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BUILDING TYPES STUDY: NEW IDEAS IN EDUCATION FOMENT NEW SCHOOL PLANNING

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ARCHITECTURAL RECORD

AUGUST 1972

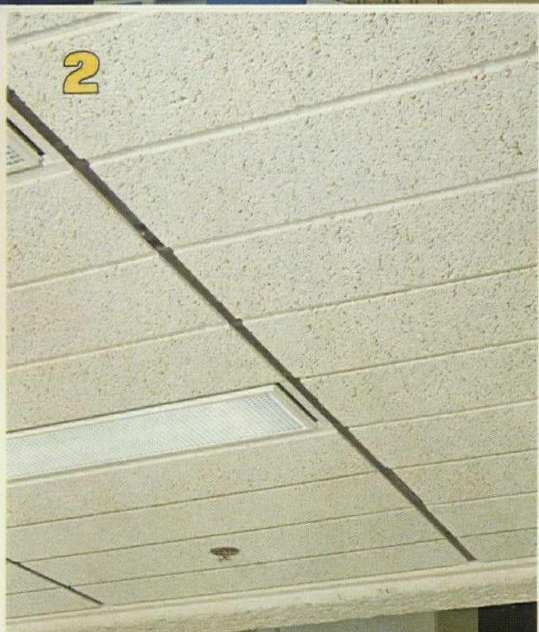
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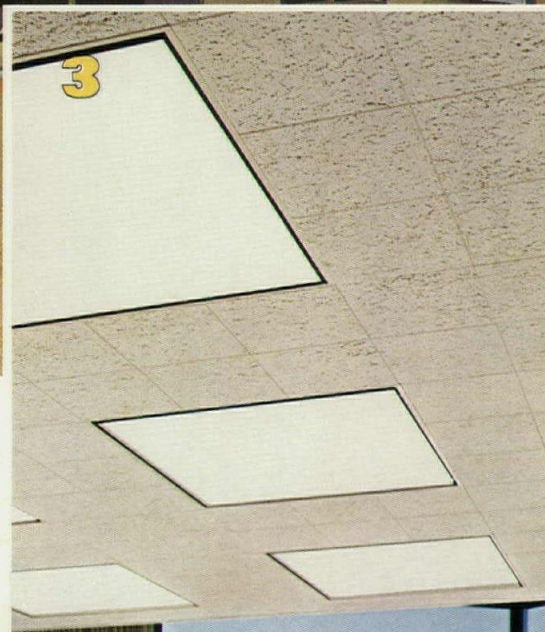
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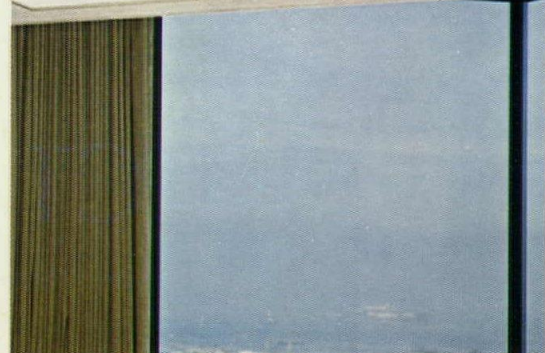
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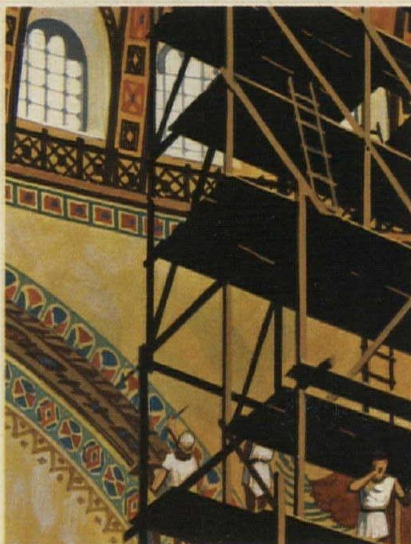
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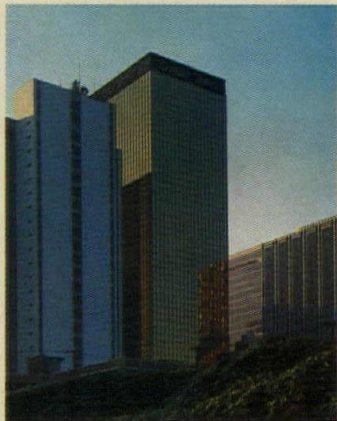
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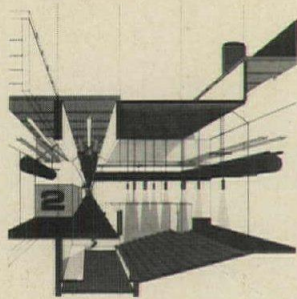
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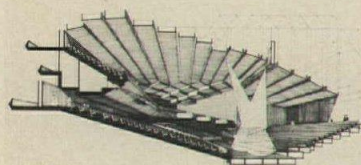
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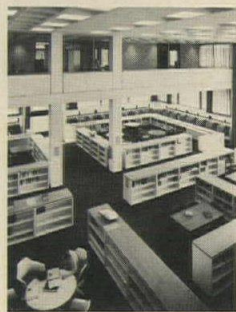
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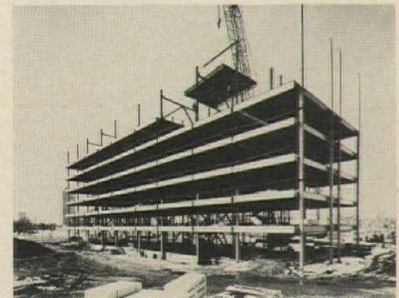
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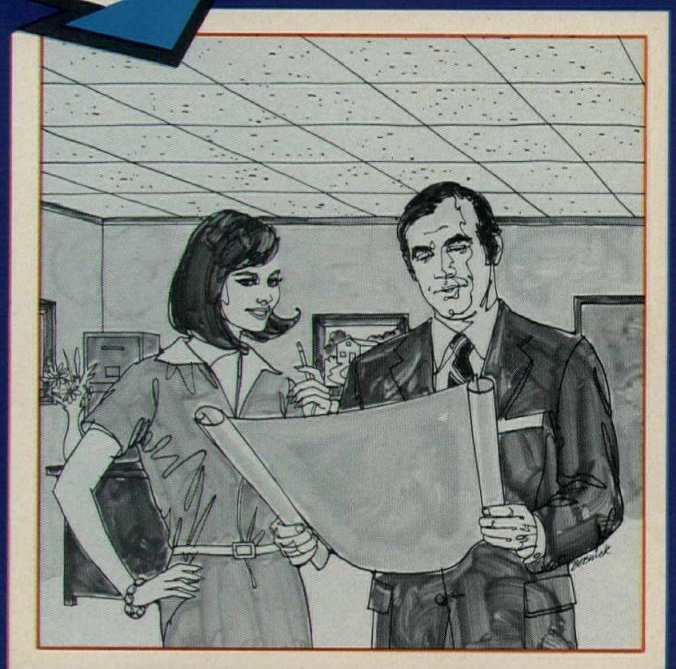
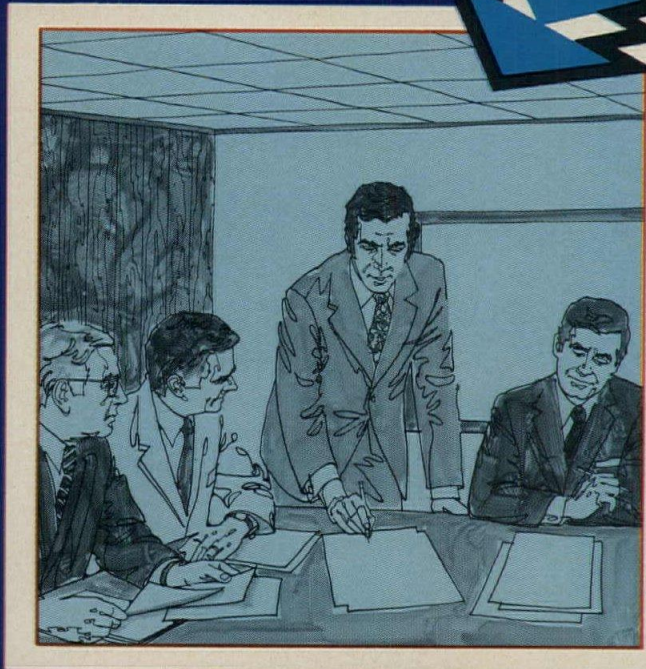
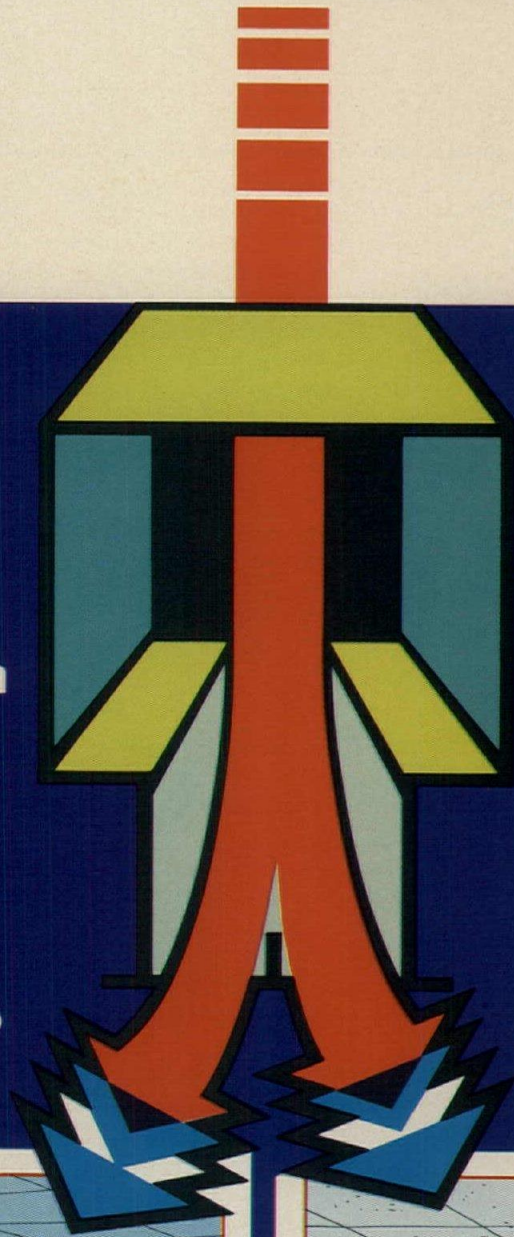


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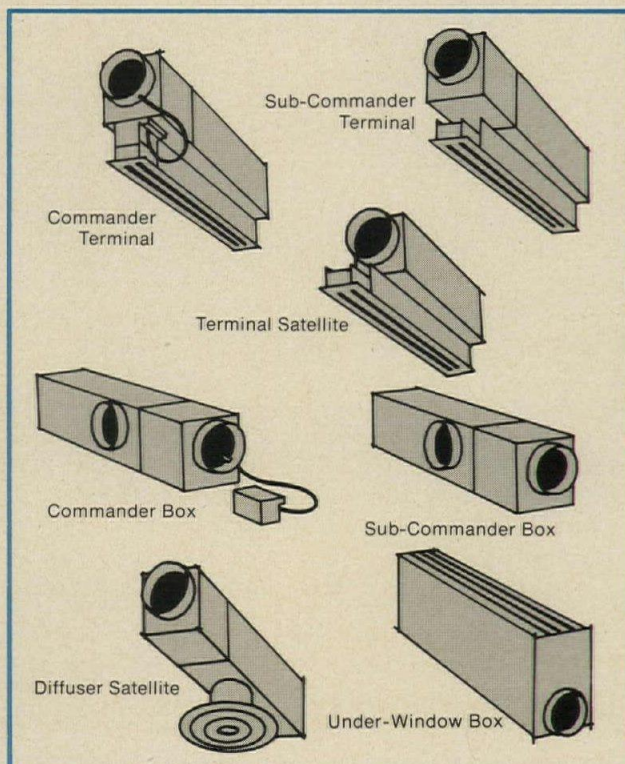
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Now that it's election time: Architects drive some nails in the planks

All along, as the Task Force on National Policy developed the recommendations it made—and had overwhelmingly approved at the convention—it has known that the real nitty-gritty was getting its bold ideas and concepts into law. As reported in our June news report, "The AIA, with technical assistance, will draft proposed Federal and state legislation . . . and will testify before Congress on the Report and lobby in favor of its new legislation. . . . As part of AIA's Minuteman program, individual members of Congress will be approached by individual members of AIA. AIA will also work to influence HUD and other Federal agencies involved in urban development. . . ." And finally, "The AIA will become active in the current presidential campaign."

Well, that kind of political activism, which would have seemed unthinkable of the august AIA just five years ago, is now taking place.

Archibald Rogers, chairman of the Task Force (also chairman of the board of RTKL, Inc., of Baltimore; and next year's first vice president of AIA) took the AIA's new proposals to the Democratic platform committee, offering "ten planks which represent a summary of our recommendations for a national policy."

Here are the platform planks to be proposed to both political parties

"1. The nation must have a national growth policy to shape its growth and improve the quality of its community life in urban, urbanizing, and rural areas.

"2. The objective of a national growth policy should be a national mosaic of community architecture designed to be in

equilibrium with its natural setting and in a sympathetic relationship with its using society.

"3. The building and rebuilding of American communities should be planned and carried out at neighborhood scale (500-3000 residential units), moving away from the haphazard and small increment development that now exists. Public utilities, transportation and services should be installed in advance as a conscious act of public decision-making to locate and guide growth and ensure a better environment.

"4. The neighborhood scale should be used as a means of expanding the options of where and how one lives. This expanded free choice should be facilitated by ensuring open occupancy, directing housing subsidies to people rather than to structures, linking development and redevelopment of urban cores to the growth in peripheral areas, and increasing citizen participation in decision-making affecting the design and governance of neighborhoods and metropolitan areas.

"5. The unearned increment of appreciated land values created by public investment should be captured and recycled into community facilities and services through mechanisms such as public acquisition and preparation of land in advance of actual development. [Editor's note: That is not the most important, but it sure is the boldest Task Force proposal. While it will (it has) raise cries of "Socialism!", it sure faces up to the incredible costs of the unprincipled land speculation that has blocked so many worthwhile projects. You might have thought it too soon for such a controversial issue to be brought

to the voters even indirectly (I certainly did), but the Democratic platform committee picked it up (see below). I'm now prepared to believe anything can happen this year.]

"6. Present disincentives in the Internal Revenue Code encouraging quick in-and-out development should be replaced by incentives for stable, high-quality development.

"7. Federal revenues should be shared at the state and local level subject to governmental reform and the creation of metropolitan planning and development agencies to guide metropolitan development through zoning, housing, control of subdivisions, and location of major public structures and infrastructures.

"8. The Federal Government should assume a greater share of the costs of local social services, especially health and welfare. Education should be financed by state revenues raised through broadbased taxation rather than local property taxes.

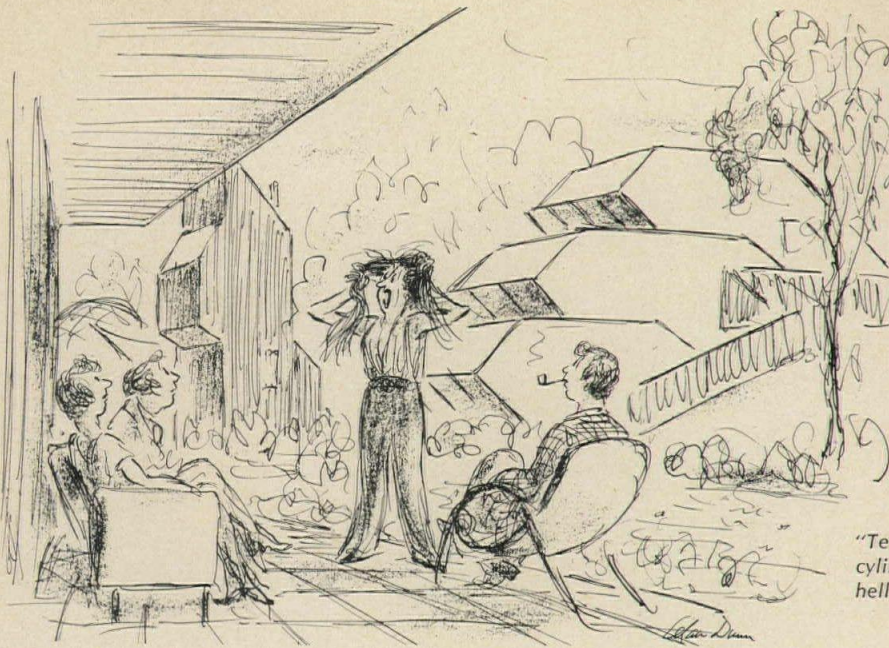
"9. A steady flow of mortgage money at low and stable rates should be ensured for unhindered community building and rebuilding.

"10. The cost of shelter should be reduced by encouraging industrialized building systems without sacrificing good planning and design."

Batting average with Democrats: Good in principle

Arch Rogers, who made a presentation of these AIA-proposed platform planks to the Democratic committee, came away from that venture (and his reading of the Democratic platform) reasonably pleased. "While none of our planks were adopted as such, the principle of many of our Task Force ideas is incorporated." Specifically:

■ The Democratic platform pledges a complete overhaul of the FHA to make it a "consumer-oriented agency." In some detail it reviews the present state of the cities



"Tetrahedrals, domes, hyperbolic parabolics, cylinders and now ANGLES! I say let's get the hell back to the box!"

and particularly their inner cores, with language claiming that the FHA has become the biggest slumlord in the country, alleging that the government will acquire a quarter of a million abandoned houses at great cost to the taxpayer. To reform this situation, the proposed Democratic policy would use the Treasury to provide direct, low-interest loans to individuals to finance construction and purchase of housing and insist on controls to assure quality. So, Score 1.

- Under the heading of Urban Growth Policy, the Democratic platform pledges a policy to experiment with "alternate strategies to reserve land for future development (land banks) and [see AIA proposal No. 5 above] a policy to recoup all publicly created land values for public benefit. Score 2. Score 3.

- The Democrats pledged a new approach to prevention of decay and abandonment of housing. Their platform suggests major new rehabilitation programs to conserve existing housing, and that low-income housing foreclosed by FHA should be provided to poor families at minimal cost as an urban land grant. And this relates, of course, to the AIA proposals. Score 3½?

- The platform pledges "reform of building practices" and use of new building techniques, including factory-made and modular construction. Score 4 from the Task Force proposals. Which seems good to me.

The Democratic platform picked other points of interest of architects

It includes several other proposals related to environment and building not directly included in the 10-point proposal by AIA, but with which the profession would surely be in general sympathy:

- It promised a strengthened New Towns program, reduction of review requirements that delay starts, and release of all appropriated funds for planning and development.
- It proposes to broaden the National En-

vironmental Policy Act to include major private (as well as public) projects, and "a genuine commitment to make the Act work."

- It promises to expand support by direct grants through the National Foundation for the Arts and Humanities, "whose policy should be one of stimulation."

Finally (hooray!) the Democrats swing hard at the good old Highway Trust Fund

The Democratic platform pledges creation of a single transportation fund to replace the present Highway Trust Fund. The AIA had earlier urged Congress to create a Community Development Fund to replace all special-purpose funding programs for community development, so the platform plank does not go as far as AIA might have wished, but is surely a step in the right direction. The Transportation Fund pledged by the Democrats would allocate money for capital projects on a regional basis, permitting each region to determine its needs under guidelines "ensuring a balanced transportation system and adequate funding. . . ."

Well, one (the Democrats) down . . . and to pretty good avail

While it's difficult to compare precisely the Task Force goals with the platform, the scoresheet outlined above indicates that much of what the Task Force hoped to lobby into the platforms of both parties has emerged in the Democratic platform.

One (the Republicans) to go —and we'll know about that next month

Arch Rogers has requested an interview with the Republican platform committee, and with some of the President's staff people. It is hard to predict (I certainly won't risk it) whether the Task Force can expect similar results—if for no other reason that the rules are very different. It is very easy, of course, for the Loyal Opposition to be highly critical of what the Administration has been

doing; and very difficult for an incumbent party to be all that critical of what it has been doing by calling, in its platform, for drastic change. Further—in the person of Arch Rogers—the AIA has been publicly critical of the Administration on growth policy. As reported in the July 3rd issue of *Architectural Record Newsletter*, the AIA feels the President has reversed his field on national growth plan advocacy, and has told Congress that the President's 1972 report "states no policy" and is "a clear reversal of his earlier broad statement." However, the President has shown a new interest in quality design and environment (see this page last month), and may—as he looks to a new Administration—be ready to advocate some new proposals and perhaps even reversals. At any rate we'll see, and report right here on this page as soon as possible.

Whatever happens, hooray for the AIA for moving into the political arena

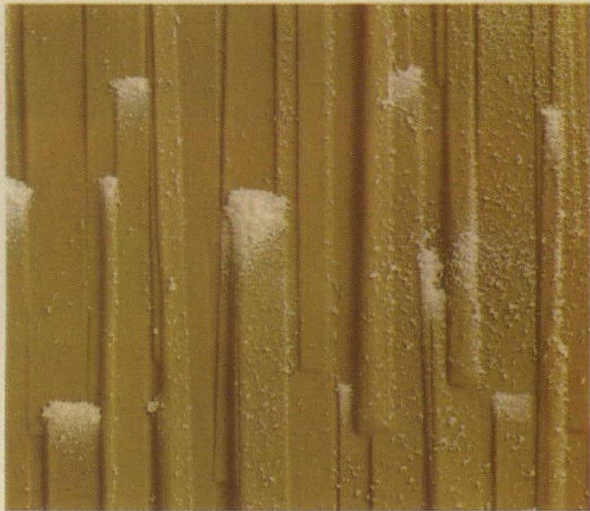
For I must say I agree with the opening statement that accompanied the AIA's proposals to the platform committees:

"The architects, we feel, have a contribution to make to our nation at this time. We believe that we are generalists in a very specialized society, and that we have the practical experience to support our contribution. We are not economists, nor sociologists, nor politicians; yet we do know the effect of economics, of sociological issues, and of politics upon the built environment which architects must develop day-by-day. We therefore claim special expertise in the understanding of these forces and in the synthesizing of these forces in our designs."

Which is another way of saying something I've been arguing on these pages for years: If architects don't know what to suggest in terms of the physical environment, who does? I, for one, am glad that the profession is now fighting (lobbying if you will) and that it is beginning to be heard.

—Walter F. Wagner Jr.

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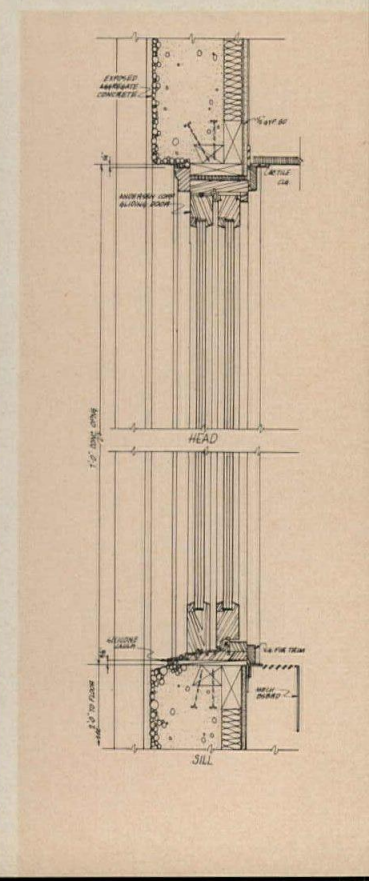
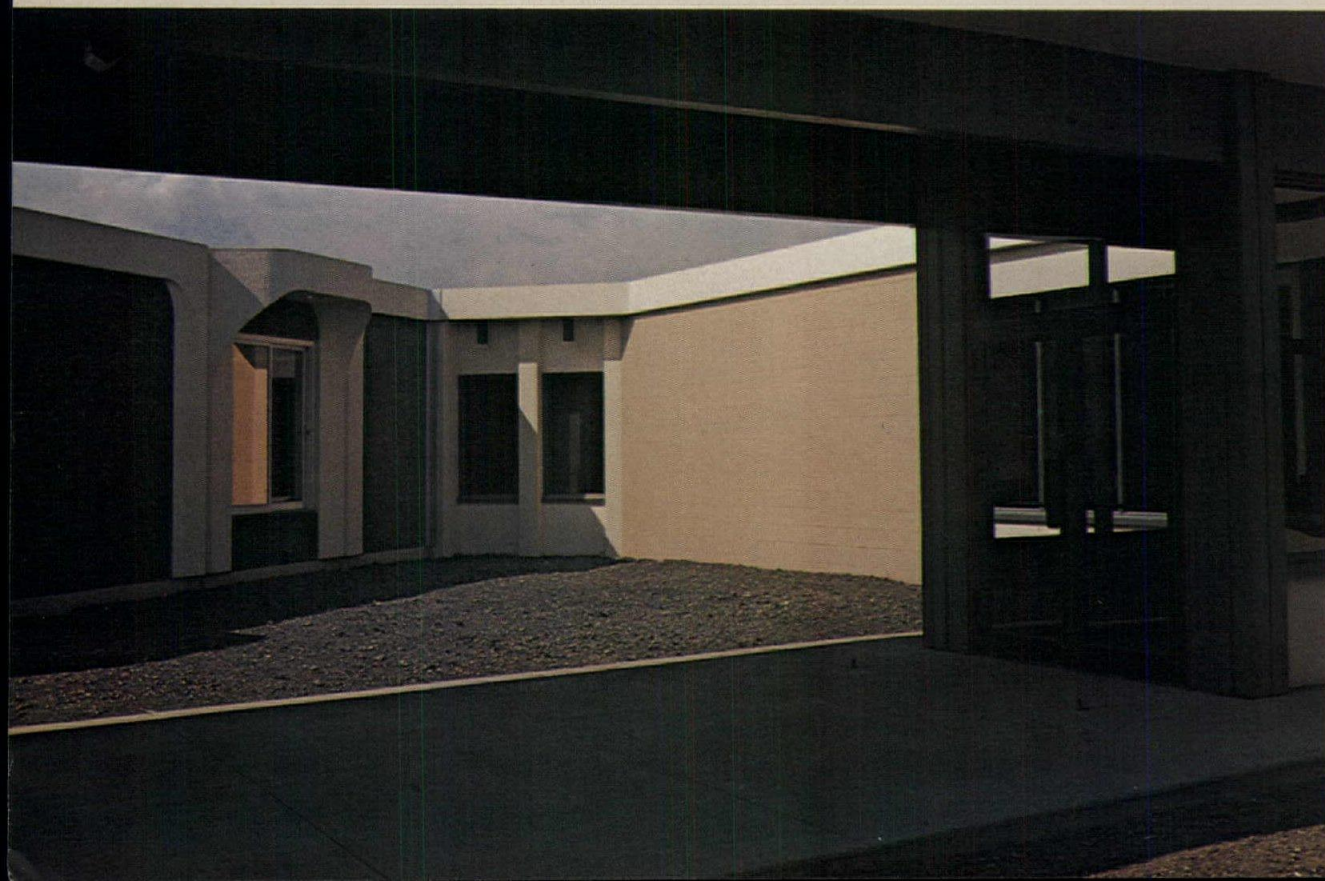
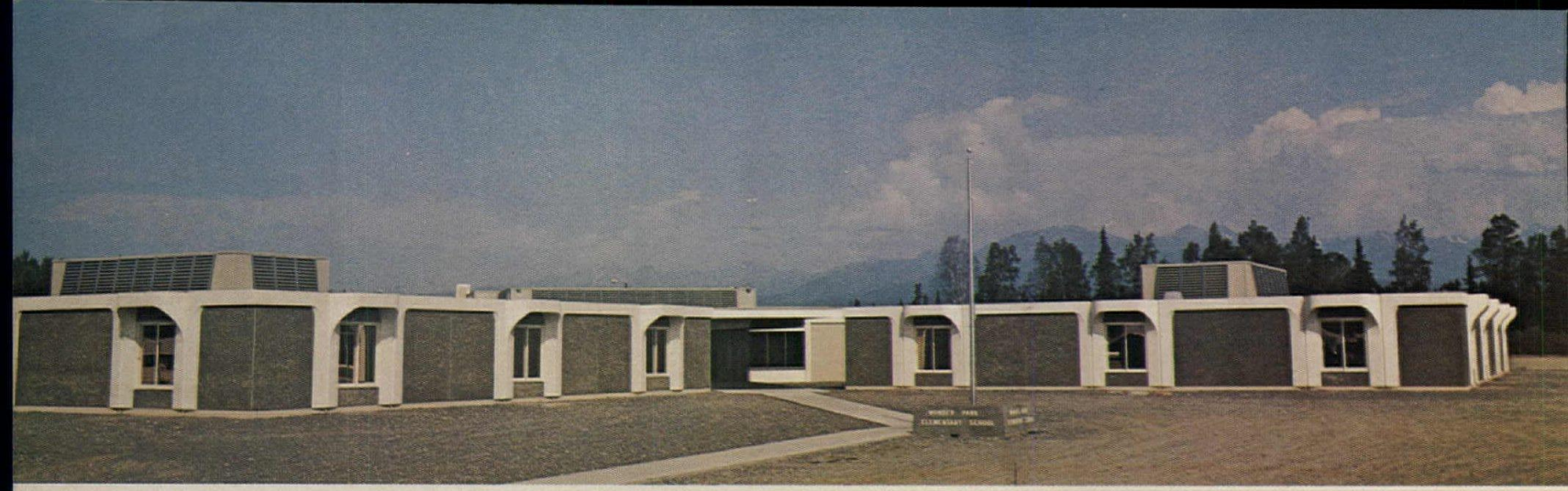
Color



U.S. Plywood

777 Third Avenue, New York, N.Y. 10017

For more data, circle 6 on inquiry card



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 quickly evacuated through them.

These Andersen Gliding Doors solved more than one problem. Their 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.



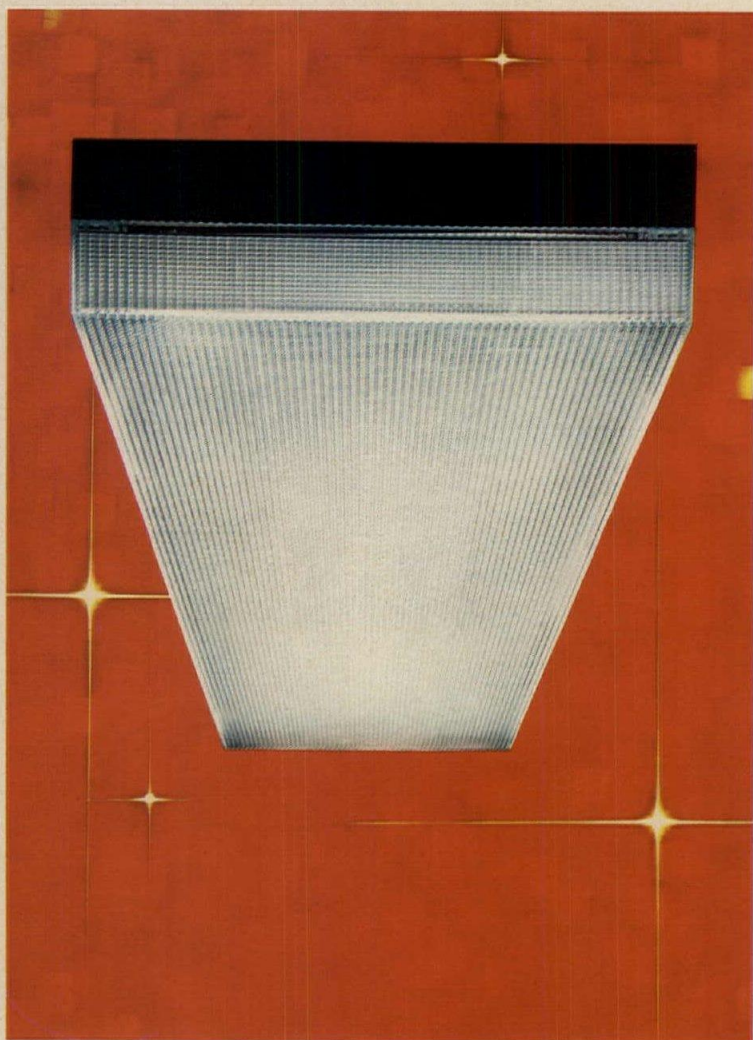
Andersen Windowalls®
ANDERSEN CORPORATION BAYPORT, MINNESOTA 55003

For more data, circle 7 on inquiry card



Keene didn't become the interiors people just by making building products.

We had to know how to fit them all together.



Our Sechrist Lighting Operation's distinctive new Celebrity fixture has a one-piece acrylic lens that eliminates all lamp image, fixture shadow.

Keene movable partitions let you rearrange office space easily—without damaging floors or ceilings.

If Keene was going to serve you as The Interiors People, we realized we'd have to offer you better building products.

We now have three separate lighting divisions that are constantly coming up with new interior fixture designs. Like a ceiling and wall fixture with advanced optical design that diffuses light uniformly, without bright spots or shadows.

We re-thought movable partitions, too. And designed five separate, versatile types, all





Over 8,000 combinations of Keene building products can be interdesigned into Keene modular interior systems—and installed rapidly under our single-source responsibility.

available in many materials and styles, all fitting the same sturdy, snap-fit framing system.

We applied our experience in acoustical control, and developed a unique easy-access ceiling system, and a line of distinctive acoustical ceiling tiles (featuring richly fissured Styltone).

But to be sure we were offering you the most useful interior products available, we decided we had to know how they all worked together. Result: the Keene interior systems concept, with all components—lighting, air handling, acoustical control—interdesigned in self-contained modules... and installed under our single-source responsibility for total job performance.

Since this end-product involvement keeps us aware of new trends in interior styling, our product divisions stay out ahead with new developments... developments we're eager to pass along to help make your interiors more successful. That's what being The Interiors People is all about.

KEENE CORPORATION

345 Park Avenue, N.Y., N.Y. 10022

We've just begun to grow.

For further information circle Reader Service numbers:
 Partition Div.—201; Ceiling & Insulation Div.—202; Sechrist Lighting—203;
 Smithcraft Lighting—204; L&P Lighting—205; Interior Systems Div.—206



Keene's instant-access Accesso™ ceiling system was chosen for 1,000,000 square feet of ceilings in the new Chemical Bank Building in New York.

If granite is so hard to install, why didn't someone tell First Federal Savings and Loan, Detroit?

Sure. They'd heard the myth about granite posing costly installation problems. But they also knew you can't plan buildings on myths, so they went over the facts about Cold Spring granite with their architect. And they liked what they found: the natural beauty of Cold Spring's polished granite resists weather, stains and all types of traffic as no other building material can; it won't fade or deteriorate; it requires virtually no maintenance; it comes in a wide spectrum of colors; and . . . *it's economical to install, thanks to Cold Spring's development of new fabrication techniques that include improvements*

like steel-backed granite panels.

In fact, they liked the idea well enough to use granite inside as well. In heavy traffic, high wear areas like check writing tables, teller's counters, and the wall facing that encloses the elevators.

How expensive is granite? Talk to our Customer Service Department about that. Tell them what you want to do and they'll tell you how it can be done. Step by step. And likely as not you'll find that granite fits your plans well on a cost-in-place basis. Refer to Sweet's Catalog No. 4.1/Co. Or call us. (612) 685-3621.



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*Raymond Granite Company
Raymond, California*

*Cold Spring Granite (Canada) Ltd.
Lac Du Bonnet, Manitoba*

over 20 producing quarries

First Federal Savings & Loan,
Main Office, Detroit, Michigan

Architect:
Smith, Hinchman and Grylls

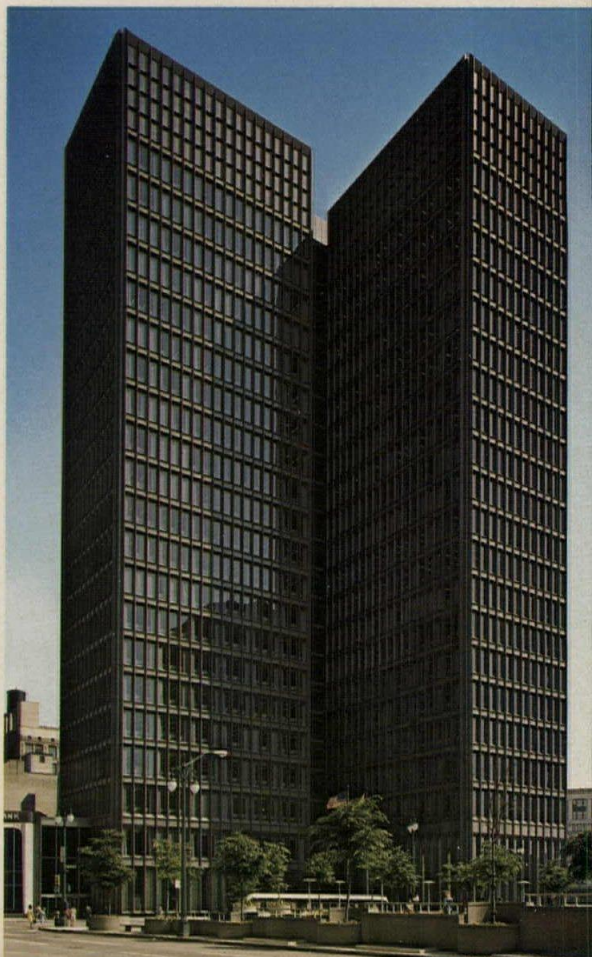
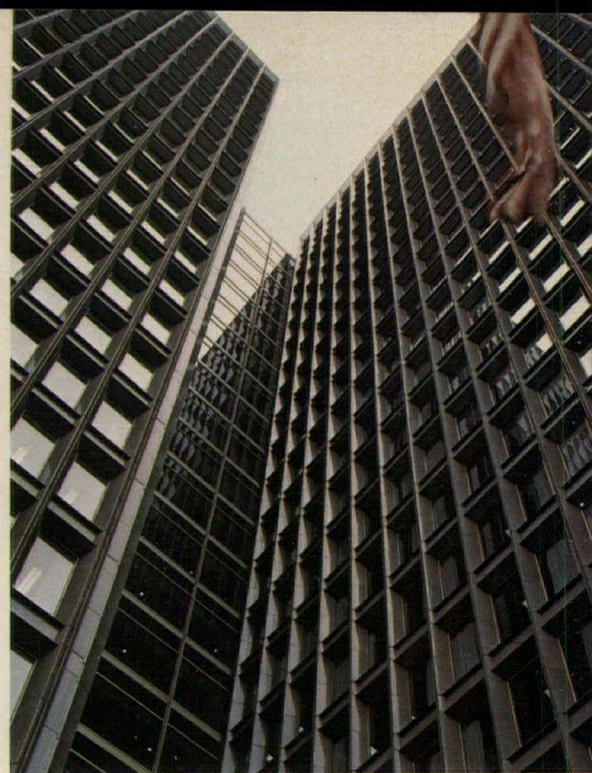
Contractor:
Fuller Construction Co.

Granite:
Dark Pearl



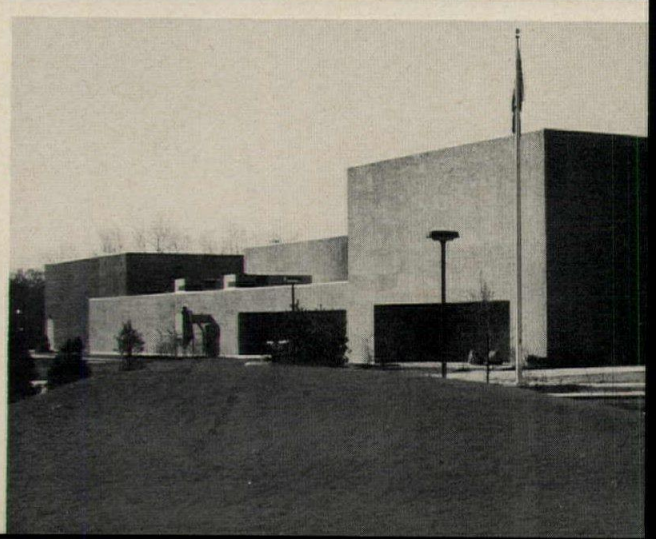
COLD SPRING GRANITE COMPANY / COLD SPRING, MINN.

For more data, circle 9 on inquiry card





**What makes
this ceiling
right for this job?**



It's a flexible system for a flexible school.

The school you see here is two schools in one. A ceiling system with great flexibility was needed to make the combination work. In Newark, Delaware, the Ramon C. Cobbs Lower School and the Martin J. Gauger Middle School were combined in one new building for students from kindergarten age to 15 years old. The building had to be flexible to handle this wide range of student ages. Contributing to the flexibility is the Armstrong C-60/30 Luminaire Ceiling System.

A changing enrollment meant areas allocated to the Lower School one year might become part of the Middle School next year. So partitions had to be moveable and lighting, flexible. With an Armstrong Luminaire Ceiling System, wall panels can be relocated and reattached to the C-60 grid. Lights can be moved to any module. Because the floor plan provided large open areas with no doors on most classrooms, an acoustically efficient ceiling was a must. Armstrong C-60/30 Luminaire met this requirement.

Conditioned air is handled through the ceiling system, diffused via Supply-Air Linear Diffusers, and returned through tees and light fixtures. Sprinklers and speakers are neatly incorporated into the ceiling, too. Yet with all this integration of services, there's little exposed hardware to detract from the ceiling's good looks.

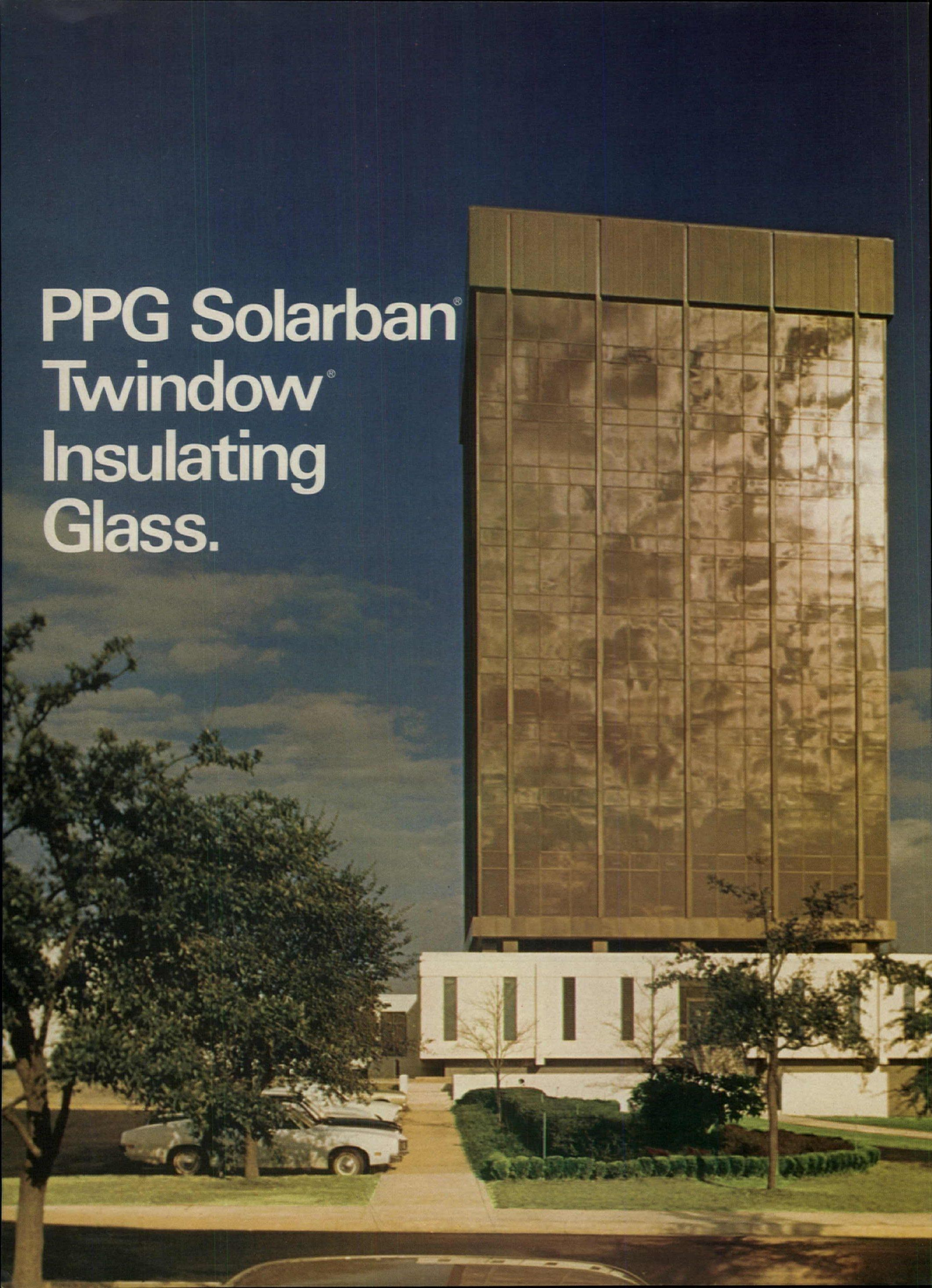
For information on C-Series Luminaire and other Armstrong Ceiling Systems, write Armstrong, 4208 Rock St., Lancaster, Pa. 17604.

Armstrong / **CEILING SYSTEMS THAT WORK**

OWNER: Newark School District, Newark, Delaware
ARCHITECT: Richard Phillips Fox, A.I.A., Inc., Newark, Delaware
GENERAL CONTRACTOR: Wm. C. Ehret, Inc., Wilmington, Delaware
MECHANICAL/ELECTRICAL ENGINEER: Furlow Associates, Inc., Philadelphia, Pennsylvania
CEILING SYSTEMS CONTRACTOR: Union Wholesale Company, Wilmington, Delaware
For more data, circle 1 on inquiry card



PPG Solarban[®]
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Insulating
Glass.



**PPG Glass gives
Blue Cross-Blue Shield
a beautiful look,
a view, and a bonus.**

The Blue Cross-Blue Shield Building in Columbia, South Carolina, is a 10-story tower sheathed in PPG reflective glass. The building has been praised as a "striking and highly visible" landmark.

Blue Cross sees the new reflective-glass-clad tower as a strong corporate symbol, and as 80,000 to 90,000 additional square feet of wide-open space with a view of the surrounding countryside.

Initially, the architect selected PPG's *Solarban 575 Twindow* Insulating Glass (with bronze cover plates) because of

its color, high reflectivity, and ability to reduce light intensities. But calculations on the mechanical system also showed that the higher cost of the *Solarban* units would be paid for just in the initial savings realized on heating and cooling equipment. The architect's studies indicated that the use of glass without the high solar-energy reflectance and insulating properties of the *Solarban Twindow* units would have required adding another floor to the building—just to house additional HVAC equipment! Blue Cross sees that as quite a bonus.

Why not see PPG about Glass Conditioning* for your next building. Early in the design stages. There's a PPG Environmental Glass that you can use as an active design medium to meet esthetic considerations, help solve environmental control problems, and contribute to a significant cost savings for your client. Write PPG Industries, Inc., One Gateway Center, Pittsburgh, Pa. 15222.

*Glass Conditioning is a service mark of PPG Industries, Inc.

PPG: a Concern for the Future

For more data, circle 10 on inquiry card

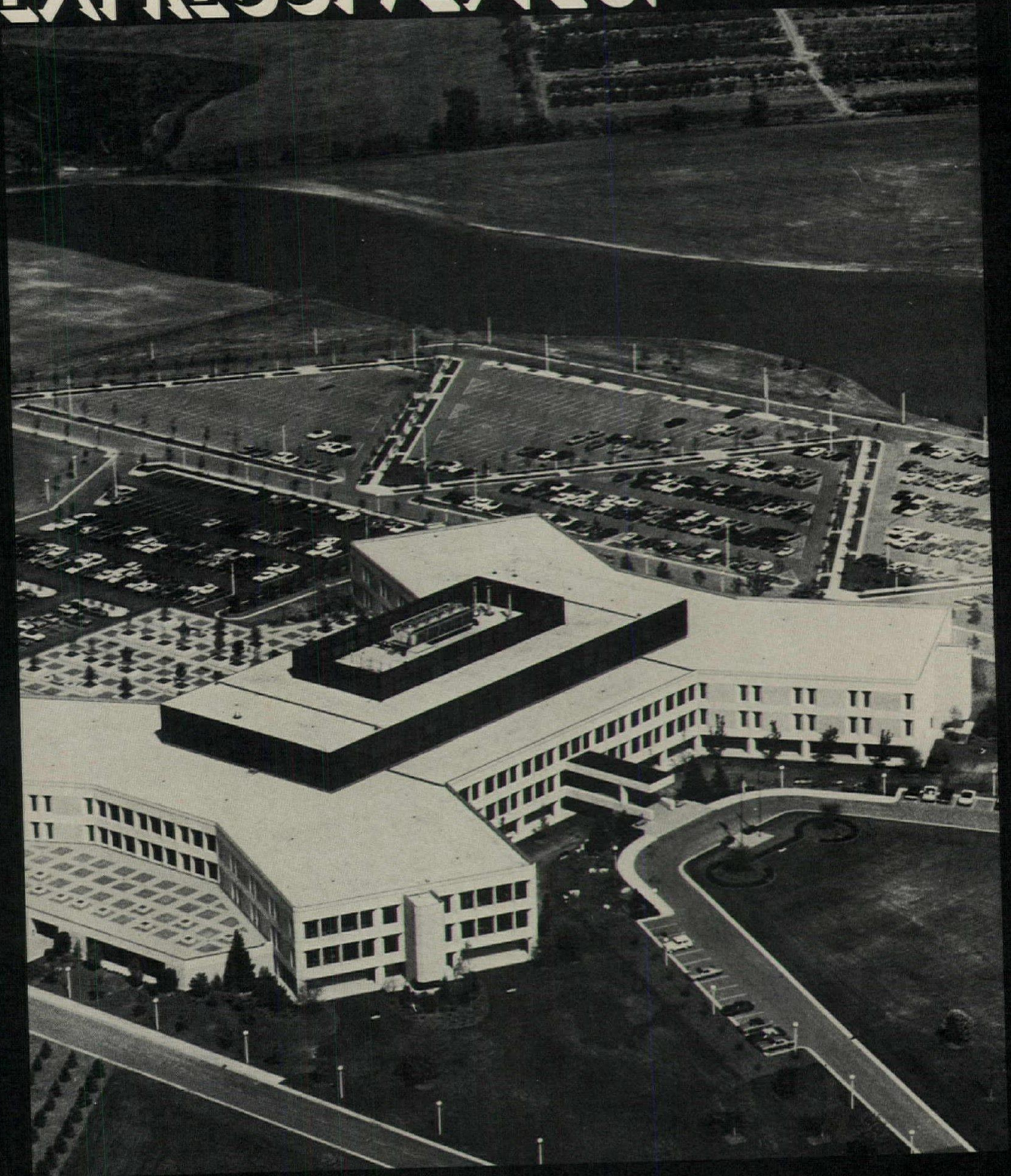
OWNER: Blue Cross-Blue Shield of South Carolina, Columbia, S.C.

ARCHITECT: Lucas, Stubbs and Long Associates Ltd., Charleston, S.C.



PPG
INDUSTRIES

REINFORCED CONCRETE EXPRESSIVE, YES.



Kemper Insurance Group Corporate Offices, Long Grove, Illinois.
Architects: Welton Becket and Associates, continuing the practice of Childs & Smith, Inc., Chicago.
Structural Engineers: Alfred Benesch & Co., Chicago.
Contractor: W. E. O'Neil Construction Co., Chicago.

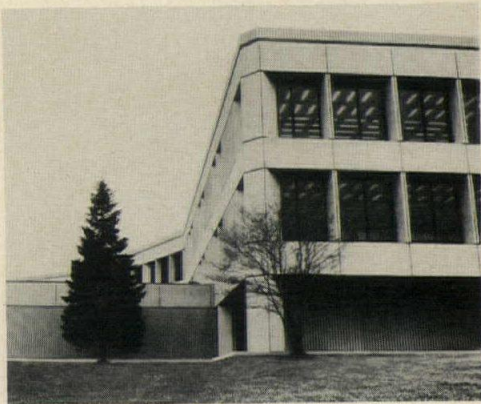
EXPENSIVE, NO.

More than a building — a planned environment.

Visualize a building site surrounded by 600 rolling acres of beautiful countryside. Suppose you had to design the corporate headquarters for the Kemper Insurance Group near Long Grove, Illinois. Your client wants a total planned environment—manmade lakes, wildlife refuge, parking areas shielded from view, with the building in harmony with its natural surroundings. Of course, he is concerned with costs, earliest possible occupancy, and due to the nature of his business, vitally concerned with fire safety. What's your solution? Compare it with the architect's choice: an expressive design, strikingly realized in reinforced concrete.

Cast in place to keep costs in line.

One of the design goals was to keep the massive structure low in proportion to the natural site, and give it a human scale. Four wings are angled obliquely from the rectangular main portion of the building. Earth-tone concrete using buff cement, with exposed aggregate panels between reinforced concrete structural members, provides visual harmony with the surroundings. Columns, mullions, and spandrels form a frame for recessed windows. In some instances, precast fluted concrete panels replace the windows. This design freedom was made possible by cast-in-place reinforced concrete columns (4,000 psi strength) and waffle-slab joist floors (complete waffle-slab designs can be selected from CRSI Design Handbooks to conform to latest codes.)



Detail of interesting exterior with exposed reinforced concrete sandblasted for texture.

The 500,000 square feet of interior space consists of free-flowing, large-bay areas. Here again, reinforced concrete construction, using Grade 60 rebars, delivers more usable, more flexible floor space. Proof that expressiveness can go hand-in-hand with economy is shown by the final cost of \$6.51 per square foot for the reinforced concrete structural frame. More than 2000 tons of rebar were used.

How to insure a maximum fire rating.

Naturally enough, the Kemper Group specified that its own corporate headquarters must have the highest fire rating attainable in light of current technology. The high fire rating required was provided by use of a 4-inch lightweight concrete topping on all structural slabs. And all other materials were carefully chosen for fire resistance or given special flame-retardant treatment.

Finishing up with months to spare.

The speed and ease of construction with cast-in-place reinforced concrete, plus the immediate availability of rebars, are once again demonstrated in the Kemper complex. All phases of construction proceeded smoothly and the structure was completed a full five months ahead of schedule. Figure that in rent and depreciation savings! Contributing to this time-saving, money-saving performance was the use of Grade 60 rebars in straight lengths with simple lap splices.

Grade 60 and the benefits of Strength Design.

Grade 60 reinforcing steel permits complete utilization of Strength Design. Its 50% greater yield strength enables the designer to plan for slimmer columns, more usable floor space, and lower construction costs.

Reinforced concrete: expression without the expense.

Get away from the stereotypes and into the building system that has it all: design freedom, fast construction and early starts, less maintenance, proven economy. Cast-in-place reinforced concrete lets the imagination soar, while budgets stay down-to-earth.

Send reader service card
for further technical data.



CONCRETE REINFORCING STEEL INSTITUTE

228 North LaSalle Street, Room 1204 • Chicago, Illinois 60601

For more data, circle 11 on inquiry card

By 1990, coal will be a significant source of gas. Coal?



America is facing a growing energy supply problem.

One promising solution to the problem is coal gasification. Coal and hydrogen can be made to react, under high temperature and pressure, to form high-quality supplemental gas.

This is especially important because coal constitutes about 88 per cent of the nation's

proved reserves of energy resources.

Last August, the Department of the Interior and the American Gas Association agreed to the joint funding of a major coal gasification research program. The project will require approximately \$120 million over the next four years.

The agreement provides for large-scale pilot-plant testing


of six known processes. One pilot plant is already operating in Chicago.

Another has been built in Rapid City, South Dakota. And still another is scheduled for Homer City, Pennsylvania.

Major gas utilities have recently announced plans to build the first two commercial gasification plants. Each will cost about \$250 million.

By 1990, there very well could be 35 plants with total fixed capital expenditures of over \$8 billion.

This domestic coal gasification program will help minimize our reliance on foreign sources of supply. At the same time, it will also create an important new industry for the nation.

 AMERICAN GAS ASSOCIATION

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Bright idea



Beautiful Washfountains that hold up beautifully. Bradglas® Washfountains . . . colorful like nature. Brick red. Salmon. Surf green. And eight others. With clean, contemporary lines to fit today's commercial, industrial and school buildings. Durable like steel. Smooth, non-porous. Resistant to abrasion, acid and corrosion. Won't swell, shrink or warp. Won't chip, peel or flake. Vandal-proof and fire-safe, too. Reinforced polyester is tough . . . yet light for easy installation . . . 80% lighter than precast stone. Bradglas Wash-


fountains cut installation costs because they serve up to 8 people with one set of connections. Save on wall and floor space. Can be installed anywhere . . . washrooms, halls, alcoves. More sanitary than lavatories because they're foot-operated. In 54" and 36" circular and semi-circular models . . . 11 decorator colors. See your Bradley washroom systems specialist. And write for latest literature. Or call (414) 251-6000. Telex 2-6751. Bradley Washfountain Co., 9107 Fountain Boulevard, Menomonee Falls, Wis. 53051.

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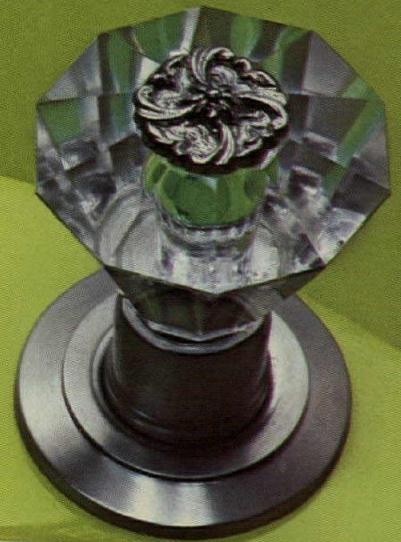
VON DUPRIN 77. Bronze . . . Drop-Forged to a Classic Design. No exit device equals the 77 in tensile strength, shock resistance or durability. Assured top performance . . . even under the most demanding conditions. Handsome plain . . . but color can be added to case inserts and/or cross-bars. Rim, mortise lock and vertical rod applications. For illustrated catalog information, write for Bulletin 653.

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elegance
quality
value
Decora
gets it
all together



Eljer has created an elegant new decorator brass . . . Decora. In satin-rich brushed chrome, with intricate bright chrome appliques. Available with sparkling crystal or decorated brush chrome handles.

For all its elegance, Decora is an outstanding value in decorator brass. It has the same fine quality and rugged reliability you've come to associate with Eljer — red brass for superior corrosion resistance, swivel-disc faucet mechanism for less washer wear, and fully renewable stems and seats.

You can specify Decora brass with confidence in both its beauty and dependability. Ask to see samples of Decora. Or send for our full-color brochure: Eljer, Dept. AR, 3 Gateway Center, Pittsburgh, Pa. 15222.

ELJER **Decora**



Entraliter® makes light of dark situations

Hard-to-light areas take on a bright new look with Hubbell Entraliter. These ruggedly built fixtures with prismatic refractors assure high quality illumination in nearly any difficult spot. Airports, loading docks, parking garages, recreational areas, industrial lots, walks between buildings . . . Entraliter belongs in all these locations where safety and security is a must.

Choose from wall and ceiling mount styles for use with up to 400 watt mercury vapor or metal halide lamps, 250 watt high pressure sodium and up to 300 watt incandescent. Each is built and performance-proven to assure weatherproof operation and vandal-resistance. Hubbell's Entraliter II is constructed of one-piece, molded aluminum housing with protective top visor—an Entraliter exclusive. Lexan® polycarbonate shields are available for special applications as well as stainless steel wire guards and other accessories.

Contact Hubbell or your nearest authorized distributor for full details or a free lighting demonstration. All you've got to lose is a lot of darkness.

HUBBELL . . . lighting innovations to believe in.



TM

lighting division

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Our light heavyweight

Permalite Pk • the new, compact roofing board that provides as much insulation as materials twice as thick.

Permalite Pk • increases design flexibility, sharply decreases operating costs, and reduces shipping and installation costs significantly.

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Note: This 1.6" Pk has "C" value of .12, and "R" value of 8.33 and is equivalent to as much as 3" of competitive material.

*Permalite Pk: Listed by FM for Class 1 Steel Deck Construction (fire and wind uplift); UL Metal Deck Assemblies Construction Nos. 1, 2 and others.



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RIGID ROOF INSULATION

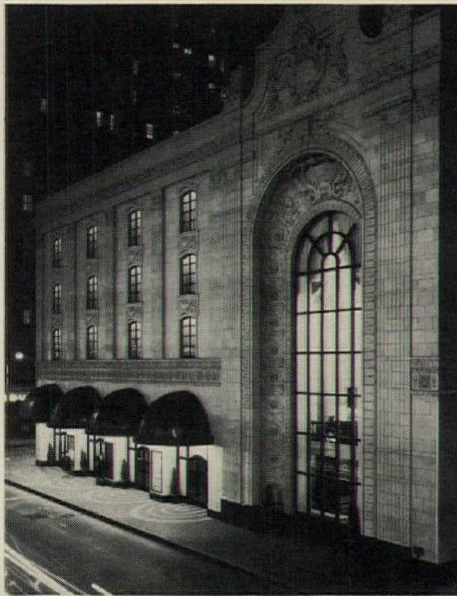
For more data, circle 21 on inquiry card

Dover Stage Lift helps recycle an old movie palace

In a Cinderella-like transformation, the old Penn vaudeville and movie theater in Pittsburgh has become a showcase for the arts.

Now known as Heinz Hall for the Performing Arts, this unique building is not only the new home of the Pittsburgh Symphony, Pittsburgh Opera, Civic Light Opera, Pittsburgh Ballet and the Pittsburgh Youth Symphony, but also offers complete theatrical and film facilities for international attractions.

Much of the neo-Baroque



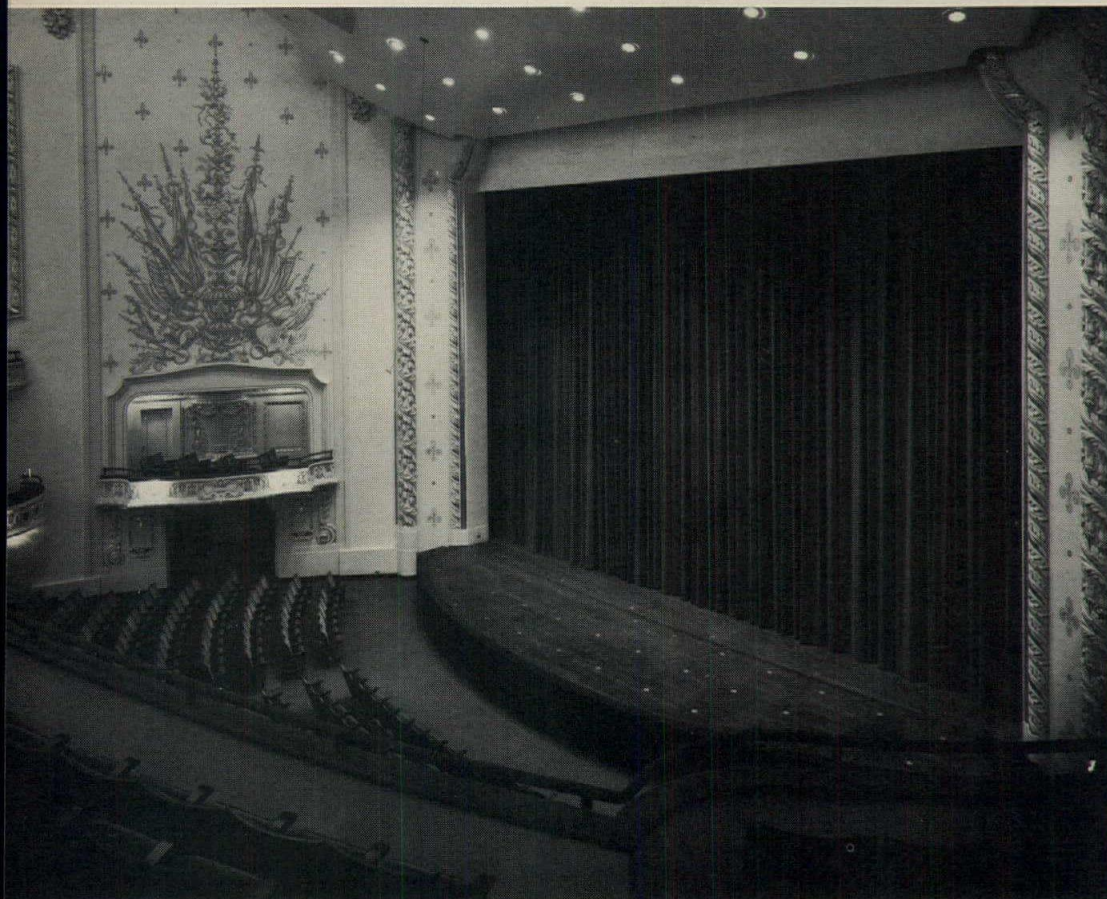
opulence was retained in the multi-million dollar renovation project. But extensive revamping was necessary for conversion of the old movie palace into a building that functions efficiently and beautifully for its diverse new tenants.

A major addition was a Dover Stage Lift, 14' x 54' in overall dimensions. Raised, it provides a needed extension of the stage area; lowered, it serves as an orchestra pit.

Dover Stage Lifts are used in theaters, concert halls, opera houses and drama centers throughout the country to provide more flexibility and imagination in staging musical and dramatic presentations. Call us in for design and engineering assistance, or check our catalog in Sweet's Files. Dover Corporation, Elevator Division, Dept. A-8, P. O. Box 2177, Memphis, Tenn. 38102. In Canada: Dover/Turnbull.

DOVER
Stage Lifts

For more data, circle 22 on inquiry card



HEINZ HALL FOR THE PERFORMING ARTS, Pittsburgh, Pa. Architects: Stotz, Hess, MacLachlan and Fosner, Pittsburgh. General contractor: Mellon-Stuart Co., Pittsburgh. Acoustical and stage lift consultant: Dr. Heinrich Keilholz. Engineers: George Levinson, Inc. (structural); Meucci Engineering Inc. (mechanical); Hornfeck Engineering, Inc. (electrical). Interior designer: Verner S. Purnell. Dover Stage Lift installed by Marshall Elevator Company, Pittsburgh.

News in brief

HUD has awarded a contract to develop a systematic approach evaluating site plans which, it is hoped, will assure that only good designs are selected for construction of HUD-assisted housing. The \$110,000 contract from HUD's Office of Research and Technology went to Llewelyn-Davies Associates, an urban planning firm in New York City. An outgrowth of site plan and design evaluation problems identified in Operation Breakthrough, the technique is expected to assure good design and save time, money, and manpower. It calls for a system that will collect available data on HUD-assisted housing developments deemed to have high quality and, using computer techniques, develop criteria and guidelines for site plan evaluation.

The AIA has created a new Department of Environment and Design and has restructured the Department of Government Affairs, in order to align the staff departments directly with the national Commissions which oversee them. The administrator of the new Environment and Design Department is Michael B. Barker, AIP. James C. Donald will head the Department of Government Affairs.

Richard G. Stein, FAIA, has been awarded the 1972 Arnold W. Brunner Scholarship to continue his investigation into the interrelationships between architecture and energy. The annual scholarship of \$10,000 is granted for advanced study in a special field of architectural investigation which will most effectively contribute to the practice, teaching, or knowledge of the art and science of architecture.

The New York Chapter of the AIA announces that the 1972 Le Brun Traveling Fellowship has been awarded to Robert H. Motzkin of New York City. The Fellowship, amounting to \$5,000, is for travel and the study of architecture outside the United States for a period of six months, and is open to draftsmen and architects under 30.

The Uniform Construction Index, a system of formats for specifications, data filing, cost analysis and project filing, has been issued by The Joint Industry Conference in the United States and Canada providing the construction industry with a coordinated construction communications vehicle. The 316-page publication sells for \$6.50 to members of participating organizations and may be purchased through the AIA.

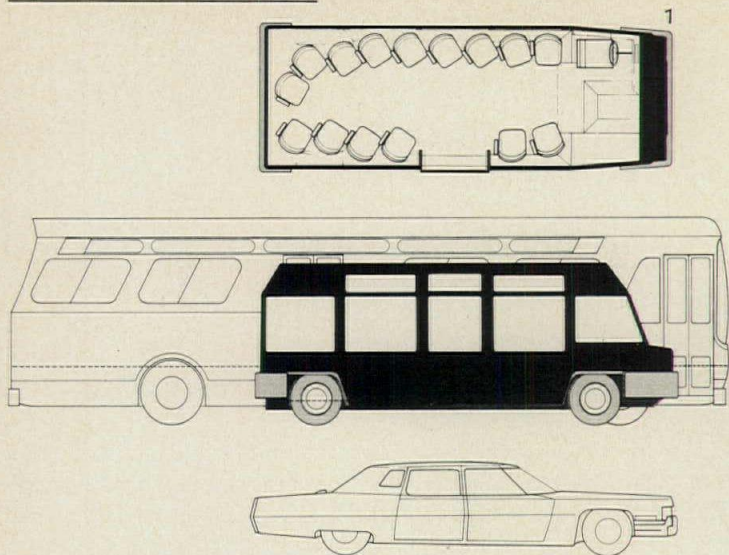
Organization of Efficient Architectural Practice is the subject of a two-day seminar to be presented by the University of Wisconsin-Extension in Madison, September 14-15, 1972. For information: Mr. Raymond C. Matulionis, Program Director, University of Wisconsin-Extension, Department of Engineering, 432 North Lake Street, Room 741, Madison, Wisconsin 53706.

An international symposium of architects, structural engineers, scientists, designers, and citizens concerned with the role structures will play in future life styles will address themselves to this question September 22, 23, and 24 at the campus of California State University, Los Angeles. Paolo Soleri and Ian McHarg will be among the guest speakers. For information: Office of Community Services, California State University, Los Angeles, California 90032.

The American Academy in Rome is offering Rome Prize Fellowships for 1973-1974 for those ready to do independent work in architecture, environmental design, landscape architecture, musical composition, painting, sculpture, history of art, and classical studies. Fellowships will be awarded on evidence of ability and achievement, and are open to citizens of the United States irrespective of race, color or creed, for two years beginning October 1, 1973, with an option to accept the fellowship for one year. Inquiries should be addressed to the Executive Secretary, American Academy in Rome, 101 Park Avenue, New York, N.Y. 10017.

Readers are reminded that submissions to RECORD INTERIORS 1973 and RECORD HOUSES are now welcome. Submissions for our special December issue (see page 66) on the work of young architects are also invited.

ARCHITECTURAL RECORD notes with sadness the passing of Aline B. Saarinen, art critic, newspaper and television journalist and wife of the late Eero Saarinen. Mrs. Saarinen died in New York City of a brain tumor on July 13.



1
MINIBUS FOR CITY TRAFFIC UNVEILED AT TRANSPO

Van Ginkel Associates Ltd., a multi-disciplinary planning and design firm, has developed the GINKELVAN, a 15-passenger public transport vehicle designed for the stop and go of downtown traffic. Shorter than a Cadillac, the GINKELVAN is formed of fiberglass on a tubular steel chassis, and its weight is approximately 6000 lbs. The interiors were designed in association with Herman Miller, Inc. According to the developers, the vehicle's 6-cylinder diesel engine meets 1975 standards for exhaust emission.

The vehicle made its debut at TRANSPO last month and will go into larger scale production later this year.

NASHVILLE EXPERIMENTS WITH SOLID WASTE DISPOSAL

A new partial solution to the solid waste disposal problem was offered to the nation's cities recently when the mayor of Nashville, Tennessee disclosed details of the first plant designed to convert community refuse into chilled water and steam for year-round air conditioning. Mayor Beverly Briley said his city will begin operation early in 1974 of a \$17 million mid-city cooling and heating plant using solid waste as the fuel. Chilled water and steam will be sold to defray operating costs. Similar treatment of the nation's 200 million annual tons of community refuse could alleviate the rising demand for electricity and fossil fuels, help eliminate sanitary landfills and lower air pollution, according to Melvin C. Holm, board chairman of Carrier Corporation, whose largest division is building the steam-driven water chillers for the Nashville plant.

Holm said that conversion of all community solid waste to steam could power 19,500,000 tons of cooling capacity, which is almost 20 per cent of the 100 million tons presently installed in the U.S. To

produce this much cooling electrically would require 16 million kilowatts, or twice the peak electric demand of New York City. The Nashville plant initially will consume 720 tons of solid waste per day in two incinerator-boilers equipped with pollution abatement devices. Steam produced by the recovered heat will be used to drive the turbines which power two water chillers totaling 13,500 tons of cooling capacity. Chilled water and steam will then be piped underground and sold to 27 state, municipal and privately owned buildings to provide cooling and heating at three-fourths the cost of individually owned systems.

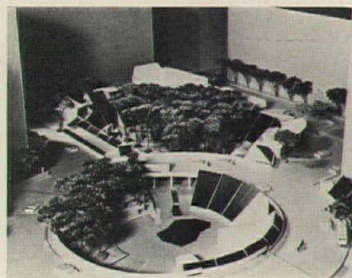
Within five years, plant capacity is expected to be 1,300 tons of solid waste per day, or roughly all of the refuse produced by the half-million residents of Nashville.

ELATION DESPITE DEFEAT IN SAN FRANCISCO VOTE

Alvin Duskin's anti-high rise proposal that would have limited downtown San Francisco building to a 160-foot ceiling, and a 40-foot limit throughout the rest of the city, was defeated by more than 25,000 votes. The Duskin forces, however, were elated to discover that 43 per cent of the voters supported the measure, a larger percentage than a similar proposal received in the November 1971 ballot.

Throwing a wrench into another height limit controversy was the recent decision by a San Diego judge who said "zoning ordinances cannot be subject to the initiative process." This came after voters of Coronado, Calif., approved a 40-foot height limit on all new buildings. The decision can be appealed.

—J. N



2
NIAE ANNOUNCES STUDENT WINNERS

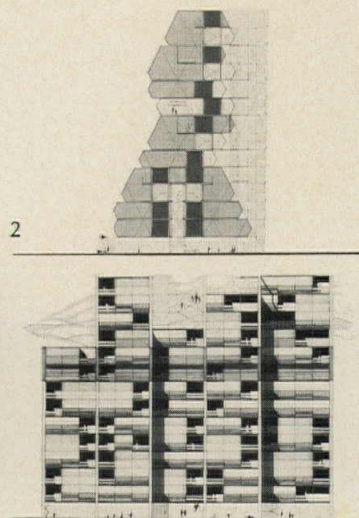
There were 74 entries, representing 16 U.S. and foreign schools of architecture, to the 1972 Lloyd Warren Fellowship Competition. Sponsored by the National Institute for Architectural Education, the competition program postulated the design of a Consciousness Center to serve crowds of visitors to the 1976 Bicentennial celebration.

The winning submission, by Charles T. Walgamuth of Ball State, envisioned the difficult urban site converted into a sequence of landscaped plazas and promenades surrounded by low-rise structures (photo above). Some of the jurors felt this solution lacked the monumentality and excitement appropriate to fair architecture, but the majority agreed that plazas, courts and trees were especially fitting symbols for the Spirit of '76 and that Walgamuth's scheme was handsomely conceived and composed.

James T. Porter and Ray C. Hoover, both of the Georgia Institute of Technology, were first and second alternates respectively. The 1972 Hiron Fellowship, for an independent submission, went to Philip Dangerfield of Brookline Massachusetts.

Awards chairman Byron Bell spoke for the jury when he said, "We were enormously impressed by the increased quality of this year's submissions. The delineation of many projects was really exceptional."

For the \$6,000 William Van Alen Award, also sponsored by NIAE, 66 submissions were received from schools of architecture all over the world. The program called for the design of a residential community that could be constructed from industrialized components. Many of the submissions showed enormous promise but the familiar uncertainties about building with industrialized parts were present too. One student, in what the judges agreed



was an exquisitely whimsical submission, asserted that the last thing the world needed was another industrialized building system. Instead, he argued, we need a system for reusing the systems already developed. His point was not lost.

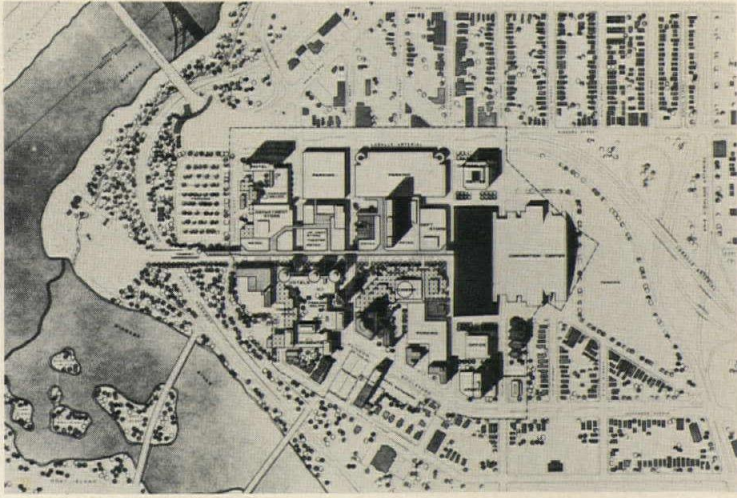
In the end, the winner was Pierre Klienans, Institut d'Architecture et d'Urbanisme, Strasbourg, France (photo above). The first alternate was Herman P. Haupt of the University of Illinois.

NEW QUAKE CONSULTANT FIRM ESTABLISHED IN LOS ANGELES

Dr. Charles F. Richter, originator of the Richter Earthquake Magnitude Scale, and Dr. Frederick C. Lindvall, head of Engineering at California Institute of Technology, have formed a consultant firm which will apply advanced computer techniques to study earthquake hazards on buildings. It is the first time that authorities on seismology, geology, soil mechanics, engineering geology and structural engineering have combined into one firm. Lindvall, Richter & Associates will set up offices in Los Angeles.—J.N.

HOUSING BILL IN TROUBLE

The omnibus housing bill of 1972 seems to be running into deeper trouble as it moves through the House Banking committee. For the first time recently, the hint of a possible Presidential veto was raised as HUD Secretary George Romney stated a surprising number of HUD objections to the committee version. Asked directly if he would recommend a veto if the "corrections" he advocated were not made, Romney avoided a direct reply, but left little doubt he could not support the bill in its present form. It appears, at this writing, that a 60-day continuing resolution will be needed to allow restudy and later consideration of the controversial bill.



3 UDC COMPETITION ANNOUNCED FOR NIAGARA FALLS PLAZA

The New York State Urban Development Corporation announced recently that it will hold a design competition for the plaza facing the new Rainbow Convention Center now under construction in Niagara Falls, New York.

The competition, open to all architects and landscape architects in Canada and the United States, offers as a first prize the awarding of the contract for the completion of design, construction drawings, and supervision of the work. Second prize will be \$10,000 and the third prize is \$7500.

The eight-acre plaza (photo above) is the focal point of an 82-acre, \$200 million renewal project located in the center of town within walking distance of Niagara Falls. The plaza will act as an outdoor focal point of activities that relate to the 8,000 seat Convention Center which abuts it on the east and the new Carborundum Center abutting it on the north.

The program for the competition can be obtained from the Professional Advisor, Charles G. Hilgenhurst, AIA, c/o the New York State Urban Development Corporation, 1345 Avenue of the Americas, New York, New York 10019. An entry fee of \$35.00 will be charged.

WILL EVALUATE OEO, HOUSING PLAN

The Battelle laboratories of the Battelle Institute are preparing to conduct a major housing experiment for the Office of Economic Opportunity. OEO is pouring \$4.7 million into a project it hopes will demonstrate how shelter can be constructed in rural areas for a cost of \$7,500 to \$13,000 per unit, bringing basic shelter within the means of low-income rural families.

The concepts to be developed will be assessed in what Battelle calls a relatively-large-scale experi-

ment program—actual construction of 100 units at each of four locations to be selected. (Two will be located in the South, one in the Southwest and one in the North). Requests for proposals are expected to go out in October with the selection of subcontractors and assignment of specific tasks to follow the contract letting.

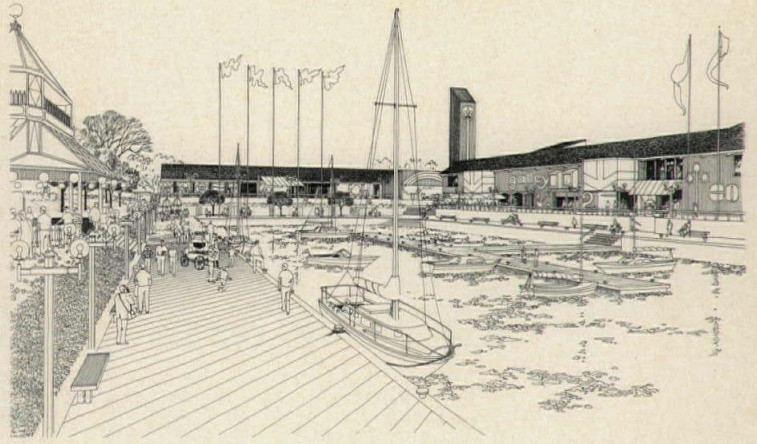
The Battelle proposal to OEO reads in some parts like the early drafts of the Operation Break-through plans of the Housing and Urban Development Department. Eight planning subcontractors will be selected, each to conduct a housing market analysis in its target area. Each also will develop a minimum of three architectural designs including working drawings, specifications and preliminary cost estimates. Further cost estimates for each housing design will then be prepared by a qualified builder or developer.

Battelle-Columbus will serve as a research source on design, materials, building techniques and building systems. Information furnished to one planning subcontractor will be made available to all.

To start with, the OEO experiment will use the FHA MPSs (1971 draft edition) for one- and two-family units as the design and construction guide.

The planning part of this demonstration project is referred to as Phase I. Phase II will include construction and evaluation of the prototype units with contracts for this going to four construction/counseling subcontractors. Battelle-Columbus said that during construction it would serve as a research information source for materials, components, building methods and techniques, systems and other innovations.

The entire program, as now outlined, will run through 1974.



4 LAKE SAINT LOUIS UNDER NEW DEVELOPMENT

Plans are now underway to develop the north end of Lake Saint Louis, the largest privately owned lake in Missouri, into a 3000-acre residential-recreational community. Builder-developer R. T. Crow commissioned Hellmuth, Obata & Kassabaum, Inc. to master plan the project which, in Phase I, will include a 150-unit resort motel, restaurant, convention facilities, swimming pool and marina. A complete shopping center is also under planning. The first units will be ready for occupancy late this year.

INTERROYAL DESIGN AWARD TO PRATT STUDENT

Helene Castelet, a 21-year old Environmental/Interior Design student at Pratt Institute, in Brooklyn, New York has been awarded first prize in the Tenth Annual 1972 InterRoyal Student Design Competition. First prize was \$500. Second prize of \$300 went to Dominic Alfano, also of Pratt, and third prize was awarded to Jim Ondler of San Diego State College.

NCARB ESTABLISHES DATES FOR NEW EXAMINATIONS

With only one dissenting vote, the new professional examination for architectural registration was approved by the National Council of Architectural Registration Boards at its convention last month in Seattle. The exam, much debated at last year's convention, was barely touched on this year, thanks to an unexpected motion to move up, from the last day of the convention to the first, discussion of a resolution which both approved the report of the examinations committee and set the dates for its implementation. Copies of sample examination questions and of a sample "test information package" were mailed to members shortly before the convention, and the intent of moving up by discussion of the

only resolution directly dealing with the examination was to provide ample time for its consideration. The vote, however, actually limited discussion to that resolution, much of it concerned with dates of implementation for the new exam process, now set at June 1973 for the first equivalency exam (for non-graduates of accredited schools) and December 1973 for the first professional exam (for graduates of accredited schools). A time limit for implementation by all boards was also set: by January 1, 1975, the new process must be in use throughout the United States and its territories. The equivalency exam is similar to the present exam; two new sections have been included in the professional exam (environmental analysis and architectural programming) and the time of the examination has been shortened. Both exams will be machine-graded.

Great progress has been made on two fronts, the convention learned. An interprofessional council on registration has been formed with NCARB, the National Council of Engineering Examiners and the Council of Landscape Architecture Registration Boards as the present members. Discussions are under way with planners and interior designers. On a broader front, NCARB announced the finalization of agreements on reciprocity with Great Britain, and a second world conference on registration to be held in Dubrovnik, Yugoslavia, this fall.

Thomas L. Sedgewick of Flint, Michigan, is the new president. Other new officers are E. G. Hamilton, Dallas, Texas, first vice president and president-elect; John M. O'Brien, Tennessee, second vice president; Jack Swing, Illinois, treasurer; and John Hillman, Massachusetts, and Charles Blondheim, Alabama, directors.

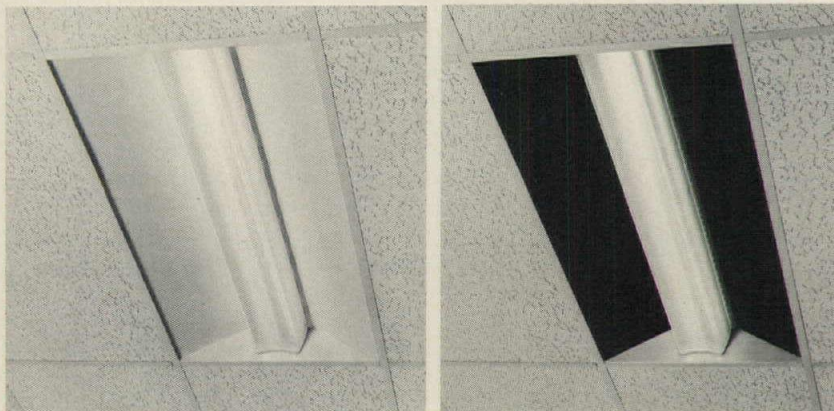
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And styled for visual appeal.



For design flexibility, the PERCEPTA Convertible Coffer can be installed with ceiling tile side panels (above), or matte white or black panels (below).



The introduction of PERCEPTA by Holophane brought an important new advance to lighting. A luminaire that eliminates veiling reflections (reflected glare). And thereby improves task-seability in places where eyes work the hardest. Schools. Offices. Libraries. Computer centers.

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You can even use it as a design element!

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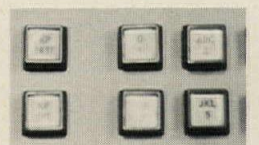
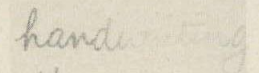
Highest visual comfort. Unusual flexibility. Lower power consumption.

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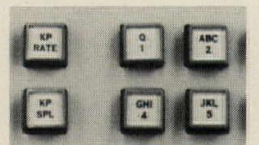
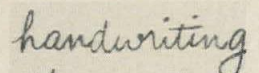
See your Holophane sales engineer for details. Or write Dept. AR-8, Holophane Company, Inc., 1120 Avenue of the Americas, New York, New York 10036.



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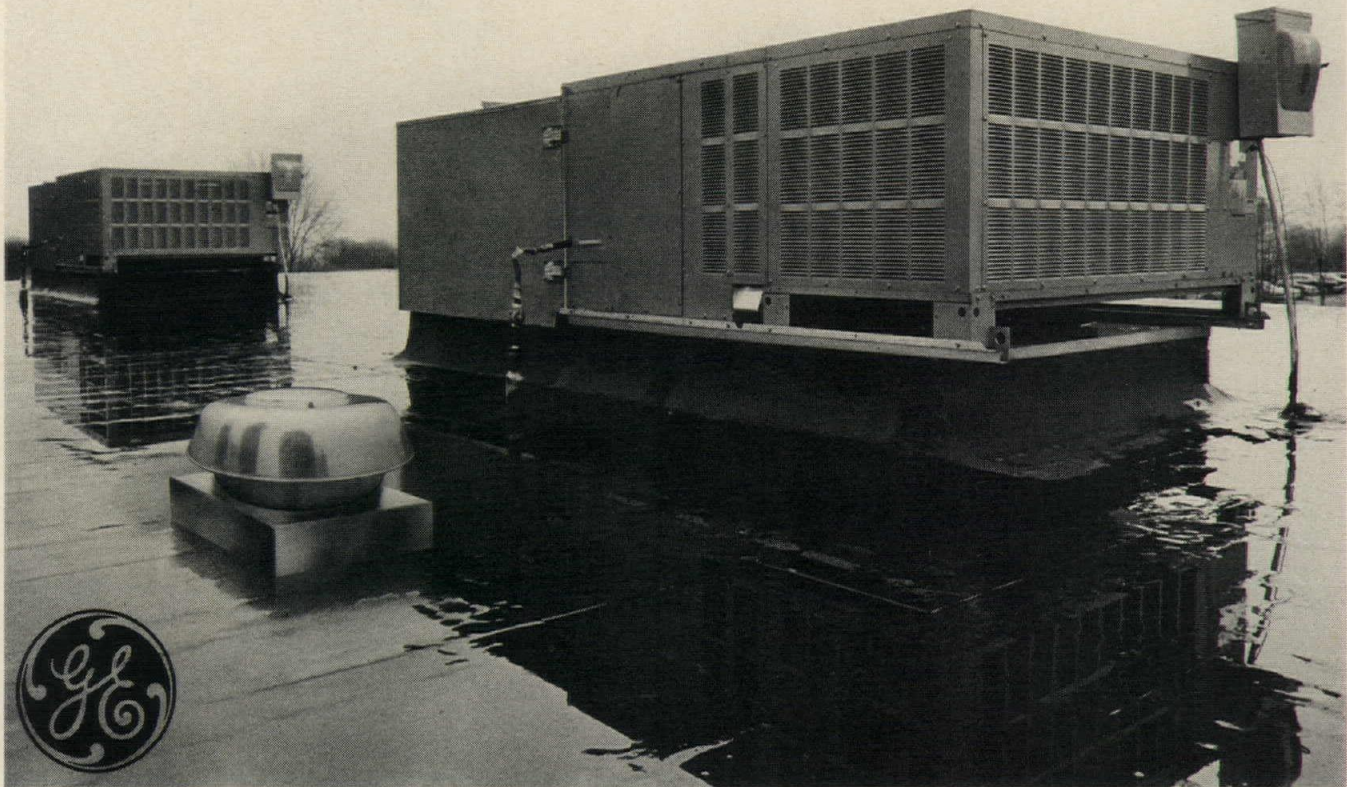


Unretouched photos of typical reading tasks: handwriting and keyboard. Conventional luminaires reflect light into viewer's eyes, producing veiling reflections. The unique PERCEPTA prismatic design virtually eliminates veiling reflections.

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same size as a two-suitcase.

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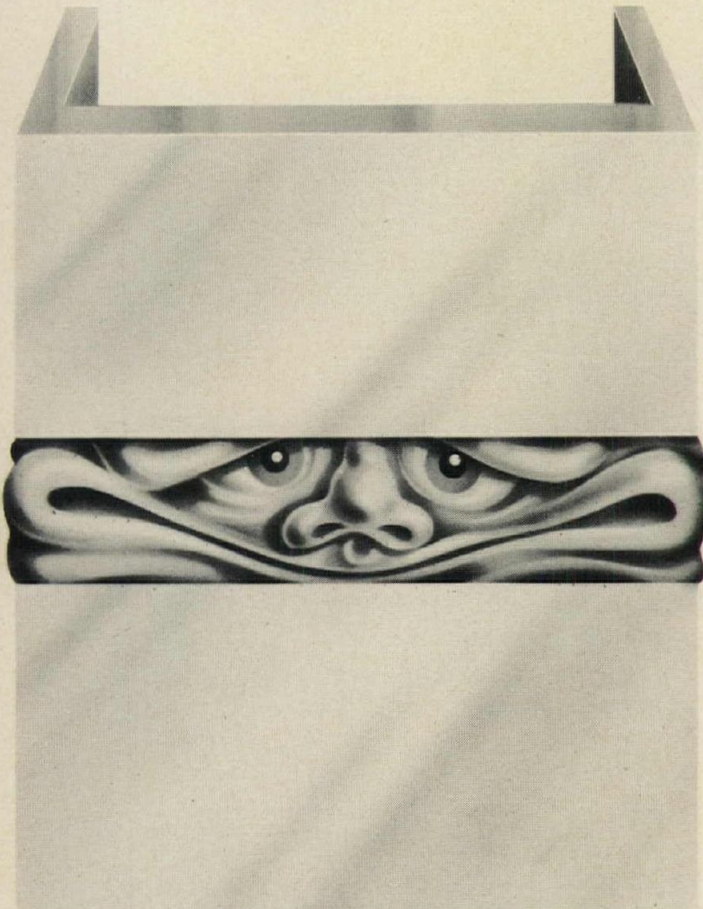
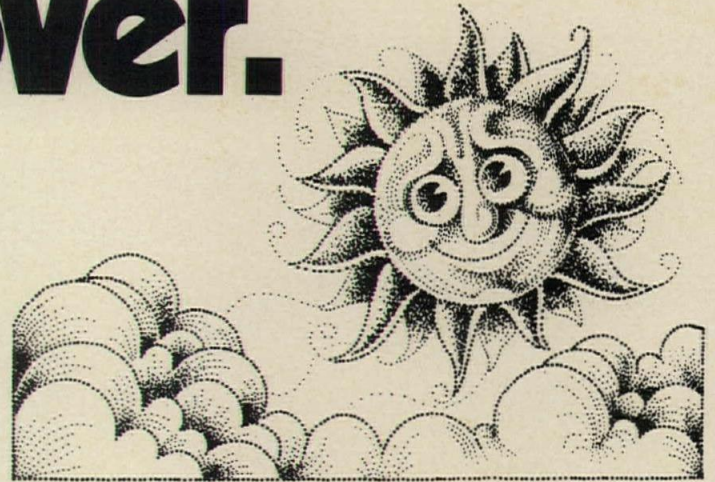
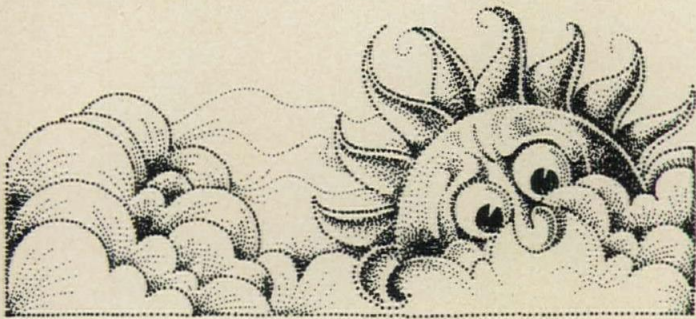
What it comes down to is that, while all specifications for rooftop gas/electrics are pretty much the same, not all gas/electrics are the same.

So do your client and yourself a favor on your next rooftop job. Specify General Electric.

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For more data, circle 24 on inquiry card

Mating habits of the all-aluminum column cover.

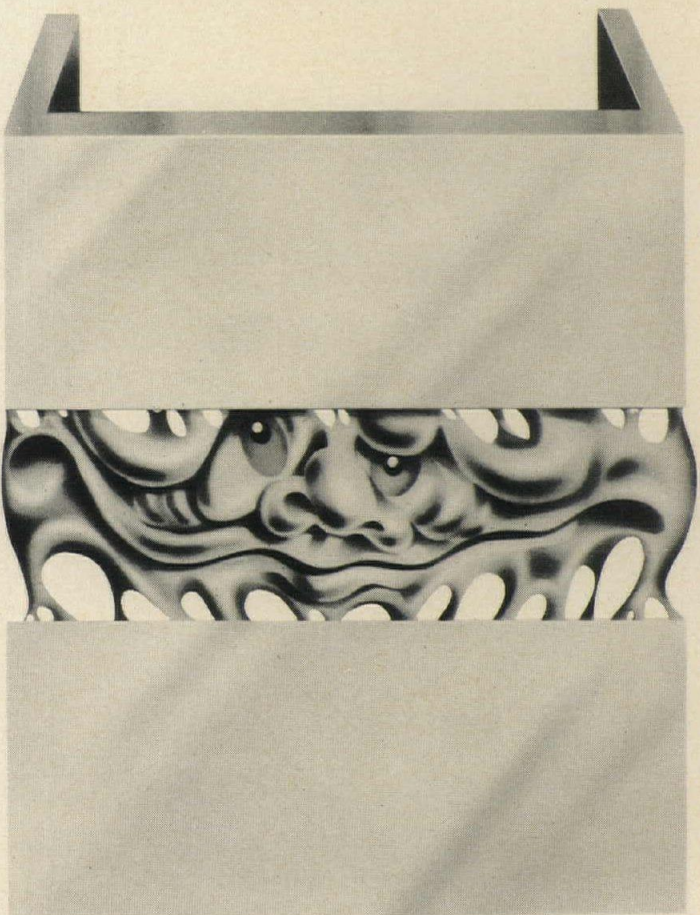
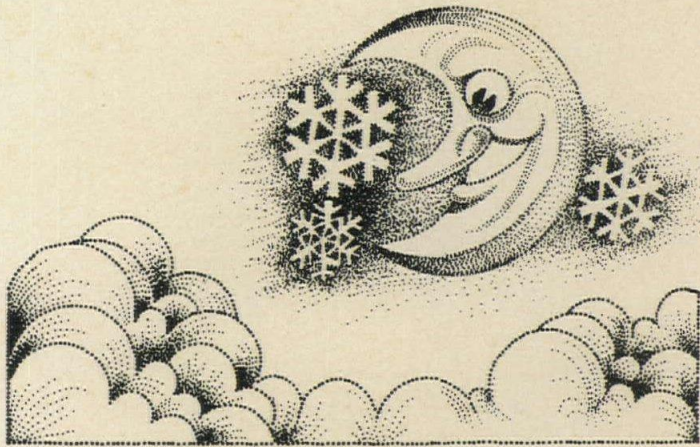


By itself an aluminum column cover is a thing of joy and beauty forever. The trouble starts when you try to make a waterproof joint between a pair of them.

Let's say the job calls for a $\frac{3}{8}$ " 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 $\frac{1}{4}$ ". 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 $\frac{1}{4}$ " 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



Anything can happen

In Merrie Olde England, Johnny Leydon of Sligo was captain of the six-man Irish team that demolished an upright piano and passed the entire wreckage through a nine-inch hole in the record-setting time of two minutes, 26 seconds, on September 7, 1968.

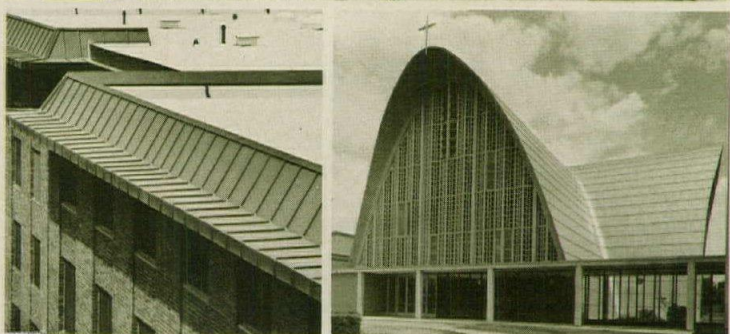
From the GUINNESS BOOK OF WORLD RECORDS
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Some of America's most beautiful buildings are topped with Overly metal roofs. We fabricate them from aluminum, weathering steel, copper or stainless steel, and warrant them against leakage for 20 years if we supervise the erection. The tougher the design problem, the better we like it, because we've solved some beauties over the years.



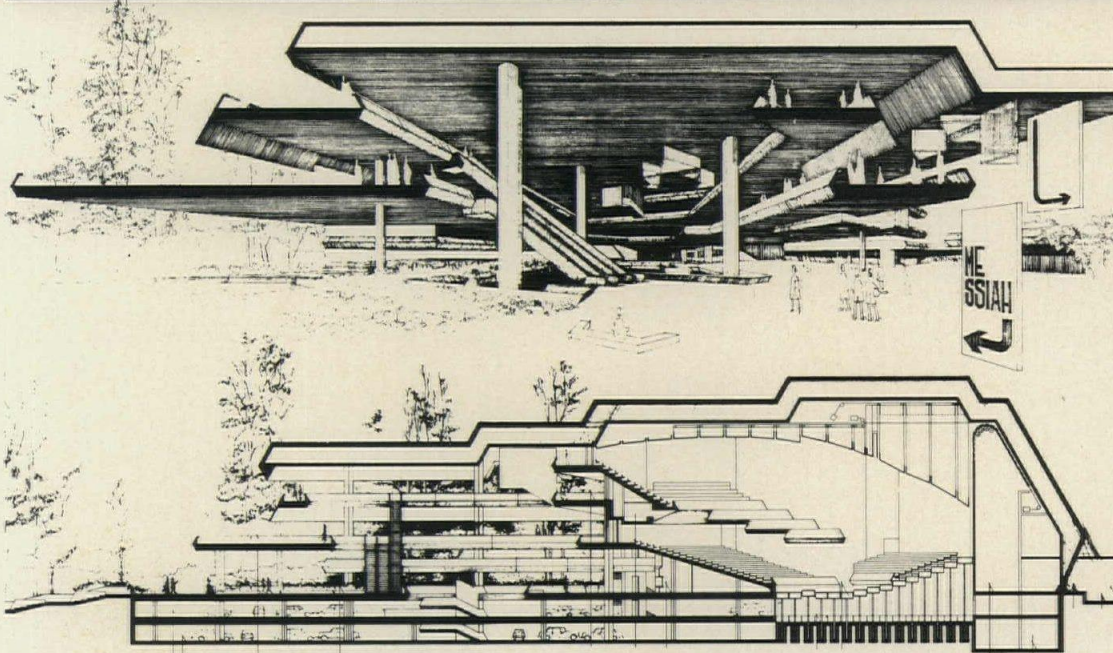
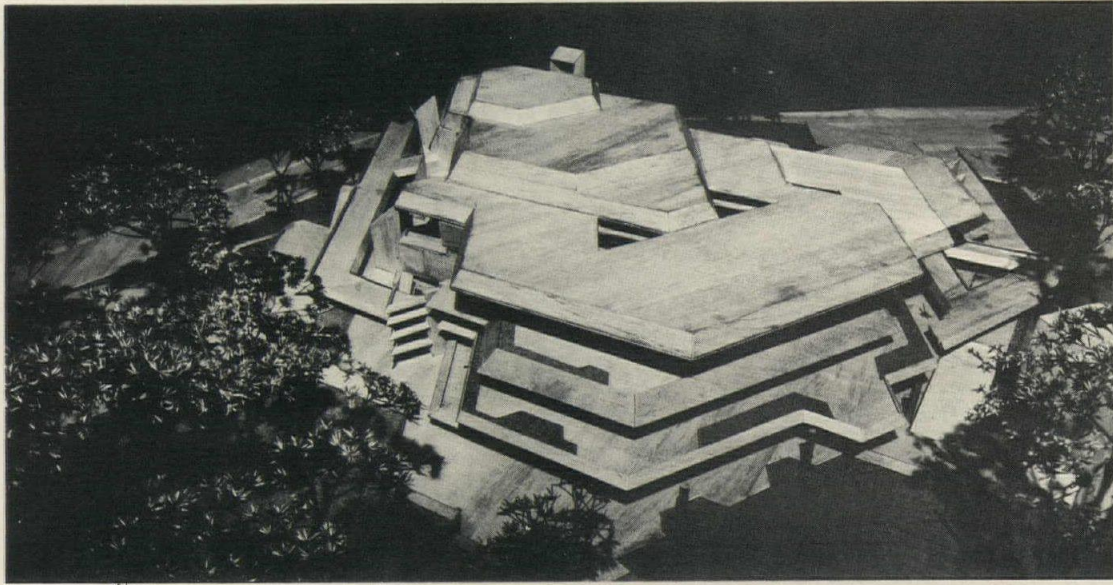
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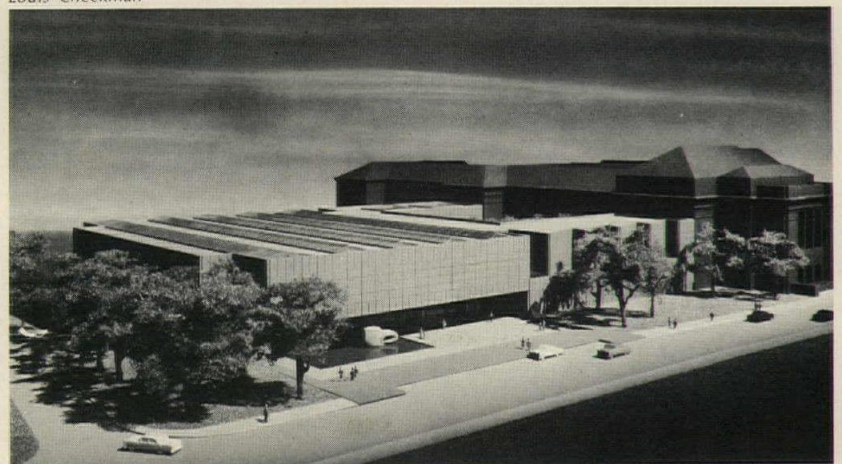
For more data, circle 26 on inquiry card



The Caracas Concert Hall by Estudio Catorce (the office of architects Jesus Sandoval, Tomas Lugo and Dietrich Kunckel) will be the seat of the Venezuelan symphony orchestra, but is a truly multi-purpose hall which will accommodate ballet, opera, chamber music and drama and orchestra with chorus as well. For orchestra and chamber music concerts the audience will surround the musicians. The balcony can be closed off for chamber music and drama, and the stage can be thrust forward as desired. On the various levels surrounding the theater are mazes of meandering terraces with skylit planted courts where the mild climate can be enjoyed. The hall, however, will be air conditioned. There will be parking underneath, a rehearsal hall, a restaurant and a soda fountain. Bolt, Beranek and Newman are the acoustical consultants and George Izenour is the theater consultant. This building will be erected instead of the design by Vannini and Gavillet published in this column in April.

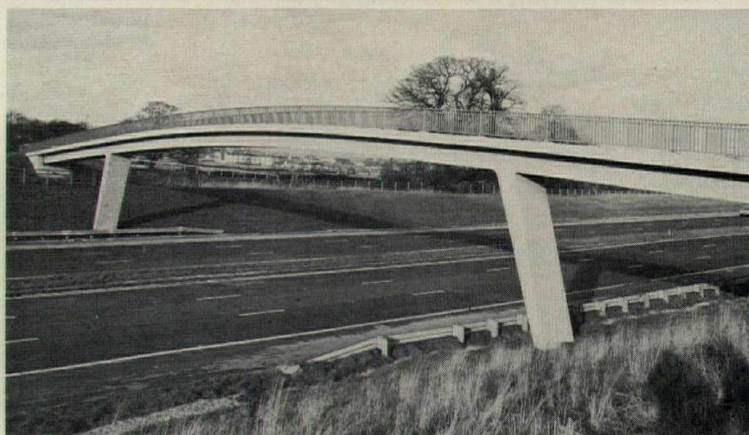
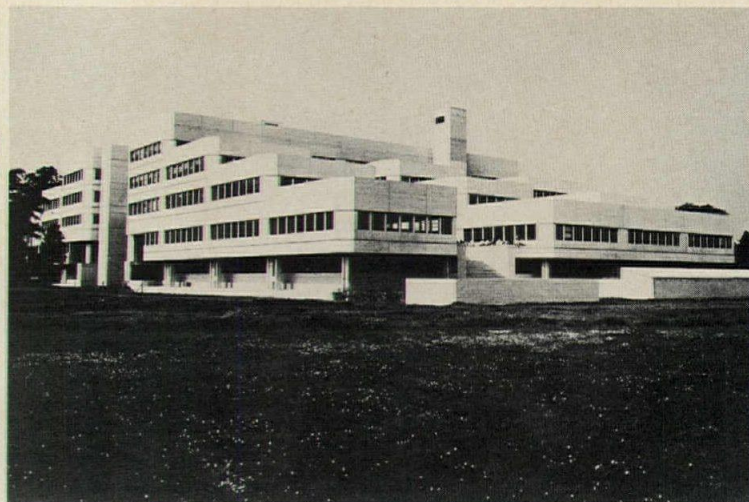
The Sarah M. Scaife Gallery addition to Pittsburgh's Carnegie Institute was designed by Edward L. Barnes for the museum's expanding permanent collection. The building of grey granite with mica facing will have a cafe, shop, lecture hall, children's room and sculpture court viewed from several levels. A wall of water on the outside of the existing building will be a background for the glass enclosed outdoor sculpture court. On the interior the transition from old to new building is to be unnoticeable and there will be emphasis on natural lighting. Completion is expected in 1974.

Louis Checkman





David Campbell

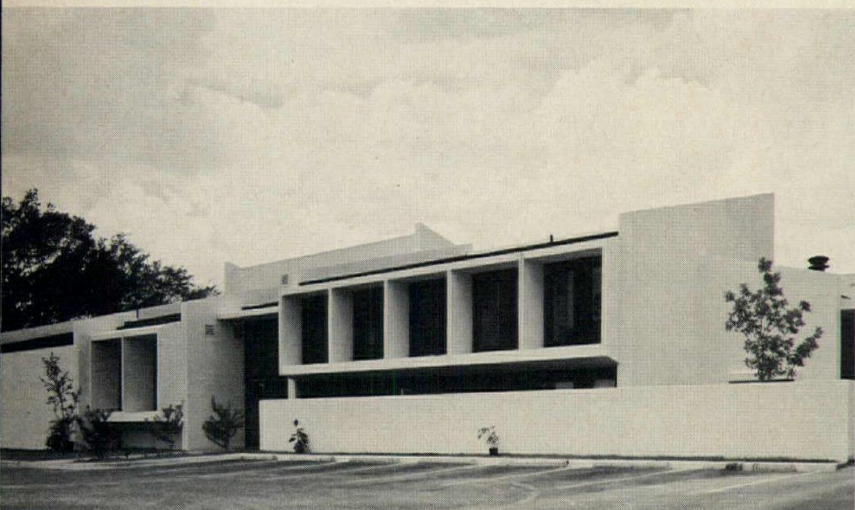


John Harvey

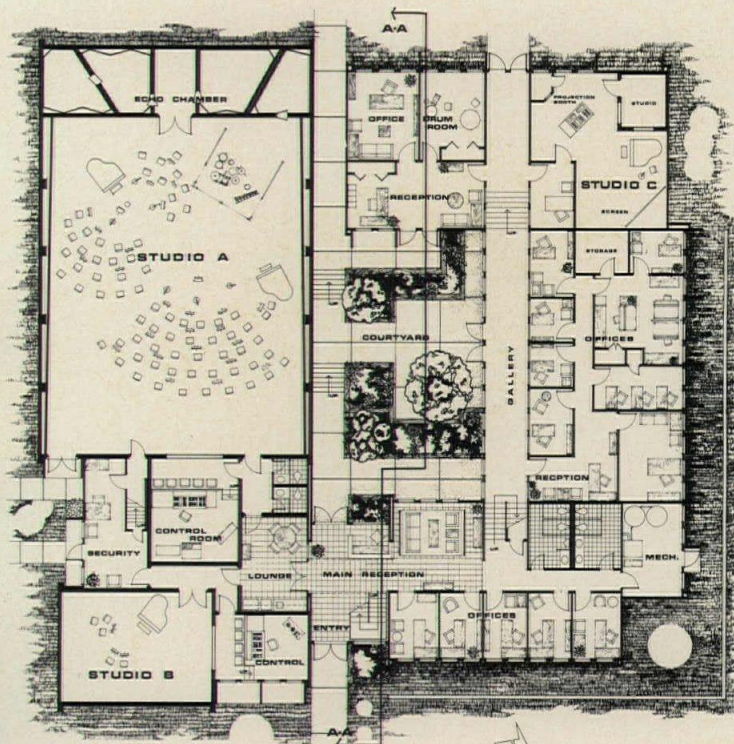
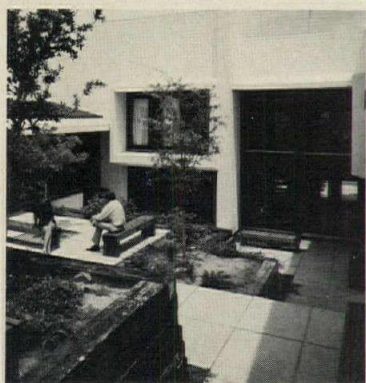
The Concrete Society of London 1972 Awards for buildings and civil engineering went to the Zoology and Psychology Building (above and top right) at Oxford by Sir Leslie Martin with Felix J. Samuely and Partners as consulting engineers and to the Gloucestershire M5 Highway bridges by Freeman Fox and Part-

ners, engineers, with architect R. E. Slater. The contractors were also cited. The jury was Sir Kenneth Wood, president of The Concrete Society; Mr. G. A. Wilson, president of the Institution of Civil Engineers; and Mr. H. Goodman of the Royal Institute of British Architects. Of the Oxford building the jury said it "is

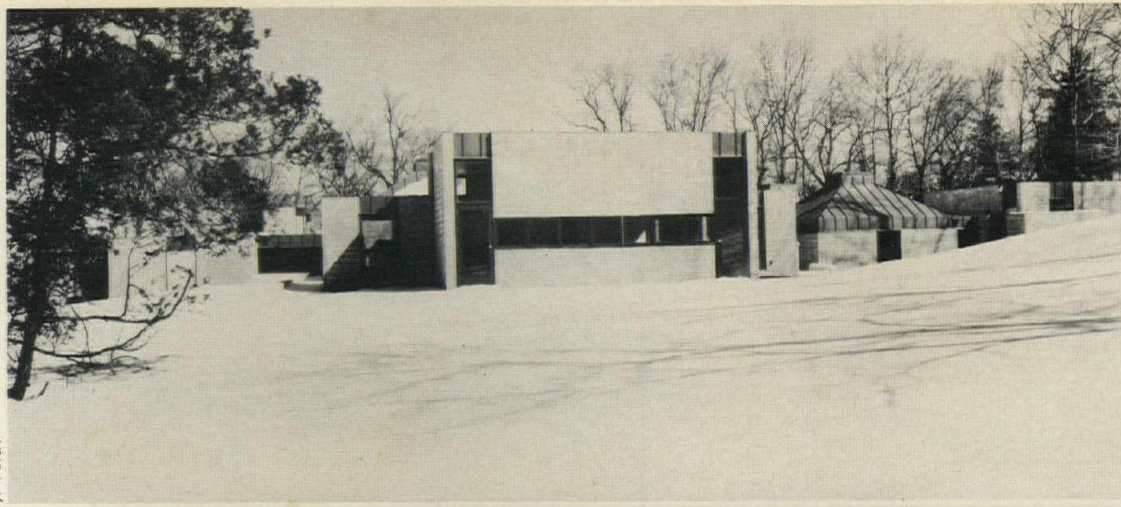
a rare combination of *in situ* concrete work, precast concrete work and concrete blockwork of fine workmanship, each being skillfully detailed not only in itself but in combination one with another." The jury commended the economy and simplicity of the bridges and their details, especially textures.



The Sumet-Bernet Sound Studio in Dallas by Craycroft-Lacy & Partners won an Honor Award in 1971 from the Texas Society of Architects. On a small sloped site, it has a central tri-level court which divides the sound recording areas from the offices and provides relaxation after difficult recording or advertising sessions. The deep window boxes shade offices and practice rooms and direct the view over the parking to a tree belt beyond. The exterior is rough plaster on metal lath.



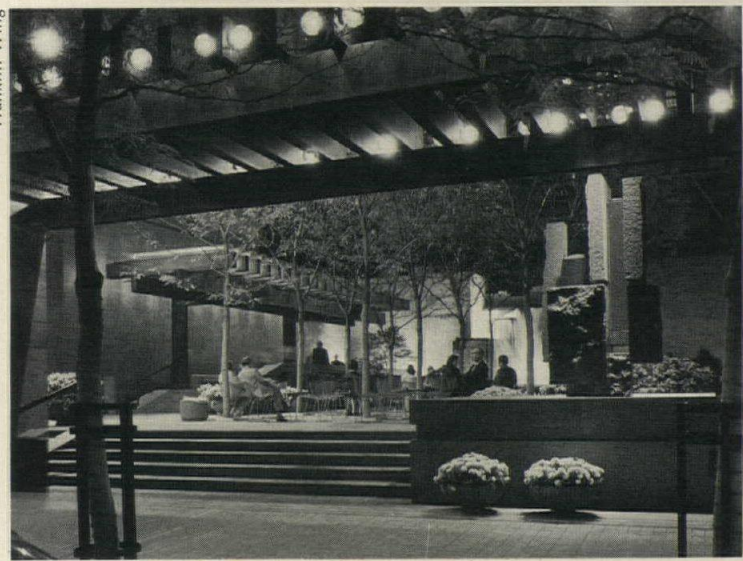
FIRST LEVEL PLAN



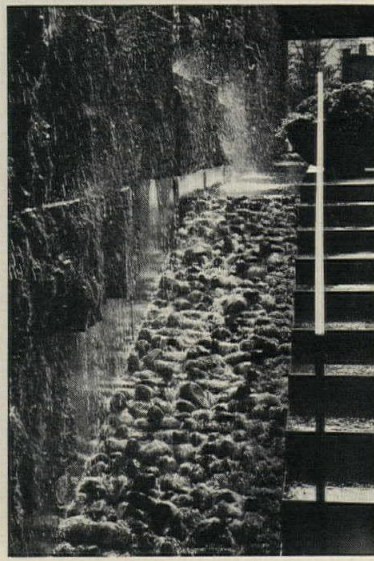
J. Veltri



Gil Amiaga

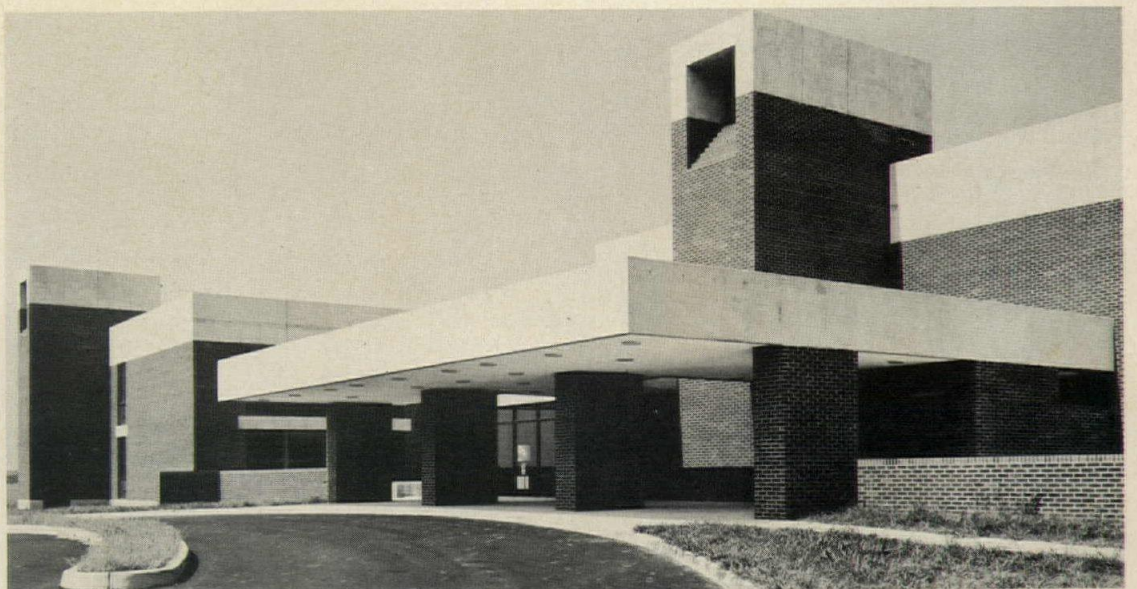


Franklin Wing

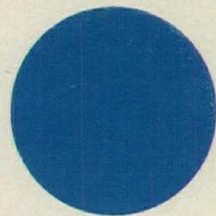


The 1972 Bard Awards for excellence in architecture and urban design went to the Residential Building at the Henry Ittleson Center for Child Research (top) in Riverdale, New York by Abraham W. Geller and the National Airlines Terminal at JFK Airport (middle) by I. M. Pei and Partners. The jury commended the Pei building for its "calm clarity . . . in the midst of wildly divergent, self-assertive forms." It spoke of the Ittleson Center as "a positive help in the children's therapy by providing definitive spaces for their varied activities, ordered means of going from one place to another, and identity for each child as an individual, as a part of his unit and as a part of the entire group." The jury also expressed special interest in three other projects: 139th Street Playground by Coffey, Levine, Blumberg and Henri Le Gendre Associates; Greenacre Park (below left) by Sasaki, Dawson, DeMay Associates, Inc. and Goldstone, Dearborn and Hinz; and Westbeth Artists Housing by Richard Meier. The jury was disappointed by the generally mediocre quality of the projects it reviewed, particularly in housing and privately sponsored public buildings but noted technical competence and sensitivity to user needs in a variety of small, private, socially significant projects. Next year the Bard Awards Program will again focus on publicly owned or supported projects.

The Greater Freehold Area Hospital in New Jersey by Max O. Urbahn Associates, Inc. is the first hospital in the U.S. built under the new FHA Mortgage Insurance Program for Hospitals. It will be an all-electric hospital with food service for patients and staff when they want it by virtue of microwave ovens, and disposable dishes vastly reducing the staff and chances of contamination. All major areas are carpeted. Mr. Urbahn says "It used to be that patients and staff were expected to adapt their habits and preferences to a hospital's facilities and schedule. This hospital is designed to adapt to them."



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And get this. J-M will bond the roof for the entire cost of repairs to the system for the first 10 years—and to more than reasonable limits the next 10 years.

First, Blue Chip is a premium, balanced roof system, using top-quality J-M materials, performance matched and applied by qualified specialists.


Second, the J-M District Engineer and a J-M roofing specialist work with you to ensure proper specification and to make sure that there is compatibility between structure and substrate.

Then, during application by an approved roofing contractor, the J-M roofing specialist inspects the application to make sure specifications are being followed. Two years after completion—and later if necessary—other inspections are made for proper roof performance.

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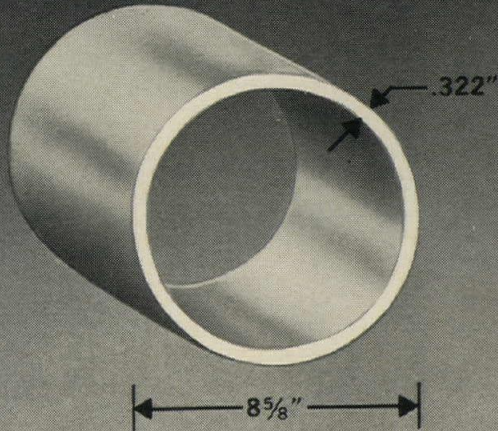
Johns-Manville 

For more data, circle 27 on inquiry card

All 3 of these structural columns do the same job. Which one would you specify?

PIPE

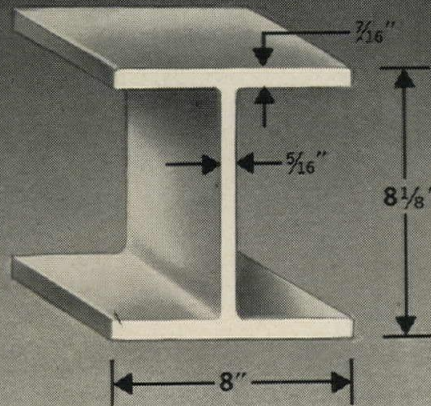
\$3.52
▲ per foot



29 lb/ft

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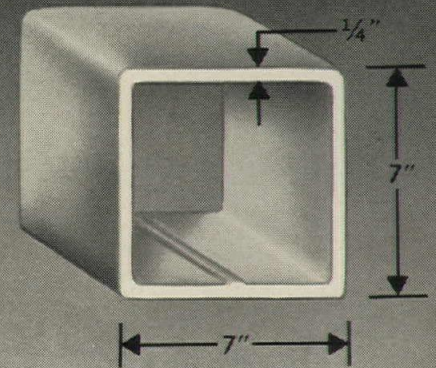
\$3.03
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35 lb/ft

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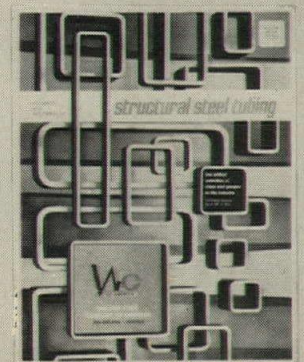
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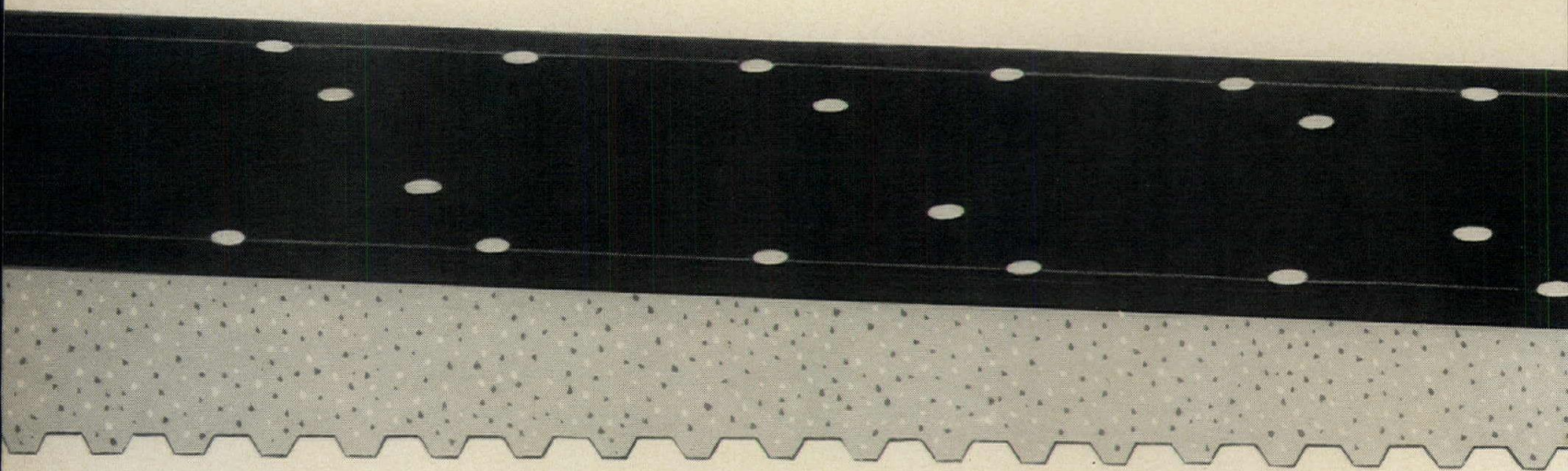
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**Here are 12 ways that
ZONOLITE ROOF DECKS
help you-
now and in the long run.**

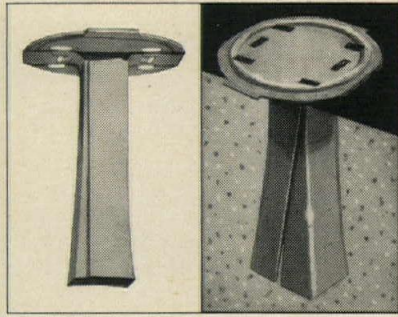


A roof must do its job.

The objective is to protect the building and its contents. A roof design which does not give the required protection is a potential problem for everyone.

Properly designed ZONOLITE ROOF DECKS meet this objective in 12 ways:

1. **EASILY SLOPED FOR DRAINAGE.** Water won't form ponds on a sloped ZONOLITE deck. Ponding damages roofing, causing leaks that lead to roof failures.
2. **FREE OF SEAMS AND JOINTS.** Smooth continuous slabs with no network of joints, ridges, or seams to weaken roofing and allow water penetration.
3. **STRONG.** Less susceptible to damage. Compressive strengths of 100 to over 350 psi, compared to rigid board's 5 to 40 psi.
4. **LONGER ROOFING LIFE.** Higher density reduces thermal fluctuations which tend to shorten roofing membrane life.



5. **NAILABLE.** Positive attachment obtainable with easily-nailed ZONOLITE® Base Ply Fasteners shown here. Important in resisting hurricane-force winds.

6. **WON'T DETERIORATE.** Unlike rigid boards, ZONOLITE decks contain only inert materials.

7. **WIDE RANGE OF INSULATION VALUES.** "U" values from .05 to .20. Meets any design or climatic need.

8. **CONTINUOUS THERMAL BARRIER.** No heat-leaking seams, common to jointed rigid insulation.

9. **FIRE-SAFE.** Non-combustible, under Factory Mutual design classifications. Many ZONOLITE deck assemblies are UL fire-tested. This often results in lower insurance costs.

10. **WIND-RESISTIVE.** Meets Factory Mutual wind-resistance standards. Further improves possible insurance premium reductions, while serving to reduce costly maintenance and replacement.

11. **EARTHQUAKE-RESISTANT.** Properly designed ZONOLITE ROOF DECKS resist lateral loads caused by earthquakes or wind forces.

12. **CERTIFIED CONTROLLED APPLICATION.** National network of skilled approved applicators and competent ZONOLITE field personnel provide certified application and job-site quality control.

ZONOLITE ROOF DECKS are less expensive to install than comparable quality systems. Almost anywhere. And they're certainly a lot more economical to maintain and repair (if ever necessary).

There are many more reasons why you should consider ZONOLITE ROOF DECKS. For details, just call us. We'll be glad to send an expert who can furnish facts and figures.

Or write for literature to W. R. Grace & Co., Construction Products Division, 62 Whittemore Avenue, Cambridge, Mass. 02140.

GRACE ZONOLITE



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**LAMINATED PLASTIC PARTITIONS
WITH STAINLESS STEEL PILASTERS
...ARE SMOOTH INSIDE AND OUT!**

Sanymetal laminated plastic panels, along with Sanyplastic doors and stainless steel pilasters with exclusive recessed latches and hinges, are the ideal combination for strength, beauty, easy cleaning and economy . . . with smooth, flush, corrosion-free surfaces inside and out.

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- Sanyplastic doors are solid, quiet and smooth . . . all the way around . . . you'll probably want the full facts . . . ask your Sanymetal rep, check Sweets or write direct.

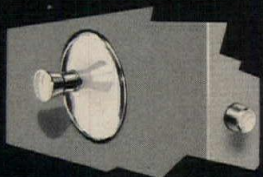
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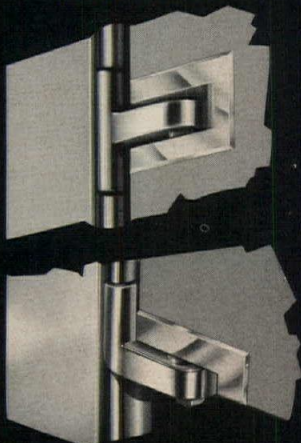
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Personnel practices in professional firms

By Bradford Perkins

Vice president, D'Orsey Hurst and Co., Inc., a division of McKee-Berger-Mansueto, Inc.

The recent upsurge of architectural unionization efforts and chronic high turnover are two symptoms of a major problem within the profession. While architectural firms are as dependent as other enterprises on the work and actions of their staff, this dependency has not been generally reflected by the personnel practices prevailing within the profession. Therefore, the following is intended as a general guide for the acquisition, care and management of architectural staff.

As with the other aspects of architectural management covered previously in this series, personnel management cannot be dealt with in a vacuum. A firm's staffing is a function of what it can afford, how it is organized, the type of work it has and hopes to have, and many other factors. Therefore, the planning process, which is the foundation for effective management of any aspect of the firm's operations, should be applied to the area of personnel management. The personnel management plan must, of course, be developed within the context of a profit plan, defined organizational structure, and the many other parts of a comprehensive management plan discussed in previous articles in this series.

The first step is the identification and employment of the capabilities that the firm needs and can afford. In well managed firms this analysis is derived from a balancing of the demands of current workload projections, capabilities required to back up the marketing plan, the expense limits outlined in the profit plan, and the gaps identified in the organizational analysis. The result of this analysis should be a set of careful position descriptions that outline the functions each person will perform, where he or she will fit in the firm, what qualifications he should have, a proposed salary range and any related considerations, including future potential.

Even the limited number of firms that do make this analysis often ignore the basic employment procedures which translate employee-need identification into a superior fit of the candidate to the job description. Such procedures should include: an aggressive search; several interviews by at least three members of the firm; and, most important, obtaining references from

all prior employers. Most firms settle for the results of one or two advertisements or phone calls, a single interview and no reference checks.

Termination is typically even more poorly handled. Few firms cut dead wood when they should, have equitable termination policies, or even find out why the employee did not work out or why he resigned. As a general rule, firms should clean house at least semi-annually, not keep employees working once they have been terminated, provide at least two weeks severance (or one week for each year of employment) plus accrued vacation, and conduct an exit interview with all staff leaving the firm to identify the reasons for the termination.

Consider the hierarchy of employees' needs

Once a staff member has been employed, another set of parameters must be considered in the firm's comprehensive plan—i.e., the employee's needs. One way of organizing a firm's response to these requirements is to relate them to Abraham Maslow's famous "hierarchy of needs." According to Maslow the typical employee looks for his job to satisfy a succession of personal requirements which could be grouped into five categories:

1. *Physical needs*—usually defined as a living wage and adequate working conditions;
2. *Security needs*—that is, the benefits and policies which bear on his health or security;
3. *Social needs*—working conditions and factors with a bearing on communication and morale;
4. *Egoistic needs*—where the employee's self-image becomes an important part of management consideration; closely related to—
5. *Self-realization*—An employee's highest level of needs is self-fulfillment—the realization of personal growth.

Clearly no personnel policies can be related to a single one of these needs nor is any staff or individual employee concerned with only one need at a time. Therefore, an effective personnel management plan considers all five levels.

The wage and salary administration plan

The first aspect of an effort to meet employee needs should be a carefully administered wage and salary administration plan. This, of course, involves far more than a living wage. All salaries within a firm should be carefully related to what is being paid for similar positions by other firms in the area (verified periodically by a few phone calls), other salaries within the firm (there must be a clear logic to the differences in salary), the individual's importance to the firm, what the firm can afford, and what the employee feels his salary should be. All of these factors should be part of a formal semi-annual review of the performance of all employees.

Unscheduled raises between reviews should be avoided unless there is a change in the person's position in the firm. All salary adjustments, promotions, terminations, or other changes resulting from these reviews should be approved by the principal's of the firm, but responsibility for the review and recommendation should come from each employee's direct supervisor.

A review of the benefit structure

After wages, most employees are affected by and concerned with the firm's benefit structure which may represent a 15 to 40 per cent addition to his base income. Most of the basic benefits are already provided to some extent in the majority of established firms. In spite of their commonness, however, most firms continue to have to re-invent answers to the basic personnel policy and benefits questions. Some of the most common policy problems are noted as follows:

1. *Vacations*—The common policy is two weeks per year for the first five years of employment, three weeks for the next five and four thereafter.

2. *Holidays*—Few firms give more than two or three days more than the basic local holidays.

3. *Sick leave*—There is no such thing as a good sick leave policy, for some employees use it as extra vacation while others never take it. The firms that have had reasonable success, however, have taken one

of two very different approaches. Either they provide a minimum number—usually five or six days per year—and then are flexible about granting more days in case of serious illness, or they have a firm policy of ten or twelve days and permit the employee to accumulate unused time as insurance against major illness.

4. *Other paid leave*—Paid time is often granted for jury duty, registration exams, death in the family and a few other special circumstances.

5. *Overtime*—Over and above requirements of the law, it is generally considered appropriate to pay overtime to staff who have no control over the cause of the overtime requirement. Professional staff that are responsible for the satisfactory completion of a project, rather than performing individual tasks assigned by others, normally should not be paid for overtime. Moreover, all overtime staff work should be authorized in advance and supervised.

6. *Work week*—A small number of firms are experimenting with the four day work week (four either nine-and-one-half or ten-hour days with Monday or Friday off for all or half of the staff) and appear to be pleased with the results to date. Ellerbe Associates has also placed a ban on inter-office calls and meetings during the first two hours to let the staff get well into its work before routine interruptions begin.

7. *Group insurance*—This area of benefits has become increasingly important to most employees. It is also the most complicated because of the myriad differences between the many available plans. As a rule of thumb, you get what you pay for. So set a budget, decide what benefits are most important to your firm, and then ask several reputable companies to make proposals (including the state AIA plan, if any). It is important to discuss any proposed plan with key employees—especially if the employees will have to pay part of the monthly premium. (In most firms with plans, employees pay 25 to 50 per cent of their own and 50 to 100 per cent of their dependents' premiums.) The major available features of most of these plans are the following:

Group hospitalization—coverage for all hospitalization where some of the major variables are the amount deductible (typically \$50 or \$100), the maximum coverage (\$10,000 to \$50,000), whether the maximum coverage is cumulative or per cause and, of course, all of the coverage limits, special coverages, and exclusions.

Major Medical—for major medical expenses is the most common and most important element of all plans.

Dental coverage—is relatively new but increasingly common and is extremely expensive.

Life insurance—other than the \$2,000 "burial coverage" in many hospitalization plans is usually set at one and one-half times the employee's salary in

the limited number of firms providing this benefit.

Long term disability—plans are often overlooked in spite of their relatively low cost and important protection.

8. *Retirement and pension plans* are extremely rare except in the form of deferred profit sharing plans. Because of the large post war crop of architects who are over 45, (and many other factors) this gap in most plans is becoming a major concern in many older offices.

9. *Performance benefits*—Many firms have experimented with a variety of performance rewards and incentives. The most important are the following:

Bonuses are only effective if they are clearly related to performance. If they are allocated in accordance with a formula, most employees regard them as part of their salary. Therefore, in well-managed firms, they are usually limited to senior, key employees.

Profit sharing is usually on a deferred basis, but it is often not regarded as an important benefit by many employees because of the small amounts usually contributed to such plans.

Stock or other ownership purchase plans are often an effective incentive to key employees—even if the percentage purchased is small.

10. *Miscellaneous policies and benefits*—Many or most firms now also provide a dinner allowance for salaried employees working overtime; permit leaves of absence without pay; supply drafting equipment and free coffee; pay 10 to 15 cents per mile when the employee uses his personal car for company business; and pay semi-monthly or bi-weekly. It is usually best for firms to put all of their policies in a brief manual which also includes the firm's history, goals, and other major policies to be given to all new employees.

How to keep up employee morale

None of the above benefits will, of course, compensate for a bad working or "social" environment. Alienation and low morale contribute more to many firms' problems than any other single cause. The most common causes are the boredom, insecurity and rumors that accompany a long, slow period; a physical and psychological separation between the principals and the staff; general employee lack of a clear understanding of their individual roles, reporting relationships, and perceived performance by their superiors; lack of opportunity for advancement or part ownership; low salaries and non-competitive benefit structures; and, of course, the disillusionment that affects many young architects when they are exposed to the harsher realities of the profession.

The counteractive responses that are most often effective are the following:

1. Early cuts of the obvious dead wood prior to any major slow period and

encouragement of rumor-squashing meetings with the remaining staff. If there are any faults that almost all firms share, they are an inability to fire and a failure to communicate basic information to their employees.

2. Continuing principal visibility, participation and employee contact even after the firm grows to where it has a middle management level. One prominent West Coast firm defeated a unionization attempt by initiating a regular and meaningful series of meetings on personnel management problems and recommendations with its whole staff participating.

3. Clear organizational structures and reporting relationships. The majority of employees do not like unstructured environments (although some do) and, even more important, they prefer to have what is expected of them clearly spelled out. The Harvard Business School devotes almost an entire personnel management course to the concept of providing all employees with clear objectives and their measuring performance against these goals. On the other hand, formal written job descriptions are rarely useful.

4. Regular semi-annual performance evaluations and, where appropriate, special notice (often in the form of a note, a small cash bonus, a dinner for the employee and his wife on the company, etc.) for exceptional performance in the line of duty.

5. Clear opportunities for growth and advancement.

6. Organization of the technical staff into teams or groups of a size that the employee can identify with once the firm grows beyond 20 to 30 employees.

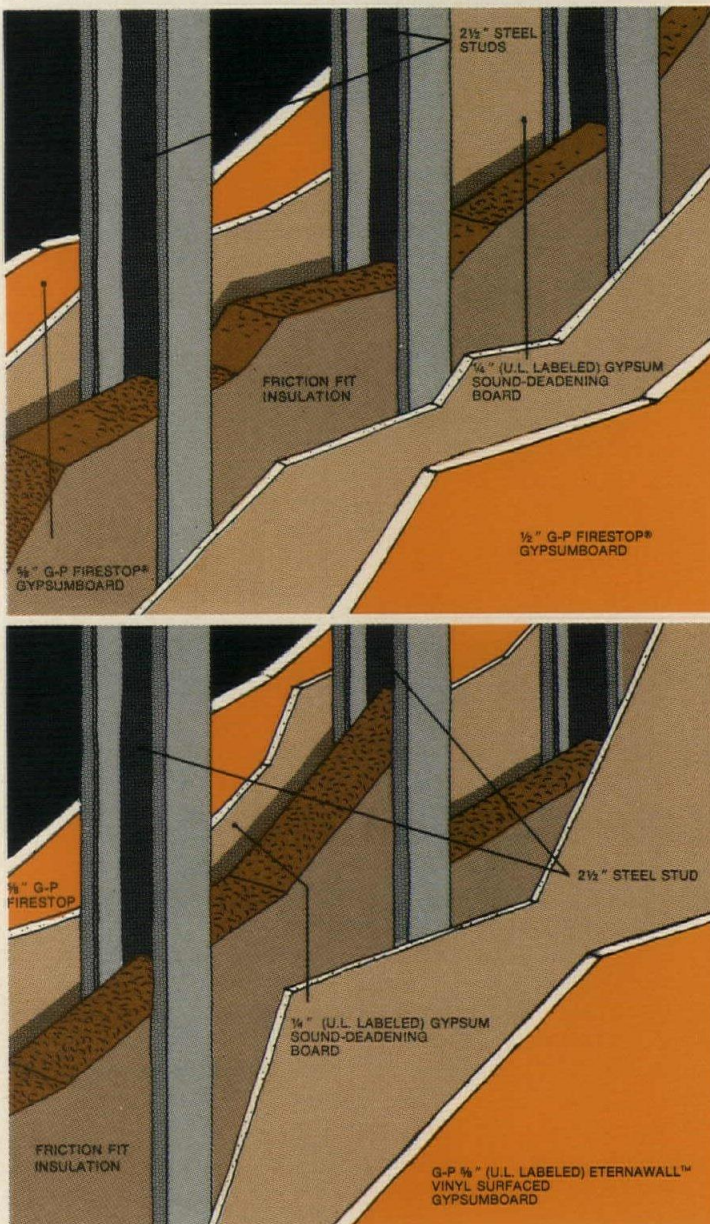
7. And, of course, competitive and equitable salary and benefit structures.

Obviously, many of the above points relate back to more than the employee's "social needs." Some of them are directly related, for example, to the employee's perception of his own importance. Traditionally, architecture has been long on ego-satisfaction and short on most of the other needs, but this is changing as more architects become employees of large organizations. In such cases, seemingly unimportant things such as titles, recognition of performance, working relationships with the principals, etc. become important substitutes for the ego-satisfactions of the one-man office.

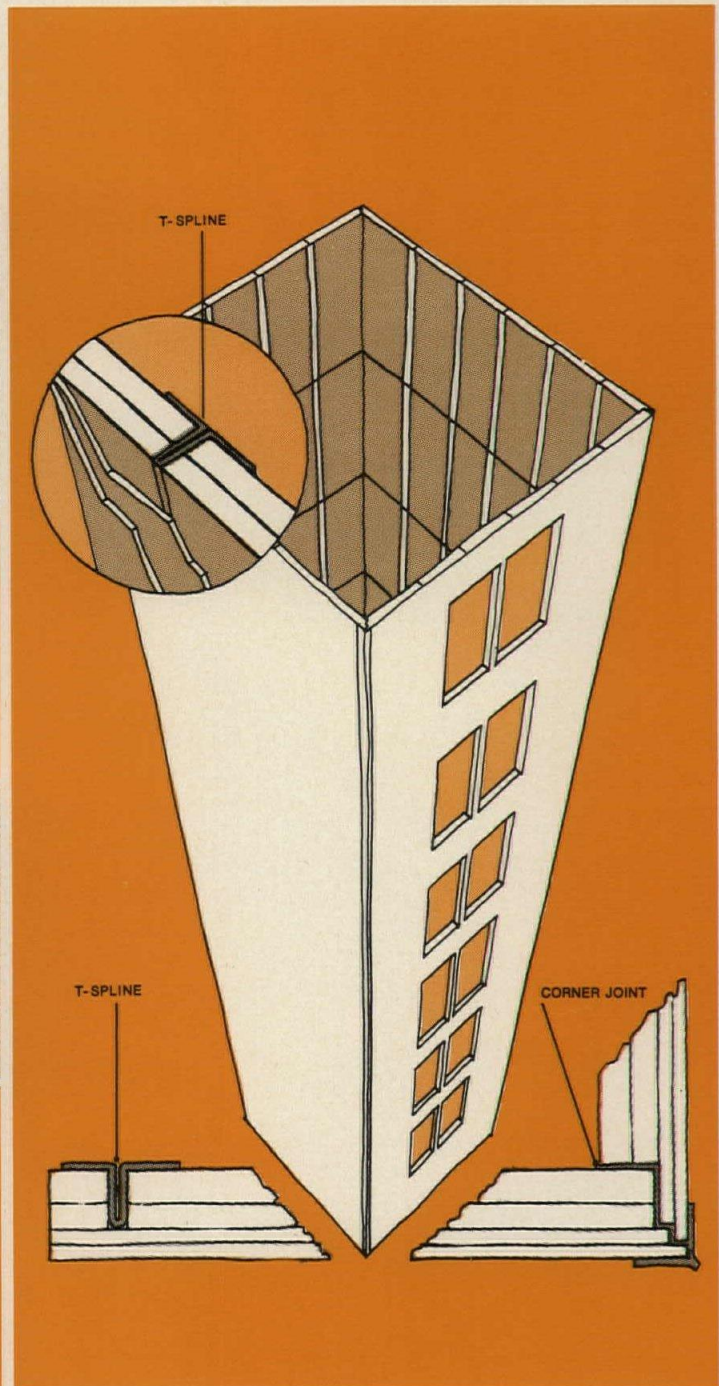
This same theme carries through into the area of self-realization. Few, if any, employees will stay highly motivated if they do not see their work helping them achieve whatever personal goals they have set for themselves. As a result, this is just one more reason why the common denominator for successful personnel management is the firm's recognition and sincere attempt to meet each employee's unique set of needs.

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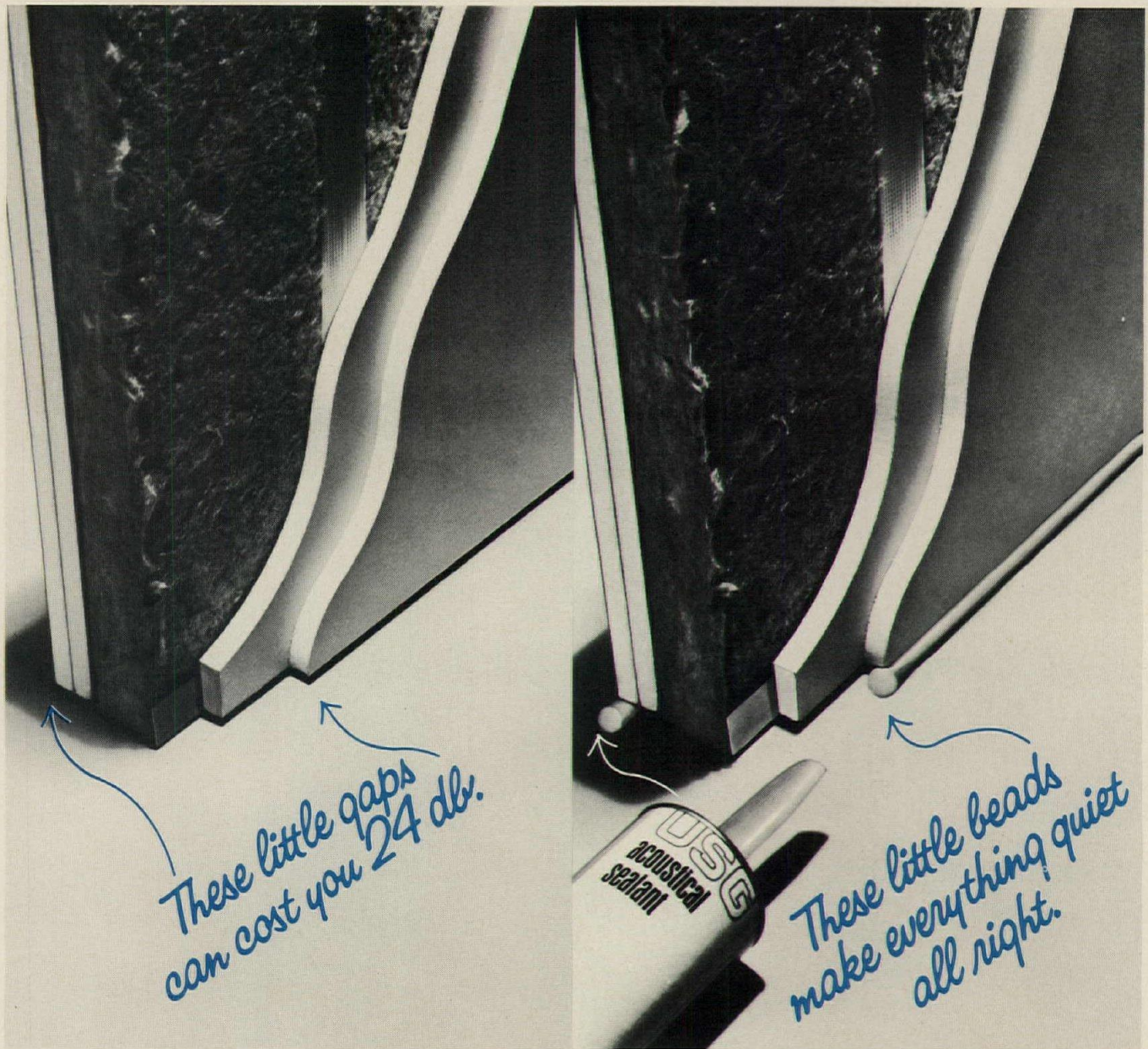
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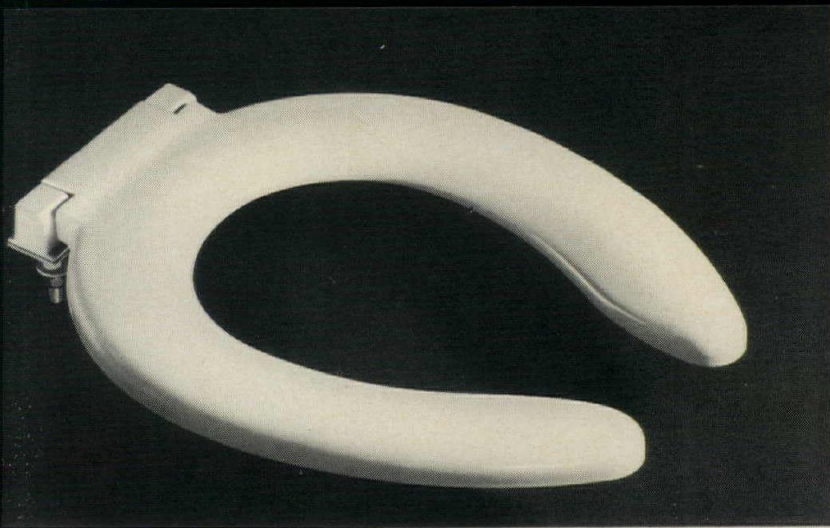
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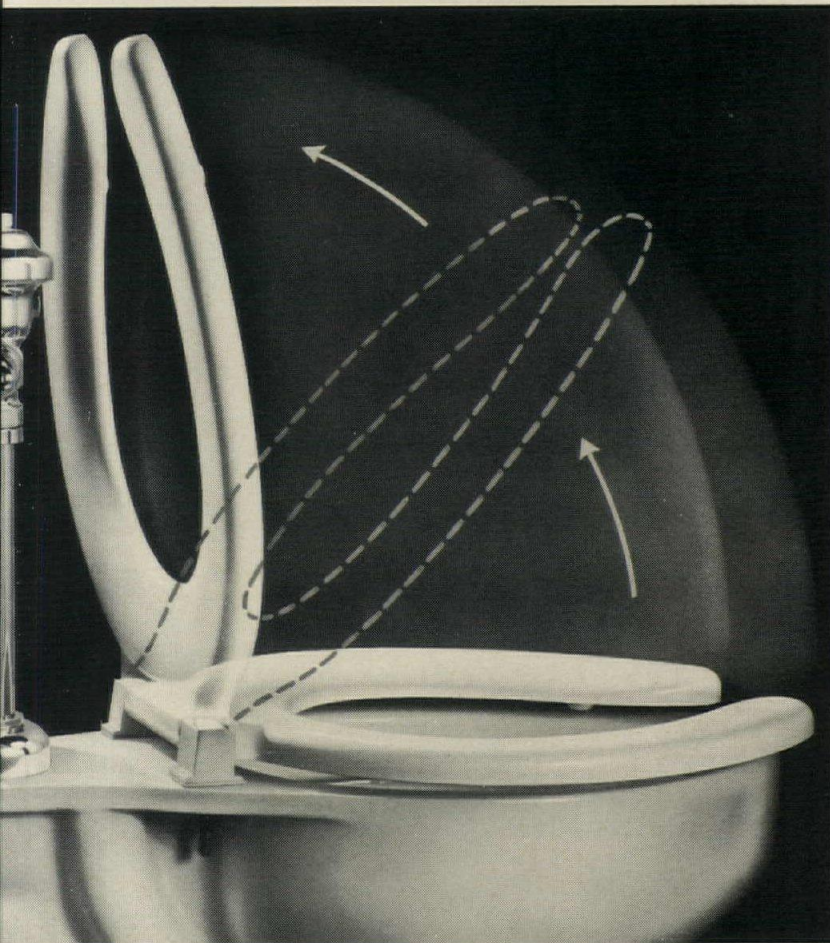
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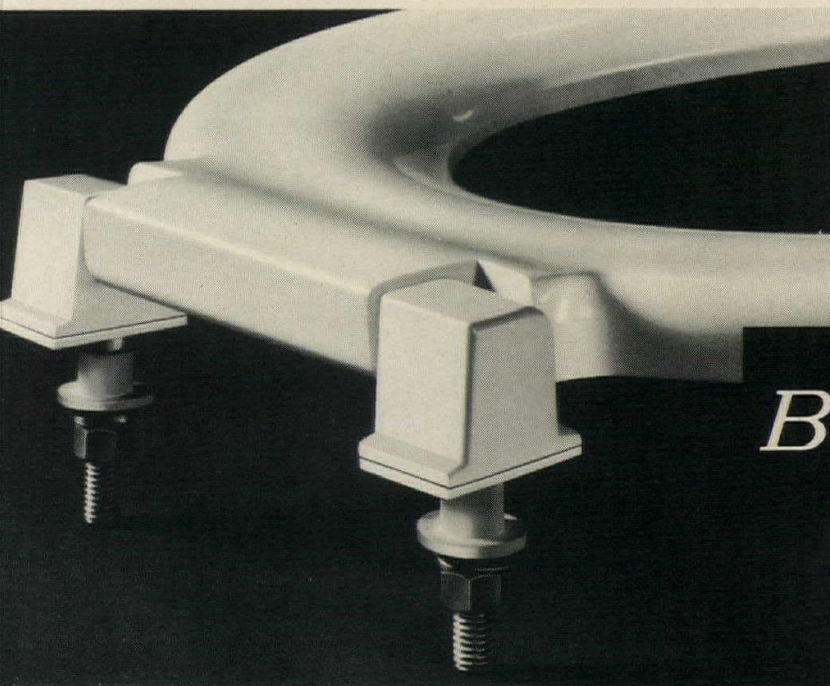
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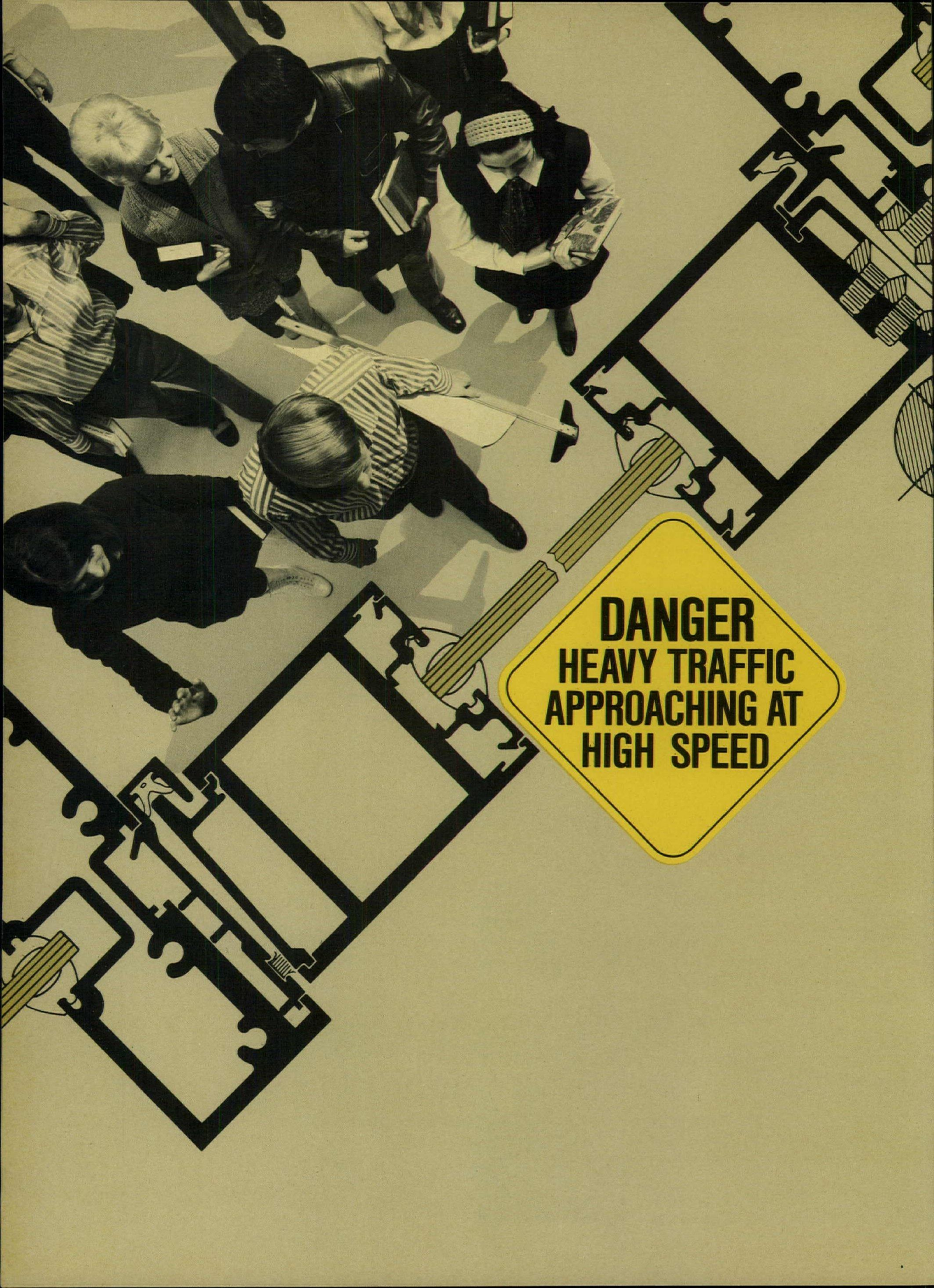
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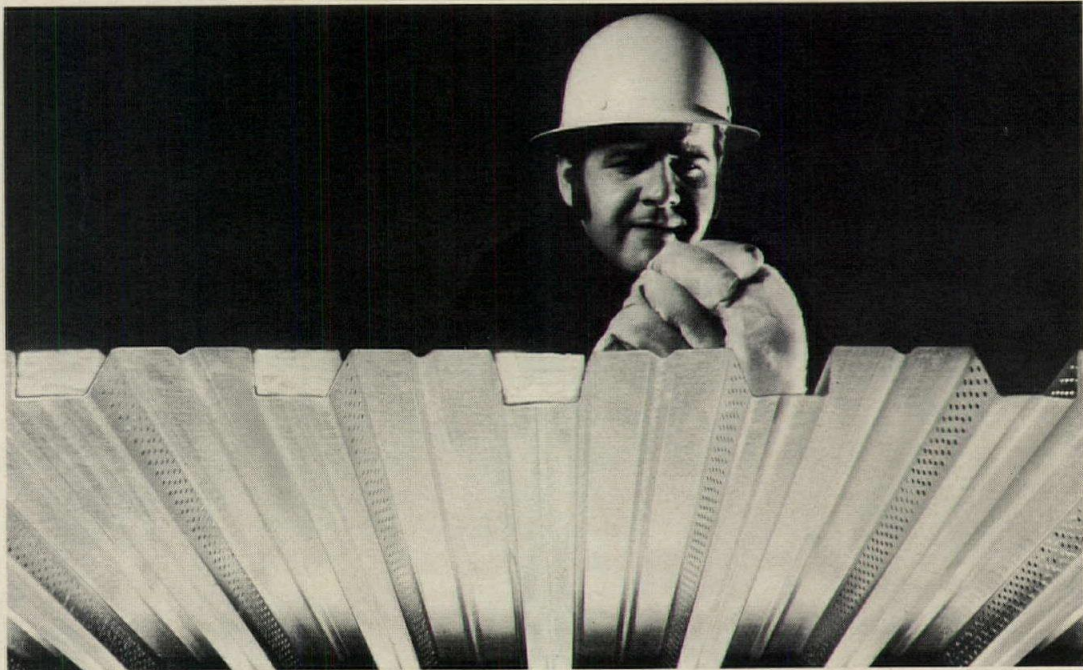
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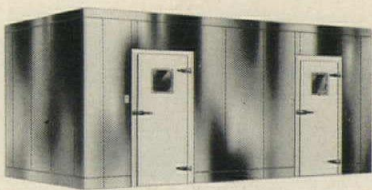
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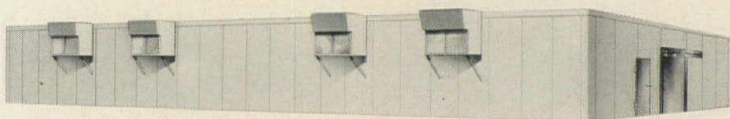


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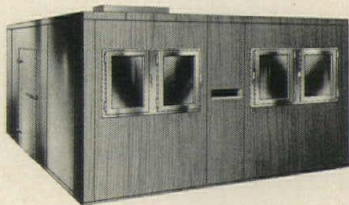
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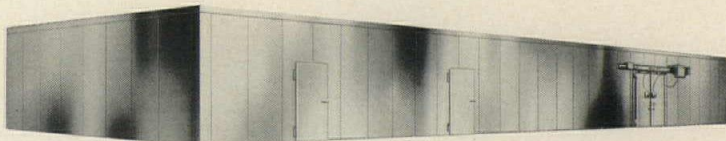
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George A. Christie
 Vice President and Chief Economist
 McGraw-Hill Information Systems Company

Construction outlook 1972: second update

Though not for all the right reasons, this year's construction forecast is still pretty much on target. The June adjustment to the 1972 Dodge Construction Outlook (such as the one we made in March) is mainly in housing, and—once again—is upward. The new total of \$86 billion brings the year's gain in construction contract value to eight per cent over the 1971 amount.

For the second half of 1972, this implies some slackening of the exceptionally strong pace of the Dodge Index during the past few months. If the rate of contracting were to hold at the level reached in the spring quarter, we'd wind up with something more like \$90 billion rather than our expected \$86 billion total. But that was one of those rare situations when both sides of the building market were prospering together: housing at its peak, and non-residential building on a strong upswing. This is not a stable situation. The trends now in motion point to a diminishing rate of residential building in the quarters ahead which will be largely—but not entirely—offset by further growth of non-residential buildings.

Mid-1972 economic environment

Nothing really new has happened on the economic scene since our March Update. (At least nothing important enough to require even a minor reappraisal of the general business outlook for the rest of 1972.) This doesn't mean that all is going perfectly . . . only that things are coming along as expected: good, but not great.

Perhaps the main difference at mid-1972 is the character of the recovery itself. What six months ago was a tenuous and fragile recovery can now safely be considered a well-established—even a vigorous—one. The risk of slipping back into recession can never be entirely disregarded, but it has been greatly reduced by the momentum and the confidence that has built up since the beginning of the year.

With things working out so far very much according to the terms of the "standard forecast" (\$1,150 billion, GNP; \$100+ billion growth), what can we expect as we go into 1972's second half? In the remainder of the year we'll be getting:

- Freer spending by consumers (who did pretty well in the first half, too).
- Inventory building by manufacturers and

sellers (who were skimping along earlier in the year).

- Accelerating plant and equipment spending (McGraw-Hill's spring survey of investment intentions showed a healthy upgrading of plans).
- Federal budgetary restraint (to avoid potential inflation from overstimulation of

the economy, as well as to reduce the deficit as elections near).

A last look at 1972 construction

Commercial building is running close to our earlier forecast, with offices holding steady, and stores well ahead of last year. The office building market is still digesting its boom of a few years ago, and while it is hardly depressed (at \$5 billion), it isn't expanding, either. On the other hand, store building is in a strong upswing—much as expected after the recent surge in home-building. This year's gain for stores and warehouses now looks headed for the high side of 20 per cent.

Industrial construction, which had been making a strong recovery through most of 1971, became stalled in this year's first half. It wasn't that business was holding back on capital spending—in fact, investment outlays rose by some five billion in 1972's first quarter, and plans for future spending were raised. Trouble was that this year's gains have so far been concentrated almost exclusively in machinery and equipment, not in buildings. A better second half should bring the year's total of manufacturing building close to the \$3 billion level, leaving it short of our earlier expectation by half a billion.

Educational building picked up sharply during the spring quarter and should reach the predicted \$5.4 billion for the full year. (That's five per cent less than 1971's total.)

Hospital and health facilities were forecast to show a strong gain this year and are doing it. If anything, the gain in this category is apt to be closer to 20 per cent than the 15 per cent we were expecting.

In total, our latest estimate of 1972 non-residential building contract value remains between \$27 and \$28 billion—unchanged except for the individual categories of buildings that make up the whole. And we still expect the second half rate of contracting to average higher than the first half, largely on the strength of improving economic conditions.

Housing as forecast for 1972 needs another boost (about 50,000 more dwelling units) to catch up with the extraordinary spring quarter. This now puts the year's estimate at 2,150,000 housing starts, and a contract value of \$36 billion—nine per cent more than the record 1971 total.

National estimates 1972

construction contract value (millions of dollars)	1971	1972 forecast	% change
nonresidential buildings			
office buildings	\$ 4,748	\$ 4,800	+17
stores and other			
commercial	4,910	6,000	+22
manufacturing	2,611	2,900	+11
educational	5,661	5,400	- 5
hospital and health	3,206	3,800	+19
other nonresidential buildings	4,532	4,750	+ 5
TOTAL	\$25,668	\$27,650	+ 8
residential buildings			
one- and two-family homes	\$21,890	\$23,800	+ 9
apartments	11,419	12,500	+ 9
nonhousekeeping	1,540	1,750	+14
TOTAL	\$34,849	\$38,050	+ 9
TOTAL BUILDINGS	\$60,517	\$65,700	+ 9
nonbuilding construction			
streets, highways & bridges	\$ 7,358	\$ 8,100	+10
utilities	5,034	4,750	- 6
sewer & water supply	3,462	4,200	+21
other nonbuilding construction	3,273	3,250	- 1
TOTAL	\$19,127	\$20,300	+ 6
TOTAL CONSTRUCTION	\$79,644	\$86,000	+ 8
Dodge Index (1967=100)	144	156	
physical volume of floor area (millions of square feet)			
nonresidential buildings			
office buildings	174	170	- 2
stores & other			
commercial	382	455	+19
manufacturing	175	200	+14
educational	190	175	- 8
hospital & health	77	90	+17
other nonresidential buildings	165	175	+ 6
TOTAL	1,163	1,265	+ 9
residential buildings			
one-and-two-family homes	1,443	1,535	+ 6
apartments	778	810	+ 4
nonhousekeeping	71	80	+13
TOTAL	2,292	2,425	+ 6
TOTAL BUILDINGS	3,455	3,690	+ 7

BOOKS RECEIVED

ANTHROPODS, New Design Futures, by Jim Burns. Burns has gathered drawings, photographs and manifestos from about 17 radical design groups from around the world (some are "established" radicals), and here publishes them, along with an analysis of his own. It's a good compendium of avant-garde architecture and design today, though we have seen most of the proposals in journals before.

Praeger Publishers, 111 Fourth Ave., New York, N.Y., 1972. 167 pp, illus., \$12.50, hardcover, \$5.95 paperback.

BUILDING IN VISUAL CONCRETE, by Erwin Heinle and Max Bacher, translated by Joseph Berger and S. V. Whitley. Published first in Germany in 1966, this book offers excellent illustrations and analysis of concrete designed to be exposed to view. This includes concrete left untouched after forms are removed, concrete subject to raking, hammering or sandblasting, and concrete whose surface has been removed altogether, exposing its aggregate. They do these things very well in Europe; the only projects illustrated in the United States are two by Paul Rudolph and one by Wright.

Technical Press, The British Book Centre, 996 Lexington Ave., New York, N.Y., 1971. 202 pp, illus., 5.25 pounds (\$21.25).

THE EFFECTIVE ARCHITECT, by Wendell E. Rossman. This book is intended for the practitioner in the mainstream of American building, with an office of from 5 to 30 people; a man who must obtain commissions, meet budgets, deal with engineers, and who worries about how he might bring his design quality to a "higher" plane. Mr. Rossman has been this kind of architect—successfully—for 15 years. The book is lacking in computer-environment systems—analysis trendy ideas, and will seem naive, but read it and think about it anyway.

Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1972. 182 pp, illus., \$12.00.

PORTUGUESE PLAIN ARCHITECTURE, Between Spices and Diamonds, 1521-1706, by George Kubler. Mr. Kubler is professor of History of Art at Yale, and his studies are largely concerned with Iberian and Iberian-American culture and art. He is best known for his book *The Shape of Time*. Kubler says "The transformation from 1520 to 1580 in Portugal is . . . of the same order as in the present century, when an ornate and eclectic taste surviving from the 1800's yielded to rationality and economic necessity in the abandonment of the heavily decorated surface." This book traces in detail the sources, developments and influence of this transformation in Portugal, relating it to the Spanish, Fleming and other northern European political, cultural and design situations. Kubler says "Plain Portuguese architecture corresponds to an experimental attitude

among designers who were nourished on Renaissance theory and yet were able to disregard its prescriptions in the quest for useful and inexpensive building. Its earliest expressions emerged in association with military architecture and in connection with religious reform movements opposed to the laxity of monastic life. Rationality and austerity were the guidelines from the beginning . . . prefiguring the Spanish *estilo desornamentado*. . . It differs from Spanish work prior to 1580 . . . above all by the cellular composition of the wall and by the functional distinctness of the masses. These dif-

ferentiating traits were not learned from Italian treatises. They are related to a larger complex of Portuguese military, nautical, and commercial traditions. . . This architectural language was conditioned by old native preferences and regional traditions rather than by imitation of the latest Florentine or Roman fashions. . . Portuguese resistance to imitation depended on the possession of aims peculiar to Portugal, some of which it has been the purpose of this book to describe."

Wesleyan University Press, Middleton, Conn. 315 pp, illus., \$25.00



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Percival Pereira

Dodge Building Cost Services

McGraw-Hill Information Systems Company

COMMERCIAL BUILDING COSTS, 1971

Miscellaneous food-related and other types of commercial buildings, including airport terminals, show reasonable consistency in square-foot costs over a wide area in the U. S. The standout is a fairly small but lavishly decorated restaurant in Toledo.

Food service buildings

	SF	Cost per square foot, dollars			
		Area	Gen.	Mech.	Elec. Total
Drive-in, Cuero, Tx.	1950	20.93	2.02	3.04	25.99
Drive-in, Norfolk, Va.	3275	15.50	6.06	2.32	23.88
Restaurants:					
Toledo, Oh.	4200	34.06	6.90	3.33	44.29
Lexington, Ky.	4548	16.69	4.05	2.13	22.87
Banquet, Murietta, Ga.	10907	24.58	3.66	3.28	31.52
Elkhart, In.	4548	17.91	6.11	2.26	26.28
Billerica, Ms.	6000	20.54	3.20	2.66	26.40
Cafeteria, Shaw, Mi.	9563	16.83	5.37	1.01	23.21

Commercial buildings:

Liquor Store, Bemidji, Mn.	2716	19.42	3.69	2.47	25.58
Food Store, Warmington, Pa.	2700	14.62	3.49	1.95	20.06
Meat Plant, Davenport, Ia.	4000	23.20	2.25	1.18	26.63
Meat Cooler, Scranton, Pa.	6350	27.79	6.02	2.85	36.66
Food Store, Burnt Hill, N.Y.	24000	12.09	1.87	2.29	16.25
Food Mkt., Springhouse, Pa.	30000	12.37	3.40	2.66	18.43
Airport Motel, Chicago, Ill.	58400	19.75	3.43	1.82	25.00
Shopping Centers:					
Omaha, Ne.	34446	9.07	1.94	1.59	12.60
Saginaw, Mi.	52500	7.12	3.16	0.72	11.00
Acton, Ma.	62000	9.70	1.96	1.24	12.90
Phoenix, Az.	97031	7.39	2.13	1.89	11.41
Auto Sales & Service:					
Tyson, Va.	18817	11.37	4.43	2.14	17.94
Massillon, Oh.	18876	10.50	3.44	2.91	16.85

Airport structures:

Terminal, Charlotte Co. Fl.	6712	16.00	3.36	2.34	21.70
Terminal, Greenville, Ms.	14113	16.05	4.41	2.26	22.72
Hangar, Grand Rapids, Mi.	14947	5.95	1.29	0.86	8.10
Terminal, Westmorland Co. Pa.	21254	21.59	3.35	3.47	28.41

Metropolitan area	Cost differential	Current Indexes				% change last 12 months
		non-res.	residential	masonry	steel	
U.S. Average	8.3	377.8	353.9	369.1	359.8	+ 7.64
Atlanta	7.8	480.3	452.9	467.4	457.2	+ 6.30
Baltimore	7.9	396.8	373.1	385.8	375.6	+ 7.83
Birmingham	7.3	346.9	322.7	334.7	330.0	+ 8.43
Boston	9.0	384.3	363.1	380.7	369.6	+ 11.47
Buffalo	9.1	421.1	395.5	416.0	402.2	+ 9.70
Chicago	8.4	430.8	409.7	416.6	409.5	+ 8.24
Cincinnati	8.7	407.2	383.2	396.2	386.4	+ 7.58
Cleveland	9.3	423.1	398.2	413.4	403.5	+ 6.27
Columbus, Oh.	8.3	402.4	377.9	390.5	383.1	+ 6.41
Dallas	7.6	370.2	358.6	363.1	356.2	+ 7.07
Denver	8.1	404.8	380.9	400.1	386.3	+ 5.79
Detroit	9.5	423.6	403.6	423.1	407.3	+ 8.53
Houston	7.6	360.5	338.6	352.1	345.3	+ 5.40
Indianapolis	8.0	356.1	334.5	347.3	339.6	+ 7.44
Kansas City	8.1	355.2	335.8	345.6	338.4	+ 6.02
Los Angeles	8.2	418.9	383.0	407.2	399.0	+ 9.11
Louisville	7.7	375.9	353.1	368.2	359.8	+ 8.59
Memphis	7.7	360.1	338.2	348.2	342.3	+ 7.16
Miami	8.0	398.3	379.5	388.7	380.2	+ 6.88
Milwaukee	8.5	430.7	404.5	425.4	411.8	+ 6.29
Minneapolis	8.9	408.2	384.1	402.0	390.1	+ 9.92
Newark	8.9	376.2	353.4	370.9	361.8	+ 7.14
New Orleans	7.3	357.5	337.5	351.9	344.1	+ 7.24
New York	10.0	418.0	388.7	405.1	395.0	+ 7.45
Philadelphia	8.7	400.6	381.7	393.6	384.3	+ 10.77
Phoenix (1947=100)	7.9	215.9	202.8	208.4	205.0	+ 10.09
Pittsburgh	8.8	370.6	348.7	363.8	353.3	+ 7.99
St. Louis	8.7	392.6	370.6	387.6	375.6	+ 7.25
San Antonio (1960=100)	7.6	146.4	137.6	143.0	139.6	+ 1.98
San Diego (1960=100)	8.0	151.2	142.1	148.2	144.8	+ 7.50
San Francisco	9.3	549.3	502.2	545.7	527.6	+ 11.48
Seattle	8.6	374.5	335.3	371.0	356.9	+ 4.85
Washington, D.C.	7.8	357.6	335.0	346.0	338.5	+ 7.99

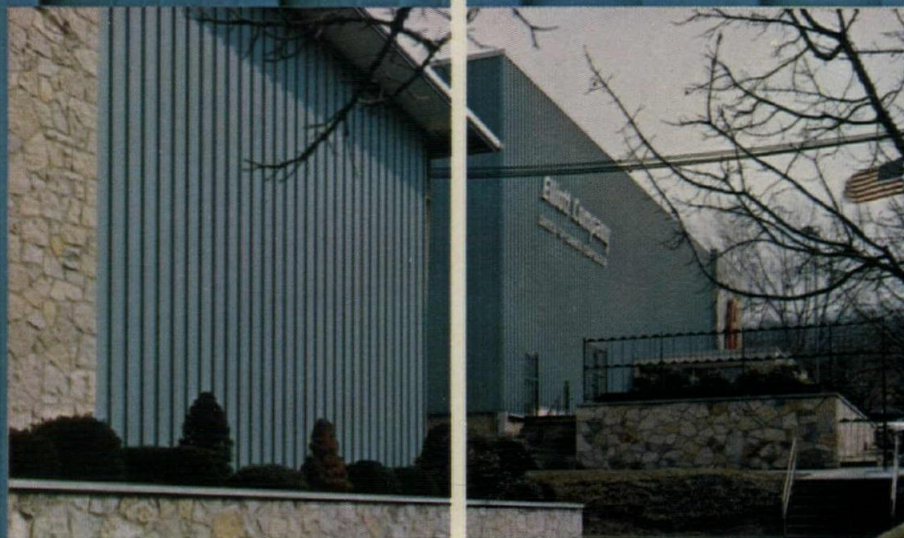
Cost differentials compare current local costs, not indexes.

HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES

1941 average for each city = 100.00

Metropolitan area	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971 (Quarterly)				1972 (Quarterly)			
										1st	2nd	3rd	4th	1st	2nd	3rd	4th
Atlanta	298.2	305.7	313.7	321.5	329.8	335.7	353.1	384.0	422.4	424.0	445.1	447.2	459.2	472.5	473.7		
Baltimore	271.8	275.5	280.6	285.7	280.9	295.8	308.7	322.8	348.8	350.3	360.5	362.5	381.7	388.1	389.3		
Birmingham	250.0	256.3	260.9	265.6	270.7	274.7	284.3	303.4	309.3	310.6	314.6	316.4	331.6	340.4	341.6		
Boston	239.8	244.1	252.1	257.8	262.0	265.7	277.1	295.0	328.6	330.0	338.9	341.0	362.0	377.3	378.5		
Chicago	292.0	301.0	306.6	311.7	320.4	328.4	339.5	356.1	386.1	387.7	391.0	393.2	418.8	422.8	424.0		
Cincinnati	258.8	263.9	269.5	274.0	278.3	288.2	302.6	325.8	348.5	350.0	372.3	374.3	386.1	399.9	401.1		
Cleveland	268.5	275.8	283.0	292.3	300.7	303.7	331.5	358.3	380.1	381.6	391.1	393.5	415.6	415.2	416.4		
Dallas	246.9	253.0	256.4	260.8	266.9	270.4	281.7	308.6	327.1	328.6	341.4	343.4	357.9	364.9	366.1		
Denver	274.9	282.5	287.3	294.0	297.5	305.1	312.5	339.0	368.1	369.7	377.1	379.1	392.9	398.3	399.5		
Detroit	265.9	272.2	277.7	284.7	296.9	301.2	316.4	352.9	377.4	379.0	384.6	386.8	409.7	416.9	418.1		
Kansas City	240.1	247.8	250.5	256.4	261.0	264.3	278.0	295.5	315.3	316.6	329.5	331.5	344.7	348.7	349.9		
Los Angeles	276.3	282.5	288.2	297.1	302.7	310.1	320.1	344.1	361.9	363.4	374.2	376.4	400.9	407.8	409.0		
Miami	260.3	269.3	274.4	277.5	284.0	286.1	305.3	392.3	353.2	354.7	366.8	368.9	384.7	391.5	392.7		
Minneapolis	269.0	275.3	282.4	285.0	289.4	300.2	309.4	331.2	361.1	362.7	366.0	368.0	417.1	401.7	402.9		
New Orleans	245.1	284.3	240.9	256.3	259.8	267.6	274.2	297.5	318.9	320.4	327.9	329.8	341.8	350.9	352.1		
New York	276.0	282.3	289.4	297.1	304.0	313.6	321.4	344.5	366.0	367.7	378.9	381.0	395.6	406.5	407.7		
Philadelphia	265.2	271.2	275.2	280.8	286.6	293.7	301.7	321.0	346.5	348.0	356.4	358.4	374.9	394.2	395.4		
Pittsburgh	251.8	258.2	263.8	267.0	271.1	275.0	293.8	311.0	327.2	328.7	338.1	340.1	362.1	364.5	365.7		
St. Louis	255.4	263.4	272.1	280.9	288.3	293.2	304.4	324.7	344.4	345.9	360.0	361.9	375.5	385.5	386.7		
San Francisco	343.3	352.4	365.4	368.6	386.0	390.8	402.9	441.1	465.1	466.8	480.7	482.6	512.3	535.3	536.5		
Seattle	252.5	260.6	266.6	268.9	275.0	283.5	292.2	317.8	341.8	343.3	347.1	349.0	358.4	363.0	364.5		

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



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*An invitation from
the editors of ARCHITECTURAL RECORD
to submit work for a special issue
in December on...*

The Best Work of The Young Architects

The entire December 1972 issue of RECORD will be devoted to presentations and descriptions of the work and professional capabilities of today's young architects. The major emphasis—as always in RECORD—will be on design. But the editors are aware that—while most young architects are as interested and involved as ever in establishing their own firms or working as principals in large firms—a considerable group is taking new paths into new kinds of work such as urban redesign, advocacy work, or development; or, in large firms, is developing a new kind of expertise in computer use, project management, feasibility work, or industrialization.

So we are inviting submissions from young architects in two categories:

1. All young architects, whether they have their own firm or work as a recognized member of a large firm, are invited to submit completed but unpublished buildings, or projects that are at least in the working drawing stage, for consideration for the issue. As always, all work—whether it is a tiny building or a major building complex—will be evaluated against the highest quality work of the profession, to continue RECORD's 81-year-old policy of recognizing the best talent of younger practitioners.
2. We also invite young architects who have taken alternate routes—who are involved in important non-design work—to write us describing their accomplishments and capabilities in their firm.

On age limit, our general intention is to publish work of those 35 years of age or younger; but we recognize that, with the time lag involved in many projects, a rigid age requirement may not be fair or meaningful.

The deadline for submissions is September 1st, 1972—but the sooner the better; the issue is now in the planning stage, and in many cases will need time for detailed follow-up.

Any building type will be considered. As noted above, we will consider any complete but unpublished building, or any project where working drawings are in process or where construction is underway.

The only data needed are photos (which need not be of publishable quality) or renderings, plus a floor plan (or other drawings which are available and help explain the project) and a brief description of the building.

Mail your submissions to Herbert L. Smith, Jr., Managing Editor, ARCHITECTURAL RECORD, McGraw-Hill Building, 1221 Avenue of the Americas, New York, New York 10020. His phone number, if you have any questions, is 212/997-2594.

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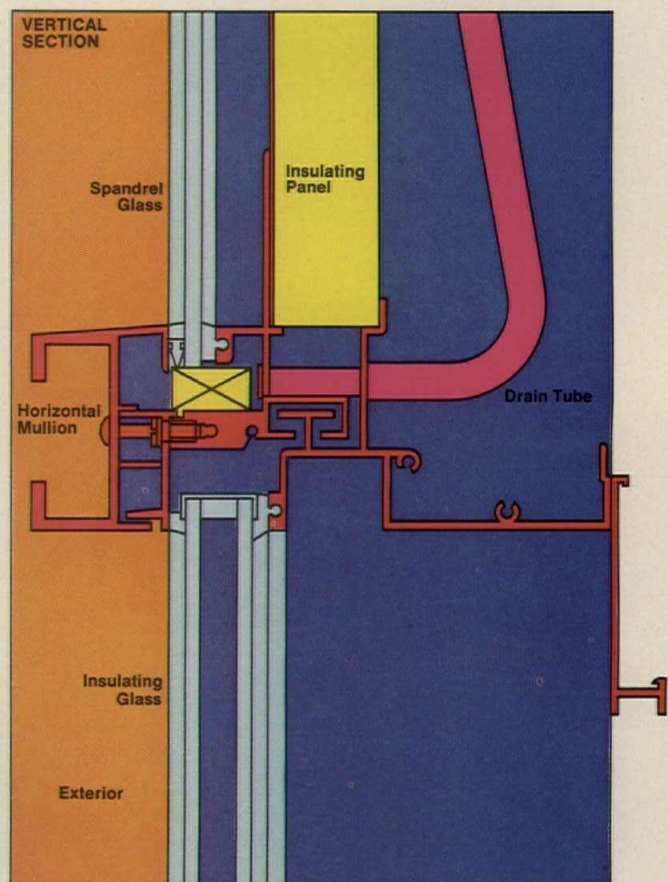
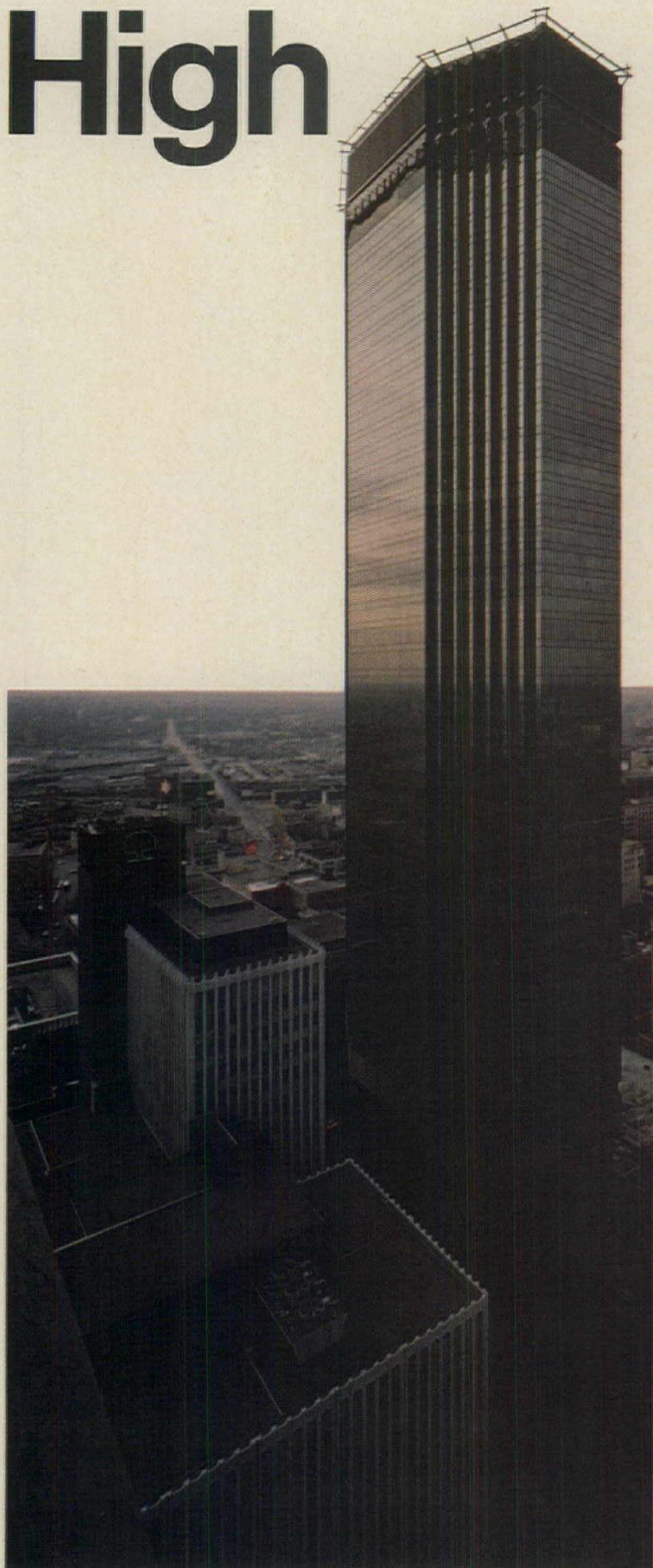
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perience, working with Flour City's curtain-wall savvy, is good to have on your side. On a high-rise like the IDS Center, or a low-rise, like this elementary school in Stewartsville, Pa. Here the curtain wall is an Alply® wall system. Composed of a polyurethane core sandwiched between finished interior and exterior facings, each Alply panel* is an integral, economical, prefabricated unit, containing insulation and a vapor barrier. The

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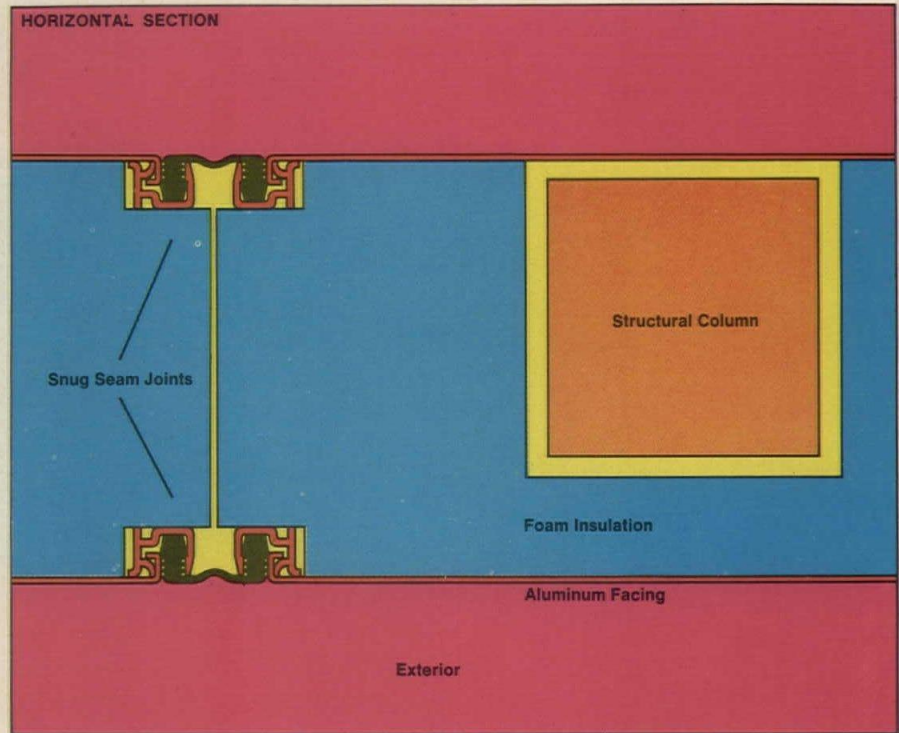
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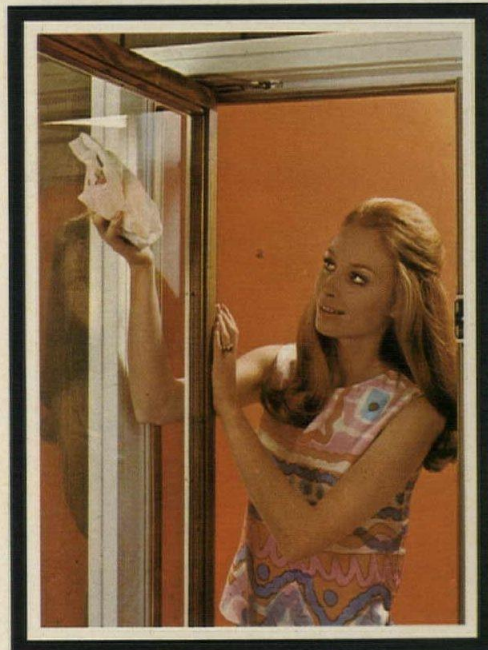
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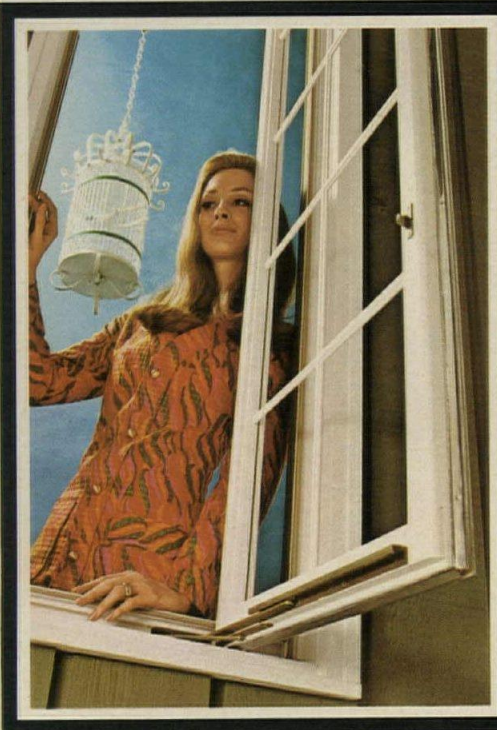
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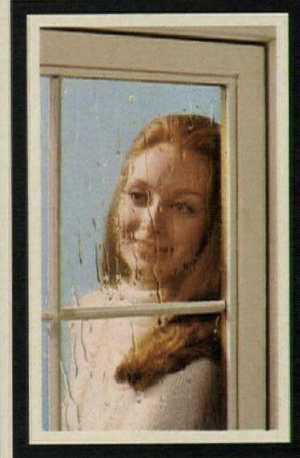
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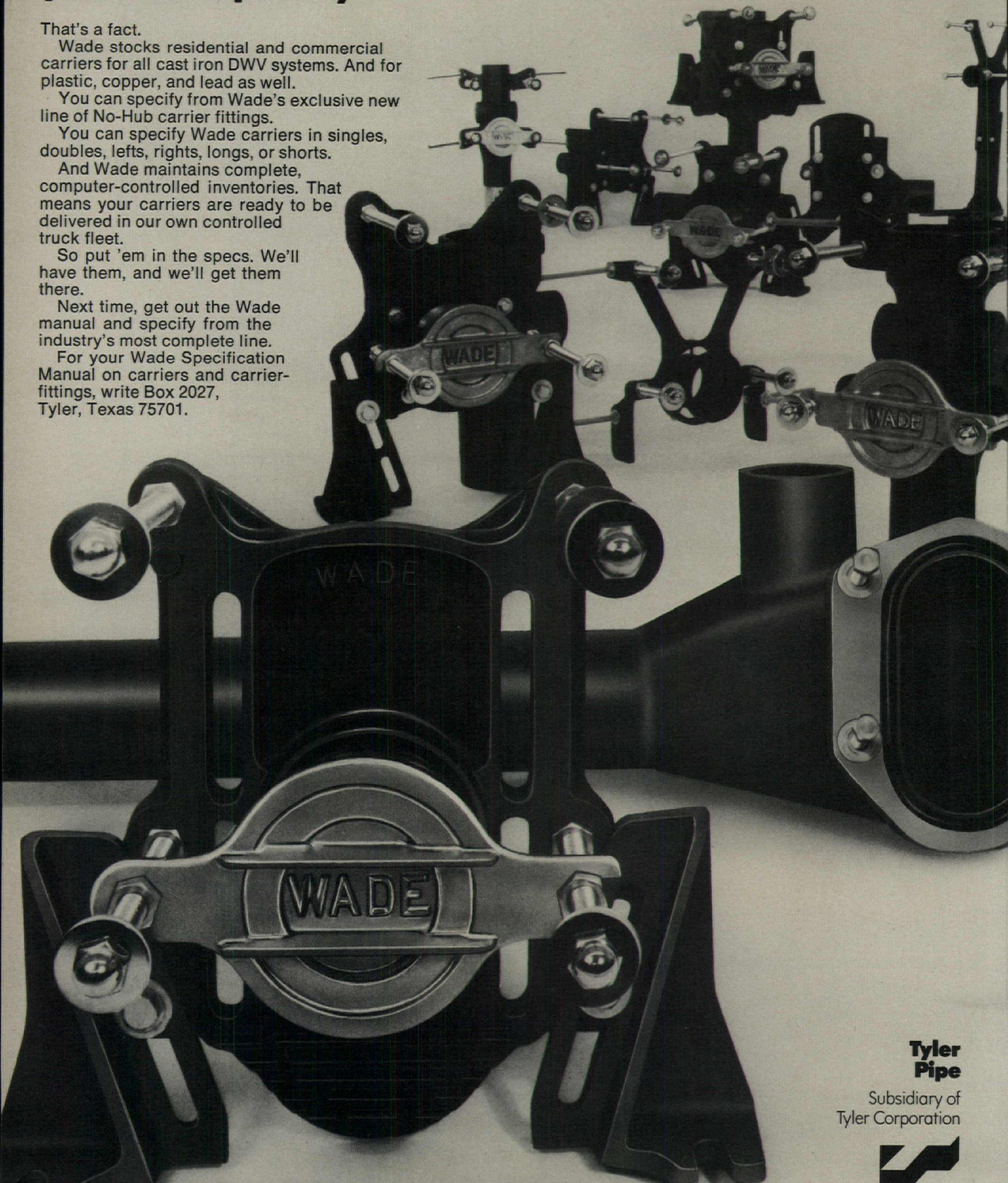
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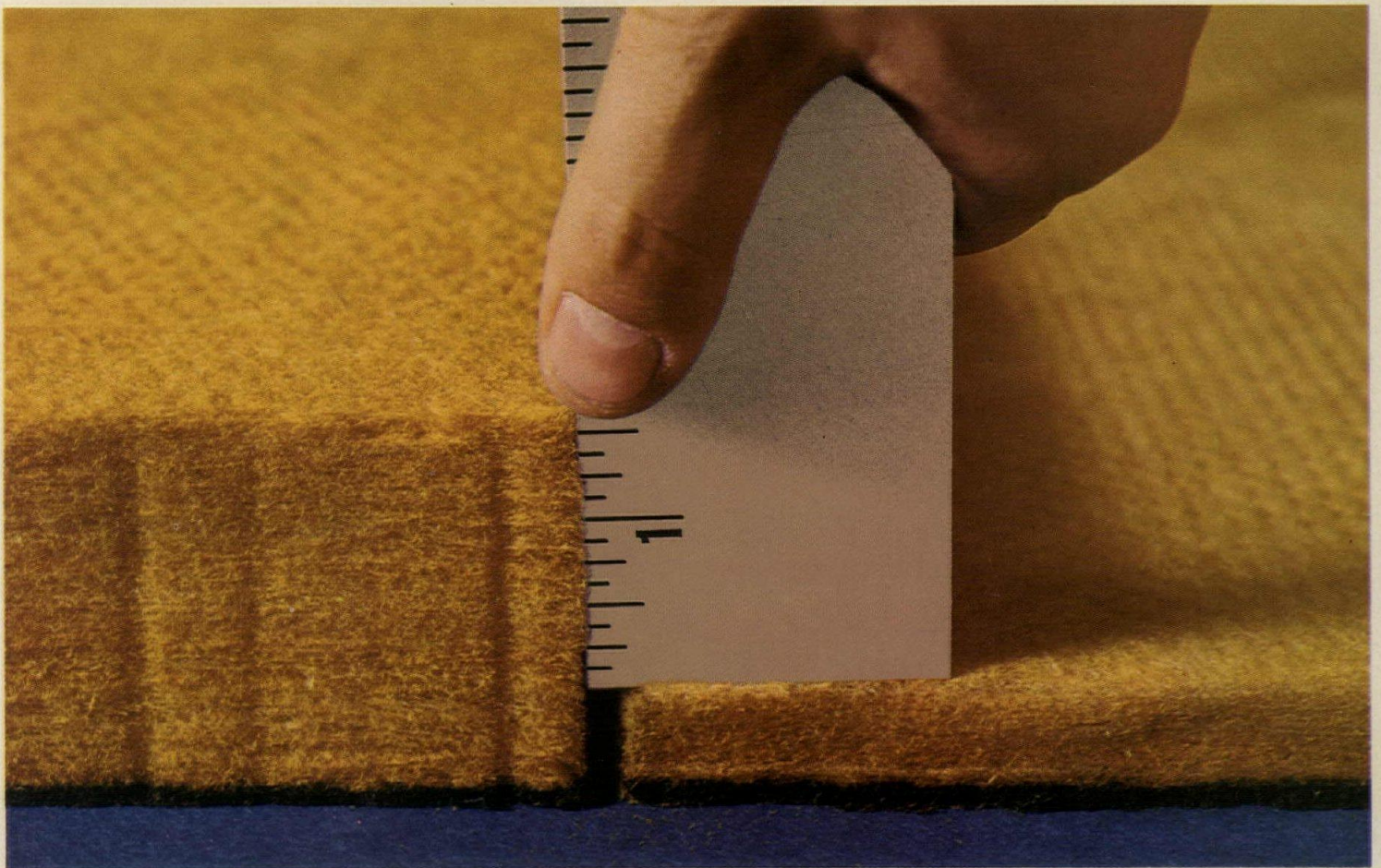
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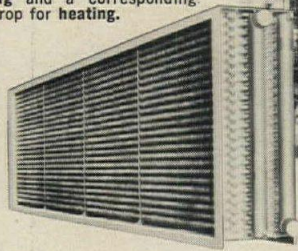
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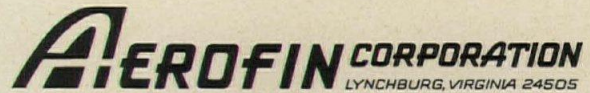
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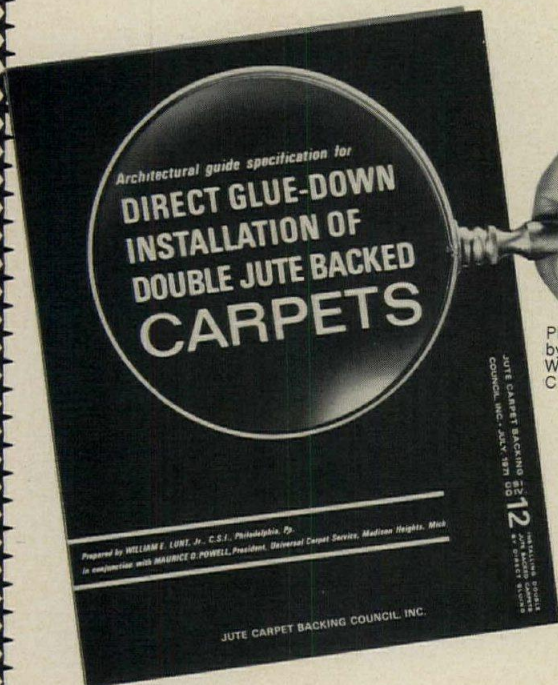
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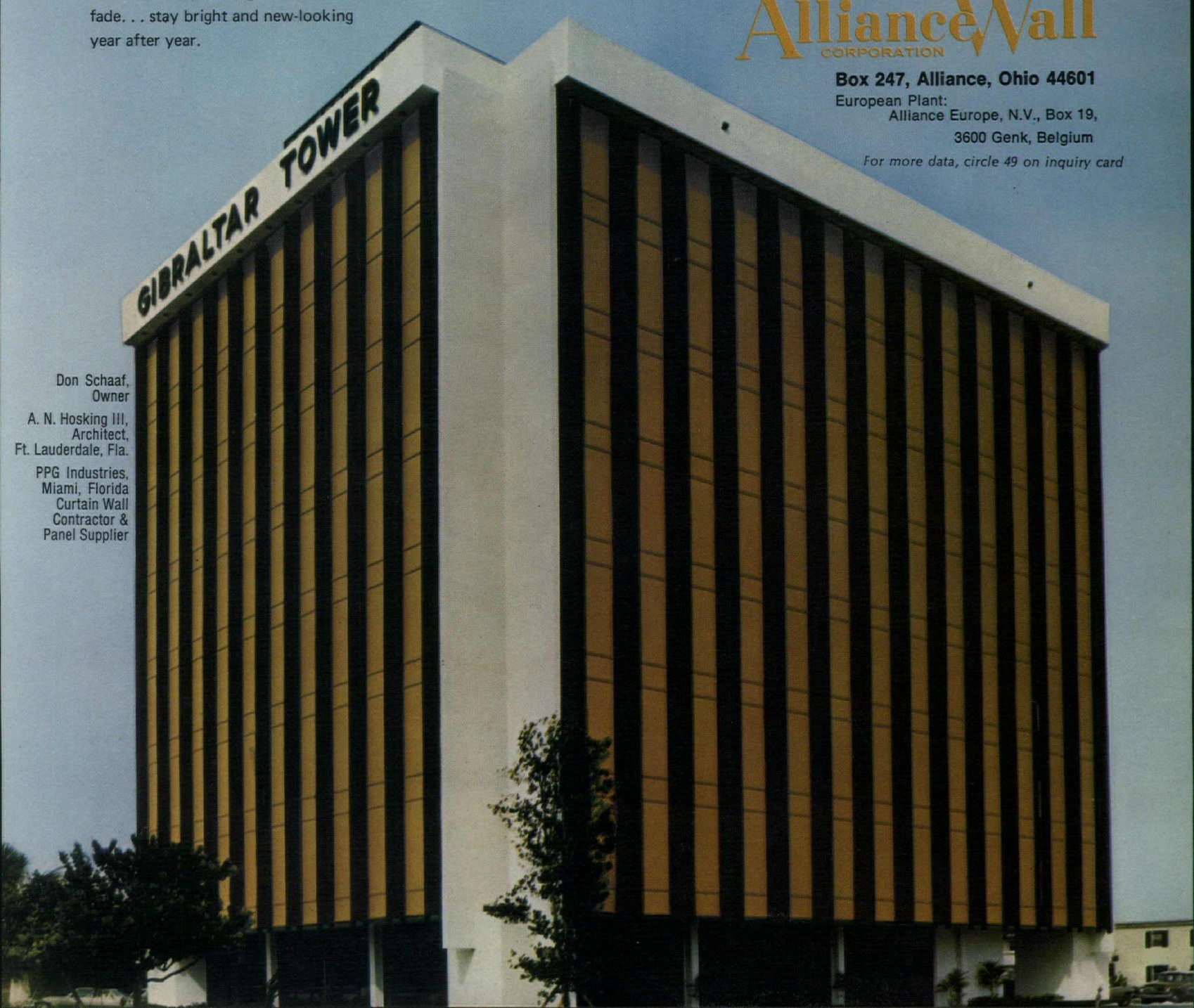
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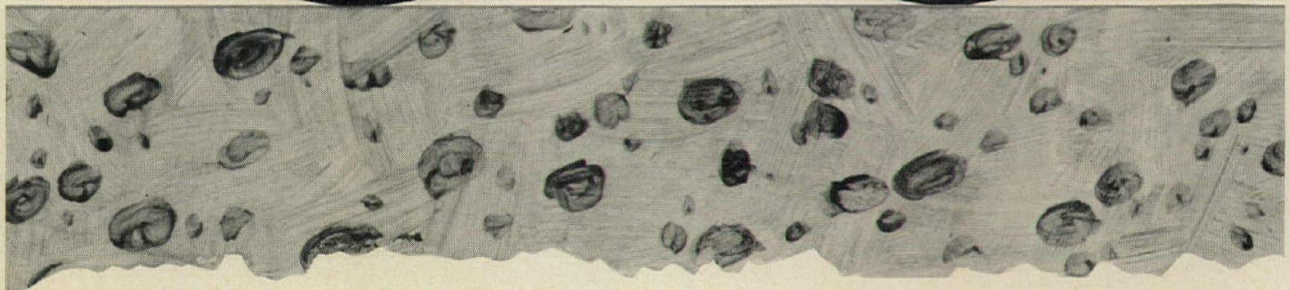
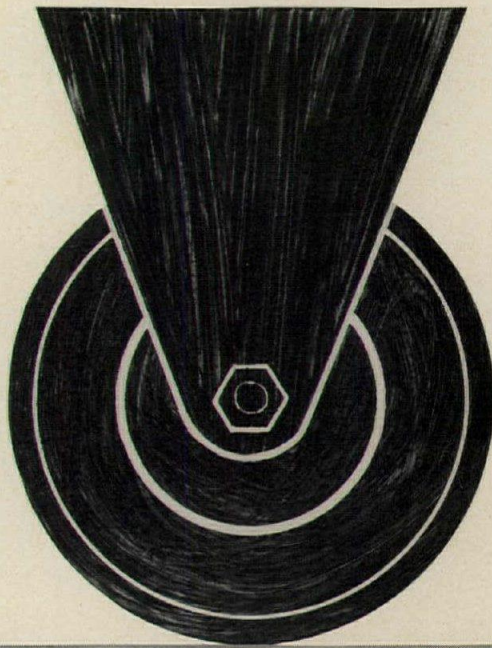
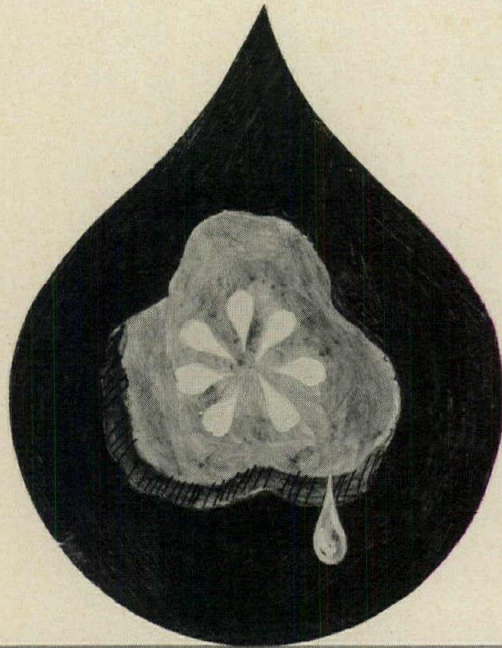
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IN PRAISE OF THE UNEXCITING OLD CONCEPTS WHICH INSPIRE THE WORK OF EDWARD LARRABEE BARNES FOR THE COLLEGE AT POTSDAM

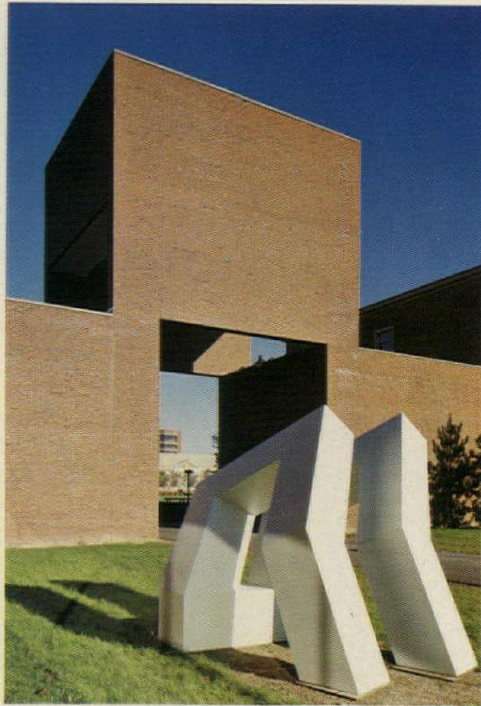
Robert Venturi once said to Edward Larrabee Barnes: "I like your work, Ed. It bores me." Never mind that Andy Warhol was the first to say: "I like boring things." Venturi doesn't have to be original to be right about Barnes' architecture at the State University of New York College at Potsdam. It is boring—peacefully, deliberately, purposefully, masterfully boring—as architecture should be more often than not. It takes an architect of unusual strength and confidence to be boring in a world which constantly demands new visual kicks.

Few architects will acknowledge, even to themselves, that in many instances their buildings should be quiet, neutral backgrounds against which the really interesting things happen. Many architects, afraid to bore, strive for a level of visual excitement in their buildings which causes these structures to dominate and preempt their surroundings. Not many designers realize that the problem they should be solving may be similar to the problem Barnes faced at Potsdam—how to design a building or buildings which help to create a sense of community and place.

The Potsdam campus is being constructed by the New York State University Construction Fund (RECORD, January 1971). It is a small and remote college of arts and sciences in upstate New York near the Canadian border. It has been planned for an enrollment of 7,100 students by 1975.

Potsdam didn't amount to much as a physical campus when Barnes first arrived there in 1962 to take a look. As RECORD described it: "To the northwest three L-shaped dormitories made a sort of overscaled quadrangle which leaked space through vast gaps on all four sides. To the southwest three large brick structures which started out in Colonial Williamsburg style but ended up with too many flat roofs combined with an early postwar 'modernistic' music building to stake out the limits of an even larger rec-

Joseph W. Molitor photos except as noted



Sculpture by Alfred Wunderlick

tangular enclosure." Barnes might have found it tempting to turn his back on such a campus and start a new building group elsewhere on the generous site. He decided, however, to weave these random, hit-or-miss, Department-of-Public Works-type buildings with the threads of new buildings into a strong new fabric. The new buildings were to have a kind of quiet unity which would mute the clash between them and their pseudo-colonial neighbors.

Attempting this sort of solution with landmark buildings of esthetic merit is, of course, acceptable practice—and considerably easier than the task Barnes set himself with the existing structures at Potsdam. He may be the first contemporary architect of note to deal seriously with the problem of enhancing the appearance, without remodeling the fronts, of existing structures of no esthetic quality whatsoever.

Barnes placed the new campus library

at the center of the larger rectangle, keeping its height relatively low. He closed the rectangle on all four sides with new academic buildings and added a gate at each corner. He located the student union within the smaller of the two rectangles. All of these buildings have been carefully related to each other in terms of their heights. Beyond the campus core are three new dormitory complexes and additional structures, including an administration tower.

Barnes compares the new Potsdam campus to medieval walled university towns in Italy, which epitomize concepts of ordered space. He believes that the concentration, rhythm and intensity of urban forms provide a more appropriate academic setting than the typical United States rural type campus which is nostalgically cherished in spite of its sprawling, diffuse quality.

Barnes has not designed all the new buildings at Potsdam. He persuaded the State University Construction Fund to commission major Potsdam buildings from three young architects, starting their own practices, who had worked on Potsdam while members of his staff. In return for this favor to his former subordinates, he has maintained considerable, but not total design control of their buildings as a consultant to them. Included on the following pages are photographs of the science building by Gio Pasanella and Joseph G. Merz and the administration tower by Gio Pasanella. Not shown are a health and physical education building by Richard Moger, now under construction, and a dormitory complex by Joseph G. Merz.

Although all three of the new young architects are sympathetic to Barnes' work and indeed helped to create it as members of his staff, they can be expected to take new directions at Potsdam now that they are on their own. In his design for the administration tower Giovanni Pasanella has clearly done so.—Mildred F. Schmertz

The problem and challenge: How to accept randomly placed existing buildings, add new structures and at the same time create a unified campus

In architect Barnes' own words: "When we first came to Potsdam in 1962, we found a few widely scattered pseudo-colonial buildings isolated in a vast frozen plain (see plan below, far left). The central court was over 750 feet across. The temperature was minus 20 degrees. We could see that our job was to tighten up the campus plan, make it urban, and bring people closer together to create a deeper sense of involvement. We wanted the campus to read as a compact unit, as a single piece of architecture. To accomplish this, we knew it would not be enough to simply specify the consistent use of a single material or to strive for a casual "village" atmosphere. We wanted to establish a strong over-all form and master spaces. At the same time the indi-

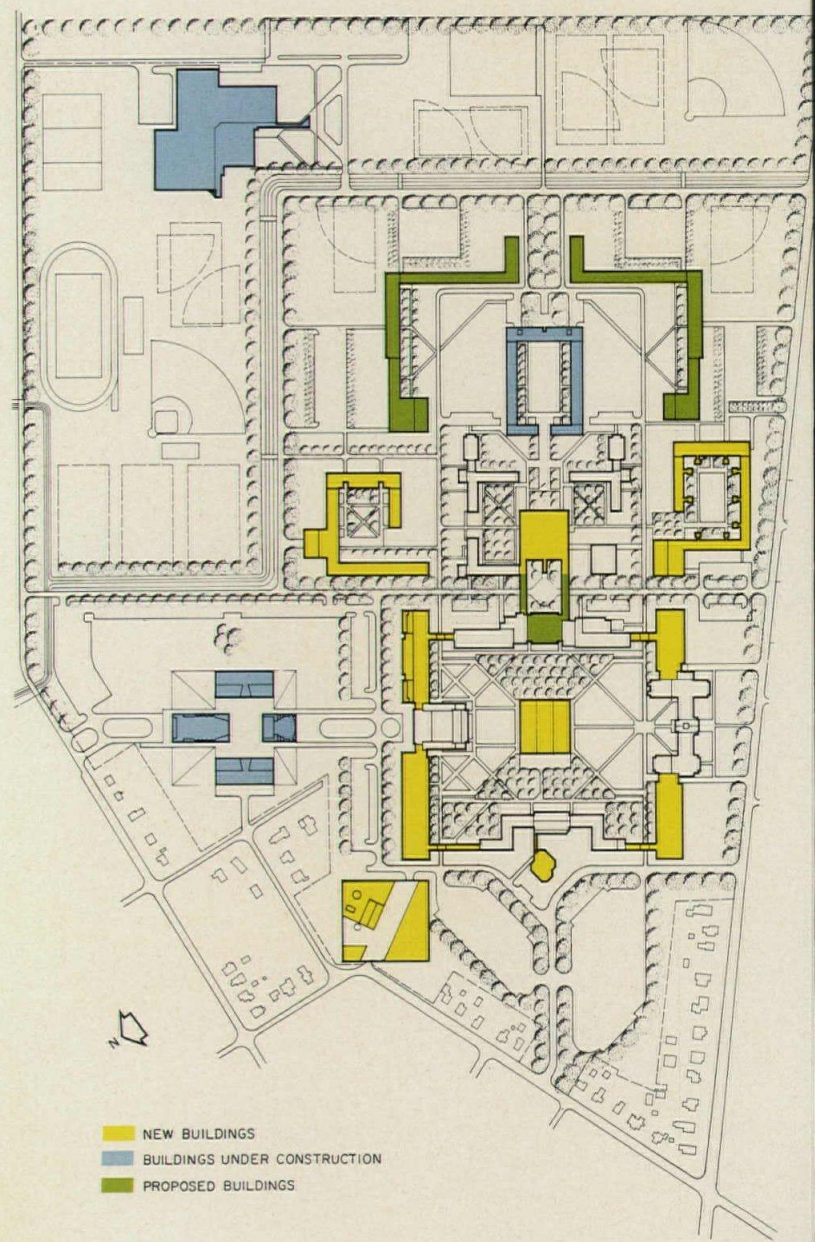
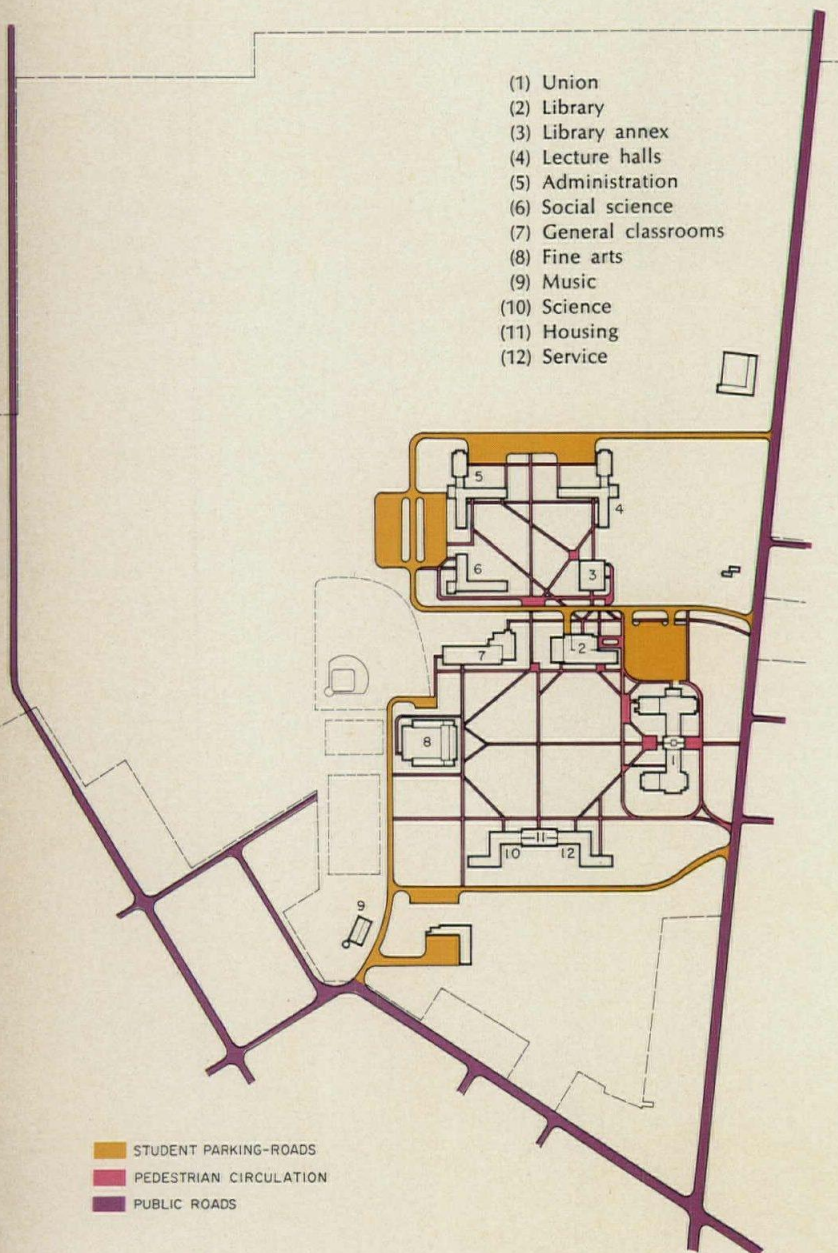
vidual buildings were to receive special architectural expression.

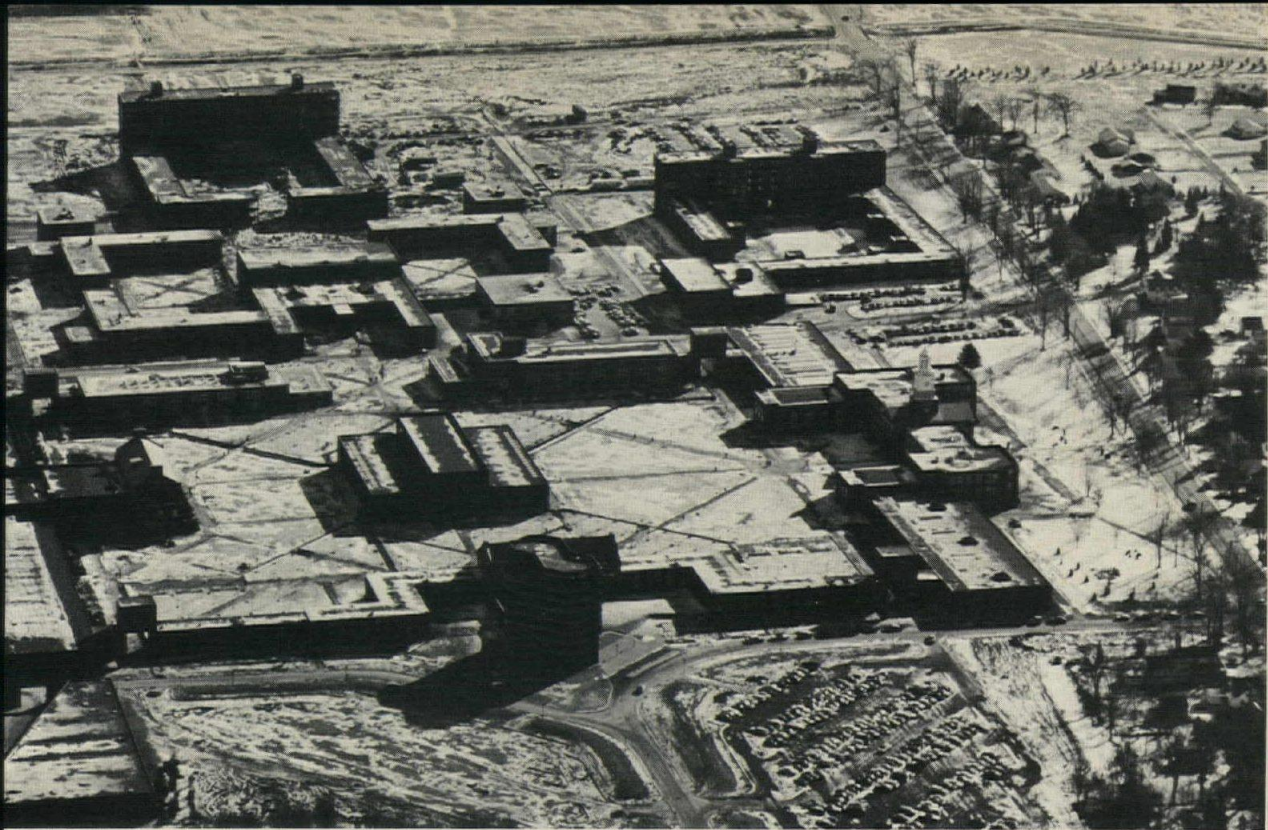
"Our solution for the general campus plan is both classical and logical. The library holds a functional and symbolic position at the center of the academic court and the student union is centered among the dormitories. The great central court has now been well-defined by the addition of low classroom buildings, all the same height with the same court facade, linking the colonial buildings together. It is possible to circulate from building to building indoors. At each of the four corners of the court are great open gateways which announce this whole complex as the academic core. The vast scale of the court is modified by the placement of the library at its center. What was origi-

nally an enormous space, leaking out at the corners, is now a tight outdoor room. The top floor of the library and the four gate towers are all at the same height.

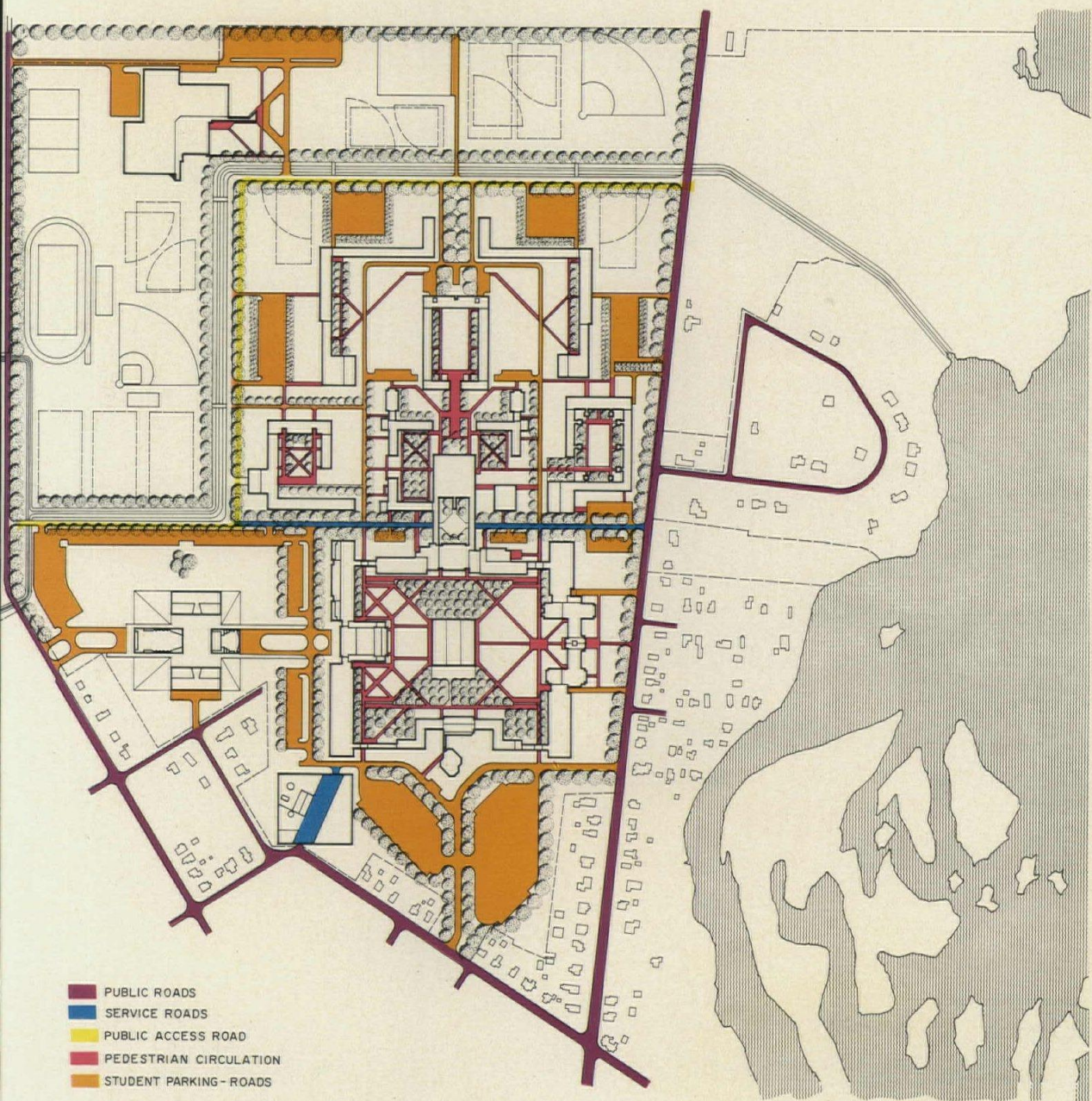
"The three new dormitories are an integral part of the total campus architecture. All have their own courtyards, all have low two-story wings that are the same height as the low classroom buildings of the academic court, all have identical high-rise blocks, each with a cantilevered top floor looking south.

"Outside the inner campus core formed by the academic courtyard and the dormitory clusters are an administration tower, a music center and a sports building. Because these buildings are outside the core area they were permitted a more free expression of their architectural form."





Nathaniel Lieberman, Todd A. Watts

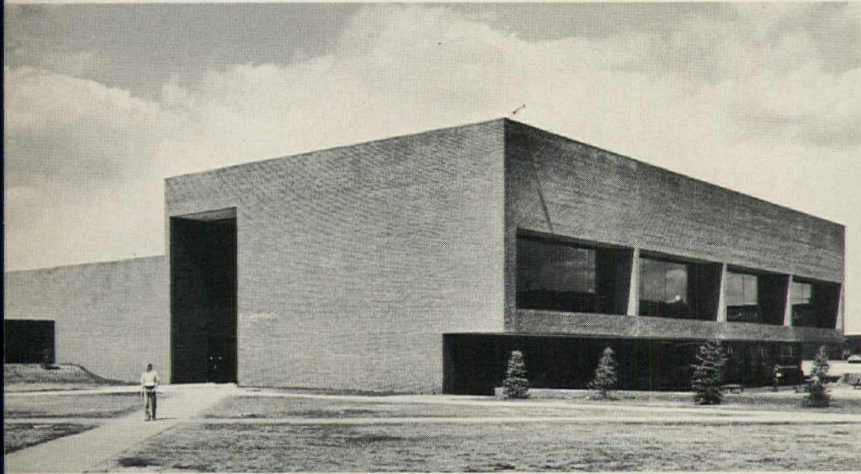
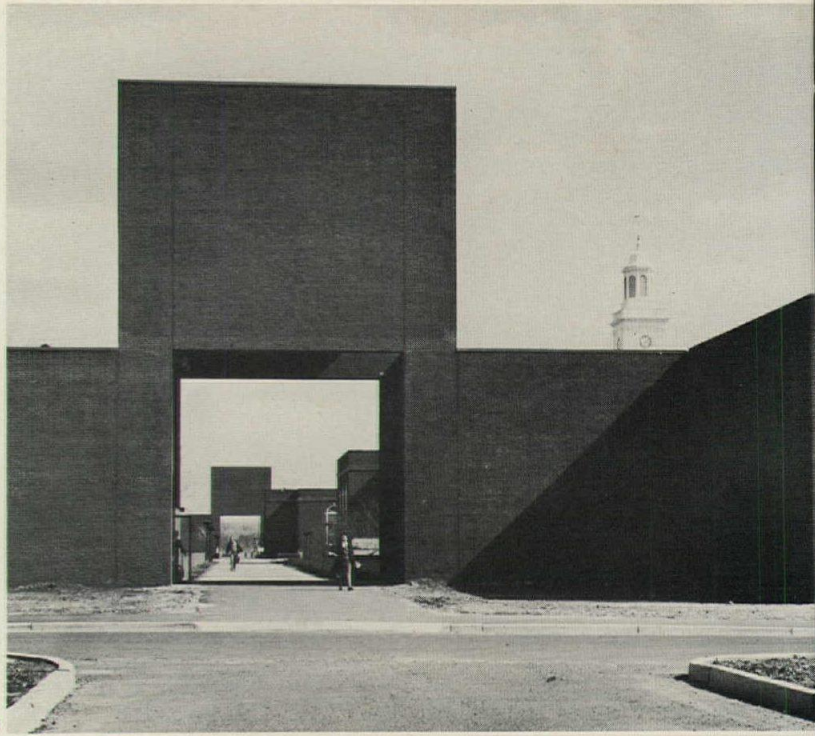


The entire Potsdam campus was to be designed within a set of rules established by Barnes

All the structures on this page were designed by the Barnes office. The gates (1), designed by Barnes in collaboration with Giovanni Pasanella when the latter worked for Barnes, occur at each of the four corners of the central court (plan opposite page). They were created because the court needed to be entered in a symbolic as well as functional way. Because they don't work as traditional campus gates—and don't close—they are curiously vestigial. Few, if any, precedents exist in the modern design vocabulary for such anachronisms as gates. Barnes acknowledges that he delved pretty far back into the past for those gates—to ancient Persia. Whatever their source—because they celebrate the act of entering and leaving the campus core—they are essential to the

expression of the spatial concepts of the master plan.

The gates also express the essence of Barnes' design vocabulary for the entire campus. The continuity of their brick surface is broken only by an essential function—the opening. In the student union (2), the library (3), the dormitory (4) and the classroom building (5) all the brick surfaces are interrupted only by essential functional openings. The gate opening is a simple rectangle, as are all the other openings. The gate's corners are clean and fine as a knife edge—as are all the other corners. The profile of the gate becomes vertical to express its "gate-ness." So do the profiles of the other structures play a subtle symbolic role by means of quietly enhanced architectural expressiveness. 1

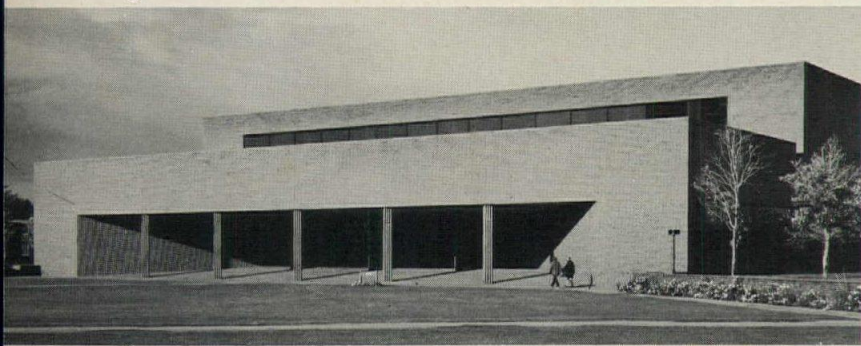


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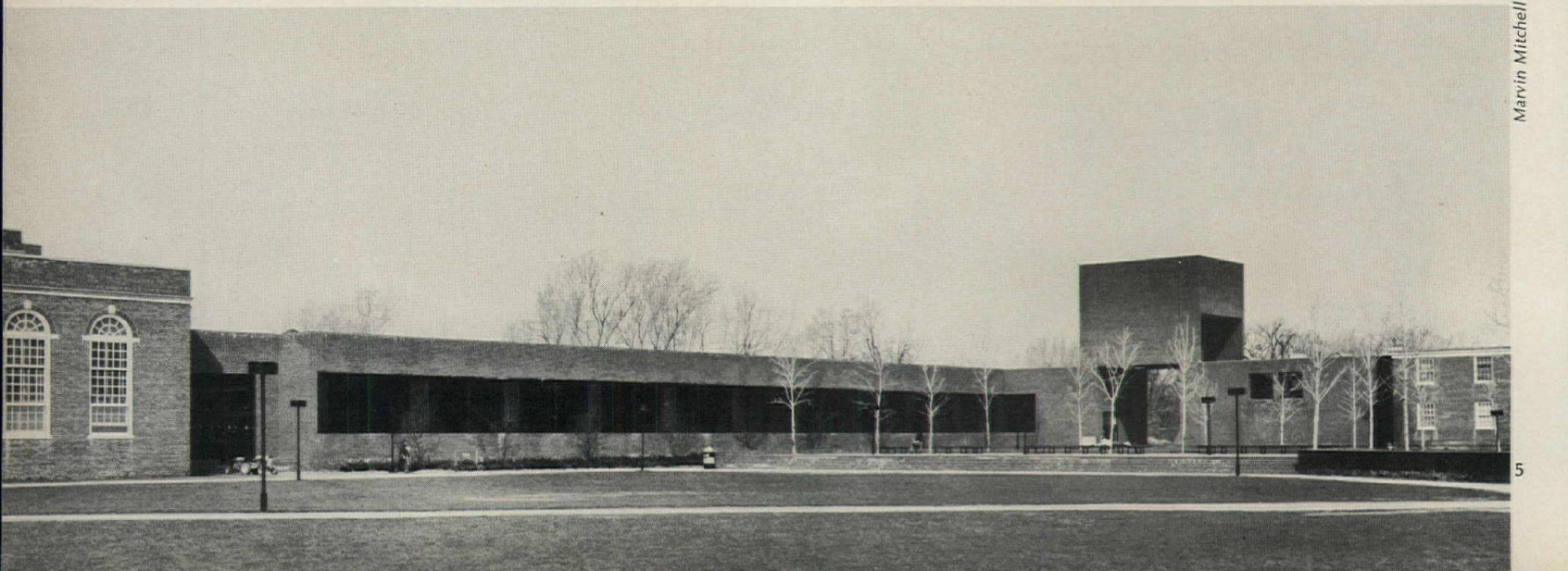


Marvin Mitchell

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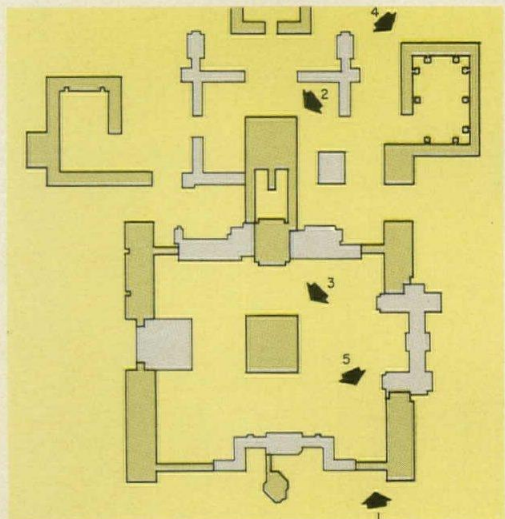
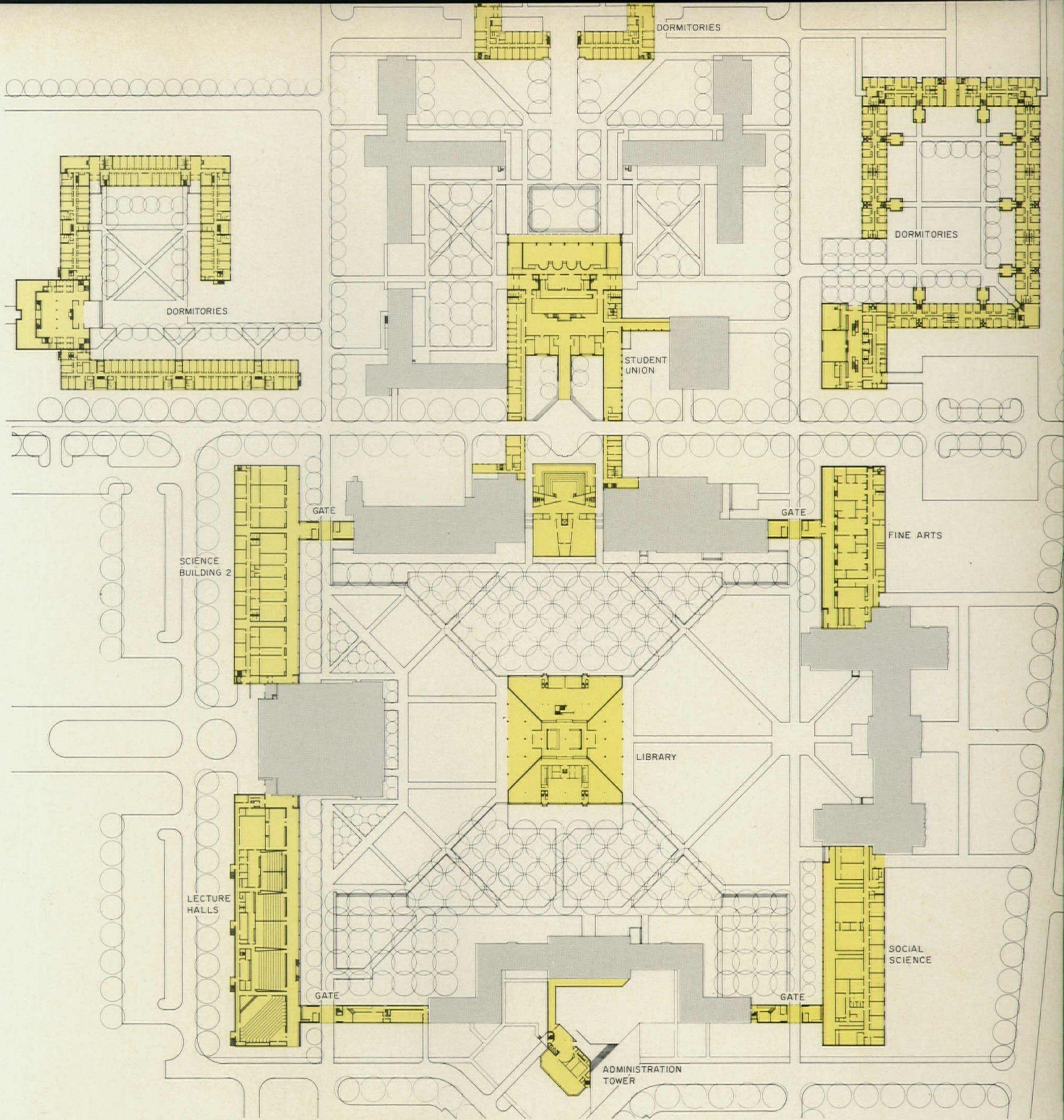


3



Marvin Mitchell

5



- 1) Campus gate
- 2) Student union
- 3) Library
- 4) Stage 11 dormitories
- 5) Classroom building and campus gate

The student union, like the library, is symbolically and functionally dominant both in axial placement and mass. The union is grafted into four existing buildings and two of its wings bridge the central crossroad. The concept is one of linking and uniting, rather than isolated placement. One face of the union looks into the academic court, while the other relates to the three new dormitory complexes each of which has about 600 beds and a dining hall. Although the programs for each dormitory group varied and the third group (partially indicated at the top of the plan) is by another architect, Joseph G. Merz, all three groups

are unified in design. It should be noted that dormitories like these will no longer be built by the New York State Dormitory Authority. The cost of construction now exceeds the Authority's funding capabilities and the level of rents students are able to pay. Further, during the ten-year period in which these dormitories were programmed and built, student life styles have altered radically. Students prefer to live in groups with rooms of their own and like to do their own cooking. In the future, much student housing will be provided off-campus by turn-key developers and at best will resemble Levittowns.

Barnes' design rules included an interior design vocabulary which not everyone followed

All the interiors on these two pages—except for the two photos of the Science II building corridor (5) and (6)—are in buildings designed by the Barnes office. The Barnes interiors have a certain quiet elegance in common. Their functions are contained within simple volumes, white plaster is used in generous amounts, and colors are muted. The student union snack bar (1) overlooks a small plaza within the dormitory complex. The large semi-circular enclosures break down the scale of the space, creating areas for study and relaxation which are extremely intimate and comfortable. The roof of the library building is the same height as the top of the entrance gates and this exterior dimension appropriately allows for a high-ceilinged, beautifully shaped main read-

ing room with clerestory lighting (2). The lobby of the student union (3) and (4) is a quiet background for the display of art.

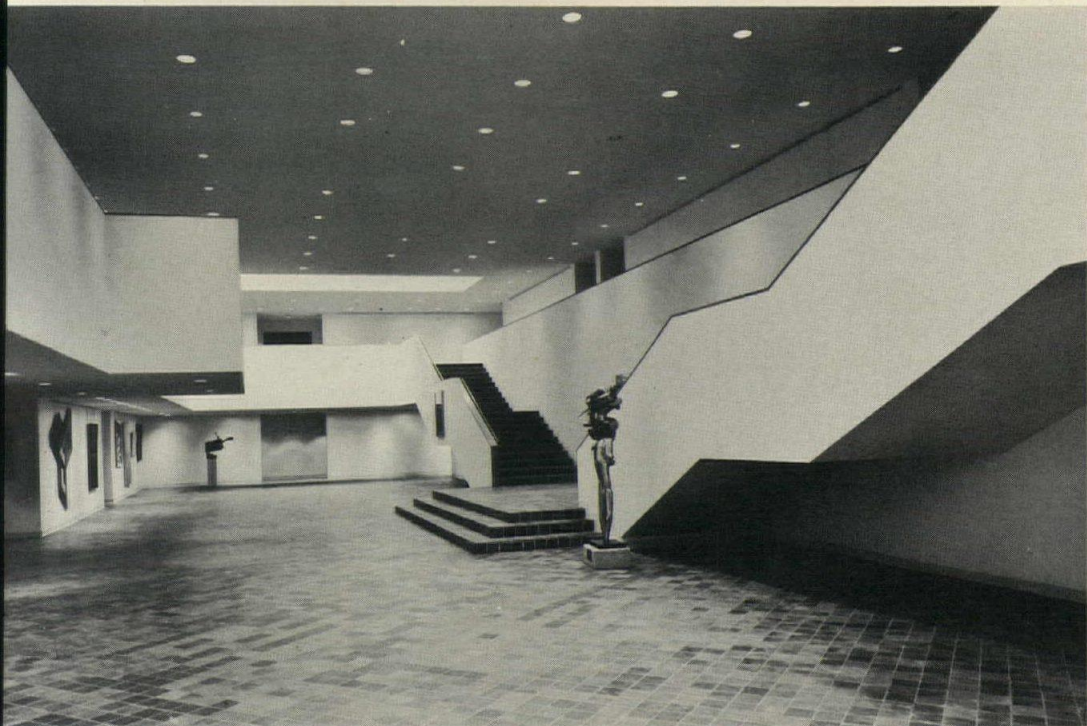
The Science II building was designed by Giovanni Pasanella and Joseph G. Merz after they left Barnes. The corridor reveals a design approach somewhat different from Barnes' esthetic. Concrete block is used instead of plaster, and the color accents are bold. The skylight, second-story hall, and the total corridor space interrelate in a dramatic and exciting manner as the section (opposite page bottom) indicates. The Pasanella and Merz interiors for the Science II buildings were really a warm-up for Pasanella's administration building (overleaf) which represents an even bolder break-away from Barnes' rules.



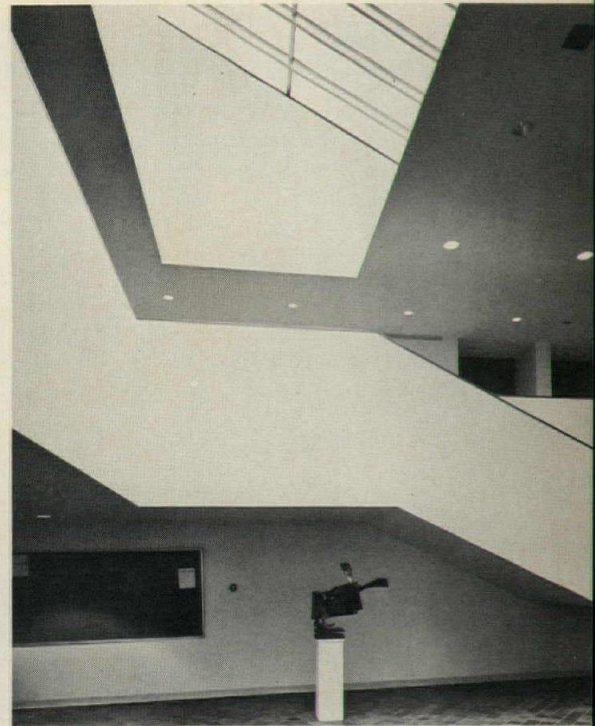
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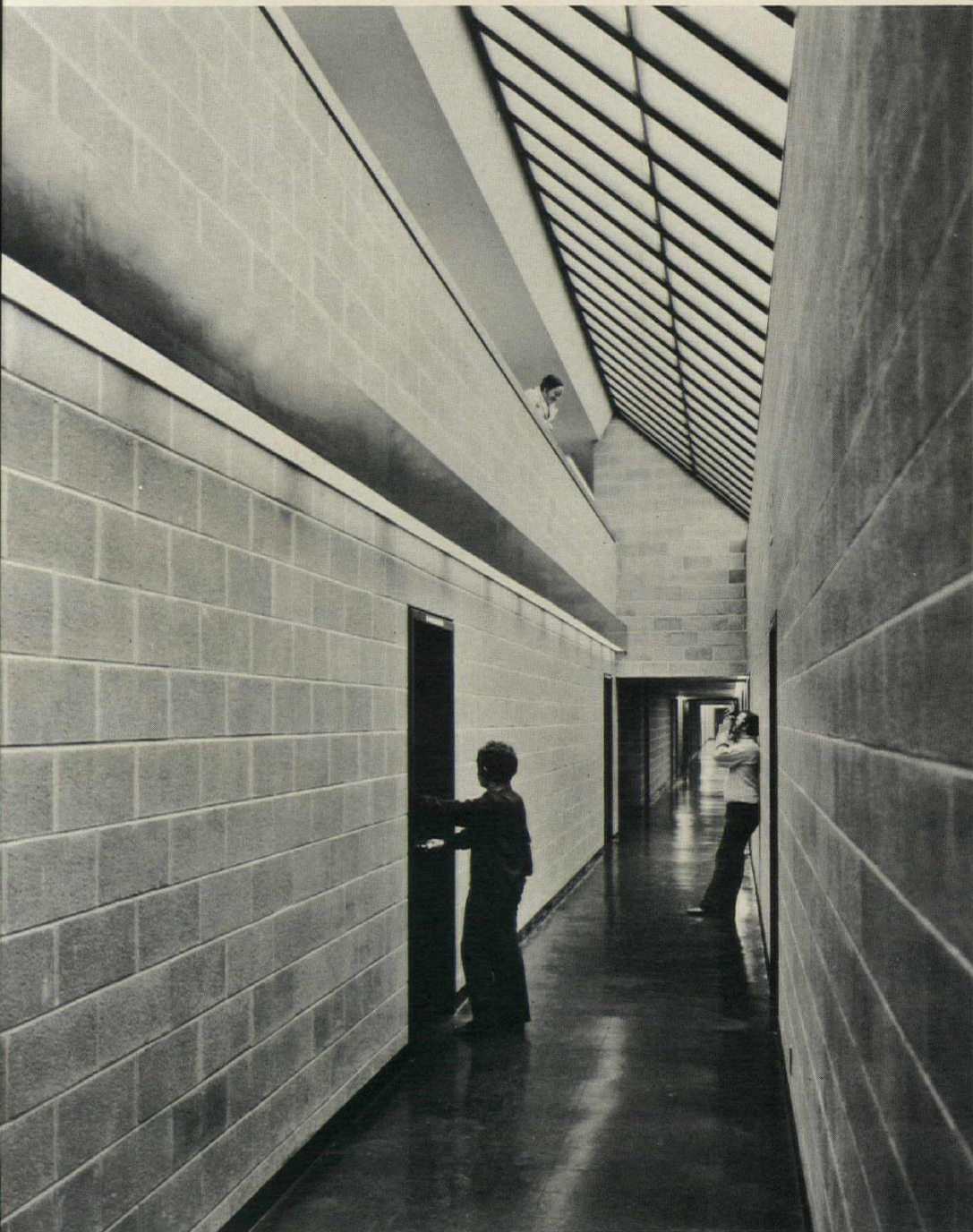
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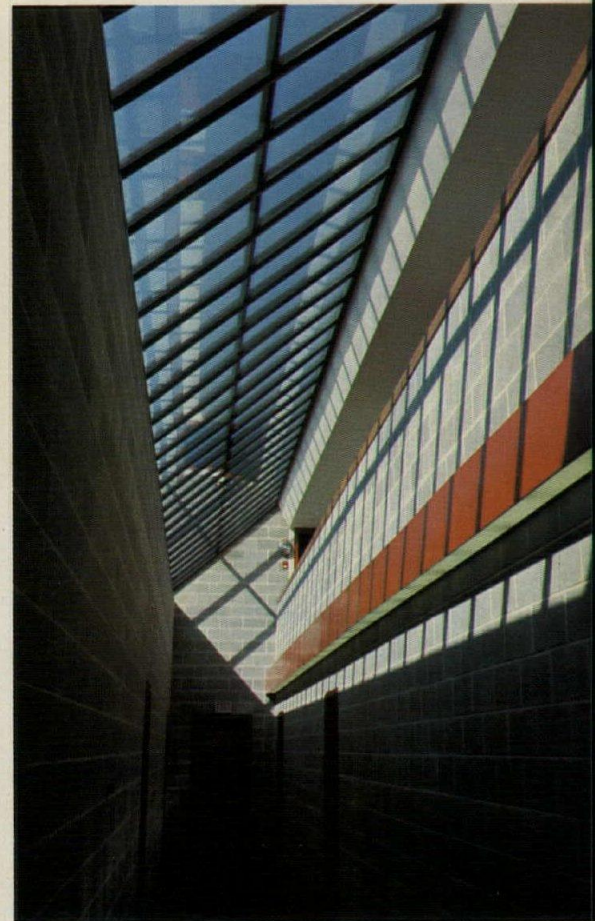
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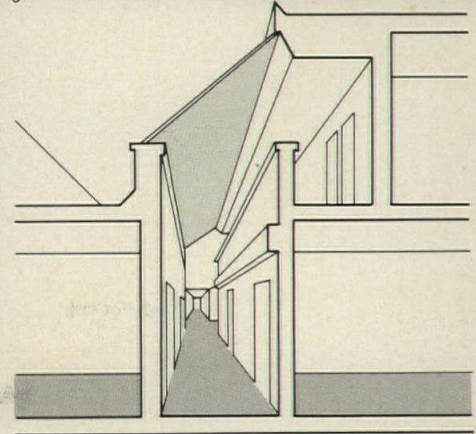


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6

Office of Giovanni Pasanella



The one that got away—Giovanni Pasanella's administration tower breaks some of Barnes' rules

This structure is the first at Potsdam to clearly emerge from a hand other than that of Barnes. The most obvious independent gesture was Pasanella's decision to express the edge of the floor slab rather than to cover it with brick. In plan the building is more complicated than one expects from Barnes, and another act of assertion is the handsome skylit arcade connecting the tower with an older pseudo-colonial structure. Barnes would probably have made the connecting link simpler in form. On the other hand, the design respects the dicta of the master plan by relating to its two principal axes and it obeys Barnes' wish that it be a low tower. In addition, the building's several facets reduce its apparent bulk.

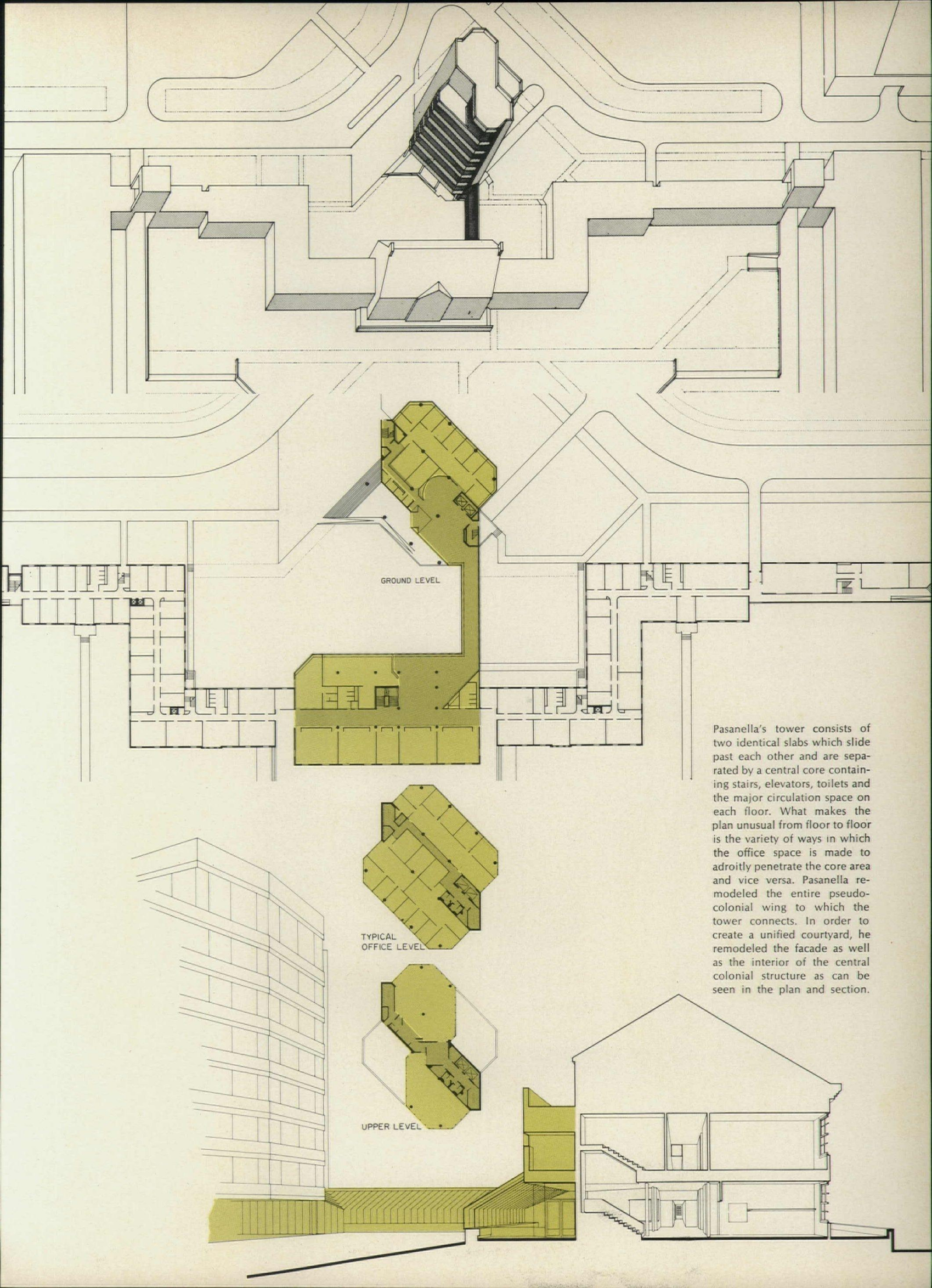
Architect Barnes always in-

tended that the Potsdam buildings which lie beyond the academic core should be freer in their design expression. These include the music center designed by the Barnes office and the health and physical education center by Richard Moger now nearing completion. Both are some distance away from the core and can with justification deviate considerably from Barnes' design decrees for the core. The administration building, however, is immediately to the north of the great courtyard. With the library and the student union it is one of the three principal nodes of the composition. For this reason, Pasanella's design should have conformed more to the vocabulary of these two key buildings than it does. The floor edges, as well as the spandrels, should be brick.



Office of Giovanni Pasanella





GROUND LEVEL

TYPICAL OFFICE LEVEL

UPPER LEVEL

Pasanella's tower consists of two identical slabs which slide past each other and are separated by a central core containing stairs, elevators, toilets and the major circulation space on each floor. What makes the plan unusual from floor to floor is the variety of ways in which the office space is made to adroitly penetrate the core area and vice versa. Pasanella remodeled the entire pseudo-colonial wing to which the tower connects. In order to create a unified courtyard, he remodeled the facade as well as the interior of the central colonial structure as can be seen in the plan and section.



Office of Giovanni Pisanella

The unusually handsome skylit arcade becomes an exterior wall of the lobby floor of the tower and of the first floor of the remodeled wing, adding to the spatial interest of these elements, bringing in more daylight and affording good views of the newly formed court. The usefulness of the pseudo-colonial structure is considerably enhanced by the generous addition of public space which the skylit area provides. In these spaces, Pisanella makes use of the white plaster walls and slate floors vocabulary to be found in most of the public areas at Potsdam. Furniture fabrics provide bright accents.



Office of Giovanni Pisanella

A GROUP OF BOYS LEARN ABOUT THEMSELVES THROUGH DESIGN AND BUILDING

by George Gardner

The Belmont-Villa Heights auto-mechanics center was built and occupied during the summer of 1968 by a group of black boys from the town of Belmont-Villa Heights in North Carolina under the direction of George Gardner, who was then a VISTA volunteer and is a graduate architect.

The design process, and the process of construction and management of the job was a vehicle by which a group of boys learned to know themselves a little better, learned to work together for the satisfaction and material accomplishment such work can provide, and came to understand a little more about the society in which they live.

Belmont-Villa Heights, in Charlotte, North Carolina, is one of six areas designated for redevelopment under the Federal Government's Model Cities Program. It is nearly be-

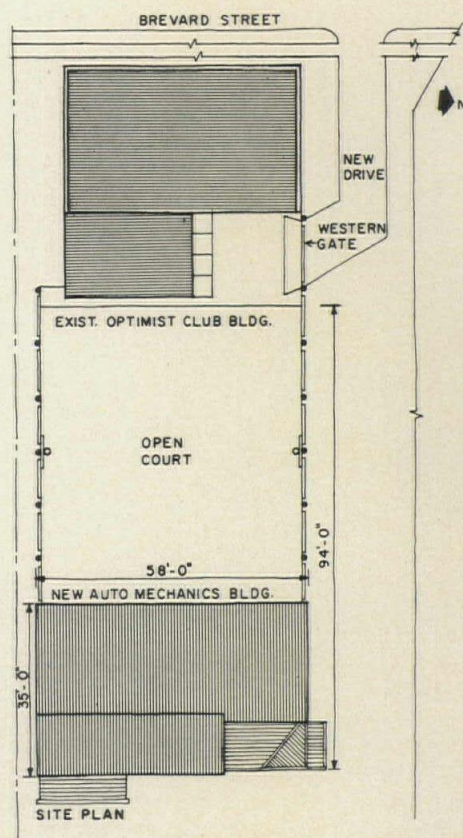
yond the transitional stage of a white community to a black community. Many of its residents come from the worst low-income areas, forced to move because of urban renewal clearance. Parts of the community are blighted, others are only beginning to show signs of decay.

As a VISTA volunteer, my task in this area was community organization—helping people gain the services due any community through the democratic process. My effort to fulfill this task during most of my one year in VISTA turned quickly into a more specific involvement: assisting 15 boys in the creation, planning and construction of their own clubhouse and auto center, where they now rebuild and repair their own cars. This was the Belmont-Villa Heights auto-mechanics center, the focus of our story.

From first conceptions of the center in May of 1968, to the beginning of construction, only two short months went by, and the

center took three months to build. During all these five months the project, of course, required hard political and technical work. Financed under the Mayor's Program for Youth Opportunity (a Federally-sponsored summer training program for youth) the project needed the cooperation of many city agencies and citizen bodies. The Reverend Walter Clark, who was a social worker in the neighborhood, I, and the boys themselves, all worked on this problem. As I was the only coordinator with architectural training, one large part of my task was mediating the boys' needs into drawings and plans, balancing the usual structural, mechanical and financial requirements along the way. But these issues are not what seem most important now: what is important are the social and personal attitudes activated by the project in the community, and activated by the project in the boys themselves. That is what I will emphasize here, as we watch the idea of a mechanic's center become a building.

During the planning stages, many people reacted to the boys' project: and often their reaction seemed aligned to the stereotypes we have come to expect in our society. To the "poor whites" of the surrounding neighborhood, the auto mechanics center was another government handout to the "blacks," or another attempt by the "blacks" to subvert the "whites." To the typical middle-class conservative, it meant simply keeping the Negro youth off the streets and out of trouble. To the more enlightened conservatives or liberals, it meant teaching these boys a skill. To the more progressive liberals, it meant giving the boys a chance to be proud of an accomplishment, and a chance



George Gardner photos

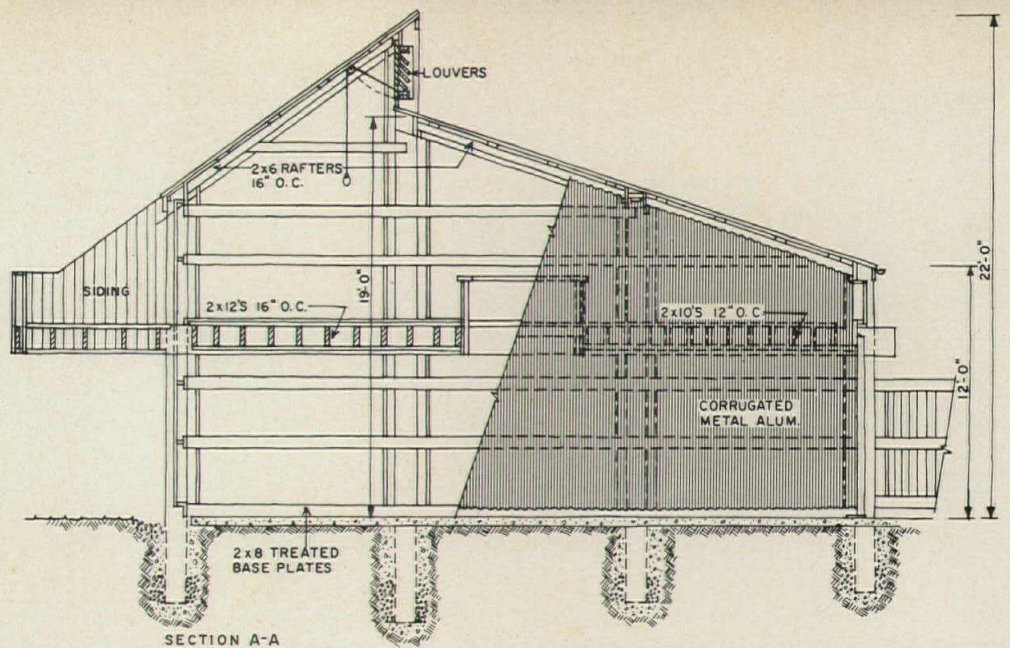
at directing their future. To the non-violent militants, it meant an opportunity for the boys to have complete autonomy in establishing their directives, and the opportunity to involve others of their race in the goals and objectives of community organization (it meant establishing the collective power of people to affect the decisions of their future).

To the businessmen and the contractors of the town, whose assistance we needed, the project must have looked like one more handout from their pockets. We did not receive many of the below-cost materials we sought from this group, although a few were sympathetic and helpful. The boys had the responsibility of convincing the Youth Board for the Mayor's Summer Youth Program that their project was a valid one, and that special appropriations should be made for the 15 boys who would be working on the project. The Mayor's Committee eventually agreed to pay the boys a small stipend for learning a trade.

Unquestionably the most difficult job in selling the idea of the auto-mechanic's project was convincing the boys that they would and actually could make this project a reality. While Reverend Clark and I had talked with the boys about what they wanted, and while we had created a model based upon their insights and recommendations, most of the boys could not truly believe that the project could get off the ground, let alone be erected by them. Since the group involved actually consisted of three "cliques" brought together, no over-all identity between all the boys—and the project—existed. In order to convince them that they could erect their own building, Reverend Clark asked *The Charlotte Observer*, the local newspaper, to do an article. But we sought to make it emphatically clear to the paper that the views expressed must be those of the boys and no one else's. In addition, the boys were given ten dollars (total) to set up and hold their own dance. By only allowing members to attend, they began to acquire an identity as a group, which they would need later to stay with the project.

Finally, with the site selected (an old Optimist Club Building that had a large concrete slab at the back of the structure for cars, a working heating system, and adequate plumbing), with the various community groups informed, and with the boys unanimously approving of the scale model and plans they had helped create, we were ready to begin the construction.

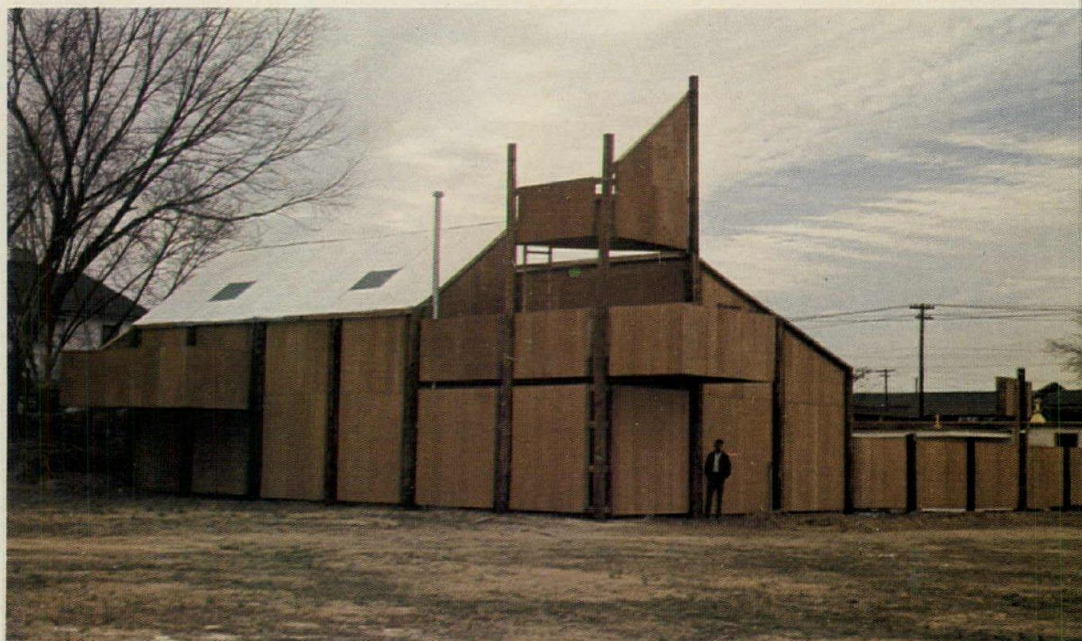
As the process of building started, the boys would hold their club meetings each week, and by painfully stumbling through parliamentary procedure, and the democratic process, they elected officers. In addition, problems that had been created during the week were discussed as well. Often Mr. Clark and I would excuse ourselves from the meeting to assure the maximum amount of autonomy in the decision-making process for the group. Often, very minute details would take hours



to be worked out, with the boys' ability to concentrate at a minimum level. Yet this slow and arduous process, totally new to the members, had to be developed for them to comprehend the concepts of group participation, and responsibility.

Antithetical to the boys' upbringing was the privilege of holding an authoritative role in the decision-making process. Far too often their mothers, or their teachers, or their former employers had entirely usurped this power. Therefore, the boys elected four foremen. These foremen not only allocated work, but could exercise disciplinary measures when needed. While the development as foremen proved to be particularly beneficial for the boys chosen, it created its own problems. Since the foremen were the same age as the other members, and had comparatively the same knowledge of carpentry (or

the lack of it) as the rest, they could not retain the respect of the other boys. The foremen had acquired no previous leadership training and they were awkward in asserting themselves with their peers. Most difficult for the foremen, as well as the entire club, was the disciplining of members who did not fully participate. In the early development of the project, the boys could not fully realize their roles, just as they could not comprehend the concept of self-discipline. When I asked whether I should be more assertive and more forceful, they all agreed I should be. This willingness to accept discipline and authority from one's elders rather than being responsible for it, seemed to be deeply and culturally entrenched in all their life styles. For me, it posed the extremely difficult problem of being the white authority figure, who did not want to assert his au-



Photos on these pages show the auto-mechanics center and clubhouse under construction during the summer of 1968. The building required only three months to complete using the unskilled labor of the boys themselves, plus a few technical assists with heavy equipment, as in

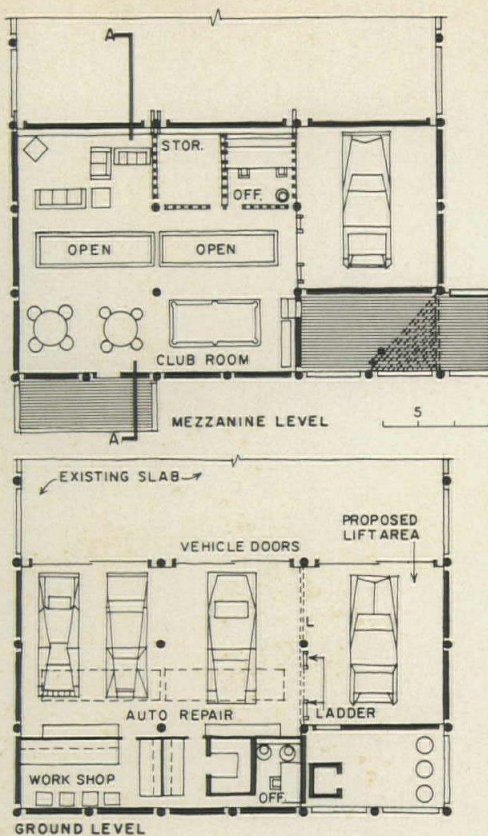
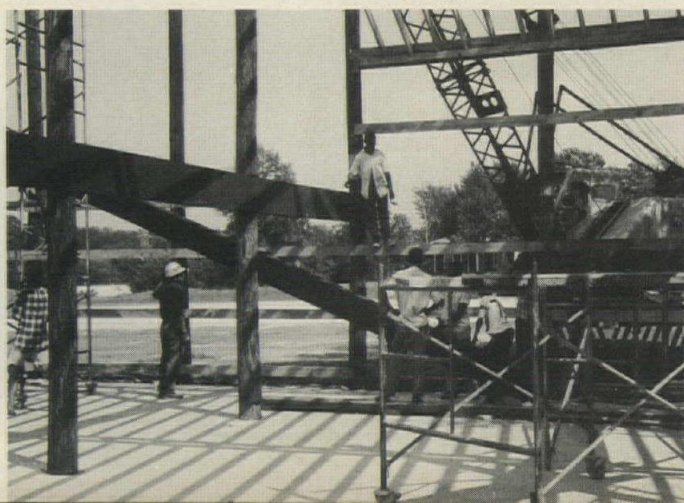
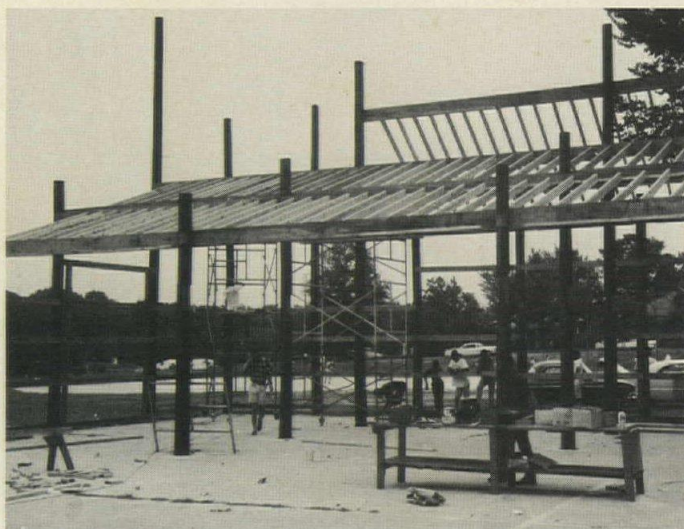
the photo at right. This summer—1972—the facility is still being used as a training center for the neighborhood, with courses taught by a nearby resident. The program is privately financed now, however, and Model Cities has taken its tools and equipment back.

thority, but who was in effect very much responsible for directing the project.

At best, these problems could only be solved by letting multitudes of mistakes be made. To further the idea of independence, authority and responsibility, one of the boys was chosen as my assistant director to have power above the foremen and be completely responsible for the project when I was not present. While potential leadership was strong, depth of experience was shallow. Obviously, inherent in the idea of having foremen was the development of this potential for leadership.

Almost all of the boys had difficulty with the decision-making encountered in carpentry, and with the confidence to tackle a problem they thought they were not capable of handling. Often the work consisted of the most rudimentary skills in carpentry, such as measuring, sawing and the process of putting two boards together, but these skills all entailed a certain amount of independent thought. Many times the boys would "stew" over basic carpentry problems, or make mistakes and would have to pull apart or do over the project they did wrong. Assisting when a boy was losing all self-confidence, we found most could complete the project on their own—and have the satisfaction of working the problem out independent of assistance. The learning process was through trial and error. The major goal of the project was to get the boys to look at a problem, to ask themselves what the problem was, to ask what the alternatives were from which they had to choose in solving it, and to resolve it. In short, the boys were forced to analyze problems unique to themselves.

Pitched roofs are a common architectural vernacular in the community, and all the boys wanted their building to have them. Also common to Charlotte are pole-supported wood frame warehouses. These buildings are cheap, easy to erect, and consequently that building system became the basis for the auto mechanics center as these photos show. There is no need for footings, as poles are simply set in the ground; then the slab is poured and framing begins on the walls and roof. The exterior is inexpensive wood sheathing, and Gardner brought light in around the poles, so they appear to stand free of the walls.



The actual building process was set up in three stages. The first stage consisted of the least difficult jobs, that of basically painting and cleaning up the existing Optimist Building. Here the club members could easily apply themselves without too many problems, begin to learn, cooperate and work together as a group, and realize an immediate result or reward for their efforts. Direct reward was constantly a problem, for in many ways the scale of the problems to be tackled were far

greater than any of the boys had ever experienced, and even greater than any their parents had realized. Consequently, there was the bewilderment and the perpetual fear of never seeing their efforts evolve into a real, tangible product. These feelings discouraged many of the boys and plagued the project with motivational problems. Paradoxically, the boys had an equally naive understanding of their limitations, and often presumed they were capable of doing more than they actually could. This presumptuousness was often reinforced by the group, which in turn would not adequately assume responsibility for accomplishing all that needed to be done. By working together, by making their own mistakes together, the "club" began to learn its limitations as well as its abilities.

The second stage in the building process was the erection of the fence and poles. Erecting the fence before the building allowed the boys to get used to the basic skills they would later apply to the building itself, such as cutting, measuring and hammering, without having to be overly concerned with alignment and craftsmanship. The fence was simply a continuation of the building frame structure and would acquaint them with the way the building was to be framed. The erection and alignment of the poles required a great deal of teamwork, and for the first time forced the boys to work consciously as well as closely with their teammates.

The boys worked five hours each per day and broke up into three shifts of five. Work started at seven o'clock in the morning and lasted continually until nine. A foreman on each shift kept a record of the time spent by each boy on his crew.

Architecture of this kind takes on new meaning. Where traditionally we have looked upon architecture as producing a kind of product, the kind of architecture produced here must be seen as a kinetic process and not as a product.

As indications of partial victories, I can look back to the time when one of the boys singularly defended the building in front of verbal attacks from outsiders, or the willingness of the boys to volunteer in their spare time to help freely to work on the building. Perhaps another encouraging sign is that at least two of the boys involved have gone on to junior college, majoring in auto mechanics. One evening some of the boys were enraged that some "undesirables" in the neighborhood might damage the building they had worked on so diligently for a summer. As the building grew to completion, this sense of proprietorship grew stronger. With the facility completed, there is now the possibility of developing the club into a self-perpetuating social organization. Other tools will become available and perhaps they may start a bicycle shop, or they may offer their services to the community. Further projects of this sort would not only reflect a great deal of prestige and success for the club, but would be an outstanding contribution toward black pride.

A SMALL CHURCH RESPONDS TO ITS COMMUNITY

Kirkville, Missouri is a town of 15,000 people about 200 miles from St. Louis. Like most small regional centers, its churches are an active part of community life; not only are there services and Sunday school, but pancake suppers, day care centers, Boy Scout meetings—and maybe even bingo games. The building of the new First Christian Church on these pages was an important event, and the architects—Anselevicius/Rupe/Associates—quite naturally describe their design as a dialogue with the community as a whole. They have also dealt creatively with the special liturgy of the church itself.

The bell tower (photo, right) is intended as a new landmark in the city, drawing people to it and placed on the most active corner of the site. It is turned at a slight angle to help “enclose” the raised court on which it is placed, and the court is the main entrance-way to the church. The exterior of the church is simple and residential in scale, to match that of the neighborhood around it. There are no spectacular forms outside; in fact, the whole design is focused inward to preserve its good neighborliness and respond to the active and noisy streets on two of its boundaries.

The entrance vestibule is low, with natural brick and soft browns to act in contrast to the main focus of the design, the sanctuary itself (opposite page). Here daylight streams in, the roof appears to float above the congregation, and the curved brick wall tries to avoid setting limits to the space. Anselevicius/Rupe have said the curved wall is one way of bringing the congregation in closer communion with themselves and with their minister, while still following a basically basilican plan. The brick walls of the sanctuary are painted white as a further suggestion of unlimited space and inclusiveness.

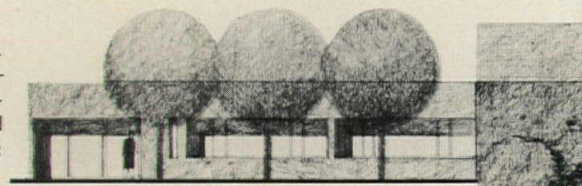
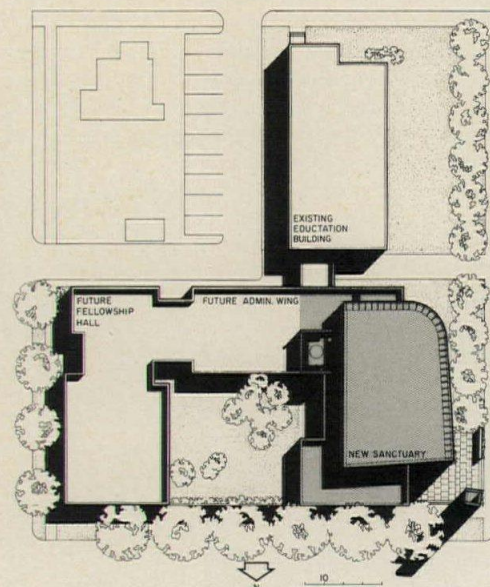
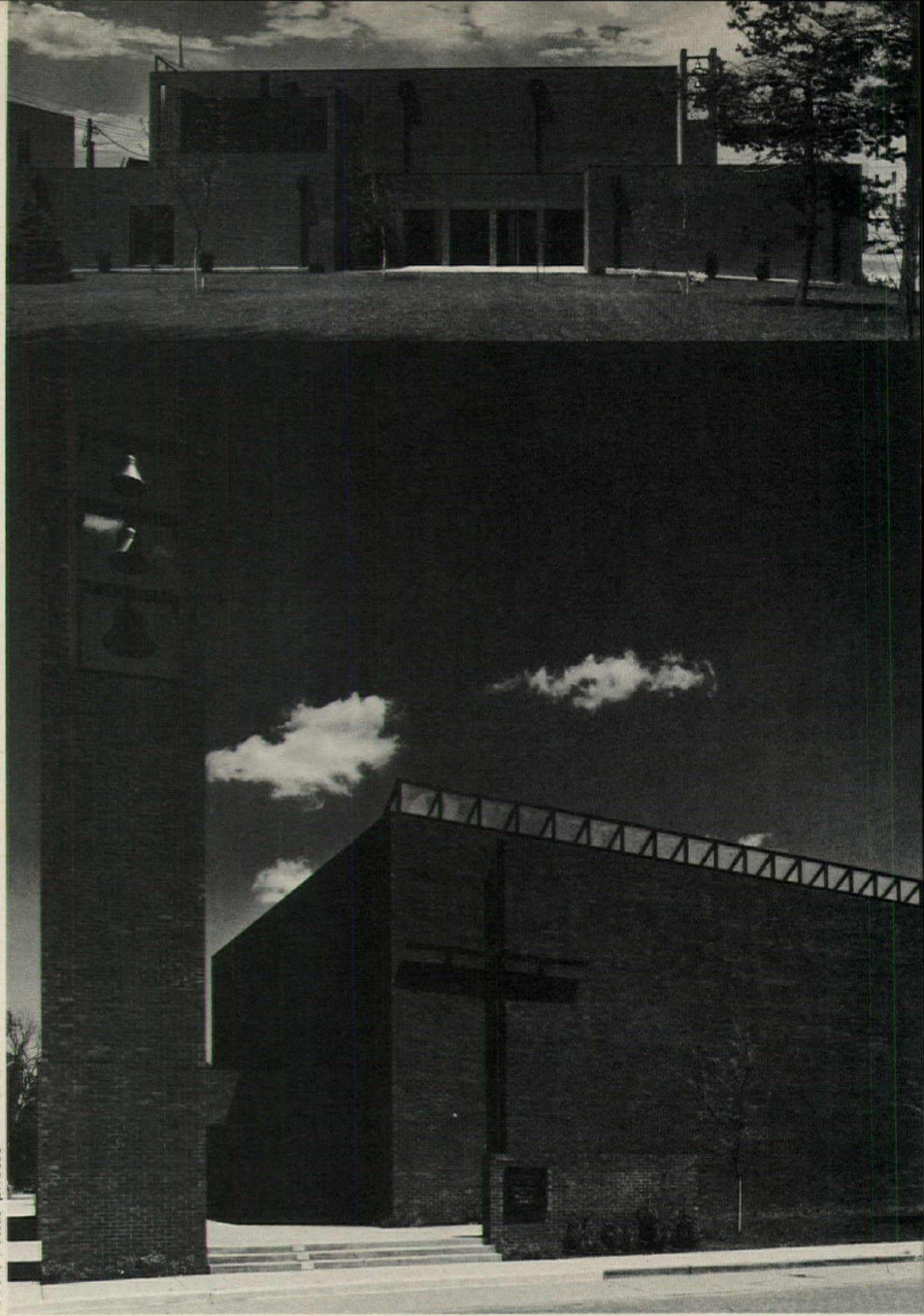
In the Christian Church, each new member of the congregation is wholly immersed as a part of the baptismal ceremony, and the architects here have made that part of the liturgy an architectural event. Immersion takes place within the sanctuary, not behind it as in many Christian churches, and in the center of the chancel space. The people to be baptized first walk down into the baptismal pool using the corridor behind the chancel, then out into the sanctuary through special doors behind the altar (see page 95).

Plants have been set on the congregation side of the pool. (Photo, opposite.)

The subsidiary spaces of the new church expand the usefulness of the whole property. The major side aisle of the sanctuary has windows looking out on a garden, which will become a quiet and sheltered courtyard when the future administration wing is built (see site plan). The sanctuary can be opened to the outside from this wall. The older education building is still in use on the site, and can be reached directly from the rear of the church. A coat room and a lavatory are located adjacent to the narthex, and can be converted into a bride's room by sliding doors. The choir has a dressing space near the rear of the church, and the choir loft is above the narthex within the sanctuary. The new church is a quiet building in its small-scaled neighborhood setting, meeting the complicated functional and emotional needs of the community it serves.

FIRST CHRISTIAN CHURCH, Kirkville, Missouri. Architects: Anselevicius/Rupe/Associates. — Charles R. Nash, project architect. Structural engineers: Thatcher and Patient, Inc.; mechanical and electrical engineers: Londe-Parker; contractor: Irvinbilt Co.

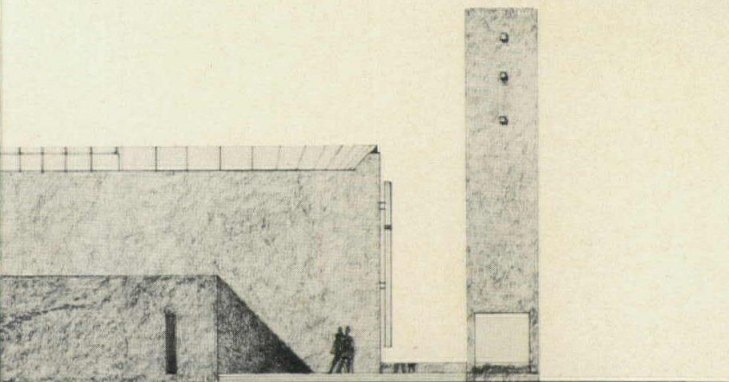
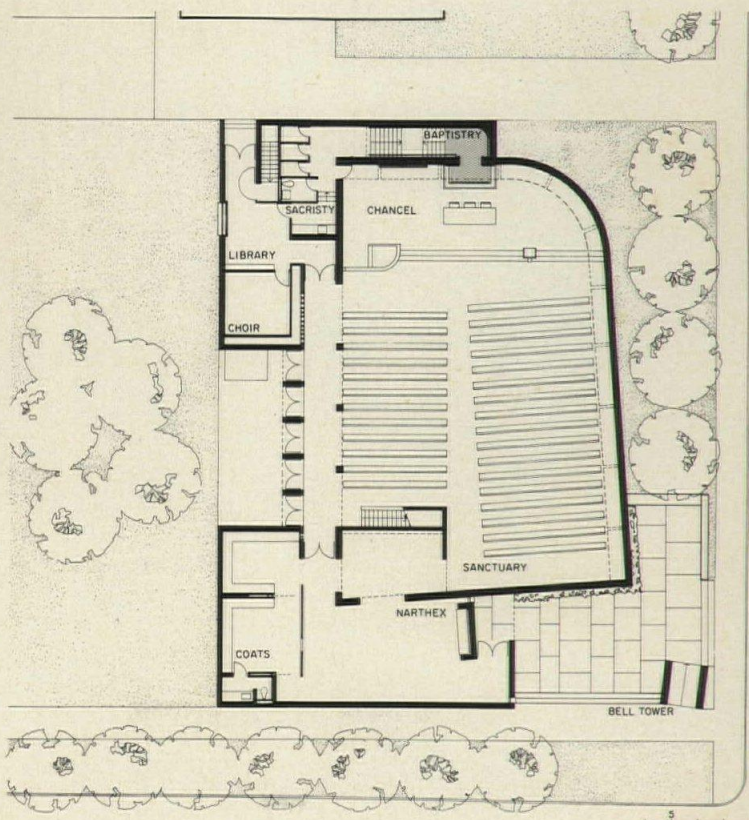
Robert Pettus photos

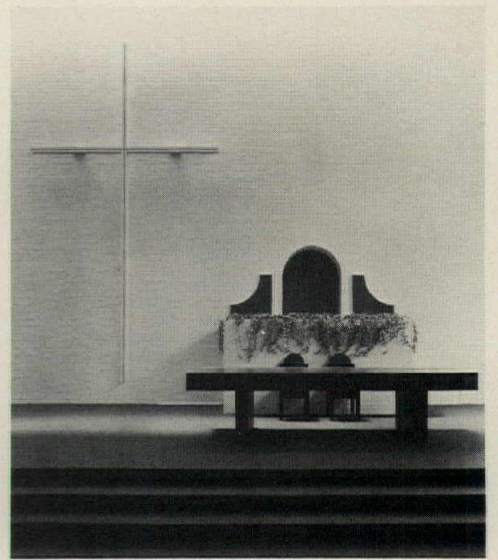
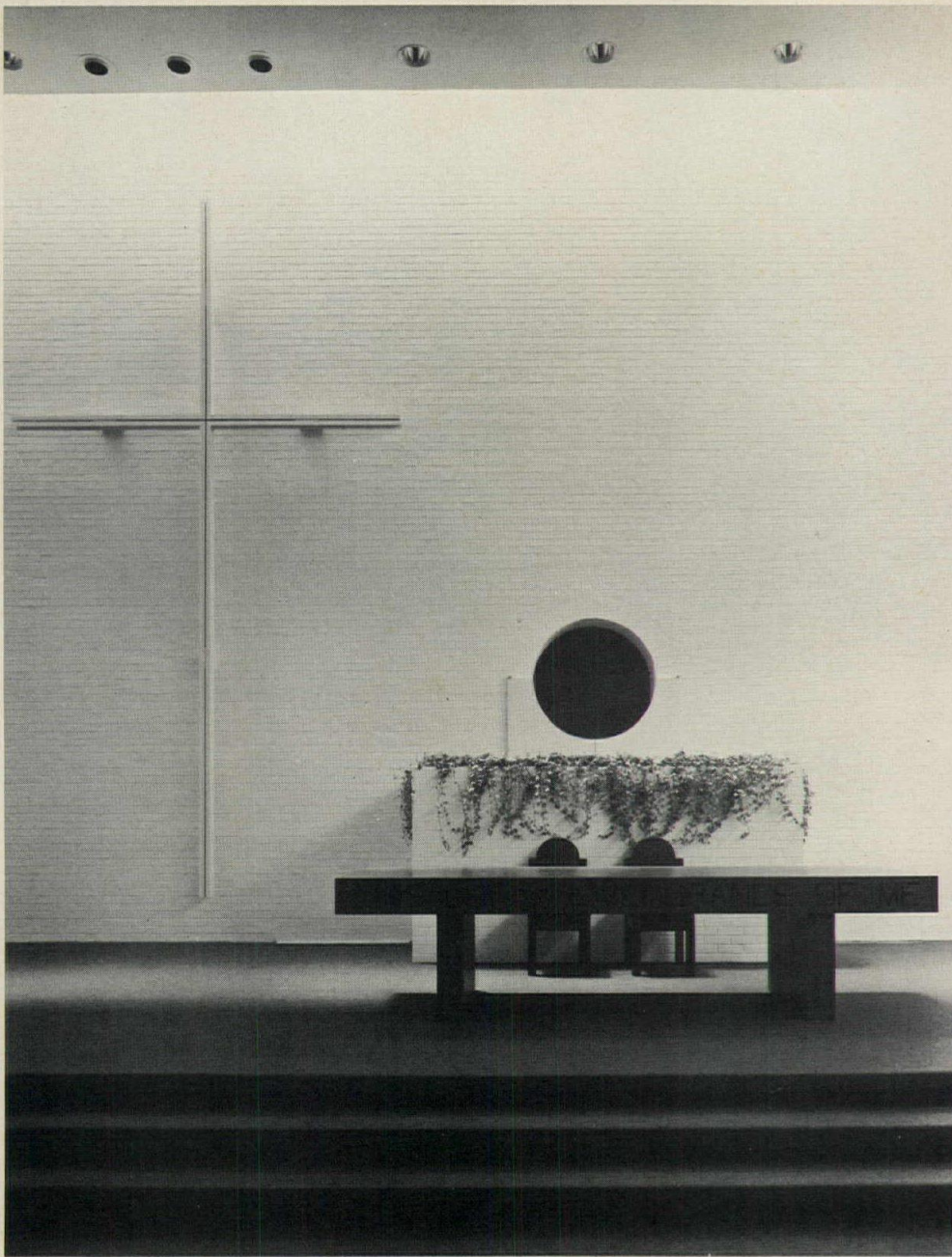




The photo (top, left) is a side view of the First Christian Church in Kirksville, showing the area of the open court which will be created when future expansion takes place (as in the site plan at left). The skylight running around the major curved face of the sanctuary is also visible in the photo (above, left) and is an important architectural feature. It admits brilliant daylight (above)

and is visible as a kind of "crown" to the church at night. It is made of acrylic plastic in anodized aluminum mullions, and one face of the skylight is frosted. Materials for the church as a whole are dark brown face brick outside and on many surfaces inside, except the sanctuary, which is brick painted white. Ceilings are painted drywall and floors are concrete, with carpeting.





The baptismal pool is placed behind the altar, and a white cross set in relief on the white brick wall completes the simple furniture of the chancel. When the baptismal pool is in use, the two doors (which help form a dramatic circle in the wall when closed) are opened to reveal the brick archway into the pool. The inside of these doors is painted a bright blue to match the blue behind the archway, forming a surprising new pattern on the white wall, as in the photo above.

A street in front of the church (photo, left) contrasts with the serenity of the interior.

THE EVOLVING URBAN ARCHITECTURE OF DAVIS, BRODY & ASSOCIATES

Lewis Davis, Samuel Brody and Alan Schwartzman all live by choice in New York City's inner core. Their concerns are the concerns of urban dwellers everywhere: more housing, better housing, better community facilities, less crowding, better outdoor facilities. Most of their energies, though, are absorbed by the enormous difficulties of building well in a city that often seems indifferent to quality and hostile to all efforts at improvement. In a working environment that has discouraged many other architects, Davis, Brody & Associates has been willing to patiently experiment and learn from the diversity and turbulence of the city. The office has worked within the limited construction vocabulary—flat plate and brick—which in New York City is almost universally used because it is inexpensive and the labor force has become very good at it.

All of its housing projects have been tough-budgeted. But the firm has clung stubbornly to the idea that our environment need not be petrified by rising costs, limited space, or an entrenched bureaucracy.

HOUSING

Riverbend is the first of the firm's urban housing designs. Undertaken in the mid-1960's, under the auspices of then-HDA administrator Samuel Ratensky, the project includes 625 middle-income cooperative apartments and was completed in 1967 at a cost of \$11,500,000. Riverbend employs both high- and middle-rise units distributed across a tight triangular site fronting on the Harlem River. An elevated access road to the Harlem River Drive cuts the site cruelly in two (photo below) and governed the fundamental grouping of buildings.

The design concept stems from the decision to use circulation galleries at every other level (photo below) which provide access to individual duplex apartments by



Norman McGrath

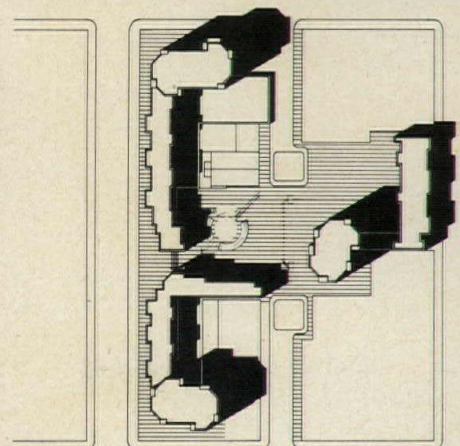
Riverbend

way of a public outdoor space that opens to small entry terraces—an idea that recurs in modified form in later designs. Landscaped plazas furnish additional outdoor space and serve visually as connective tissue between buildings. In what was to prove a design trademark, Davis, Brody included 10 different sizes of apartments in the building.

East Midtown Plaza is located at the south end of a large renewal area that extends from 23rd Street north to Kips Bay between First and Second Avenues. Phase I, comprising 512 apartment units plus shopping, presents a continuous facade along 23rd Street, interrupted only at mid-block by an entrance, and anchored at each end by a tower (photo and plan right). Like Riverbend, it is a middle-income cooperative designed within the



East Midtown Plaza



All photos by Robert Gray except as noted

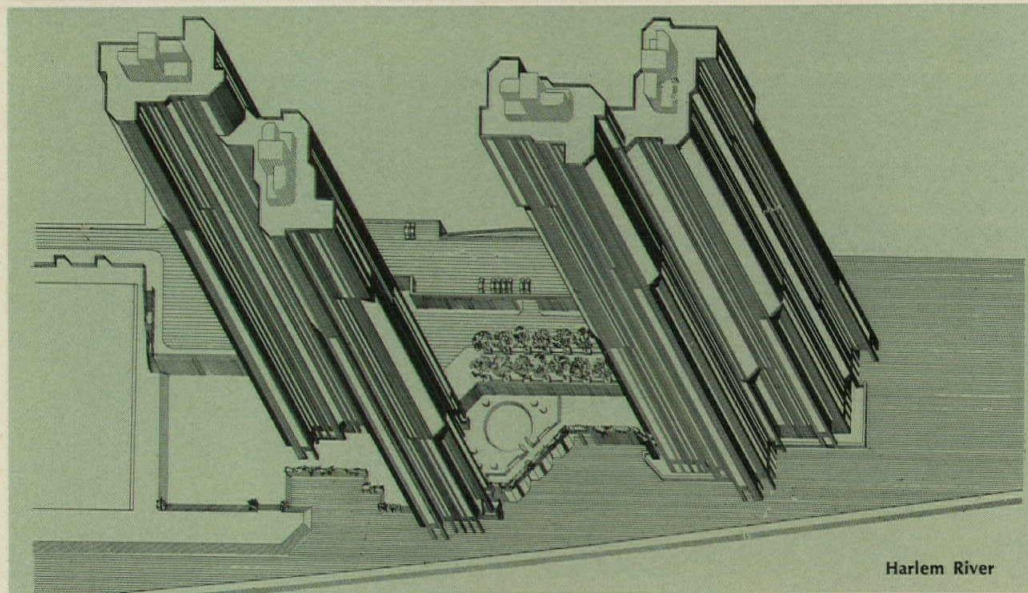
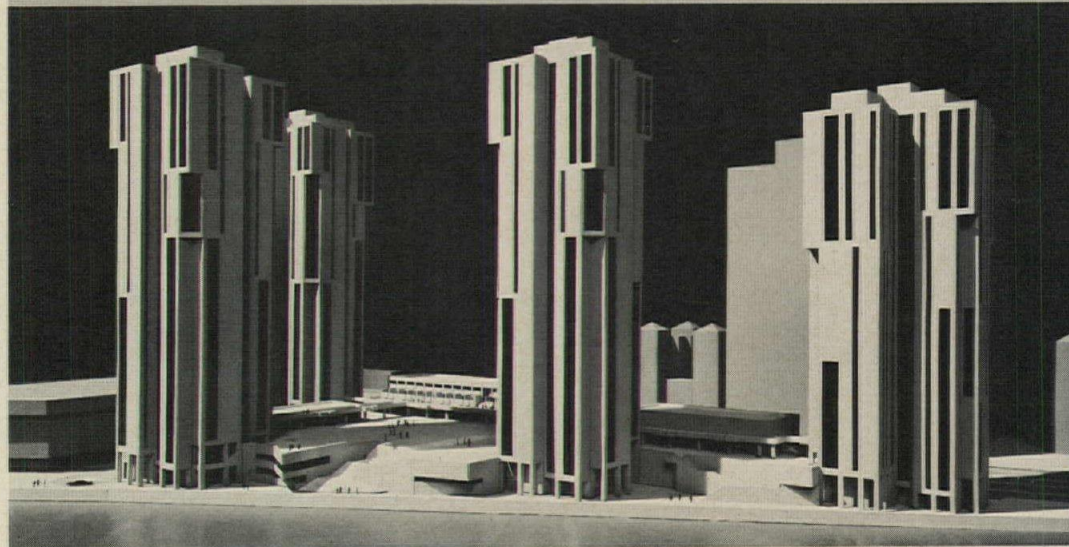
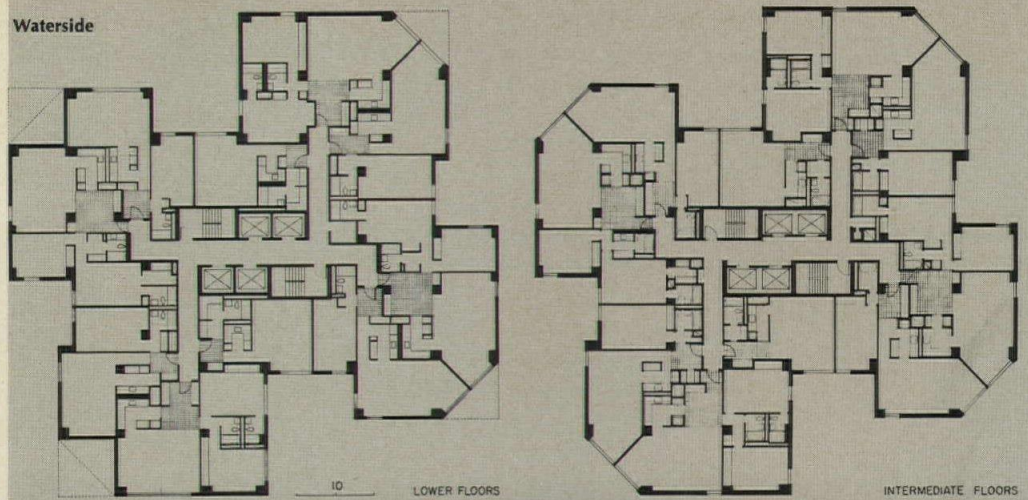
existing street grid and erected using standard flat plate techniques. Here the Riverbend access gallery has been modified and enlarged to create a series of raised outdoor spaces that overlook a central, handsomely landscaped, public mall. Private balconies, on the opposite side, overlook the street, and give strong sculptural interest to the facade. Elaborating on these and other Riverbend ideas, in terms of its massing, its refinement of scale, its sculptural faceting and definition, East Midtown Plaza is a strong step toward new flexibility in high density urban housing.

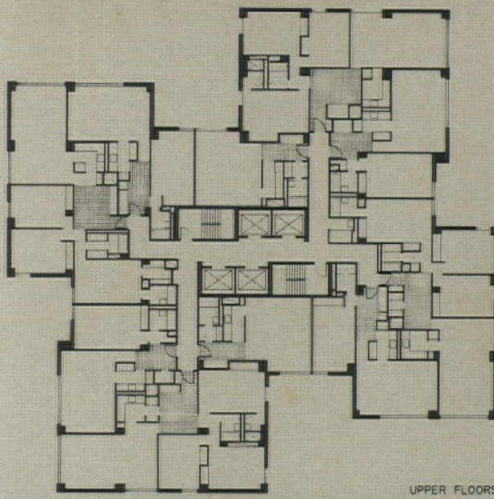
At Waterside, the architects had an opportunity to develop a Mitchell-Lama community outside the existing pattern of city streets. Building on pilings and a precast deck to create a site beyond the Chinese wall of the East River Drive, the architects combined housing and recreational elements in an effort to bring activity to a long neglected waterfront area. The plan, when complete, will include 1480 low- (rent supplement) to upper-middle-income rental units and 90,000 square feet of commercial and professional space. A large plaza facing the water is designed for public use and opens in a series of broad steps to inviting riverside promenades which it is hoped will extend to other riverfront projects. To open the vista, the architects developed a slender tower profile and emphasized this verticality with strip fenestration. Here, they began working with transformation and rearrangement of a variety of apartment plans to develop the striking tower shapes and silhouettes that have now become a Davis-Brody trademark.

Harlem River Housing is the first UDC-sponsored renewal project the firm has under construction. Again the site is decaying waterfront property cut off from its East Bronx parent community by Penn Central trackage and a high-speed expressway. Again, the master planning (by M. Paul Friedberg & Associates—see RECORD, April, 1971) envisions a mixed use community that includes 1650 units of moderate- and low-income housing grouped in two pairs of vertically articulated towers—a more economical siting variation of the Waterside towers which, nonetheless, creates a strong pedestrian entry mall. The housing plan provides a new bridge spanning the rail and motor barriers and tying the new community back to the old. Just off the bridge will be a new school, to be built utilizing air rights over the tracks. Other important amenities will include a state park, a day care center, a marina, retail stores, a community swimming pool and a rich variety of landscaped courts and plazas.

Lambert Housing is rising near the zoo in Bronx Park. Because the surrounding community is largely low-rise and low-density, the architects here planned a series of 731 four-, five- and six-story middle-income units

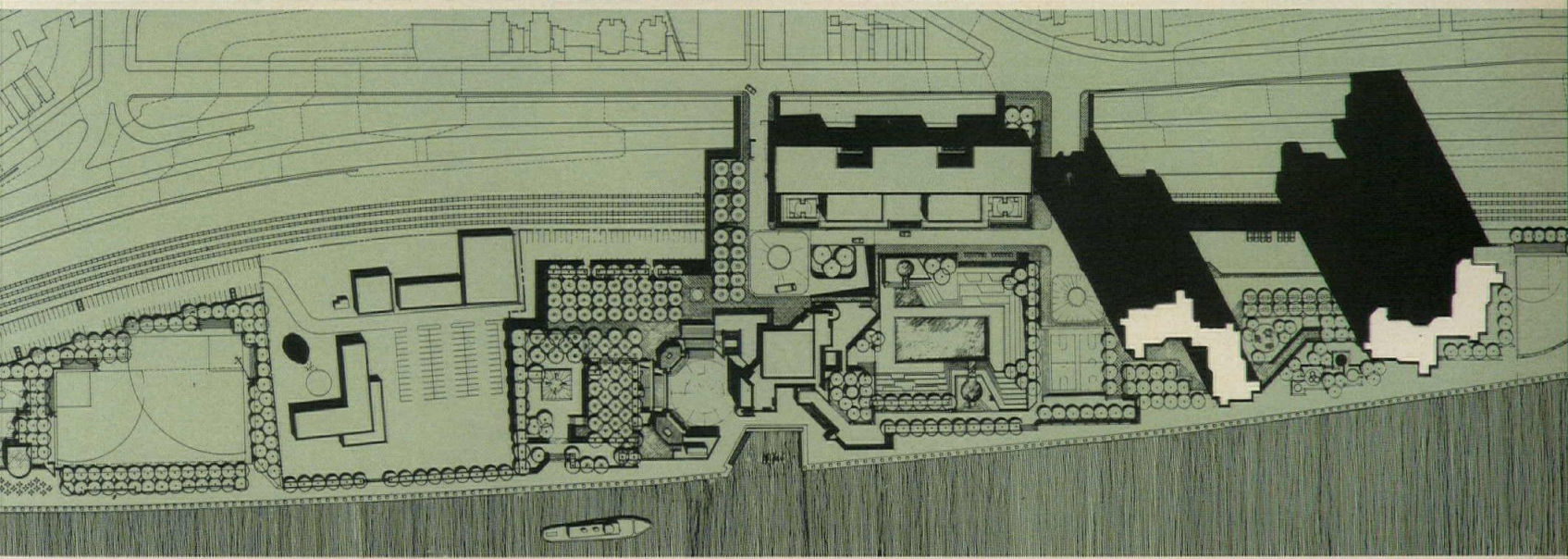
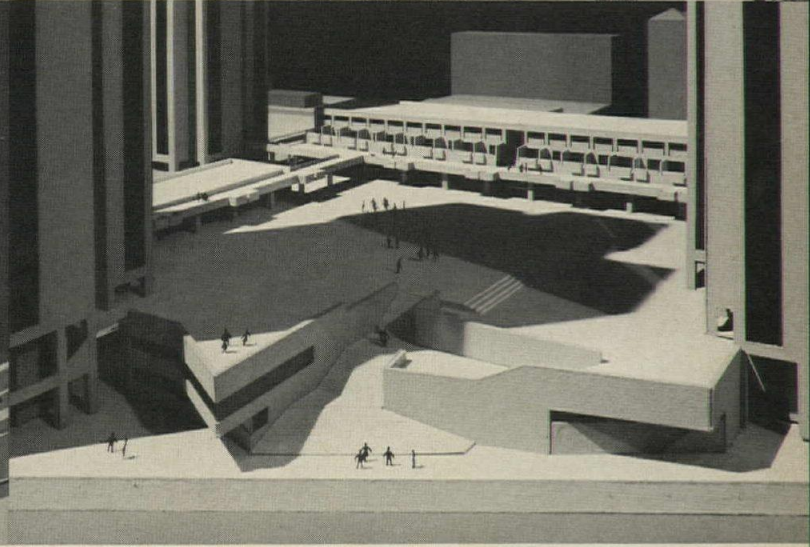
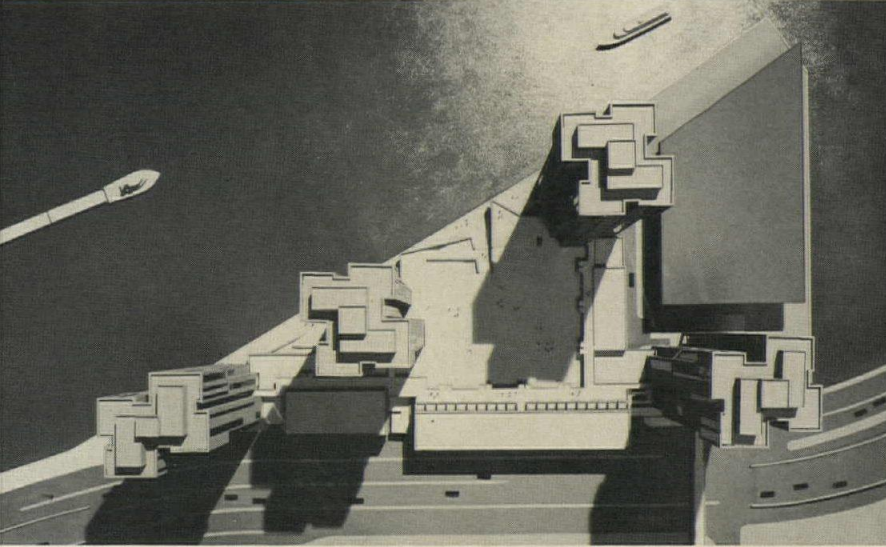
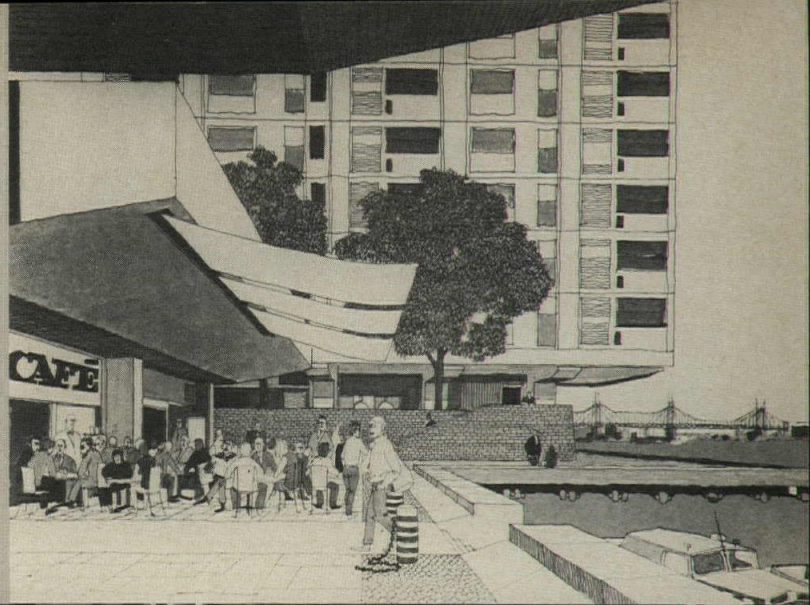
Waterside





UPPER FLOORS

Both Waterside and Harlem River Housing were developed outside the grid pattern of city streets on waterfront properties either created for the purpose or rescued from deteriorating, marginal use. Each project treats the waterfront as a neglected public amenity urgently in need of development. Many New Yorkers have forgotten that they live on an island. Waterside and Harlem River Housing may help some of them remember.



under FHA 221-D3. The apartments are larger (many are duplex) and include a high proportion of three- and four-bedroom units. The grouping of buildings (see page 99) creates a flow of plazas and play yards, and, the architects hope, "a friendly edge to the park." At Lambert, the architects were permitted to use non-fireproof construction and employed both wood joists and a single-wythe masonry bearing wall section, employing 8" by 10" by 8" brick extruded with an integral grip for ease of handling.

2440 Boston Road, in the north Bronx, is a departure from earlier projects in several significant ways. Again, working with the New York City Housing Authority, the architects have planned 235 low-income rental units with the preponderance designed for the elderly, again in a tower configuration because the site was relatively isolated.

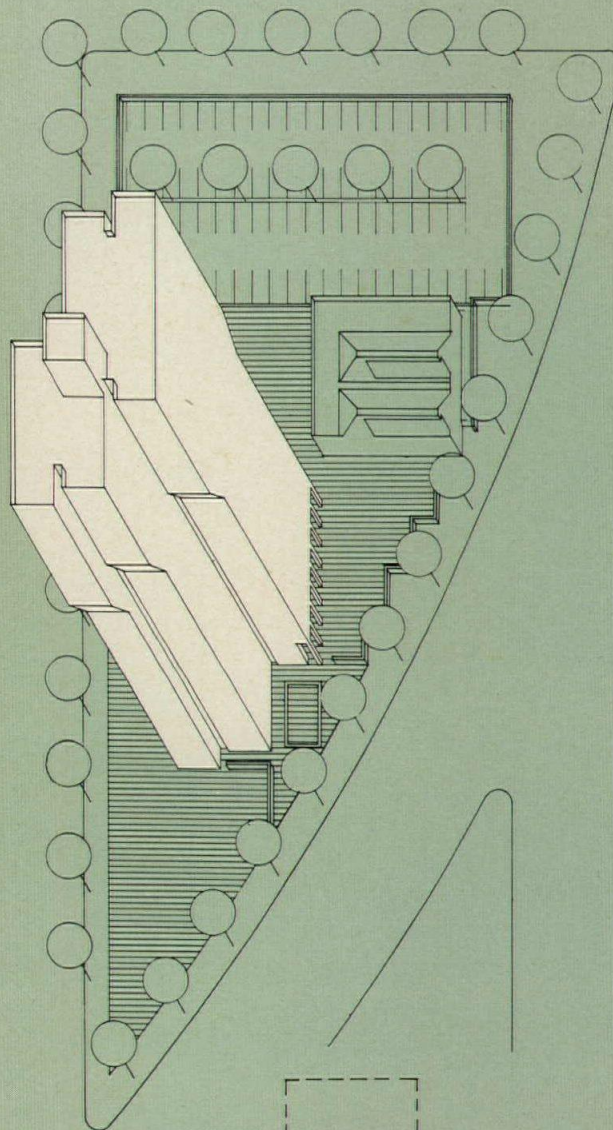
The new form and silhouette of this building was created by pouring the slab in a stepped configuration—creating three rectangular spaces with a corridor space between that ends in windows to articulate the sections (see plan). At the upper floors, larger apartments are cantilevered and the major fenestration switched to the ends, creating the strong sculptural form that marks this complex.

Again the architects have used a jumbo brick but instead of doing the masonry work first, then inserting the windows, the window units are placed first and the masons work to them.

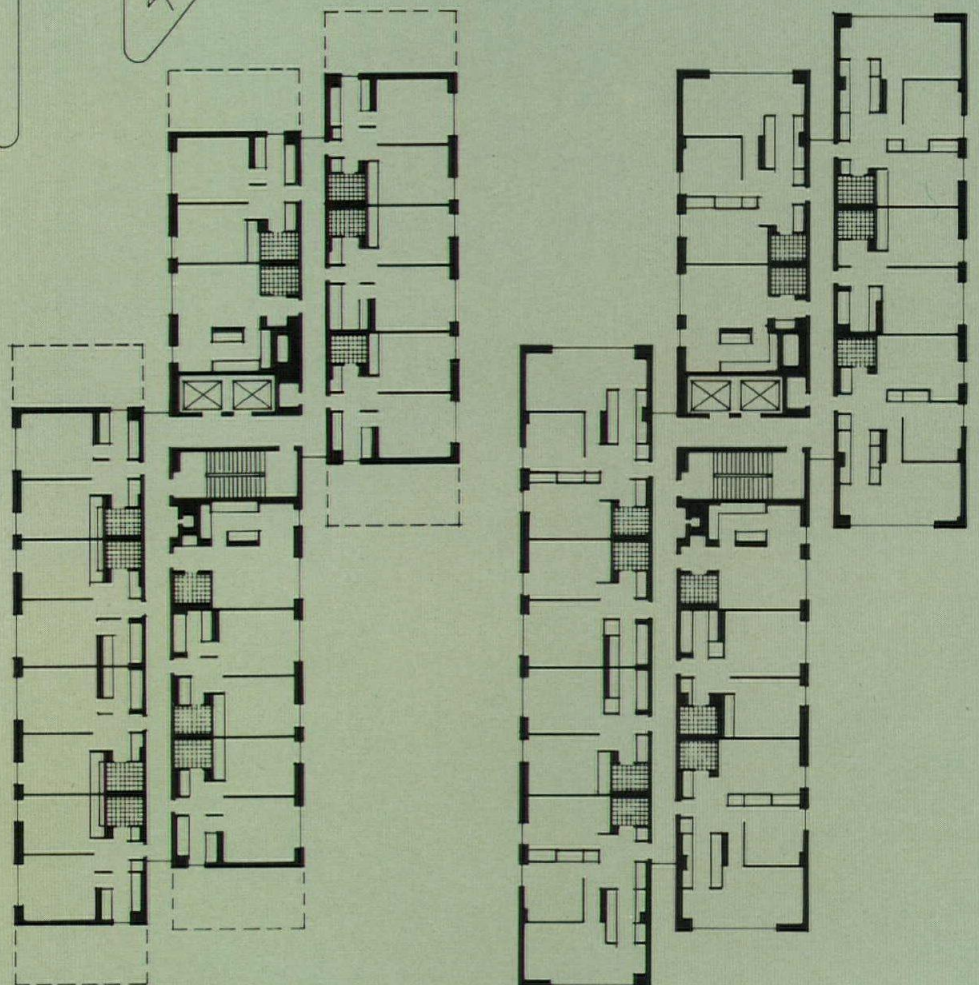
As in almost all of the previous projects, the architects have achieved a richness and variety uncommon in public housing and provided residents and the surrounding community with unexpected but welcome amenities.

Cathedral Parkway Housing, (see drawing on next pages), is a project sponsored by the Harlem Urban Redevelopment Corporation, a subsidiary of New York State Urban Development Corporation. It has been designed in association with Roger DeCourey Glasgow, to include day care and community facilities in addition to 309 units of moderate-income housing divided into two pairs of stepped slabs: one at 12 stories facing West 109th Street, the other at 20 stories facing the Cathedral of St. John the Divine in Mount Morris Park. The two towers are offset to create a strong diagonal space between. This semi-enclosed processional space (see perspective page 103) winds through the project, changing levels several times, and offering strollers a welcome variety of options.

As in all the preceding projects except Lambert, flat plate was the method of construction. But like Waterside, the variations in apartment size and plan provided design opportunities the architects exploited with considerable skill. By stacking apartments of different plan, the designers developed a building mass with a strongly sculptural silhouette. Balconies cantilevered off both

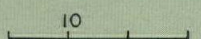


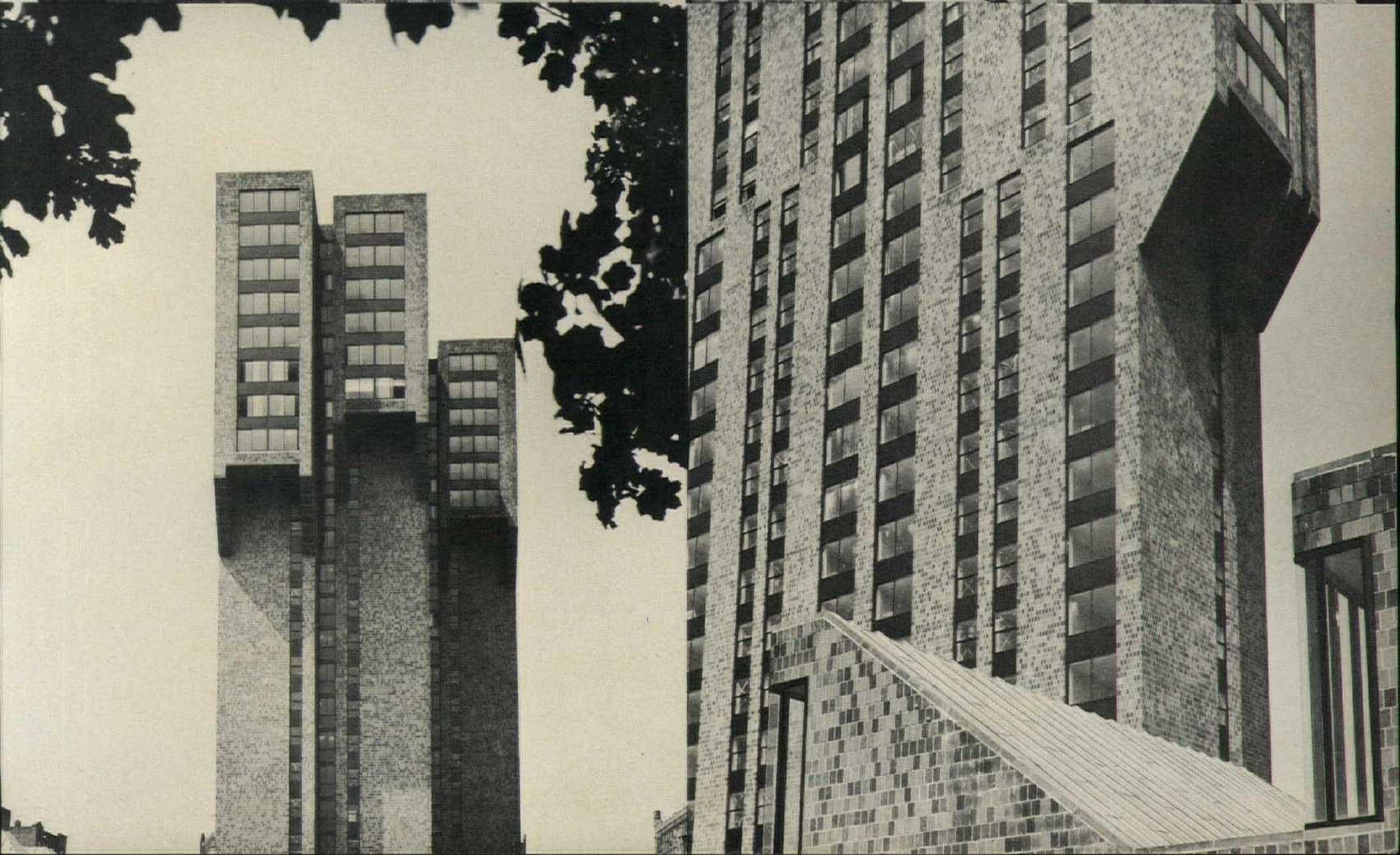
The triangular site in the North Bronx, is in a stable residential community that includes a high percentage of elderly residents. The tower and the small community center were designed especially for their use.



LOWER FLOORS

UPPER FLOORS





sides of the towers, and varied window openings, emphasize these diversities.

The designers also capitalized, as they had before, on the opportunity to develop useful play space on the roofs of low-rise support structures. In this instance, an outdoor play area for the day care center is located over the parking garage.

The firm's accomplishment in housing has not come easily or without struggle. In fact, almost every innovation or amenity these buildings offer came hard. Waterside, for example, was nearly ten years in planning and final approvals came only after countless meetings and endless bargaining with clients, city officials and special interest groups.

All this effort would have counted for little if the final product has been architecturally disappointing. Happily, that has not been the case. In spite of limited budgets, restrictive codes and sometimes constricted sites, the projects are intelligently planned, sensitively shaped to reduce their masses and—most surprising—brought in at prices within reach of the income groups they are designed to serve. This, according to the architects, has been the hardest part and an area that will challenge the firm's ingenuity to an even greater extent in the future.

RIVERBEND. Client: Riverbend Housing Corporation. Architects: Davis, Brody & Associates (Brian Smith, Walter Beattie, Lynda Simmons). Engineers: Wiesenfeld & Leon (structural); Arthur L. Zigas (mechanical); landscape consultants: Coffey and Levine, M. Paul Friedberg & Associates; contractor: HRH Construction Corporation.

EAST MIDTOWN PLAZA. Client: East Midtown Plaza Housing Company, Inc. Architects: Davis, Brody & Associates (Lynda Simmons, Harold Rolls, Alexander Purves). Engineers: Robert Rosenwasser (structural); Cosentini Associates (mechanical); landscape architects: M. Paul Friedberg & Associates; lighting consultants: David A. Mintz, Inc.; contractor: Caldwell Wingate Company.

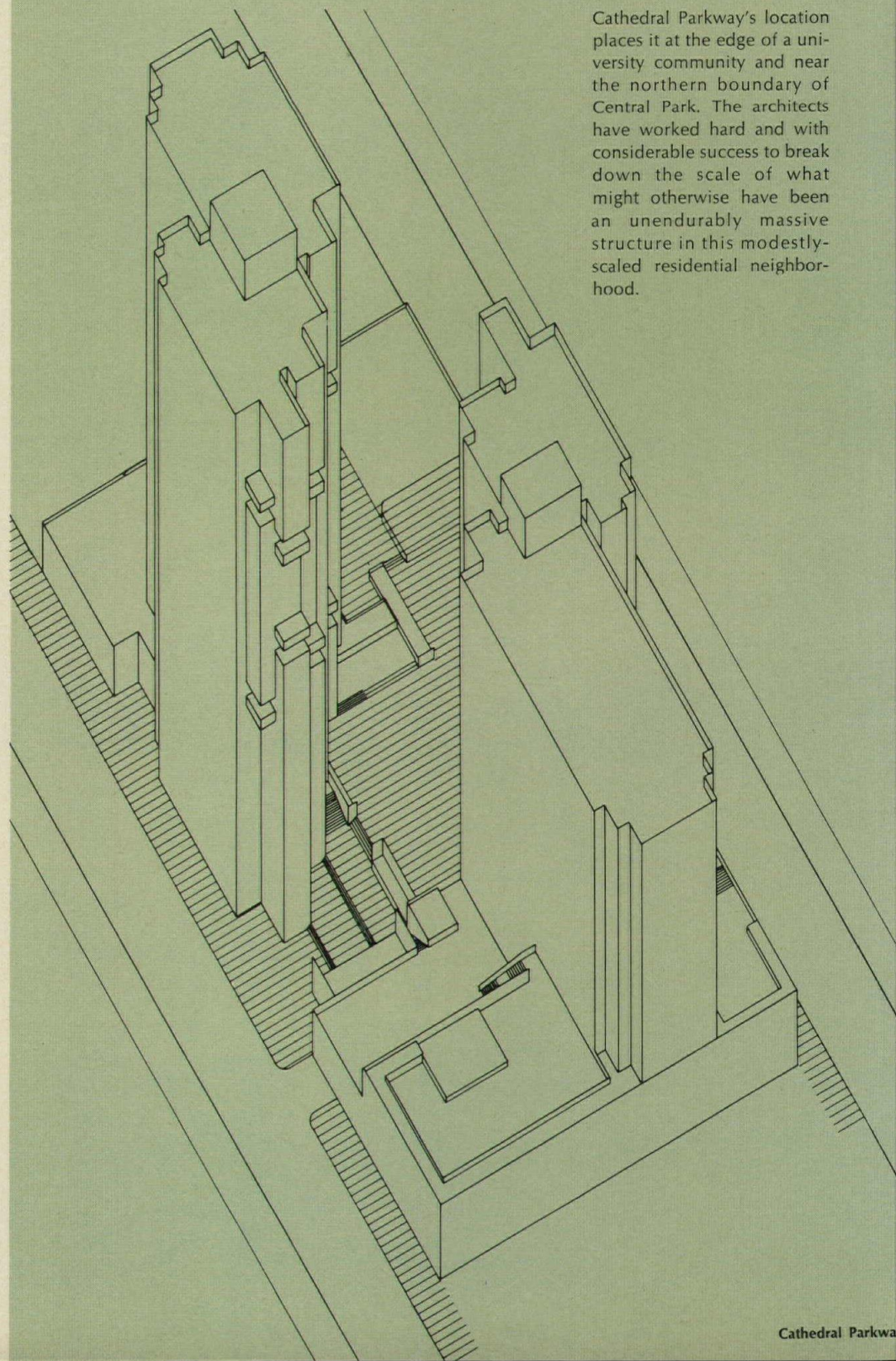
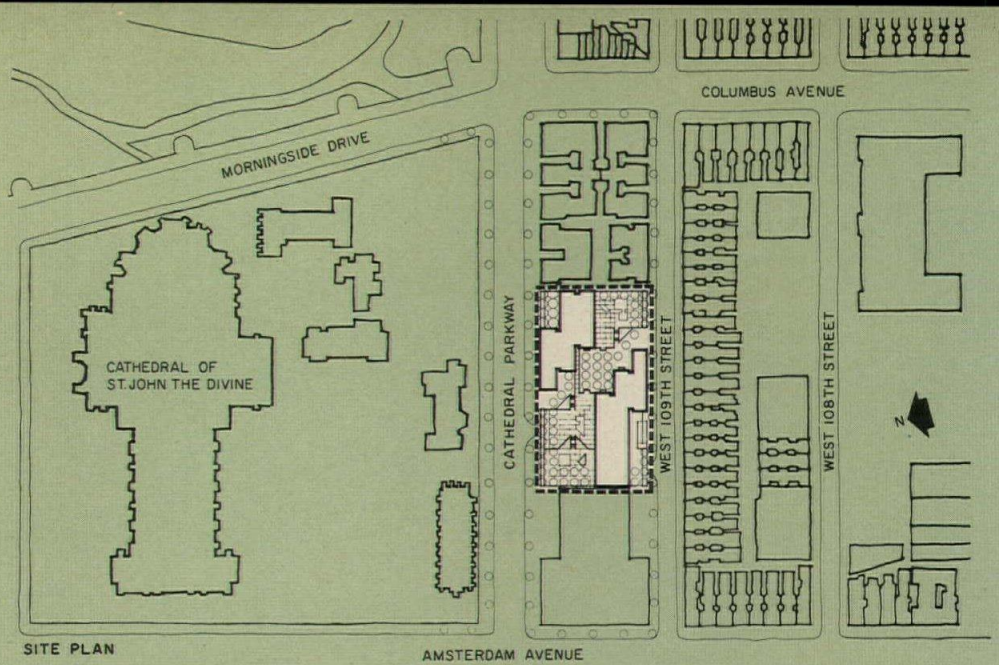
WATERSIDE. Client: Waterside Redevelopment Company, Inc. Architects: Davis, Brody & Associates (John Lebduska, Herbert Levine). Engineers: Robert Rosenwasser (structural); Cosentini Associates (mechanical); contractor: HRH Construction Corp.

HARLEM RIVER PARK HOUSING. Client: N.Y.S.U.D.C. Developer: The DeMatteis Organizations. Architects: Davis, Brody & Associates (Harold Rolls, Martha Rudzki). Engineers: Robert Rosenwasser (structural); Cosentini Associates (mechanical); landscape architects: M. Paul Friedberg & Associates.

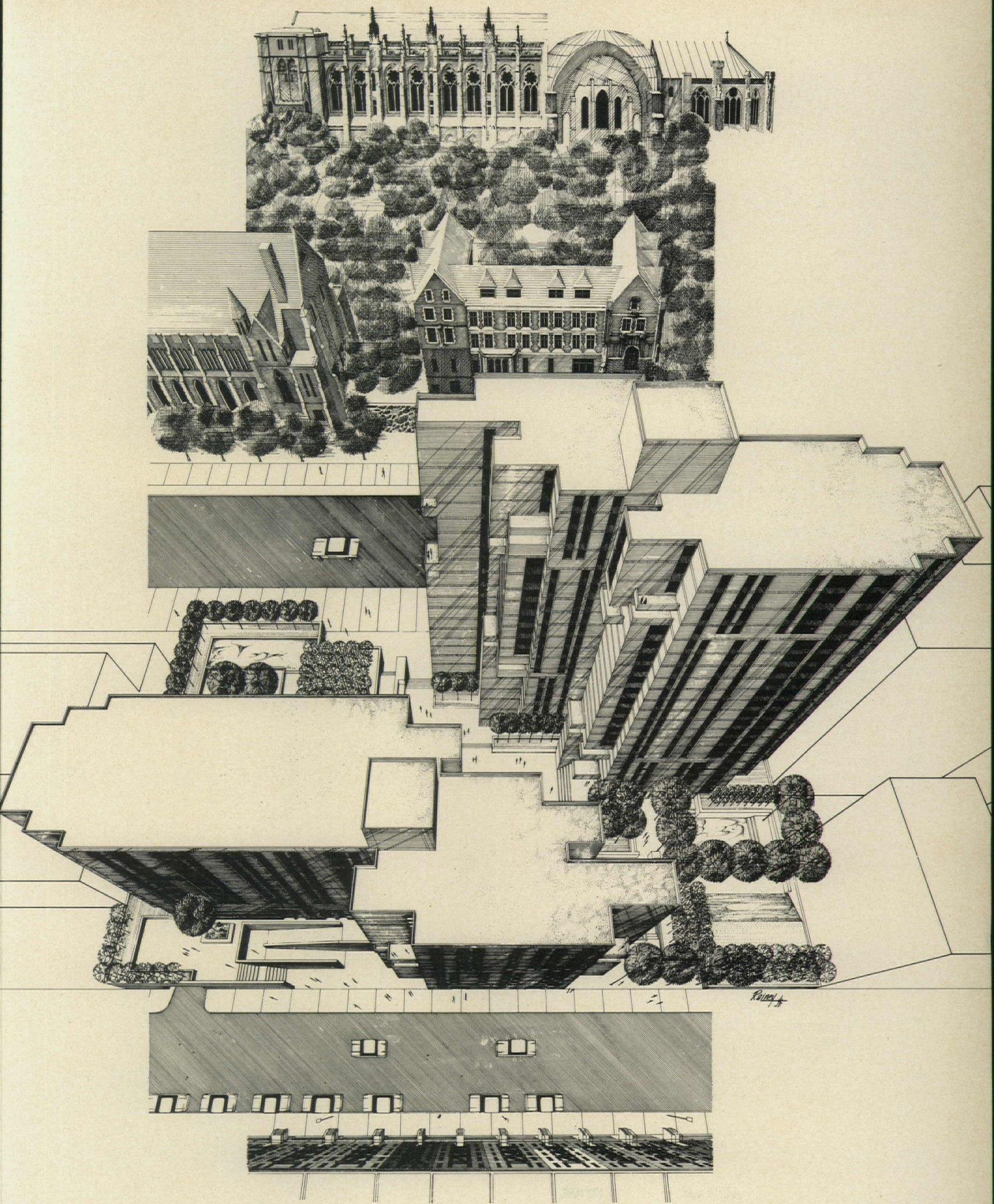
LAMBERT HOUSES. Client: Phipps Houses and Bronx Park South Community Development Committee. Architects: Davis, Brody & Associates (Brian Smith). Engineers: Godreich Page and Thropp (structural); Arthur L. Zigas & Associates (mechanical); landscape architects: A. E. Bye Associates; lighting consultants: David A. Mintz, Inc.; contractor: HRH Construction Corporation.

2440 BOSTON ROAD. Client: New York City Housing Authority. Architects: Davis, Brody & Associates (Norman Dorf). Engineers: Fisher-Saddler (structural); Cosentini Associates (mechanical); landscape architects: M. Paul Friedberg & Associates; contractor: A. D. Herman Company.

CATHEDRAL PARKWAY HOUSES. Client: N.Y.S.U.D.C. Architects: Davis, Brody Associates in association with Roger DeCourey Glasgow. Engineers: Robert Rosenwasser (structural); Cosentini Associates (mechanical); contractor: Douglass Urban Corporation.



Cathedral Parkway's location places it at the edge of a university community and near the northern boundary of Central Park. The architects have worked hard and with considerable success to break down the scale of what might otherwise have been an unendurably massive structure in this modestly-scaled residential neighborhood.



COMMERCIAL

The firm's commercial work got early recognition with the completion in 1970 of the Westyard Distribution Center, a tapering, tough concrete office and warehousing space (RECORD, May 1970) seen in the photo below from the west bank of the Hudson River. In plan and structure (it spans a four-track main line of the Penn Central), this building established a standard of economical and functional innovation carried out very differently in . . .



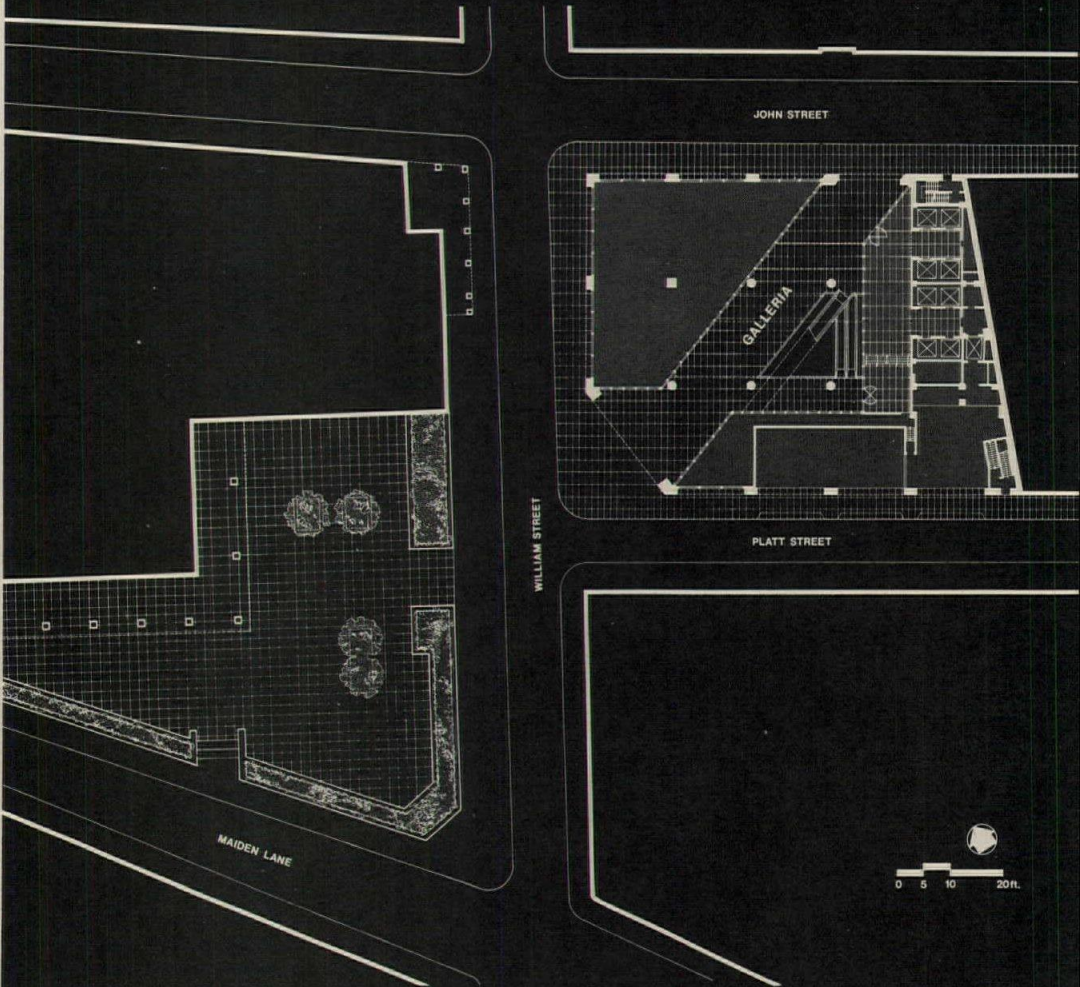
John Naar

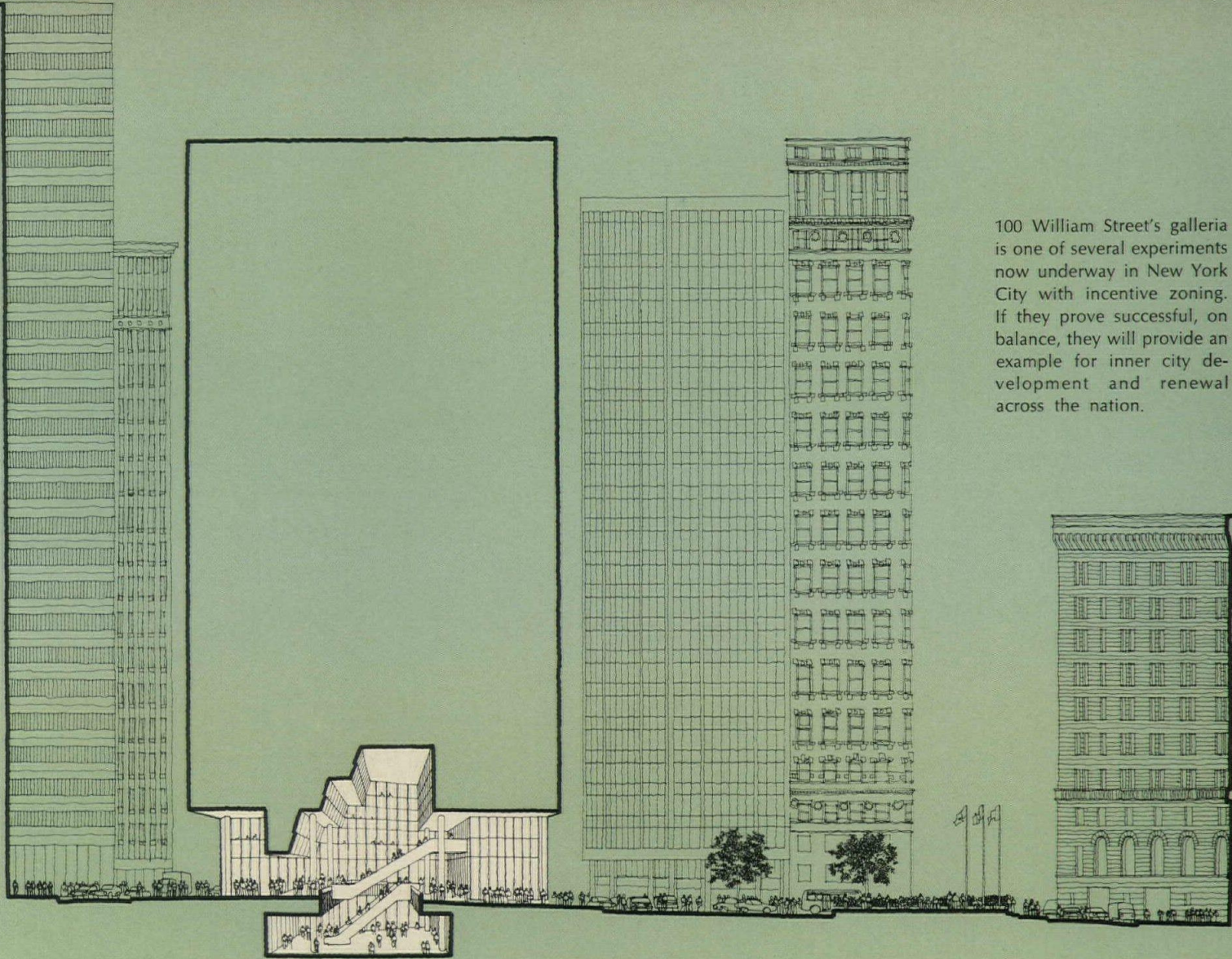
Westyard

100 William Street which was designed in association with Emery Roth & Sons for a site in Lower Manhattan. This project is an experiment with incentive zoning. The developer, the Sylvan Lawrence Company, was permitted additional rentable floor area as a tradeoff for building a public amenity—in this case a through-building galleria at street level. The five story galleria, sculpted out of the 300,000 square foot office tower's lower floors, will connect John Street with the intersection of William and Platt Streets to the west and the plaza beyond. An escalator leads from street level to the galleria's second level which will become a reception area for the prime tenant. Both street level and lower level will have shops and eventually lead to an underground subway connection.

Although, in the tradeoff, several floors of additional space were added to the overall height of the building, the architects point out that the area is already crowded with tall buildings and one more will not substantially alter the amount of light and air reaching the street. The amount of new street activity and the retail stores it will provide, insure that the galleria will be, on balance, a public benefit.

100 WILLIAM STREET. Client: Sylvan Lawrence Company. Architects: Davis, Brody & Associates (Alexander Purves) in association with Emery Roth & Sons. Engineers: Office of James Ruderman (structural); Jaros, Baum & Bolle (mechanical).





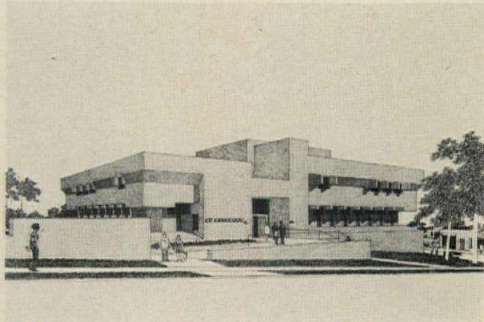
100 William Street's galleria is one of several experiments now underway in New York City with incentive zoning. If they prove successful, on balance, they will provide an example for inner city development and renewal across the nation.



INSTITUTIONAL

Among the firm's institutional projects is the 37th Precinct police station (rendering below) now nearing completion on a site in the north Bronx. Again the client is a city agency—the Department of Public Works—and again the architects have used flat plate and brick to achieve a more interesting massing than that vocabulary often yields. While the police station seems chiselled from a single masonry mass, the building's fortresslike character has been sensibly subdued.

Some of the same compositional skills are apparent in the institutional structure at right for a much more rural site.



37th Precinct

The Children's Aid Society is a 120-year-old New York institution dedicated to giving aid and care to city children in need. Among the programs the Society manages is a day camp on a 41 acre, wooded site on the north shore of Staten Island. Davis, Brody & Associates was retained by the Society to study the property and determine how it might be developed to greater advantage for an expanded program.

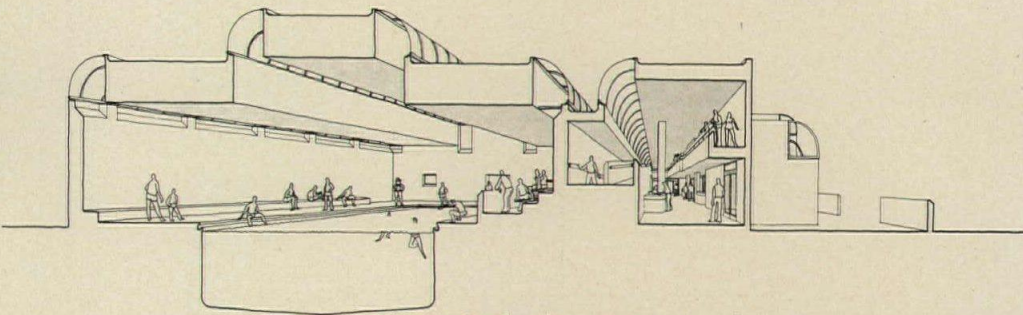
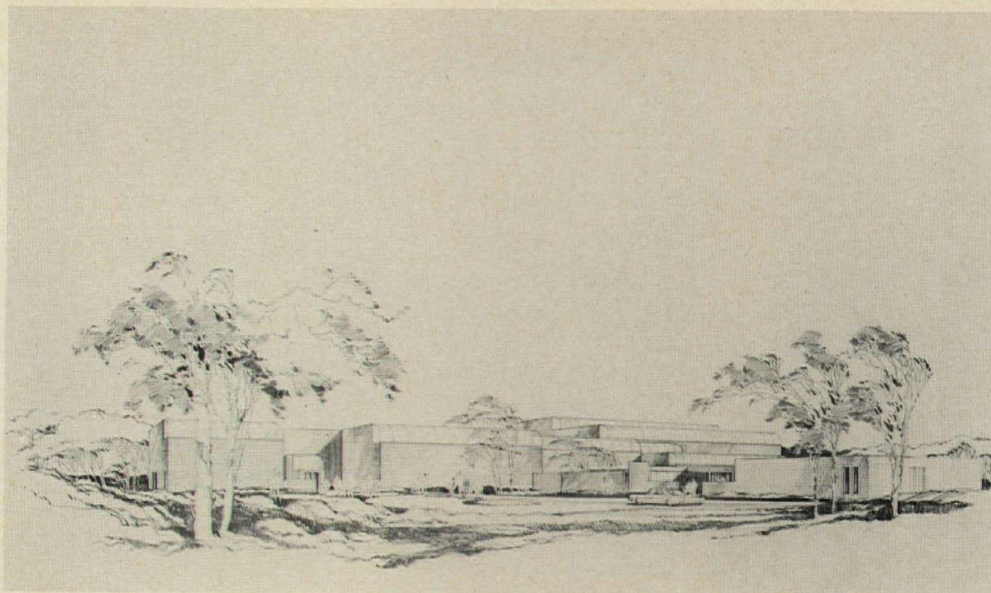
As part of the master plan for the entire site, the architects have designed a 45,000-square-foot Children's Center (right) that includes a swimming pool, a gymnasium, various craft spaces, playrooms for day care, and a well equipped dental facility.

Owing to the natural beauty of the site and the character of the surrounding neighborhood, the building will be low in profile and residential in feeling. "The building," say the architects, "will act as a backdrop for the adjacent playing fields." By spanning in the long direction and introducing bands of skylights, daylight will flood the gym and the swimming pool. These skylights, combined with the brick bearing walls will give the structure its basic esthetic.

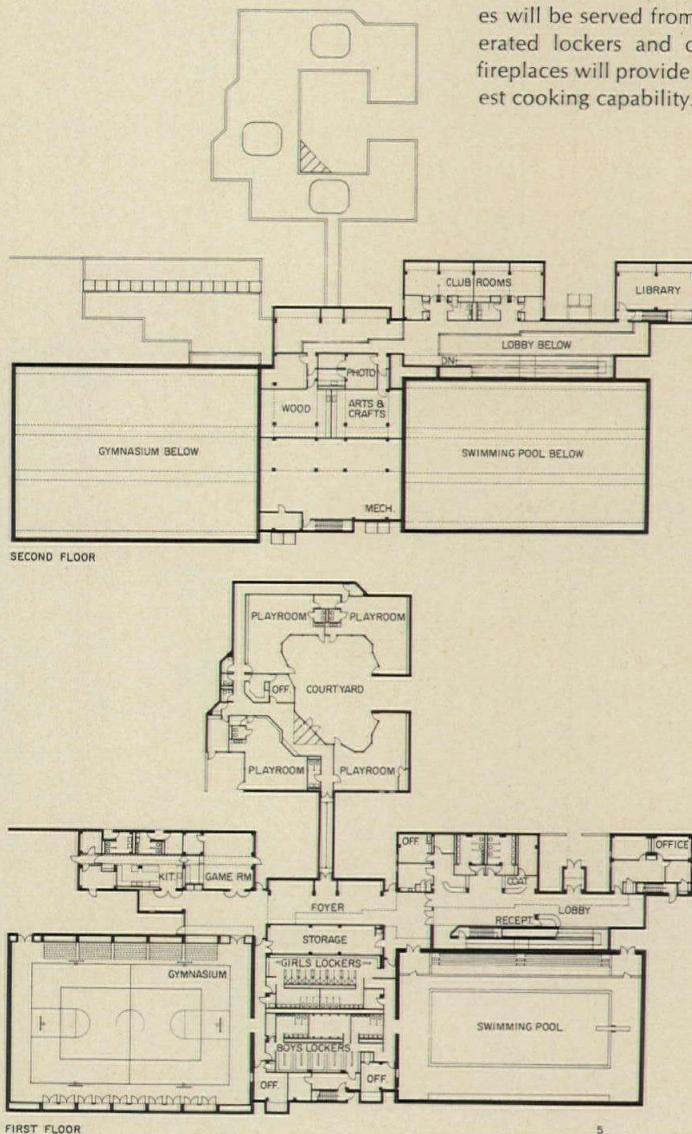
Other improvements include four cottages for 36 non-commuting children and spaces for staff and caretakers.

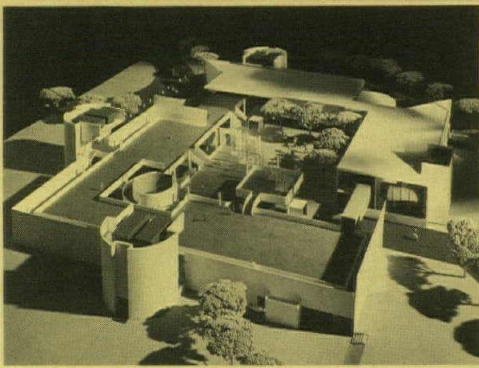
When complete, the day camp will accommodate 300 under-privileged children, the day care facilities, an additional 75.

CHILDREN'S AID SOCIETY, Goodhue Property, Staten Island New York. Client: *Children's Aid Society*. Architects: *Davis, Brody & Associates* (associate-in-charge: *Brian Smith*, project architect: *Joshua Pan*). Engineers: *Wiesenfeld & Leon* (structural); *Arthur L. Zigas* (mechanical); landscape architects: *A. E. Bye Associates*.



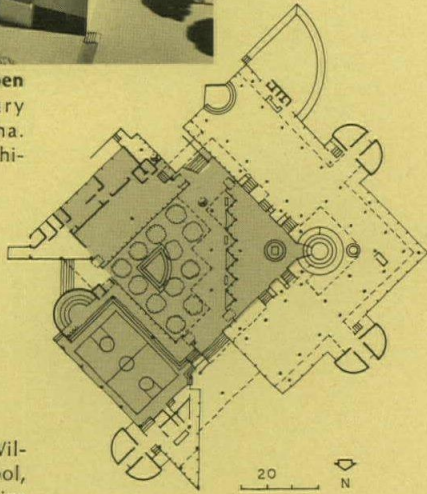
In the day camp area, only temporary (dismountable) shelters will be used. Lunches will be served from refrigerated lockers and outdoor fireplaces will provide a modest cooking capability.



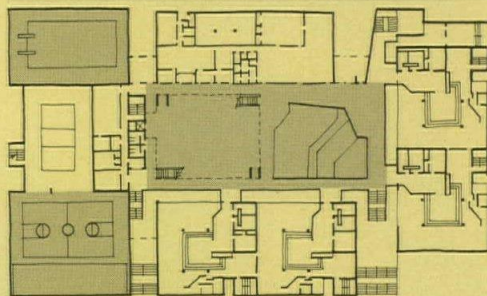
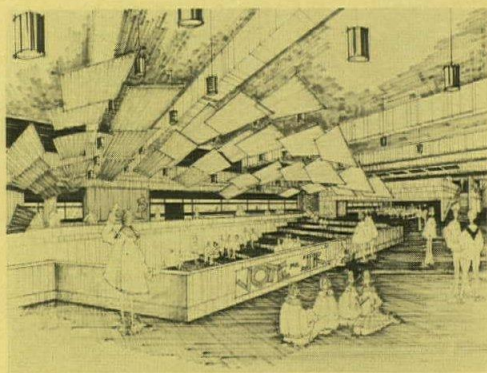
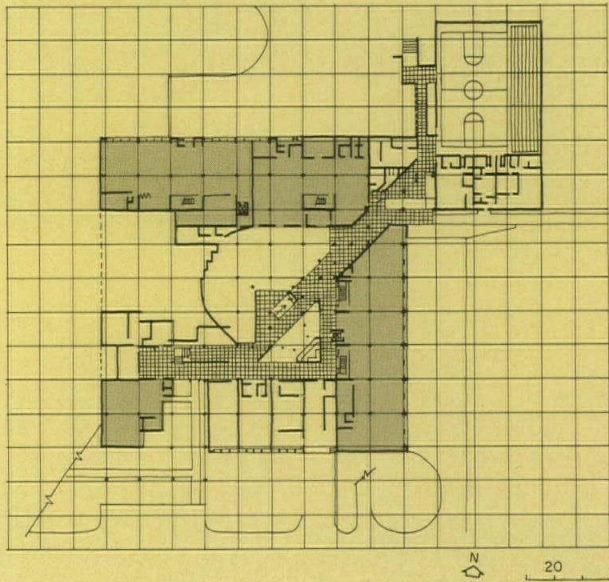


Richard Karl Koch

1. Community / school—open plan: Fodrea Elementary School, Columbus, Indiana. Caudill Rowlett Scott, architects.



2. Vocational high school: William R. Davies High School, Lincoln, Rhode Island. Perkins & Will, architects.



3. After hours community use/open plan: Martin Luther King Jr. Middle School, Atlanta, Georgia. Heery and Heery, architects and engineers.

OPEN PLAN • OPEN DAY • TEAM TEACHING • INTEGRATED PROGRAM
ALL-YEAR SCHOOL • OPEN CLASSROOM • HOUSE OR MINI SCHOOL
CLUSTER PLAN • COMMUNITY/SCHOOL • SCHOOL WITHOUT WALLS
NON-GRADED SCHOOL • CONTRACT LEARNING • ALTERNATIVE SCHOOLS

NEW IDEAS IN EDUCATION ASK NEW PLANNING SOLUTIONS FOR SCHOOLS

By now the open plan for schools—especially elementary schools—is nothing new. Developed in the 1960's, and at first considered as radical an approach to planning as it was to education, the open plan has since been used throughout the United States to the point of becoming almost commonplace among new schools. Although its success has been mixed, the open plan school has opened many minds to the possibility of using school space imaginatively and innovatively, and to thinking of it as a means to put into practice what is known—through the studies of Piaget and others—of the learning process.

What the open plan did to the physical aspect of the school was to effect the first change in its building since the little red schoolhouse became a multi-room educational institution. What it did to the school curriculum was to open it up to a variety of ideas and theories which, in a climate of dropout students, school-bond failures, Third World demands, and a host of other sociopolitical pressures, have had more ready acceptance than before.

If architects feel stunned by the barrage of ideas on educational method, and the implications they have for the physical planning of school buildings, they can take comfort in knowing that they are not alone.

Teachers, administrators, legislators and parents find themselves caught up in a swirl of educational terms—some new, some familiar, some strange and unwieldy combinations of known words, connoting—what? Even "open plan" does not mean the same thing to two people. Add "open classroom" and "open day" and the confusion is compounded. Only the children—who should be at the center of the whole discussion—seem unconcerned, and that is because they can only take, for weal or woe, what is given.

The open plan itself is undergoing changes, becoming more sophisticated in its reflection of needs and methods. Where once the open plan meant a great sweep of open loft-type space without identifying mark or guidepost, today's open space tends increasingly to be defined by some architectural planning device such as the alcove plan used in the Seattle schools (page 108) which in no way impairs the fluidity of the space relationships; or by color and graphics, as in the Colorado school on page 110. A sense of place is important especially for the very young.

The success of the open plan depends on how it's used

How open space is used is often a problem—and is the principal

continued on page 122

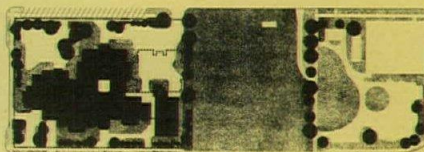
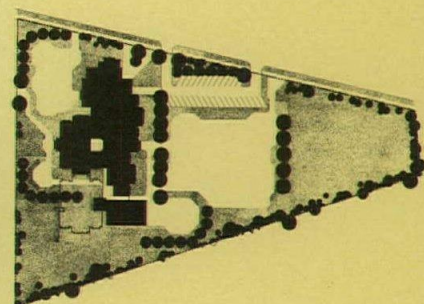
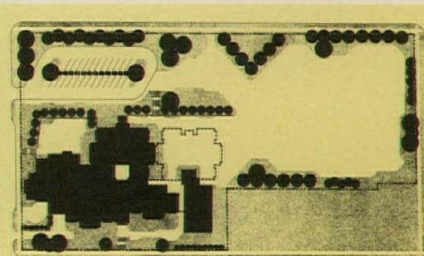
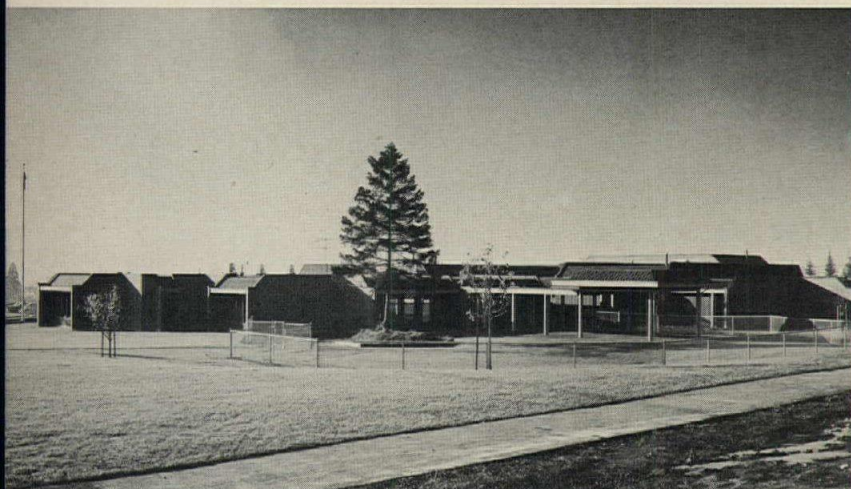
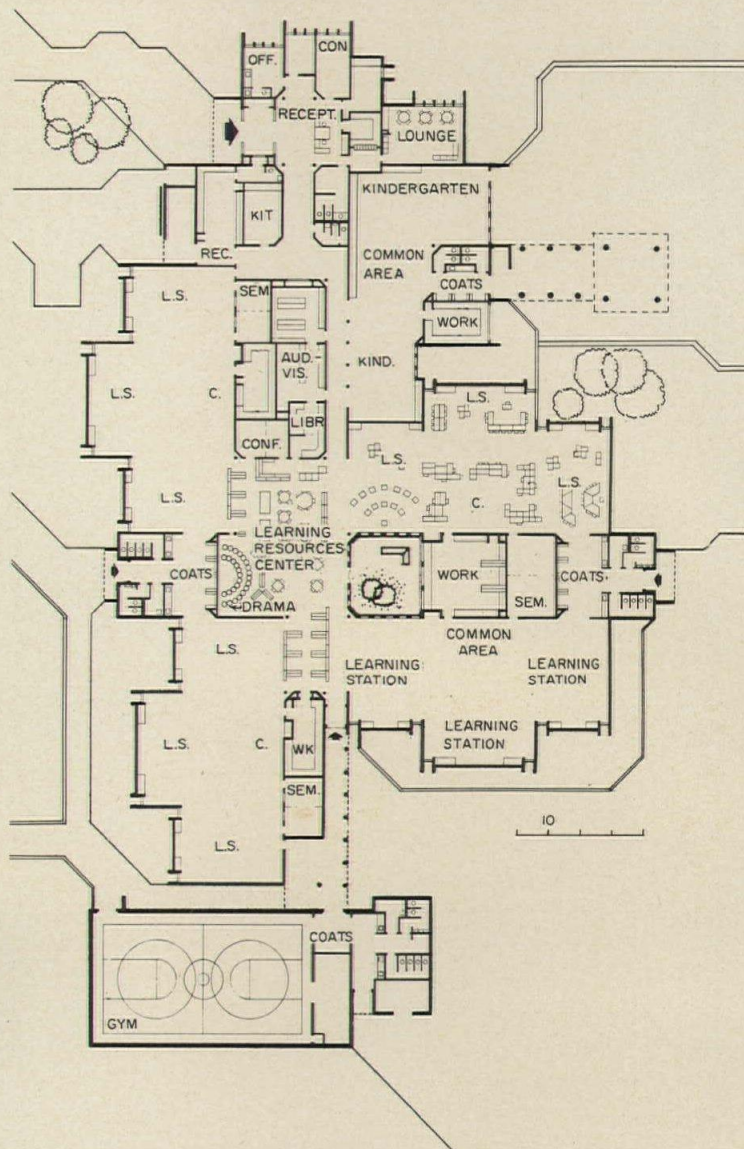
Alcoves provide each learning station with two walls for teaching

The open plan of these Seattle schools modifies the loft type of open space school to provide each "learning station" with two walls (for black-and-tack board use) and a common area. This plan, used on three new schools with similar educational requirements, neighborhood environments and construction schedules, represents the district's first implementation of its long-range commitment to "continuous progress" education. The building is a physical expression of its intent to encourage team teaching, individual learning at the pupil's own pace, and increased use of a wide range of learning resources (audio-visual and other electronic equipment as well as books and magazines). The openness of the plan further permits flexible grouping of both pupils and schedules and, since each group of three learning stations is oriented to the

resource center, facilitates use. The distinction between commons area and the learning stations it serves is accented by a difference in ceiling height and lighting: over the commons area the ceiling is higher, and indirect light is used in the ceiling cove.

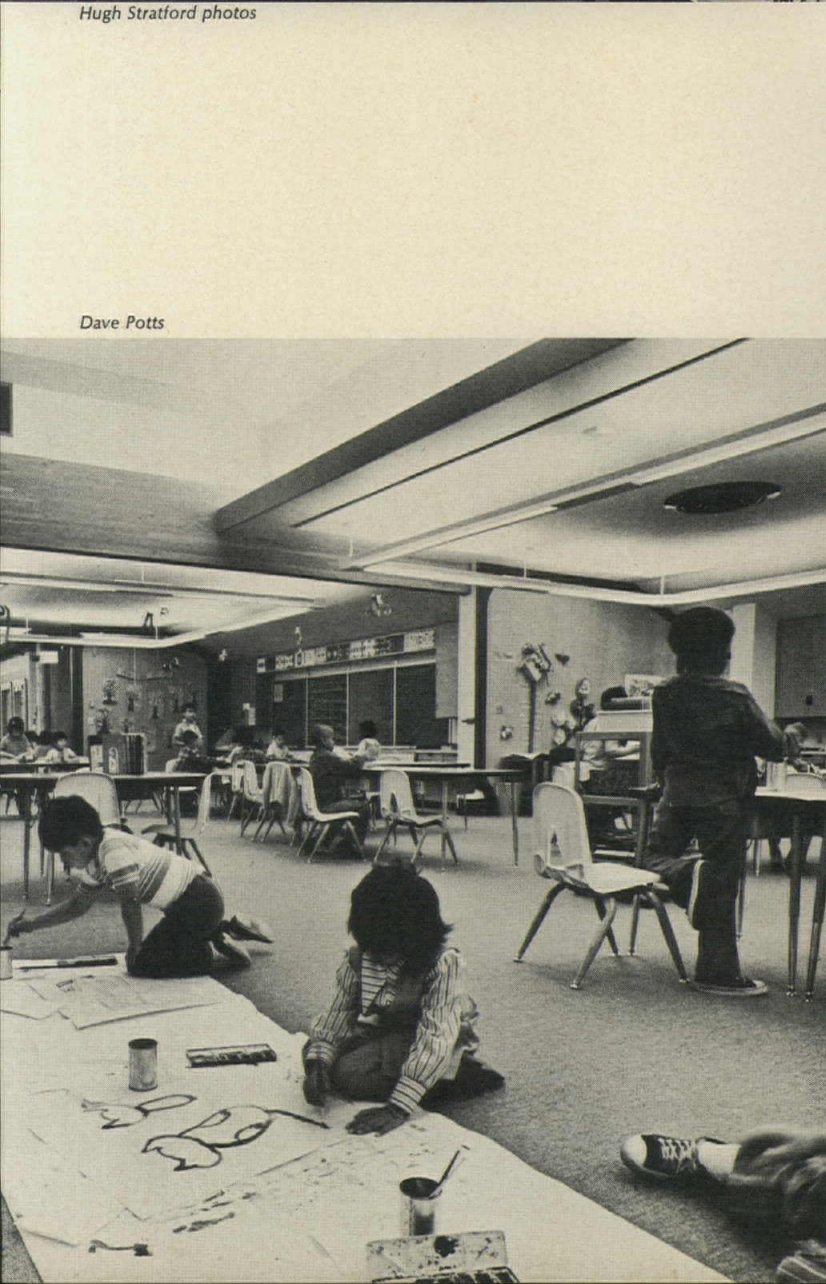
Color is used as an important aspect of design, with a different scheme for the exterior of each of the three schools. Interiors, however, use the same color palette—orange red, yellow paint, and deep blue and walnut stain. Walls are off white; windows are framed with a band of color; carpet is gold.

MAPLE, BEACON HILL & COMMODORE KIMBALL ELEMENTARY SCHOOLS, School District #1, Seattle, Washington. Architects: *Durham Anderson Freed Company, P.S.* Engineers: *Macdonald, McLaren, Hammond*, structural; *Richard M. Stern & Associates*, mechanical; *Beverly A. Travis & Associates*, electrical. Contractor: *Wick Construction Company.*

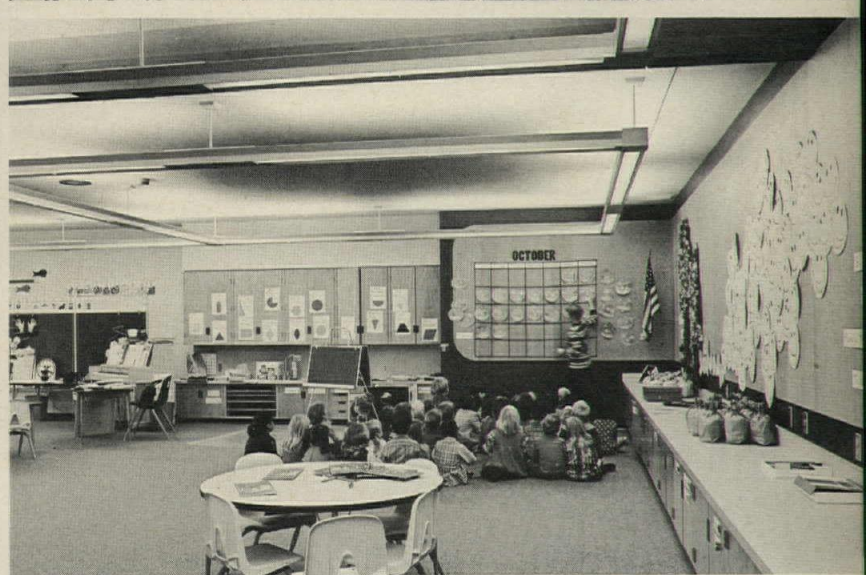
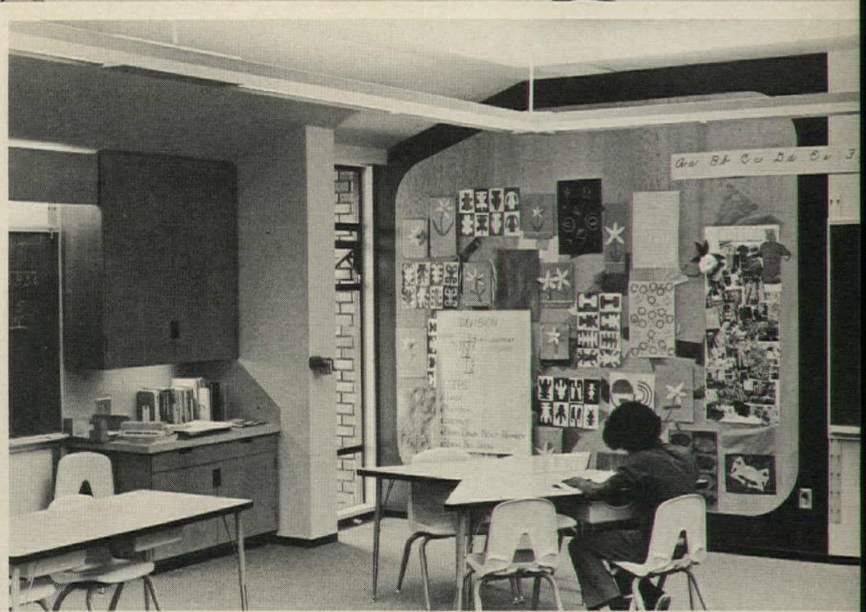




Hugh Stratford photos



Dave Potts



Open plan modules allow for easy expansion along circulation spine

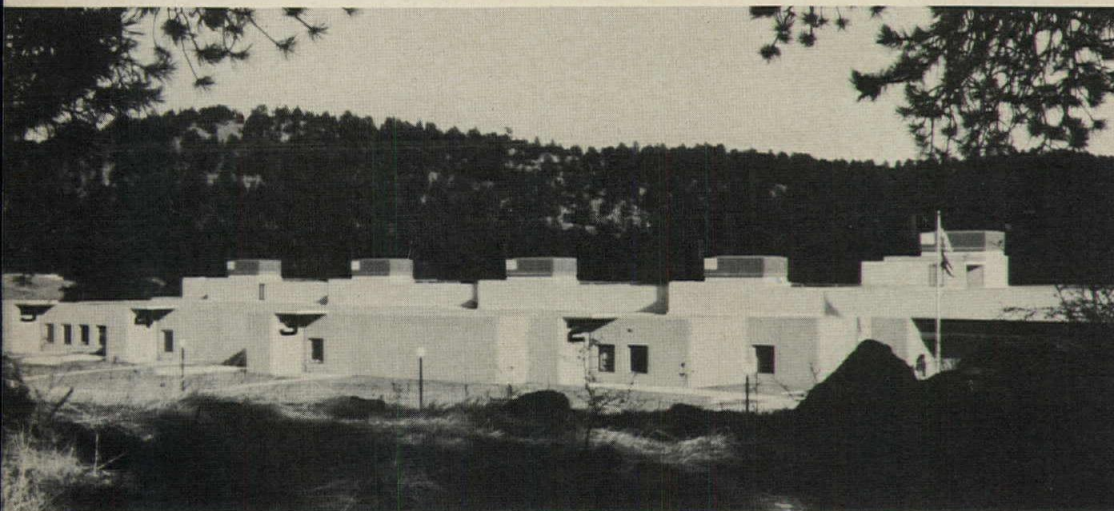
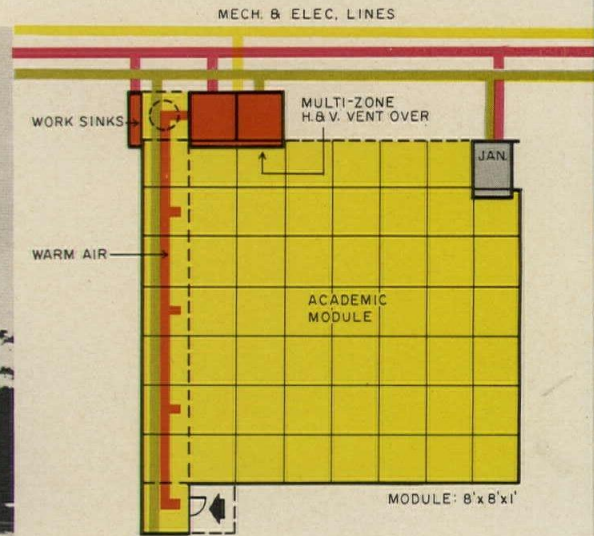
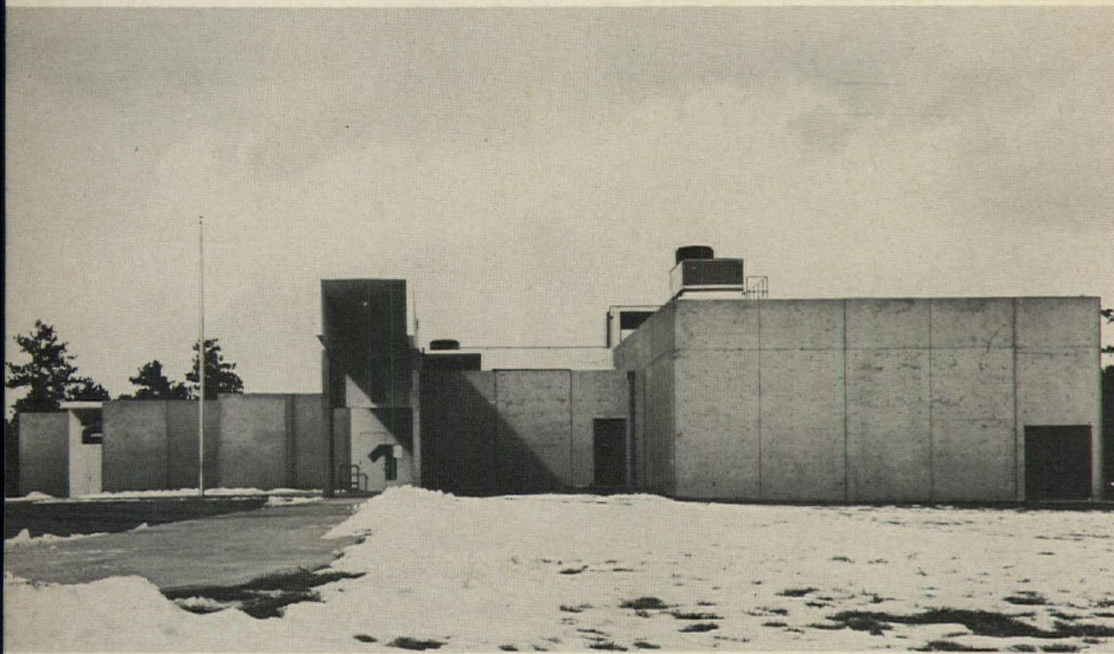
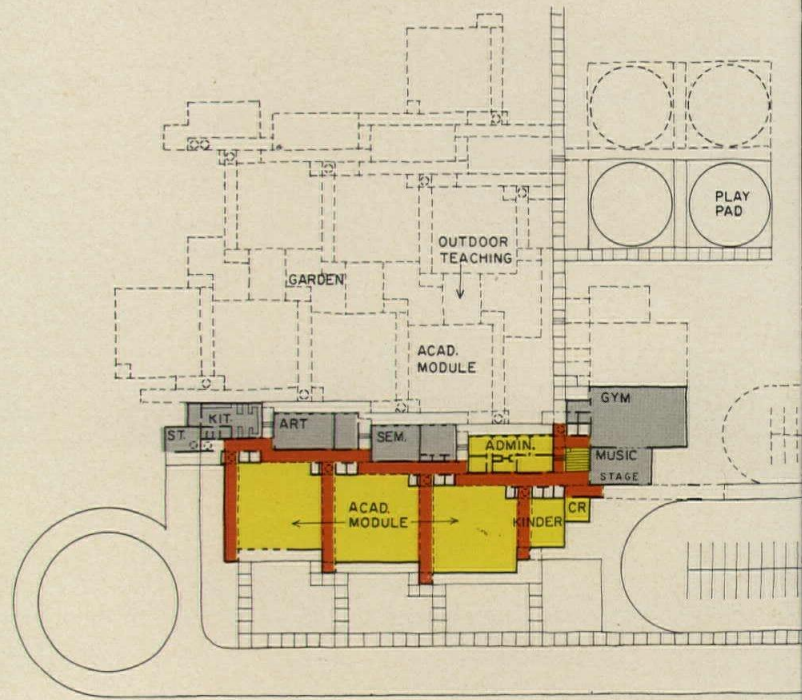
At Bergen Elementary School in educationally progressive Jefferson County, Colorado, the open plan of the academic area is designed as a series of space modules, attached to a "circulation spine," and a series of closed spaces for special uses which either adjoin these modules (if they serve them directly) or are separated from them if they serve the whole school and have autonomous uses. The initial building program provides three academic modules; additional modules can be added to the extendible spine as the school grows in size.

The wooded site, in a fast growing community in the mountains 30 miles west of Denver, slopes west from the access road which winds down from above, with a view of the school building's rooftops. The rectangular form of the school and its placement parallel to the contours of the site keep floor level changes at a mini-

mum. What changes in level there are have been effectively used: the "theater" on a level below the main floor; and the vocal music room adjoining the gym and higher than its floor so that it doubles as a stage, used by the community also.

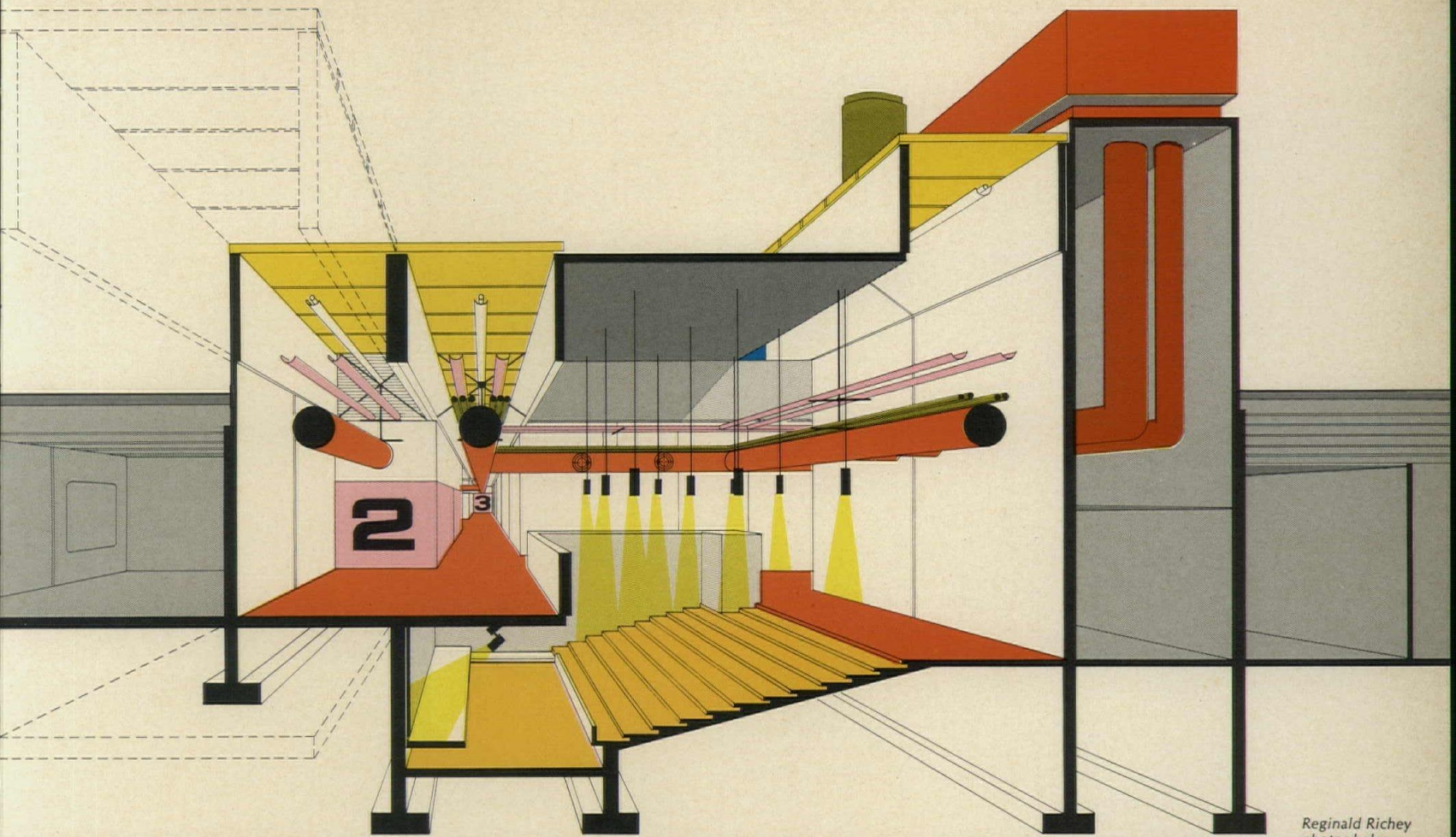
Academic modules are each structurally independent and have their own toilets, sinks, venting, and heating and ventilating supply and distribution. The openness of the academic area makes for great flexibility of use; the kindergarten is located adjacent to the grade modules because it is used sometimes by the upper grades.

BERGEN ELEMENTARY SCHOOL, Jefferson County School District, Bergen Park, Colorado. Architects: *Muchow Associates, George S. Hoover*, project architect and designer. District coordinating architects: *R/N/L Inc.* Engineers: *Edward R. Bierbach*, structural; *McFall and Konkel*, mechanical; *Swanson Rink Associates*, electrical. Contractor: *Blackinton and Decker Inc.*

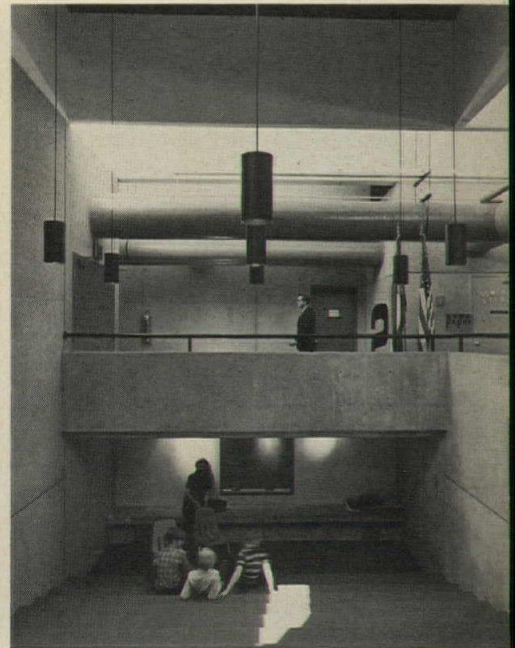
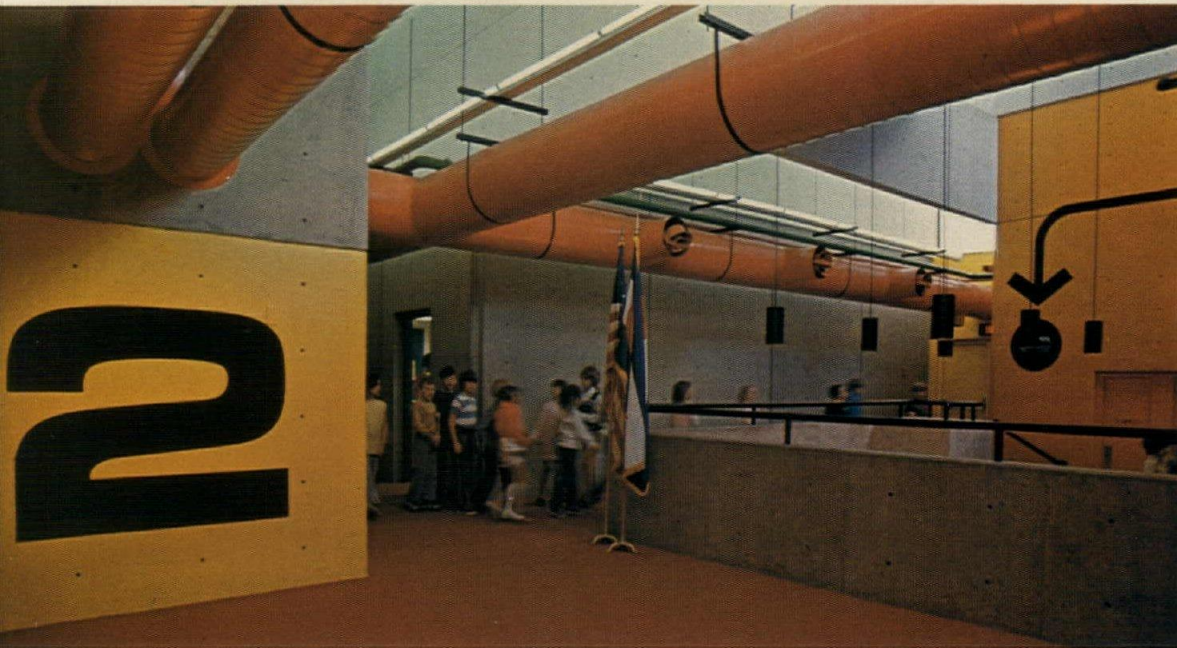


George S. Hoover photos except as noted

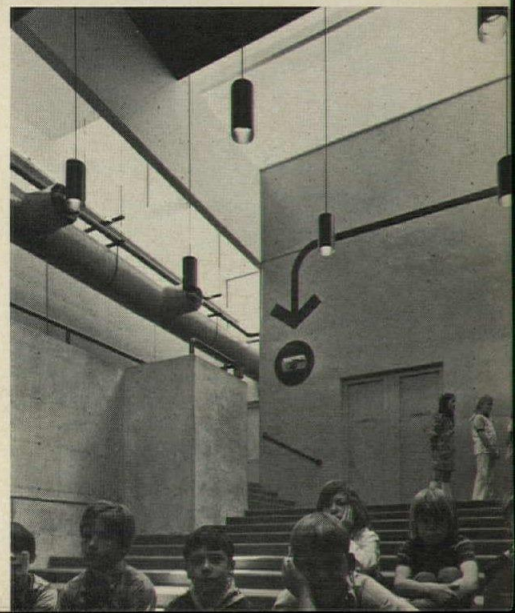




Reginald Richey
photos below



The finished building is designed to be a "visual diagram of its own functions" with pipes and ducts exposed and color coded throughout the building: multi-zone heating and ventilating units are color coded with air distribution ducts, plumbing vent enclosures with vent piping, transformers with electric raceways, etc. Large graphics identify class areas. The building is of poured-in-place concrete, sandblasted, with poured slabs over spines, and exposed T ceilings. Movable furniture is used instead of cabinet work and partitions.

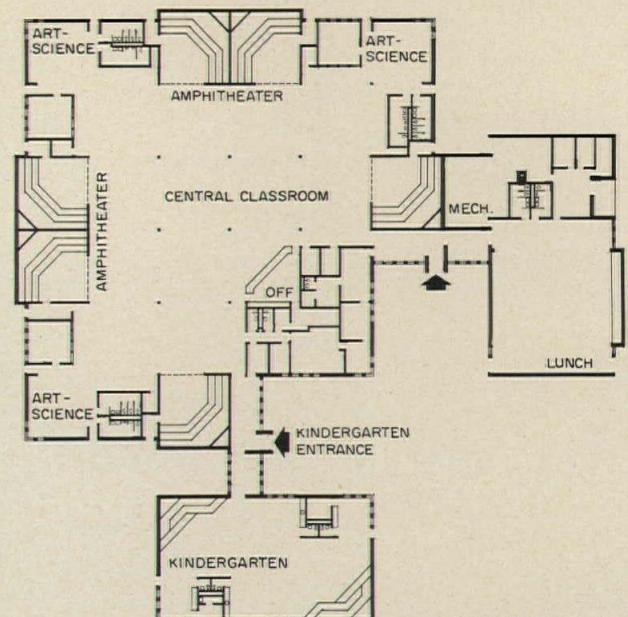
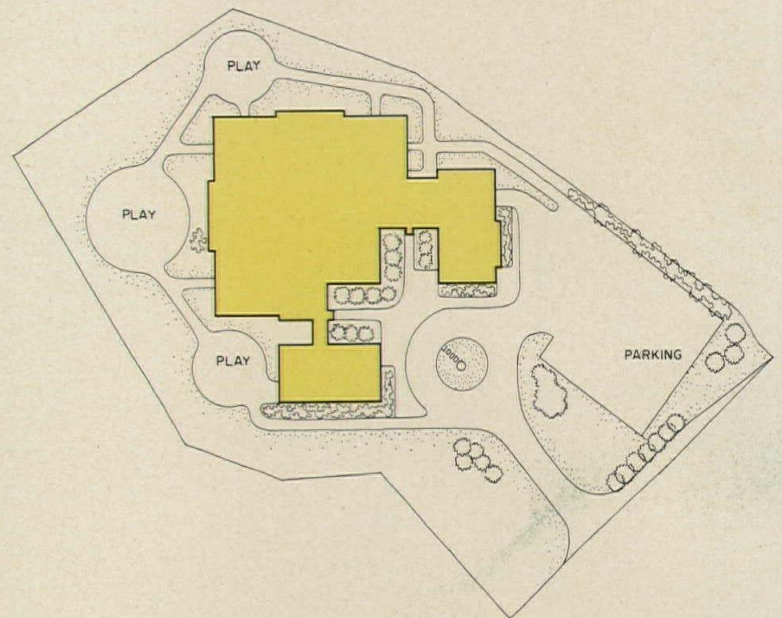


Amphitheatres add open space for non-graded team teaching program

This school in Stow, Massachusetts, is unusual in the number of amphitheater spaces it provides in its open plan, all of which are used in grades 1 through 3 for both large groups (up to 75) and small groups, for special instruction and for using controlled audio-visual equipment (top right). The kindergarten, a separate but related entity (and almost an autonomous operation), has two such provisions of stepped seating areas (center right). The open plan affords flexibility within this school's curriculum for grouping of pupils in a variety of ways; it also gives teachers the opportunity to "subdivide grades into subjects and into small groups within each subject." In addition, it takes care of the problem of the unusually large class, adapting in floor area to the needs of the particular group. Art-science project areas (bottom right) at three of

the school's corners separate this kind of activity from quieter studies. Corner windows admit daylight and open up the area to views of the neighborhood. The central learning area (below center) although related directly to a media center for use by grades 1-3, is a place where various kinds of learning take place, both formal and informal, and where space is defined (and redefined) by movable equipment. The building is located on the high portion of a gently rolling site (bottom left). There are two principal entrances, one for the kindergarten (below), one for upper grades.

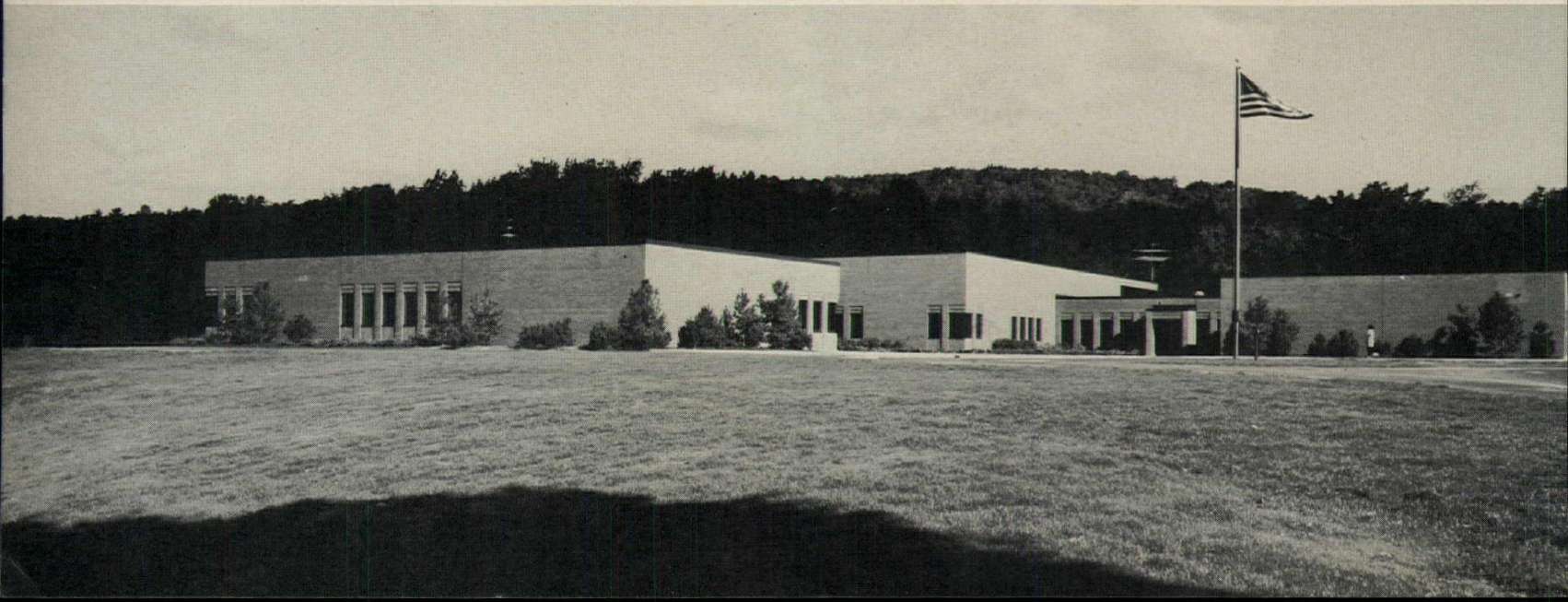
POMPOSITTICUT ELEMENTARY SCHOOL, Stow, Massachusetts. Architects: *Drumey Rosane Anderson, Inc. (DRA)*, Richard C. Rosane, partner-in-charge. Engineers: *Theodore/Weaver Associates, Inc.*, structural; *Greenleaf Engineers, Inc.*, mechanical/electrical lighting; *Cambridge Acoustical Associates*, acoustical. Contractor: *Roberto Construction*.

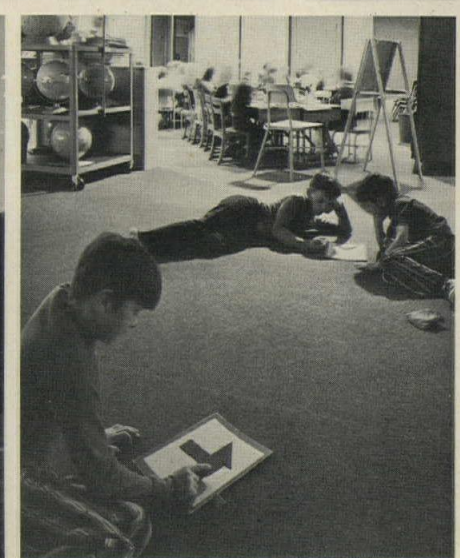
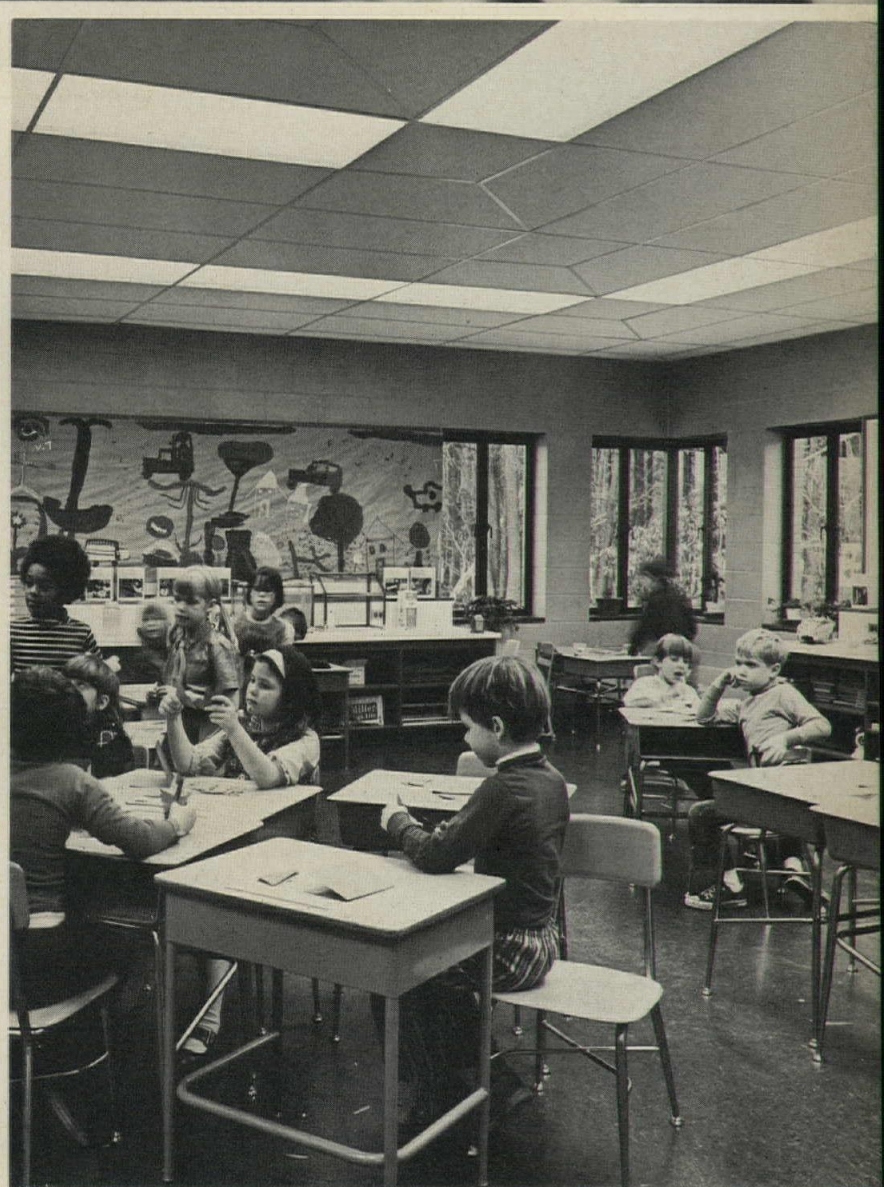


Left, kindergarten entrance. Below, vehicular approach to school. Opposite page: top, small group instructional amphitheater; right, kindergarten amphitheater; far right, art-science project area; below, center, central teaching area. School cost \$1,005,000 or \$27.93 per square foot.



Samuel H. Robbins photos



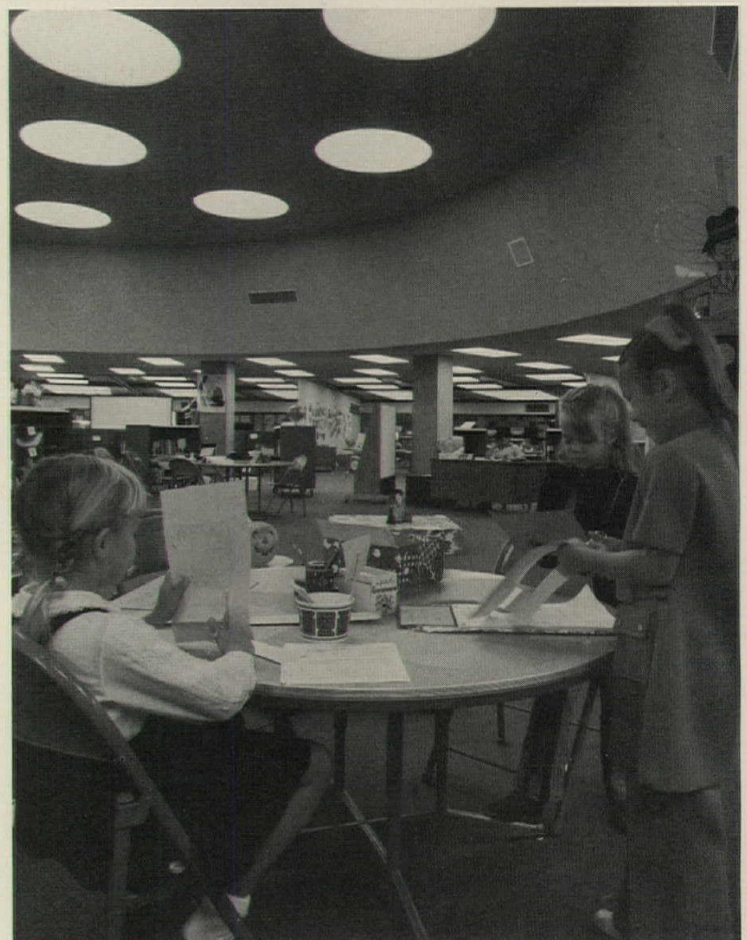
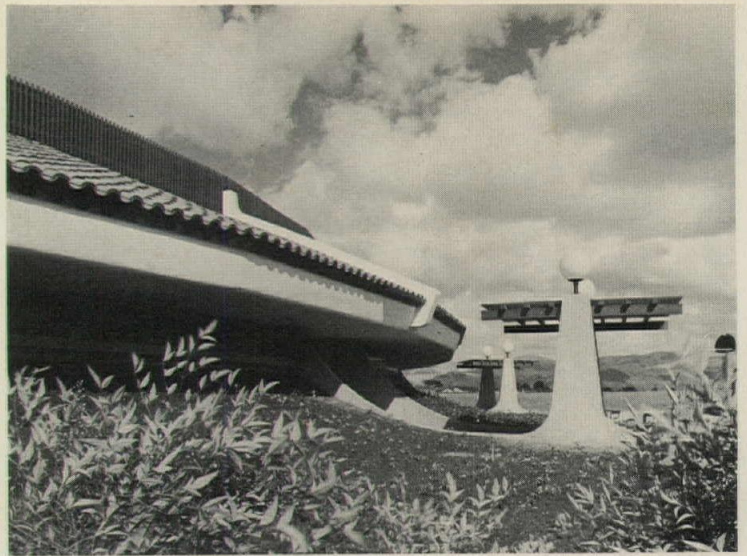


Compact circular plan gives school unusual flexibility for space use

Blossom Valley School's circular plan is both compact and flexible, providing the required open plan for the school's open program and also the desired small spaces—which it places on the perimeter—for small group or individual learning. This arrangement also permits provision of a Resource Center (and three unassigned teaching spaces) at the core of the building and a Multi-Use area (right) for food service, art, crafts, science, physical education and kindergarten activity use. Multi-use room, administration and kindergartens are on a lower level than the Resource Center and academic area (see section). The academic or instructional area can be partitioned, if future changes make this necessary, along radial or concen-

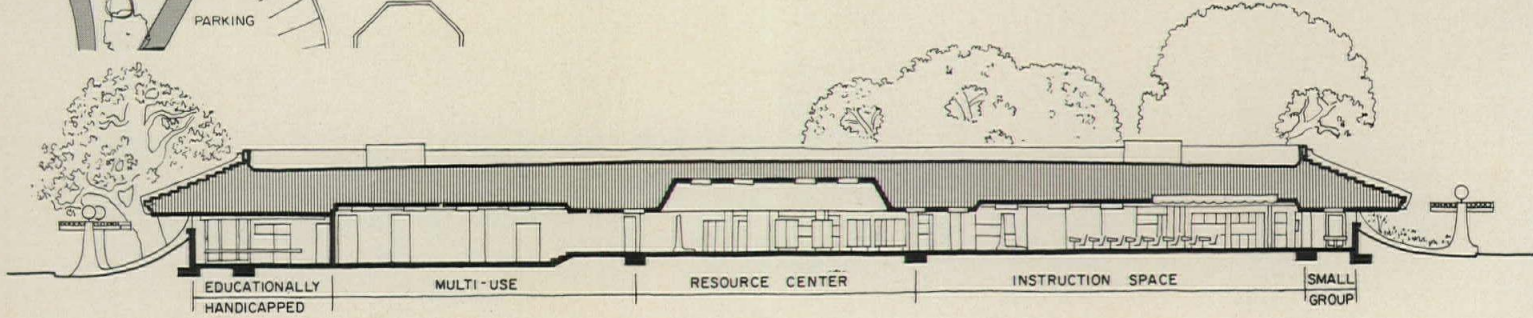
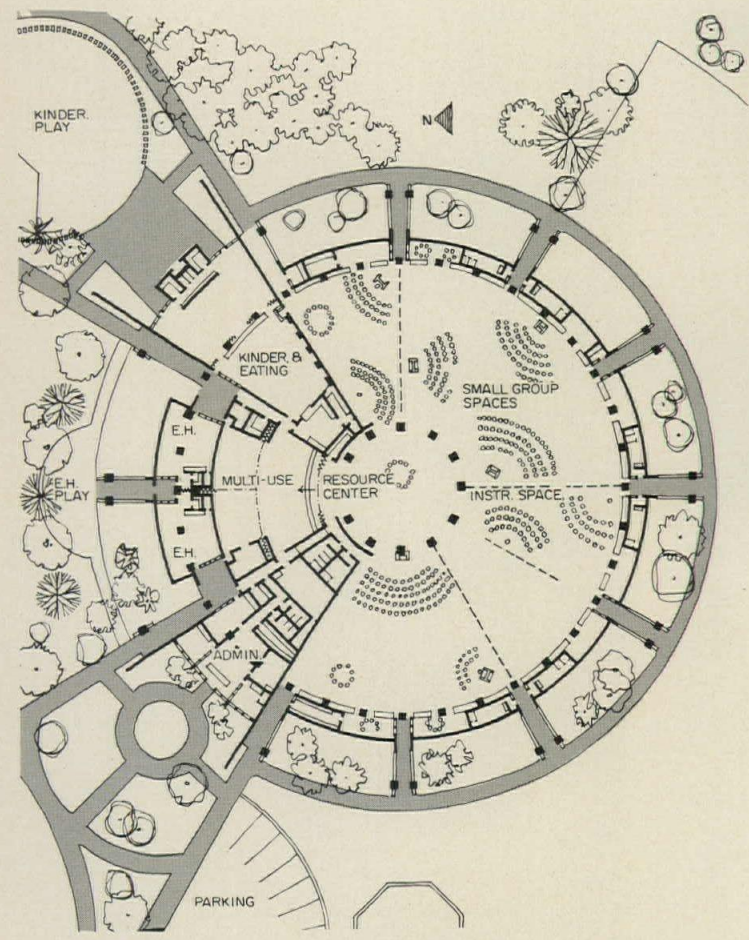
tric lines, but the present program uses the open space with complete flexibility. The school provides two special instruction rooms (for educationally or emotionally handicapped children) in addition to the 20 teaching stations and two kindergartens. The building appears, from the outside, to rise from the earth, due to the banked earth all around it (except at entrances). The building cost \$22.20 per sq ft.

BLOSSOM VALLEY SCHOOL, San Jose, California. Architects: *Porter-Jensen & Partners, Don Jensen, partner in charge of design, Paul Calandrino, project manager.* Engineers: *Charles F. Uhrhammer, structural; G. L. Gendler & Associates, mechanical; David M. Arrigoni & Associates, Inc., electrical; Geo Engineering, soils.* General contractor: *Aiken Construction.*



A.C. Baumgartner photos

Windows along the building's perimeter wall open into small individual teaching spaces and permit views to outside even from the central area. The circular plan, unusual in school buildings, is surprisingly flexible, allowing for a variety of teaching options.

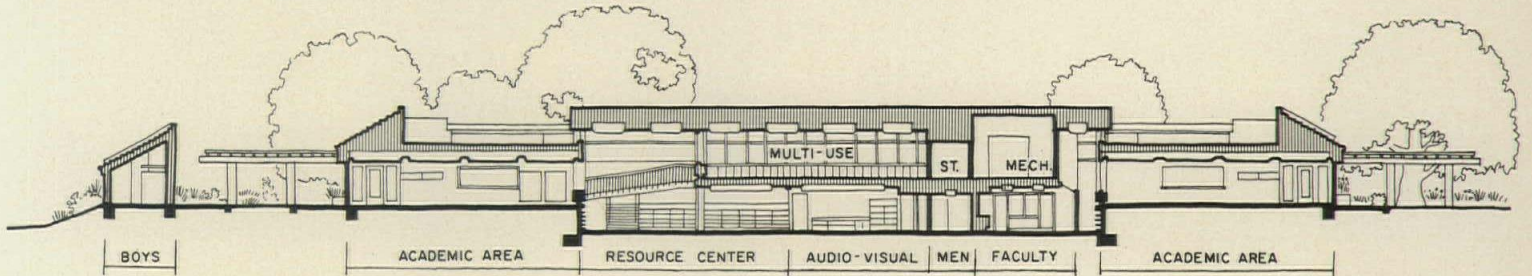
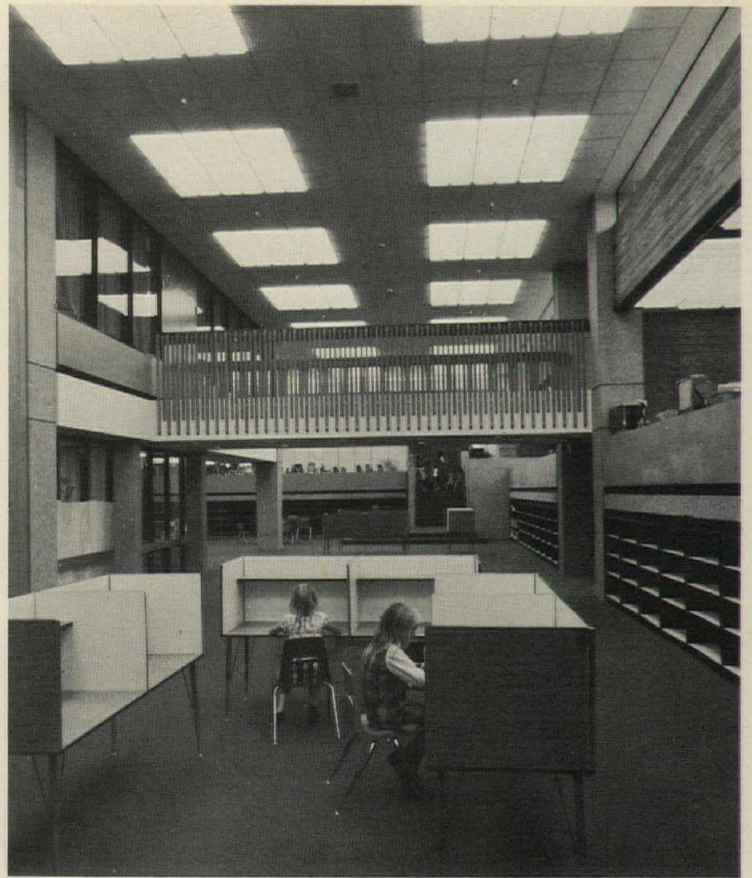


Split-level plan defines spaces and increases flexibility for teaching

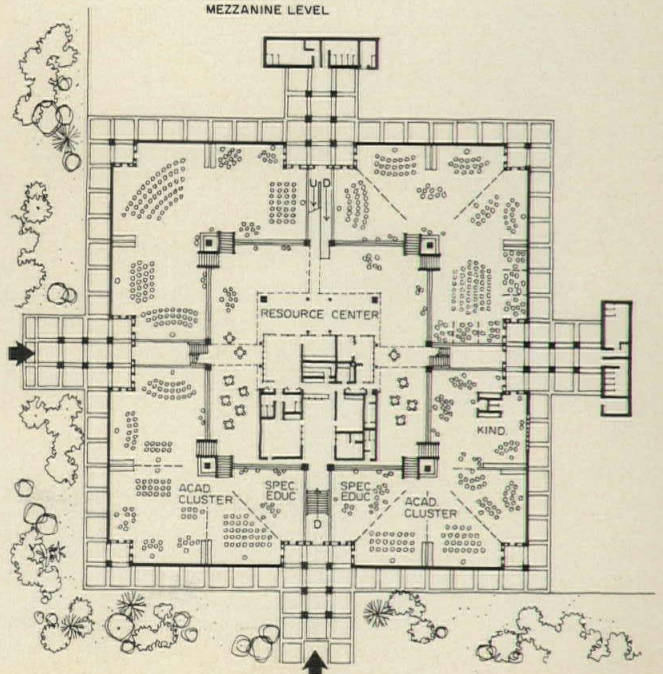
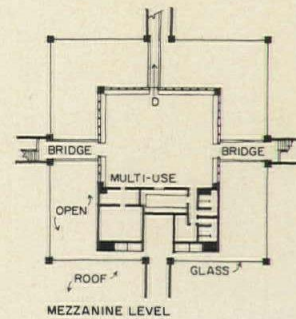
Birchwood School is about the same size, has the same number of pupils (745) and cost approximately the same as Blossom Valley School, and was designed by the same architects. Its program, however, is transitional, committed to individualized learning but retaining the option of achieving this in a variety of ways. The plan provides four academic clusters (bottom photo), each with six teaching areas. Demountable partitions can be used to define these areas when and if desired, but the plan also provides for the kind of combined spaces needed for team teaching. Each cluster is served by a utility core, located at the inside corner of the cluster, which consolidates required services and provides work centers (for art, science, etc.) with counters,

sinks and storage. At the center of the building is a two-story structure which serves the whole school: half a level down by stairs is the Resource Center, half a level up is the Multi-Use area, reached by bridges at three points. This change in level delineates the Resource Center and Multi-Use area without walling them off, and the split level solution makes access easy to either. The school has two kindergarten areas, two E.H. rooms, and 20 teaching stations.

BIRCHWOOD SCHOOL, San Jose, California. Architects: Porter-Jensen & Partners, Don Jensen, partner-in-charge of design, Don Leatherman, project architect. Engineers: Lloyd McVicker, structural; Geo Engineering, soils; George A. Greene Company, mechanical; David M. Arrigoni & Associates, Inc., electrical. General contractor: Herwig of California, Inc.



A.C. Baumgartner photos



Designed for conventional use or for non-graded team teaching

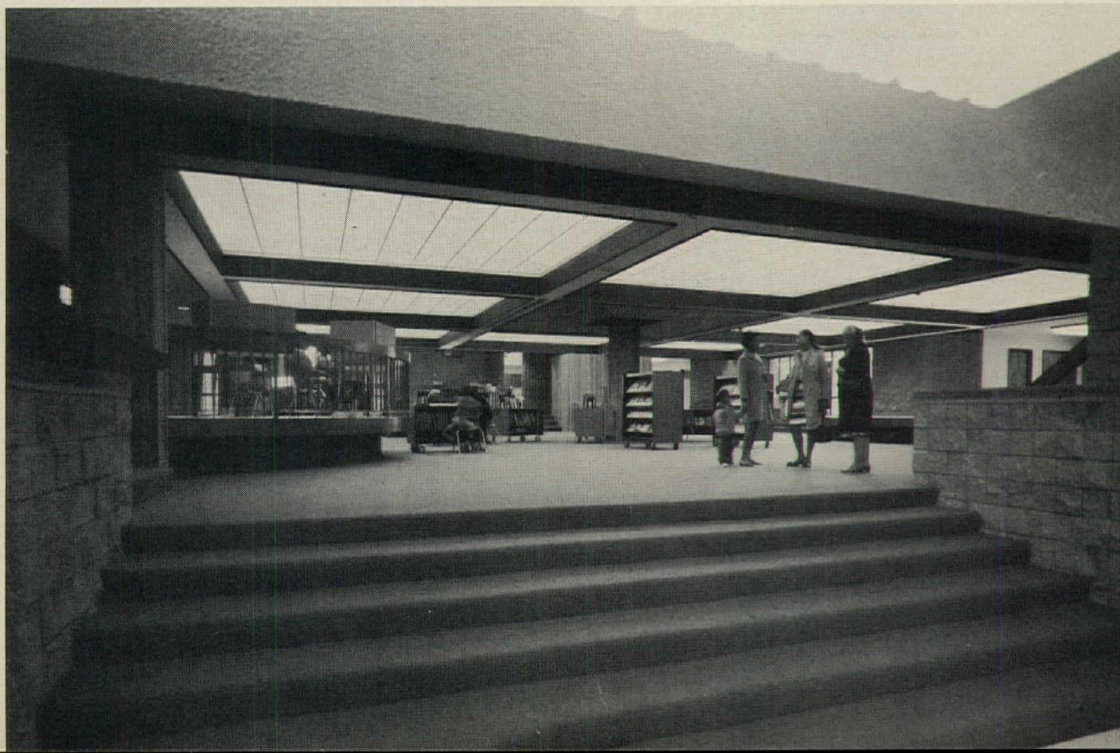
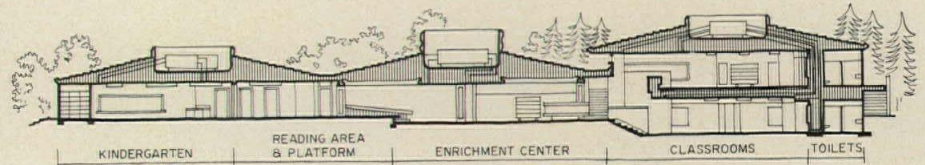
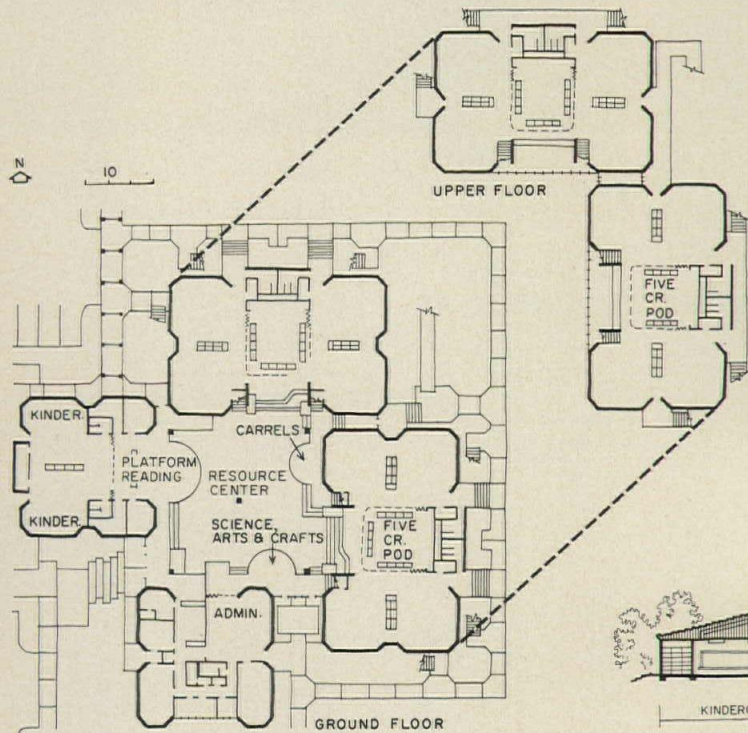
Martin Luther King Jr. Elementary School in Richmond, California, is a school in transition, like many other schools at this time of radical change in educational ideas. It is in process of changing from the one-teacher-to-a-class method to the non-graded, teacher-team approach, and the plan reflects the necessity to allow for both ways of teaching. Three five-classroom pods and an administration pod surround the Enrichment Resource Center (bottom photo) but a split level plan for the two-story pods used by Grades 1-6 differentiates between Center and class areas (center right) so that walls are unnecessary.

Movable furniture and folding partitions are provided in the classroom pods so that the transition to a completely open use of the space can be effected easily. The scale of the building is purposely residential to foster community assimilation of the building and pride in its appearance.

MARTIN LUTHER KING JR. ELEMENTARY SCHOOL, Richmond, California. Architects: Porter-Jensen & Partners, Jan Hansen, partner-in-charge of design, Hirofumi Miyachi, project architect. Engineers: Butzbach-Bar-Din, structural; G.L. Gendler & Associates, mechanical; Ackerman Engineers, electrical; Woodward-Clyde-Sherard & Associates, soils. General contractor: Garavaglia Construction Company.

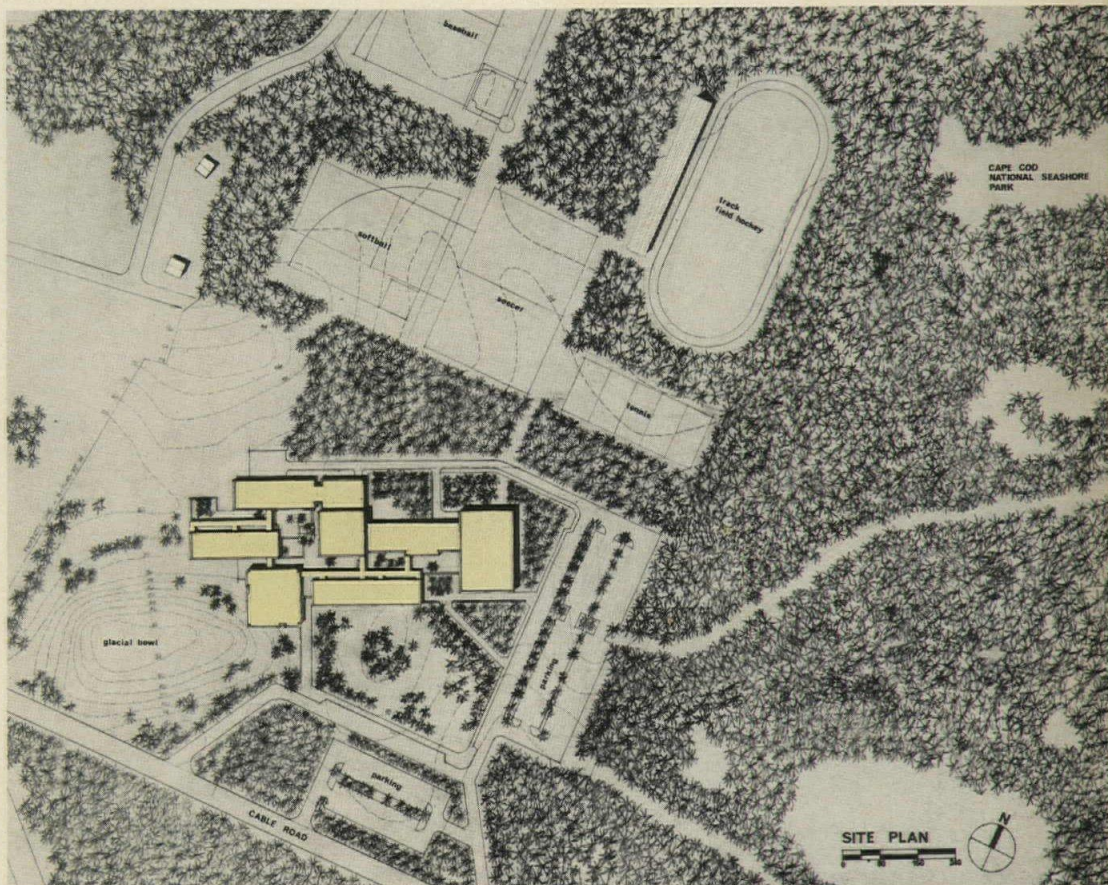


A.C. Baumgartner photos



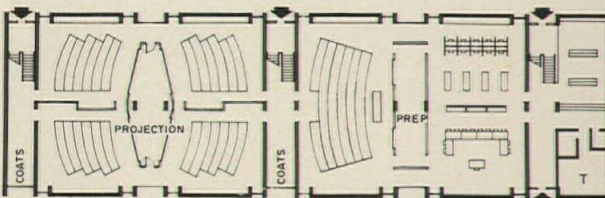
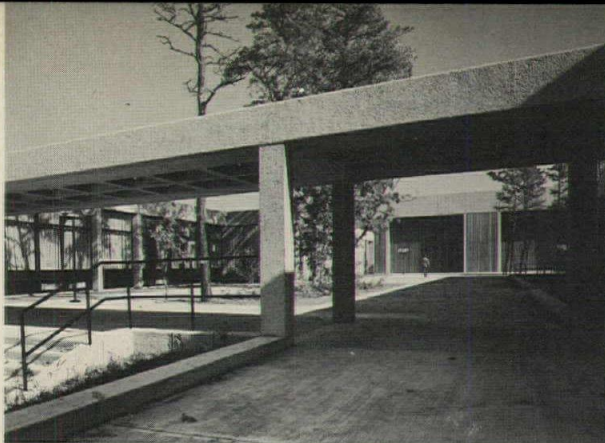
Designed for flexibility in classroom use and for pleasant vistas

The new Nauset Regional High School on Cape Cod is designed on a modified campus plan which provides a series of unusually pleasant outdoor spaces, walks and vistas. Its educational program called for standard classrooms for the present, but the architects made them adaptable for a variety of teaching methods. They can be considerably reshaped (see diagrams overleaf). The ceiling rib pattern permits placing of partitions on 10-foot centers in one direction and on 2-foot centers in the opposite direction. Individual study rooms, teacher preparation space and project areas are provided at the center of each group of four classrooms, giving immediate flexibility in curriculum and teaching. The auditorium also can be changed with partitions to provide three lecture rooms. Classroom buildings are two stories

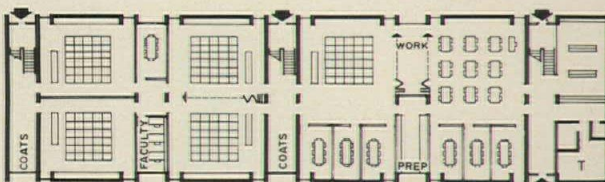


high and have no interior corridors. Instead, they are entered at every other bay at mid-level and are connected to walkways (most of them covered) by bridges. Building frames are poured-in-place concrete, sand blasted, with red cedar infill panels. The school serves 800 students currently, but is designed for a student population of 1100. The campus plan allows for community use of certain facilities (auditorium, gym, etc.) independent of the remaining buildings. All of the publicly used facilities—auditorium, cafeteria and gym—are located in one wing and are connected with a major entrance by the delightful landscaped walk.

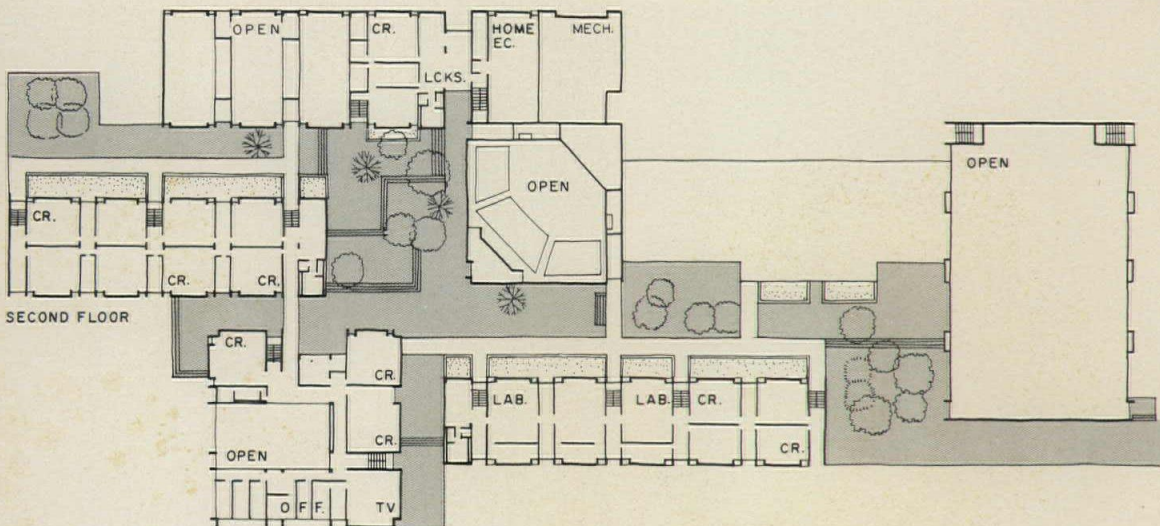
NAUSET REGIONAL HIGH SCHOOL, Eastham, Massachusetts. Architects: *The Architects Collaborative; William Geddes, H. Morse Payne, Jr.*, principals-in-charge; *Spencer Parsons, Gray Henry*, job captains. Engineers: *Souza & True*, structural; *Francis Associates*, mechanical/electrical. Landscape architect: *Larry Zuelke* of TAC. Contractor: *Westcott Construction*.



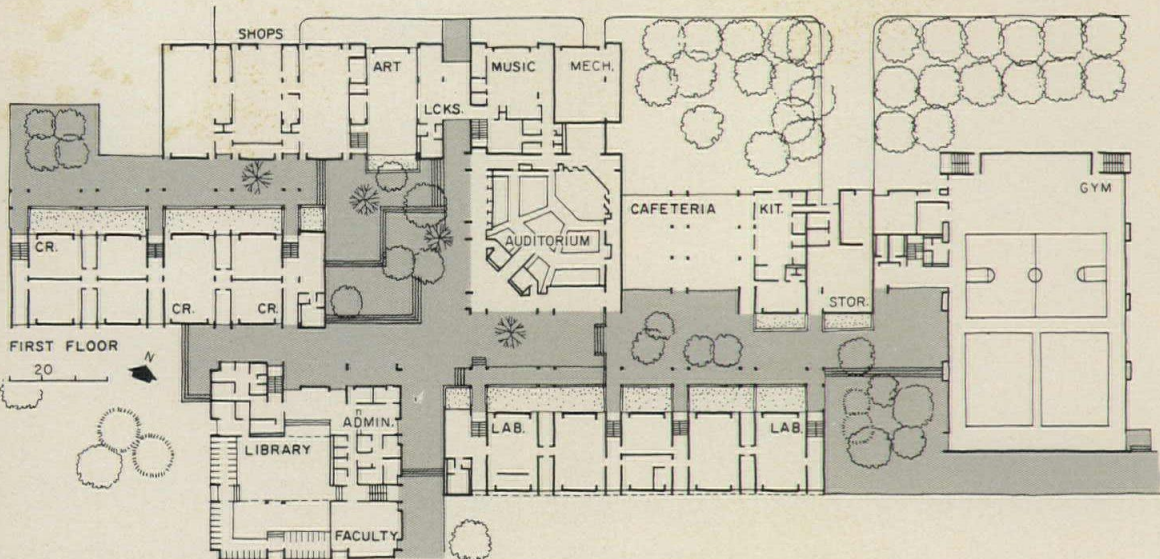
TYPICAL ACADEMIC CLUSTER STANDARD CLASSROOM CONDITION VARIATION 1 CLASSROOM & INDEPENDENT STUDY CONDITION



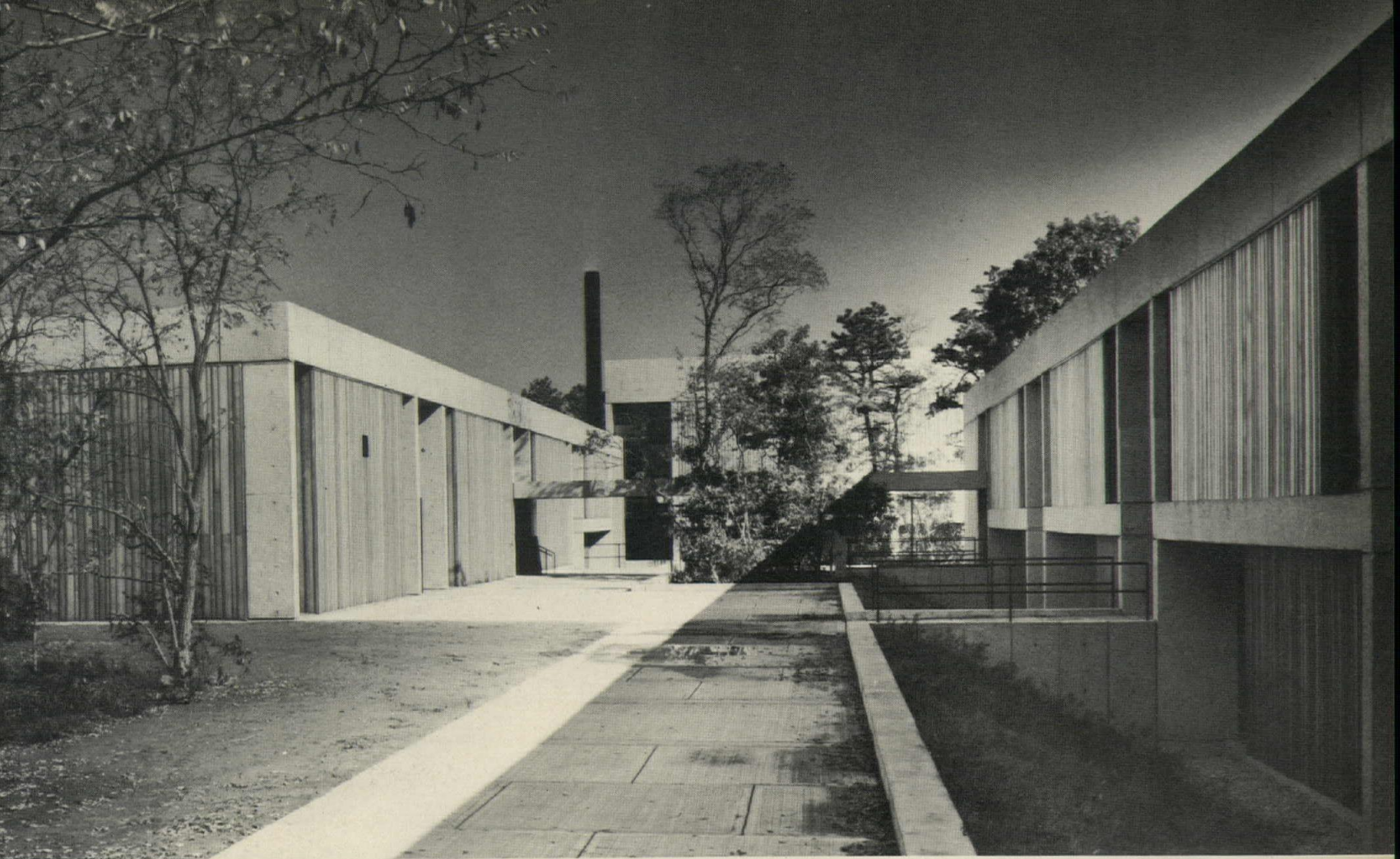
VARIATION 2 AUDIO-VISUAL CONDITION VARIATION 3 LECTURE HALL & MULTI-PURPOSE CONDITION



SECOND FLOOR



FIRST FLOOR



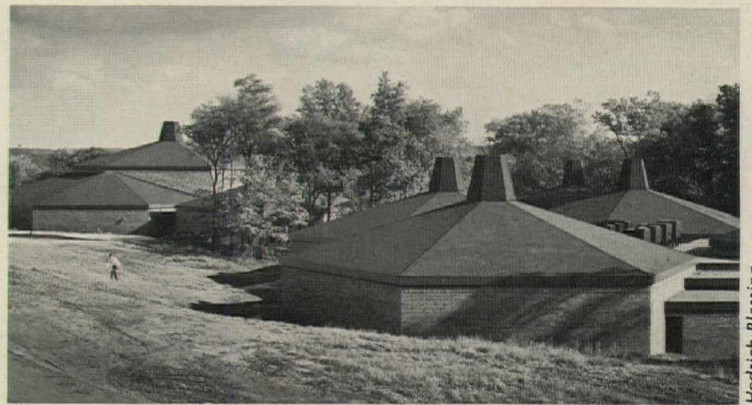
Hexagonal units, open "Learning Centers" express unusual program

At Mariemont High School in Cincinnati the scale and character of the buildings adapt to the wooded, rolling site as if this had been the only consideration in their design. But in fact the form and appearance are an outward expression of the school's innovative program and its emphasis on individualized instruction and maximum flexibility in teaching "strategy." The plan consists of a series of "learning centers" and specialized areas (art, music, industrial arts, science, gym, pool), most of which are hexagonal in shape. These are clustered in groups within which there are as few fixed walls as possible. The special areas like art and music, and the auditorium, and the two-story library (opposite top) are enclosed, for obvious reasons. But the four academic learning centers flow into each other with no walls at all. These learning centers are large

enough for a number of classes to meet in each simultaneously, with only movable screens or furniture (below center) as partial visual separation. At the center of each hexagon is a department office with a study area, making teachers easily accessible to students for special individualized instruction.

The building's all-electric climate control system is designed to make it possible to use the facilities all year round. Mechanical equipment is housed in the tent-like roofs of the pods. The school is currently used by 800 students but its learning centers provide for an eventual 1200 students.

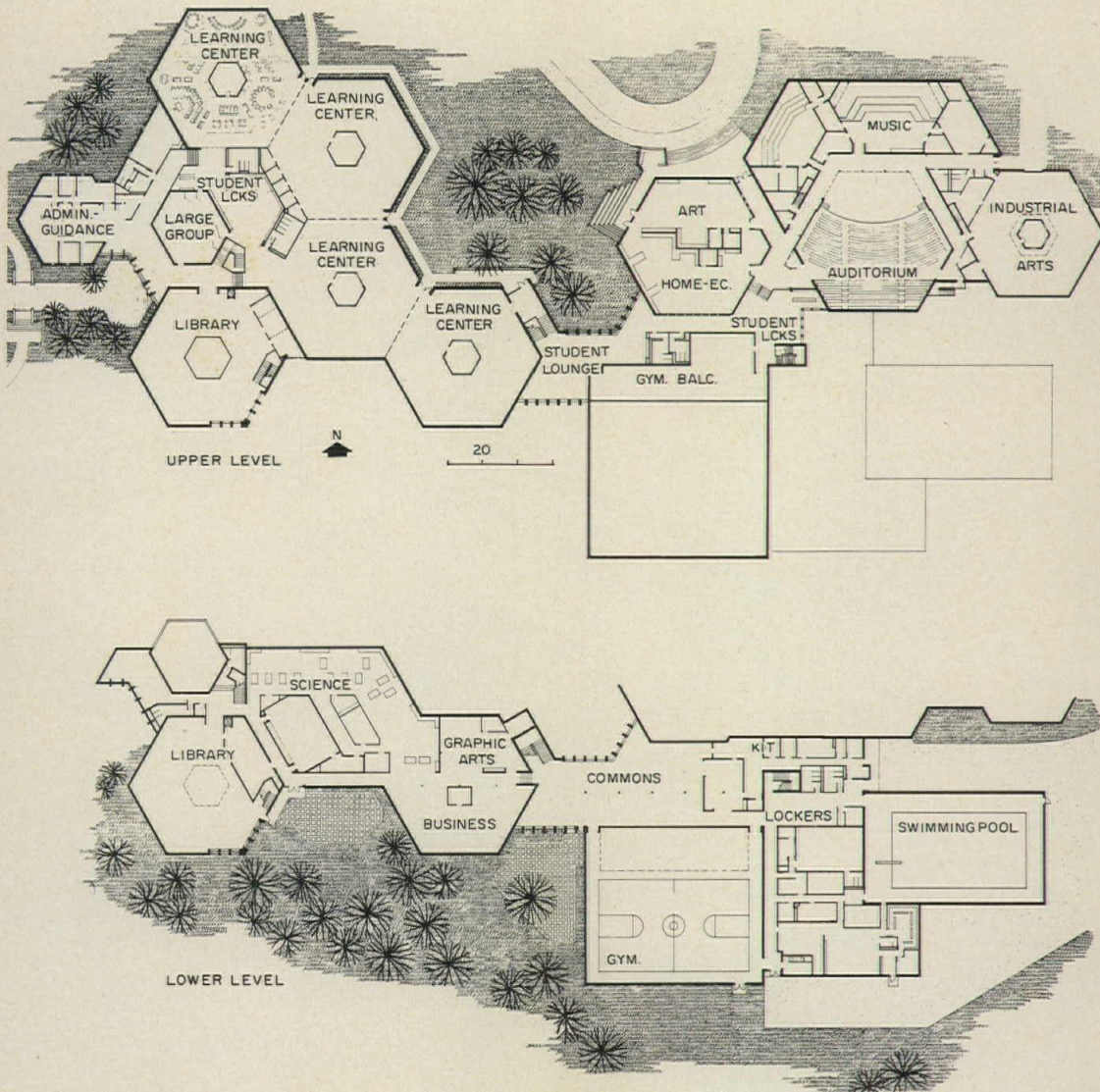
MARIEMONT SENIOR HIGH SCHOOL, Cincinnati, Ohio. Architects: Baxter Hodell Donnelly Preston, Jack E. Hodell, partner-in-charge. Engineers: Miller Tallarico McNinch & Hoeffel, structural; Ziel-Blossom & Associates, mechanical/electrical; The H.C. Nutting Company, soils. Contractor: Fisher-De-Vore Construction Company.



Hedrich-Blessing



Hedrich-Blessing





Lawrence Zink photos



continued from page 107

cause of what failures there have been in open plan schools. To overcome this problem, teacher training workshops in a number of cities are providing teachers with the opportunity to use the new and different kind of teaching space before they actually move into new open plan buildings. The freer environment for learning means also a freer environment for teaching, but understanding that environment in its physical state is basic to using it to its full potential. Teacher workshops are a practical means of avoiding the trauma of a building misused (an architectural heartbreak), and architects should perhaps participate in them as part of the service.

The next phase: "Open Day"—an import from Britain

With the advent in this country of the British "open day" (or "open classroom" or "open education") method, an even greater freedom in school space use portends, and an increased informality in use of school time and resources. Children move freely about the room or area, talk among themselves, work on projects with other children or alone, use a wide variety of resources—things as well as books and electronic equipment—or get small group or individual instruction from the teacher. It sounds not unlike many individualized programs already in use here, but it makes greater demands on the teacher who must work toward a plan, and see that each child works at his own pace to achieve according to his capability. So far too few such schools have been designed in this country to indicate in what way their architectural expression will be different from today's open plan school, but it will be surprising if planning innovations do not result.

Varied plans for high schools reflect the new philosophies

High schools, too, find that students respond to open planning and that teaching strategies can adapt to the new environment. House schools (or mini-schools) (6) make possible smaller group teaching and more personal relationships. Academic cluster plans (4) encourage team teaching and team teaching offers students more expert knowledge as well as variety.

Schools for all-year use create different design problems

Controversial though it is, the all-year school has attractions which may make it a frequently encountered design problem. Some schools, like Fodrea in Columbus (1), will incorporate this extended program without influencing the planning.

Vocational schools must respond in different ways

After a good many years of neglect, the vocational school (2) is once again an important part of the over-all educational offering of a community. Today's vocational school, responsive to technological developments, offers a broad range program and its building requires imagination.

Community schools: a coming thing?

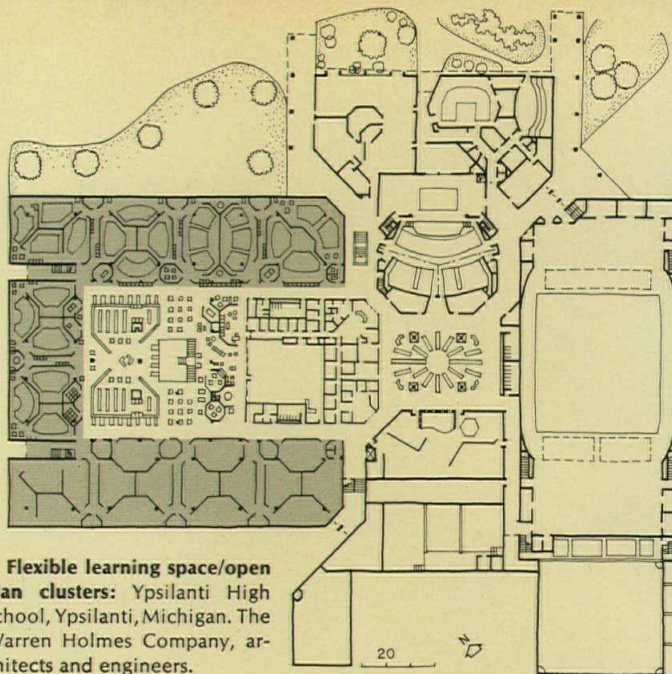
The "community/school" is more than a school whose gym and auditorium are used after hours by the community, though this is still an important double-use (3) and can be an exciting interchange. The community/school includes the whole community in its program. Although few such schools have been built, a number are under construction. Fodrea Elementary School in Columbus, Indiana (1) is designed for this aim.

Educational Facilities Laboratories says in a just published report, *Places and Things for Experimental Schools* (a joint effort with the U.S. Office of Education), that the Community/School is the future school.

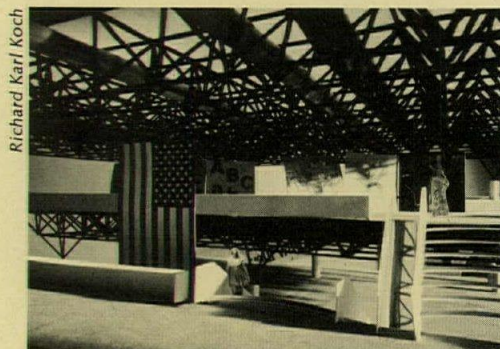
"Looking to the long future," it reports, "the single-purpose school will gradually give way to the community/school. Increasingly schools will be designed for people as distinguished from just children. Though still called a schoolhouse, the place of education will be the gathering place for persons of all ages who desire to learn from each other in contrast to the school houses we have known which appear to have been designed defensively against the destructive impulses of the occupants. The new schools will trust the occupants to rise to our expectations of them."

The eight schools featured in this study are all designed imaginatively and innovatively and with "high expectations of their occupants."

—Elisabeth Kendall Thompson

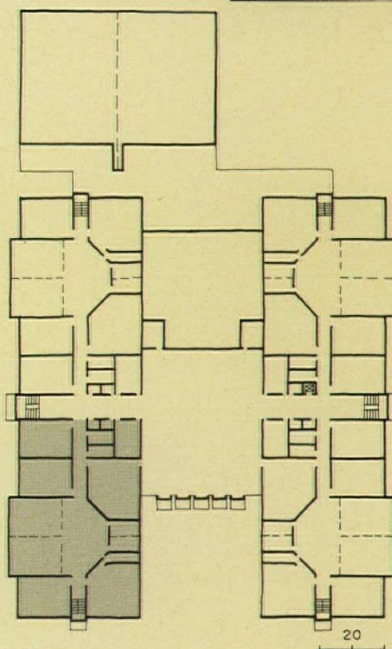


4. Flexible learning space/open plan clusters: Ypsilanti High School, Ypsilanti, Michigan. The Warren Holmes Company, architects and engineers.

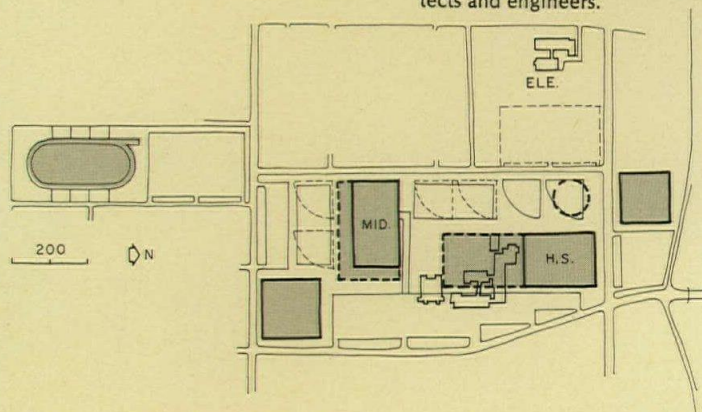


Richard Karl Koch

5. All-Year School: Fodrea Elementary School, Columbus, Indiana. Caudill Rowlett Scott, architects.



6. House or Mini-School: Ada H. Lewis Middle School, Philadelphia, Pennsylvania. Everett Associates, architects.



7. Educational Park or Complex: Martin Luther King Jr. Middle School, Atlanta, Georgia. Heery and Heery, architects and engineers.

Steel system building uses standard parts, familiar materials

This project makes amply clear that systems building doesn't have to involve strikingly new concepts or "hot-out-of-the-lab" technologies. But rather it means closer engineering design; attention to practical details with respect to weathertightness; proving the effectiveness of different concepts and new uses of materials to building officials; and closer attention to scheduling, construction, and purchasing factors.

Before any consortium-type

group embarks on a system development, the presumption is made that inherent in the approach is the generation of certain special and unique components and design and fabrication details—key links in the over-all system—that are patentable. While this may be a gamble, it is a necessary incentive to protect the group's investment in the studies made, and in the time and effort in presenting the system to various agency-type clients.

A new, modular steel-frame building system is having its first large-scale U.S. application in a \$10-million, 458-unit, low- and moderate-income housing project, called Lake Grove Village, on an 8-acre urban renewal site on Chicago's South Side.

Consisting of three 10-story buildings and five 3-story buildings, the project is scheduled for completion in 12 months' time. The structure for the 10-story buildings has been erected in 30 days, and they have been enclosed with exterior panels, windows and roof in 18 days.

The structure is simple, straightforward and easily accommodates all utilities

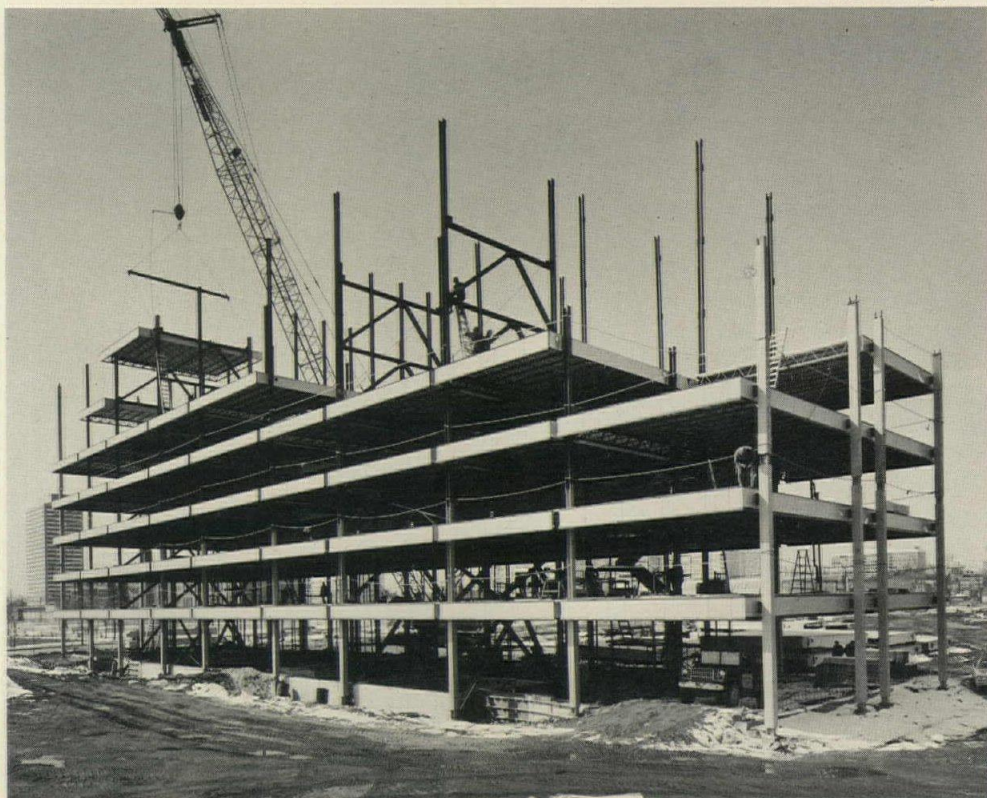
There are only a very few elements—all standard—that comprise the structural system: 1) columns erected in two- and three-story lengths; 2) trussed-frames in U-shaped bays for wind bracing; and 3) bay-size floor panels made up of bar joists, open-web perimeter girders, and gypsum-panel floor decking. The floor panels are preassembled on two assembly lines at the site, trundled to the building location by straddle buggy, lifted to position by crane and simply bolted to column brackets. The floor elements include fascia panels; and also floor channels and head sections to receive the exterior wall panels that are installed simply from the inside. The floor deck serves as a work platform, so no planking or internal scaffolding are required.

Interior columns are enclosed within party-wall partitions, and the column-width spaces between wall panels provide a natural location for mechanical chases for pipes and ducts. Sides of the wall panels facing the chase are covered with gypsum board for fire protection.

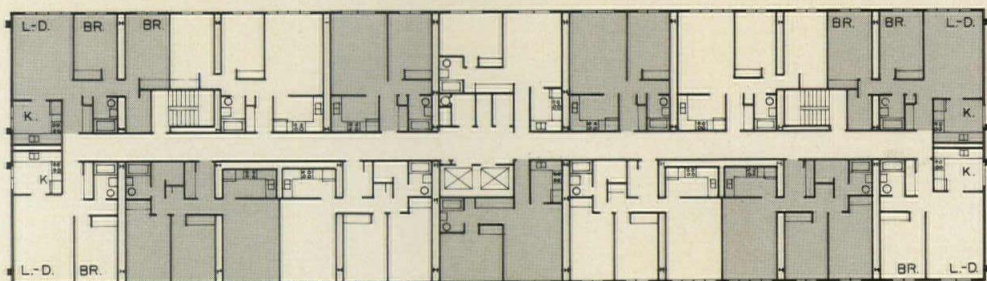
The structural elements are simple, standard, and thus endlessly repeatable.

The 10-story high-rise has four different bay widths. Where the interior columns occur they are enclosed by gypsum board, and the remaining space serves as a mechanical chase for pipes and ducts. The wind bracing consists of truss-braced columns and occurs at approximately the quarter points (note chases on plan).

Hedrich-Blessing photo



Lake Grove Village, Chicago, Illinois. Architects: Environment Seven, Ltd.



There are no obstacles to interior layout, save for the few columns and chases

One obvious advantage of the system is the freedom permitted in space planning. The only fixed elements are the columns, vertical runs of piping and ductwork and stairs and elevators. Partitions could even be rearranged—within reason—to alter room sizes and shapes. Because the floor panels are framed with open-web members, there is plenty of room for horizontal runs of pipes, ducts and electrical conduit. Additional runs could be put in later, and it would be a simple matter to penetrate the floor system for the risers.

Perhaps one of the most salient features of the system is that there are no "specials" that have to be attended to and accounted for in working out a component list for a project. Because of the planning flexibility and the physical "openness" of the system there should be little temptation for architects and engineers to violate the discipline of the system—because the discipline, itself, from the mechanical standpoint is not rigid. And, of course, adhering to the discipline of a system oftentimes means the difference between whether there are significant cost savings or no cost savings.

A carefully detailed, highly disciplined kit of parts is the heart of the system

The system elements have to be fabricated and erected to closed tolerances than is customary with much of conventional construction. A study of tolerances as they affected system details was undertaken by the developers of the system, Component Building Systems, Ltd., in the construction of a prototype of the system—two duplex units—built on Chicago's North Side. Joint details of curtain wall panels were exhaustively studied and refined over a year's pe-

riod. Component Building Systems took a direct hand in the Lake Grove Village project. When others are franchised to use the system, they will be expected to use the system components as detailed, because the company feels that these details are essential to the economy and integrity of the system. For example, the exterior walls must use the system's metal panels—concrete panels would not be allowed.

Component Building Systems, Ltd. functions in many respects like the producers of industrialized building systems that have been imported here from Europe except in one very significant aspect—they have not needed to set up a factory for manufacture of system components; the only such investment is for the on-site production lines for assembly of floor panels and these represent only very nominal cost. The steel frame elements can be bought conventionally; curtain-wall panels can be obtained from an established manufacturer; the gypsum planks are a standard product; the ceiling tile, however, are special cementitious units with a vermiculite-silicate base that are imported from France where the component building system now in use originated.

One of the changes made in the French system was to substitute conventional bar joists for the space-frame floor system which consisted of 7- by 11-ft panels made up of rods welded to rolled bars in a space frame configuration—like bar joists assembled in a saw-tooth pattern. This approach would have been uneconomical here, and, in fact the panels were costly to fabricate and transport even in France, so the system there has been changed to the U. S. arrangement.

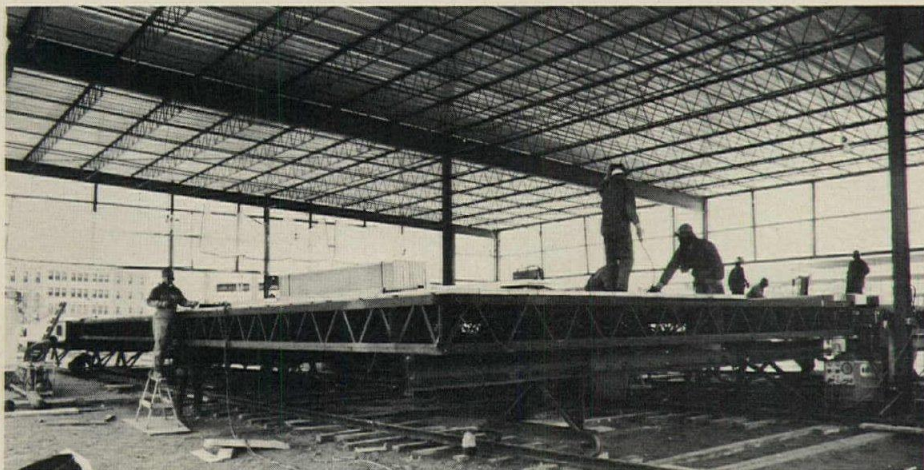
The system originated in France in response to the need for more flexibility

The original system was first used, except

for two small prototypes, for a 500-unit apartment project in Rouen, France consisting of 25 five-story buildings. It was developed by the Paris architectural firm of Lods, Depondt & Beauclair in collaboration with French building product manufacturers. Paul Depondt, who now is also vice president and director of architecture of Component Building Systems, Ltd., says that the French government has constantly been increasing the minimum size of apartments, and because of the availability of larger spaces, some of the early post-war apartment buildings with fixed partitions have become less and less desirable—thus the incentive for more flexible partitioning.

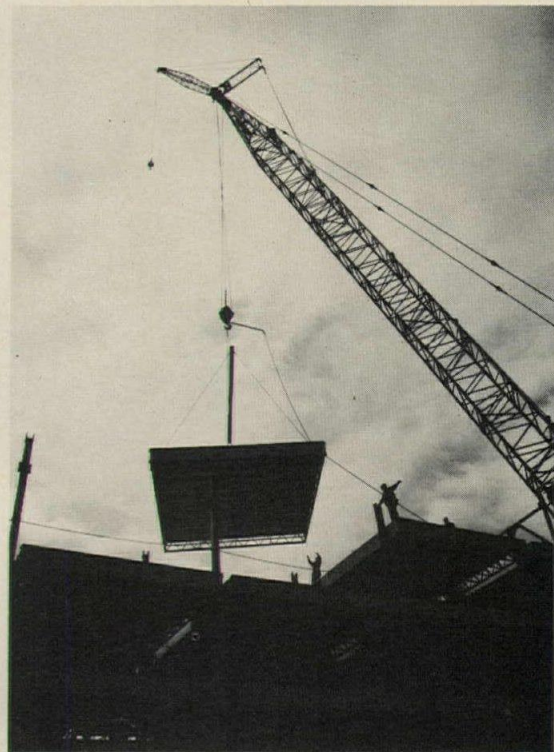
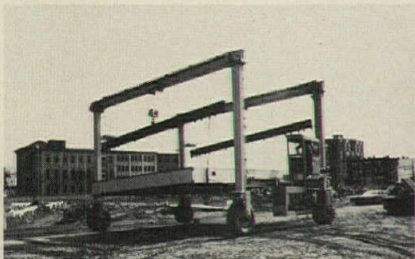
System III is the name for the industrialized building system now being used in the U. S.—it represents that many steps away from the original system. Besides Depondt, other principals in the U. S. organization are Kenneth C. Naslund, president and director, who is a partner of The Engineers Collaborative of Chicago; Arthur O'Neil, who is board chairman of the well-known Chicago contracting firm, W. E. O'Neil Construction Company; and Arthur Bohnen, vice president for marketing Chicago building cost consultant. The firm was organized after O'Neil and Naslund became acquainted with Depondt's Rouen project. (Depondt studied at Chicago's Illinois Institute of Technology and received his master's degree from Harvard.)

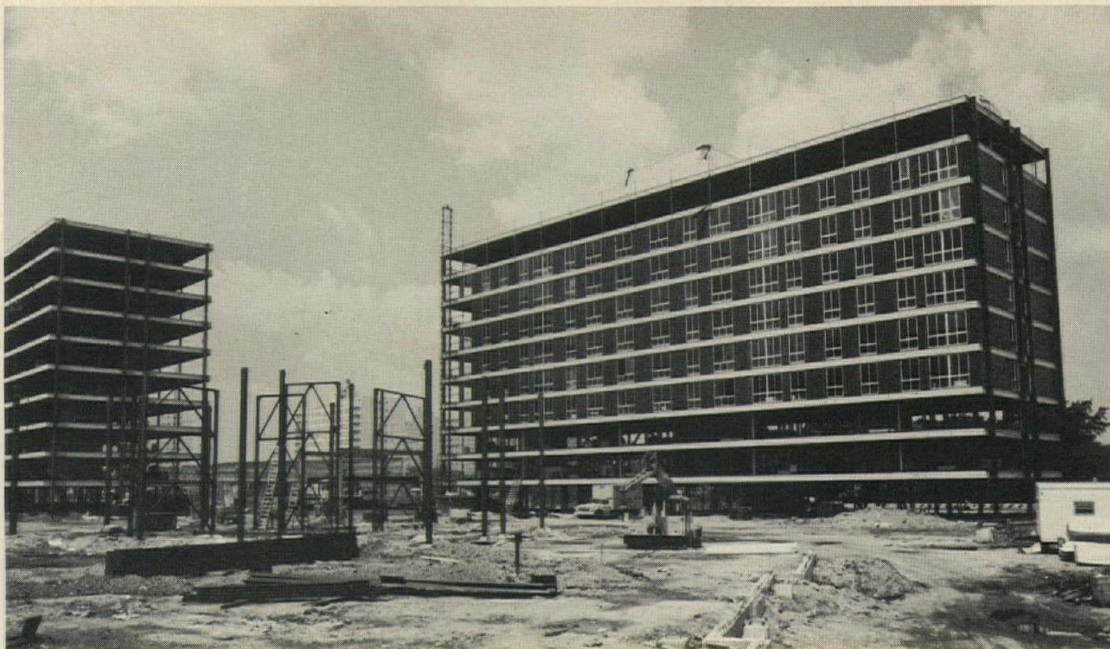
System III will be licensed to qualified general contractors who pay a flat fee plus royalties based upon the dollar value of the components. Component Building Systems' function first is to show an architect how System III can be used to suit a given project when it is in its formative stage. After a design has been accepted by an owner or developer, the organization then: 1) prepares



Floor panels are assembled on a production line that speeds fabrication and helps quality control.

The panels consist of bar joists, open web girders, gypsum-plank decking and metal fascia panels. Electrical conduit also is installed. A straddle buggy takes the finished panel from shed to building location. Panels are bolted to column brackets.





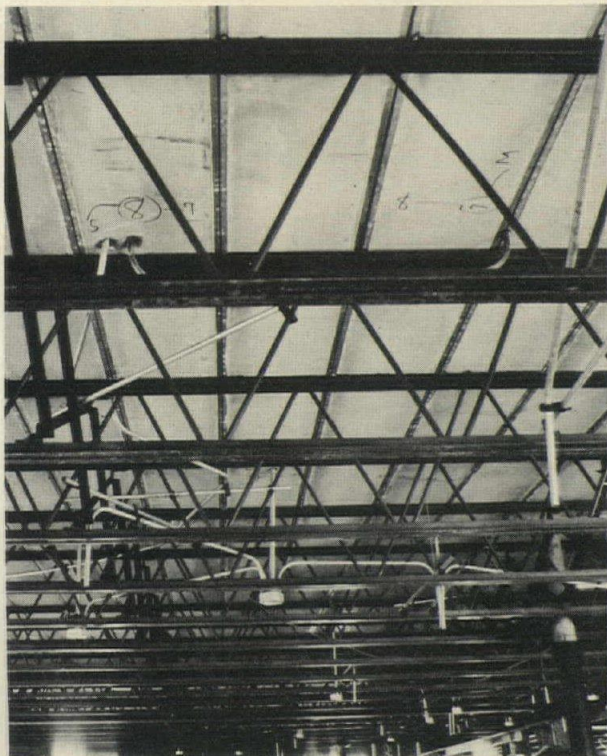
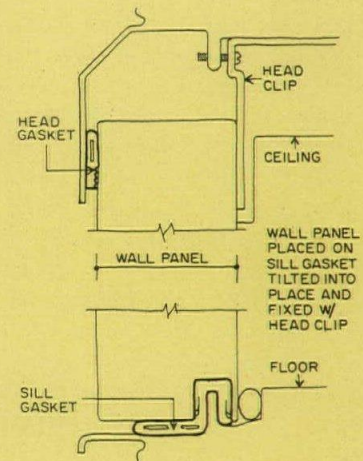
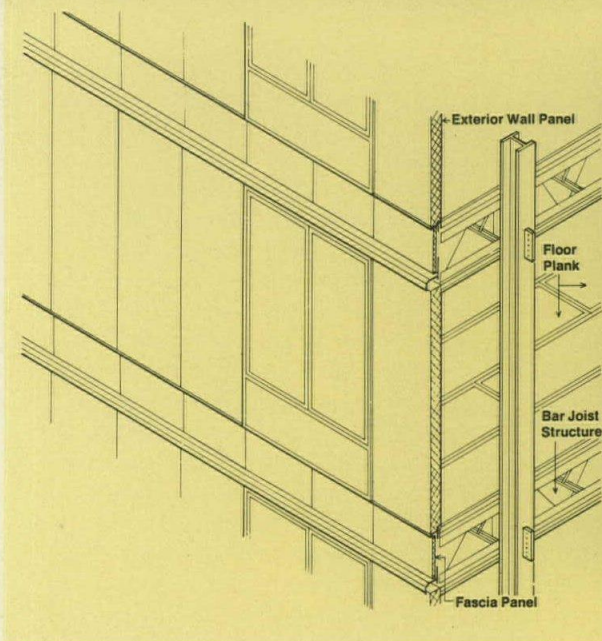
The wall system also consists of standard units—designed to be easily installed from the inside.

Wall panels are tilted up into place on top of a gasket which fits over an attachment that is part of the fascia assembly. The panel is held in place by a bolt at the head clip. The vertical joint between panels utilizes an interlocking detail and gaskets.

Both inner and outer skins of the panels are steel, with an acrylic finish on the outside and a vinyl laminate on the inside. The core of the panel is cementitious, mineral-particle material.

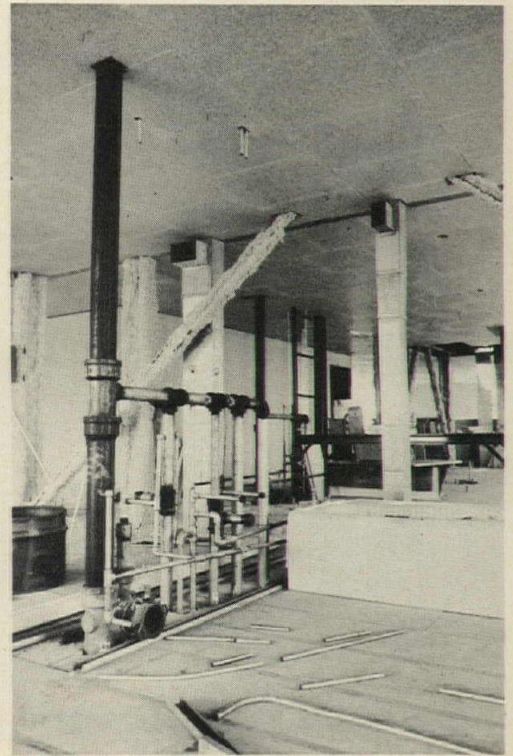
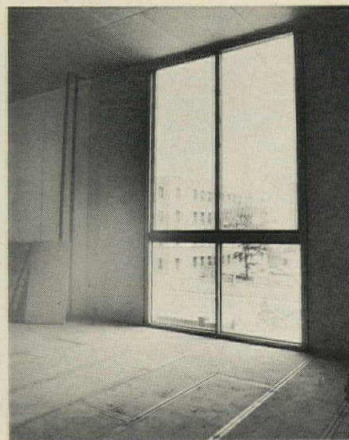
Exterior columns are fire-protected on the exterior with concrete that has been factory applied. Interior columns and trussed bracing have sprayed-on fire protection.

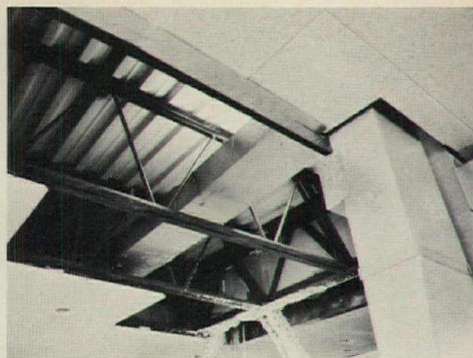
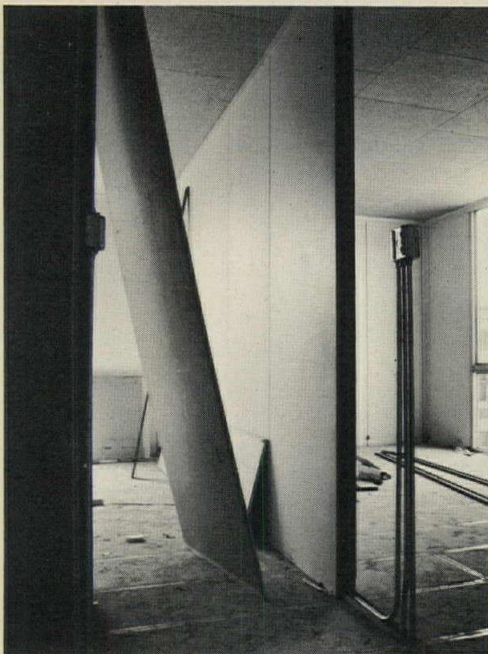
Floor covering is carpet applied directly over gypsum plank, or resilient tile over skin coat.



The mechanical and electrical services are easily installed in readily available space.

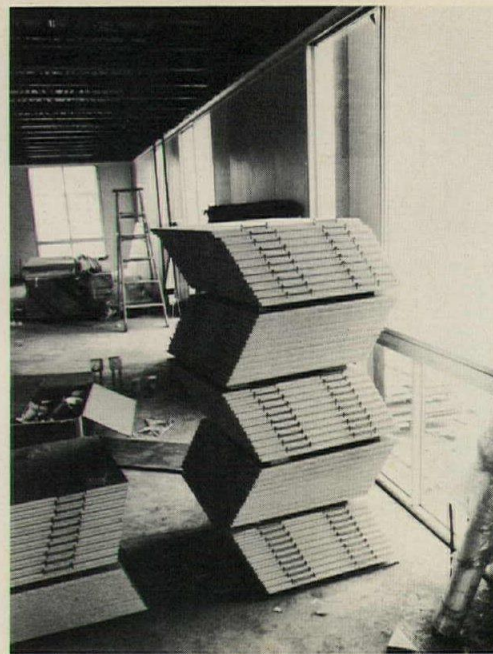
The open-web nature of the floor system allows plenty of room for conduit (left) and any necessary ductwork. The heating system for this project is perimeter hot-water convectors, so ductwork is minimum. Heating risers (center) and the plumbing wall (right) are concealed in a double-wall partition.





Partitions and ceiling could hardly be simpler.

Within apartments partitions use a standard gypsum board system that leaves room for conduit (left). The ceiling tile is a vermiculite-based product imported from France. A wedge between a clip on the tile and a clip on the bar joist holds the tile in place. A fire test for the floor assembly indicated 3¼ hr.



a list of the components required by the design; 2) prices the package of components to the contractor/licensee; 3) prepares with the contractor/licensee a schedule and an erection sequence which together indicate the delivery schedule; 4) gives the contractor/licensee advice as is needed for erection of the system; 5) inspects the manufacture of components for precision and quality control; 6) coordinates delivery to the site; and 7) inspects fabrication and erection.

Besides being an architect, Depondt brings to the firm the experience acquired in developing and building the Rouen project. Naslund's firm has long been involved with industrialized building systems in this country, working with manufacturers in developing new products and participating in systems-building projects—for example Naslund and architect Robertson Ward devel-

oped the structural system that was used in California's SCSD project, and, further, Naslund worked with another manufacturer in adapting an existing precoordinated structural system so that it would meet SCSD type specifications. Beyond this, his firm has done considerable work in connection with acceptance of products by building code and building department people, as well as in testing of materials and products for building code acceptance.

The system won a turnkey competition for New York state student housing

Caudill, Rowlett, Scott together with Component Building Systems, Ltd. were winners in a \$5.4 million competition to design and build student housing at the State University College at Brockport for the Dormitory Authority of the State of New York. Members

of the team include W. E. O'Neil Construction Company, The Engineers Collaborative, and M. Paul Friedberg Associates, Landscape Architects.

The concept is a village of 1,000 students living in 200 two-bedroom, 25 three-bedroom and 25 one-bedroom apartments, with access to community centers, service facilities, parks, streets and plazas. The architects designed the project so that, "housing units serve as 40-ft deep 'partitions' modulated vertically and horizontally to create appropriately-scaled pedestrian ways."

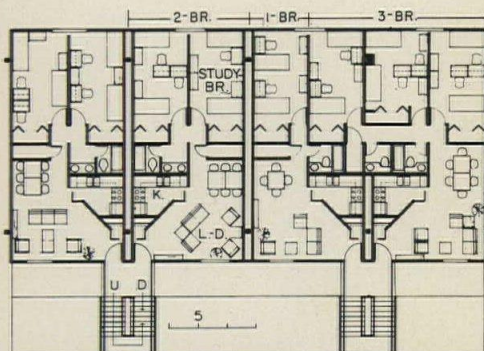
The height of the buildings ranges from 1½ to 3½ stories above the street, and the apartment units are arranged horizontally in blocks of two to six units. Vertical circulation is via exterior stair towers.

CRS points out that the village-type layout incurs certain cost penalties that a typical double-loaded corridor, motel-type scheme does not. Exteriors of the apartment buildings are all weathering steel.

A requirement of the competition was that the buildings be ready for occupancy by August 1973. Construction began in July and anticipated completion date is this December or next January, representing perhaps as little as 5½ months total for construction.

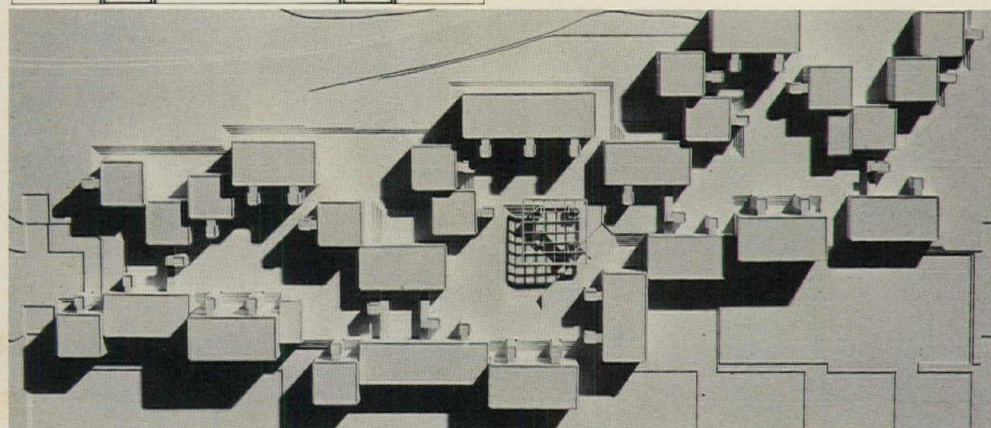
CRS notes that while the construction process is quickened, and while the architect works on the project for a shorter period of time, there still remains a fixed amount of work the architect has to do that systems do not eliminate. There is a more concentrated effort in a shorter period of time—and there is vigorous involvement during the construction phase.

A significant advantage to the architect is that there is a quick turn-around process. Importantly, feedback is quick on how well the project works that can be plugged much sooner into future projects.



Caudill, Rowlett, Scott won a competition for this student housing using the system.

The \$5.4 million project for 1,000 students illustrated here is under construction now at Brockport, New York for the Dormitory Authority of New York State. The massing of buildings and the site plan give a village-type character to the project. External stairs free the plan, cut construction.



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When you design a built-up roof, you're staking your reputation on a roof that will withstand the elements for as long as 20 years—or even longer.

Reason enough to get the best advice available right from the beginning. Because anything less than that can be costly. To you and everyone else involved.

That's why we strongly suggest your first step be to contact J-M. To call in the J-M roofing specialist near you to look at your plans, to work with your people to develop recommendations for the entire roof structure.

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Main thing is that we've given you good, solid advice, which, if followed, will result in a good, finished roof that you may choose to have guaranteed secure for a specified period of time—backed by bond. It's free advice that will end up saving money—come rain or shine.

For your roofing advice, contact your J-M district sales office. Or write: Johns-Manville, Post Office Box 5108, Denver, Colorado 80217.

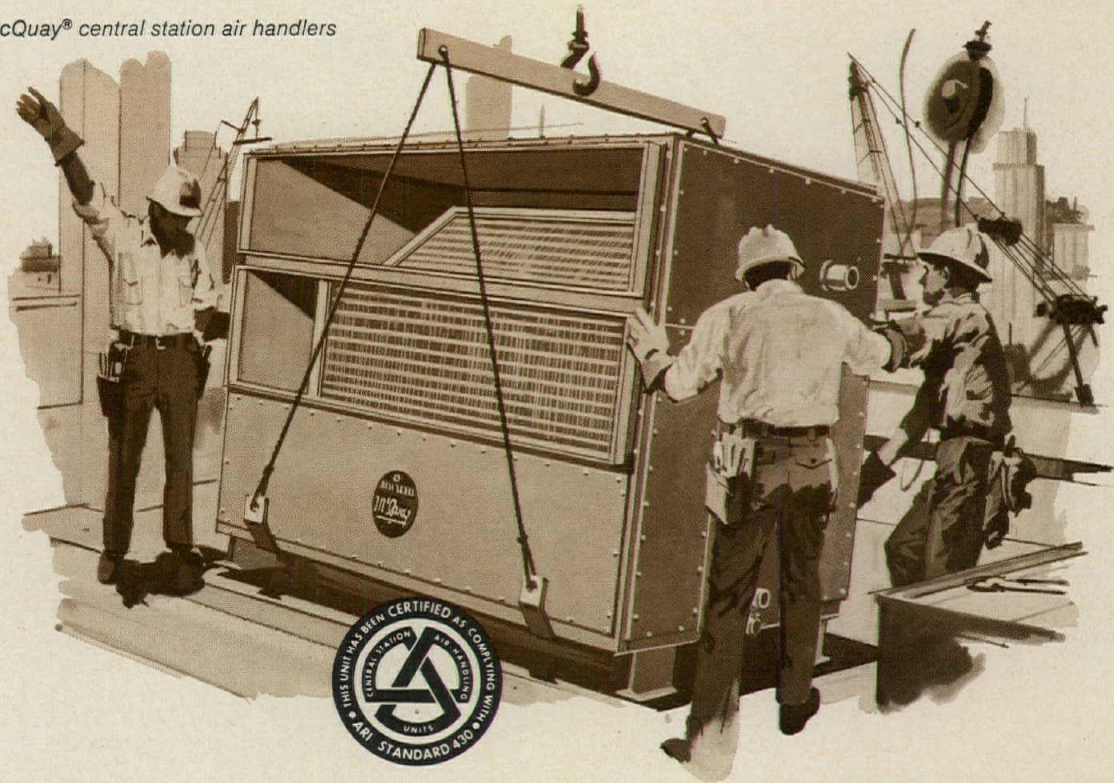
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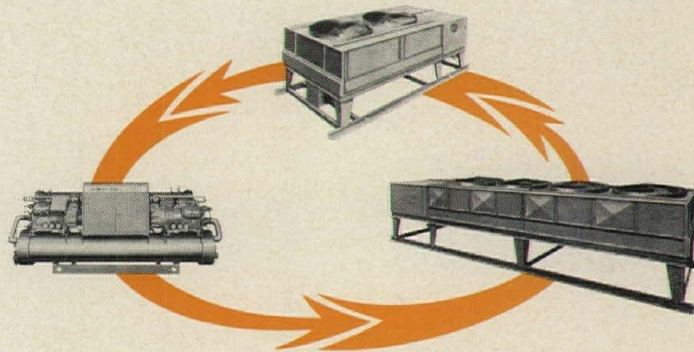


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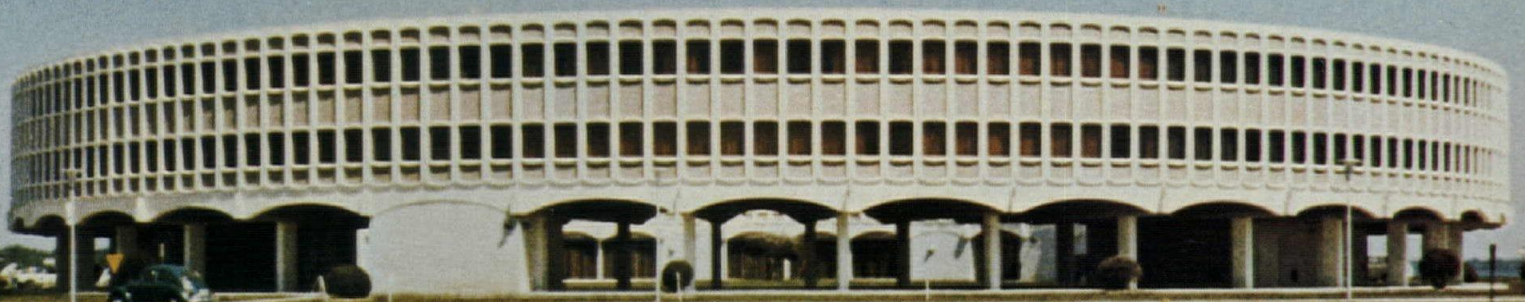
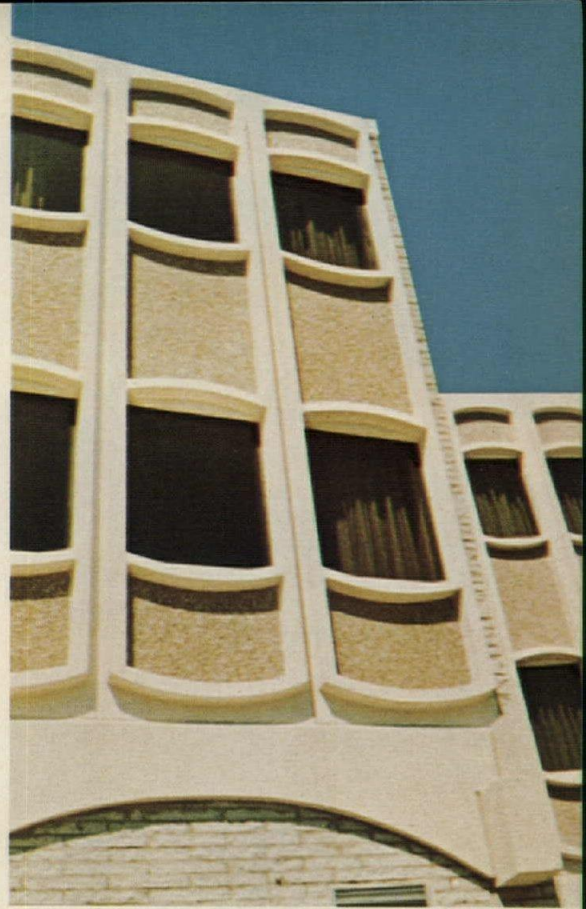
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Where ZINC guards the Coast Guard



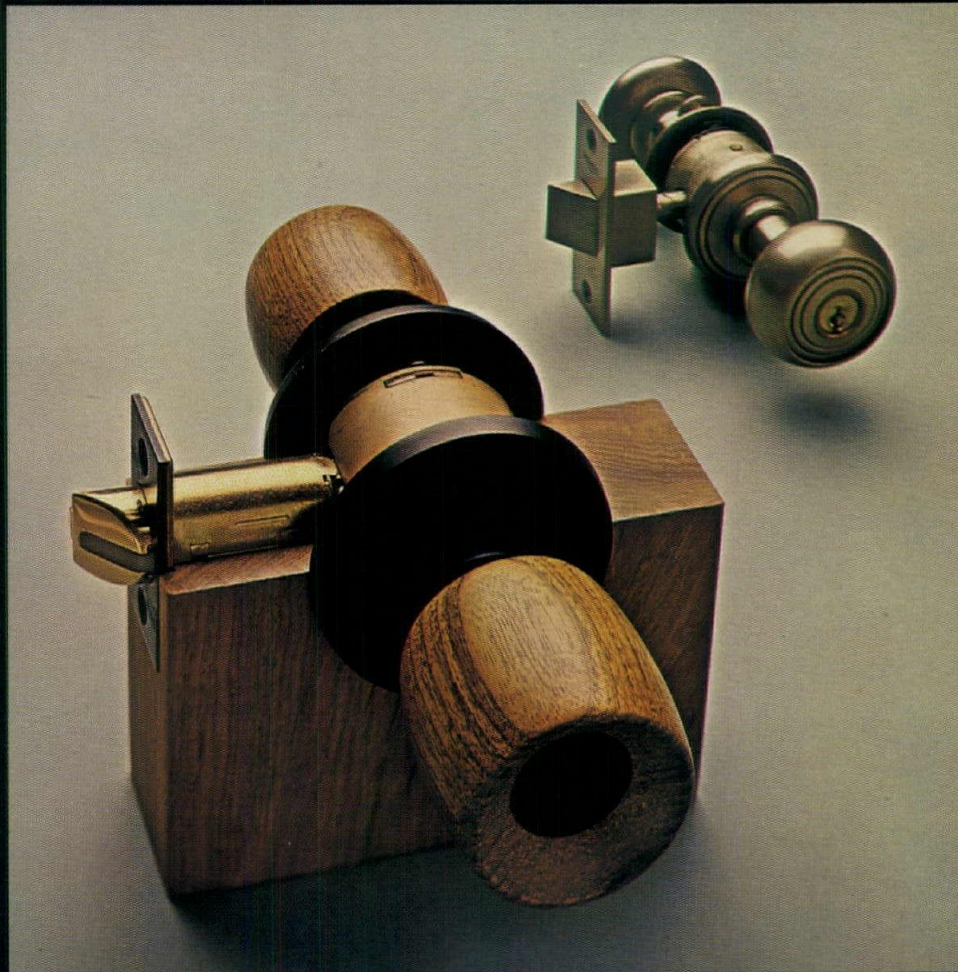
Design Specifications by Design Branch,
Civil Engineering Division, U. S. Coast
Guard. Concrete Panels by Southern
Block & Pipe Div., Lone Star Industries,
Inc. General Contractor, Fred C. Gardner
Co., Inc.

The Coast Guard's own designers took the "drab" out and zinc will keep the rust out of this beautiful new concept in military quarters. □ This handsome building is the new U. S. Coast Guard Barracks at the Elizabeth City, N. C. Air Station. The zinc is on the galvanized steel reinforcing rods below the surface of the 237 precast concrete panels used for both interior and exterior walls. Galvanized steel was specified because of its proven ability to prevent subsurface rust which could cause staining, cracking and spalling of the concrete surface. □ While the use of galvanized re-bar is especially important in marine environments, it is also specified in inland locations to protect against general moisture and other corrosive atmospheres. □ Used in concrete or as a separate material, galvanized steel provides the most practical combination of strength, corrosion-resistance and economy.

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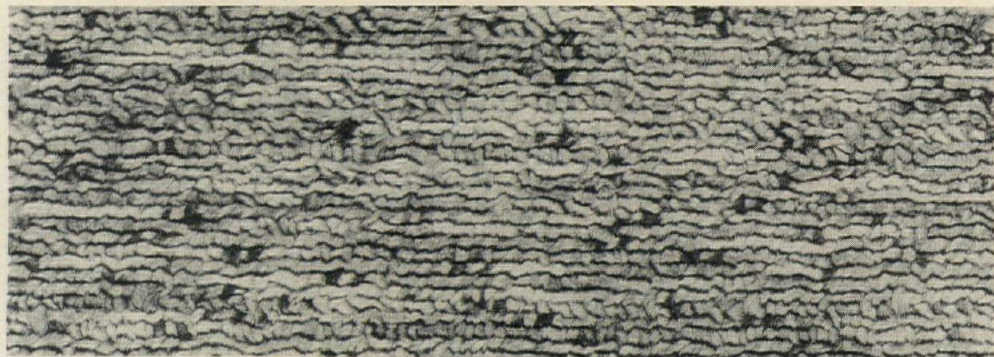


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For more information circle item numbers on Readers Service Inquiry Card, pages 188-189



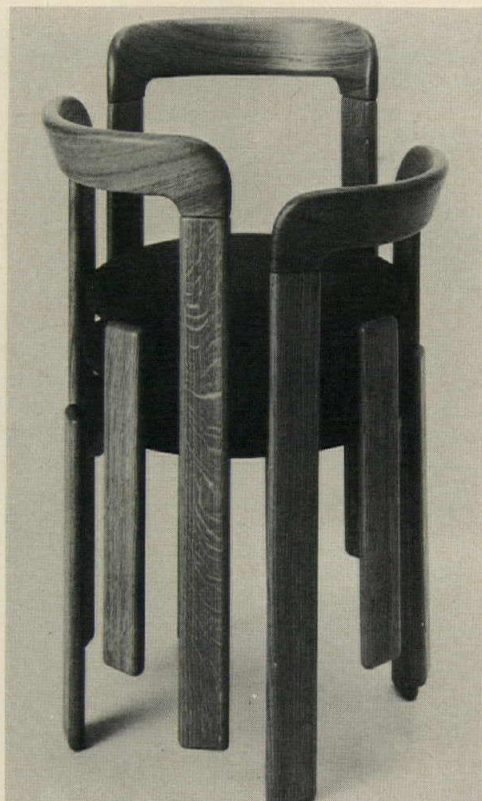
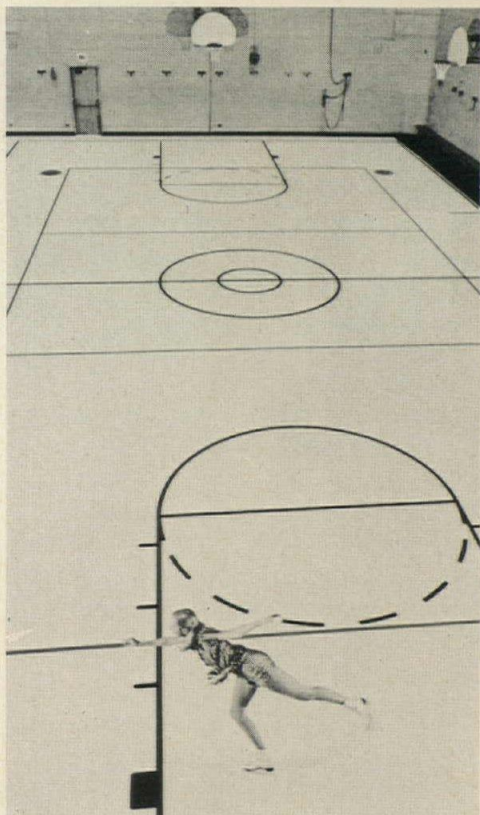
LEVEL-LOOP CONTRACT CARPET / Tufted entirely of Anso nylon, this carpeting incorporates an anti-static metallic filament. Available in nine colors including natural

and earth tones. Twelve-foot width with double jute backing. ■ Exclusive Carpets, New York City.

Circle 300 on inquiry card

VINYL ICE SKATING SURFACE / Slick vinyl panels, 3 ft by 3 ft by 1/2 in. thick, provide a recreational floor on which to ice skate or play basketball, according to the company. The product can be installed on concrete or wood. The ice skating capability is produced by applying a conditioner which can be washed off for a firm footing. ■ Vinyl Plastics Inc., Sheboygan, Wis.

Circle 302 on inquiry card



STACKING CHAIR / Recommended for cafeterias, clubs and auditoriums, this chair is available in natural oak, beech with red, white or black lacquer frame, with plywood seat to match or upholstered. ■ Stendig Inc., New York City.

Circle 303 on inquiry card



HORIZONTAL-VERTICAL AIR HANDLING / A line of 3-, 4- and 5-ton air handling units is available for field piped refrigeration lines. All models can be used in horizontal or vertical applications. ■ Mueller Climatrol Corp., Milwaukee, Wis.

Circle 301 on inquiry card

EMERGENCY LIGHTING / Fixtures are made in single- and two-head versions, in black, white or spun aluminum, with other colors available. Batteries, charger and controls are in the cylindrical housing and the battery will keep a lamp burning up to four hours. Unit is installed on a Gem box or similar AC-type fitting in the wall. ■ Dual-Lite Co., Newtown, Conn.

Circle 304 on inquiry card

more products on page 134





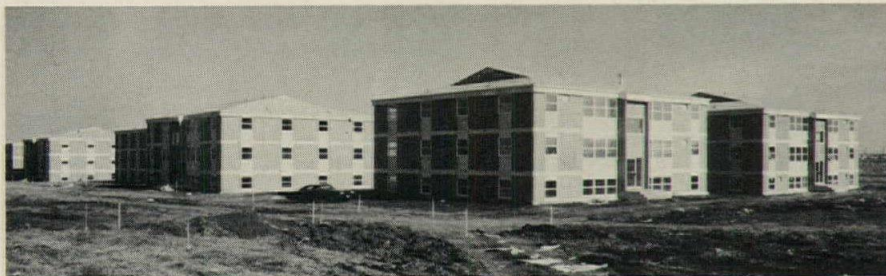
Robert Friessen, Partner
Preferred Painters, Inc.
308 West Lotta Street
Sioux Falls, S. D.

“My two-man painting team covered 12 apartments in 3 hours with *Hide-A-Spray*™”

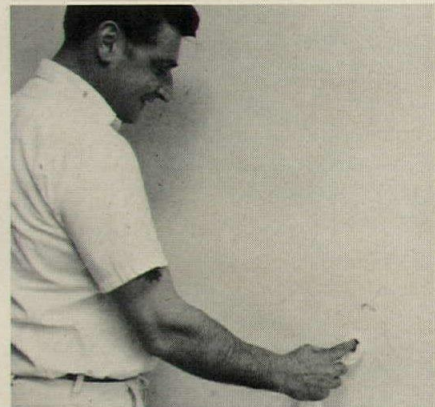
For Painting Contractor Bob Friessen, and for the Developer and General Contractor, and the Project Owner, *Hide-A-Spray* High Build Interior Flat Latex Paint was the answer at the Meadowland Apartments. According to Mr. Friessen, “The *Hide-A-Spray* Coating covered interior surfaces in one 8-10 mil wet coat at a rate of one to one and a half gallons per minute, without priming, ghosting or sag. Taped and spackled joints in the drywall construction disappeared in one pass of the airless spray gun. And, it dried uniformly to a 4-mil dry coat in just two hours. It would have required 150 hours for two men with brush and roller to do the same 12 apartments, using conventional paint.”

Painting contractors and builders everywhere are turning to *Hide-A-Spray* High Build Interior Flat Latex as the top quality, competitively priced, airless spray paint system that provides maximum coverage, saves time and money, and returns a handsome profit. Cover yourself with the facts by writing PPG Industries, One Gateway Center, 3W, Pittsburgh, Penna. 15222.

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PITTSBURGH® PAINTS



The Project:
Meadowland Apartments
Sioux Falls, S. D.
Ten 12-apartment units.
Developer & General Contractor:
Lloyd Construction Co., Mankato, Minn.
Architects: Koch Hazzard Associates,
Sioux Falls, S. D.



Incidental marks and dirt came off quickly and easily with a damp cloth.



Hide-A-Spray Latex paint completely covered taped and spackled joints in dry-wall in one pass of the airless gun.



Hide-A-Spray paint dried in two hours. Contractor installed cabinets and floor covering the same day. Walter Scharfe, left, Job Superintendent for Lloyd Construction, commented, “Conventional two-coat paints would have meant a week’s time between painting and any such installation.” PPG Paint Center Manager, Eugene Lee, is shown at right.



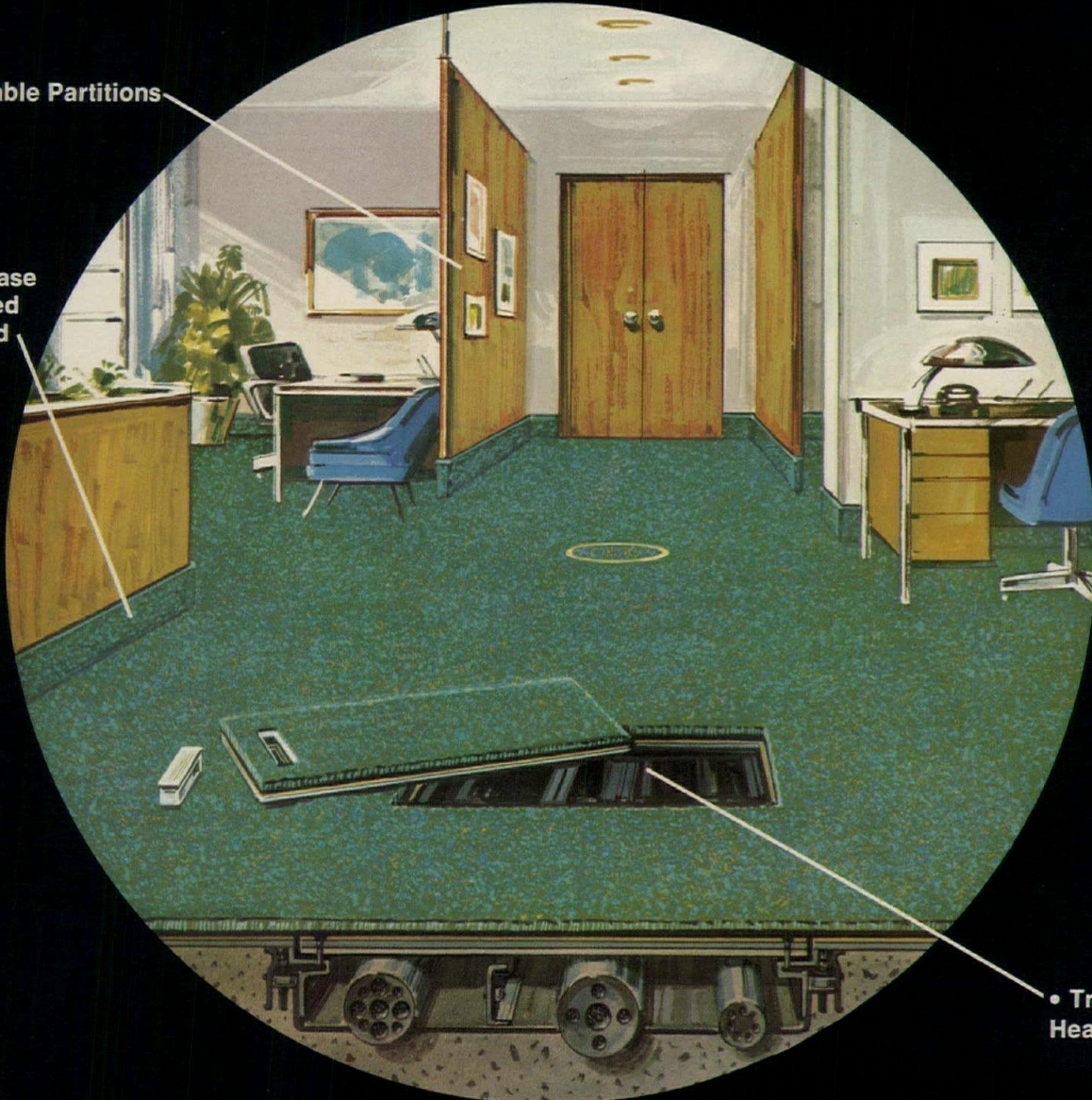
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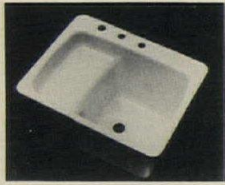
Address _____ Phone _____

City _____ State _____ Zip Code _____

For more data, circle 58 on inquiry card

continued from page 131

UTILITY SINK / Designed in cast iron acid-resisting enamel, this sink features a deep bowl and adjoining scrub deck. Unit is adaptable to either countertop or wall installation and comes with stand or hanger. Available in white or colors. ■ Graning Co., El Monte, Calif.



Circle 305 on inquiry card

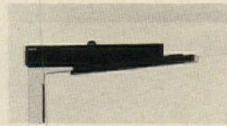
COST ESTIMATING SERVICE / Within 48 hours, according to the company, a computer system can provide current construction cost estimates for any specific area of the county. Offered on a subscription basis. ■ Summation Systems Institute, Falls Church, Va.

Circle 306 on inquiry card

STADIUM SEATING / Lightweight plastic planks surfaced in Du Pont's Tedlar PVF film will not warp or stain and maintain original appearance without painting. Claimed to be as strong as conventional wooden seating, Perma-Glass seating is available in 21 colors, with or without backs. ■ Miracle Equipment Co., Grinnel, Iowa.

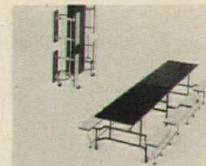
Circle 307 on inquiry card

FIRE-SMOKE DOOR CONTROL / Surface-mounted and recommended for schools and other public buildings, this product is UL listed. It allows full 180-degree swing, closing speed adjustment and is non-handed for application to any swinging door. ■ Republic Industries, Inc., Chicago, Ill.



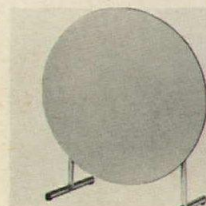
Circle 308 on inquiry card

FOLDING BENCH-TABLE / Space conservation and ease of entering are features of this new product that can accommodate 16 children or at least eight adults. A compression spring holds the table in a semi-open position for cleaning and when completely folded, the unit clears single doors. ■ Hamilton Mfg. Co., Two Rivers, Wis.



Circle 309 on inquiry card

ACTIVITY TABLES / The Spectra II series features tops which fold parallel to the legs for compact storage. T-shaped legs permit lateral movement without tipping. Tops are available in white or tan leather-grains, in round, rectangular or trapezoidal shapes. ■ Peabody, N. Manchester, Ind.



Circle 310 on inquiry card

WALL-WASHER LUMINAIRE / Available in both mercury vapor and incandescent, the unit is recommended for lobbies, reception areas and display rooms. The square design is planned for integration with ceiling tiles and grid ceiling systems. Additional features are matte-white acrylic ceiling plate, flat black, low brightness aperture and integral light control baffle which prevent light leaks. ■ Guth Lighting, St. Louis, Mo.



Circle 311 on inquiry card

EXIT FIXTURE / Meeting new Federal safety requirements, this fixture is available in matte black finish with a variety of colored letters, or a vinyl-clad aluminum face with simulated walnut finish. Luminous-faced models come in combinations of white and green or red. Units may be top, left or right end, back or pendant mounted. ■ Keene Corp., Denver, Colo.



Circle 312 on inquiry card

JUNIOR LOUNGE CHAIR / The "Alvar Jr." is child-size, 23 in. deep, 16 in. wide and 19 1/4 in. high. The seat height is 9 1/2 in. Made of one block of polyurethane, upholstered in shiny vinyl or wool. ■ Stendig, Inc., New York City.



Circle 313 on inquiry card

STACKING CHAIR / Frames are chrome or white baked enamel, with seats and backs in black or natural belting leather, plasticized fabric or top grain leather. Suitable for cafeterias. From Planula of Italy. ■ Vecta Contract, Dallas, Tex.



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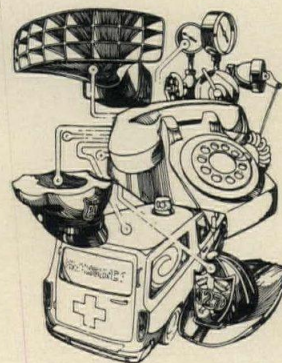
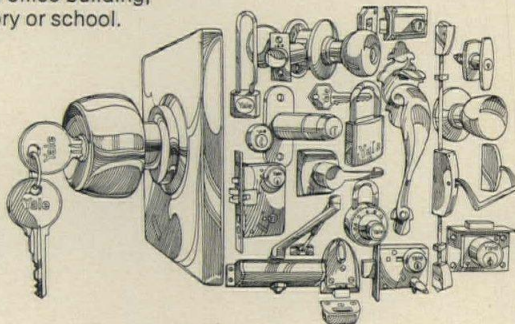
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more products on page 143

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Installation: Ohio Medical Products Division, Airco, Inc.
(Manufacturing Plant and Power Plant)
Project Engineers: Mead & Hunt, Inc., Madison, Wisc.
Architect: Strang Partners, Inc., Madison, Wisc.
Panel Manufacturer and Coating Applicator: Armco Steel Corp.

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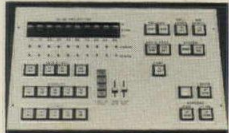
Coil
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For more data, circle 62 on inquiry card

continued from page 134

AUDIO-VISUAL CONTROL SYSTEM / Intended for A-V rooms, conference rooms and auditoriums, *Media Master 2001* offers up to 40 programmable commands and a simplified magnetic tape programming format. Projectors, VTR's, tape recorders, house lights, screens can be controlled simultaneously from several locations. The 2001 consists of two rack mountable units, each 5½ in. high, designed for installation in standard 19-in. instrument racks. ■ Columbia Scientific Industries, Austin, Tex.



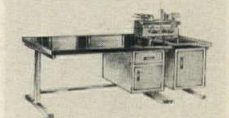
Circle 315 on inquiry card

LIQUID CHALKBOARD SYSTEM / Felt-tip markers in red, blue or black are used to write on a semi-gloss surface. The image dries instantly, according to the company, and can be easily erased. An overhead fluorescent light eliminates glare. For permanent use on walls, or as movable equipment, in 4-ft and 8-ft widths. ■ Claridge Products and Equipment, Inc., Harrison, Ark.



Circle 316 on inquiry card

MODULAR LAB EQUIPMENT / Three modular units can be used to develop a fully equipped science room, according to the manufacturer. All services are provided in one unit with hose that allows connection to floor pit or wall box. Acid-resistant finishes on steel and plastic laminate. ■ Duralab Equipment Corp., Brooklyn, N.Y.



Circle 317 on inquiry card

STAINLESS STEEL SOAP DISPENSER / Vandal-proof features make this model appropriate for schools and other public buildings, the producer claims. Dispenses any grade of liquid soap in a measured amount. Dimensions are 5 in. wide, 7½ in. high and 6 in. from wall to push button. ■ American Dispenser Co., Inc., Carlstadt, N.J.



Circle 318 on inquiry card

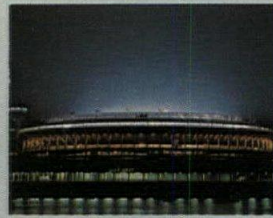
COUNTERFLOW HEAT EXCHANGER / Designed to utilize most of the energy normally lost through mechanical ventilation exhaust systems, this product claims 100 per cent separation of exhaust and make-up air, efficiencies in excess of 70 per cent and low cost. In addition, the company claims the product reduces the size of the required heating and cooling equipment and saves on fuel. ■ Allied Air Products, Portland, Ore.



Circle 319 on inquiry card

more products on page 150

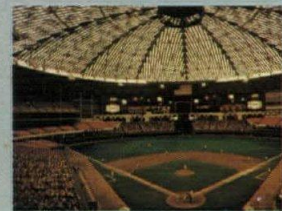
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Complete line of rugged, dependable drinking water equipment includes models for indoors or out-of-doors. Frost-proof, extra-large capacity, and vandal-resistant models available. Write for complete information.

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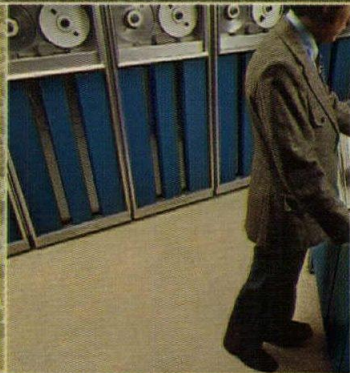
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Halsey Taylor®

KING-SEELEY **KST** THERMOS CO.

GAF MAKES FLOORINGS FOR ALL KINDS OF FEET.



A floor covering should be chosen not only to withstand the number of feet that will go over it, but for the particular type of feet as well.

That's why, when it comes to resilient floorings, GAF makes over 300 types, patterns, and colors—to try to have exactly the one you'll need.

For instance, for a medium traffic area you might choose new Fashioncraft™ floor tile. This 3/32" grade comes in a striking assortment of high-fashion designs, making it a worthy candidate for residential areas, too. Or ask us about the GAF Thru-Chip® lines which offer no-wax maintenance in heavy traffic areas.

But perhaps you'll decide sheet goods can do the job better.

In that case, GAF offers sheet vinyl that comes up to 12' wide, is cushioned for softness and quiet, and needs no waxing or scrubbing.

Whether you're catering to high heels, office furniture legs, or shopping cart wheels, consider GAF. After all, we've got over 300 different ways to help.

All are fire-safe; and meet Federal specifications where applicable.

For more information, contact: GAF Architectural Flooring, Dept. L-82, 140 West 51 Street, New York, New York 10020.



For more data, circle 69 on inquiry card

four good reasons for the growing popularity of Inryco/Milcor[®] steel studs for exterior walls.

① Fast enclosure. Framing assemblies can be prefabricated, in the shop or on the job site, for production line speed and economy. Panelization, with facing materials applied before installation, can afford further savings.

② Design freedom. Light gage steel framing adapts to any building contour . . . flat planes, angles, curves, recesses, reliefs . . . and serves both load bearing and non-load bearing conditions.

③ Economy. Initial cost is lower than many other types of construction. Light weight walls reduce footings, foundation and structural requirements. This ornamental fascia eliminated over \$170,000 of additional structural framing that pre-cast concrete panels would have required.

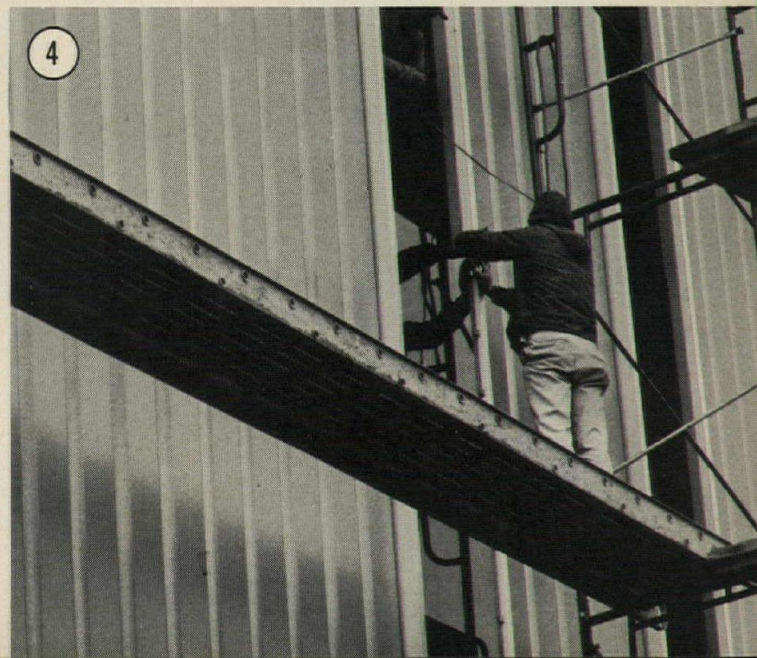
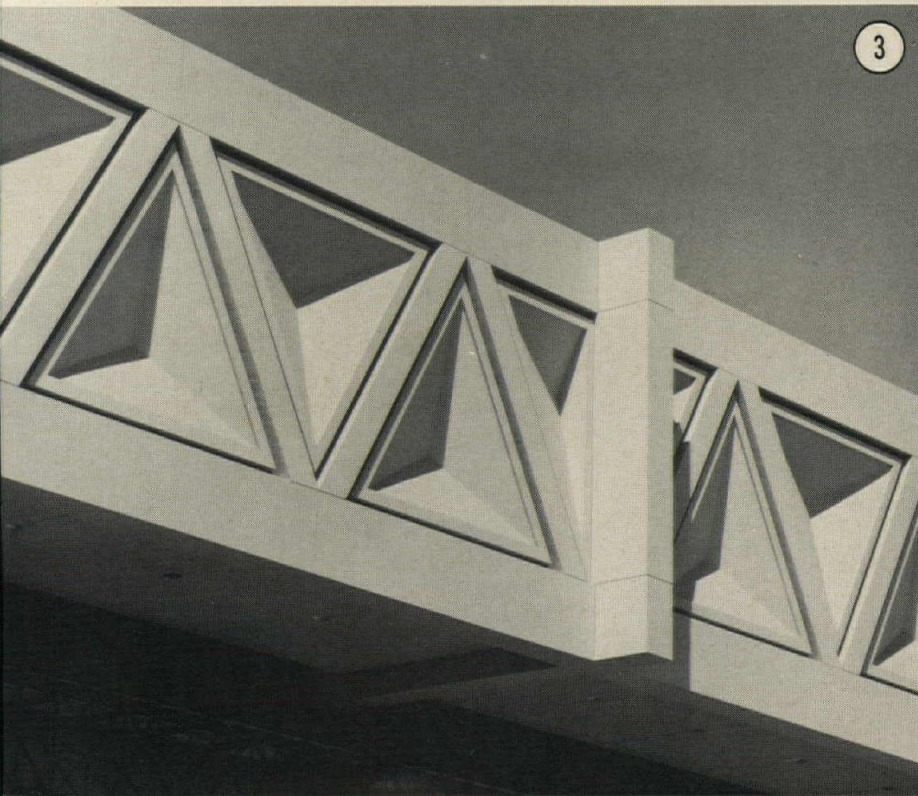
④ Versatility. Almost any facing material may be used. This building had metal panels and glass insets. The steel studs also provided structural support for the top three stories and a heliport.

For detailed information, see Sweet's Section 5.3/In. Or write for Catalog 31-2 to Inland-Ryerson Construction Products Company, Dept. H, 4033 W. Burnham St., Milwaukee, Wis. 53201.

For more data, circle 68 on inquiry card

INLAND
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General Offices: Chicago, Illinois
Milcor Division: Milwaukee, Wis.
A member of the INLAND steel family



when the bell rings, montgomery escalators take over



Architect: Pauer, Bourassa
& Gareau
General Contractor: J. R.
Coté Construction Ltée.

Owner: La
Commission des
Ecoles Catholiques
de Montréal (Mon-
tréal Catholic
School Commission)

At Ecole Polyvalente Emile Nelligan, a school in Montreal, six Montgomery 48" crystal balustrade escalators provide vertical transportation for the rush of students between classes.

To get the most from school construction (or modernization) dollars, designs must achieve maximum space efficiency. Schools being constructed today in restricted space situations must build "up", not "out". Then how do you get the students from their 5th floor class to their 1st floor class between bells? Montgomery escalators are able to move more people faster than any other method. The problem is solved by efficient, effective vertical transportation.

Whether your "space" problem is new construction or modernization, schools, office buildings or shopping centers,

Montgomery can help you "design-in" efficiency in moving people.

For further information contact our general office or look for one of our 170 offices in the Yellow Pages. You'll find we're not very far from anywhere in North America.

montgomery[®]

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POWER WALKS & RAMPS

Montgomery Elevator Company, Moline, Illinois 61265

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montgomery moves people.

For more data, circle 70 on inquiry card



Some doors should look good and be kid-proof, too.

Beauty doesn't have to be fragile. It can be exceptionally strong and long-lasting — as in Republic stylable steel doors.

Made of durable steel with a sturdy honeycomb inner structure, these doors last through generations of school kids.

But you get much more, too.

You can choose from 36 door sizes and 8 standard styles, all prime-coated or prepainted in one of 19 popular colors.

You can specify your own distinctive light and louver treatment. That's because your local Republic distributor can modify our basic door design right in his own warehouse. And with no delay in delivery.

Plus, when your doors are delivered, they're ready to hang or erect. No planing, notching, or mortising is needed on any Republic door frame and Frame-A-Lite stick system.

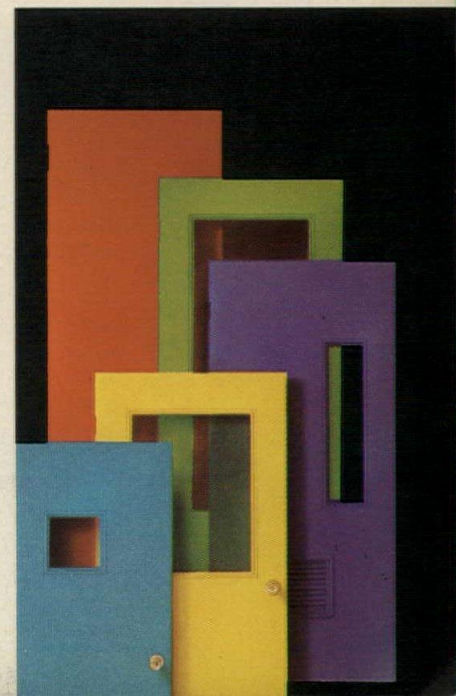
Fact is, our doors are so great that we use them in THE ENVIRONMENTAL HOME, Republic's new single-family residential building system that uses prefabricated steel panels and components that lend themselves to mass production and easy on-site assembly.

Like more information? Contact your Republic distributor. He's listed in the Yellow Pages under "Doors-Metal."

Or, send for a free copy of our Architectural Products Manual. Write Republic Steel Corporation, Manufacturing Division, Youngstown OH 44505.

Republicsteel
Manufacturing Division

For more data, circle 71 on inquiry card





*"Looks pretty good-
we were smart to
economize"*



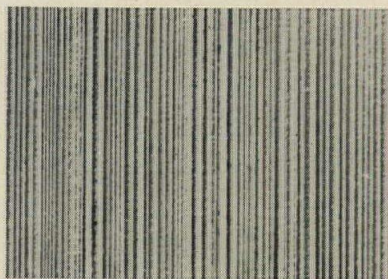
*Will you still be
proud-3 years
from now?*

No and you'll be less so as time goes by. In vinyl wallcoverings, penny-wise can be pound-foolish. With durable Vicrtex, your installation will hold up for your client—*beautifully* (10 years and more). Maintenance costs are reduced. With Vicrtex, occasional soap-and-water washings instantly restore original freshness. Spots and stains can be removed more easily, more quickly than from other vinyl wallcoverings. Insure your clients' installations by specifying high-quality, durable Vicrtex.

Vicrtex[®] VINYL WALLCOVERINGS

WITH VICRTEX, YOU AND YOUR CLIENT ARE ASSURED:

- The industry's most complete range of decorative patterns in a broad spectrum of colors.
- Fade-proof colors; unusually durable surfaces.
- High stain-, spot- and alkaline-resistance.
- Easy, fast cleaning for low-cost maintenance.
- 3-way mildew protection.
- Class "A" Fire Hazard Classifications.
- 1-year protection against manufacturing defects—Vicrtex Vinyl Wallcoverings are guaranteed!



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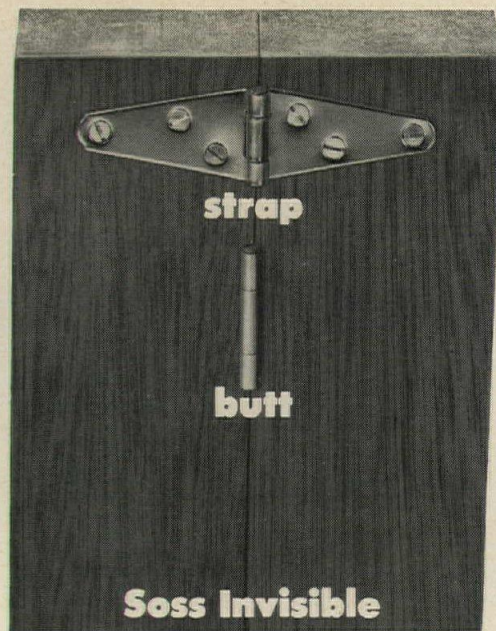
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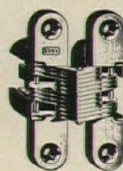
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Pick the hinge that hides



Compare the Soss look of invisibility with any strap or butt hinge and you'll choose The Soss Invisibles. These amazing hinges hide when closed to blend with any decor. With The Soss Invisibles you can create room, closet, or cabinet openings which are unbroken by hinges or gaps . . . the perfect look for doors, doorwalls, built-in bars, stereos, or T.V.'s. The Invisibles are extra strong, open a full 180 degrees, and are reversible for right or left hand openings. See listing in Sweet's or write for catalog: Soss Manufacturing Company, Division of SOS Consolidated, Inc., P.O. Box 8200, Detroit, Michigan 48213.



the SOSS
Invisibles

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quality coating capability
featuring coatings
based on Kynar 500*.
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129 Leeder Hill Drive, Hamden, Conn. 06517 Tel. (203) 248-6346

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

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Here's an idea as fresh as a daisy.

New odorless convenience copier for fast engineering check prints.

Now your entire drafting department can breathe easier! That's what Bruning's PD-80 can do for your drafting and check print operations.

No ammonia, no venting problem. That's the beauty of the remarkable Bruning PD Process.

That—plus the PD-80's compact design (64" x 13½" high) — means you can put it anywhere. Make quick check prints right where you make your drawings. No

long walks, no long waits. Whether you make just a few prints a day, or dozens, the PD-80 will really pay off in the valuable time it saves your busy draftsmen.

The fast, high-quality PD-80 is the only odorless convenience engineering copier. Turn it on, feed tracings at once, get finished prints in seconds.

Your local Bruning man is ready to show you the remarkable PD-80 in action in your drafting room, using your tracings. And to show you how

easy it is to put this cost-cutting machine to work for you on an attractive rental plan. With no capital investment, no long-term commitment.

Call our office nearest you. Or contact us at 1555 Times Drive, Des Plaines, Ill. 60018.

Once you've had a whiff of this great new idea in check printing, you'll want a PD-80 in your drafting room as soon as possible.



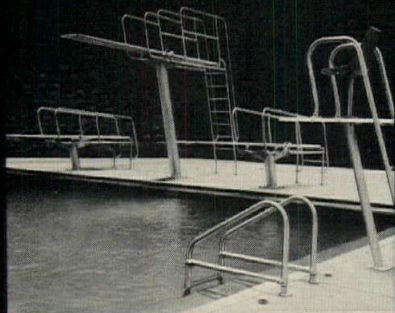
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exciting challenge
of designing
better pools.**



For nearly two decades KDI Paragon has shared its engineering expertise with Architects helping them exercise their ingenuity and achieve design goals while staying within budget. Paragon understands your language and the problems you face in building pools. Contact us. We'll give you straight answers and sound advice and usually an immediate solution to your problem.

KDI Paragon is one of the world's leading manufacturers of quality deck equipment, filtration systems, underwater lighting and observation windows. We make over 500 professionally-engineered products used in, on and around pools.

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PRODUCT REPORTS

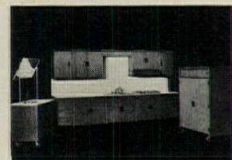
continued from page 143

FOLDING PARTITION / This double-wall, double-insulated partition can withstand temperatures up to 2300F for eight hours. Manual or motorized operation on a dual track and trolley system. Heights are available up to 30 ft, in unlimited lengths. Varied finishes available in anodized aluminum, vinyl-clad wood textures or patterns and baked enamels. ■ The Won-Door Corp., Salt Lake City, U.



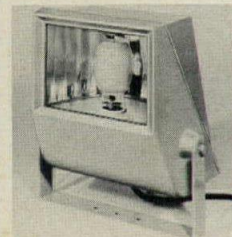
Circle 320 on inquiry card

PLASTIC LAMINATE CABINETRY / Institutional casework combines a rugged steel frame with high pressure laminate on all work surfaces and plastic polyester finish on side and door panels. Available in several colors, the PL Steelcore line includes fixed and movable storage units with general or specialized interiors. ■ The Vecta Group, Kalamazoo, Mich.



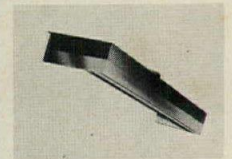
Circle 321 on inquiry card

FLOODLIGHT / Designed for medium-level illumination applications such as alleyways, building facades and recreational areas, these luminaires require 100-, 175- and 250-watt mercury vapor lamps. Easy maintenance and installation are claimed. Available in several colors. ■ Wide-Lite Corp., Houston, Tex.



Circle 322 on inquiry card

CEILING DIFFUSER / These diffusers are installed over the T-bars on exposed grid type ceilings. After the unit is installed, ceiling tile is trimmed to fit, resting on the adjacent T-bars and supports on this unit. The same unit can be used for supply or return air. Finish is white enamel. ■ Barber-Colman Co., Rockford, Ill.



Circle 323 on inquiry card

OFFICE PLANNING TEMPLATE / Made of transparent plastic, this product has cutouts showing exact sizes for standard office furniture in scales of 1/4 in. to 1/8 in. Complete floor plans can be developed in precise scale according to the manufacturer. ■ Conwed Corp., St. Paul, Minn.



Circle 324 on inquiry card

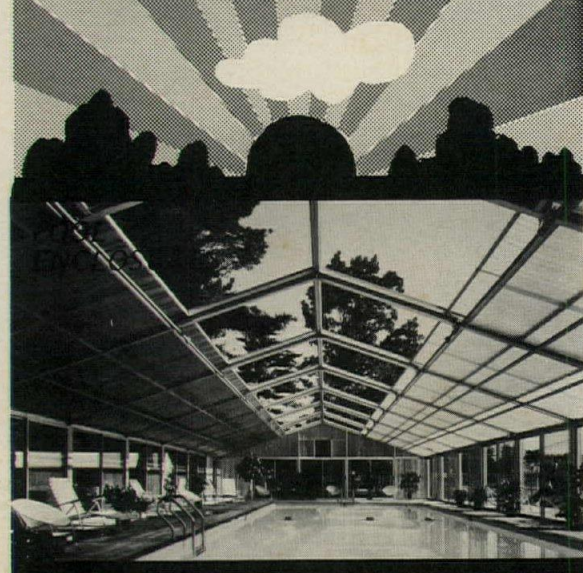
ESTIMATING SYSTEM / A construction-oriented calculator handles area, volume, pricing and scale conversions with the further capability of printing take-off quantities instantly. A memory unit provides storage of up to 120 take-off items for recall. ■ Diversified Electronics Co., Inc., Severna, Md.



Circle 325 on inquiry card

more products on page 160

**WE DIDN'T
DISCOVER
NATURAL LIGHT-**



*We just
know a lot of
ways to make
good use
of it—*



Like indoor/outdoor pool enclosures for year-round swimming...Like custom skylights for malls, recreation areas, foyers...Like horticulturally correct environments for teaching and research.

See us in Sweet's

ICKES-BRAUN GLASSHOUSES, INC.
P. O. Box 147, Deerfield, Ill. 60015

Representatives in principal cities.

For more data, circle 77 on inquiry card

Wide-Lite dreamed up the perfect solution for a harness raceway.



At Brandywine Raceway in Wilmington, Delaware, 5 of 6 racing days aren't day races. They're at night. So dependable illumination is one requirement.

It's also a sure bet nobody wants to miss an exciting moment at the far turn, the stretch, or the finish line. So high, even illumination levels are vital requirements, too.

But how do you light the path for night mares when you also have to keep initial cost and maintenance down for a system that puts fixtures through 10 grueling power surges a night? How?

Get a workhorse.

Our (1) "Lumitor" model is one of a total line of floodlighting the engineer and our representative could choose from.

(More about the other fixtures later.)

They chose this one because it's efficient and trouble-free. Its well-defined vertical and broad horizontal patterns make it ideal in lighting the path for night mares. Not to mention sports fields, architecture, or billboards requiring tight vertical beams.

It was also chosen because it works so well with the engineer's lighting system. Which works like this: During warm-up time and between races, one-third of the fixtures are in use; as the horses approach the starting gate, the second third are energized; and when the individual race starts, lighting is at full capacity.

Ten races. Ten power surges. And the only unhappy customers are the ones whose horses didn't win.

Our "Lumitor" is available for use with 500, 1250 and 1500-watt quartz iodine lamps. It also has our

patented "Seal-Cool" lamp clips for reliable heat control.

But, maybe you're running a different race with a different kind of outdoor lighting need. See us. We can give you a full stable to choose from.

Like our (2) new "B" model. The junior-size floodlight that you can use with 250-watt high pressure sodium lamps in addition to 100, 175 and 250-watt mercury vapor ones. It can be mounted three ways; comes in five optional colors; has extra protection options; is easy to install; and requires no routine maintenance.

Or maybe you need our (3) "F" model. Virtually, the best and most economical outdoor luminaire for

climate-tested housing. It illuminates stadiums, skyscrapers, large outdoor work and storage areas and similar installations. Use it with 1000-watt high pressure sodium and 1500-watt metal halide lamps.

And let's not forget our (5) "SW" model. Few people do. It does a beautiful job lighting large buildings, parking lots, sports facilities, and all outdoor areas requiring smooth high level illumination. A choice of reflector options and designs, lamps, and horizontal or vertical mounting flexibility give it exceptional adaptability. Especially with today's most modern light sources. It works with 400 and 1000-watt mercury vapor and



extremely broad patterns of light. It gives parking lots, work areas, loading docks, and buildings exceptionally uniform lighting. It comes to you with a choice of our patented, segmented reflector systems; in 400, 1000 and 1500-watt models; for mercury vapor and metal halide light sources. And, it also has our patented "Stabilux" socket that eliminates lamp breakage from shock or vibration.

Then there's our (4) "Tite-Lite" model, which gives you the coverage of a floodlight with better beam control than just about any tight-beam floodlight around—all in a tough,

metal halide lamps, and 400-watt high pressure sodium lamps with an internal ballast.

Got a tough job to harness? Call your Wide-Lite* representative in the Yellow Pages, under Lighting.

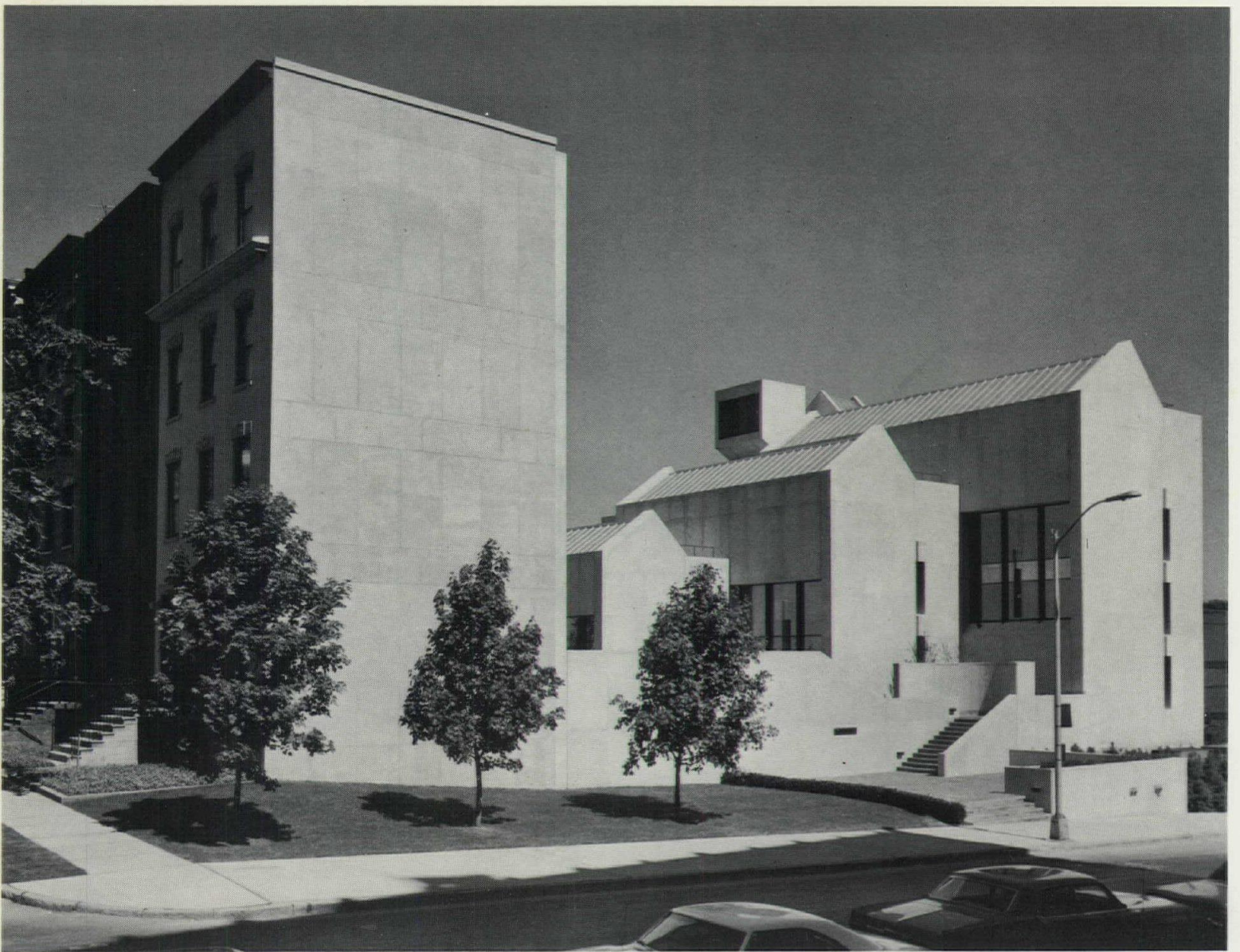
WideLite®

P.O. Box 191, Dept. AR-1111-8/72
Houston, Texas 77001

Also manufactured in Australia, Belgium, Canada, Mexico and Great Britain.

A company of the Esquire Lighting Group

*Trademark of Wide-Lite Corporation



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

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

Photographer: George Cerna

TCS... and a "lesson in civilized architecture"

"The headquarters of the New York State Bar Association," as a most distinguished critic recently wrote, "is an object lesson in how to build intelligently, sensitively and well... In a happy alliance, the lawyers and the architects, James Stewart Polshek and Associates, have preserved a row of handsome 19th-century town houses and incorporated them, not as a false front, but as a working part of a completely and strikingly handsome contemporary complex built

behind them. The words that come to mind are skill, imagination and taste, qualities not encountered too often on the urban scene."

We at Follansbee Steel are particularly gratified that Mr. Polshek specified TCS (Terne-Coated Stainless Steel) for all pitched-roof areas on this outstanding building in which originality of design and integrity of site are so felicitously coupled.

FOLLANSBEE STEEL CORPORATION

Follansbee, West Virginia

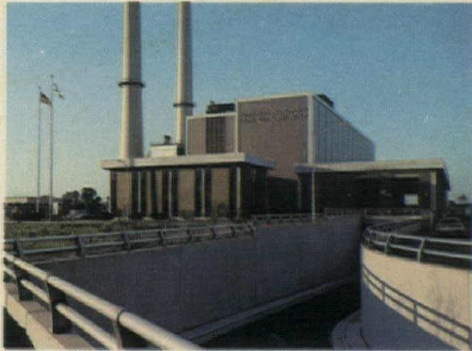
For more data, circle 83 on inquiry card

◆ For more data, circle 82 on inquiry card

City of Chicago Northwest Incinerator

Louver Manufacturer, Air Balance, Inc.

Extrusions and Coating Application, Howmet Corp., Air Master Div.

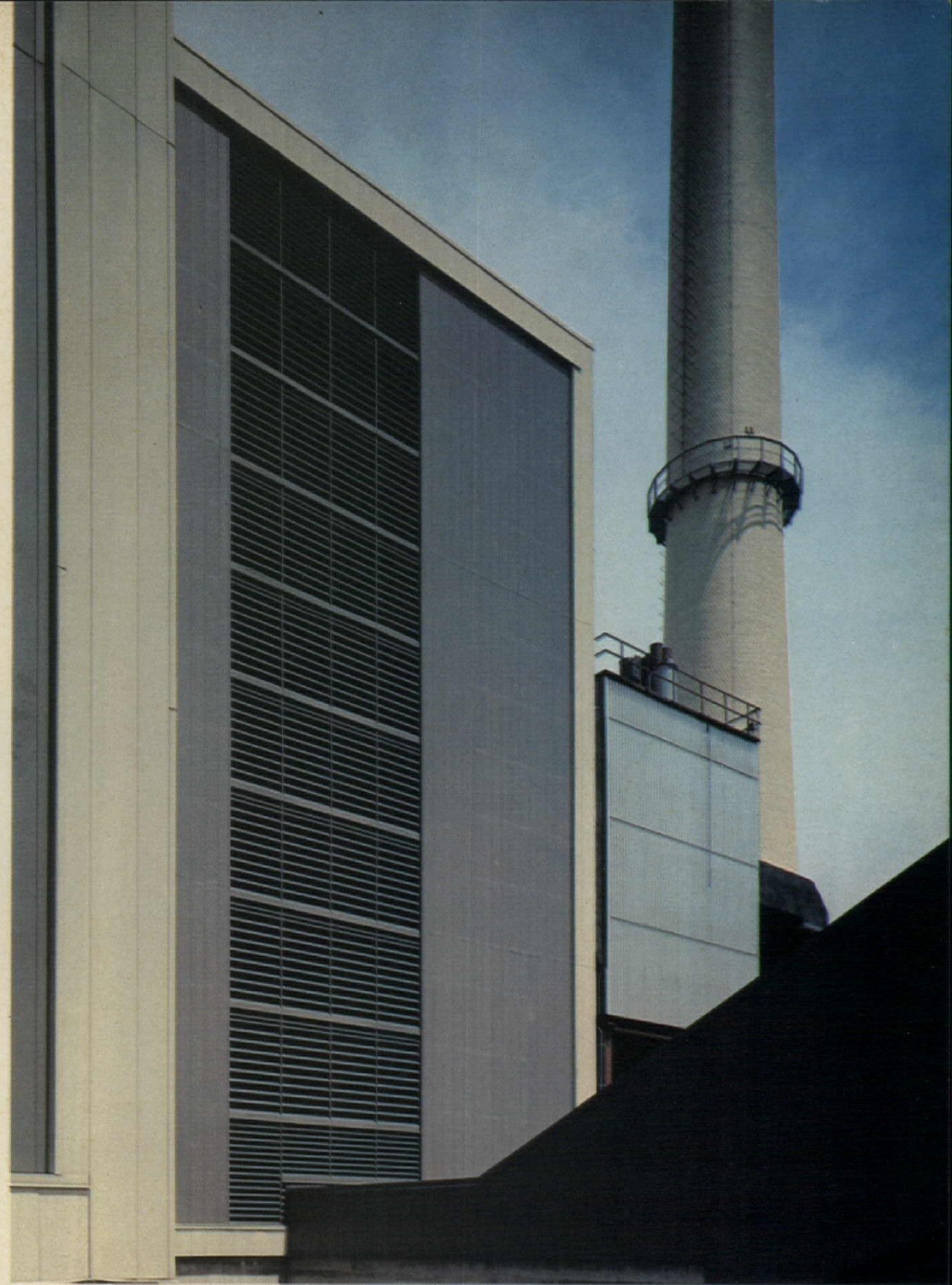


The specifications called for a coating that would last 20 years. That's why the 80 foot-high extruded aluminum louver assemblies on this incinerator plant were factory finished with long-life DURANAR 200 fluoropolymer coatings from PPG.

DURANAR 200 color coatings combine rich architectural beauty with maintenance-free surface protection rated at 20 years. They resist ultraviolet deterioration, weathering and attack by airborne chemicals and dirt. Color integrity and color life match the film stability of the fluoropolymer base.

Moderately-priced DURANAR 200 coatings offer a cost/performance advantage that is unequalled today in architectural color coatings. For spec data, see Sweet's Architectural and Industrial Construction Files, or write Product Manager, Extrusion Coatings, PPG Industries, Inc., Dept. 16W, One Gateway Center, Pittsburgh, Pa. 15222.

PPG: a Concern for the Future



20-year finish specs on giant incinerator plant met with DURANAR® 200 coatings

Extrusion
Coatings 
INDUSTRIES

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Thinking about a waste collection system?

Thinking about a pneumatic waste collection system?

Think about:

TRANS-VAC SYSTEMS

designers of

Pneumatic Transport & Waste Collection Systems for handling soiled linen or trash (or both).

fast • efficient • sanitary



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- SHREDDER
- BALER
- COMPACTOR
- INCINERATOR



LAUNDRY COLLECTION POINT

Simplified Illustration

used in:

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Ideal for new hospital construction, major additions or renovations . . . or can also modify existing gravity chute systems for lateral transfer of material.

- high-rise structures

Ideal for high-rise structures such as hotels, motels, large office buildings, apartment complexes, dormitories and institutions.

- large recreational developments

Ideal for large recreational projects, amusement parks, sports complexes and stadiums.

Space saving TRANS-VAC Systems utilize idle wall and ceiling space for placement of chutes and conveyor pipes. Piping may also go above or below ground, over roof tops, along outside walls and into basement area. Separate collector hoppers located in laundry room and trash collection area automatically deposit loads of transported material on signal from central control panel.

TRANS-VAC Systems offer completely integrated systems for Pneumatic Transport, Shredding, and Waste Disposal — all fully automatic. Each system individually engineered and backed by 47 years experience in pneumatic conveying and waste disposal technology.

Write or phone Dept. AR for further information and/or design assistance. See our Catalog 10.28/TR in SWEET'S 1972 Architectural File.



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For more data, circle 85 on inquiry card

PRODUCT REPORTS

continued from page 150

VANDAL-RESISTANT DRINKING FOUNTAIN /



Construction is heavy-duty 10-gauge steel. Bubbler features a steel guard. The access panel is reinforced and locked to the fountain with Allen screws. Unit is completely undercoated and

is available in a range of colors. ■ Western Drinking Fountains, San Leandro, Calif.

Circle 326 on inquiry card

HEATING-COOLING UNIT /



A through-the-wall unit including self-contained refrigerant cooling, plus three option modes of heating: low watt density electric elements, heat exchanger for forced hot water system, or heat exchanger for steam system. Cooling capacity: 9,000 to 15,000 BTU/hour. Heat output: 6,816 to 21,000 BTU/hour. Room-side air volume: from 245 to 380 CFM in two blower speeds. External louver in anodized aluminum. ■ Beacon-Morris Corp., Boston.

Circle 327 on inquiry card

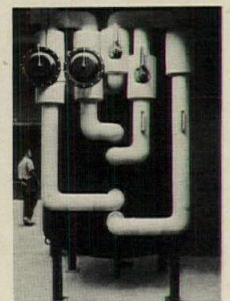
HYDRO-ELECTRIC HEATER /



Shown with access cover removed, this unit is recommended for schools and institutions. The company claims unit is tamper-proof. Over-all height is 9½ in. with graduated length from 23 in. to 107 in. Optional right or left end controls. Available in seven colors. ■ Shaw-Perkins Mfg. Co., West Pittsburgh, Pa.

Circle 328 on inquiry card

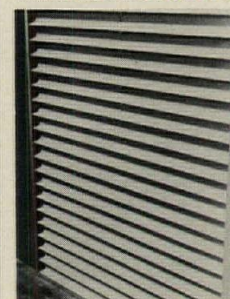
URETHANE PIPE INSULATION /



Continuously molded, Armalok—with high compressive strength—is recommended for exposed areas where abuse could occur. In 4-ft sections, it is 1 in. thick with a k factor of 0.15 BTU/hr sq ft (F deg/in.) at 40F mean temperature. The company claims low price, light weight and cleanliness for this product. ■ Armstrong Cork Co., Lancaster, Pa.

Circle 329 on inquiry card

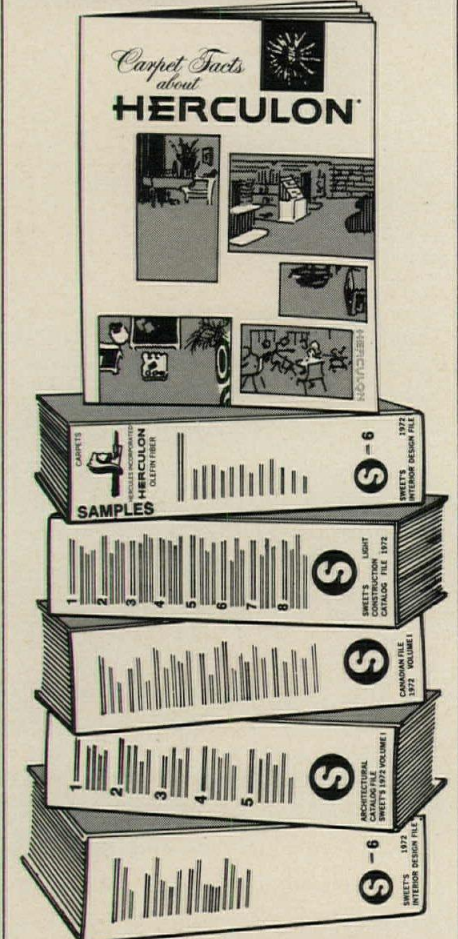
VANDAL-RESISTANT FIBERGLASS SCREEN /



Shatterproof fiberglass panels are mounted in an aluminum framing to form a protective screen for each window. The louvers are spaced to protect the entire glass surface and are mounted at an angle. Objects thrown at the screen are said to bounce off. Diffused sunlight enters through the translucent plastic. ■ California Sunscreen Corp., San Leandro, Calif.

Circle 330 on inquiry card

Look for our book...



...in your books.

Our book is called Carpet Facts About HERCULON®. A colorful, 24-page booklet detailing the performance, construction, installation, maintenance and specifications of carpets made with pile of HERCULON* olefin fiber. You'll find it in four volumes of the 1972 Sweet's Catalog . . . Architectural, Interior Design, Light Construction and Canadian files.

A special swatched binder in Sweet's Interior Design file features a cross section of carpet constructions in HERCULON. It's a first for Sweet's . . . the first full volume of carpet samples ever assembled by a fiber producer.

We are doing all this for one very simple reason. The more you know about carpets of HERCULON, the more likely you are to specify them.



*Hercules registered tm—Hercules Incorporated

For more data, circle 86 on inquiry card

The only acoustical fire door 9 feet tall and 30 minutes thick.



A 30-minute fire door is something you need. A 9-foot acoustical door is something you'd like. Only U.S. Plywood puts them both together, in our tall, tough, beautiful, acoustical fire door. 9 feet tall. 30 minutes thick. STC rated 28. UL tested and rated for fire resistance, heat transmission and structural integrity.

The Weldwood acoustical fire door is considerably less expensive than a comparable metal door. It also performs considerably better when tested for heat transmission. After 30 minutes in UL's test furnace, where it gets well over 1500°F, the Weldwood door's unexposed side was less than 175°F, cool enough not to harm a person forced against it during a fire. Its STC 28 rating provides good speech privacy and protection in hotels, motels and other commercial installations.

The core of this door is Novoply.[®] The face is your choice: striking hardwood veneers, Duraply[®] for job-site painting, Permaply[®] for solid color prefinishing, or colorful plastic laminates.

No matter what kinds of doors you're specifying, the one name to remember is Weldwood.[®] We have the biggest, and best, line of architectural doors in the business: interior, exterior, static- and radiation-shielding as well as acoustical and fire. For more information on any of them, call your local U.S. Plywood Branch Office.



U.S. Plywood

A Division of Champion International
777 Third Avenue, New York, N.Y. 10017

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No grates, scrubbers, or precipitators.
No special training for operation.
Less than six cents outside fuel cost
per hour. Guaranteed acceptance,
at the site, before purchase.

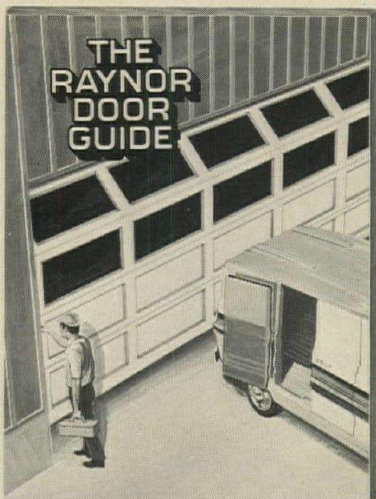
Yes, the Kelley-Hoskinson Incinerator is
different. We'd like to tell you
more about it. **KELLEY COMPANY, INC.**
6768 North Teutonia Avenue
Milwaukee, Wisconsin 53209

KELLEY-HOSKINSON



For more data, circle 89 on inquiry card

54-298

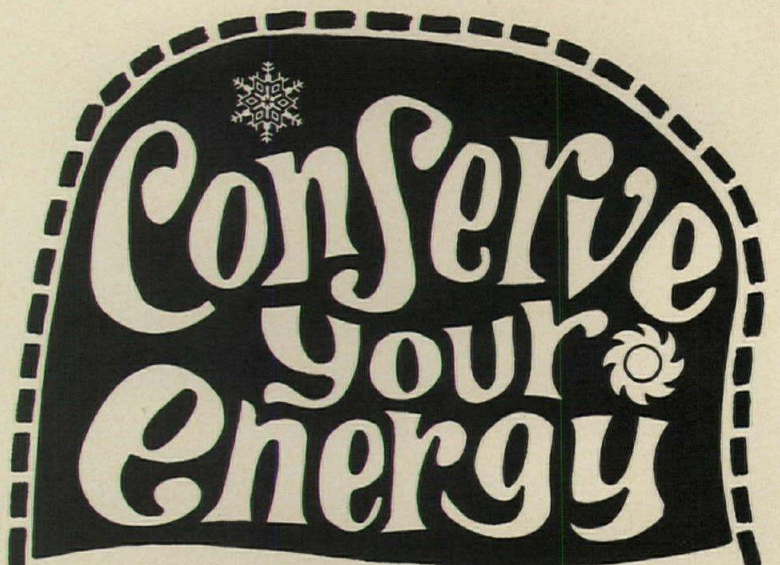


All the facts you should know about garage doors can be found in this complete Raynor reference guide. Garage door styles, materials, mountings, applications, specifications (including handy door and track selection guides)... **PLUS** information on Raynor's new deep-ribbed, good-looking 'Security Line' steel doors. See why Raynor builds better doors.

Just clip this coupon and mail to:
RAYNOR MANUFACTURING COMPANY
DEPT. AR, DIXON, ILLINOIS 61021

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Firm _____
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City _____
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Technical Guides to...
All-weather Crete Insulation

- Leakproof roof decks
- Roof deck systems
- Reroof without tearoff
- 8 great plaza systems



Write to: **SILBRICO CORPORATION**
6300 River Road, Hodgkins, Ill. 60525

For more data, circle 91 on inquiry card



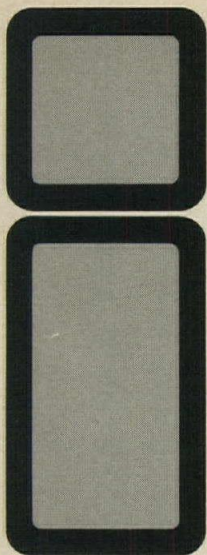
**TOWER FOR LIVING..... COLOR CONTROLLED
WITH MEDUSA CUSTOM COLOR MASONRY CEMENT.**

From top to bottom and start to finish the mortar color in this unique apartment tower was controlled by Medusa in strict adherence to the architect's choice. Medusa Custom Color Masonry Cement is mill-mixed under scientific process control. It arrives at the job site ready for mixing with just sand and water. No job site color formulation necessary. The architect and owner get what they specify — with controlled color from start to finish. Write for new color brochure. Medusa, P. O. Box 5668, Cleveland, Ohio 44101.



*DIVINE TOWERS,
Madison, Wisconsin.
Architect: John J. Flad
& Associates, Madison.
Masonry Contractor: Wild
Masonry Inc., Madison.
Masonry Supplier:
Wisconsin Brick &
Block Co., Madison.
Medusa Custom Color
Masonry Cement
Color No. 79E.*

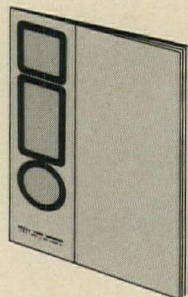
MEDUSA CEMENT COMPANY Division of Medusa Corporation



Specify
Structural
Steel
Tubing

for
STRENGTH
plus
BEAUTY!


Regal rectangular and square structural steel tubing offers many advantages for use as load bearing and curtain wall columns, railings, mullions and stair stringers. Provides great strength, attractiveness and safety. Requires little maintenance. As there are only four sides, other materials fasten to it easily. Often used as supports and downspouts as well. Available in many sizes up to 12" x 8" or 10" x 10" and wall thicknesses up to 1/2".



Write for brochure
giving complete
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REGAL TUBE COMPANY

A Subsidiary of
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 7401 South Linder Ave.
Chicago, Illinois 60638
312/458-4820

COPPERWELD
SPECIALTY MATERIALS

Rely On Regal

For more data, circle 93 on inquiry card

OFFICE LITERATURE

For more information circle selected item numbers on Reader Service Inquiry Card, pages 189-190

SOUND ATTENUATION UNIT / Literature describes a molded mineral fiber cylinder that provides efficient, low cost sound absorption according to the producer. Incombustible *Sonosorbors* spaced every 10 sq ft are equal to an acoustical ceiling of .80 NRC. Each white-colored unit is 24 in. long and 12 in. in diameter. Suited for gyms, auditoriums, industrial areas. ■ Keene Corp., Princeton, N.J.

Circle 400 on inquiry card

CEILING SYSTEM WITH LIGHTING / Also includes acoustical control, air supply and return and partition attachment. Module size is 5 ft by 5 ft with custom sizes available. Brochure shows design details and data. ■ The Celotex Corp., Tampa, Fla. *

Circle 401 on inquiry card

LIGHTING FIXTURES / This 104-page color brochure features 400 illustrations, including contemporary designs for interior use. ■ The Feldman Co., Los Angeles, Calif.

Circle 402 on inquiry card

EMERGENCY EXIT SIGN / Four-page brochure describes a unit that eliminates the need for a separate circuit, while meeting National Electric Code requirements. ■ Day-Brite Lighting Div., Emerson Electric Co., St. Louis, Mo.

Circle 403 on inquiry card

CONTRACT CARPET GUIDE / Designed for architects and designers, this publication deals with carpet made of *Antron* nylon. Guide covers maintenance, installation, static, acoustics, flammability, color and construction, with color photos of installations. ■ Du Pont Textile Fibers, Wilmington, Del.

Circle 404 on inquiry card

PLEXIGLAS MIRROR / An image-reflecting acrylic plastic sheet weighing half as much as glass, yet breakage-resistant is described in a brochure. Product is available in six transparent colors or colorless finish and can be silk screened. ■ Commercial Plastics & Supply Corp., Cornwall Heights, Pa.

Circle 405 on inquiry card

ON-THE-SPOT SIGNAGE / A brochure illustrates how signage can be produced using fast-heating metal dies to cut letters, numerals and symbols from pressure-sensitive vinyl tape. Table-top machine uses no inks or chemicals to produce lettering up to 5 in. high, in contemporary styles. Unit weighs 45 lbs. ■ PST Co., Sausalito, Calif.

Circle 406 on inquiry card

FLOORING PRODUCTS / A 16-page brochure describes, in full color, resilient flooring in vinyl asbestos and asphalt. Included are sizes, gauges, uses, light reflection values and a brief specifications guide. ■ Azrock Floor Products, San Antonio, Tex. *

Circle 407 on inquiry card

SOLID VINYL FLOORING / Tiles and 72-in. sheet vinyl flooring are described in a brochure that also illustrates styles, colors and patterns in the regular flooring line. Self-stick *Instant-Floor* series is described in a separate brochure. ■ The Good-year Tire & Rubber Co., Akron, O.

Circle 408 on inquiry card

* Additional product information in Sweet's Architectural File

more literature on page 172

ADVERTISEMENT

FOR THE RECORD

CHARLES A. LINDBERG comments on a sure way to stop drug theft

Drug theft today is a threat to public and private institutions . . . in fact, drug theft is a real threat to anyone who must store drugs or narcotics.

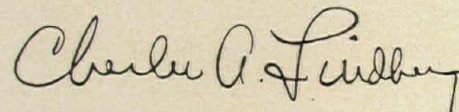
I would like to call attention, therefore, to some specially designed lockers that will keep drugs safe from unauthorized use. These are constructed of heavy gauge steel and each has a four pin tumbler lock . . . not master keyed. Each locker which measures 10" high x 12" wide can be obtained for only \$74.50, including a switch which operates a warning light.

This excellent theft-proof narcotics locker is also offered as a component of a larger 30" x 30" wall cabinet, providing the double protection of locked steel doors. The complete unit is available at \$247, including switch and warning light.

If neither of these quite fit your needs, the manufacturer will undoubtedly assist you by custom building to your specifications and can of course, provide special wiring to additional warning devices.

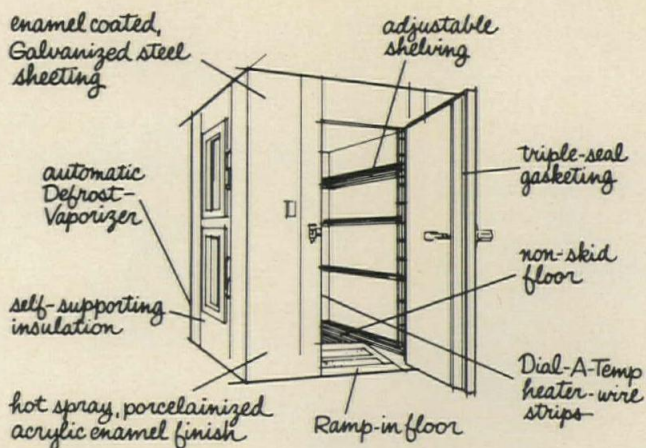
All lockers and cabinets are made by one of the nation's most qualified manufacturers of metal and stainless steel casework — Jamestown Products Division of AVM Corporation. Don't wait! Contact their engineers at 178 Blackstone Avenue in Jamestown, New York 14701.

They will be glad to furnish complete information at once.



Vice President — Institutional Sales
AVM of Maryland, Inc.

For more data, circle 94 on inquiry card



You can practically write your own specifications when you specify a Nor-Lake walk-in. 1344 standard sizes to choose from. Custom sizes available upon request. Each with a long list of specially designed features and a delivery schedule that will fit your schedule. Specify Nor-Lake. The traditional name for quality in walk-in coolers.

Please send me more information about Nor-Lake walk-ins.

Name _____

Address _____

City _____ State _____ Zip _____

I need refrigeration equipment for _____

NOR-LAKE INC.
Second and Elm, Hudson, WI 54016
Phone: 715-386-2323 DEPT. 3172

For more data, circle 95 on inquiry card

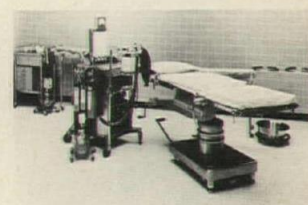
PORTABLE SOLID WASTE AND REFUSE COMPACTORS and systems from The Tony Team, Inc. includes four sizes and great versatility. Pollution Packer™ compactors bale, bag and box all types of wastes and refuse, wet or dry. Machine capacities range from .8 C. Y. to 4½ C. Y. of loose wastes at 10 to 1 compaction ratio . . . operate on low amperage, 110-V 60 cycle service. For hospitals, hotels, schools, colleges, restaurants, office and apartment bldgs. Simple adaptation to chute-type disposal systems. Spec sheets and literature available from: The Tony Team, Inc., 7399 Bush Lake Road, Mpls., Minn. 55435.

For more data, circle 96 on inquiry card



VPI CONDUCTILE(R) STATIC CONDUCTIVE VINYL TILE offers new design flexibility and convenience for critical areas. Four pleasing pastel colors are available in a fresh, new pattern that extends through each tile to last the life of the floor. VPI Conductive Epoxy Adhesive system makes installation easy over most subfloors or existing floors . . . eliminates copper-strip grid. Exclusive Micro-squared tiles ensure a smooth surface with no open seams. Contact Vinyl Plastics, Inc., 3123 South 9th Street, Sheboygan, Wisconsin 53081.

For more data, circle 97 on inquiry card



NO PLACE TO HIDE!

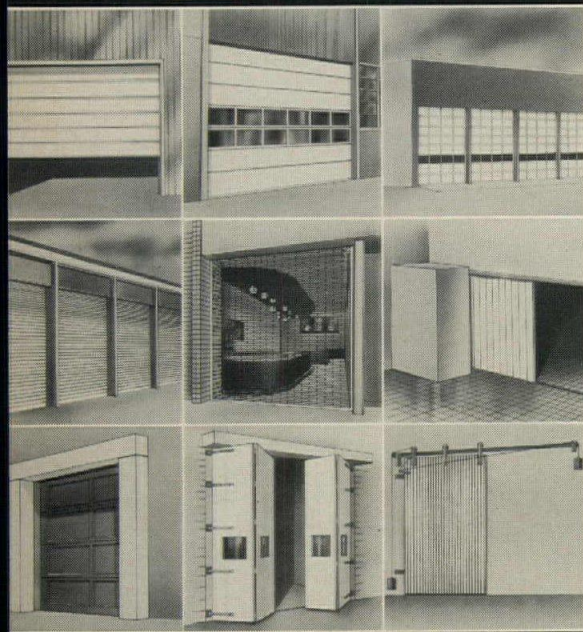
Parker Type 302 Stainless Steel Washroom Units provide NO PLACE FOR DIRT TO HIDE. One piece frame has no open miters, easy to clean. Specify Parker. . . There's a functional unit to fit every job. See our complete line in Sweet's Architectural file (10.17/Pa) or WRITE FOR 44 PAGE CATALOG!

charles parker

**290 PRATT STREET
MERIDEN, CONN. 06450
TEL: 203-235-6365**

For more data, circle 98 on inquiry card

when
it comes to
filling
an opening...
any opening



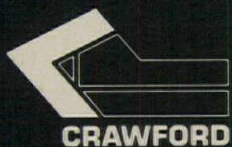
CRAWFORD has the DOOR

Industrial, Commercial
Institutional, Residential

- Sectional Doors: Steel, Fiberglass, Aluminum, Wood-Flush and Panel
- Security and Counterweighted Doors
- Rolling Doors: Steel, Stainless Steel, Aluminum
- Rolling Grilles: Steel, Stainless Steel, Aluminum, Bronze
- Rolling Counter Shutters: Wood, Steel, Stainless Steel, Aluminum
- Side Coiling Grilles and Doors: Wood, Steel, Stainless Steel, Aluminum, Bronze
- U. L. Labeled Rolling Doors, Counter Shutters, Metal Clad and Corrugated Sliding Fire Doors
- All Special Engineered Doors
- a Full Line of Accessories: Electric Operators and Controls, Pass Doors, Removable Mullions, Dor-Seal Dock Shelters.

FOR FULL DETAILS SEE YOUR SWEETS ARCHITECTURAL CATALOG FILE Section 8.9/Cra "Uprising Sectional Doors" and/or Section 8.7/Cr "Rolling Doors, Grilles, Shutters and Sliding Fire Doors."

Contact your local Crawford Distributor for specific data.



Crawford Door Company, 4270
High Street, Ecorse, Michigan

48229

Division of The Celotex Corp.

OFFICE LITERATURE

continued from page 166

STRUCTURAL PLASTICS STANDARDS / A voluntary product standard relating to glass-fiber reinforced polyester structural panels is described in this publication. The product standard covers a broad range of configurations of reinforced plastic panels intended for structural applications, including sizes, weights and squareness of panels, color uniformity, appearance, light transmission, flammability and bearing loads. ■ The Society of the Plastics Industry, New York City.

Circle 409 on inquiry card

BUILDING MATERIALS SPECIFIER / This supplier has organized its interrelated materials for concrete floors, waterproofing and joint treatment designs by type of project. This is designed to aid the specifier in selecting a proper combination of materials from one source, for any given application. Chemstruction systems. ■ Sonneborn, Div. of Contech Inc., Minneapolis, Minn. *

Circle 410 on inquiry card

VINYL TILE SPECIFYING GUIDE / Designed for the architect, this series of guides contains the complete line of architecturally-gauged Vinylflex tile and appropriate coordinating accessories. Three-inch square samples in patterns and colors, with beveled edging, all-purpose rubber cove base and molded corners. ■ GAF Corp., New York City. *

Circle 411 on inquiry card

CHAIN LINK FENCE GUIDE / A kit is offered, containing application information; specifications for aluminum-coated steel chain link fence, posts, rails and gates; test data; and drawings to assist in installation. ■ Page Fence Division of Acco, Bridgeport, Conn.

Circle 412 on inquiry card

AUTOMATED REFUSE COLLECTION / A 6-page brochure describes system for collecting soiled linen and solid trash. Recommended for hospitals, apartments, office complexes. High velocity air stream operation. ■ Envirogenics Co., El Monte, Calif.

Circle 413 on inquiry card

STEEL FIREPROOFING / Data sheets, architectural specifications and sample panels are available on Pyrocrete, a 4-hour fireproofing for structural steel. Recommended for schools, hospitals, factories—where a 3-hour fire rating is available at an applied thickness of 9/16 in. Designed for use on exposed steel. ■ Carboline, St. Louis, Mo.

Circle 414 on inquiry card

ACCESS CONTROL SYSTEM GUIDE / Design criteria for custom access control-lock systems which require no keys, cards or dials are discussed in a brochure. Twelve types of the system are offered, meeting many functional and budgetary requirements. ■ Welx Electronics, Silver Spring, Md.

Circle 415 on inquiry card

SOUND CONTROL SYSTEM / The company offers a 1/4-in. incombustible Gypsum sound-deadening board, described in a recent brochure. Eleven systems are shown, with sound test data and fire ratings, showing STC ratings from 40 to 55. Product is designed for wood and metal stud partition construction, as well as floor-ceiling assemblies. ■ Georgia-Pacific Corp., Portland, Ore. *

Circle 416 on inquiry card

* Additional product information in Sweet's Architectural File

more literature on page 185

H.E.L.P.TM Security Pack

Battery-powered emergency
fluorescent lighting.



Invisible...



until it's needed.

Here's an emergency lighting system that's *really* out of sight.

You can place a SECURITY PACK luminaire anywhere in your recessed fluorescent lighting system. It looks and operates just like the other luminaires. You'll never notice it.

Unless there's a power failure.

Then the SECURITY PACK lamp stays on without reduction in light output. For up to 90 minutes.

The SECURITY PACK consists of a Power Module...it's part of the fluorescent fixture. And an 8" x 16 1/2" x 2 1/8" Control Module...you can install anywhere in ceiling or wall.

H.E.L.P. SECURITY PACK is battery-powered. Works instantly. Solid-state circuitry assures reliability and long life.

The unit is virtually maintenance-free. And the sealed batteries last up to 8 years. U.L. listed, and designed to meet local Codes.

What's more, you can choose from a wide range of lens styles, fixture types and sizes.

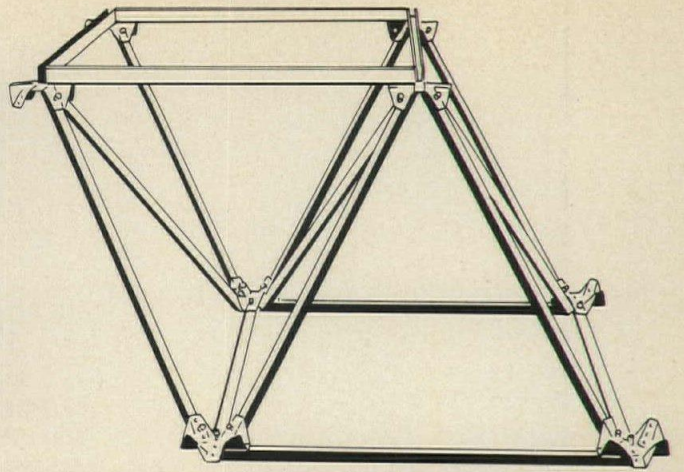
Write for details. Dept. AR-8, Woodbro Corp., Subsidiary of Holophane Company, Inc., 13500 Saticoy St., Van Nuys, California 91402.

Holophane®

Holophane Emergency
Lighting Products (H.E.L.P.)

For more data, circle 100 on inquiry card

SPACE-FRAME IDEAS at WORK



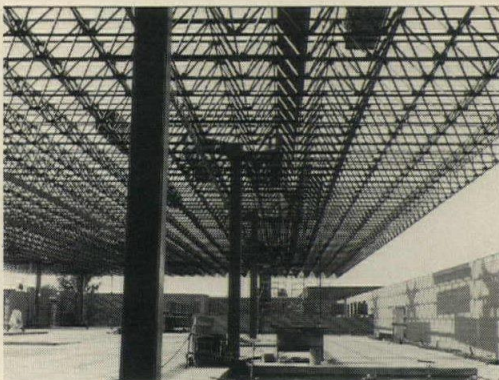
...in residential complexes



...in office buildings



...in cultural centers



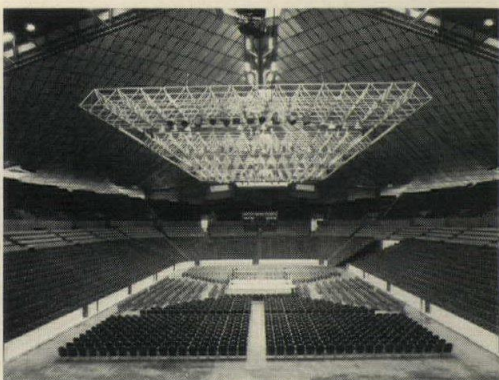
...in plants



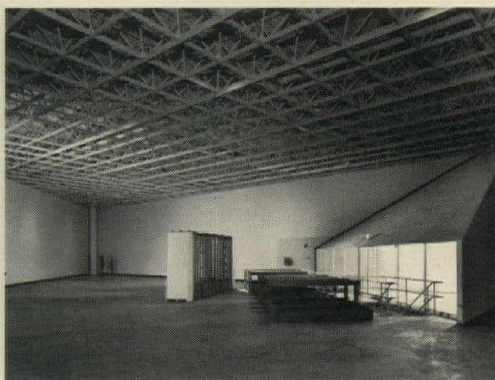
...in schools



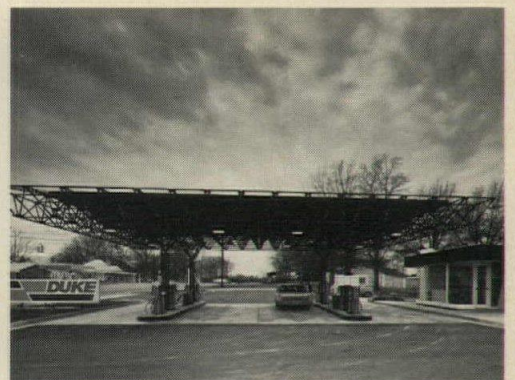
...in canopy structures



...in lighting gridworks



...in museums



...in gas stations

*For Space-Frame Engineering Ideas
ask for brochure SF-9*



For more data, circle 101 on inquiry card

school is not out!

Gang-Nail® Truss Systems are regularly selected by architects, specifiers and builders for school and other roof systems.

Design specifications for the 40,000 square foot roof of this school called for a flat roof system with clearspans up to 65 feet and a 75 psf snow load. Many roof systems were bid, but none had the flexibility and cost savings offered by computer designed Gang-Nail Trusses. Final selection of the Gang-Nail System effected a "cool" saving of \$30,000 over competitive systems.

Easy to handle trusses, engineered according to specifications and meeting all codes, were delivered to the school 30 days ahead of schedule.

We have a network of Gang-Nail Fabricators in virtually all areas of the United States. They have the engineering, computerized design programs and the most sophisticated fabrication equipment that provide your customer with quality trusses and you with confidence and peace of mind.

Let us introduce you to the Gang-Nail System and your local Gang-Nail Fabricator.

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Now you can specify "fail-safe comfort"

Our multizone rooftop units assure you're never without heating or cooling.

That's because Modine's larger, most popular multizone HVAC Rooftop units have two independent heating systems and two independent cooling systems.

Under normal weather conditions, one system easily handles your heating and cooling needs. When extremes occur, the second heating or cooling system also goes to work automatically.

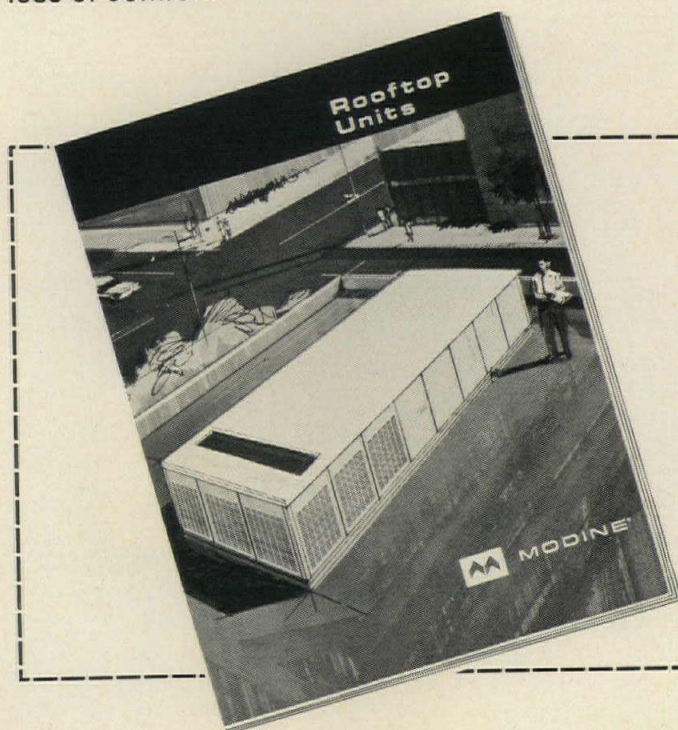
Most important, should one system fail, the other takes over to make sure you'll never be without heating or cooling. In extremely cold weather, the dual heating system guards against building freeze-up. During hot weather, the dual cooling system protects you against total loss of comfort.

Fail-safe heating and cooling is only one of the many reasons why Modine multizone rooftop units are so reliable. The owner also gets a big saving of up to 50% in cooling costs and "free heat" when the weather is mild. The architect and engineer get satisfied clients and the installer has fewer call backs.

There's a lot more to tell about the Modine rooftop unit. Under its weatherproof shell are other top performance features you would expect to get in a rooftop unit designed to last as long as the building. Just clip and mail the coupon to get the complete Modine rooftop story.



MODINE®



Send detailed information on reliable Multizone , Singlezone rooftop units made by Modine for:

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| <input type="checkbox"/> electric heating | <input type="checkbox"/> gas heating/electric cooling |
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| <input type="checkbox"/> hot water heating | <input type="checkbox"/> hot water heating/electric cooling |
| <input type="checkbox"/> electric cooling | |

Have your Modine representative arrange an appointment.

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Title _____ Firm _____

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City _____ State _____ Zip _____

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RTMZ-M-11162

For more data, circle 103 on inquiry card

Holds the temperature steady.

RADA'S THERMOSTATIC HOT AND COLD WATER MIXERS.



Neither pressure drop nor temperature rise can upset the steadiness of Rada control. That's the kind of double-pronged safety you can count on with our thermostatic mixing valves.

Rada has a bimetallic brain which automatically adjusts for both temperature and pressure fluctuations in the hot and cold water lines. Scalding or freezing bursts are things of the past and Rada-safety becomes a built-in fact.

Specify Rada for your next job. It's the doubly safe mixing valve for showers in schools, hospitals, nursing homes, hotels and recreational shower rooms as well as industrial plants.

You'll find Rada valves are available in a variety of sizes, and flow rates. With connections sized from 1/2" to 2", they are designed to meet all specific requirements for shower, tub/shower, or gang-shower installations.

The Rada Thermostatic Hot and Cold Water Mixers. Ask for them and make safety part of the specifications.

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Phone: (212) 683-0745

For more data, circle 104 on inquiry card



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Your most complete line of fully-mechanical truck and railcar dock levelers plus bumpers, chocks, door seals, loading-lites, and safety signs. Meets OSHA standards.

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Golfomat...The "In" Recreation for '72!

For Complete Information
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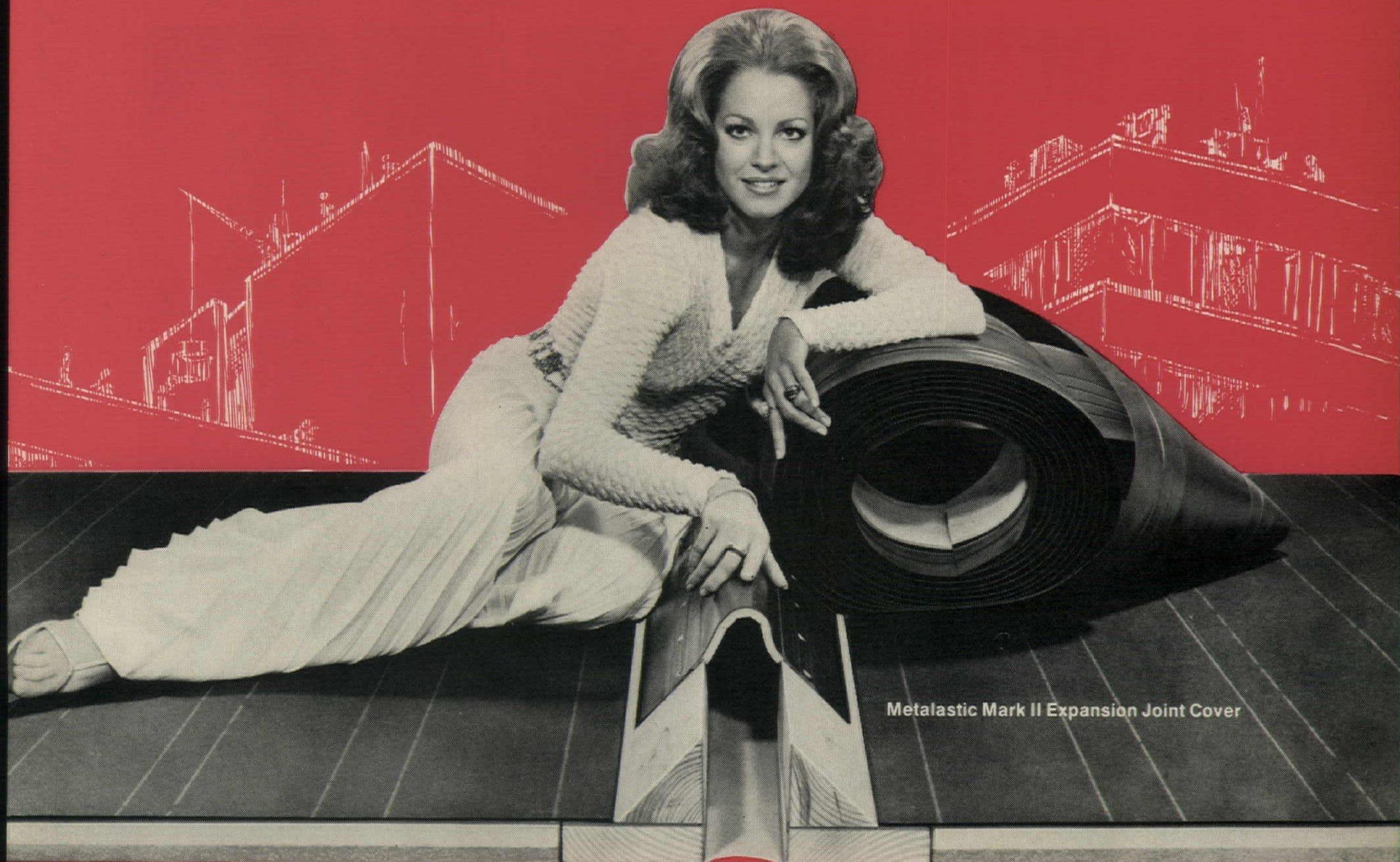
BILLY CASPER
GOLFOMAT

Division of EMC/Electronics & Manufacturing Corp.

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Phone (703)-549-3400



For more data, circle 106 on inquiry card



Metalastic Mark II Expansion Joint Cover

ULTIMATE ENGINEERING

METALASTIC MARK II™ EXPANSION JOINT COVER

An exceptionally durable vinyl extrusion, with 3/8" PVC foam insulated bellows section,* that provides absolute bonding and unequalled ease of installation:

- Exclusive splicing system defies error.
- Open cut insulation channels assure tension-free application.
- Imbedded steel fastening strips, indented nail points and self-adhering flange strips facilitate installation.
- Fastens to curb, cant or nailable deck edges.

Flexible at temperatures as low as -50°F., available for joint openings of 1" to 4" in 50 and 100-ft. rolls (flexible at temperatures to -50°F.) and 10-ft. curb-shape sections, with thermoformed transitions.



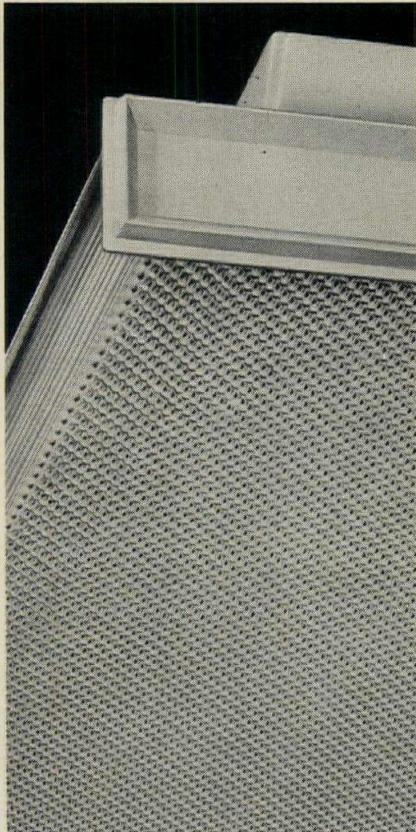
Get the facts:

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2111 ENCO DRIVE
OAK BROOK, IL. 60521



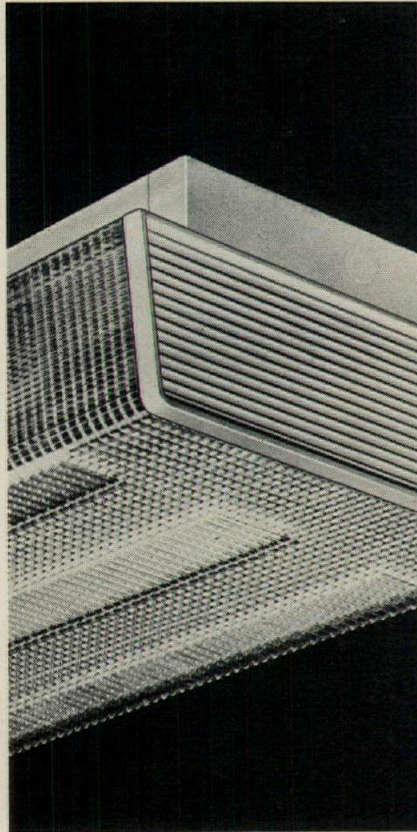
*"K" factor
of .30



LPI Highlander Series

Low-budget wrap-around for surface mounting.

LPI's crisply styled Highlander series provides a specification luminaire for the most conservative budget. The Highlander presents an extremely low silhouette with an apparent depth of just 1-5/8". It has two prismatic lens systems (sides and bottom) for uniform lighting and effective brightness control. The clear virgin acrylic lens hinges from either side and is supported along its full length. Installs easily. Stays perfectly aligned, presenting an unbroken light plane when mounted in rows. Exposed ends are attractively decorated with high-impact polystyrene end caps. Offered in 1'x4' two-lamp... 1'x8' with two lamps in tandem (total 4 lamps) ... plus a 1-1/2'x4' 4-lamp model. Write for complete specifications.



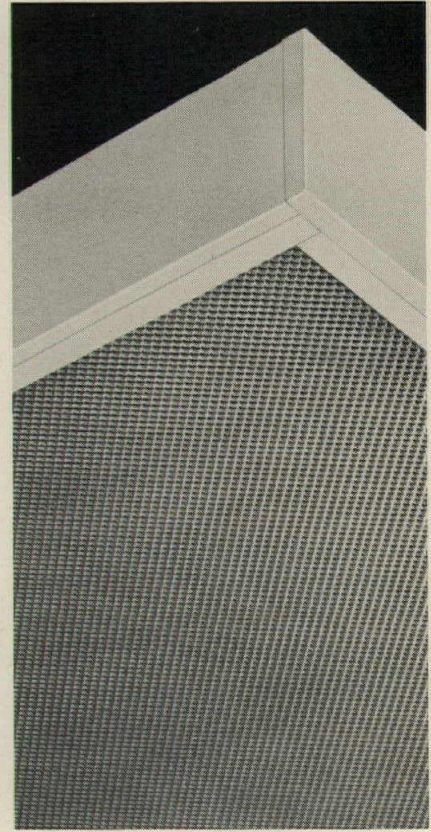
LPI 7100 and 7400 Series

Injection-molded wrap-around for surface mounting.

LPI quality design and construction in two luminaire series featuring the Holophane 7100 and 7400 injection-molded clear acrylic wrap-around Controlens®. These unique, precision prismatic wrap-around lenses direct light upward and outward as well as downward for glare-free, uniform illumination with very low surface brightness. Decorative opaque acrylic end caps are integral with the diffuser.

The 7100 Series, only 8-5/8" wide, is offered in 2-lamp four-foot and 4-lamp eight-foot models. (Four-foot units for 1 or 3 lamps and 8-foot units for 2 or 6 lamps also available).

The 7400 Series, 13-9/16" wide, is offered in 4-foot lengths for 3 or 4 lamps. Write for complete specifications.



LPI Versataire II Series

Full-line versatility for surface mounting.

LPI's Versataire II luminaires combine clean, contemporary design and prime quality in an exceptionally wide selection of sizes and with many options. Versataires are shallow (only 3-3/8" deep) with side-mounted ballasts for cooler operation (extends ballast life, increases light output and eliminates center shadow, too). A full-width wiring gutter makes installation easy. Choices include a variety of diffuser types, flat metal or injection-molded plastic end-trim caps and a full range of sizes: 1'x4' (for 2 or 3 lamps) ... 1'x8' (4 or 6 lamps) ... 2'x2' (2, 3, or 4 20W lamps, or 2 or 3 40W U-lamps) ... and 2'x4' (2, 3, or 4 lamps). LPI also offers compatibly styled 4-foot surface squares. Write for complete specifications.

LPI designs for extraordinary performance

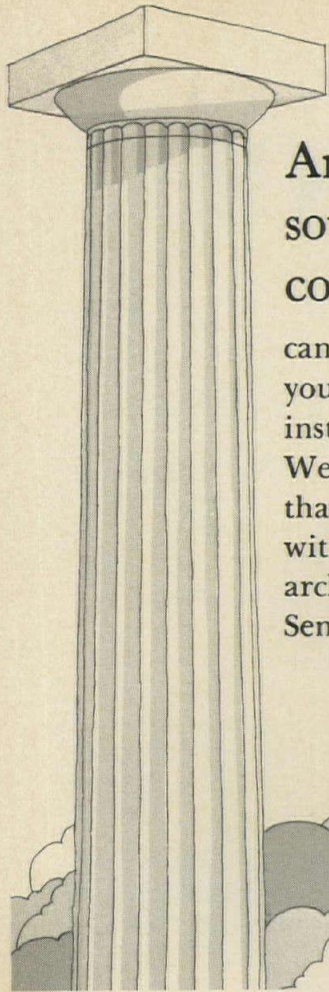
LPI offers a wide choice of fluorescent luminaire types and models to meet a wide variety of specific application requirements—without compromising on lighting function and overall luminaire performance. Nor on quality: LPI luminaires are thoughtfully engineered and ruggedly built for trouble-free installation and long in-service performance. There is an important difference in luminaire quality—a difference you can see. Ask your LPI representative or write for data on luminaires that are function-matched to your application.

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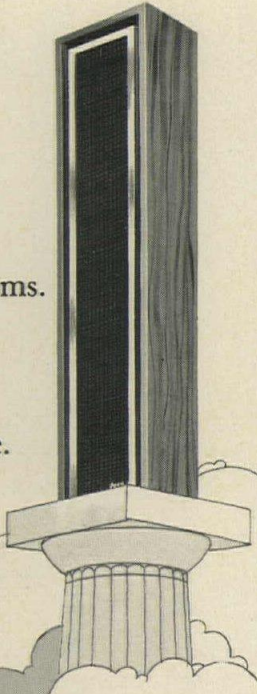
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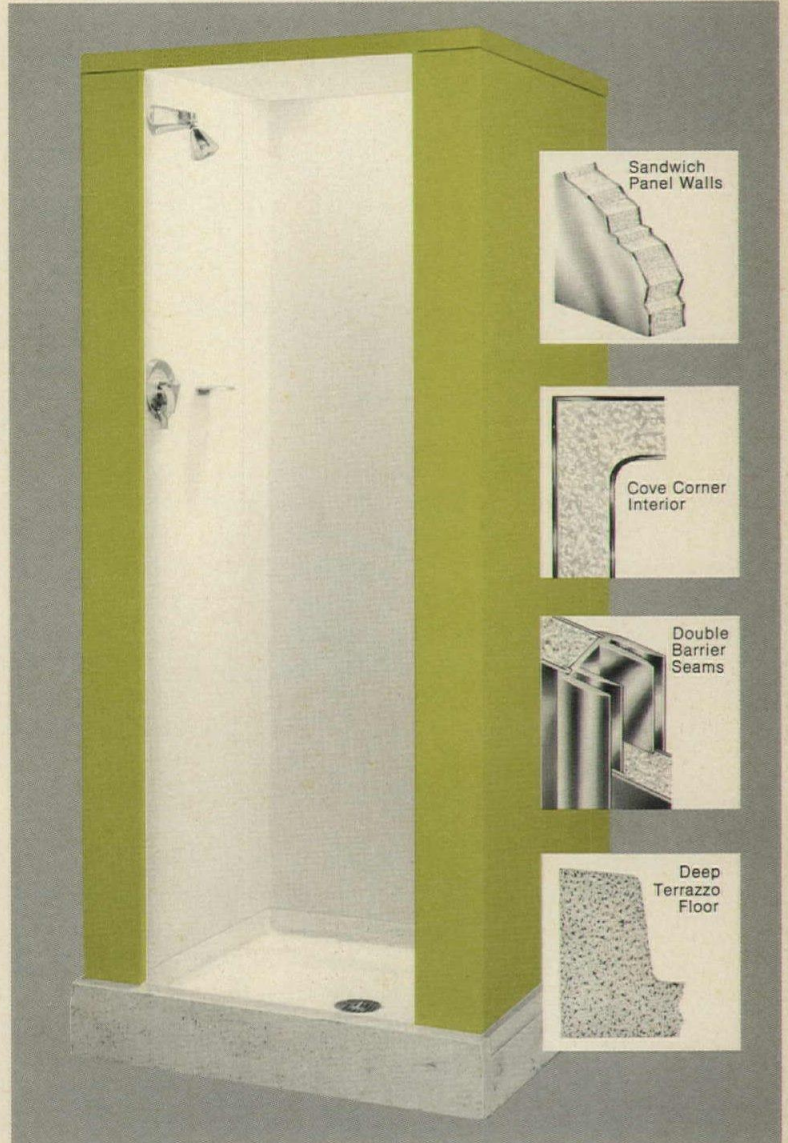
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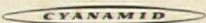
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The \$400-Billion

According to a recent survey by the Opinion Research Corporation of Princeton, New Jersey, most Americans think that business profits run about 28%. That is, that the average U.S. company or corporation nets 28¢ on the sales dollar.

Nothing could be further from the truth. The truth is that *U.S. business as a whole nets less than 3¢ on the sales dollar.*

In 1971, as reported by the Department of Commerce, total U.S. corporate profits after taxes amounted to \$47.4-billion—or 2.9% of total sales of \$1,650-billion.

Some companies, of course, do better than the average. But even the largest, most successful U.S. corporations do not begin to approach the mythical figure that the public has in mind. A Standard & Poor's analysis of the 1971 earnings of major corporations shows that these leaders averaged a 5.6% net on sales. Almost double the national average, but only one-fifth of the reputed average.

But it does not matter, except to the companies concerned, that business *makes* less, as a percent of sales, than most people think.

What matters, and matters greatly to all Americans, is that business *has* less than most people think. Less, far less, in total profits after taxes—which is to say in disposable income to use for its own needs and purposes, or to contribute to other needs and purposes.

If U.S. business had netted 28¢ on the sales dollar in 1971, total corporate profits would have amounted to \$462-billion. This is a fabulous amount of money. In every sense of the word—imaginary and immense.

The difference between \$462-billion and \$47-billion is roughly \$400-billion. And it is this difference—this \$400-billion misunderstanding—that leads to a great deal of fruitless debate, dissension and division in American society today.

To the extent that the American people believe the myth about business profits—either

the precise myth about \$462-billion or the more general myth that business has a vast hoard of undistributed wealth—they are deluding themselves.

Or are being deluded. By the very few who think that profits are immoral, or by the very many who think that profits are a very good thing—that ought to be more widely shared. Because they believe that the sharing will solve most of the nation's public and private ills.

The demand for wider sharing presupposes that business profits are a public, as well as a private, asset—a national resource, money in the bank, to be drawn on in case of need.

Let us, for the sake of argument, accept this concept.

And let us also accept the validity and the urgency of the whole array of public and private needs that are usually cited.

The practical question remains—what then?

How much money is there in the bank? If we simply confiscate *all* corporate profits, exactly \$47.4-billion.

How far will it go? That depends. Suppose, for example, that we divide it fifty-fifty—half for public needs, half for private. Half to add to the \$37.2-billion that business *already* pays in taxes, and half to add to the \$450-billion that business already pays in wages.

The \$23.7-billion in additional taxes would increase total U.S. tax revenues by about 8%. For one year.

The \$23.7-billion added to wages would increase the average American worker's pay check (before taxes) by about 5%. For one year.

Why only for one year? Because the final, practical question remains. What happens when the money is gone?

The confiscation of profits would leave business with nothing to reinvest in the business, and nothing to pay out in dividends to stockholders. Nothing, in short, to invest in the future. And without an investment in the future, there is

Misunderstanding

simply no way of reading the future.

In 1972, American business plans to reinvest some \$30-billion in retained earnings (past profits) in the maintenance and expansion of physical facilities. Other billions will be invested by individuals and institutions as an advance on future earnings, in the expectation of profits, and dividends, to come.

Without these commitments, what can we expect from the U.S. economic system? What can we expect from aging, neglected and deteriorating facilities? From an economy without growth or the hope of growth? From, in sum, a free enterprise system no longer free and no longer enterprising?

No one, in all honesty, knows. We can speculate about confiscating \$47-billion in profits today, but what would there be to confiscate and divide tomorrow? \$40-billion? \$20-billion? Nothing? One guess is as good as another—it is purely and simply a gamble.

And a wildly, almost insanely, reckless gamble. Profits are the lifeblood of business, as we know it or can realistically conceive it. To cut off or restrict the flow of profits, to further diminish that vital 3%, is to knowingly risk the health, the well-being and perhaps the very existence of American business.

Business is not sacred. It holds no special mandate, enjoys no special immunity. But neither does it live or die in a vacuum. It lives or dies as an integral part of an interdependent society. A society in which the health and well-being of each major group—business, professions, labor, government, the public—depends on the health and well-being of all. And in which whatever fatally weakens one, fatally threatens all.

It makes little sense to demand that business do what it cannot do. It makes even less sense to take great risks for small rewards. But then it has never made sense to kill the goose that lays the golden egg—and yet the urge endures.

Against this ancient, consuming urge, it may not help to point out to the impatient and

avid that it is their own goose they would cook.

But it might help a little, if more people understood that the fabulous egg of business profits is neither so large nor so golden as rumor hath it. So that killing the goose may simply be not worth the trouble.

In the end, business profits can be regarded as a fee. A fee for financing, maintaining and managing the U.S. economy.

A 28%, \$462-billion, fee may seem a bit much.

But a 3% fee for financing, maintaining and managing a trillion-dollar economy?

It seems more than reasonable.

And it is!

The problem of business profits reemphasizes the interdependence of American society. And the misunderstanding about profits reemphasizes the need for a better recognition of the mutual dependence and respective contributions of the major groups in our society—business, labor, government and the general public.

We at McGraw-Hill believe that it is the responsibility of media to improve this recognition. This editorial message is one of a series that we hope will contribute to better understanding.

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HOT WATER BOILERS / Units are described with ratings from 40 to 2475 kw. UL listed, ASME coded boilers are designed primarily for the electric space heating market. Units carry a 150-psig pressure rating, with tank wall thickness above minimum requirements. ■ Industrial Engineering and Equipment Co., St. Louis, Mo.
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HVAC ENGINEER NEWSLETTER / A 4-page newsletter prepared specifically for mechanical engineers does an indepth study of one or two subjects each month, such as "Estimating Energy Without Computers." No charge for the subscription. ■ Better Heating-Cooling Council, Berkeley Heights, N.J.
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AIR CONTROL MODULES / A bulletin describes the complete line of environmental air control modules of the dual-compressor, 15-ton refrigeration capacity type. UL approved for both air-cooled and water-cooled models available for use with 208- and 460-volt, 3-phase, 60-cycle electrical service. ■ Pomona Air, Inc., Pomona, Calif.
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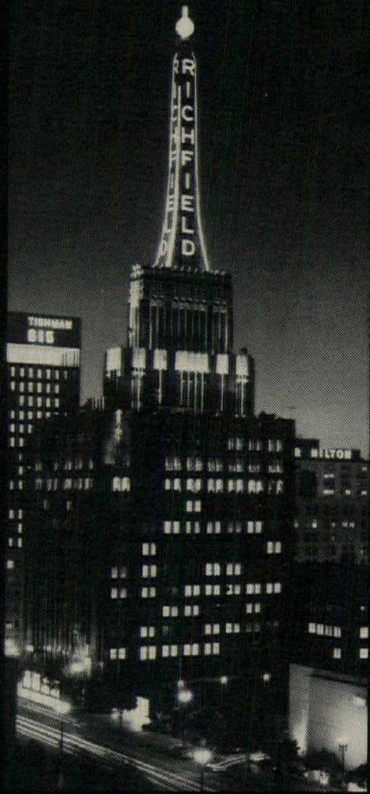
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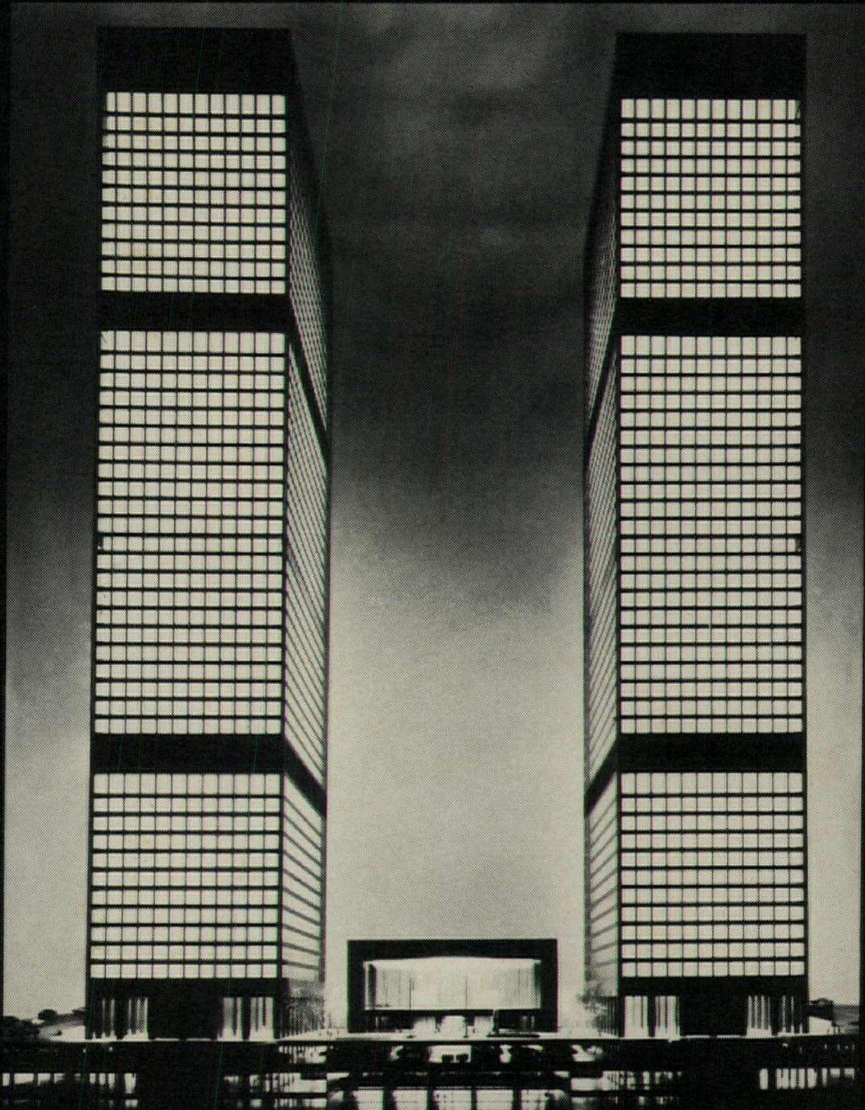
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In 1958 they sealed the old Atlantic Richfield headquarters with LP[®] polysulfide polymer.



In 1971 they demanded that the new Atlantic Richfield headquarters be sealed with LP[®] polysulfide polymer.



It always makes sense to ride a winner.

Case in point: the spanking new Atlantic Richfield Plaza whose designers and builders specified that it be waterproofed with a sealant based on Thiokol's LP[®] polysulfide polymer.

The reason for their decision? A polysulfide-based sealant has proven to be a winner. In fact, it has been doing just that for the past 14 years at Atlantic Richfield's former headquarters building nearby in downtown Los Angeles.

The choice, then, was both obvious and logical. Why not go with a sealant that had successfully withstood years of punishment in an environment that often contains more than its share of corrosive pollutants?

But, at Thiokol we don't rest on past accomplishments alone. Granted, sealants based



on our polymer have performed flawlessly for more than 20 years. Yet that doesn't stop us from continuing a Seal of Security Program which aims to see that they'll last even longer in the future.

So ride with a winner. Specify a sealant based on Thiokol's polysulfide polymer. It won't let you down over the long haul.

For more information, including detailed comparisons between sealants based on Thiokol's LP[®] polysulfide and eight other kinds of sealants, write: Dan Petrino, Thiokol Chemical Corporation, P.O. Box 1296, Trenton, N.J. 08607.

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