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RECORD INTERIORS OF 1971

BUILDING TYPES STUDY: CAMPUS DESIGN FOR SUCF—AN ANALYSIS OF EXCELLENCE

ARCHITECTURAL ENGINEERING: QUALITY IN LIGHTING

FULL CONTENTS ON PAGES 4 AND 5

ARCHITECTURAL RECORD

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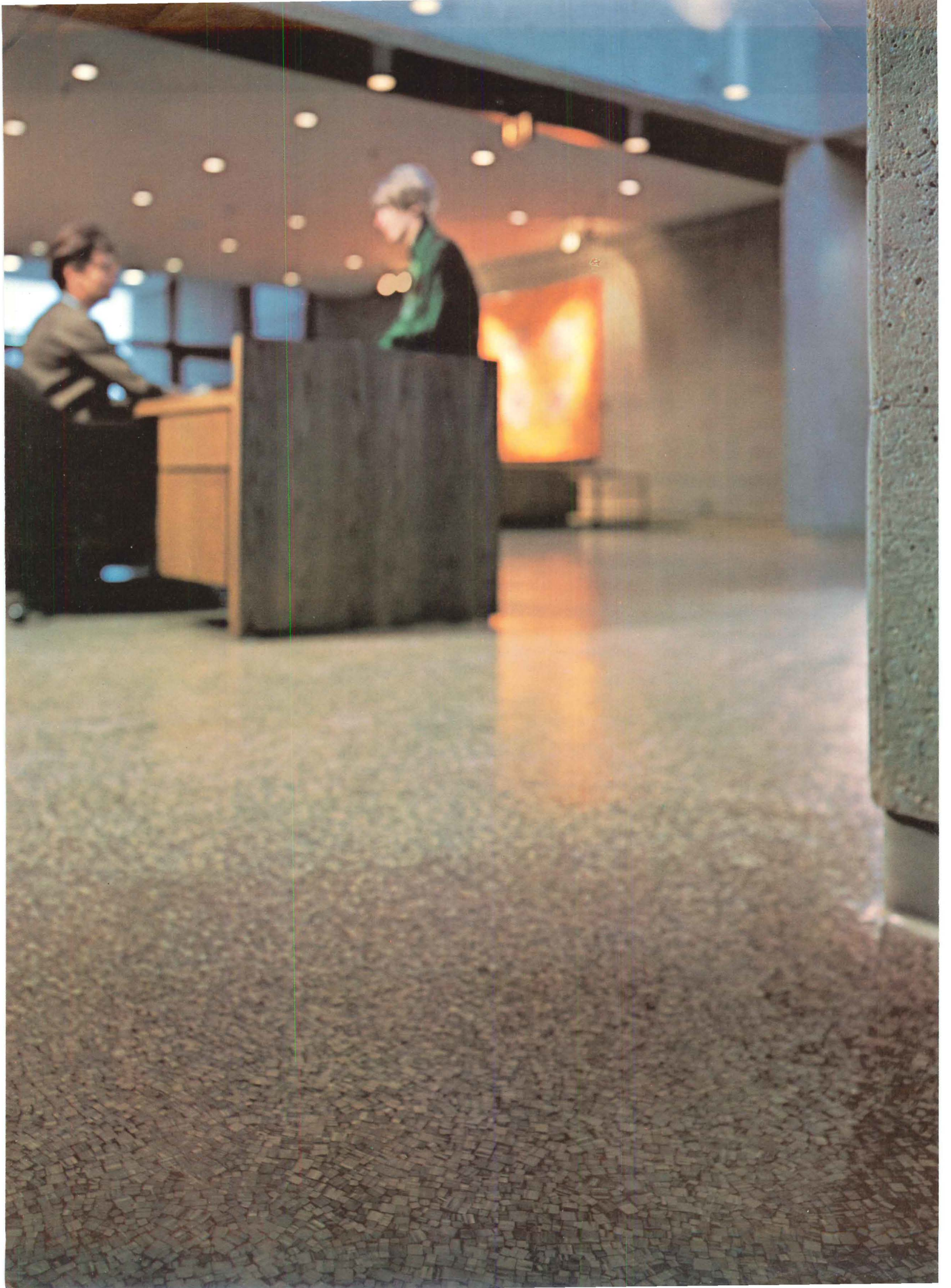

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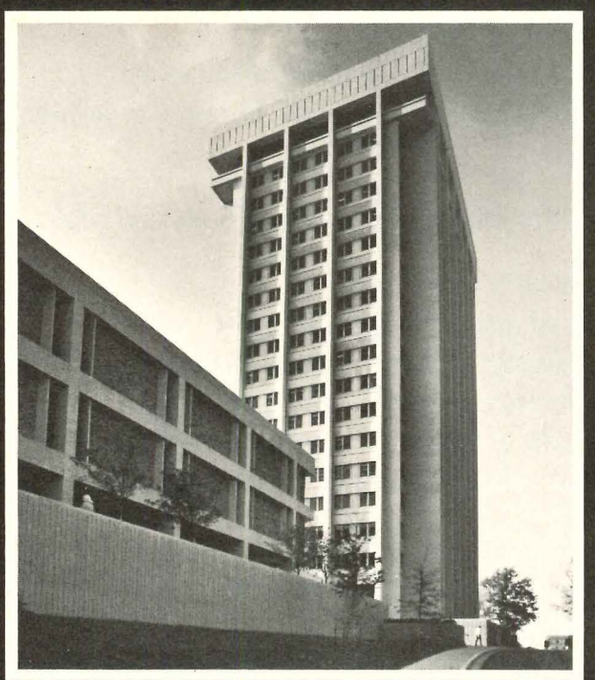
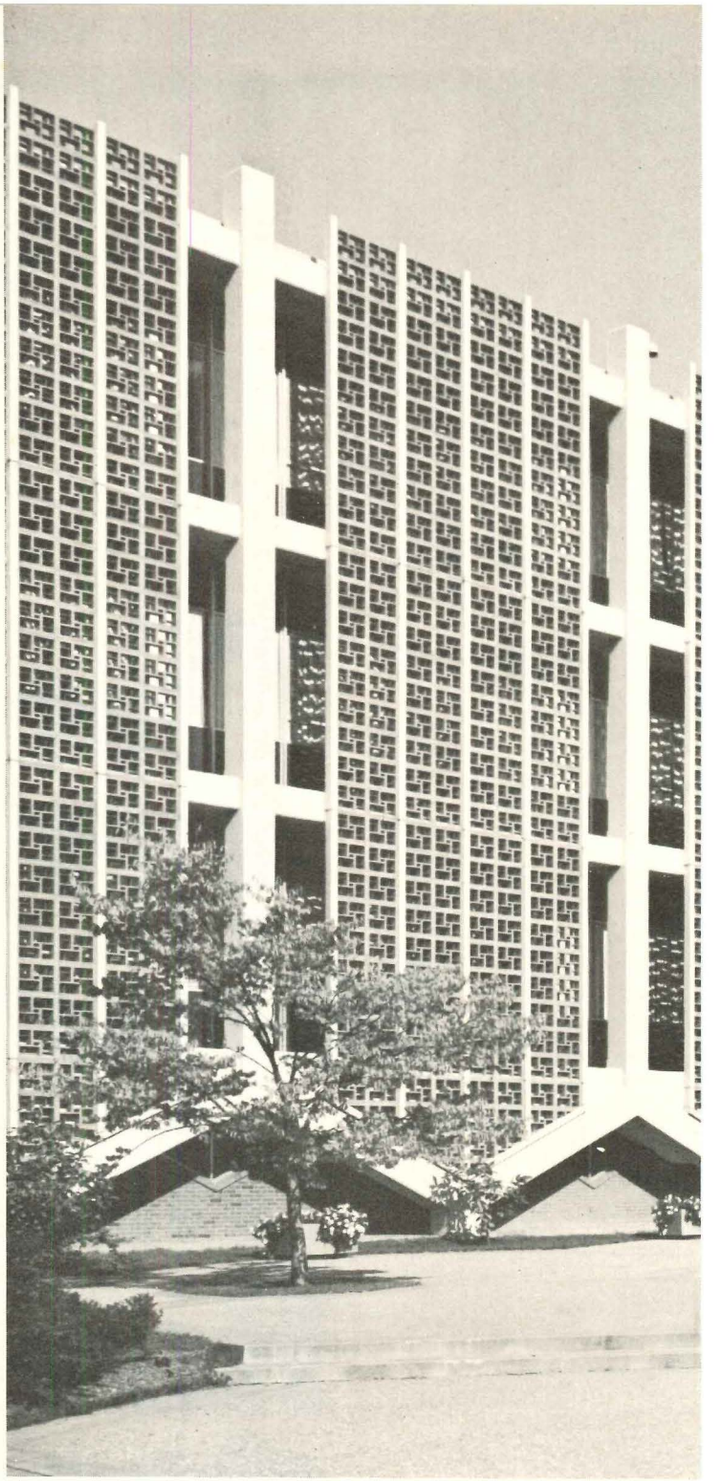


(Above) Patterson Office Tower and White Classroom Building. Architects: Johnson-Romanowitz, Lexington. General Contractor: Foster & Creighton Company, Lexington. Six Dover gearless traction elevators with Computamatic IV Control.

(Right) Agricultural Science Building One. Architects: McCulloch & Bickel, Louisville. General Contractor: Foster & Creighton Co., Lexington. Two Dover Oildraulic Elevators with Duplex Control.



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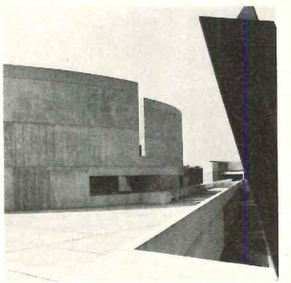

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Photo: Courtesy New York State University Construction Fund

THE RECORD REPORTS

Engineering-News Record

ARCHITECTURAL BUSINESS

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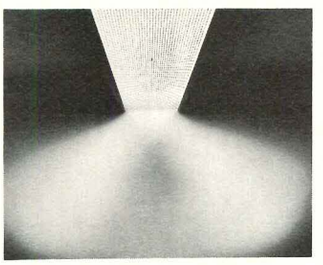

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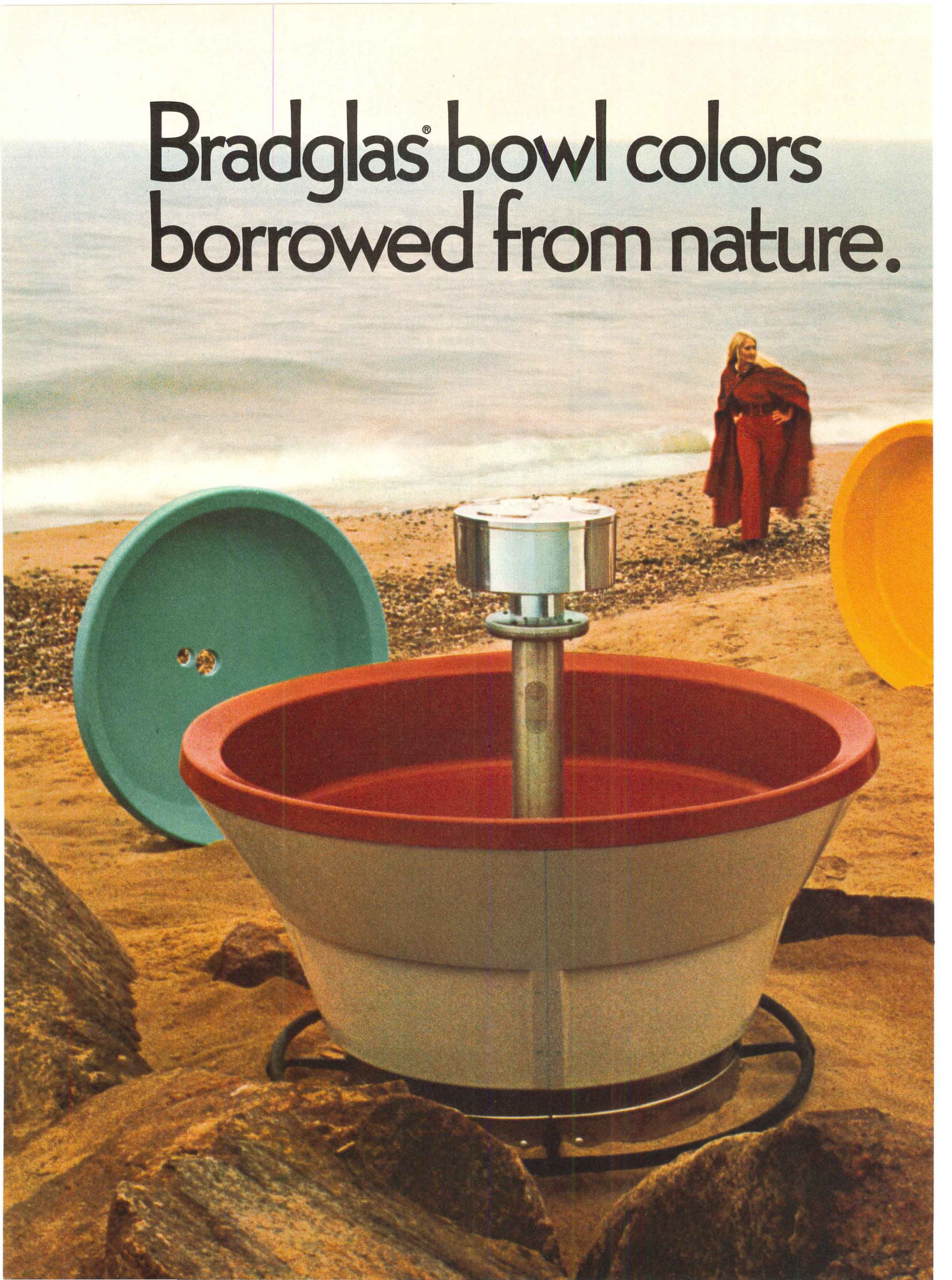
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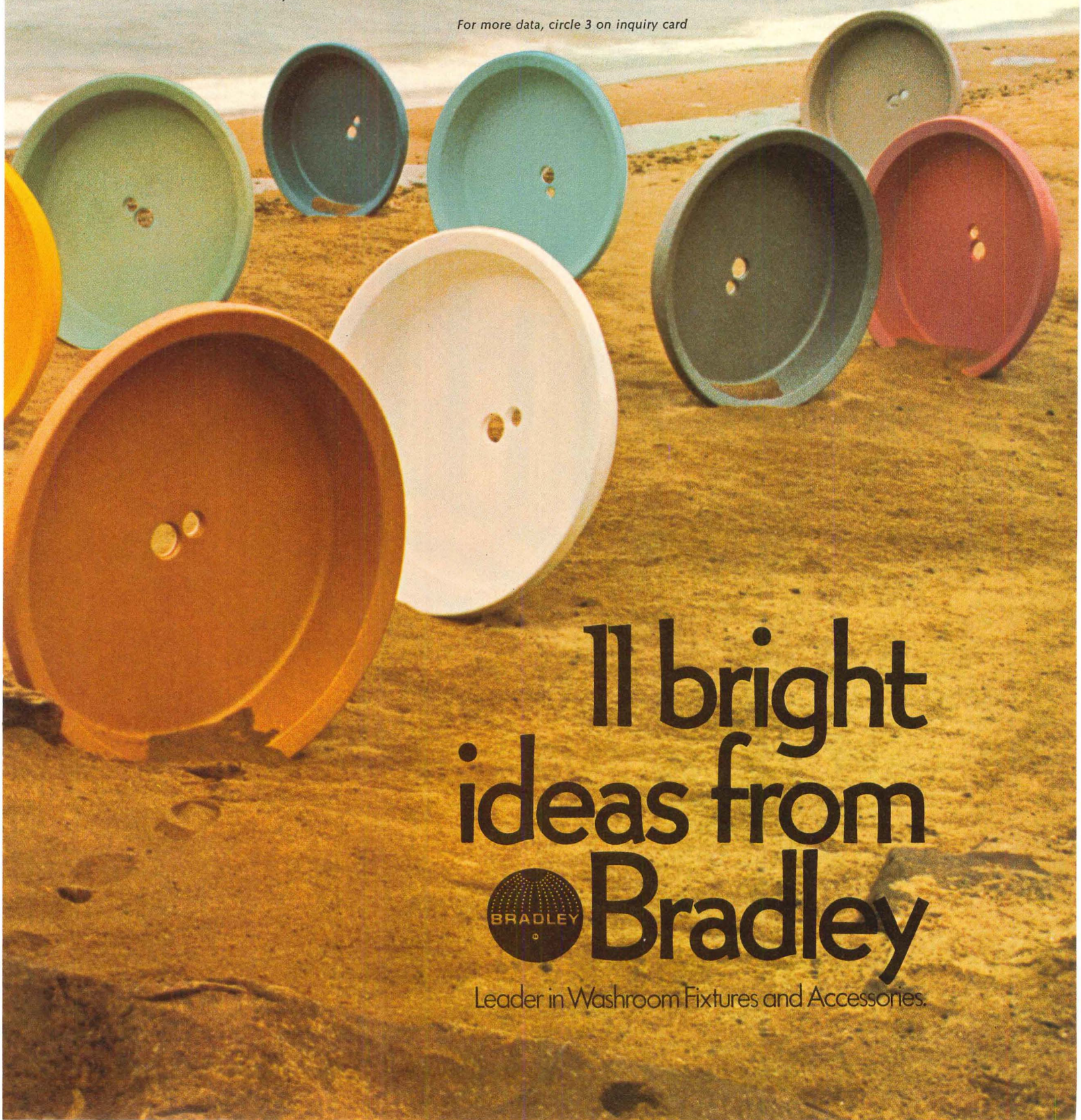

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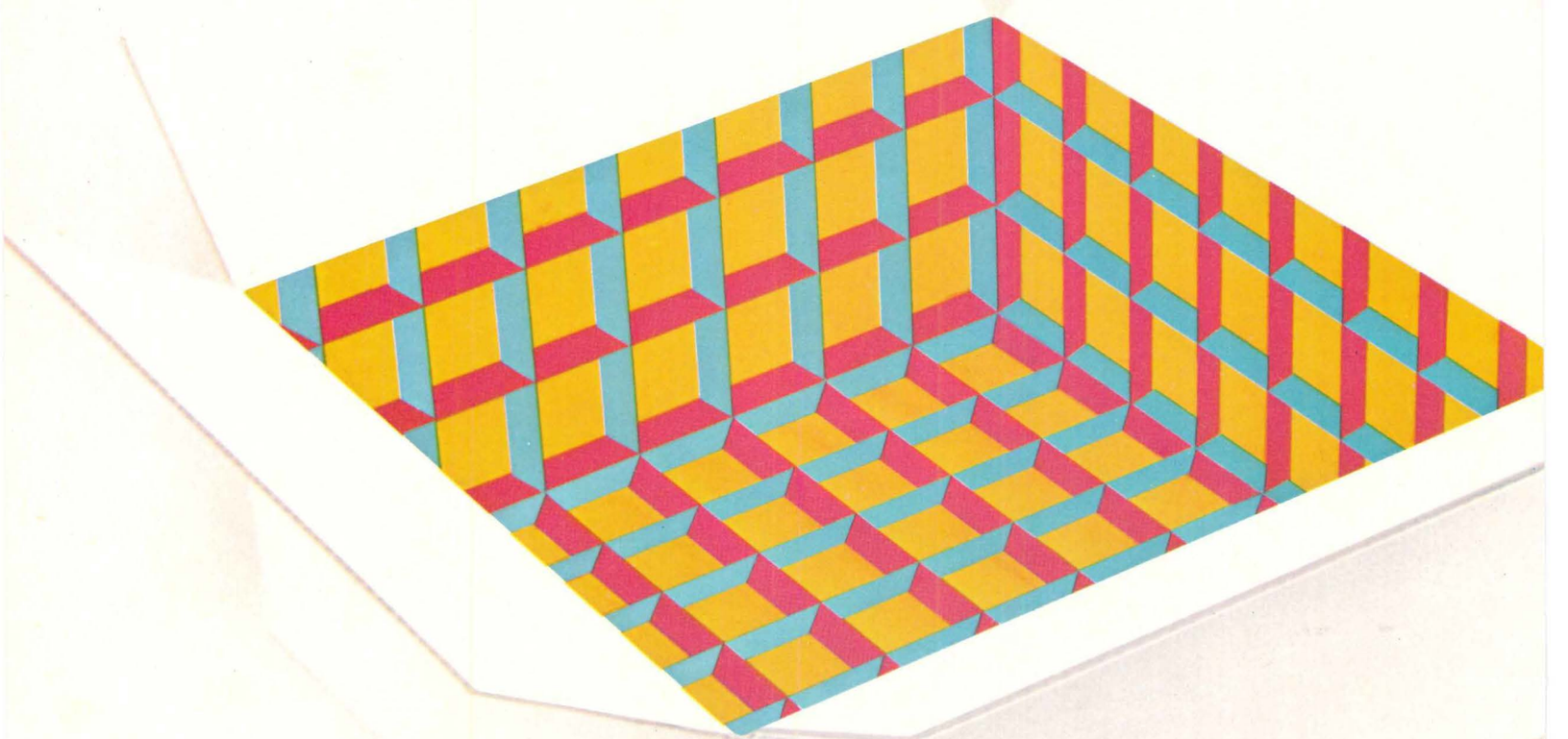

COLOR DYNAMICS® the inside story

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Some random thoughts on the dawn of a new year

Pronouncements are generally called for at the beginning of each new year, but I find I haven't a really massive, here-we-are-at-the-beginning-of-a-new-year pronouncement. Instead, collected below are some of the things that I've wanted to write about (as soon as I had them figured out in my own mind). They're still not figured out, but here they are anyway:

■ A recent article in The New York Times by John B. Oakes reinforced the thoughts that senior editor Mildred Schmertz brought home from her conversations with Japan's leading architects. And the implications and lessons for America are clear: "The most important—and least asked—question here today is whether Japan will manage to survive its own success. . . . The price [it has] paid for these 25 years of fantastic industrial development of everything from shipyards to electronics, from cameras to textiles, has been such extensive damage to their environment that life in the most heavily populated parts of these islands threatens to become unlivable. If that sounds paradoxical in a country where the standard of living as measured by the usual yardsticks has risen with extraordinary rapidity, it is only because"—Oakes concludes with a statement that ought to be carved in stone— " 'standard of living' has no necessary correlation to quality of life—in Japan or anywhere else."

■ In case anyone has taken heart at the progress (so far, at least) in the stabbing of the Super Sonic Tyrannosaur, I offer this dash of cold water, from an in-house speech by Robert Hotz, the very-well-indeed-informed editor of McGraw-Hill's Aviation Week and Space Technology: "For the past 20 years, this country has enjoyed an unchallenged superiority in strategic military power. . . But during our preoccupation with Southeast Asia, the Soviet Union has mounted a massive military technology development program that has already achieved strategic parity with this country. In three years, at the present pace, the advantage will have shifted significantly to the Soviets. We can expect both major technical surprises, almost as shocking as Sputnick and the first Soviet ICBMs, as well as political pressure all around our perimeter. In response, there are going to be some frantic technical development programs that will make the post-Sputnick seem mild."

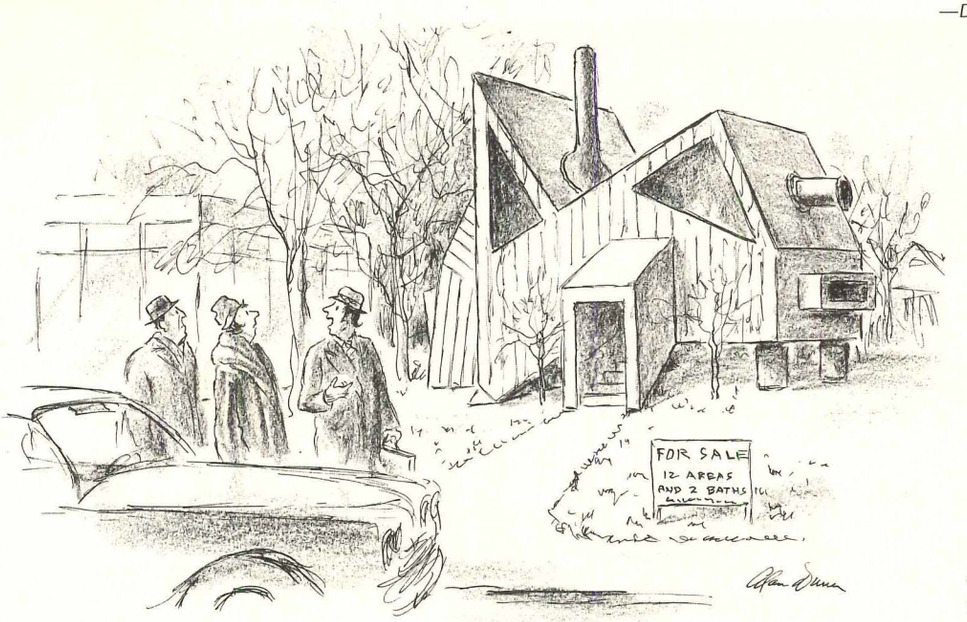
Anyone here want to bet whether these "pretty frantic development programs" or the pretty frantic development programs our cities need get our tax dollars?

■ Thoughts on "who should manage the team," from Frank Whitney, architect and president of Walter Kidde Constructors (in a speech to the ASCE): After suggesting that more architects might find it possible to team up with a turnkey organization to get a job built, he rhetorically asks the question: "Who will serve as chairman of the board? It's always a good question and one we ought not to easily dismiss." One answer suggested by Mr. Whitney (and one that bears some careful consideration these days) is: "The lead function can change. At the outset, the architect or architect/engineer can assume responsibility for management. But he can give way to a construction manager as the building phase gets underway. This isn't nearly so complicated as it seems. . . There is, of course [and here Mr. Whitney makes an essential point and assumption] no substitute for mutual respect. Where men join their talents and subordinate their personal interests to professional standards, we have nothing to fear. This nation has reached an historic moment: professional people must cooperate to make this technological civilization function for the benefit of all."

■ Amidst reports that President Nixon will appoint another non-architect to the post of Architect of the Capitol, Representative Andrew Jacobs (D., Ind.) has introduced this resolution in the House: "Resolved, that the Architect of the Capitol shall be an architect, or in the alternative, the physician of the Capitol shall not be a physician."

■ For a long time, the design professionals have been talking about the input that is required to improve the quality of our environment. It seems a bit (but not much) easier to cope with the output—viz. our waste. A year ago, the new (and now just-fired) Secretary of the Interior Walter Hickel wrote in the Phoenix (rising from ashes Phoenix) Quarterly: "Like a teenager who is adjusting to the challenges of adult life, we, as a nation, are adjusting to technological maturity and population growth. Those who preceded us freely used this nation's bountiful resources and were little concerned with environment. If one area became too 'civilized' or gutted, they moved on. Our technology was not so advanced and our wealth, in terms of possessions, not so great. In previous generations, if a carriage broke, it was repaired. Today, our assembly lines create goods so quickly that it is cheaper to buy a new car than to repair the old one. Our land has become glutted with the refuse of an affluent society. . . Now we, like the teenager, must settle on a plan of life. We must adjust to our maturity. We must curb our youthful exuberance for haphazard growth and substitute wise planning to insure our long-range environmental goals." Well, Hickel, who was doing

—Drawn for the RECORD by Alan Dunn



"Don't worry—If you love it enough it will love you back"

pretty well in this area, is gone; but surely we can manage this alone, if not at a noble scale, at least at a local scale. Surely we can do with a bit of tattle-tale grey in the few white shirts we still own if doing away with phosphates will help solve the water pollution. Let's do it! If those new gasolines really do help cut down air pollution, let's make them mandatory now. If it is true, as the Institute of Scrap Iron and Steel claims, that "with the vast expansion of scrap processing equipment over the past 10 years, there is no doubt whatsoever that the scrap industry has the capacity to process every pound of material presented at its doors," let's get it processed. If that takes a different kind of titling law to speed up processing of abandoned cars, let's get the new titling law. Our roadsides are littered with beer cans and beer bottles, but not with milk bottles. Isn't there a simple lesson in that?

Or . . . with all our expertise at developing new industries, couldn't we find more ways to make waste processing profitable (that always helps). Two items: 1) It now turns out that fly-ash is a very useful material for adding non-skid qualities to tires, and as aggregate in brick; and 2) It turns out that the waste heat of nuclear power plants can be used to increase the rate and effectiveness of sewage treatment processes and (under controlled conditions) accelerate the growth of shellfish and extend the growing seasons (and production) of some crops.

If such positive incentives to industry don't work, surely we must apply some negative incentives. The Sierra Club's Phillip Berry has proposed a "National Corporations Code" to stress that "in exchange for the privilege of doing business as a corporate entity, every corporation would be obligated to provide reasonable protection for the environment in every phase of its operations," and thus, each new project would have to be considered not just from a profit standpoint, but from the standpoint of whether it would meet reasonable environmental standards. Seems fair enough.

■ Signs of the times, curriculum-wise (from a press release of Washington University, St. Louis): "Dean George Anselevicius of the School of Architecture . . . announces two combined degree programs:

"1. Master of Architecture and Master of Business Administration. Studies. . . . deal with accounting, economics, finance, marketing production management, quantitative business analysis and management information systems. Choice of studio and the required thesis in the School of Architecture relate to the above studies.

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And how's that for calling what's happening what's happening?

■ How fast and how soon are we going to find a new compromise between complete fire safety and cost in the design of skyscrapers? The two recent fatal fires in New York City and a San Francisco fire (all in just-completed or just-about-to-be-completed skyscrapers) make it tragically clear that the present codes are inadequate (like FHA minimum standards, they soon become maximums under the pressure of high costs).

Predictably, there are broad accusations of "design" faults. If so, they must be corrected. So must inadequate codes, inadequate research, and inadequate willingness by owners to pay for what is needed to protect the innocent tenants of a building that is supposed (and assumed) to be "fireproof."

■ In last month's editorial, I made brief mention of the "Hard Choices" that will be the theme of next year's A.I.A. convention. Since then, I've heard Bob Hastings, the brand-new (as of December 4th) president of A.I.A., express them in more detail. And they seem so important that they are here reported in more detail. From Bob Hastings' remarks on the occasion of his elevation to the presidency: "Architects, engineers, planners, political leaders, and citizens are avoiding the painful task of facing up to reality. But this cannot be postponed much longer.

"We need to look at the hard choices that confront us, coldly and clearly. We can pose them as a series of questions. For example:

"Do we want to abandon our cities to the poor, agree that we cannot restore our urban centers, and concentrate our design skills and resources outside these areas?

"Despite ringing pronouncements about building a decent home for every American, is this really a practical goal and are we really willing to tax ourselves to the degree necessary to do it?

"Is single-family suburban life satisfying enough to pay the penalty for increasing sprawl, heavier dependence upon highways and automobiles, and higher taxes they will demand as time goes on?

"Are we genuinely willing to pay the costs (which are far greater than those cited in present or proposed legislation) to halt the poisoning of air and water?"

The answers to these questions, Hastings argues, would—if translated into public policy—have a profound effect on American life. And he proposes to try and get them answered.

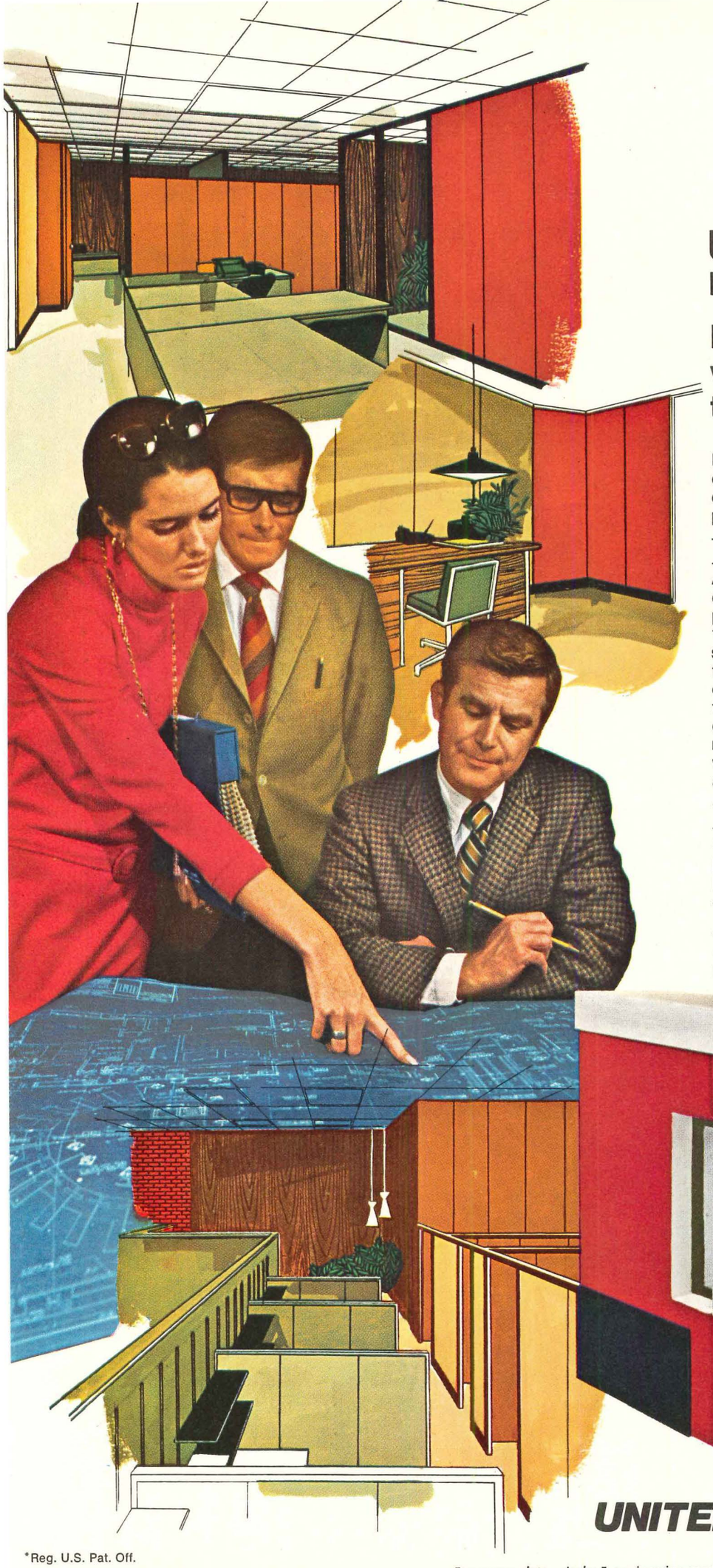
Which seems to me the kind of facing up to facts that simply must be done if we are not—as a profession, and as citizens—to keep riding off in all directions.

Well, as the sun rises out of the sea on a new year, those are some of the questions that bother . . .

Your friend,

—Walter F. Wagner, Jr.

P.S. Happy New Year.



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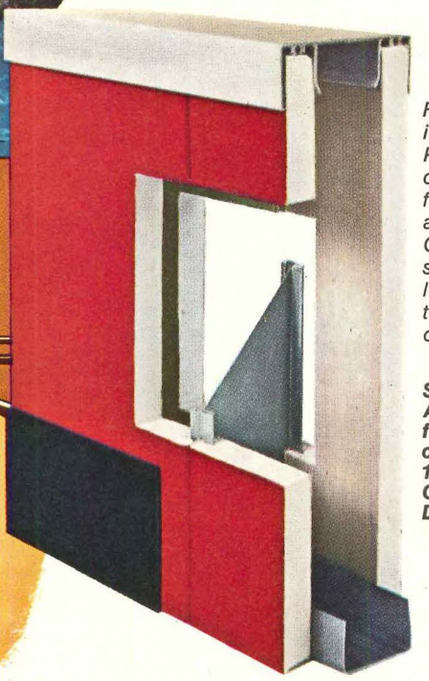

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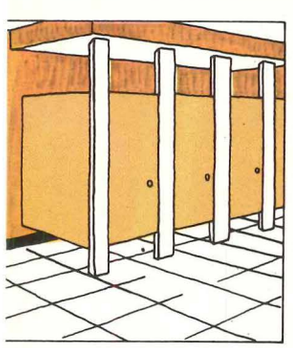
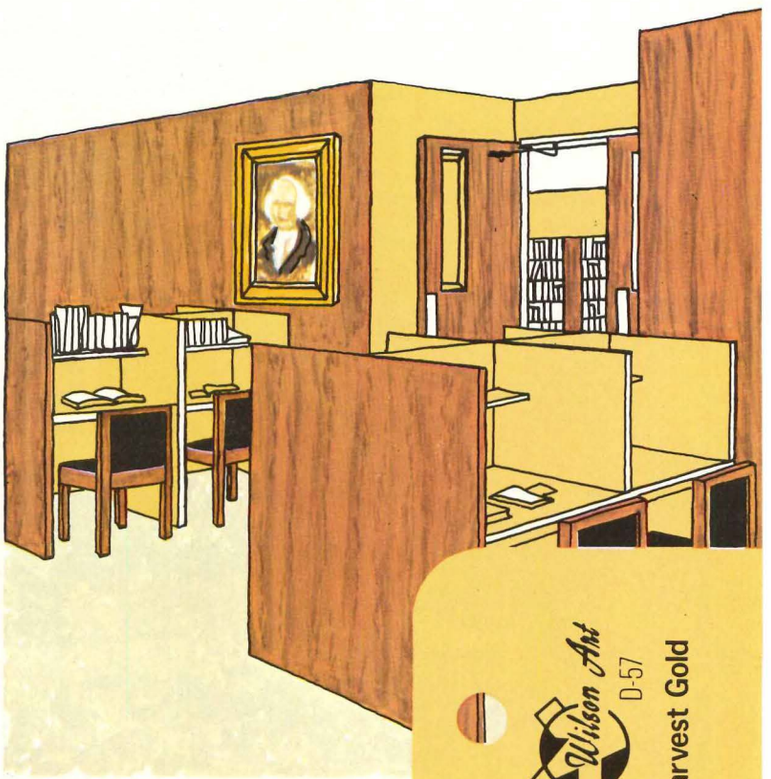


Left: Wilson-Art covered toilet partitions with exclusive Cuero finish (deep, grainy texture) discourage graffiti, always look fresh and clean.

Above: Authentic woodgrains, rich solids, Wilson Walls and Wilson-Art covered lead-core doors combine esthetic desirability with environmental function and low maintenance.

the one laminated plastic to specify when you are concerned with the *total* interior.

Right: Wilson-Art covered study alcoves, doors, furniture, and Wilson Walls, offer many practical advantages in educational facilities, including low initial and ultimate costs.



Left: Design expression and practical functionality suggest Wilson-Art—"up front," where it helps direct positive consumer attitudes—and in food preparation areas where it offers sanitary, service and economic benefits.

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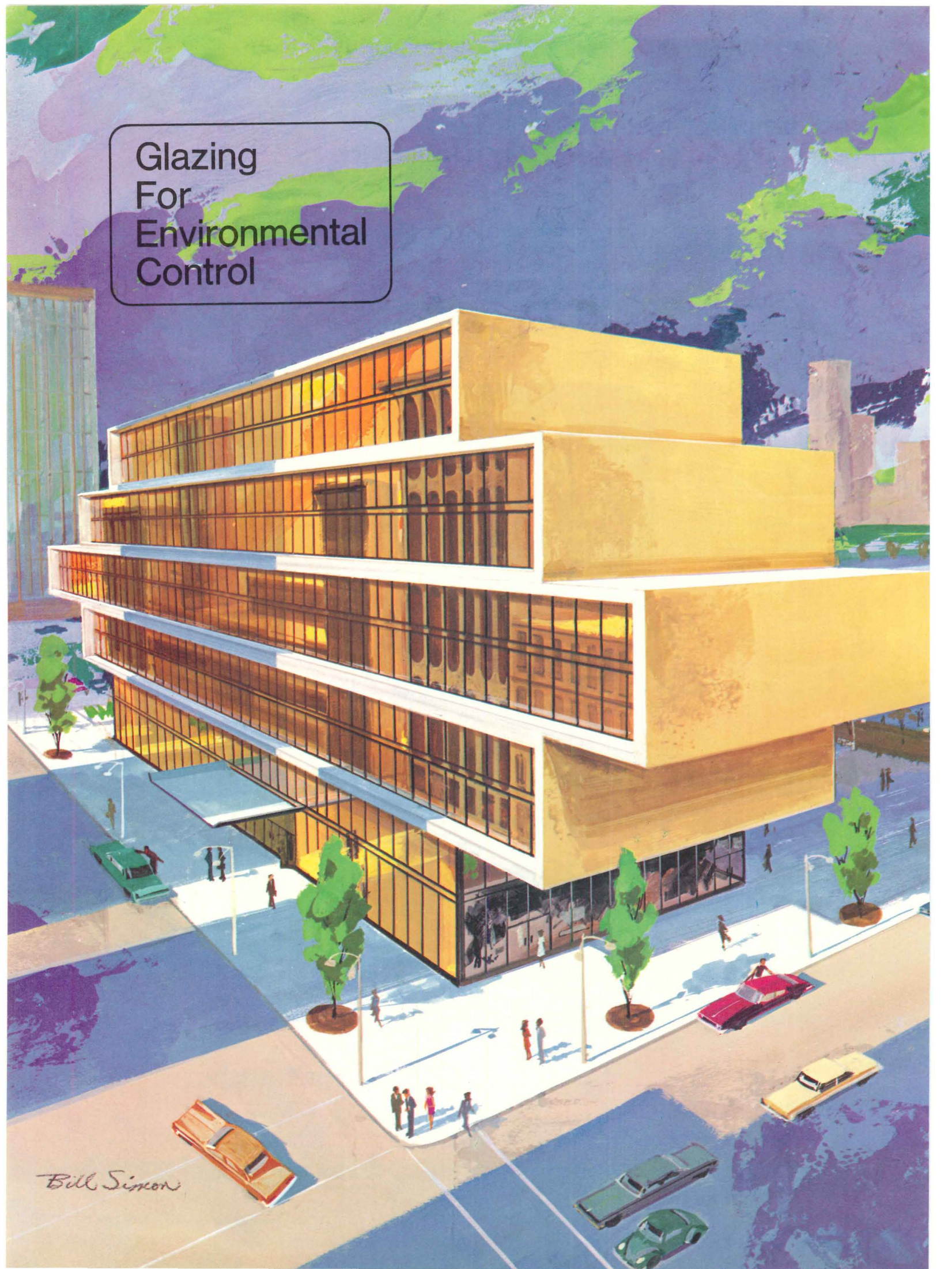
Glazing For Environmental Control



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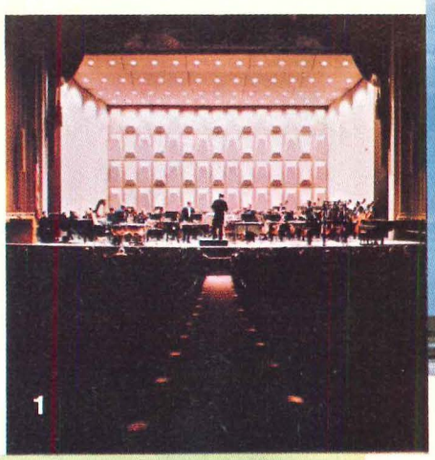


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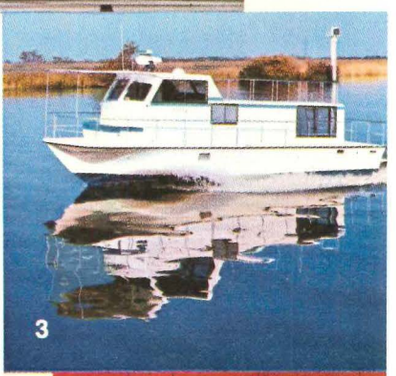

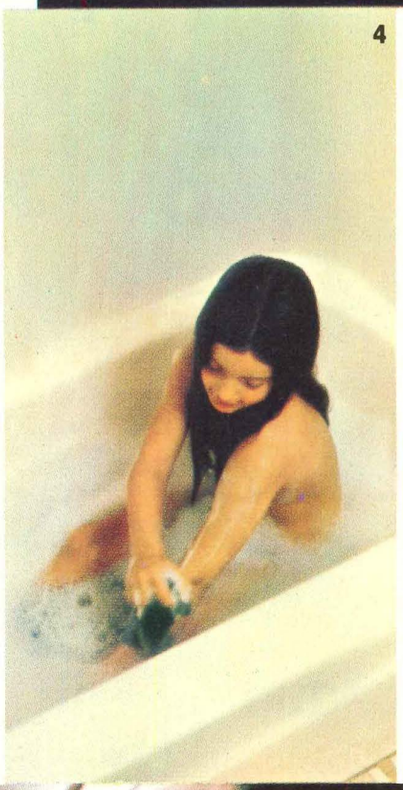

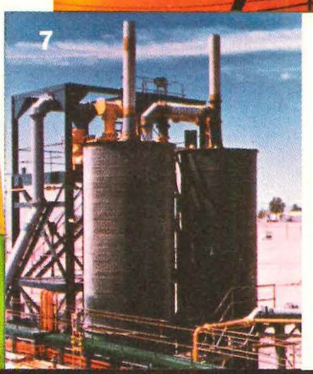

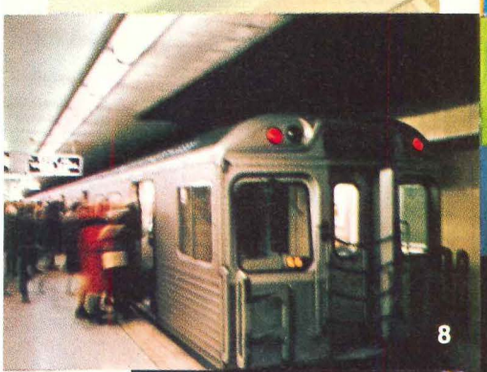

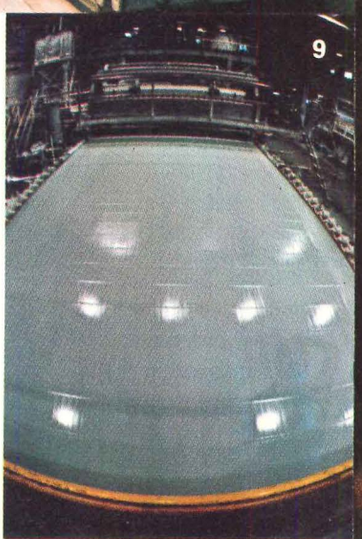

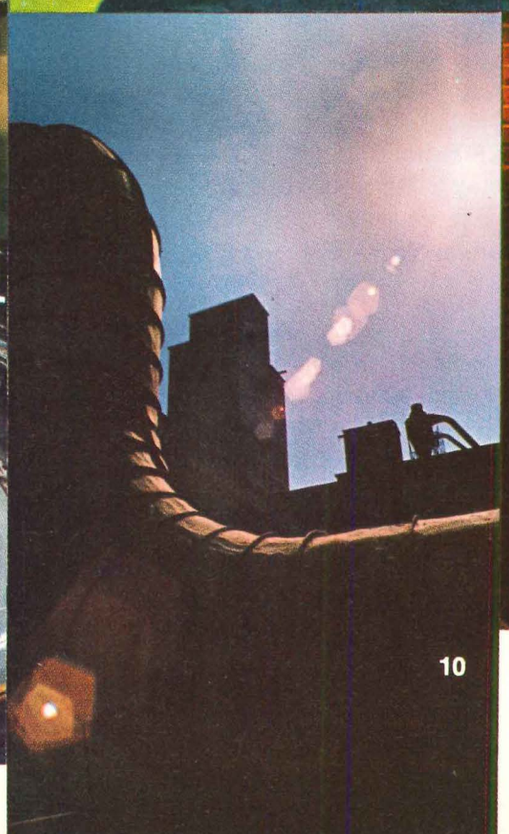

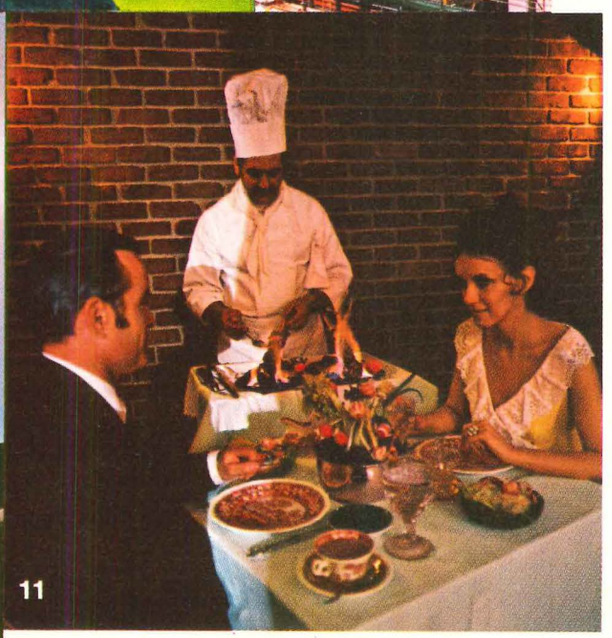

1. The San Francisco Opera House picked Hetron-based acoustical panels to sound off to the best advantage. Structurally safe and flame retardant. Meets fire codes for sell-out crowds.

2. Up in the big birds, it's good to have fire-retardant Hetron along for galley panels, flooring, wing tips and tail fins. Meets the stiffest FAR requirements. Stands the roughest stress. Light enough to pay its own fare.

3. Uniflite puts Hetron safety in the hull of every boat. Slaps out fire. Stands up to salt water and the knocks of floating debris. Makes the long voyage just like home.

4. From bathtub stall to outer wall, Hetron-based sanitary units and plumbing fixtures will douse the welder's spark for sure installation and provides a safer building for the bathing beauty.

5. Hetron-based Sanpan® translucent panels let daylight inside the biggest man-made missile complex. Won't break up when rockets blast off. Holds up in hurricane, sun and salt water.

6. To squeeze 300,000 volts, a lineman needs a mobile aerial bucket made of Hetron. Shock-proof. Meets NEMA standards. UL tested. Tough enough for computers, switchgear and complex electrical systems.

7. Hetron took on the Chile desert for Anglo-Lautaro Nitrate Corporation's iodine-extraction complex. Takes the load stress of 425,000 gallons in tanks and scrubbers. Corrosive problems of iodine, kerosene and brine. Outside temperatures from subfreezing to sizzling hot.

8. Rapid-transit cars put passenger safety on top with Hetron on the ends, front light housings, seats and window trim. Fights fire and corrosive fumes. Holds down repairs and repainting. Keeps everything moving, from motor vehicles to monorails.

9. Tough enough to handle chlorine dioxide bleaching, Hetron FRP laminates are inherently corrosion and fire resistant. Takes chemicals at 250°F operating temperature.

10. To buffer a fast-running, humid air system, Froedtert-Malt Corp. picked Hetron for one of the largest duct systems in the world. Stands tight when fire and corrosive fumes at 200°F try to stop a job.

11. Cavrok® simulated-brick FRP panels with fire-retardant Hetron keeps dinner guests safe. Smart looking inside and out. Flame-spread ratings under 25 comply with building codes wherever people get together.

You supply the sparks, the sizzle, the rot, the stress.

Hetron supplies the durability.

You've got to take your design off paper. Put it in the field and make it work.

**Get Hetron.®
Works like its own fire engine.
Proven in the
toughest surroundings.
FRP resins with
built-in fire retardance.
Self-extinguishing to nonburning.
Meets the stiffest building codes.**

**Structurally safe and sound.
For opaque and translucent building panels and sandwich-wall applications. Simulated brick and wood veneers.**

Plumbing fixtures and most any architectural shape. Inside and out.

Corrosion resistant. Shock-proof. Or a combination to fit your specs.

Think creative for your environment. Then let Durez® supply Hetron resins for durability. Contact our technical staff now.

Durez Division
Hooker Chemical Corporation
8011 Walck Road
North Tonawanda, N.Y. 14120
Subsidiary of
Occidental Petroleum Corporation

hooker
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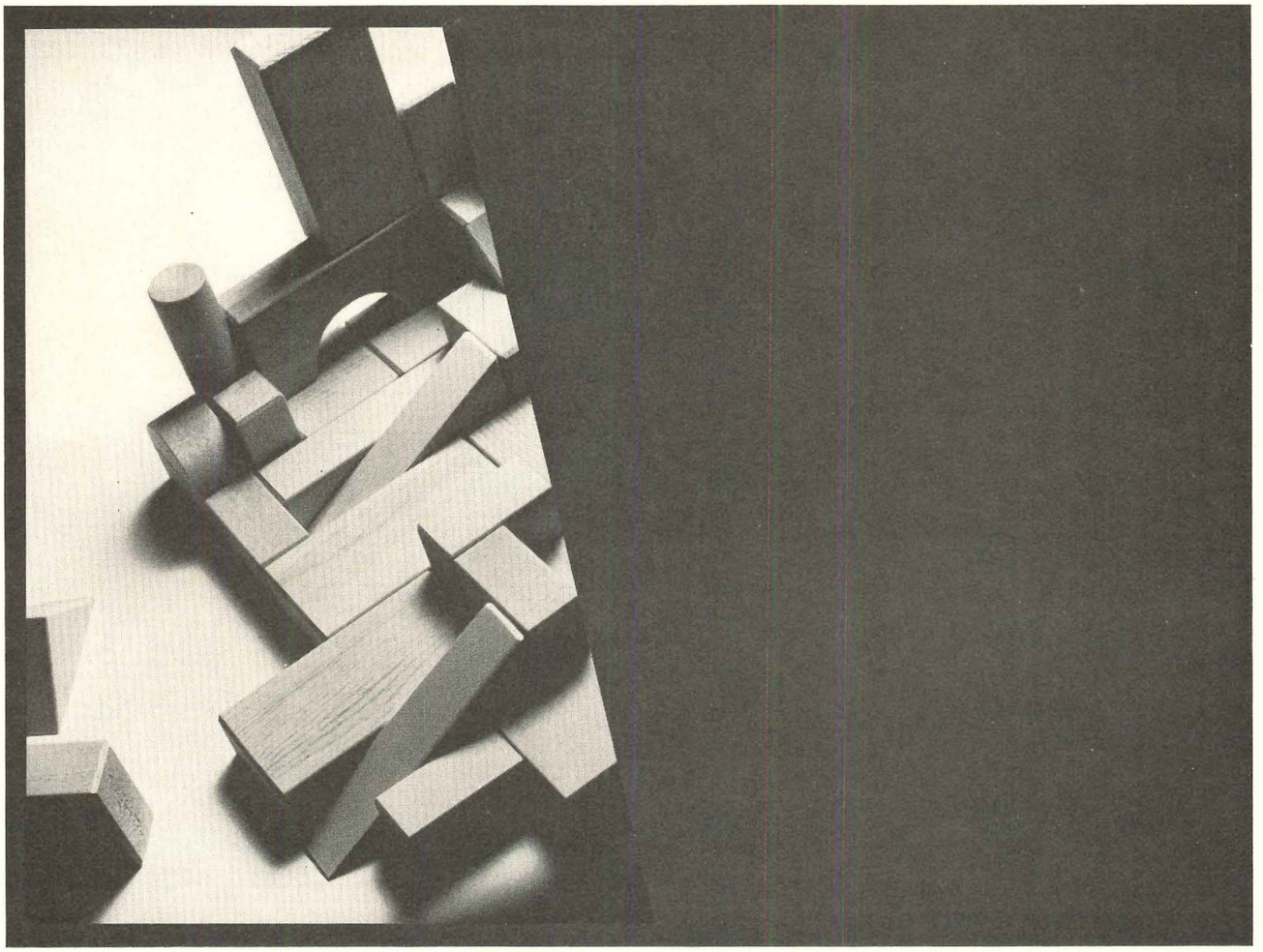
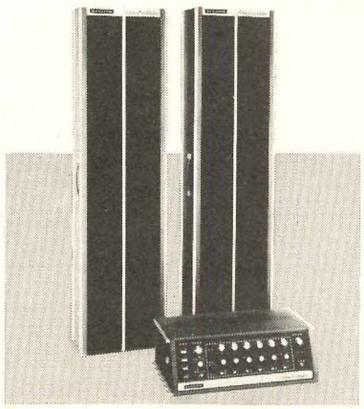


Your mobile, modular sound system.



There are four excellent reasons that architects specify the *Shure Vocal Master* sound system. The first is sound quality: the Vocal Master is the first sound system especially tailored to project the voice with authority and clarity. Reason two is adaptability to environment: the system is completely portable; therefore it can do the work of several systems — in any size area from a small conference room to the outdoor Greek Theater in Los Angeles. Three is economy: it costs only a fraction of the built-in systems it easily outperforms. Four is its utter reliability. Write Shure Brothers Inc., 222 Hartrey Avenue, Evanston, Illinois 60204.

SHURE

For more data, circle 9 on inquiry card

made-to-measure protection with KINNEAR rolling grilles

A key controls opening or closing this large Grille on Stuarts in the Seminole Mall, Seminole, Florida.

Also manufacturers of Automatic Steel Rolling Fire Doors and Counter Shutters.

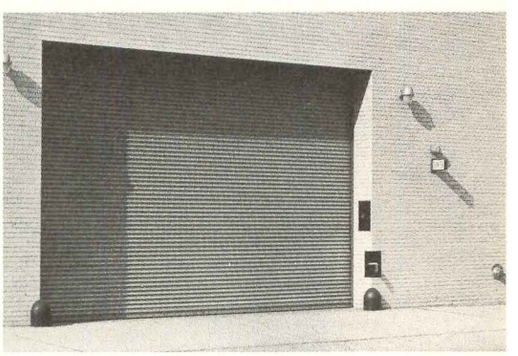
After-hour security is always of prime concern to the building designer and store owner. With Kinnear Rolling Grilles, you get positive protection, attractive design, carefree and easy operation, and no restrictions on dimensions. Store fronts both large and small with one or more openings can be easily fitted with Kinnear Grilles that will more than "measure up" to every security challenge.

A perfect example of Kinnear adaptability is Stuarts store in the new Seminole, Florida Mall. The wide, open entrance is protected by rugged but graceful motor operated Kinnear Grilles. With a "turn of a key," these Grilles can be silently and quickly raised or lowered. The opened Grilles disappear completely out of sight — and out of the way — above the store opening where the operating mechanism is also concealed. The compact rolling curtain principle developed by Kinnear has never been excelled, and the people of Stuarts echo their acceptance when they say, "Our Kinnear Grilles are convenient, as well as decorative . . . they suit our needs perfectly."

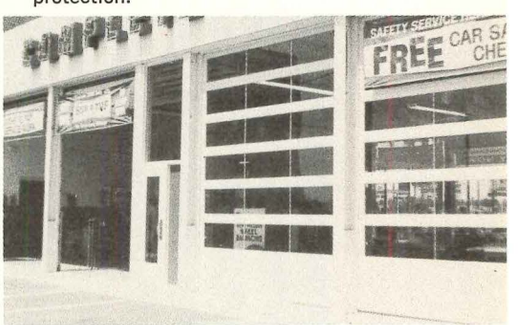
The Seminole Mall is one of the newest of many attractive shopping malls whose stores have found Kinnear Grilles to be the best "see-through protection" available. Window shoppers can still admire the store's displays through the closed Grilles. And for the centralized climate control, the Grilles allow uninterrupted circulation of air.

Kinnear's "Registered" Life-Extension policy, backed by a nationwide service organization, assures maximum Grille efficiency and minimum maintenance.

Let Kinnear consult with you on your newest project or present building for proven entryway protection with Kinnear Rolling Grilles. Write or call. No obligation.



Kinnear Steel Rolling Doors offer maximum protection for shipping and receiving entrances — or store front vandalism protection.



Kinnear Aluminum "RoL-TOP" Doors are the market's "best buy" for auto service centers or where vision is essential.

KINNEAR CORPORATION
and Subsidiaries
1860 Fields Avenue, Columbus, Ohio 43216
Factories:
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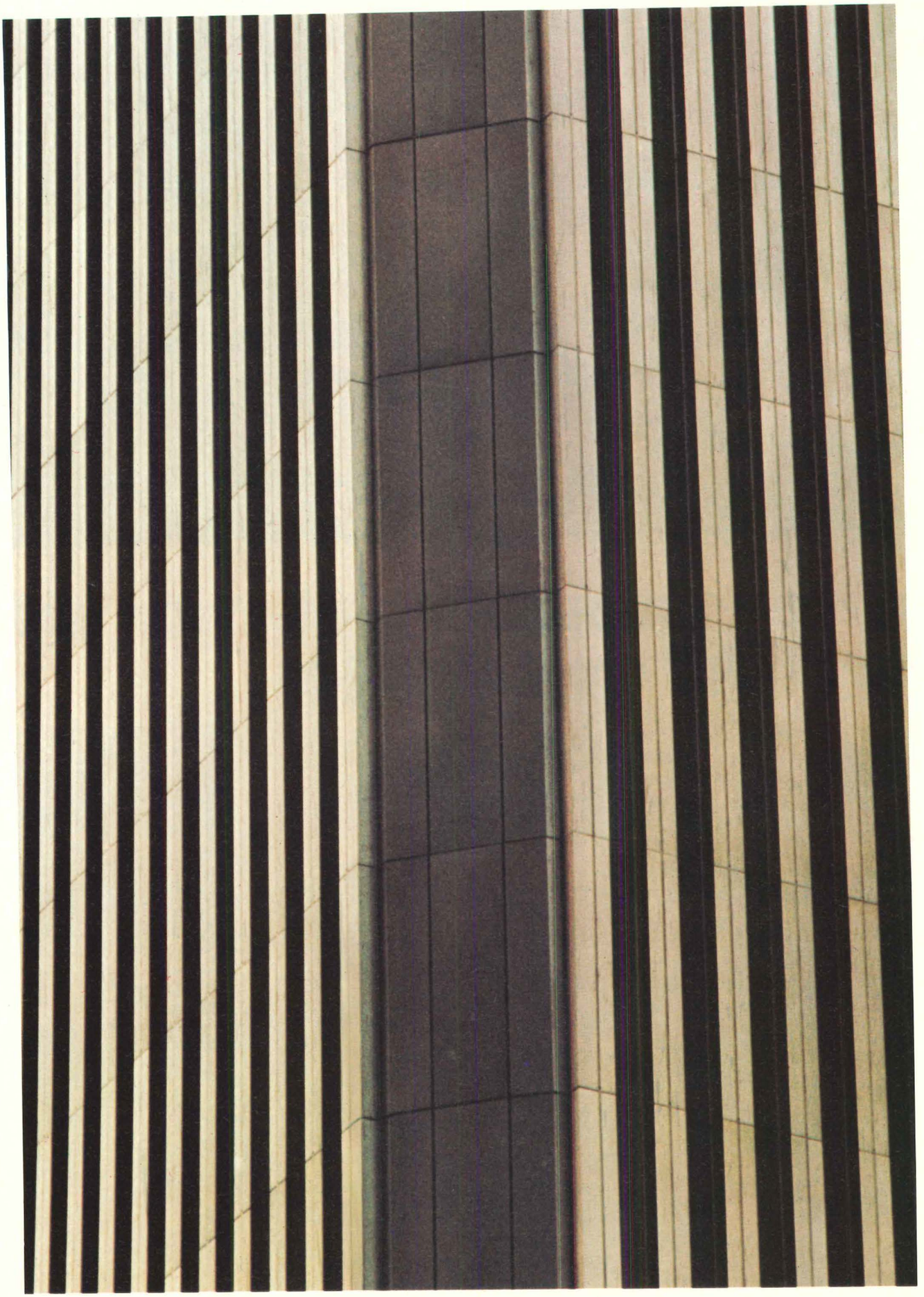
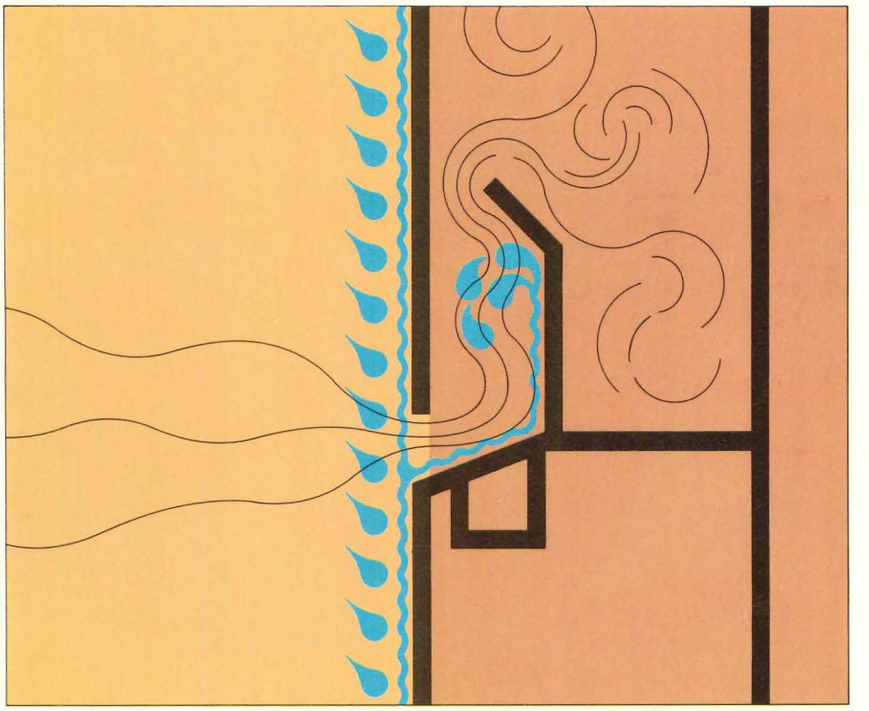
KINNEAR® ROLLING DOORS
Saving Ways in Doorways Since 1895

Offices and Representatives in all Principal Cities — listed in Yellow Pages Under "Doors." Also see Sweet's!

For more data, circle 11 on inquiry card



Hundreds of tests were required to determine the most efficient baffle configuration for separating water from air entering the wall cavity, in order to achieve pressure equalization.



From the fabricator's standpoint, Jim Davis (Vice President of Engineering, Cupples Products*) discusses the development of the World Trade Center's wall system:

"Working from performance specifications changes your entire approach. For example, take one of the basic specifications—'to avoid primary reliance on sealants.' On a building the size of the Trade Center, with a performance specification of 125 lb of static wind loading, avoiding the use of sealants in a dynamic condition led to the pressure-equalization system we finally developed.

"I use the words 'finally developed' because designing a pressure-equalization system for the Trade Center—a process which took approximately three years and hundreds of tests—involved a great deal more than merely opening joints and baffling air.

"It involved building a glass-enclosed chamber that allowed us to study the effects of an airplane motor driving water against mock-ups of wall systems. It involved our realization that the *crucial* factor was the velocity of the air . . . and that we would have to find the baffle configuration that would separate the water from the air, yet still allow the air to penetrate the aluminum skin *fast enough to achieve pressure equalization.* Which meant we also had to know the speed of air-pressure changes in the environment so we could design a system that would balance natural pressures.

"For seven years, the Port Authority, architects, general contractor, structural engineer, erector and Alcoa worked together as a building team that was totally involved at all times. Without such total involvement, the Trade Center, as we will soon know it, would have been impossible."

*Cupples Product Division, H. H. Robertson Company

The World Trade Center is a project of the Port of New York Authority. Engineering and development was carried out under the Authority's World Trade Center Planning and Construction Division.

Change for the better with Alcoa® Aluminum

ALCOA

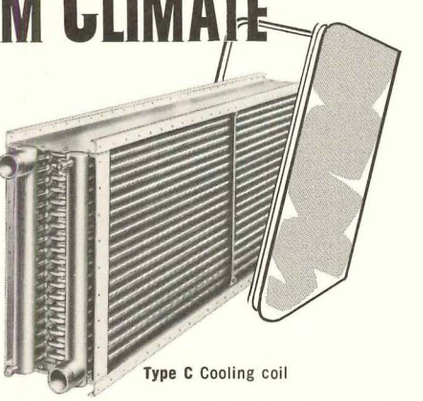
PROFESSIONALS AT WORK

Architects: Charles Luckman Assoc., N. Y. • *Primary Consultant:* Cushman & Wakefield, Inc. • *Mechanical Engineers:* Jaros, Baum & Bolles, N. Y. • *Air Conditioning Contractor:* Continental Mechanical Co., Dallas, Tex. • *Owner/Builder:* Tishman-Superior Inc., subsidiary of Tishman Realty & Construction Co., Inc. • *Building Management:* Ostendorf-Morris Co.

CLEVELAND'S CENTRAL NATIONAL BANK MAKES DAILY WITHDRAWALS OF AEROFIN'S CUSTOM CLIMATE

The new Central National Bank Building has a population of 2500 in 540,000 sq. ft. of space with 115 Aerofin Heat Transfer Coils in its air conditioning systems.

This climate controlled coil installation offers testimony to Aerofin's optimum heat-transfer capability in compact, mechanical space. Dependable Aerofin Coils save on operating or renovating costs. Ask your Aerofin Sales Specialist for facts—technical help on the varied types of coils and configurations.



Type C Cooling coil

Type CH Heating coils and **Type ANF** Steam Heating coils also used in structure

AEROFIN

CORPORATION • LYNCHBURG, VIRGINIA 24505

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

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AEROFIN CORPORATION (CANADA) LTD., Gananoque, Ontario

The last great advance in desks

47 years ago we at GF made the first four-legged pedestal office desk on a production line. It's been copied a million times. And it's so popular we still make it.

In all that time, however, we haven't been sitting on our hands. Besides improving what we have, we've designed a desk that's completely different.

It's called the Davis Allen Desk. It was designed by Davis Allen of Skidmore, Owings & Merrill.

We won't tell you how good it looks. You can see for yourself.

What we will tell you is that it comes in several sizes. Walnut, American oak, and teak are standard woods. And the range of colors in metal panels is virtually limitless.

And if you look for the wires leading from the electrical paraphernalia on the desk, you'll realize another unusual thing: the Davis Allen Desk is the first desk designed to take account of electricity.

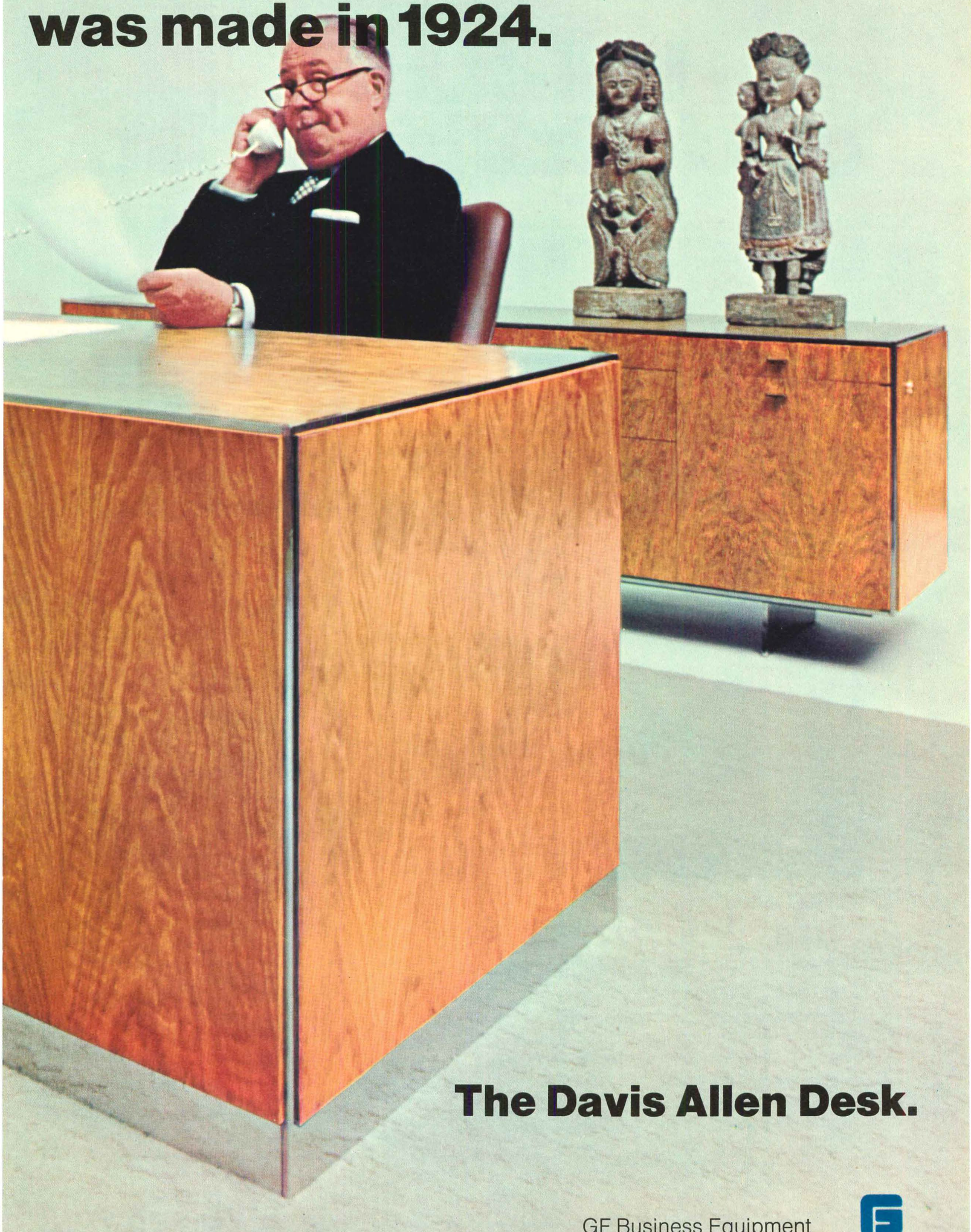
Because of all these things, you could say that the Davis Allen Desk is the first custom-made desk made on the production line.

The Davis Allen Desk. Part of the Davis Allen Collection. The General Fireproofing Company, Youngstown, Ohio 44501.

SIDE CHAIR PICTURED ABOVE, DESIGNED BY ZOGRAPHOS, AVAILABLE FROM US TOO.

For more data, circle 13 on inquiry card

was made in 1924.



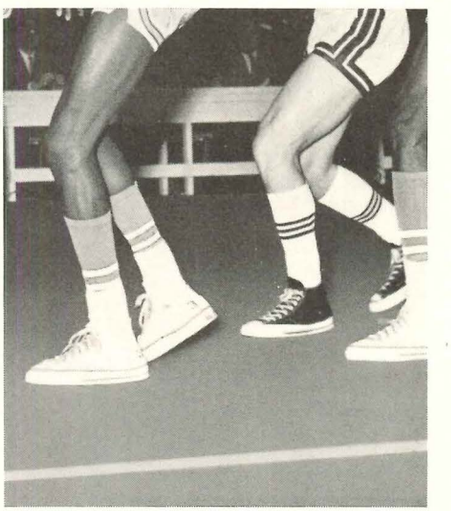
The Davis Allen Desk.

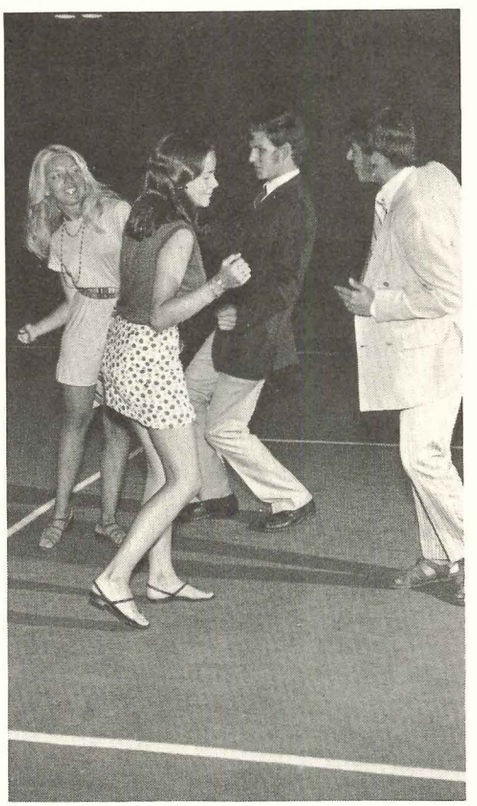
GF Business Equipment

UNI-TURF®... quick change artist.

Sandwich a dance between today's basketball game and tomorrow's gymnastic meet. Schedule indoor tennis, band practice, and a calisthenics class all in the same day. You can . . . with Uni-Turf, the indoor and outdoor synthetic playing surface that lets you do what you can't do on a wooden floor or dirt base.

Uni-Turf is a unique resilient vinyl plastic material that sets new standards.



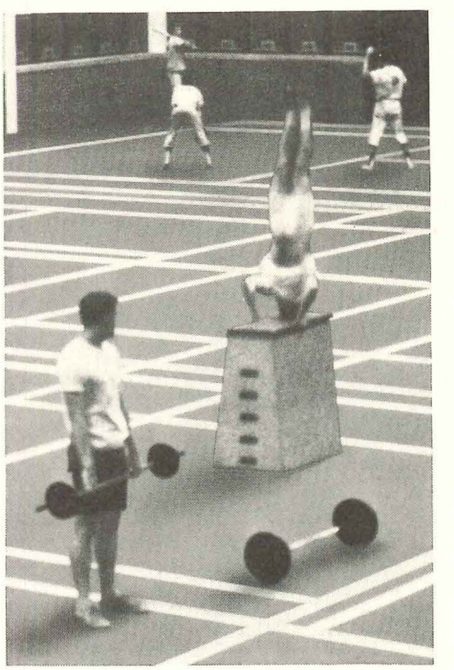


VERSATILITY

Easily installed over a solid base, Uni-Turf is ideal for a wide range of year-round sports and recreational activities, including tennis, track and gymnastics. Available in any combination of school colors.

DURABILITY

Uni-Turf far outperforms other playing surfaces; shrugs off rain, sun, heat and snow; won't rot, stain, fade or discolor; withstands wear or damage from spikes, cleats, pins, street shoes or roll-out bleachers and gym equipment.



PERFORMANCE

No dead spots with Uni-Turf. Exceptional uniformity and resilience guarantee true ball bounce. Sure-footed traction assures faster, safer play.

EASY MAINTENANCE

An important economical reason why Uni-Turf is the ideal choice for indoor/outdoor playing surfaces in schools, colleges, universities and other major installations.

There's so much to tell about Uni-Turf. You can learn it all by sending the coupon.

R

Please send brochure detailing complete information about:
☐ Uni-Turf for Track, Tennis, Basketball ☐ Poly-Turf Synthetic Grass

NAME TITLE

FACILITY OR INSTITUTION

ADDRESS

CITY STATE ZIP

RECREATIONAL SURFACES DEPT.
AMERICAN BILTRITE RUBBER CO., INC.
BOSTON, MASSACHUSETTS 02103

For more data, circle 14 on inquiry card

porcelain-enameled steel moves into Alaska

Faced with a construction season only 3 months long, the architects for the James C. Ryan Junior High School, in Fairbanks, Alaska, wanted an exterior wall system that would be quick to install in any weather, and easy to maintain through the years.

They met their needs by cloaking the structure in porcelain-enameled steel wall panels. And they added an aesthetic note by specifying a crisply attractive embossment in the panel surfaces.

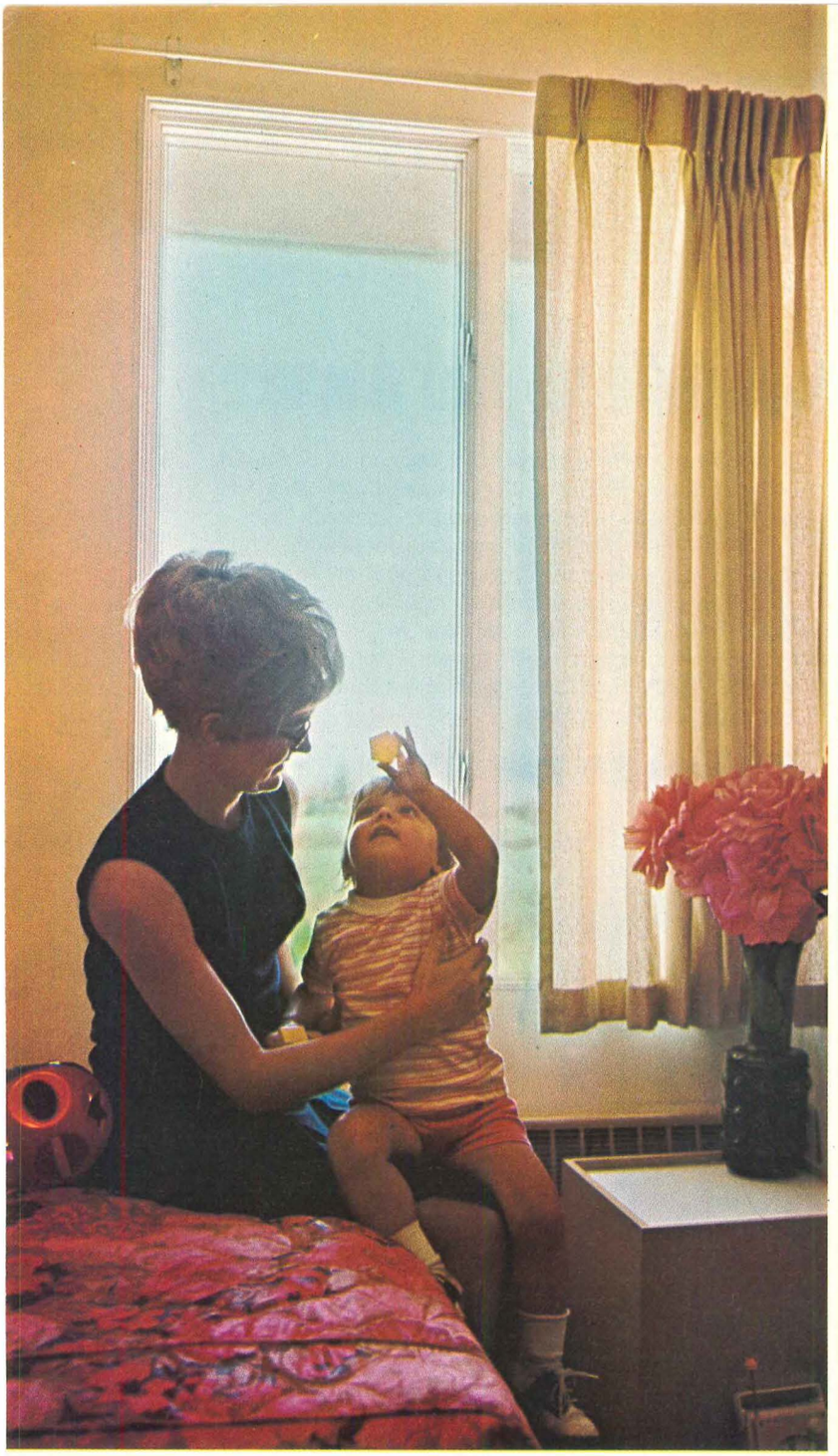
Porcelain-on-steel panels can be installed quickly anywhere, anytime, without curing periods or other delays. They require little or no maintenance, and hold their color for many years. They can be designed in many different shapes, textures, and embossments for wide latitude in architectural expression.

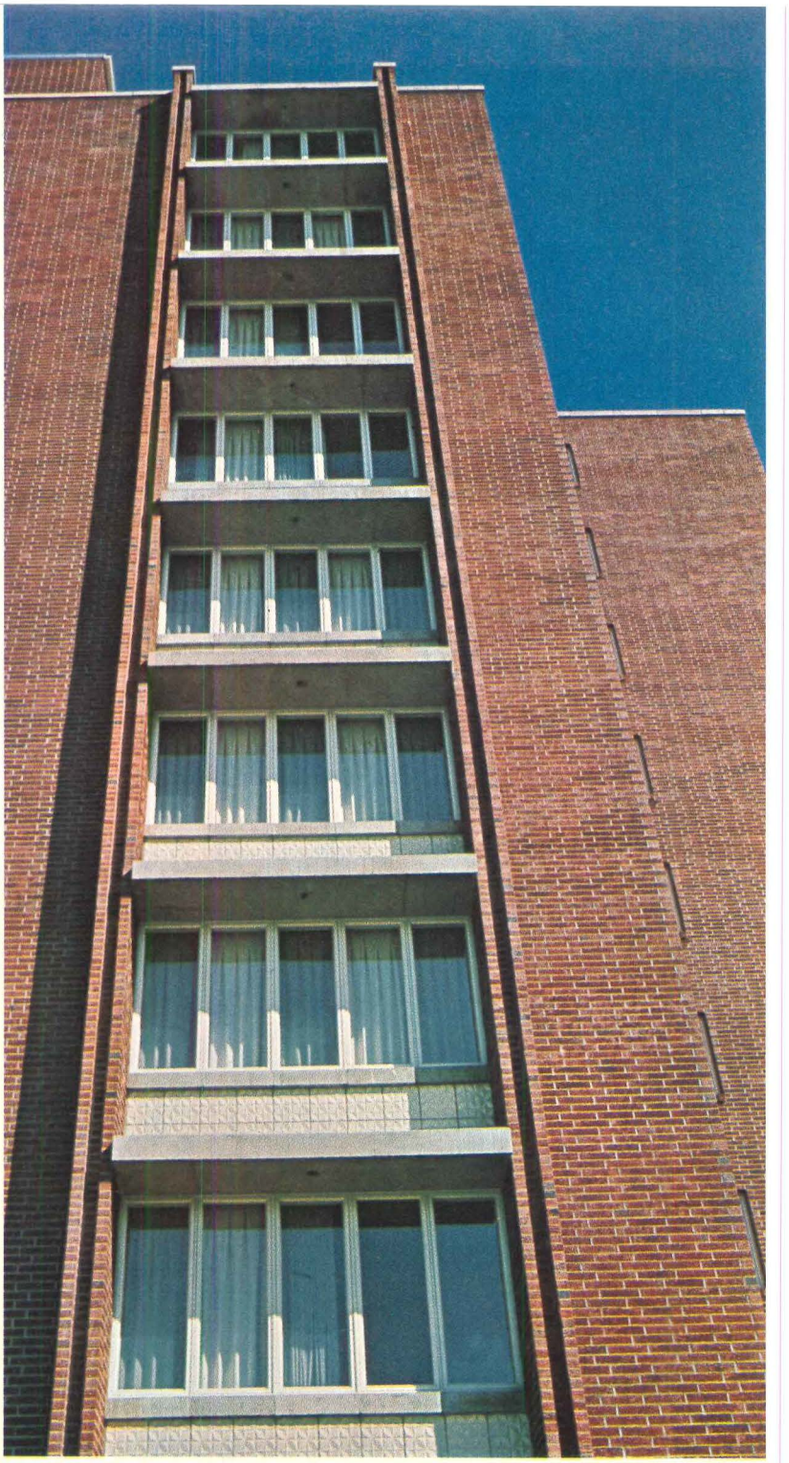
Bethlehem furnishes special enameling steel sheet to fabricators who form and coat architectural panels in a rainbow of colors, including twenty-four matte finish Nature-tone hues. We will be glad to see that you get a copy of the Porcelain Enamel Institute's brochure on Nature-tones. Bethlehem Steel Corporation, Bethlehem, PA 18016.

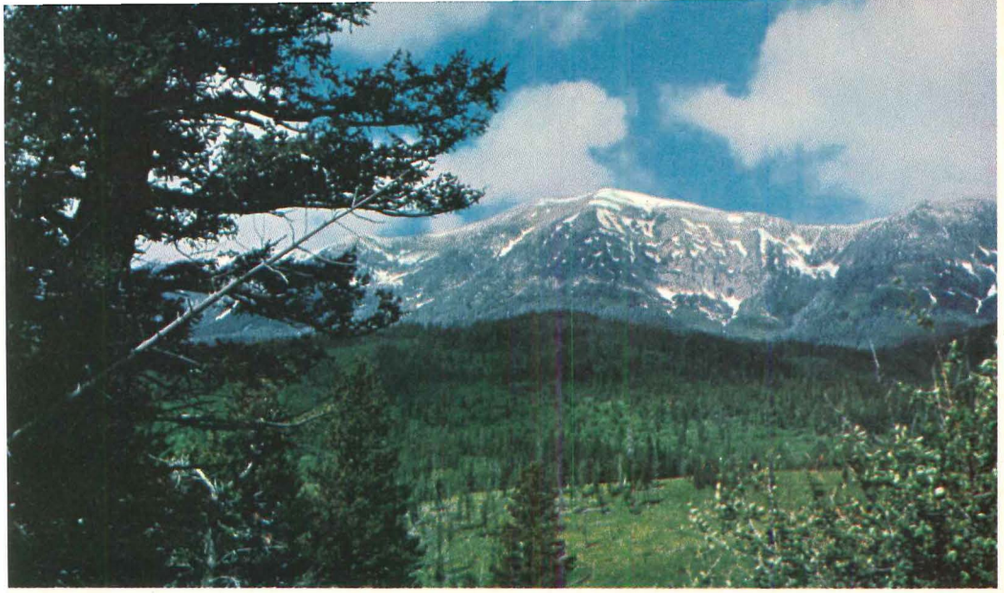
BETHLEHEM STEEL

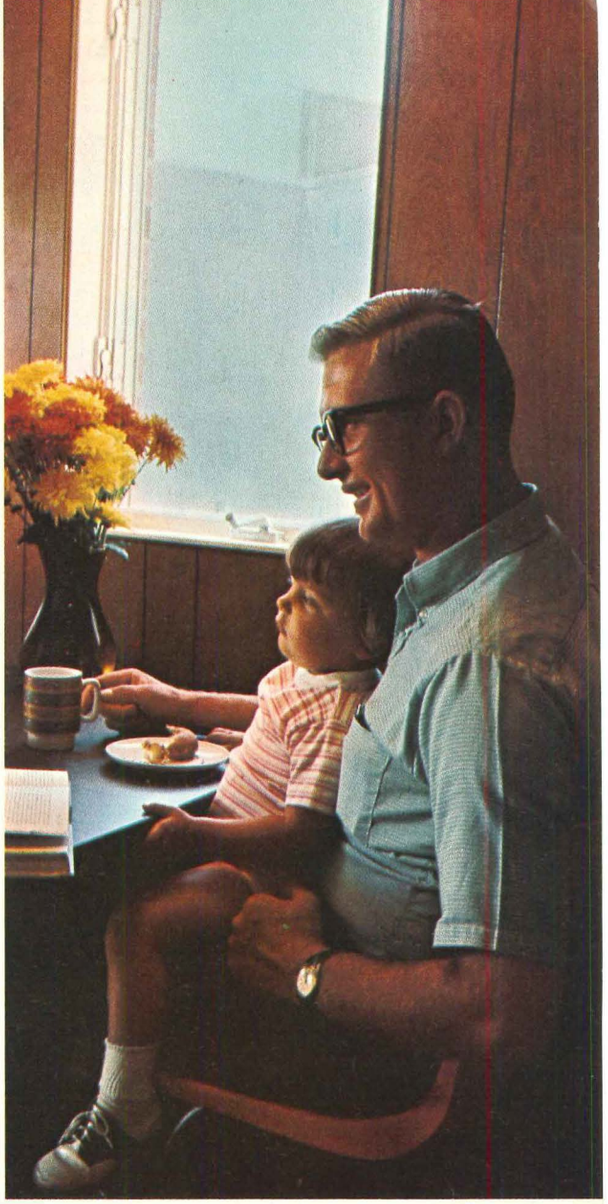
Steel

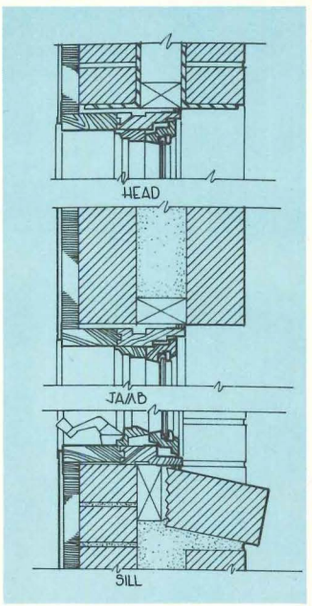
Architect: Alaska Architectural & Engineering Company, Fairbanks, Alaska
Porcelain Enamel Panels: Ferro Enameling Company, Oakland, California











Montanans love wide open spaces.

[but not between their sash and frames]

This is Big Sky Country. Where a view is a 150-mile-wide panorama. Where a man comes to grips with his insignificance.

Where everything's scaled a bit larger. Including the weather. Make no mistake about it. Montana gets cold. Bone-chilling cold.

And sometimes the wind comes cascading down from icy mountain slopes. Paint-peeling hard it blows.

If an architect finds a product that won't knuckle under to weather like that, he remembers it. He *looks* for places to use it.

That's what prompted the architects to choose Andersen Perma-Shield® Casement Windows for this Montana State University married student housing project.

They could install them, the college maintenance staff could forget them. Because their vinyl exterior just doesn't need paint.

Being casements, they wouldn't steal room space from active, growing families. They'd provide top-to-bottom ventilation.

Most importantly, they'd seal out those howling winter winds . . . yet beautifully frame a view and help bring some Montana magnificence indoors.

Remember Andersen Perma-Shield Windows. You'll find lots of places to use them. And get acquainted with the five other types and hundreds of sizes you'll find at your Andersen dealer or distributor.

Building: Married Student Housing
Montana State University, Bozeman, Montana

Architect: McIver & Hess, AIA
Great Falls, Montana

AW®

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Window Beauty is Andersen

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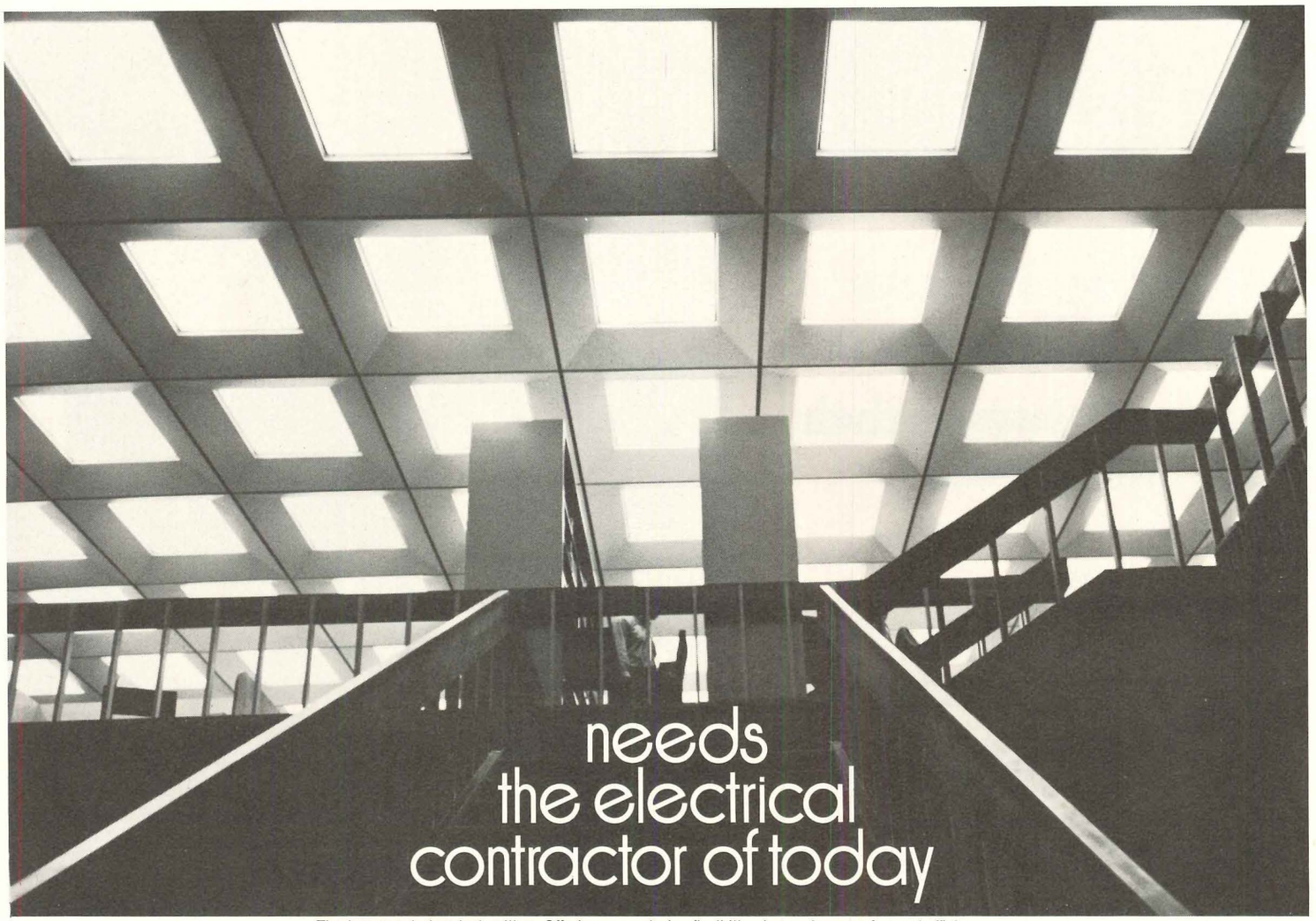
The electrical promise of tomorrow...



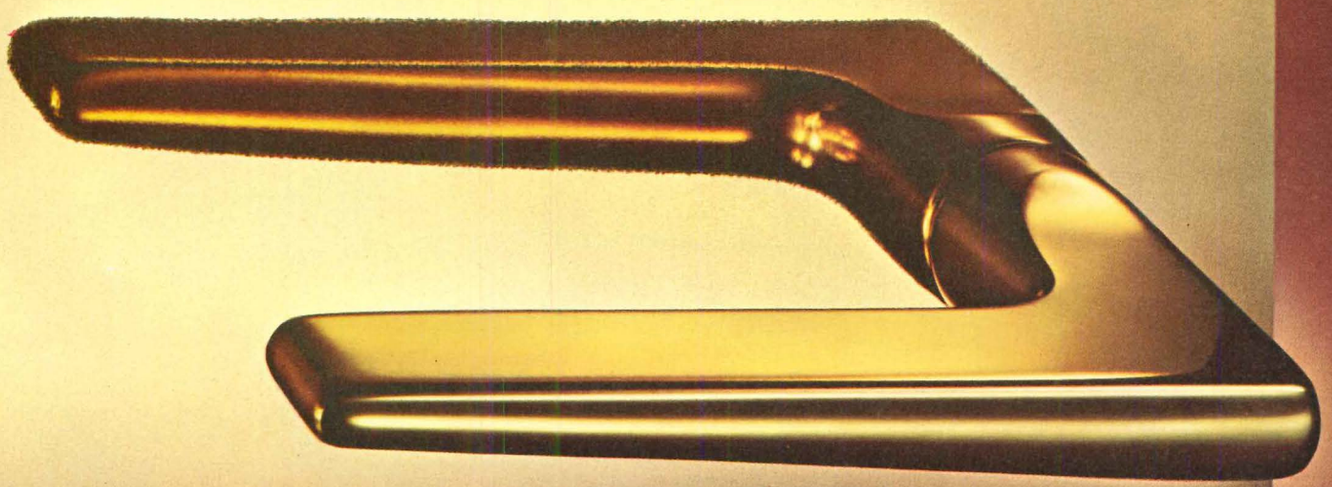
The integrated electrical ceiling. Offering great design flexibility, it promises comfort and efficiency for years to come. It heats, cools, lights, and carries communications . . . thanks to electricity.

Your buildings need a lot of power—electrical power—to sustain a modern Electro-environment. An environment properly heated. Properly cooled. Properly lighted. An environment where intercoms and business machines and background music can all get along together in harmony . . . thanks to a qualified electrical contractor.

He, and he alone, possesses the theoretical and technical skills to translate new designs and concepts of electrical technology into working, functioning realities. Trust the qualified electrical contractor to wire your building safely. To anticipate future as well as initial power needs. To coordinate the work of other specialists — carpenters, sheet metal men, heating and refrigeration experts — while he himself handles everything electrical in such installations as integrated ceilings.

Remember: your qualified electrical contractor guarantees performance not only on the electrical functions, but on the entire ceiling installation he oversees as well.

National Electrical Contractors Association
Washington, D. C. 20036



SARGENT®

A complete line of advanced architectural hardware, including the Sargent Maximum Security System

New Haven, Connecticut • Ontario, Canada

There's more to communications than meets the ear.

Many people have heard of Walkerduct, but few people ever get a chance to see it. Because after it's installed, it's out of sight. Gone. And gone with it is maintenance, ugly poke-through holes, unsightly electrical wiring and the communications gap.

With a Walkerduct Underfloor System in your building, you have nothing to worry about. When the building needs more phones, you're ready. When it needs more electrical power, you're ready. When you have to rearrange office space, you're ready. The communications gap? You don't even have to waste time talking about it.

Contact your nearby Walkerman for more information. Or write Walkerduct, Parkersburg, West Virginia 26101. In Canada: Walkerduct of Canada.

walkerduct WALKER/ PARKERSBURG

A textron DIVISION

For more data, circle 17 on inquiry card

Light and man.

What is light? Light is a medium of perception which makes the world visible. But what is the nature of light? How does it interact with man's environment to influence his life and his work? To deal with light, to shape it, direct it and utilize it is what Sunbeam does. To us, light is a medium as dramatic and potent in man's environment as any other form of energy. Our product is the tool which allows the architect and designer to create the proper environment for working and living, whether that tool is a single fixture or an entire system of illumination and air distribution. As part of our involvement in the architectural community, Sunbeam Lighting is preparing a series of booklets entitled *Light in the Human Environment,* written by authorities of various disciplines...art psychology, anthropology, behavioral science, human engineering and the social sciences. The second in this series, *...as the Psychologist sees it,* is available free of charge or obligation merely by writing David T. Traitel, President, Sunbeam Lighting, 777 East 14th Place, Los Angeles, California 90021. On your letterhead, please.

NEW DENVER TOWER . . .

Prudential Plaza will have 1200 fpm Montgomery elevators.

Prudential Plaza, joint venture of Del E. Webb Corp., and Prudential Life Insurance Co. of America, is the first major investment in Denver's Skyline Urban Renewal project.

Montgomery Elevator Company's more than one million dollar installation in the new 27-story office tower will include four high-rise 1200 fpm gearless elevators, five high-rise 700 fpm gearless elevators, and four low-rise 300 fpm geared elevators. All high rise units will be under the command of Montgomery's latest group supervisory control, ESP Measured Demand, with Zones of Service. The result will be Denver's fastest elevators, and the Mile-High City's most efficient elevator system.

Montgomery will also install two 48″ escalators in the Mall section of Prudential Plaza.

This combination of People-moving capability is characteristic of Montgomery Elevator Co.: high speed, high-rise elevators; midrange elevators; low-rise oil hydraulic elevators; escalators moving walks and ramps; powerful heavy-duty oil hydraulic freight elevators; and hundreds of special designs to satisfy unusual requirements. In all these ways, Montgomery *moves* people—dependably, quickly, safely.

montgomery

ELEVATORS/ESCALATORS
POWER WALKS & RAMPS

Montgomery Elevator Company, Moline, Illinois 61265
Montgomery Elevator Co. Limited, Toronto, Ontario
Offices in Principal cities of North America

Architect: Flatlow, Moore, Bryan & Fairburn; Albuquerque
General Contractor and Owner: Del E. Webb Corporation; Phoenix

For more data, circle 18 on inquiry card

News in brief

Architect-designed construction declined again in October to 229, down from 252 in September and 293 in August (1957-59 equals 100) according to the seasonally-adjusted Dodge Construction Index.

The Brooks Bill on Federal selection of architects and engineers has passed the House with minor amendments. The bill would establish Federal guides on professional selection for most Federal building projects, eliminating fee competition. The Senate Government Operations Committee has cleared it, but the SST filibuster is expected to prevent any Senate action, so the entire legislative process will have to be repeated next year with the new Congress. However, even House passage alone represents a major success for backers of the bill.

Robert F. Hastings, F.A.I.A., has become the new president of the American Institute of Architects, succeeding Rex Whitaker Allen, F.A.I.A. Mr. Hastings heads the Detroit architectural, engineering and planning firm of Smith, Hinchman & Grylls Associates, Inc. Under a new system of succession, he had served as A.I.A. first vice president since June, 1969. Max O. Urbahn, F.A.I.A., will be president for the year 1972. David S. Clarke has been appointed executive secretary for the Association of Collegiate Schools of Architecture and assistant director of education programs for the A.I.A. Mr. Clarke has taught at the University of Oregon and worked for the Boston Redevelopment Authority. He has been especially active in environmental awareness education projects.

Fires have taken five lives and created serious damage in three brand new skyscrapers, two in New York City, one in San Francisco. An investigator's report on the first New York fire came up with the conclusion that such a structure should be called "semi-combustible," and made recommendations which could bring about major changes in office building construction if adopted (more on page 37).

New leaders of the National Urban Coalition are Sol M. Linowitz and Jack H. Vaughn. Mr. Linowitz, an attorney and business leader and former Ambassador to the Organization of American States, is the Coalition's new chairman. Mr. Vaughn, former director of the Peace Corps and Ambassador to Colombia, is the new president. John W. Gardner, who resigned to devote his time to the new "citizens' lobby" he founded (Common Cause) after nearly two and a half years as Coalition chairman, will continue to play an active role in the N.U.C.

New Federal legislation guaranteeing use of prefabricated products in construction is being sought by the American Institute of Architects, the Consulting Engineers Council and the National Society of Professional Engineers.

The Associated Student Chapters of the American Institute of Architects elected Joseph T. Siff president and agreed on educational goals at its annual Forum in Berkeley (page 36). Mr. Siff, a moderate, is a student at Rice University. He has worked with law students in Houston, and has been employed by the firm of Caudill Rowlett Scott for several years. He succeeds Michael Interbartolo.

The Society of American Registered Architects met in Boston in late November. Discussion concentrated on ways for architects, builders, developers and lenders to team up "synergistically" and get housing built. Major speakers included Dean John P. Eberhard of the State University of New York at Buffalo, builder William Zeckendorf, architect Moshe Safdie, and Buckminster Fuller.

The Peace Corps is looking for experienced architects to work overseas, especially in Iran, Colombia and India. Volunteer architects in Colombia will design structures in self-help housing projects in the country's coastal regions; architects in Iran will assist in a municipal development program, making and carrying out developments for street and building designs, bridges and other public works; in the Punjab state of India, architects are needed for a new program of urban planning; they will help design private residences, office buildings and other structures. Volunteers for the programs, which begin training this spring, must be men, U.S. citizens, single, and hold architectural degrees. Contact the Peace Corps' San Francisco office, 681 Market Street.

The Society of Architectural Historians will hold its twenty-fourth annual meeting in Chicago January 28-31 at the Hilton Hotel. Subjects will include "World's Fairs 1851-1970" and a special session on preservation in Chicago. **The Associated General Contractors of America** will hold their 52nd annual convention March 5-11 in San Diego. **The National Association of Home Builders** will hold its annual convention, subject: "The Critical Path," in Houston January 17-21. **The American Institute of Architects** will hold Grassroots meetings this month in Washington, D.C., New Orleans, and Salt Lake City to discuss reform of A.I.A. national structure and current A.I.A. projects.

Students plan for future at Berkeley FORUM

Encouraging news from Berkeley. Last month over 400 architecture students and a host of "resource" people gathered together on the campus of the University of California for the annual FORUM of the Associated Student Chapters of the A.I.A. After 4 days of conferences, workshops, caucuses and general butting of heads, the students made a giant step toward "putting their own house in order," i.e., the students established a new framework for architectural education which, it is claimed, an individual may "plug-into" according to the dictates of his conscience. The emphasis is clearly upon making education relevant to the social problems of our day. By this action the students feel they have stopped acting only as the "conscience of the A.I.A." and will now demonstrate through their own programs what they think architects should be involved with.

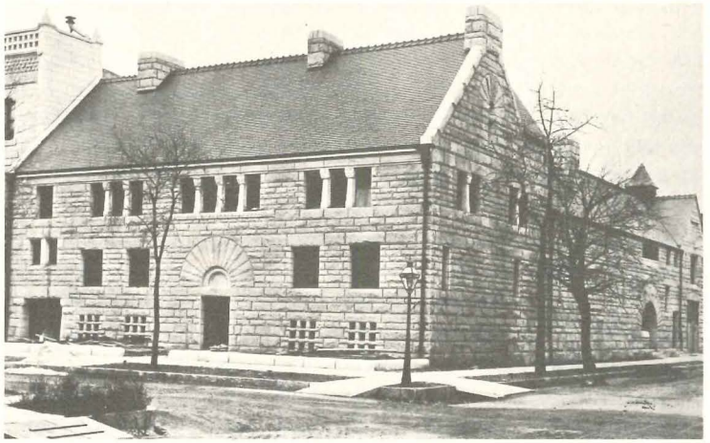
In recent years it has been the contention of the students that their experience with formal education was meaningless; that they were not being prepared to become useful professionals. In the 1960's, students across the country expressed a desire to fulfill a social commitment as students by shaping their education toward more purposeful goals. These recent years have been tough on everybody—students, teachers, administrators—but perhaps it has not all been in vain. A number of viable interests were laid bare in the attempts to restructure curricula and it is these that the A.S.C. has seized upon. Practical experience with community problems, environmental education of youngsters (in primary and secondary schools), more practice-oriented courses in the schools of architecture, experience with the mechanics of getting a program through, a project built —herein lie the interests that if satisfied by formal education, would make school worthwhile.

To help clarify these goals, the students invited a large number of people from a variety of professions to meet with them. Included were Eliot Levinson, assistant to the chancellor of New York schools; Michael Brill, chairman, Department of Architecture, Buffalo; Taylor Culver, past president of A.S.C., architect Hugh Zimmers, Community Design Center, Philadelphia; Alice Barclay, San Francisco Chinatown Workshop; Ricky Wurman of Murphy, Levy, Wurman, architects, Philadelphia; and Elisabeth Kendall Thompson, RECORD senior editor.

To make sure that these goals will be developed into programs students can relate to, the A.S.C. has delegated to each of its vice presidents a specific task encompassing an area of interest. In this way, says Janet Null, student at Berkeley's College of Environmental Design and partially responsible for the program, students will know what A.S.C. has to offer.

The A.I.A., long suffering student scorn, should be gladdened by this turn of events—and pleased with the investment of $8,000 (matched by HUD) that helped make the FORUM possible.

—Raymond Lifchez



Glessner House gets a new lease on life

Henry Hobson Richardson's Glessner House (above) in Chicago, one of his last (1886) and most celebrated buildings, has been rescued from dereliction and near destruction to become a center of architectural and historical activities. The house recently became the first structure to receive official landmark status from the Chicago Historical and Architectural Landmarks Commission, but its real savior was the Chicago School of Architecture Foundation, formed in 1966 to save the building. The Foundation's new president is Ben Weese, vice president of Harry Weese and Associates.

The Glessner House will be the starting point for A.I.A. tours of Chicago (October, page 40), a center for lectures, seminars and exhibits on architecture and related arts, an office center for architectural organizations, a conference-social center, and an historic museum. Several rooms are being restored with the original furniture donated by the Glessner family; and there is also a collection of Sullivan ornamentation and Wright furniture.

Lardera sculpture to grace Maryland factory site

In an effort to soften the contrast between the Maryland countryside and the factory buildings of the Eastalco Aluminum Company, a subsidiary of the Howmet Corporation, Howmet's president, Andre Jacomet, commissioned Berto Lardera to design a 40-foot sculpture. "Works of art are not intended to be locked within the walls of museums that finally few people visit. . . Their place is in the daily life," says Mr. Lardera.

B.R.A.B.-B.R.I. conferences view technology

Forecasting technology is at best a complicated and unsure art. The state of this art, currently, underwent an exhaustive analysis at the fall conferences of the B.R.A.B.-Building Research Institute in Washington in November.

Philip J. Meathe, F.A.I.A., of Detroit, set the tone for the largely theoretical considerations with his "Challenge of Tomorrow" speech. Some hold the "absolutely illogical" idea that computers and system analysis, when properly joined, will design and build great buildings, he said, but tools cannot design or build buildings.

He put the computer and its potential still in the infancy stage and said its value along with other professional efforts must yet be learned.

A later session on ecological impact heard Professor Albert G. H. Dietz of M.I.T. claim that construction is not yet geared to true industrialization. "It goes back to doing one building at a time when it finds that mass production of prototypes always costs more," he said. He urged more work on performance concepts and said innovation had become particularly troublesome because inventors have problems with acceptance.

Many of the conference meetings were conducted as freewheeling discussions with heavy audience participation. Speakers served primarily as resource people to stimulate thought and expression. Population and industry resources (their inevitable collision) and forecasting techniques were analyzed.

Conference topics included new communities, single design/construct contracting, safety and risk factors, tall buildings, air kinetics and building costs.

Fuller keynotes Industrialized Building Congress

The first Industrialized Building Congress and Exposition, held in Louisville, Ky., in November, was heavily attended, but revealed few innovations. The many exhibits included full-scale mock-ups of modular housing systems, few of which are on the market. Most of the numerous speakers were industrialized building industry leaders, and their speeches (to an audience of industrialized builders, developers and financiers) painted a rosy picture of the future. There will be another Congress in Louisville next year.

Keynote speaker Buckminster Fuller provided the most exciting moments. Bucky Fuller and the majority of the audience were in some ways nearly opposite in their approaches to housing, Fuller judging housing theoretically as a reflection of universal principles, his developer-industrialist audience taking a pragmatic view, trying to stay precisely with the majority (as indicated at other sessions). Fuller told the Congress there is no such thing as scarcity, even in housing, and that accumulated intelligence is the only really valuable property, not land or money. He predicted radical changes in our systems for creating housing are only about five years away, and that events will move faster than most people now believe. These changes, he said, will be caused by a gathering political and social crisis and the country's responses to it. The audience had plenty of time that week to talk to each other about practical matters, so Fuller's visions were an effective and useful contrast, if they cared to listen; he drew the largest crowd (8000) of any of the events.

A.I.A. forms Human Resources Council

The American Institute of Architects has formed a Human Resources Council to help put through its programs of professional responsibility to society. The idea of a body distinct from, but within, the A.I.A. to raise substantial tax-deductible contributions was conceived when it became apparent that the A.I.A., as a sole source, could not provide sufficient financial support for these new programs.

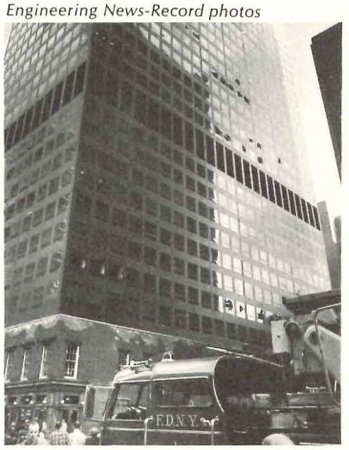
Co-chairmen of the eight-member council are Nathaniel Owings, F.A.I.A., a founding partner of Skidmore, Owings and Merrill, and Robert J. Nash, the first black architect to be elected a national vice president of the A.I.A. Mr. Nash is also chairman of the A.I.A.'s Task Force on Professional Responsibility to Society.

The immediate plan is to enlist an "activist corps" composed of a member from each of the A.I.A.'s 173 chapters across the country. These members will work to raise funds at the local level and undertake programs designed to meet specific local needs.

The ultimate financial goal of the Human Resources Council will be to achieve the $15-million commitment made at the A.I.A.'s 1969 Chicago Convention. Taylor Culver, who first proposed that commitment in Chicago, will be a member of the Council. The Council's initial objective of $1 million is expected to be pledged by firms and individual architects.

A.I.A. social responsibility programs now underway include Community Development Centers (October, page 144); VISTA volunteer architects; and scholarships. New programs are expected to include a high school guidance program; continuing education for practicing architects on the human and social dimensions of their work; publication of guidelines on effective citizen participation in planning; and a broad study of constraints on building for the poor.

Engineering News-Record photos



Fire report scores skyscraper construction: two more fires occur

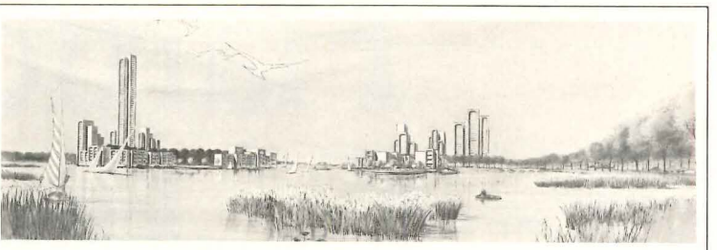
"The reason for the severe fire in this fire-resistive building can be understood if it is realized that the building classification is a misnomer. Buildings of this type should more correctly be called 'semi-combustible'." This conclusion appeared in the report on the fire at One New York Plaza (September, 1970, page 36), after an investigation by W. Robert Powers of the New York Board of Fire Underwriters. That fire killed two, injured 27, and caused an estimated $10 million damage to the newly-finished 50-story tower.

Last month, another fire killed three and injured 20 in a newly completed 47-story office tower, designed by Skidmore, Owings and Merrill, on New York City's Third Avenue (left). Despite automatic air system shut-offs, smoke reportedly permeated the building, preventing evacuation and forcing occupants in areas remote from the fire (confined to the fifth floor) to break windows to vent smoke. All but one of the building's 24 elevators failed.

Three weeks earlier, a smaller fire burned for two hours in San Francisco's new 52-story Bank of America Building (July, 1970, page 126), forcing evacuation of all floors above the 35th.

All three fires were largely confined to furnishings; however, polystyrene foam insulation helped fuel the New York Plaza fire. Exterior wall design which created "vertical flues" was also blamed for spreading that fire from floor to floor.

Mr. Powers ended his report on the first fire with a list of recommendations. They were aimed at future construction as they were too sweeping to be applied to an existing structure. They included: prohibition of highly inflammable foamed cushioning; reduction of total fire load or installation of sprinklers; protection of steel members by materials that cannot be readily removed or damaged (sprayed asbestos had been used in One New York Plaza); thorough fireproofing of ducts between floors; better means of venting the building during a fire; prohibition of heat-activated elevator call buttons that take an elevator to a floor because of heat or fire.



New Jersey development for 185,000 to stress ecology

20,000 acres of polluted, largely undeveloped, marshland across the Hudson River from Manhattan are slated to become a water-oriented city in the State of New Jersey's new comprehensive land use plan for the area, known as the Hackensack Meadowlands.

The plan was developed under chief consultants Dan Coleman Associates, chief planner for the new town of Reston, Va. Urban planner Paul Ylvisaker (October, page 37) at first headed the Development Commission, now run by Edmund T. Hume.

It envisages a total of 70,000 new housing units for mixed incomes and of mixed building types in complete residential neighborhoods linked by pedestrian ways and linear parks and island residential clusters (above); there is to be a water-oriented business, shopping, civic and cultural complex as well. More than a quarter of the land is to be devoted to open space. A residential population of 185,000 and a business population of 200,000 are expected when development reaches completion in thirty years. Financing is to come largely from private sources after initial supportive funding from state and Federal sources.

The plan emphasizes preservation of existing natural resources, control of pollution, and improvement of decayed natural areas. New transportation facilities will be added to the already substantial transportation network.

RECORD editor Mickel gets major building industry award

Ernest P. Mickel, RECORD's Washington editor, has received the 1970 F. Stuart Fitzpatrick Memorial Award for outstanding individual achievement in the unification of the building industry. Elliot Carroll, deputy executive vice president of the American Institute of Architects, headed the awards jury, which represented the Associated General Contractors of America, Inc., BRAB/Building Research Institute, the National Association of Home Builders, the Producers' Council, Inc., and the A.I.A. Douglas Whitlock, of the Structural Clay Products Institute was also a judge.

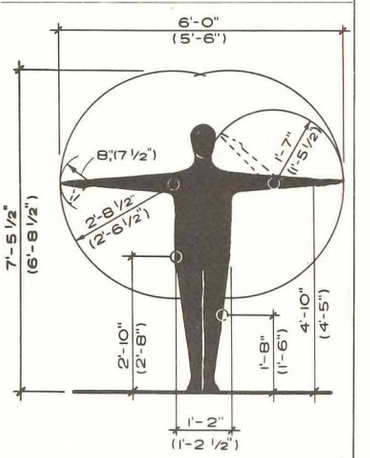
Sibyl Moholy-Nagy to receive Architecture Critics' Citation

Author, teacher, designer and historian Sibyl Moholy-Nagy will receive the American Institute of Architects' Architecture Critics' Citation this year at the Detroit convention.

Mrs. Moholy-Nagy has written numerous articles in the architectural press, earning a reputation for pulling no punches. She has also written several books, including a biographical study of the work of her husband, Laszlo Moholy-Nagy, "Experiment in Totality," and an illustrated history of the urban environment, "Matrix of Man." In recent years, she has sharply criticized architectural education, particularly attacking the substitution of social activism for the learning of skills (October, 1969, page 149).

Mrs. Moholy-Nagy taught at Pratt for 18 years until 1969. Last year, she was a visiting professor at Columbia's School of Architecture.

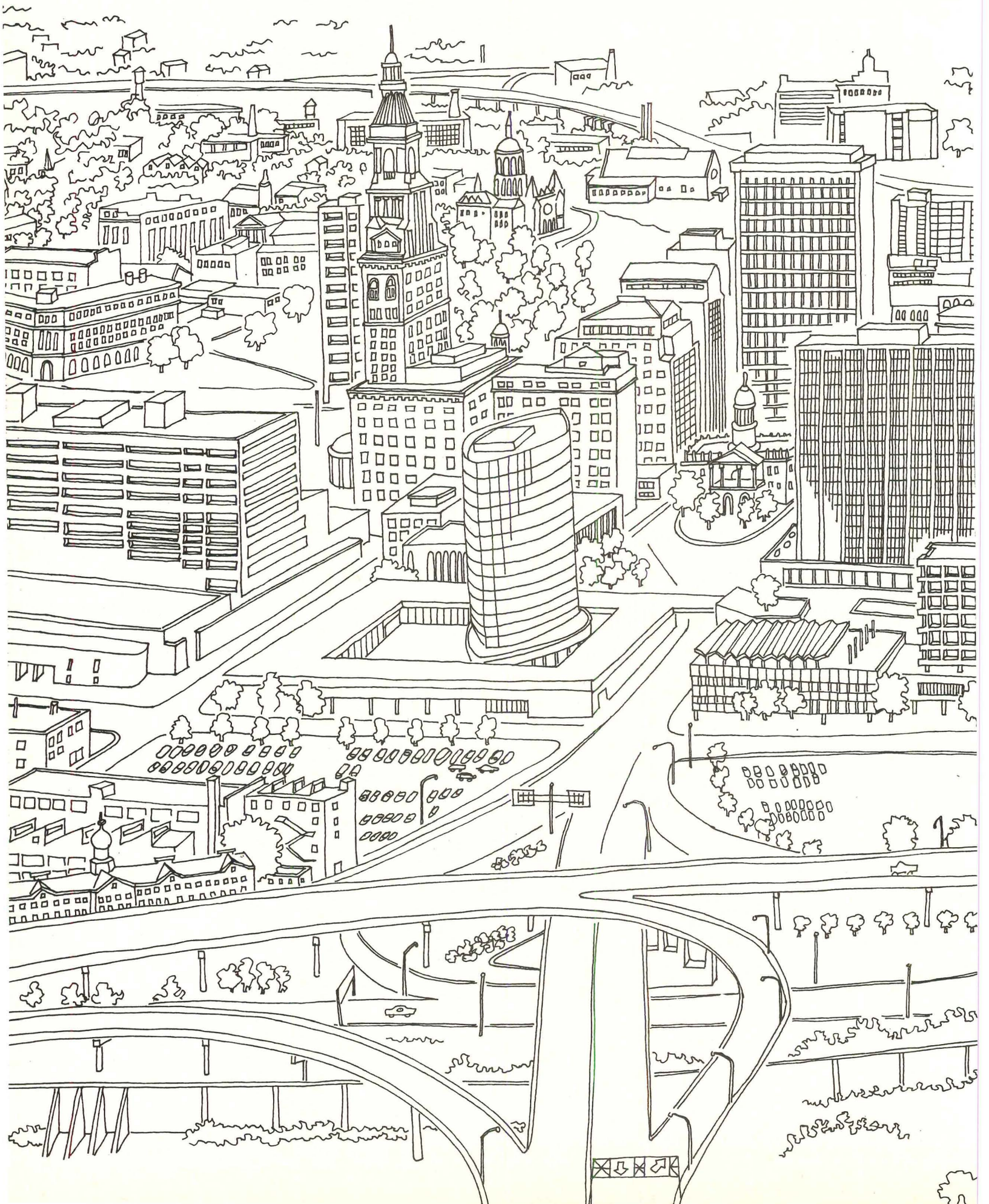
The Critics' Citation was established in 1968. Previous recipients have been Henry-Russell Hitchcock, Ada Louise Huxtable and Lewis Mumford.



New Ramsay and Sleepers' "Graphic Standards" published

The new edition of "Architectural Graphic Standards," prepared by the American Institute of Architects, is more copious than ever, with 657 9 in. x 12 in. plates, all new, covering everything from dishpans to diving towers. Harold D. Hauf, F.A.I.A., chaired the Editorial Advisory Committee; Joseph N. Boaz was editor.

Hartford looks at



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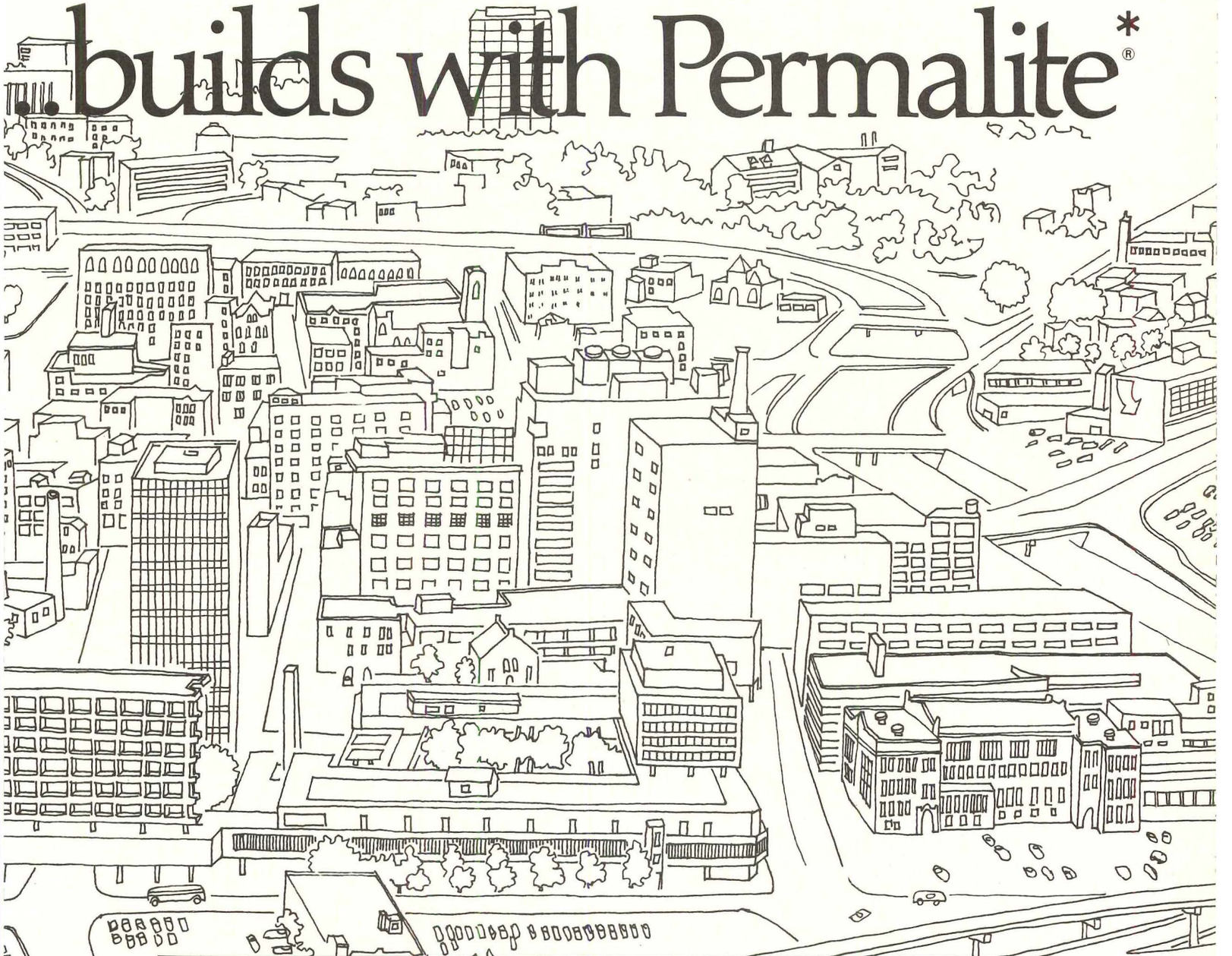

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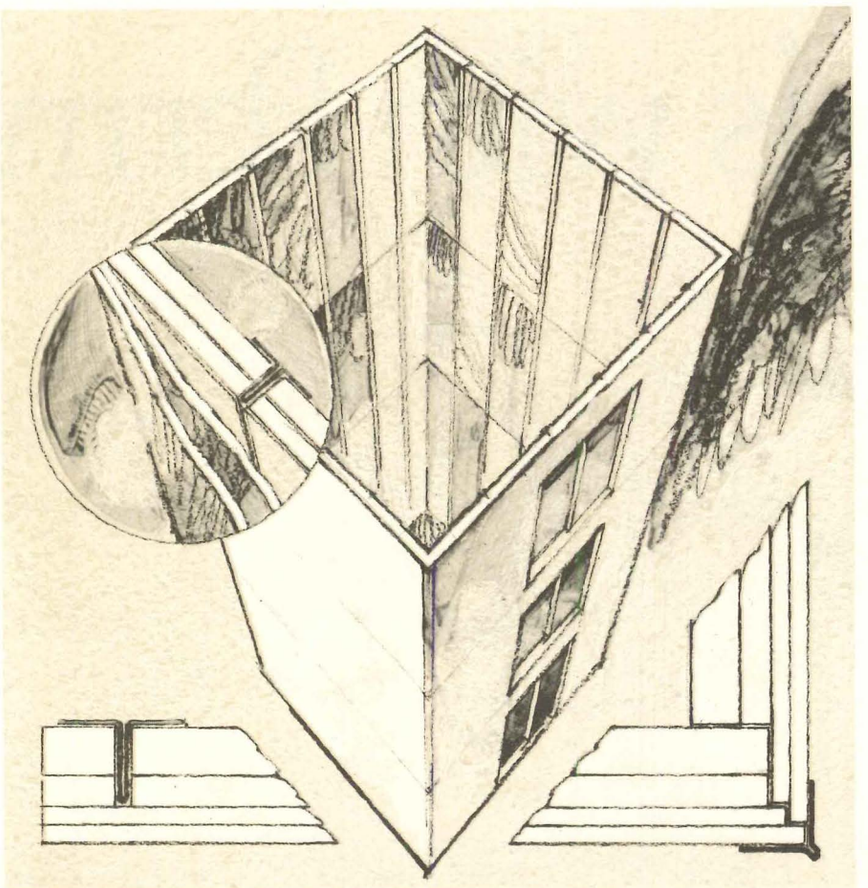

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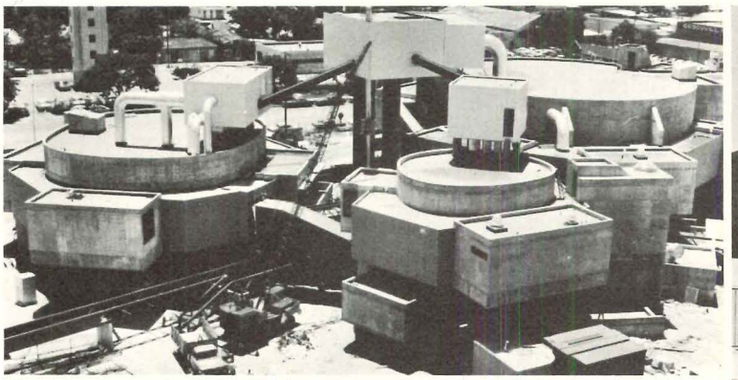
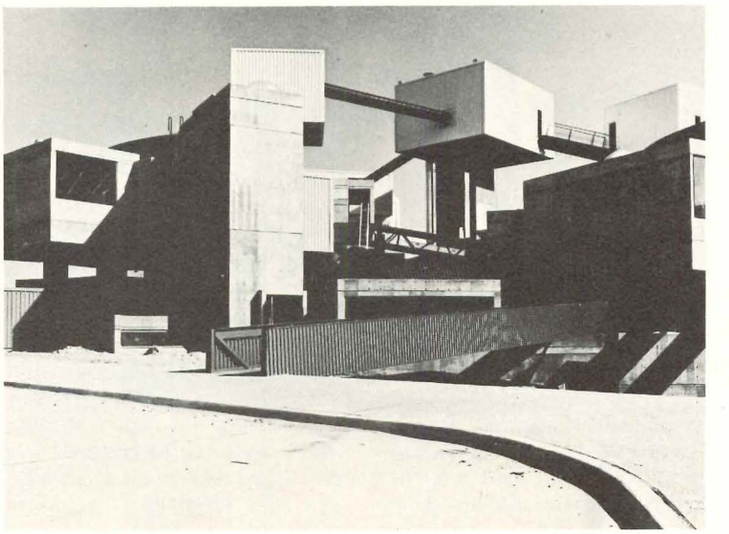
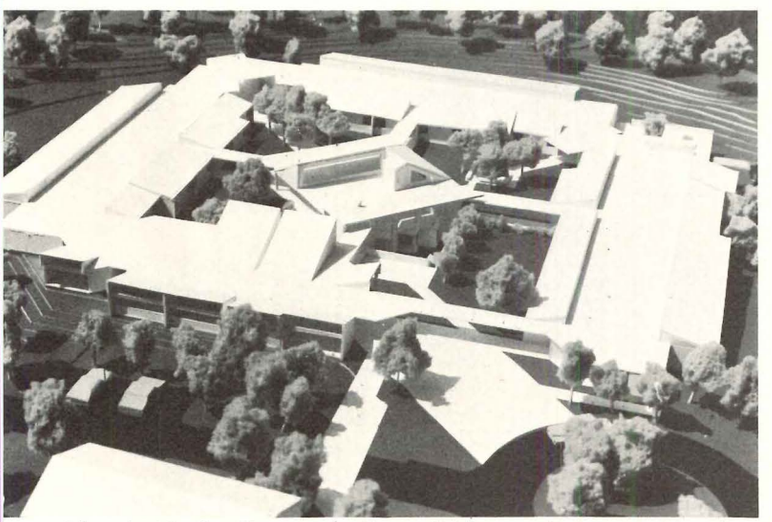


The Mummers Theater, Oklahoma City, Okla., John M. Johansen, architect, is designed to be a loose, functional, free arrangement of components: a large theater, small theater, and rehearsal hall-school, and sub-components: offices, lounges, etc., interconnected by "circuitry systems"; stairs, ramps, bridges. It is meant to provoke and invite the passer-by, and to be, in many ways, a product of chance.

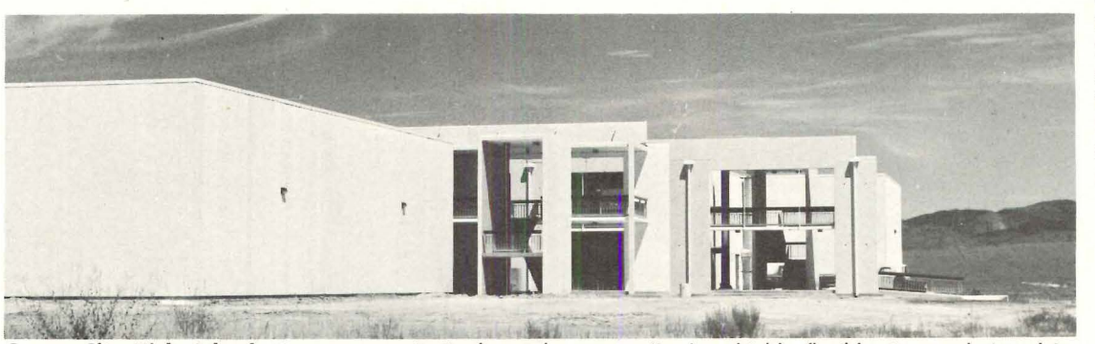


Rush J. McCoy



Adventist Nursing Home, Inc., Livingston, N.Y., John D. Latimer and Associates, Inc., architects, is designed to develop the feeling of a small-scaled community of spaces, dividing patient areas into three nursing units connected to social rooms. Variation of spaces and contact with a scenic site were emphasized in the design.

Skyline Park Apartments, Denver, Maxwell L. Saul and Associates, architects, will provide 143 low-to-medium-rent units under FHA Section 236 and rent supplement programs. The development, part of the Skyline urban renewal project (November, 1970, page 36), will also include stores, off-street parking and green space.



Carson City High School, Carson City, Nevada, Selden and Stewart, architects with Caudill Rowlett Scott is phase I of a "school community," focused on a "main street." Circulation is through pedestrian galleries joined by bridges. The structure is planned to be highly flexible. It was designed in the hope that "the school will become society and society will become a school."

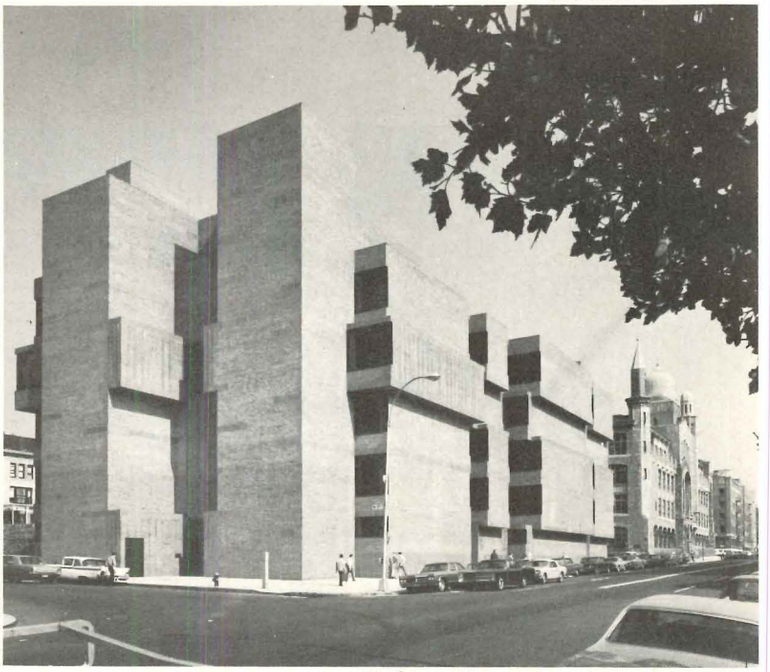
New York State Association of Architects gives Certificates of Merit

The New York State organization of the American Institute of Architects emphasized contributions to environmental quality in giving its annual awards. Buildings not shown are: **Bradfield and Emerson Halls,** Cornell University, Ithaca, N.Y., Ulrich Franzen & Associates, architects (June, 1970, page 41), and **Operations Center, Manufacturers Hanover Trust Co.,** N.Y., Carson, Lundin and Shaw, architects. Leo Kornblath headed the jury. In addition, thirteen buildings were cited with Honorable Mentions.

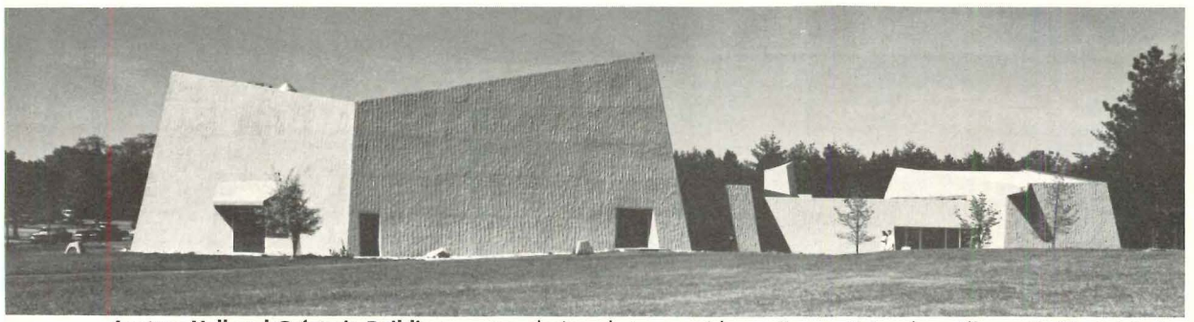
Alexandre Georges

Morningside School (P.S. 36), Manhattan, N.Y., Frost Associates, architects (November, 1968, page 151) avoids a structure that would dominate small children (aged 5-7) by dividing into three units. Bridges, which serve as lunchrooms and play areas, connect the three separate class buildings to a central administration unit.

Ezra Stoller ESTO ©



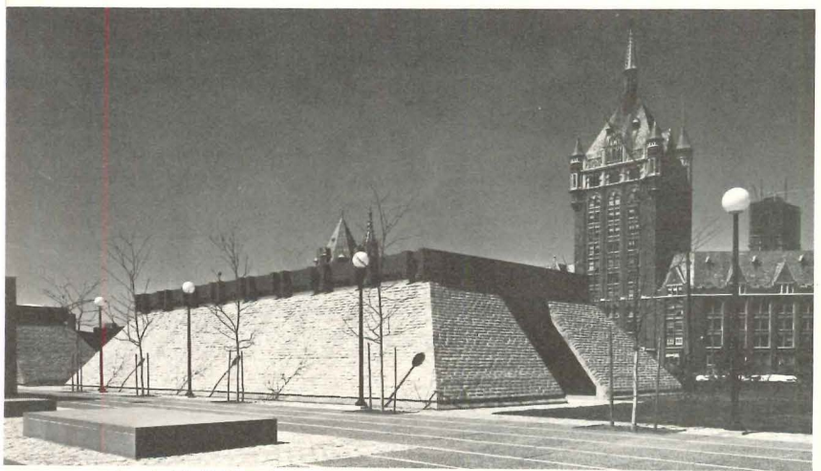
Yeshiva University Library, New York City, Armand Bartos and Associates, architects, contains two libraries, a museum, a music collection, a microfilm center, and an archives collection. Separate entrances are provided for visitors and students. Structure is of concrete with brick infill.



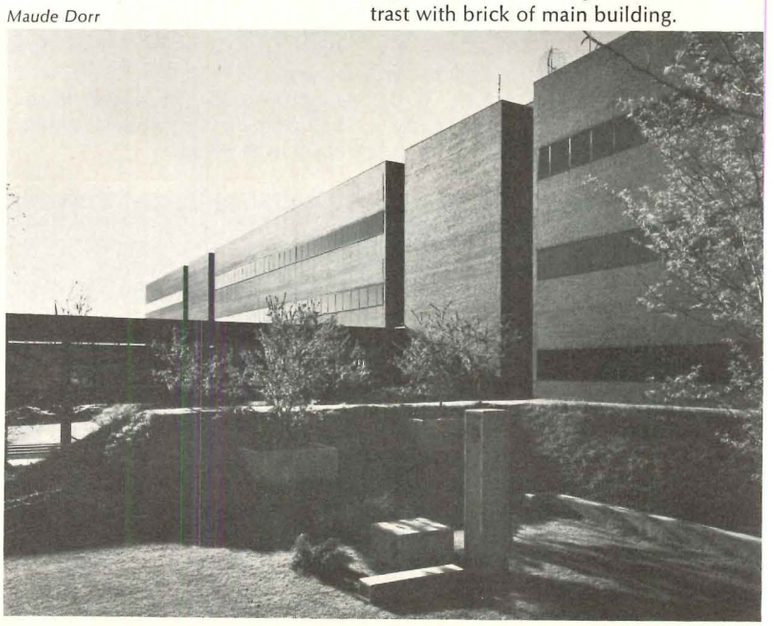
Lecture Hall and Cafeteria Building, Brookhaven National Laboratories, Upton, Long Island, N.Y., Max O. Urbahn Associates, Inc., architects, was designed to provide a "relaxed imaginative environment of free-flowing spaces" in contrast to the daily environment of the scientists who will use it. Most interior walls are non-parallel. Structure is of cast-in-place concrete bents, exteriors are sprayed "shotcrete."

I.B.M. Facility, Burlington, Vt., Curtis and Davis, architects, is first part of three-phase-expansion project. It contains an office building, engineering laboratory, and main entrance lobby. The building was set on an earth berm to serve as focal point for the complex. Linking structures are all glass to contrast with brick of main building.

Maude Dorr

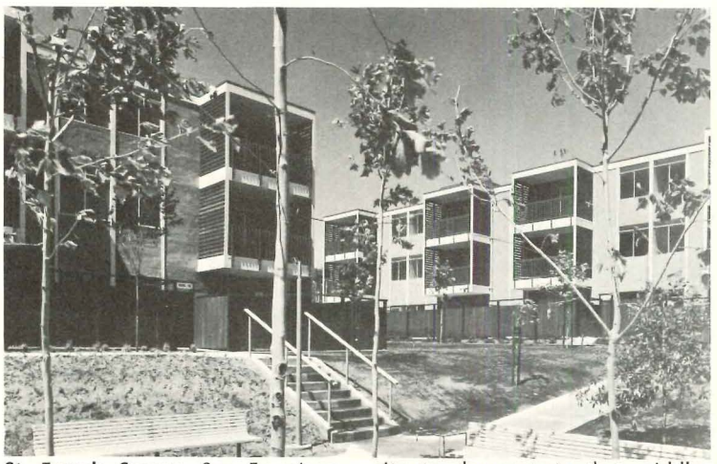


South Mall Riverfront Pumping Station, Albany, N.Y., N.Y. State Office of General Services, Albert Brevetti, Chief Architect, with RTKL, Inc., consulting architects, is designed to harmonize with historic structures in a park in downtown Albany. Facade stone is from cobblestone streets ripped up during construction of the station.

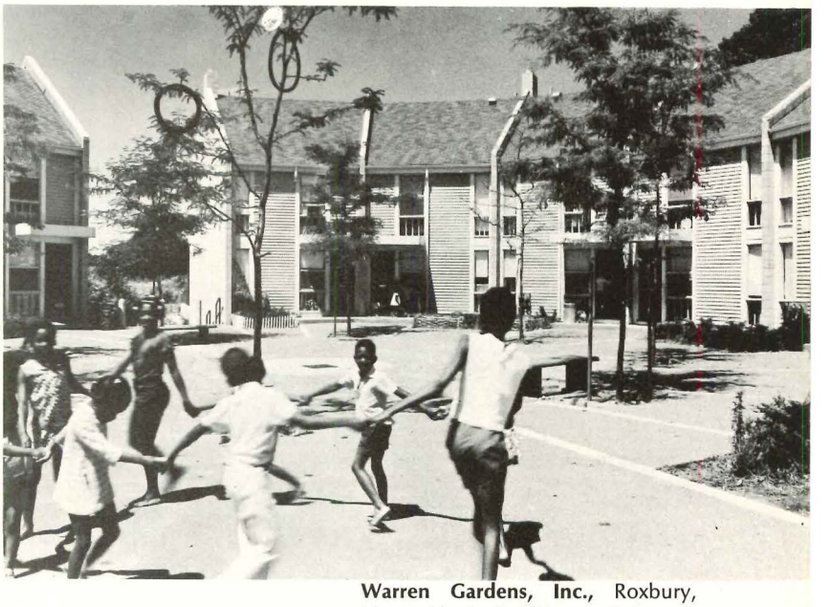


Winners named in first awards program for non-profit sponsored housing

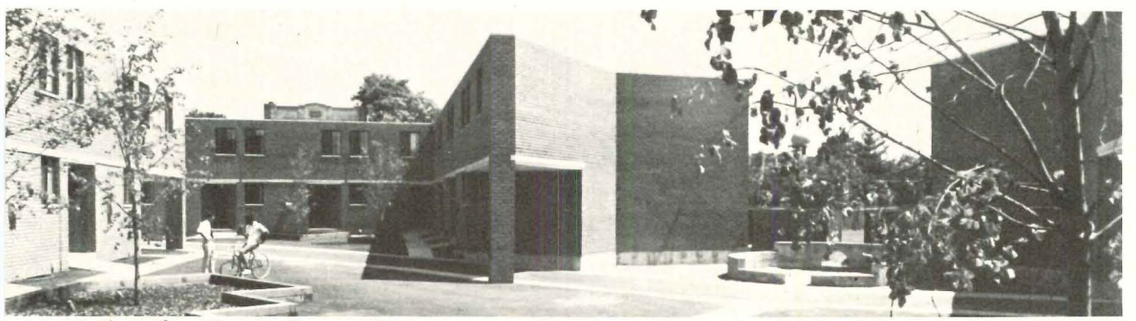
Nine nonprofit sponsored low- and moderate-income housing projects received awards in a new program of the American Institute of Architects, the National Center for Low- and Moderate-Income Housing, the National Urban Coalition, and the Urban Design and Development Corporation. Those not shown are: **Columbia Interfaith Housing Corporation,** Columbia, Md., Collins & Kronstadt, Leahy, Hogan, Collins, architects; **Episcopal Development Corporation,** Altadena, Calif., Carl Maston and Edward R. Niles, architects; **Kukui Gardins, Inc.,** Honolulu, Daniel, Mann, Johnson & Mendenhall, architects; and **Woodlawn Gardens,** Chicago, Stanley Tigerman, Ltd., architect. Harry M. Weese, F.A.I.A. was Chairman of the Awards Committee.



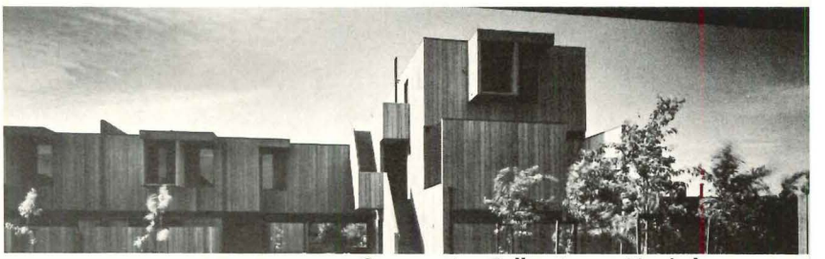
St. Francis Square, San Francisco, Calif., Marquis and Stoller, architects was designed to create, on a minimal budget, a "pleasant, safe environment in the heart of the city to demonstrate that middle-class families would stay in the city given a reasonable choice." Former streets gave way to landscaped interior courts.



Warren Gardens, Inc., Roxbury, Mass., Hugh Stubbins and Associates, Inc., and Ashley, Meyer and Associates, Inc., architects maintains traditional neighborhood scale in a 228-unit low-income project. Radial and linear clusters of two- and three-story units are terraced across the site or stepped down its slope. Effort is to give a clear visual identity to each house.



Martin Luther King, Jr. Community, Hartford, Conn., Hartford Design Group, architects, aims to create a defined "community place" while relating to the surrounding neighborhood. Entrances and kitchens are on paved courts where activities are concentrated to promote closer ties among neighbors; living rooms face private gardens and landscaped open space. Emphasis is on scale and approach sequence.



Sacramento Collegetown Married and Student Housing (RECORD HOUSES, May, 1970, page 98), Smith Barker Hanssen, architects, is first phase of a campus-oriented community. Clusters focus on courts; a variable 20x20-foot plan is used for all units.

Westbeth Artists Housing Rehabilitation Project, New York City, Richard Meier, architect (March, 1970, page 103), turned a 13-story complex, built between 1898 and 1920 into studio and living space (384 units), also providing theaters, indoor and outdoor exhibition space, a playground, shops, film studios, dark rooms, rehearsal rooms, and community facilities.

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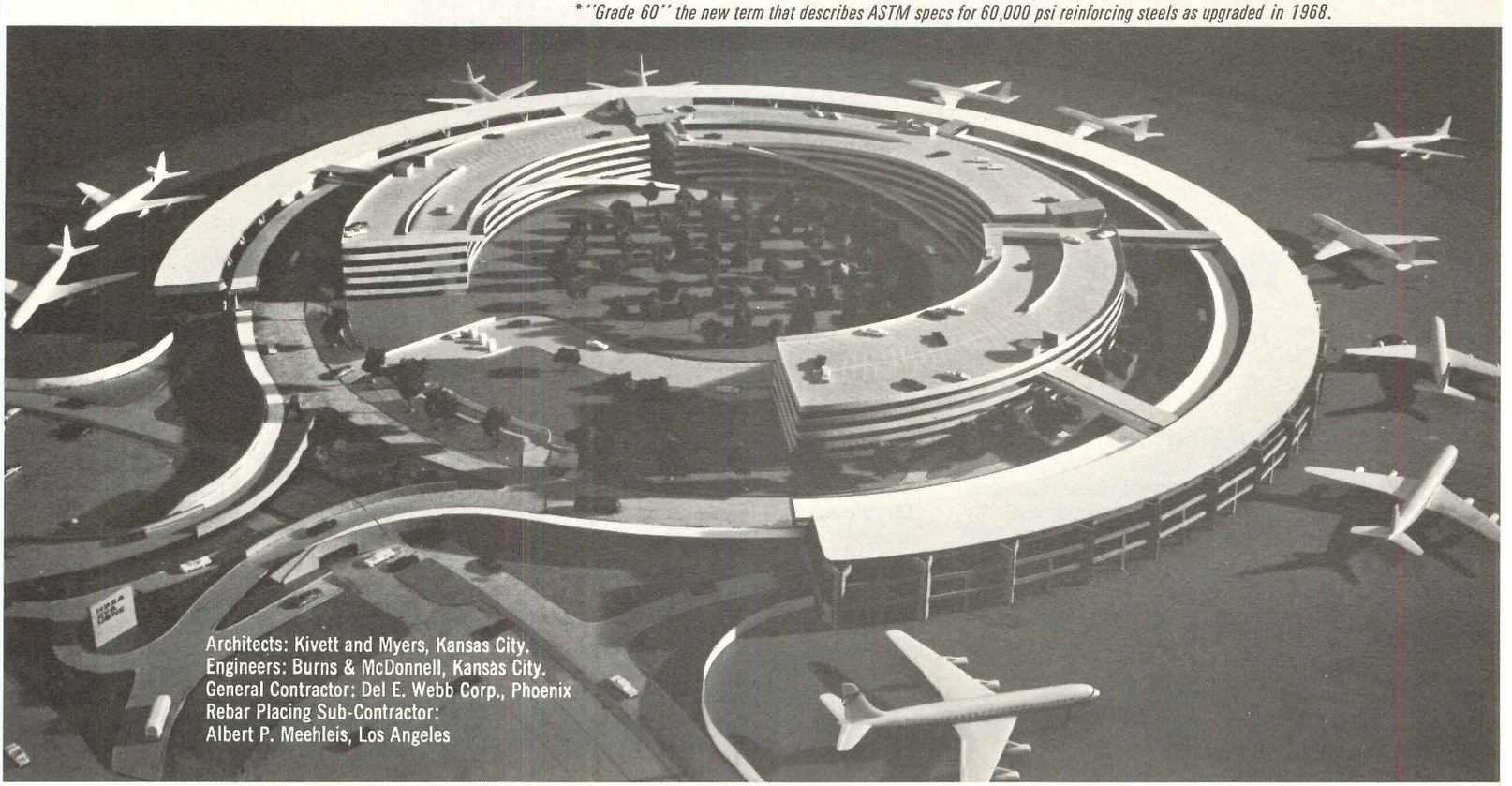

Architects: Kivett and Myers, Kansas City.
Engineers: Burns & McDonnell, Kansas City.
General Contractor: Del E. Webb Corp., Phoenix
Rebar Placing Sub-Contractor:
Albert P. Meehleis, Los Angeles

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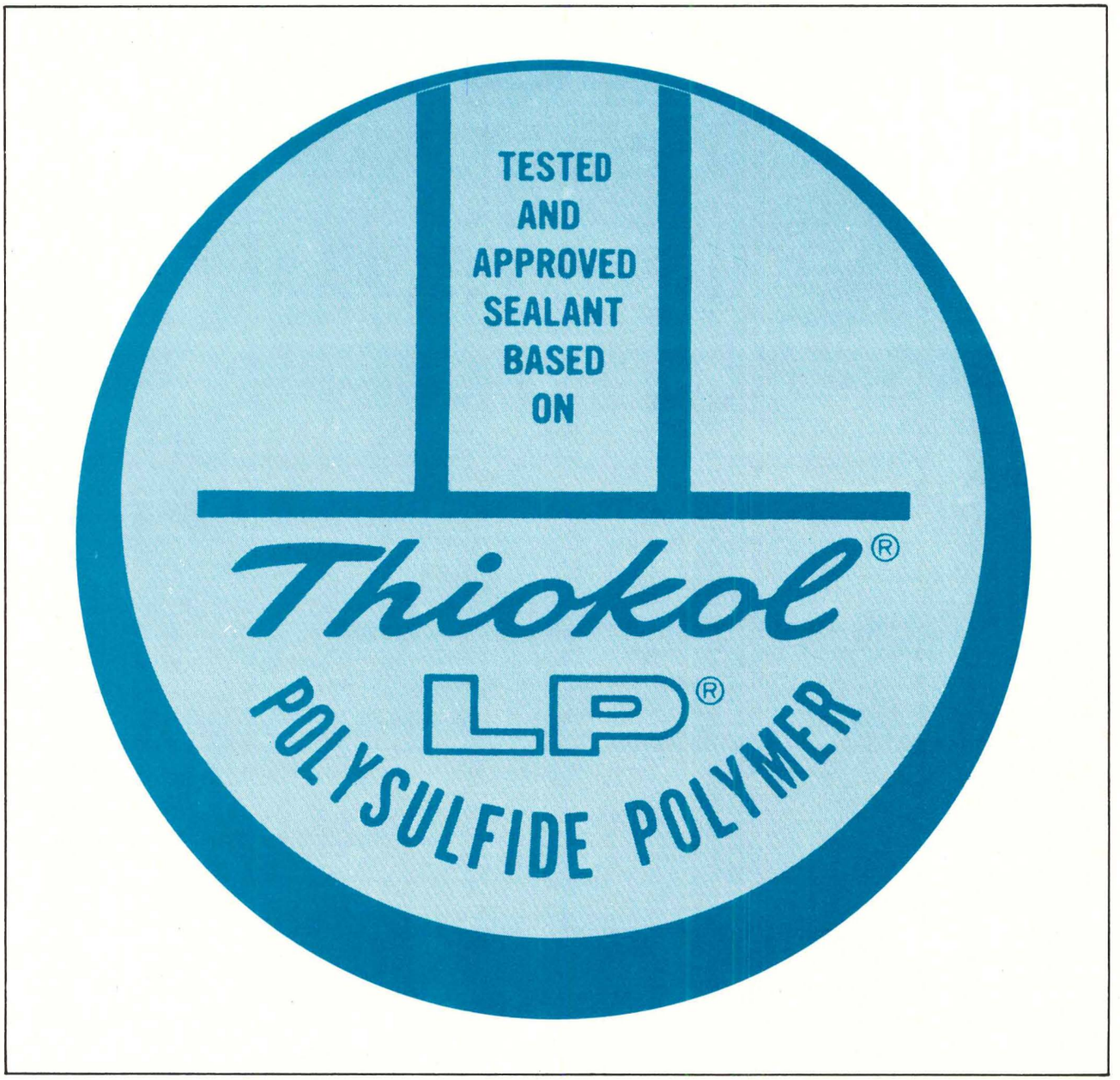

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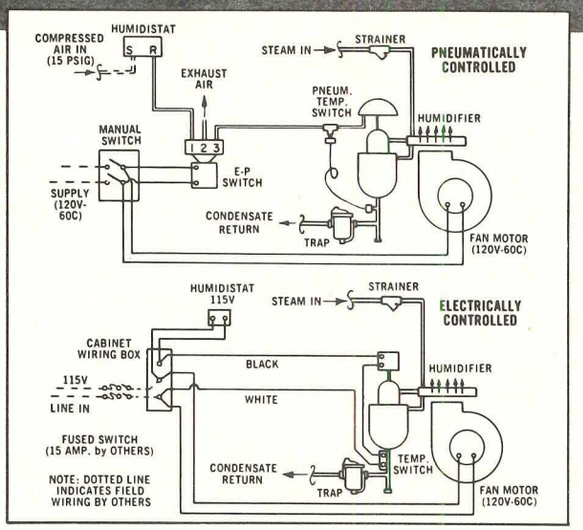
Shown is a horizontal floor model of the Humidifan System. It is also available in vertical floor models and suspended models which may be hung from a wall or overhead or concealed with remote ducting.



The Armstrong Humidifan System may be controlled pneumatically or electrically. These schematic drawings show the integral components of each type.

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ARCHITECTURE OF REVOLUTION; NOTHING NEW

TOWN AND REVOLUTION, by Anatole Kopp

George Braziller, New York, 1970. 288 pp., illus., hard cover, $15.00

Reviewed by Judy Wolin. Miss Wolin has traveled in Russia studying Constructivist architecture, and she is currently working on the same subject at Yale University.

"The architecture of revolution" is a phrase one is not surprised to hear in 1970; on every campus it is a current, if ill-defined theme. In fact, the phenomenon of "revolutionary architecture" is history . . . because by 1929 in the Soviet Union, the architects who called themselves "Constructivists" had come to grips with the whole range of issues that today are again identified as revolutionary.

Kopp's book is the first in English to present a clear and accurate chronology of the Russian Constructivist movement in architecture, and a broad anthology of the buildings and projects of the period (1917-1935). It includes translations of several important documents and a valuable bibliography. The author declares in his introduction that this is not a "coffee table book" . . . no one can argue. The difficulties of resurrecting suppressed material and of documenting existing buildings that are now in a state of miserable decay is a thankless task. The reproductions are poor and the new photographs are not pretty.

But unlike much other "little known" work, Constructivism does not deserve the obscurity it has suffered. The buildings and projects are exciting, powerful, and elegantly executed; their influence on Le Corbusier and the Bauhaus, and *vice-versa,* is self-evident. But the Constructivists speak to our generation in another way—they deal directly with the formulation of a new role and "identity" for the architect in a revolutionary society.

They saw themselves as propagandists, using as their media not only the (then) new technology of glass, steel, and concrete, but of radio broadcasting, diapositive projection, and electric power as well; they saw themselves as advocates, members and representatives of the workers' groups who were to occupy the new buildings. They saw themselves also as production technicians who would have an active part in the invention of new construction techniques, materials and equipment.

They conceived of their buildings as elements of a social environment—as active forces in the organization of a "new mode of life"—as places where people could work and play together with a communality, freedom, and ease that they had never known before.

Kopp thoroughly and thoughtfully investigates the political and social content of their work, but unfortunately, he presents Soviet socialism as the Soviets themselves might—devoid of the paradoxes of a complex culture immersed in dogma and apocalyptic utopian fantasies. Kopp's explanation of the suppression of the movement seems too complacent in its "evolutionary" viewpoint. He questions very little the assumption (or the meaning) that the Constructivists were "true socialist revolutionaries." Although there is little doubt that as architects they were "in revolt," their identification with the "masses" was self-invented. Because the author chooses not to examine this very important problem, much of its relevance to our own decade is lost, or rather, is left as an intellectual and interpretive challenge to the reader.

THE HOUSE AS A CULTURAL SYMBOL

HOUSE FORM AND CULTURE,
by Amos Rapoport

Prentice-Hall, 1969, 146 pp. hardcover $4.95, paperback $1.95

Reviewed by William P. Thompson. Mr. Thompson is on the Faculty of Architecture at the University of Manitoba, and is currently studying the ways culture is transmitted through architecture and house design.

Professor Rapoport's book answers well the question, "Why should this book be on my reading list?" The following themes of the work make it "a must" in this observer's viewpoint.

There is a discussion of the contrast between what is "shelter" and what is "dwelling."

The reader gains an understanding of what it means for a building to be in consonance with nature.

The physical determinist view of the development of house form is debunked.

There is a necessary and critical difference between "masscult" and "high style" architecture.

There is a prolonged argument about the differences between the physical fit of vernacular architecture to a given program and that fit which twentieth century machine age architects assume to be necessary for the same program.

The book brings together a stimulating bibliography on its subject. (Special mention should be made of Lord Raglan, *The Temple and the House,* and Bruno Taut, *Houses and People of Japan.)*

"This book tries to propose a conceptual framework for looking at the great variety of house types and form and the forces that affect them."

It is a difficult book

As the author reminds us, this book is a tentative and exploratory attack on the subject. The reader therefore must be prepared to overcome a few difficulties if he is to gain the insight stored within its pages.

The organizational structure is stereotyped and causes needless repetition.

A particular annoyance is reference to a point previously discussed in greater depth without a footnote to indicate where the discussion occurred.

There is a lack of careful definition of terms (i.e. "grand design tradition," or "symbolic roof").

Despite the obvious understanding and wide-ranging experience of the author, there is an air of superficiality about some portions of the text. Perhaps the case study method would have been appropriate.

This is a book which is very good in sentences, paragraphs, and pages, but which does not hang together in chapters or as a whole volume.

Sometimes the author's words are unspecific, and his meaning is illusive; this can be annoying. "One can only suggest some of the ways of looking at these forms, in order to give a feel and the sense of the subject—and to awaken interest in it, and sensitivity to it."

It is a basic book

Meant as something which probes the essentials, the roots, or the base of a subject, this book can indeed be referred to as *basic.*

It attempts to explain what are "basic needs" of man. (page 60)

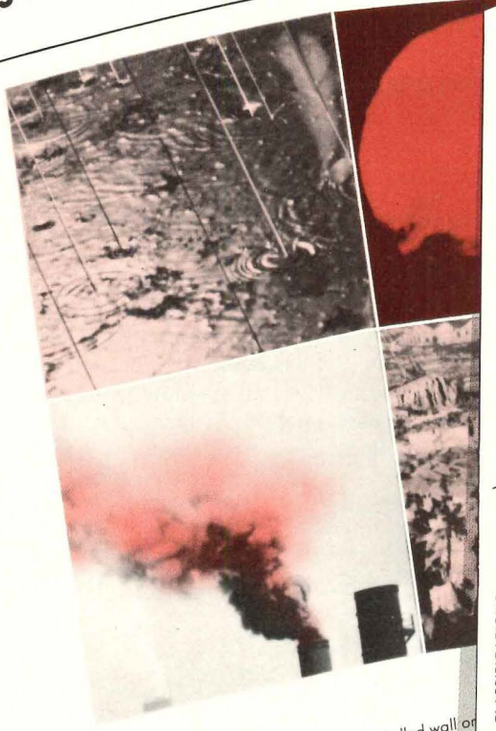
It contrasts *archetypal* and *alternative* solutions to house form.

It introduces the *concept of criticality*

continued on page 68

Improved Galbestos

Performance report: Robertson's improved Galbestos® walls and roofs.



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	TEST	PROCEDURE	TEST RESULTS	COMPARE: Improved Galbestos	COMPARE: Other	BUILDING PERFORMANCE SIGNIFICANCE
PHYSICAL AND ENVIRONMENTAL	Humidity Resistance ASTM D-2247-68	Test samples for 1000 hours at 100°F.	Improved Galbestos No blistering No loss of adhesion	✓		Resists deterioration due to the influence of water and humidity in the atmosphere
	Condensation Resistance Cleveland Condensing	Test samples for 1000 hours with continuous condensing humidity at 120°F with a minimum of 40°F interior to exterior temperature differential	Improved Galbestos No blistering No loss of adhesion	✓		Resists deterioration from the effects of condensation
	Abrasion Resistance (Falling Sand Method) ASTM D-968-51	Determine the number of liters of sand under test conditions required to abrade samples to end point of wear through the entire coating system exposing bare metal	Improved Galbestos 250 liters	✓		Resists erosion caused by the abrasion of airborne particles
ASTM CLASSIFICATIONS CHEMICAL	Pollution Resistance Procedure in accord with ASTM D-870-54	Saturate distilled water with SO_2 gas. Immerse test panels for 72 hours.	Improved Galbestos No blistering No loss of adhesion Slight discoloration	✓		Resists attack of airborne pollutants in atmosphere, such as sulphur dioxide. Demonstrates superior coating integrity to assure against corrosive attack of substrate
	Coating System Integrity Salt Fog ASTM B-117-64	Test samples continuously exposed to 5% salt fog at 95°F for 2000 hours. All samples scribed to expose the underlying metal before testing.	Improved Galbestos No blistering No loss of adhesion No creepage from the scribe.	✓		Resists corrosion and other forms of environmental attack due to coating continuity and integrity. Demonstrates superior long-term coating adhesion
AESTHETIC	Color Change and Fade Resistance Weatherometer ASTM E-42-65	Test samples exposed 2000 hours to artificial weathering test using ultra-violet light, heat and water	Improved Galbestos Maximum chalk ASTM No. 9 Maximum color change 2.0 NBS units	✓		Resists fading and color change under normal environmental exposure
	Glare Resistance Specular Gloss ASTM D-523-67	Measure the luminous fractional reflectance of light at the specular direction of 60°	Improved Galbestos 10-15	✓		Unique texture reduces building glare. Only 10-15 percent of glare-producing light rays is reflected
	Resistance to Dirt Retention Actual Exposure	Expose to industrial atmosphere 36 months sloped 45° South	Improved Galbestos less than 2 NBS units of color change washed; less than 5 NBS units of color change due to dirt retention	✓		Remains clean longer in polluted atmospheres

challenges them all.

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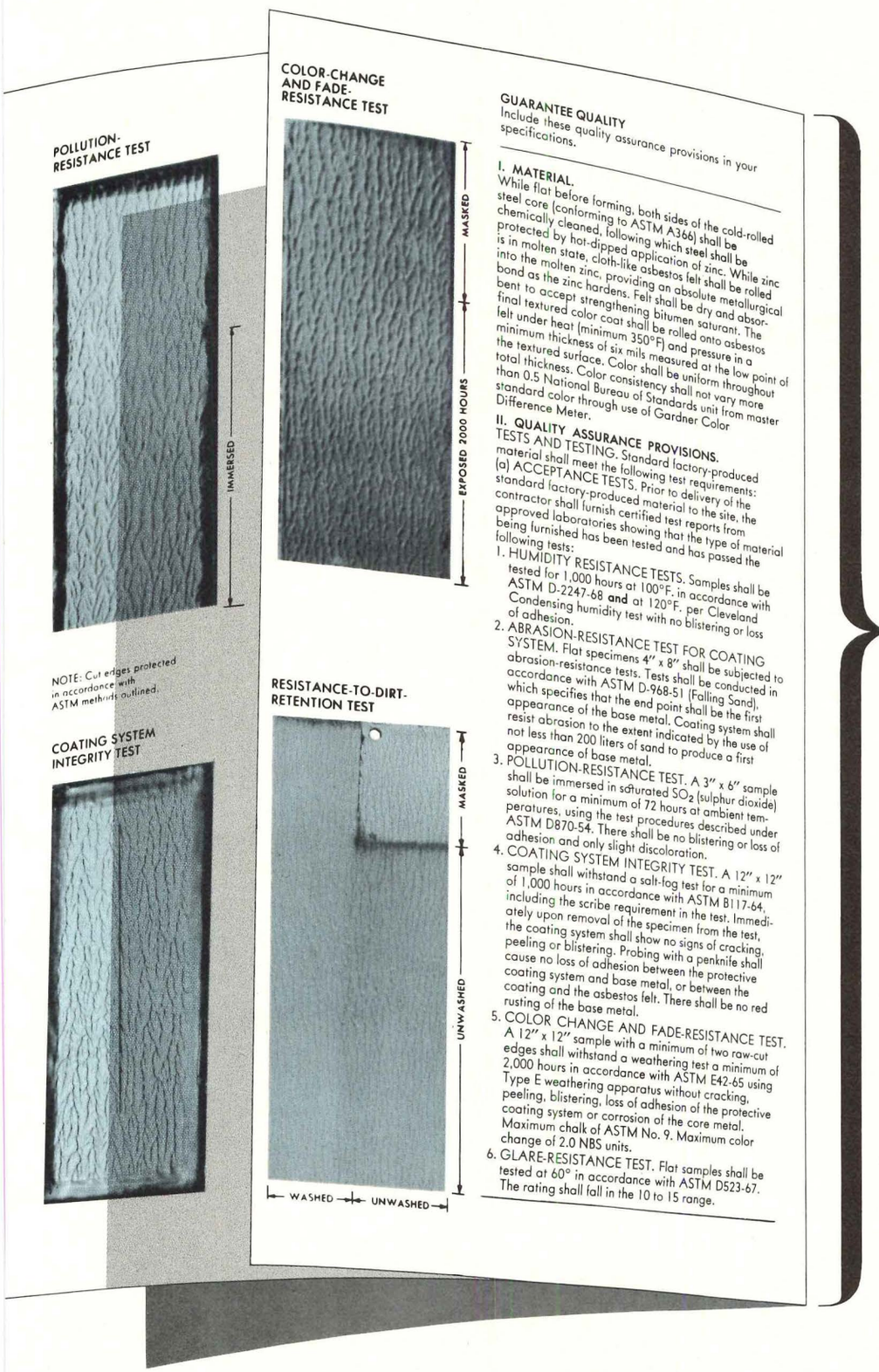

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*Detailed on page 2 of our Performance Report.

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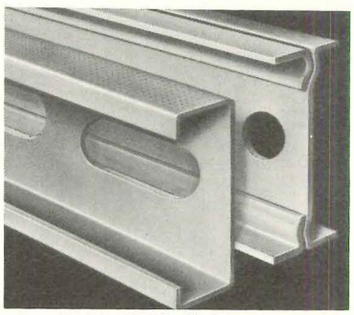
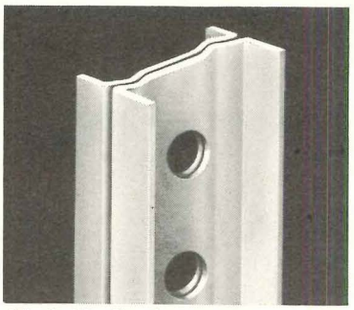
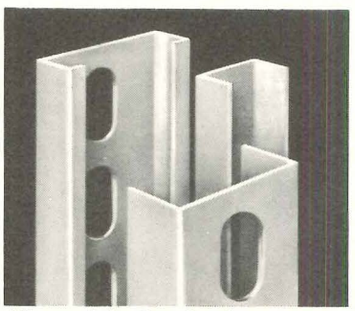


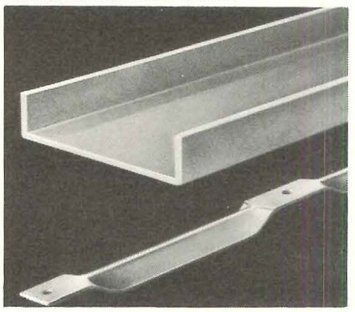
Cee & Nailable Joists



Nailable Studs



Channel & Cee Studs



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ai

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A state construction fund: management for quality

How private architects and engineers are managing $4.5 billion worth of construction in a decade of growth for the State University of New York.

Time, cost and quality are the key considerations in management of the New York State University Construction Fund which is committed to "government by contract" in the private, professional sphere of planning and architectural design for the State University. The Fund is a public benefit corporation created by the New York State Legislature in 1962. It has become a "4.5 billion-dollar client" in its mission to accommodate a three-fold increase in full-time students on some 37 campuses of the State University of New York in the decade ending 1972. In 1969, the Fund completed $118 million of work, and had an additional $948 million of work in design—almost all of it by private firms both in and out of the state.

From the beginning, the Fund chose to tap the resources of professionals in private practice rather than to create a huge agency with its own staff of planners and designers. It set out to implement a "government by contract" approach to design and construction whereby professional planners, architects and consultants carry the actual responsibility for planning, design and construction supervision. To make such an approach effective, key personnel of the Fund staff were also recruited from the professional sector and charged with a primary role in expediting the complex decision-making process inherent in so massive a design/construct program.

The time-cost-quality emphasis of Fund management was aptly underscored in Governor Nelson Rockefeller's appointments to the first three-man board of trustees. As chairman, he appointed Clifton Phelan, president of the New York Telephone Company and already a trustee of the State University, with full realization of the time-related urgencies of its program. As a cost-oriented financial expert, the governor appointed James W. Gaynor, at that time the State's housing commissioner and head of its Housing Finance Agency [which issues bonds to finance self-liquidating projects of the university—other than student housing, which is financed through the state's Dormitory Authority]. In support of the Construction Fund management's ability to promote quality in architecture on campus and to ameliorate the effects of campus growth on nearby communities and regions, the governor appointed George A. Dudley, then director of the State Office of Regional Development. Mr. Dudley left New York in 1965 to become the first dean of the School of Architecture and Urban Planning at the University of California at Los Angeles but returned to New York in 1968 to become chairman of the State Council on Architecture and the State Pure Water Authority. As such, he has regained, through monthly inter-agency meetings, contact with important aspects of Fund objectives.

The Fund's commitment to government by contract was reinforced by the appointment of Dr. Anthony Adinolfi as manager of planning. He had been an effective sponsor of that same approach as director of Detroit's $200-million school expansion program. Adinolfi chose two architects as key associates at the Fund: Frank J. Matzke, then associate architect for the University, was made deputy manager of planning while he acted as one of four planning supervisors; Grover Tarbox, then with the university Architect's office, became supervisor of program coordination over a staff of planning coordinators working with the planning groups.

In the first stages, a parallel operation with Adinolfi's planning division was a construction division with H. Pierce Reed as manager of comparable staffs of construction supervisors and coordinators.

SUCF reorganization unifies design and construction process

In 1968, a general reorganization brought the construction and planning divisions of the Fund together under the single leadership of Adinolfi as general manager (with Matzke and Tarbox now serving as deputy general managers). This change was in response to repeated demonstration of the fact that design and construction of each project comprise a single and continuous process so far as management considerations of the Fund are concerned (a practical reflection of the fact that the dichotomy between the two phases in conventional practice is a more or less artificial separation brought about by the historical roles of architects and general contractors).

In a situation requiring the delivery of plans and buildings on a rigorous schedule and budget, especially where overlapped phasing of large multi-contract projects is involved, the separation of design and construction processes is not only difficult but virtually impossible to sustain. The unified Fund organization allows the architect to deal with a coordinated client situation rather than a divided one. At the same time, the architect is given clear responsibility throughout the design and construction process while the Fund retains its procedural and fiscal role.

The selection of planners and architects for projects of the University has also undergone some evolution. In the early days, the large scope and long-term planning of whole campuses induced the Fund management to seek out firms of demonstrated capability for carrying out both the planning and design phases of the work in more or less conventional sequence. As master plans became more clearly outlined and the work of design began to be divided among a greater variety of single building projects, opportunities emerged for younger and smaller firms to be commissioned. Some out-of-state architects have also been commissioned on the basis of particular capabilities in scope or management experience. This has been done with or without association with local architects—but, of course, with a requirement for New York State registration of responsible principals.

The Fund maintains records and brochures of the capabilities of firms in and out of the state, and when the University issues a project program, recommendations of qualifying candidate firms are made to the Fund's board of trustees which then makes the final selection.

Architectural fees are a per cent of construction cost based on the assumption that most of the work is institutional in character. The agreement is flexible enough to allow some special compensation and consultation. Planning fees are on a cost-plus basis.

To support planners and architects in their decision-making processes, especially

those affecting specifications and management, the Fund provides several kinds of information resources. One is a series of guideline publications on Fund operations. Another is a series of research programs pertaining to specific problems of materials and costs. Third is a more or less unscheduled series of seminars. Some of these are national in scope and audience and deal with such problems as building systems, laboratory furnishings and general planning problems. Other seminars are attended entirely by Fund staff, project architects and consultants, and deal with specific problems of work in progress.

Research promotes informed design and cost decisions

Notable output of the research program directed by Roger Hallenbeck has been a series of publications. One brochure on making facilities accessible to the physically handicapped has had international distribution. Others include a guide for campus planning and various reports on product performance criteria covering site products, concrete, interior finishes and others. These criteria are design and specification aids, but the performance spec as such is not used on University projects.

As performance criteria and other research data increased in volume, it became apparent that simply publishing documents for architects to use on each subject presented some serious limitations. First, the sheer volume of information was gigantic, fragmented, and cumbersome to use. Second, the information was not specific to spaces in a given project but was organized horizontally across many kinds of project so that a search problem attended its use. Third, the criteria themselves are dynamic and subject to change.

These limitations generated the idea of a computerized, automated retrieval system geared to architects' specific use. As mechanics of such a system were developed, it became apparent that the data bank could be greatly expanded to contain other portions of the program package. So the research project acquired the name: System for planning and constructing the environment—SPACE, of course.

Currently, data from performance criteria, program bulletins and other sources are coded and put into the computer on a facility or space-specific basis. This information comprises the SPACE master file of existing criteria plus new criteria as they are developed. In addition, the file can store information on building type studies and other aspects of the program such as budgets, campus plan information, building site work budgets, scheduling information, portions of the operations guides and equipment lists.

Computerized data system will sense regional problems

Several Fund research projects deal with cost control. One is a computerized building industry data system now under development at the Center for Architectural Research at Rensselaer Polytechnic Institute. David Haviland is director of the Center.

The data system is intended to provide insight into all the factors affecting construction in various areas, taking account of local differences in material costs, wage rates and the susceptibility of an area to abnormal conditions of contractor loading. An attempt is made to evaluate building volume as a drain on area resources and to develop forecast data provided by architects, developers and owners regarding current and near-future work, public and private. A pilot study is now in work in the Binghamton area.

Data will be applied with reference to a bidding calendar of developing projects. The calendar is now being extended to show all state projects. Originally, it applied only to SUCF projects campus by campus. The calendar is issued every three months and provides a guide to probable conditions affecting each area. The calendar and pricing data can affect schedules for design or processing as well as the options for single or multiple bidding, pre-purchasing of materials, etc. An architectural construction information committee meets monthly in the offices of the State Council on Architecture to facilitate feedback and cooperation among other state agencies, including those concerned with ecology.

Coordination with others is, in fact, one of the major preoccupations in the Fund's decision-expediting role. Personnel at each campus, SUNY central offices, Division of the Budget, Dormitory Authority and other state and Federal supporting agencies as well as professional, contracting, manufacturing and labor groups in the construction industries are all involved at one time or another.

The bidding process is formal but flexible

By law, the Fund retains the option of either single or multiple bidding. As a rule, projects of $15 million or over are bid in multiple contracts for major divisions of the construction. Smaller projects tend to be bid as single contracts; the choice depending largely on bonding capacities of available contractors and their records of performance. In either case, the architect and his consultant are charged with management of the bidding and construction process in close coordination with resources and procedures of the Fund. A format for bidding documents is detailed by guidelines of the Fund so that the process maintains uniformity.

One recent development fostering multiple contract bidding has been the emergence of so-called fast-track methods of design and construction. This is a process of overlapping phases of the over-all project so that certain items of construction can proceed while details of design are still in work. Application of the method to a project by Smith Hinchman & Grylls at the Stonybrook campus was described in the October issue.

The Fund's first publication on the fast-track method developed out of conversations between Frank Matzke and Thomas Bullock of Caudill Rowlett Scott. Bullock was at that time chairman of the A.I.A. Committee on School and College Architecture. Matzke had also served on the committee and had been exploring methods of applying private techniques to public construction.

It was observed that campus planning itself is inherently overlapped in many of its phases. Further, the technique had already been applied to design and construction of simple industrial buildings. It was noted that the conventional end-to-end phasing of design and construction of public works was much like waiting to start construction of a shopping center until the last tenant's interior had been laid out. The idea of overlapped phasing of individual campus buildings gained favor. The outcome was a conference among Fund and CRS personnel which developed into a commissioned publication about how the Fund might apply what is increasingly called the fast-track method.

Construction-project management, redefined and reassigned

Changes in the interpretation of the term *construction management* within the Fund reflect some of the changes that have been current in national practice. Originally, construction management in Fund parlance was a staff function concerned with scheduling and expediting materials and trades to a given project. Following the merging of the design and construction divisions of the Fund, the term was applied to an over-all management responsibility for the entire design/construction process. This responsibility was specifically assigned to the architects who now maintain that function from beginning to end of their own projects, with or without consultants.

A further evolutionary modification of the term was introduced by complexities inherent in development of an entirely new campus, such as the one now under development at Amherst, near Buffalo. Here, the multiplicity of architects involved, the very size of the over-all project and its relationships to new communities might have resulted in fragmentation of such responsibilities as site access and security, solid waste disposal, general cleanup, etc. In this case, a third-party consultant (Pope, Evans & Robbins) was commissioned to handle such problems so that each architect would be free to handle his own management problems.

"If you want quality," says Frank Matzke, "you must organize the process that permits it to come about. It is not just a matter of hiring good architects and designers. It is creating a system that brings out the best capabilities of each."

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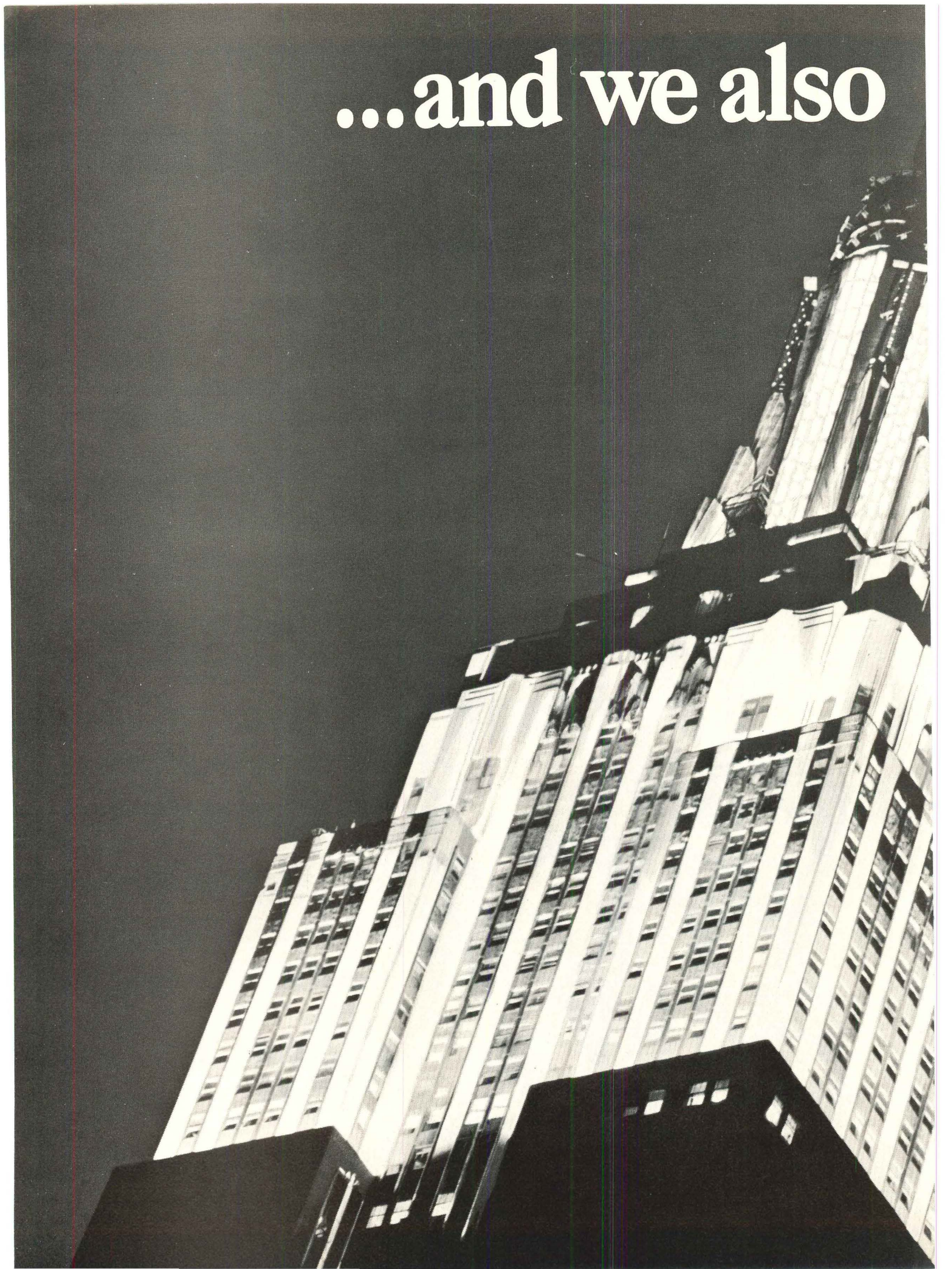

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CURRENT TRENDS IN CONSTRUCTION

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

Seasonality in construction: climate and custom

Climatic conditions have always posed work scheduling problems for the construction industry as the following table (from a report made 527 years ago) attests.

WAGE LIST FOR BUILDING THE ETON CHAPEL
(Monthly Average)

	August, 1442	January, 1443
Freemasons	53	44
Row Masons	24	2
Carpenters	44	9
Sawyers	6	4
Smiths	1	1
Daubers	1	1
Jackers	—	2
Tilers	—	1
Hard Hewers	12	8
Laborers	40	11
TOTAL MEN	181	83

(G. G. Coulton, *Art and the Reformation*, Cambridge University Press)

Unlike the man in charge of building the Eton Chapel, today's contractor or builder doesn't usually cut his work force in half between the peak and low months of construction activity. (Except in the special case of highway construction.) But, work force cuts of 20 per cent or greater, on the average, are pretty much the rule of thumb over the annual construction cycle.

The overall seasonal pattern is highly correlated to general economic conditions in the industry. During periods of peak demand, winter work is pushed regardless of the extra cost and inconvenience. In the early 1950's for instance, when the volume of new construction work was very heavy, peak-to-low-month labor force shrinkages were only around 17 or 18 per cent. During the period of little growth in the early 1960's, the low month (February) construction labor force was almost 30 per cent less than the peak month (August).

The business cycle, then, can have a significant impact on the seasonal pattern of activity in the industry at any given time. Abstracting from the business cycle, though, structural changes that have taken place in the industry over the past 15 or 20 years should have reduced the long-term trend of seasonality of construction work. Also:

- First, there has been a shift in the proportion of new construction work in favor of the South over the past 15 years. The seasonal pattern of Southern construction, of course, is less pronounced than that for the nation as a whole.
- Second, the "mix" of new construction work appears to be shifting in favor of project types that are most conducive to year-round work. Employees of "special trade contractors" are the fastest growing component of the construction labor force. Special trade contractors is another name for trades like plumbers and electricians, who, Labor Department studies show, have a less pronounced seasonal employment pattern than the other construction trades. As a whole, they average only about a 15 per cent peak-month-to-low-month labor force shrinkage, as against the 20 per cent figure for all construction.
- Third, the size of the average construction project has been getting progressively larger over time. It would appear that the larger the project, the greater the opportunity for "planning in" and scheduling year-round work.
- Fourth, the proportion of total construction employment that on-site construction workers account for has diminished over time. The fact that builders and contractors are hiring proportionately more office staff than they have in the past probably indicates a commitment to more sophisticated business practices.
- Finally, technological improvements that make winter construction easier are coming on the market with increasing regularity.

Despite these factors, there has been *no measurable trend* toward reduced seasonality in the industry as a whole during the post-war period. Why?

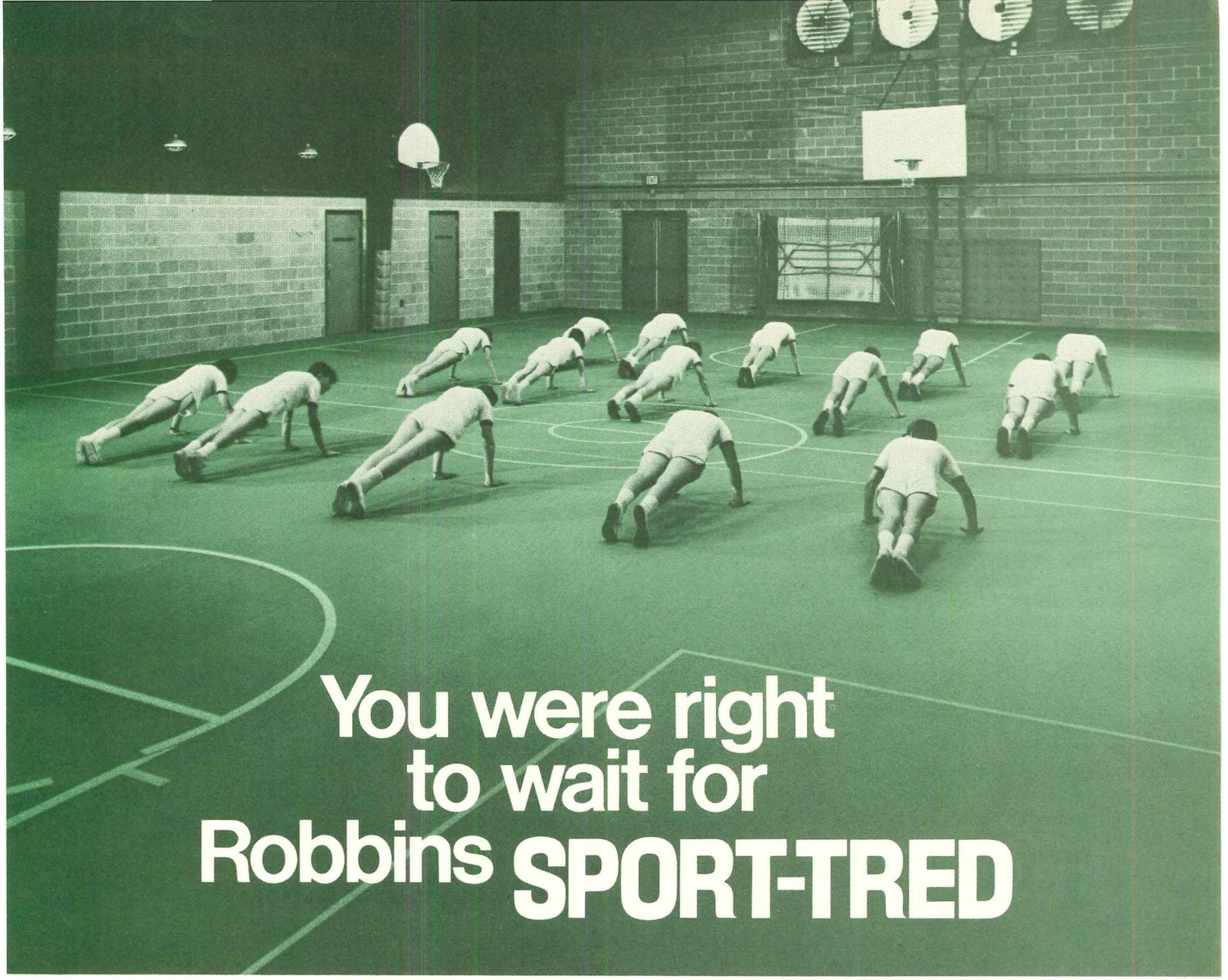
The Hoover Commission Report on *Seasonal Operation in the Construction Industries*, released in 1924, said a lot in its opening sentence. "Custom, not climate, is mainly responsible for seasonal idleness in the construction industries." Established patterns of behavior are often very hard to break. Traditional periods for contract letting, "moving days" and the like, have been important determinants of the annual pattern of construction work over the years.

More recently, contractual arrangements with labor unions have made winter work more costly than it should be. Provisions that the contractor or builder guarantee his employees a minimum number of hours of work a week, make him reluctant to incur the financial risk that this involves in the winter. Also, new innovations are slow to be assimilated. They usually operate via a "filtering down" process.

Although it sounds like a paradox, another reason for the failure of the construction industry to make any significant strides in the area of year-round employment has been the shortage of labor. Many construction jobs require large numbers of unskilled or semi-skilled workers in fairly fixed proportions to the skilled workers. An unskilled labor pool is readily available during the summer months when students are home from school and actively seeking summer employment.

There are some problems with winter construction that have proven extremely difficult to solve. One that has, until now, defied all kinds of attempts at a practical solution is the compacting of surfaces such as embankments, dikes or roads using soils with a high percentage of frozen material. Thawing or crushing the soil has not been economically feasible. Problems like this go far toward explaining why employees in heavy or nonbuilding construction experience such a sharp seasonal pattern.

The fact that in periods of peak demand more year-round work *has* been accomplished than is normally the case is an indication that, given sufficient motivation, progress can be made in reducing seasonality over the longer term. Society would benefit from year-round work because, due to more efficient use of the builders' or contractors' plant, it would get more construction at less cost. But, society isn't in the construction business—contractors, architects and construction unions are. And the fact that the construction business hasn't made significant progress toward solving this problem on its own must mean that there are *costs* (financial and otherwise) attached to these benefits. The increased risk, both financial and physical, of winter work is a cost, for instance, as is the break-up of established customs in the industry. The construction industry must be motivated to absorb these costs, or compensated in some manner, if significant progress is to be made here.



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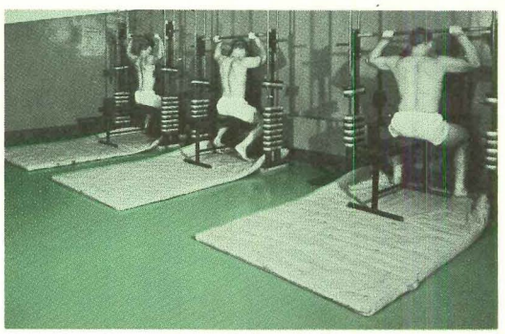

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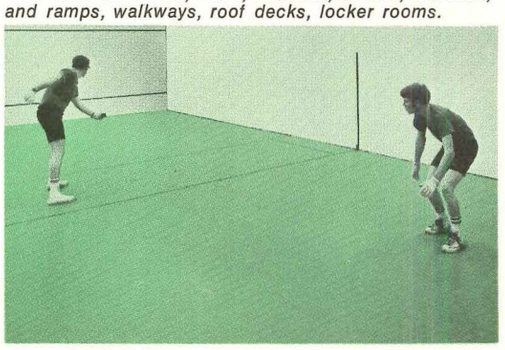

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INDEXES AND INDICATORS

William H. Edgerton
Dodge Building Cost Services
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BUILDING COSTS CONTINUE CLIMB

More than ever before, architects must be concerned with the ever present building cost spiral as forcefully illustrated in the column to the extreme right. If you read this page regularly, you know that the RECORD recently expanded its coverage of tabulating building costs. Suggestions for additional improvements or other changes are welcome.

Building cost indexes

The information presented in the tables indicates trends of building construction costs in 33 leading cities and their suburban areas (within a 25-mile radius). The table to the right presents correct cost indexes for non-residential construction, residential construction, masonry construction and steel construction. The latter two indexes are new to the RECORD. Differences in costs between two cities can be compared by dividing the cost differential figure of one city by that of a second city.

The table below presents historical building cost indexes for non-residential construction; future costs can be projected after examining past trends.

All the indexes are based on wage rates for nine skilled trades, together with common labor, and prices of five basic building materials are included in the index for each listed city.

1941 average for each city = 100.00

JANUARY 1971

Metropolitan area	Cost differential	Current Indexes non-res.	residential	masonry	steel	% change year ago res. & non-res.
U.S. Average	8.5	338.6	317.9	332.3	324.6	+ 7.27
Atlanta	7.8	427.9	403.4	417.2	411.2	+10.18
Baltimore	7.9	355.1	333.8	345.9	339.4	+ 8.22
Birmingham	7.2	313.6	291.7	306.5	300.8	+ 2.11
Boston	8.7	332.2	314.8	330.1	321.1	+11.57
Buffalo	9.2	381.4	358.1	375.1	364.6	+10.14
Chicago	8.8	391.9	372.6	379.6	374.2	+ 8.60
Cincinnati	9.0	353.4	332.5	347.8	339.5	+ 7.13
Cleveland	9.8	385.8	363.0	378.3	370.4	+ 6.26
Columbus, Ohio	9.0	368.5	346.0	359.3	352.9	+ 8.68
Dallas	7.7	330.4	319.9	322.5	316.9	+ 6.17
Denver	8.4	372.5	350.4	369.9	357.5	+ 8.74
Detroit	9.5	381.9	363.8	381.0	368.2	+ 7.09
Houston	8.1	327.4	307.4	320.4	314.2	+ 6.82
Indianapolis	8.8	313.2	294.1	307.4	300.8	+ 2.59
Kansas City, Mo.	8.2	319.7	302.1	312.5	306.8	+ 6.88
Los Angeles	8.1	370.2	338.4	358.8	353.2	+ 5.32
Louisville, Ky.	8.1	331.8	311.5	325.1	318.8	+ 7.14
Memphis	7.8	326.0	306.1	318.7	312.1	+ 6.11
Miami	8.6	357.8	340.8	351.5	343.4	+ 7.42
Milwaukee	9.2	393.9	369.9	390.0	377.2	+ 6.18
Minneapolis	8.9	365.4	343.8	359.7	350.2	+ 9.19
Newark	9.0	341.1	320.3	335.7	327.4	+ 9.76
New Orleans	7.9	323.4	305.2	318.6	311.6	+ 7.38
New York	10.0	374.8	348.4	362.5	355.1	+ 6.40
Philadelphia	8.5	350.7	334.0	344.2	336.0	+ 8.11
Phoenix	8.2	187.2	175.7	181.1	179.6	+ 5.79
Pittsburgh	9.1	331.1	311.5	326.6	318.3	+ 5.38
St. Louis	9.2	349.2	329.6	346.1	334.6	+ 6.23
San Antonio	8.0	138.5	130.1	135.7	132.1	+ 9.03
San Diego	8.2	137.8	129.4	135.1	132.0	+ 7.78
San Francisco	9.0	475.8	434.9	469.2	456.0	+ 5.58
Seattle	9.0	351.0	314.1	349.0	334.7	+ 7.72
Washington, D.C.	7.7	312.9	293.8	305.9	299.8	+ 8.18

Cost differentials compare current local costs, not indexes.

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

1941 average for each city = 100.00

Metropolitan area	1962	1963	1964	1965	1966	1967	1968	1969 (Quarterly) 1st	2nd	3rd	4th	1970 (Quarterly) 1st	2nd	3rd	4th
Atlanta	298.2	305.7	313.7	321.5	329.8	335.7	353.1	364.2	365.9	382.8	384.0	399.9	406.2	408.1	422.4
Baltimore	271.8	275.5	280.6	285.7	290.9	295.8	308.7	311.4	313.0	321.8	322.8	323.7	330.3	332.2	348.8
Birmingham	250.0	256.3	260.9	265.6	270.7	274.7	284.3	288.4	289.9	302.4	303.4	303.5	308.6	310.2	309.3
Boston	239.8	244.1	252.1	257.8	262.0	265.7	277.1	278.2	279.6	294.0	295.0	300.5	305.6	307.3	328.6
Chicago	292.0	301.0	306.6	311.7	320.4	328.4	339.5	340.4	342.1	354.9	356.1	362.2	368.6	370.6	386.1
Cincinnati	258.8	263.9	269.5	274.0	278.3	288.2	302.6	309.8	311.5	324.8	325.8	332.8	338.4	340.1	348.5
Cleveland	268.5	275.8	283.0	292.3	300.7	303.7	331.5	334.9	336.7	357.1	358.3	359.7	366.1	368.1	380.1
Dallas	246.9	253.0	256.4	260.8	266.9	270.4	281.7	287.2	288.7	307.6	308.6	310.4	314.4	316.1	327.1
Denver	274.9	282.5	287.3	294.0	297.5	305.1	312.5	317.9	318.5	337.9	339.0	343.4	348.4	350.3	368.1
Detroit	265.9	272.2	277.7	284.7	296.9	301.2	316.4	326.8	328.5	351.8	352.9	355.2	360.5	360.6	377.4
Kansas City	240.1	247.8	250.5	256.4	261.0	264.3	278.0	281.0	282.3	294.5	295.5	301.8	306.8	308.8	315.3
Los Angeles	276.3	282.5	288.2	297.1	302.7	310.1	320.1	323.7	325.4	343.0	344.1	346.4	355.3	357.3	361.9
Miami	260.3	269.3	274.4	277.5	284.0	286.1	305.3	309.6	311.2	328.3	329.3	338.2	343.5	345.5	353.2
Minneapolis	269.0	275.3	282.4	285.0	289.4	300.2	309.4	310.6	312.2	330.1	331.2	341.6	346.6	348.5	361.1
New Orleans	245.1	248.3	249.9	256.3	259.8	267.6	274.2	285.5	287.1	296.6	297.5	305.4	310.6	312.2	318.9
New York	276.0	282.3	289.4	297.1	304.0	313.6	321.4	324.9	326.6	343.4	344.5	351.1	360.5	361.7	366.0
Philadelphia	265.2	271.2	275.2	280.8	286.6	293.7	301.7	304.6	306.2	320.0	321.0	328.9	337.7	335.7	346.5
Pittsburgh	251.8	258.2	263.8	267.0	271.7	275.0	293.8	297.0	298.6	310.0	311.0	316.9	321.6	323.3	327.2
St. Louis	255.4	263.4	272.1	280.9	288.3	293.2	304.4	306.8	308.3	323.7	324.7	335.2	340.8	342.7	344.4
San Francisco	343	352.4	365.4	368.6	386.0	390.8	402.9	415.6	417.5	439.9	441.1	455.4	466.9	468.6	465.1
Seattle	252.5	260.6	266.6	268.9	275.0	283.5	292.2	296.1	297.5	316.8	317.8	325.4	335.1	336.9	341.8

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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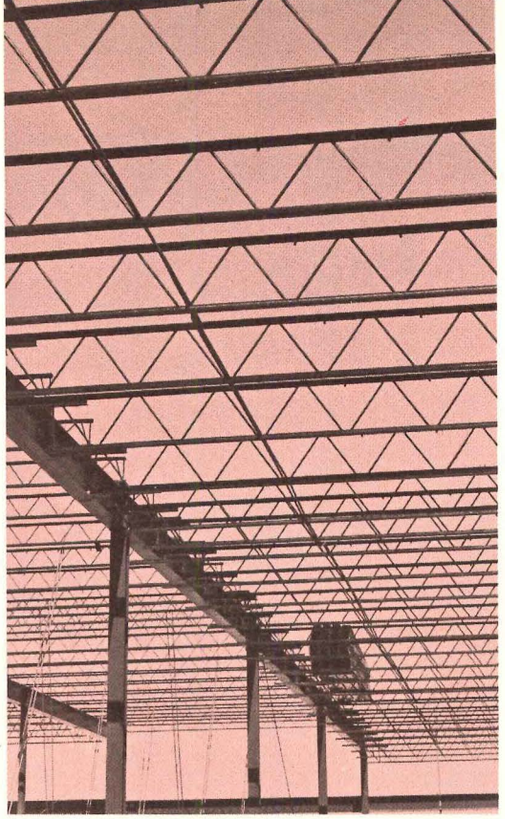

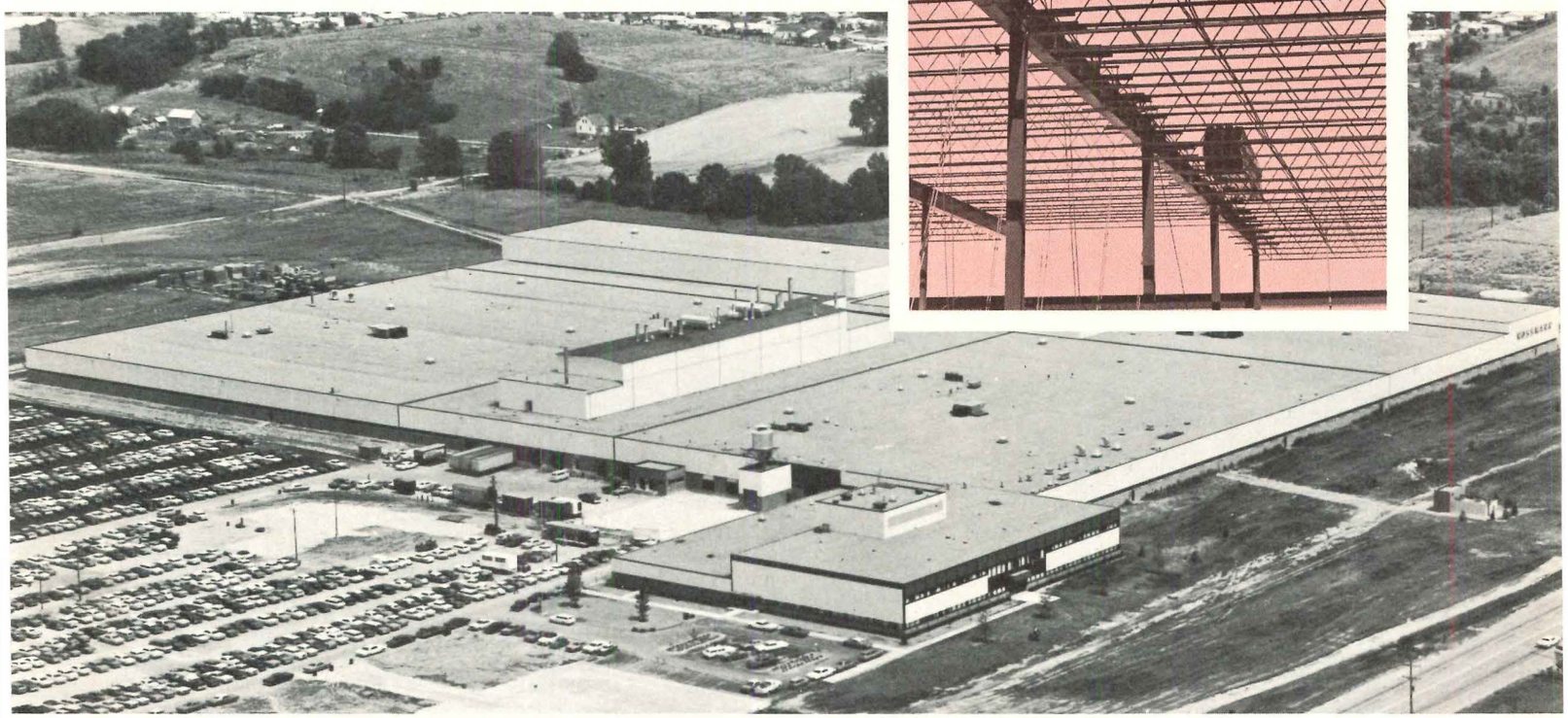

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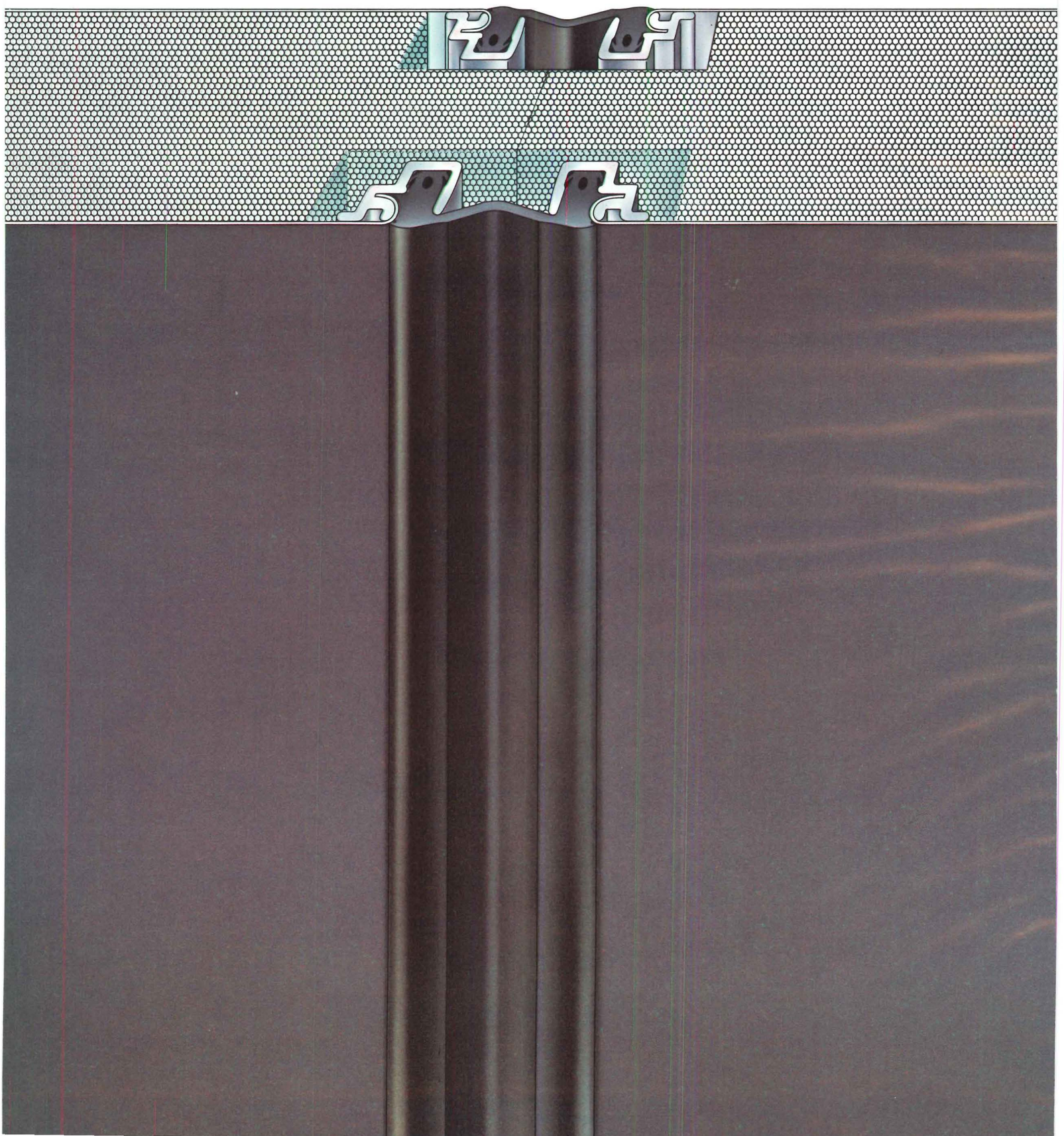
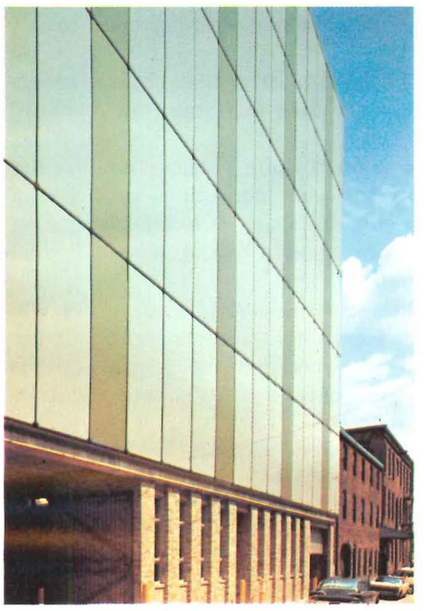
One answer.



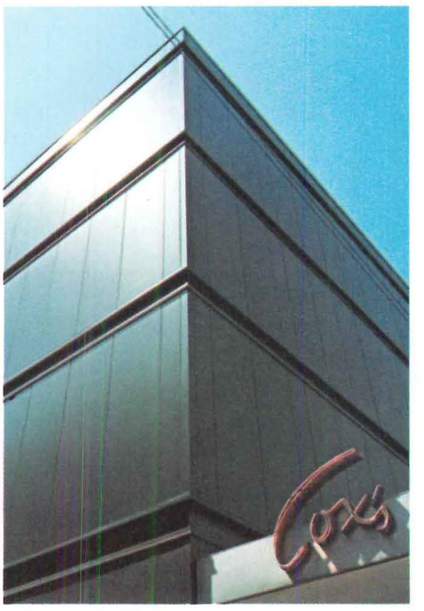


Problem 1. Maintain strict thermal and moisture control.
Answer: Alcoa Alply wall system.

Manufactured of a foamed plastic core, sandwiched between aluminum faces or aluminum and another material, high-quality Alcoa * Alply paneling can keep interior spaces very hot or very cold. U values range from .206 to .018, depending on type of core material and thickness. And they retain their insulating values indefinitely because they have low permeability.

Shown above:
Schmidts Brewery, Philadelphia, Pa.
Architect: William F. Koelle & Sons, Philadelphia, Pa.

*Registered Trademarks of Aluminum Company of America.
†Trade Name of Aluminum Company of America.



Problem 2. Reduce installation costs.
Answer: Alcoa Alply wall system.

Because Alply panels are a single laminate of insulating core, exterior and interior surfaces, they reduce the most expensive building cost: site assembly. And the Alcoa Snug Seam® joining method decreases the number of framing members required. Panels are simply "zipped" tightly together with a neoprene gasket.

Shown above:
Cox Department Store, McKeesport, Pa.
Architect: Celli-Flynn and Associates, McKeesport, Pa.
Curtainwall contractor: Columbia Architectural Metals, Pittsburgh, Pa.

Problem 3. Expand design freedom.
Answer: Alcoa Alply wall system.

Architects have almost unlimited design choices with the Alply wall system. Panels come in sizes up to 5 x 18 ft, with smooth, fluted or stucco facings. And they're available in a wide range of colors: 10 vibrant Alumalure® colors (baked-enamel); 7 earth-toned Duranodic† 300 tones (hard-coat electrochemical finish), mill finish, Alumilite† finish (natural color with increased weather resistance); and other Alcoa architectural color finishes.

Shown above:
Redesigned and refaced Lovemans' Department Store, Chattanooga, Tenn.
Architect: Klaus Peter Nentwig.
Builder: Hubbuch Glass Company.

For complete information on the Alply wall system, contact your nearest Alcoa sales office or write: Aluminum Company of America, 1625-A Alcoa Building, Pittsburgh, Pa. 15219.

Change for the better with Alcoa Aluminum

ALCOA

continued from page 49

as the degree of freedom of choice of alternative solutions.

The simple, but highly descriptive sketches in the book, show a blend of graphic and verbal message almost as direct as the architecture described.

There is a description of those features of a house which are most universal. (pages 17ff.)

The "possibilist" school of geographers is stressed rather than the "inevitabilist" group.

It suggests quite persuasively that the question of what constitutes *privacy* is a highly complex issue. It is one depending strongly on cultural, social, and individual preferences.

Professor Rapoport notes, "Yet the need to look at the house as part of a larger system confirms that the house conveys little sense outside of its setting and context." (page 69.)

This book develops further the themes previously explored by both George Kubler, and Sigfried Giedion (among others) in examining a bit of the matrix of constant and changeable elements which must be part of any system of building or any life style.

It is a provocative book

This book raises a number of provocative issues. The following are a few of what seem the most important.

How does the grand design tradition differ from the vernacular tradition in approach to the design of human habitat?

What is a *necessity* in the determinants of house form?

Is architecture more important as a *social guide* or as a *spatial organization* system?

Are socio-cultural or physical-environmental forces the primary ones in the determination of house form?

Which is more basic to man: image (symbol)-making or tool-making?

Is the predominant reverence for site in primitive cultures a partial answer to our ecology crisis? "The Pueblo Indians beg forgiveness every time they fell a tree."

A question comes to mind: What is the order of events in vernacular house form development? This is not answered as well as it might have been.

It comes to mind also; why cannot we rate houses (or other building types as well) as power-consuming devices with high marks given to those lowest in energy input for construction and operation at given comfort levels?

Many questions that the reader will have are answered effectively and concisely in the generous annotations at the bottom of each page.

PRESTRESSED CONCRETE

TRANSLATES ORIGINAL DESIGN IDEAS INTO DRAMATIC REALITY!

Mass-produced to exacting requirements, these typical prestressed concrete shapes point the way toward quality, economy and an early completion date for your next structure.

DOUBLE TEE

Basic floor and roof panel member, span range to 60 feet. Also made as giant double tee in spans to 125 feet. Simplifies and speeds erection of single and multi-story structures. May be used exposed with or without special finishing. Excellent for long cantilevers. Creates dramatic effect used vertically as exterior wall panels.

SINGLE TEE

Used for floor and roof structural decks in the longer span ranges, to 125 feet. Normally 6, 8 and 10 feet in width, each unit provides large coverage. Popular for exposed ceilings. Service systems can be channeled between stems, providing easy access. Ends can be custom shaped to provide architectural treatment when cantilevered.

I GIRDER

Generally used as long span beam to support extremely heavy loads. Serves as principal girder in many beam and deck systems. Spans to 120 feet.

BOX GIRDER

Principal application is in bridges and as girder in heavily loaded structural framing systems. Void accommodates mechanical and electrical services. Ideal for industrial applications.

PILES AND COLUMNS

Square or octagonal piles in sizes beginning at 10" serve as foundation supports where poor bearing conditions are encountered. Precast columns, with or without haunches, are used as an integral part of the precast column-beam-deck concept which makes fast erection possible.

CHANNEL SLABS

A very rigid member with minimum deflection characteristics at maximum load conditions. Used where heavy floor and roof loads are encountered in short and medium span ranges.

INVERTED T BEAM AND LEDGER BEAM

These basic building beams reduce total structural depth since deck members can be supported on haunches. Mainly used with double tee, single tee and hollow core slabs for structural framing including the deck sections.

HOLLOW CORE SLABS

Major use is in office, commercial and apartment structures where flat ceilings are desired. Provides high insulation and low sound transmission. Voids may be used for mechanical and electrical systems. Shorter spans, to 40 feet. Also used as partitions and load-bearing walls.

WALL PANELS

...of every description are made in precast and precast prestressed concrete for partial and full story heights for curtain wall or load bearing use. An unlimited choice is available in plain, sculptured, textured, or exposed aggregate units of all shapes, sizes and colors. May include insulating material for improved thermal characteristics.

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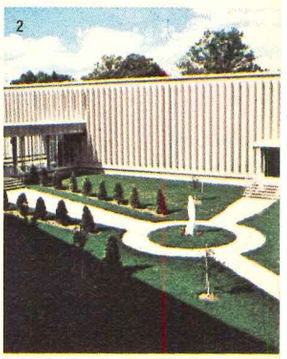
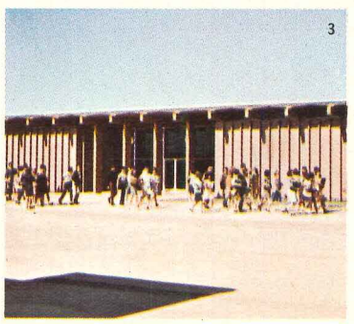
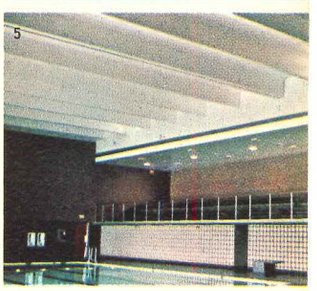
Post-tensioning is often used to connect precast prestressed concrete units. It can be combined with precast construction when continuous designs are desired. In segmental construction, precast members are post-tensioned together to further extend the already long-span capability of precast prestressed concrete.

1. DOUBLE TEE ROOF
2. DOUBLE TEE EXTERIOR WALL





3. SINGLE TEE ROOF
4. SINGLE TEE EXTERIOR WALL
5. SINGLE TEE EXPOSED CEILING



6. PRECAST WALL PANELS
7. PRECAST WALL PANELS AND COLUMNS

8. PRECAST PRESTRESSED GIRDER BRIDGE
9. TENDONS IN PLACE FOR POST-TENSIONED SLAB

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For more data, circle 35 on inquiry card

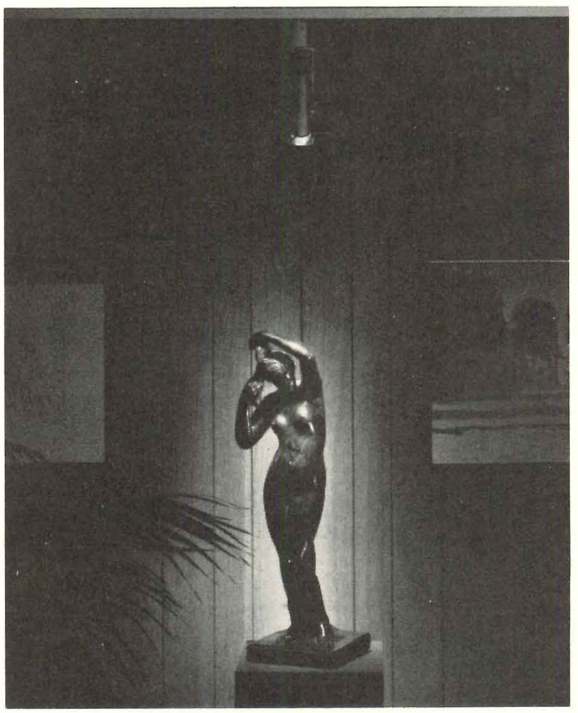
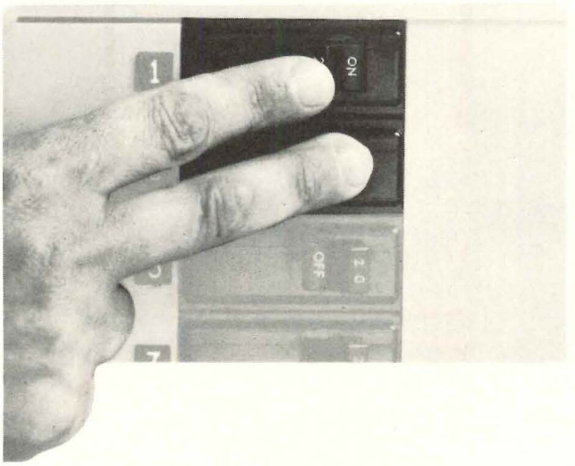


Illustration above shows one circuit of trac being used for dramatization of selected items.



the beauty of using two circuit lite-trac

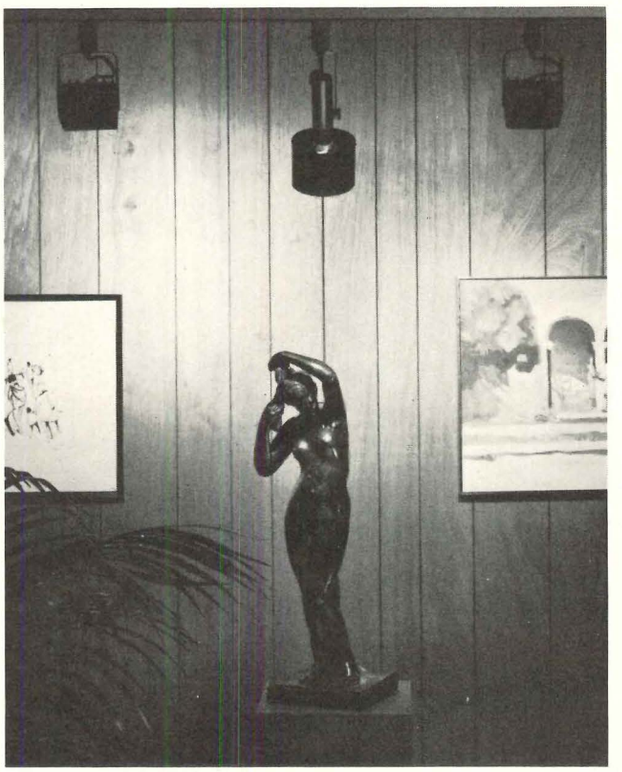


Illustration shows both circuits being utilized to light all displayed objects.

PHASE 3

Prescolite's PHASE 3 Lite-Trac is an adjustable lighting system with almost unlimited adaptability. Designed for use with standard 120/240 volt distribution, it offers both single and two circuit power sources in one, three wire trac. Either one or both circuits may be switched on. Lite-Trac may be surface mounted (horizontally or vertically), recessed, or pendant mounted. A wide range of Trac-Lites for use with the PHASE 3 Lite-Trac system is available - with wattages from 25 to 500. Spots, floods, wall washers, framing projectors supply flexibility of beam spreads and intensities.

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For more data, circle 36 on inquiry card

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Plexiglas skylights are designed not to leak and come to the builder preassembled and ready for fast installation in standard sizes up to 8 feet square.

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These light, strong, laminated wood chairs,
for office and home,
were selected by Industrial Design's 14th Annual Review.

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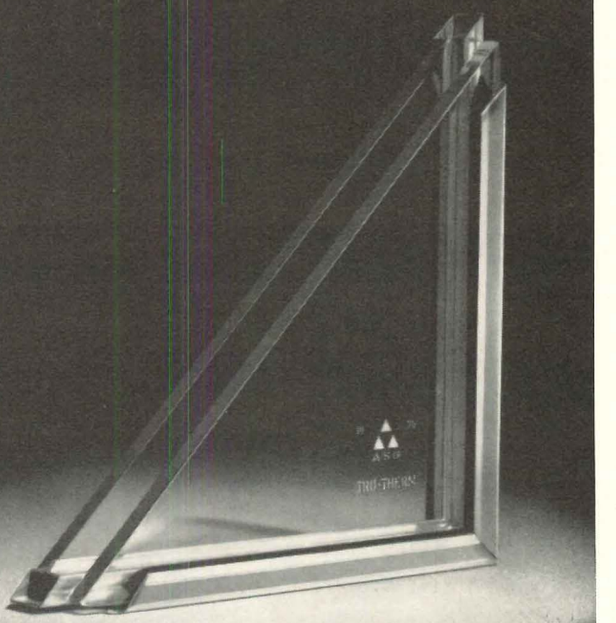
Knoll International operates in 31 countries.

In insulating glass, too... the difference is made by ASG. We call it Tru-Therm®



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2. A sealant that stays flexible permanently.
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3. The best lock-seam spacer.
To make Tru-Therm work even better, ASG delivers the best lock-seam spacer made to provide added strength and eliminate squeaks under high wind load. Its special shape locks the sealant permanently in place and keeps the interglazial area pure and dry. Joints are silver-soldered for maximum strength.

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Every model is color coded for easy temperature control.

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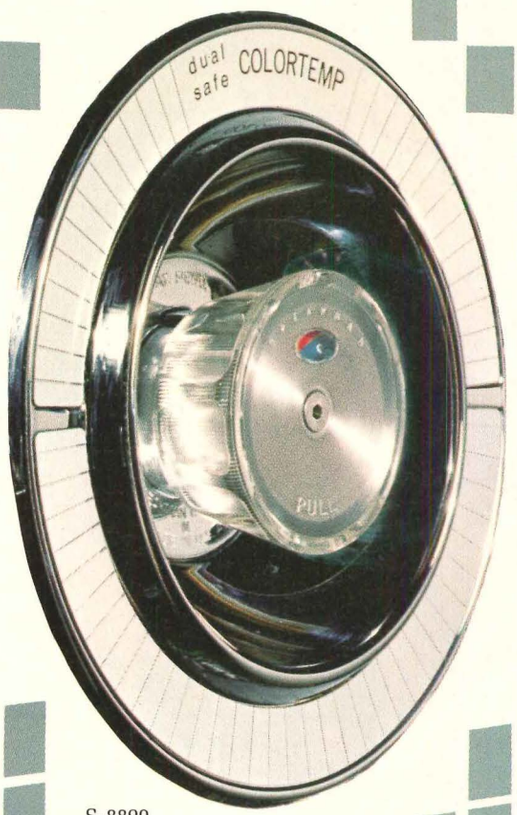

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Environmental Planning Associates, 333 Fayetteville St., Suite 904, Raleigh, N.C. 27601

Goetz, Hallenbeck & Goetze, Inc., 5758 Broadway, Oakland, Calif. 94618

Leonard Kowadlo, P.E., Mechanical Engineer, 182 Valley Rd., River Edge, N.J.

Lutes & Amundson, A.I.A., 200 South Mill St., P.O. Box F, Springfield, Ore. 97477

Frank Orr, A.I.A., 1908 Glen Echo Rd., Nashville, Tenn. 37215

Ilmar Reinvald, Architect, 206 Rice Bldg., Troy, N.Y. 12180

NEW INTERIORS DEPARTMENTS

Frost Interior Design, Inc., A. Corwin Frost, President, 30 E. 42nd St., New York, N.Y. 10017

Golden·Thornton·LaBau·Inc., Department of Interior Design under Clifford Mitchell, 1224 Farmington Ave., West Hartford, Conn. 06107

Interiors Incorporated, an affiliate of C. F. Murphy Associates, **John A. Dziuba, President,** 224 S. Michigan Ave., Chicago, Ill. 60604

ZVS Associates, Architectural Space Planning Division under Moto Shimano, 15213 Burbank Blvd., Van Nuys, Cal. 91401

NEW ADDRESSES

Durham Anderson Freed Co., Architects, 1100 Eastlake East, Seattle, Wash. 98109

Johnson-Graham & Associates, 644 Grand Ave., Billings, Mont. 59102

Skidmore, Owings & Merrill, Georgia Pacific Bldg., Suite 1600, 900 S. W. Fifth Ave., Portland, Oregon 97204

Weiner Gran & Associates, Architects-Planners, One Main Street, Brooklyn, N.Y. 11201

MERGERS

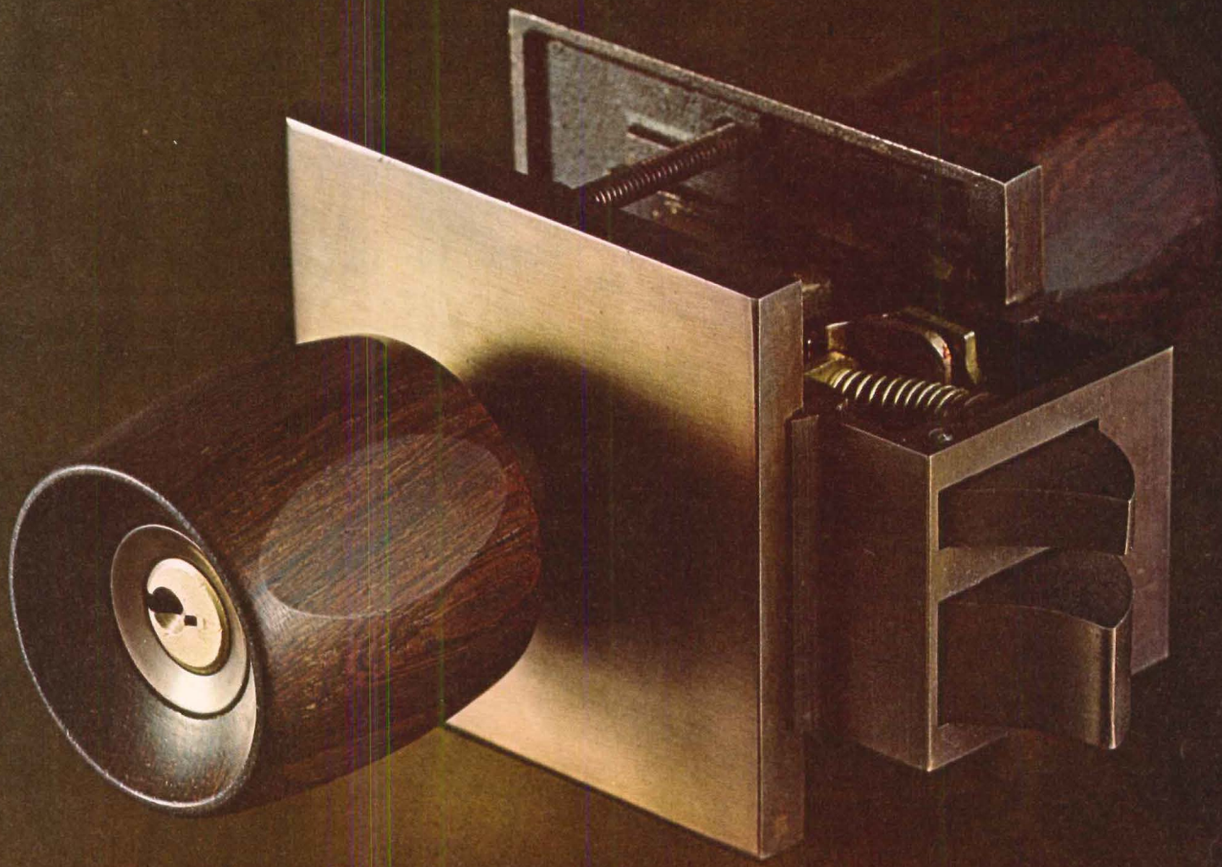
Arthur A. Frimet, A.I.A. with David A. Novick, A.I.A., the new firm is **Frimet-Novick Associates,** 208 S. 28th Ave., Hollywood, Fla.

Ingham Kaffka Marcu with Schmertz and Erwin Assoc., the new firm is **The IKM Partnership,** 1210 Empire Bldg., Pittsburgh, Pa.

Pisani and Falco Associates with John LoPinto, the new firm is **LoPinto, Pisani, Falco, Architects,** 1295 Northern Blvd. Manhasset, N.Y.

Ronald L. Moline, A.I.A. with Scott L. Seaton, A.I.A., the new firm is **Moline-Seaton A.I.A., Architects-Planners,** Suite 412-19, 189 East Court St., Kankakee, Ill. 60901

James Richard Nelson and Murrey and Harris Associates, Architects, the new firm is **The Architects Studio, Inc.,** Box 157, Montchanin, Del. 19710



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Solarcool Bronze Glass is a new light- and heat-reflective glass from PPG. It can bring a unique beauty and warm-toned reflectivity to any building facade.

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Solarcool Bronze Glass is the only single-glazed, annealed, light- and heat-reflective product available today. It can also be heat strengthened and tempered. Only PPG has it.

Solarcool Bronze Glass is the newest addition to PPG's family of Environmental Glasses. Look into it. Or see us about one of the others, early in the design stages. There's a PPG Environmental Glass that can meet any esthetic consideration, solve any environmental problem, and provide a solid return on investment in your next building. Write PPG INDUSTRIES, Inc., One Gateway Center, Pittsburgh, Pennsylvania 15222.

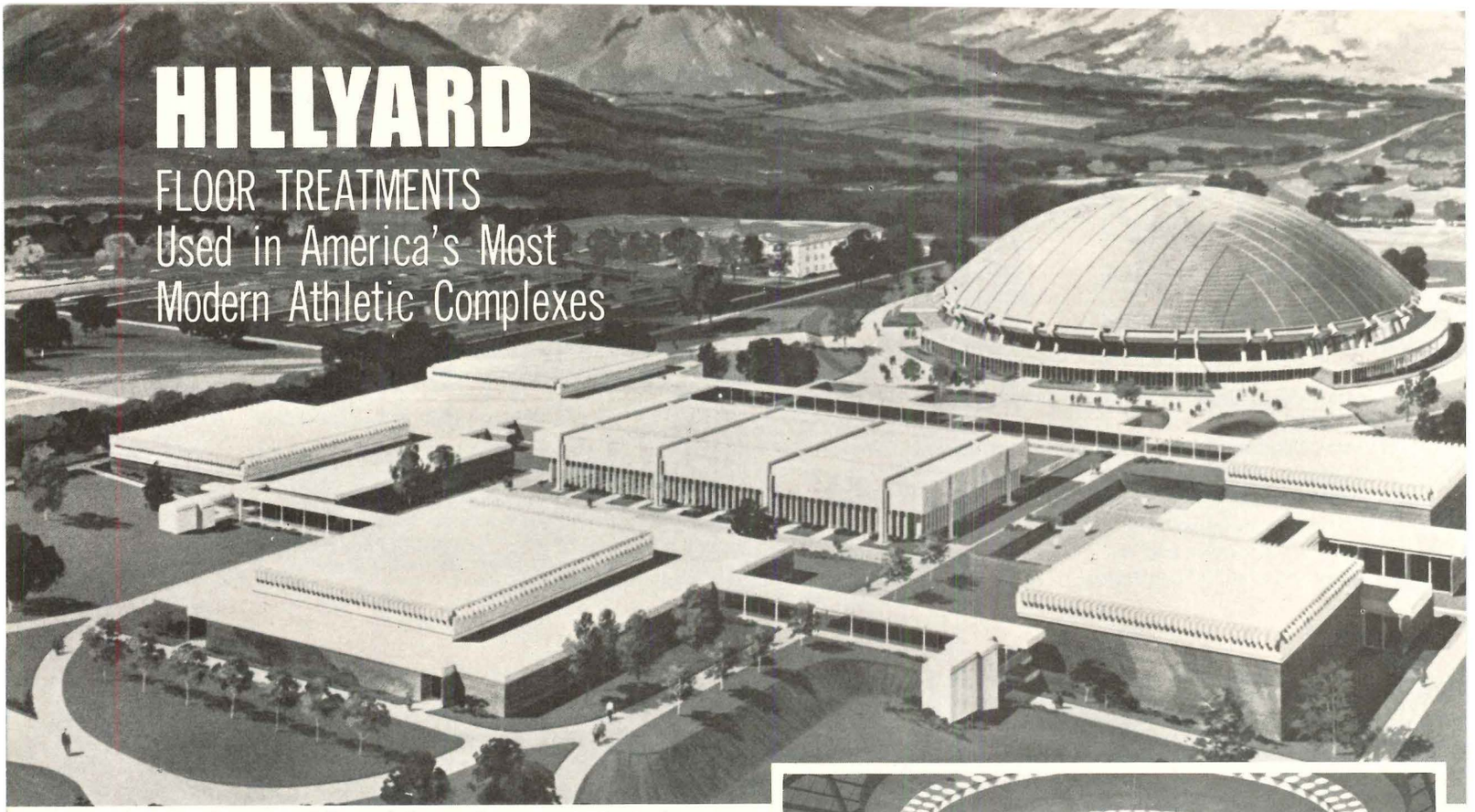
PPG is Chemicals, Minerals, Fiber Glass, Paints and Glass. So far.

For more data, circle 46 on inquiry card

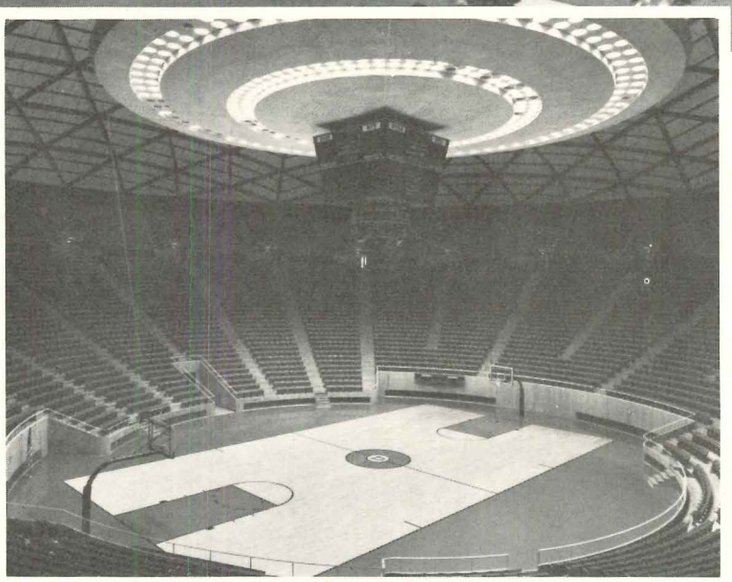
Below: The Southern Yacht Club on Lake Pontchartrain, in New Orleans. Curtis & Davis, Architects, specified *Solarcool Bronze* Glass on a test basis two years ago. The results: an open view of the lake; greater occupant comfort; a beautiful, reflective facade.

HILLYARD

FLOOR TREATMENTS Used in America's Most Modern Athletic Complexes



New Sports and Special Events Center and Physical Education Complex at the University of Utah, Salt Lake City. Architect: Robert A. Fowler, Associated Architects, Salt Lake City.



TROPHY® Gym Seal and Finish has again contributed to the beauty and utility of one of the newest and finest athletic plants in the nation.

Built at a cost of $10 million, this complex at the University of Utah consists of five individual buildings connected by hallways at the lower underground level. The Special Events Center, a circular facility with 15,000 permanent chair seats, will serve for athletic events, lectures, entertainment, conferences and commencements.

Other facilities include two exhibition areas, offices, classrooms, a three-pool natatorium, and men's and women's physical education departments. In addition to the basketball floor in the Special Events Center, the complex has five other multiple-use gym floors and six handball courts. All are finished with Trophy Seal and Trophy Gym Finish.

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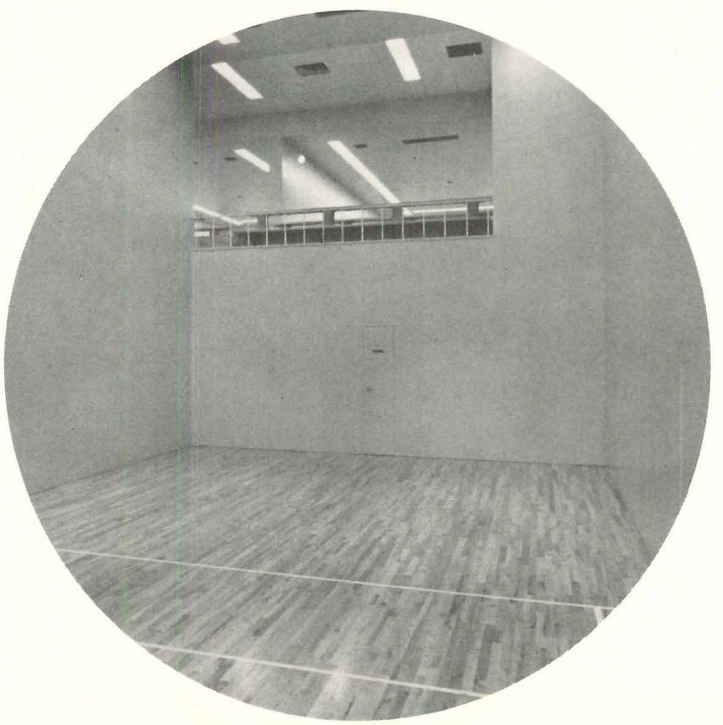

HILLYARD
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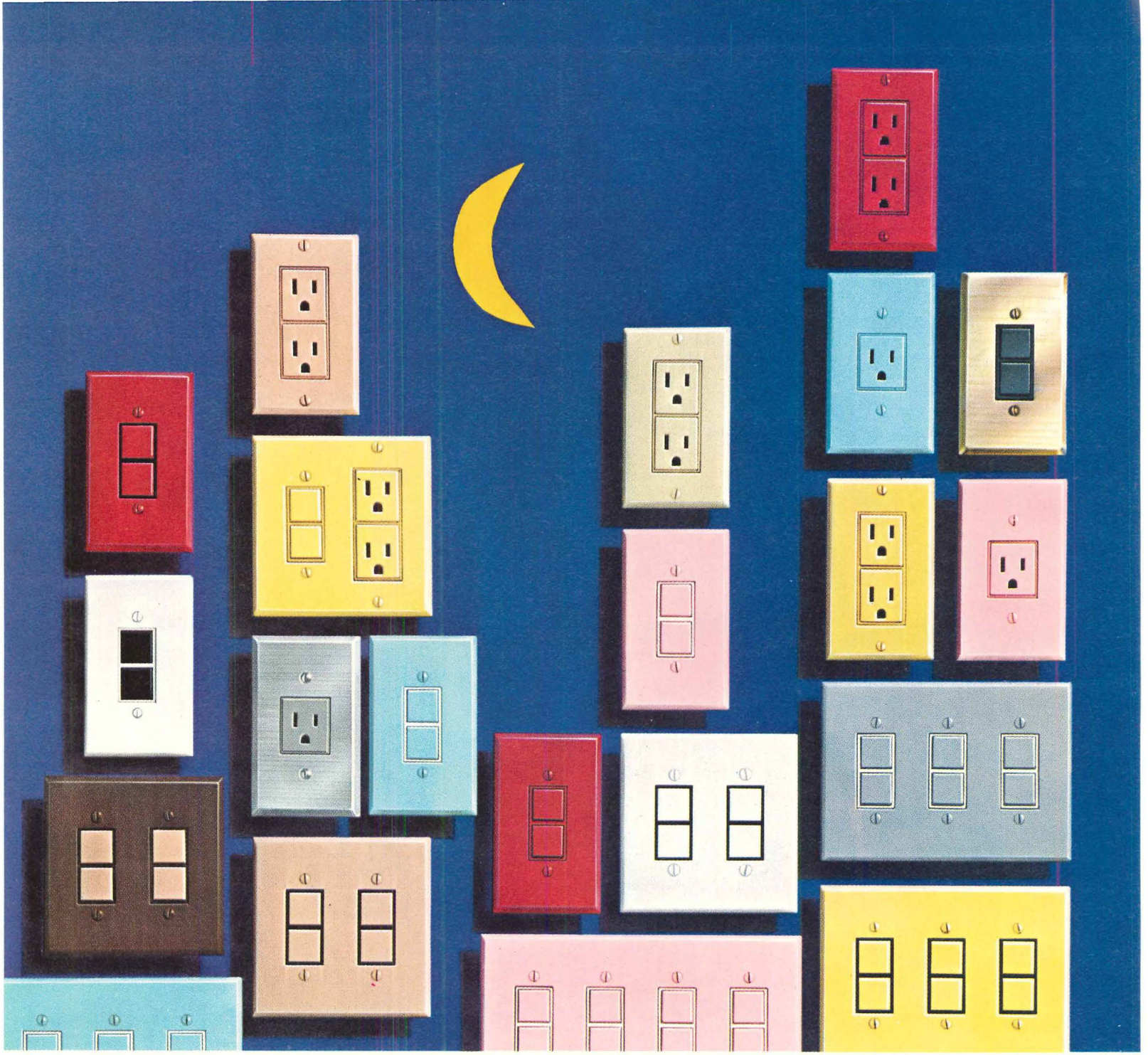

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For more data, circle 48 on inquiry card

A chair that works, for people who work

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

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

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

It helps you work better.

It's good looking, very comfortable, well priced, and has some terrific engineering features that no other chair has.

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

This helps you work better.

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

This also helps you work better.

And, a unique trim channel on the outer shell protects both chair and desk from getting all nicked up, and saves you from aggravation.

This has to help you work better.

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

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

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Steelcase

Furniture That Works
For People Who Work.

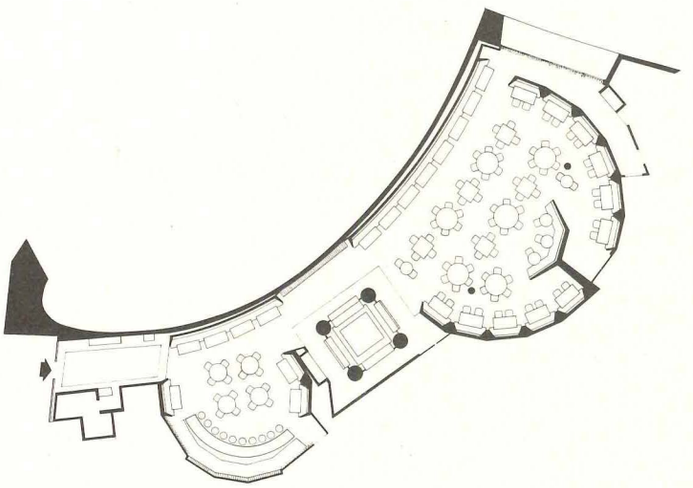
For more data, circle 49 on inquiry card

Record Interiors of 1971

In the pages that follow, RECORD is pleased to present the twelve winning submissions in its second annual Interior Design Awards Program. These twelve, all designed by architects, are the product of a rigorous selection based on programmatic need. As a group they are diverse in function, budget and location. Some are spare and tightly disciplined. Others, like Warren Platner's restaurant for TWA (photo below) are more fanciful and evocative. In spite of these differences, all twelve are united by a common excellence. Each begins with clearly defined functional and esthetic goals and proceeds by a series of ordered assumptions toward the realization of these goals. The editors would like to express their thanks to those whose excellent submissions are not published here but who, nonetheless, made our choice so difficult. Several of these runners-up will be published in the months to come. Submissions for next year's program (winners to be selected in the fall) are welcome throughout the year.—*Barclay F. Gordon*

Alexandre Georges photos of Le Monde Restaurant (see overleaf)

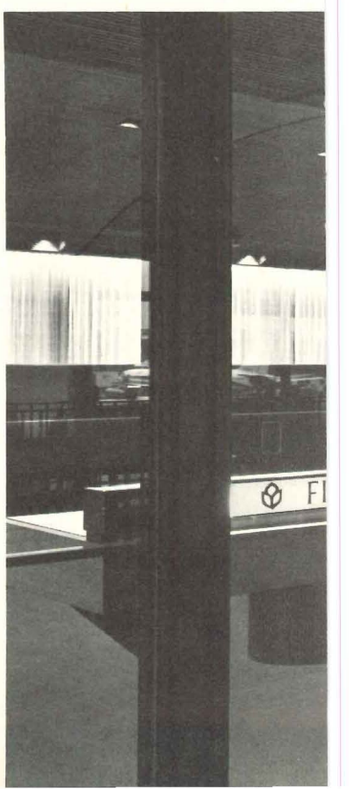
Alexandre Georges photos



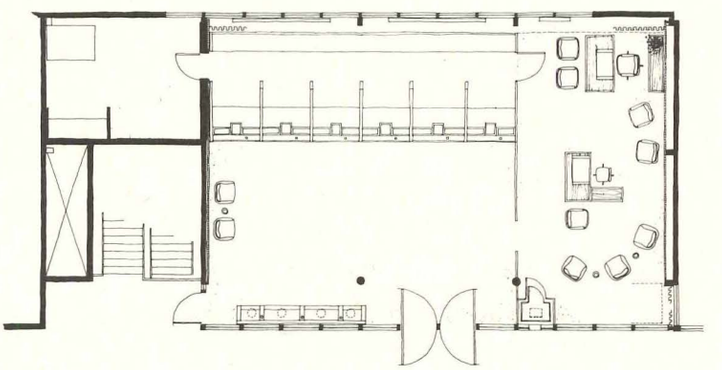
"LE MONDE" RESTAURANT
TWA TERMINAL, JOHN F. KENNEDY AIRPORT
NEW YORK CITY
WARREN PLATNER, ARCHITECT
WITH KEVIN ROCHE AND JOHN DINKELOO

Fine food and drink are the things here and the visual character is made of these elements, their preparation, and the furnishings and fittings necessary to properly enjoy them.

The vocabulary of materials is simple: clear glass and mirrors, polished stainless steel, natural leather, and myriad custom-designed lighting fixtures set in a plaster ceiling. Carpets are dark red. Deeply-absorbing wool tapestries, designed by the architect in collaboration with Sheila Hicks, flank the back bar (photo, right). The space and its forms flow together into near fantasy compounded of softly fractured images and reflected detail (photo, preceding page). TWA wanted a warm, rich, intimate ambiance for dining and drinking. They got it with little more than the necessary functional elements splendidly conceived and elegantly detailed. Mechanical engineers: *Jaros, Baum & Bolles;* contractor: *Hennigan Construction Co.*



Lawrence S. Williams, Inc. photos



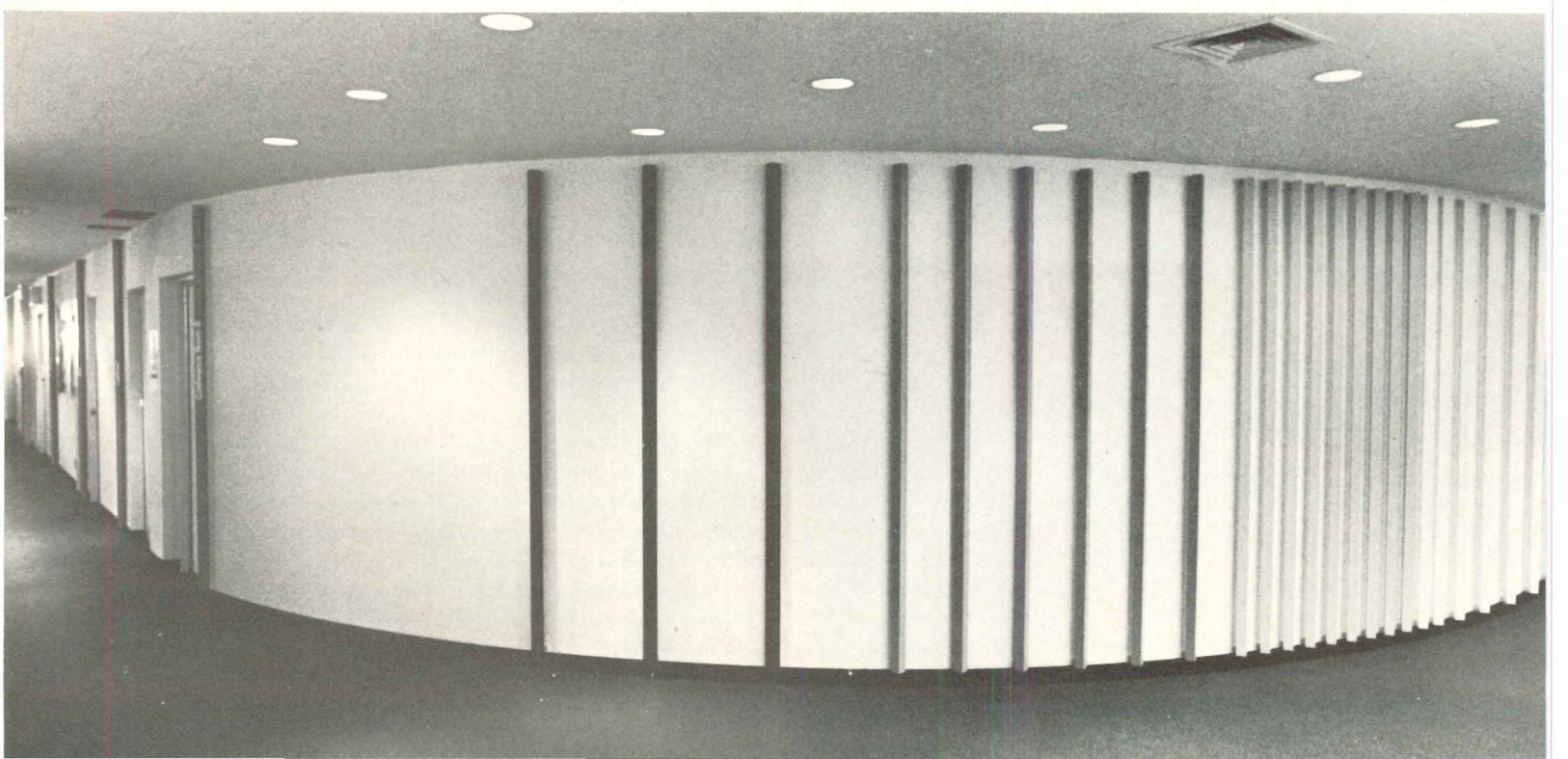
BRANCH OF THE FIDELITY BANK PHILADELPHIA INTERNATIONAL AIRPORT VINCENT KLING, ARCHITECT

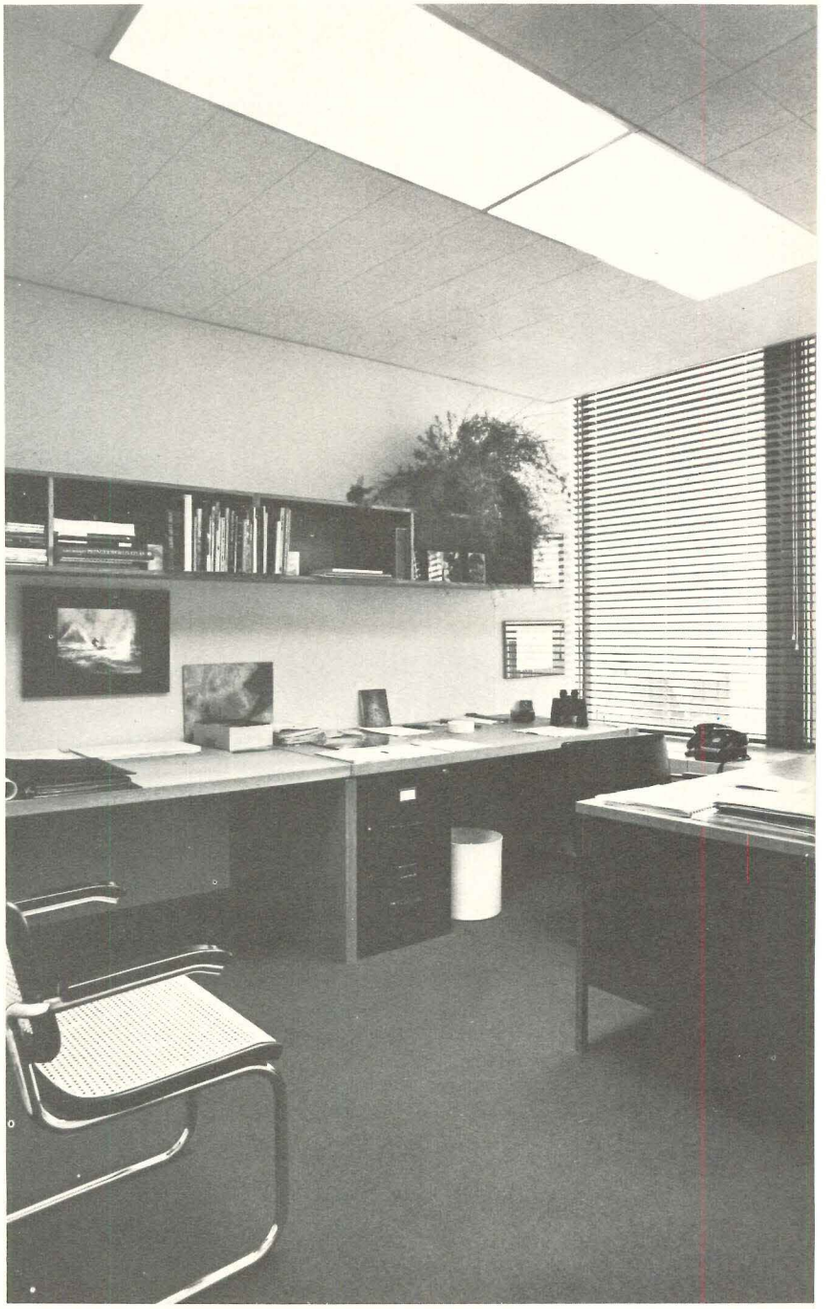
This branch office of a Philadelphia bank is located in a passenger waiting area of the city's international airport. Working with few materials but using them splendidly, the designers have created a tranquil pocket amid otherwise busy surroundings.

The gently vaulted ceiling of oiled cherrywood strips hangs effortlessly over the space and unifies it. Banking counters and half-height partitions in the same material are detailed with exemplary care. End walls are covered in champagne-colored vinyl and the carpeting is Moroccan red.

Shunning supergraphics or other modish expression, the design has a restraint and timeless excellence that does credit to both the architect and his client. Mechanical and electrical engineer: *A. E. D'Ambly;* contractor: *Interior Milling Co.*

Norman McGrath photos

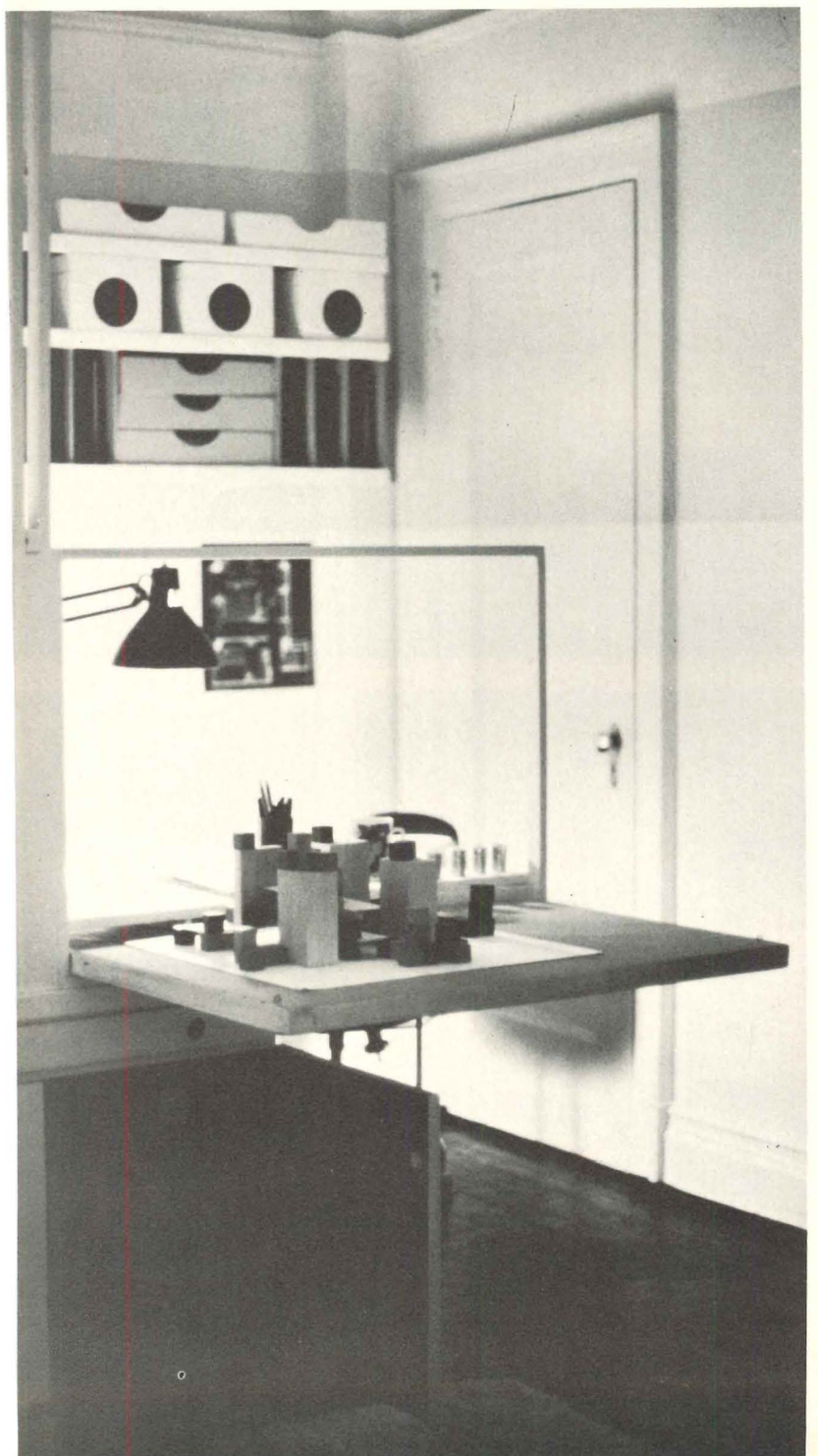


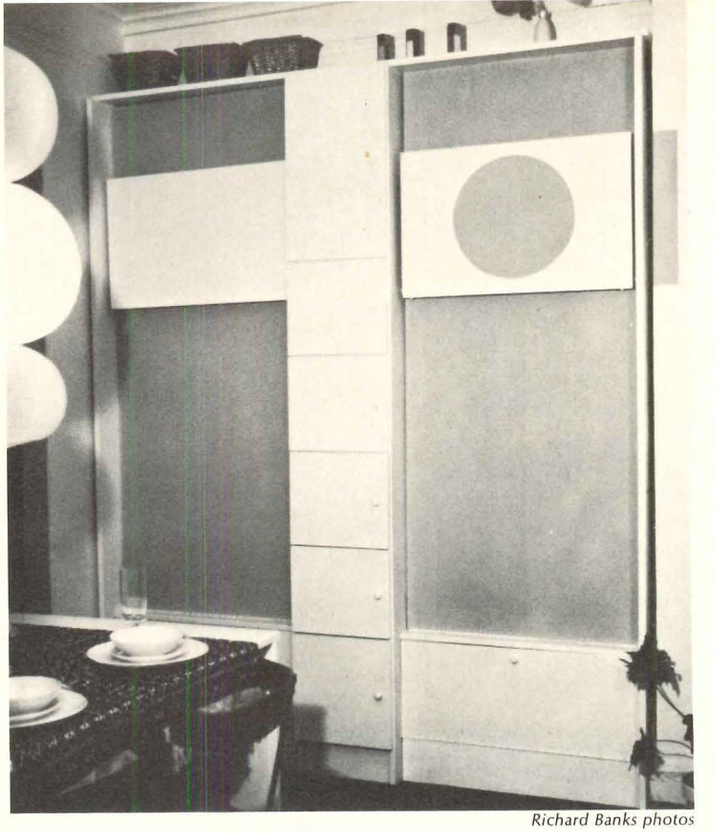


NEW YORK STATE
URBAN DEVELOPMENT CORPORATION
NEW YORK CITY
SMOTRICH & PLATT, ARCHITECTS
RICHARD SARAVAY, ASSOCIATE

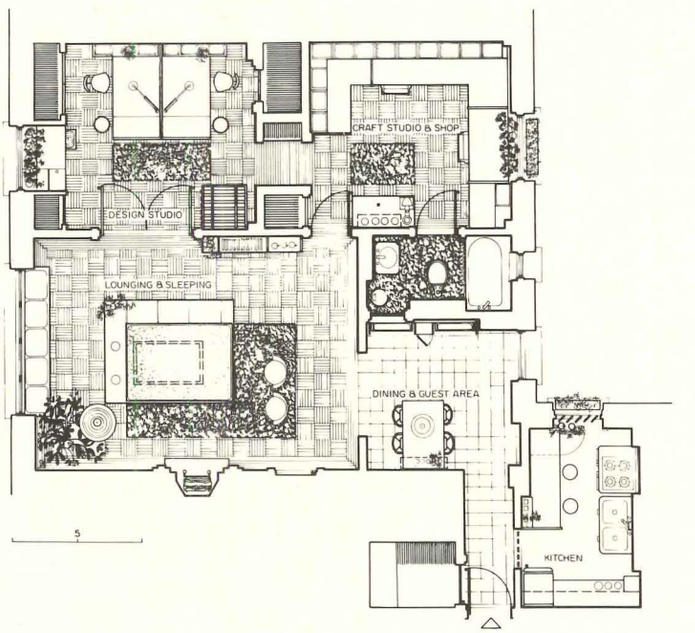
U.D.C. president Edward Logue's mandate to his architects was "show them we mean business." This is just what the architects did in designing the interiors for the agency's new offices in midtown Manhattan. Accepting the "building standard" with few substitutions, and working within a strictly limited budget, the designers created a series of working spaces both handsome and utilitarian.

The plan is arranged to create areas between departments where staff members from various disciplines can interact. Long corridors terminate in openings to the outside wall and interior office partitions are fitted with clerestories to make the best use of light borrowed from the exterior. A general spirit of professional activity blankets the spaces which flow together in unexpected but convincing ways. Graphics consultants: *Chermayeff & Geismar;* lighting consultants: *Wald & Zigas;* acoustic consultants: *Bolt, Beranek & Newman;* audio-visual consultant: *Jerome Menell Co.;* contractor: *Data Construction Corp.*





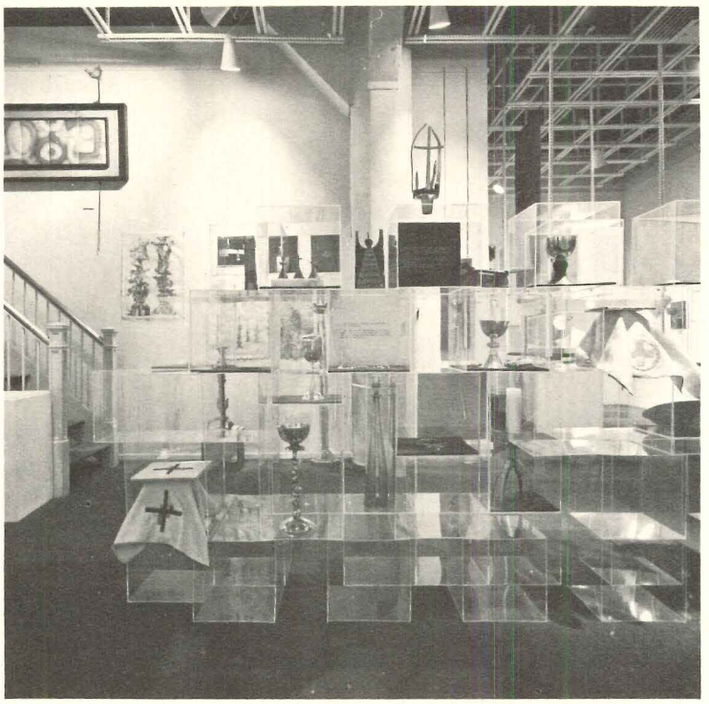
Richard Banks photos



ARCHITECT'S OWN APARTMENT
NEW YORK CITY
RICHARD BANKS ARCHITECT

Richard Banks and his wife Laurene began with an ordinary two-bedroom Manhattan apartment in a generally low state of upkeep. Since both are designers and do much of their work at home, the space allocation was bound to be unusual. Since both describe themselves as "messy workers," the scheme had to incorporate a place for everything.

The bedrooms were turned into studio and shop space respectively and Banks designed and built a combination sofa-bed/bookcase/storage unit that serves as the focus of the living room. The foyer contains two fold-away beds (photo, above) and a dining table also designed by the architect. Color is used throughout in an uninhibited way—sometimes as a communicative device but more often as a purely decorative element. The detailing of furniture and storage units is especially inventive as most of the pieces are demountable and many serve several purposes simultaneously.

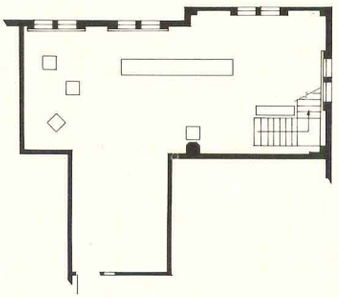


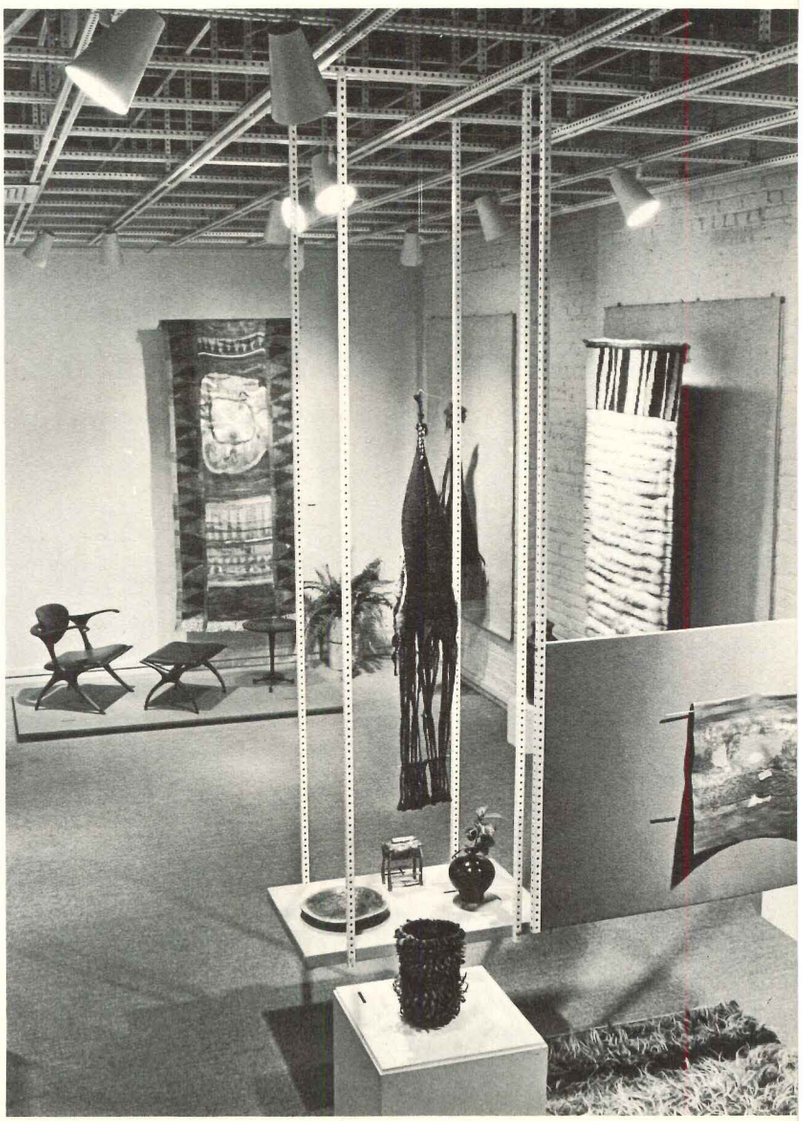
Rondal Partridge photos

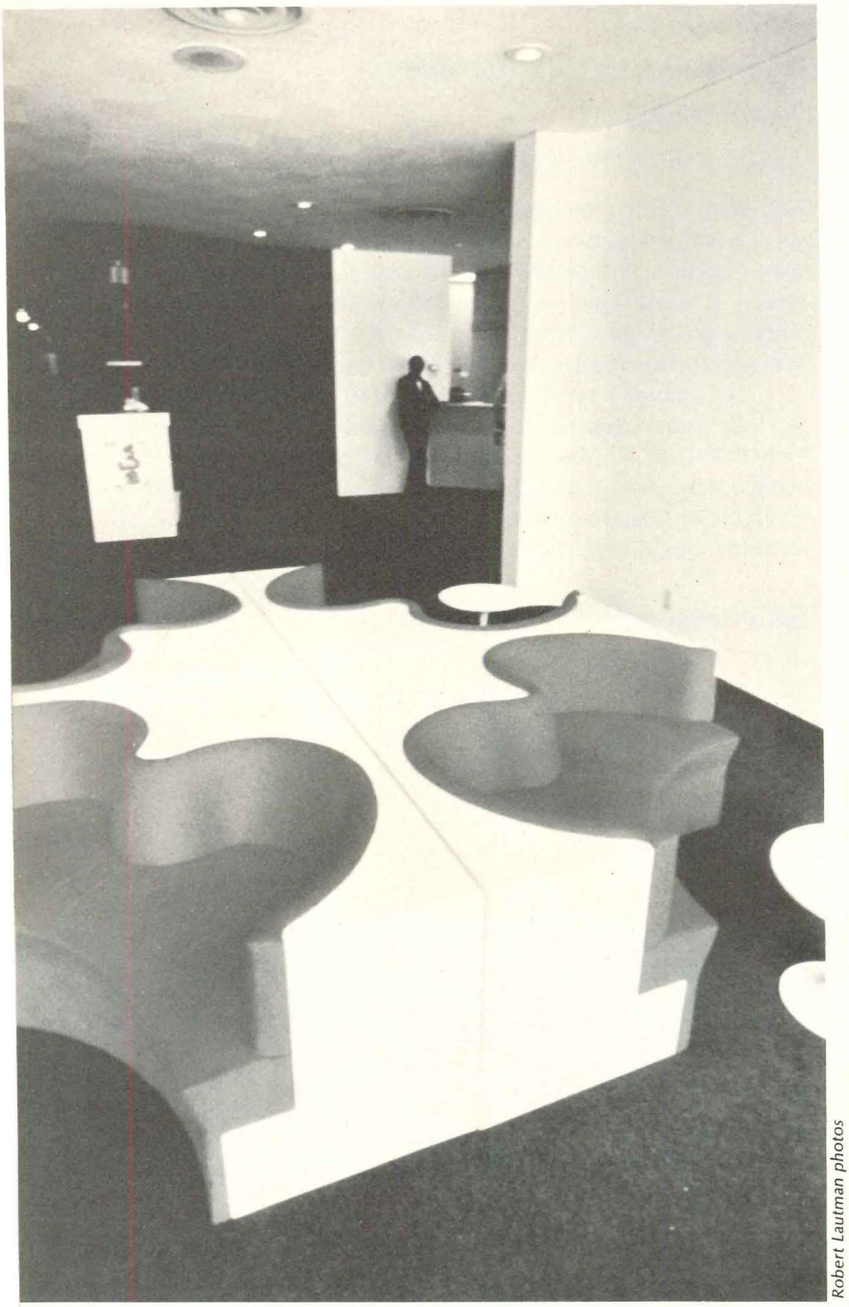
MUSEUM WEST
SAN FRANCISCO, CALIFORNIA
JAMES LEEFE OF
LEEFE & EHRENKRANTZ, ARCHITECTS

This small space, a temporary West Coast annex for the American Craftsman's Council, defers gracefully to the objects it displays except in the plane overhead where a three-dimensional-steel-grid asserts itself vigorously. The museum's only powerful architectural element, this grid provides flexible, inexpensive support for hanging displays with minimum visual interference.

The museum's small scale and simplicity of plan combine to facilitate easy, loosely-directed circulation and eliminate the "labyrinth-itis" so often experienced by visitors to larger museums. Walls are exposed brick, painted white and carpeting is a soft brown sisal. Mechanical engineer: *G. A. Gendler;* electrical engineer: *Stanley Anderson;* contractor: *Victor McKinnon.*



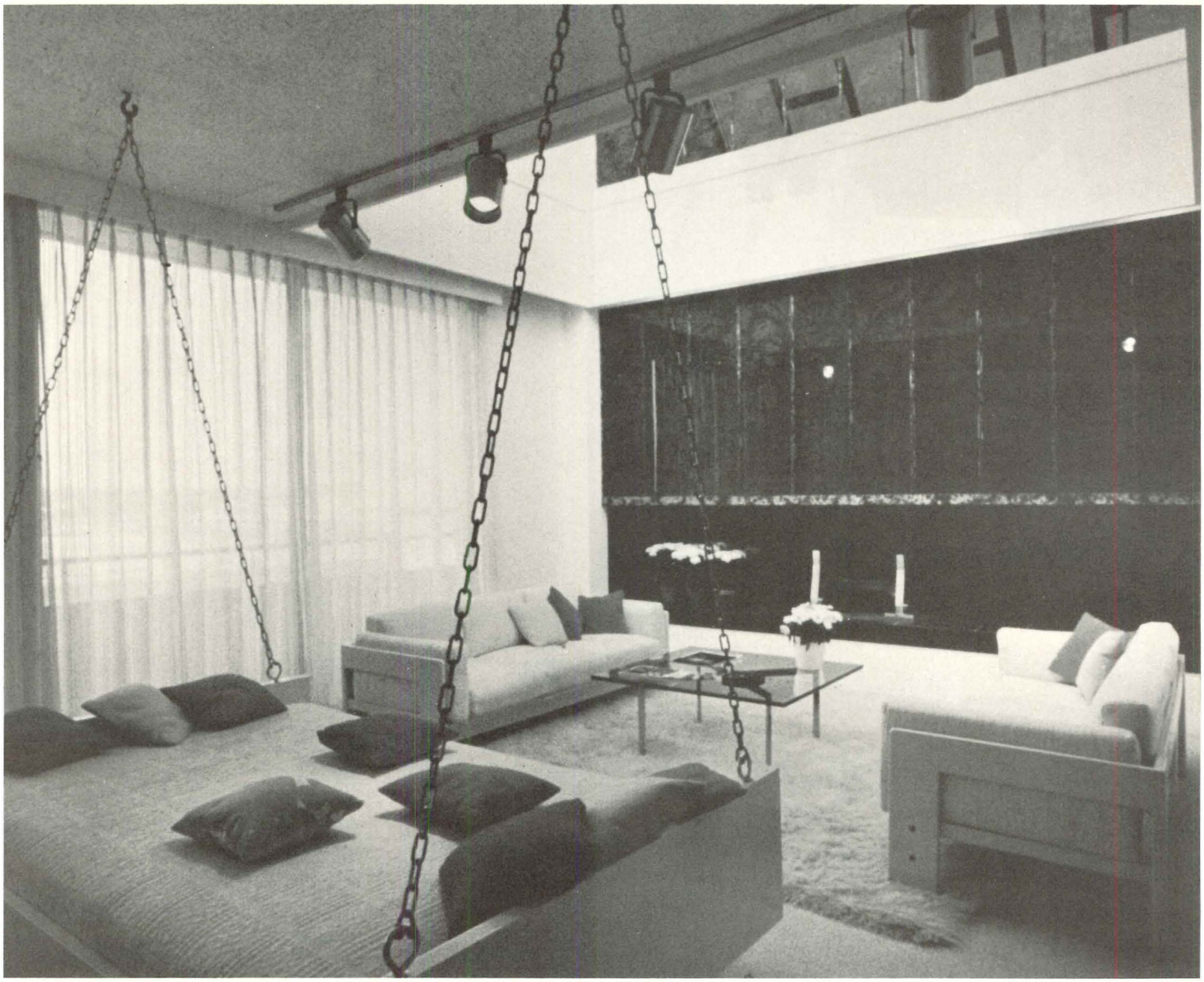


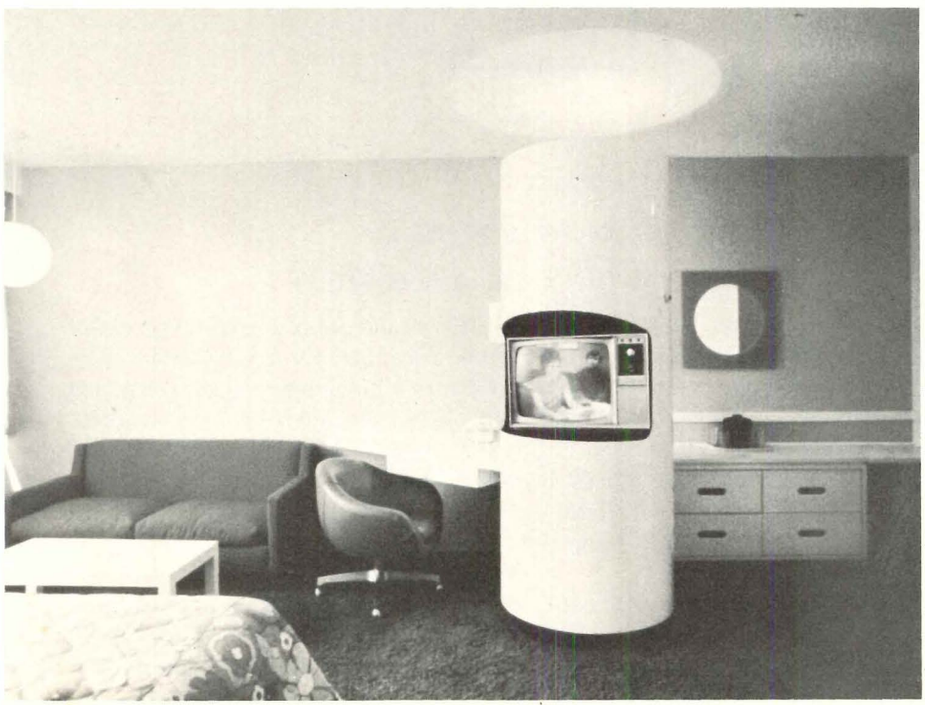


Robert Lautman photos

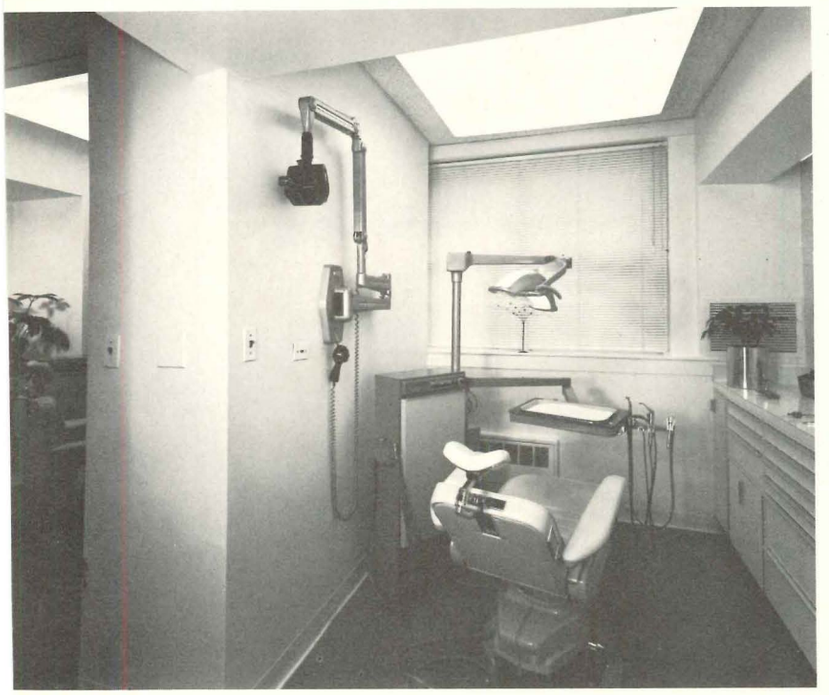
KING OF THE ROAD MOTOR INN
NASHVILLE, TENNESSEE
HUGH NEWELL JACOBSEN, ARCHITECT

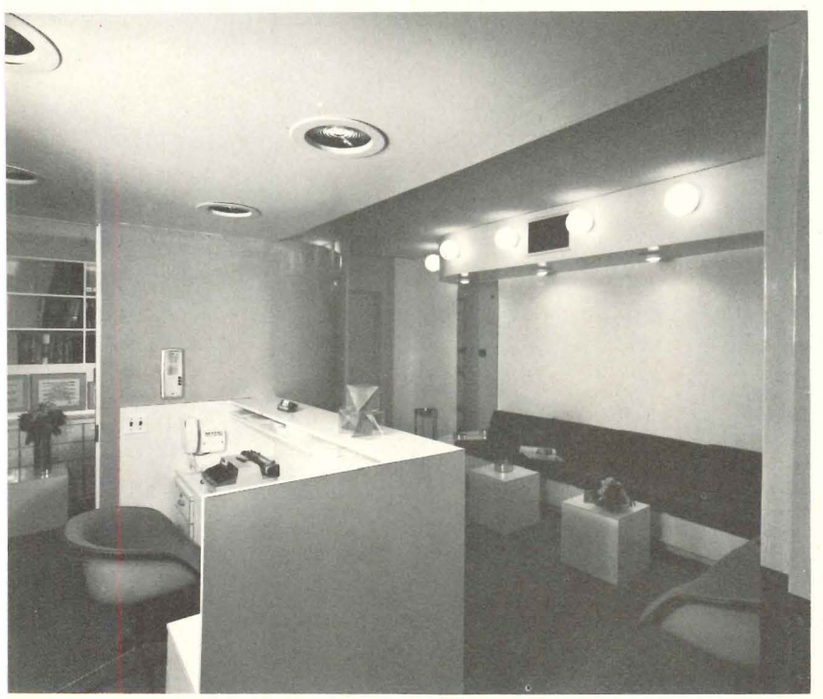
Belonging to a building type notorious for its crass commercialism, this motor inn was rescued from that unhappy fate by a sensitive design hand. No blizzard of neon greets the visitor here; nor is he delivered into a plastic-palmed Polynesia for dinner. Instead, the visitor passes through a sequence of elegant but tasteful spaces, vivid in color, but detailed with restraint. The red, blue and white lobby space, left, and the dining room, lower right, set the tone. In the private rooms and the suite, the theme is carried through in the same cheerful spirit. The tall cylinder opposite the bed contains TV, lighting and speakers while providing support for a specially-designed writing table. Furnishings, some designed by the architect, are selected with care and do much to enrich these spaces. Architects for the structure: Robinson Neil Bass & Associates.

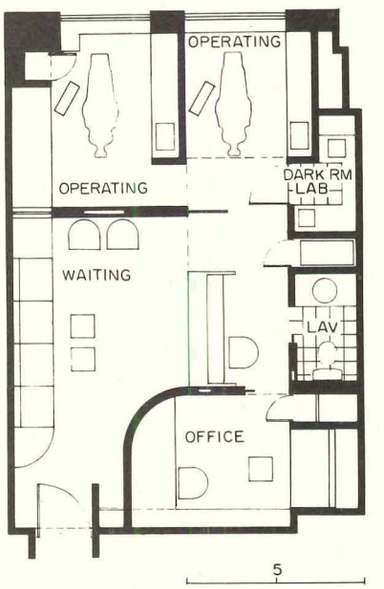




James Brett photos





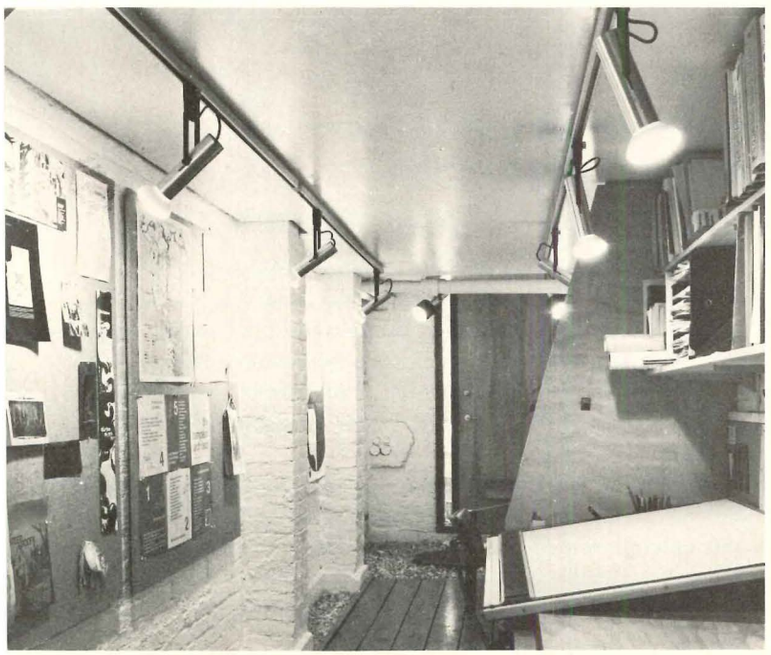


DENTAL OFFICE
BROOKLYN, NEW YORK
SMITH & MUNTER, ARCHITECTS

Located in an apartment house, this lively dental office makes maximum use of minimum space. Services are collected along one wet wall and, in accordance with current practice, operating rooms are screened from the waiting room by a sliding door. The nurse's station, designed by the architect, is centrally located for visual control. Because many of the patients are youngsters, the architects have selected materials that are durable and easily maintained—vinyl for wall coverings and plastic laminate for counters.

The sparkling overhead lighting and the warm, ingratiating color scheme invest this windowless waiting room with a special cheerfulness that acts to ease patients' anxieties. Mechanical engineer: *Seymour Berkowitz;* contractor: *Sam Amato.*

John Whitehall photos

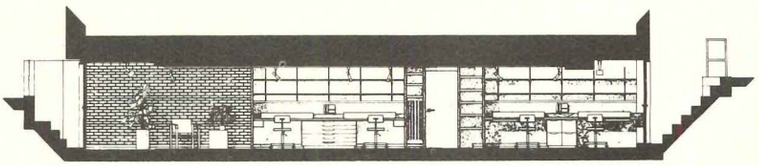


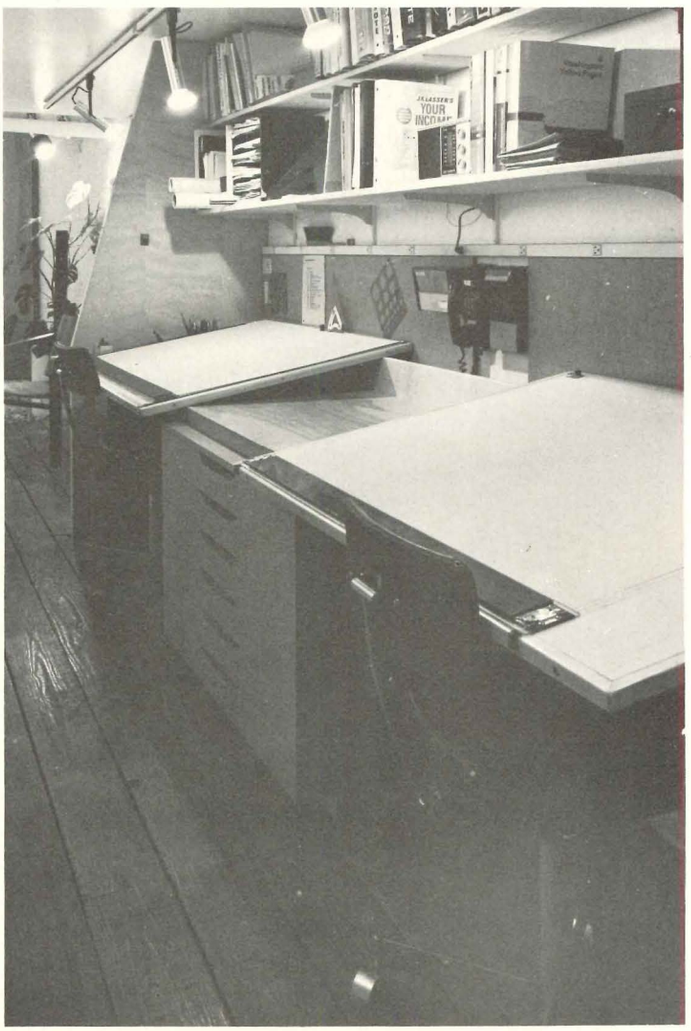
ARCHITECT'S OWN OFFICE
THE DESIGN COLLABORATIVE, ARCHITECTS
BALTIMORE, MARYLAND

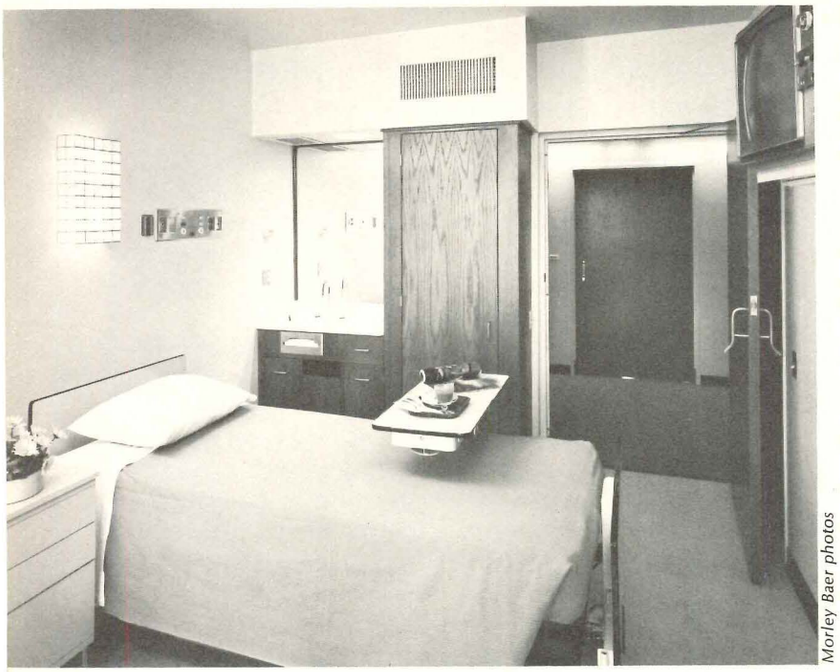
Pursuing a search for inexpensive space, three architects who are opening their own practice found an unused service corridor in a hundred-year-old Baltimore brownstone. Six-and-one-half-feet-wide and seven steps below sidewalk level, awkwardly proportioned and badly deteriorated, with little light and no heat, the space seemed to have nothing much to recommend it.

But from this bleak beginning, the architects fashioned an exceptionally pleasant work space. They removed the old plaster and painted the exposed brick white. They installed a new plaster board ceiling and new doors and sidelights front and rear. They laid a new floor of 1 by 6 pine planks using chipped stone at the entry and as infill between the pilasters. Drafting positions were built-in along one wall and separated with light wood partitions. Lighting tracks were mounted overhead to serve both the drafting areas and the display boards behind.

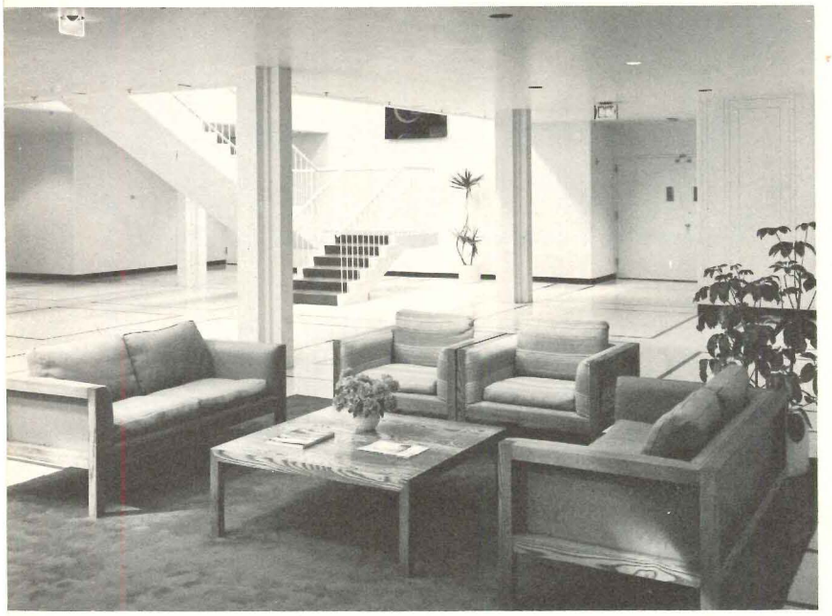
The final result is a very handsome small office. But more than that, it is an office imaginatively redeemed on a rock bottom budget from the city's growing inventory of throwaway space. Contractor: *Valley Construction Co.*

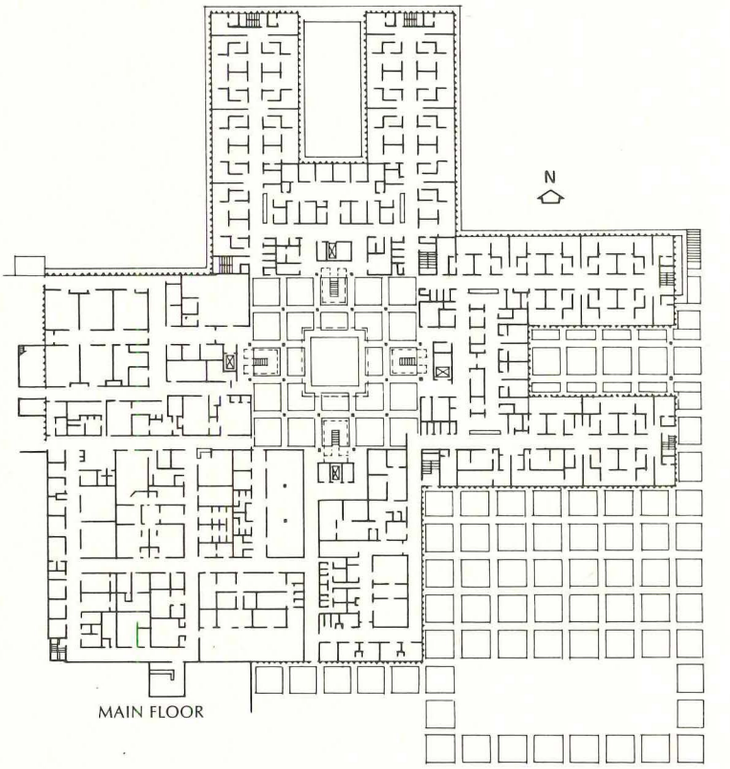






Morley Baer photos

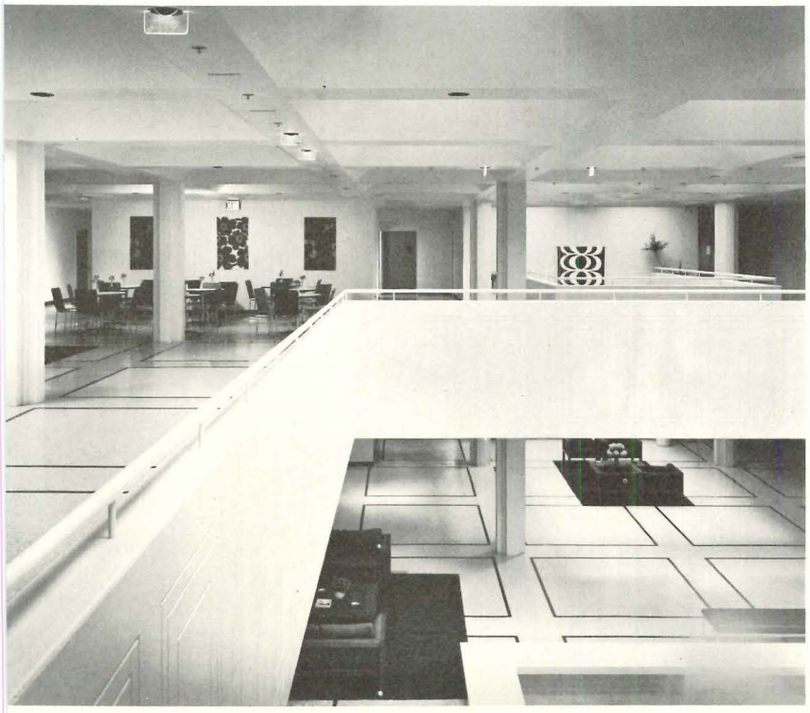


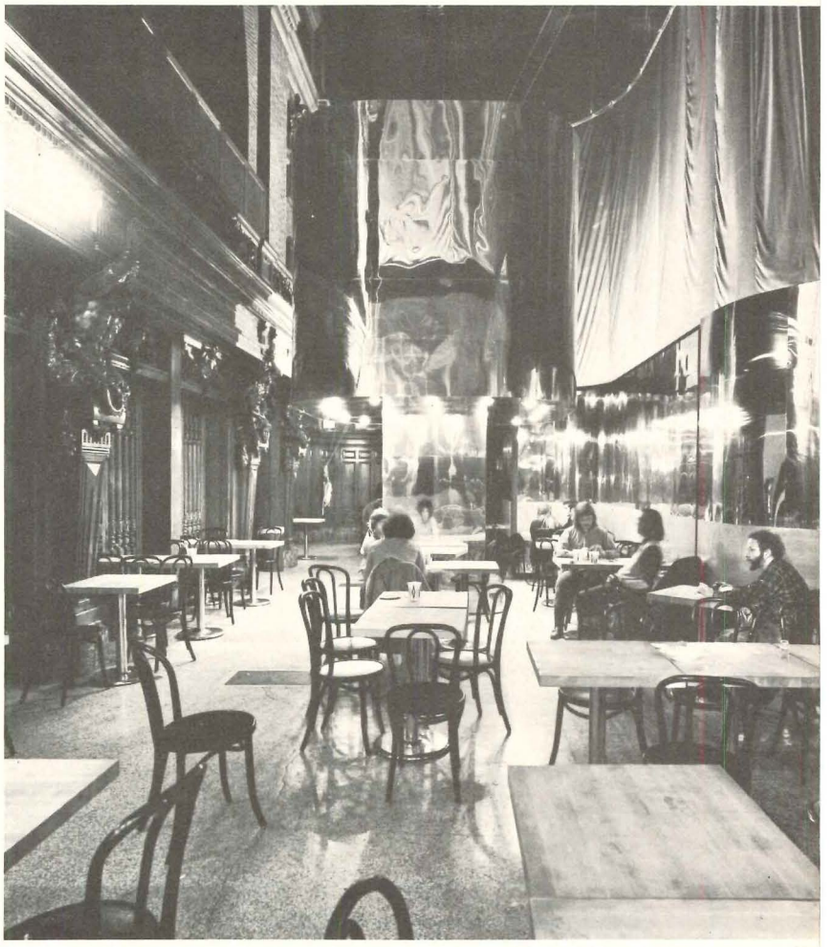


VALLEY GENERAL HOSPITAL
RENTON, WASHINGTON
EDWARD DURELL STONE, ARCHITECT

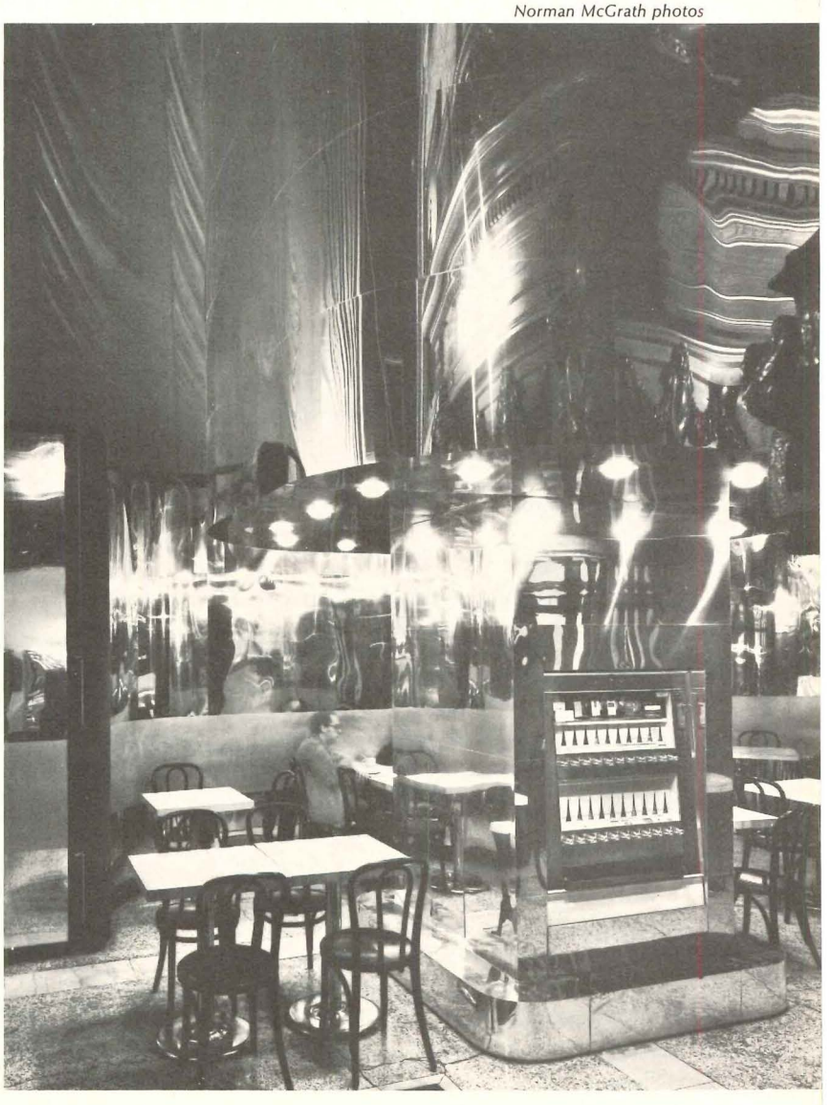
A visitor seated in one of these public spaces and facing an interior pool-cum-fountain recognizes a visual quality quite unexpected in a fully-equipped, modern hospital. Bold, brightly colored tapestries relieve the pristine whiteness of the walls and comfortable furnishings do much to ameliorate the hospital impact. Cafeteria, left, and patient rooms are treated with the same clarity and concern.

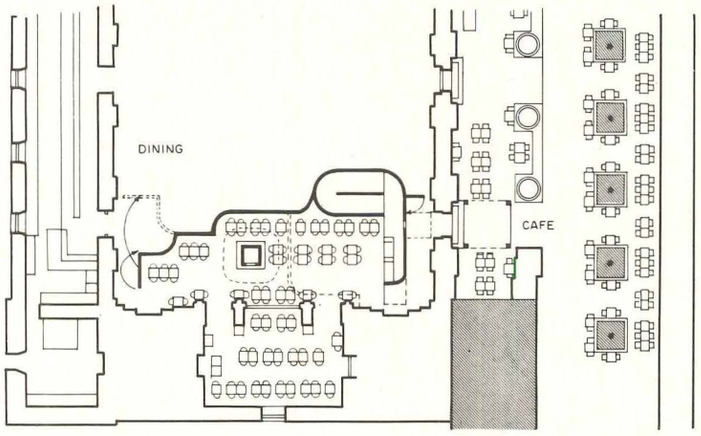
The result is an environment that refreshes visitors and treats patients and their families with an essential dignity not usually encountered in medical institutions of this size. Consulting engineers: *Buonaccorsi & Assoc.;* structural engineers: *Skilling, Helle, Christiansen & Roberston;* hospital consultant: *William E. Murray;* contractor: *Baugh Construction Co.*





Norman McGrath photos



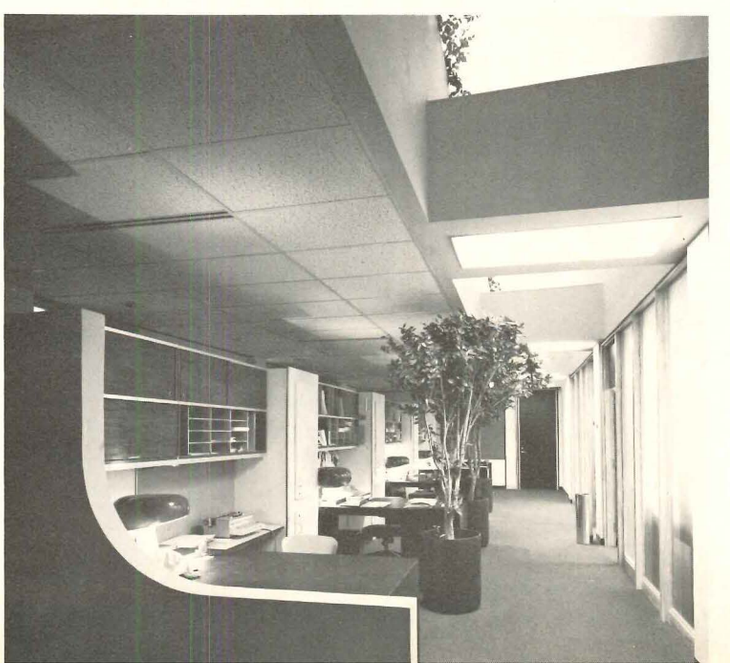


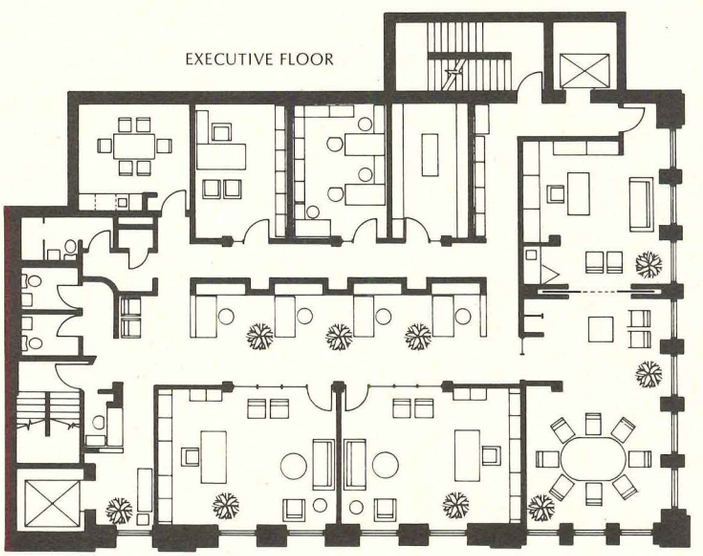
CAFE, YALE FRESHMAN COMMONS
NEW HAVEN, CONNECTICUT
JOHN FOWLER, ARCHITECT

Working with a rigid program in a monumental, turn-of-the-century space, John Fowler has created a spectacular cafe for Yale University undergraduates.

The facility has to operate without interrupting the normal ceremonial functions of the Commons itself, and has to be able to return its floor space to the Commons for large banquets at least six times a year. The architect met these requirements by designing a combination folding and hinged partition, mounted on casters and anchored to an enclosed stair. When thrown open, the cafe is part of the larger space. When closed, as shown, the space becomes a private, shimmering world of mixed texture and blurred form. Sheets of specular aluminum, mounted on the curved partition, contrast brightly with the magnificent but somber oak carvings and reflect them in distorted and sometimes frenzied detail. Red and purple banners, hung overhead, filter the light and add the right dose of brilliant color. Structural engineer: *Associated Engineering, Herman Spiegel;* contractor: *George B. Macomber Co.*

Alexandre Georges photos

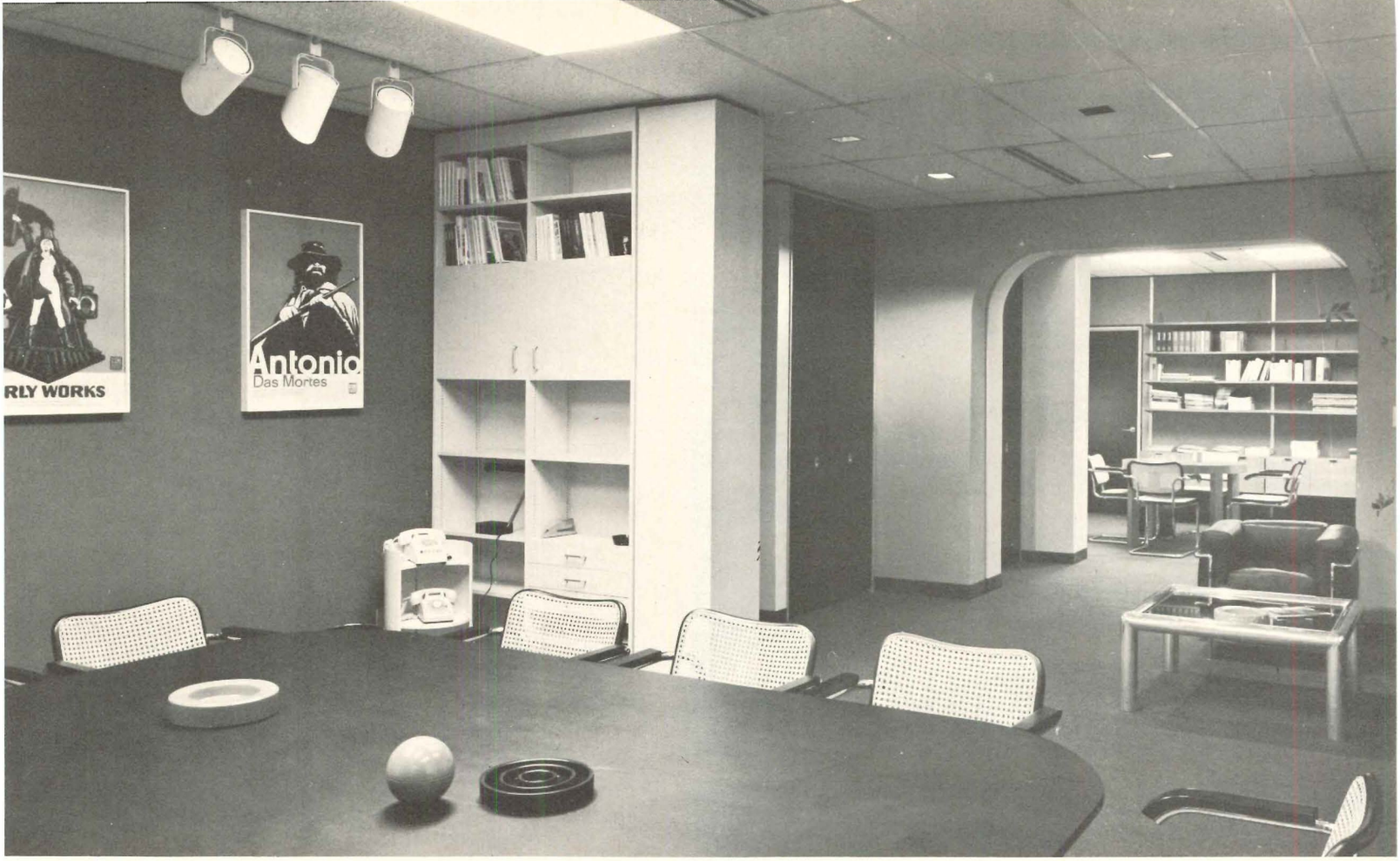




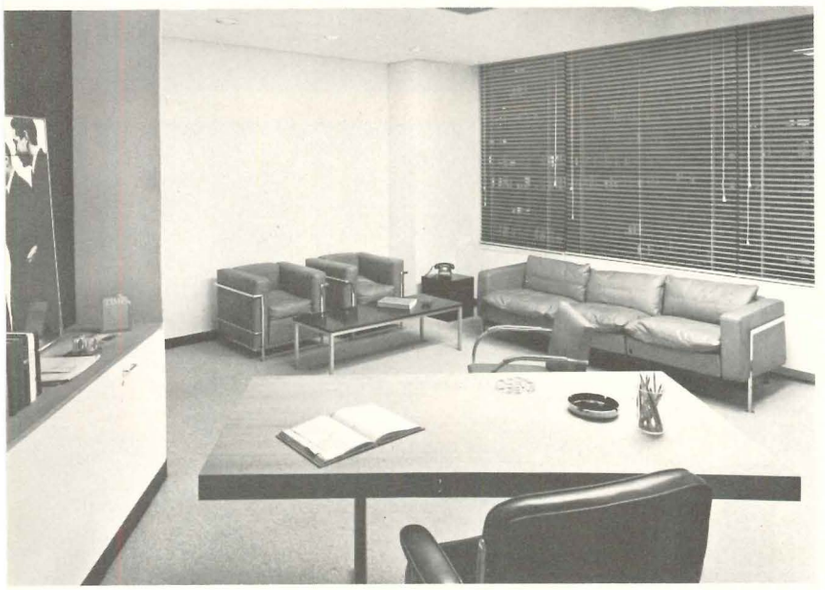
GROVE PRESS
NEW YORK CITY
HEERY & HEERY, ARCHITECTS

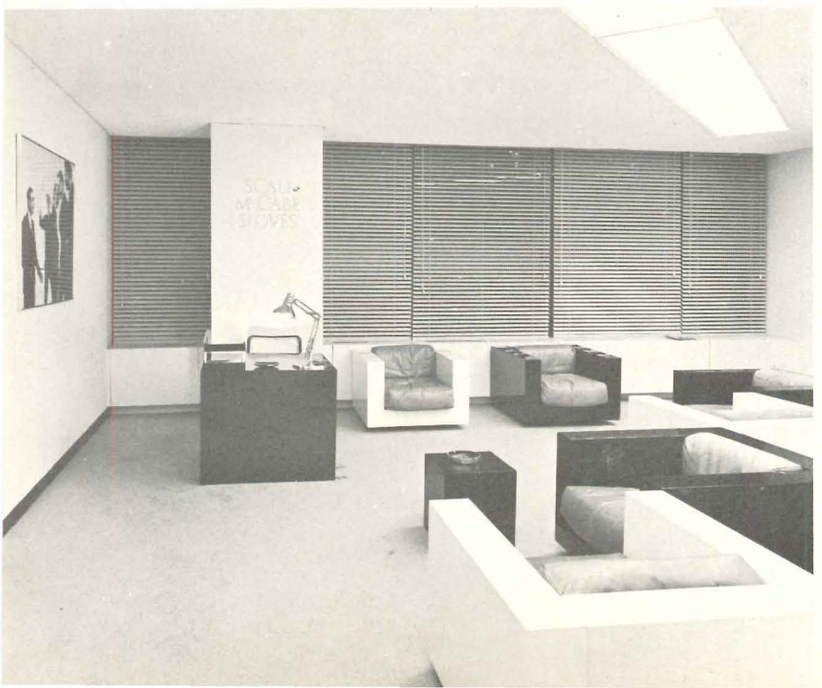
Since its establishment in 1951, Grove Press has outgrown a series of Manhattan offices. The firm now occupies space in a newly renovated building in Greenwich Village—a section of the city long associated with artists and writers. For the publishers of *The Evergreen Review,* (and first in the U. S. to publish Henry Miller, William Burroughs and D. H. Lawrence) these new interiors had to reflect an avant-garde spirit without sacrifice to efficient, comfortable, working surroundings.

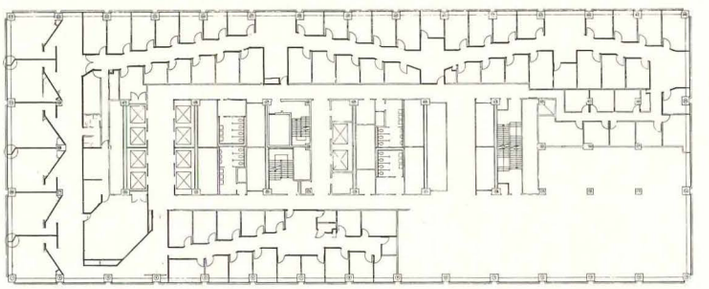
The renovation was carried out by two wholly-owned Heery & Heery subsidiaries: Interiors for Business Inc. and Design Directions who combined to plan and complete the renovation in just seven months. Using conventional materials, inventive graphics and furnishings, many of which are modern classics, the designers have created a series of vital, fresh and expressive spaces. Mechanical and electrical engineers: *S. A. Bogen & Associates.*


RLY WORKS
Antonio
Das Mortes

Norman McGrath photos







OFFICE FOR SCALI, McCABE, SLOVES
NEW YORK CITY
PRENTICE & CHAN, OHLHAUSEN, ARCHITECTS

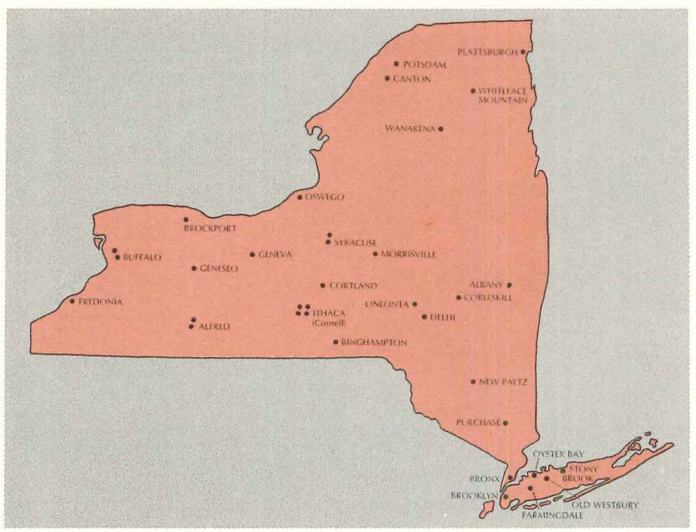
The client, a young advertising agency, had the usual requirement for flexibility on a tight budget. But they had idiosyncratic needs as well. Because the staff worked continually with strong graphic materials, a neutral, monochromatic environment was desired. In its previous quarters, the firm had found that some of its best thinking took place, not in offices, but in busy corridors.

The architects therefore developed the block-long corridor into a generous zig-zag space that abets the movement and chance meetings between members of the staff. The sliding scale of office sizes that resulted from this decision provided flexibility in housing one-, two- and three-man account teams.

The designers' accomplishment here rests on the degree to which they have adapted very ordinary rental space to the specific needs of its users and, with few departures from "building standard," have created a stylish but congenial working environment. Mechanical engineers: *Jaros, Baum & Bolles;* contractor: *Ruden Management Co.*

A report on the accomplishments so far, and the bold plans for the future, by the New York State University Construction Fund —an eight year old public agency with a notable record of enlightened and effective organization for good campus design:

AN ANALYSIS OF EXCELLENCE



The State University Construction Fund, a public benefit corporation, is one of the nation's largest public clients for architecture. Since it was proposed by Governor Nelson A. Rockefeller and created by the New York State Legislature in 1962, the Fund has been responsible for the design and construction of new campuses and the expansion of old ones for the State University of New York (SUNY) to meet the needs of the state's expanding student population and fulfill the programmatic requirements of the University. In the past eight years the Fund has been in charge of the physical development of four major university centers, thirteen colleges of arts and sciences, six two-year colleges, and specialized colleges and facilities on five other campuses as well as several major off-campus facilities.

At present SUCF has $4.5 billion earmarked or spent for work completed since 1962, in construction, or under design and planning contract through 1976. By 1969 the Fund had completed 102 major projects with an aggregate of $118 million. At the end of 1969 SUCF had another $249 million in construction, and had under contract to private architects and planners an additional $948 million of work in design. As of October 1970 the Fund had $237 million in construction contracts awarded and is working toward an objective of more than $500 million for fiscal 1970-71.

SUCF differs from other public agencies charged with design and construction in its almost total reliance upon "design by contract" with private professionals as opposed to the customary build-up of a large planning bureaucracy. During 1969 it had planning and design agreements in force with over 139 private architectural and engineering firms, as well as planners and landscape architects. The Fund itself has a staff of approximately 200 of which about 130 are architects, engineers, lawyers and other professionals.

Further, the Fund differs from most other public planning and design agencies in that it does more than develop plans, it develops plans that can be carried out—and proceeds to do so—on time and within the budget. Total costs of facilities built so far are within the aggregate project budgets established. (How SUCF is funded, organized and managed to accomplish its time, budget and quality goals is explained in some detail in the article in the Architectural Business section which begins on page 55).

The Fund's 1970 target dates have now been met. All over New York State students move into new dormitories that are ready for them, eat in new dining halls, attend class in new lecture hall centers or classroom and lab buildings, study or do research in spacious new libraries, practice the creative arts in new fine arts centers which include studios, theaters and concert halls, and get to know each other in new student activity buildings. Because of the Fund's emphasis on design quality these students are consciously and unconsciously learning about architecture and becoming aware of what a better environment can be. Construction is going on all around them for the growth of these campuses is continuous and good things are happening. Building groups as completed begin to reveal consistent and interesting architectural character, lakes are created or conserved, stands of trees are left as they are—on the top of a hill or within the courtyards of dormitory groupings—campus greens and plazas and walks and bicycle paths appear, vistas emerge, cars are relegated to the campus perimeter.

SUCF differs from most other public agencies in still other important respects. As a client it gives its architects a chance to do a good job, it comprehends good work yet is able to play a constructive critical role, and most importantly it sees each project through to completion with as many architectural and environmental values as possible intact.

The cause of architecture itself has been steadily advanced by the Fund. Since SUCF actually builds what it plans, many architectural and planning ideas which for years have gathered dust as sketches within the pages of planning brochures now exist in brick and mortar for all to see, evaluate, compare and learn from. If a campus, or a part thereof looks dated or capricious or contrived—if some ideas turn out not to have worked—SUCF and its architects know it now, and won't do *that* again. Conversely, those ideas made real which turn out to have been good ones are reinforced and become a new standard of excellence. Anthony G. Adinolfi, general manager of the Fund and one of the most knowledgeable and strongest advocates of good architecture ever to have the fiscal and administrative power to accomplish it, admits that he wishes he had known eight years ago what he knows now. Thanks to Adinolfi and the Fund many good architects and planners also know more now than they did then.

The impact of SUCF's continuing accomplishment could become national, to the good fortune of this country, if other state and Federal agencies were to use the Fund as a model in their own efforts to organize themselves to build urgently needed facilities of every kind at today's scale and complexity and of a quality that our deep concern with the environment demands.

—Mildred F. Schmertz

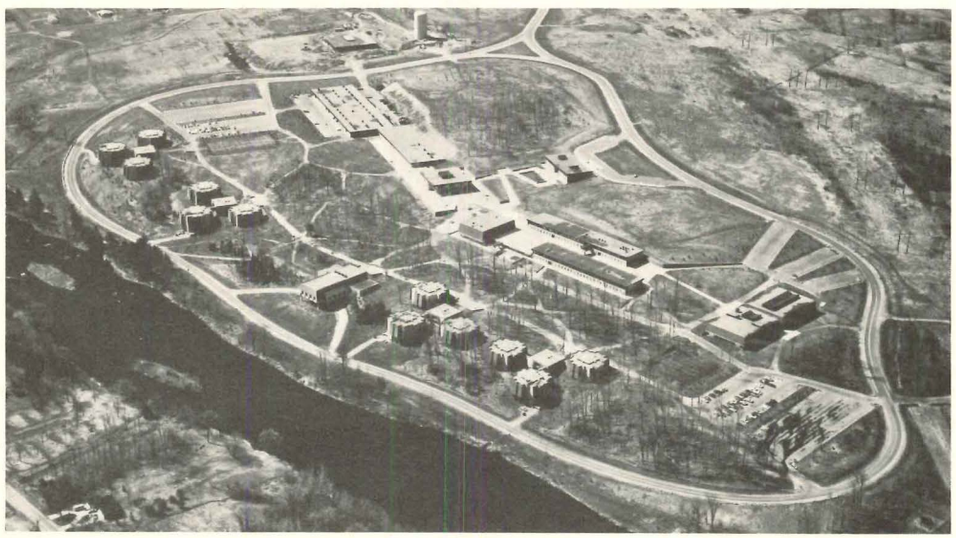
Some of the campuses, designed from scratch, were small enough to be the work of a single architectural firm, who were thus able to create and implement an over-all cohesiveness, consistency and order for site and buildings

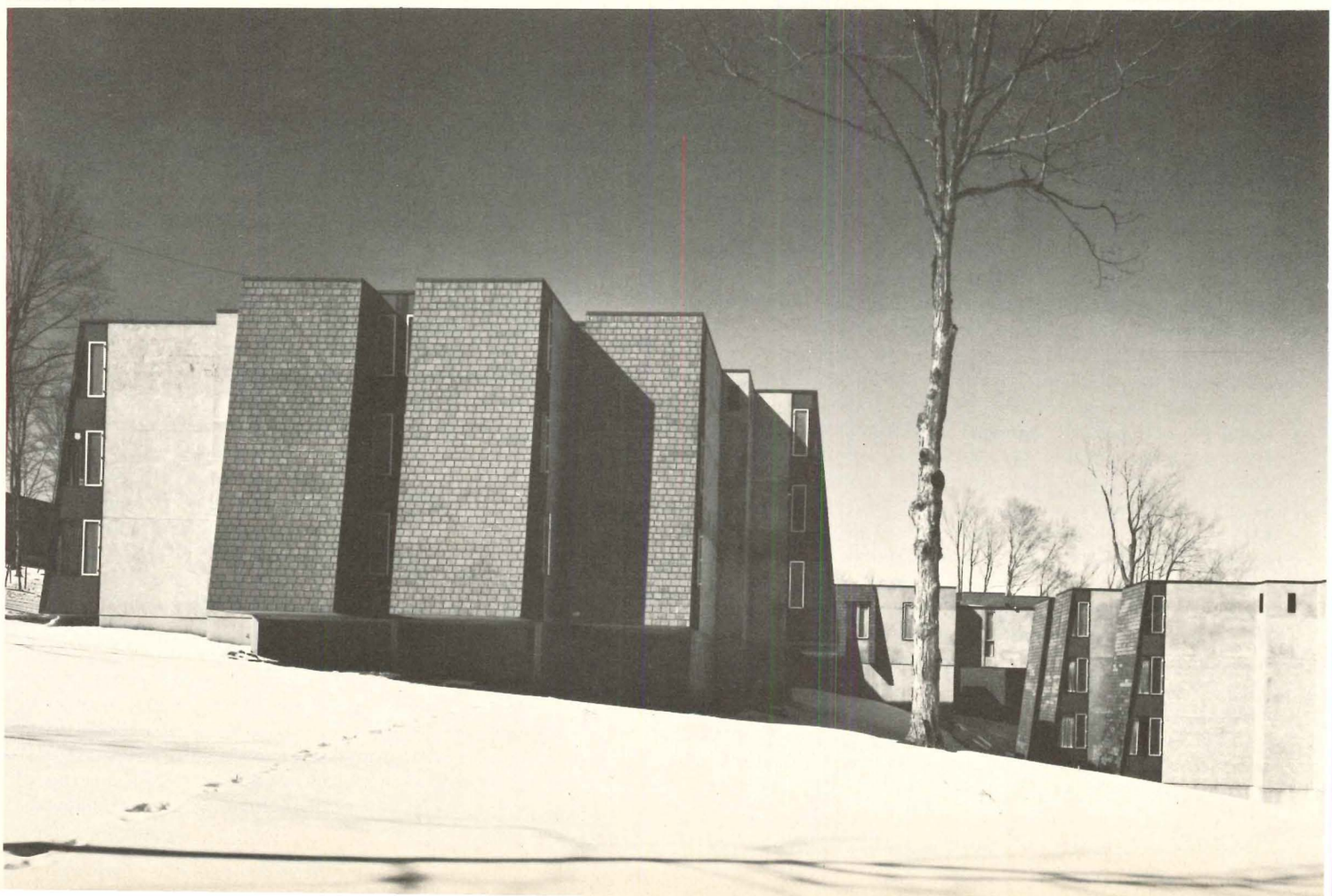
Canton is a two-year college 20 miles to the southwest of the College at Potsdam (pages 110-111) to which its educational resources relate. The site is beautiful—a wooded hill sloping down to a small river —which overlooks the village of Canton to the southeast and farmland to the west and southwest. Designed from the beginning as a brand new campus, it offered the architects few constraints other than those dictated by the topography, the relatively poor bearing capacity of the soil, the existence of high tension power lines bisecting the campus to the northwest and strong western winds at the top of the hill. The land sloping generally to the west from the top of the hill is predominantly open, gently rolling and rural in appearance, while the east slope upon which the campus is developed is steeper and heavily wooded in part as it continues down to the river's edge. These two land types meet and overlap at the top of the hill in a grove of trees which are visible for some distance and serve as a landmark for the campus.

The campus plan retains and emphasizes the characteristics of each of these two types of land. The athletic fields are located on the western open slopes, while the academic and residential facilities are

. . . as at the Agricultural and Technical College at Canton by Carson, Lundin & Shaw

The view from the air shows the five level campus circumscribed by the ring road. At the crest of the hill is the administration building. Just below on the second level is a long mall parallel to the contours upon which are located the industrial engineering building (toward the top left of the photo within the ring road), next to it the library, followed by a group of general education buildings and a gymnasium and pool facility. On the third level is a wooded green belt with parking at either end. On the fourth steeply sloping level are the dormitory groupings, and at the foot of the slope along the river is a quiet recreational area.





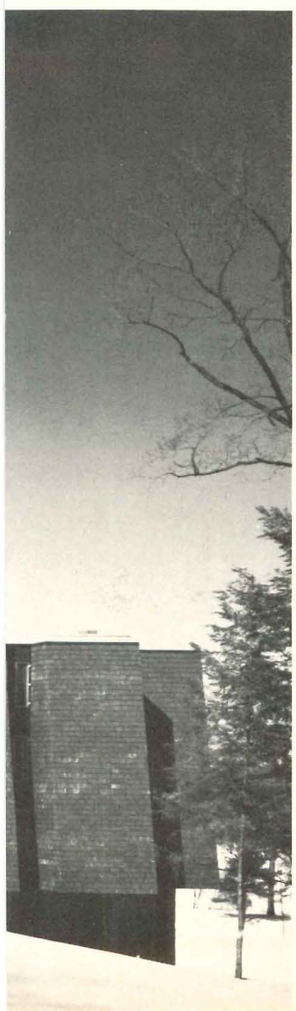
placed on the eastern slope in a manner respecting its natural wooded character.

The plan has been conceived as a series of five levels descending from the crest of the hill down its easterly slope to the level of the water. The levels, alternating between wooded areas and building terraces, are circumscribed by the principal vehicular road. The administrative area is located at the topmost level in such a way that the landmark grove of trees is preserved.

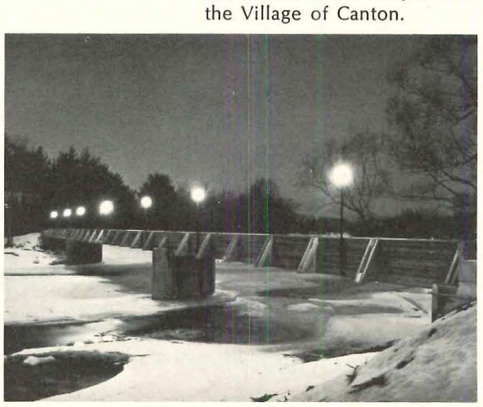
The second level from the top has been designed as a long mall on which the principal instructional and recreational structures are located. The width of the mall varies, becoming at some points a campus street, at others a small plaza. This mall, intensely built up and paved from edge to edge, connects, by means of steps and ramps, the library at its center and the administration building at the top of the hill. Within the mall area the spatial quality is formed by the walls of the academic buildings and the concrete retaining walls. Trees that have been placed in the mall area are located near its edge in a manner suggesting that they spill into it from the adjacent natural woods.

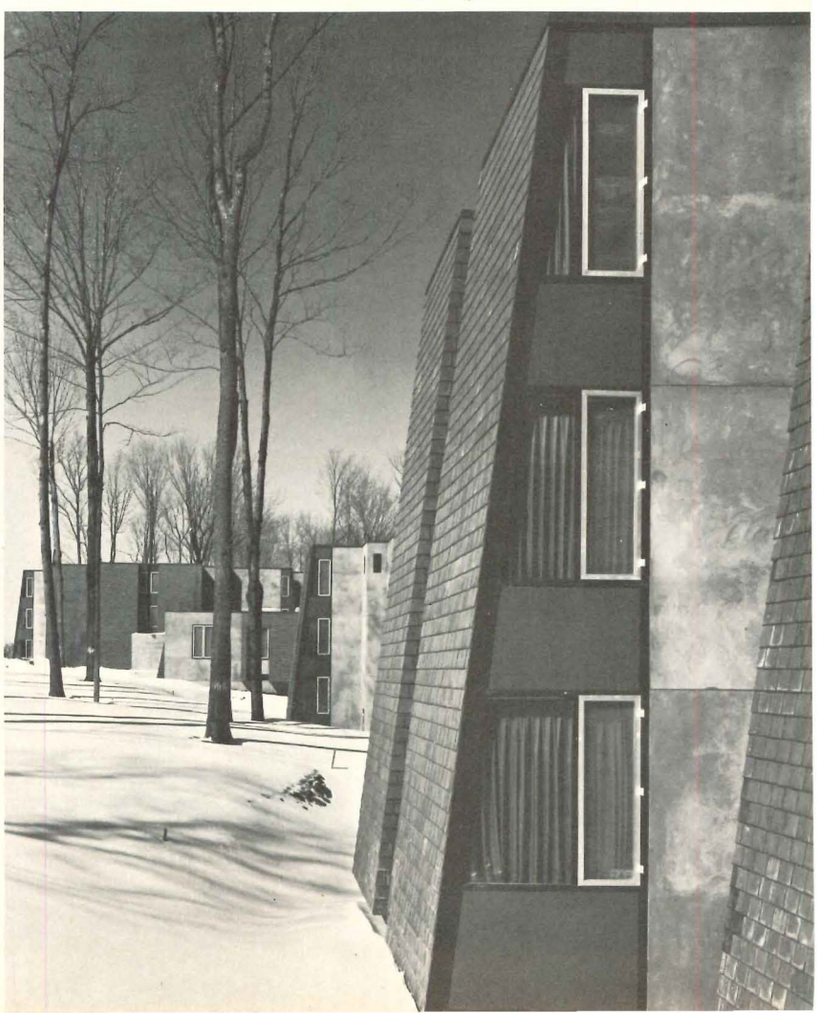
The third level forms a green belt separating the academic facilities from the housing accommodations. On this level the heavy concentration of trees have, except for a series of connecting walks, been left in their natural state. At either end of this level are the parking fields.

The fourth level, just below the wooded central space, is located along a steep slope that parallels the academic zone. Here the architects have placed the dormitory clusters and the central dining hall. The dormitories spill down the slope, their heights adjusting to the various elevations. The dormitories have been sited so that the openings between them and the views



To the left of the photo above is the dining hall and to the right are several dormitory clusters shown in detail (left and right). The battered dormitory walls are sheathed in a light gray asbestos slate shingle—a material used on sloping walls and roofs throughout the campus in combination with stucco vertical walls and rubble stone parapets and retaining walls. The bridge (below) spans the small river and connects the campus with the Village of Canton.





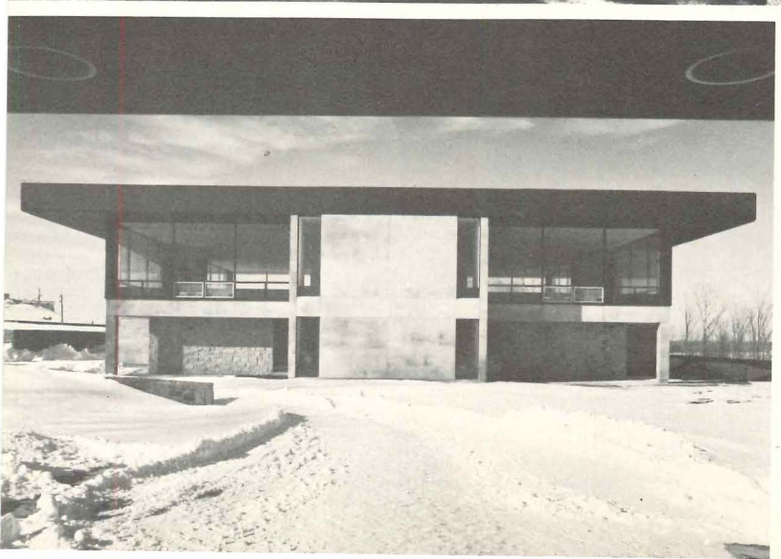
from within them are orientated toward the green belt or to the river.

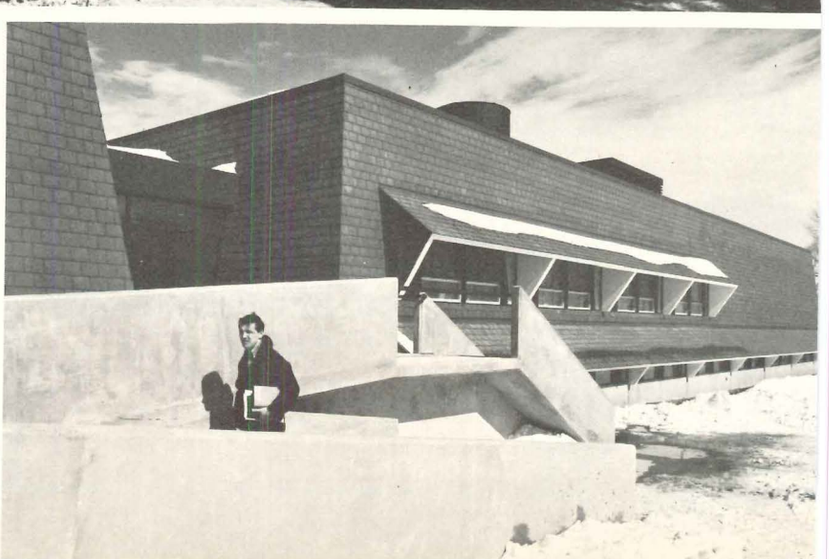
The fifth and lowest level of the site runs along the river bank which has been preserved as a quiet recreational area.

These five levels are clearly expressed architecturally by means of two principal design devices. The first is the development of horizontal bands of buildings and parapet walls parallel to the contours. The second device is the location of the principal buildings on these bands in such a manner as to make them act as nodes indicating the principal routes of student traffic across the contours.

The common denominator of these nodal structures is the battered wall and/or roof fascia which relates them to the local tradition of gambrel roofed barns, and also uniquely separates these structures from the linear forms of the more neutral background buildings. The unspoiled natural characteristics of the site called for the choice of rugged textured materials. Rubble stone, roofing slates and stucco are the principal materials, contrasted with roofs and soffits of heavy wood plank. Because of soil bearing conditions, heavy loadings were avoided where possible. In the place of long span structural members, such as precast or prestressed concrete beams, whose weight would have required the engineer to enlarge his foundations or go deeper to find good bearing soil, light steel and wood bent construction have been used to minimize foundation work.

The plazas are developed as a linkage of enlargements and contractions of the academic street. They become a passage connecting the academic buildings to the parking lots at either end through the series of malls and terraces. The vocabulary is one of a continuity of variable spaces rather than the placement of separate, discrete public plazas.





Educational projections through 1974 call for an anticipated growth at Canton which very nearly equals, in terms of building area, the extent of the facilities now provided to meet the needs of 1970. Among the new structures presently in design or underway are a field house containing an ice hockey rink, a classroom and faculty office building, a service building, dormitories with 1,000 beds, another dining hall of 500 seats and additions to the library, administration building, student activities building and the industrial-technical building. Additional facilities to be completed by 1974 include athletic fields and parking areas. Both the planning concepts and the design vocabulary which has been implemented so far will continue to be used as guidelines for the work projected to 1974. Since SUCF, whenever feasible, commissions new structures from firms responsible for the master plan, Carson, Lundin & Shaw continue to do the major work at Canton.

The continuing expansion of this agricultural and technical college is having a strong impact upon the town of Canton. With the attainment of its 1974 enrollment goal the college, in combination with another resident center of higher learning, will bring a total number of local college students to the community which will represent about 50% of the combined populations of the town and village of Canton. The expansion of this college's student body will be accompanied by an increase in the number of local commercial establishments which minister to its off-campus needs. In addition, the enlargement of the educational facilities in the area will increase its attractiveness for technical industries. The village of Canton plans to redraw its boundaries to bring the whole of the campus within its village limits.

Landscape architects were Johnson, Johnson & Roy.

© ESTO

The student activities building (above) and the gymnasium (left) have the same essential architectural character as key buildings within the complex. The classroom structure (far left) has a different architectural expression as a secondary or background building.

© ESTO

The dining hall (right and below)—another key building—shares its architectural vocabulary with the student activity building and the gym. Wood bent construction has been used to ease footing loads because of poor bearing.

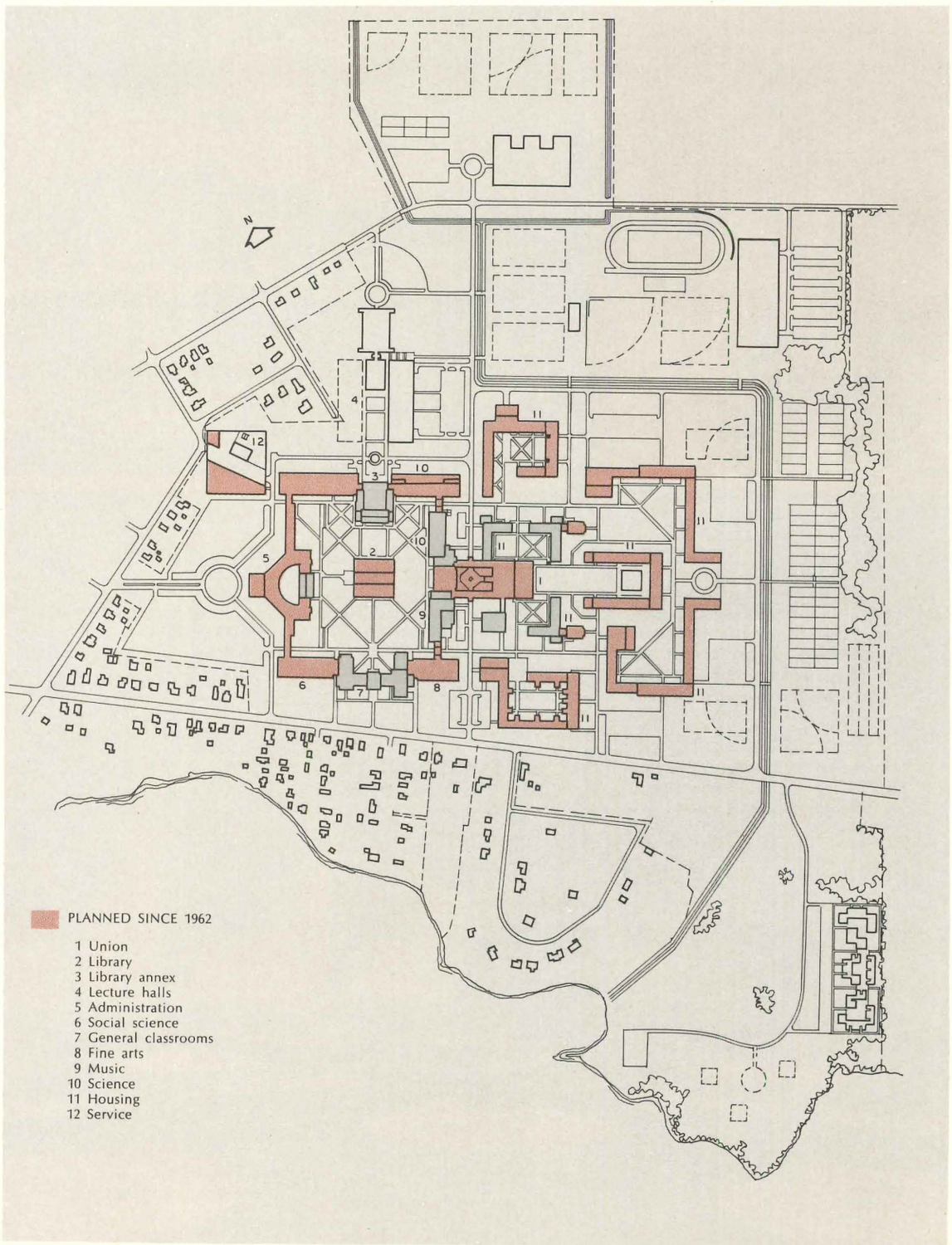
Green for © ESTO

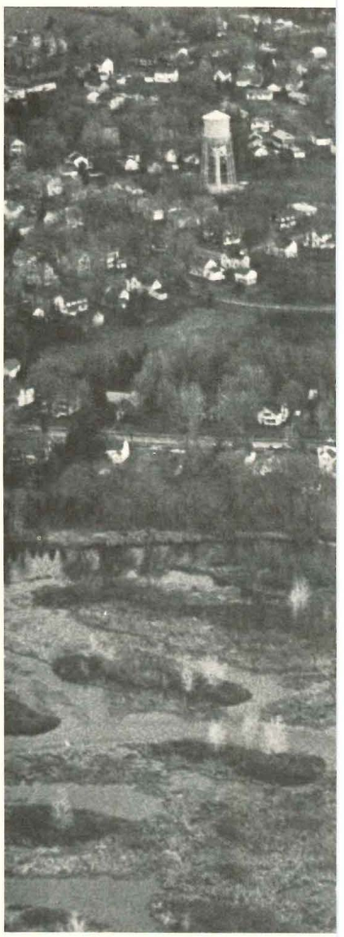
On many of the campuses, the SUCF planning teams found Department of Public Works-type buildings built, hit or miss fashion, on any convenient site. Thus, the architects' task was to bind these buildings together by the strategic placement of new structures to create —for the first time—a sense of community and place

If one is visiting a great architectural ruin, a lonely reminder of a vanished civilization, one may expect the trip to be difficult. Important works of contemporary architecture, however, tend to be little more than a long or short cab ride from the airport. But not Potsdam. This small and remote college of arts and sciences which expects an enrollment of 7,100 students by 1975 is located on rolling, lake-studded farmland beyond the Adirondacks and almost as far to the north as it is possible to get in New York State. Near the small village which gives the college its name is the St. Lawrence River, forming the border between the United States and Canada. It is a campus which is hard to get to. When architect Barnes visits the site he usually arrives by small plane.

It is an unhappy truth that most clients, given a choice, put the best architects and the most money where it shows—into buildings which are constructed in the great urban centers where everyone may see them. It is to the great credit of SUCF that it puts leading architects to work on modest budgets to create—far off the beaten track —esthetic and functional amenities solely for the users—students, faculty, and people from the town and outlying region. For

. . . as architect Edward Larrabee Barnes did for the College at Potsdam





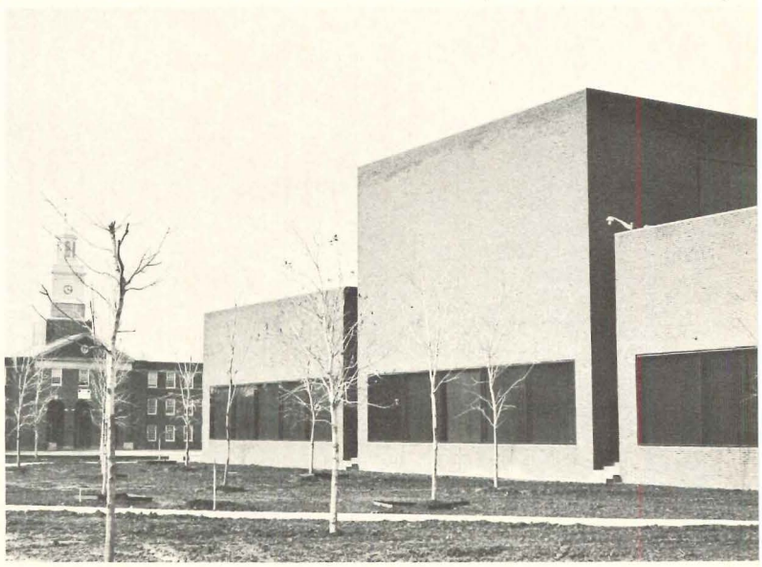
The view from the air corresponds to the orientation of the site plan (left). The new library (below right) can be seen in the aerial photo at the center of the large quadrangle just beyond the cupola of one of the eclectic Georgian structures. As both photographs show, the library straddles the central pedestrian walk of the campus and is easily accessible from all points of the compass. The knife-edged simplicity of Barnes' red brick library (shown also at far right) is typical of the architectural vocabulary and expression of all the Potsdam work built under SUCF supervision.

many students, especially those from the upstate villages and farms, a campus like Potsdam is their first experience of architecture and planning as a conscious process. The SUCF planners consider this a long-range value and so do many of SUNY's educators.

When Barnes began work there was little to be said for Potsdam as a physical campus. To the northwest three L-shaped dormitories and a student union made a sort of overscaled quadrangle which leaked space through vast gaps on all four sides. To the southwest three large brick structures that 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 rectangular enclosure. Barnes placed the new campus library at the center of the larger rectangle and closed it on all four sides with the addition of a classroom building, a combined lecture hall center and faculty office wing, a science center and a fine arts building. Within the smaller of the two rectangles he located the new student union. Completed or under construction beyond the campus core are additional dormitories, academic structures, service buildings and an administration tower. Barnes has pointed out that a plan which is functional often finds a form which is symbolic, and the classic position of the two core buildings—the library and the student union—symbolize the two poles of student activity.

Barnes has established a design and materials vocabulary for all the campus buildings. Structures which have not been designed by his office are the work of such younger architects as Joseph G. Merz, Richard R. Moger and Giovanni Pasanella, all of whom are sympathetic to, and have been influenced by his work. Thus, a rare design unity has been achieved.

Mildred F. Schmertz photos

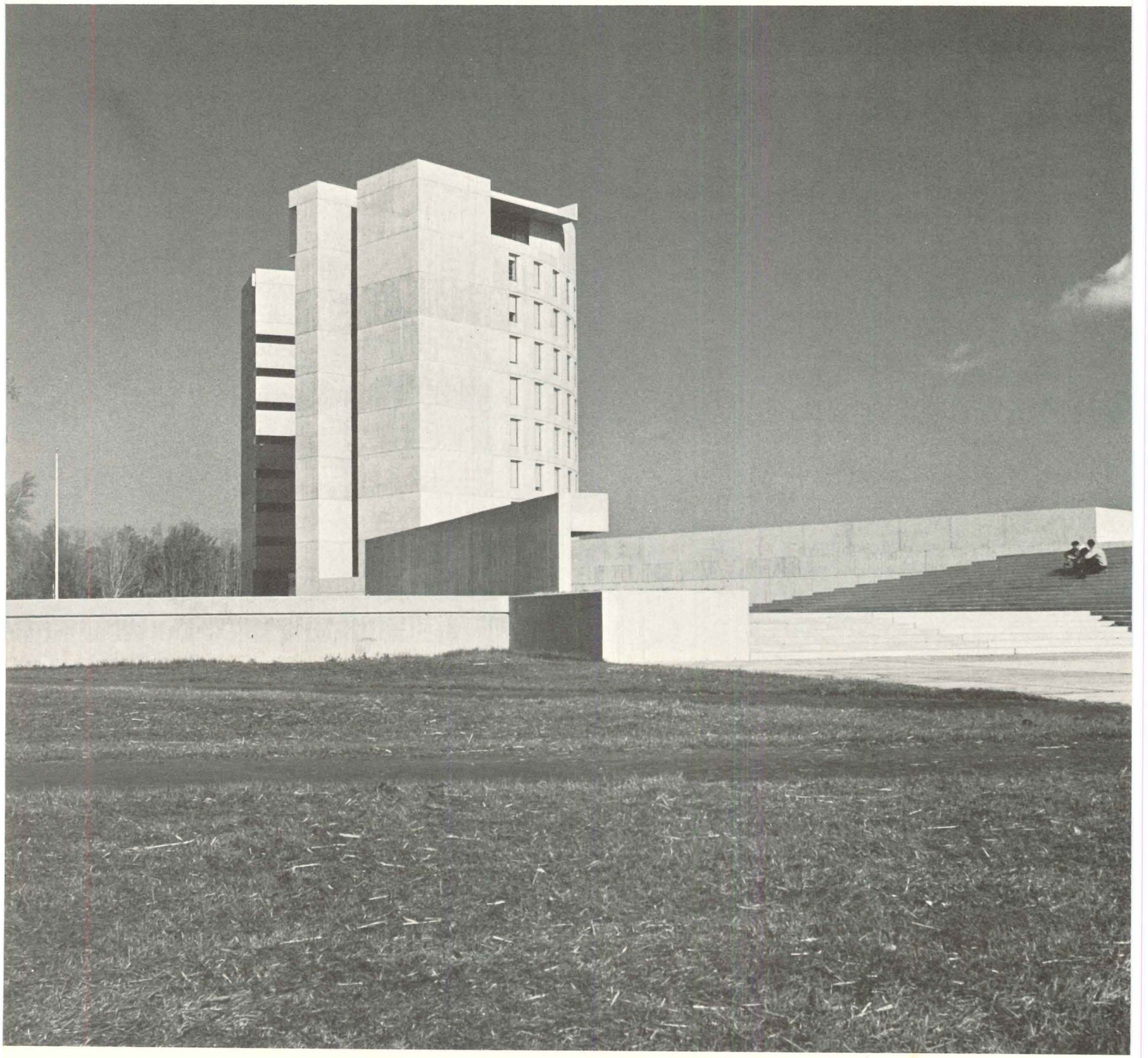


Of the 23 SUNY campuses either begun or developed by SUCF which are partially complete, the most interesting from the standpoint of design esthetics is the College at Fredonia. Once again, as at Potsdam, SUCF has brought great architectural talent to an out-of-the-way place. Fredonia, however, is not quite as isolated as Potsdam, since it is only 45 miles southwest of Buffalo and close to the famous summer art and music center at Chautauqua Lake, and other recreational and cultural facilities. Long known as a college for musicians and teachers of music, it has expanded as a college of arts and sciences with a graduate and undergraduate enrollment of approximately 4,500 students.

Students and faculty have been given an extraordinary architectural environment in the place of a once flat, bland and featureless campus. As at Potsdam, the older buildings appear to have been arbitrarily strewn about. Except in strictly functional terms, the new construction does not unite them, nor does it exclude them. It dominates them, and reduces them to secondary background buildings. The work of I. M. Pei and Partners at Fredonia is a bold architectural intervention, at a new scale in beautifully finished cast-in-place concrete which pre-empts the scène and reveals the old red brick structures for what they are, ugly reminders of an era when architecture did not count.

It should be added that the use of concrete, strained the SUCF budget for Fredonia quite severely. This is attributed to the fact that skilled labor for concrete construction was not available in the vicinity of Fredonia at the time the buildings were constructed. SUCF is now better able to assess the impact of local availability of labor and materials on costs than it was in the early years during which the new Fredonia campus was designed. Had they

. . . and I. M. Pei and Partners did for the College at Fredonia



known then what they know now, Pei's buildings would have been in another material. Had this occurred, it is hard to believe that the new structures would be as handsome as they are or contrast so dynamically with the older buildings, or with the new ones beyond the precinct of the academic center.

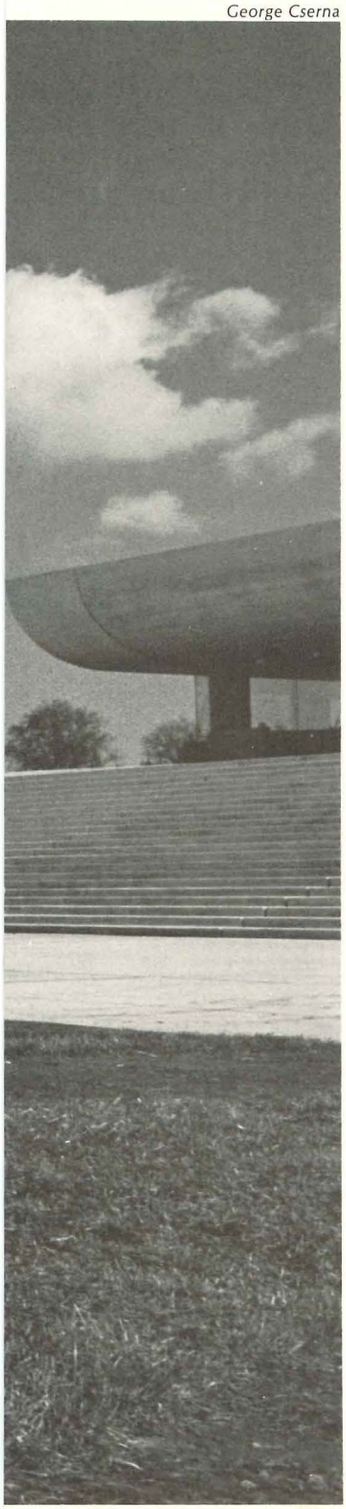
Architect Henry N. Cobb, partner in charge of the design of the Fredonia campus, has eloquently explained his basic design concept which SUCF has so effectively carried out. "The order we have devised for Fredonia is extremely simple and is composed of three principal elements—separately identifiable but entirely interdependent—which have one essential characteristic in common. Each possesses within the context of the plan not only a clearly defined functional significance, but an articulate formal and spatial significance as well. These three fundamental elements are the circular roadway, the spine and the terrace.

"The circular road provides access to all major activity zones of the campus from a single, easily-comprehended, circulatory system. The simplicity and clarity of its form confirms the essential unity of the campus community.

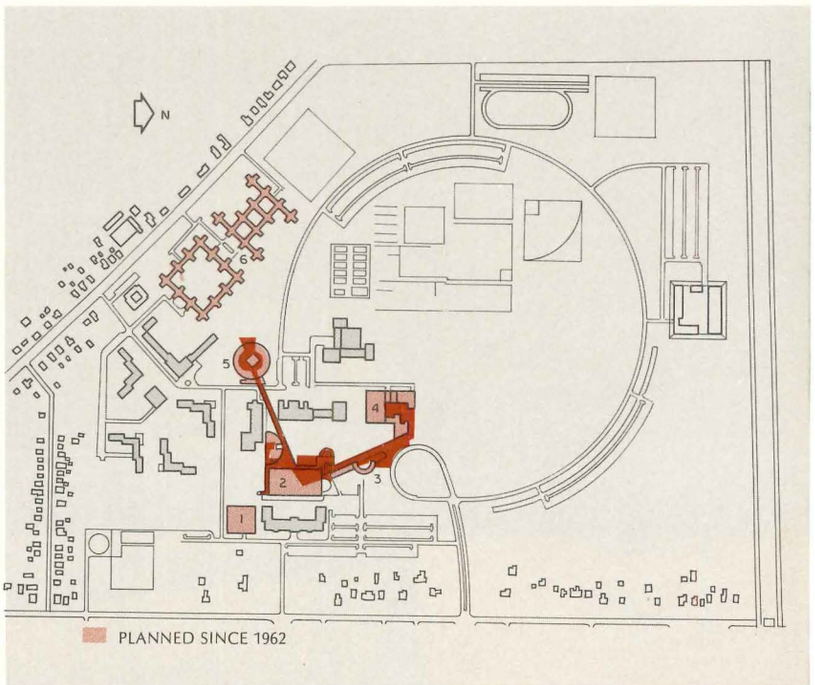
"The spine is a system of straight-line paved pedestrian ways, which provides a direct path of pedestrian movement linking the major centers of activity and congregation within the campus, and permits the development of a two-level-circulation-system within and between the academic complex.

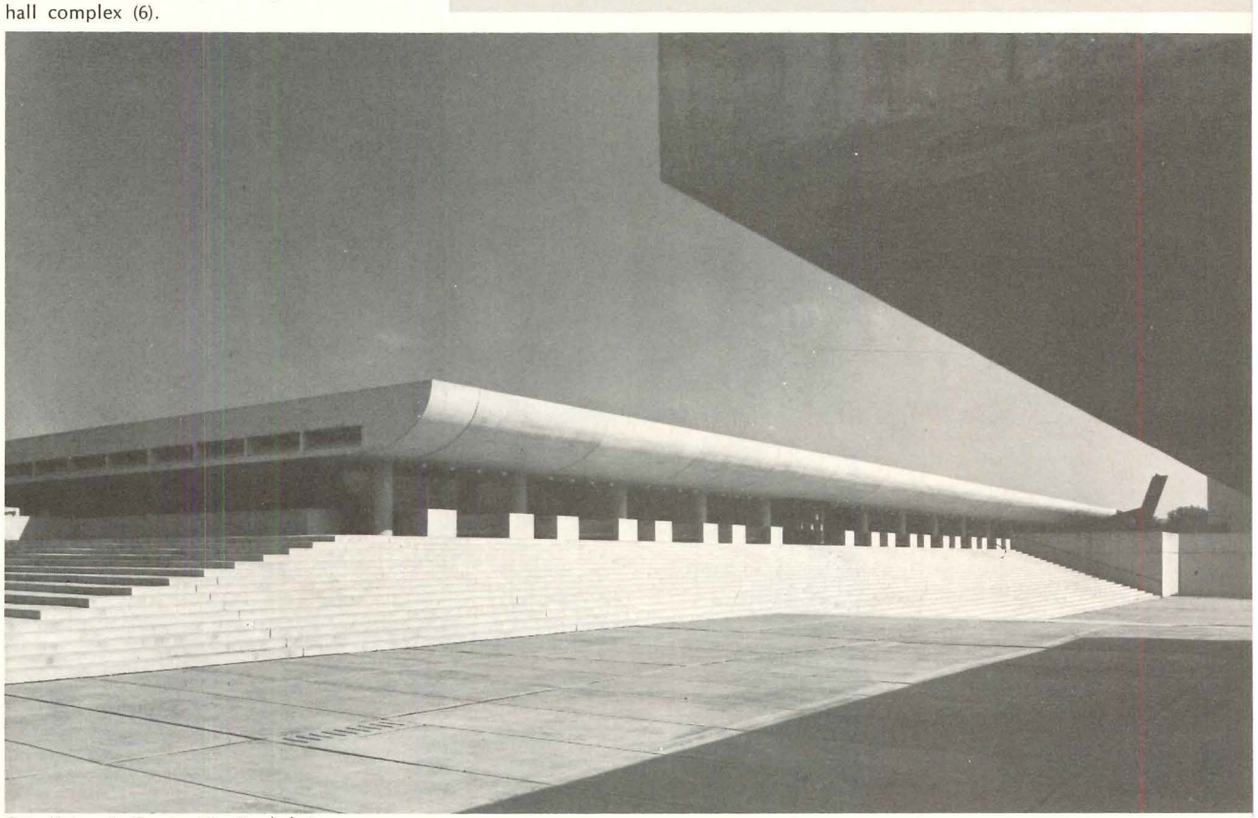
"The deliberate integration of the spine into those buildings which are used by all the students in common (student union, lecture hall center, library, administration and fine arts center) intimately affects the form and architectural vocabulary of those buildings, so as to identify them as the

George Cserna



The administration tower, part of the academic center, is shown on the site plan (3) and in the photo (left). An eight-story, poured-in-place reinforced concrete building, like the other buildings of the academic core, it contains offices for student services and general administrative facilities. On the broad-stepped terrace (below) is the Reed Library (2) a central academic and research resource for the entire campus with a capacity of 200,000 volumes. The other academic core structures are the Arts Center (4) the student union (5) and the Communications-Lecture Hall (7). These elements are linked by a V-shaped spine, composed of principal interior circulation spaces and exterior terraces, steps and paths. The spine is indicated in color on the site plan. Beyond the academic core are the science building (1) and the dormitory, dining hall complex (6).





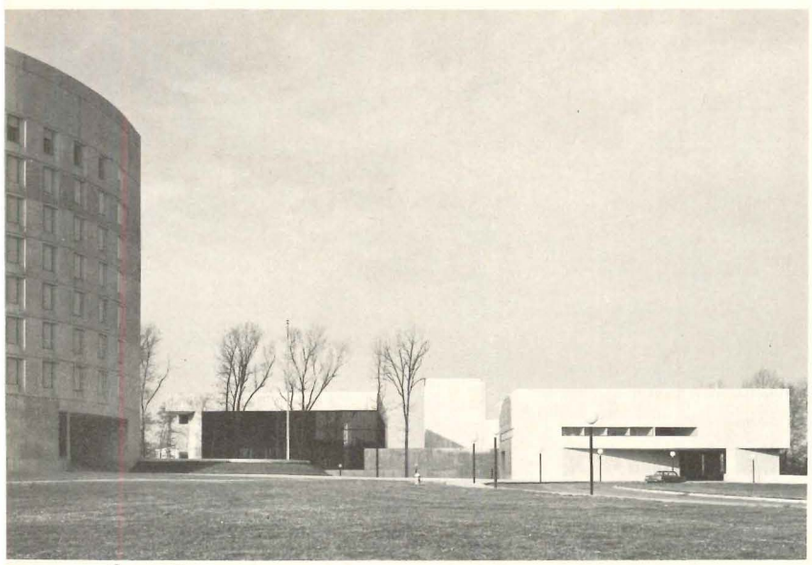
State University Construction Fund photo

core buildings of the campus and set them apart, both from the existing classroom buildings, and from those which will be added in the future. This is particularly important as it provides the key to the solution of the most difficult architectural problem which we face: namely how to introduce the major new structures in such a way that the existing buildings are not excluded from the spatial and architectural ambiance of the new academic campus." Cobb's last sentence is interesting in the light of the results. Excluded the older buildings are not, but as pointed out earlier, overwhelmed they are.

Cobb describes the last of the three fundamental elements—the terrace as "in effect, a highly concentrated and organized path system . . . creating natural frontages for the classroom buildings which may be added in the future."

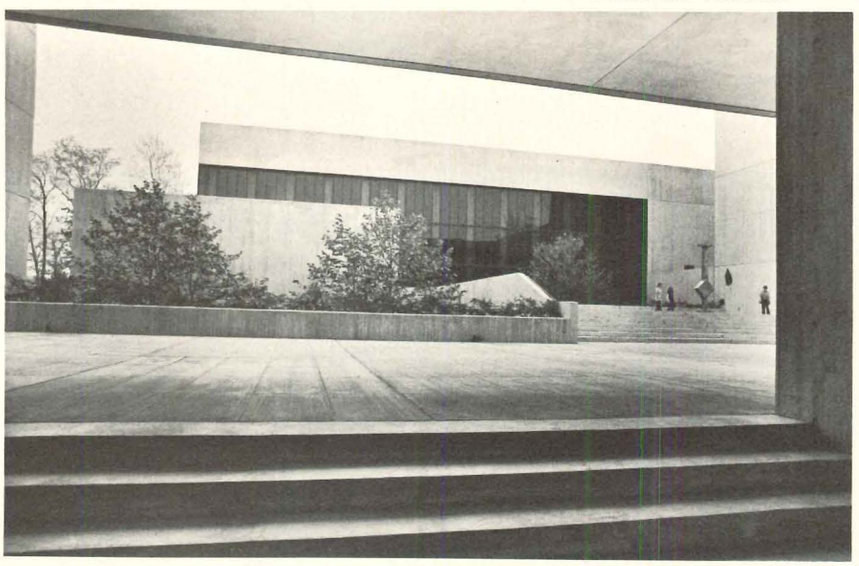
The academic center includes the Michael C. Rockefeller Arts Center, a 111,756 square foot multi-level complex for music, art and drama on campus. The arts center includes in addition to the 1200 seat concert hall (below), a 400-seat proscenium theater, 250-seat arena theater, an art gallery, 24 classrooms, 11 studio classrooms for instruction in ceramics, sculpture, painting and drawing, a drama and speech room with an enclosed glass observation area, an area for photographic instruction, dramatic production facilities and faculty offices.

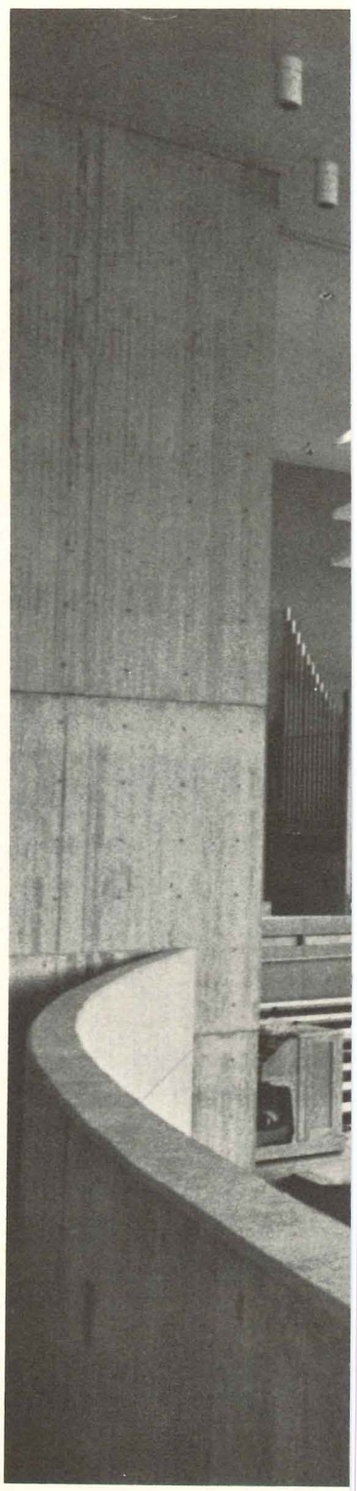
Next on the spine is Maytum Hall, an eight-floor semi-circular office and computer center building. This administration building is designed to serve not only as the operational center of the campus, but also as a focal point for the major complex of academic buildings. Located on the spine at the principal entrance to the pedestrian mall, it becomes a symbolic gateway to the college and a link to the surrounding community. Semi-circular in plan, the building



George Cserna

The four-level communications-lecture hall shown at the right of the photo (left) contains two 120-seat lecture centers, a 240-seat lecture hall and two 60-seat halls. The arts center (below left) contains a 1200 seat concert hall (right), an experimental arena theater and a theater with a proscenium stage for conventionally staged drama. There are also art studios and gallery space. The building is uncommonly well sited and terraced as the photographs suggest. Acoustical consultants for the theaters and concert hall were Bolt, Beranek and Newman.





is connected at the first floor and basement with a low rectangular wing containing the campus computer center, mechanical spaces and the central air conditioning chiller plant. Administrative and conference spaces, staff lounge and faculty offices are arranged on the outer perimeter of the tower.

Adjoining the low wing of the administration building is the Reed Library. Rectangular in shape and roughly the size of a football field it provides seating for over 800 readers. Next to it is the classroom-lecture hall.

In addition to the buildings of the academic center shown on these pages, Cobb has created a recently completed residence-dining hall complex which works so well that it has become a prototype for other SUCF campuses. Also recently completed, but not shown, is a science building. Both of these newer campus elements are of brick, an appropriate as well as more economical material, since they lie beyond the spine-connected academic center. The final building designed on the spine to be constructed—the student union which just opened this fall—has been executed in poured-in-place concrete, thus carrying to completion Cobb's original concept for the academic center.

Future plans for capital construction through 1974 call for an additional 670 thousand square feet of campus space to raise the total to well over 2 million square feet. Projected facilities are to include an education-social sciences complex, a mathematics-physics building, an addition to an existing music building, a health and physical education building and two 800-student residence-dining hall facilities in addition to the residence-dining hall complex just completed. The present campus, broad, flat and easy to build on permits a vast expansion of interconnected facilities

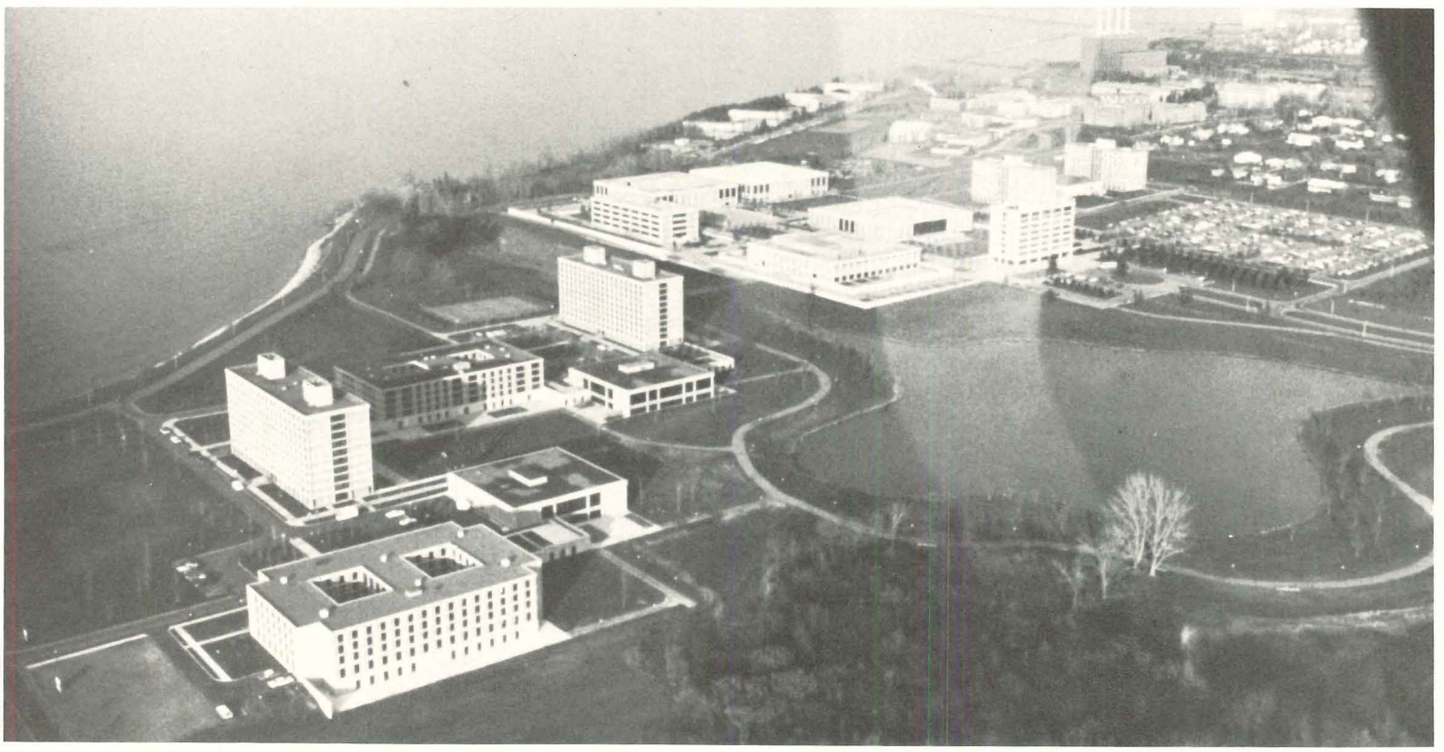
State University Construction Fund photos

While most campuses are fairly low density, several are quite urban in their concentration of people and services and in their architectural expression. Two of these invite comparison, although they differ in detail and concepts of symmetry

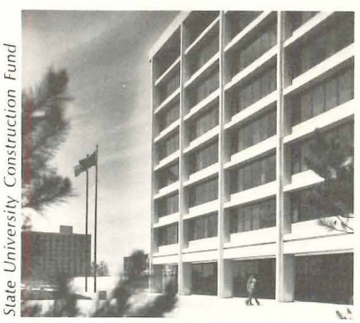
Eight years is a short span in the measure of architectural history, but at least two campuses commissioned at the outset by the newly established SUCF, and now virtually complete as originally conceived, speak of our recent architectural past rather than to its future. This kind of monumental urban design—whether classically symmetrical in the Beaux Arts tradition as at Albany, or assymetrically classic as in Oswego—had its day in the United States in the dozens of downtown urban renewal schemes for performing arts centers, office complexes, shopping centers and housing developments, built in the fifties and sixties and in some cases even today. This is not to say that the State University Campus at Oswego by the New York office of SOM, and the Albany Campus by Edward Durell Stone and Associates are examples of bad architecture and planning—on the contrary they are good of their kind—it is just that this very kind of architecture is no longer done by architects in the vanguard who are now consistently non-formalistic and strongly program oriented.

To anyone stirred by the promise of the new architecture now being commissioned by the Fund—projects such as Benjamin Thompson's designs for one of the sub-

. . . Skidmore, Owings and Merrill's Campus at Oswego

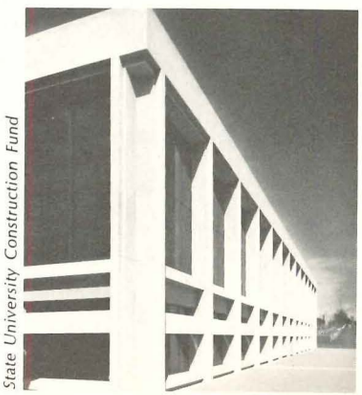


Frank Matzke

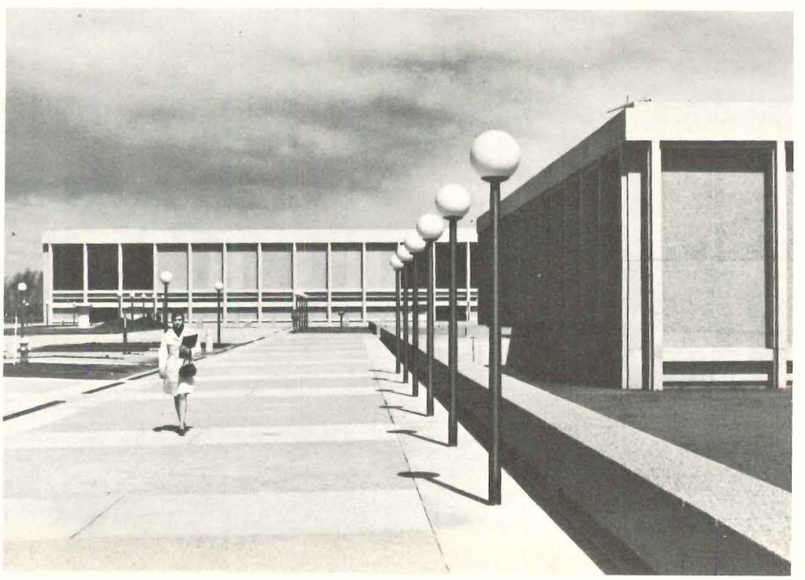


State University Construction Fund

Oswego is a windswept campus on the shores of Lake Ontario, which now accommodates more than 5,000 students. The air view shows only a portion of the campus and focuses on the work completed by SOM. Shown at left is the administration building and below it the library. The communications-lecture hall is identical. The view (right) looks beyond the student-faculty center to the lecture hall.



State University Construction Fund



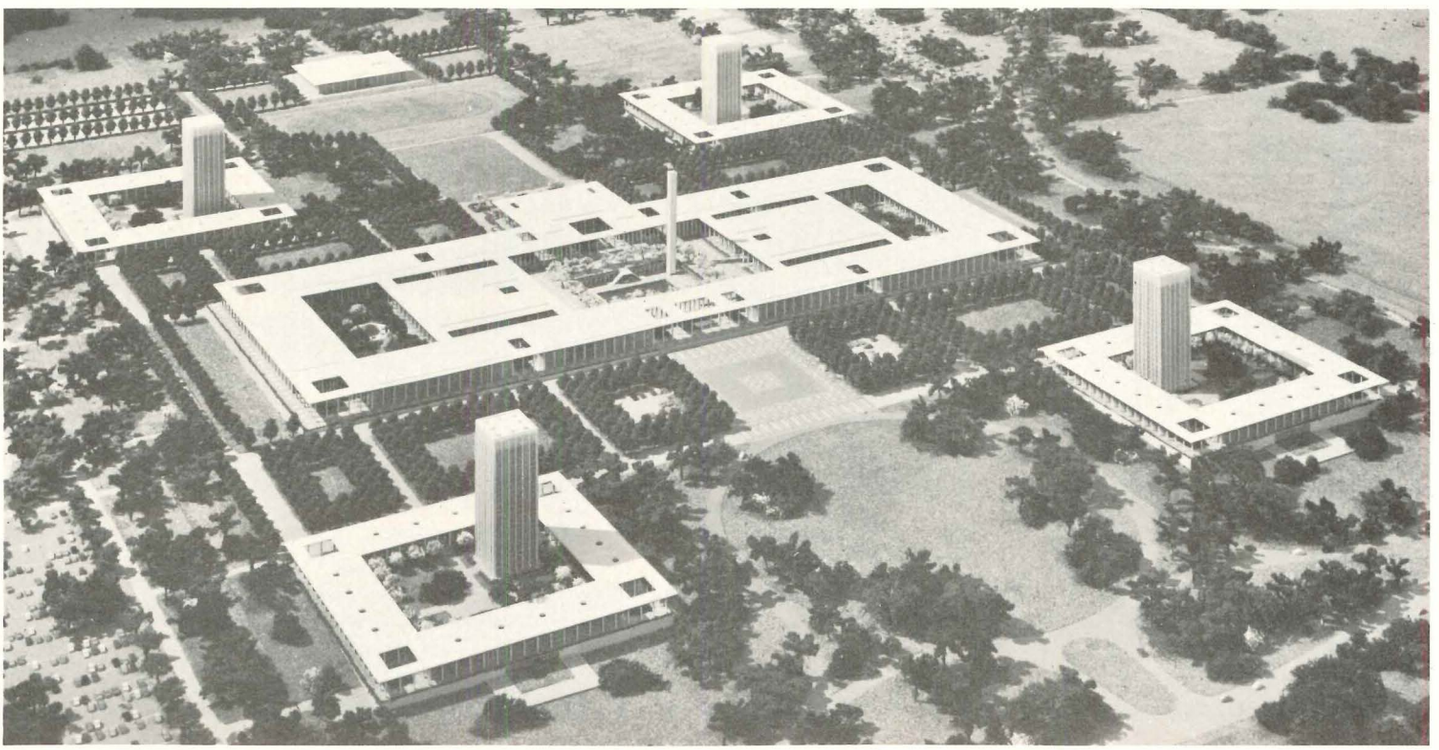
campuses of the huge Buffalo/Amherst site (pages 124-128)—Oswego and Albany seem cold and austere. To visit them is to reinforce this impression. To one who has learned to expect good buildings to express their functional complexity in their exterior massing, it is a surprise to still find buildings whose essential purposes are unexpressed behind a neutral classic facade. At Oswego there are two identically handsome structures on a large paved plaza, one of which contains twelve lecture halls. Its twin is the campus library. At Albany every function of campus life is behind an arcade or within a tower overlooking a formal court.

It should be said that the repetition of identical structural elements in great quantity, because all functional elements are contained within a consistent module, added to the speed and economy with which the Oswego and Albany campuses were erected.

At Albany and Oswego the structural elements consist mainly of precast and cast-in-place concrete. At Albany the main structural elements are canopied columns and vaulted rib slabs. The SOM buildings at Oswego are not locked into a system as relentlessly uniform as Stone's at Albany, but they nonetheless have great structural and modular consistency. The lecture hall center and matching library have identical exterior beams, girders and parapets of exposed cast-in-place concrete.

The two campuses differ principally in the manner in which they are expanding. Architect Stone's monumental formalism will continue to serve, as Albany is to keep reproducing herself with more identical dormitory towers in square colonnades and more academic facilities housed behind arcades. The pattern has been broken at Oswego, however, and outside the campus core a new architecture takes shape as in the new physical sciences building by Armand P. Bartos and Associates (page 123).

. . . Edward Durell Stone's Albany Campus on the outskirts of the state capital



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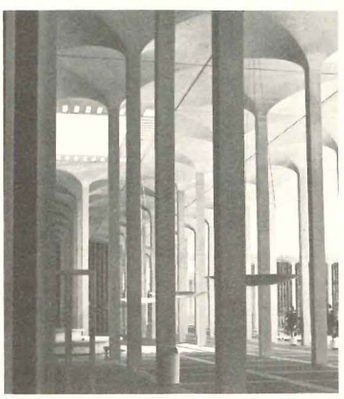
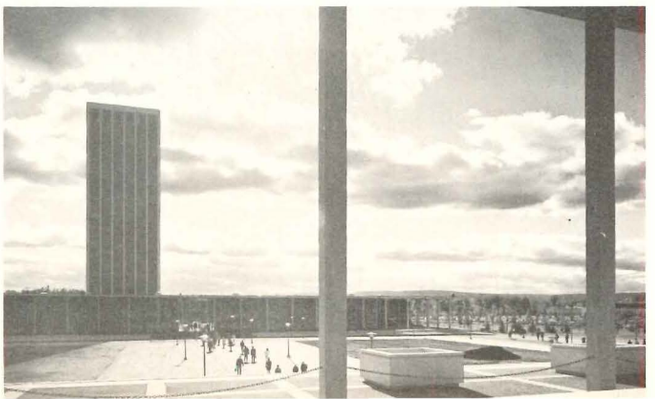


The four squares, each of which surround a 22-story tower, are dormitories holding approximately 5,000 students apiece. The rectangular pavilion houses the departments of biology, chemistry, physics, education, humanities, social sciences, business, fine arts and earth science. Also within the rectangular facility is the campus administration building. The two square pavilions within the rectangular pavilion are respectively the theater and the library. Another square pavilion, the student union, is on axis with the tower at the center of the composition. The monumental scale is clearly indicated in the interior photos (left) and those of the smaller and larger plazas (right).

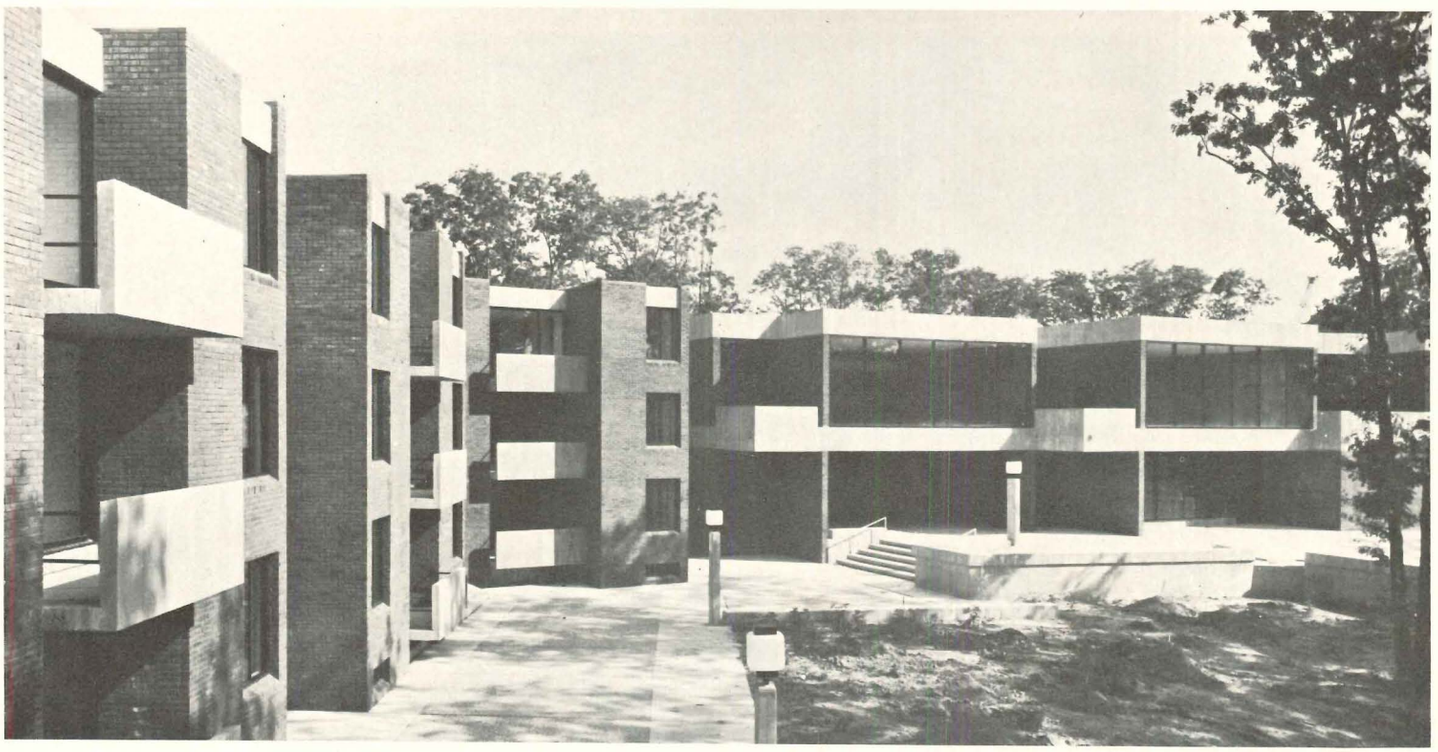
State University Construction Fund by Rand

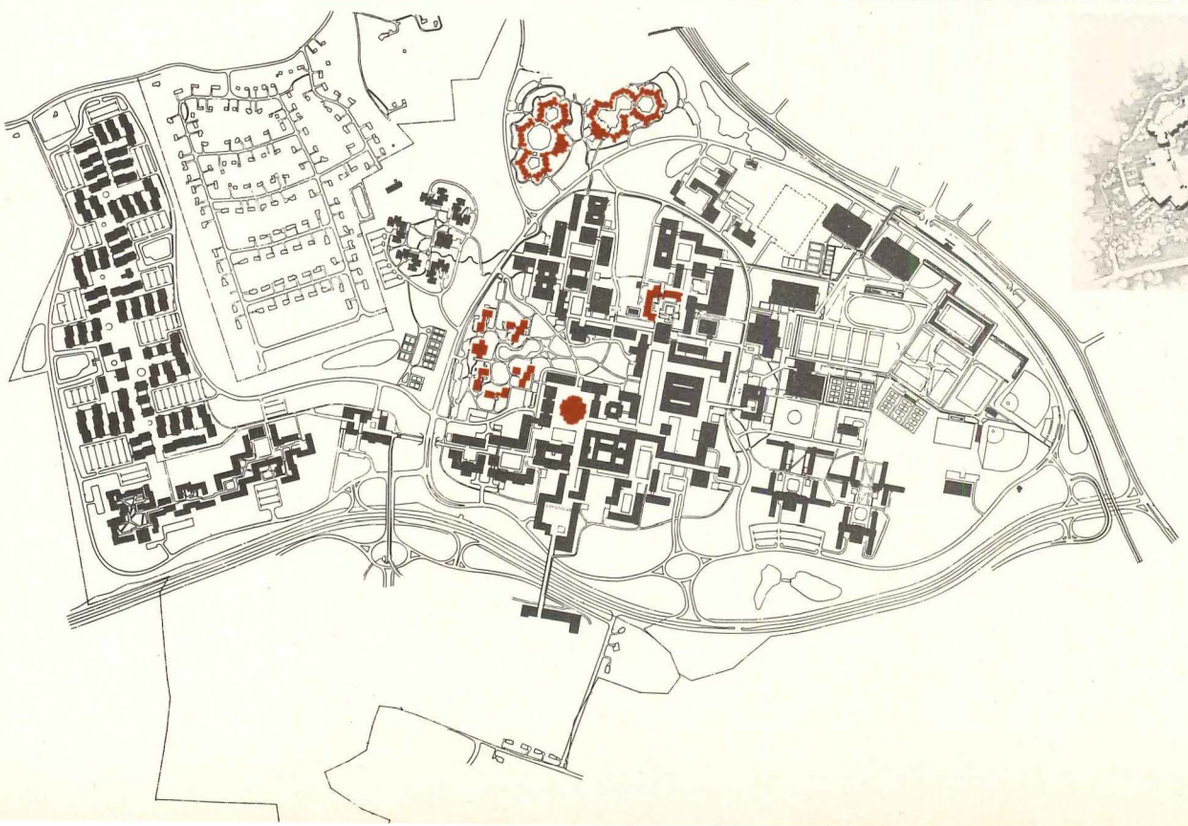


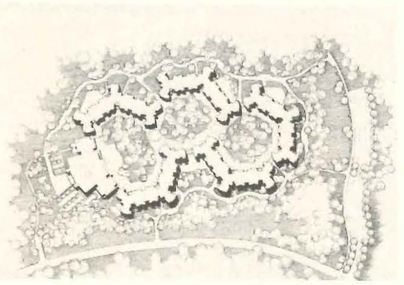
Other campuses have become so large that they far exceed the possibility of design control by a single firm. To break down their vast scales into systems of comprehensible parts, SUCF conceives such projects as a series of campuses, designed by different firms within a huge interconnecting circulation network

The master plan of SUNY at Stony Brook, Long Island is the work of Damaz, Pokorny, Weigel, Architects. Stony Brook was originally a teachers' college founded in 1957. Two years later, in 1959, its mandate was extended to include the training of students in science, mathematics and engineering, and in 1960 the institution was designated to become one of the four graduate centers in the statewide system. Upon completion of the master plan, architect Paul Damaz discussed some of the problems of the site in a lecture given to his fellow architects at a meeting of the New York Chapter of the A.I.A. Said Damaz: "The first plans drawn up by the original architects were actually for a small college. On that basis, buildings were located on the site, designed and built. When the function of the college was extended, the master plan should have been scrapped and a new one begun, based on the new program. The failure to do so is at the basis of the difficulties which we encountered when we inherited the present campus and its red brick buildings. These buildings, originally part of a rural campus, had to be integrated in a revised master plan of a completely different scale and character. First, we had to minimize the original buildings since they are now out of scale

. . . as at the State University of New York at Stony Brook







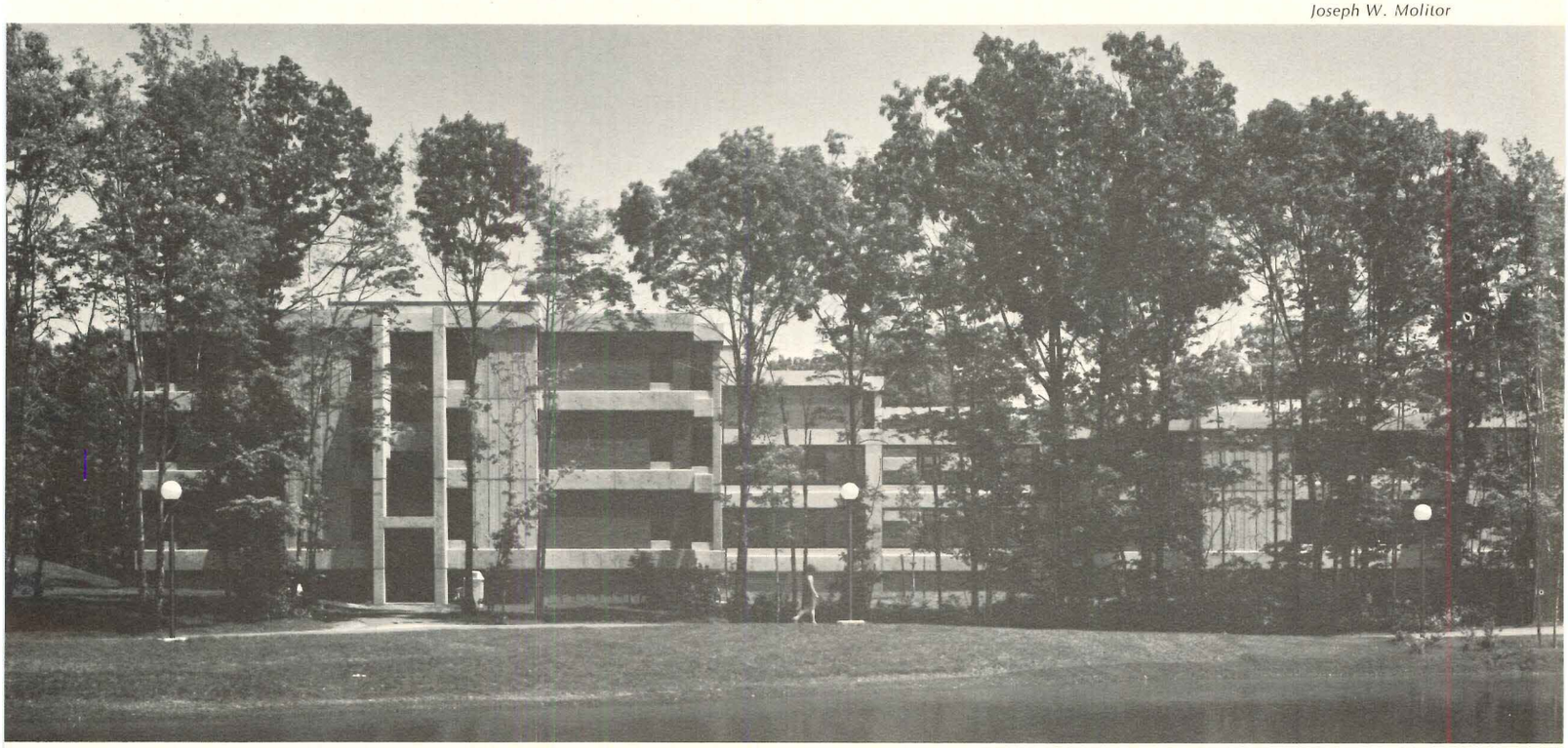
The dormitory-dining hall group by Gruzen & Partners, shown on the master plan (left) and in the photo and site plan (above) is an uncommonly pleasant place, made so by the semi-enclosed wooded courtyards and the interest engendered by the buildings' irregular contours.

and out of context and second, in increasing the building density we had to find the best way to build new buildings between the old. Since the construction of the campus did not start systematically from the center to the periphery, construction is occurring right in the center of the campus, disrupting the life of the university. The entire northern half of the academic area will be in total turmoil, notwithstanding all the precautions we can take . . ."

Stony Brook has been conceived as a unified university and not as a group of semi-independent colleges, and thus the campus planners could not depend upon the articulation of separate collegiate entities as a means of breaking down the scale. Damaz, Pokorny and Weigel therefore attempted to create a human scale by planning a succession of small academic plazas serving as nodes, linked together by pedestrian and bicycle paths and accented by highrise buildings serving as landmarks. The campus has three major areas—the central campus area which includes some residential buildings, the residential portion and connected by two bridges across the throughway, the health sciences center. Within the academic center is the physical sciences complex which includes the science building shown below which was designed by Gruzen and Partners, the liberal arts group, the engineering sector, a group of special schools, and at the interconnecting bridge, several health science buildings. Included also are such common facilities as a communications lecture-hall center (pages 120-121), a library and a student union.

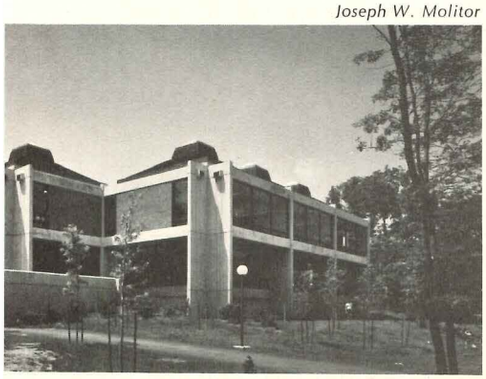
Among the best of the dormitory groups within the residential sector are those by Emery Roth & Sons shown below, and by Gruzen & Partners (opposite page). Both dormitory groupings sensitively follow the contours of the site and make the most of the natural vegetation and views.

Joseph W. Molitor

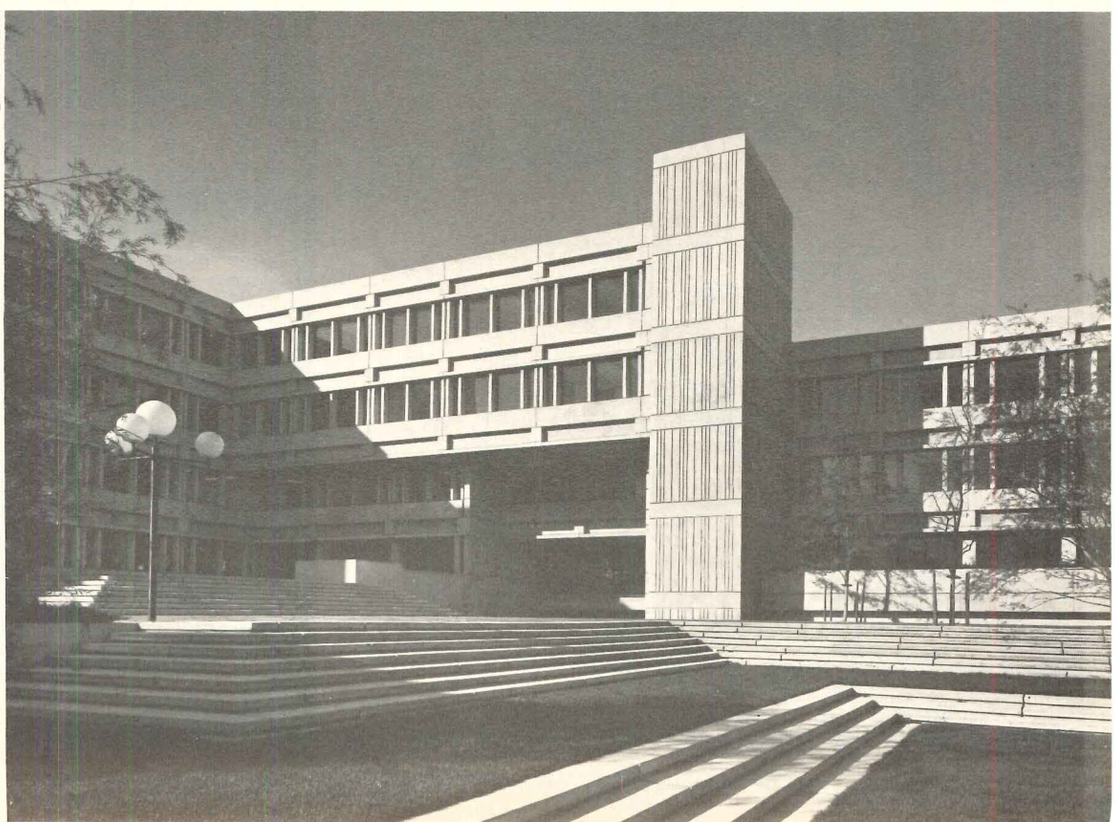


The dormitory-dining hall group, by Richard Roth, Jr. of Emery Roth & Sons, surrounds a small lake within the central campus area. The site slopes upward at this point and the dining hall, shown below is at the crest of the hill. The Earth-Space Sciences Building, (right) designed by Gruzen & Partners encloses a multi-level landscaped court, as shown on the master plan opposite.

Joseph W. Molitor



David Hirsch

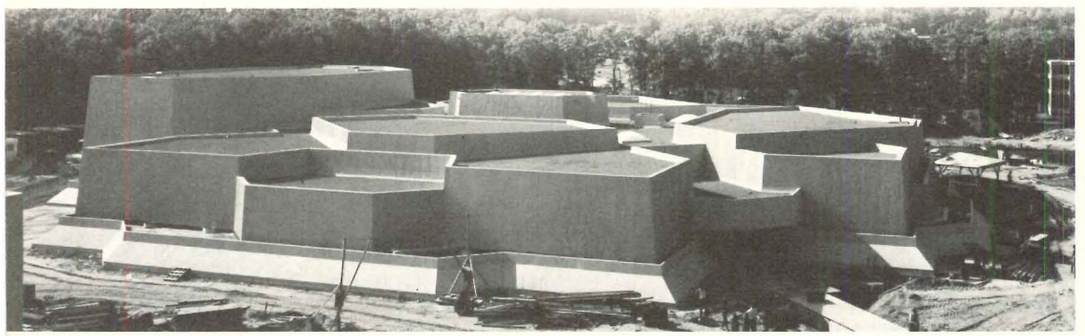


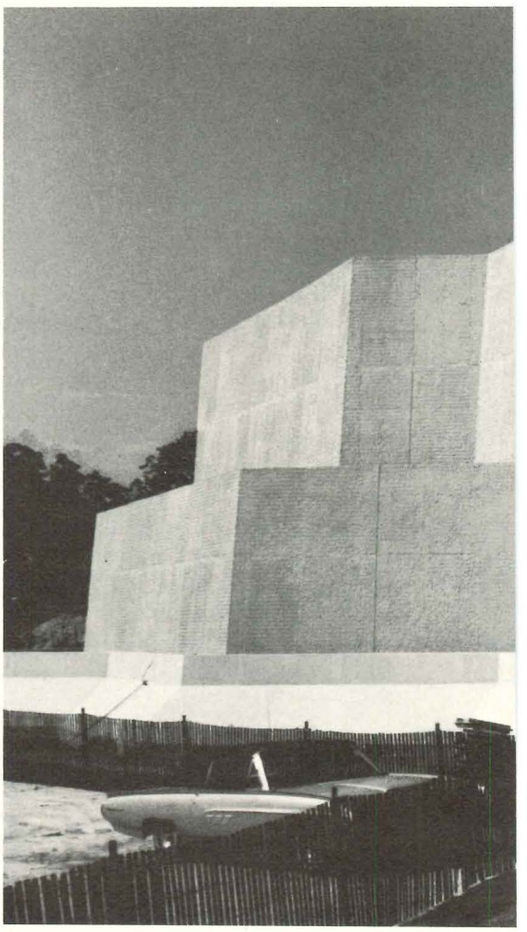
SUCF has built a number of excellent lecture hall centers as principal core elements —and in the process has contributed greatly to the development of this new building type

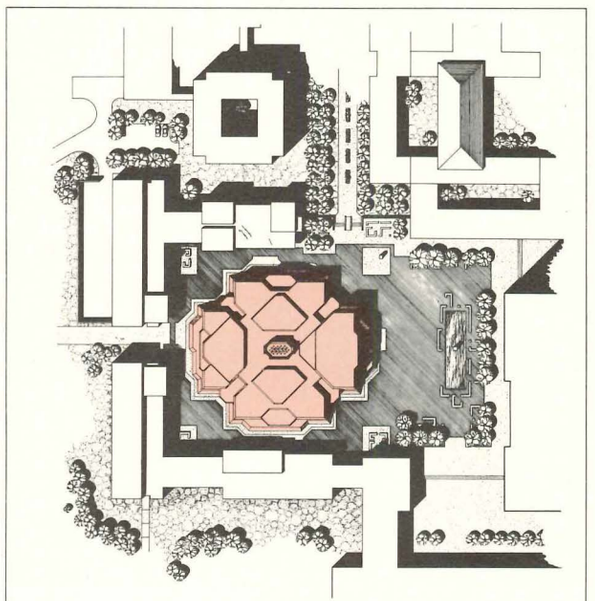
The communications and lecture hall centers on the SUCF campuses are a relatively new building type growing out of the increasing sophistication of audio-visual equipment, its convenience and widening use. Generally these are non-departmental facilities. They have in common instructional method rather than discipline, curricula or course. A high rate of utilization of these facilities is typical and they are usually located near the campus core. For flexibility of scheduling each lecture hall center contains a variety of room sizes ranging from 60 to 480 seats. SUNY and the Fund helped pioneer the development of this building type and the new lecture halls at Albany, Binghamton, Brockport, Buffalo, Cortland, Fredonia, Geneseo, New Paltz, Oswego, Plattsburgh, Potsdam and Stony Brook have been studied and evaluated by colleges and universities throughout the world.

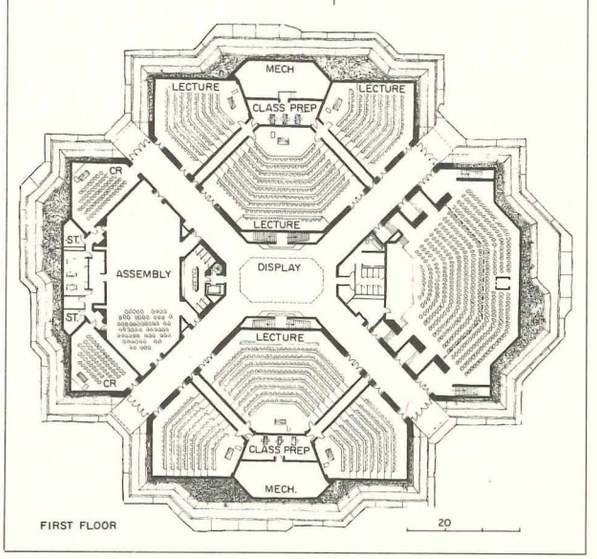
The Communications-Lecture Center, designed to accommodate approximately 2,000 students of all disciplines, comprises ten lecture halls ranging in capacity from 60 to 600 seats. The plan is based upon the need for ease of student circulation, not only within the structure itself, but also with respect to approaches from various

. . . as in the Lecture Hall for SUNY at Stony Brook by William Kessler and Associates









Of all the lecture hall centers built so far by SUCF, Stony Brook's is perhaps the most plastically expressive of its function. It may appear in these photos to be oddly scaleless due to the lack of scale defining elements on the exterior. When seen in the context of the L-shaped structures which surround it however—also designed by William Kessler and Associates, nearing completion and shown on the plot plan—its size can be readily apprehended by the passerby. Its purpose, on the other hand, will not be evident to anyone that does not know that it is a lecture hall center, but it can certainly be argued that a new building type may call for a new architectural expression which people must learn to recognize.

parts of the campus. Located within a plaza, and central to the expanding campus, the building is a concrete monolithic structure which Kessler has endeavored to make expressive as an integral part of the plaza rather than as an object within the plaza.

The Center's varied profile reveals what it contains—ten lecture halls of different sizes and shapes, varying in plan and elevation in accordance with visual and acoustical considerations. All lecture halls are on the main floor. The mezzanine floor houses student lounges and integrated facilities for the operation of the audio-visual system. Two groups of three lecture halls each are served by one projection room, thus facilitating efficient and economical operation.

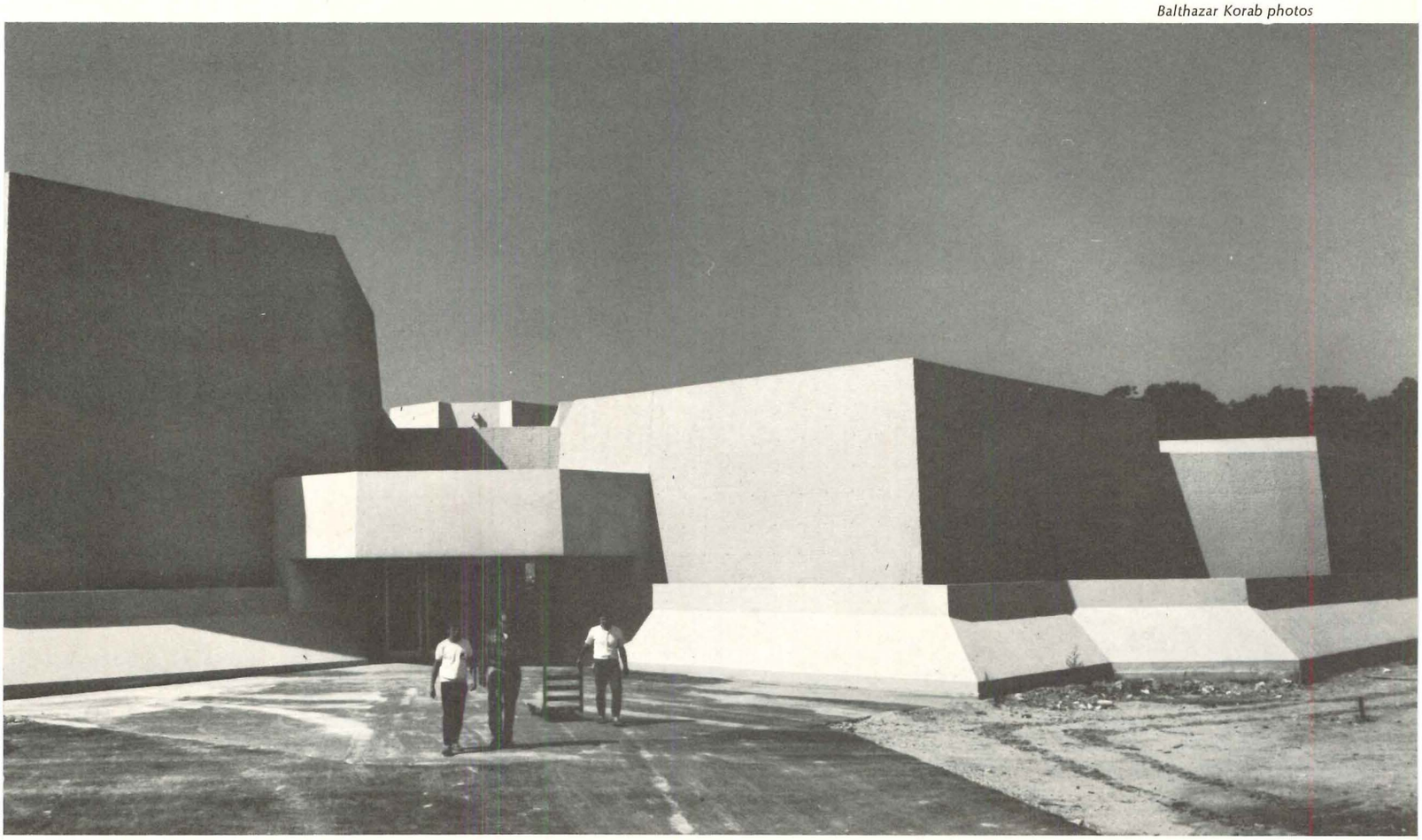
At the center of the building is a large hall with a skylit ceiling where exhibits and formal gatherings are held. Walls slope gently upward toward the ceiling.

The concrete texture was achieved by lining the concrete forms with flattened expanded metal, which, when pulled from the concrete after setting, tore away the surface revealing the stone aggregate while leaving the diamond pattern of the metal. This surface finish was used inside and out, except for the lecture hall interiors which have a surface created by rough vertical form boards.

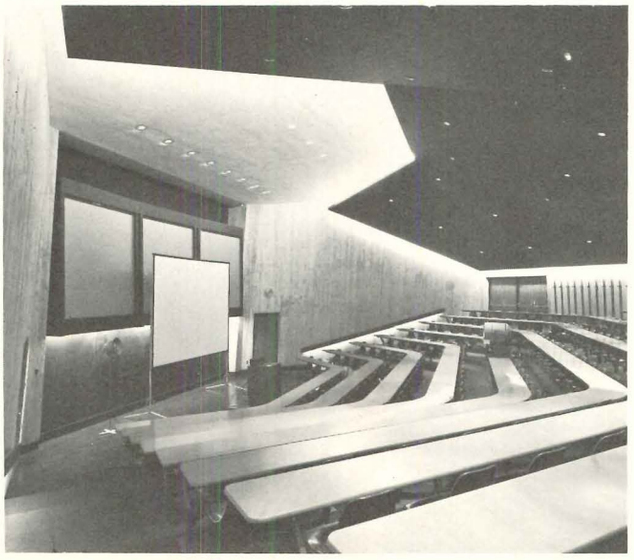
This building was completed in 1969 at a square foot cost of $32.

The Detroit Chapter of the American Institute of Architects presented this building with an award of honor in their 1969 annual awards program. McClurg, McClurg, Paxton and Mikle served as structural engineers; Meyer, Strong and Jones were the mechanical engineers; and the landscape architects were Zion and Breen. The acoustical engineers for the project were Bolt, Beranek and Newman, Inc. Rosoff Brothers, Inc. acted as the general contractor.

Balthazar Korab photos



The center hall and mezzanine (left) and two typical lecture halls (right) express spatially the hexagonal module which orders the building. All lecture halls constructed by the Fund including these have multi-media capability using three simultaneous multiple images. The halls have been designed to use 35mm slides, 16mm film, television and overhead projection to aid the instructor in his presentation.



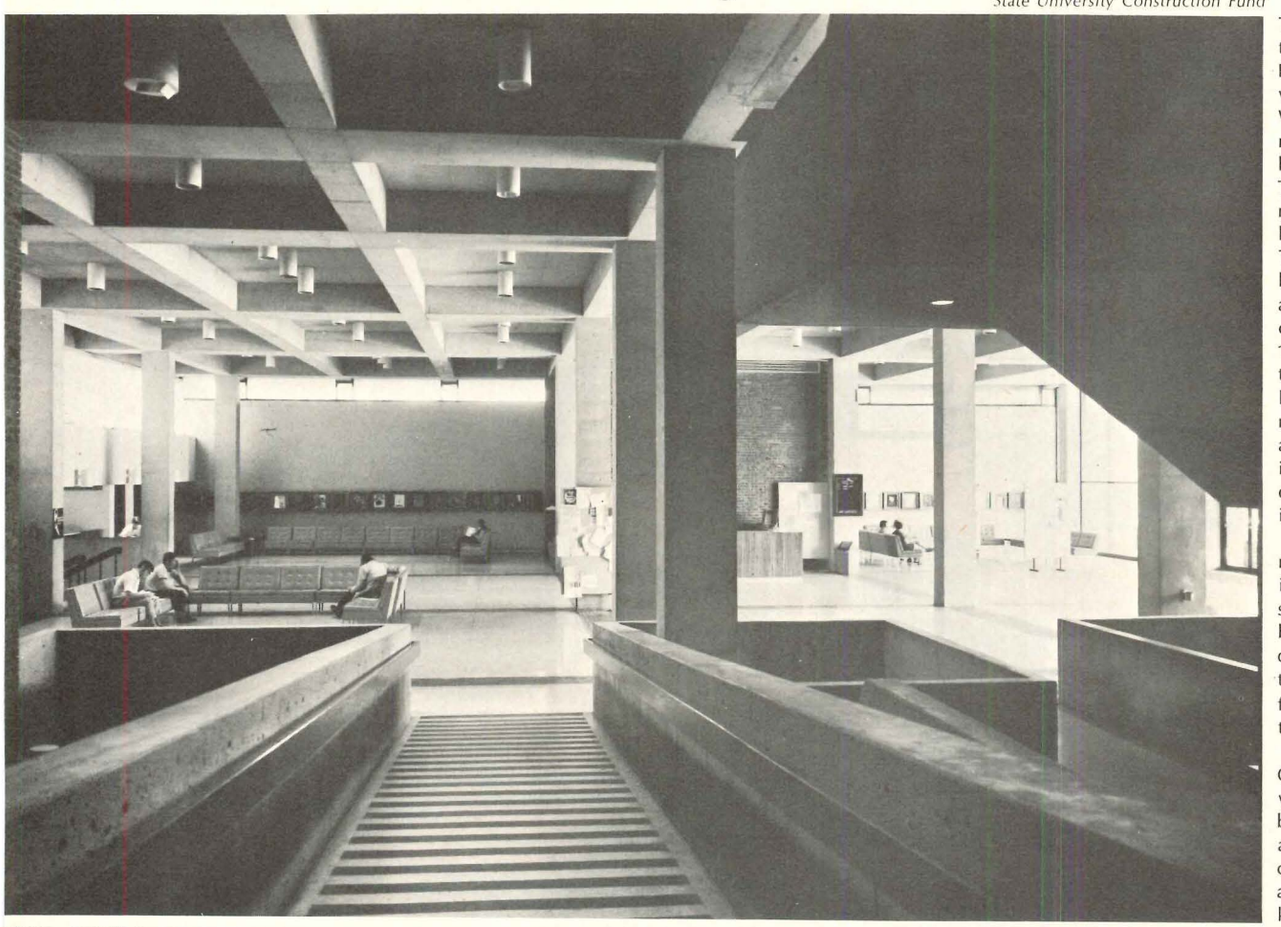
SUCF has conceived and maintained an architectural standard that other college-building administrators might well emulate. Shown below is a very small selection from the dozens of well done buildings which help enhance almost every campus

The Fund's research and development program, described in this month's article on SUCF's organization methods (page 55) has produced a series of publications to aid the architects and planners under contract to the Fund in doing their job. The recently published *Guide for Facilities Planning* reveals the basic relationships of private professionals to the Fund and offers insights into the processes by which this multi-billion dollar program is coordinated and buildings are produced—on time, within the budget and of the quality shown below.

Says the Guide: "To accomplish large-scale building programs, government has traditionally created powerful agencies with large staffs to do the work. The Fund, however, has chosen a different means; and through the years has become a proponent of the "government by contract" approach. Through a system of contract management, professional planners, architects and consultants carry the actual responsibility for planning, design and construction supervision. . . . The Fund provides the necessary information to enable the private professionals to develop the campus plan, site program facility program, site budget, program budget, performance criteria, etc. The Fund fulfills its primary charge to the State

. . . constructed on time and within the budget

State University Construction Fund



The student union building at the State University College at Buffalo (left and below right) was designed by the Perkins & Will Partnership as part of a new campus core which they have designed for the college. Their work also includes the new college library, lecture hall center and related spaces. The student union serves as a link between the residential and academic spaces on the campus. In its more than 120,000 square feet are contained reading and music listening rooms, game and recreation rooms, assembly rooms and student offices. The facility also includes a 900-seat dining room and smaller dining spaces.

Incorporated within the new air conditioned structure is the 30,465 square foot one-story former student union, built 15 years ago. Instead of destroying the old building this scheme permitted it to function while the new structure rose around it.

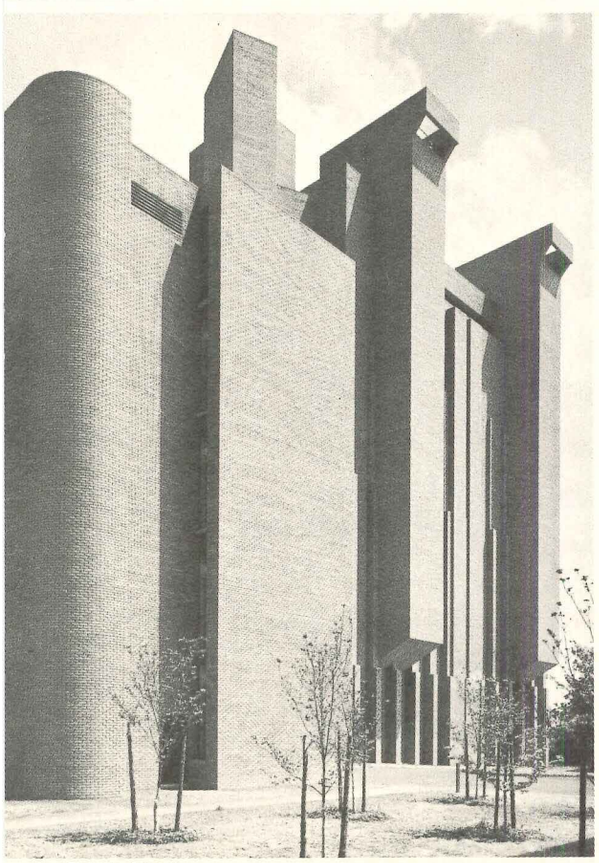
The Fine Arts Building for Geneseo College (below left) was designed by Myller, Snibbe, Tafel and Lindholm who are also responsible for the campus plan for this college and the great majority of its key buildings and dormitories.

University and to the public by monitoring the process; by insuring that the professional is making the decisions necessary to meet the goals of time, cost and quality; and by seeing that these decisions are communicated to all concerned. The Fund's primary role, then, is to expedite the decision-making process. Behind this primary role is a secondary one: to assist in evaluating the actual quality of these decisions. [Ultimately the Fund's role is one of coordination with others]. Personnel at each campus, SUNY central offices, Division of the Budget, Dormitory Authority and many other groups all play major roles. Finally the construction industry, the contractors, subcontractors, suppliers and manpower who actually construct the job must be considered. . . .

"To facilitate communication between the Fund and the professionals working on a project, a number of Fund staff members are designated to assist in supplying information and to see that the project is moving forward. A director of design and construction within the Fund acts as project coordinator. His task is to evaluate the process and to make broad judgments on the quality of the product. He recommends submission of reports for Fund approvals when the necessary decisions have been made and documented. . . .

"The Fund has developed a definitive system of design cost control [which delineates responsibility]: the Fund must develop and maintain a valid budget; the architect must, after review, accept the budget as a design objective. SUCF does not feel that cost control and quality design are in conflict; in fact, one is very much part of the other. A valid initial budget which is constantly evaluated, updated and accepted by the architect as a design objective can and often does result in architecture of the very highest quality—on time."

Norman McGrath



George Cserna

The student activities building for the SUNY Upstate Medical Center at Syracuse (above) was designed by Conklin & Rossant. The key to its organization is a large two-story high lobby connecting the main entrance from the west at the first floor (shown in photo) with the entrance from the east on the second floor and linking the upper and lower parts of the site. The building contains such major recreational facilities as indoor tennis courts at grade, as well as a swimming pool, gymnasium and squash and handball courts. In addition are faculty and administrative office space, academic facilities and a day nursery.

State University Construction Fund

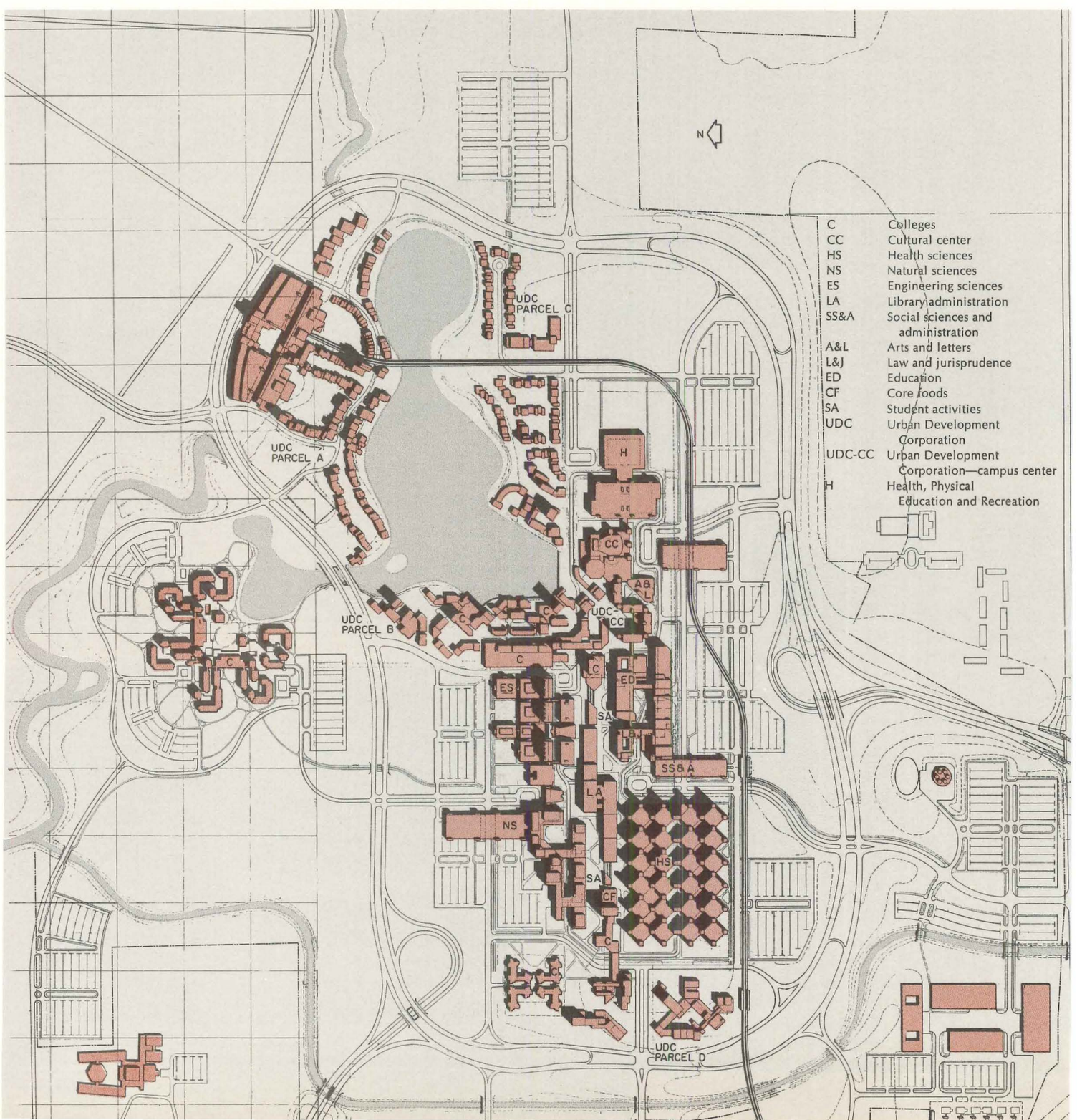
The Cornell Agronomy Building (below left) was designed by Ulrich Franzen & Associates as a visual as well as functional link between this State University Agricultural College and the endowed portion of Cornell University. A new physical sciences building for Oswego (below) was designed by Armand P. Bartos Assocs.

Until recently SUCF has been constructing campuses at scales ranging from Canton to Stony Brook. Now the Fund is planning and constructing larger campuses and building complexes than ever before in history—and thus takes leadership in solving today's problems of superscale

In a report to the Board of Trustees of SUNY, the Fund describes the essential characteristics of the comprehensive plan for the Amherst Campus—a plan which, in the words of Anthony G. Adinolfi, general manager of SUCF, "responds to a comprehensive academic program, and embodies the expert judgment of more than one hundred educators, architects, landscape architects, engineers and planners from among the best available talent both within the university system and outside. This plan represents a physical plant and the strategy for achieving it with optimum flexibility to accommodate the challenging and changing needs of the university in future decades."

Planning began in 1967 when it was decided to relocate the entire University including its Health Sciences Center from its Buffalo site to the Amherst site. Says the report: "The design and construction of more than eight and one-quarter million net square feet of space on the twelve-hundred acre Amherst site represents a new order of magnitude in the planning of facilities for higher education. The education complex at its peak will generate an on-site population of over fifty-thousand persons including students, faculty and

. . . as at the Amherst Campus of SUNY at Buffalo



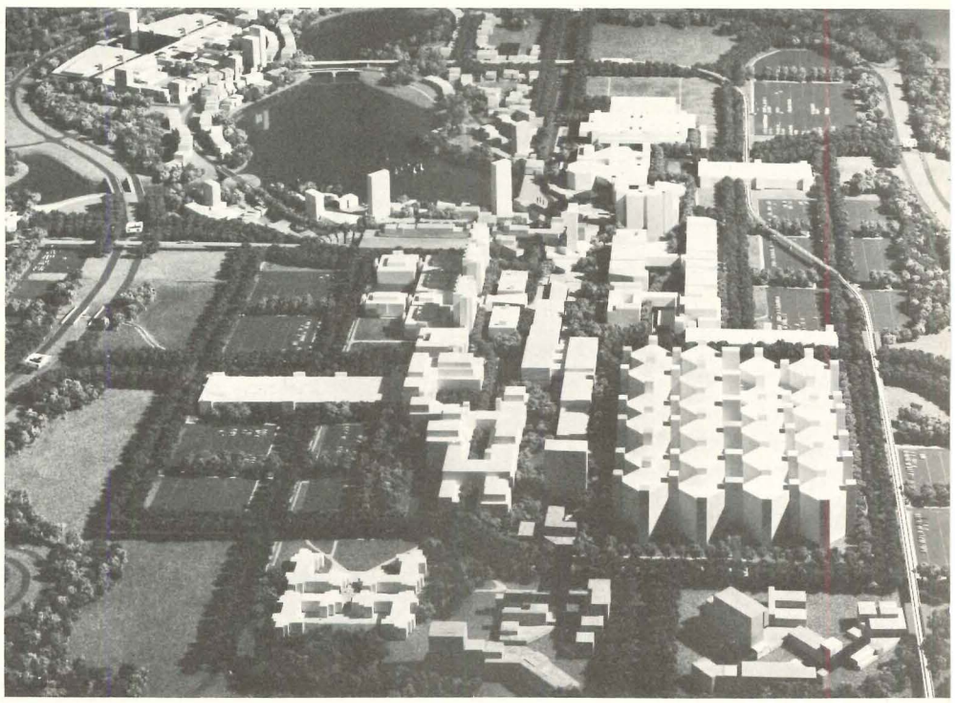
staff. The scale, complexity and coordination of this growth required that SUCF create an organizational framework and develop new techniques to augment the traditional planning process. More than twenty planning firms are working in a coordinated effort under the Fund's direction to ensure that the resultant facilities not only satisfy the University's program but also realize the potential of the site and induce the atmosphere of activity envisioned there to bring new life to the land. Resultant social, cultural and economic changes have been forecast and analyzed. A major portion of the [resultant growth of the surrounding community] is being planned by the New York State Urban Development Corporation as a new community adjacent to the campus with non-university functions located within the university boundaries. . . . The commercial center which will serve this associated growth will be located immediately adjacent to the campus.

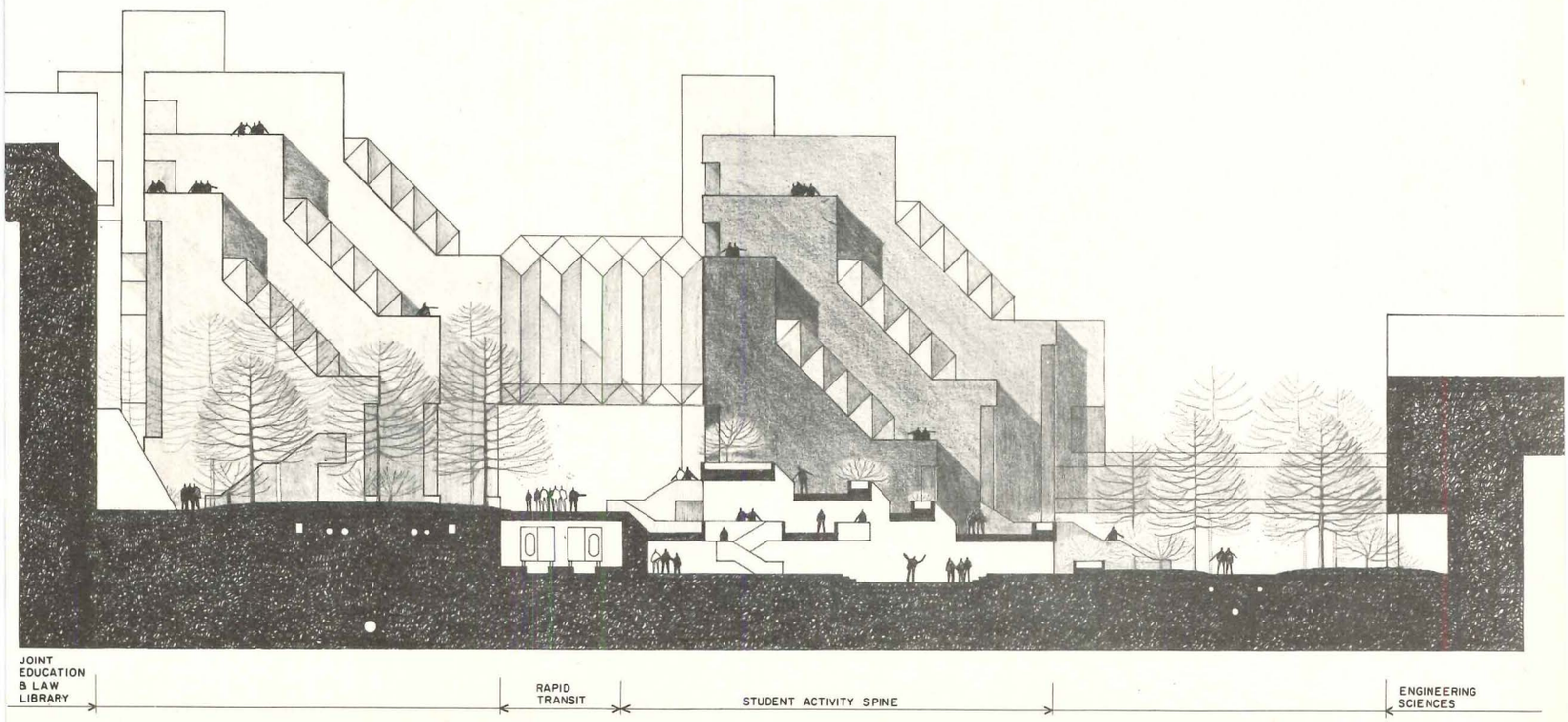
"The state has allocated 650 million dollars in planning and construction monies through 1975 to meet the objective of having a workable campus at the time."

Designers of the comprehensive campus plan (shown at left) are Sasaki, Dawson, DeMay and Associates. The architects and planners at work on the sub-campuses within the plan are Armand P. Bartos and Associates, Marcel Breuer and Associates, Cannon Partnership, Anthony L. Carlino, Robert Traynham Coles, Davis, Brody and Associates, Fontanese & Halfpenny, Fuller & Sadao, Inc., Ulrich Franzen & Associates, Hellmuth, Obata and Kassabaum, Thomas Justin Imbs & Associates, Milstein, Witeick, Davis Associates, I. M. Pei & Partners, Pohl-Roberts-Biggie, Benjamin Thompson & Associates and Harry Weese and Associates. The State University Construction Fund coordinates the work of these firms.

The demands of the academic program call for high density development. Surface and subsurface conditions of the site, however, severely restrict the amount of area upon which this intense development can be placed without incurring harsh penalties in foundation and footing costs. Because of drainage problems, a generous portion of the land is to become a man-made lake. It was through comparative critical analyses of these two major determinants—site conditions and academic program—that the spine and activity corridor concept evolved to a satisfactory plan. The location and configuration of the buildings not only take full advantage of the soil conditions on which it is most economically feasible to build, but meet the requirements of the academic program. The campus comprises seven Faculties along a spine or central activity corridor, (shown in the site plan, and section, below) and the model photo (right) which serves as an organizing element, and several linear activity corridors which extend outward through the perimeter areas. Each Faculty is a highly identifiable complex and is located closest to those other Faculties with which it has the greatest relationship. The Faculties are served by a loop road. The spine spaces are a strictly pedestrian precinct containing a wide variety of commercial, recreational and dining functions intended for use by everyone on campus. A significant segment of the commercial services and goods offered will be part of an on-campus development by the Urban Development Corp.

The activity corridors interwoven with and extending from the spine are a mixture of residential, classroom, dining and recreational facilities and serve as entries to the campus center.



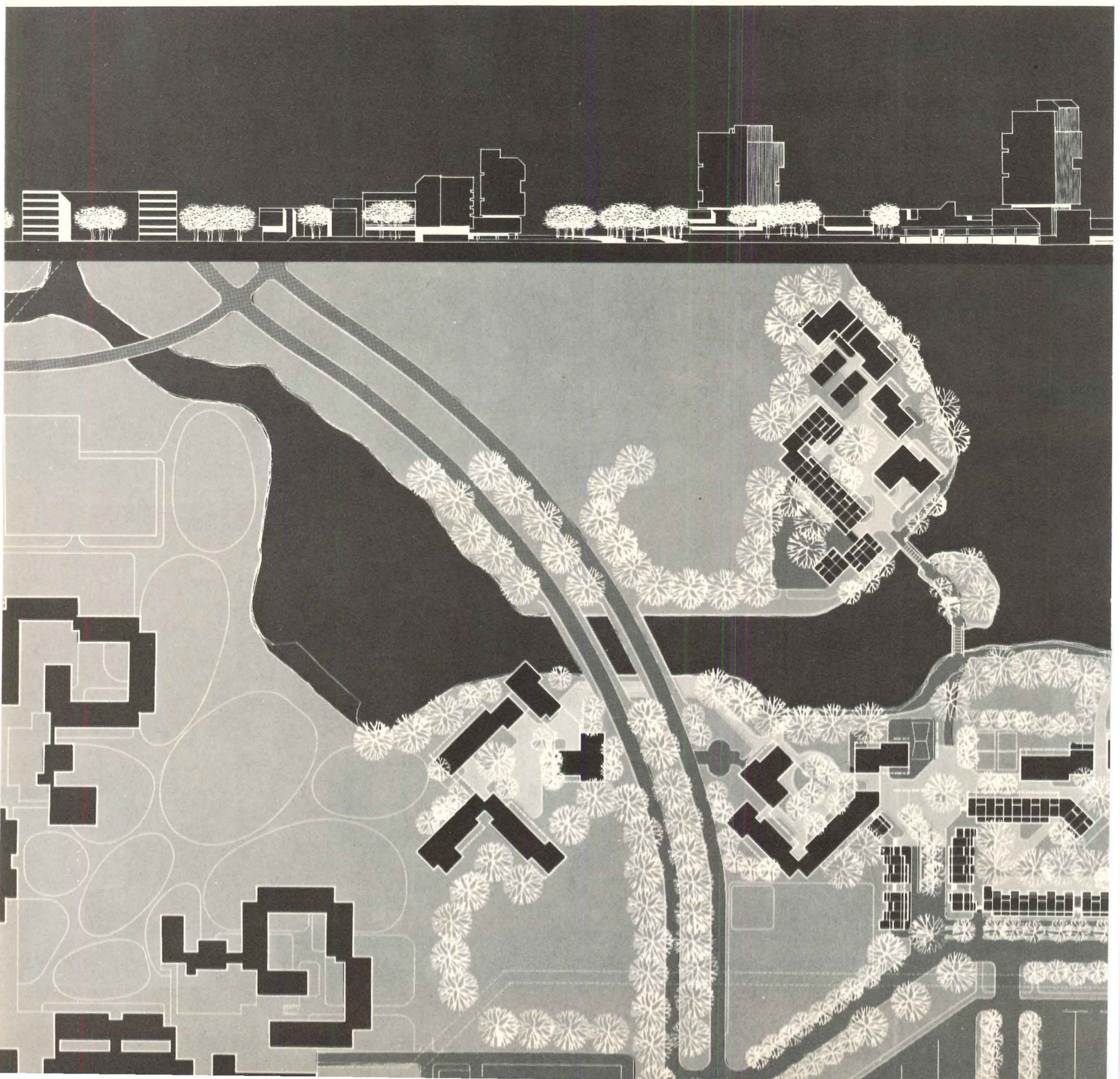


The Amherst Campus is so vast that the spine can be compared to the distance along Fifth Avenue between the N.Y.C. Public Library and the 59th Street end of Central Park. The Health Sciences Center (overleaf) by itself covers about as much area as the Albany Campus (page 117). All concerned must grapple with complex scale, functional and environmental questions . . . including architect Benjamin Thompson whose subcampus designs incorporate one of the proposals for

Amherst makes one ponder—as does Thompson—"how can a human mind comprehend and plan at today's speed, scale and cost what must be done for the human environment?" His work covers a segment of the campus along the man-made lake and includes cooperative housing and community facilities, a campus commercial square and a new town center, as well as recreational areas, parking and roadways. He must coordinate his efforts with the N.Y. Dormitory Authority, the Urban Development Corporation, the other architects designing subcampuses and SUCF which plays the ultimate coordinating role.

Says Thompson: "Our special aim in designing this part of the campus has been to achieve a mixture of living, learning and commercial functions, merging the jurisdictions of three agencies which have no legal precedent for sharing land, design, or construction costs. We are attempting to forestall fundamental planning errors, as well as to predict and prophesy the quality and spirit of the total area as a community of living people, not just a deadly chain of isolated buildings on a bulldozed site.

"Physically the lakefront development will be an environment scaled for pleasant walking, yet integrated with both automo-



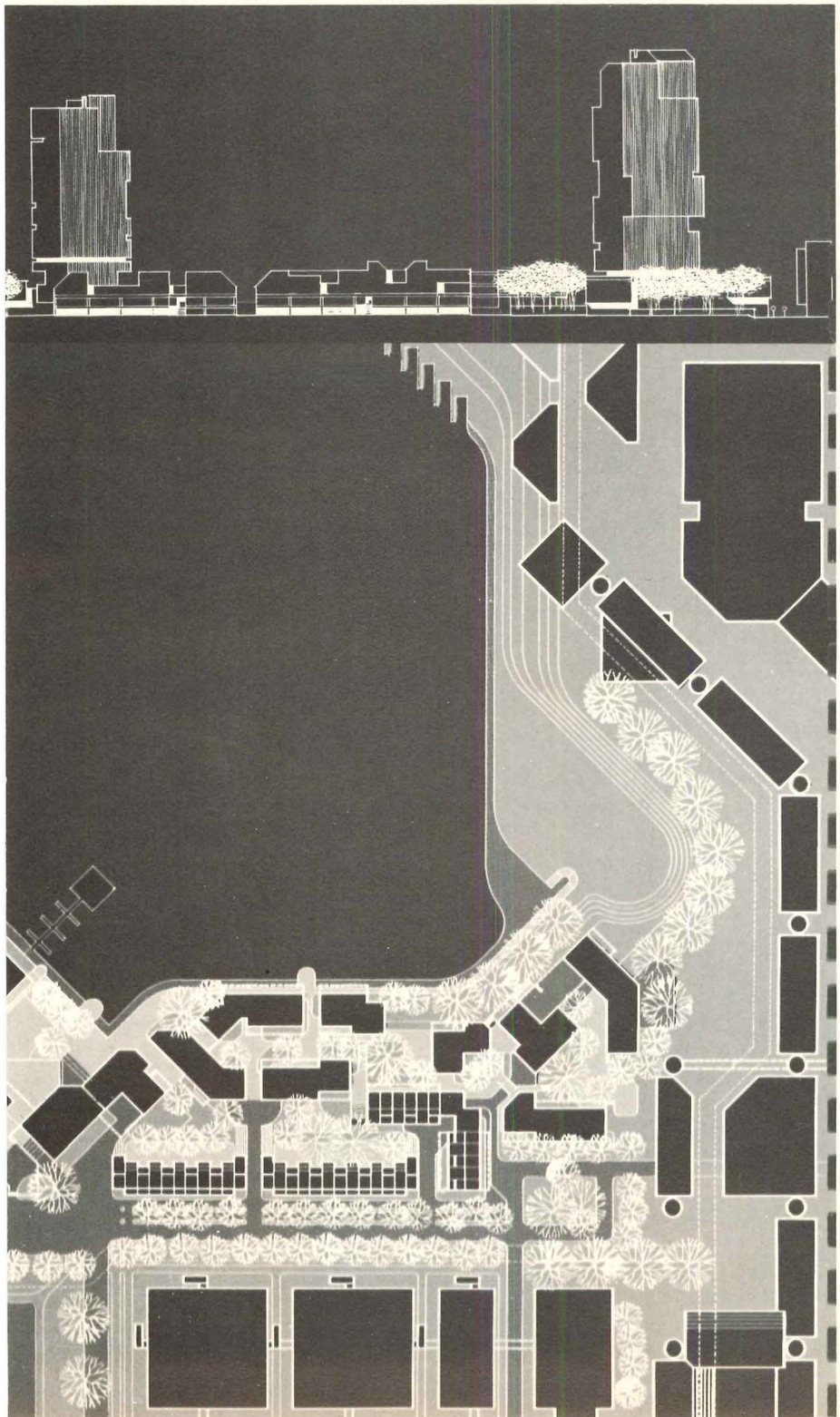
tive and public transportation systems. We are seeking a rich mixture of people and activities, of buildings and streets, of levels and spaces for the variety of experience which removes monotony and makes the environment lively and interesting. It will be a city in the country—a dense concentration of housing and services that preserves zones of open land, playfields and woods reached by foot and bicycle paths around the lake to retain the freedom of rural living.

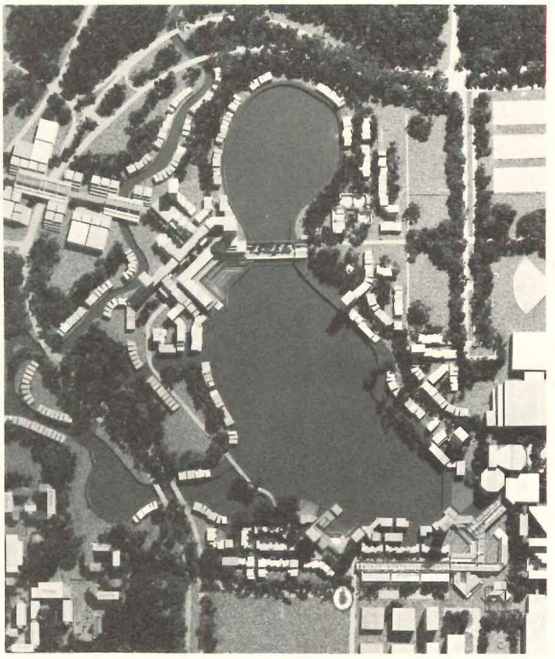
"Educationally the lakefront development will be a community where education and living are inseparable, where learning happens in a continuum of activities, experiences and relationships; a community where everyone, every day, can be in touch with trees, grass and water, even while enjoying cultural and intellectual opportunities that are urban in scope; a community that is multi-mix in every sense—physically and socially unstratified so that students, faculty, married students, some employees and children, all freely coexist and intermingle as a natural organic community."

Thompson's sector of the Amherst Campus proposes four major building types. In the first category are commercial, instructional and student activity buildings. The second category includes 18-26 story apartment towers. In the third group are 2-3 story apartments or row houses and in the fourth are 6-story parking garages.

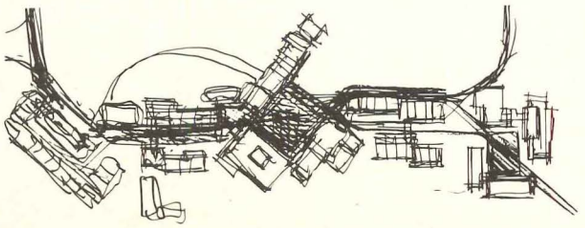
Several modes of transportation will be coordinated throughout the site. An east-west shuttle bus route bisects the site just to the south of the colleges. Running in a north-south direction is a rapid transit train which parallels a major automobile access and service route from the circumferential highway. Intertwined with these and other transportation routes are pedestrian and bicycle paths.

an interface between the Amherst site and a new community planned by UDC





The complete subcampus under detailed study by Thompson is shown in the model above, although along the bottom and right hand edges of the photo are segments of parcels planned by other firms. Following the shore of the man-made lake are commercial, instructional and student activity buildings, apartment towers, low-rise apartments, row houses and garages. Adjacent to the principal bridge is the town square. Diagonally opposite across the lake near the end of the main spine of the entire Amherst Campus is a campus mall and co-op. Model photos of these elements are shown overleaf. Shown in detail (left) is an earlier study of the segment comprising the lakeside apartments and co-operative center.

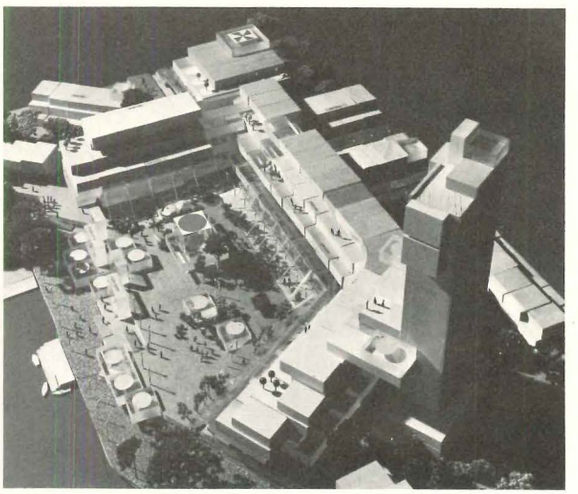


Masonry bearing wall and wood frame construction will be considered for all low-rise apartment and row-house units. Low-rise instructional and student activity buildings may be framed in steel or concrete. A glass gallery in the campus mall may be built entirely of steel and glass.

The construction of buildings in the subcampus designed by Thompson is scheduled for 1975 to 1980. Three college groups, the lakeside center, the core store and campus co-op will be built first. In general the construction will start at the lake side and then spread in a north, south and west direction.

Ezra Stoller © ESTO photos

The campus mall and co-op is the nerve center of the campus plan, providing a physical and visual focus and a transition between the residential and academic sectors. The mall is a glass gallery linking the lake and the co-op store. It has been planned as a mixture of services, eating places and other facilities that meet daily student and faculty needs.



In Thompson's interface proposal, the town square will be linked to the campus proper by two convenient bridges. Placed on the shore opposite the mall, visible and accessible from the entire campus, yet separate enough to provide an off-campus place to go, the town square should be a visible magnet for visitors and residents. The major structure of the town square will be an inn of 100 rooms. Around the inn in the multi-mix fashion of the other centers will be town houses and apartments, and round-the-clock recreational facilities.

The lakeside cooperative is a neighborhood center for residents. The basic services will be centered on a laundromat and are designed around an all weather playground. A day care center has been included.

"Good footcandles" for better quality lighting

Lighting researchers have long known that light reflected in mirror-like fashion from tasks reduces "seeability." But only recently have the techniques and test equipment been made available for determining how good or bad a given lighting installation is in this respect. Now, not only are typical installations being evaluated, but manufacturers are introducing new lighting devices that put the footcandles where they are needed, and block them from where they are unwanted.

Years of research on criteria for evaluating the *quality* of installed lighting systems are now paying off in terms of much more sophisticated lighting equipment, and in terms of rating methods for quality that the lighting system designer can use with understanding and confidence. The success of any given lighting installation—that is, whether it suits the designer's intended purpose, and satisfies the occupants—depends upon a number of factors, many of them interrelated and difficult to articulate in precise terms. But some factors can be quantified, especially those that govern quality when its context is: 1) the visual "comfort" (absence of annoying glare) of a lighting system, and 2) the ease and accuracy with which occupants can perform visual tasks, particularly reading tasks in offices and schools.

With any tasks that involve discrimination of detail, the accuracy and ease with which a person can assimilate detail—say the handwritten, typewritten or printed word—depends upon the contrast between the detail and the background upon which it is viewed. The more the contrast in *brightness*, the better we can see. This fact has given rise to higher and higher footcandle levels which have been made possible by the continuing development of new lamps and fixtures, and which have been accepted, no doubt, because the public felt it could afford these levels.

It is not necessarily true that a high-footcandle installation is a high-quality installation; nor that a low-footcandle installation (by present-day practice) is necessarily a poor one. What counts is whether we can see what we want to see as accurately as we need.

The reason is that contrast between detail and background can also be increased by controlling the direction from which light strikes a task. Light that comes from a direction that enhances contrast has been characterized as "good footcandles," and light that comes from a direction that deteriorates contrast, "bad footcandles."

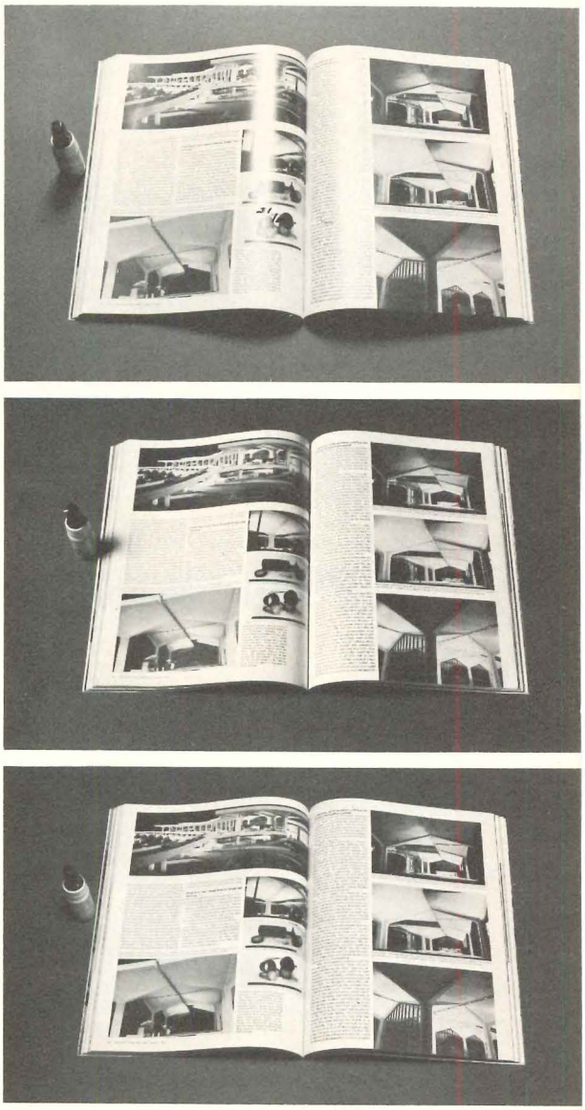
Veiling reflections make it more difficult for people to see detail

Inasmuch as we see better the more contrast we have between the detail and its background, how is contrast improved and how is it negated? First a definition. Mathematically contrast is equal to the brightness of the background less the brightness of the detail divided by the brightness of the background. Experiments have shown that a 1 per cent loss of contrast requires a 10 to 15 per cent increase in illumination to maintain the same visual performance. With more light, the eye is more sensitive and requires less contrast to see detail.

Light falling upon paper, pencil line, ink or print can play tricks upon us, however. All paper is specular (mirror-like) to some extent and can reflect the source of light. With matte paper, the fibers, though shiny themselves, are randomly oriented and reflect light diffusely. But the harder the paper the more specular it becomes over-all, and the more it acts like a mirror in picking up images of light sources. The specularity of pencil, pen and printing ink vary widely. The brightness of the detail depends upon how much of the light is reflected diffusely, and how much is reflected directly.

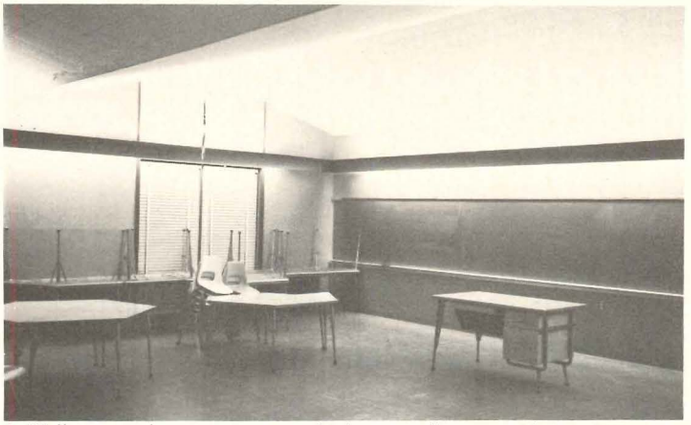
When the angle of the light source in relation to the task is such the light rays can be reflected directly into the viewer's eye, veiling reflections may result. They are called veiling reflections because the contrast between detail and background is reduced, which visually has the effect of pulling a "veil" over the detail.

Everyone has experienced this phenomenon and reacts to it instinctively by tilting the page, moving a lamp or one's head until the annoying light source image disappears. Thus the angle of the light source in relation to the task is changed so that specularly reflected light is directed away from the eye. With fixed lighting fixtures, veiling reflection can be reduced through the geometry of the lighting layout, pro-

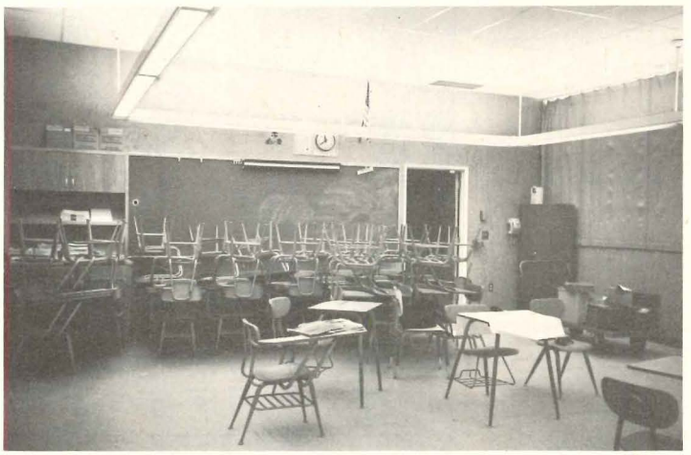


Effect of position of the light source in relation to the task on veiling reflections (at one time called reflected glare) is shown in these three photographs. In the top photo the light source (a bank of fluorescent lamps) is in front of the task, and the reflected image of the lamps is seen by the camera. In the center photo light comes from the left side, and in the bottom photo light source is to the rear of the task. Thus image of the lamps is not reflected toward the camera. The illumination from these two directions could be called "good footcandles."

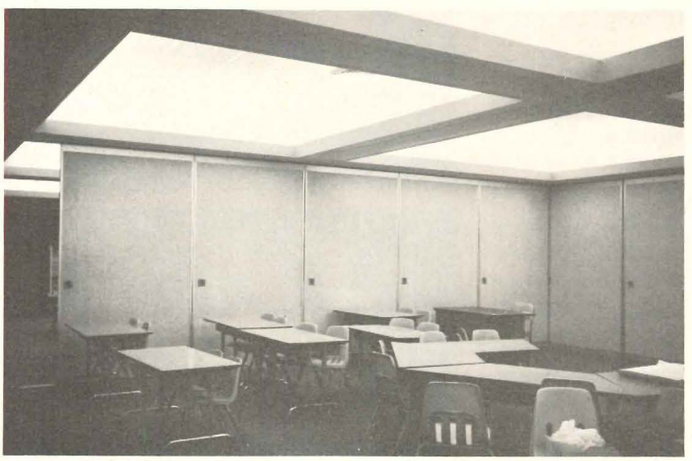
Classroom lighting survey: how a variety of systems fare in "seeability."



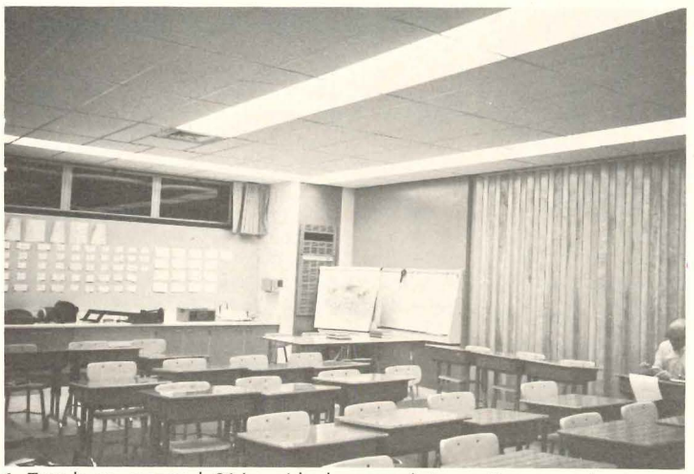
1. Wall-mounted coves, using very-high-output fluorescent lamps. LEF = 1.87 CRF = 1.12



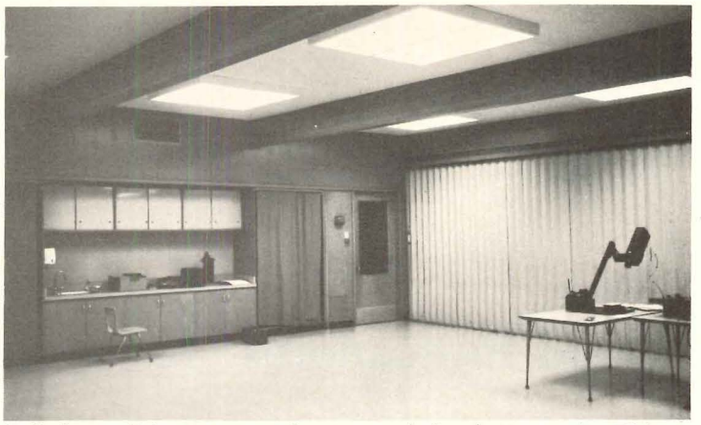
2. Semi-indirect, perimeter type, suspended, lens-bottom panel with diffusing plastic using very-high-output fluorescent lamps. LEF = 1.16 CRF = 1.02



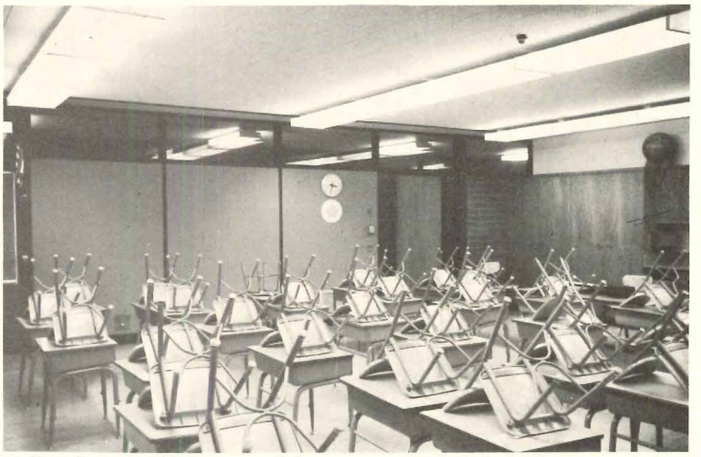
3. Four 11 ft-6 in. square coffers, indirectly lighted by 2-lamp coves on the side of each coffer. LEF = 0.722 CRF = 0.956



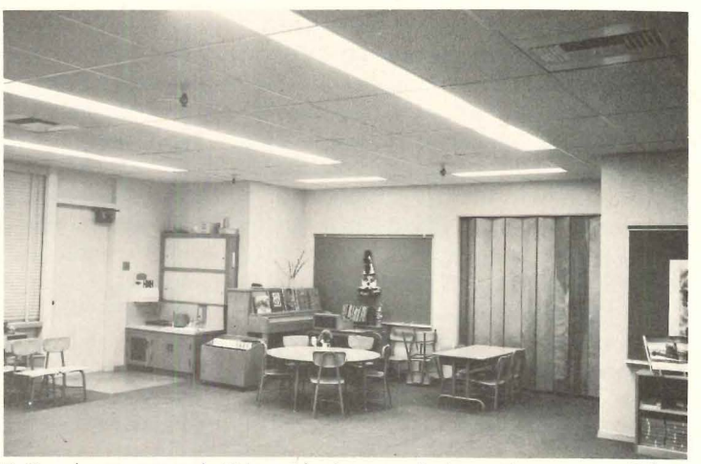
4. Two-lamp, recessed, 24-in. wide, lens panels in continuous perimeter pattern, with a short single row in the center. LEF = 0.530 CRF = 0.919



5. Six-lamp, 48-in. square, surface-mounted, lens-bottom units, 10-ft on center, both ways. LEF = 0.136 CRF = 0.742



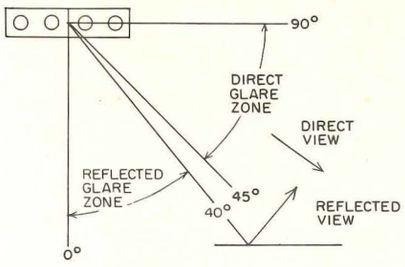
6. Four-lamp, surface-mounted, lens wraparound, 16-in. wide, in continuous rows, 10-ft on center. LEF = 0.165 CRF = 0.749



7. Two-lamp, recessed, 12-in. wide, lens panels, in continuous rows, 7 ft on center. LEF = 0.182 CRF = 0.766

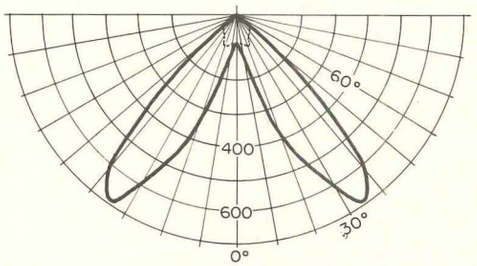
Engineer Foster K. Sampson surveyed 18 different classroom situations to evaluate a wide variety of lighting systems with regard to contrast rendition of pencil handwriting. Four of the most satisfactory installations (1-4) and three of the least satisfactory (5-7) in this respect are shown.

1. This valance lighting installation has the best lighting effectiveness (LEF) and contrast rendition (CRF) values (see definitions across page), though brightness difference between a task in the center of the room and the ceiling above the valence is close to the 10 to 1 maximum allowable. Illumination varies from 23 fc in the center of the room to 45 fc close to one wall. 2. Semi-indirect perimeter system is second best and provides uniform distribution with a minimum of 54 fc in the center of the room and a maximum of 74 fc. 3. Lighted-coffer system is third best. Illumination is very uniform, being 100 fc in the center of the room, 108 fc directly under a coffer, and 75 between coffers near one wall. 4. Recessed perimeter system (with center row) is fourth best. Lighting level uniformity is outstanding varying from a low of 114 fc to a high 128 fc. 5. Poorest system of the 18 for contrast rendition is this one with nine 48-in. square lens-bottom luminaires. It produces an average of 127 fc with 2.9 watts per sq ft. 6. Next poorest system has wraparound lens units with four lamps. Usually only two lamps per fixture are turned on because of the reported high luminaire brightness. 7. Third from poorest installation is flush lensed luminaire system.



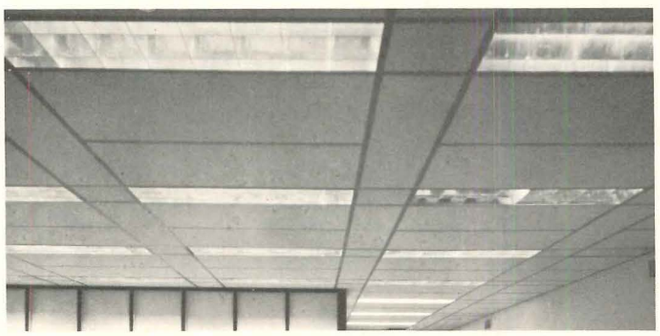
Diagram, left, indicates direct glare and reflected glare zones. Because of the higher footcandle levels being used recently, emphasis in luminaire design has been on control of direct glare (brightness of the fixture as seen by occupants).

But higher footcandle levels do not necessarily assure better seeing, particularly if reflected glare reduces the contrast between the task (handwritten, printed material) and its background. For this reason, and because loss of contrast can now be measured and evaluated, manufacturers are developing lighting devices that are designed to concentrate light output away from the offending glare zones, to the extent that is practically possible.

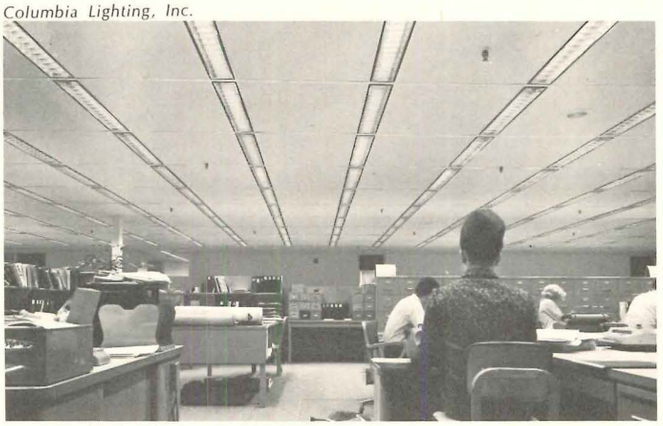


When luminaires are designed to concentrate light rays outside the glare zones, the resulting candlepower distribution of a luminaire will be somewhat similar to the one shown above, frequently referred to as "bat-wing" distribution. This curve is of an early design for a 2-20w fluorescent troffer having a reflector shape to produce the "bat-wing" and curved baffles to control brightness of the fixture in the direction of the axis. With desks oriented perpendicular to the axis of fixtures, illumination on the tasks would come principally from left and right sides, minimizing reflected glare. Photo is of mocked-up installation of 1-by-4-ft fixtures.

Edison Price, Inc.



Columbia Lighting, Inc.



These fixtures are from a family of low-brightness units introduced eight years ago. They use aluminum parabolic reflectors and cross baffles to get unusually low brightness while also achieving high efficiency. The first fixture developed had a pronounced bat-wing shape, achieved through contour of the reflector and use of a highly specular finish. Fixtures here have a slightly different shape and use a slightly diffuse specular finish so that the fixtures would appear less dark than the original.

Contrast Rendition Factor (CRF)—measure of the capability of a lighting installation to render contrast between detail and background as compared with the quality of illumination from a uniformly illuminated sphere. When illumination comes from a sphere there is very little loss of contrast because only a very small amount of the total illumination comes from the offending zone.

The CRF depends upon several variables such as the location and size of the light sources in relation to the task, and the nature of the light distribution in the space (light from the luminaires plus reflected light from room surfaces). CRF can actually be greater than 1.00 because it is possible for some lighting systems to have less illumination come from the offending zone than comes from a sphere.

Equivalent Sphere Illumination (ESI)—the footcandle level of illumination from a sphere that would provide the "equivalent" degree of visual accuracy as the lighting installation being evaluated. In other words, it is a measure of the degree to which a particular lighting installation approaches the effectiveness of sphere lighting.

Lighting Effectiveness Factor (LEF)—a measure of how effective the footcandles produced by a particular lighting installation are in relation to spherical illumination. LEF is found by dividing Equivalent Sphere Illumination (ESI) by the level of illumination on a task.

vided that desks can be placed in fixed positions with respect to the lighting. Viewing angles of people at desks range from 10 to 40 degrees, with 25 degrees being the most frequent viewing angle.

To picture which lighting fixture locations could cause veiling reflections, one could place a mirror over the task area and look into it at the viewing angle. Lighting fixtures located in any portion of the reflected image can cause veiling reflections.

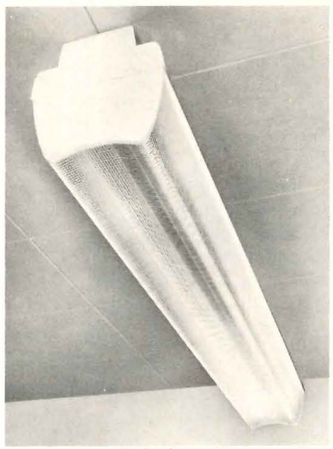
Of course, the over-all problem is not as simple as this because tasks are not perfect planes. For example, books and magazines many times cannot be laid flat, but have a curvature near the binding. Further, pressure of pencil, pen or printing type may actually emboss the paper, and the groove created can pick up images from positions on the ceiling other than the normal angle of reflection from the plane of the paper.

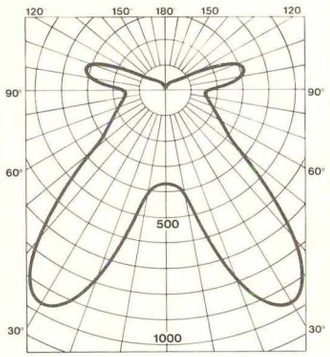
Through directional control of light veiling reflections can be reduced

Lighting systems that provide good contrast rendition of detail to background can be designed (and have been) with equipment that has existed. Some of these lighting fixtures provide good contrast rendition inherently through their light distribution characteristics, and not necessarily because they were designed for this attribute. Further, some knowledgeable designers who have understood the veiling reflection problem have arranged the geometry of fixture layouts to minimize the problem. More recently, several manufacturers have introduced special reflectors and lenses that control the light distribution of fixtures so as to concentrate light output in the zone that on the one hand reduces veiling reflections, and, on the other, avoids direct glare.

Last year a study on "Contrast Rendition in School Lighting", by consulting engineer Foster K. Sampson, was published by Educational Facilities Laboratories, Inc., of the Ford Foundation. Sampson took extensive measurements in 18 different classrooms in the states of California and Washington to determine how the contrasts created by various lighting systems affect the ability to see visual tasks. (See photos and captions, page 130.) Sampson noted that while loss of visibility due to veiling reflections was recognized as a problem, until recently there were no methods to evaluate these losses accurately in actual installations. Then, several years ago, a method and the necessary instrumentation to support it were brought out by Dr. H. Richard Blackwell of Ohio State University, who has done much research in the field of veiling reflections. With this equipment, called the Visual Task Photometer, it is now possible to measure the Contrast Rendition Factors (see "definitions") for pencil handwriting for any actual lighting installation. Using the Visual Task Photometer, Sampson has shown that many lighting systems in

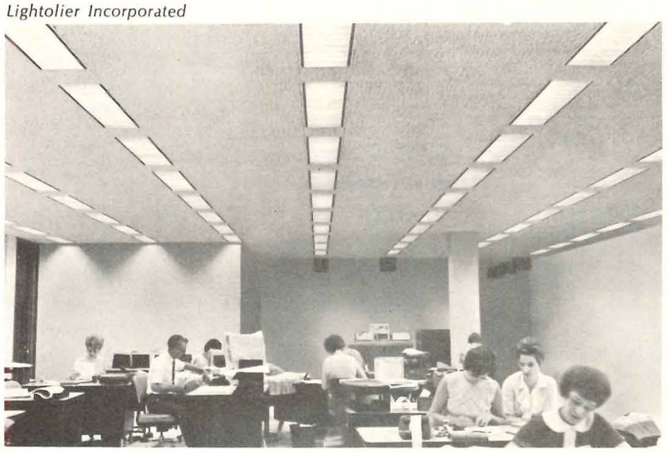
The prismatic surface and specially contoured shape of this luminaire give it the twin beam (bat-wing) candlepower distribution shown here. It has some light output above 90 degrees to illuminate the ceiling so as to reduce brightness contrast between ceiling and luminaire. It uses one 4-ft 40-w fluorescent lamp. Maximum candlepower output is at 30 degrees. It has 62 per cent of this maximum at 15 degrees and 36 per cent at 50 degrees.



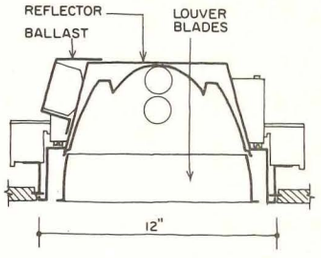


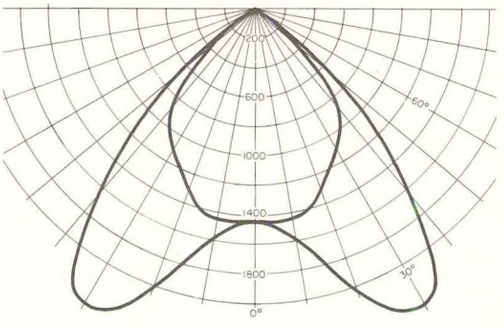
Holophone Company, Inc.

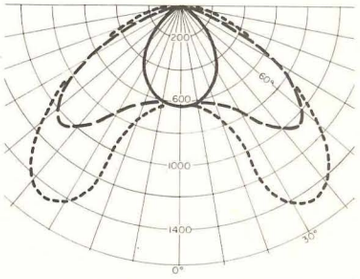
Lightolier Incorporated



Recessed luminaire has novel reflector design to provide "bat-wing" type distribution with very low brightness. Visual Comfort Probability (VCP) is in the vicinity of 90 for typical room sizes and reflectances (IES stipulates a minimum VCP of 70 for a comfortable installation). The lamps are located one over the other, rather than side-by-side to get the distribution desired. Where lamps are adjacent, interreflectance makes them high brightness sources, enabling the reflector to punch out light in the bat-wing pattern.

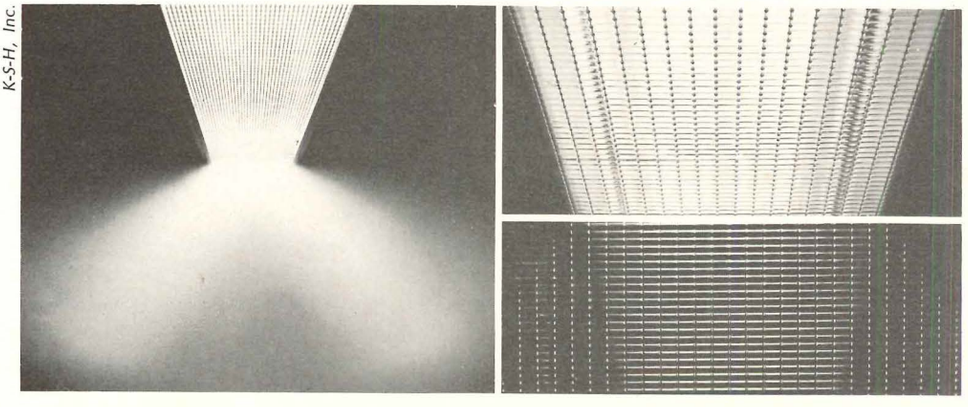






Bat-wing light distribution is also possible via a flat prismatic lens for use in recessed luminaires. Portions of the prisms on the rear face of the lens are opaqued with a white coating to block light rays from being emitted at unfavorable angles with respect to veiling reflections. The photos of the lens demonstrate its principles. In the left photo, the light distribution of the lens, with its twin beams, is apparent on the wall. In the photos below, it can be seen how the light comes through at favorable angles, is blocked from rest.

K-S-H, Inc.



common use are less than 20 per cent effective in terms of "glare-free" illumination on the task. He also points out that dark walls "seriously reduce the visibility of pencil handwriting by not reflecting light to the task," and that, "dark ceilings are not desirable because of the discomfort due to high brightness differences between the ceiling and lighting fixtures and the bad effect on the visibility of pencil handwriting."

New lighting devices produce a high ratio of "good footcandles"

Because it is not always possible to orient the desks and lighting layout so that all of the lighting fixtures are outside the offending glare zones of all tasks, manufacturers have developed lighting control devices that accomplish the same thing. The reflectors and lenses now on the market that do this have been designed to confine the light output of a fluorescent luminaire in the direction perpendicular to the axis as much as possible within the zone between 25 and 50 degrees from the vertical. When desks are oriented perpendicular to the axis of the luminaires, much of the illumination reaching the task comes from the sides, and specular reflections are bounced away from the viewer's eye. If desks are oriented parallel to the axis of luminaires, contrast rendition is less, the amount depending upon the particular distribution characteristics of the luminaire and the shape, size and reflectances of the room.

The reflected glare zone is from 0 degrees to 40 degrees from the vertical; the direct glare zone is from about 45 degrees to 90 degrees from the vertical. Whereas we want contrast between detail and background of a task, we are bothered by high brightness contrasts (direct glare) between luminaires and room surfaces when we look away from the task. A new brightness criterion now accepted by the Illuminating Engineering Society is Visual Comfort Probability, or VCP for short. This is a prediction of the percentage of people who find a given lighting installation visually comfortable. It considers such variables as the level of illumination, mounting heights, room sizes and shapes and reflectances, and luminaire layout. The higher the VCP, the more comfortable the environment due to less glare. The IES recommendation for minimum VCP is 70; that is 70 per cent of the people would generally find the installation comfortable. Of course, the higher the VCP the better the installation.

Obviously in addition to the criteria of Contrast Rendition Factor and Visual Comfort Probability, the lighting designer also will have to evaluate over-all economics in terms of both first cost and operating cost; in other words, how many "good footcandles" is he getting per dollar spent. Further he will have to make some judgment as to how critical the viewing tasks are, and determine when he has reached a point of diminishing returns in terms of increased efficiency of seeing versus additional cost.

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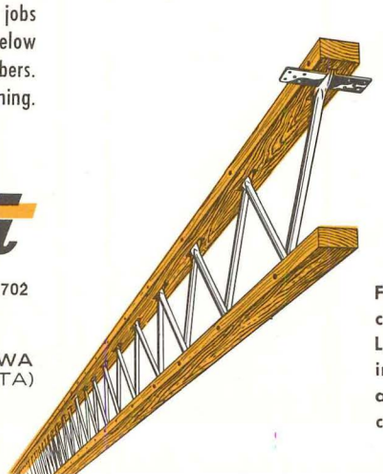

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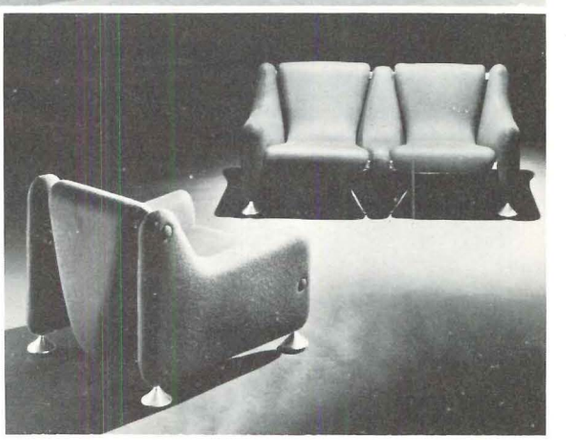

SEATING MODULES / These individual seating modules of foam rubber over steel mesh frames, designed by Luigi Colani, are used for two different armless lounge chairs, an armchair and a two- and three-seat sofa.

Shown (photo left) are the three-seat unit and two of the single seating units. The sofas have an aluminum backbar which joins the modular seating units. The sofa has aluminum feet of conical shape. The side chair rests in a frame of tubular chrome-plated steel.

Shown (photo lower left) are the two-seat and single seating unit armchairs, with aluminum feet of conical shape.

The series is upholstered in fabric only, with zippered covers to facilitate removal. ■ Fritz Hansen Inc., New York City.

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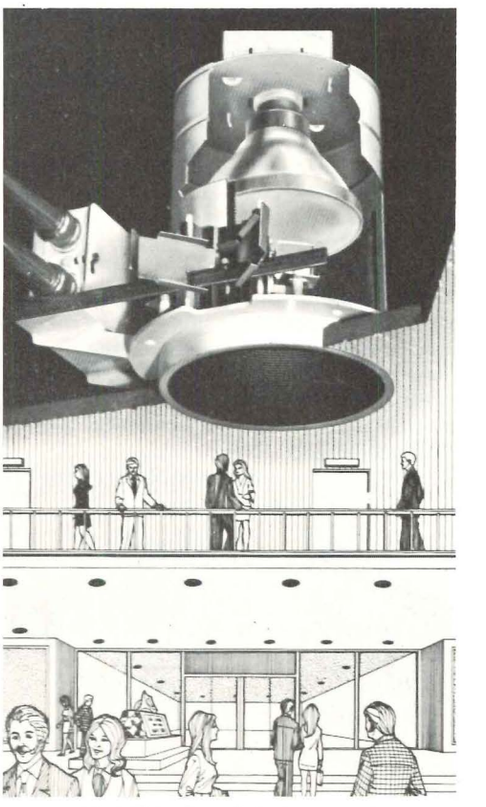
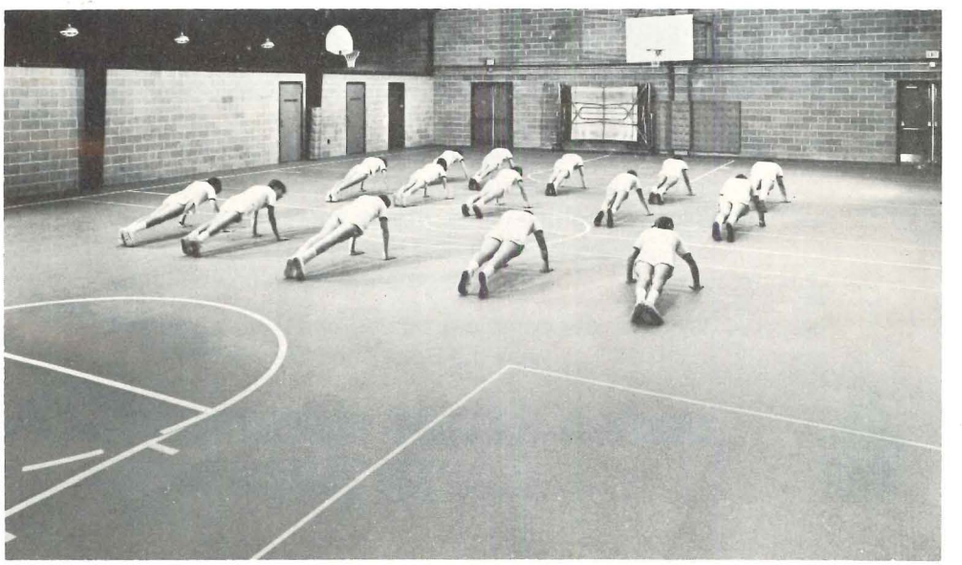


LIGHTING / This downlight is one of a series which can be placed in wet, dry, or suspended ceilings with total control of the finished appearance. Incorporating a snap-and-lock principle which allows for relamping or inspection from above or below without the use of tools, the housing may be set partially within the plaster frame for semi-recessed application. This series features a mini-baffle with a one-piece, black, grooved phenolic beam control which achieves a soft downlight effect with minimum surface brightness. ■ Berns Air King Corp., Chicago.

Circle 302 on inquiry card



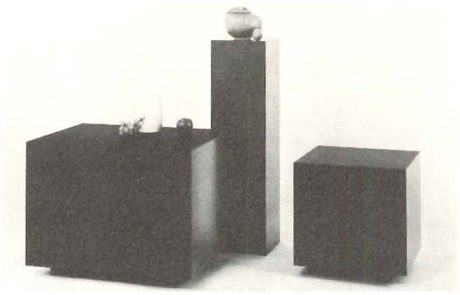
ATHLETIC FLOOR / This synthetic athletic floor composed of solid vinyl plastisol is designed for both indoor and outdoor sports. The manufacturer can adjust ingredients in floor formulation to make individual floors more suitable for certain sports.

The flooring is available in three standard colors and four standard thicknesses. ■ Robbins Flooring, Memphis.

Circle 301 on inquiry card

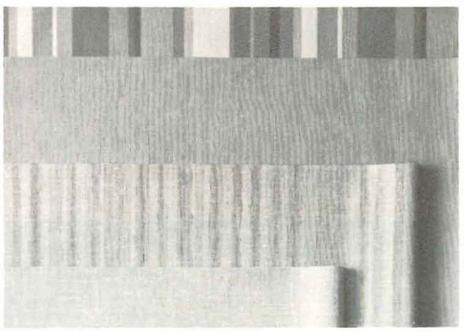
More products on page 136

continued from page 135



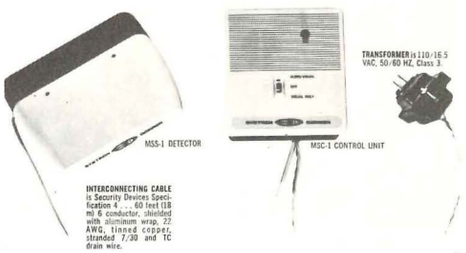
FURNISHINGS / Simplicity of design is featured in this collection of cubes, pedestals and tables. The complete line is offered in 16 standard sizes, 12 polyurethane surface colors, as well as in combinations of color-finished sides with laminate tops or finished wood tops of walnut, teak, oak or rosewood. ■ Cubulus, Los Angeles.

Circle 303 on inquiry card



WALL COVERINGS / These designs are included in a lightweight fabric-backed vinyl line consisting of seven coordinated patterns and a total of thirty-eight items. The line is designed primarily for commercial or public areas which do not require heavier qualities. The four patterns above (from top to bottom) are: Fandango, a crisp modern wide stripe and its companion, Sumter, a solid-color linen texture; Nordica Stripe, a narrower stripe design and its printed tweed companion, Norfolk. All four patterns are available in five colors. ■ The General Tire & Rubber Co., Akron, Ohio.

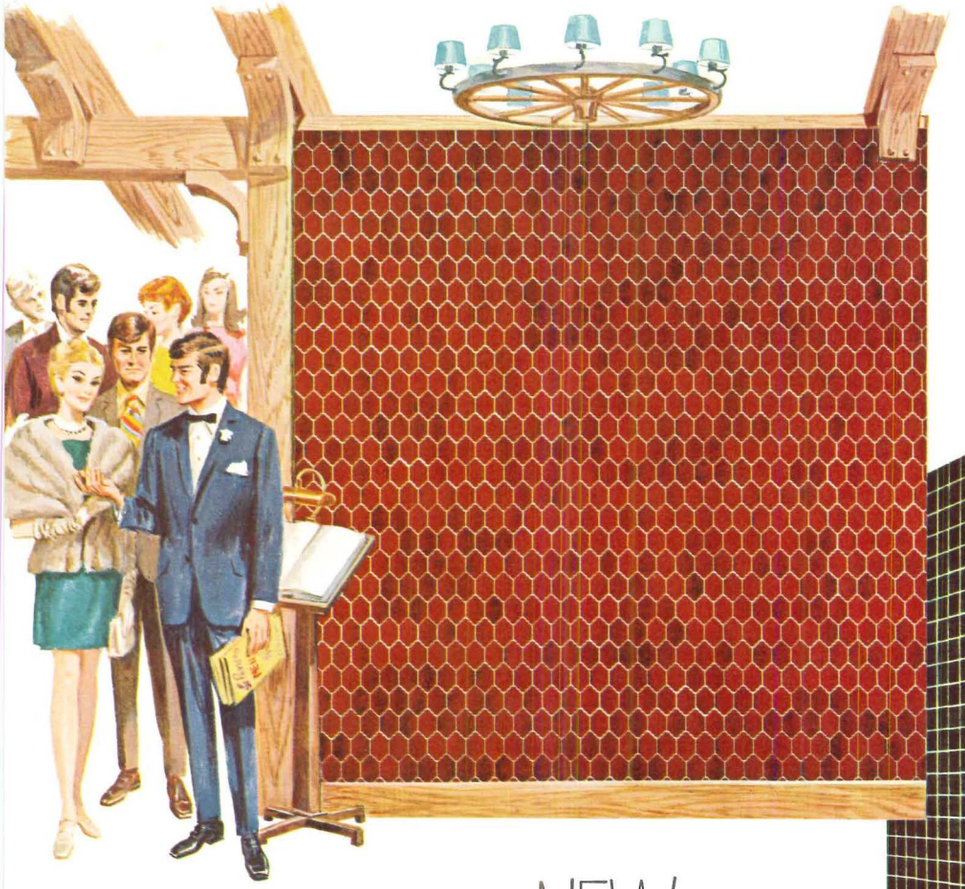
Circle 304 on inquiry card

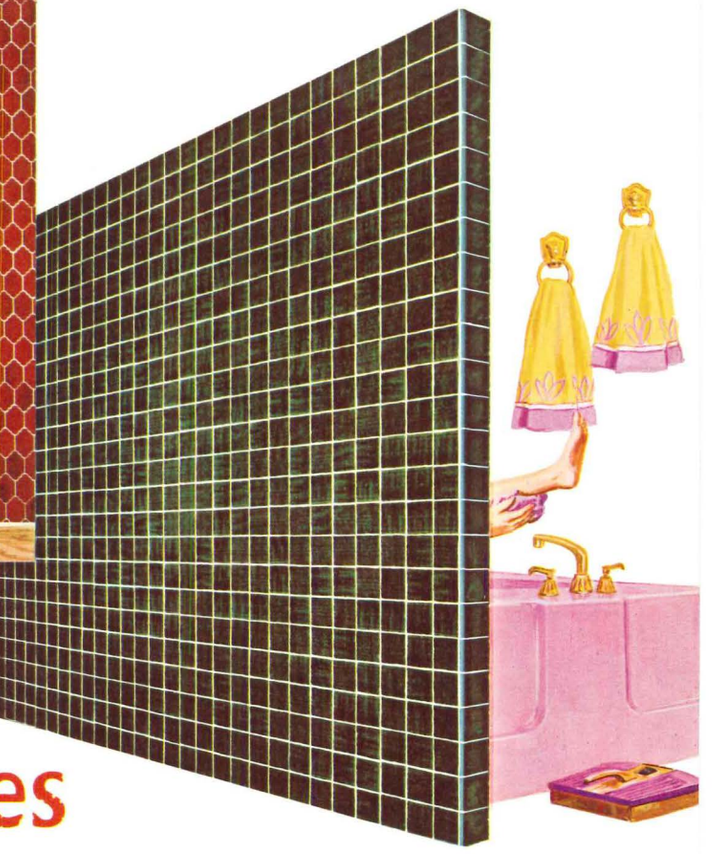


SECURITY SYSTEM / The microwave detector in this system can flood an area up to 3,500 sq. ft. with spherical wave energy. Any persistent motion within this cubic space under surveillance disturbs the wave pattern and will trigger one or more of several optional alarm responses available. The unit is reported to have a "search circuit" stage that intensifies sensitivity after the first disturbance, pauses, and waits for a second movement before signaling an alarm. The detector and power control unit occupy approximately 1.5 sq. ft. of space. ■ Systron Donner Corp., Dublin, Calif.

Circle 305 on inquiry card

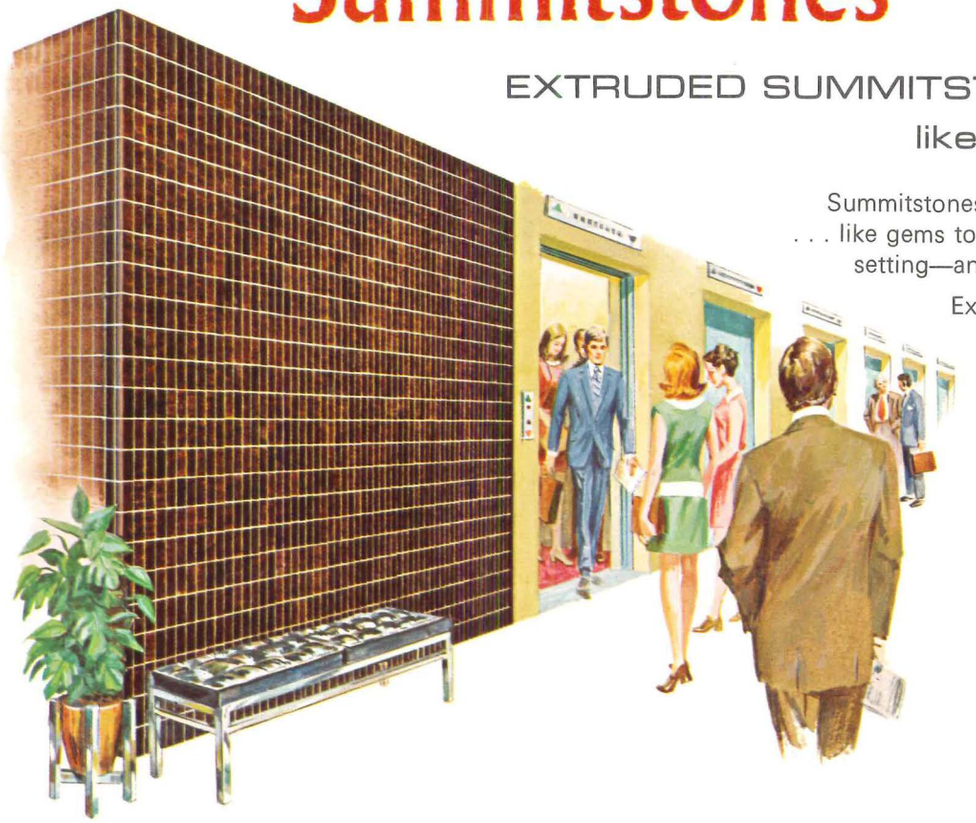
More products on page 150





NEW

Summitstones



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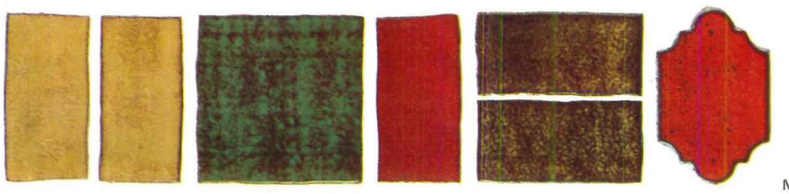

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SUMMITVILLE, OHIO 43962

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hydrocide liquid membrane

is the seamless elastomeric waterproofing membrane system for superior protection against the lateral movement of water.

applied directly to concrete . . . hlm cures chemically to form a flexible, seamless, continuous waterproofing membrane on any configuration of vertical or horizontal surfaces for: Parking garages / Pools / Air conditioning ponds / Plaza decks / Malls / Fountains / Wet rooms / Bridges / Highways / Curbs / Sidewalks / Balconies / Steps / Below-grade foundations / Between floor waterproofing of high-rises / Walls / Foundations / Culverts / Around drains / Seawalls / Dams / Reservoirs / Concrete tanks.

hlm remains intact with dimensional changes up to ± 1/16". It develops an adhesive bond to concrete, primed metals and wood as it cures. hlm has unsurpassed flexibility, expanding and contracting with the substrate. hlm won't crack, or become brittle, or lose its bond or waterproofing properties in temperatures from −40° to 180°F.

hlm covers and seals cant strips, working or expansion joints . . . and is the preferred waterproofing underlayment membrane for quarry tile or terrazzo.

hlm goes on quick with speedy one-step application, by spray or by hand, using a trowel or a squeegee.

hlm is competitively priced . . . also saves time and labor costs. It's fast and simple to apply without cutting or seaming . . . or using multiple layers of preformed or premolded pieces. hlm eases scheduling problems.

hlm requires but two men to apply, wherein similar applications require four or five. No heavy or heating equipment is necessary.

compare these typical application rates for various waterproofing methods.

Type	Application	No. of Men	Daily Rate
PVC	Roll goods plus adhesive	3–4	5–8,000 sq. ft.
Butyl	Roll goods plus adhesive	3–4	5–8,000 sq. ft.
Bitumens & Felt	Roll goods plus adhesive	5	5–10,000 sq. ft.
hlm hydrocide liquid membrane	By Spray	2	10–12,000 sq. ft.
	By Squeegee	1-1½	4,000 sq. ft.

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Fall in Love with a Castelli/Krueger 106?

Designed by G. C. Piretti
Produced by Castelli
Assembled and solely distributed by
Krueger Metal Products, Inc.

Everybody does! It's really groovy.

Unbelievable but true. The Castelli/Krueger 106 with its 7 concepts drastically reduces your investment in seating versatility. And, its trim European styling and beauty, coupled with extra wide, contour shaped seating comfort really turns you on. Much more than a chair, the Castelli/Krueger 106 is really a system, as illustrated at right. Bear up to a designers real love for the exciting and dramatic choice of finishes, too: Warm satin-finished molded plywoods in Beech, Walnut or Rosewood for the more subtle interior... or perk up a dull setting with 8 choice colors of luxurious fabric or 6 colors of business-like vinyl plastics. That's another thing that's so groovy about this chair. We've a special new catalog that gives the complete story. *Write for a copy, on your letterhead, please.* It's real groovy.

6. Single or double armrests—that also stack

7. Wood finishes in Beech, Walnut or Rosewood

1. The basic model 106 chair

2. Upright stacking on storage dollies.

3. Ganging in rows with inter-locking nylon pins

4. Tip-away Tablet Arm permits easy stacking

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Only one company can design, install, (and then service) every facet of a complete communications system, anywhere in the world.

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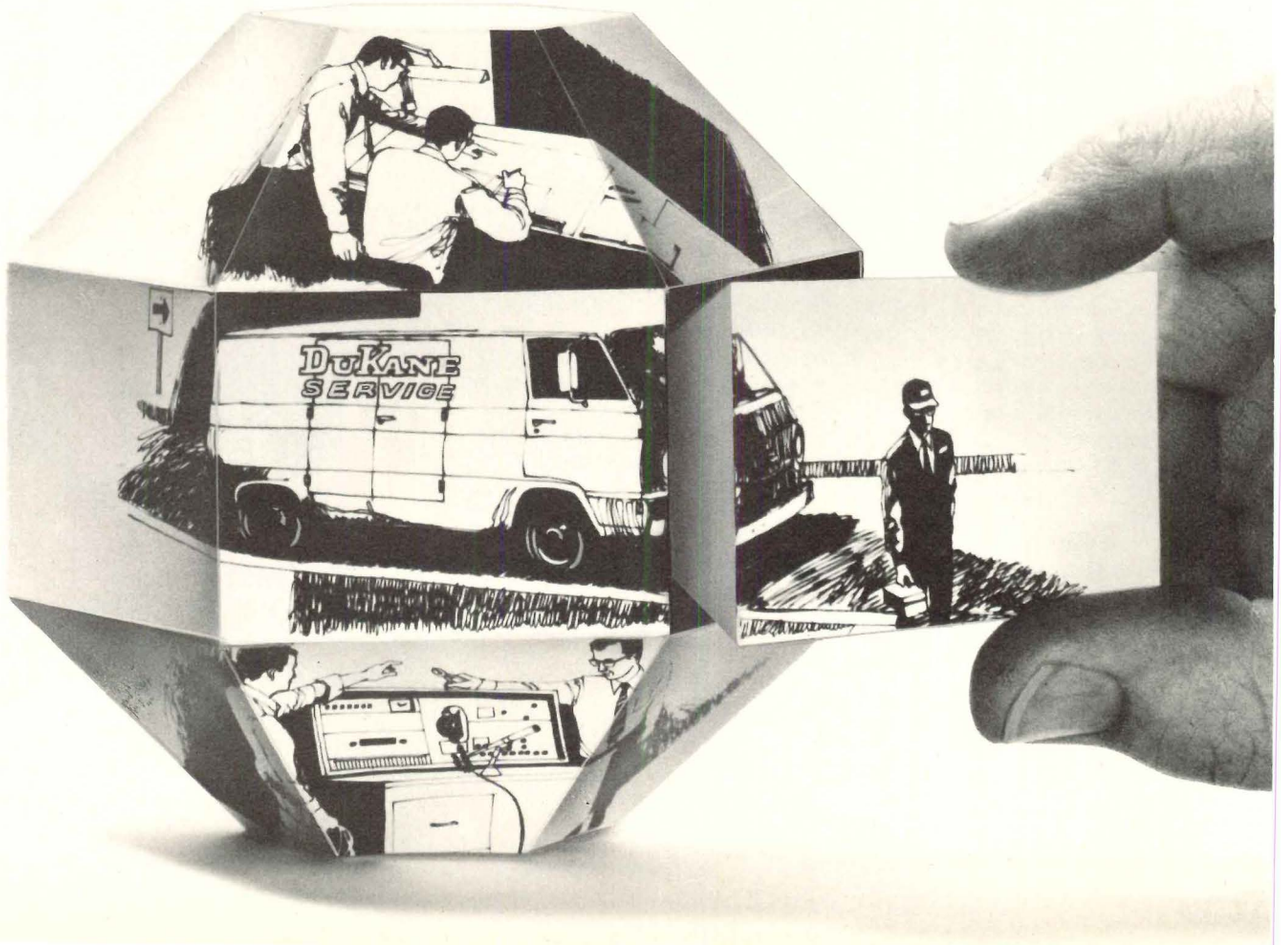

DUNCAN CERAMIC PRODUCTS BUILDING, FRESNO, CALIFORNIA • DESIGNER: STANLEY C. BITTERS, FRESNO, CALIFORNIA • GENERAL CONTRACTOR: TAYLOR-WHEELER BUILDERS, FRESNO, CALIFORNIA • ROOF DECK FABRICATOR: H. H. ROBERTSON CO., PITTSBURGH, PA. • MISCELLANEOUS STEEL FABRICATOR: HEALEY & POPOVICH, FRESNO, CALIFORNIA.

For information on bare USS COR-TEN Steel, the original weathering steel, contact a USS Construction Marketing Representative through the nearest USS sales office, check your Sweet's Architectural File, or write to United States Steel, Box 86, Pittsburgh, Pa. 15320. USS and COR-TEN are registered trademarks.

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get your waste handling system out of the middle ages...

WASCON IS A BETTER WAY TO CONTROL POLLUTION

Furthermore, Henry and his hound would have had a dreadful time with plastic cups and plates, corrugated paper cartons and other throw-away trappings of modern civilization. And so will you, if you don't specify a system that gets rid of it quickly, cleanly, automatically.

The Wascon idea is a wet-process, pulping-type system that reduces pulpable waste to a mere fraction of its former bulk. It does this as close as possible to the point of waste generation. Once processed, the end product is efficiently transported automatically to a remote point of disposal . . . using a recirculating system.

A Wascon System can be as modest as one low-cost, compact unit installed to service a single station or, a series of waste receiving pulpers located throughout a building. The system accepts most all waste, including food, processing only that which is pulpable.

The cost is realistic, the advantages impressive. A Wascon System reduces the physical cost of waste handling; improves building sanitation; eliminates air-fouling burning; saves costly space; solids do not discharge into a sewage system; operates with the flick-of-a-switch; is easy to use and maintain.

Complete data is contained in new catalog W-502. Write direct to Wascon Systems Inc., 210 Bonair Avenue, Hatboro, Pennsylvania 19040.

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37 Wascon systems are either installed or ordered for the following S.U.N.Y. campuses!

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Cortland	Oneonta
Delhi	Plattsburgh
Farmingdale	Potsdam
Fredonia	Stony Brook

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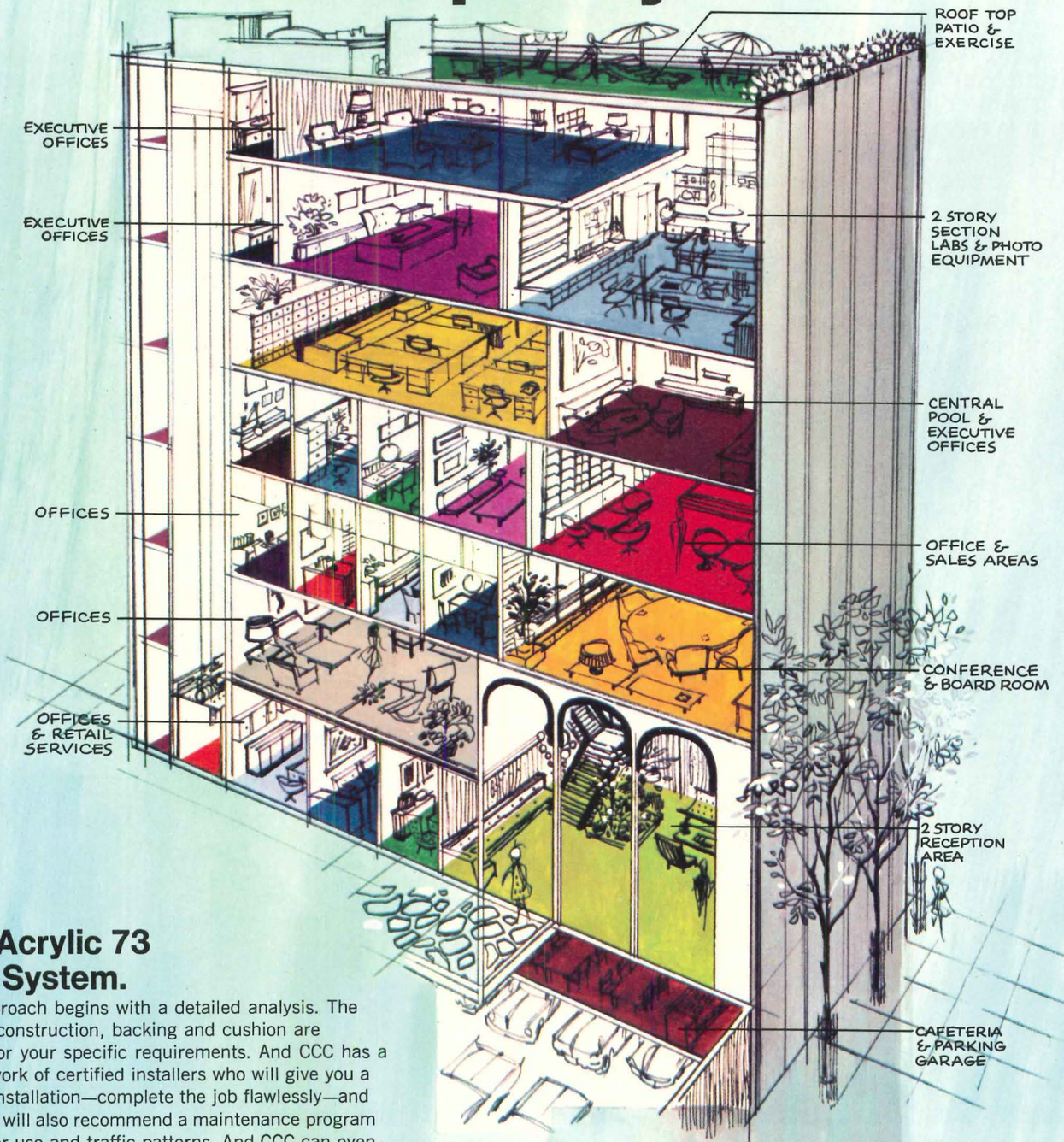
If you're a building you don't need carpet. You need a carpet system.



CCC's Acrylic 73 Carpet System.

The CCC approach begins with a detailed analysis. The right carpet construction, backing and cushion are engineered for your specific requirements. And CCC has a national network of certified installers who will give you a guaranteed installation—complete the job flawlessly—and on time. CCC will also recommend a maintenance program based on floor use and traffic patterns. And CCC can even help you carpet a building without using capital funds through our unique Showplace Leasing Program.

Acrylic 73 is a CCC exclusive blend of 70% long-staple Creslan® acrylic and 30% long-staple commercial nylon which has unequalled durability both in wear and appearance retention. You get clean, soil-resistant colors without pilling, fuzzing or webbing. Acrylic 73 satisfies fire safety standards and is manufactured with a built-in static control system.

CCC is the world's largest manufacturer of commercial carpet systems. Every one of our carpet specialists is an expert, who is fully qualified to help you solve your carpet problems. Mail in the coupon and let us do the rest.

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CCC

Commercial Carpet Corporation
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Attention: Mr. Walter Brooks

☐ Please have a CCC consultant contact me.
☐ Please send me an Acrylic 73 brochure.
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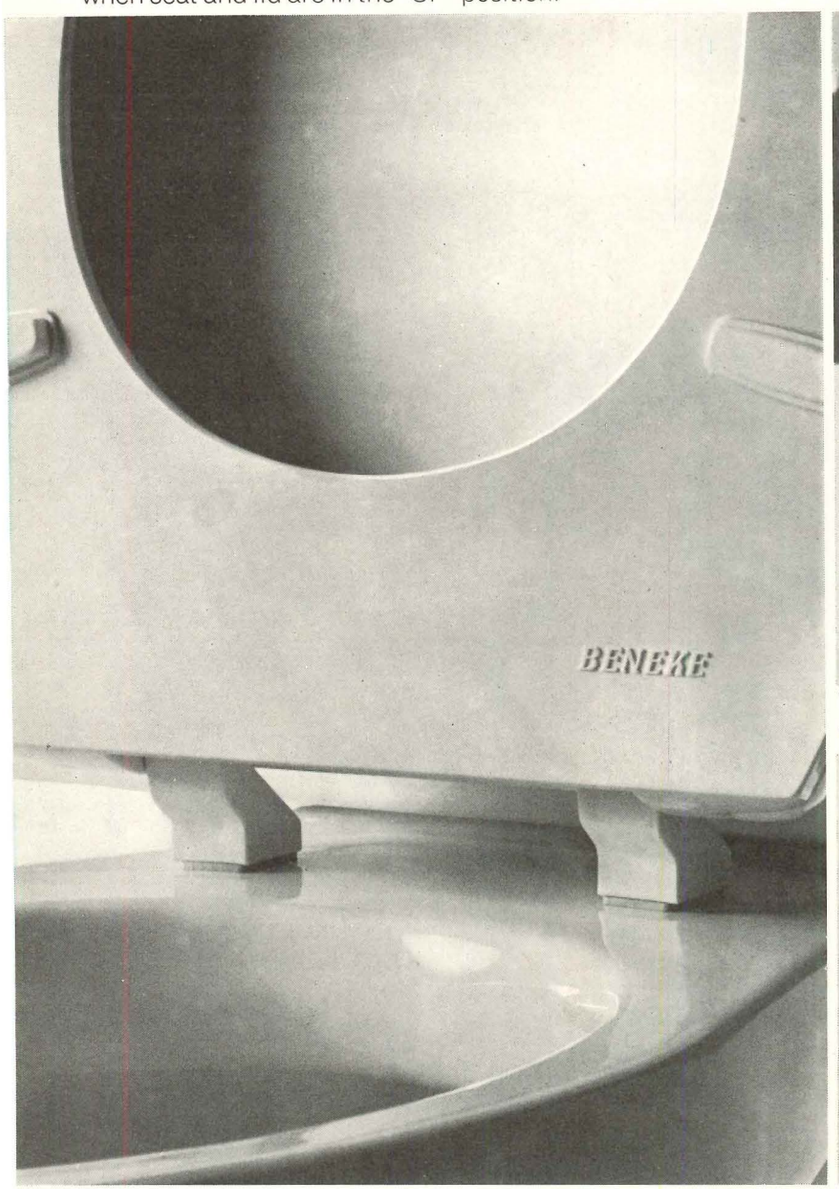
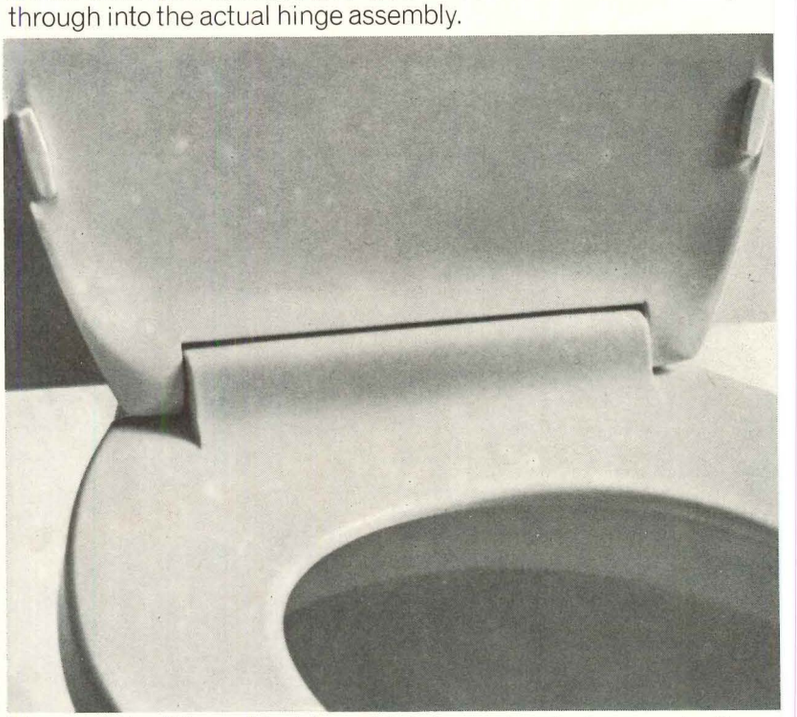
New hinge benefits from Beneke

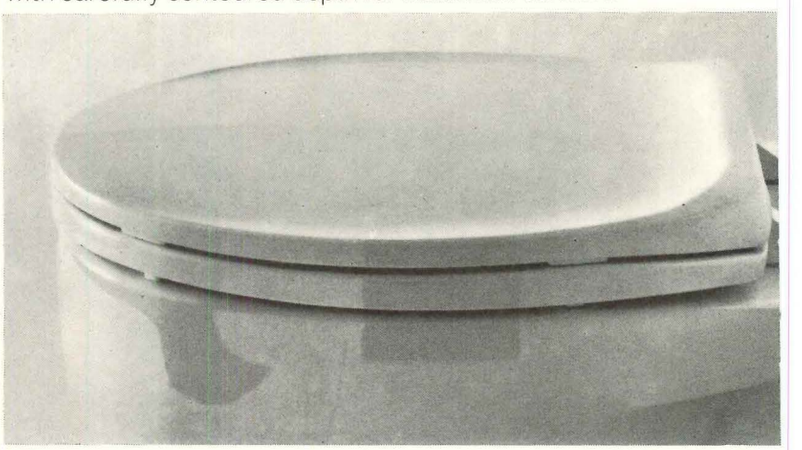
With the new elevated hinge, former hard-to-reach bowl surfaces conducive to moisture and bacteria accumulation are eliminated when seat and lid are in the "UP" position.



With the seat down and lid up, the streamline design of the hinge shield facilitates comfort and cleanliness. Wetness can't seep through into the actual hinge assembly.



The seat itself is molded from high impact polystyrene plastic with carefully contoured depth for maximum comfort.



The bowl and seat are cleaner because the hinge is higher. The Beneke HI-RISE® heavy duty plastic toilet seat is the first to feature this important sanitary breakthrough: the rotating mechanism is elevated well above the bowl, so thorough cleaning is accomplished quickly and easily without removing the seat. The best seat is the cleanest seat. The HI-RISE is the cleanest because it's the easiest to clean.

The Beneke HI-RISE is available in open front and closed ring models for both regular and elongated bowls.

You're better off with Beneke on.

Beneke Corporation

Columbus, Miss., Chicago, New York, Washington, D.C., San Francisco, Toronto, Paris

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COLORED PRECASTS

A choice of many– all with MEDUSA WHITE

Depending upon your desires and project dictates, you now have a wider range of colorful variations to satisfy your precast concrete needs.

WHITE PRECAST – The long term inherent beauty of Medusa White Portland Cement, combined with decorative aggregates form an excellent architectural color effect. White Cement, the only portland cement *controlled* hour by hour during production, provides *uniformity* in physical characteristics and color. Gives the precaster optimum performance, regardless of strengths required. Surface retarders and other finishing techniques can best be controlled with the use of Medusa White.

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CUSTOM COLOR PORTLAND PRECAST A new Medusa innovation, Custom Colored Portland Cement, comes to the precast producer ready for mixing. Blended at the mill, the final colored product is scientifically controlled to assure *constant uniformity,* batch after batch. Complete information upon request.

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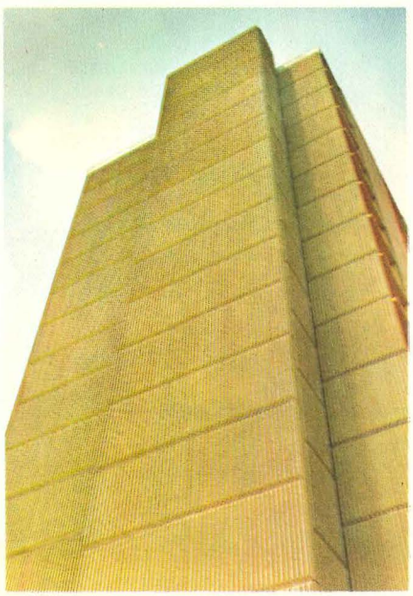
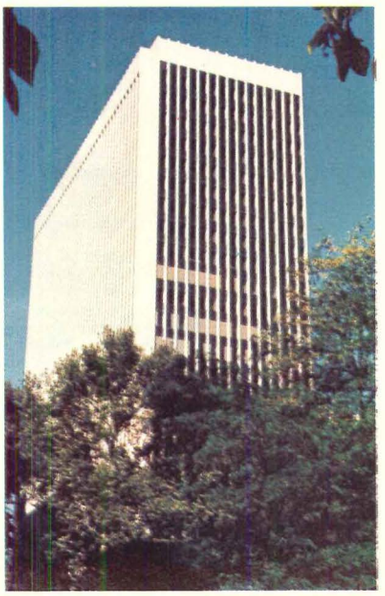




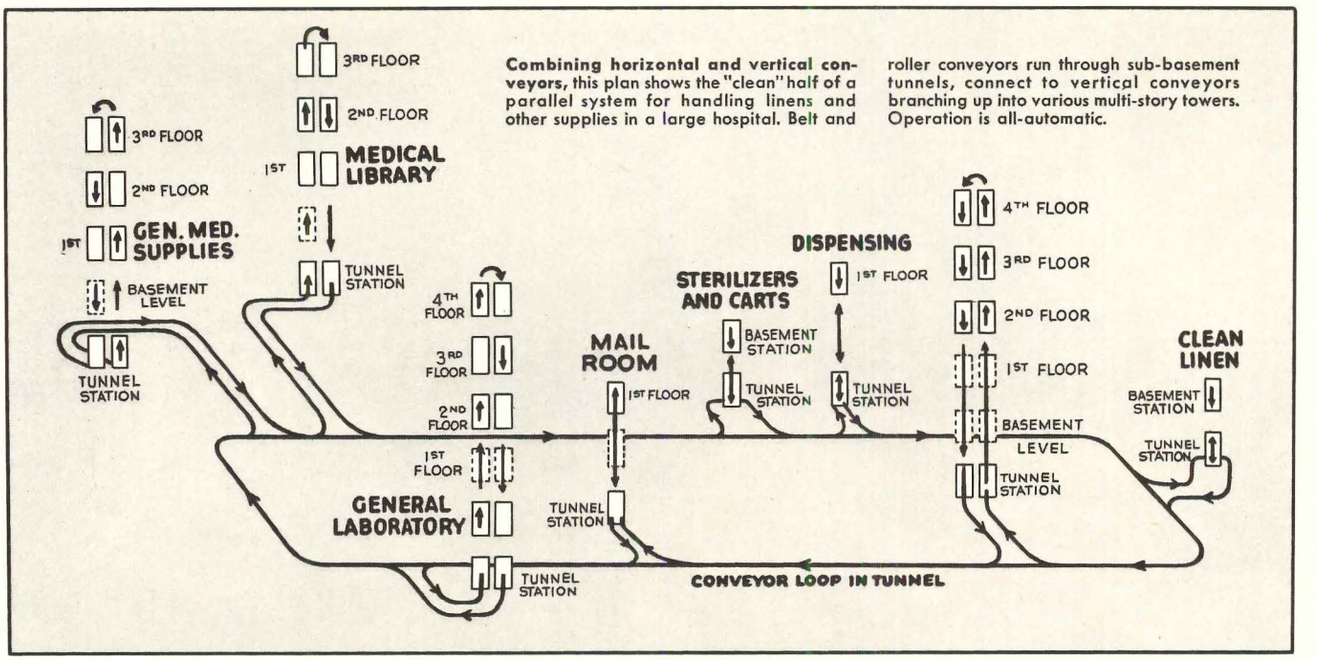
CLEVELAND STATE UNIVERSITY (Library and Faculty Tower) Cleveland, Ohio. *Architect:* Outcalt Guenther Partners, Cleveland. *General Contractors:* (Joint Venture) Blount Brothers Construction Co., of Birmingham; William Passalacqua, Builders, of Cleveland. *Precast Producer:* Marietta Concrete Company, Marietta, Ohio. (Precast Units of Medusa White mixed with umber pigment).

MUTUAL BENEFIT LIFE INSURANCE CO., Philadelphia, Pa. *Architects:* Nowicki and Polillo of Philadelphia. Eggers & Higgins, New York City, New York. *Engineers:* David Bloom Associates, Philadelphia. Robert Rosenwasser, New York City, New York. *General Contractor:* E. Frankel Enterprises, Philadelphia. *Precast Producer:* Formigli Corp., Philadelphia, Pa.

ADDISON SQUARE, Cleveland, Ohio (Building System). *Architect:* Barbitta James & Assoc., Akron, Ohio. *Developer and Contractor:* Ohio Turnkey Co. (Joint Venture); Tom-Rob Inc., Cleveland; Dillon Co., Akron, Ohio. *Precast Producer:* Sidley Precast Inc., Thompson, Ohio. (Medusa Colored Portland Cement – buff shade).

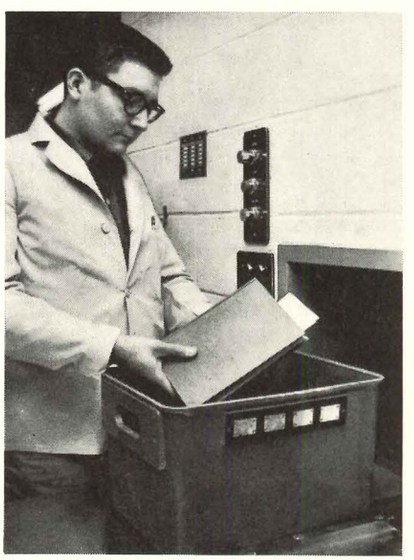
MEDUSA

For more data, circle 62 on inquiry card



Combining horizontal and vertical conveyors, this plan shows the "clean" half of a parallel system for handling linens and other supplies in a large hospital. Belt and roller conveyors run through sub-basement tunnels, connect to vertical conveyors branching up into various multi-story towers. Operation is all-automatic.

Pushbutton conveyor system speeds hospital supplies to any of 17 stations



Automatic control is an integral part of a Recordlift System. It employs the magnetic tab principle of conveying encoded digital information—one of the most reliable, economical, maintenance-free systems devised.

Operation is fast and automatic. Operator simply loads the basket, places it on the loading station, pushes the proper button for the desired destination—and away it goes!

PLANNING for materials handling in multi-story buildings can become an easy matter—when you specify a STANDARD CONVEYOR *Recordlift* System.

A *Recordlift* System *unifies* a building. General supplies, mail, records, files and other materials go up, down, and throughout the building at the push of a button. The cost and congestion of interfloor messengers is saved—speed and efficiency are gained.

Ideal for hospitals

Widely used in office buildings, banks, libraries, etc., *Recordlift* Systems have long proved ideal for handling hospital supplies.

The plan above, for example, shows the "clean" portion of an extensive double *Recordlift* System being designed for a new 700-bed hospital.

Has two-lane traffic

Two separate horizontal-vertical conveyor systems will run side-by-side throughout the building complex. One will handle clean linen; the other, soiled. The systems will also handle mail, books, records, forms, publications, medical supplies, instruments and lab specimens.

There are 17 pushbutton stations on the clean system, 14 on the soiled. The entire double system has about 4,300 feet of conveyor—3,000 feet horizontal. The vertical footage includes 8 *Recordlifts* and 12 reciprocating lifts.

Provisions are included for adding 7 more stations to the clean system and 8 more to the soiled.

Dispatching is simple

Any station can send to any other station in each separate system. For reasons of cleanliness, the two systems do not connect at any point.

Dispatching is simple, fast and selective. The operator merely loads the 20½" x17½"x10" container (2 will hold a complete change of linen for 3 beds), pushes the button for the proper station, and the system delivers it.

Write for data file

If you are concerned with multi-story buildings which call for streamlined distribution of everyday supplies, be sure to investigate STANDARD CONVEYOR *Recordlift* Systems.

Write today for an illustrated data file. Or simply clip this ad to your letterhead and mail it.

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S.O.P.

Since 1881 the Standard Operating Procedure at R-Way has been to build the finest furniture possible. Styling and faultless craftsmanship are blended to create distinctive pieces that will enhance any office. The choicest woods, perfectly matched veneers and flawless finishes are combined to make R-Way a preferred source in the office furniture field. R-Way also produces a complete line of chairs, settees and occasional pieces to complement all desk styles.

S.O.P. at R-Way also means a large inventory for prompt delivery, blanket wrapped in R-Way trucks, plus custom designing in quantity orders. Write R-Way Furniture, Box 718, Sheboygan, Wisconsin 53081, for our catalog of contract furniture.

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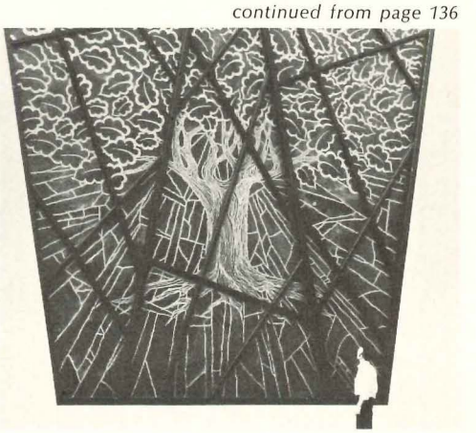
Showrooms in New York, Chicago, San Francisco, Denver, Detroit, Dallas, New Orleans, and Minneapolis.

continued from page 136



PLASTIC "STAINED GLASS" / *Stainglas* windows are made of clear acrylic plastic coated with "Resilene": polyester resin combined with glass fiber and colorants. Resilene lines colored black or silver replace lead lines. Windows are made in several hundred design patterns, and colored according to specification. Single-span windows up to 4 ft. by 8 ft. are also available. These windows are breakage resistant, lighter in weight, and less expensive than traditional stained glass. ■ House of Stainglas, Skokie, Ill.

Circle 306 on inquiry card

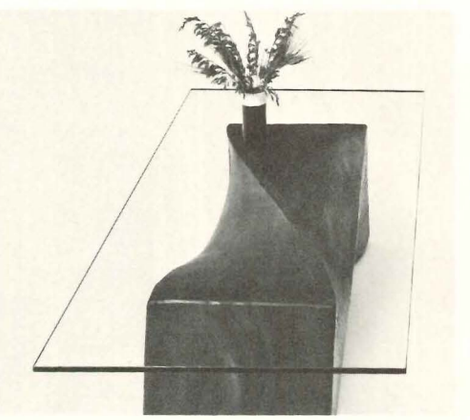
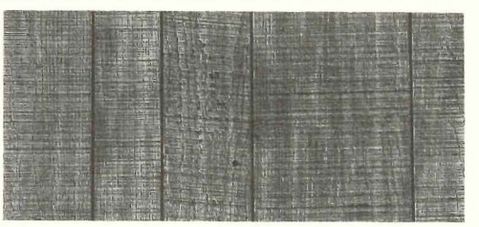


TABLE / This cocktail table base is composed of a polyester resin with the sound and appearance of natural wood. Measuring 42 in. long, 16 in. high and 13 in. wide, this table is produced on a roto-cast machine. The proper compounding of 80 pounds of material is determined to insure uniform wall thickness and a minimum of exotherm. The finish is applied very slowly by hand to achieve a weathered look. The base supports a 35-pound, ½ in. by 28 in. by 60 in. plate glass top. Retail price is $250.00. ■ American Cyanamid Co., Plastics Div., Wallingford, Conn.

Circle 307 on inquiry card



PANELS / Designed to look and feel like weathered wood, these textured panels are available in red, gold, green and blue. Tongue-and-grooved to simplify fitting, their dimensions are 16 in. by 8 ft. ■ Marlite Paneling, Dover, Ohio.

Circle 308 on inquiry card

more products on page 158

For more data, circle 66 on inquiry card ▸

From v-v-v-vvvrrrroooooommmmmmmm to shhh

ONTARIO MOTOR SPEEDWAY, Ontario, California / Architects: Benham-Kite & Associates / General Contractors and Developers: Stolte Inc. / Glazing Subcontractor: Sitelines Inc. / Glass tempered by Guardian Industries Corp.

...with Glaverbel Float Glass

At California's new Ontario Motor Speedway the roar of the cars joins the roar of the crowd in a decibel-defying crescendo of nerve-knotting noise. *Wall it out,* demanded the owners. Wall it out for the race officials...the radio-tv people...the computer installation. With a wall that controls the temperature and humidity of the space it guards. *But a wall so transparent it seems not to be there.* The architects specified Glaverbel Float glass—criterion for flatness and transparency. Tempered Glaverbel Float in huge (eighty square feet), sealed, double-glazed acoustical window units. The sound-stopping power of an eight-inch solid concrete barrier! And a unique compensating system that equalizes the units' internal pressure to ambient atmosphere, keeps the lights perfectly parallel, utterly undistorted, and as clear as—no glass at all!

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"I want a walk-in with one full-length stainless steel door and a steel plate, Ramp-In floor and adjustable wire shelving and an Automatic Defrost-Vaporizer and two half-length glass service doors and an Alarm System and I want it yesterday."

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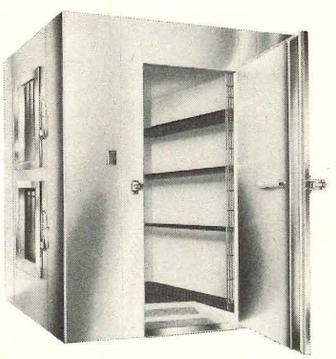

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The only thing we won't change is the quality.

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Gives You the Building Blocks for Top Shooting Range Design

Over 30 years of experience in designing and building of shooting range facilities for law enforcement training, commercial, educational, and military use makes Detroit Bullet Trap Corp. tops in the field. A complete selection of traps, electronic controls, target lighting, ventilation, exhaust systems, and acoustically treated protective safety barriers is available from Detroit Bullet Trap Corp.

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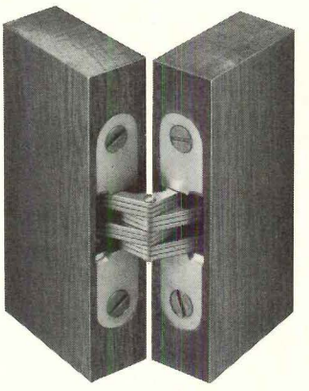
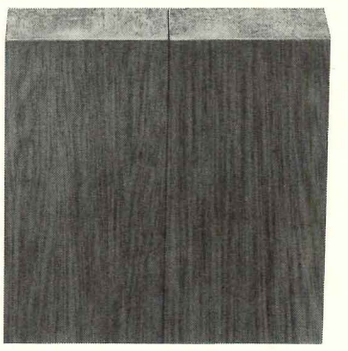
The hinge that hides



NOW YOU SEE IT



NOW YOU DON'T

The Soss Invisibles—for a custom look for any room! These amazing hinges hide when closed, eliminating unsightly gaps, hinges, and door jambs. They're the perfect hidden touch for doors, doorwalls, storage cabinets, built-in bars, stereos, and TV's. Specify the Soss Invisibles wherever looks matter. See listing in Sweet's or write for catalog: Soss Manufacturing Co., Division of SOS Consolidated, Inc., P.O. Box 8200, Detroit, Mich. 48213.

the SOSS Invisibles

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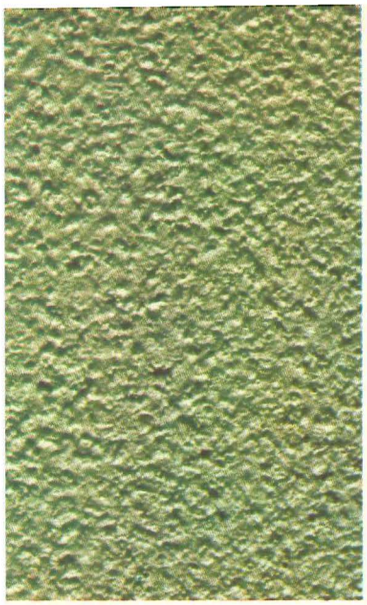

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Glowing colors, fresh from the sun country, to make new Pueblo more exciting than ever. A real swinger... from one end of the spectrum to the other.

Textured like simple stucco, Pueblo offers its unique beauty to any decor. Along with incredibly long wear. And great resistance to soil, stains and fading.

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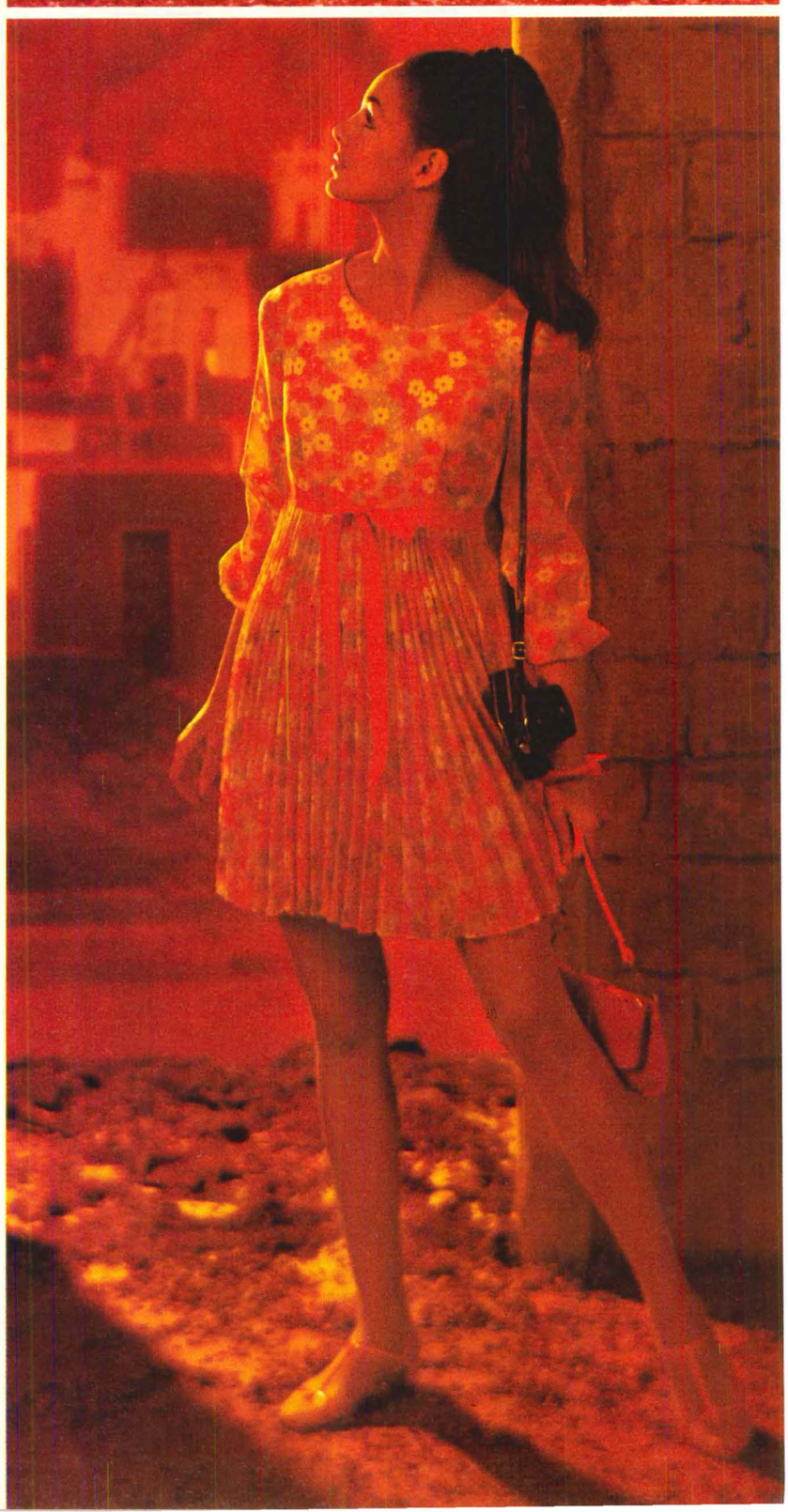

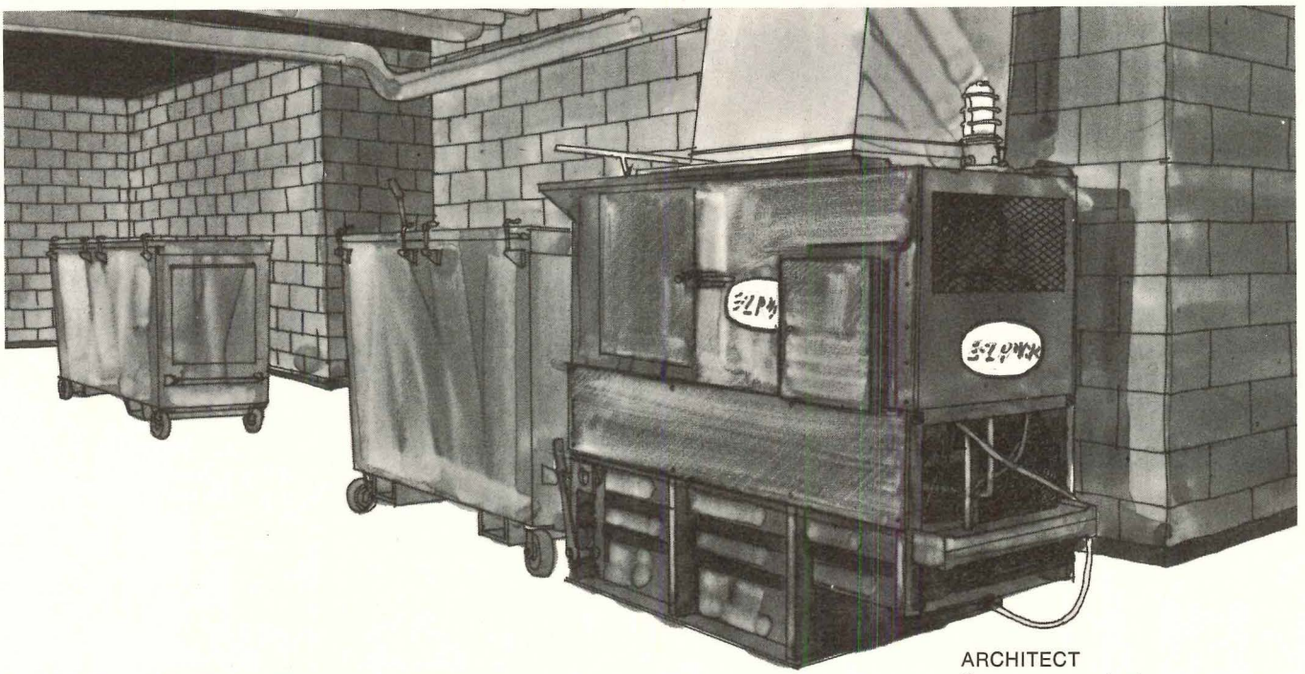

With E-Z Pack handling refuse, you get a better apartment building,

and these people know it.

ARCHITECT
Gave me more design flexibility so I could create a more beautiful, efficient building.

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Economical, and it also does away with incineration, and those air pollution problems. Saves space, too.

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It's very convenient. And the building is neater and cleaner than a lot of others.

E-Z Pack has the answer to refuse problems in apartments . . . from several points of view.

Tenants just drop refuse down a chute. E-Z Pack then automatically rams it into a standard roll-away container to await pick-up by the regular collection service. All refuse is compacted to a fraction of its original size.

This means E-Z Pack handles more refuse more efficiently with considerably fewer man-hours. Makes a cleaner, better operating, more rentable building.

Include E-Z Pack in new building plans. Or, install it when modernizing or converting older buildings.

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Either way, you'll learn how E-Z Pack simplifies refuse handling . . . automatically.

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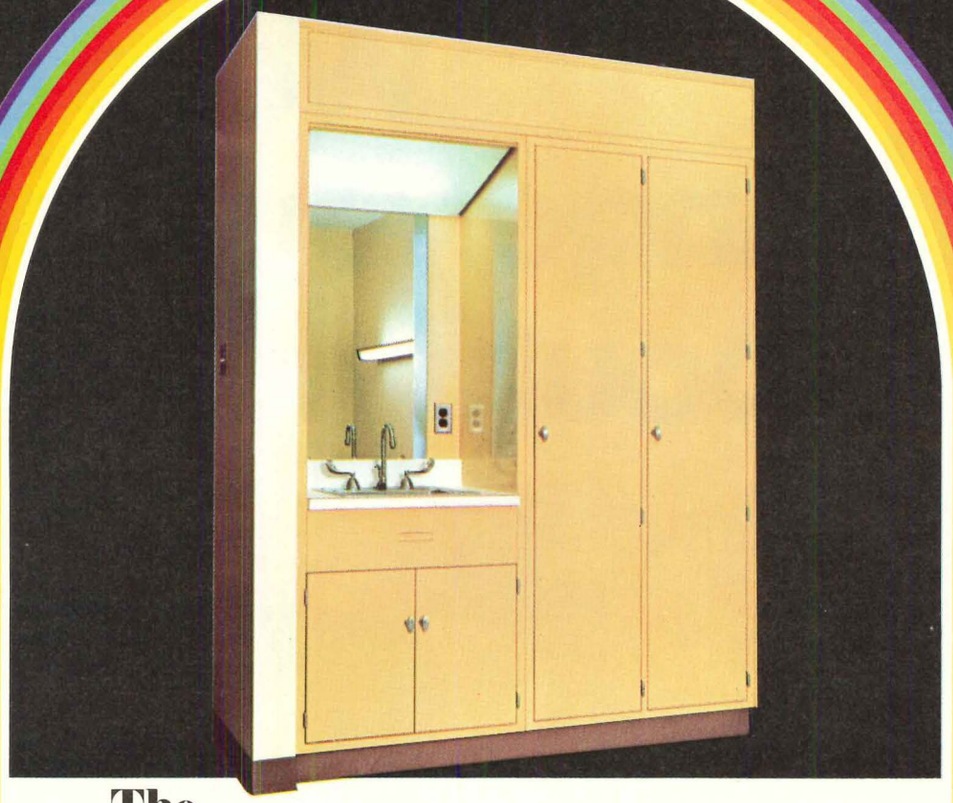
Front Loader and Rear Loader Containers can be used with the E-Z Apartment Packer.

For more data, circle 71 on inquiry card



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Endurables in the era of discontinuity

So much of what a hospital uses is made to be expendable. But not casework. Once it has been permanently installed in a specific section to serve a specific function, it must play a continuing, purposeful role in hospital life.

Jamestown Products patient's wardrobe-lavatory unit is equipped with premium quality hardware that lasts. This is true of all our casework. You may have it custom built to dimensional and design requirements. Why not ask to see our catalog?

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AVM CORPORATION

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We're out to change your mind about Tyler Pipe.

A lot of you think of us as the leading source for cast iron soil pipe and fittings. ℄ No-Hub® couplings and TY-SEAL®gaskets. And you're right.

Others think of us as a full-line source for DWV system specification products under our Wade name. You're partly right, too.

Many of our customers know us as a supplier of quality ABS plastic fittings.

Still others of you think of us as a leading supplier of waterworks and municipal fittings. You're on the right track but you're not getting the whole picture.

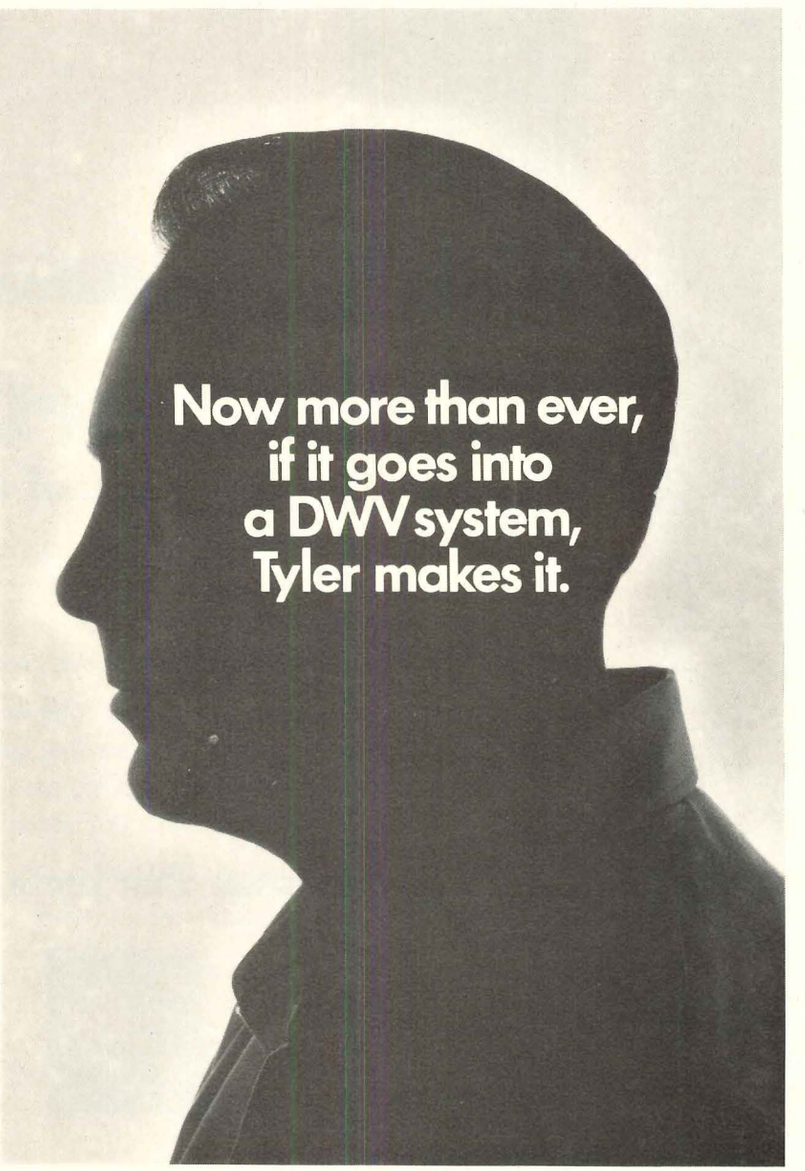
And that's why we're out to change your mind about us.

Tyler Pipe is all four of the things just mentioned.

That's a good point to remember because it means you can come to just one source for everything you need, for any DWV system requirement.

So think of Tyler Pipe as one company, one source and your one major supplier for a complete line of DWV system products. For the complete story, write P. O. Box 2027, Tyler, Texas 75701.

Now, more than ever...if it goes into a DWV system, Tyler makes it.



Tyler Pipe
Subsidiary of
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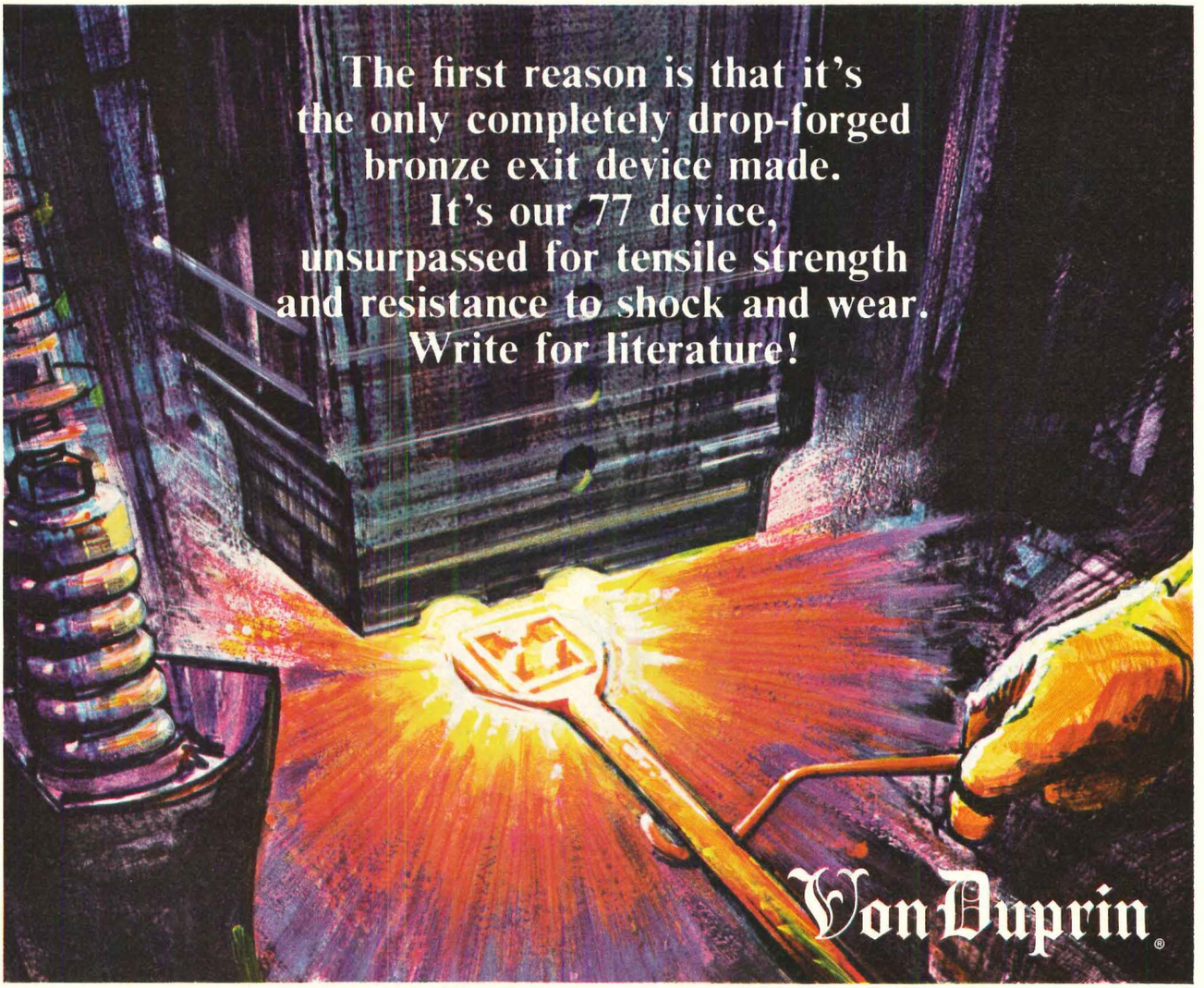
This is a fine looking exit device. But that's the last reason for specifying it.



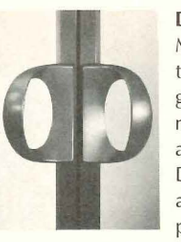
VON DUPRIN, INC. • 400 WEST MARYLAND STREET • INDIANAPOLIS, INDIANA 46225 IN CANADA: VON DUPRIN, LTD.

For more data, circle 74 on inquiry card

continued from page 150

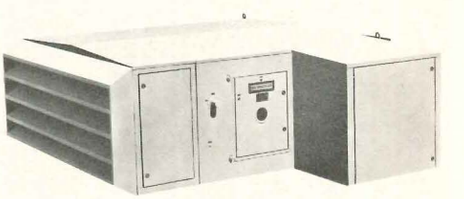
CARPETING / These patterned carpet squares are loose-laid and totally interchangeable. They can be easily removed to accommodate any flexible layout. If underfloor access is required, the squares are simply lifted and then replaced after work is finished. The pattern shown is available in six color ranges. The manufacturer claims the squares are burn-proof with practically no static build-up, and guarantees that they will hold fast under any traffic conditions. ■ Heugatile Corp., Kenilworth, N.J.

Circle 309 on inquiry card



DOOR PULLS / Designed by Malcolm Leland, this sculptured doorpull is one in a group available in bronze, nickel, silver and aluminum, and in various finishes. Designs are available for aluminum frame doors, tempered glass doors, metal and wood doors. ■ Forms & Surfaces, Santa Barbara, Calif.

Circle 310 on inquiry card



DOOR HEATERS / This gas-fired door heater designed to furnish a curtain of warmth at door openings is for commercial and industrial applications. The unit provides 4,000 to 8,000 CFM and 400,000 to 990,000 BTU and natural or LP gas operation. Flame characteristics of the burner assure complete combustion throughout the turndown 50 to 1 range of the unit. ■ Gas-Fired Products, Inc., Charlotte, N.C.

Circle 311 on inquiry card

EXHAUST REGISTER / Modern styling and an eccentric center cone designed to eliminate noise patterns are featured in this series. Its high pressure drop design permits higher velocity ductwork at low noise levels. ■ American SF Products, Inc., Englewood Cliffs, N.J.

Circle 312 on inquiry card

For more data, circle 76 on inquiry card

Enthusiasm runs high when you install the quietest, most easily personalized steel office furniture. Lyon comforts include an adjustable typewriter platform that extends or retracts to match individual needs. Lyon modular design lets you combine basic components according to personal preference. Double-wall construction with lavish use of honeycomb filler has such a comforting, muffled sound. Desk and file drawers glide almost inaudibly. There are comforts galore, including a handy stationery pedestal. Convenient features like the exclusive "lock-in-top" that controls *all* desk drawers. Plus clean, crisp styling; so timely, so easy to live with. Call your Lyon dealer today!

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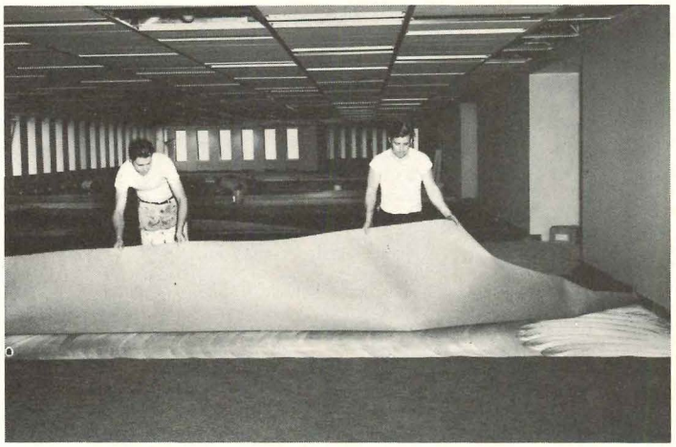
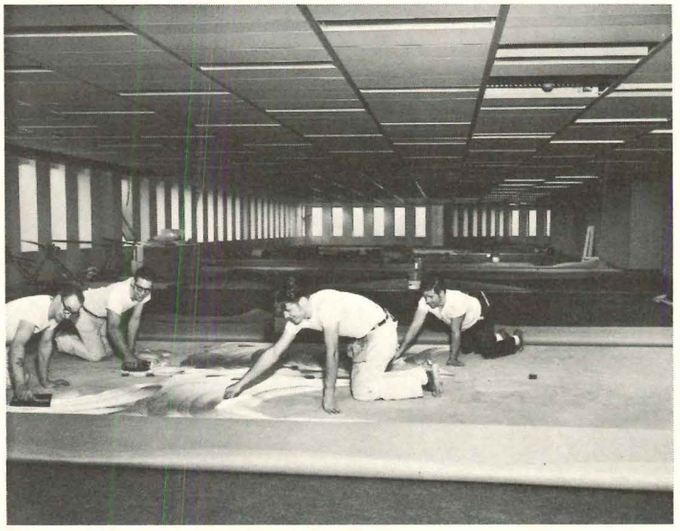
Making headlines

Direct Jute Glue-Down Carpet Used in New U.S. Steel Building



Double jute-backed carpet being installed directly on concrete sub-floor coated with adhesive.



Installers applying adhesive to concrete sub-floor, for direct glue-down installation of double jute-backed carpets in new 64-floor U.S. Steel Building, Pittsburgh.

The fast-growing concept of direct glue-down installation of double jute-backed carpets is being utilized in the new United States Steel Building in Pittsburgh. This is reported to be one of the largest single carpet installations on record, encompassing about 130,000 sq. yds. Occupancy of floors on an individual basis began in September.

The floors to be occupied initially by U.S. Steel in the 64-floor structure are carpeted by the direct glue-down method, including elevator lobbies and 48 passenger elevators.

Maria Bergson Associates, New York, directing the buildings' interior design, and U.S. Steel officials investigated and tested the direct jute glue-down method in great depth before deciding on it for a project of such magnitude. Based on their rigorous pre-testing, they are even utilizing it in high spillage risk locations such as "coffee break" areas, and anticipate no problems.

In addition to lower initial cost than other carpet systems and practically no strain on seams, one important benefit of this method is easy mobility for conventional wheels and casters and great pile resistance to them with carpet construction of the proper contract type. Hence U.S. Steel is able to place directly on the carpet, without underchair pads, thousands of secretarial chairs with standard casters now in service elsewhere.

Gaymar Co., Pittsburgh, is handling the installation, with the crews under the supervision of Don McGinn. He reports: "Pre-cutting for the large floor expanses between trench headers, with separate carpet strips cut to fit the headers, is greatly increasing our productivity. We foresee no problems in pick-up with the jute when and if it becomes necessa to reach underfloor sections. T jute backing is providing a stro bond with minimum adhesive cause it holds the compound an absorbs it thoroughly right on the surface. Carpet edges are consistent in height, so we can butt-seam fast, with the result practically invisible."

Architects: Harrison & Abramovitz and Abbe, New York. General contractors: Turner Construction Co., New Y

Specifiers strongly favor double Jute-backed carpet glue-down

Specify this system where you couldn't specify carpet. For the reasons at the right. Plus aesthetics, sound absorption, low-cost maintenance, employee morale, comfort underfoot, insulation.

Double jute backing makes glue-down work. Retains adhesive for strong, permanent bond to any subfloor or previously installed hard flooring. Provides the necessary dimensional stability. Specify both Jute primary and secondary backing in tufted carpets, because their compatibility protects against delamination.

JUTE CARPET BACKING COUNCIL, INC. 25 Broadway • New York, N. Y. 10004

American Industries, Inc. • BMT Commodity Corp. • C. G. Trading Corp. • Delca International Corp. • Dennard & Pritchard Co., Ltd. • A. de Swaan, Inc. • Robert F. Fitzpatrick & Co. • Gillespie & Co. of N. Y., Inc. • Hanson & Orth, Inc. • O. G. Innes Corp. • Jute Industries, Ltd. • Lou Meltzer Co. • Pak-Am Inc. • William E. Peck & Co. of N. Y., Inc. • R. L. Pritchard & Co. • Revonah Spinning Mills • Stein, Hall & Co, Inc. • White Lamb Finlay Inc. • Willcox Enterprises, Inc.

LOWER INITIAL COST—less than identical carpet plus separate underlayment, or foam or rubber backed carpet with equal pile specifications.

CLEAN PICK-UP FROM FLOOR — carpet can be lifted to reach trench headers, intact for re-installation anywhere.

EASY WHEEL, CASTER MOBILITY — with standard contract pile construction, no mushiness to bog down carts, mobile equipment, secretarial chairs.

HELP IN MEETING FIRE SAFETY CODES — provided the carpet is otherwise qualified.

For more data, circle 77 on inquiry card

Plan yourself a "Field Trip"

Where the differences in Permanent Dockboards really show up

Permanent Adjustable Dockboards look alike, and have similar sounding features. But put them in operation and the resemblance ends.

We feel Kelley Dockboards are superior in design, construction and operation. That's why we'd like you to see our dockboards in operation . . . insist on operating them yourself. Ask us to fully explain our exclusive twin safety system and automatic operation. In fact, before you buy or specify, make us prove how much better and safer Kelley Dockboards really are.

Your clients will appreciate the extra effort. For complete details, fill in the reply card or write:

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(414) 352-1000

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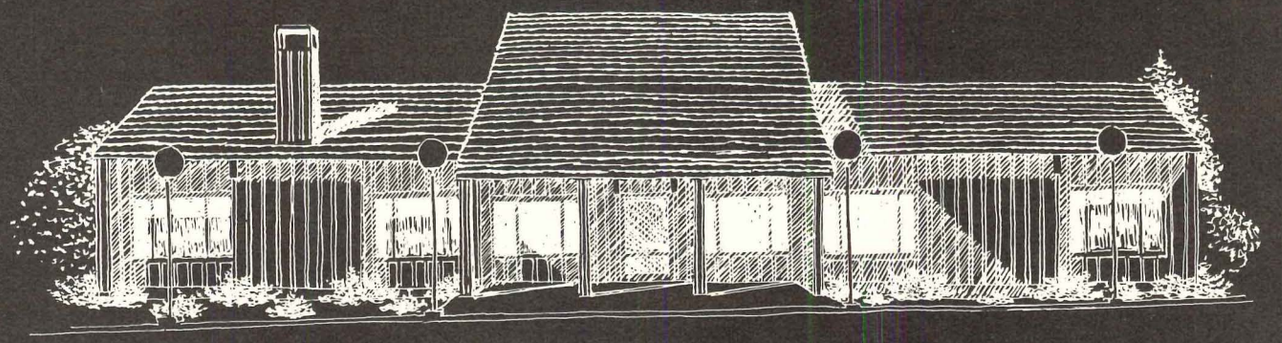

Red cedar shakes help a hospital feel more like home.

North Lincoln Hospital, Lincoln City, Oregon. Certi-Split No. 1 Handsplit/Resawn Shakes, 24" x ½" to ¾". Architects: Edmundson, Kochendoerfer, Kennedy, Daniel, Mann, Johnson & Mendenhall. Builder: George A. Moore & Associates

At first glance, this 50-bed hospital in Lincoln City, Oregon, appears to be a residential development.

That's the idea. A hospital that feels at home in its wooded environment. And feels *like* home to patients, visitors and staff.

Red cedar shakes match the mood beautifully.

Rich in color and texture, these shake roofs slope down to express a warm, casual welcome. They create a sense of home that's carried throughout the hospital interior with wood beams, panelled walls, and view windows that offer the scenic therapy of a nearby lake and wooded slopes.

Cedar shakes blend effortlessly into this native setting. They live in natural harmony with the hospital's cedar board-and-batten siding. And they bring rustic beauty to strikingly bold design.

Red cedar weathers beautifully, too. These shakes will retain their warmth and elegance for decades without maintenance. They are naturally insulative against heat and cold. And they withstand even hurricane winds.

For your next hospital project, specify the real thing: Certi-Split shakes or Certigrade shingles. For details or money-saving application tips, write: 5510 White Bldg., Seattle, Wa. 98101. (In Canada: 1055 West Hastings St., Vancouver 1, B.C.)

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

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Red Cedar Shingle & Handsplit Shake Bureau

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

A UNIQUE CONCEPT IN WATER COOLING

New Simulated-Recessed CORDLEY® COOLER

Here's a truly new concept in drinking fountains to keep pace with new trends in architectural design. This Cordley cooler mounts flush to *any* wall. Creates the illusion of a semi-recessed unit. Provides all the construction and installation economies of a wall-hung unit. Extends only 9½ inches from the wall and hangs like a picture.

Available with lower cabinet colors of tan, grey, or walnut-woodgrained vinyl; sandalwood or mist grey enamel—even stainless steel. Capacities: 6 and 12 g.p.h.

It's available now; contact your Cordley Representative or write for detailed specifications.

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The cure for cancer

There is no doubt that sooner or later research will find the ultimate cure for cancer.
We can help make it sooner. If you help us. Give all you can to the American Cancer Society.

Fight cancer with a checkup and a check.

Too beautiful to be a work area... too practical not to be...

St. Charles gives you the best of both worlds in every hospital casework application you can name. And because every piece is custom-built to fit the specific circumstances of your job, you have the most complete flexibility of design available anywhere. Contact your St. Charles representative early in the planning stage and let him help you with a wealth of design experience and production facilities that's unmatched anywhere in the industry.

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OFFICE LITERATURE

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

WEATHER STRIPPING / A 24-page guide gives comprehensive information on most commonly used types of interior and exterior weather stripping and thresholds. Data includes advantages and disadvantages of each type, and installation characteristics for a wide variety of applications. Brand names are not given. ■ Pemko Manufacturing Co., Emeryville, Calif.

Circle 400 on inquiry card

PANELS / A catalog and technical brochure describe a line of fire-test panels offering flame spread ratings of 25 or under, smoke ratings as low as 15 and rated fuel contribution of 5 or below. Each panel carries a UL label with specific test information. ■ Marlite Paneling, Dover, Ohio.

Circle 401 on inquiry card

POLLUTION CONTROL / A group of water strainers which removes solids from raw process water supplies is described in an 8-page brochure. Models offer solids separation from 125 to 1588 microns. Automatic backwashing cycles permit continuous strainer operation at capacity. Applications include removal of solids from reclaimed process water and recirculated cooling water. ■ R. P. Adams Co., Inc., Buffalo.

Circle 402 on inquiry card

OUTDOOR LIGHTING / A catalog describes a line of outdoor lighting structures. Shown are highway, commercial, industrial, municipal and recreational uses of aerial floodlighting. The catalog includes engineering data and prices. ■ Rohn Manufacturing Co., Peoria, Ill.

Circle 403 on inquiry card

LUMBER / Seven lumber-use catalogs completely revised to apply size and grade changes under the new National Lumber Standard include 11 softwood species. Key booklet in the series is the "Product Use Manual", a basic technical guide for selecting the proper product for light framing use and estimating needed quantities of siding and paneling. Other catalogs in the series are entitled: "Stock Doors, Windows, Mouldings," "Siding," "Interior Paneling," "Concrete Forms," "Sound Control," and "Western Red Cedar Grade Guide." ■ Western Wood Products Assn., Portland, Ore.

Circle 404 on inquiry card

AUDITORIUMS / A 4-page brochure describes the turntable, divisible, auditorium approach wherein entire seating areas are placed on individual structural turntables. If the full auditorium is not needed, the turntables revolve 180 degrees and face the seats into smaller self-contained auditoriums with their own visual and acoustical characteristics. The back wall turns with the seats and becomes a soundproof divider. The brochure presents floor plans of three schools with TDA installations. ■ The Macton Corp., Danbury, Conn.

Circle 405 on inquiry card

OFFICE LANDSCAPING / "The Landscaped Office," a 32-page booklet, describes how light, color, and sound affect the office environment. Case studies illustrate applications of the manufacturer's loose-laid, interchangeable carpet squares in solving floor covering problems. ■ Heugatile Corp., Kenilworth, N.J.

Circle 406 on inquiry card

DOORS / Shock-absorbing doors for supermarkets and food processing plants are described in a 2-page bulletin. The doors feature a patented heat insulating construction, and positive, Hypalon air seals and "bump-open," self-closing door action. The doors are recommended for applications where temperature and/or humidity controls are necessary. ■ Rubbair Door Div., Cambridge, Mass.

Circle 407 on inquiry card

BUILDING SYSTEMS / This system integrates a polyurethane insulated panel system applied to a basic steel building system to provide interior temperature control. The system is applicable to any building requiring hot or cold temperature control and is particularly recommended for use by the cold storage industry. The 8-page brochure gives complete technical specifications, and schematic drawings. ■ Soule Steel Co., San Francisco.

Circle 408 on inquiry card

PARKING LOT DESIGN / Fourteen basic designs are offered in this 32-page booklet, each showing minimum and optimum dimensions for a variety of space requirements. Dimensions of 37 popular passenger cars are given. The manufacturer's line of wheel-stopping barriers is featured. The barriers consist of metal saddles that hold treated or painted timbers above the surface. Price is $1.00. ■ Write Harris-Barrier Corp., P.O. Box 88243, Indianapolis, Ind. 46208.

* *Additional product information in Sweet's Architectural File*

more literature on page 178

DIMENSION ∇™

Dimension ∇™: Patent Pending

Paneling with the bold look for Modern America

Dimension ∇™ paneling has grooves deeper and wider than any other. The effect is modern. Smart. Dramatic. This is the look for now homes. Flat walls are definitely out.

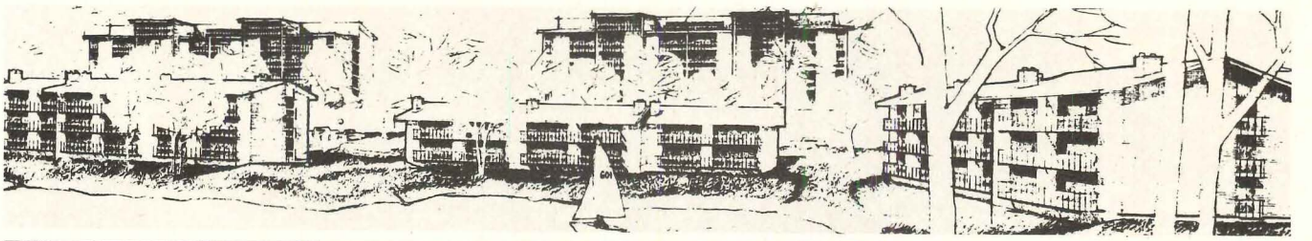
Available in five distinctive real wood veneers, oak, elm, pecan, walnut or birch. Dimension ∇, the paneling with the Great American Look from Georgia-Pacific.

For details check Sweet's Architectural File Division 6. Or wire Georgia-Pacific Corporation, Instant Sample MA Portland, Oregon 97204. We'll get Dimension ∇ paneling samples to you within 48 hours.

The Great American Look

GP GEORGIA-PACIFIC
Portland, Oregon 97204

For more data, circle 82 on inquiry card



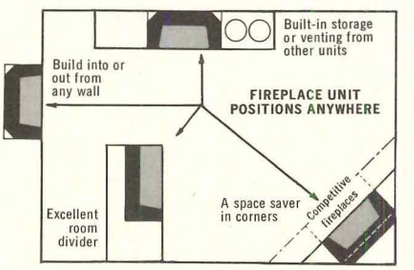
Typical apartment in recreation-oriented Four Lakes Village Apartment Complex, Lisle, Illinois. (Chicago Suburb)
Aubrey J. Greenberg, A.I.A. Architects and Planners

For so many volume developers this Heatilator fireplace is it!

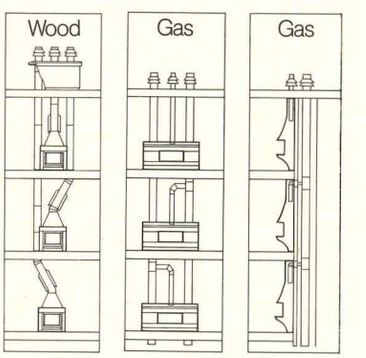
Mark 123 is the name to remember. Here, as builders nationwide are discovering, is fireplacing simplified. Mark 123 is so simple that it installs quickly, adapts to any architectural plan, delivers lower operating costs. Here, also, is the lure of relaxing escape—proven a strong selling feature with renters.

Forget any set ideas about fireplaces. The representative diagrams shown detail the versatility, adaptability and stacking features. Support and surround the Mark 123 with combustible materials. Heatilator Mark 123 systems (fireplace, flue and roof termination) arrive jobsite for under $300. Twist-lock feature secures components in seconds. Full-pack insulation eliminates condensation and noise transmission.

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

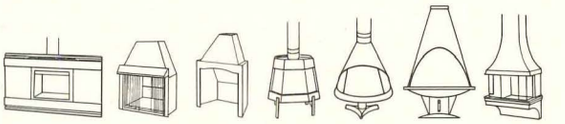


See your Heatilator distributor. Or send for free "Fireplace Idea Kit," detailing a full line of wood and gas burning models. Write: Vega Industries, Inc., 3311 W. Saunders St., Mt. Pleasant, Iowa 52641. Also available in Canada.



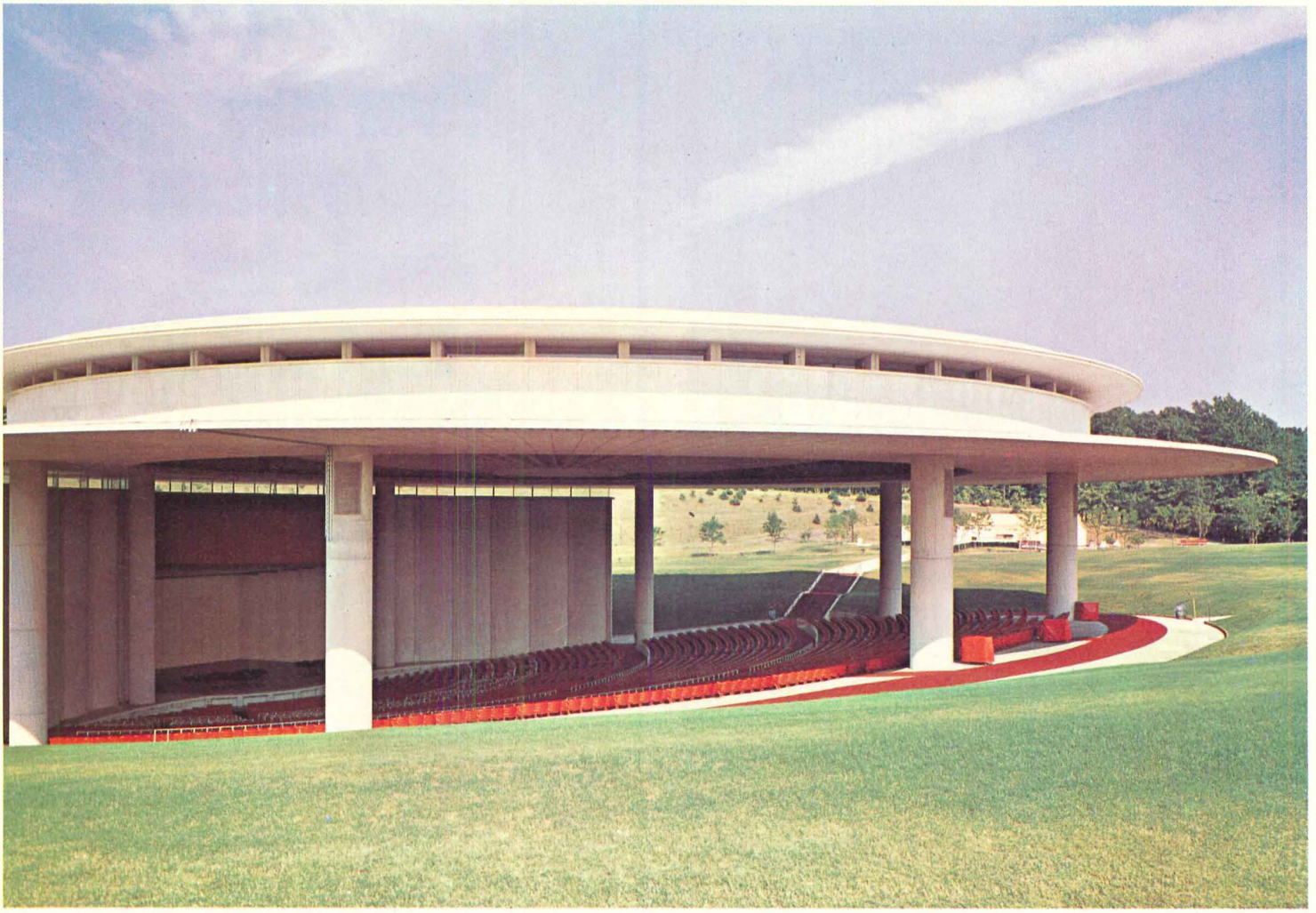
Multi-level venting for Wood or Gas systems. Choice of manufactured or job-built roof termination.

heatilator®
America's Leading Fireplace Systems



Built-in/Free-standing/Wall-hung

For more data, circle 101 on inquiry card



GARDEN STATE ARTS CENTER

■ ARCHITECT: Edward Durell Stone, New York ■ ENGINEER: T. Y. Lin & Assoc., New York
■ CONTRACTOR: Sovereign Construction Co., Ft. Lee, New Jersey

Esthetic design with concrete is beautifully demonstrated by the new Garden State Arts Center designed by Edward Durell Stone for the New Jersey Highway Authority. ChemComp shrinkage compensating cement was specified for the seating area where crack resistance was considered an absolute necessity, and in other areas in the complex where its superior qualities make possible a significantly better, more attractive structure. ChemComp is produced by a group of leading manufacturers of superior quality cements, and is available nationwide.

- REDUCES size and incidence of drying shrinkage CRACKS
- DIMENSIONALLY STABLE
- LOW PERMEABILITY
- INCREASES BOND STRENGTH TO REINFORCING STEEL
- 20%-50% MORE LIVE LOAD CAPACITY
- SUBSTANTIAL REDUCTION IN NECESSARY CONTROL JOINTS
- NO SPECIAL PLACING PROCEDURES
- LESS SEALING AND CAULKING OF JOINTS
- MUCH LESS LONG-TERM MAINTENANCE

Specify, profit by using

ChemComp® Cement

AVAILABLE NATIONWIDE FROM THESE MANUFACTURERS

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Portland Cement Co.
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Cleveland, Ohio 44101

PENN-DIXIE
Cement Corp.
1345 Avenue of the Americas
New York, New York 10019

SOUTHWESTERN
Portland Cement Company
1034 Wilshire Boulevard
Los Angeles, California 90017

TXI
Texas Industries, Inc.
P. O. Box 400
Arlington, Texas 76010

For further information contact: **Chemically Prestressed Concrete Corp. 14656 Oxnard Street, Van Nuys, California 91401** or the sales office nearest you

For more data, circle 83 on inquiry card

* Of course it's a Haws drinking fountain

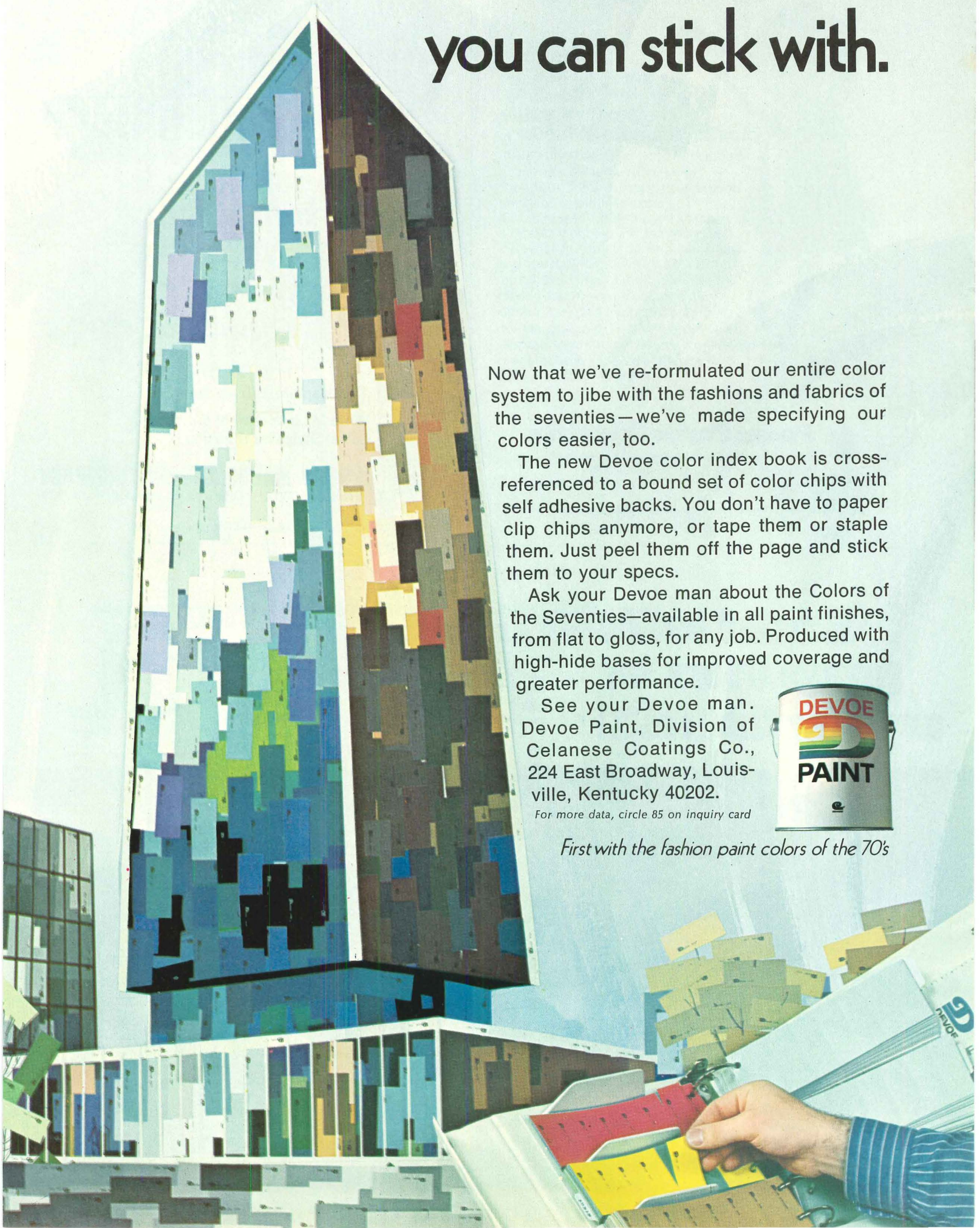
. . . a beautiful drinking fountain shouldn't be too obvious. Agreed? Carefully-sculpted to enhance your ideas . . . clad in the native splendor of cast stone (five colors, two finishes). The Haws Model 30 outdoor drinking fountain stands exquisitely in harmony with its setting . . . any setting. A fountain? It could almost pass for a work of sculpture. Yet this sly harmonizer is incomparably rugged—a fountain for all seasons, kid-proof, weather-proof, freeze-proof! Write **Haws Drinking Faucet Co., 1441 Fourth St., Berkeley, Calif. 94710.**

The drinking fountain that looks better than a drinking fountain—Haws Model 30 in vivid stone.

HAWS® **DRINKING FOUNTAINS**

For more data, circle 84 on inquiry card

Devoe announces a line of colors you can stick with.



Now that we've re-formulated our entire color system to jibe with the fashions and fabrics of the seventies—we've made specifying our colors easier, too.

The new Devoe color index book is cross-referenced to a bound set of color chips with self adhesive backs. You don't have to paper clip chips anymore, or tape them or staple them. Just peel them off the page and stick them to your specs.

Ask your Devoe man about the Colors of the Seventies—available in all paint finishes, from flat to gloss, for any job. Produced with high-hide bases for improved coverage and greater performance.

See your Devoe man. Devoe Paint, Division of Celanese Coatings Co., 224 East Broadway, Louisville, Kentucky 40202.

For more data, circle 85 on inquiry card

First with the fashion paint colors of the 70's

the landscaped office

super efficiency with some problems

Whatever your feelings about office landscaping, you'll want your free copy of this 32-page study from Heugatile.

Beautifully illustrated in full color, The Landscaped Office presents a stimulating discussion of the problems involved in the change from the classical concept of the "cell office" to the new "landscaped office".

It tells how large European companies achieve 20% to 30% increases in efficiency with landscaped offices—how leading designers handle light, color, acoustical problems, furniture, floor coverings, air conditioning, wiring and other special requirements of office landscaping.

Heugatile's revolutionary loose-laid carpet squares play a very special role in the landscaped office. Locked to the floor by their own vacuum, they can be lifted or moved easily for underfloor access to electrical connections. Because they are rotatable and can be moved from heavy traffic lanes to light traffic areas, they give your client two to three times the wear of ordinary carpet. Heugatiles are known throughout the world as a must for the landscaped office.

HEUGATILE

HEUGATILE CORPORATION
185 Sumner Avenue
Kenilworth, New Jersey 07033
Dept. AR-1

☐ Send me your new study, **THE LANDSCAPED OFFICE.**
☐ Send me more information on Heugatile.
☐ This is for a current project.

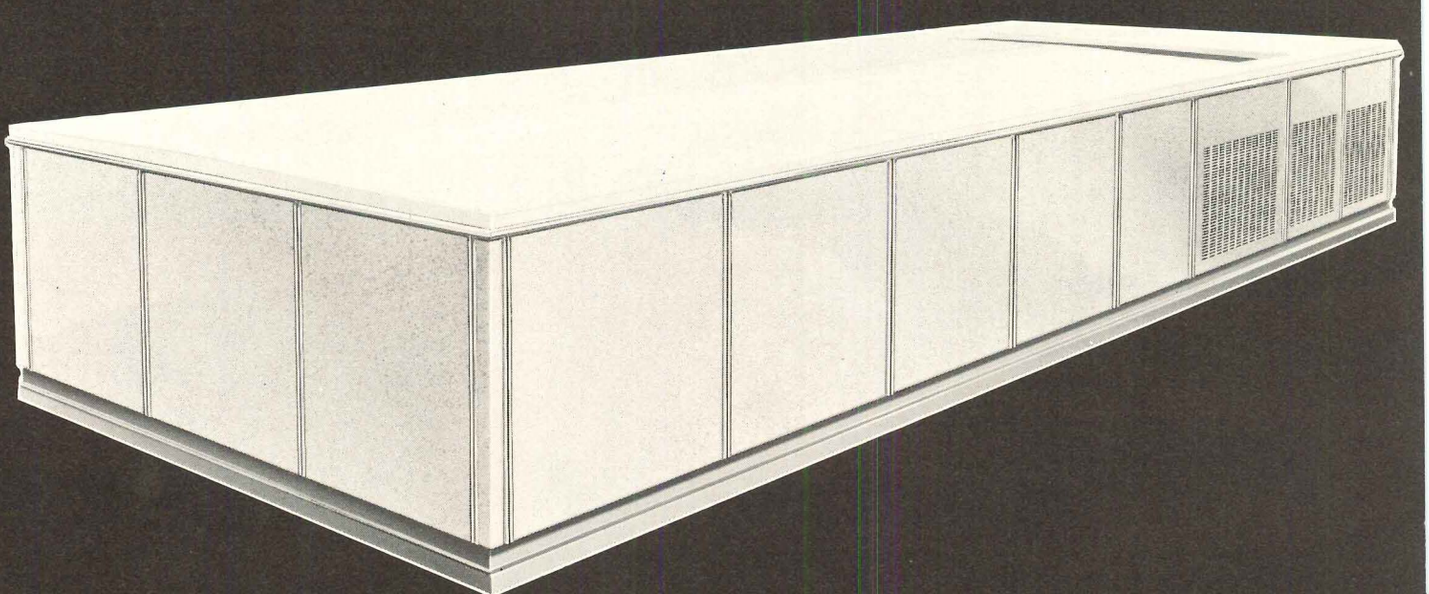
Name _____ Title _____
Company _____
Address _____
City _____ State _____ Zip _____

Warehouses and showrooms from coast to coast.

CONTENTS

For more data, circle 89 on inquiry card

What we've done to make Schemenauer rooftop units* the most reliable.



*Multizone systems for:

1. Heating-cooling-ventilating
2. Heating-ventilating with optional provision for future cooling
3. Cooling-ventilating

What is reliability?

To a building owner it means comfort he can depend on. It means low fuel and power consumption. And it means absolute minimum maintenance.

To an architect, and an engineer, it means satisfied clients.

To an installer it means fewer call-backs.

Now here are some of the built-in features that have earned Schemenauer multizone rooftop units a reputation for reliability.

Two heating/cooling systems in one rooftop unit

On our larger units (the most popular sizes) we use two separate cooling systems, two separate heating systems (on gas units). Now that's what we call fail-safe protection!

Under average cooling conditions, only one cooling system operates. In extremely hot weather, both systems operate. And, if one system should become inoperative for any reason, the other will continue to operate so that occupants would never be without cooling.

Dual gas heating systems give the same fail-safe protection. Either one supplies enough heat, even in sub-zero weather, to prevent freeze-up in any of the zones served.

Save up to 50% in operating cost

The dual cooling system means that we use two half-size compressors instead of one large one. So under average cooling conditions, only one is operating—at half the electric power consumption (compared to a single compressor with cylinder unloading which decreases the power consumption approximately 25%). Because a smaller compressor runs for longer time periods than a large one, even more power is saved because there are less frequent motor start-ups.

On the dual heating system, automatic controls modulate gas input down to 20% depending on comfort requirements. As a result, only enough heat is produced to supply the need. Fuel dollars aren't wasted.

We make use of "free heat"

While the Schemenauer unit is cooling some zones, other zones might need heating. That's when we take advantage of the "free heat" in the hot refrigerant coil. By diverting a portion of the cooled, dehumidified, filtered air through that hot coil, we use the heat that is normally wasted. So you get a mixture of cooled air and "free" heated air to meet varied requirements of each thermostatically controlled zone. You don't even have to operate the unit's heating system until temperatures go below sixty degrees.

Positive-acting multizone dampers control comfort accurately

Oversize dampers eliminate damper "position hunting" which can cause wide temperature variations within zones. The air supply for up to 12 zones is handled quickly and accurately by our full-modulating, 45-degree proportioning-type dampers. The result is better control over both heating and cooling.

Designed with service in mind

Schemenauer rooftop units are designed to 1) eliminate potential service problems, 2) make service easier if it should be necessary and 3) eliminate a possible panic situation by providing back-up systems (in our larger rooftop units) for both heating and cooling.

Like any equipment exposed to weather, a rooftop unit needs weather protection. Protection like our one-piece fiberglass roof. It can't leak. Like double-walled aluminum side panels with a baked enamel finish that can't rust. And like protected panel insulation that can't tear.

Our kind of protection includes special fasteners that bolt and seal the side panels to sturdy aluminum posts. And, weather-tight gaskets that join the rooftop unit to its curb base.

These Schemenauer innovations make our rooftops almost service free. But, like all mechanical equipment, some routine service is necessary and we have that in mind, too.

Most filters, for example, are accessible from either side of the unit. Pilots on gas-fired units are the automatic electric type. Components such as furnaces and compressors are half the usual size and weight (there are two of each on large units), making them much easier to handle.

Small access side panels slip out easily and the aluminum upright panel dividers can be removed without cutting or welding. A remote monitoring panel identifies and locates mechanical problems and this saves costly troubleshooting time. We've even labeled the major compartments to make the serviceman's job easier and faster.

There's a lot more to tell you about Schemenauer multizone rooftop units. They're the units designed to last as long as the buildings they're installed on. Just clip and mail the coupon.

☐ Tell me more about reliable Schemenauer rooftop units for
__gas __electric __steam __hot water applications.

☐ Have your representative arrange for an appointment. RT-14467

NAME_____

TITLE_____ FIRM_____

STREET_____ CITY_____

STATE_____ ZIP_____

Mail to: Modine, 1510 DeKoven Avenue, Racine, Wis. 53401

MODINE

Nothing quite equals Modine/Schemenauer heating and air conditioning quality.

For more data, circle 90 on inquiry card

continued from page 166

HEATERS / Electric infrared and unit heaters are described in a 48-page catalog illustrating 143 models. Specifications and applications are included for large and small portables, overhead heaters for plants and warehouses, comfort heaters for snow melting, and electric unit heaters for offices, stores and factories. Two pages are devoted to controllers, cords and other related accessories. ■ Aitken Products, Inc., Cleveland.

Circle 409 on inquiry card

CONCRETE FLOORS / Two 4-page brochures describe the manufacturer's concrete floor surfaces intended for use where heavy duty and/or cleanliness are important design criteria. ■ Kalman Floor Co., White Plains, New York.

Circle 410 on inquiry card

MOULDINGS / A guide to the selection and installation of pre-finished wood mouldings contains profiles of the most popular moulding patterns and their applications. ■ Western Wood Moulding & Millwork Producers, Portland, Ore.*

Circle 411 on inquiry card

AUDIO-VISUAL EQUIPMENT / An 8-page guide includes information on mobile equipment tables, cabinets, teaching centers, overhead projector tables, multi-media centers, audio panels, mobile TV tables, video tape trucks, mobile book and materials handling trucks, and materials storage cabinets. A line of audio-visual accessories is described. ■ Bretford Mfg., Inc., Schiller Park, Ill.

Circle 412 on inquiry card

GLASS / A guide to the specification and glazing of gray- and bronze-tinted plate glass describes methods for controlling thermal breakage from absorbed solar energy. Technical explanation of the manufacturer's line of gray and bronze plate products is included, with wind load data and safety factors relative to statistical probability of failure. ■ American St. Gobain, Kingsport, Tenn.*

Circle 413 on inquiry card

WATERPROOFING / Membrane waterproofing with dry-sprayed bentonite is described in a two-page brochure, which states that the Bentonize System protects wall and horizontal surfaces with little or no surface preparation and continues to seal and reseal even after cracks appear. ■ Bentonize, Inc., Minneapolis.

Circle 414 on inquiry card

COATINGS / A line of coating powders is described in a 24-page brochure giving formulations of five basic types. Coating processes, such as the fluidized bed and electrostatic spray systems, are covered as well as specific applications for the various coatings. ■ The Polymer Corp., Reading, Pa.

Circle 415 on inquiry card

FURNITURE / "Capri 70 Indoor/Outdoor Benches," a 4-page brochure, describes a line of reinforced fiberglass benches designed for indoor and outdoor use. They can be used outdoors in parks, patios and shopping centers; indoor applications include lobbies, museums and airport terminals. The line includes six models. Optional features, including removable lids and locking devices, are listed. ■ Lynema Enterprises, Inc., Bronson, Mich.

Circle 416 on inquiry card

FLOORING ACCESSORIES / Rubber and vinyl accessories including cove base, stair treads, carpet and stair nosings, reducer strips, edge guards, and corner bumper guards are described in this 8-page catalog. Size and dimension details are given. ■ Johnson Rubber Co., Middlefield, Ohio.*

Circle 417 on inquiry card

STAIR ACCESSORIES / A line of handrails, nosing for metal pan, concrete and terrazzo stairs, and safety rail is described in a 4-page brochure. The thermoplastic properties of the handrail permit more design flexibility. Twelve profiles to fit most standard flat bar, channel, tube or pipe railings are available in five decorator colors. ■ Vinyl Plastics Inc., Sheboygan, Wis.

Circle 418 on inquiry card

HEATING SYSTEMS / An 8-page catalog presents a line of snow-melting and floor-heating mats and cable, controls and accessories. Selection guides and specifications are given. ■ Easy Heat-Wirekraft, Lakeville, Ind.

Circle 419 on inquiry card

FANS / A line of pressure blowers is described in an 8-page brochure. Designed for continuous duty, the fans are available in twelve sizes. ■ Industrial Air, Inc., Amelia, Ohio.

Circle 420 on inquiry card

* *Additional product information in Sweet's Architectural File*

more literature on page 188

To paint or not to paint.

The beauty in shapes and textures is undeniable. But a life without the full expression of color is not life. Color infinitum. Paint is the one medium that offers the individual in his environment the choice of nature's completed spectrum.

With all its subtleties. With all its explosiveness. It is the only medium that encourages the total exploration of color. Paint is freedom. Let paint be part of your creative decision. And when it is, let it be the finest. Pratt and Lambert. The paint.

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

For more data, circle 91 on inquiry card

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A new service offering reprints, reports and back issues.

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This Building Types Study describes the 22 industrialized building systems which HUD has picked as winners, and examines the significance of Breakthrough for the housing industry as a whole.

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Updated Special Reports from 1967, 1969 and 1970 by editor Robert E. Fischer and consultant F. J. Walsh with six new pages of cross referencing and guides to uses of materials
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Did you miss these important issues of RECORD HOUSES? If so, there is a limited supply available.

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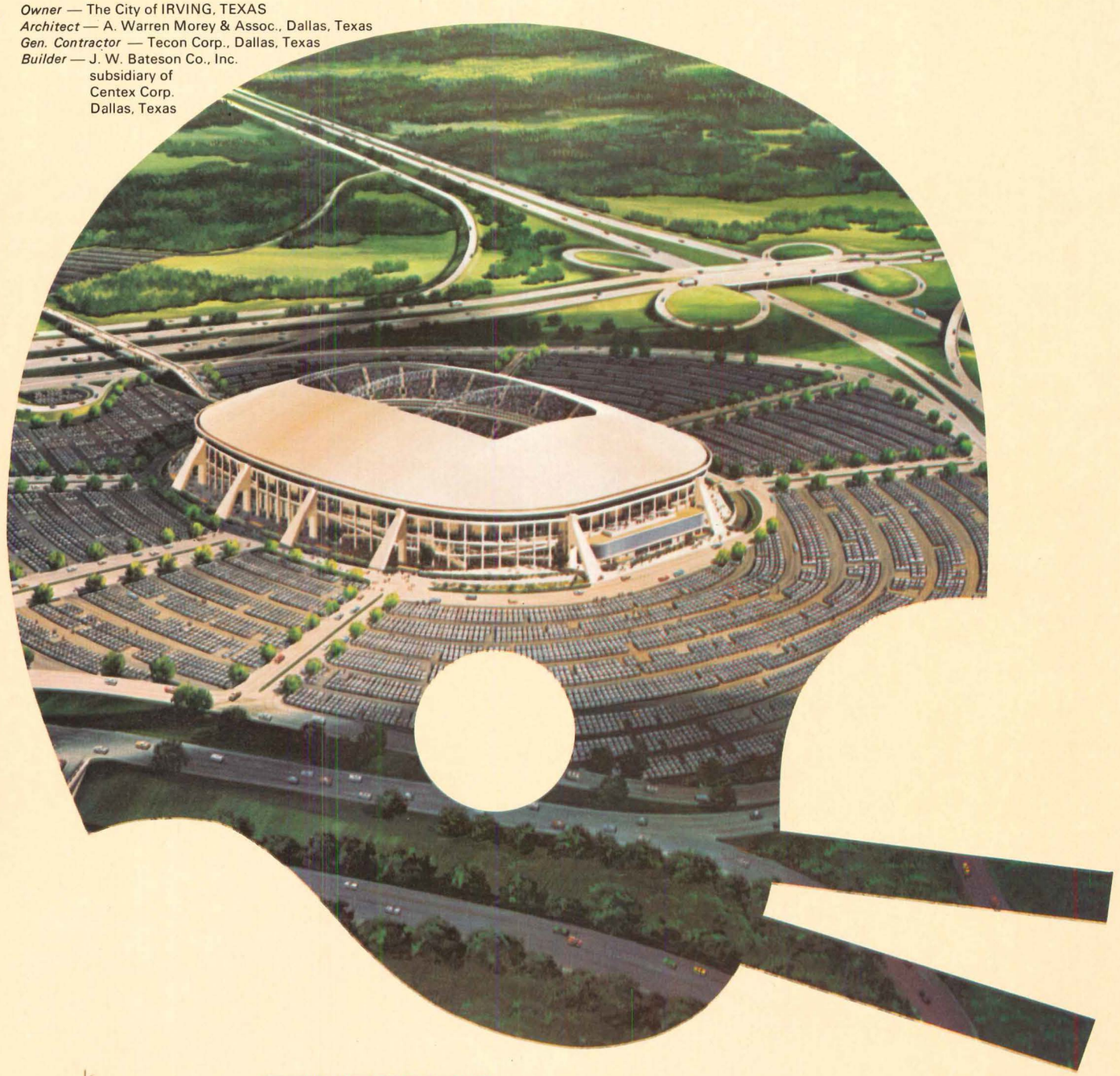
TEXAS STADIUM

Owner — The City of IRVING, TEXAS
Architect — A. Warren Morey & Assoc., Dallas, Texas
Gen. Contractor — Tecon Corp., Dallas, Texas
Builder — J. W. Bateson Co., Inc.
subsidiary of
Centex Corp.
Dallas, Texas



FENESTRA steel doors and frames face a long, tough life in the NEW home of the DALLAS COWBOYS

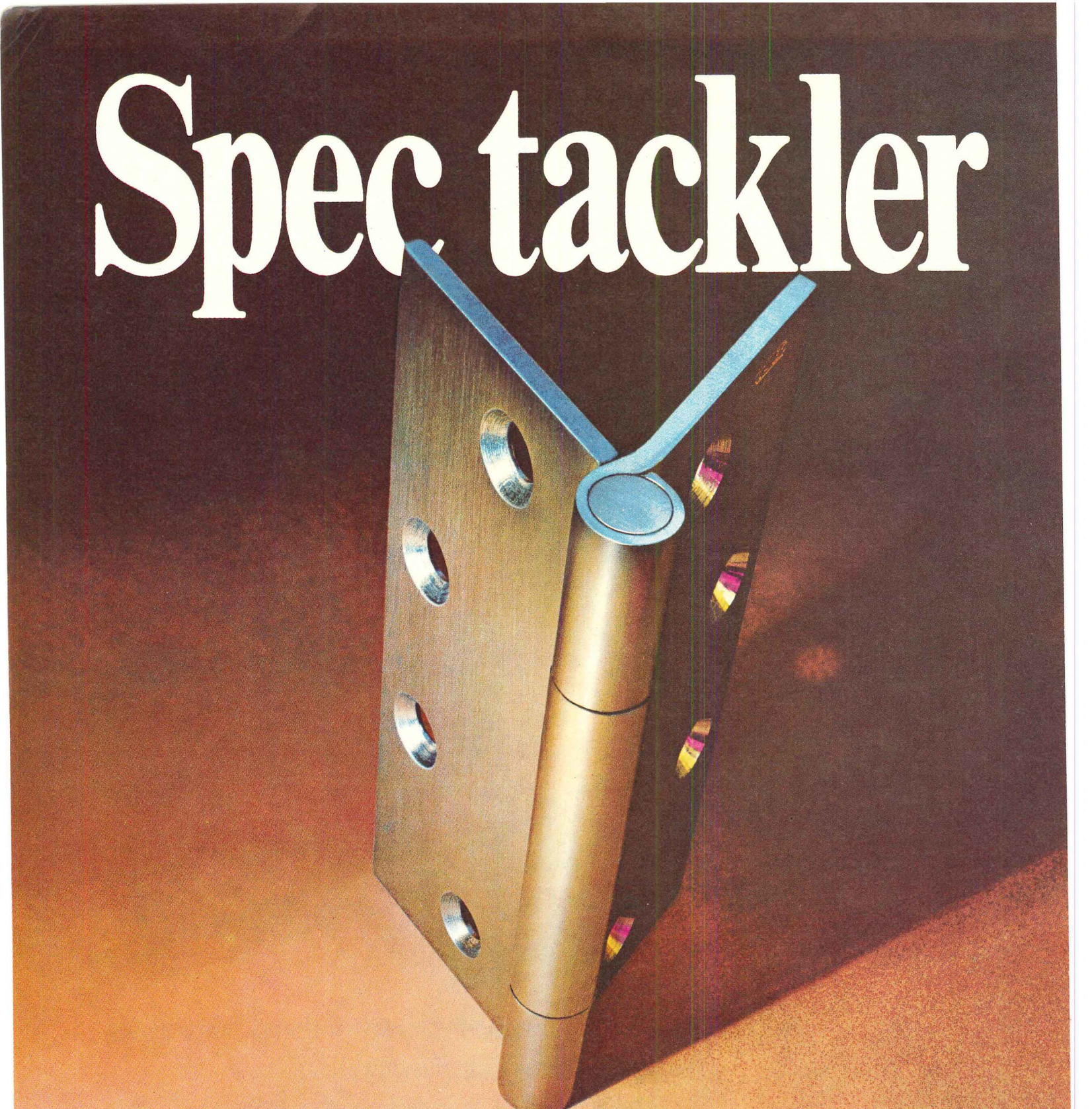
What better place for a door to show its ability to take it than in Texas Stadium . . . new home of professional football's Dallas Cowboys. But Fenestra all steel Doors and Frames are more than up to the task. We build 'em tough . . . just like the Cowboys. Whether the application is a new stadium, a school, dormitory, apartment building, motor-hotel . . . you name it . . . it's the right place for attractive Fenestra steel Doors and Frames. And remember, now these precision-made doors are available in a full spectrum of colors. Prefinished at the factory . . . with appliance type enamel. The complete line, including Fen-Dry drywall frames is available from a nearby Fenestra distributor. Why not join the swing to Fenestra? Where things happen in steel doors, frames and versatile architectural entrance systems. Your Fenestra distributor is listed in the Yellow Pages under Doors-Metal. Or see us in Sweets

FENESTRA IS LOCAL EVERYWHERE

FENESTRA
DIVISION OF THE MARMON GROUP, INC. (MICHIGAN)
ERIE, PENNSYLVANIA 16505

For more data, circle 92 on inquiry card

Spec tackler



the hinge that has no equal

When the spec calls for three-knuckle construction with flush tips and stainless steel pins recessed in the barrel, concealed bearings not using oils or grease and requiring no maintenance . . . it calls for the Stanley LifeSpan hinge* . . . the hinge that has no equal. LifeSpan is the only hinge that can meet such rigid specifications. *And it's so extraordinary that it's guaranteed for the life of the building.*

Featuring the slimmest three-knuckle barrel in the industry, the LifeSpan hinge utilizes a new architectural-grade LifeStan™ bearing. This bearing consists of a precision-flat and super-finished stainless steel bearing part that works against Stanite, a self-lubricating bearing material. The result . . . LifeSpan offers a totally new concept in hinge design and bearing construction — yet one that has been successfully proven in laboratory and field use.

For additional information on this new hinge design; request LifeSpan brochure H-463. Write Stanley Hardware, Division of The Stanley Works, New Britain, Connecticut 06050.

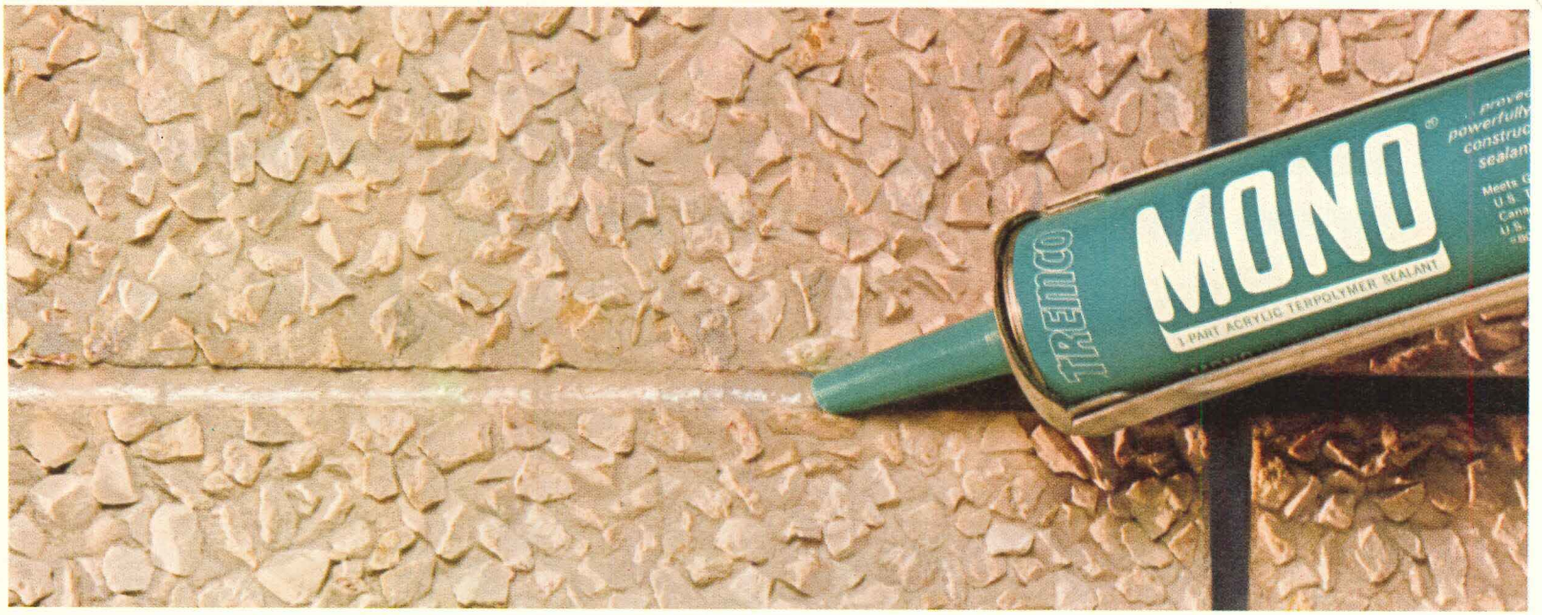
STANLEY®
helps you do things right

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION MEMBER bhma

*Patent No. 3,499,183

In Canada: The Stanley Works of Canada Limited

For more data, circle 93 on inquiry card



Nine times out of ten, MONO fills the sealant gap.

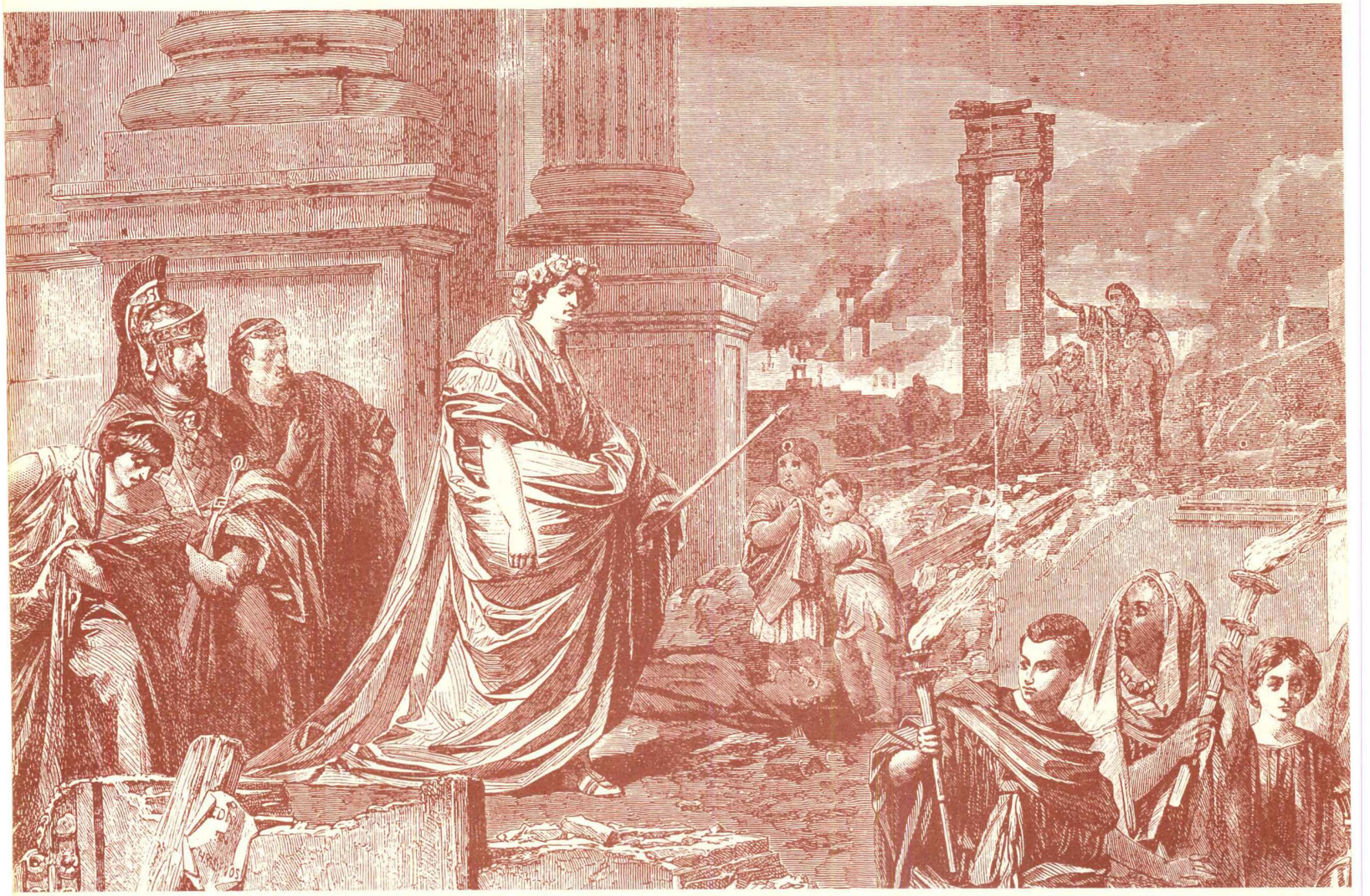
When it can't, he can.

We know you'd like an all-purpose trouble-free construction joint sealant. □ So would we. But right now, MONO's as close as we can come . . . and it won't do everything, any more than any other types and brands we've tested. □ Sure, MONO's good and works so well under the kind of adverse conditions (dust and moisture) that are common to the job site, that we suspect many construction people actually look on it as an all-purpose sealant. □ But actually Tremco's business isn't based on selling *any* all-purpose sealant. Instead we're a single-purpose company. We're The Water Stoppers and we want to give you leakproof security in every joint on the job. □ So we make not one, but fourteen other sealants besides MONO, like a very good polysulfide (Lasto-Meric), a highly-regarded preformed tape (440) as well as a dozen others with special purposes. □ The only all-purpose item in our catalog is the Tremco Representative. He has been thoroughly trained to provide you the proper sealant for each application and is ready to give job-site assistance before, during and after each project. □ Why not give him a call next time you run into the sealant gap? He'll get you across every time. □ The Tremco Manufacturing Company, Cleveland, Ohio 44104; Toronto 17, Ont.

TREMCO
The water stoppers

For more data, circle 94 on inquiry card

If the Romans had only talked to us about Zonolite Mono-Kote, Nero would have had to fiddle a lot longer.



Zonolite® fireproofing experts would have known exactly what to recommend for any fireproofing job. Too bad they weren't around in those days.

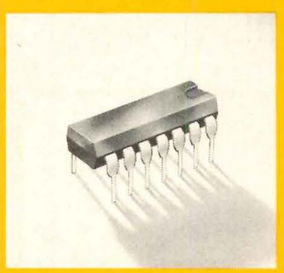
But today there's a local Zonolite Mono-Kote® fireproofing expert to serve every major city. He'll help you sort out local building codes. Advise you on current fire ratings. Provide answers on anti-pollution and in-place density requirements.

Mono-Kote is the *cementitious* direct-to-steel fireproofing material that so many specifiers are turning to. So check with Zonolite first, on any fireproofing job. It'll only take a minute now—and can save you time and headaches later. In fact, it just might be a matter of life and death. Construction Products Division, W. R. Grace & Co., 62 Whittemore Ave., Cambridge, Massachusetts 02140.

GRACE ZONOLITE

Just say Grace!

small wonder



the fastest passenger service ever known is delivered by the new HAUGHTON 1092-IC elevator control system!

That "small wonder" holds an array of the microminiature integrated circuits that enable Haughton 1092-IC to achieve faster, more flexible passenger service than any other control system.

The interval from pressing a call button to arrival at the destination floor—Passenger Destination Time—is shorter than was ever before possible. That's because 1092-IC, alone, is packed with enough electronic logic to supervise and weigh *every* factor affecting service. Others can deal with less than half of them.

In milliseconds, 1092-IC allots and reallots calls to cars; constantly adjusts to all changes in load, location, calls, commands and delays—as quickly as they happen. The entire elevator plant becomes more efficient than ever before, because now any car can be deployed anywhere to streamline passenger traffic. And it's accomplished in less than the former space, with greater reliability.

To learn more about this new concept of better service for elevator passengers, write us for your copy of the new HAUGHTON 1092-IC brochure—or call your nearest Haughton office.

RELIANCE ELECTRIC COMPANY

HAUGHTON ELEVATORS

P.O. BOX 780, TOLEDO, OHIO 43601

For more data, circle 96 on inquiry card

ADVERTISING INDEX

Pre-filed catalogs of the manufacturers listed below are available in the 1970 Sweet's Catalog File as follows.

A Architectural File (green)
I Industrial Construction File (blue)
L Light Construction File (yellow)
D Interior Design File (black)

ARCHITECTURAL RECORD

McGraw-Hill, Inc., 330 West 42nd Street, New York, New York 10036
Advertising Sales Mgr.: Louis F. Kutscher (212) 971-2838
Eastern Sales Mgr.: Donald T. Lock (212) 971-3583
Central Sales Mgr.: Robert G. Kliesch (215) 568-6161
Advertising Services Mgr.: Joseph R. Wunk (212) 971-2793
Marketing Services Mgr.: Elizabeth Hayman (212) 971-2858
Classified Advertising: (212) 971-2557

District Offices:

Atlanta 30309
Edward G. Graves, 1375 Peachtree St., N.E., (404) 892-2868

Boston 02116
Ted Roscoe, 607 Boylston St., (617) 262-1160

Chicago 60611
Robert T. Franden, Edward R. Novak, 645 N. Michigan Ave. (312) 664-5800

Cleveland 44113
Willis W. Ingersoll, 55 Public Square, (216) 781-7000

Dallas 75201
Angus A. Macaulay, 1800 Republic National Bank Tower, (214) 747-9721

Denver 80202
Richard W. Powers, 1700 Broadway, (303) 266-3863

Detroit 48226
Richard D. Thielmann, 2600 Penobscot Bldg., (313) 962-1793

Houston 77002
Angus A. Macaulay, 2270 Humble Building, (713) 224-8381

Los Angeles 90017
Robert L. Clark, 1125 W. Sixth St., (213) 482-5450

New York 10036
Donald T. Lock, Douglas S. Markhouse, Ted Roscoe 500 Fifth Ave., (212) 971-3583

Philadelphia 19103
Robert G. Kliesch, George T. Broskey, 6 Penn Center Plaza (215) 568-6161

Pittsburgh 15222
Edward C. Weil, 4 Gateway Center, (412) 391-1314

St. Louis 63105
Richard Grater, 7751 Carondelet Ave., (314) 725-7285

San Francisco 94111
Richard R. Butera, Robert L. Clark, 425 Battery Street (415) 362-4600

Overseas Offices:

Brussels
Galerie Porte de Namur, 22-26, Chausee de Wavre 1050 Brussels, Belgium

Frankfurt/Main
Elsa-Brandstroen Str. 2, Frankfurt/Main, Germany

London
34 Dover Street, London W.1, England

Milan
Via Baracchini No. 1, Milan, Italy

Paris
17, rue Georges Bizet, 75 Paris 16°, France

Tokyo
2-5, 3-chome, Kasumigaseki, Chiyoda-ku, Tokyo, Japan

continued from page 178

METAL / An alloy consisting of zinc, copper and titanium is described in a 12-page brochure. Designed for roofing, fascias and flashing, this sheet metal is non-staining, resistant to cold flow and corrosion. Specifications are given. ■ The New Jersey Zinc Co., New York City.

Circle 421 on inquiry card

VERTICAL LIFT EQUIPMENT / Electric dumbwaiters, record carriers of the drum and traction type, and hand-powered varieties are described in a 16-page catalog. Details on car capacities, speeds, car sizes, horsepower duty tables, hoistway doors and clearances, controls and signal devices and systems are given. Specifications are included on all models. ■ D. A. Matot, Inc., Chicago.*

Circle 422 on inquiry card

PLASTICS / A decorative laminated plastic made of layers of manufactured papers impregnated with synthetic resins is described in a 6-page brochure. These solid panels may be used for surfacing kitchen counters, doors, movable office and toilet partitions, walls and fixtures. Technical data and specifications are included. ■ Consoweld Corp., Wisconsin Rapids, Wis.*

Circle 423 on inquiry card

ROOFING AND SIDING / This performance report describes ASTM test methods for environmental testing of metal roofing and siding. Test results for the company's protective coating are given in comparison with other products. ■ H. H. Robertson Company, Pittsburgh.*

Circle 424 on inquiry card

PANELING / Applications of burlap paneling are shown in a 4-page brochure. Made by laminating imported jute to the company's insulation board, the paneling is for interior use only. ■ Homasote Company, Trenton, N.J.

Circle 425 on inquiry card

MODULAR CONSTRUCTION / A brochure describes the construction and installation of the company's factory-built apartments. Floor plans are shown and on-site labor and costs savings are given. ■ Cardinal Industries, Columbus, Ohio.

Circle 426 on inquiry card

ELECTRICAL SERVICE UNIT / A 2-page bulletin describes a service distribution unit in the form of a pole that places electrical circuits and outlets, data and communications terminals at desk top level. The service pole with its terminal point can be moved anywhere and powered in a few minutes time. All wiring connections are concealed in the ceiling; the pole can be installed in any normal suspended ceiling. ■ Electro-Link Systems Ltd., 819 Alness St., Downsview, Ontario, Canada.

Circle 427 on inquiry card

GRAVEL STOPS / *Slimline*, an addition to the company's line, is designed especially for use where a narrow exposed face is desired. The system allows independent erection of the building facing and roofing operation. A variety of finishes is offered. ■ W. P. Hickman Co., Troy, Mich.*

Circle 428 on inquiry card

**Additional product information in Sweet's Architectural File*

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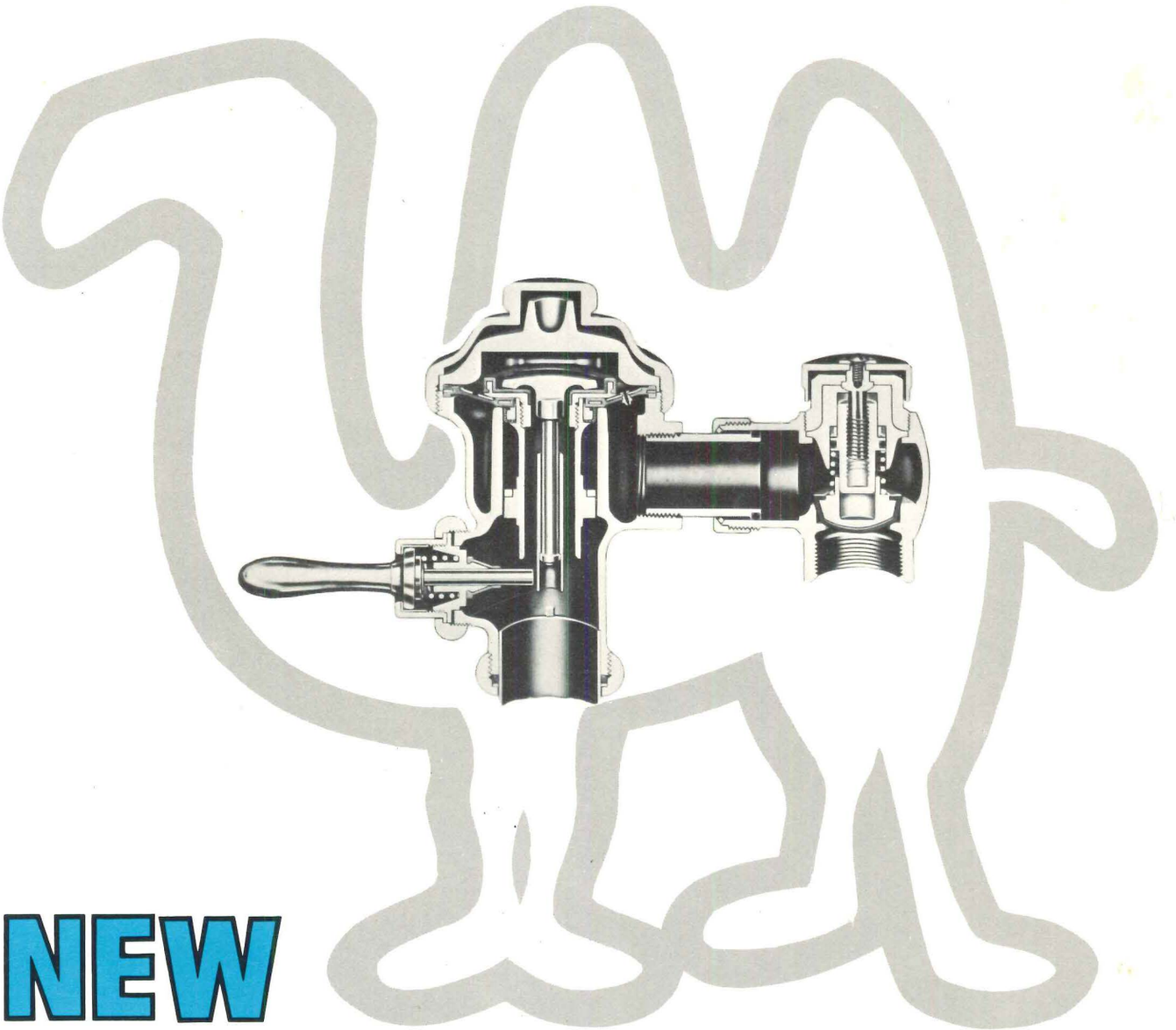

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