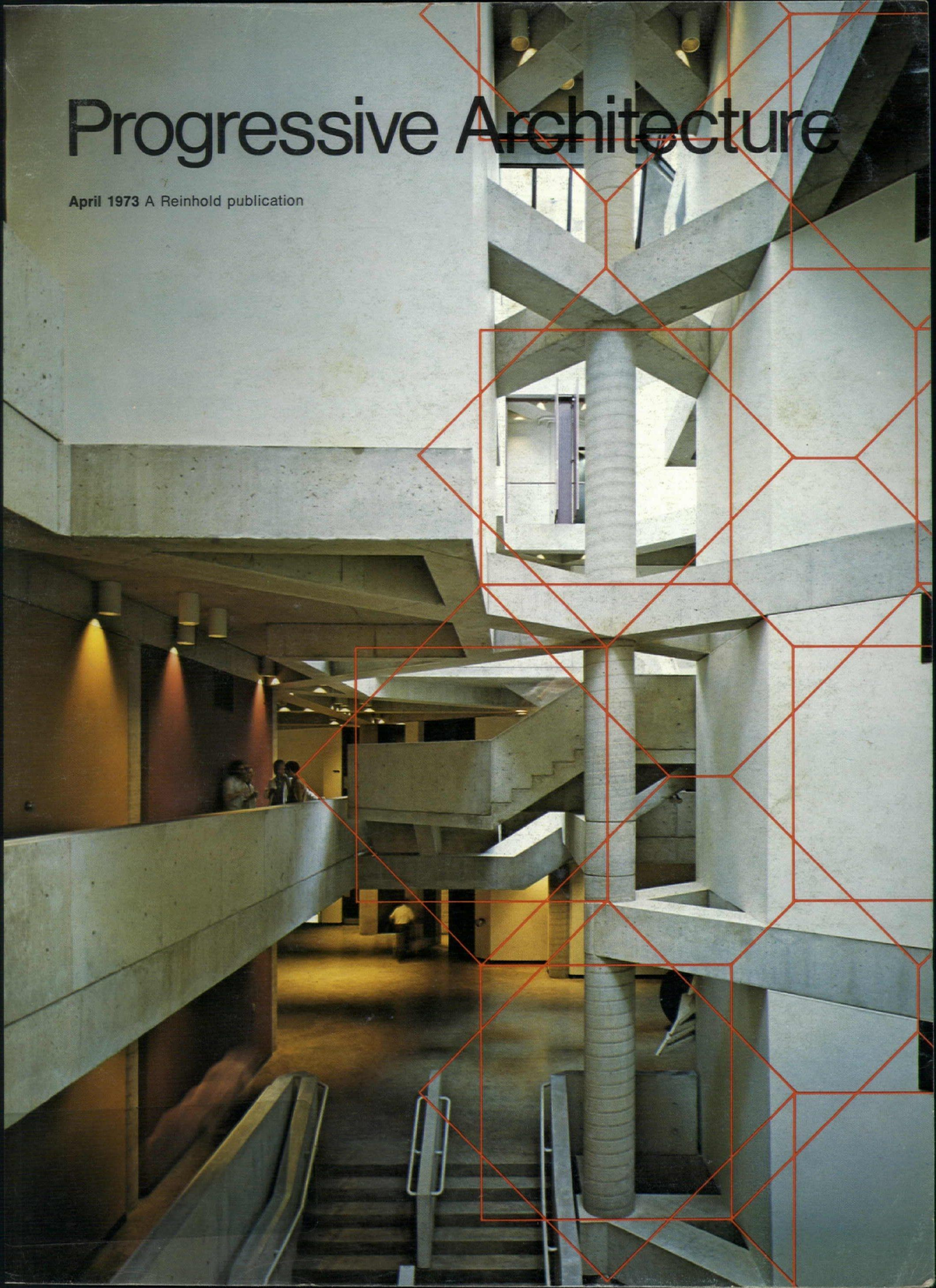
Progressive Architecture

April 1973 A Reinhold publication



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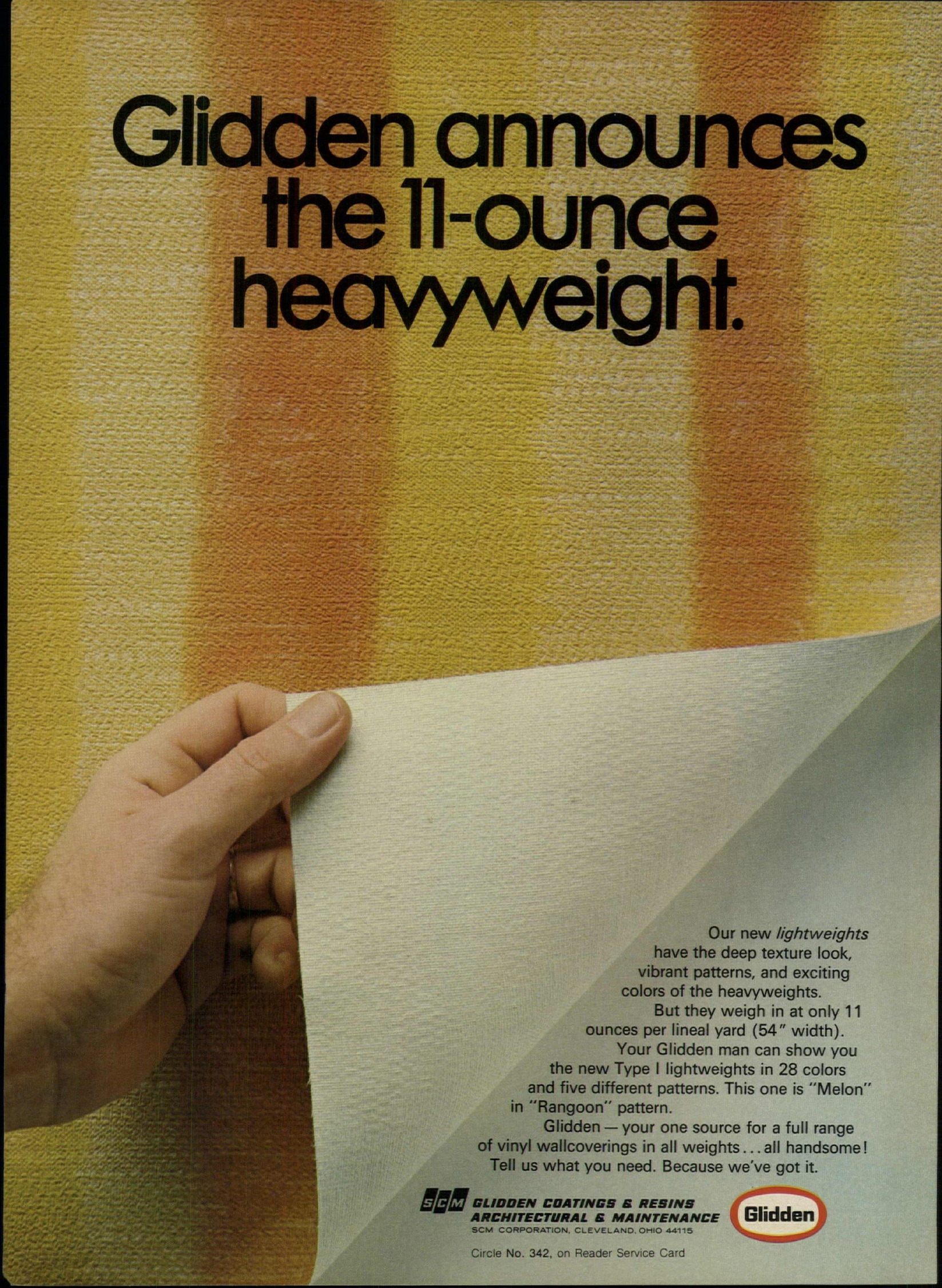

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ABP

April 1973

Progressive Architecture

Cover: The Basic Science Building, The University of Iowa at Iowa City by SOM/Chicago (p. 82). Superimposed is the "field" lattice represented in the plan configuration. Photo: Orlando Cabanban.

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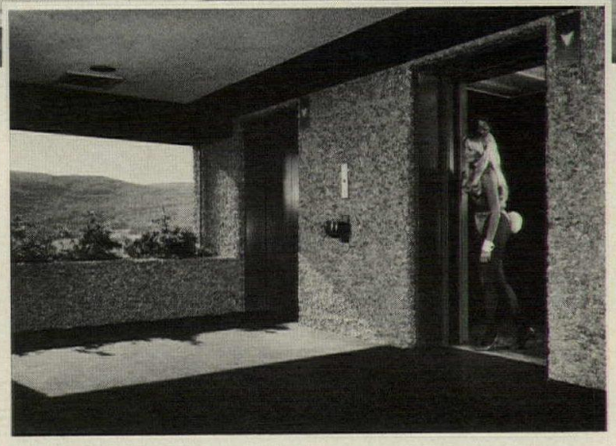

OHIO MEDICAL PRODUCTS, A Division of Airco, Inc., Madison, Wis.
Project Engineers: Mead & Hunt, Inc., Madison
Architect: Strang Partners, Inc., Madison
General Contractor: Nelson, Inc., of Wisconsin, Racine
Dover Elevators installed by Northwestern Elevator Co., Inc., franchised distributor, Milwaukee and Madison

PLAYBOY CLUB-HOTEL, Great Gorge, McAfee, N. J.
Architect: A. Epstein and Sons, Inc., Chicago
General Contractor: The McKinley Co., Chicago
Dover Elevators installed by Burlington Elevators, Inc., Hoboken, N. J.

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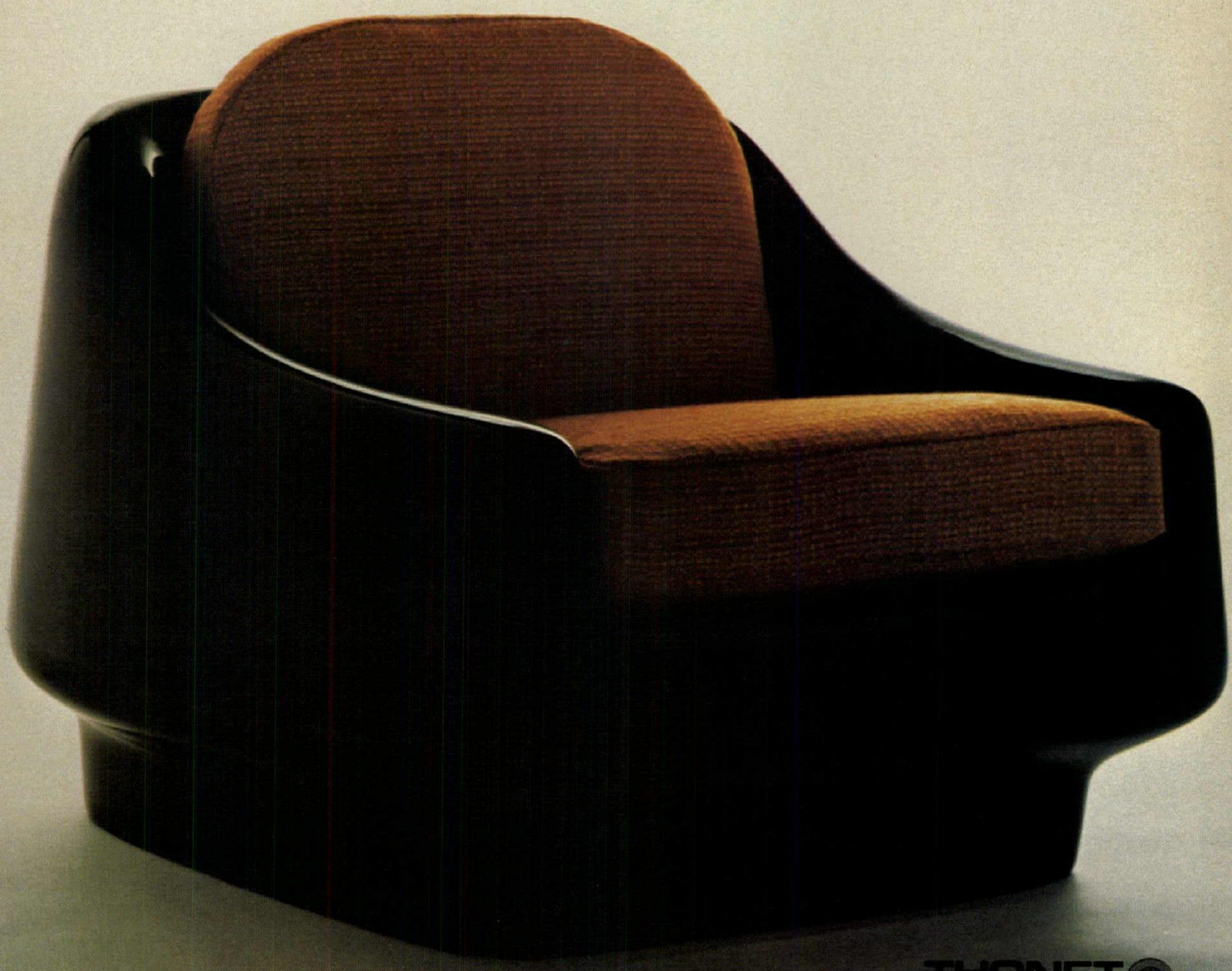

THONET
CENTER OF DESIGN

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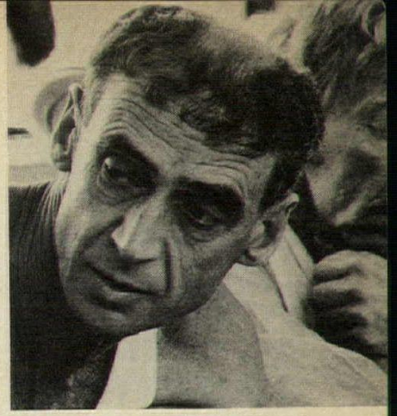
People in P/A

Paolo Soleri

With his mild demeanor, his simple clothes and his sun-browned skin, Paolo Soleri may seem like a rustic prophet. But his visionary schemes (p. 76) are by no means products of untrained intuition. Born in Turin in 1920, Soleri earned a degree from the Polytechnic there before coming to the U.S. in 1947 to work under Frank Lloyd Wright. Leaving Taliesin after a few years, Soleri joined Mark Mills, another former apprentice, to design a house at Cave Creek, Ariz. (1951), which was notable for its roof of two movable half-domes. After a brief return to Italy, where he completed a widely admired ceramics factory near Salerno in 1953, Soleri began to build his studio and bell-casting shop in Scottsdale, Ariz. Here, in a series of small-scaled structures, Soleri worked out mechanics of thin-shell concrete. The bonelike forms and applied colors of his Scottsdale work are reminiscent of Gaudi's work, but Soleri finds the similarity largely coincidental. If there is any historical influence on his work, he observes, it is that of the Italian Renaissance, "not so much the actual architecture as the idealized architecture of paintings by Piero della Francesca."



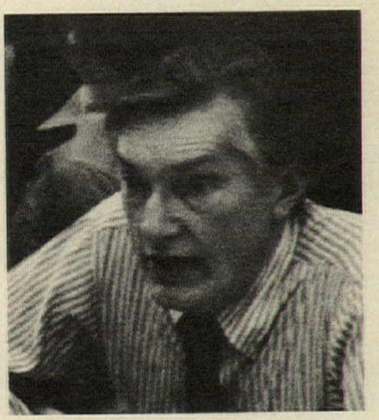
Paolo Soleri

Skidmore, Owings & Merrill, Chicago

Walter Netsch's field theory is only one facet of SOM/Chicago, involving only 10 of the 475 employees. "We began looking for modes outside of the box in 1959, while working on the Air Force Academy Chapel," Netsch recalls. "We went through stages of increased formality (of field applications) leading to increasing familiarity of fields' properties." To him, the field theory has matured as an organizing device (p. 82).

"I am *sympatico* with people like Archigram and John Johansen. I enjoy a Johansen building. Our buildings *look* different, but we have in common the fact that we arrive at solutions in a way that *is* different from others. I've been accused of being more a painter than an architect, and I really object to that; but I *don't* object to the fact of art in architecture."

Netsch, one of six partners in SOM/Chicago, is a Chicago native, an MIT graduate and a Fellow of the AIA. He counts his work on SOM designs for Oak Ridge, Tenn. and the Inland Steel building, Chicago, among his important early learning experiences.



Walter Netsch

Views

What does P/A stand for?

Today I picked up a copy of the Feb. P/A and ran upon your opening editorial, "What does P/A stand for?" Answering this question, you proceeded to say, "We stand for ecologically sound, socially beneficial allocation of resources—materials and manpower—in reshaping the environment" (p. 51).

Then I turned to p. 52 for an elaboration of the new Boise Cascade Home Office, occupying an entire block of downtown Boise, by Skidmore Owings & Merrill.

Good grief, man, what are you trying to tell us? Between Boise Cascade and SOM, more environmental desecration has been perpetrated on the American public than by any combination of unthinkable alliances. Fortunately, to my knowledge, they have never before joined forces in a single endeavor.

If you're going to lay your ideological claptrap on people in one page, and on the next extol outrageous monumental ego trips forged by destroyers of the environment, someone must account for this hypocrisy or else at least one's ignorance, apathy, naiveté or total imperviousness to what's going on around you.

You are in a position to alter the insane course of architecture and environmental awareness, and yet you perpetuate the problem with such irresponsible reportage. Please consider your role and re-examine. If you're going to publish Boise Cascade and SOM in concert, please do so without talking about "ecologically sound socially beneficial allocation of resources . . ." in the same issue.

Ned D. Cherry, Jr.
New York City

[*Our presentation referred only to this building, which has certain virtues—modest scale in the city context, large protected interior court, outstanding employee environment—not to any alleged sins of either SOM or Boise Cascade. Ed.*]

Defining pluralist

In "Towards a pluralist architecture" (P/A, Feb. 1973) the author associates pluralism with a variety of forms which a person experiences psychologically. He seems to derive his pluralism from a multiperceptional response by the viewer; his concept, however, is only partially pluralistic. An individual cannot separate social and physical realities if one attempts to reach a whole. While perceptual multiplicity may be included in the author's concepts, social pluralism is not.

The decisions for these forms are singularistic in nature, in that the architect has obviously made the majority of such decisions. Even with consideration of client inputs, the overall continuity of space is dependent on the architect's singularistic decisions. Paul Davidoff, noted city planner, refers to pluralism as a widening of choice. Your author, Peter Carl, discusses such an increase of form giving choice with the architect, not the people experiencing the space. The only voluntarism associated with the concept is whether or not the individual wishes to fully experience the space without having participated in its formation.

Social pluralism in architecture truly includes the ability of future occupants to play a role in their own physical environment. The Columbia Point Public Housing project in Boston, designed by Jan Wampler and Illustrated in the Jan. 1973 issue, presents a more valid case of pluralist architecture than Graves' building design. While an architect may attempt to allow or represent a variety of community values, his design act can never be more than representative singularism in social reality, even though the physical configurations may be perceptually pluralistic in form. The nondesign oriented persons, such as public housing occupants, must have a role in the design process if a total pluralism is to occur. Pluralism of perceptual experience is a valid concept, but without community participation for determining such an environment, it is only a half truth. To end in a positive note, there is some notable content within Graves' concept. In a shallow sense it might be conceived as a justification for ornamentation; however, the author has not narrowed himself to the proliferation of form. He has allowed for one's multiconception of form which contains a greater profundity of thought than the arbitrary, increased manipulation of space.

Jim Mayo, AIP
Department of Sociology
Oklahoma State University
Stillwater

A jury nomination

One of your jurors once said, "any architect who thinks he is a sociologist ought to be locked up." I am not advocating anything quite so drastic, but I do believe that if decisions are to be made as to which type of buildings have socially redeeming qualities, your readers are entitled to the opinions of qualified observers. The repetitive remarks by jurors describing single family houses as "ego trips" or "boring" reveal a puerility and shallowness inconsistent with the very valid purpose of your awards program.

There was an engineer on the jury. How about including an anthropologist and/or sociologist on the next? Say Margaret Mead and E.T. Hall.

Certainly as a profession we need a greater collaboration with the social and behavioral sciences. It would be extremely valuable for all of us to have projects evaluated on the basis of their behavioral influence by experts in this field.

Carl Maston, FAIA
Los Angeles

Credit due

The U.S. Courthouse and Federal Office Building, now under construction in Philadelphia (P/A, Jan. 1973, p. 33) was designed and is being supervised during construction by a joint venture of three firms: Carroll, Grisdale & Van Alen; Bartley, Long, Mirenda & Reynolds; Bellante, Clauss, Miller & Nolan, Inc., rather than only the latter as you printed.

J. Roy Carroll, Jr., FAIA
Philadelphia

Wait till July

I think it is wrong for you to publish buildings, giving all descriptions except *cost.* Time and time again we are teased with beautiful, well-designed examples of "progressive architecture" and left ignorant when it comes to the issue of their cost, i.e., Boise Cascade Home Office by SOM, Feb. 1973.

Why don't you refuse to publish projects if clients refuse to make costs available? The costs *are* available; it's just that someone doesn't want to come across with them . . . ever stop to think why not?

Roy Ettinger
San Francisco, Calif.

[*Withholding of cost information is usually done at the request of the client, often because of unforeseen over-runs that would make the figures unrepresentative if published. The need for* meaningful *cost data will be met in part in July, when P/A launches a series of cost articles with actual data analyzed by Hanscomb Roy Associates of Toronto and Chicago. These will appear with selected buildings on a regular basis. Ed.*]

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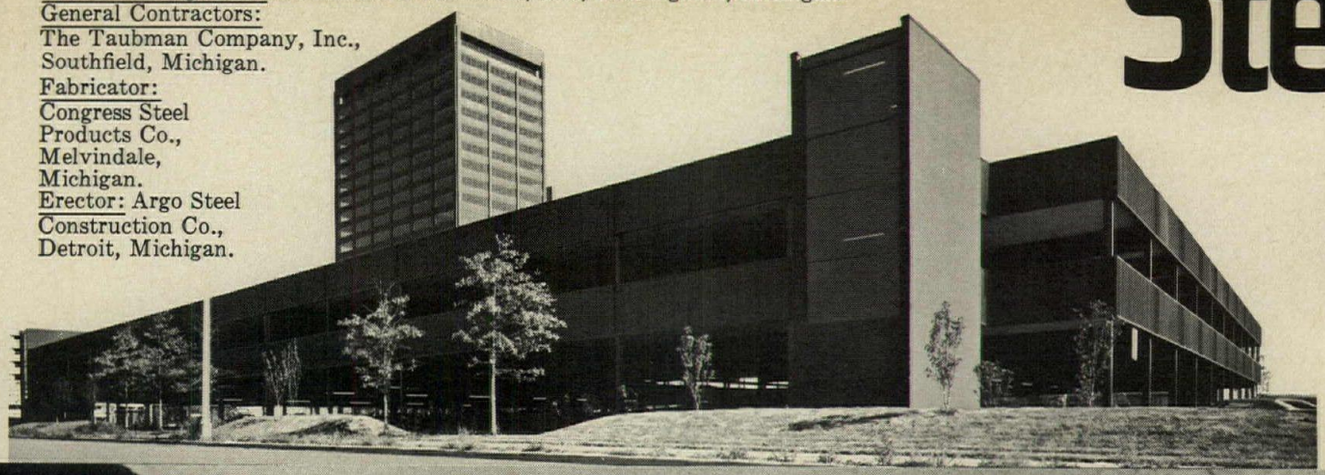
Structural Engineers: McWilliam & Keckonen, Inc., Birmingham, Michigan.
General Contractors: The Taubman Company, Inc., Southfield, Michigan.
Fabricator: Congress Steel Products Co., Melvindale, Michigan.
Erector: Argo Steel Construction Co., Detroit, Michigan.



goes to great lengths this parking deck.

(More space for less cost)

More and more open-deck parking structures are being conceived and constructed in steel. The Executive Plaza Parking Deck in Detroit is a case in point.

Steel frame won out over competition—pre-cast concrete and poured-in-place concrete. Mainly because the long-span concept, which is most economical in steel, results in a minimum of interior columns. This allows much more open space, making self-parking easier and attendant-parking more efficient.

The three-tier building has 128,750 sq. ft. of supported parking area. While meeting the City of Detroit's requirements of a 75 psf live load, the building's structural weight is low. For the most part, the structural steel is USS EX-TEN 50 (ASTM A572 Grade 50) high-strength low-alloy steel. Certain lighter members are A 36. Naturally, the lighter the structure, the lighter the foundations. More savings!

The entire structure was finished in five and a half months at a total cost of $910,000.

Not only did steel frame construction lower the total cost by lessening the time it took to build, but it also permitted the owner to begin realizing a rental income much sooner.

With all these factors considered, steel frame turned out to be the most economical system.

Here is another example of how an income-producing facility like an open-deck parking structure can be erected fast in steel and meet with great satisfaction—from a functional, economic and aesthetic point of view.

Minimal fire danger! Results of a recent extensive survey indicate that losses resulting from fires in this kind of structure are minimal. Realizing this, the City of Detroit permitted a deviation from their existing Building Code. With no fire protection necessary, costs were cut considerably. It is interesting to know that elimination of fire protection can mean a saving of as much as $1 per square foot in steel parking decks.

Let us help you program your next garage in steel. For a more complete story on this structure, get a copy of our USS STRUCTURAL REPORT (ADUSS 27-5779-01). Also, you might be interested in our Technical Report on Steel Frame Parking Structures (ADUSS 27-5227-02). For copies of these reports or to find out the many ways in which we can help you program your next garage, call our nearest sales office and ask for a USS Construction Marketing Representative. Or write to U.S. Steel, Box 86, Pittsburgh, Pa. 15230.

Construction Details

Description: A rectangular, three-level structure with interior, two-way straight ramps—open on all four sides. A parking capacity of 745 cars. All floor decks designed with a drainage slope. The slope is downward from the outer edge of the deck toward the building center—a total drop of 18 inches.

Building Description:
Dimensions: 311′ -2½″ x 252′ -0″
Height: 2 tiers (above the on-grade parking level)
Floor to Floor Heights: 10′ -6″
Capacity: 745 cars.

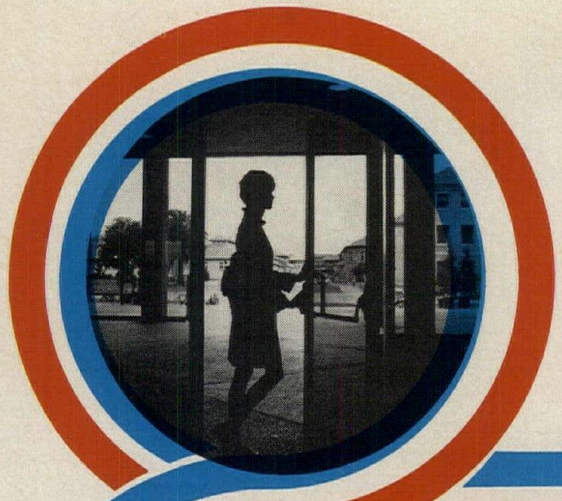
Gross Areas:

Ground level (including unenclosed space):	98,300 sq. ft.
Second level:	78,400 sq. ft.
Roof level:	78,400 sq. ft.
TOTAL	255,100 sq. ft.

Occupancy Type: Open-deck parking garage.
Applicable Code: City of Detroit Building Code
Design Loads: 75 psf live loads
82 psf dead loads
20 psf wind load

Structural Steel:
Total weight: 530 tons.
6.75 pounds of steel per square foot of supported structure.
All A572 Grade 50 except details.
All beams and girders are composite designed non-shored construction.
All bolts ASTM A325 High Strength.
Bracing: Semi-rigid moment connections in selected bays.
Floor Slab: 6″ thick two-way post tensioned 4,000 psi stone concrete with supplemental reinforcing over 62 ft. girders.
Exterior Walls: Extruded anodized aluminum. Painted concrete block.
Foundations: Spread footings.
Elevators: 1 Hydraulic type 1,500 lb. passenger elevator.

United States Steel



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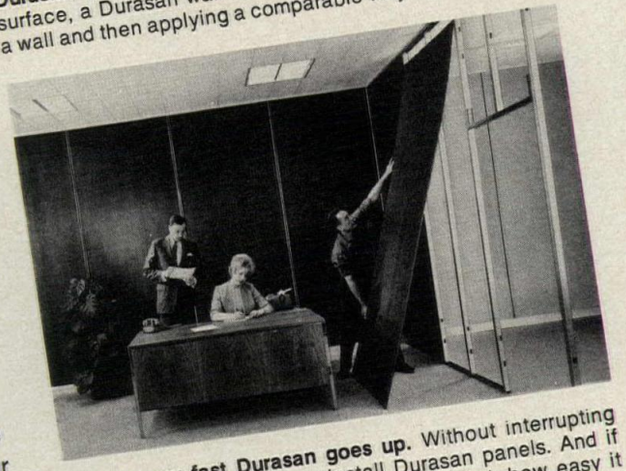

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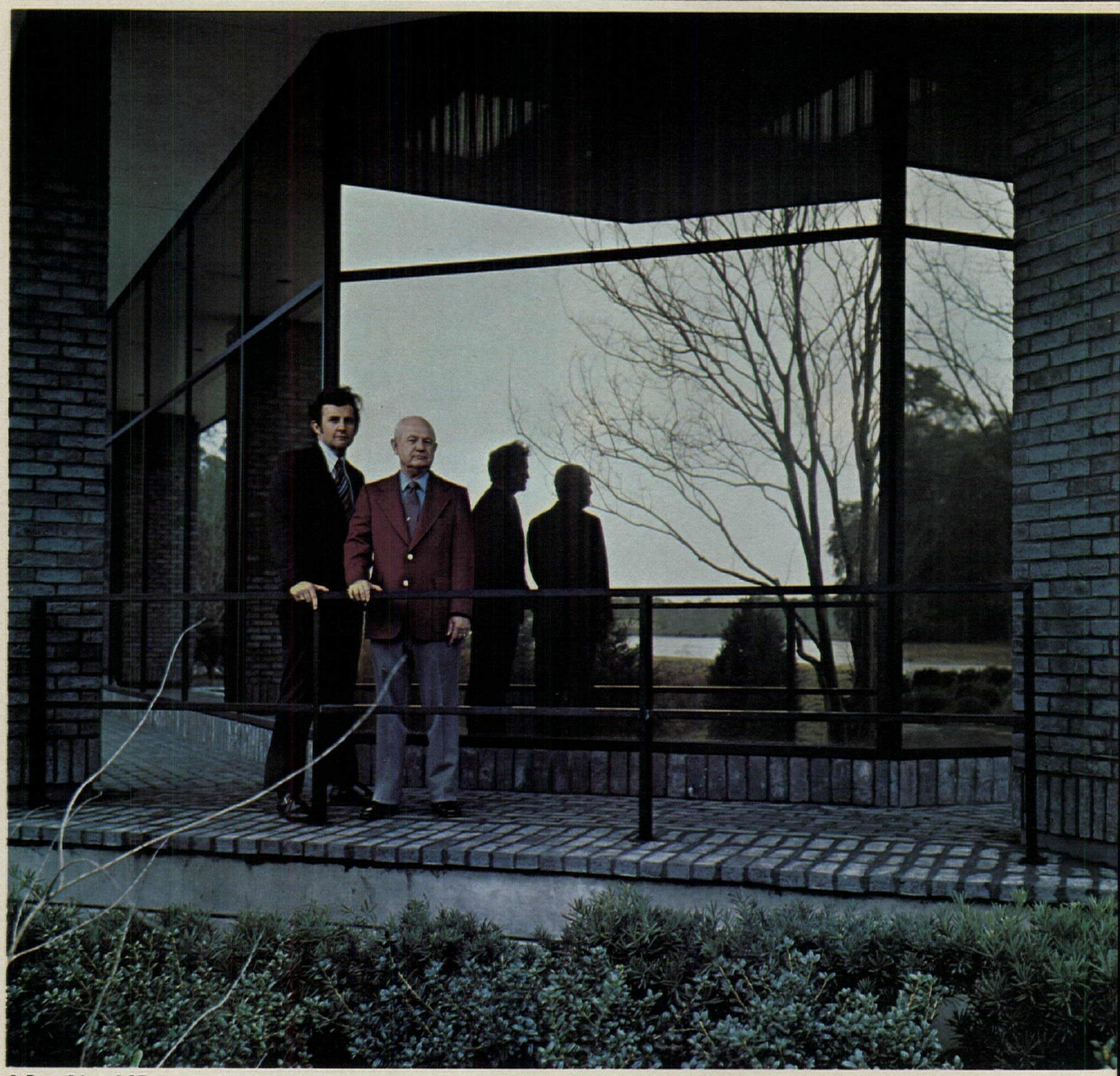

A. Page Atkins, LOF
G. L. Loggins, Jr.,
Regional Mgr., Aetna Insurance Co.

Owners: Aetna Insurance Company, Inc., of Hartford. Architect: Saxelbye, Powell, Roberts & Ponder, Jacksonville, Florida. General Contractor: Batson-Cook Co., Jacksonville, Florida. Glazing Contractor: Florida Glass & Mirror, Jacksonville, Florida.

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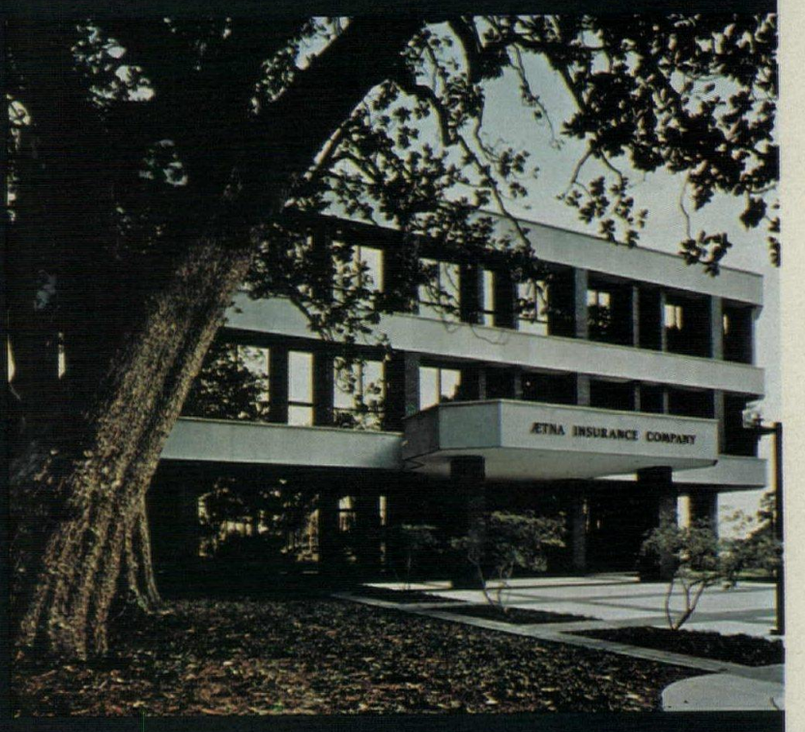

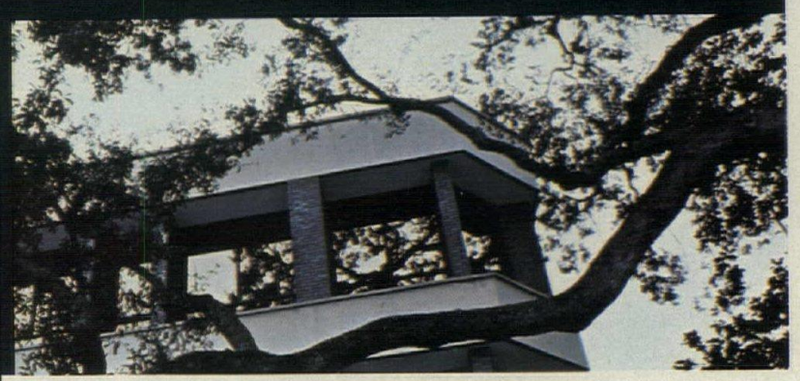

A. PAGE ATKINS, LOF DISTRICT REP.,
ARCHITECTURAL CONSTRUCTION, ATLANTA, GEORGIA

Compatibility with the residential character of the area was fundamental in the planning of the new regional home office building for Aetna Insurance Company in the suburbs of Jacksonville, Florida.

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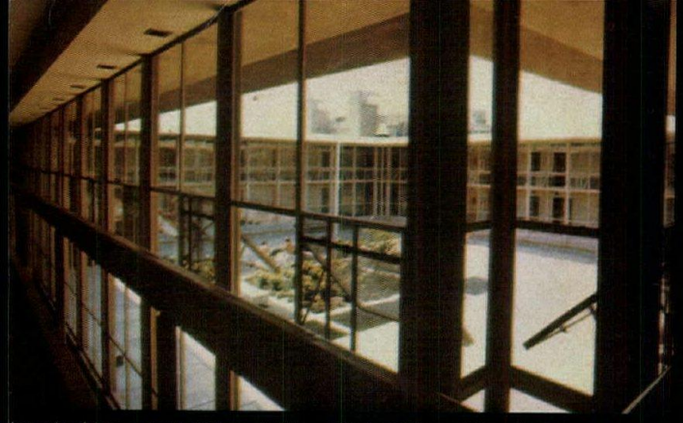
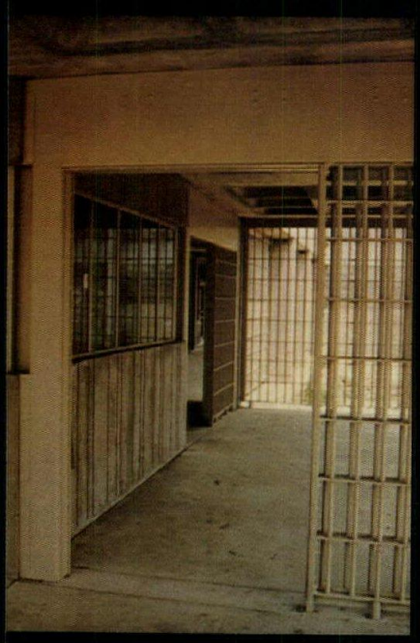


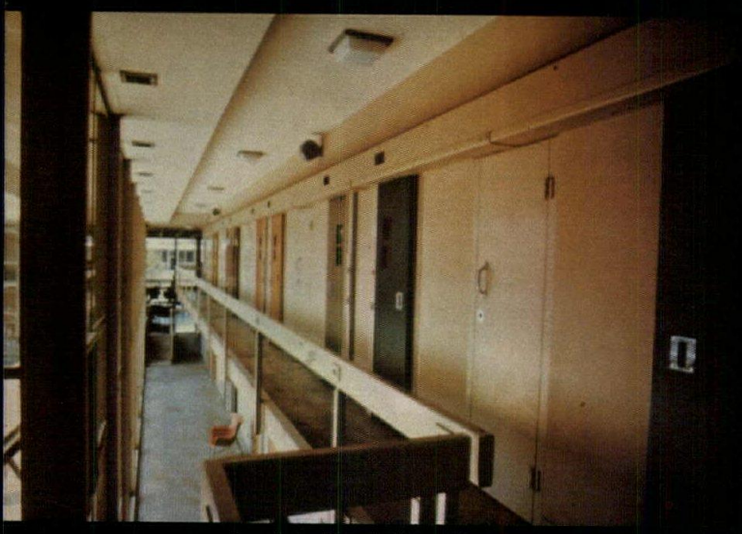
The New Jersey State Prison at Leesburg
Architect: Gruzen & Partners, Architects-Planners-Engineers,
New York City and Newark, New Jersey.
General Contractor: N. J. Post Construction Company

Interlocking courtyards provide unique setting at Leesburg.

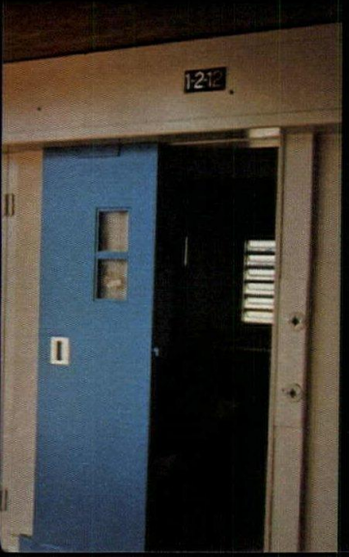
Detention Equipment Should Help Keep People Out of Prison.



Direct walkways connect all facilities.



Southern Steel's Panel Doors provide non-prison look.



Doors and walkways are controlled electronically.

Most "correctional" institutions of the past have little in common with their name. In fact, most served completely the opposite purpose.

The New Jersey State Prison at Leesburg represents a change. Here, the words "correction" and "rehabilitation" have true meaning. Both the institution and its detention equipment are designed to produce broader results than mere security. Leesburg's purpose is to reduce crime through an improved and meaningful correctional environment.

But achieving this worthwhile goal takes realistic and thorough planning to provide the proper relation of equipment, personnel and institutional goals. And Southern Steel products, like the remote controlled automatic doors and sally ports, are contributing to the overall objectives at Leesburg.

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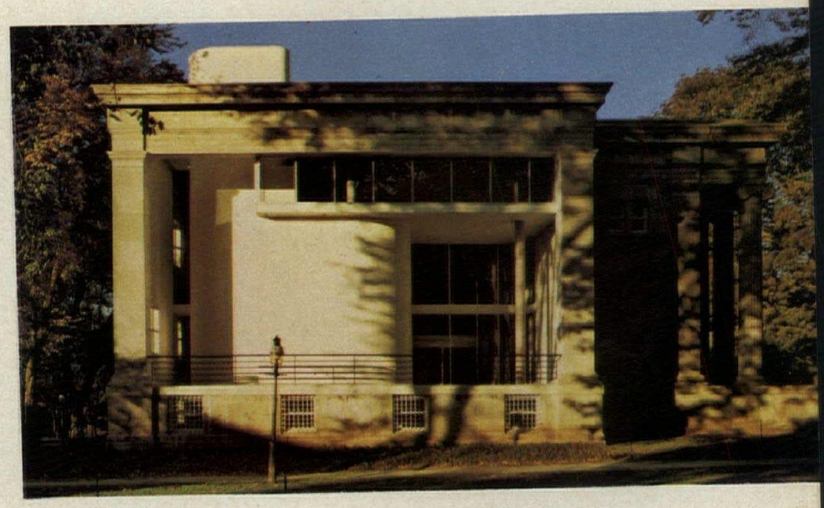
News report

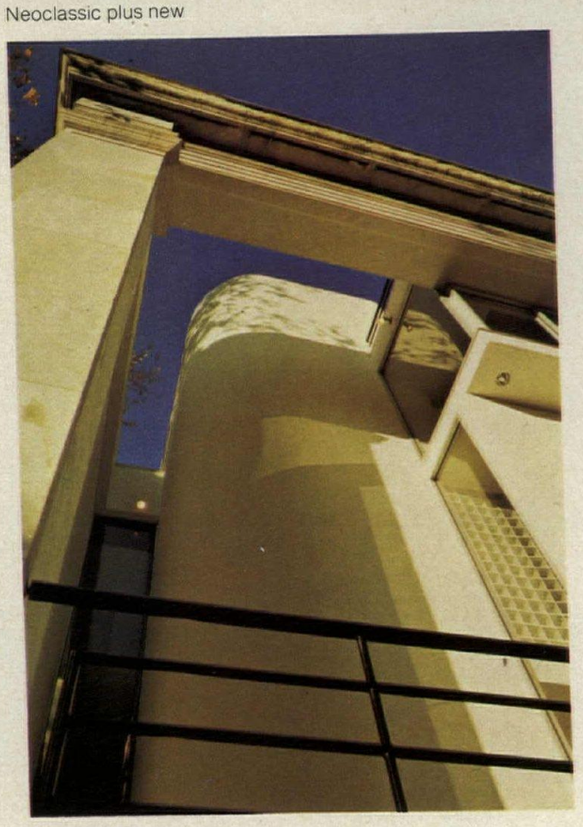
1973 P/A citation winner completed

One of this year's P/A design award project winners has just been completed on the campus of Princeton University. Unlike most winning schemes, this project is not a wholly new building. Whig Hall was a neoclassical marble structure that had served one of the university's debating societies since it was built years ago. When the wooden interior of the building was gutted by fire a little over two years ago, the university took the opportunity to enlarge the facilities so the building could be used for other activities in addition to those of the debating society. With a program that called for increasing the space from 7000 sq ft to 10,000 sq ft, they called in architects Charles Gwathmey and Robert Siegel to study the feasibility of renovating or reconstructing the old building. The architects realized that to extend the design beyond the existing object "would be disastrous with regard to historical architectural precedence, traditional interpretation and site references." Instead, they constructed a new, reinforced concrete building within the marble shell of the old one.

In awarding the project, the P/A jury was particularly impressed with the skillful handling of interior spaces and the architects' decision to make a clean break with the past through designing the interior in striking juxtaposition to the exterior. Now completed and occupied, Whig Hall will be shown in greater detail in a special June issue devoted to 20 years of the P/A design awards.



Neoclassic plus new



Rice Center for Community Design and Research opens

To provide students with experience in problems of the real world and to focus a wide range of student, faculty and professional talents on problems of the physical environment, Rice University has opened the Rice Center for Community Design and Research. A nonprofit public foundation, the Center will take on applied research projects and offer architectural and allied services and broader community planning and systems design. It will not compete with Houston's architectural firms; instead it will serve clients who don't have access to professional services or who can only use the services of a nonprofit organization.

Staff will consist of a core of full-time professionals, a changing group of student interns, Rice faculty members and special consultants. David A. Crane, Dean of the School of

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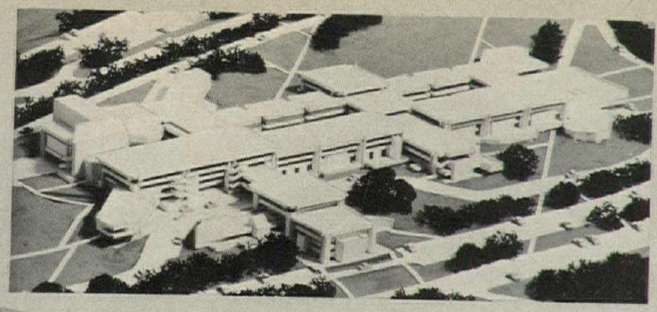
Buildings on the way up



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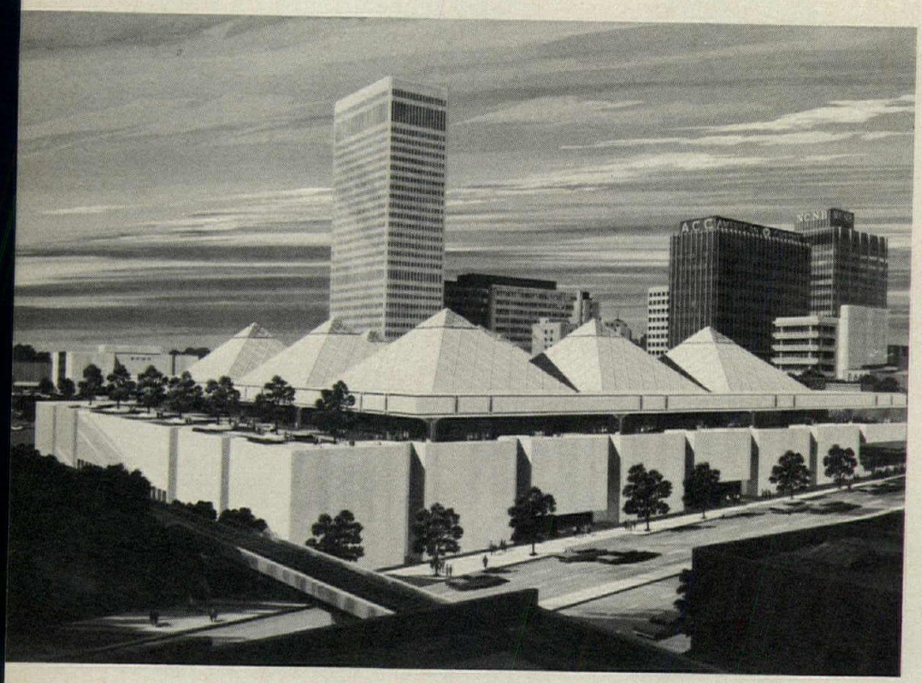

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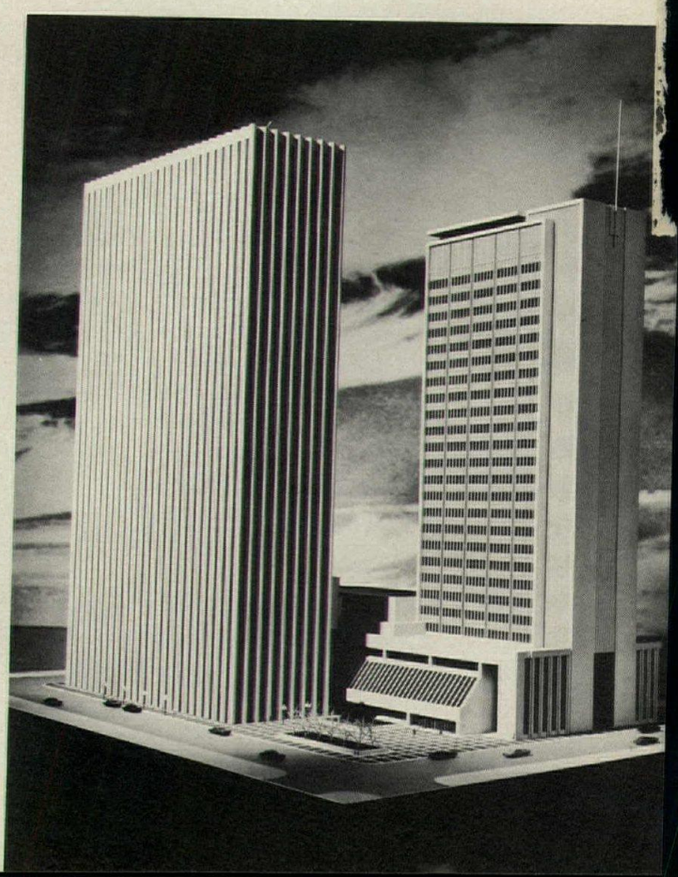


3

1 Interior courts, educational malls, study areas, lounges and classrooms are all enclosed in a single megastructure designed for the new South Campus Community College of Allegheny County, near Pittsburgh. First phase of construction will serve more than 2000 students; future enrollment is expected to reach 8000. Classrooms, labs, study area, student union, temporary library and offices are to be built during initial phase; learning resources and physical education facilities will be expanded during later stages. The monolithic concrete structure will be set into the sloping site; height will range from two to six stories. Williams/Trebilcock/Whitehead are architects.

2 White pyramids, nine in number, make up the roof structure of the new Charlotte, N.C. Civic Center. Designed by Odell Associates, Inc., the four-level structure will contain about 420,000 sq ft. Two lower levels will provide parking for 320 cars and house building support services, catering service and mechanical space; two upper levels will be devoted to exhibit space and office areas. The steel roof pyramids will give the mezzanine floor a ceiling height varying from 20 to 60 ft; floor slabs are to be post tensioned concrete. Besides exhibit space, the upper floors will have loading docks, entrance lobbies and administrative and utility areas. Part of exhibit floor will be divisible into large meeting rooms; small conference rooms and lounges will be provided in office areas off main entrance lobbies.

3 New office tower for First National Bank of Denver, on left of photo, will be connected to existing bank facility, right, by plaza and six-story glass-roofed plaza structure. Tower provides 638,483 sq ft of space; the plaza structure provides 90,189. Adjacent to skylighted section is six-story structure housing 170-ft-long teller and banking service area. Tower will be 32 stories, or 415 ft high. Architects are Welton Becket & Associates.

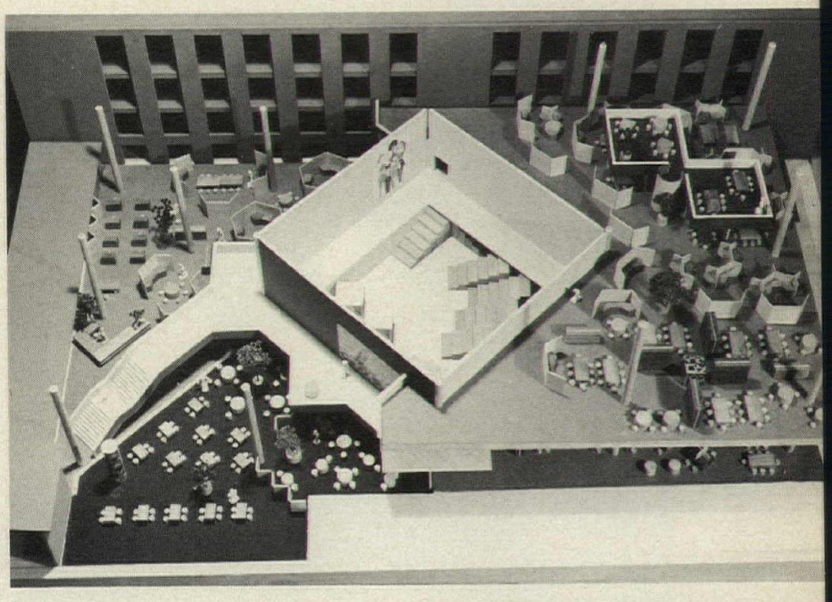
4 Extensive life safety and security systems are a feature of 22-story John W. McCormack state office building under construction in Boston. Sprinklers and a smoke evacuation system are augmented by 100 percent firemen patrols on elevators; firemen have their own separate phone system. A remote control security system allows locking and unlocking of all doors from central control. Steel framed building will have bronze glass and bronze anodized aluminum curtain wall, with exposed aggregate precast concrete column covers. A landscaped plaza tops four levels of underground parking, already in use. Hoyle, Doran & Berry are architects.

5 Open plan addition to Wellesley, Mass. Senior High School will provide increased space for art, home and industrial arts, music, physical education and English, as well as more library and teachers' work areas. Completion date for $5.7 million turnkey project is Sept. 1974, according to The Providence Partnership.

6 Concrete and glass exterior for new Walter Reed General Hospital in Washington, D.C. encloses over 1 million sq ft of space. Utility space between floors has been expanded to 6'-9" and a two-story underground garage provides parking for 1000 cars. Cost of seven-story, 1280-bed hospital is put at $102 million. Architects are a joint venture of Stone, Marraccini & Patterson and Milton T. Pflueger.

7 Day care center in downtown Louisville, Ky. will open as a no-wall operation, according to Jasper Ward, whose firm designed building for Eduplay, Inc. Visual and noise barriers will be installed later if they are needed. Steel frame building will have brick and concrete block walls and provide 20,000 sq ft of space on three floors. Part of first floor will be rented out as commercial space, and a play area will be located in part of the sunken first level. Center will house 350 children from 6 weeks to 6 years in age; children up to 10 will be accepted after school hours. An accredited kindergarten will be part of the operation. Robert Kingsley is designer in charge.

4



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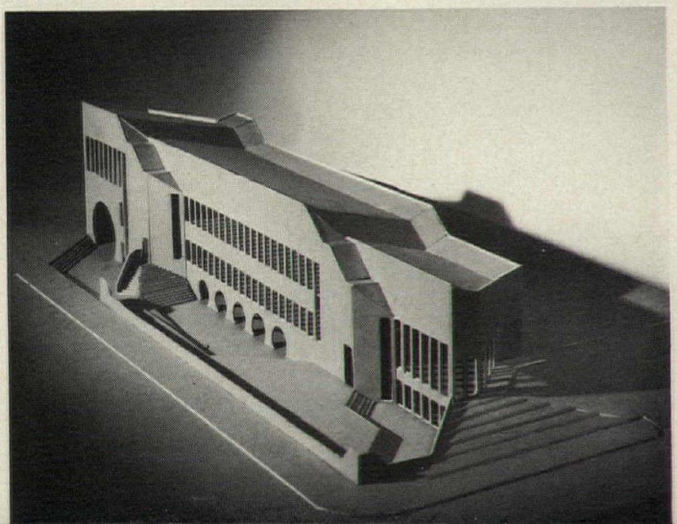

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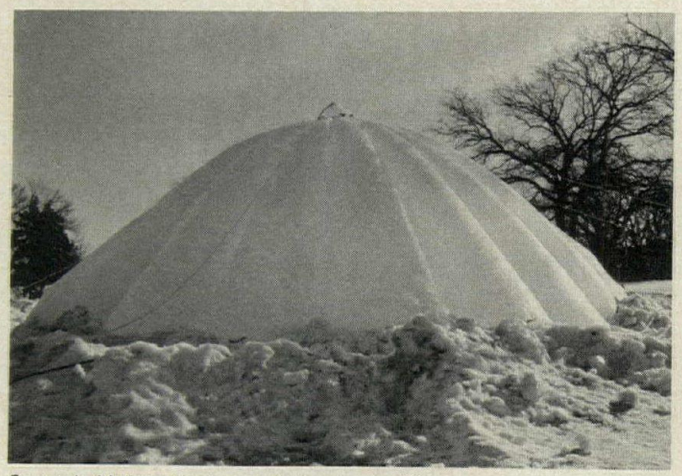
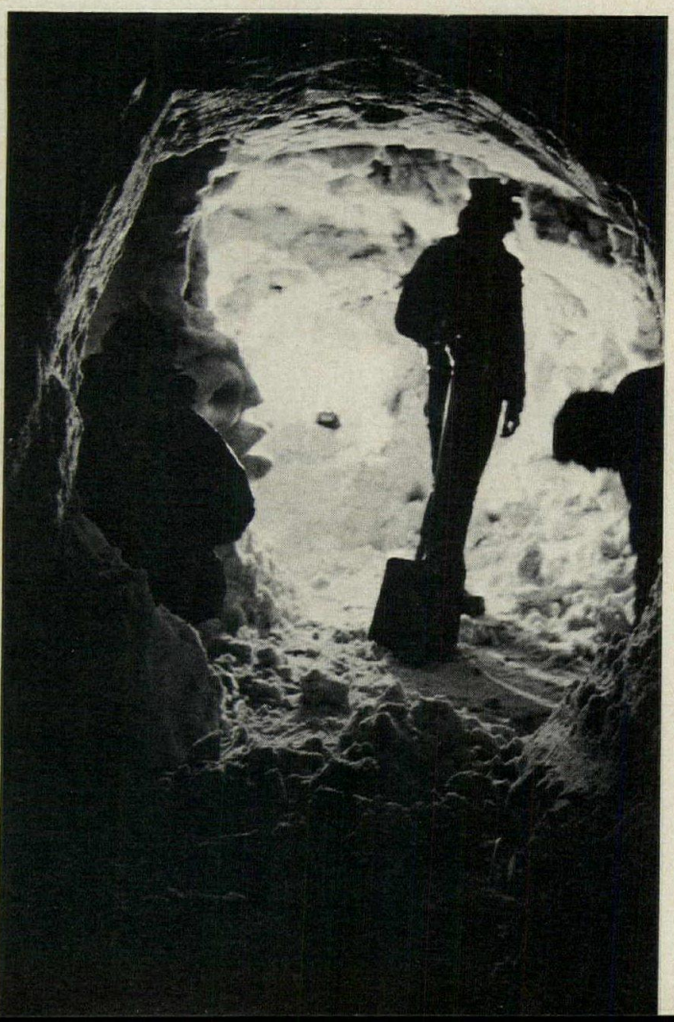


Carnegie-Mellon structure and others at Ice City



Architecture, is president and chairman of the board. Other board members include O. Jack Mitchell, Rice professor and principal of Omniplan; William W. Caudill; George Pierce and Talbott Wilson along with other academic and community leaders. Donald L. Williams is Executive Director; he was formerly the assistant director of the Urban Studies Center at the University of Louisville.

Warm spell dashes cold water on Ice City

"We learned that whatever can go wrong will go wrong under severe site conditions," Rolf Hilbertz said after Fargo, N. Dak. had its warmest January since 1944. Hilbertz, a professor at the University of Texas at Austin, was one of the organizers of Ice City, an architectural workshop exploring the use of ice as a building material; along with the University of Texas, North Dakota State University and Carnegie-Mellon University sponsored the conference.

The 75 participants, from U.S., Canada and Germany, had come to Fargo expecting temperatures in the 10 F to 20 F below zero range. Instead, the temperature barely dropped below zero during the two weeks between Jan. 10 and Jan. 25, playing havoc with attempts to build ice structures. They would go up during the coldest part of the night, only to melt away in the next day's sun. Some would collapse in a split second; others would slowly roll to one side, according to Hilbertz like a "great beached whale."

There were some successes, the most notable being a near-barrel vault structure by students from Carnegie-Mellon. A thin (1½ in.) shell structure, it was 38′ x 14′ x 7½′ high; it stood for a week. Other structures were generated by spraying water onto movable frames or inflatable forms, and a computer-guided spraying system was tried. It worked perfectly, according to Hilbertz, and had the weather cooperated, would have produced the first "totally computer-built, manipulated and reclaimed structure."

While everybody waited for the temperatures to drop, some of the participants busied themselves carving an intricate series of snow structures out of existing snowdrifts. Single, double and multi-room caves were dug, providing shelter for the duration of the workshop. Floors were insulated with 4 in. of straw; interior temperatures varied from 40 F to 60 F, depending on the lighting and number of people.

The interest in ice is easy to explain: it is, says Hilbertz, the only cheap and abundant thermoplastic material that is easy to manipulate. It has a few obvious geographic limitations, and Hilbertz is studying other materials—particularly a sulphur-sand mixture which, like water, is a thermoplastic material.

Conference, exhibit on religious architecture

Along with the conference sessions, the National Interfaith Conference, scheduled for Minneapolis, Minn. June 4–6, will include an architectural exhibit with a slight difference. In addition to churches, temples and synagogues, the exhibit will include other projects sponsored by religious groups. Educational facilities, retirement center, housing and other projects developed and financed by religious organizations will be shown.

Under the theme "Community, Celebration and Our World," the conference will focus on the religious experience in today's world. It will include visits to the new town of Jona-

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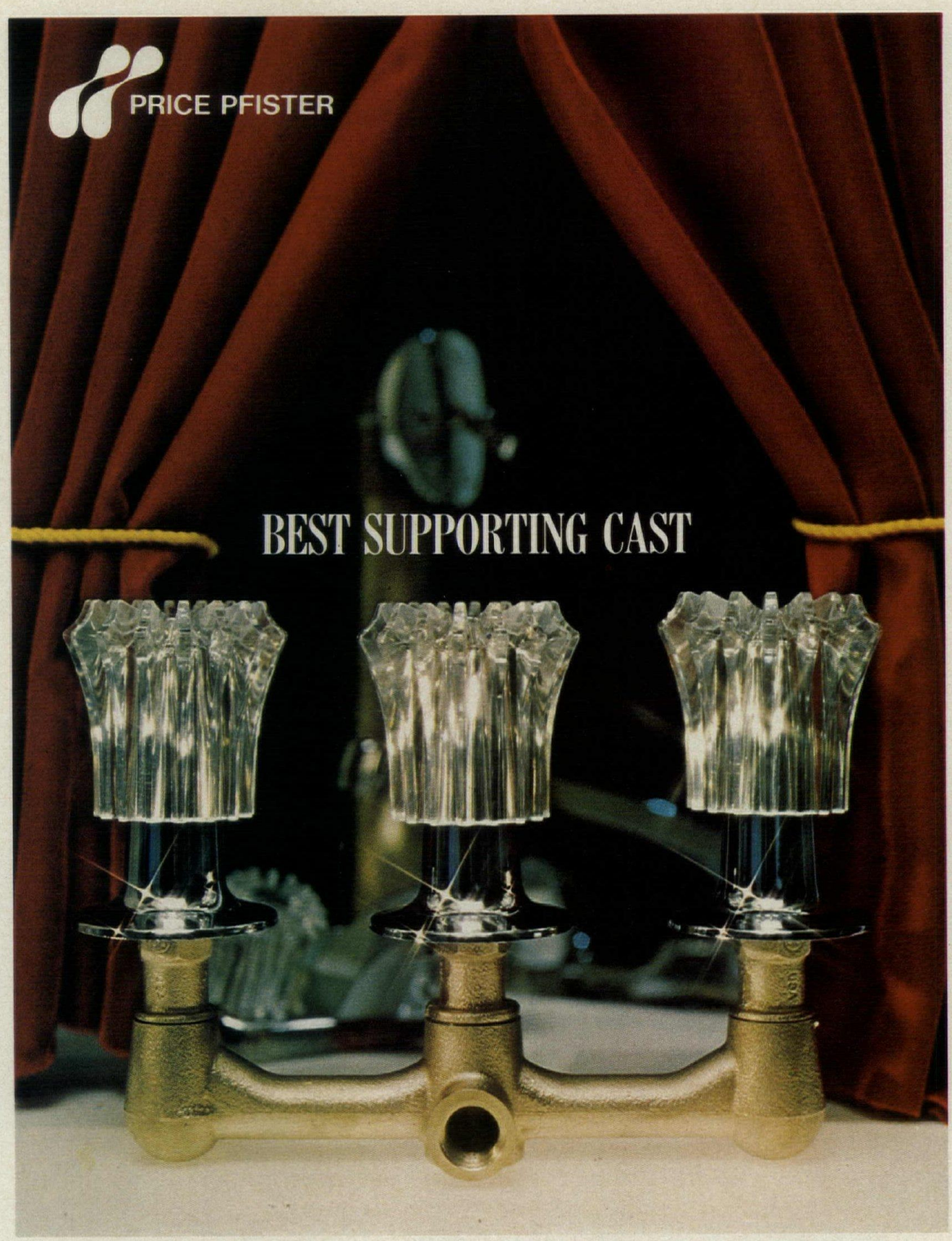

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Weathering Steel blends corporate headquarters into harmonious wooded setting

A wooded valley with a meandering stream is the setting for National Liberty Corporation's new headquarters building on a 92-acre tract near historic Valley Forge, Pennsylvania.

A prime consideration was to maintain and enhance the esthetic values of the site to present an attractive corporate image while creating an optimum working environment.

The architectural firm of Vincent G. Kling & Partners recommended a structural steel framing system, with exterior columns and spandrels fabricated from Bethlehem Mayari R Weathering Steel (ASTM 242, Type 1). Their choice blends the structure with its wooded setting as the bare steel weathers to a rich dark brown and develops a self-protecting, natural oxide coating.

Location and design of the structure fitted into a master plan for further development of the site. The initial construction phase provided a 4-story building encompassing 135,000 gross sq ft of office space to accommodate some 750 employees of the insurance firm. Executive, marketing, operations, and computer functions share the structure.

The result is a unified, functionally efficient building, strikingly adapted to its environment. Maximum growth flexibility is provided for without weakening the unity of the initial structure.

The building measures 360 by 92 ft. Its central bay is 52-ft wide, framed on either side by two 20-ft bays. The structure spans a small stream crossing the site, and connects the two major building segments with an area which may be used for either circulation corridors or office space.

Bethlehem provided approximately 700 tons of A36 grade structural steel for the building framework, as well as 400 tons of Weathering Steel for the exterior columns, spandrels, grating, and window frames. Steel framing is versatile, economical, and adaptable. It provides large column-free office areas so highly prized by building tenants. Want more information on steel-framing? Put in a call to our sales engineer at the Bethlehem sales office nearest you. Bethlehem Steel Corporation, Bethlehem, PA 18016.

BETHLEHEM STEEL

Weathering Steel gratings at each floor level, between the exterior walls and the sun screen, facilitate washing the bronze-tinted insulating glass.

The lobby is located at ground level in the central bay of the headquarters building, midway between the first and second floors, providing easy access to front offices.

Owner: National Liberty Corporation; architect: Vincent G. Kling & Partners, partner-in-charge, Jonathan Naylor, AIA; project architect: Helmut Krohnemann; structural engineer: Allabach & Rennis, Inc.; fabricator/erector: Belmont Industries, Inc., and Keystone Wire and Iron Company; general contractor: L. F. Driscoll Company. Exterior columns, spandrels, and window frames are Bethlehem Mayari R Weathering Steel (ASTM A242, Type 1) which will weather to a rich dark brown, further blending the structure with its wooded surroundings.

The central section of National Liberty Corporation's new headquarters bridges a valley and a small stream crossing the site. An artificial lake further enhances the landscaping while an existing adjacent wooded area is maintained intact.

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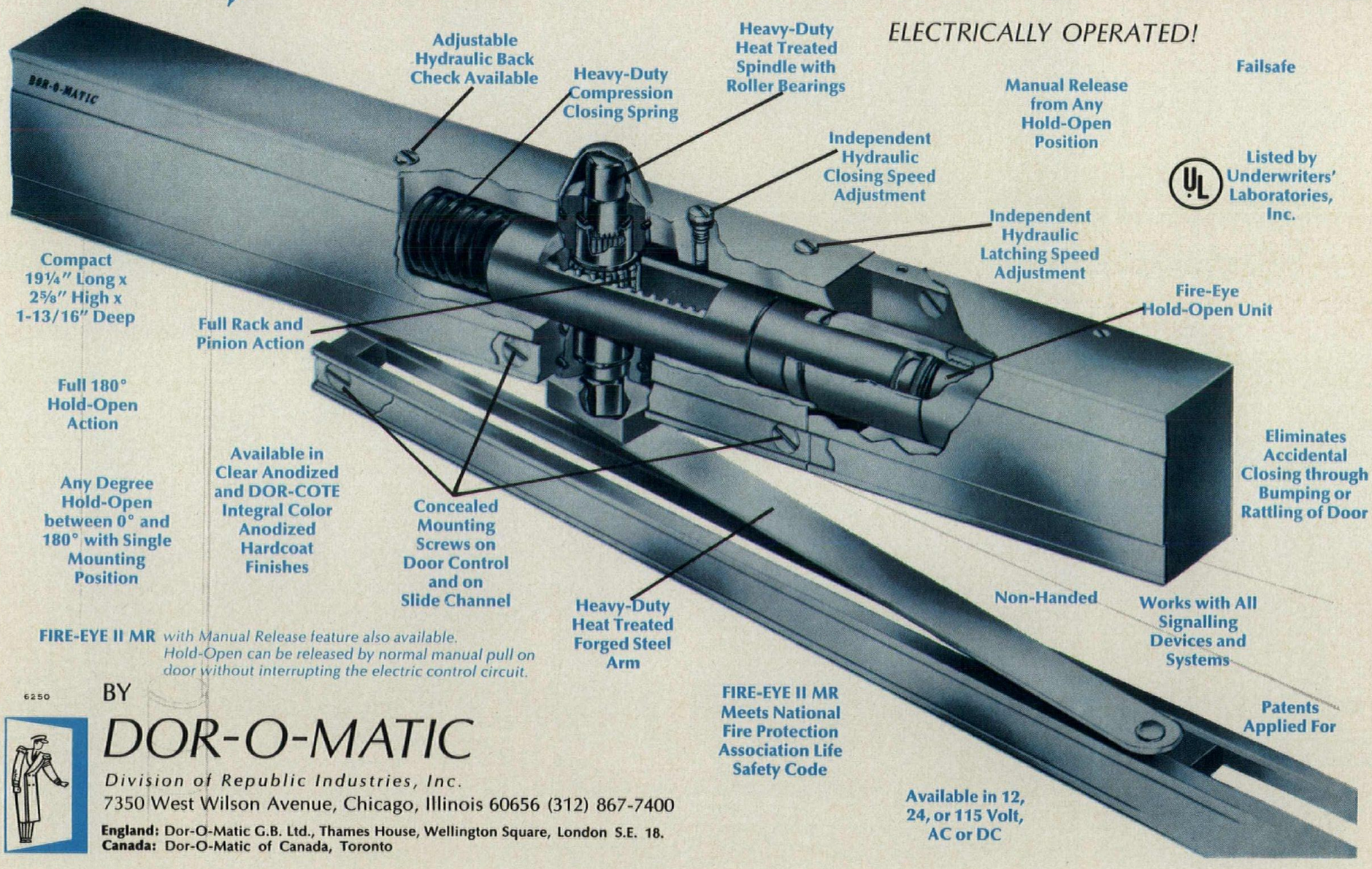

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News report continued from page 26

than and the new town-in-town Cedar-Riverside. All registered architects are invited to participate in the exhibit; further information is available by writing: 1973 Minneapolis Conference, Guild for Religious Architecture, 1777 Church St., N.W., Washington, D.C. 20036.

AIA minority scholarships seeking nominations, money

According to the best estimates, no more than 2 percent of the country's architects come from the black and Spanish speaking minority groups, a situation that the AIA and the Ford Foundation hoped to remedy, at least in part, by a scholarship program that started in 1969. Since that time, the program has helped 96 disadvantaged minority youths attend architecture school; now the Ford Foundation funding has stopped.

That means that the number of young people helped by the program this year will depend on the results of a fund-raising drive mounted by the Institute. While the fund raising goes on, the AIA has continued to seek nominations for the scholarship program, which provides financial aid during the first three years of college; during the last two or three years, AIA staff and members will help students find other aid, through loans, jobs, other scholarships.

The West Front fight: one more round

Just when it looked like the smoke had died away, the fire broke out again: the Commission for Extension of the United States Capitol reaffirmed its earlier position on extending, not just restoring the West Front. The Commission. a panel including Vice President Agnew and congressional leaders, ordered George M. White, the Capitol architect, to ask Congress for the $60 million the estimators say is needed.

Ten years ago, when the late J. George Stewart proposed the extension, the cost was put at $30 to $34 million. But while the cost spiraled upward, congressional leaders and critics of the proposal were going around in their own circles: Congress kept calling for action, and the critics kept calling the proposal a boondoggle and a desecration. Instead of extending the West Front, the opposition (which includes the AIA and other design societies) wanted to see it restored. Extension would destroy parts of the building designed by William Thornton in the 1790s and by Charles Bullfinch in the 1820s; gone, too, would be terraces designed by Frederick Law Olmstead in the late 1800s.

As recently as a year ago, the Commission came out in favor of extension, but Congress said the $2 million already set aside could not be used without specific approval. Now White not only has to get approval, but he has to ask for a whopping sum of money. The battle of the West Front is just about to resume.

Subsidized housing proposed for Scarsdale

For several years, the Village Board of Scarsdale, an affluent community in New York's suburban Westchester County, has made its opposition to subsidized housing quite clear. Other Westchester towns are equally opposed: for the past year or so controversy has been simmering over what is usually called the nine towns plan of the N.Y. State Urban De-

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News report continued from page 31

velopment Corp. Scarsdale is not one of the nine towns, but it is now facing its own subsidized housing battle.

At issue is a zoning variance sought by the Westchester Ethical Humanist Society, which would let the group build 30 low- and moderate-income apartments on two acres of land it already owns. The property, which is the site of the Society's meeting house and Sunday School building, is zoned for single family houses on two-acre lots.

The project, designed by Abraham Rothenberg Associates, would provide housing for families who work in Scarsdale but can't afford to live there. The Village has about 100 employees who would be qualified by income for the housing project. Rents would run from $170 a month for a one-bedroom apartment to $260 for four rooms.

Architecturally, the apartments are designed to blend into the Village; horizontal wood siding and sloped shingle roofs are the major exterior materials, and the units look more like small houses than like apartments. They are grouped, in Rothenberg's design, around a circular turnaround and parking area and are set into a wooded part of the site.

Despite the history of opposition in Scarsdale, some of the sponsors of the project feel that the Village Board might accept the project as a way to avoid being sued later on the grounds of exclusionary zoning. They hope to convince their neighbors that it would be better for any community to plan for and accept well-thought-out subsidized housing than to have it forced down its throat in the future.

Royal Gold Medal to Sir Leslie Martin

Sir Leslie Martin, who retired at the end of last year from the Chair in Architecture at Cambridge University, will receive the Royal Gold Medal for Architecture. Alex Gordon, president of the Royal Institute of British Architects, will present the medal at Institute headquarters in London during an exhibition of Sir Leslie's work in June.

The award honors Sir Leslie's "truly outstanding contribution to architecture and planning, both through his work in private and public practice, and most notably as a leading figure in architectural teaching and research."

The glory that was (and is) Rome

Currently on view at the University Art Museum in Berkeley, Calif. are some 800 photographs, films, paintings, photomurals, color transparencies and other displays tracing the rebuilding of Rome since 1870. The show, titled "The Third Rome, 1870–1950: Traffic and Glory," was put together by University of California grad students directed by architectural historian Spiro Kostof and E. Marc Treib, who designed the installation and the catalog.

The story the show tells is really a chapter in a longer one: it seems that Rome has always been in the process of being rebuilt. Once the largest Western state ever established and later the center of Western Christianity, Rome also had its periods of political and physical decline. Under the popes it was magnificently rebuilt between the 15th and 18th Centuries. When Italy was unified and Rome named its capital, it was again rebuilt, this time as part of a national reconstruction program aimed at reviving past glories.

[continued on page 38]

Texas Tech Law Building, Lubbock, Texas. Omniplan Architects Harrell & Hamilton, Dallas.

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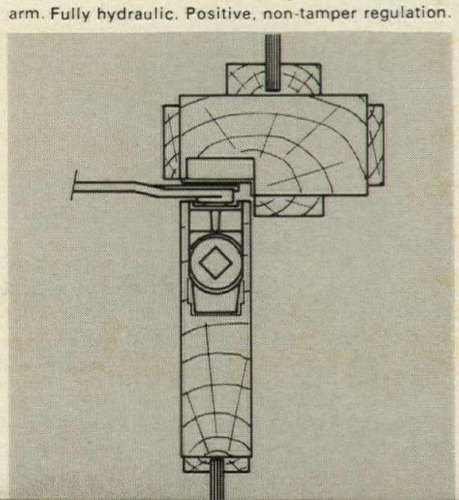

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Washington report

Towards the portable pension

Professionals found a matter peculiarly their own—the question of pension provisions—as a focus for attention in Washington, amid all the alarums and excursions concerning federal funding cutbacks, highway and mass-transit plans, environmental protection and pure politics.

The matter of pensions, specifically "portability" of pensions and early "vesting" of employees' rights to such funds, was more particularly a matter of concern to engineers than to architects. But architects were working on parallel lines of their own, and sitting in on heavy lobbying activities of the engineering societies.

Reasons for the differences in approach were obvious: The vast majority of the estimated 800,000 "engineers" of all regimens work as employees of industry, governmental agencies or other engineers. The architects—much smaller in number anyway (maybe 42,000 in all)—are more likely self-employed or work in partnerships and other associations.

Nevertheless, the question of mobility is similar. Engineers figure that their members are among the most mobile workers in the U.S., moving at least every five years from one employer to another. Architects tend to move from employer to employer very rapidly in their first years out of school, then settle down a bit.

Because of this mobility, something like half of these professionals may never qualify for pension rights, or may end a career qualifying for only a small part of the pension rights they might have been entitled to had they remained with one employer for 30 years or more.

The matter gets into the legislative field because pension plans represent an enormous depository of money (estimates run to $160 billion in total, though nobody really knows), a tax consideration for the federal government, a lot of charges of fraud and a major expense for employers.

So far (as of early Apr.), three bills have been introduced in Congress on this matter: S.4, known as the Javits-Williams bill; HR 2 (the Dent bill) and HR 462. Yet another bill is expected momentarily from the Nixon administration—a reintroduction of legislation that failed last session, which provides, among other things, "vesting" when an employee achieves a combination of age and employment service totaling 50 years (for example, age 40, service of 10 years). None of the bills is exactly satisfactory to the professionals, but they are supporting features of each of them as better than no bill at all.

From testimony at congressional hearings and at symposia such as a three-day "forum" conducted by nine engineering societies in Washington at the end of Feb., it appears that the problem of "portability" (the right of an employee to take his pension benefits with him when he leaves an employer) could be settled by simply "vesting" him with pension rights immediately or very soon after he begins any employment. Thus, when he leaves, he will be entitled, at statutory retirement age, to whatever share of pension payments he earned (and to which his employer contributed). Thus he could add up "pieces" of pension rights from various employers into a re-

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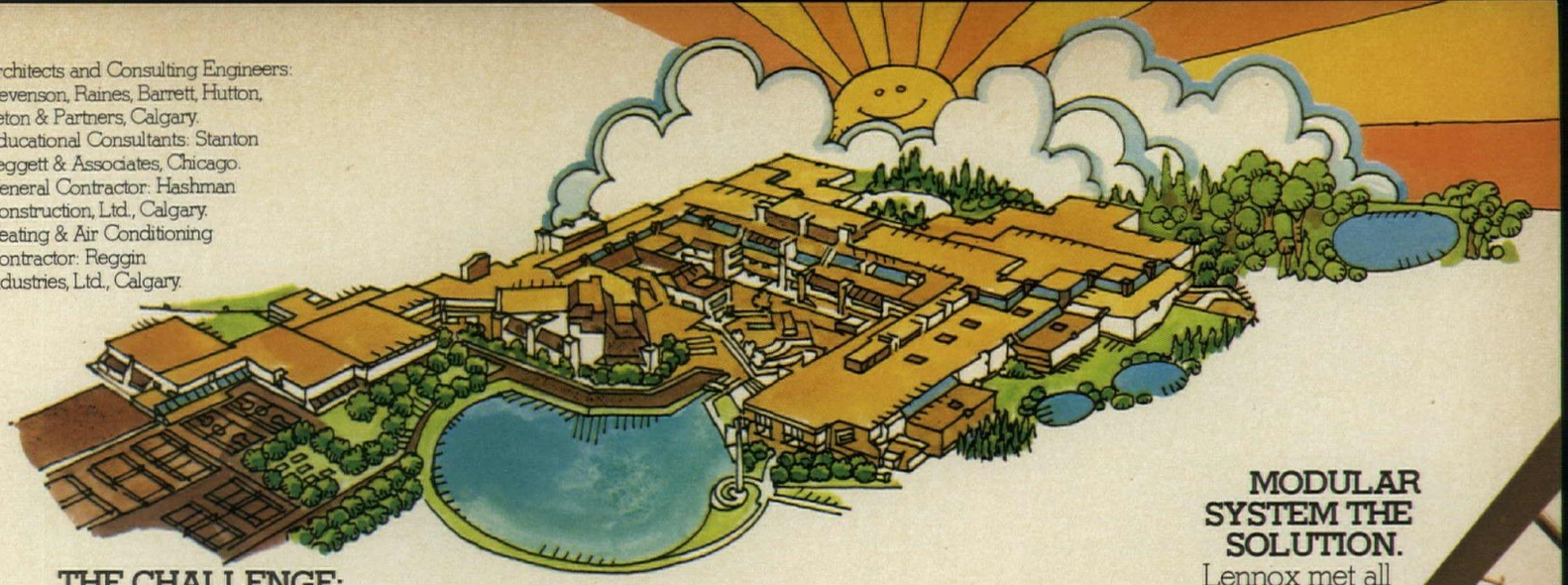
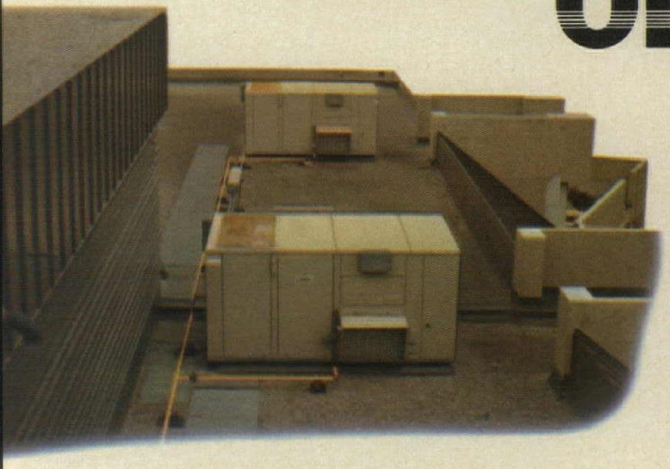
Architects and Consulting Engineers: Stevenson, Raines, Barrett, Hutton, Seton & Partners, Calgary. Educational Consultants: Stanton Leggett & Associates, Chicago. General Contractor: Hashman Construction, Ltd., Calgary. Heating & Air Conditioning Contractor: Reggin Industries, Ltd., Calgary.



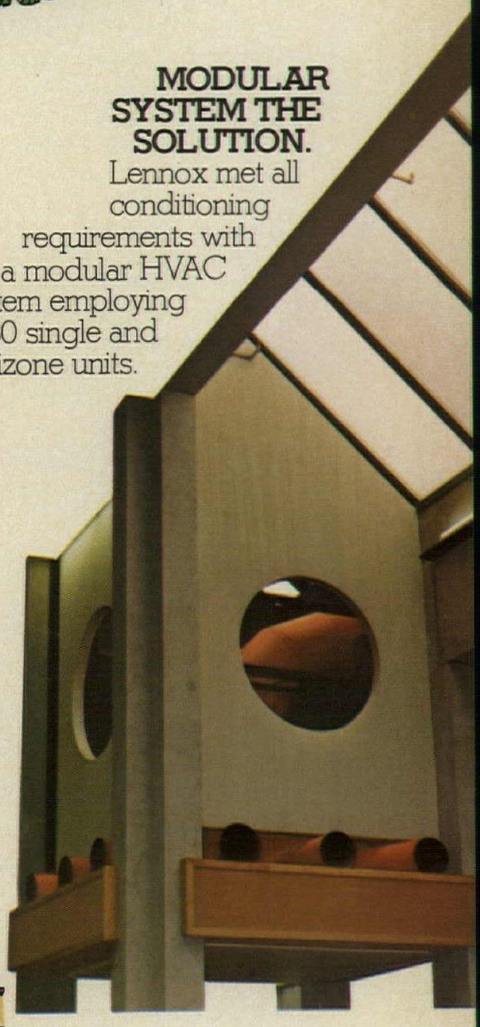
THE CHALLENGE: Design environmental control for the 14.7 acre building which houses the entire campus of Mount Royal College in Calgary, Alberta, Canada. In this multi-level structure are 641,000 square feet, a wide variety of flexible modules, huge open class rooms, and decentralized service areas.

LENNOX SPACE ODYSSEY

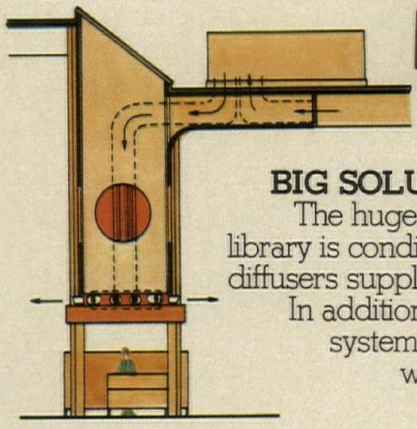
MODULAR SYSTEM THE SOLUTION. Lennox met all conditioning requirements with a modular HVAC system employing 80 single and multizone units.



FLEXIBLE SYSTEM. To accommodate future expansion as well as internal re-structuring, much of the duct work was left exposed. This also complemented architectural appearance.



ON-SITE LABOR REDUCED. The Lennox systems are not only an integral part of the exterior architecture, but, because they were factory assembled and wired, on-site labor was considerably reduced. In fact, the Lennox system was installed for 27¢ per foot less than the budgeted amount.



BIG SOLUTION TO BIG PROBLEM. The huge, sprawling, open learning library is conditioned by 12 cannon-type diffusers supplied by vertical duct work. In addition, a flexible perimeter duct system separately handles exterior wall and window loads.

UNEVEN OCCUPANCY PROBLEM SOLVED. Because Mount Royal is a multi-use community college, occupancy of space is uneven. The Lennox modular HVAC system helps reduce fuel and energy consumption in unoccupied areas.

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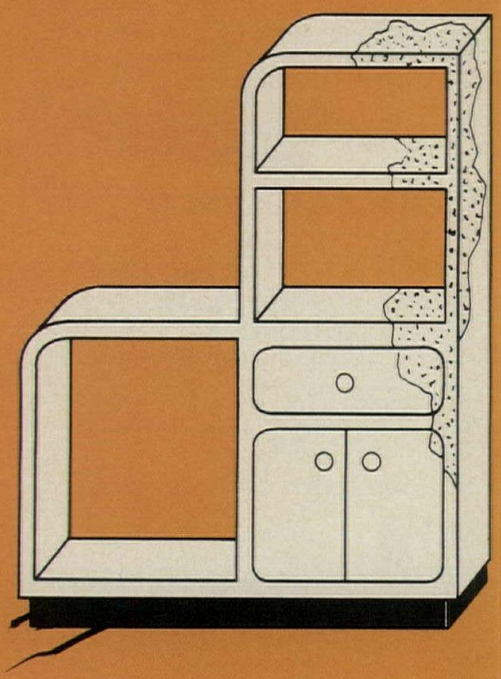

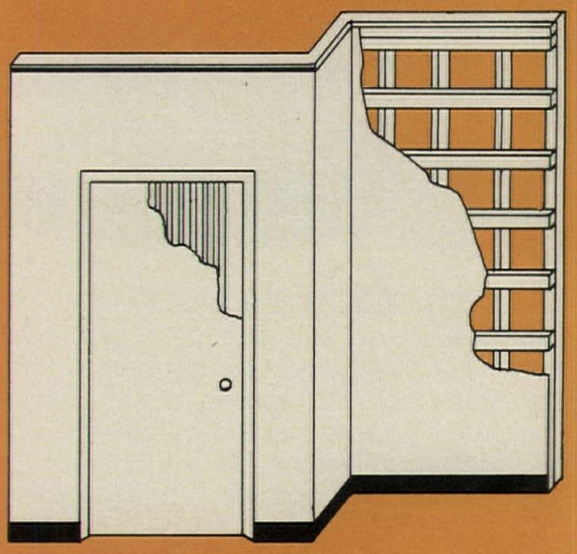

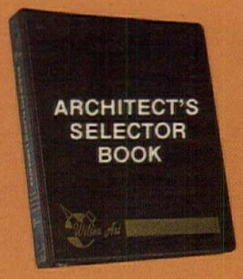

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News report continued from page 38

spectable pension for himself. Employers have objected to straight-out portability for several reasons, including the point that large amounts of pension funds would have to be kept in liquid form for quick pay-outs when an employee leaves, thus reducing opportunities for investment and growth of the funds and increasing the employers' liability and insurance costs. Some employees rather bitterly name another objection: Many "sweetheart" pension plans couldn't stand this kind of a drain.

In any case, any such program—even of early "vesting"—would require some sort of multi-employer group to handle pay-in and pay-out, monitor conditions and insure that the funds existed in fact when a pensioner was ready to draw his benefits. One other point: Any such program would be expensive. Estimates bandied about in Washington set the cost to employers as something like 1.2 percent of total payroll at least in the first years of any multi-employer scheme.

Concentration on this matter provided a sharp contrast to the diffused situation that prevailed on Capitol Hill in early Apr., a situation generally based on the classic, and annual conflict between executive power and congressional initiative and pique.

For example, Congress didn't even wait for presentation of the annual budget, economics and other messages before angrily taking up one measure after another that would override the presidential strictures on spending: The Senate passed bills that would restore funds for rural electrification, telephone and public utilities construction; opened hearings on transportation spending; entertained numerous other bills that would force spending of more money on water and sewer programs, public buildings and the like, restore funds for economic-aid programs and poverty fighting such as for subsidized low-income housing and urban renewal.

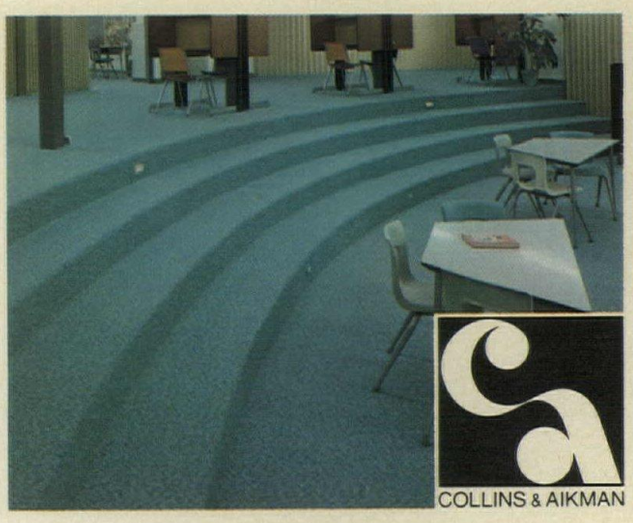
But the lawmakers were backing away, at the last ditch, from open confrontations. The reason: a political play by the White House that put Congress into the position of accepting a "big spender" label if it exceeded budget figures by too much. The end result, as best estimated in Washington, would be the usual compromise—a bit more than the executive wanted, a good bit less than Congress wanted to spend. Whatever the outcome, it would have little effect on available funds for construction work this calendar year—since any congressional actions would affect only the upcoming fiscal year (which starts officially in July).

Highway hearings were an example: There was a good deal of fire-breathing about "opening" the Trust Fund, but no talk about increasing established taxes and spending. With both the Administration and Congress, for once, on the same side, it began to appear that some diversion of Trust Fund money can be expected in final legislation—sums up to about $1 billion a year, to be used for mass-transit work. Highway boosters were exceedingly mild in their defense of the Trust Fund, apparently resigned to some loss.

There was also some small sign of a slowing in the headlong "environmental" drive of the past few years, though there was plenty of new environmental legislation already available. The evidence of some slowdown, however, included the president's "environmental report" calling for

[continued on page 44]

When they're old enough for diapers, this floor will not need changing.



Long after these students have gone on to jobs and babies, this floor will still be here. All here.*

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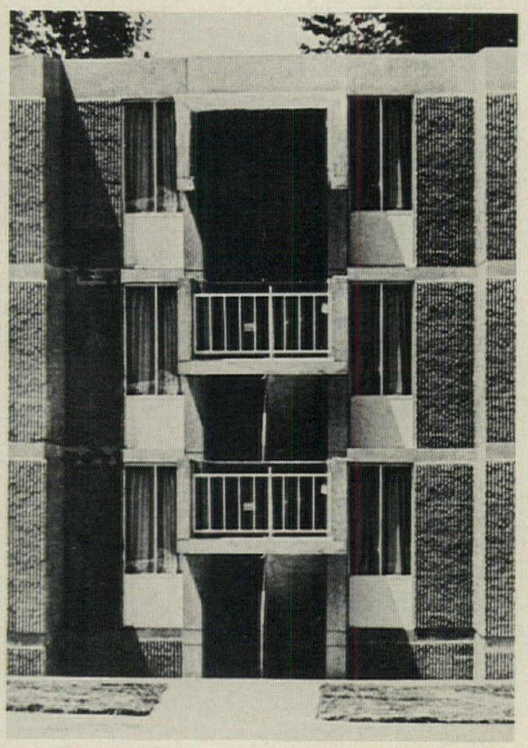
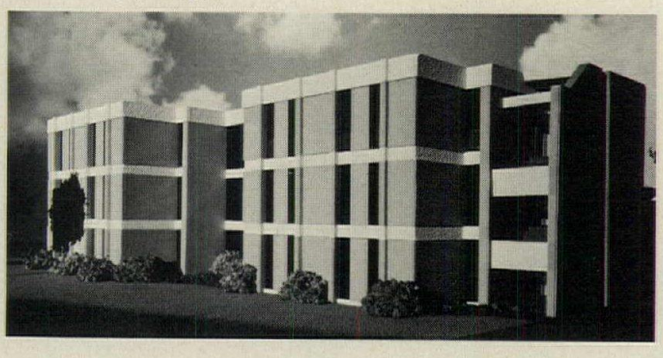
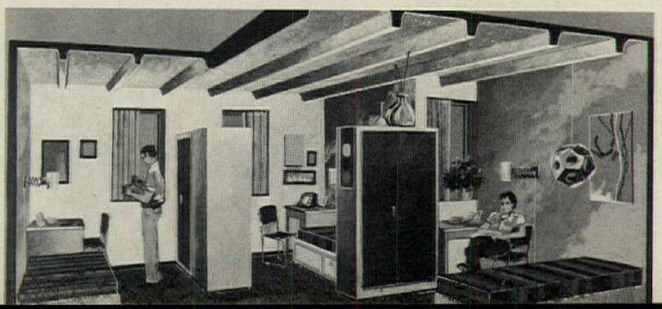
News report continued from page 42



LBC&W scheme

Benham-Blair prototype





"sensible balance" between human and environmental needs; a bill in Congress to permit issuance of licenses for "needed" powerplant construction, to approve offshore construction of ports for deepwater tankers (with careful safeguards of state approvals as well as federal); moves to use legislation to cut through legal controversies that have delayed construction of the $3 billion (or more) Alaskan pipeline; comments from Agriculture Secretary Butz—newly appointed energy "czar" in the White House Circle—that "resources should be used, not hoarded." [E.E. Halmos]

New Army builds new quarters

Some grizzled 20-year sergeant—the sort that Forrest Tucker might portray—is sure to say it: "The Army ain't what it used to be." He'd be right. Before too long enlisted men are going to find themselves living in carpeted air conditioned comfort.

It's all part of making the new all-volunteer army something worth volunteering for. The army's new barracks construction program calls for an end to the open 80-man barracks; soldiers are people and are to have some degree of privacy and comfort. In fact, the new barracks will bear much more resemblance to college dorms than to even recently built barracks.

To come up with prototype designs, the Army's Chief of Engineers organized a competition, asking each of the Corps' four regional districts to select an outstanding design firm to develop a scheme based on the new barracks guidelines. Final winners were Benham-Blair & Affiliates and Lyles, Bissett, Carlisle & Wolff.

The Benham-Blair prototype is based on a 270-sq-ft living module which can be occupied by one, two or three men, depending on rank. Each man, even in a three-man unit, will have his own private area with a window. Four such rooms are grouped around a common lounge serving 24 men. The first will be built at Fort Carson, Colo.

Lyles, Bissett, Carlisle & Wolff based their design on a 12-man module made up of two living rooms shared by four 3-man bedrooms. Stacking the modules three high makes a 36-man building, which can be joined with another to form a 72-man cluster with an enclosed court. The cluster can be repeated to meet housing needs.

In both schemes, structural systems and exterior materials can vary from location to location. Both schemes also include much more attention to site planning and landscaping than has been given previously to military barracks.

Low rise aluminum competition

Architects, and builders are invited to enter the first national design awards program for low rise building projects incorporating aluminum building products. The program is sponsored by the Architectural Aluminum Manufacturers Association and the Aluminum Association.

The program will be divided into two categories—new construction and rehabilitation—with designs for residential, commercial and industrial projects being judged together in each division. Any low rise (five stories or less) new construction or rehabilitation project completed during the 24 months preceding July 31, 1973 will be eligible. National winner in each division will receive $1000 plus a plaque; plaques will be awarded to second and third place winners.

Further information is available from Architectural Alumi-

[continued on page 46]

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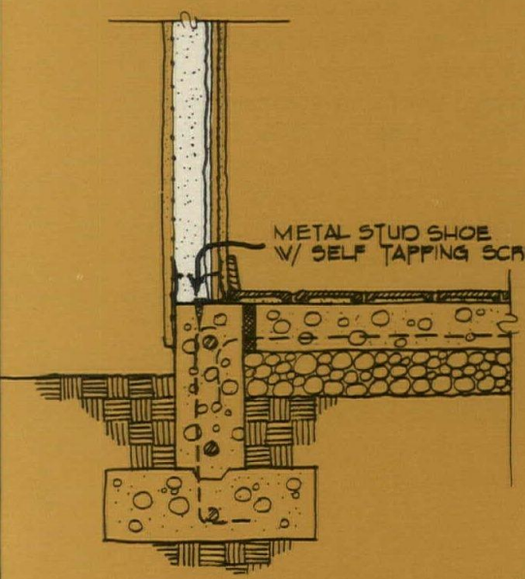
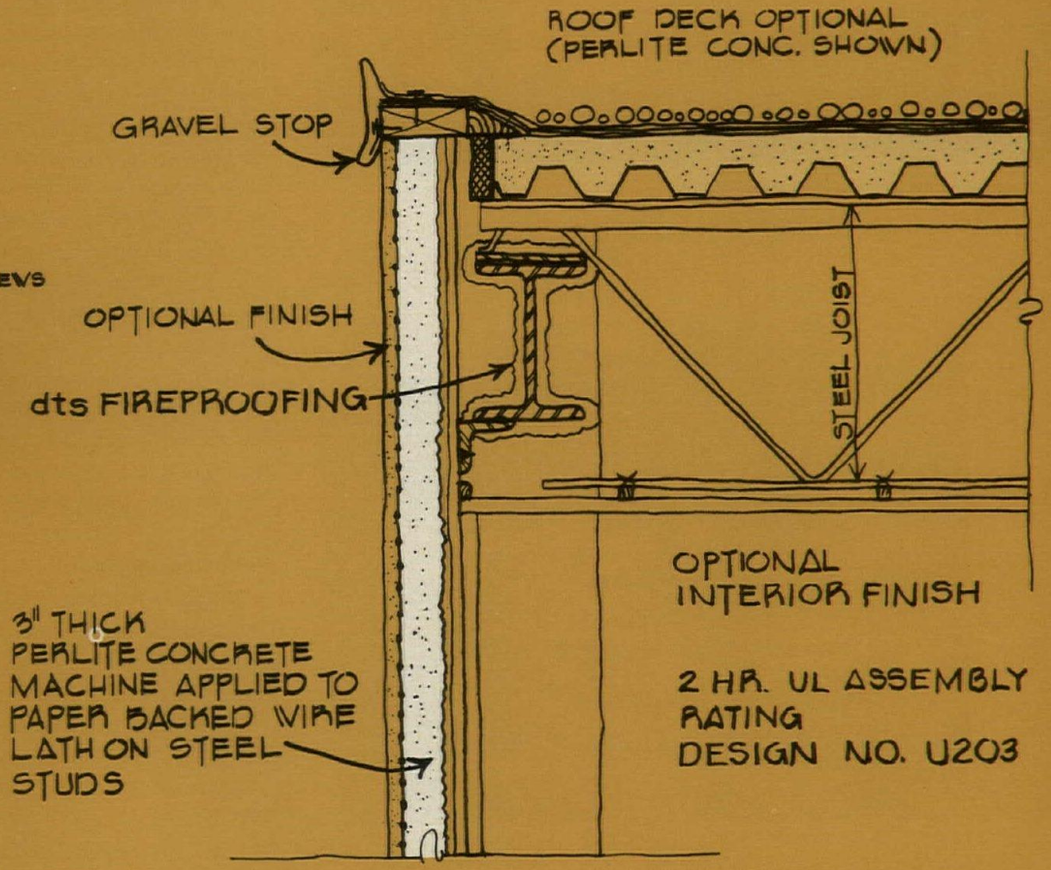


B/5 FOUNDATION DETAIL



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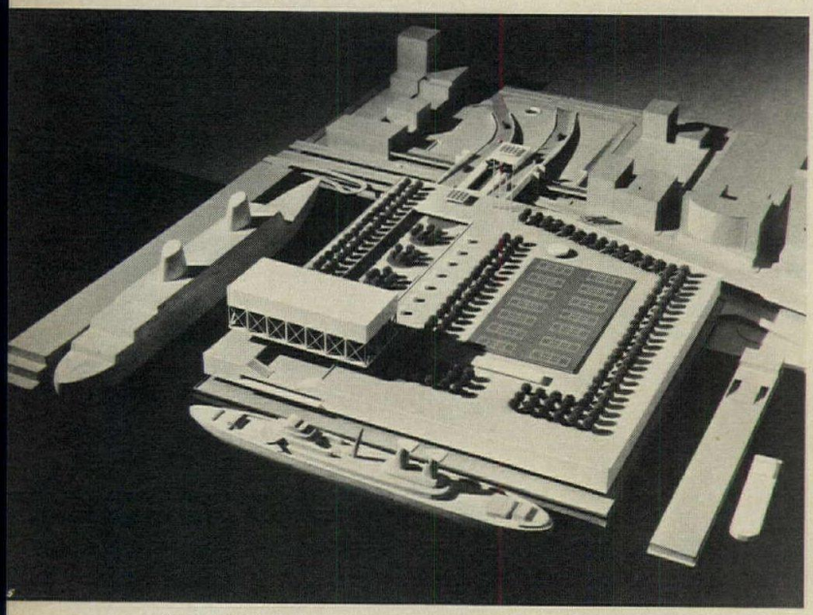
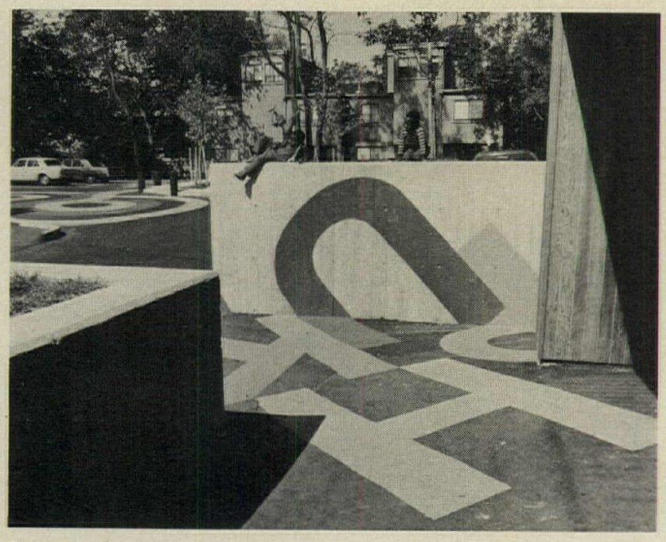


NYC's giant convention center



Playground painted on pavement

num Manufacturers Association, 410 N. Michigan Ave., Chicago, Ill. 60611. Entries must be received by Aug. 1, 1973; winners will be announced at AAMA's convention and annual meeting in Seattle, Oct. 28–Nov. 1.

NYC announces world's largest convention center

It will be, according to the mayor, the world's largest convention and exposition center—560,000 sq ft of exhibition space on one level, with an 18-acre park and recreational area on the roof. The project is the New York City Convention & Exhibition Center; opening day is set for July 4, 1976.

As designed by Skidmore, Owings & Merrill, with Gordon Bunshaft in charge, the giant convention center is a four-layer cake by the Hudson River. The second level, the 560,000 sq ft of exhibition space, is the heart of the center; above it is a 200,000-sq-ft lobby and support level with meeting rooms, restaurants, registration areas and more exhibit space; the main entrance lobby is on the fourth level, which can be reached by a bridge over the West Side Highway; at grade level are the garage and mechanical spaces. An extra structure over the roof provides two more floors of meeting rooms and restaurants overlooking the Hudson.

The center is designed to allow as many as six meetings or shows to take place at the same time. Flexible partitions can allow for groups ranging from 40 to 1500 people in one meeting room. A two-lane truck roadway will surround the exhibit floor, making delivery and pick-up of exhibits a fairly simple process; a pier large enough for ocean going ships will also allow many of the international shows to transport heavy equipment by ship, right to the center. Cost for the convention center is put at about $110 million, excluding the river platform and bridge approach; total development cost is expected to be around $200 million.

Painted playground

The colorful patterns, letters and numbers on the asphalt at the Sherman and Munson housing development in New Haven (P/A, May 1972, p. 106) turn the pavement into something more than streets and parking areas. For the kids who live there, the parking lots and roadways have become an extension of the small partly enclosed playground that was part of the original design by Louis Sauer & Associates.

The paint job is the product of Malcolm Grear Designers, Inc., a Providence design firm; the actual painting was done by the designers and the firm's summer employees, aided by neighborhood children. Playground equipment was also designed by Grear's firm and put together by two undergraduate students at Yale. There are swings, platforms, benches, ladders and a sandbox, all built of used wood.

Since the play area was completed in Sept., there seems to be less litter, more careful driving according to some observers. And no unauthorized vehicles have been found in the parking lots for the past few months.

Chicago architect, Chicago architecture in Scandinavia

Now making the rounds of several Scandinavian cities is an exhibit on "The Evolution of the Chicago High Rise Building" put together by Chicago architect Harold Nelson. The show consists of some 80 photographs documenting the growth of the city's architectural prominence after the Chicago fire.

All the well-known landmarks—the Rookery, the Monad-

[continued on page 50]

Some communication systems are a costly error.

The communications boom can drive you right up the walls. If you can't handle it, it's really going to cost you. Running wires around the bases. For more phones, more equipment. Taking chances on an accident. So play it safe. Put a Walkerduct Underfloor System in your building specs. It will keep packing 'em in.

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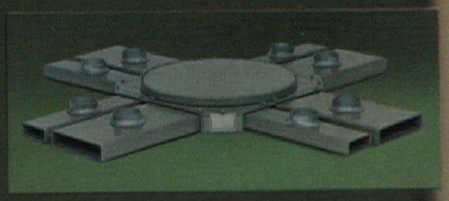

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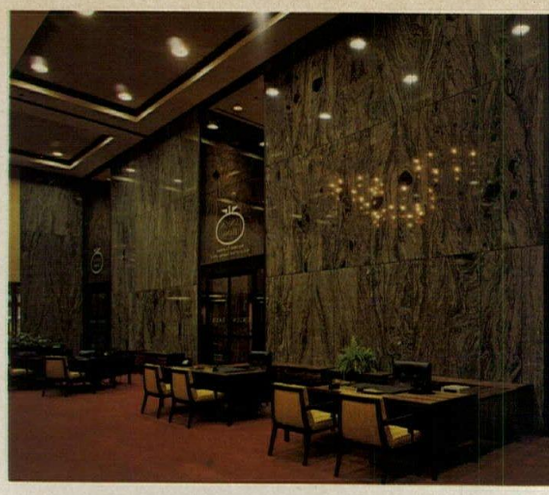
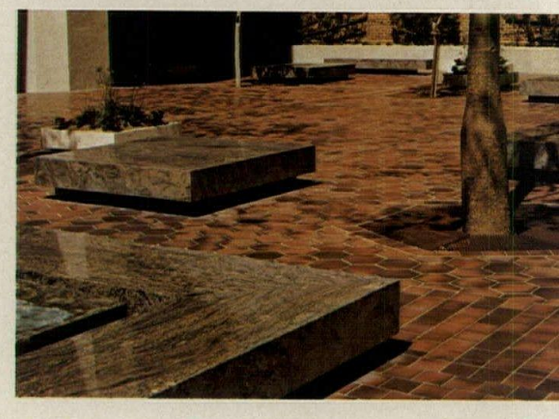
If granite is strictly for building exteriors, why didn't someone tell Union Bank, San Francisco?





There are those that hold that *the* place for granite is the outside wall for that big, monumental building that comes along once every century. But the building owner and the management of the Union Bank of San Francisco and their architects had other ideas. They liked the warm, natural colors of granite. They were aware of how polished granite resists weather, stains and all types of traffic as no other building material is capable. They knew it requires virtually no maintenance. Doesn't fade or deteriorate. And that it would fit into their plans on a cost-in-place basis. So it was employed. On the plaza to cradle a fountain and pool. As exterior furniture. Inside it was used as facing for walls on the first floor, in heavy traffic areas. Focal points that at once blend and accent. Warm. Lasting. Beautiful.

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Architects:
Exterior and lobby
Welton Becket and Associates

Bank interior
Anthony Heinsbergen and Company

Exterior furniture and fountain
Michael Painter & Associates

General Contractor:
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INSTALLMENT
LOAN

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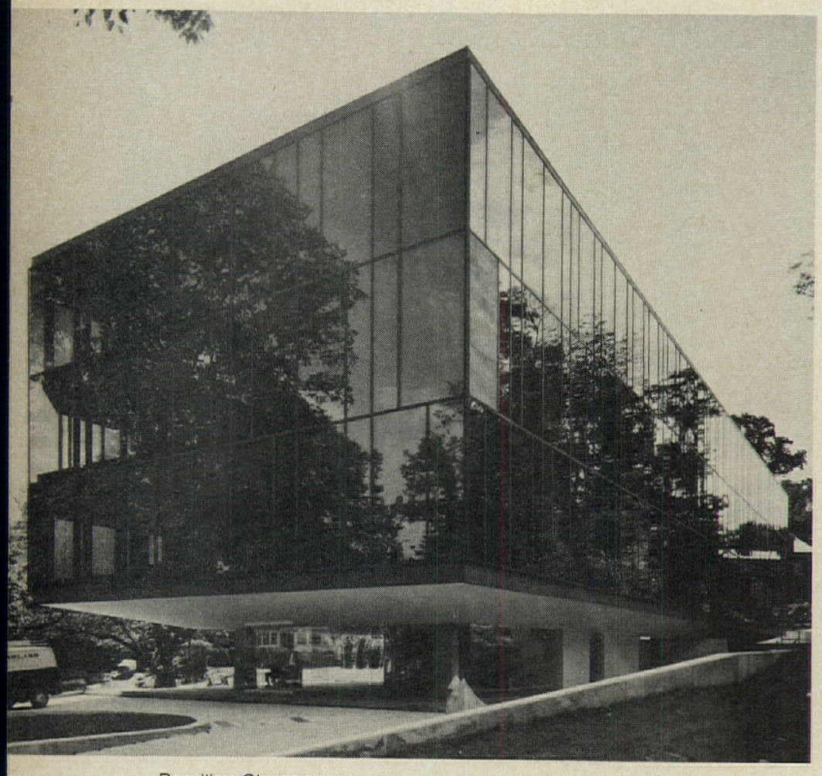
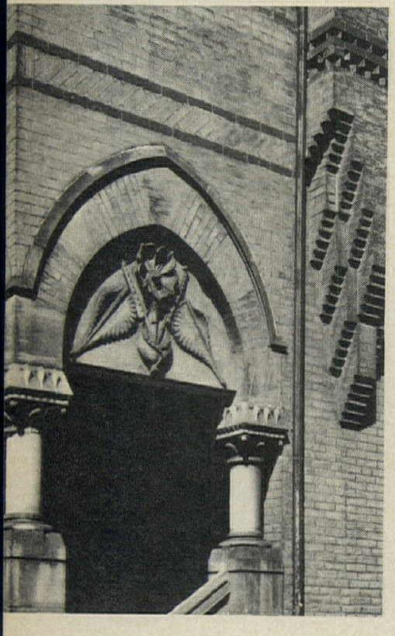


Brazilian Chancery



Furness remembered

nock, the Reliance Building—are included, along with such recent additions to the skyline as the Civic Center, the John Hancock building and the Sears Tower. Support for the show, which spent two months at the School of Architecture in Stockholm before traveling to other cities, came from the Graham Foundation for Advanced Studies and the United States Cultural Center in Stockholm. Nelson, a director of the Chicago Chapter of the American Sandinavian Foundation, did the photography for the show.

Brazilian Chancery graces Embassy Row

Appearing to float above Washington's "Embassy Row," the new Brazilian Chancery has been termed by the Washington Post an "outstanding example" of "exciting Brazilian architecture." A glass box cantilevered from a glass and concrete base, the Chancery provides three 50′ x 100′ office floors and a smaller ground level lobby and basement. To give the greatest flexibility for partitioning, the building is supported by a double row of columns along a central corridor; the columns support the cantilevered roof trusses from which the three office floors are hung.

Designed by Olavo Redig de Campos, with Hans-Ullrich Scharnberg as the associated American architect, the Chancery will be a showcase for Brazilian art and furnishings. It is the first stage of a projected development of the Embassy site that will include an auditorium-theater, an exhibit center, a landscaped plaza and underground parking. Also on the site: the Ambassador's residence, an eclectic palazzo designed by John Russel Pope in 1931.

Philadelphia exhibit recognizes Furness

Photographs, drawings and prints of 40 of the major buildings of Philadelphia architect Frank Furness (1839–1912) went on display at the Philadelphia Museum of Art early this month. Known up to now mainly for his ruggedly offbeat Pennsylvania Academy of Fine Arts in the heart of the city, Furness is shown to have worked in a wide variety of modes combining elements of Victorian Gothic, French, Neo-Grec and Romanesque, on a wide variety of projects. In his time Furness was so widely respected that the young Louis Sullivan went to Philadelphia specifically to work in Furness' office. But in the 20th Century many of his larger works have been demolished and his smaller ones forgotten. The current show should set the record straight.

Researched by James F. O'Gorman of Boston University and George Thomas of the University of Pennsylvania, the exhibit will also include furniture and decorative arts designed by Furness, along with examples of his art work. O'Gorman also wrote the catalog for the exhibit, which opened Apr. 6 and will run through May 27.

The British are coming—to Southern California

Lectures, seminars, visits and a workshop program are on the itinerary for 150 students, faculty and staff members of London's Architectural Association as they visit sunny Southern California next month. The trip planned in conjunction with the University of Southern California, will bring the British architects and planners together with some of their West Coast counterparts.

With Los Angeles as their base, they will make numerous forays into the wild southwest. Disneyland and Universal Stu-

[continued on page 52]

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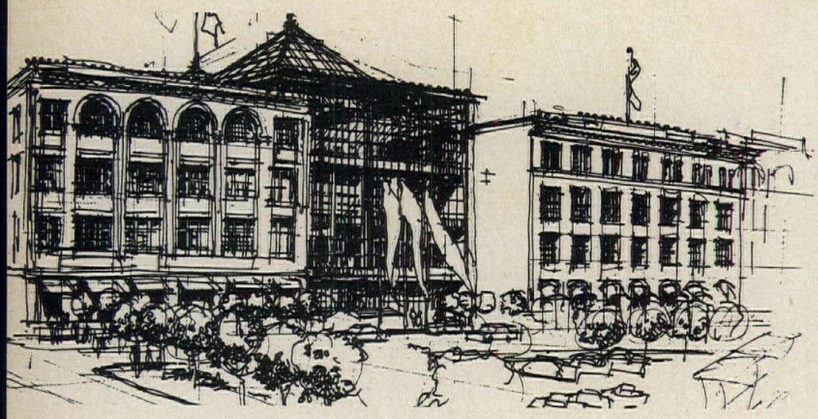
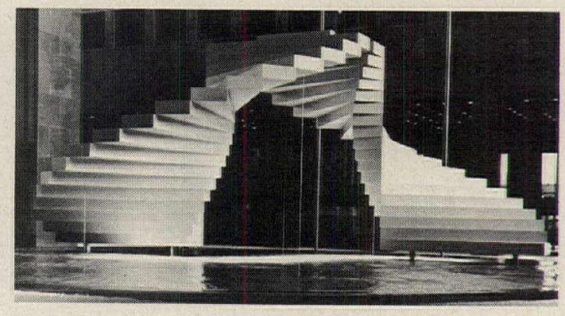
News report continued from page 50



Warehouses become furnishings mart



ARCO's stairs

dios are on the list, naturally, as are more traditionally architectural destinations as buildings designed by Neutra, Schindler and others. In Arizona, the English designers will visit Paolo Soleri's Arcosanti Foundation; they will visit Las Vegas, Santa Barbara, San Diego and, dropping south of the border, Tijuana. They will also find their way to San Francisco during the 1973 AIA Convention.

San Francisco warehouses to become furnishings mart

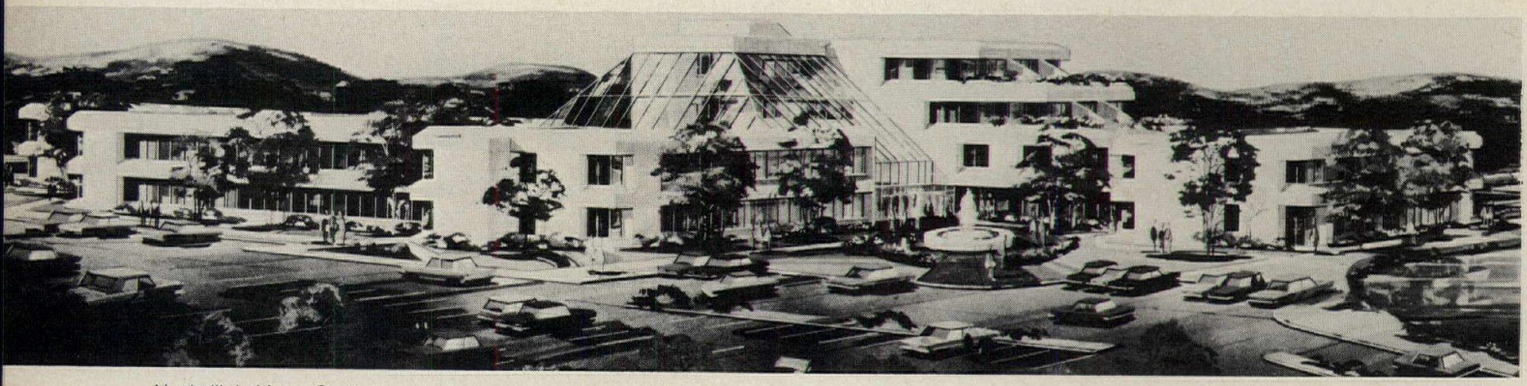
Two old San Francisco warehouses, their brick walls sandblasted and their timbers and arched windows preserved, will eventually be linked by a glass walled and roofed courtyard to create a display and trade show center for the residential furnishings trade. The 300,000 sq ft project, known as Showplace II (it is an adjunct to the existing The Showplace!) was designed by Taylor/Huston Architects.

The glass enclosed courtyard will include glass elevators, a grand staircase, lights and banners. Henry Adams & Co. are the developers of both Showplaces.

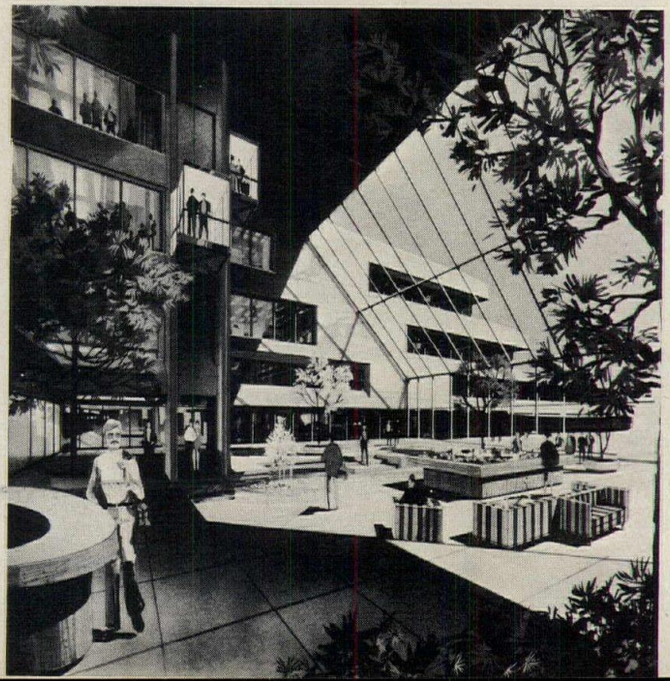
Stairs mark completion of Atlantic Richfield Plaza

The unveiling of a pair of stairways that really don't go anywhere but up marked the completion of the $188 million Atlantic Richfield Plaza complex in downtown Los Angeles. The stairs, finished in bright orange enamel, are actually a metal sculpture by Herbert Bayer. Called "Double Ascension" they are 33 ft wide and 14 ft tall and rise above a 46-ft diameter pool.

Bayer is also represented by a 26′ x 44′ mosaic of woven fabric in the ground floor lobby of the ARCO tower. Born in Austria and now residing in Aspen, Colo., Bayer is one of the few surviving masters of the Bauhaus.



Nashville's Metro Center



Construction starts on Nashville new town

About a year and a half after the first announcement of MetroCenter, a new town-in-town planned for Nashville, Tenn. comes word that the first building is ready to start. It is to be a lakeside office complex surrounded by terraces, pools, patios and courtyards and grouped around a five-story glass enclosed atrium.

The complex was designed by Hart, Krivatsy & Stubee, who are also responsible for the master plan for MetroCenter. Eventually the new town will cover 800 acres by the Cumberland River 13 blocks or five minutes away from downtown Nashville. As planned, MetroCenter will include about 150 acres of housing, 300 acres set aside for technological uses along with the commercial development of which Nashville House, as the building is called, is the first stage.

[continued on page 54]

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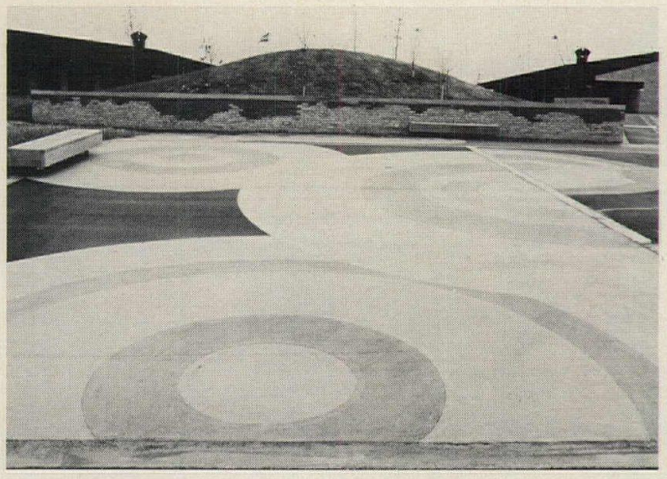
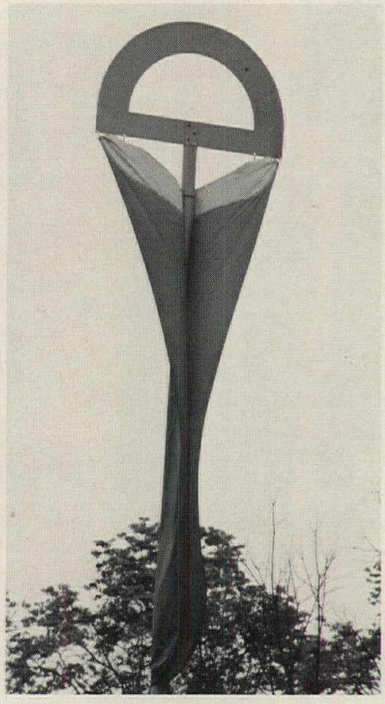
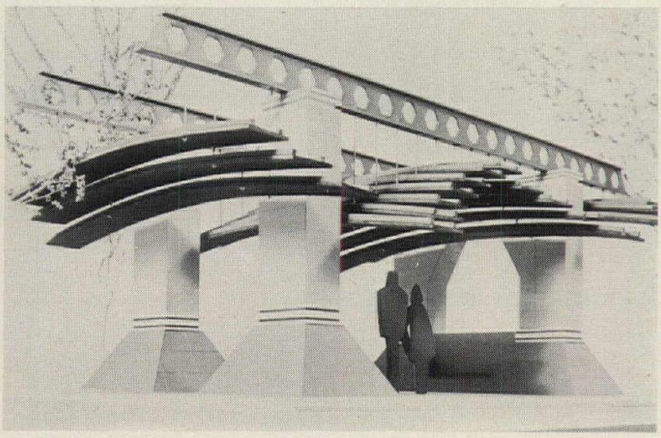
News report continued from page 52



Playthings with a purpose





Picnic shelter from reclaimed materials

The office building is aimed at what Gary Nelson of the MAT–NEL Co. developers of MetroCenter, terms "an entirely new concept of 'business living.' " Close to center city, but with the amenities of suburban and rural living, MetroCenter will include a golf course and other recreation facilities, lakes and a park; the golf course and the park are already on the site. The now-started commercial area, besides offices, will include shops, theaters and other facilities. All those good ol' boys who used to come to the Ryman Auditorium for the Grand Ol' Opry will never believe it.

Graphics to make children feel at home

Everything, no matter how whimsical it may look, has a purpose at Oakwood, a recently opened school for mentally retarded children in Somerset, Ky. The tractor seats and hay rake are aimed at making the children, most of whom come from farms in rural Kentucky, feel at home; the teeter boards, swings and seesaws are to improve motor coordination; the letters on the drapes help bring the alphabet alive for the kids; and the wooden vegetables hanging on the walls encourage them to plant gardens.

Openness is a key thought: there are no fences on the 250 acres of land, no locked doors for the 450 children in the state-financed school. Berry Burris & Thompson designed the school as a cluster of small units, with 12 children per two houses, 2 children in a room.

The colorful graphics—inside and out—are the work of Malcolm Grear Designers. For children in wheelchairs, Grear provided sections of concrete filled with earth for sitdown gardening; there are also birdhouses to watch.

The school officially opened in January, but it will be summer before the grounds and interior are completed. In the meantime, the tractor seats, the rake and a menagerie of aluminum and wooden animals are already in place; the animals were done by sculptor Hugh Townley and illustrator Ed Koren.

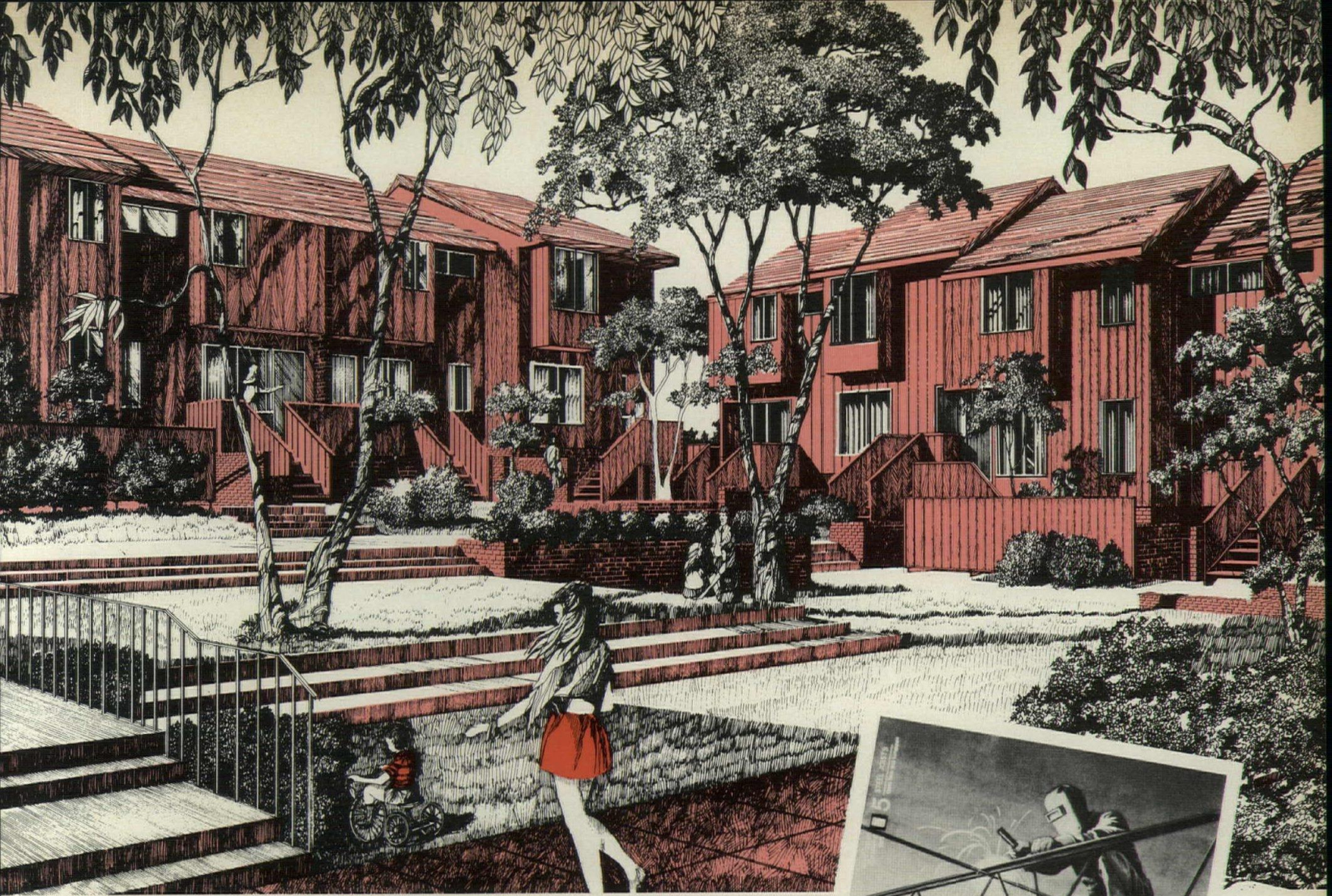
Glass + rubble + clay = picnic shelter

What can you make with 29,000 lbs of rubble, 15,000 lbs of broken glass and 2800 lbs of clay? Would you believe 1534 building panels for use in construction of a picnic pavilion in a Denver park? That's what the Colorado School of Mines Research Institute did: they developed a material named Thixite, which can be made in a range of colors, shapes and textures and has a tilelike finish.

The picnic shelter was designed by Denver architect Maxwell L. Saul as an open structure 36′ x 27′. The panels will be structural as well as decorative; the only parts of the structure not made of the material will be two steel girders and steel hang-downs supporting the roof and some cement blocks in the internal part of a wall at one end and in columns at the other. The panels will be in 14 colors.

The $60,000 cost of the project, which is being donated by the Colorado Soft Drink Association, CSMRI, the Glass Container Manufacturers Institute and several local industries, will include the expense of setting up a pilot plant to make the panels. The reclaimed glass and demolition rubbles will be ground up and mixed with the clay; the mixture is then cast into panels in a vibration process and fired in kilns. While the shelter is being built this winter, the Colorado Soft Drink Association plans a contest to find a new name for Thixite.

[continued on page 58]



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Who can enter. Any registered architect or professional engineer practicing in the U.S. is eligible. As an individual. Or in a team. But to qualify, your entry must be a commissioned building project—in the design process, under construction, or a completed structure.

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

Industrial—including manufacturing plants, research centers, warehouses.

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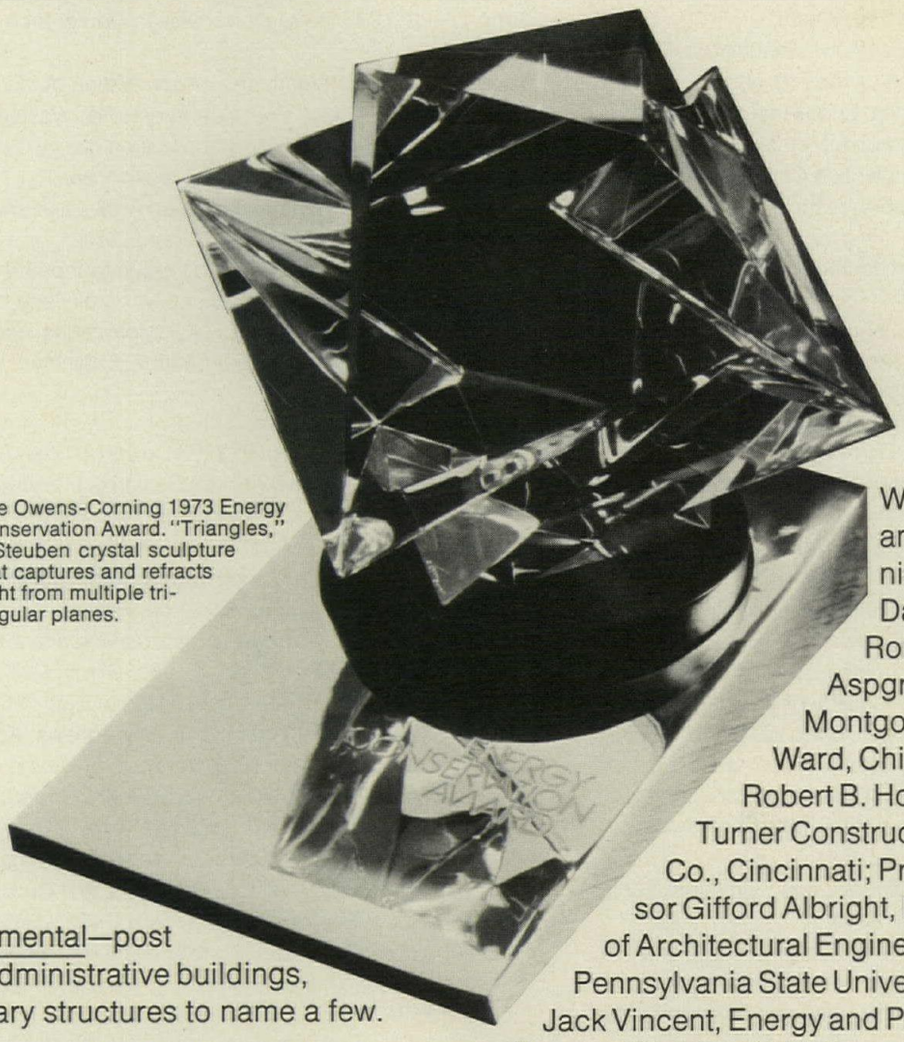

The Owens-Corning 1973 Energy Conservation Award. "Triangles," a Steuben crystal sculpture that captures and refracts light from multiple triangular planes.

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The Awards Jury for 1973. Seven outstanding professionals in architecture and engineering will serve as the Awards Jury to select the winners.

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Send for entry details now. Completed entries must be submitted by August 31, 1973. Winners will be selected in September and notified in early October.

For a brochure giving complete details, contact your local Owens-Corning representative. Or write G. P. Meeks, Owens-Corning Fiberglas Corporation, Fiberglas Tower, Toledo, Ohio 43659.

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News report continued from page 54

Calendar

Mar. 30–Apr. 29. Exhibit of the Italian Art & Landscape Foundation Inc., Seattle Art Museum, Seattle, Wash.
Apr. 2–3. First Federal Design Assembly, Washington, D.C., sponsored by the Federal Council on the Arts and the Humanities under a grant from the National Endowment for the Arts.
Apr. 2–4. Fifth annual apartment builder/developer conference and exposition, Miami Beach Convention Center.
Apr. 2–6. Fifty-fourth annual meeting of the American Welding Society, Chicago.
Apr. 6–May 27. Philadelphia Architecture 1: Frank Furness exhibit, Philadelphia Museum of Art.
Apr. 9–12. American Society of Mechanical Engineers design engineering conference, Civic Center, Philadelphia.
Apr. 9–13. Structural engineering meeting of the American Society of Civil Engineers, San Francisco Hilton Hotel.
Apr. 9–15. Earth Week.
Apr. 11–13. Third national conference for the Building Team, Drake Hotel, Chicago.
Apr. 11–13. International Congress "Renovation of old towns," Maastricht, Holland.
Apr. 14–May 12. Exhibit of the Italian Art & Landscape Foundation Inc., New Orleans Museum of Art.
Apr. 15–18. Fourth international conference of the Environmental Design Research Association, College of Architecture, Virginia Polytechnic Institute and State University, Blacksburg, Va.
Apr. 17–June 30. Revised date. Furniture by Charles Eames exhibition. The Museum of Modern Art, New York City.
Apr. 23–25. 110th annual meeting of the National Academy of Sciences, Washington, D.C.
Apr. 26–28. Interior Design Educators Council National Conference, University of Michigan, Ann Arbor.
Apr. 29–May 2. Annual convention of the American Wood Preservers' Association, Marriott Hotel, New Orleans.
May 3–4. Ninth annual meeting of the National Academy of Engineering, Washington, D.C.
May 7–9. International symposium on Urban Housing, Wayne State University, Detroit, Mich.
May 7–10. AIA national convention and exposition, Brooks Hall, San Francisco (to be reconvened in Honolulu May 11–15).
May 7–10. Thirty-first annual technical conference of the Society of Plastics Engineers, Queen Elizabeth Hotel, Montreal.
May 7–13. Conference-workshop on "Buildings in the North," Université de Montréal.
May 10–11. Twenty-fifth annual national engineering conference sponsored by the American Institute of Steel Construction, Bellevue-Stratford Hotel, Philadelphia.
May 11–20. Soviet American conference on architecture and urban design sponsored by the American Institute of Architects, Moscow and Leningrad.
May 14–15. Urban lighting conference, "Light for the City," General Electric Lighting Institute, Nela Park, Cleveland.
May 21–23. Conference on "Environmental Assessments of Transportation Facilities" sponsored by the Illinois chapter of the American Society of Civil Engineers, Regency Hotel, Chicago.
June 1–Sept. 10. "The Arts and Crafts Movement in America 1876–1916," Renwick Gallery of the Smithsonian Institution, Washington, D.C.
June 2–30. Exhibit of the Italian Art & Landscape Foundation Inc., High Museum of Art, Atlanta, Ga.
June 4–6. National Interfaith Conference on Religion and Architecture, Minneapolis, Minn.
June 12–Aug. 28. "Streets" exhibition, the Museum of Modern Art, New York City.
June 17–22. 1973 International Design Conference in Aspen, Colo.
June 25–27. Seventeenth annual convention of the Construction Specifications Institute, Sheraton Park Hotel, Washington, D.C.
June 25–29. Applied building illumination design seminar, the Pennsylvania State University, University Park, Pa.
July 21–Aug. 18. Exhibit of the Italian Art & Landscape Foundation Inc., Phoenix Art Museum, Phoenix, Ariz.
Aug. 15–27. Annual meeting and foreign tour of the Society of Architectural Historians, Cambridge University and London.
Aug. 29–31. "The Design Activity," international conference, Polytechnic of Central London, London, England.

Awards

Among the winners in the 1972–73 Design in Steel Awards program: **J. Robert Hillier**, Award for Design of Housing (Hillier residence, Princeton, N.J.); **A.J. Diamond** and **Barton Myers**, Citation for Excellence of Design (Myers residence, Toronto, Canada); **Sigmund Blum** and **Harutun Vaporiciyan**, Citation for Excellence of Design (Blum residence, Franklin, Mich.); **Baltan Tournier, Vergun & Yanaga**, Citation for Excellence of Engineering (steel-framed modular housing, Gilroy, Calif.);

I.M. Pei & Partners, Award for Design of High Rise Construction (Commerce Court, Toronto); **John Andrews/Anderson/Baldwin** and **LeMessurier Associates, Inc.**, Citation for Excellence of Design (George Gund Hall, Harvard University); **Reynolds, Smith & Hills**, Citation for Excellence of Design (Landside/Airside Terminal Complex, Tampa, Fla., International Airport); **Engineering Division, Perkins & Will Corp.**, Citation for Excellence of Engineering (Standard Oil Building, Chicago); **The Office of Mies van der Rohe** and **C.F. Murphy Associates**, Citation for Excellence of Engineering (One IBM Plaza, Chicago);

C.F. Murphy Associates, Award for Design of Low Rise Construction (McCormick Place On-The-Lake, Chicago); **Lev Zetlin Associates** and **Conklin & Rossant**, Award for Engineering (Superbay Maintenance Facility, American Air Lines, Los Angeles and San Francisco); **Myron Goldsmith, Skidmore, Owings & Merrill**, Chicago, Citation for Excellence of Design (printing plant for The Republic, Columbus, Ohio); **Harry Weese & Associates**, Citation for Excellence of Design (IBM central utilities plant, Endicott, N.Y.); **Odell Associates, Inc.**, Citation for Excellence of Design (Burlington Industries headquarters, Greensboro, N.C.); **McCue-Boone-Tomsick**, Citation for Excellence of Design (Alza Corp. headquarters and laboratory, Palo Alto, Calif.); James K. Wright, **Mitchell/Giurgola Associates**, Citation for Excellence of Design (subway entrance, Philadelphia); **Cope Linder Walmsley**, Citation for Excellence of Design (Columbia, Md. mall);

Albert Kahn Associates, Citation for Excellence of Engineering (Ford Motor Co. parts warehouse); **Eberhard H. Zeidler, Craig Zeidler Strong**, Citation for Excellence of Engineering (Ontario Place, Toronto);

Clesson T. Wiseman, architectural design section, Southern California Edison, Award for Design of Public Works (Southern California Edison substation).

E. Jay Nielson took first prize in the color category of the Kodak International Newspaper Snapshot Awards; **Andrew D. Bowles** and **Jerry H. Houston** also won awards.

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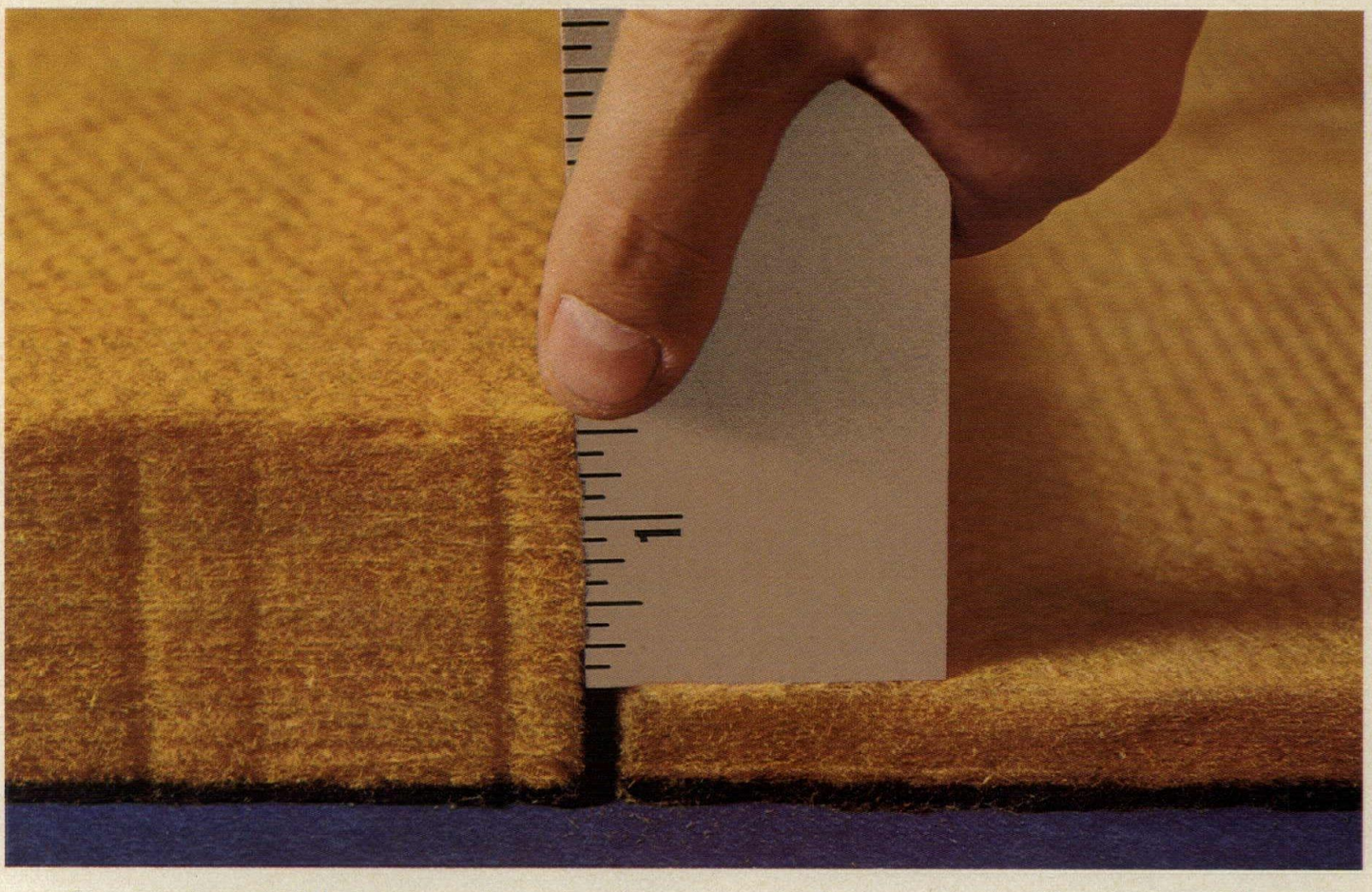

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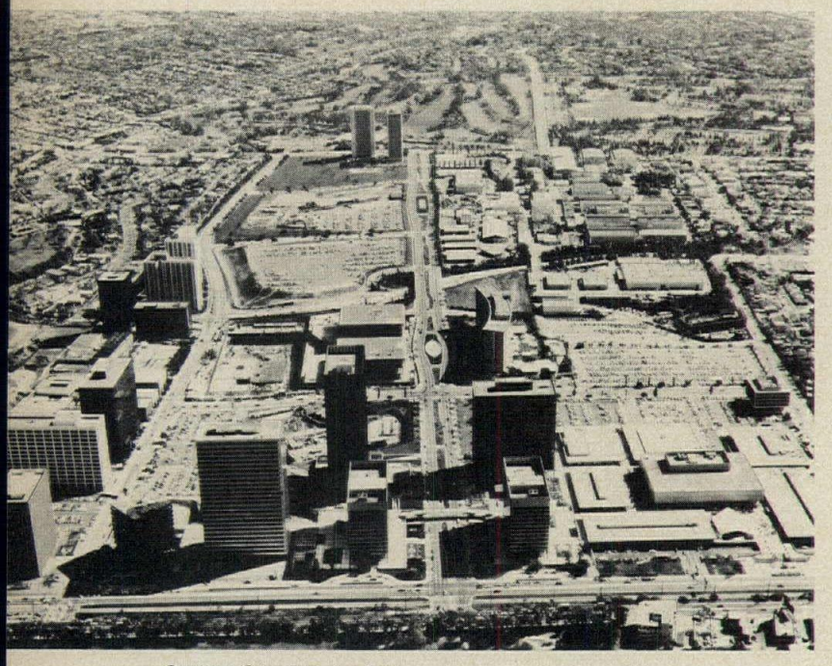
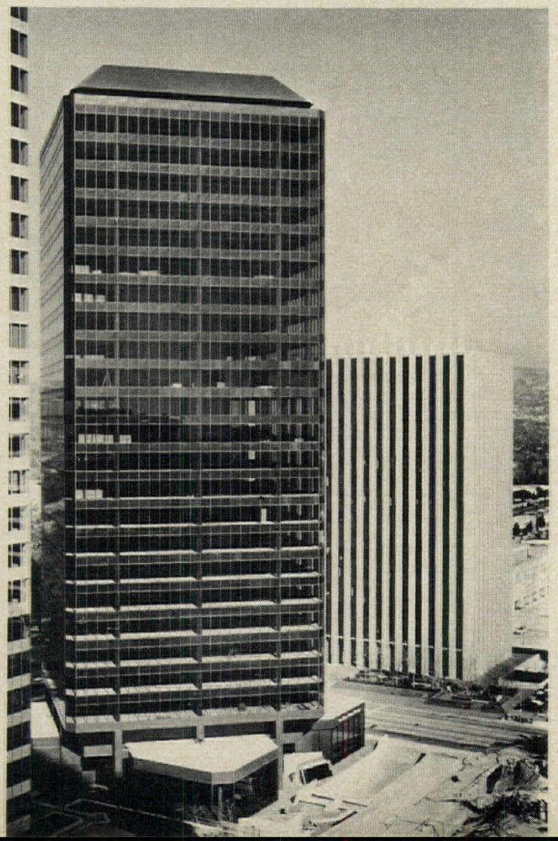
Architecture west

Century City in Los Angeles has come up so fast that we have almost forgotten the time 15 years ago when the 180-acre city-within-a-city was Twentieth Century Fox's back lot, alive with false fronts of New York, New England and New Abilene. Easy to forget because the 22 major buildings (two more under construction) are too spaced out to read as an urban center, Century City is one end of dumbbell concentration of tall buildings. The other end is the new downtown financial center, and the two are joined by a 12-mile rod which is, roughly, Wilshire Blvd.

The latest building to be dedicated is Welton Becket & Associates' 27-story Century Park Plaza, set diagonally to Santa Monica Blvd. It is the fifth by the Becket office, which is also the master planner. The one mile by .6 mile development has been owned outright since 1963 by Alcoa, a fact symbolically recognized in the aluminum spandrels and mullions of the bronze-glazed buildings.



Century City: growing fast



Century City has been successful in providing a prestigious address on the west side, something Beverly Hills could not do because of its anti-high rise policy. The high occupancy of the buildings on Avenue of the Stars (Century City's Champs Élysées) has kept the ambitious program on course. The plan, however, to balance the 80-acre business portion with luxury housing on a 75-acre area south of Olympic Blvd. has stopped after the completion of four apartment buildings. Executives who were expected to jump at the chance to live within walking distance of work did not jump fast enough, and by then the planned freeway link had been so successfully stalled by Beverly Hills (itself a city-within-a-city that plugs into the services and amenities of Los Angeles) that Century City was caught in a traffic vise.

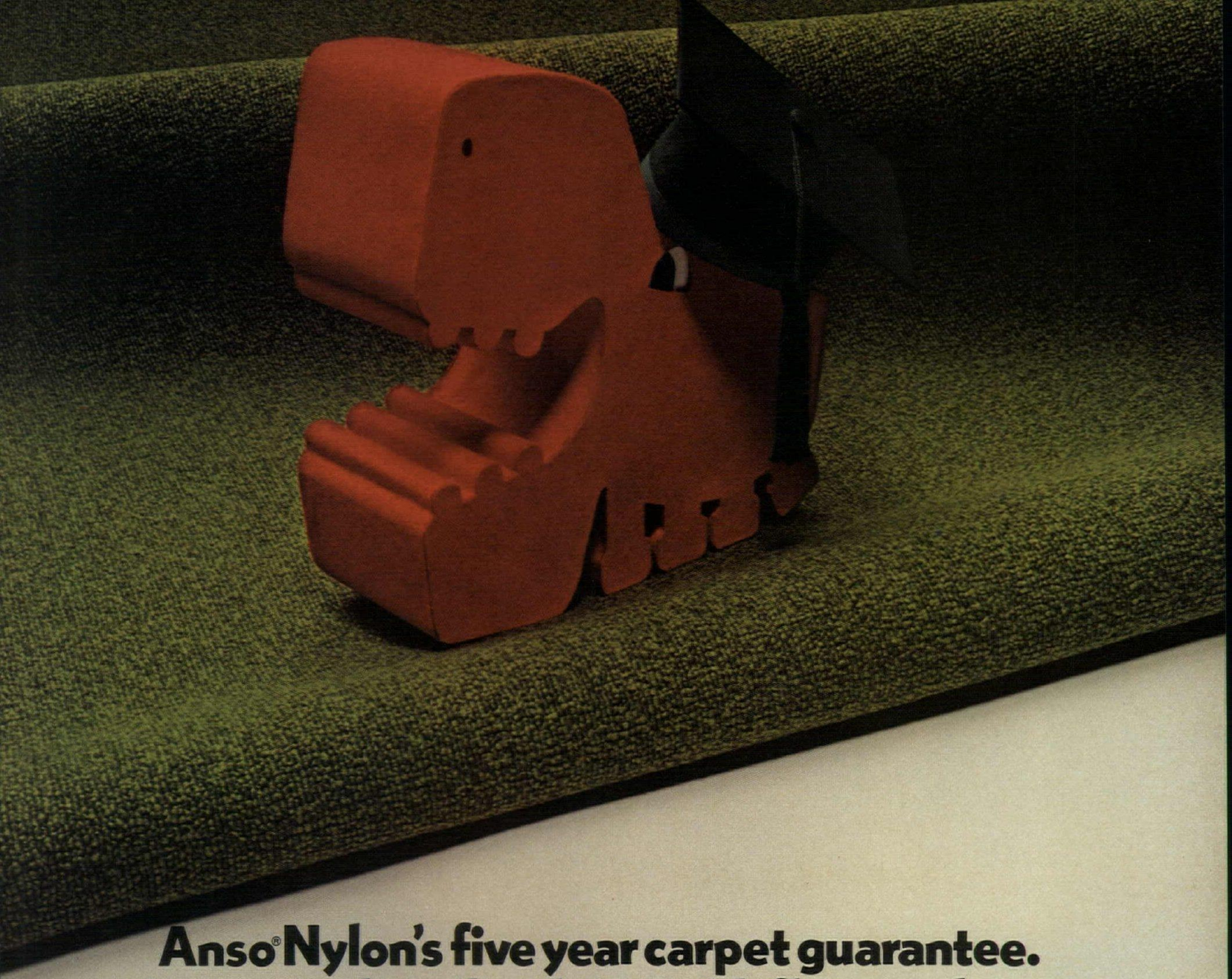
The Planning Commission had originally approved the plan because of the projected freeway and the expectation of a rapid transit system along the Wilshire corridor. Last year when the Planning Commission recommended density reductions in both the commercial and residential portions, Century City officials called it a restriction which placed a financial burden on the landowner; they held that it was up to the Planning Commission to find the solution.

There's no easy one. All the major streets serving Century City run east-west, and 85,000 through trips are made over them each day by car. On the north is the Los Angeles Country Club, to the south the Rancho Park Golf Course, the Hillcrest Country Club and the Twentieth Century Fox Studios—the latter an 80-acre sector of the original studio holdings which Alcoa now leases back and which eventually will become part of Century City.

The meager north-south outlets are feeder streets in residential districts. With neighborhood groups well organized to fight the widening of their streets, the only other course would be to cut a road across the Hillcrest-Rancho park green areas. Motor Ave., which winds through the residential district of Cheviot Hills, has become so overburdened it is now designated as "dangerous." Ray Bradbury, the writer, who lives off Motor Ave., is angered at the possibility that his wooded and serene community may be sacrificed to accommodate the increased traffic generated by Century City—a development he looks upon as a graveyard of black buildings.

Century City, with 90 percent of its land still in open space, reflects none of the chaos it has helped spawn. Broad avenues separating superblocks are traversed by pedestrian overpasses; but traffic is light enough to cut safely across the street. The regional shopping center is built over 30 acres of parking space; there is a six-level garage under the five-acre Alcoa Plaza—and enough more underground parking that cars are generally seen only when arriving and departing.

It is the relative emptiness of the grand boulevards that gives to Century City some of the fantasy of the movie sets it replaced. Since the opening last year of the 2000-seat Shubert Theater and two movie houses across Alcoa Plaza from the Century Plaza Hotel, things are changing. In a few years Century City may lose the last traces of its resemblance to the paper plans of the 1940s for the Ideal City. [Esther McCoy]



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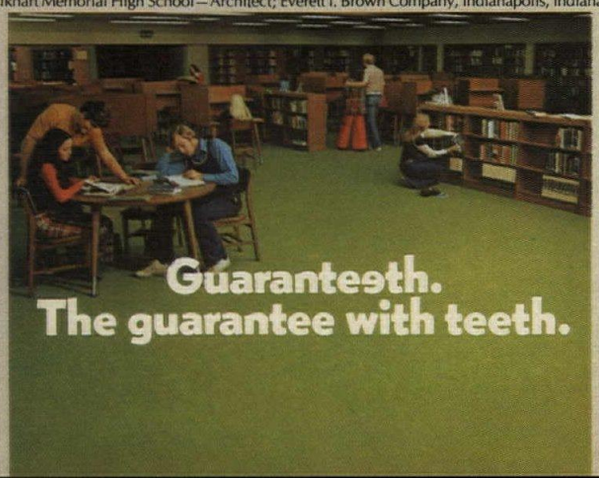

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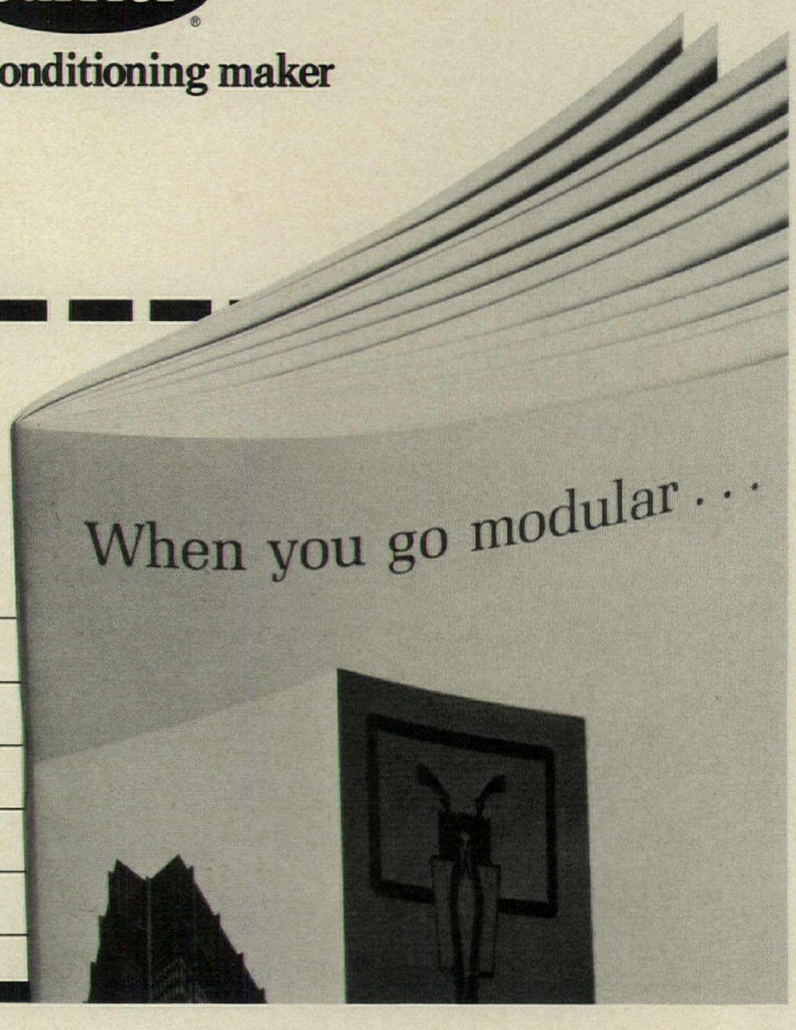

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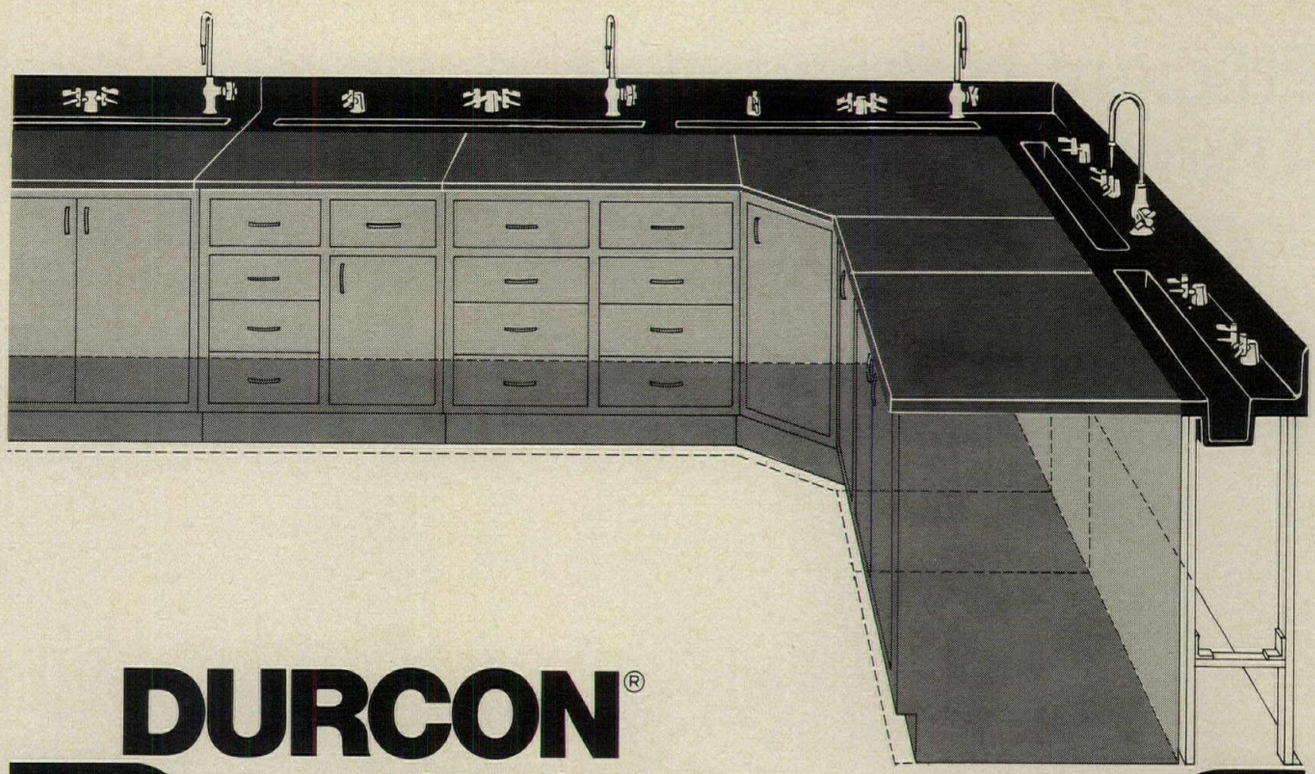

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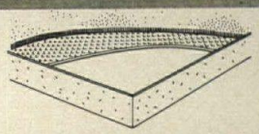
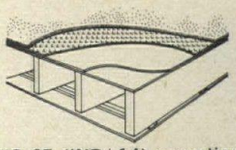


IIC 70 (INR+19) acoustical test on 5″ concrete slab with carpet and pad.



IIC 65 (INR+14) acoustical test on conventional framing with 5/8″ plywood subfloor, 5/8″ gypsum ceiling and resilient channels, carpet, pad.

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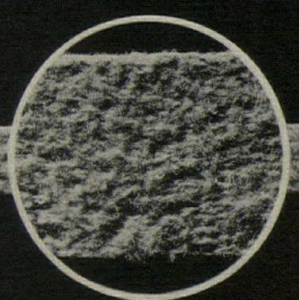

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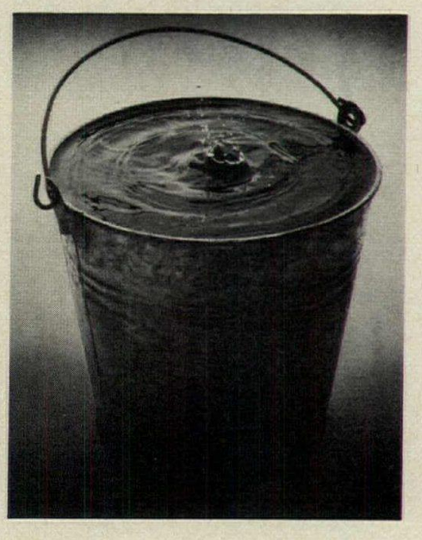

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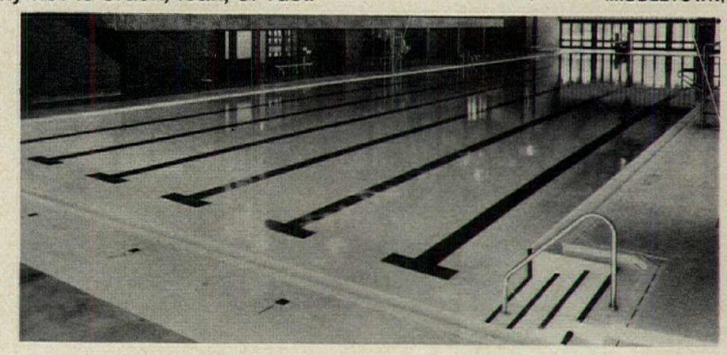


NATIONAL SWIMMING POOL INSTITUTE

Progressive Architecture

April 1973

"**Public support for the aims of the profession** is at an all-time high," observed AIA President S. Scott Ferebee, Jr. at the time of his inauguration in Dec. "We should be marching into this era of environmental awareness with bands playing and flags flying, while others scramble to climb aboard our bandwagon." Note the words "should be"; this was a call to architects to be *leaders* of public initiative on social and environmental matters.

The "aims of the profession," it turns out, had already been discounted by one crucial sector of the public, the Nixon Administration, which has since made that point very clear. Calling for Federal disengagement from subsidized housing, urban development, job training, pollution control, etc., the administration has spelled out doom for a long list of programs that architects as a body have supported.

The reaction of organized architects to the first step in this retrenchment, the moratorium on housing subsidies, was predictably indignant. "The profession of architecture," wrote the Executive Committee of the New York Chapter AIA, in a letter to President Nixon, "is dedicated to providing the best possible housing and environment for all people. As members of this profession, we are outraged by your acts which directly oppose this commitment." In his own letter to the White House, AIA President Ferebee warned that the housing moratorium could "prove catastrophic in terms of both human need and economic stability."

In his few words Ferebee managed, inadvertently, to reveal the nagging ambiguities of the architects' position. He attacks only the moratorium, the cutoff of funds with no alternative sources in sight; he does not defend existing programs as such, since architects know as well as anyone how unwieldy and inequitable they can be. And he sees in this abrupt cutoff both an apparent rejection of "human need" (to which most architects are idealistically committed) and a threat to "economic stability." Whose economic stability? The architects', among others. A nagging question recurs: to what extent is the social commitment of architects bolstered by self-interest? Assuming the majority of AIA members to be liberal by political conviction (a likely posture for people whose work is improving the world), do the rest fall into line so readily because there is a stake in it for the profession as a whole?

Mixed motives aside, the profession must now exert its informed influence to make sure that cutbacks in Federal programs are part of a comprehensive, nonpartisan *reform* (more about that next month) and that essential responsibilities transferred to the states and localities can be adequately funded and administered. And in the process, it must be recognized that even the best existing housing and urban development programs are merely palliatives—that truly equal opportunity and thoroughly sound allocation of resources depend on more radical programs.

Our economic and ecological survival now clearly depends on redirecting urban growth and redevelopment into compact, rational patterns. Schemes such as Louisville's "New Communities" proposal (p. 98), Paolo Soleri's "arcologies" (p. 76), or the conduit development pattern of Gunnar Birkerts (Mar. P/A) may seem to varying degrees impractical. But they indicate directions we must follow to escape a worsening environmental disorder. As Soleri points out, the prevailing development pattern in this country not only wastes resources, but imperceptibly robs us of our personal freedom; we are, he finds, victims of a dictatorship imposed by the distance from home to work, by segregated housing patterns, by unequal educational opportunity, by the virtual necessity of having a car, by the high cost of health care, by taxes to service accumulated debts and by other conventions of a nominally free society.

One radical program that answers many of these problems is the National Growth Policy of the AIA itself. In last April's editorial, I urged its adoption by the 1972 AIA Convention, which did in fact approve it. Next month in San Francisco, the Growth Policy will be taken up again; methods of implementing it and obstacles facing it will be examined. By now the Growth Policy has lost its star billing on the Convention Program. I hope this is not a sign that AIA leaders are intimidated by an unsympathetic national administration or frustrated by conflicting forces at lower levels of government. Eventually—all at once or bit by bit—the U.S. *must* adopt a saner policy for development. And the sooner we can bring it about, the safer the whole world will be for human life.

John Morris Dixon

Arcosanti, Arizona

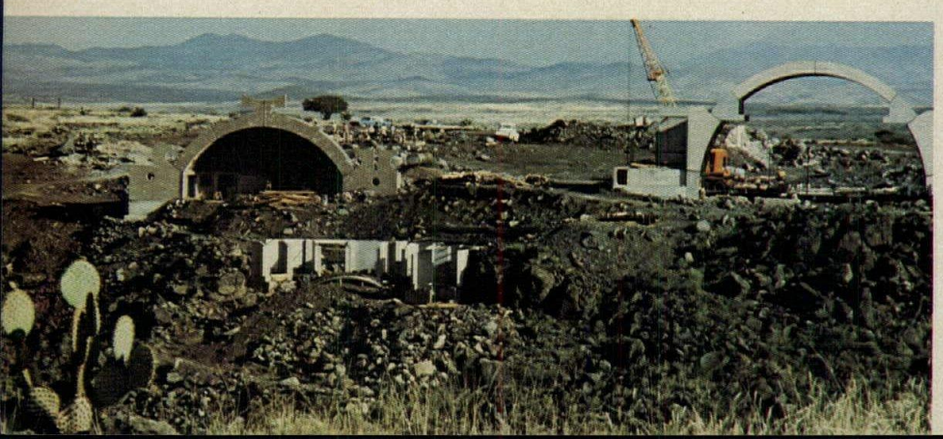
Job site for Utopia

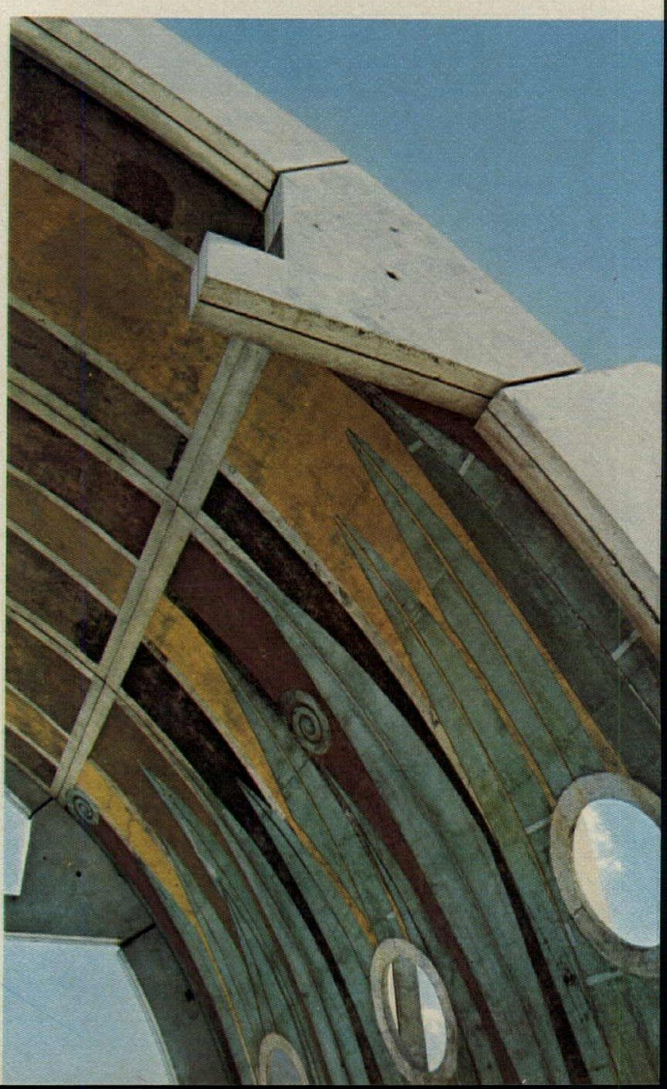
On a remote mesa in Arizona, one of Paolo Soleri's visionary communities, Arcosanti, is beginning to take shape through the labors of people who pay for the experience

The Cordes Junction exit from Route I–17 swoops up to a crossroads with a couple of service stations and a luncheonette. At first, there seems to be nothing else for miles around but rolling scrub land, broken here and there by crumbling cliffs. Then, turning off onto a dirt road, you spot the first vaults of Arcosanti rising on a distant mesa.

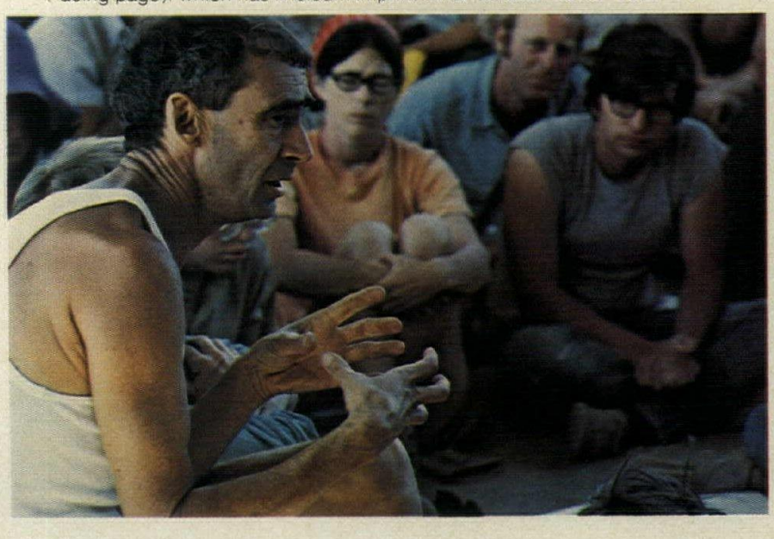
Most of us have seen Paolo Soleri's books, with pages of overlapping, futuristic drawings. And many of us have seen the models of his "arcologies"—vast megastructures designed to stride across the land—which were exhibited at the Corcoran and other museums in 1971. With their grand scale and intricate detail, these models were among the finest sculpture we have seen in recent years, but all of us who saw them wondered whether any would ever be built. At Arcosanti, a relatively modest arcology for 3000 residents is actually going up, and the process of putting it up is at least as unorthodox as the structure itself.

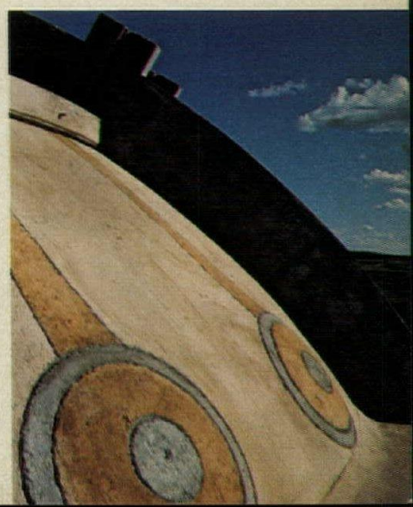
Construction at Arcosanti is carried out largely by participants in several annual "workshops." This year's program began on Mar. 5 and calls for 12 workshops of six weeks each, overlapping by three weeks so that two groups will be





Tallest element to date on Arcosanti's skyline is precasting vault (facing page), which has linoleum imprint on underside. Lower ceramics apse (below right) has silt-cast ribs, with hangers for bells cast into concrete shell. Talks with Soleri (below) relieve construction routine





there at a time. The 20 to 40 members of each workshop, plus about 15 full-time apprentices and associates, will bring the total work force on the site to at least 75, and close to 100 at its midsummer peak. From Dec. through Feb., cold weather will close down the operation.

Workshop members this year are paying a tuition of $250 plus $12 per week for food. Volunteer labor would not do, Soleri explains; without tuition there would be no steel or concrete to erect. In return for their tuition and time, participants will receive credits toward rental of living units in Arcosanti, redeemable once the project is 10 percent completed; these "co-usership" credits will be proportional to workshop contributions, by a formula not yet precisely established.

Most of the men and women in the workshop groups are of college or graduate school age. Soleri rarely accepts participants under 18 years old and has to discourage couples from bringing children, who would be exposed to the risks of a construction site in the wilds. A child-care program may soon make it possible to invite workers with families.

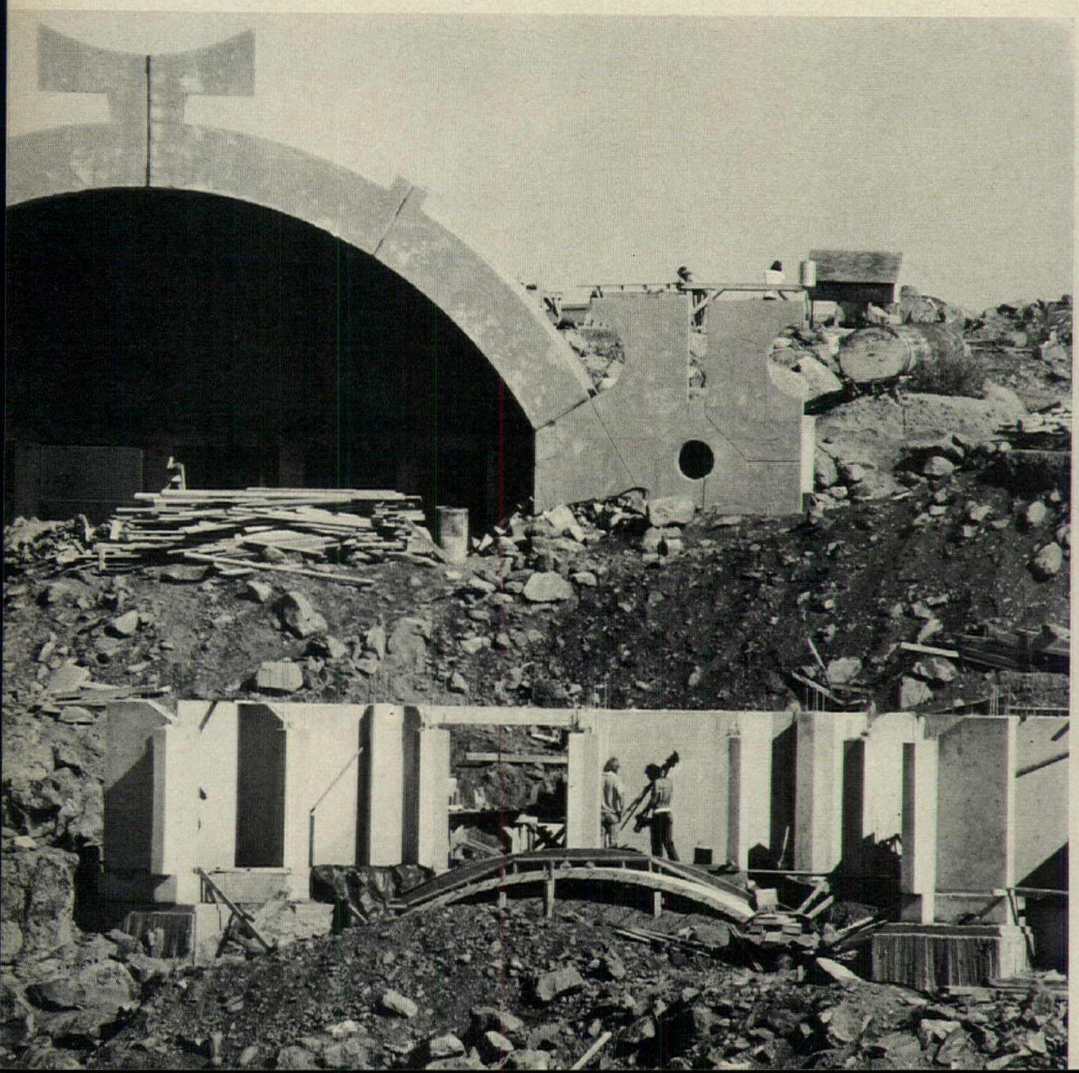
Work at Arcosanti began in 1970, after the Cosanti Foundation acquired the 860-acre site, at the base of the mesa. Temporary sheds there were supplemented in 1971 and 1972 by clusters of 9-ft concrete cubes, which gave workers cells to live in and served as a shakedown program for the more demanding construction on the mesa above.

Work up there started with footings in 1971 and rose above ground in 1972. To date, 1100 cu yds of concrete and 30.5 tons of reinforcing steel have been put in place. The tallest structure is the vault that shelters the precasting shops, where the welding and woodworking are done for the casting beds just outside. Two-story housing wings are now rising on either side of the casting vault. Also completed is the ceramics apse, which will be equipped this summer to produce ceramic bells, long an economic underpinning for Soleri's projects. A short distance down the face of the mesa are the walls of the foundry apse, where metal bells will be cast; this apse will have a second floor of residential units under its half-dome.

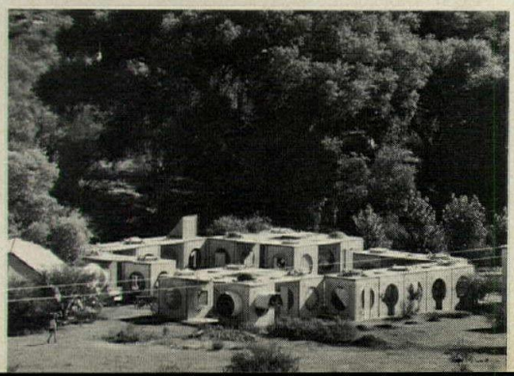
This season's program calls for further work on the housing and the foundry, plus construction of a restaurant and kitchen. These new, larger dining facilities up on the mesa will make it possible to increase the workshop forces to over 200 at a time, and offer meals to visitors as well.

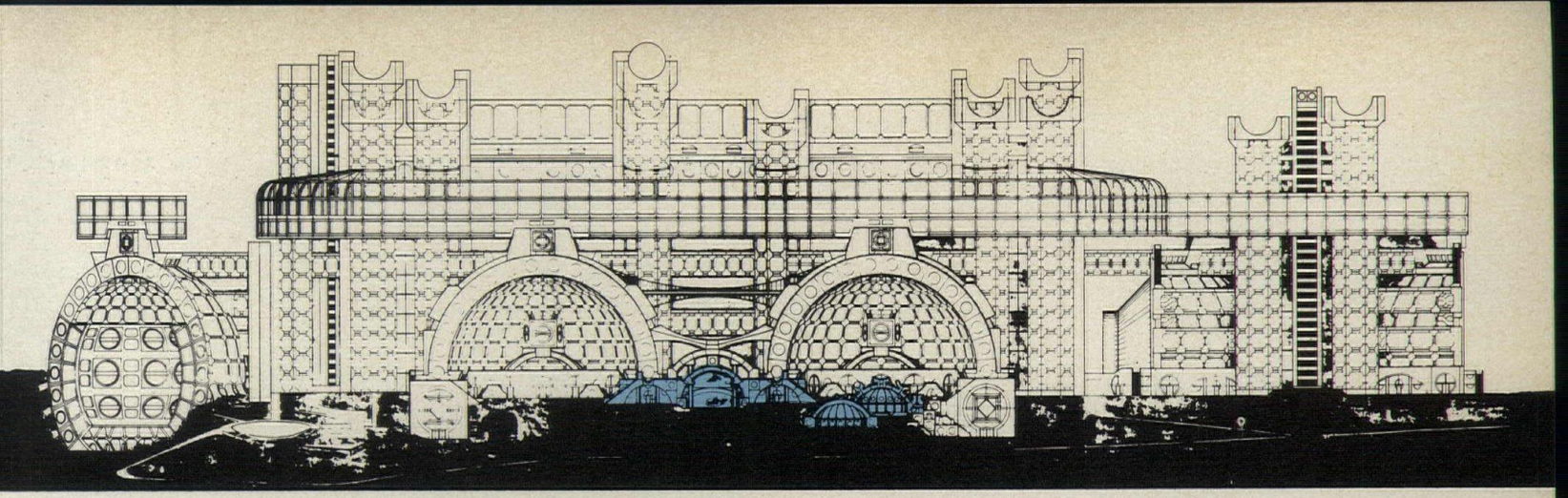
Construction techniques at Arcosanti draw on Soleri's experience at his older compound in Scottsdale, where most of the concrete vaulting was cast on sand. At Arcosanti, the cast-in-place vaulting and the precast elements—wall panels and sections of vaults—have been poured over forms shaped out of silt from stream beds on the site. The silt serves as a handy parting agent and is easily carved to produce ribs where needed. Coloring matter applied over the silt adheres to the concrete, with some of the silt itself, to create variations in color and texture. For large areas, where silt carving is too laborious, sheets of linoleum cut to predetermined shapes are used to produce indentations and to transfer color to the concrete. Foundations, columns, beams and slabs are poured in ordinary wood formwork, but for some floor slabs silt is used on top of the formwork to obtain curved, ribbed undersides.

After conducting a tour of the mesa, Soleri sits down under



Soleri checks progress of foundry apse (above) located down slope from ceramics apse (right). Living quarters are in concrete cubes at foot of mesa (below).





an arbor in the camp to talk over Arcosanti. Is there anything perverse about erecting a megastructure for 3000 people here, with untouched land extending for miles in all directions? Not at all: "Dispersal is antagonistic to life. Density is not an evil we have to accept for ecological reasons; it is the only morphology that can give us a lively existence." Land conservation, energy conservation, desegregation are important secondary benefits, but concentration, Soleri maintains, has advantages in itself "as any biologist or computer technologist can tell us."

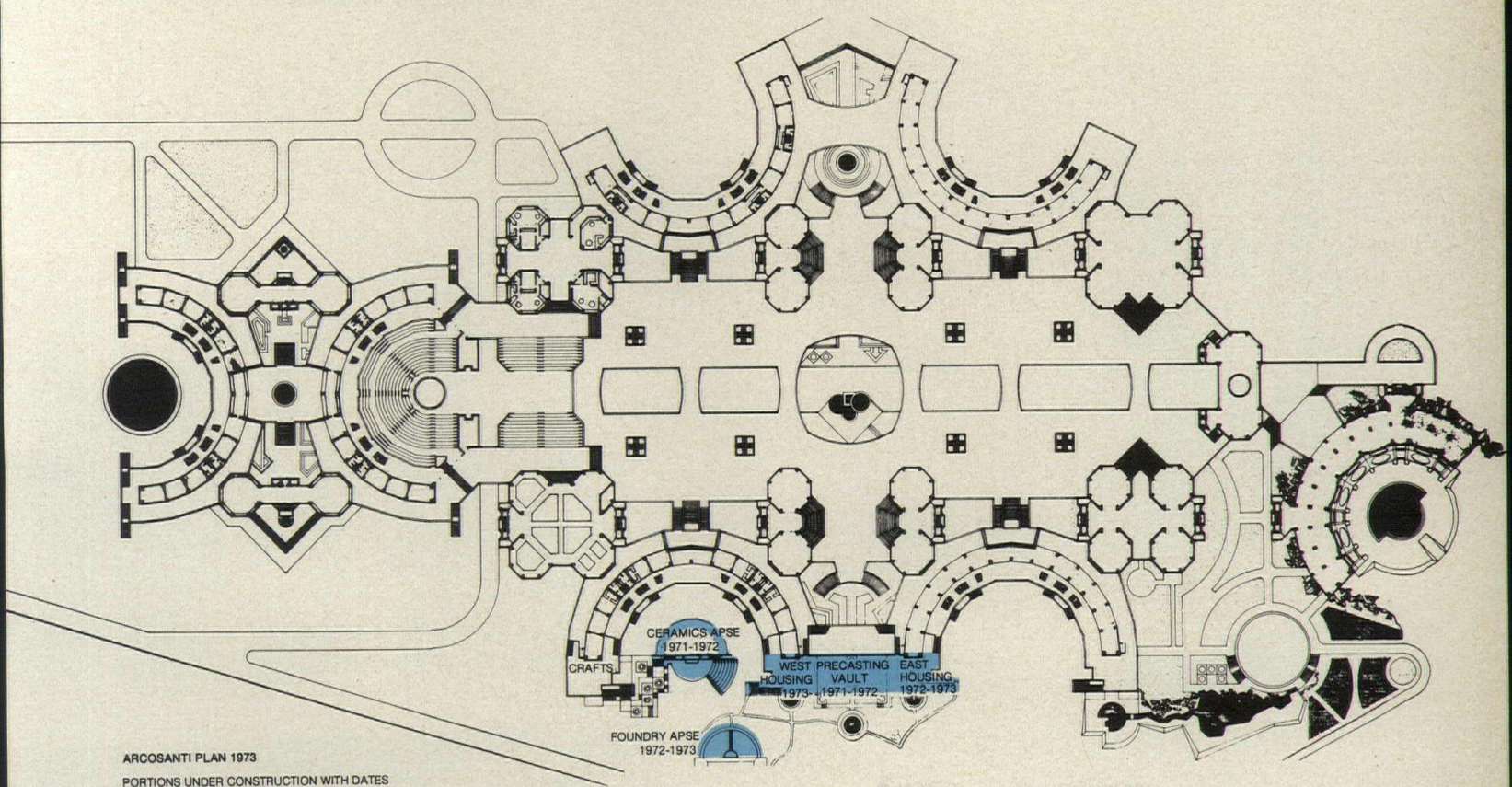
"The American idea of relating to land" he warns, "is a misinterpretation of what land and nature are. Nature is a fantastic machine that can grind you down unless you handle it carefully. If we don't, it is going to dispose of us.

"Even though Fuller may tell us we will never run out of resources, we must now accept frugality. What I am advocating is not squalid *survival,* but a rich life. I believe in a rich life; it is *opulence* that kills the spirit.

"The objective at Arcosanti is a prototype. Building a prototype is wasteful, of course, and people may come around and laugh at it when it is finished. But once this idea is developed *better than I have done it here,* it will be an answer for society."

When Soleri first came to the U.S., he went to Scottsdale to work under Wright at Taliesin West, and he has a deep respect for what he experienced there. ("You have to spend time at Taliesin," he cautions the visitor. "You have to see a few sunsets from there.") Now, in his workshops at Arcosanti, Soleri is influencing another generation of disciples—a larger and very different kind of following. Wright's apprentices were almost all architects-to-be, but the great majority of people in Soleri's workshops are from other fields: biology, medicine, anthropology, law, etc.

These workshop people will be carrying Soleri's message about alternative ways to build into many areas of decision-making. And their word will be supplemented by reports from informed tourists, who are visiting Arcosanti in increasing numbers as it grows. Both as a visible demonstration and as a learning center, Arcosanti may do more than even Soleri can hope to challenge our present patterns of living. [JMD]



ARCOSANTI PLAN 1973

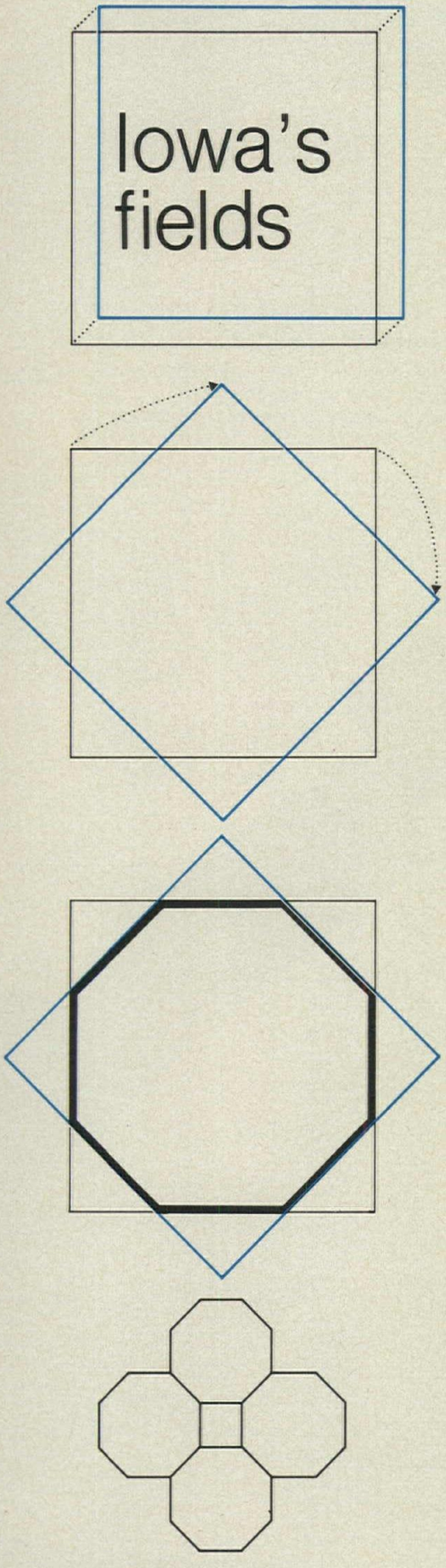
PORTIONS UNDER CONSTRUCTION WITH DATES

Job site for Utopia

Ceramics apse faces south to catch winter sun, control summer sun. Precast blocks for bell-hangers appear as raised circles in cast-in-place shell. Hornlike projection at peak will support canopy over seating platform.

University of Iowa

Iowa's fields



Three buildings for the same school provide evidence that field theory buildings are not all alike, either in appearance or in design reasoning that shaped them

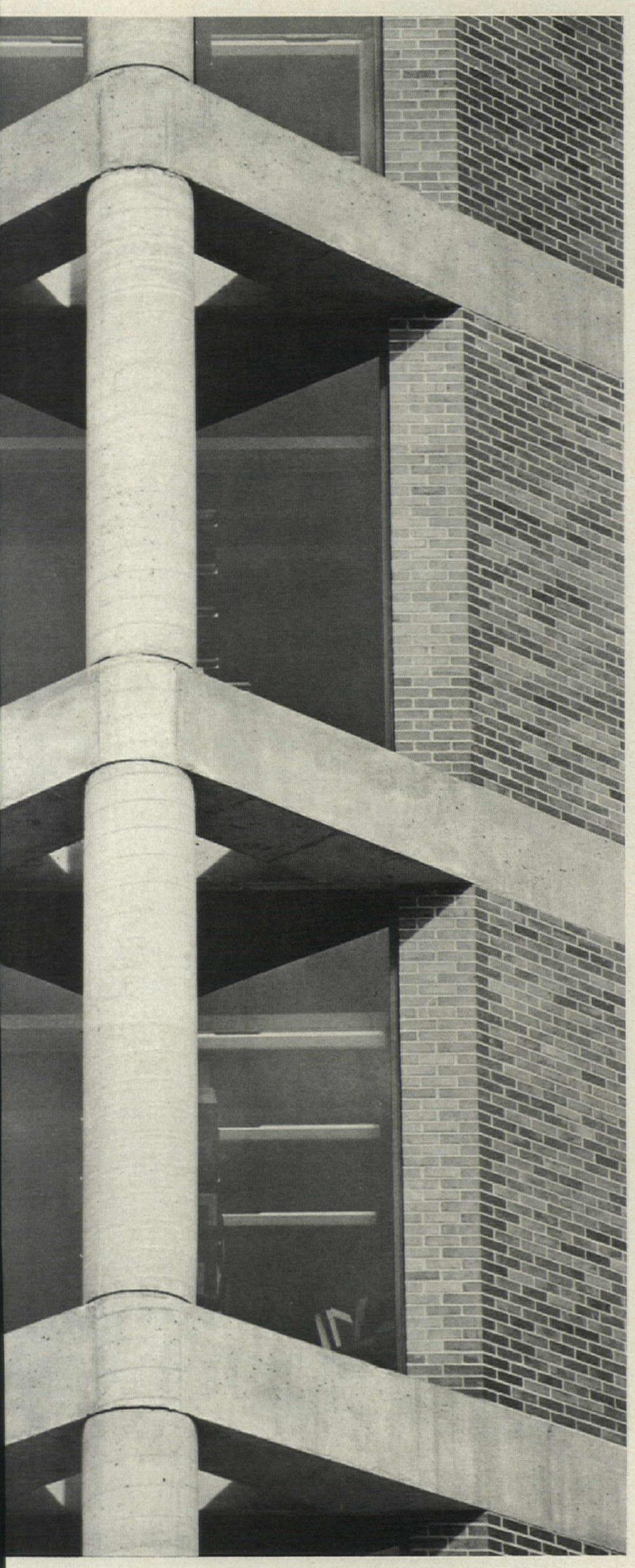
There are three new buildings at the University of Iowa that, at first glance, seem to have little in common. They all *do* share something, however—they are field theory buildings designed by SOM/Chicago's Walter Netsch and his team. Visual dissimilarity is an important option of field theory design, as demonstrated by the three Iowa buildings.

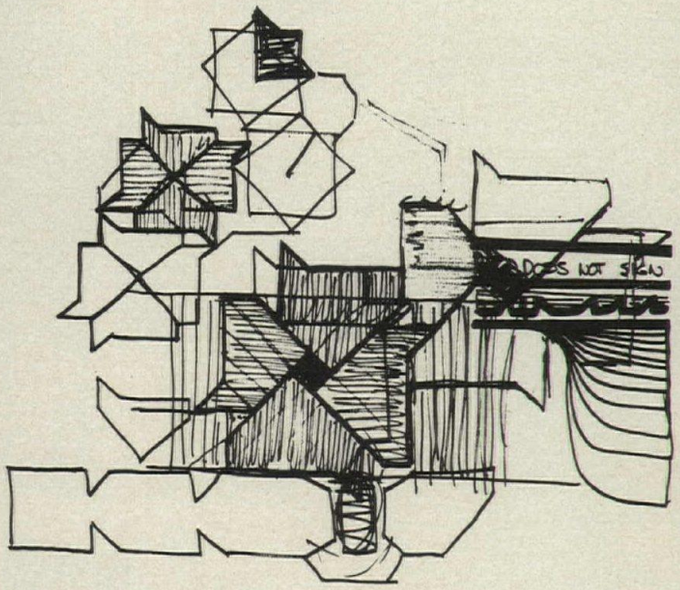
Although it has been practiced at SOM/Chicago for many years, field theory is still misinterpreted by observers, either in meaning or method of operation. Some assume that field theory design begins with a geometric lattice, onto which is imposed a plan that is then "elevated" to completion. According to Walter Netsch, however, "Field theory is an ordering device, a way of looking at things." A *field* as defined in the March 1969 P/A article on the subject, is the spatial unit or "environmental module" used by the SOM team to compose a building. It *may* express itself as a two-dimensional planning tool, a lattice of connected rotated squares (squares turned diagonally on similar squares). Other lattices may be created by truncating "star" points resulting from the rotated square. Octagons thus formed may be joined to enclose a smaller square, and so on. Combinations and extensions of these and other lattices are suggested by similar progressions and by shifting acetate lattice sheets across one another. All elements of the design *may* then be positioned along field lines.

Field theory itself was evolved from design concepts for the chapel at the U.S. Air Force Academy. There is no doubt, as Netsch's team worked toward perfection of the fields as design tools, that geometric influences ran high. Charges that field theory was only a geometric game seemed inevitable. A static, mechanical application of the lattices might even justify those charges, Netsch feels. "It is *a* way of looking at form," he reiterates. "You've *got* to look at it some way—you can't create a form without looking at it. I think that most people assume that we start out with the fields first. Actually we don't; you don't start with *any* aesthetic discipline first. You just know that it's always there. Whatever the formal structuring of your design process, whether it's in the spirit of Corbu, Mies or Kahn, it's a little bit like a language—you just have a sense that you are going to be able to speak it. It's built in, and therefore it's not a concern."

Originally, fields interested Netsch because of their potential application to urban or large scale problems. Although they have been used to solve smaller designs, he still hopes to apply them with the broader scope. In the meantime, he feels that the field theory has helped loosen up what had become a dead end in architecture. Acknowledging that not all human activity follows straight lines, and that rectangles are not always the best spaces, Netsch sees the fields as a more human alternative. They also allow him a new approach to technology. "Technological architecture, which is different from Mies, was leading to some very mundane and aggressively ugly buildings," he says. "We do not start with the material as the demigod, but with ordering as the demigod." Field theory also makes possible the visual variety to be seen in the Iowa buildings.

Earlier strict adherence to the rotated square or its deriva-





Corner of a rotated square is punctuated by a column (left) standing free of the Basic Science Building. Offices typically occupy these truncated points. Sketch (above) is the early development phase of a new field Netsch is formulating for his own house. It is not based on any previous geometry, but resulted from program/design directions.

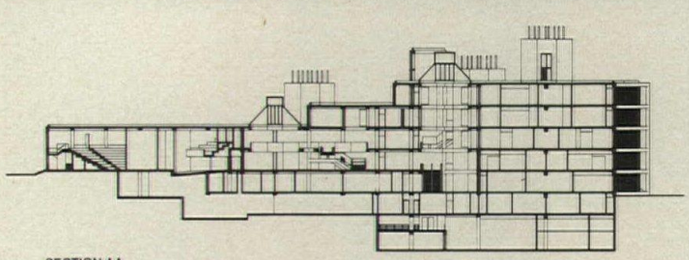
tives gave rise to what critics called excessive formalism. Netsch admits that an increasing sensitivity to such comments caused his group to search out less formal extensions of the fields. Eccentric positioning of elements, use of other components of fields, triangles and radials within fields have all been tried. For some, the tendency to fall back on the rotated square is still there. Netsch feels that, since all geometry came from that arabic symbol, it might be more comfortable to work with than other fields. Comfort, however, is not all; "it also could be very dull," he says. Having learned how to deal with fields, and though still very much committed to them, he has not rested on his lattice acetates. One new lattice he is working on uses triangles within a field, but is not derived from the rotated square. Even orthogonal (rectilinear) schemes have been accepted. According to Netsch, "We've had to learn, where either the shape of the site or the technological implications of the program mean an orthogonal system, to use that system and to respect it. We would still look for a field application, but we've gotten over the feeling that we're carrying a banner down the street. I think that one thing you have to be able to show is that any good conceptual design today *has* to be able to work back to an orthogonal design in some way."

Beginning with the problem—familiar to anyone who has detailed even a rectilinear-grid building—of whether the grid lines fall on partition centerlines or on wall faces, compromises must be made. One of the beauties of field theory, Netsch feels, is its capacity to adapt to program dictates, and to an individual designer's way of looking at spaces. While not all of Netsch's team members see the fields as abstractly as he does, all *do* have a way of communicating within the broad context of field theory. "I'm personally not a purist," Netsch says. "Still, the tendency to stick with the rotated square is understandable, because I'm not convinced yet that everyone wants to go through the exploration that it takes to develop new fields, or even to modify existing ones. It's kind of a personal taste problem."

Basic Science Building

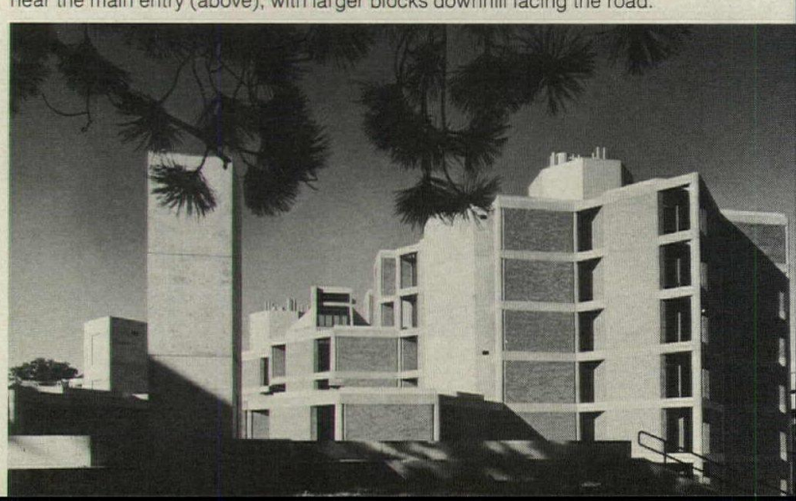
Chronologically, the design of the three University of Iowa buildings began with the Basic Science Building. In some ways, it comes closest to being the type of problem for which field theory was developed. In its scale, diversity of requirements and surrounding earth forms, Basic Science presented a prototypical problem. The design process did not begin with preconceived fields, unless a "knowledge of the language" is considered a preconception. It started with use relationship diagrams and a pragmatic separation of program needs. As that work continued, dictates of the site were considered. A planned mall would later intersect the site; a ravine and a road suggested a rough "S" shape for the building's spine.

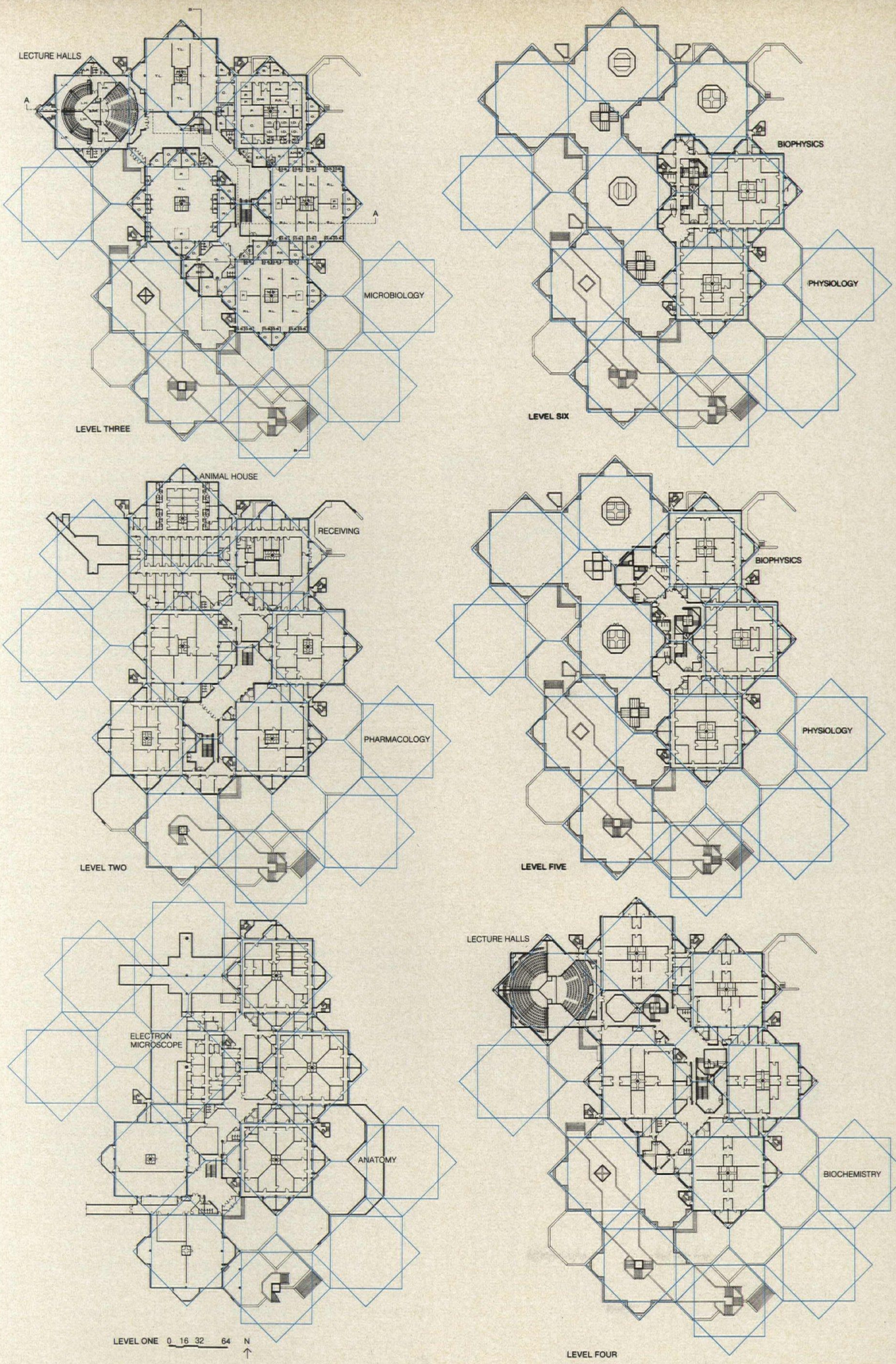
Earlier studies called for laboratories arranged around service cores. Taking the basic elements composing the circulation as the "S" form, laboratories could then be added along and on either side of the spine. From previous knowledge of fields, the architects knew that within a formal rotated square/point-touching system, there is a series of octagons that could represent the small circulation elements. Further, these octagons could form the desired "S." With lab modules in the basic square, offices were located in the truncated



SECTION AA

Building scale and massing break into smaller elements on the uphill side near the main entry (above), with larger blocks downhill facing the road.




LECTURE HALLS
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A
MICROBIOLOGY
LEVEL THREE
BIOPHYSICS
PHYSIOLOGY
LEVEL SIX
ANIMAL HOUSE
RECEIVING
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LEVEL TWO
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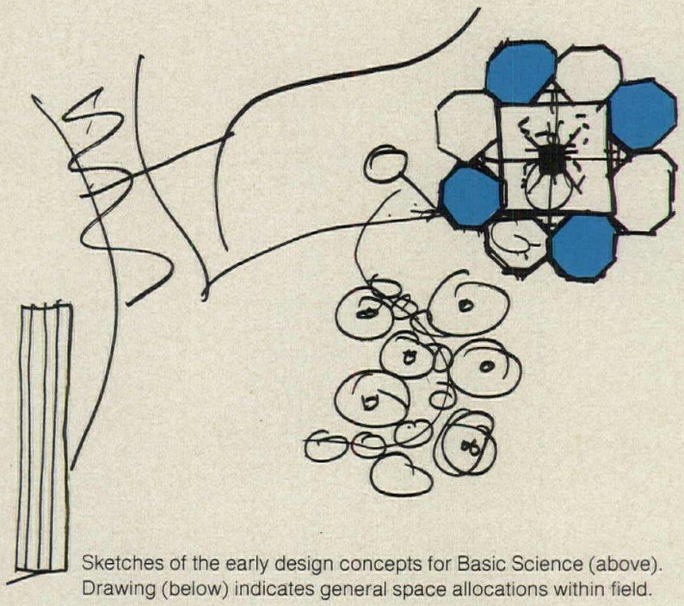
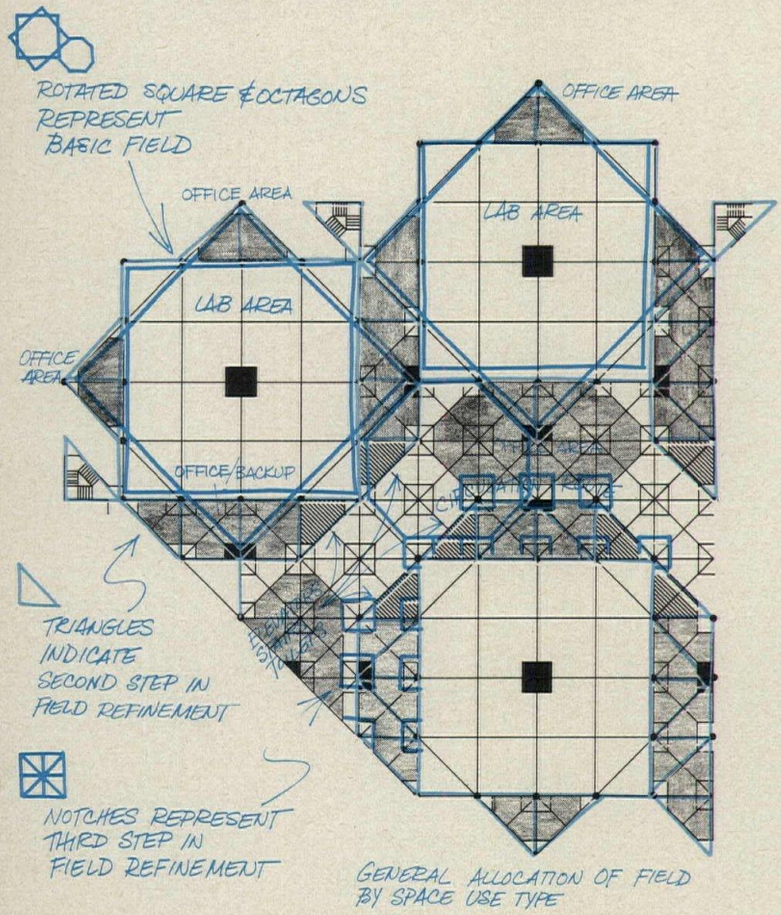
ELECTRON MICROSCOPE
ANATOMY
LECTURE HALLS
BIOCHEMISTRY
LEVEL ONE 0 16 32 64 N
LEVEL FOUR

points formed by rotation. Columns form the points, standing free of the truncated wall position, but engaged by brick walls at the other corners.

Both program and site are well served by the flexibility of the lab modules. Their scale and nature work within the system to allow the building to grow up the hillside without making the total overwhelming. The only massive aspect of the building is the downhill side, close to the road, where the scale is not objectionable. In addition, the largest departments had to be nearer the ground, permitting a systematic carving away of upper levels. This irregular stacking of complex elements gives the building a constantly changing mass



Sketches of the early design concepts for Basic Science (above). Drawing (below) indicates general space allocations within field.



and, if the budget had allowed, would have provided a delightful progression of rooftop walkways. Students could have left the sixth level by either interior or exterior routes. The outside walk would have led across roofs and down stairways to a point near the main entry.

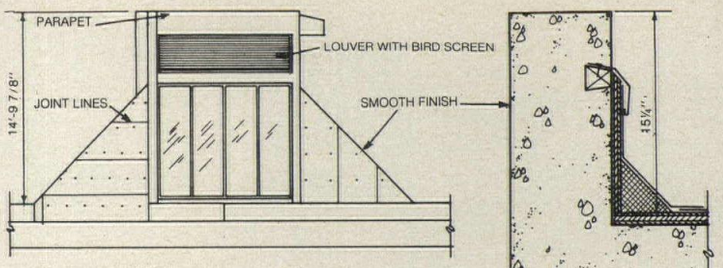
Another cost-cutting measure was not at all detrimental. Original plans for brick walls in the main walkway inside the building were changed to gypsum board. Netsch feels that the substitution was an improvement, eliminating a carryover from the Architecture and Art Building at the University of Illinois Chicago Circle Campus. "It was the *integrity of materials* syndrome," he says. "No one talks about that anymore, because design attitudes change. Things have become much more abstract than they were in the days of the Depression . . . the years of our professors, when everything was precious." The loss of two of the four proposed skylights caused the interior walkways to become more hierarchical than the architects intended, but Netsch is not disappointed. "It's a bit more churchlike than we'd planned," he says, "but that only serves to increase the skylight impact at the main stair."

Laboratory modules have been subdivided along various orthogonal and field lines, depending on space and equipment requirements. This fact seems to underscore Netsch's requirement that fields be able to work back to orthogonal planning where necessary. An original concept for modular, additive lab furnishings (P/A, Mar. 1969) was "about 10 years ahead of its time, technologically," according to Netsch. Its development is only now reaching the go ahead stage.

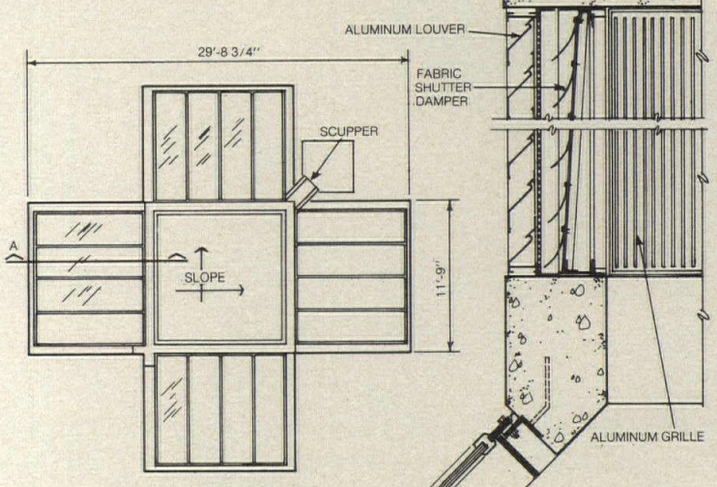
"Field theory," Netsch remarks, "is not a freshman architectural exercise. It requires prior knowledge of how to build a building, since it is not basically a column system." In similar terms, the Basic Science Building is not an elementary statement. It is the complex resolution of a complex program, a serious research and learning environment. It is a working building, and its interior finishes reflect that—a student union it is not. It *is* a good neighbor, especially on the uphill (main entrance) side, where its complexity conceals its actual size.

Data

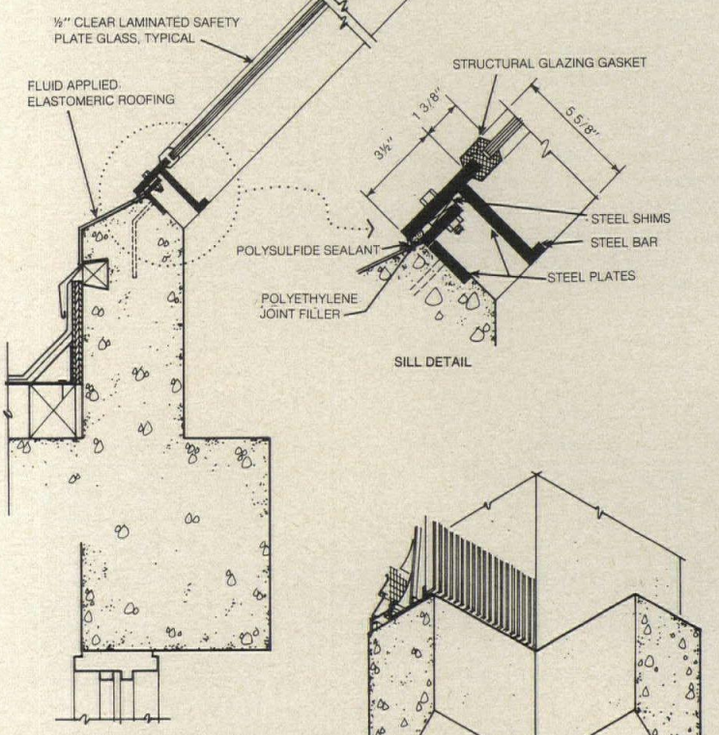
Project: Basic Science Building, the University of Iowa, Iowa City.
Architect: Skidmore, Owings & Merrill (Chicago); design partner, Walter Netsch; project manager, Robert Cohlmeyer; Sr. studio architect, Maris Peika; technical coordinator, Alan Hinklin; structural engineer, Manu Shah; mechanical engineer, Shepard Eisenberg; sanitary engineer, Fred Schwartz, electrical engineer, Joseph Ziemba.
Associated architect: George L. Horner, university architect.
Program: science building, one-third of which is to be used for teaching and two-thirds for research in anatomy, pharmacology, microbiology, biochemistry, physiology and biophysics. Backup facilities for an animal house, electron microscope suite and lecture halls.
Site: sloping land over an existing road, which was rerouted, with a wooded ravine to the south. Part of a master plan, the site is at the end of a proposed pedestrian mall linking the medical campus.
Structural system: concrete foundations, 24 in. round concrete columns, 24" x 24" concrete beams, flat slab concrete floors. Bay sizes for lab modules are 39' x 39', and for other areas, 19'-6" x 19'-6".
Mechanical systems: high velocity terminal reheat system, with electric radiation, chilled water for air conditioning from university's central plant. Central shafts in each lab module supply all services. Shaft increases in size on upper levels, as fume hood and building exhausts accumulate. All air is exhausted (100 percent).
Major materials: interior, hardened concrete floors (sealed) in most areas, seamless flooring in radioactive areas and terrazzo in animal facilities, exposed concrete ceilings with acoustic clouds, block and gypsum board walls, painted; exterior, exposed concrete columns with brick infill, bronze glazing.
Costs: $12,987,263 ($36.02/sq ft).
Consultants: laboratory furniture, Joseph Brunnacci; acoustical consultant, Paul S. Veneklasen & Associates.
Photography: Orlando Cabanban.



ELEVATION OF SKYLIGHT



PLAN VIEW OF SKYLIGHT

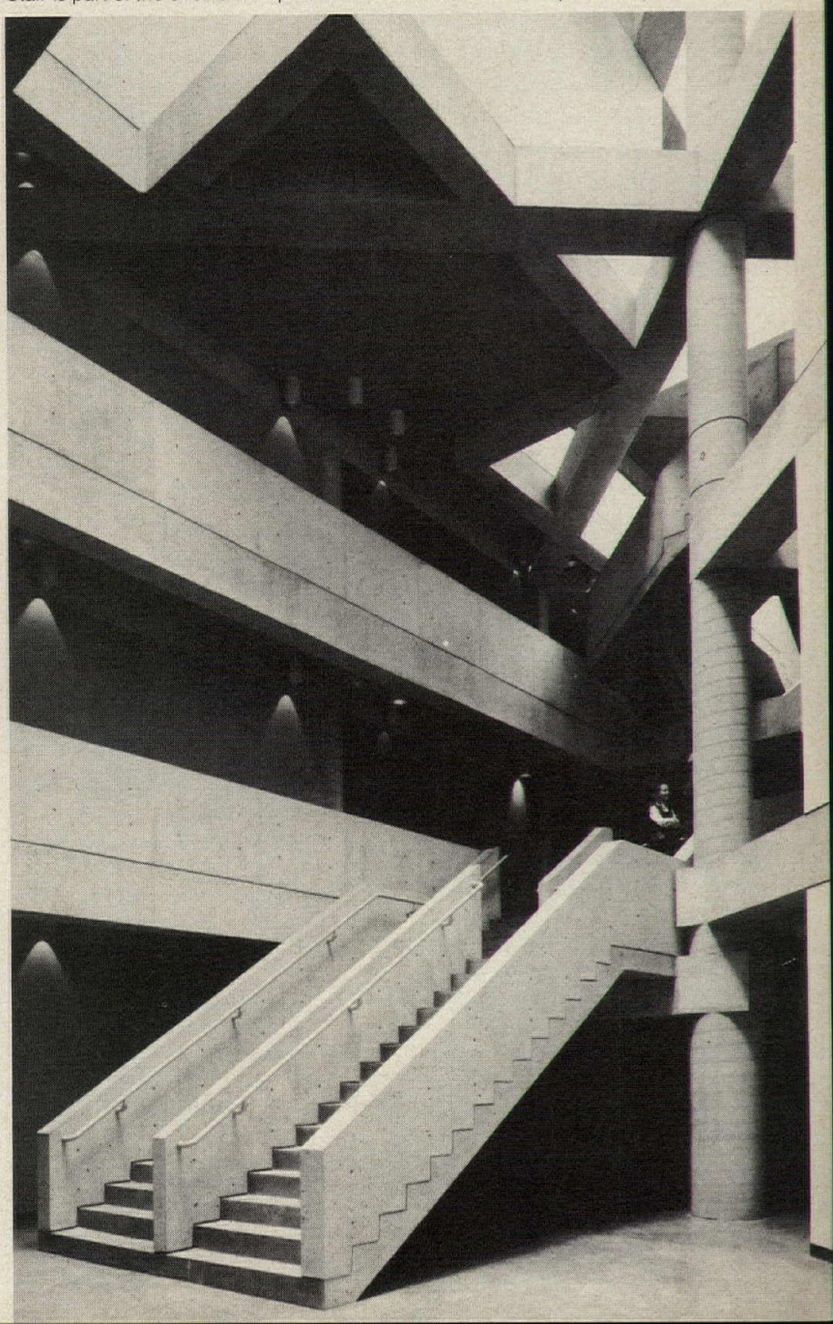


SILL DETAIL

PARTIAL VERTICAL SECTION AT AA

PARTIAL INTERIOR ISOMETRIC

Column at the point of a rotated square picks up beams along field lines. Stair is part of the circulation spine formed between rotated squares.



Health Sciences Library

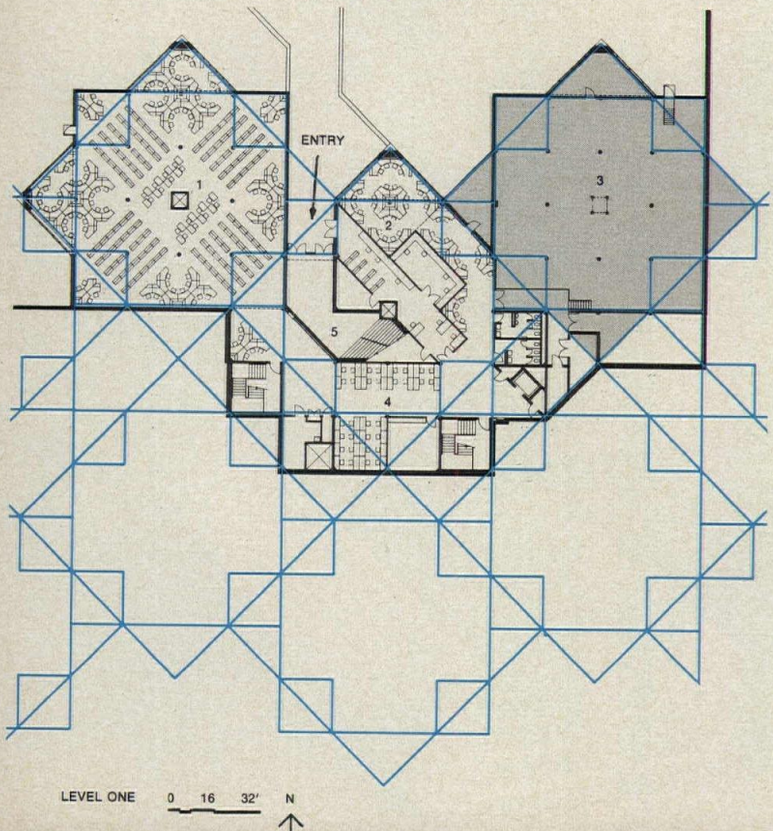
If Basic Science had the scale and complexity for which field theory was developed, the Health Sciences Library (scheduled for completion in mid-1973) adds the third dimension to the fields. By changing emphasis of the fields from level one up through level four, a transition occurs in section as well, developing a three-dimensional diagonal. "The library is much more formal, as a complete building, even though it's on a hillside," Netsch says. "The progression from a full formal rotated square to a square, through an octagon to the Greek cross, makes this building our best example of that option of fields. It is a pure resolution of form, whereas Wells College Library [P/A, Mar. 1969] is a transitional resolution." Two different design schemes were carried along concurrently quite far, he says, one formal and one much less formal. Finally the choice was made, not because of the formality, but because of the clear opportunity to show the transition and express it in a "nonextruded" form. Although the geometric transition is formal, some very informal spaces and volumetric interplays result. As with Basic Science, the fields show their ability to fit into the hillside of the library site.

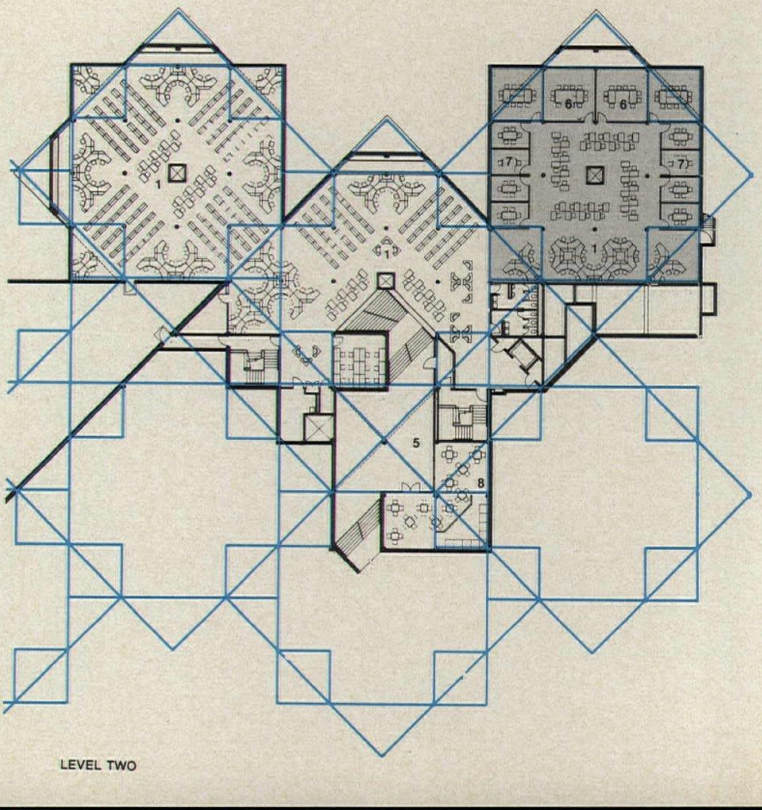
Structural bays are 18 ft square, continuous in both directions, to accommodate stack spacing. Original plans to use a thinner skin, possibly of plastic, did not work out and first weathering steel, then concrete, was substituted. Sloping concrete walls will have a concrete-color fluid roofing.

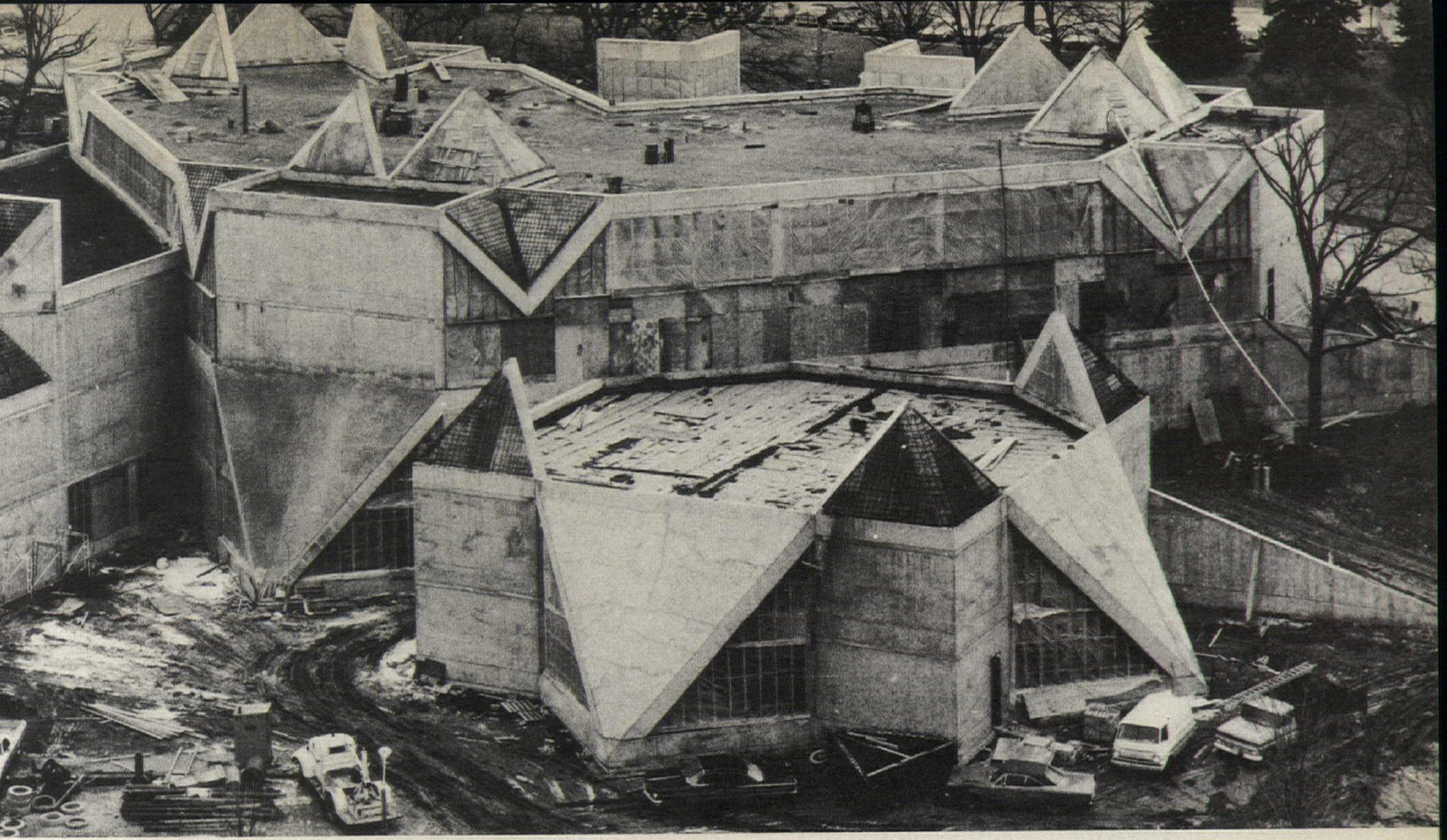
One major feature of the library is the enclosed passage through the building. Entering at either the first or the third level, a pedestrian can pass through without entering the building; a snack bar and a study room will be accessible from the walkway 24 hours a day. Newton Road, in front of the library, is to become the proposed medical campus mall which will terminate at the Basic Science Building.

Data

Project: Health Sciences Library, the University of Iowa, Iowa City.
Architect: Skidmore, Owings & Merrill (Chicago); design partner, Walter Netsch; project manager, Robert Cohlmeyer/Alan Hinklin; Sr. studio architect, Maris Peika; technical coordinator, Kenneth Wertz; structural engineer, Manu Shah; mechanical engineer, Shepard Eisenberg; sanitary engineer, Donald Mills; electrical engineer, Raymond Koecher.
Associated architect: George L. Horner, university architect.
Program: library to serve medical campus, for undergraduates, professional students and professionals in the health sciences, including many not associated with the university.
Site: sloping site adjacent to future pedestrian mall, with many fine old oak trees.





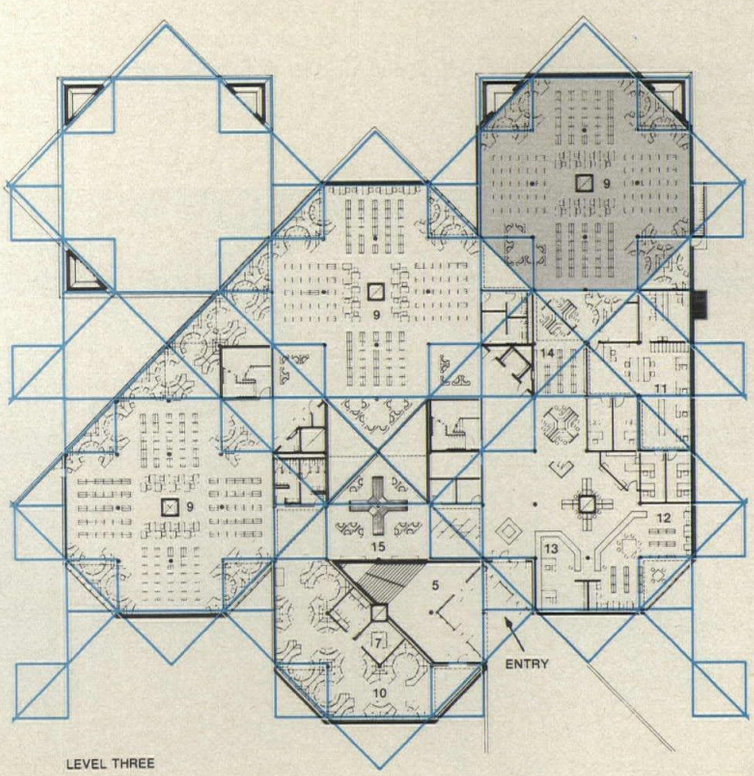


Structural system: concrete foundations, poured concrete columns, floors, roof and walls. Bay size is 18′ x 18′ to accommodate bookstacks.
Mechanical system: low velocity terminal reheat and steam heated fin-tube radiation. Separate HVAC for rare books.
Major materials: architectural concrete (plastic forms) is major material on exterior, with bronze or clear glazing, depending on exposure; interior, exposed concrete, gypsum board and concrete block walls, gypsum board ceiling, carpeted floors (not in contract). Fluid applied roofing on sloped surfaces.
Costs: $3,119,566 ($35.01 / sq ft).
Consultants: library consultant, Louise Darling, UCLA librarian.
Photography: Orlando Cabanban.

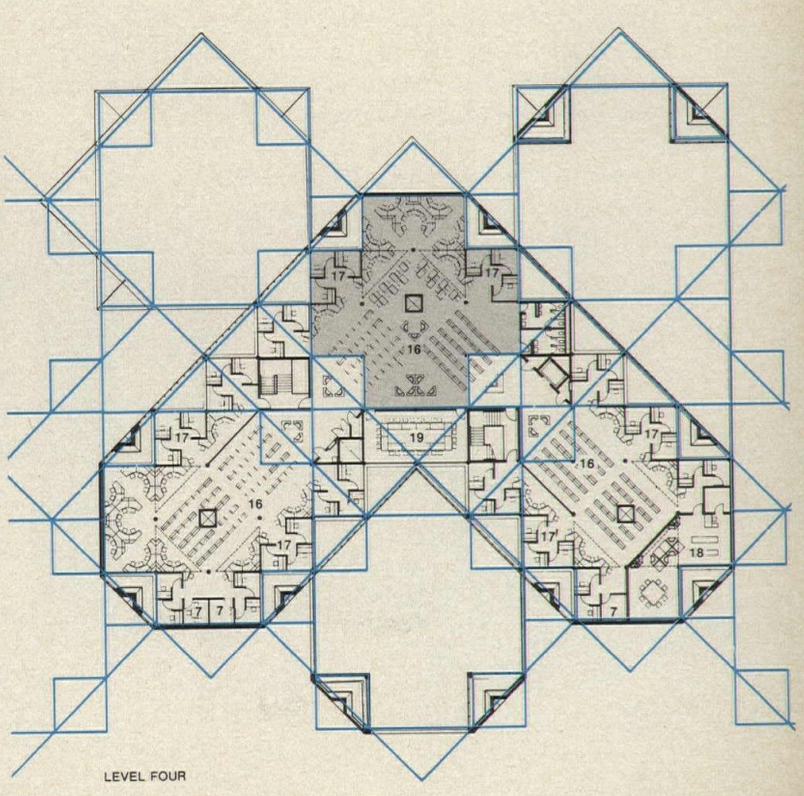
Third dimension of fields in the library is a result of changes in plan emphasis for each floor level. Starting with a rotated square on the first level, successive plans stress the square, the octagon and the Greek cross.

Legend

1 Older Journals
2 Assigned Carrels
3 Mechanical
4 Audio Visual
5 Through Walkway
6 Seminar
7 Group Study
8 Food Service
9 Recent Journals
10 24 Hour Study
11 Staff
12 Reserve Books
13 Circulation
14 Reference
15 Display
16 Books and Monographs
17 Faculty Study
18 Rare Books
19 Conference

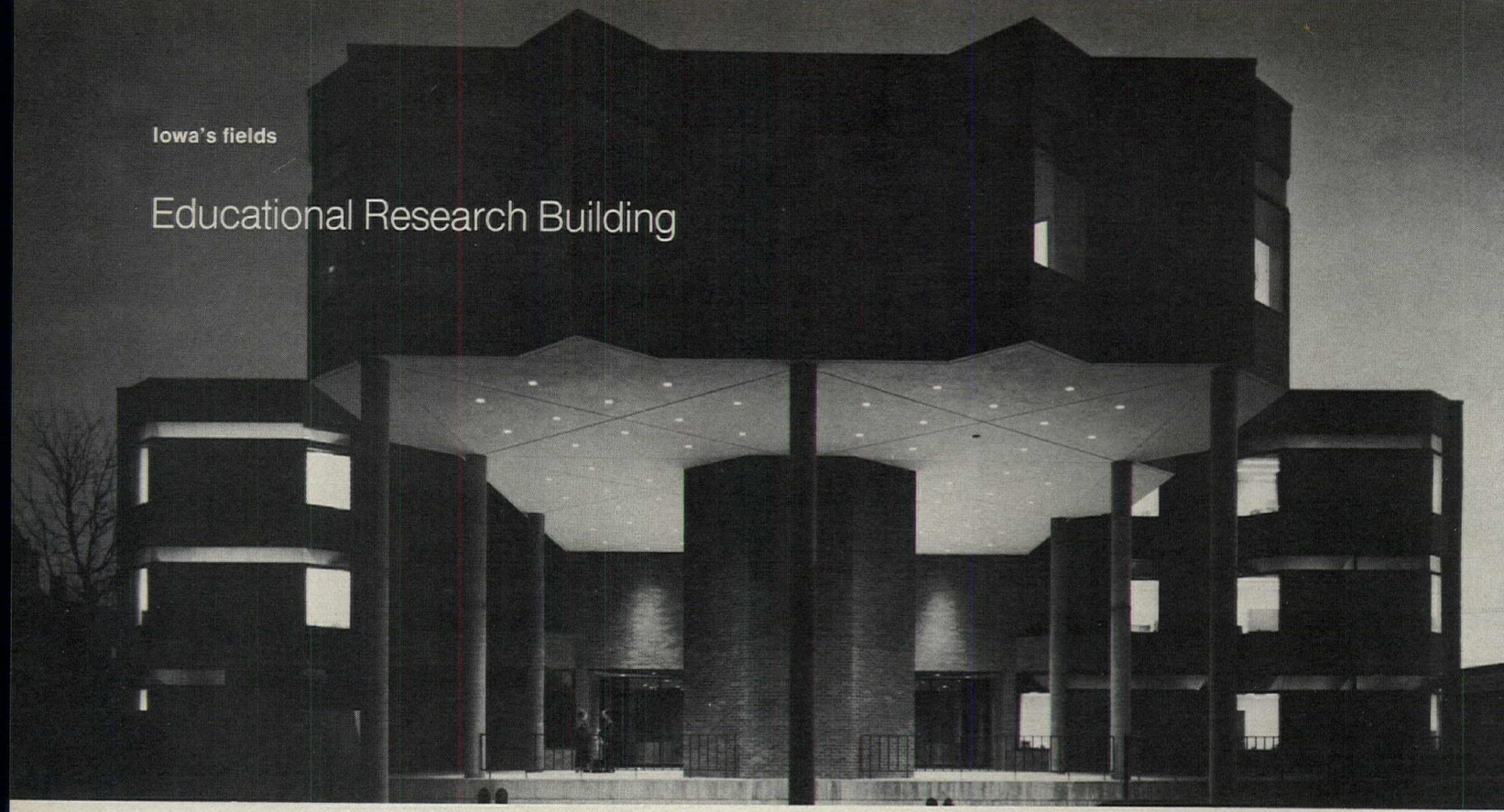


LEVEL THREE



LEVEL FOUR

Educational Research Building



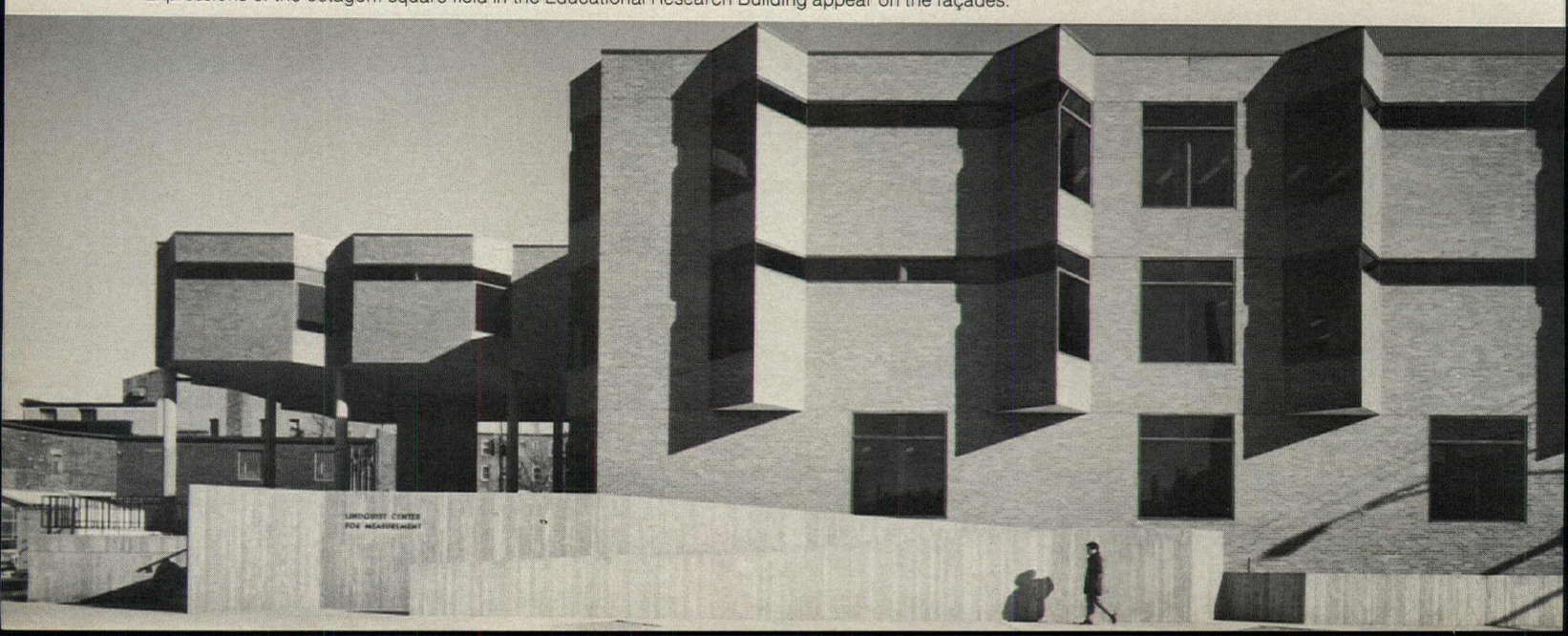
Unlike the library or Basic Science, the Educational Research Building was designed for a flat city site. It is an office type loft structure, with square structural bays. The field chosen is an octagon/square, instead of the rotated square. While the completed building occupies only one quarter of a city block, the design provides future expansion to the whole block with the projection over the entry the connecting link to future phases.

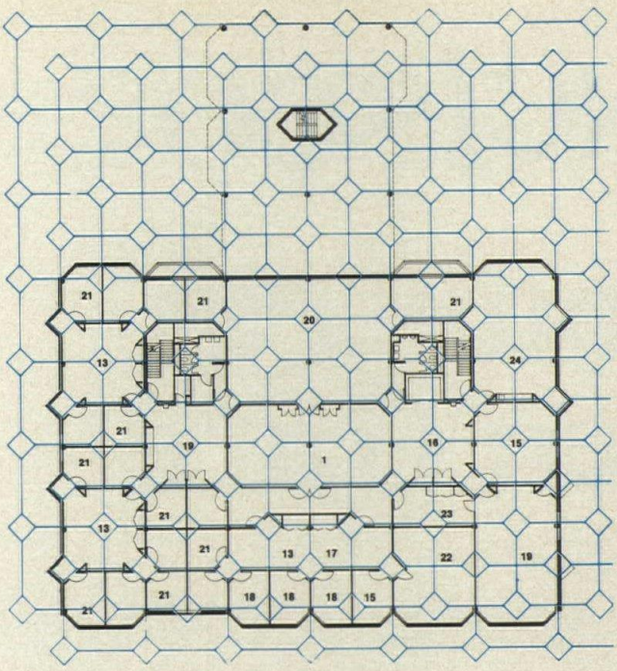
Two main design objectives were set by the architects: to eliminate as much corridor as possible and to let the fields show through a thin-skin expression. The first was accomplished by linking activity nodes, so that circulation is from work area to work area. The only floor that returns to the orthogonal planning is the basement, where heavy computer equipment and keypunch operations are housed. "When you have all of that linear stuff put together at five feet on center," Netsch quips, "you're not really dealing with people. You're dealing with things, and they usually fit in the same kind of container they came in. Fortunately, we aren't shaped like a box, so we *can* fit in other spaces."

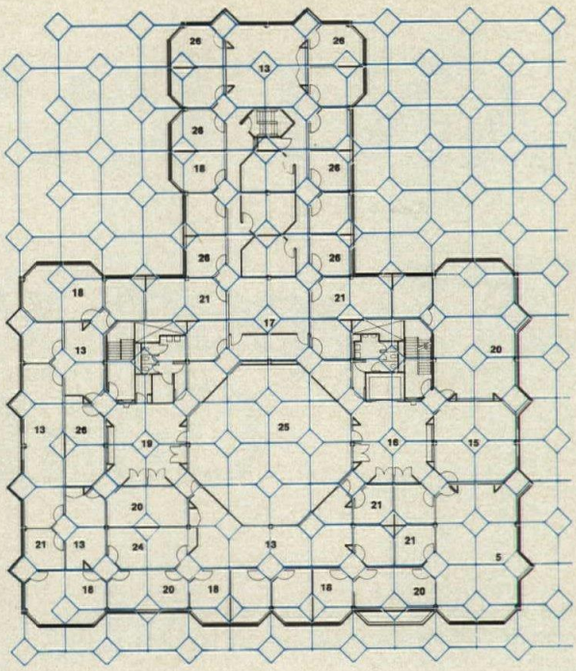
Fields are expressed on the building elevations with projecting half-squares and octagons. The suggestion of third-dimensional fields appears at windows, where suspended ceilings slope up from their standard height to higher window heads, funneling more light into the spaces.

One thing is clear from discussions with Walter Netsch: he will not long remain within the relative comfort of rules from past field theory experience. In addition to using field theory as a way of looking at things, he constantly looks for new ways of looking at fields. Geometric ordering of architecture is not unique to Netsch, but the extent and steady change of field theory set it apart. "You see, to be able to work on a building, find its form and then suddenly get its field later—that would be *intuitive* to me," he says. "I'm sure, however, that some people think of that as highly *inventive.*" Almost all design begins, consciously or unconsciously, with a learned body of knowledge. The Golden Mean, Le Modulor, observations and past experiences—all can have a bearing on how a designer orders his creative process, and its result. So can field theory. [JM]

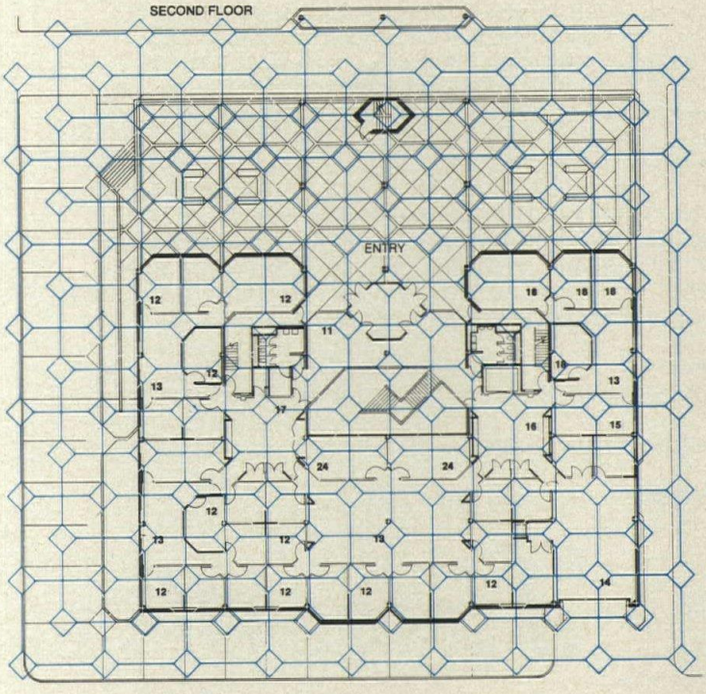
Expressions of the octagon/square field in the Educational Research Building appear on the façades.



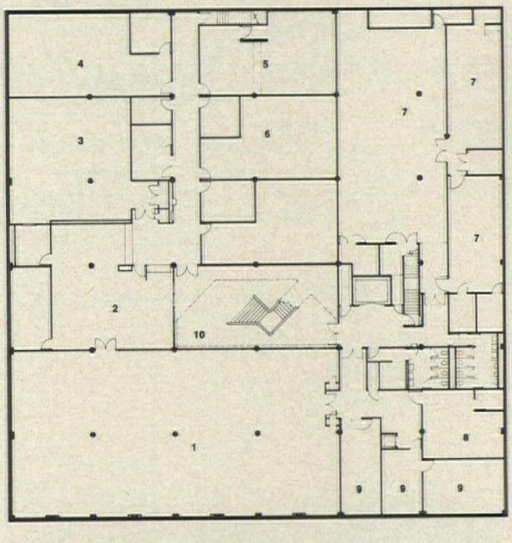




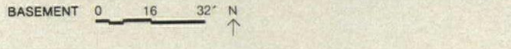
THIRD FLOOR



SECOND FLOOR



FIRST FLOOR



Legend

1 Computer Machine Room
2 Printer/Reader
3 Data Preparation
4 Keypunch
5 Library
6 User Work
7 Mechanical and Electrical
8 Development Lab
9 Computer Support
10 Observation
11 Lobby
12 Programmers
13 Secretarial
14 Loading
15 Conference
16 Elevator Lobby
17 Reception
18 Administration
19 Lounge
20 Laboratory
21 Staff Offices
22 Audio Visual
23 Vending
24 Work Room
25 Shared Seminar Facility
26 Faculty Spaces

Data

Project: Educational Research Building, the University of Iowa, Iowa City.
Architect: Skidmore, Owings & Merrill (Chicago); design partner, Walter Netsch; project manager, Robert Cohlmeyer/Alan Hinklin; senior studio architect, James DeStefano/Wayne Tjaden; technical coordinator, Rimantas Griskelis; structural engineer, Manu Shah; electrical engineer, Raymond Koecher; mechanical engineer, Shepard Eisenberg; sanitary engineer, Donald Mills.
Associated architect: George L. Horner, university architect.
Program: office and work spaces for five agencies dealing with educational research, including a large computer and keypunch operation. First phase of a building, with provisions for the expansion of facilities; final building to fill the entire site.
Site: relatively flat city lot, bounded on two sides by streets. First phase occupies one-fourth of city block, with final stages to occupy full block.
Structural system: conventional flat slab concrete floor system with drop panels and columns grounded on steel H-pile foundation.
Mechanical system: terminal reheat air system with supplemental hot water radiation at perimeter.
Major materials: concrete, with brick veneer and bronze glass on the exterior; acoustic tile ceilings, gypsum board walls and vinyl asbestos tile and carpet on floors.
Costs: $2,911,000 ($36.68/sq ft).
Photography: Orlando Cabanban.

SAN FRANCISCO

open your

Golden Gate!

IN THE FOLLOWING PAGES, WE PRESENT A PORTFOLIO OF SCORES FOR YOUR ENJOYMENT OF SAN FRANCISCO AND THE BAY AREA DURING THE AIA CONVENTION.

THESE SAN FRANCISCO ACTIVITIES WERE SCORED BY MORE THAN 20 MEMBERS OF LAWRENCE HALPRIN AND ASSOCIATES IN A SPECIAL SKETCH PROBLEM. THEY ARE DESIGNED TO GIVE YOU MANY DIFFERENT KINDS OF EXPERIENCES IN THE BAY AREA THAT YOU WONT FIND IN REGULATION SOURCES. IT WOULD BE GREAT IF YOU COULD DO ALL OF THEM . . . YOU WOULD EMERGE WITH A REALLY DIFFERENT KNOWLEDGE OF THE BAY AREA ENVIRONMENT.

SINCE YOU PROBABLY WONT HAVE TIME TO DO EACH SCORE, WE INVITE YOU TO SELECT THE ONES THAT APPEAL TO YOU MOST AND FIT THEM INTO YOUR OWN SCORE FOR THE CONVENTION WEEK. THEY ARE ALL FUN AND INFORMATIVE AT THE SAME TIME.

A WORD ABOUT SCORES. THIS IS OUR TERM FOR COMMUNICATIONS THAT GENERATE PEOPLES ACTIVITIES IN TIME AND SPACE.

THE SIMPLEST COMPARISON IS TO A MUSICAL SCORE WHICH IS USED BY THE COMPOSER TO INDICATE GRAPHICALLY TO THE MUSICIAN WHAT HE IS TO PERFORM. SCORES CAN BE GRAPHIC, VERBAL, OR PRESENTED IN OTHER MEDIA. THEY CAN BE OPEN, IN WHICH CASE THE PERFORMER'S INPUT IS AS CREATIVE AS THE SCORER'S, OR CLOSED, WHERE THE PERFORMER SIMPLY FOLLOWS THE DIRECTIONS OF THE SCORER WITHOUT ALTERING OR QUESTIONING THEM IN ANY WAY. AT LAWRENCE HALPRIN AND ASSOCIATES, WE USE THE CONCEPT OF SCORES AND SCORING TO INVOLVE PEOPLE IN THE ACT OF PLANNING FOR THEIR OWN COMMUNITIES, AND IN OUR OWN PROFESSIONAL ACTIVITIES IN ENVIRONMENTAL DESIGN AND PLANNING.

FINALLY, AN IMPORTANT ASPECT OF DOING SCORES IS FEEDBACK AND RECYCLING OF INFORMATION, FEELINGS, AND EXPERIENCES. WE URGE YOU TO TAKE A NOTEBOOK OR SKETCHBOOK ALONG WITH YOU ON YOUR SCORES. TAKE NOTES AS THEY OCCUR TO YOU . . . MAKE SKETCHES OF WHAT YOU SEE. AFTER THE CONVENTION, SEND COPIES OF YOUR NOTES AND SKETCHES TO US . . . LAWRENCE HALPRIN AND ASSOCIATES, 1620 MONTGOMERY STREET, SAN FRANCISCO, CALIFORNIA 94111 . . .

MEANWHILE, WE ARE DELIGHTED TO HAVE HAD THE FUN OF CREATING THESE SCORES. WE HOPE YOU HAVE AS MUCH PERFORMING THEM.

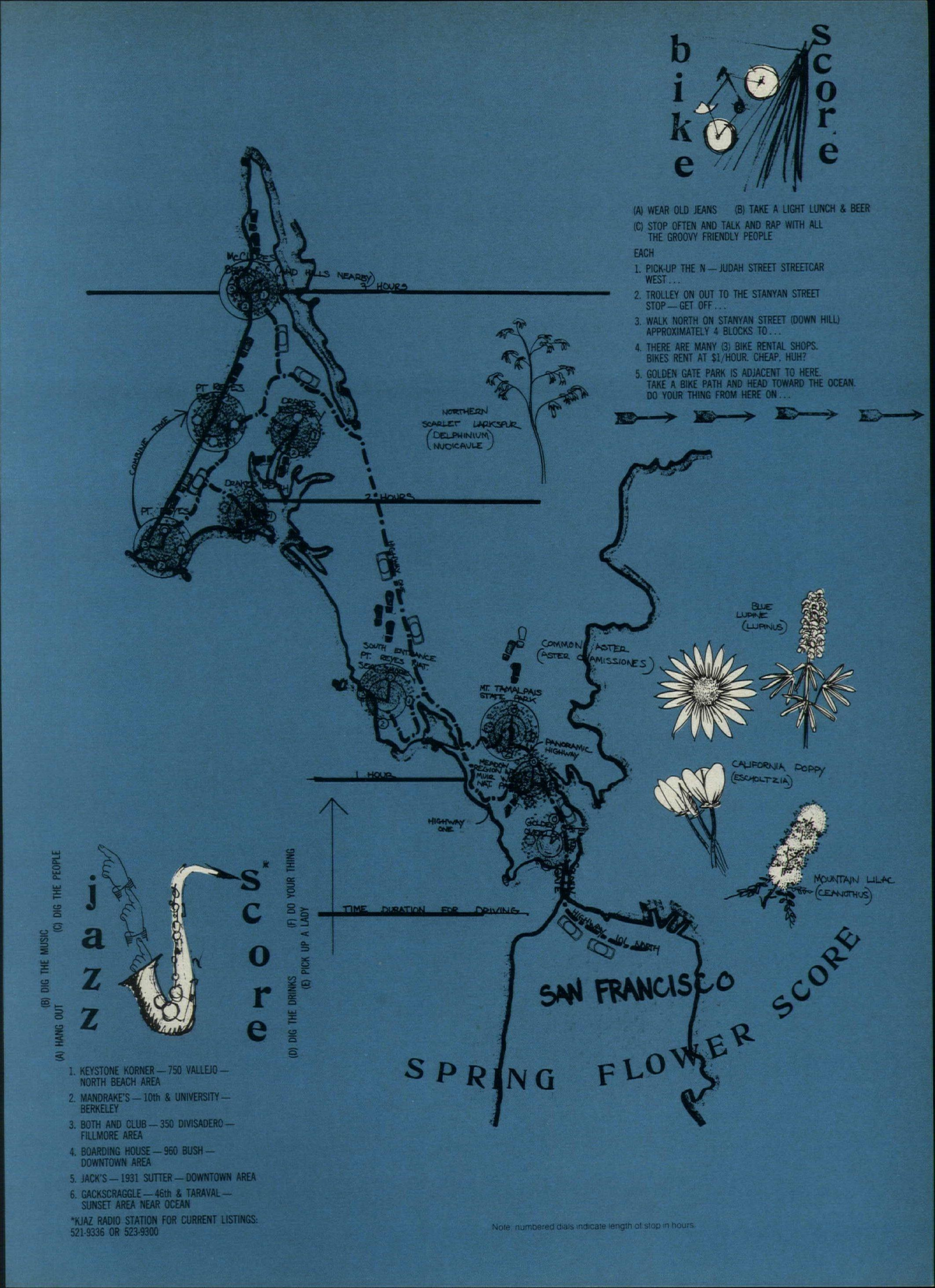
WELCOME TO SAN FRANCISCO.

LAWRENCE HALPRIN AND ASSOCIATES . . .

Lawrence Halprin

Anto Nardig Agapetian John Anderson
Jim Burns · Charles Cerniglia Brian Collett Paula Farley
Allen Hall Barbara Johannes Thomas Koenig Norman Kondy
Oran Long Thomas Lee Tyler Leime E. Byron McCulley
Noni Monson david nisbet. Myles C. Stein Paul Thompson
Jean Wood MONIQUE / Barry Wasserman.
. . . and all the rest, plus Sue Yung Li Ikeda.

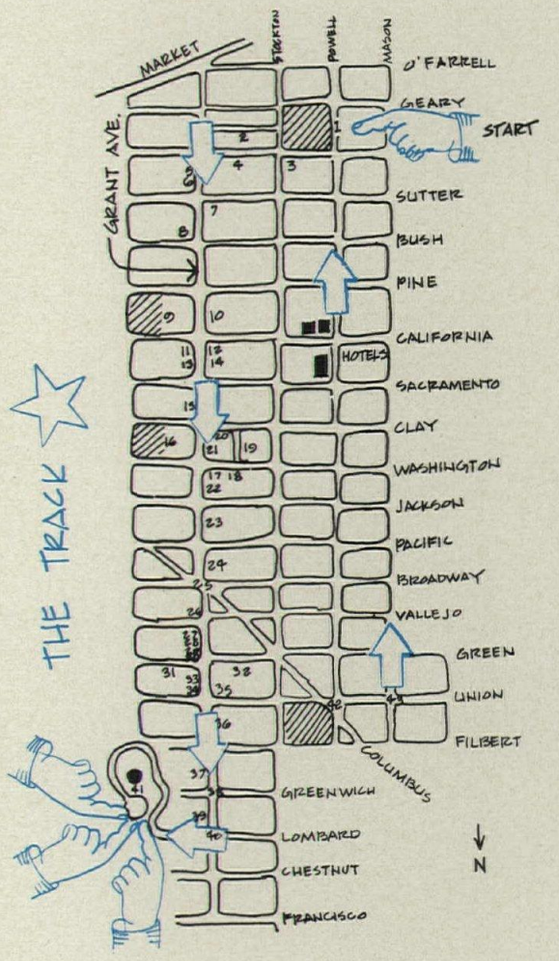
hello A A


bike score
(A) WEAR OLD JEANS (B) TAKE A LIGHT LUNCH & BEER
(C) STOP OFTEN AND TALK AND RAP WITH ALL THE GROOVY FRIENDLY PEOPLE
EACH
1. PICK-UP THE N — JUDAH STREET STREETCAR WEST...
2. TROLLEY ON OUT TO THE STANYAN STREET STOP — GET OFF...
3. WALK NORTH ON STANYAN STREET (DOWN HILL) APPROXIMATELY 4 BLOCKS TO...
4. THERE ARE MANY (3) BIKE RENTAL SHOPS. BIKES RENT AT $1/HOUR. CHEAP, HUH?
5. GOLDEN GATE PARK IS ADJACENT TO HERE. TAKE A BIKE PATH AND HEAD TOWARD THE OCEAN. DO YOUR THING FROM HERE ON...
NORTHERN SCARLET LARKSPUR (DELPHINIUM NUDICAULE)
BLUE LUPINE (LUPINUS)
COMMON ASTER (ASTER CHAMISSIONES)
CALIFORNIA POPPY (ESCHOLTZIA)
MOUNTAIN LILAC (CEANOTHUS)
3 HOURS
2 HOURS
1 HOUR
TIME DURATION FOR DRIVING
SOUTH ENTRANCE PT. REYES NAT. SEASHORE
MT. TAMALPAIS STATE PARK
PANORAMIC HIGHWAY
MUIR WOODS NAT. MON.
HIGHWAY ONE
HIGHWAY 101 NORTH
SAN FRANCISCO
SPRING FLOWER SCORE
jazz score
(A) HANG OUT
(B) DIG THE MUSIC
(C) DIG THE PEOPLE
(D) DIG THE DRINKS
(E) PICK UP A LADY
(F) DO YOUR THING
1. KEYSTONE KORNER — 750 VALLEJO — NORTH BEACH AREA
2. MANDRAKE'S — 10th & UNIVERSITY — BERKELEY
3. BOTH AND CLUB — 350 DIVISADERO — FILLMORE AREA
4. BOARDING HOUSE — 960 BUSH — DOWNTOWN AREA
5. JACK'S — 1931 SUTTER — DOWNTOWN AREA
6. GACKSCRAGGLE — 46th & TARAVAL — SUNSET AREA NEAR OCEAN
*KJAZ RADIO STATION FOR CURRENT LISTINGS: 521-9336 OR 523-9300
Note: numbered dials indicate length of stop in hours.

GRANT AVE

THIS SCORE IS INTENDED NOT TO CONTROL MOVEMENT ALONG GRANT AVE BUT TO HELP YOU UNDERSTAND & DESCRIBE WHAT IS GOING ON THERE. THE STREET CONVEYS A QUALITY OF LIFE WITHIN THE VARIOUS PARTS OF THE CITY IT TRAVERSES: DOWNTOWN, CHINATOWN & NORTH BEACH. THE FOLLOWING LIST OF THINGS TO SEE IS NOT INTENDED TO CONTROL MOVEMENT BUT MERELY TO POINT OUT THE GREAT VARIETY THIS STREET OFFERS— POINTS THAT THE VISITOR MIGHT MISS ON A SINGLE TRIP.

IN THE VARIOUS PARKS TAKE NOTE OF BY WHOM & HOW THEY ARE BEING USED. WHILE IN SHOPS TAKE NOTE OF HOW PEOPLE WORKING THERE REFLECT THE CHARACTER OF THE BUSINESS & DISTRICT. MOST IMPORTANT BE AWARE OF ENVIRONMENT & HOW IT CHANGES—SOUND, SMELL, TEXTURE, SCALE, MOVEMENT, RHYTHM, INTENSITY.



GRANT AVE, SAN FRANCISCO, U.S.A., EARTH

20 BLOCKS OF UNSPEAKABLE VARIETY!

START - UNION SQ.

RIDE DOWN POWELL VIA CABLE & JUMP OFF AT UNION SQ.

FOLLOWING THE NUMBERED SEQUENCE COVER AS MUCH GROUND AS TIME & STAMINA WILL ALLOW.

DIVIDE THE STREET INTO SEVERAL SHORT SCORES IF NECESSARY

DEPENDING ON YOUR INTERESTS, THIS EXCURSION COULD REQUIRE 1 HR. - 1 WK. - 1 LIFETIME (IF YOU REALLY WANT TO SEE ALL THERE IS TO SEE!)

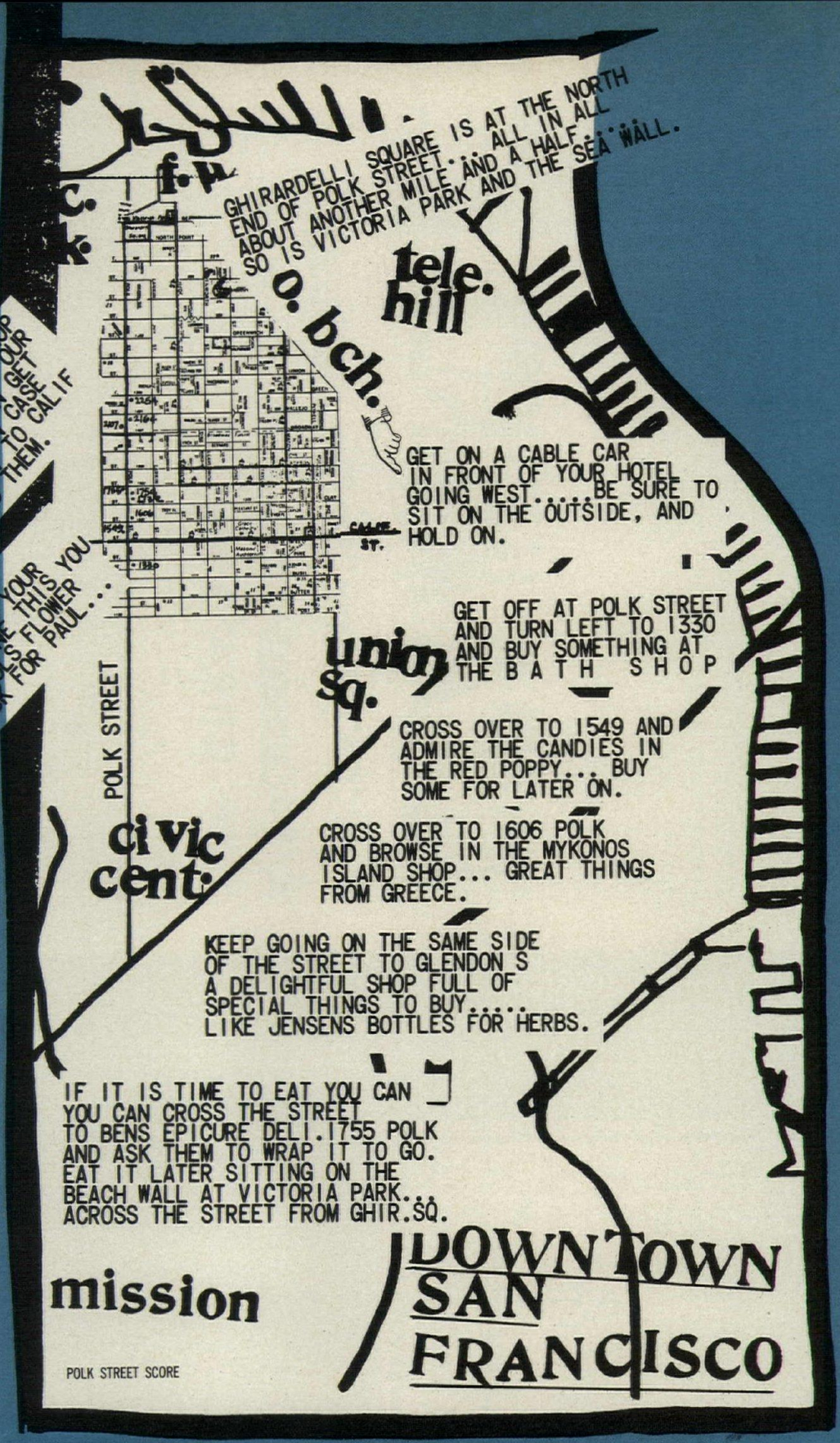
END - COIT TOWER

END IT ALL HERE WITH AN ELEVATOR RIDE & A 360° VIEW OF UNABASHED NARCISSISM.

RETURN VIA COIT BUS FROM THE TOWER TO WASHINGTON SQ.

WALK WEST TO MASON FOR CABLE CAR, NOB HILL & YOUR VIBRATOR RED!

1 UNION SQUARE
2 140 MAIDEN LANE - F.L.W.
3 HYATT HOUSE - S.O.M.
4 GUMP'S - GIFTS, ETC.
5 PODESTA BALDOCCHI - FLOWERS
6 TIFFANY & CO.
7 THOUSAND FLOWERS - TRIBAL IMPORTS
8 MIDORI - JAPANESE RESTAURANT
9 ST. MARY'S SQ - REST
10 HOUSE OF SUNG - FINE CHINESE ANTIQUES
11 OLD ST. MARY'S CHURCH
12 WAX MUSEUM
13 CANTON BAZAAR
14 FAR EAST CAFE
15 COMMERCIAL ST - VIEW FERRY BLDG.
16 PORTSMOUTH SQ - REST
17 GOLDEN DRAGON RESTAURANT
18 UNIVERSAL CAFE
19 DRAGON TEMPLE - BONSAI, GOLD FISH
20 SIDEWALK STAND - TRIVIA
21 FONG FONG - CHINESE CANDY
22 TIN POW TONG - TRADITIONAL CHINESE PHARMACY
23 SUN SING THEATRE - CHINESE MOVIES
24 FISH & POULTRY MARKETS
25 BROADWAY HOT SPOTS
26 NEW PISA RESTAURANT
27 POSTERMAT
28 BLUE MACAW - CLOTHING
29 KYRIAKOS OF HYDRA - GREEK IMPORTS
30 NEW DEAL - FUNKY CLOTHES
31 OLD SPAGHETTI FACTORY - RESTAURANT & BAR
32 GREEN VALLEY RESTAURANT
33 SCHLOCK SHOP - FUNKY TRIVIA
34 SAVOY TIVOLI - RESTAURANT & BAR
35 MALVINA COFFEE - COFFEE HOUSE
36 JEWELRY FROM NATURE
37 GERKE ALLEY
38 GREENWICH ST - VIEW RUSSIAN HILL
39 1734 HANDSOME OLD BLDG.
40 VIEW BAY & ANGEL ISLAND
41 COIT TOWER
42 WASHINGTON SQ.
43 MASON - CABLE CAR



SAUSALITO SCORE

1. TAKE CALIFORNIA ST. CABLE CAR DOWN HILL TO FERRY TERMINAL. **25¢**
2. TAKE FERRY TO SAUSALITO. **75¢**
3. HAVE ORGANIC LUNCH AT TRIDENT **$3.50** RECORD VISUAL IMPRESSIONS.
4. TOUR SHOPS ON BRIDGEWAY AND PRINCESS ST. PURCHASE WHATEVER YOU WANT.
5. RECORD YOUR IMPRESSIONS IN PRINCESS PARK AT FOOT OF PRINCESS ST. **20 min.**
6. HAVE DRINK IN NO NAME BAR . SPEND 40 MIN. OR MORE.
7. RETURN TO S. F. VIA FERRY. LAST ONE LEAVES TO S.F. AT 8:50 WK. DAYS, 7:30 ON WK. ENDS.
8. RECORD IMPRESSIONS OF SAUSALITO ON RETURN TRIP.
9. TAKE CABLE CAR TO HOTEL.

FLEA MARKET AIA

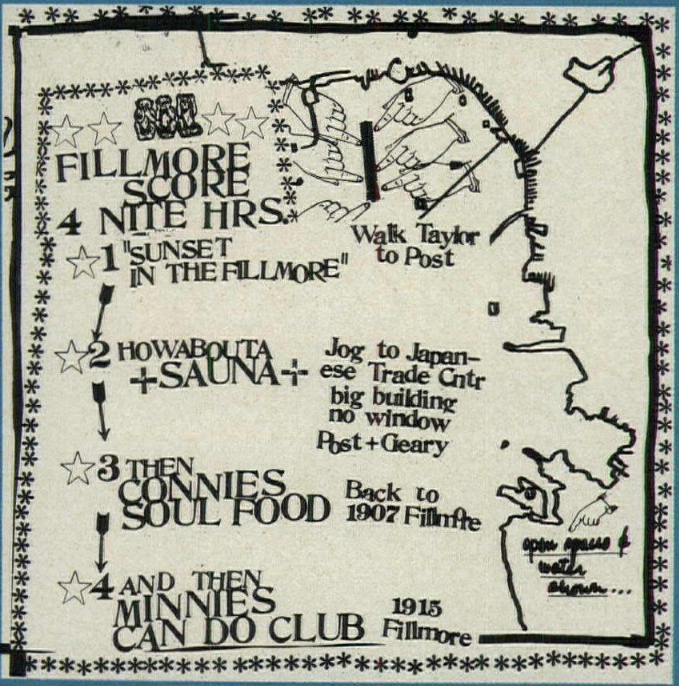
A GREAT WAY TO DO A SUNDAY.
A SACREMENT IN ITSELF
A CELEBRATION OF LIFE

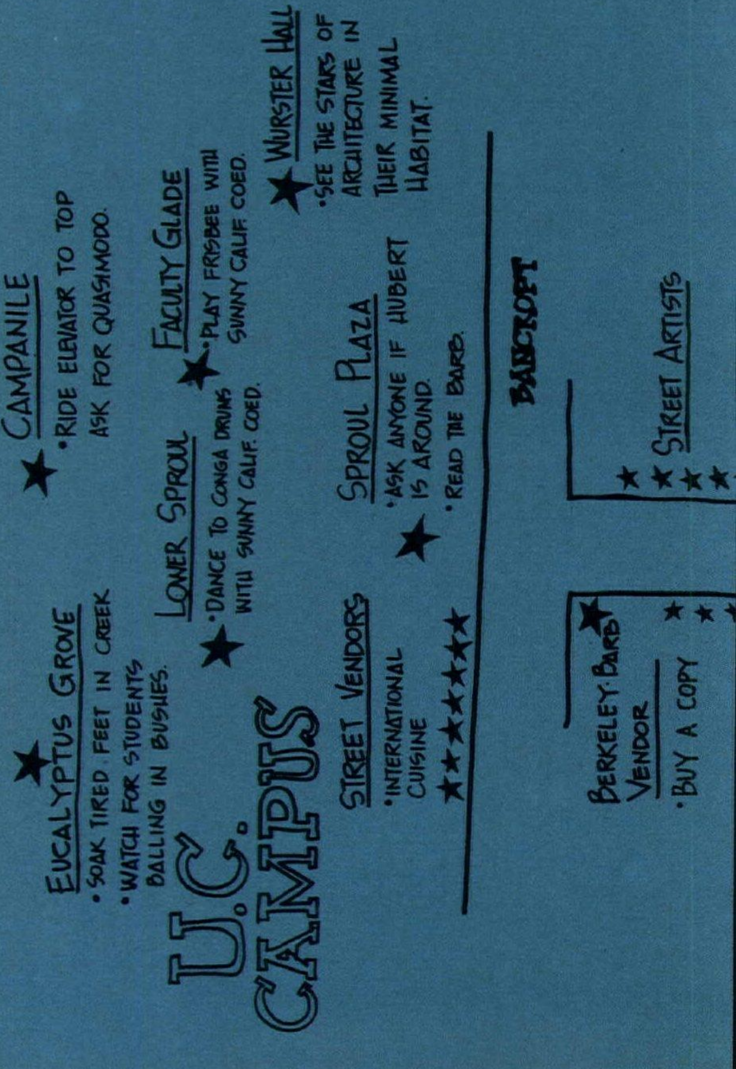
THIS TRIP REQUIRES A CAR & AT LEAST 2 HRS. OF TIME (PREFERABLY EARLY) ON A SUNDAY.

DRIVE TOWARD OAKLAND ON THE BAY BRIDGE (NO TOLL) & LOOK FOR SIGNS TO ALAMEDA. FOLLOW ALAMEDA SIGNS – THESE WILL LEAD YOU THROUGH THE TUBE TO ALAMEDA ISLAND. AS YOU COME OUT OF THE TUBE, GO STRAIGHT. ON YOUR LEFT WILL BE THE "ISLAND" AUTO THEATRE. THIS IS THE FLEA MARKET. CONTINUE STRAIGHT & GO LEFT ON EAGLE ST. FOLLOW THE TRAFFIC TO THE MARKET. AMPLE FREE PARKING, 20¢ ADMISSION. HRS. ARE FROM ABOUT 8 AM TO 3 PM. YOU CAN EAT LUNCH THERE.

IF YOU HAVE KIDS ALONG, PICK A SPOT TO RONDEZVOUS AT IF YOU GET LOST, SUCH AS THE REFRESHMENT STAND.

HAVE A GOOD TIME!





THE "AVE."

TELEGRAPH AVE

BANK OF AMERIKA
- IN EARLY BERKELEY FORTRESS STYLE.

DURANT

SWENSON'S ICE CREAM
- ORDER IM-PEACH MINT

LEOPOLD'S
- S.O.B. (STUDENTS OF BERKELEY)
- CUT-RATE CO-OP.

HEIDELBERG
- MAKE CONVERSATION
- DROP NAMES LIKE MARCUSE, BOBBY, & ANGELA.

CHANNING WAY

GARDEN SPOT MARKET
- LOITER FOR 5 MIN. UNTIL POLICE ASK FOR I.D.

BERKELEY INN
- CHECK LOBBY FOR SPEED FREAKS.

HASTE

BOOKS
- CODY'S
- SHAMBALA
- MOE'S

ONE WORLD FAMILY
- ORGANIC MUNCHIES

PEOPLE'S PARK
- RIDE ON PEOPLE'S SWING.
- RUMMAGE IN PEOPLE'S CLOTHING BOX.

THE "MED"
- SIT ONLY AT OCCUPIED TABLE.
- ENGAGE IN CONVERSATION.

DWIGHT WAY

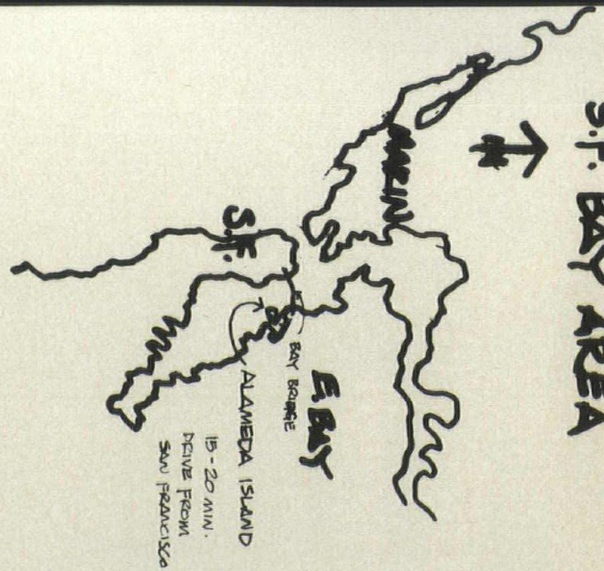
START HERE OR ANYWHERE

FINISH?

HO CHI MINH PARK
- COOL OUT

VISITORS SCORE FOR SATURDAY AFTERNOON IN BERKELEY

S.F. BAY AREA



UPON RETURN, SIMPLY REVERSE THE PROCESS. GO THROUGH TUBE & FOLLOW SIGNS TO SAN FRANCISCO. 50¢ BRIDGE TOLL UPON RETURN.

HAVE A BALL, SPEND UNDER $2.00 & BRING BACK A UNIQUE GIFT FOR EVERYONE IN THE FAMILY.

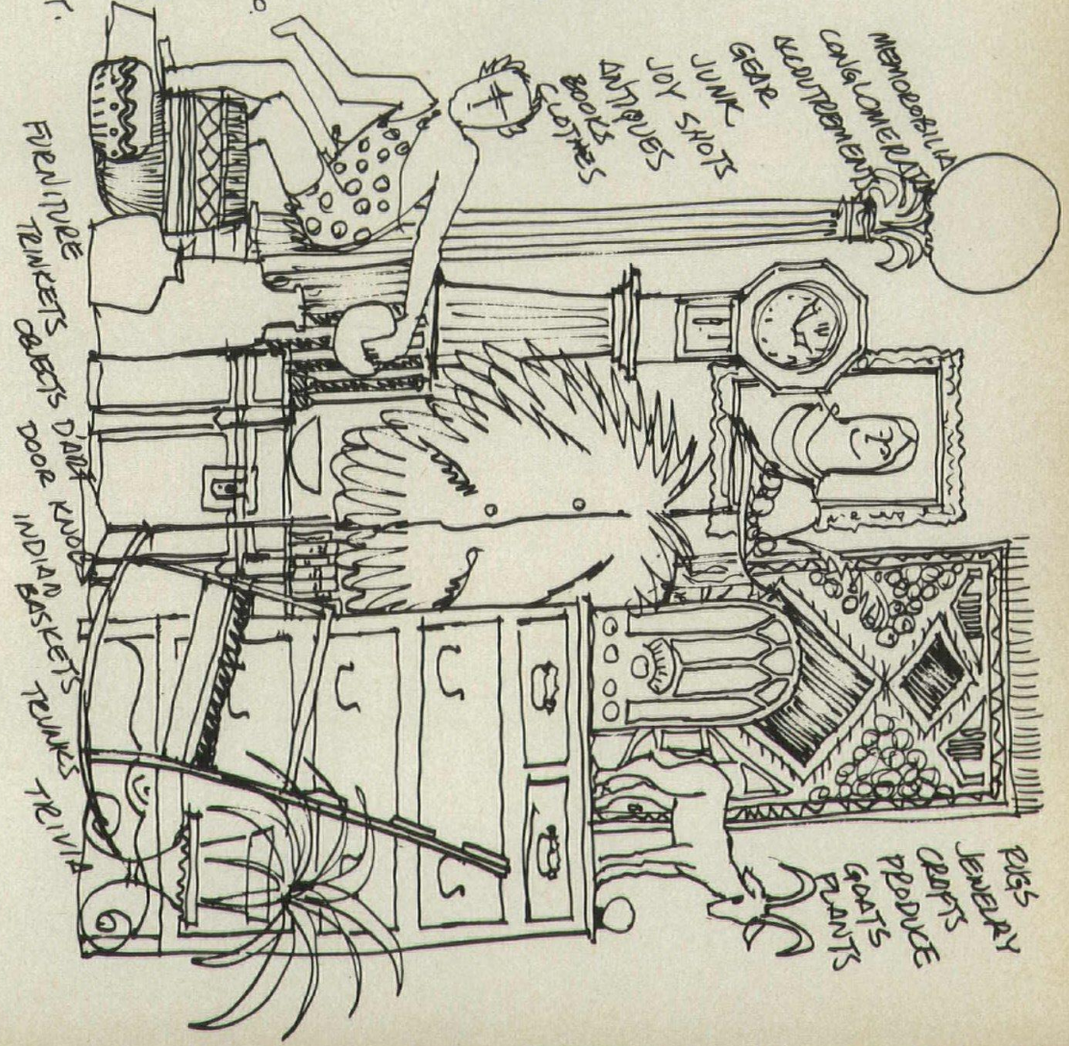
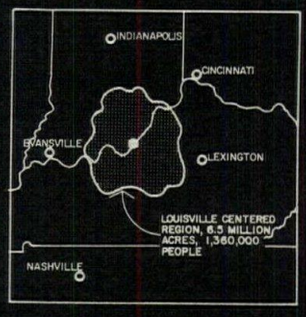


figure 1
Louisville centered region



Profile: Urban Studies Center

Architecture? Absolutely!

figure 2
Inventory

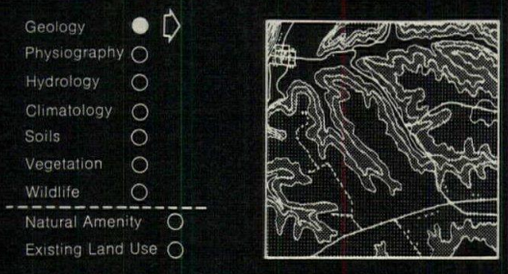


figure 3
Development categories/ consequences matrix

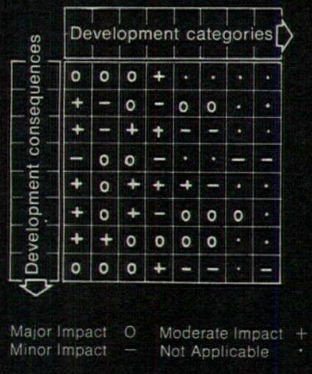
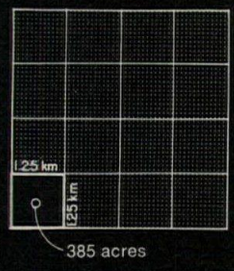


figure 4
Cell size:



By designing processes to translate social needs into physical terms, the Urban Studies Center at the University of Louisville is turning out its own unique brand of architecture—one that produces no buildings but has a real effect on the future of the physical environment

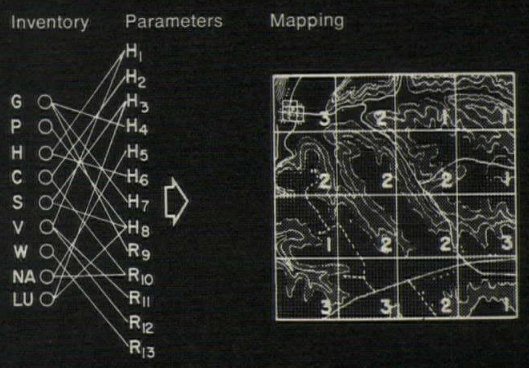
In the 11 lbs of paper that make up the final report on a new communities study, there isn't a single rendering, a single architectural drawing, yet Carl Sharpe is most emphatic about what the University of Louisville's Urban Studies Center is doing and how it relates to architecture. "It is architecture—absolutely."

Putting it another way, Don Williams, who preceded Sharpe as the Center's assistant director, once said "What we are doing is community development," which he suggested "may be more the architecture of the future than what our profession is currently doing." Since 1966 the center has trained people for community action programs, helped the Kentucky Association of County Judges with legislative research, investigated the social and environmental impact of highways and airports and undertaken other projects often thought of as being slightly outside architecture. But then what would you expect from six architects, planners, ecologists and community organization experts, headed by a former newspaperman and aided by 40 or so specialists in law, psychology, medical sociology, transportation, community health, business, chemical engineering, political science, education, police administration, aquatic biology and heaven knows what else?

Officially, by its own brochure, the Center is described as a nonprofit agency set up to "develop ways by which the University can be of greater service in the area of community development, through comprehensive research, studies, consultation and conferences." Director Doug Nunn says it's a simple set-up: "We're given a building and enough dollars to have a core group that can deal with community agencies. On an ad hoc basis we add the expertise that is needed, drawing consultants from the University."

Simple, according to the brochure and the director, but what they do just isn't that simple. And nothing shows it better than the 11-lb new communities study, usually referred to as "NewCom," which grew out of the Center's first big grant. In 1967 the Appalachian Regional Commission put up some money to find ways to deal with migration—not how to stop it, but how to help those who are going to go no matter what.

figure 5
Natural limitations and interpretation for development



Whether aimed at finding sites for a new community or a new airport, the environmental analysis process developed by the Urban Studies Center is a step towards a "legally defensible land use system." The area around Louisville (1) was broken down into smaller areas, which were mapped and inventoried (2). At the same time, consequences of various types of development were studied to show their impact on potential sites (3). Part of total acreage was broken down into 385-acre blocks for further study (4) according to a variety of parameters—hazards such as slope, watersheds, ground water, and resources such as agriculture, wildlife, woodland (5). By superimposing hazards and resources for a potential site and the impact of proposed development, areas suitable for development could be identified, along with areas not suited for development.

figure 6
A problem:

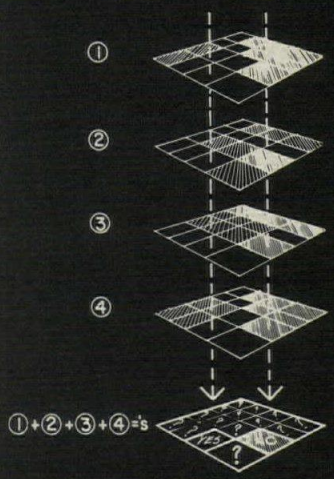
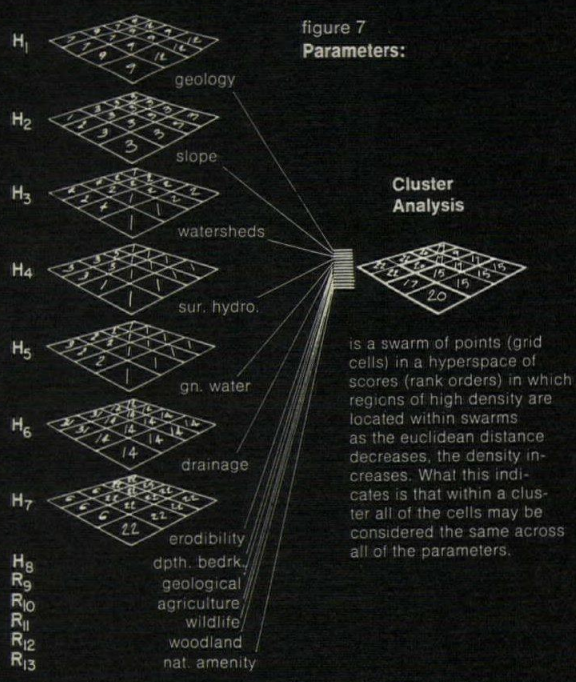
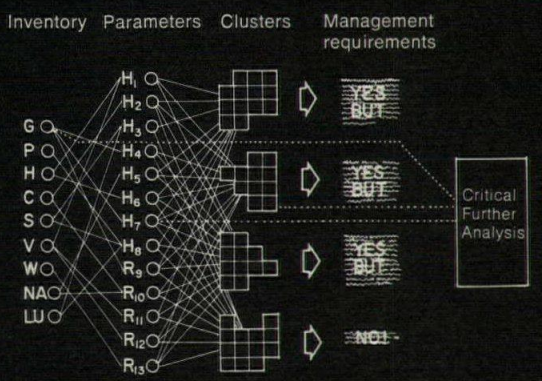


figure 7
Parameters:



is a swarm of points (grid cells) in a hyperspace of scores (rank orders) in which regions of high density are located within swarms as the euclidean distance decreases, the density increases. What this indicates is that within a cluster all of the cells may be considered the same across all of the parameters.

figure 8
Natural Environment Analysis



Two years later, the Federal Office of Economic Opportunity, impressed by the report, provided funds for a feasibility study of one of the strategies it outlined. The Center and OEO signed a 30-month contract to develop pre-operational planning (as far as a go or no decision); that study ended up as NewCom.

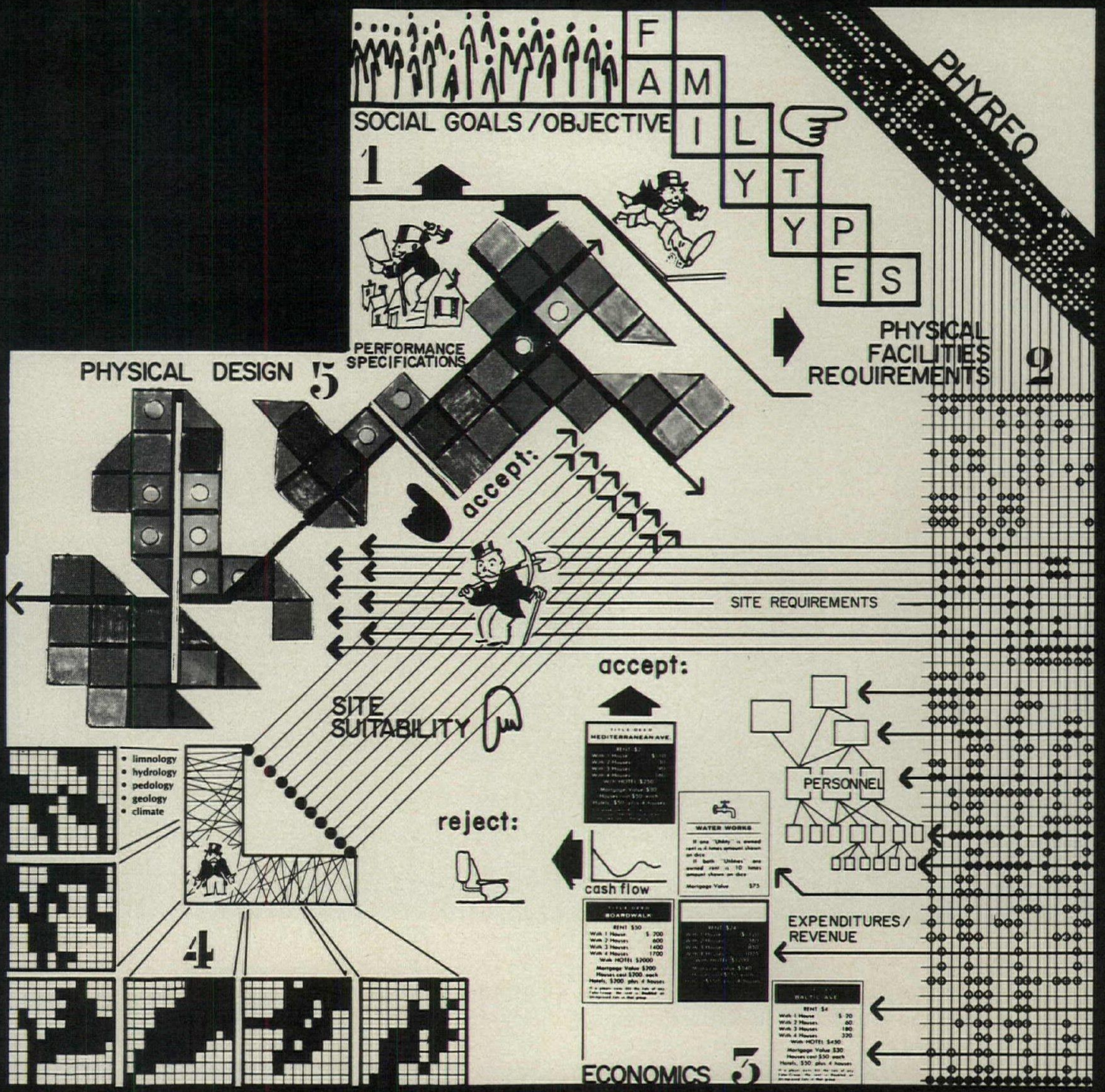
Actually there are two items involved—The New Communities Family Mobility System and the NewCom demonstration of the system which has been proposed for the Louisville urban region. The Family Mobility System portion of the NewCom report is based on three basic parts: jobs, backed by training; new homes and guaranteed citizen participation; and a new, socially and physically supportive environment. These basic parts would be put together in new communities—as many as 100 of them, with around 80,000 people in each—outside economically thriving middle sized urban regions.

About half the families would come from poor rural and urban areas. There would be all sorts of help for families making the move, assistance beyond just the simple promise of a job. It would start six months or more before the move, and would include not only job training but general preparation for the workday world and the problems of being part of a community. The rest of the families would be "non-assisted," leading to a healthy mix of income, social and racial groups that avoids the creation of "glorified poverty towns" or "gilded ghettos."

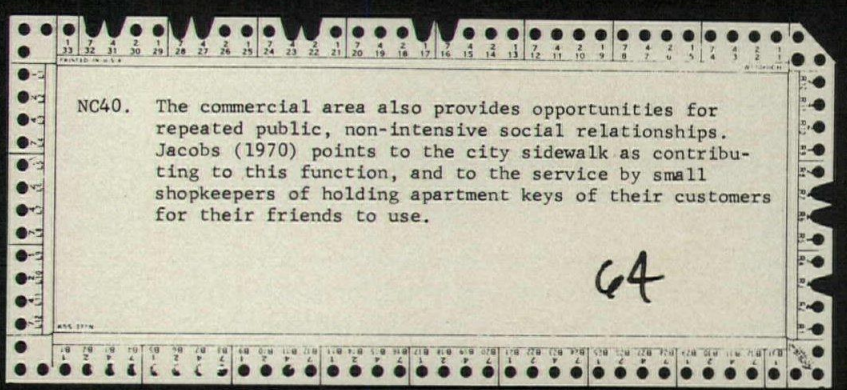
NewCom goes on to demonstrate that approach. A state law has been passed to allow a demonstration project; five areas in the Louisville region have been studied as possible sites; performance criteria have been written for every aspect of the new community—from neighborhood service centers to health facilities; and a built-in system for citizen participation has been designed.

The process behind NewCom shows a lot about the way the Urban Studies Center approaches problems. "First there's an issue," says Carl Sharpe, "and you get it funded. Once you've got it funded you subvert it into something you're interested in."

Operating from that premise, the Urban Studies Center took its OEO contract and ran in several directions. One of the first tasks, according to Williams, was to decide what there was in the OEO contract that was physical. Two key areas were identified: locating the new community—"There's gotta be a bet-

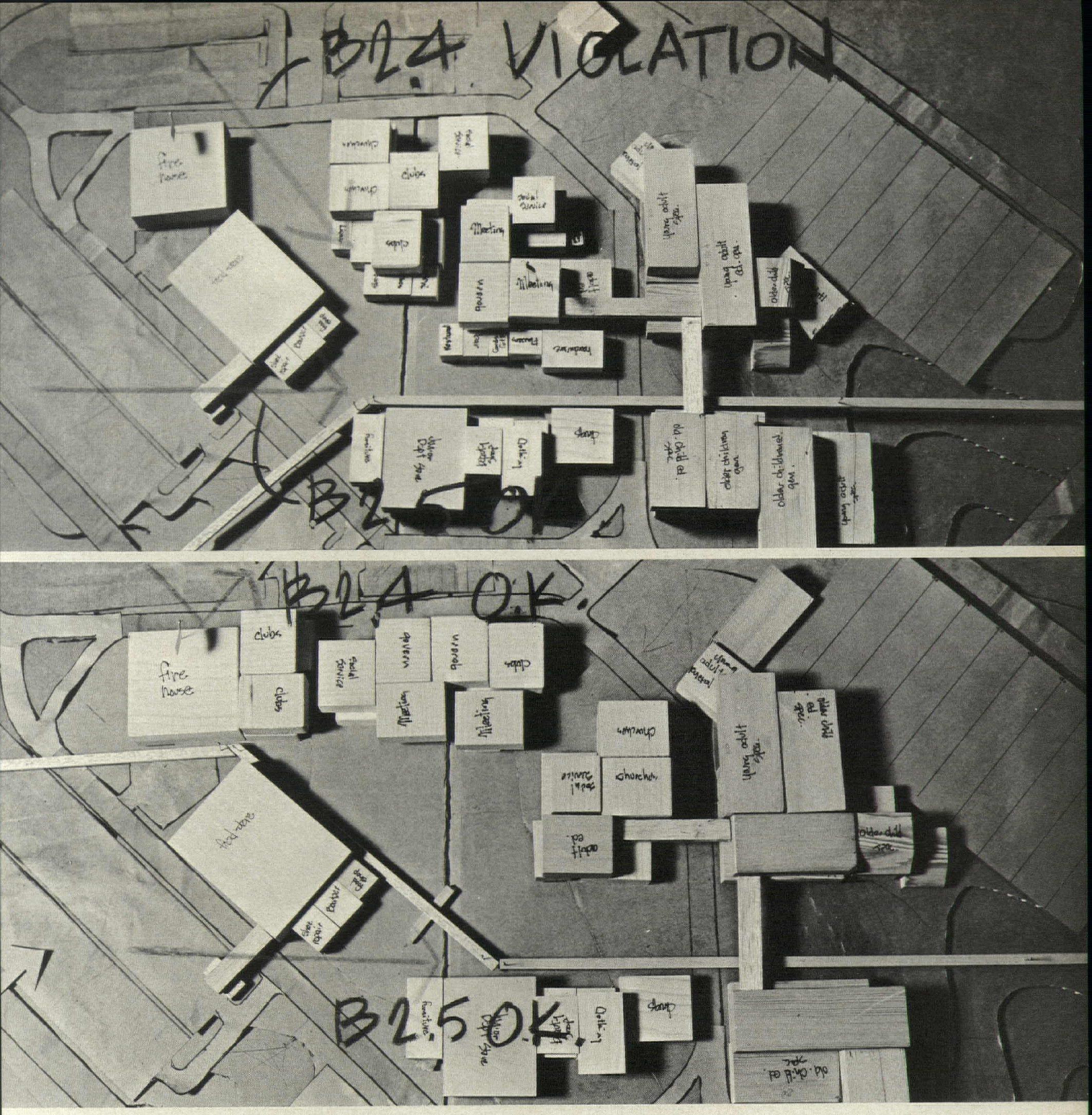


Development process for NewCom balances social goals and objectives against physical requirements, economics and site problems. Result is a physical design that best uses human, natural and financial resources to meet psychosocial and physical demands of the community. Standards and goals are entered on punched cards, and fits and violations (or misfits) in design are checked by computer or study model (facing page).



NC40. The commercial area also provides opportunities for repeated public, non-intensive social relationships. Jacobs (1970) points to the city sidewalk as contributing to this function, and to the service by small shopkeepers of holding apartment keys of their customers for their friends to use.

64

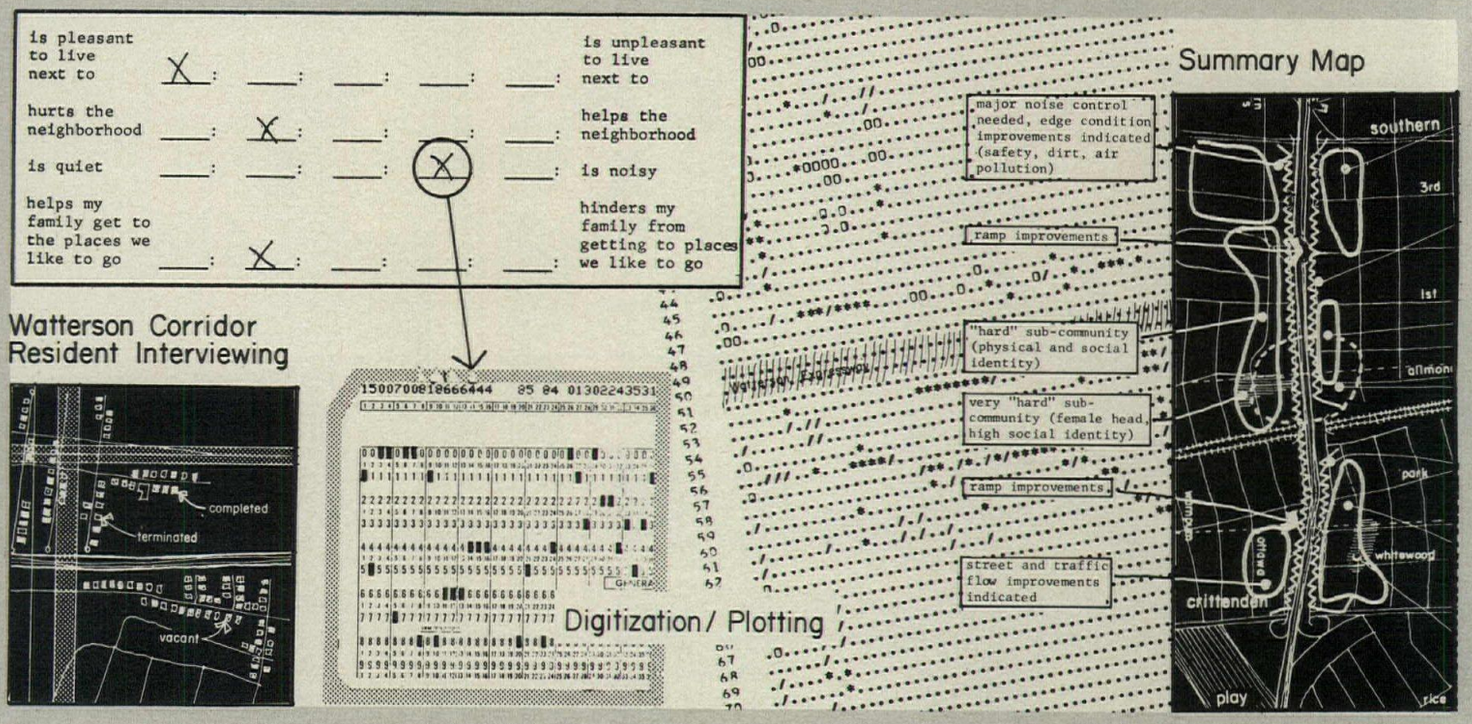


Architecture? Absolutely!

ter way than just going out and finding available land"—and delivering the community services.

The better way to locate new communities that the Center has been seeking boils down to a "legally defensible land-use system," and if they haven't got all the details pinned down, they are at least well on the way. The system combines hard data from the natural sciences, knowledge of community building technology and the techniques of operations research to show where to build and where not to build, based on the ability to protect the natural environment.

For NewCom, the Center's studies covered an area of 6½ million acres around Louisville, with a population of 1.4 million people. The 6½ million acres were broken down into regions of 24,000 acres; of the total acreage, something over 800,000 acres was studied further at a subregional—385-acre increment—scale. In each subregion, the impact of proposed development on the natural environment is interpreted item by item—erosion, ground and surface pollution, drainage, slope, agriculture, wildlife and vegetation capability. The information is checked, correlated and modeled by a computer,



and the result is a statement of the capability to accept development. Not only does the system show where to build and where not to build, it tells what must be done to protect the natural environment.

Computer model

A predictive modeling process is the key to the Center's approach to the delivery of community services. It lets the behavioral scientists and community service specialists design prototype institutional and service systems and determine the economic and physical effect on other services and on the total community within a few hours. At the same time the physical planners know required land areas, spaces, land costs, capital costs, public revenues generated, thresholds for beginning services and their relation to other services.

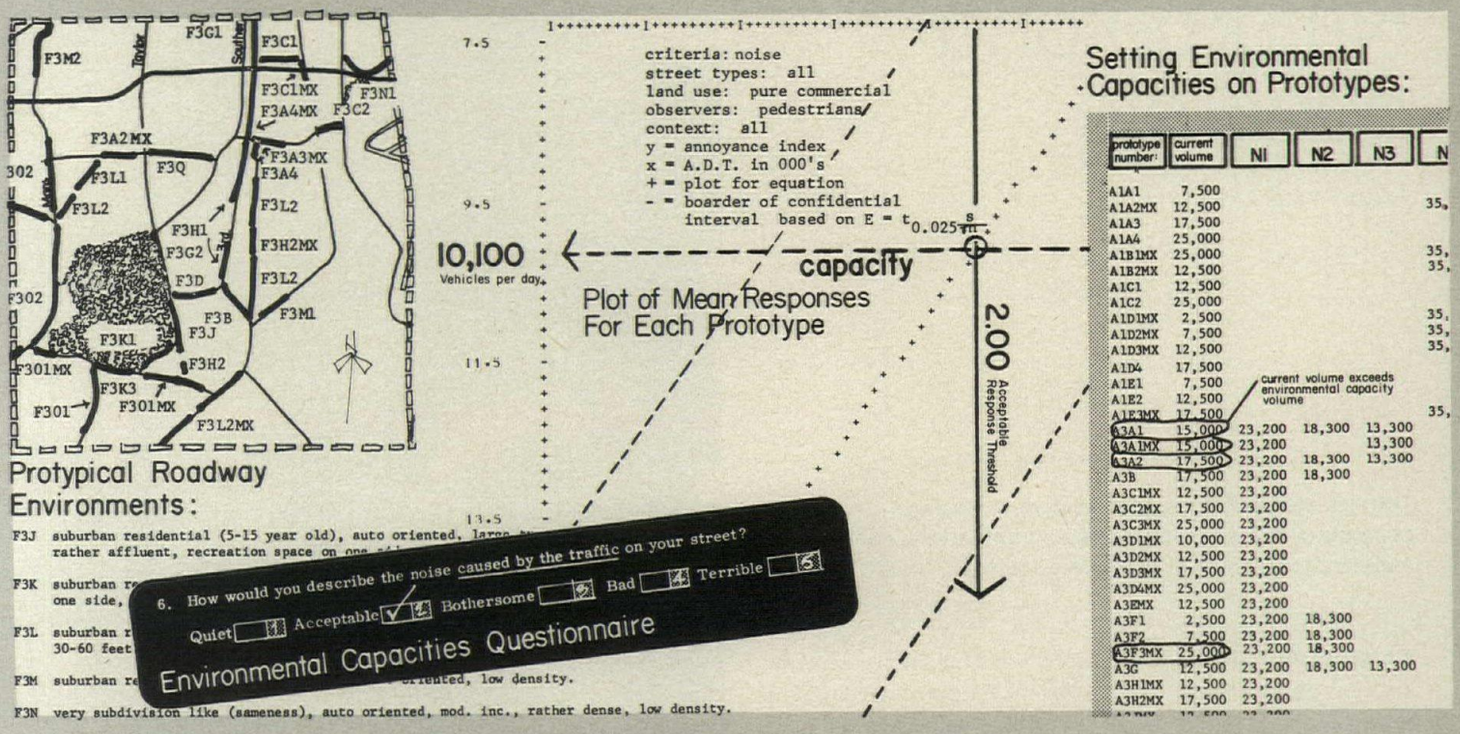
Input for the computer model is people—family size, age and income. The families are matched to their probable housing choices, which are in turn related to the area's housing market, allowing the planners to predict a population arrival and its experience over a period of time. This leads to predicting the needed community services and the consequences of alternate social and physical designs. Later, as people actually move in to the community, the system can be used to spot developing problems.

Citizen participation is another vital element in the center's work. When a long stretch of expressway was scheduled for improvement, the Urban Studies Center set up a process to involve citizens in the decision-making process. A total of 2500 interviews with people living up to half a mile from the expressway produced data on what they wanted, feared or felt they needed. As the project went on, citizen panels met regularly to study and criticize possible solutions as they were developed by the highway planners.

The process used in the Watterson Expressway study can be extended, as a project labeled "urban demonstration corridor" shows. Looking for a way to predict people's subjective responses to changes in street traffic or urban settings, the Center staff theorized that the kind and number of complaints expressed by similar people in similar settings would vary with the amount of traffic along their street. Through some 2000 home interviews, the Center gathered responses to such problems as noise, air pollution, pedestrian and child safety; matching these responses with the level of traffic (measured in average daily trips) along the street gave what the Center has termed a "bitching index," a step closer to being able to predict the subjective complaints of changes to streets, traffic or adjacent communities. And, says Sharpe, closer to the time when citizens' groups may be able to go to court armed with legally defensible quantifiable evidence of the future consequences of planning decisions.

The setting for all this forward-looking work is about as unurban as one could find within the city limits of Louisville, the Gardencourt Campus of the University of Louisville (Gardencourt being the name of the mansion that the Urban Studies Center occupies), in a neighborhood of large expensive houses. On the inside, informality reigns, along with a high degree of organized chaos; the staff obviously takes its work very seriously, itself not too seriously at all.

The center's work was not always so heavily slanted toward the physical environment. The Center's first contracts were



Citizen involvement is a key part in two similar projects: Center's staff interviewed residents along transportation corridors, tallied data and finally displayed information graphically, not statistically.

signed in 1966, a year after organization which followed several years of talk and abortive action by a group of citizens and University people. It started in 1967 by offering its services primarily to community action programs. For the Office of Economic Opportunity, the Center evaluated community action programs in terms of goals and performance, delivering what has been described as a "real blast across the board—we said they weren't performing well at all."

Among its other early activities were leadership training programs and short courses for community leaders, including county judges, who are the chief executives of counties in Kentucky. The Center also began building an image in the area of citizen participation in local planning decisions, starting with an Urban Decisions Manual it developed for the Falls of the Ohio Council of Governments; groups were formed to state goals and strategies and pamphlets were published on each major issue.

Then in 1969 came the really big opportunity—the OEO grant that got NewCom started. At the same time, something else was happening that was changing the nature of the Urban Studies Center. In 1968, the Center had received a two-year grant to set up a graduate program in community development. It was an experimental program, conceived at the center, and since the center is an applied research unit, not an academic unit, says one staffer, "we illegally ran an education program within the university." Well, not so illegally, really, because on paper, the program was part of the graduate school and social science department; in practice, though, it was run by the Center. A two and a half year program, it leads to a master's degree in social science. The aim is to take people with five years' experience in their own field—architecture, journalism, planning, sociology and almost anything else—and give them a broader perspective on social problems. They then go back to their own fields or become generalists.

In many ways, and in typical Urban Studies Center fashion, the graduate program is just about what one would expect it to be—quite different from the traditional view of education. The students are what Williams described as "change agents—they want to see change." Good at what they do outside the program, they keep the faculty on its collective toes; classes meet Friday evenings and Saturdays to allow full-time jobs. The busy work of education is pared away—papers can be cross-related from one course to another and, if something in the library is required reading, it's copied and distributed all around.

Although it started out dealing with social problems, the Center has its feet pretty firmly planted in the physical/environmental/ecological area right now. This is, says Doug Nunn, a coincidence of time, a reflection of widespread concern. But whatever the direction at any given time, some basic things stay the same: the Center's big job is translating social needs into physical terms—not, says Nunn, just the problems of the poor but of all people—all the problems of contemporary society. A central theme is powerlessness in a complex society: "people are copping out at all economic levels."

What Nunn's comments, and those of Williams and Sharpe, all point to is the idea of the future—alternate futures—and that is a theme that underlies just about everything the Urban Studies Center does. Absolutely. [CP]

Naturbetong concrete

Julian J. Karp

Thirteen-year-old Norwegian system of placing concrete promises crack-free construction with no imperfections, voids or other irregularities

A prepacked and sandblasted concrete, first used in Norway and now gaining popularity in Western Europe, may enter the American construction industry shortly. "Naturbetong," an exposed concrete, has great potential for use in the United States because it provides a finished wall without cracks, construction joints and other irregularities.

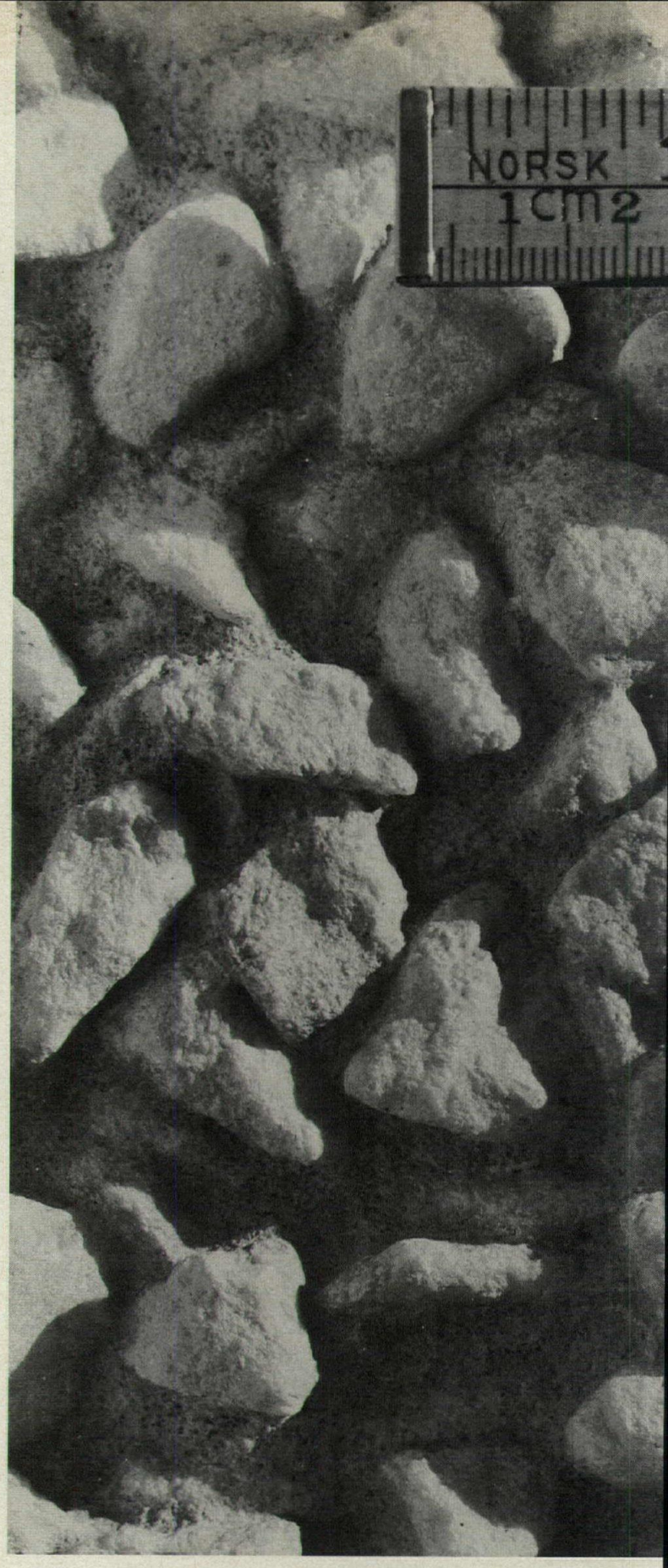
These imperfections long considered a natural liability of exposed concrete, are overcome in the Naturbetong process. Inspection of a number of exterior walls and beams 100 ft long and longer showed absolutely crack-free construction with no imperfections, joint marks or other marring features. In addition, shrinkage and other causes of cracks were almost completely eliminated by the Naturbetong method.

The process involves packing particles of coarse aggregate into the form to obtain maximum contact between them. A specially adapted mortar is then injected under pressure to fill all voids. This ensures that there will be no shrinkage cracks around or between the stones in the concrete. Added benefits from this technique include total uniformity in strength, impermeability and frost resistance.

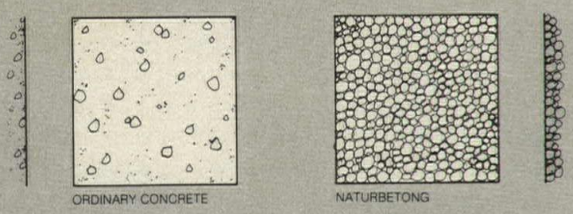
Before it hardens, the surface is sandblasted. A myriad of finishes can be created by varying the depth of the sandblasting, or by leaving some portions unblasted in regular or irregular patterns, as well as by changing the color of the mortar and using different kinds of aggregate.

Careful execution is essential to the process, requiring high quality workmanship and thereby adding some cost to the concrete. Based on recent studies the increased extra cost is usually more than compensated for by the savings achieved through the elimination of a building's skin.

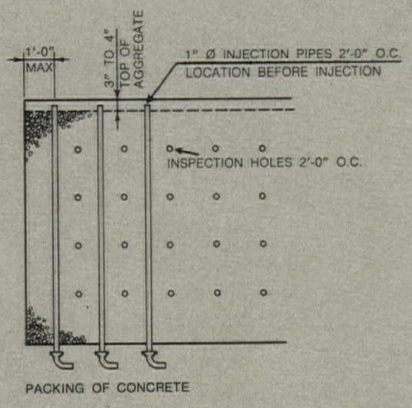
This kind of concrete has been used in Norway since 1959. It was first developed by Erling Viksjo and Sverre Jystad, architect and engineer respectively, while working on a government building in Oslo. By now some 40 buildings in Norway have been built with this material. Western European nations such as West Germany, France and Spain have also begun to adapt the process. A new building in Barcelona and a sculpture near Paris have been decorated by renowned artists using a form of Naturbetong.

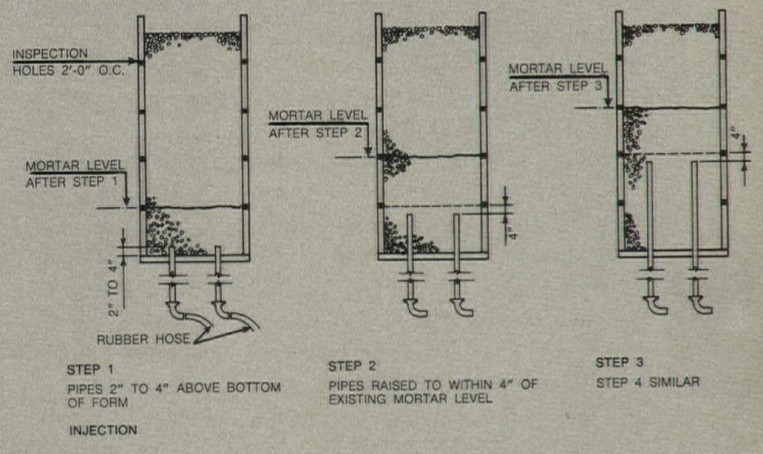


Author: Julian J. Karp, Partner, Farkas, Barron & Partners, New York, along with other American engineers recently inspected a number of Norwegian cement plants and structures erected using the Naturbetong method.



Sandblasting exposes tightly packed aggregate in "Naturbetong."





American firms wanting to apply this new technique should have no insurmountable difficulties. There appear to be no proprietary interests controlling any aspect of Naturbetong. Norwegian construction firms, however, will work on a subcontract basis or supply supervisors on jobs outside Norway to firms that want to benefit from their experience.

Materials and process

Details of how the system works follow:

Aggregate. Unlike conventional concrete where all ingredients are pre-mixed, the forms for Naturbetong are first filled with selected and washed aggregate and then injected with cement mortar. Exposed faces of concrete are usually fin-

ished by sandblasting, which exposes the coarse aggregate.

Coarse aggregate used is usually of a size that will pass a 1⅝ in. screen and be retained by a ⅝ in. or ¾ in. screen. The aggregate must be free of all impurities and must be washed before placing. It is best to wash well in advance of placing so all water may drain, and then keep the aggregate in covered storage to prevent contamination.

Sand. Sand for the injected mortar should pass a 2 mm screen and must be stored under cover to maintain a constant moisture content.

Cement. Cement for the mortar should be taken from a single shipment of uniform quality and color and be stored in a dry place.

Pigments. Almost any color pigment can be used, comprising about 5 to 6 percent of the cement by weight.

Cement mortar. The mortar batch must be proportioned at the building site with a strict control of the mix. A sample mix used on one of the Norwegian projects had the following proportions:

Cement	110 lbs
Dry sand with filler material	110 lbs
Intrusion aid admixture (fluidifying agent)	9 oz
Water	23 qts

Form work. Forms must be of high quality, and be tight and sturdy enough to resist internal pressure. The thin consistency of the mortar and the relative pressure in the forms require an absolutely tight form. Strips of foam rubber gaskets must be used at all joints, and joints between old and new concrete must be tight. All visible top surfaces of concrete members must be formed.

Forms must be fabricated and erected in such a manner that they can be stripped rapidly and conveniently, since the concrete must be sandblasted as soon as it has set sufficiently to permit stripping. Special care must be exercised in stripping sharp corners.

Inspection holes spaced at 2-ft intervals vertically and horizontally are bored in the forms to observe the mortar level during injection. The horizontal holes are located midway between the injection pipes. In addition, drain holes for rain water are necessary in the bottom form. These holes are bunged when injection starts.

Injection pipes. These are 1 in. diameter galvanized pipes, threaded at the outside end with a 1 in. elbow, a 1 in. to 1½ in. reducing socket and a 1½ in. dog clutch. Pipes are spaced 2 ft apart with a maximum end distance of 1 ft. Before the placing of aggregate begins, the pipes must be raised to extend above the top of the form.

Reinforcing. All reinforcing should be well tied and have a minimum of 2 in. protective covering.

Placing of coarse aggregate. The aggregate is placed in layers, compacted and vibrated thoroughly. During this operation the injection pipes should not be drawn down as this may cause the pipes to clog. The level of the aggregate should not be higher than 3 in. to 4 in. under the top of the form. In rainy weather the forms must be protected to shed the water.

Batching. Activator-type mixers assure a homogeneous mix. It is important to maintain an established constant water-cement ratio. High water-cement ratio will cause the mortar to separate during injection. A too low water-cement ratio will result in a thick mortar, which is impossible to pump.

Materials are fed into the mixer in the following order: water, filler materials, fluidifying agent, cement and sand. Mixing time of 20 sec is usually sufficient.

After a batch has been emptied, the mixer should immediately be refilled with water. If for any reason there is a stop in the work, the mortar must not be permitted to remain more than five minutes in the mixer. From the mixer the mortar is fed to a "Colmono Pump" (screw type), and a 1½-in. diameter rubber hose leads from the pump to the injection pipes.

Injection. Before injection, pipes should be located 2 in. to 4 in. from the bottom of the form. Injection starts with the first pipe adjacent to an end of the form. After the mortar reaches the level of the first inspection hole, the hose is then attached to the next pipe and pumping continued until the mortar has thoroughly reached the level of the lowermost inspection holes. As the injection proceeds, the holes are bunged.

A second round of pumping is then started with ends of pipes raised to within 4 in. of the existing mortar level. Pumping thus continues until the form is filled. During the injection period the form should be vibrated with a form vibrator. Usually, a crew of six to seven men is necessary for mixing and injecting the mortar. After injection has ceased, the pump, hoses and injection pipes must be thoroughly cleaned.

Stripping of forms. Depending on the type of concrete, weather and temperature, the forms can be stripped anywhere from 5 to 24 hours after the end of the injection cycle. Successful sandblasting depends on the proper estimate of the set of concrete. Variation in the time of set may require that stripping and sandblasting be done the same day or as night work.

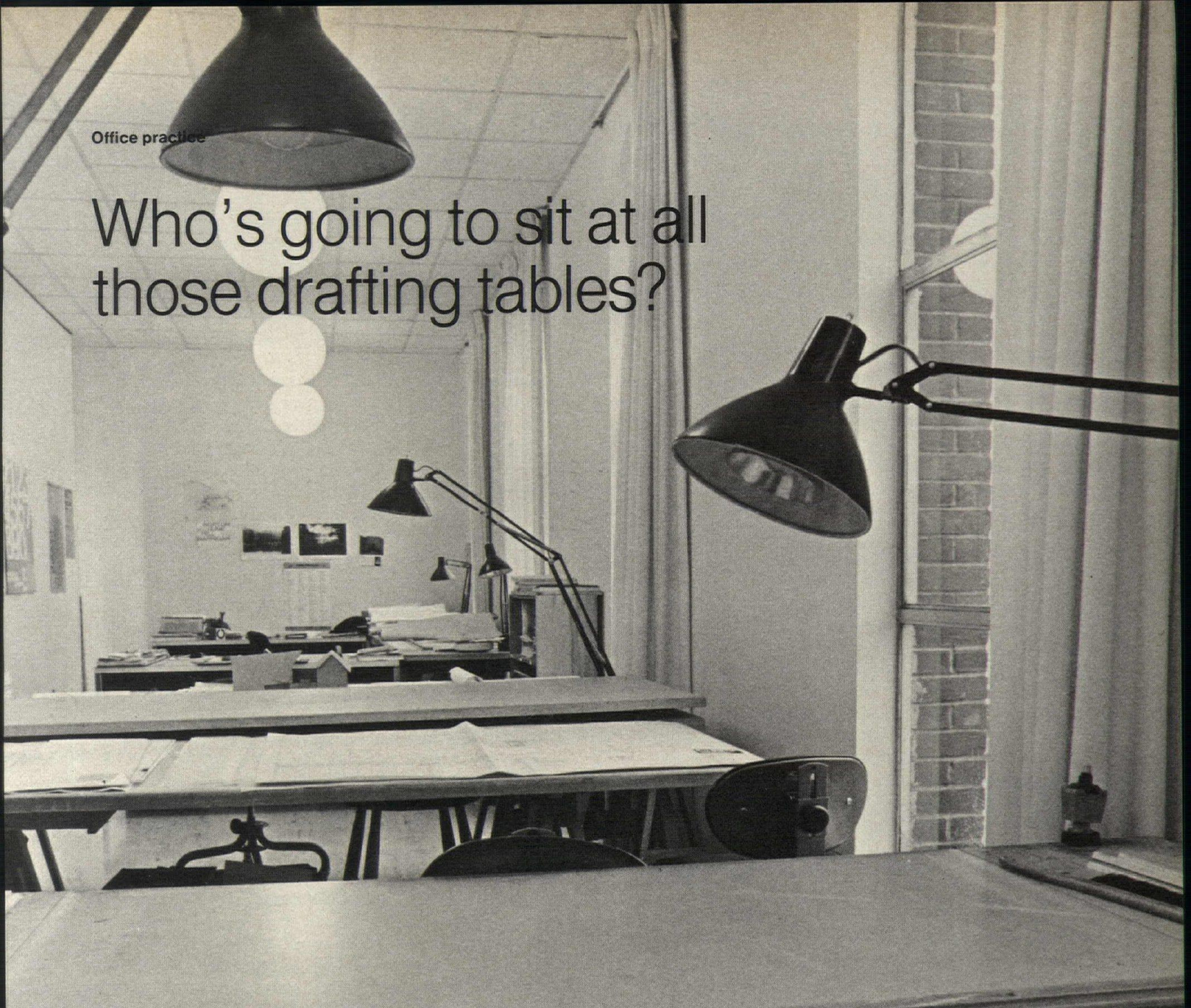
Sandblasting. Sand for the blasting must be predried. Grains should be sharp, hard and smooth. Depth of sandblasting should be specified by the architect. Templates or sketches on the surface may be used to effect patterns and designs. Special care must be taken at joints between old and new concrete and other areas where different hardnesses of concrete are encountered. Usually at this type of joint, a strip 2 in. wide should be left until the concrete has set sufficiently so that sandblasting will not show a sharp line at the joint. A second round of sandblasting is made when all of the concrete has been poured. This is done to remove the dust and splattering occurring during pouring. Following sandblasting, the surface is blown clean.

Curing. The concrete must be kept moist for two weeks after pouring and protected from direct sun exposure.

After the surface has been approved by the owner and the architect, a water-repellent silicone layer is applied to the surface of the concrete.

Conclusion. A wall built with Naturbetong hardly looks like the typical concrete wall; it looks much more like a stone wall made of small crushed stones. To the layman, of course, Naturbetong will be taken for granted as simply being part of a construction project. To the professional, however, this 13-year-old technique is almost revolutionary. It will become even more important as its use becomes more widespread.

Who's going to sit at all those drafting tables?



Expected demand for architectural services will require more architectural employees—of different kinds—than professional schools can turn out. There is hope in the growing number of two-year technicians' schools

Just about everybody admits that there are not now, nor will there be, enough graduates of architectural schools to fill all the technical jobs within the profession. The country's 100 architectural schools turn out roughly 3500 graduates each year, and many of these don't go into the traditional entry-level jobs they once flocked to. Even before the current recession began, they joined the Peace Corps, Vista, built houses in Vermont or Big Sur, wrote, joined governmental agencies, did research, made films—anything but take jobs as junior draftsmen.

There is, however, another source of technical employees for the architectural firm—the young people who graduate each year from the more than 250 two-year architectural technicians' training programs. In theory and, for the most part, in practice, they can do many jobs within the profession.

It is the "in practice" part, of course, that means most to the architectural employer: just what can these graduates do for him? Draw, certainly; that is a strong suit in just about all the two-year programs. Richard Reinholt, chairman of the architectural technology department at Schoolcraft College in Livonia, Mich., says that his program turns out "junior and senior draftsman types." They aren't taught design or history; they are given some structural and mechanical concepts—"enough so they can talk to engineers." Their primary skill, says Reinholt, is the preparation of construction documents; the school's prime concern is the quality of drawing and lettering. Echoing that concern is a comment from Merlin Jenkins, an assistant professor at the Shenango Valley Campus of the Pennsylvania State University. Penn State will start a two-year associate degree program in architectural technology this fall, and the curriculum, according to Jenkins will include "lots of drawing—most of our courses have a heavy background in actual work on the board."

Traditionally, these technical jobs have been entry jobs for fledglings from architectural schools, who have been exposed to design as well as drafting and are potential associates and principals. Why not continue hiring them? Howard Sims, who heads Howard Sims Associates in Detroit and was

the first chairman of the AIA task force that drew up guidelines for the two-year programs, has a ready answer, in addition to the obvious one that there aren't enough of them: "There's no real advantage to hiring a graduate architect so long as we can continue to place before the technician the appropriate work for him to do. He can actually be more productive at the things he does best than the graduate architect doing the same job with one eye on things up the ladder." Sims also points out that the technicians' programs focus on construction, while many professional programs have moved away from nuts and bolts in recent years.

Then too, as the experience of some technician graduates shows, they also have management potential. Sims, who taught in a two-year school, has three former students working for him; one is a job captain, with supervisory responsibilities and another is a specialist in rehabilitating multifamily housing, handling his own program with a minimum of supervision. Two of the graduates from Dick Reinholt's program are job captains; two others, he says, are taking the registration exam this June.

Ball started rolling in 1966

It has only been since 1966 that the architectural profession has shown serious interest in the two-year programs. That year the AIA set up a task force to study the growing need for qualified technicians within the architectural profession and related fields; one of the group's assignments was to come up with a program to meet that need. The result, published two years later, was a program and report spelling out curriculum guidelines for two-year training programs.

Since then the number of such programs has steadily grown, with AIA an interested supporter. The Institute is now in the early stages of a program to evaluate and approve technician programs; the procedure involves a self-study by the school and a visit by a review committee. Approvals would be granted for four-year periods.

The key elements for approval are the school's resources—students, faculty and facilities—and curriculum. Students must be high school graduates or equal; the faculty must include at least one full-time instructor who is a registered architect or an experienced graduate architect; facilities must include drafting rooms and equipment and students must have access to standard architectural references and publications. For approval, the curriculum must cover two years beyond high school and be technological in nature—it must include such courses as drafting and technical mathematics. So far, says the AIA, one program has been granted approval and others are going through the process.

Protection for the profession

The main purpose of the approval program, according to James E. Ellison, administrator of the Institute's Department of Research and Education, is "to make sure that the user [the architect] gets together with the school" on what students need to qualify them for useful employment.

Ellison is careful to point out that the aim is not to accredit programs. When the approval program first started, the National Architectural Accrediting Board said that it rightly belonged with the AIA, as it was continuing liaison between the profession and schools rather than an accreditation procedure. Lately, however, there has been some thought that the approval procedure might be misunderstood, and that approval might be misconstrued as accreditation. Until the whole matter is settled in the course of an extensive study of the general accreditation process for architectural schools, the approval program for two-year programs is not being pushed very hard.

Another effort aimed in much the same direction was started in 1971 by Dick Reinholt. What he wanted to set up was an information network for all the two-year schools offering programs in architectural technology. The effort is now going forward through the Association of Collegiate Schools of Architecture, which has changed its by-laws to admit two-year schools as associate members.

Explaining the project, Reinholt points out that 17 two-year schools in Michigan offer what they call architectural engineering technology programs. "But just because they all call them that doesn't mean they are offering the same thing. Some may be more architecturally slanted than others; some may lean more towards mechanical drawing as opposed to architectural drafting. What we're trying to do is get some measure of protection for the profession."

Another slightly less important purpose behind the AIA approval program, and perhaps a by-product of Reinholt's information network, is further recognition of the movement.

Recognition is important; in fact the success of the movement depends on slowly growing recognition by the architectural profession. Generally speaking, says Ellison, it will be "some time before the profession as a whole recognized that the tech school grads are good for something other than drafting or cleaning floors. Architects are very leery; they don't think the tech school grads can do anything and would rather buy up graduate architects who can go on to rise in the firm." As the need for technicians increases, as it is bound to do, Ellison feels the nation's architectural firms will recognize the importance of the technicians' training programs.

The view from Ellison's Washington office is a nationwide one; things can look somewhat different over a smaller area. Dick Reinholt reports 96 percent employment of his Schoolcraft graduates. "They start at $3 to $3.25 an hour, the usual beginning salary around here, and a couple have reached the $6 an hour level." The program is eight years old, but Reinholt says that it has only been in the past three years that firms in the area have begun to realize the worth of his graduates as employees. Very few, he says, go into large firms; those that do "don't find enough stimulation." Most go into medium or small firms where they do quite well, with two, as noted, having made job captain.

There is another side to the consistency, or standardization, that is being sought. Two-year architectural technology programs seem to come in two varieties: feeder programs, in which the students eventually aim to go on to architectural school, and terminal programs, in which the students plan to go to work after two years. "Most schools," says Ellison, "can't make up their minds which they are."

Confusion about which type of program to offer could be either the cause or the effect of some basic confusion about what a technician's job really is. Says Howard Sims, "The

Architectural engineering technology program

First term	credits
Engr. 2, Engineering Orientation	1
E.G. 3, Architectural Graphics	2
*Engl. 800, English Usage or Engl. 1, Composition and Rhetoric	3
Math. 801, Technical Mathematics	3
Phys. 150, Technical Physics	3
	12

Second term	credits
A.E. 801, Building Materials	2
E.Mch. 811, Elementary Mechanics	3
Math. 802, Technical Mathematics	3
Phys. 151, Technical Physics	3
	11

Third term	credits
A.E. 802, Methods of Construction I	3
A.E. 803, Plumbing, Fire Protection and Electrical Layout	3
**Engl. 1, Composition and Rhetoric or Engl. 3, The Writing of Ideas	3
Math. 803, Technical Mathematics	3
	12

†**Summer term**	credits
A.E. 812, Building Lighting and Acoustics	3

Fourth term	credits
A.E. 805, Architectural Rendering	2
A.E. 808, Graphical Analysis	2
E.E. 800, Applied Electricity	2
E.Mch. 813, Strength of Materials	3
Social Science elective	3
	12

Fifth term	credits
A.E. 804, Heating, Ventilating and Air Conditioning Layout	3
A.E. 809, Structural Design	3
Humanities elective	3
Spch. 200, Effective Speech	3
	12

Sixth term	credits
A.E. 807, Methods of Construction II	2
A.E. 810, Office Practice	2
Com. 801, Business Management	3
Cmp.Sc. 1, Basic Computer Programming	1
Technical elective	2-3
	10-11

*Students will be placed in Engl. 800 or Engl. 1 on basis of English placement test scores.
**Engl. 1 completed the English requirements, but Engl. 3 or Engl. 826 is recommended for students having been placed in Engl. 1 on basis of English placement test scores.
†Summer term to be taken at the University Park Campus.

technician's job should not be viewed as a stepping stone, a transition between novice and professional, nor should it be seen as a place for someone who couldn't make it in architectural school." It can, and should be, a job with its own satisfactions, its own prospects for the future. "The technician should not be seen as a second class citizen on the professional team," Sims points out.

That indicates a definite direction for technicians' programs. "We ought not to gear them to students who want to be architects," says Sims. It seems clear that one program can't turn out skilled technicians while it is trying to prepare other students to enter professional school. At Penn State, says Merlin Jenkins "We don't like to give an associate degree for the first two years of a baccalaureate program. To our mind that's just halfway trained for nothing." Dick Reinholt is equally firm on the matter: he feels that the distinction between the two types of programs should be quite clear. If a student wants to become an architectural technical he should be in a program specifically set up to train him as one; a student wishing to go the professional route should start in a program aimed in that direction. "There should be little ability to transfer," says Reinholt.

Naturally, the students that are attracted to the two-year programs will come in all types—there will be those with their eye on eventual registration and others who may have tried architectural school and not succeeded. But for the most part they will be high school grads who want to be prepared for a job in two years instead of four or six.

There is every reason to believe that there will be a ready market for their skills. In preparing for its program in architectural engineering technology, Penn State surveyed the state's architectural firms and learned that they wanted people who could be, in Merlin Jenkins' words, "more than just draftsmen—people who could do the detailing and some of the calculations to put a design on paper." The firms, Jenkins says, are very enthusiastic and will have places for the program's graduates.

But the market is going to be far wider than just architectural firms; it will include almost every aspect of the building industry. Jenkins says that their studies also turned up interest on the part of construction firms, state agencies and the like who feel that the graduates of the program would make good construction inspectors. Howard Sims in Detroit also suggests that tech school grads will find welcomes in plant engineering departments, manufacturing firms, building product firms and others.

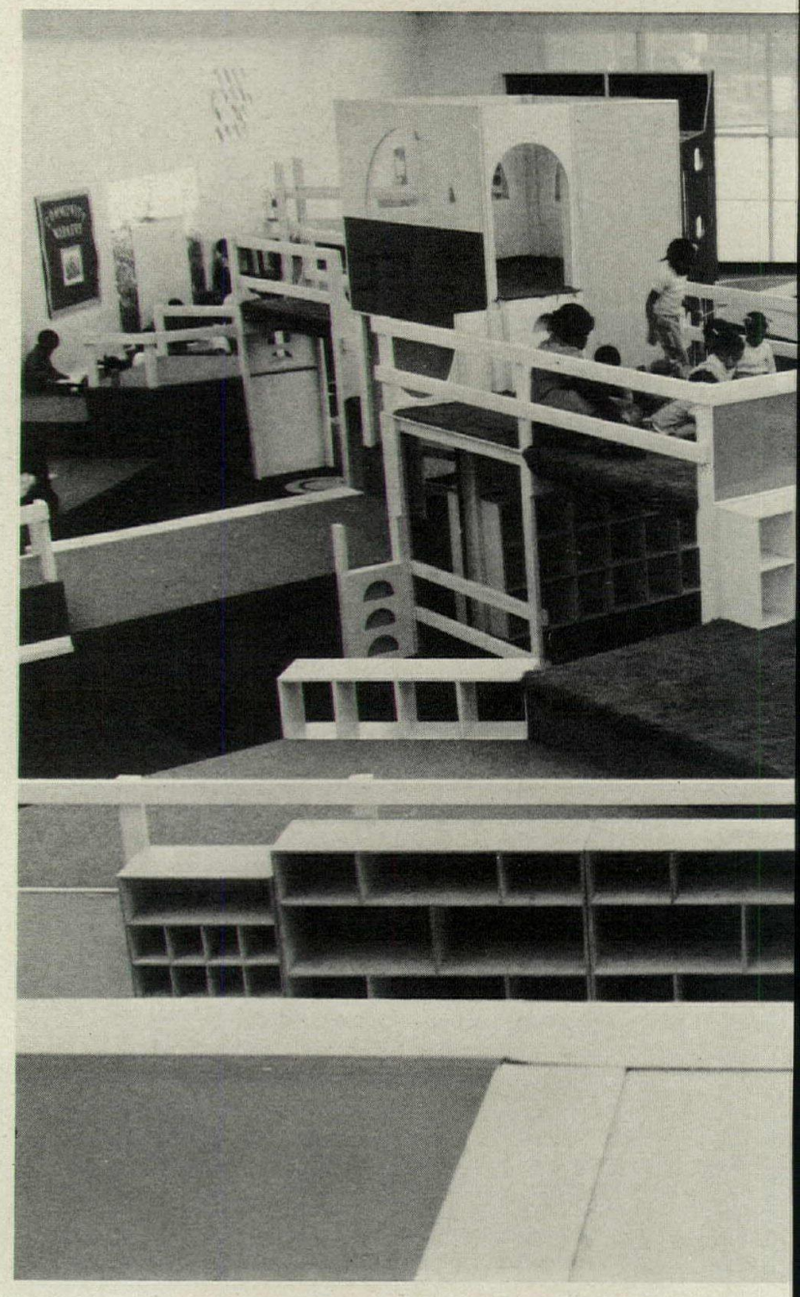
All of which simply means that if the demand for architectural technicans is going to be as great as it promises to be, the architectural profession ought to make sure that there is a healthy supply of properly trained technicians. The AIA's efforts to encourage two-year technicians' training programs and to provide constant contact between the profession and the schools is a good start on solving the problem; so is the information network being set up through ACSA. But these efforts can go only so far; what is really needed is support, not from the professional association, but from the individual professionals as employers—a willingness to hire qualified technicians and a readiness to make the job something of importance and satisfaction to the person who holds it. [CP]

This program, from The Pennsylvania State University, is a typical one.

Interior design

Child's play

What began as one small project to design a space to teach in has now become a full-time profession for two teachers who are committed to the idea that the environment can be an important part of learning

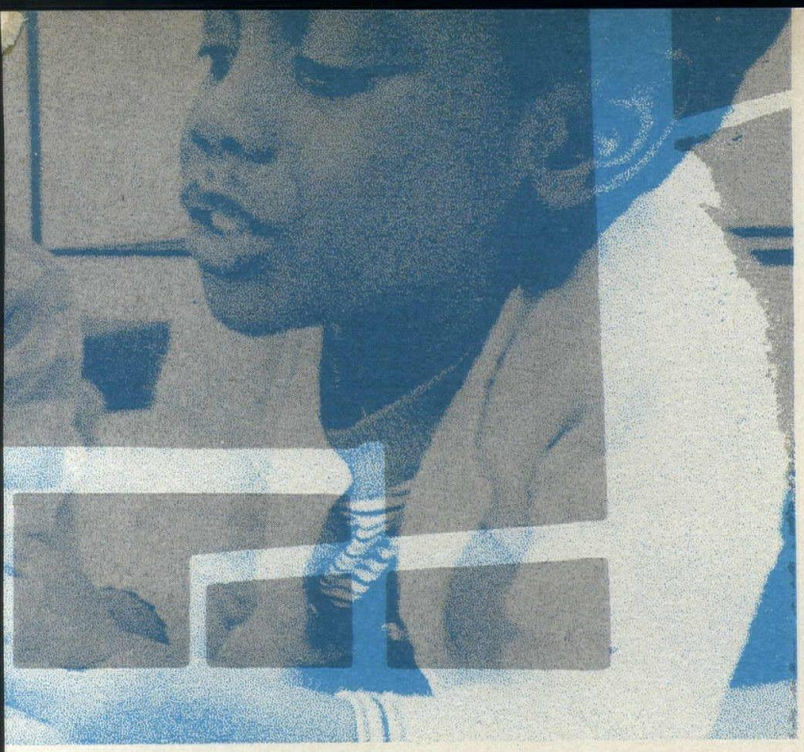


Paul Curtis and Roger Smith, partners in Curtis-Smith Associates of Boston, gave up teaching to start their own company to design and build interiors for learning centers. They have completed five centers, designed two more and begun preliminary work on two others. They work with simple materials—plywood, 2 x 4s, paint, carpet and colored acrylic panels—and build and install the environments themselves.

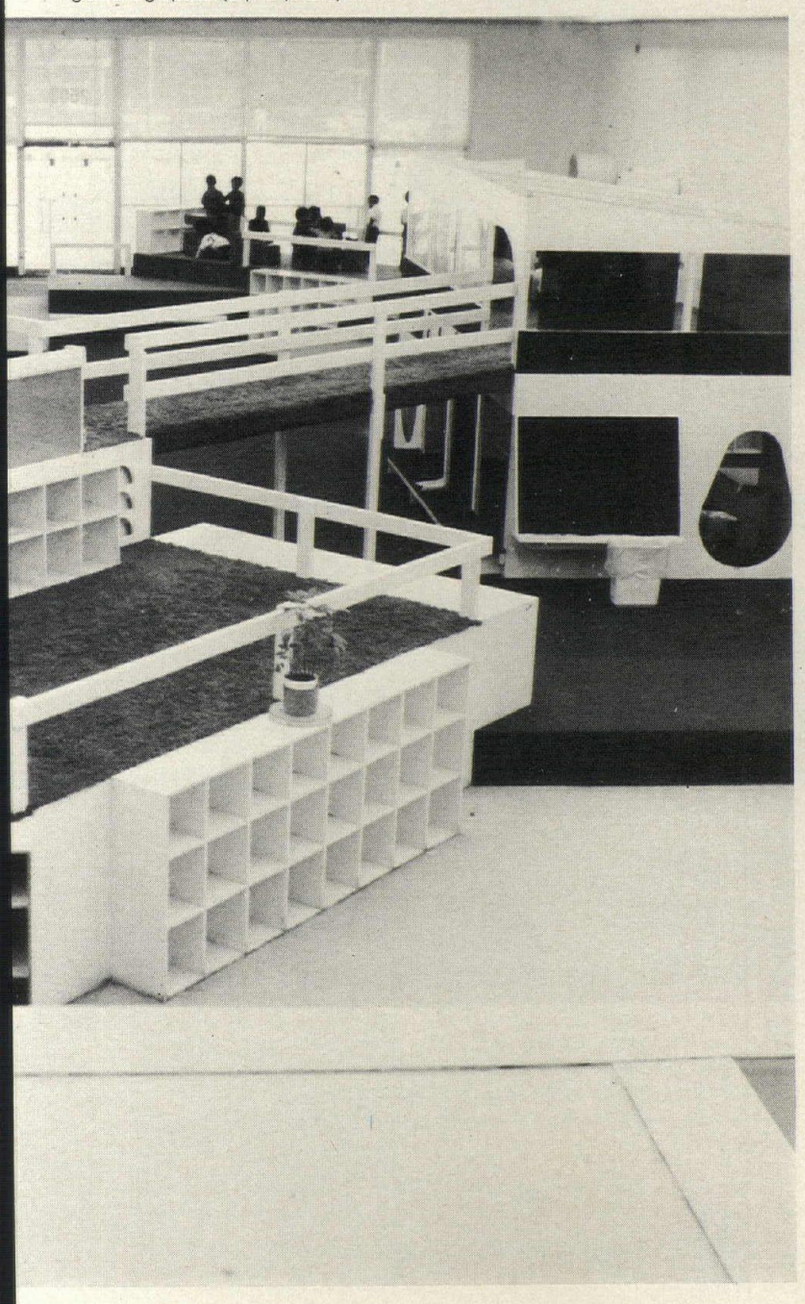
As teachers they wanted to provide a space and an atmosphere where a child could grow, at his own rate, in his own way. When it came to translating this abstraction into a designed space, they explored some very basic questions: How could an environment allow learning and still be relevant to different age groups? What kinds of space could give the teacher and child alternatives for use, provide stimulation, support freedom? Could it be a place in which both teacher and child would enjoy working and learning?

An early, and very consequential, decision was to build at the scale of the child, giving him an immediate freedom from the tyranny of the adult-sized world—spaces which the child could sense were for his use. A second basic decision was to explore space in the third dimension—to build several levels of spaces and double the usable floor area. Being teachers rather than designers, their knowledge of structure was limited and their ability to think in three-dimensional forms, they admit, was not well developed. In an early project, an independent school for 4- to 12-year-olds in four rooms of a Victorian house in Pittsburgh, one of their major structures had to be rebuilt three times until it was not only structurally sound, but functioned as intended and looked right proportionally in the room.

Another early project, a day care center for 100 children of the employees of American Telephone and Telegraph in Washington, D.C., was installed in an abandoned supermarket and organized like a market—a central gathering space with streets leading to other, interconnected spaces. This center has been in operation nearly two years. The original program for ages 2½ to 5 was set up by Margaret Skutch, di-



The AT&T center in Washington D.C. is organized around a central gathering space (top of photo) with "homebase" areas around the periphery.



rector of the Early Learning Center in Stamford, Conn. who had worked closely with Curtis and Smith in its design. After the first year, AT&T gave the contract for running the center to the Singer Co. Many of the teachers trained by Ms. Skutch have left and the design suffers from misuse. Much of the original materials have been removed, the director and new teachers do not know what to make of the multilevel spaces and, consequently, a very traditional educational program of organized teacher-leading-child activities has been superimposed on the spaces. Just providing designed spaces doesn't ensure their use unless those running the program allow, even encourage, the children to use the spaces and make choices for themselves.

These two early projects and a third, the Early Learning Center in Stamford, were all done as part of Curtis and Smith's full-time profession as teachers and as members of John Holt Associates, educational consultants. The first project after forming their own company was the Mother of God Academy in Stamford completed in Sept. 1971. A small center for pre-school children, it is run by the sisters of a Rumanian order who helped with the installation by doing all the painting and making the fabric hangings. Besides designing the structures for the space, Curtis and Smith developed a system of storage that makes a game of hide and seek out of finding and putting away materials and supplies. Acrylic containers suspended from the ceiling are operated by ropes and pulleys from a central control tower. Variable light and sound systems were also provided so that by changing lighting levels and playing different types of music, the children could alter the mood and create different settings for themselves.

Two projects designed but not yet installed are both for Chicago—the YMCA and the Crow Island School Resource Center. The "Y" project, for 2- to 5-year olds, added a requirement: it would be necessary to move the installation in two years when the "Y" took over new space. For the first time, the designers used a modular component which could be taken apart and easily reassembled. The modules connect three contiguous rooms with towers and catwalks that will accommodate small carts for the children to travel in.

The Crow Island project, for children 5 to 12, is a library, resource center and creative arts center in the 6700-sq-ft basement of a Saarinen-designed school. One of the goals developed with the staff and board members was to have total

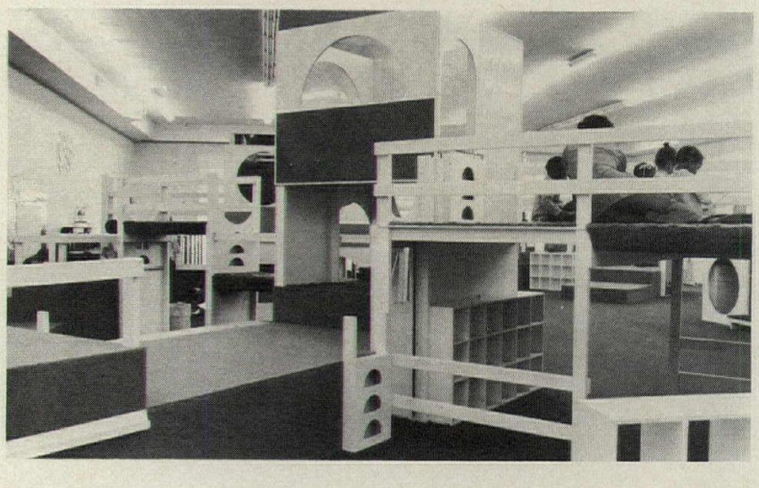
communication over such a large area. Video tapes, monitors and intercoms will be incorporated in the space and will be used both by teachers and children. The total area was divided into two zones: an active zone for crafts, painting, woodworking and cooking, and a passive zone for quieter and more private activities. The two-level structure divides the two zones, is a means of traversing the space without touching the floor, has enclosed private spaces on the upper level and also serves as the core of storage for the library. Due to the nature of the program, this is one of the most specific-use spaces that Curtis-Smith has designed.

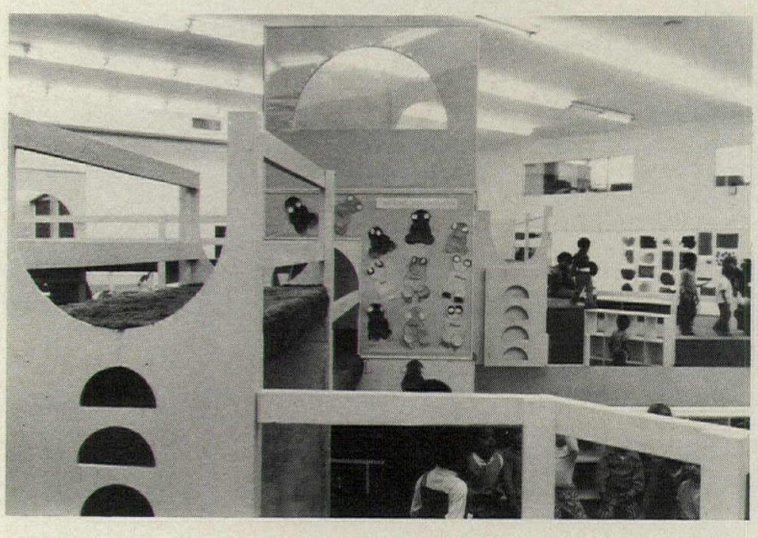
The most recently completed project—a Montessori school in Newtown, Conn.—was installed in a small wood frame building that formerly housed a restaurant. A main space two-stories high is flanked on either side by low, one-story spaces. The main space contains a multilevel circular tower stair leading to a high overlook under the peaked roof, a lower, square tower and a walkway through the middle. The structure spills out into the adjacent side spaces which have carpeted seating places, terrariums, arts and crafts activities. There are innumerable ways of moving through the space, many paths to choose from; it is the most complex environment spatially that Curtis-Smith has designed.

Neither Paul Curtis nor Roger Smith is self-conscious about design or about not being formally trained as a designer. It is, for them, only a natural extension of their feelings about teaching, the child and the experience of learning. In many ways, their attitudes and designs contradict the formalized notions of architecture. There are no specific functions to be cataloged, organized and designed for—no math rooms, reading rooms or play areas. Juxtaposed to the nonspecific programmatical requirements, however, are the very real and distinguishable shapes and spaces, colors and textures. In that juxtaposition there is an apparent contradiction to the traditional notion of form and function.

Referring to a previous article on learning centers (Learning through Design, P/A, Feb. 1972) a P/A reader raised the issue (Views, May 1972) that there was little evidence to substantiate the assertion that the design was structured "to respond to the child's needs" and that forms related to learning. The same questions obviously can be raised here. The difference, however, is that there is no presumption in Curtis-Smith's work that any specific visual decision influences or affects learning directly.

The intent of the designs goes beyond the accepted realm of function as determinative of form; it deals, instead, with the nature of the learning process. The nonspecific function of the spaces allows the choice of their use to be made by the child. It provides the stageset for his imagination, his exploration, his changing moods and needs for a variety of experiences; and it provides for these at the rate that the individual child is ready to accept, to expand his own capabilities. The emphasis is not on design, but rather on the nature of growth, learning as a process of making choices. [SLR]





This "homebase" is a space where approximately 20 children can gather for meetings and projects. It is surrounded by undulating, carpeted platforms ranging from floor level to 3 ft in height. In the background, a catwalk leads to two high towers overlooking the homebase.

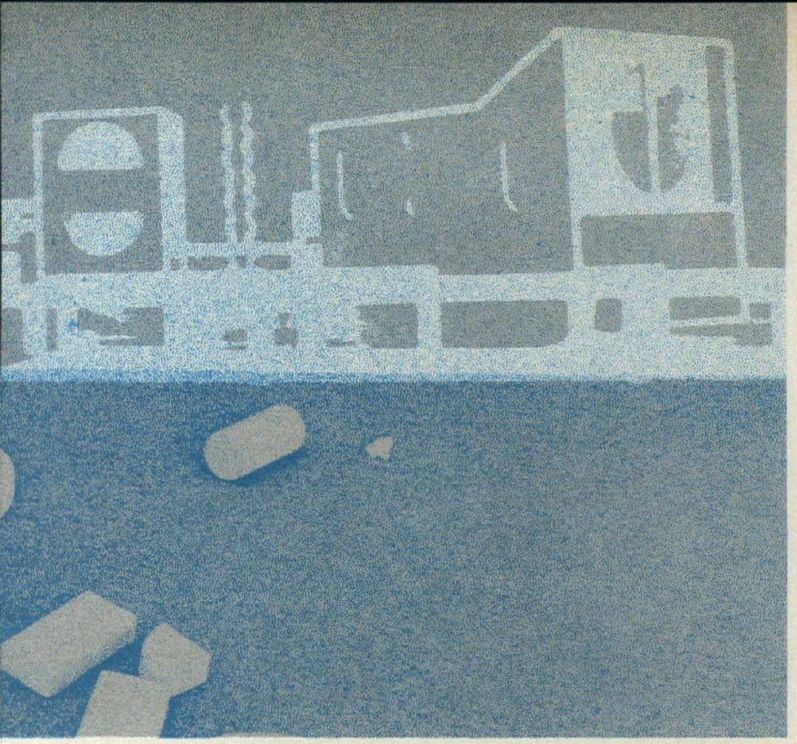


Photo-montages by Paul Curtis and George Kelly

All photos: Sharon Lee Ryder

Interior design

Children are sensitive to space

John Holt

I taught once at a small elementary school where each year we would have an all-day school outing and picnic. On one such outing we drove up to a new place that none of us had seen before. There was a flat, grassy field, the usual picnic tables and fireplaces; and beyond, a broad gentle hillside, covered in knee-high grass. The children, as if pulled by magnets, went to and up that hill, each one making his own path, running this way and that—drunk on space. That space beckoned, demanded to be used, explored, filled up, occupied. This hillside was just the right size, big enough to be inviting and exciting, not so big as to be overwhelming. The children responded.

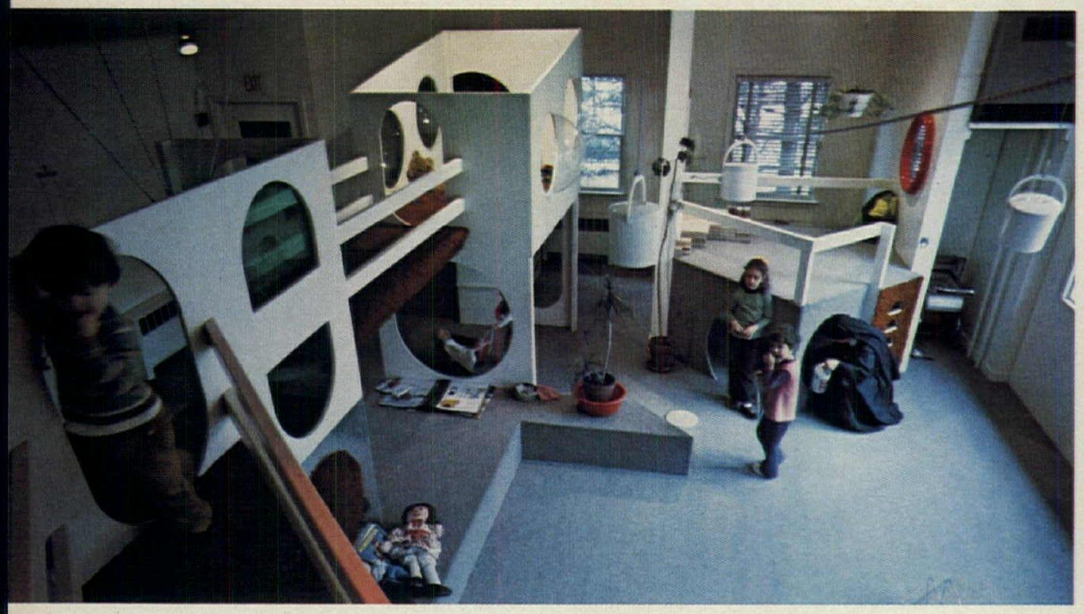
We all respond to space, but most adults so seldom see a space that we want to and can respond to that we lose much of this sense. Our surroundings are often so ugly that to protect ourselves we shut them out. Children, on the whole, have not learned how to do this. Children respond to many other kinds of space, not only big space, open space, but small spaces, cozy places, especially hidden private places.

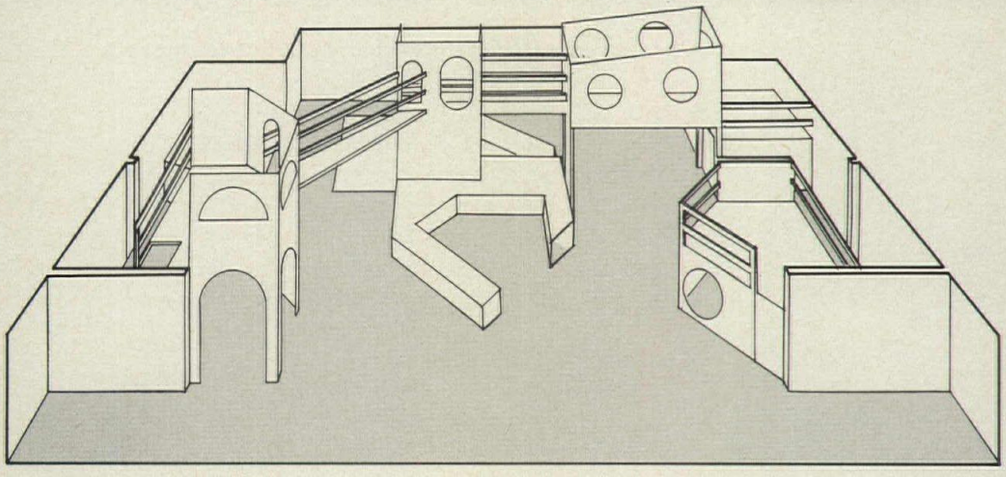
The right kind of space *creates* activity. A child sees the space and his imagination begins to soar. He does not think, "Now there is an interesting space, what can I do with it?" His mind jumps past that, begins to create scenarios of action, play, make-believe. A place that he might crawl under instantly becomes some sort of cave, and his mind begins to make cave fantasies, to invent cave games and possibilities. It is as if there were in his mind all sorts of things ready to happen and waiting only for the space to appear in which they could happen.

If children see a cozy spot, secluded enough to be private,

Author: John Holt, lecturer and author, has been an outspoken critic of the traditional system of education and an advocate of individualized learning. His books include: *How Children Fail, How Children Learn,* and *Freedom and Beyond.* He has taught and consulted on educational change in various schools including Harvard University and the University of California.

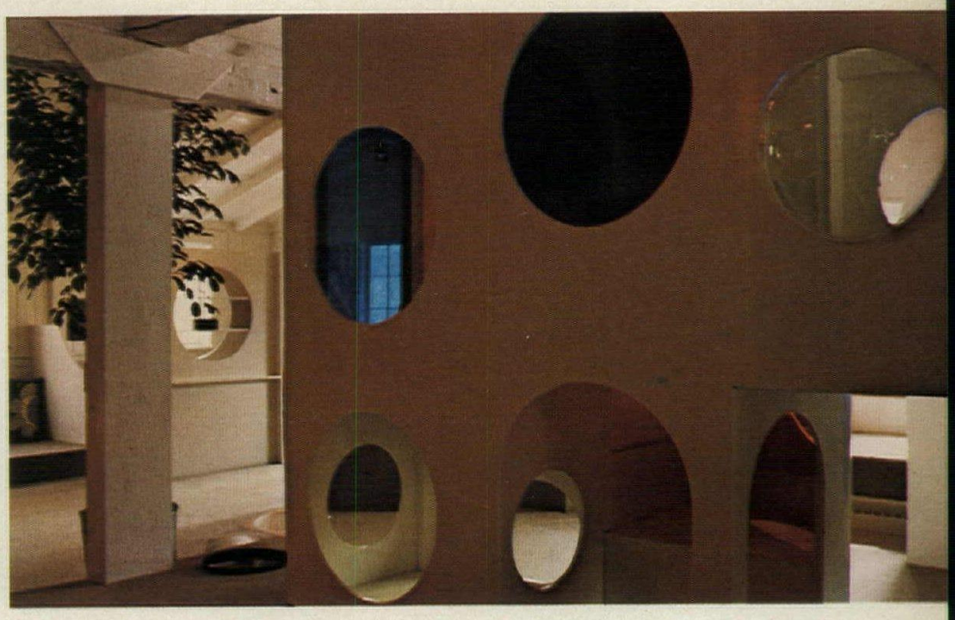
Child's play

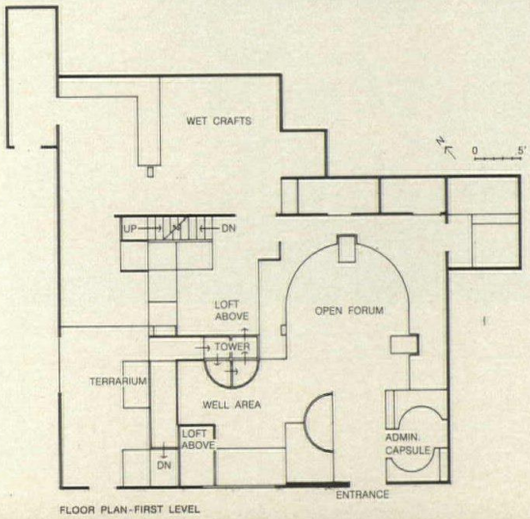




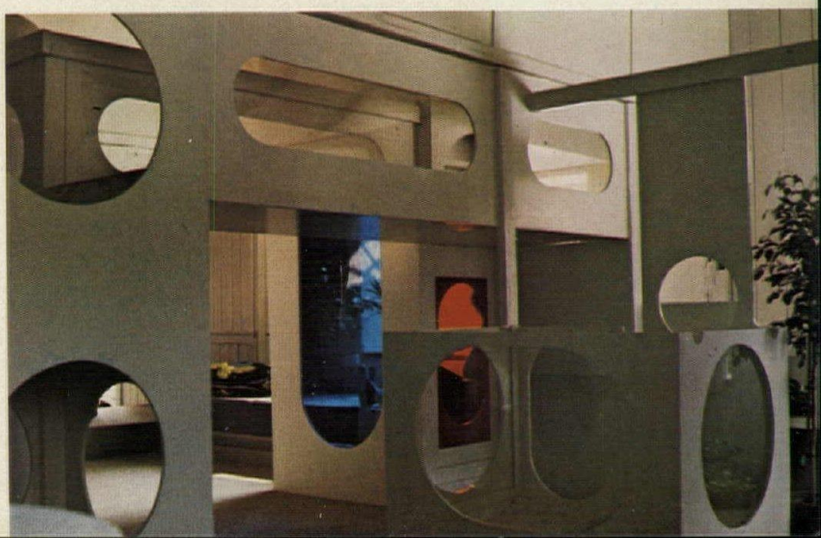
From a 2-ft-high platform at the Mother of God Academy, a child can look into a well and up into the three main towers, connected by catwalks. The central tower is the control point for the pulley storage system. Climbing up a carpeted ladder, a child can crawl into a small structure with bubble windows large enough to stick one's head in and look out of.

Semi-round form in the middle of the Newtown Montessori School is a two-story tower with an interior stair and places to look out of through colored acrylic panels. The stairs lead to a loft overlook high up under the eaves of the tall space. There are numerous other routes leading to and from the overlook as well as a bridge connection to a smaller tower.





FLOOR PLAN - FIRST LEVEL



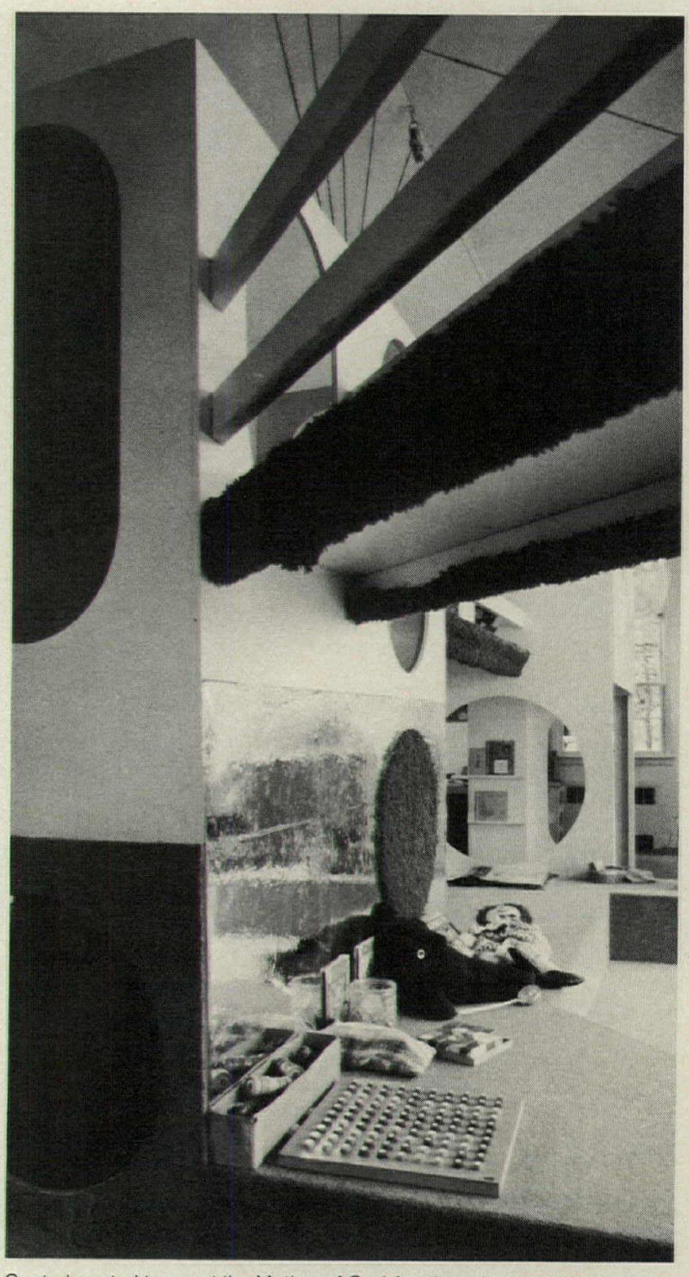
but not so hidden as to be secret, or completely cut off from what everyone else is doing, they begin to think of things to do there, perhaps by themselves, more often with a good friend. In one otherwise not very imaginative classroom, someone had put up two pieces of cardboard or masonite, about three feet high, to enclose a corner, and had put some cushions into it. There were almost always two children in that corner, perhaps reading with and to each other, perhaps talking, perhaps playing some quiet and intimate game.

Space creates activity. A tunnel demands to be crawled through. And no child crawls through a tunnel just to get to the other side. As he crawls he imagines himself somewhere exciting, doing something important and probably dangerous. The tunnel creates things, not just to do, but to think about, talk about, plan about, argue about with other children, do over and over in many different ways, vary, embellish. In the same way, whatever can be climbed, *must* be climbed, in many different ways, in many different imagined situations. An enclosed spot that can be looked out of, must and will be looked out of, as if it were a ship, or a train, or a car or a fort. A spot that can be looked down from, will be looked down from, as if it were a tree, or a balloon, or a plane, or a rocket ship, or a satellite or whatever he wants.

None of this is likely to happen, even if the adults in charge allow it to happen, want it to happen, even try to make it happen, in the conventional schoolroom with a flat floor and the usual school furniture.

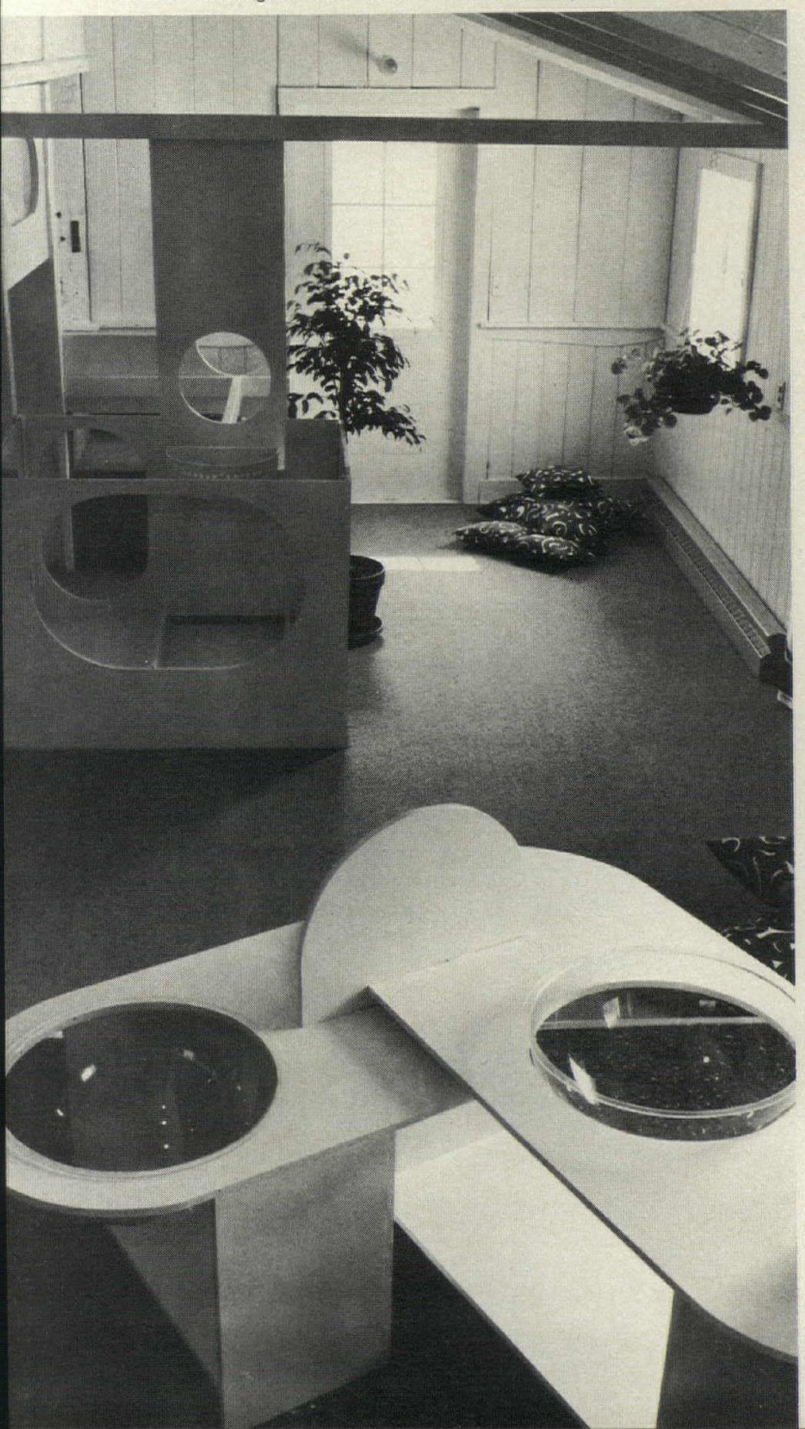
People who are trying to turn conventional classrooms into open classrooms in which children can move about and make their own activities, in which many things can happen at once, have a problem with the space. Usually they divide it up with various kinds of vertical barriers which block not only movement but sight. A small room ends up broken into many still smaller ones.

There are better ways. Imagine a room, flat floor, no furniture. Take a space, say 6′ x 6′, and raise it a foot off the floor. Instantly a space is created, defined, bounded. Children who see it will think of things to do on it, in it, with it. In their minds, they will begin to make things out of that space. But this space, though it defines and confines their activity, will not cut it or them off from anyone else. Other children can see what those on the platform are doing, and can move about without disturbing them. There will be few of the usual quar-



Central control tower at the Mother of God Academy is viewed from under a catwalk that leads to a small private space where children can retreat.

Low side space at the Newtown Montessori School has a water play area in the foreground and a terrarium in the background.



rels about turf. If we use paths as interesting ways to get from one part of the room to another by making them into catwalks from which children can look down at what is going on in the room, the children will go out of their way to use them, will invent fantasies and games to go with the paths. The paths, at first just ways to get from one place to another, will become active and creative spaces of their own.

This creates what at first seems paradoxical. If we begin with a room, so much floor space, we will have a room for only so many people, so much activity. If we now put things into that room, to divide, shape, articulate that space in all three dimensions, the room will become larger, will hold many more people and the children using the room, will more often be excited and inspired by what the others are doing. Thus the proper shaping and use of space within a room not only generates activity, but provides more room in which it can happen.

The best school, architecturally, that I ever saw or worked in was not designed as a school at all. It was the Commonwealth School in Boston, which is housed in two old houses, tall and narrow, five floors and a basement, joined together at every floor to make one building. From the point of view of almost any school architect, the building is a disaster, full of "wasted" space, "unusable" space—stairs, stair landings, little corridors, closets, bathrooms, tiny rooms too small to use for any recognizable school purpose. And those spaces, as much as anything else, have been the making of that school. A great deal of the most important intellectual and social life of the school went on in them. In and on these stairs, landings, corridors and corners, students meet, study, talk, argue and dream. The tiny closets and bathrooms have been made into private studies, which the older students sign up for and decorate in various personal and eccentric ways. One student filled a bathtub with cushions and made that her reading and study space. Whoever would have thought of such a thing, would have planned and built such a mixture of public, semiprivate and private spaces? But it is what most schools desperately need.

We would have to worry a lot less in our schools about "motivating" children, about finding ways to make good things happen if, as Paul Curtis and Roger Smith have done in these examples, we would just provide more spaces in which good things *could* happen.

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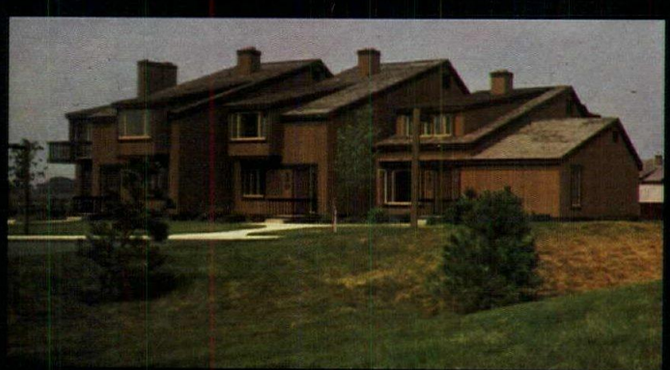

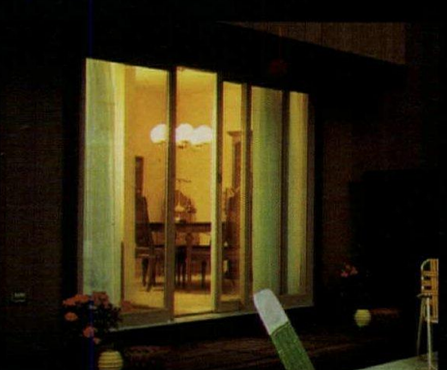

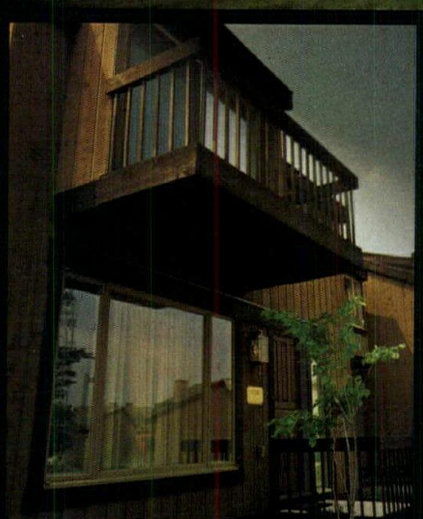

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Continuous power supply

Joseph V. Ortiz and Clarence Tsung

Transient failures in electronic equipment caused by voltage fluctuations can be averted by the installation of an uninterruptible power supply system

The increasing use of real-time computers and their vast interconnections of data processing equipment, process instrumentation and critical communications has created a need for high quality electric power which cannot be satisfied by the utility-supplied power distribution systems.

In contrast with conventional electric equipment, computers and other critical electronic equipment, with their far more complex components and circuits, are extremely sensitive to short-term power fluctuations. They may make errors, suffer damaged memories or shut down under power fluctuations lasting only a few milliseconds. The disturbances causing these problems are frequent and inevitable occurrences with normal public utility service. Even in metropolitan areas served by the most elaborate electric power distributing networks, U.S. public utilities simply cannot deliver sufficient quality power to avert computer malfunctions. Uniform power flow can be interrupted, for instance, by high-tension equipment faults, or even by lightning, wind and routine switching. Similar problems with the street distribution system and low-tension building equipment can multiply these harassing transients to over 100 a year.

To overcome such unavoidable power deficiencies, installing a power-buffering system, known as uninterruptible power supply (UPS), is the most practical and economical means of assuring the steady, constant power flow needed to avert transient failures in electronic equipment. Even the utilities recommend this method over the alternative of buying unadulterated power suitable for such applications. Thus far, the rates or conditions under which such power is supplied cannot compete either economically or functionally with the installation of a UPS.

Most computers now in use require a normal power supply of 120/208 volts, using a three-phase, four-wire, 60-cycle-per-second (Hz) alternating current. In addition to the 60-Hz alternating current, some recent models also use supplementary 208-volt, three-phase power at higher frequencies such as 415 Hz. To assure proper functioning of their EDP equipment, manufacturers' installation manuals recommend that voltage and frequency remain within certain carefully prescribed limits.

Voltage fluctuations of extremely short duration can produce undetectable computer errors and/or shutdowns. A voltage variation lasting one millisecond can cause thousands of computer errors in today's high-speed computers. Similar voltage variations lasting only 10 milliseconds will multiply the errors and may also shut down the computer.

Basically, there are two available UPS methods: the inertial type and the solid-state electronic type. Both are acceptable to the EDP equipment's critical requirements.

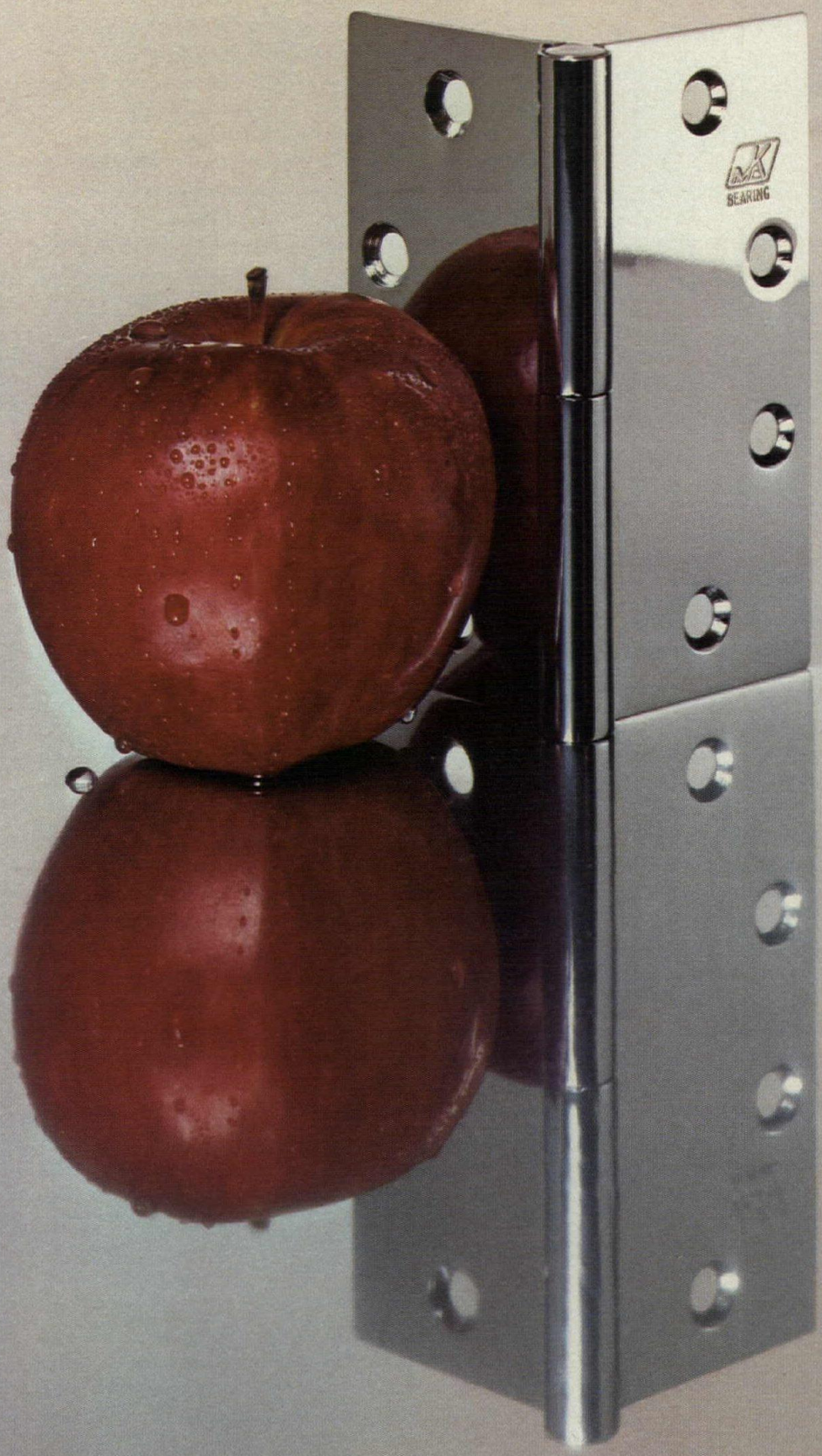
In the inertial system, utility power energizes a motor with an energy-storing flywheel connected to an a-c output generator through an eddy-current coupling. When utility power falters, the kinetic energy stored in the rotating flywheel is automatically transmitted and regulated by the coupling controls to maintain the output generator at proper voltage and frequency for 15 to 20 seconds. Under full load, the flywheel's rotation may decelerate from 1200 to about 1000 rpm. The rpm difference which might be expected to affect generator output is compensated for by the eddy-clutch. If the utility failure lasts more than a second, a back-up emergency diesel generator starts up. In less than 10 seconds, it replaces the utility as power source without affecting computer operation. When utility power resumes at normal and stable levels, it automatically re-energizes the driving motor; emergency power shuts down; and the system awaits the next emergency.

In the solid state electronic system, the a-c utility power is rectified and connected to the d-c bus and storage batteries. From the d-c bus the electric energy is reconverted into a-c by means of static inverters, with an output similar to the utility power supply. When the utility power falters, electric energy stored in the batteries continues to supply the inverters for intervals up to one hour. The time interval depends on battery size and time required to put an emergency power generator into operation as a replacement for utility power. When normal utility power is restored, it automatically re-energizes the rectifiers. When batteries are properly recharged, the system is ready for the next emergency.

Both inertial and electronic UPS systems are comparable in overall efficiency, performance and space requirements. The initial cost is somewhat greater for the electronic system but noise and exhaust problems are reduced. When using an inertial system, a diesel generator must be provided to obtain unrestricted and continuous operation of the system beyond the carry-through capacity of the inertial flywheel (about 20 seconds). For the electronic system, the standby generator is necessary if the operation of the system is extended beyond the capacity of the batteries (usually about 30 minutes).

The recent trend, however, has been to use solid-state electronic systems which offer inherently simpler installation methods, quieter operation, higher efficiency and lower maintenance costs over the years. In addition, continuing rapid advancement in solid-state electronic technology promises a brighter future for steadily decreasing cost and physical size per system kva and also greatly improved overall reliability.

Authors: Joseph V. Ortiz is a Senior Engineer and Clarence Tsung an Associate with Syska & Hennessy, Inc., Consulting Engineers, New York City.



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Specifications clinic

Uniform construction index

Harold J. Rosen, PE, FSCI

The addition of the Project Filing Format to the Uniform System provides a broader scope of information for easy classification and retrieval but involves many changes, deletions and additions as detailed in the article below

The Uniform System for Construction Specifications, Data Filing and Cost Accounting was first published in 1966. This document was a first attempt at correlating diverse elements in the construction industry so that a meaningful and useful agreed-upon organized informational system could be achieved. It included the CSI Format which governs the organization of specifications; the AIA Standard Filing System for filing manufacturers' literature; and AGC Guide for Field Cost Accounting which deals with cost analysis. The Conference on Uniform Indexing Systems brought these major organizations together and produced the Uniform System, a side-by-side arrangement of this information keyed for easier classification and retrieval.

In 1972 the Uniform System Joint Industry Conference revised the Uniform System and published the Uniform Construction Index. One of the major additions was the inclusion in the Uniform Construction Index of the Project Filing Format. This Format is the contribution of the Canadian Building Construction Index Committee. The format is arranged so that it permits the filing of correspondence and information pertaining to a specific project, governing administration, design, bidding and construction. However the Project Filing Format is not keyed to the other three elements of the Uniform Construction Index. A separate matrix of broadscope headings is established to provide an overall format for the filing of project information.

Some changes have occurred between the issuance of the Uniform System and the Uniform Construction Index. Some involve the names of the division headings as follows:

Former name	Present name
Div. 5 Metals; Structural & Misc.	Metals
Div. 6 Carpentry	Wood & Plastics
Div. 7 Moisture Protection	Thermal & Moisture Protection
Div. 8 Doors, Windows & Glass	Doors & Windows

Other changes involve the rearrangement, the addition and the deletion of some items. Obviously experience with the first Uniform System has dictated change which is reflected in the Uniform Construction Index.

A major change has occurred in Division 1, General Requirements, so much so that any specifier following the system will have to drastically rewrite this portion of his specifications. A side-by-side comparison is shown as follows:

Uniform System	Uniform Construction Index
Summary of Work	Summary of Work
Schedules & Reports	Alternatives
Samples & Shop Drawings	Project Meetings
Temporary Facilities	Submittals
Cleaning Up	Quality Control
Project Closeout	Temporary Facilities & Controls
Allowances	Material & Equipment
Alternates	Project Closeout

The use of the long recognized term "alternate" has been replaced by the term "alternative" which may not be as readily acceptable as the old term. The placing of "Samples and Shop Drawings" under "Submittals," and "Allowances" under "Summary of the Work" are improvements, but locating "Cleaning Up" under "Project Closeout" is inappropriate. "Project Closeout" should be reserved solely for documentation attesting to receipt of information such as guarantees, bonds, record drawings, release of liens, maintenance manuals, certificates, etc., so that the architect or engineer can sign a final certificate for payment.

The creation of a separate title "Material & Equipment" is sound since generalized information on transportation and handling, and storage and protection can be specified here once with little need to repeat it in every technical section.

The new heading "Quality Control" likewise provides a convenient place to spell out the scope of the contractor's quality control program. See "Specifications clinic" on this subject in the Nov. and Dec. 1972 issues of P/A.

There are some discrepancies with respect to the Specifications Format, Part 1 of the Uniform Construction Index and the CSI Format, Document MP–2A dated Sept. 1972. The Uniform Construction Index makes a point that "it is hoped that specifiers will accept the general principles of this format as the basis for international unification of specifications." However, the Uniform Construction Index uses the term "Material & Equipment" as a section title under Division 1 whereas the CSI Format uses the term "Products." Other differing terms appear in both documents, especially for narrow-scope section titles. In some instances the order of the section titles are not consistent.

Another area where improvement can take place is in the listing of technical sections under divisions in some unified manner. An alphabetical arrangement would be far better suited than the present haphazard listing in no particular order. On the whole the Uniform Construction Index is an improvement over the previous Uniform System. Copies of the Index can be obtained from AIA and CSI.

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

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A marvel of the jet age is K.C.I.—Kansas City's International airport—a $250 million dollar installation consisting of three circular terminals, air cargo facilities, two commissaries, a post office and a new control tower.

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Site inspection v. owner's responsibility

Bernard Tomson and Norman Coplan

Contractor's site inspection does not absolve owner from liability or damages if data is withheld or conditions are misrepresented, as cited case points out

The instructions to bidders on public building projects generally direct them to investigate the site before bidding. Both public and private construction contracts often contain an acknowledgement by the contractor that he has inspected the site and that he will not be entitled to any extra compensation due to site conditions which could have been discovered in an appropriate inspection. Such a provision, however, will not necessarily protect the owner against claims for extra compensation or damages where available site data was not furnished to the contractor by the owner, or site conditions were misrepresented to the contractor.

In a recent decision (*County Asphalt, Inc.* v. *State of New York,* 337 NYS 2d 415) an appellate court considered a claim of over one-half million dollars for breach of contract arising out of a highway construction project. The claim was based upon alleged acts and omissions of the state requiring the contractor to perform work not contemplated by the contract and to sustain damages arising from the state's alleged misrepresentations and omissions. It was the contractor's position that he had to excavate unclassified material at the project site far beyond that contemplated by the construction contract and that he had sustained damages due to delay arising from the state's failure to decide promptly as to the quantity of "select borrow" he would be required to furnish.

Prior to entering into the construction contract, the Soils Bureau of the state had reviewed and analyzed the original design of the project and concluded that there would be approximately 266,000 cu yds of unsuitable material. The state, however, in its proposal indicated that only 89,819 cu yds would be encountered. The actual quantity of unsuitable material excavated was 224,722 cu yds. The contractor based his damages not only upon the increased amount of unsuitable material excavated, but also on the extra cost arising from the change in the contractor's methods of operation. The contractor also claimed damages for delay and for the refusal of the state to grant an extension of time which resulted in working double shifts in order to make up for the delays.

It was the state's position that the contractor was required to investigate the site prior to entering into the contract and that his failure to make any independent subsurface investigation or analysis of soil conditions bars him from asserting any claim for damages arising from unanticipated subsurface conditions. The Court, in rejecting this position, stated:

"From the date of advertisement for bids and submission of bids, there was only a period of three weeks in which to review the plans and specifications, inspect the job site and prepare its bid, and there was insufficient time to conduct an independent subsurface exploration. The contractor's inspection of the job site did not indicate any difficulties as to the location and extent of unsuitable material. Any inspection that could possibly have been made within the three-week period between the advertisement for bids and the opening thereof, would not have revealed the subsurface conditions to the point where it could be said that the prospective bidder should be forced to rely on this limited exploration over the misleading information supplied by the State which was a result of over three years of investigation. . . . The State set forth in its contract estimate the exact quantities and location of unsuitable material to be excavated. . . . The record further indicates that the State knew or should have known that conditions existed that were not reflected in the information given to prospective bidders. . . . 'The exculpatory clauses in the contract and in the invitations to bid do not insulate the State from liability where the conditions are not as represented in the contract and inspection by the contractor would not reveal the representations to be false.' "

Inadvertently the construction contract had not originally specified the amount of "select borrow" which would be required. Although subsequently the state and the contractor entered into agreements providing for payment to the contractor for the amounts of "select borrow" required, it was the contractor's position that the state's failure to make a prompt decision on the quantity required caused him serious delays. The state, however, contended that since there were supplemental agreements providing for the contractor's compensation, he could not further claim damages for delay. In holding for the contractor on this point, the Court stated:

"There is no question that the unit price of $1.25 per cubic yard for (Select Borrow) covered only the cost of the material and the loading, hauling and placing it on the job site. The evidence established clearly that there never was any intention on the part of the State in paying the contractor for this item and entering into supplemental agreements to preclude respondent from prosecuting its claim for damages. The contractor made it clear during the performance of the contract that it intended to hold the State responsible for its additional costs . . ."

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

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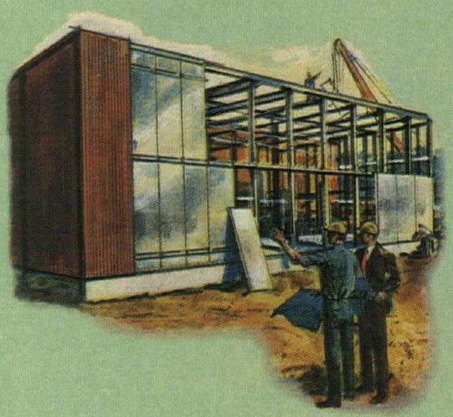

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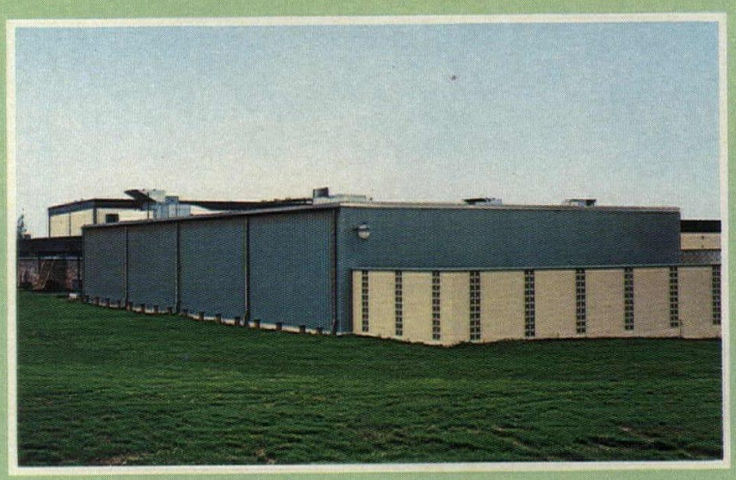

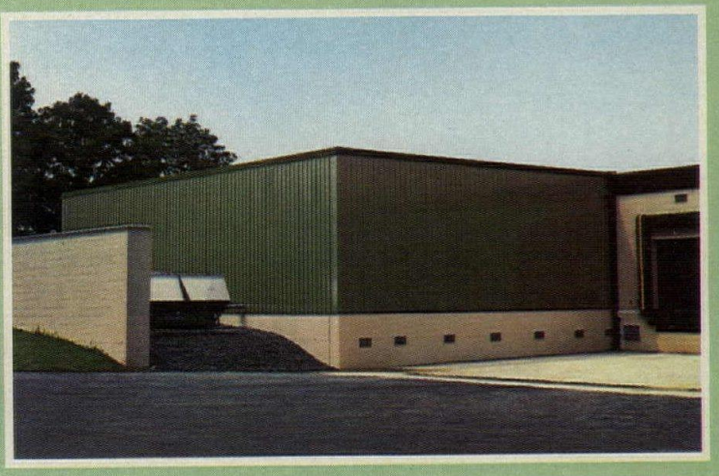

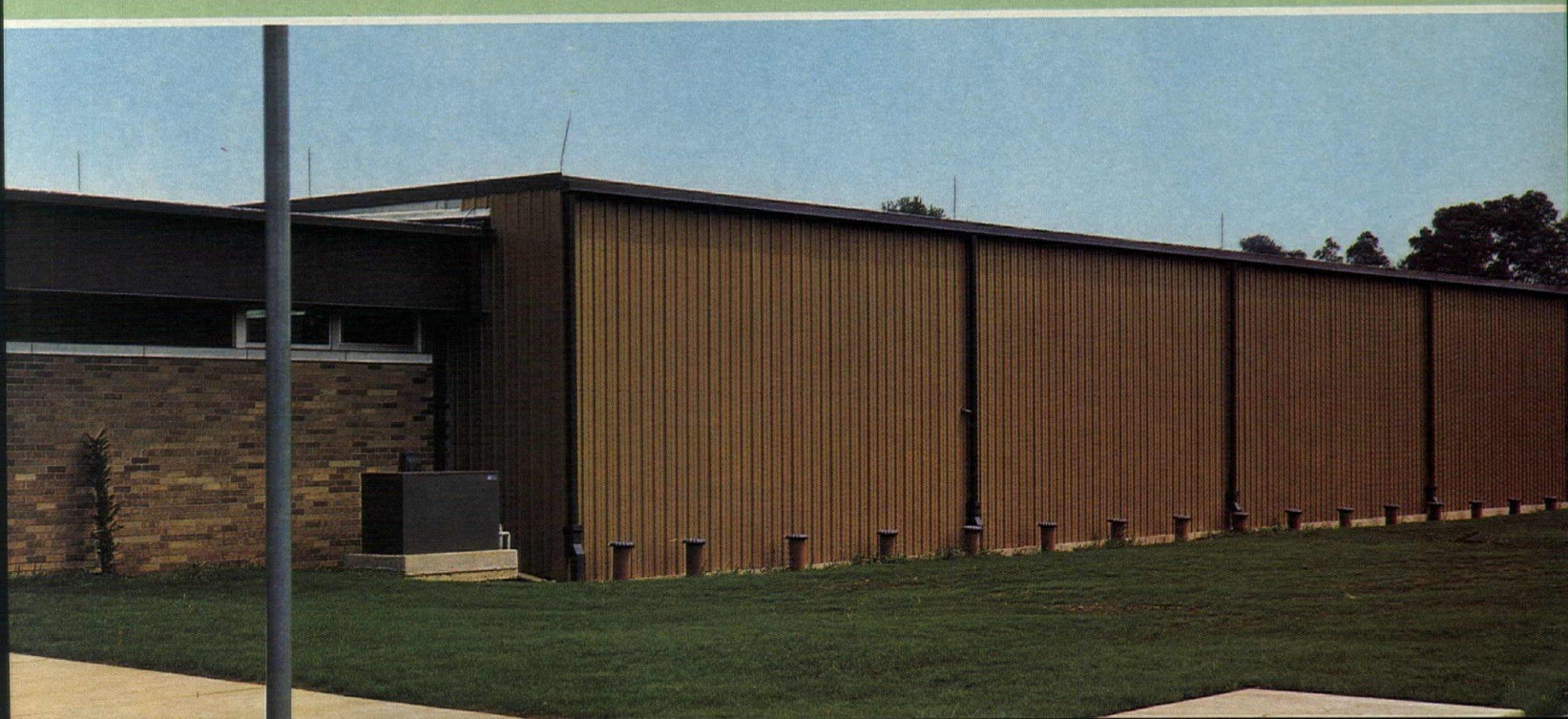

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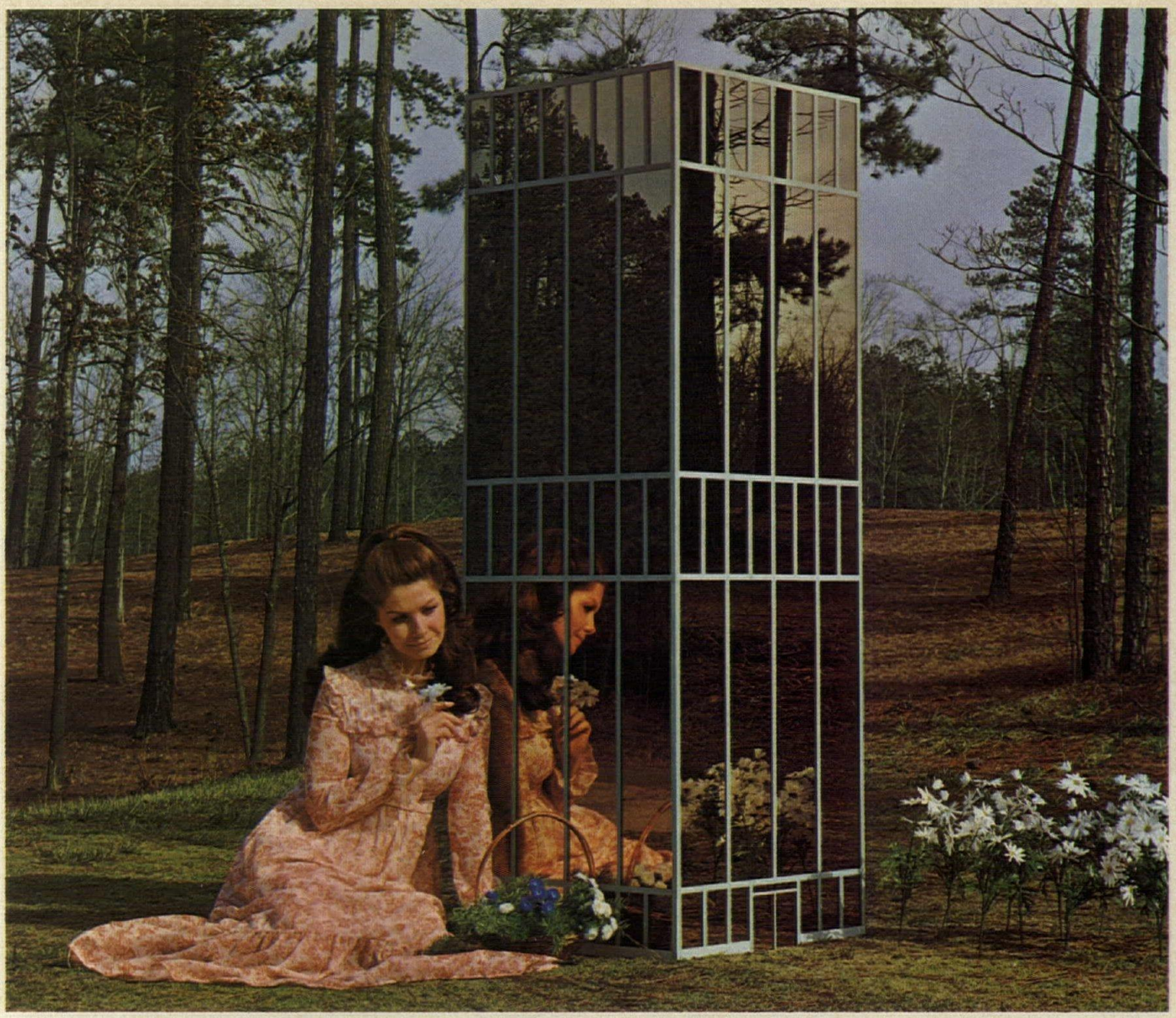

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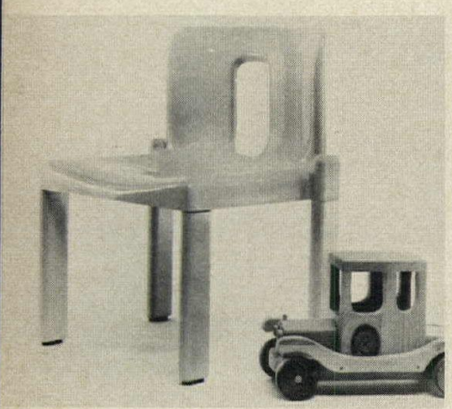
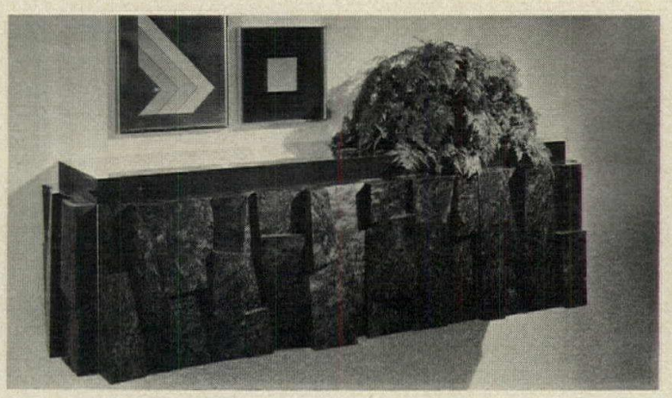
Products and literature

Learning carpet



Seating

Children's chair



Cabinetry

Learning carpet. Solid color carpets have inserts of numerical systems, geometric forms, letters, mazes to help teach mathematical ratios, number progressions as well as visual concepts of shape and proportion. Modules of 3′ x 5′ inserts allow for layouts as large as desired. A comprehensive manual sets guidelines for teachers and supervisors in the use of the learning carpet. Especially suited for schools, it can be modified for use in children's areas in institutions, hospitals, churches or community centers. Allied Chemical Corporation.
Circle 101 on reader service card

Children's stacking chair. An injection molded children's chair for institutional or residential use. Stacks four high; ABS plastic available in white or orange. 15½ in. wide, with 12 in. or 15 in. seat height. Hank Loewenstein, Inc.
Circle 102 on reader service card

Like-lead. A composite material reportedly combines lead's outstanding corrosion resistance, aesthetic appeal and sound barrier properties with the strength of steel. Called roll-bonded lead-clad steel, the material was developed in England; it is produced by pressure bonding lead to steel sheets which have been precoated with lead alloy. The lead-clad steel has been subjected to extensive mechanical and thermal testing without bond failure; it can be fabricated using traditional steel fabricating techniques and has been successfully used for commercial and industrial building construction applications. It is suitable for roofing, siding and chemical construction. Lead Industries Association, Inc.
Circle 103 on reader service card

Elevators. Pre-engineered, pre-manufactured electric passenger elevators for rises up to 30 stories are described and illustrated in this publication. Standardized designs offer simplified planning and installation for single elevators or two- or three-car groups. Completely automatic, elevators carry up to 16 passengers at speed of 200 ft per min for rises to 16 stories and 350 ft per min to 30 stories. Two- and three-car groups automatically coordinate for prompt response to passenger calls without unnecessary elevator travel. Otis Elevator Co.
Circle 104 on reader service card

Self-drilling tapping screws. A revised industry-wide mechanical, dimensional and performance standard for steel self-drilling tapping screws has been developed. This screw drills its own hole and forms or cuts mating threads in the materials into which it is driven. Industrial Fasteners Institute.
Circle 105 on reader service card

Seating. This low back swivel chair has polished chrome finished base, is upholstered in scotchgarded fabrics or vinyls and is fire-protected throughout. Shell is molded reinforced polyurethane. Consolidated Burris International.
Circle 106 on reader service card

Cabinetry. Wall-hung cabinet, faceted in walnut burl, has two bi-fold doors, one adjustable shelf. It is part of a collection of hand-crafted and signed pieces designed by sculptor Paul Evans for both residential and contract use. Directional Furniture Showrooms, Inc.
Circle 107 on reader service card
[continued on page 132]

Satisfying Supercritical Surgeons

Surgeons are trained to be supercritical of their work. And, their desire for perfection makes them supercritical of everything else, including the plumbingware they use and depend on.

So Eljer designed a new full line of hospital-styled plumbing fixtures and fittings to meet their most demanding needs. Besides the plumbingware shown above, you'll find more than 290 other hospital and commercial line products fully detailed and illustrated in Eljer's new "Hospital/Institutional Plumbing Fixtures and Fittings" catalog.

Hospital-styled plumbingware . . . one example of Eljer's ability to meet any commercial building need with a complete line of well-designed, quality commercial plumbing products.

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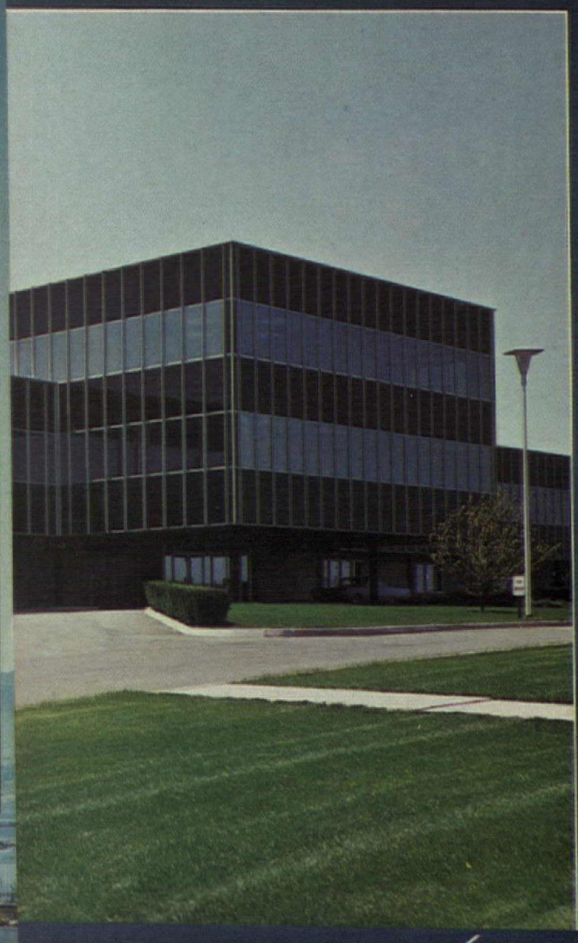

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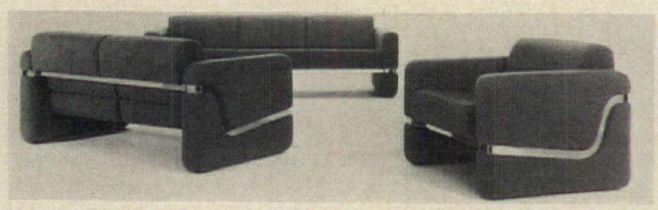
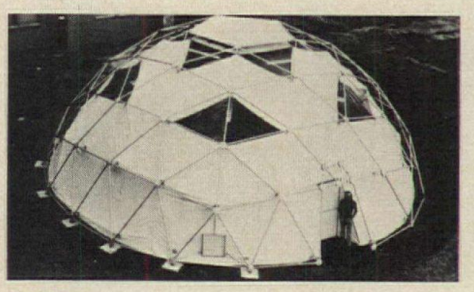
For full information, see your Kawneer representative or contact Kawneer Product Information, 1105 N. Front St., Niles, Michigan 49120.

Products continued from page 128



Jig saw puzzle

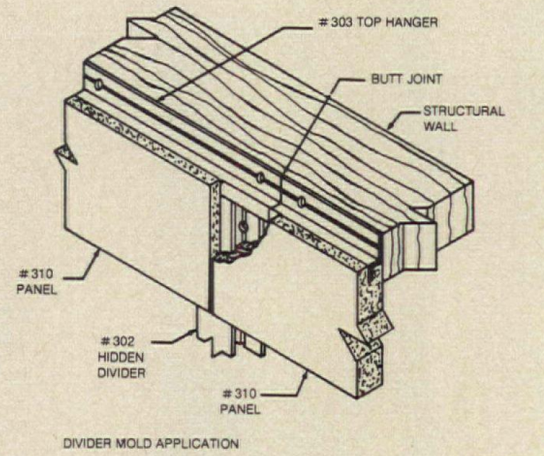


Shelterdome

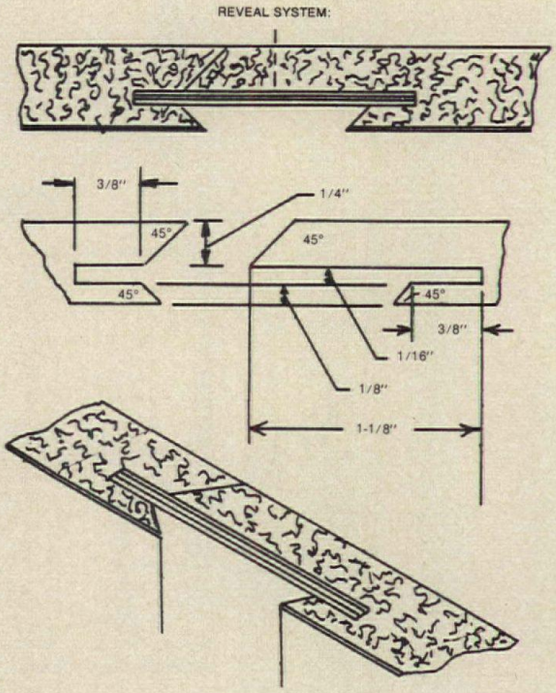
Jig saw puzzle. The signature of this seating group is the chrome structure that outlines the upholstered curved components complementing each other. Double-stitched for strength, upholstery is wool or leather over a foam inner structure. Fortress Incorporated.
Circle 108 on reader service card

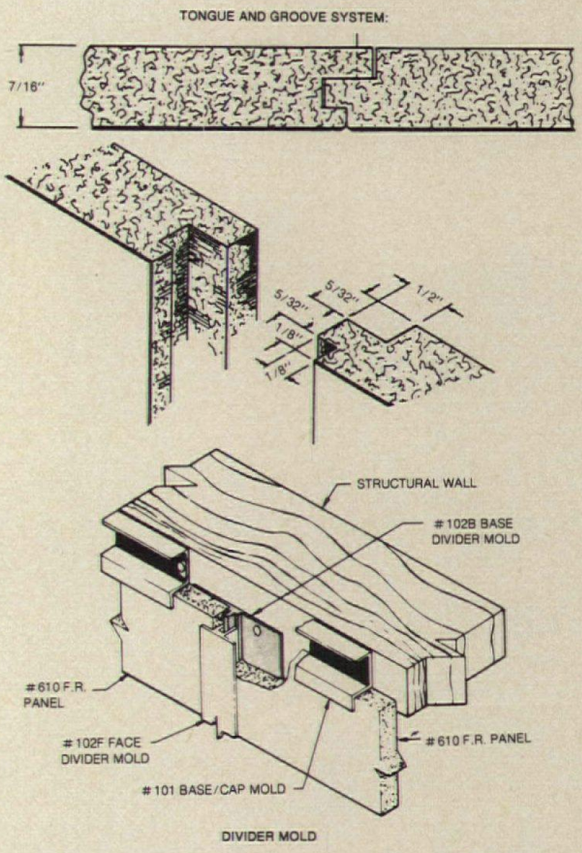
Shelterdome. A spin-off of the space program, Shelterdome was built from computer printouts first written for a NASA study. Assembled, literally overnight, for use as a classroom on the grounds of the New York Botanical Gardens in the Bronx, N.Y., the 45-ft-diameter dome weighs less than 1500 lbs and will support over 60,000 lbs. It is said to withstand hurricane-force wind, snow and ice, is quickly disassembled and transported. The dome lends itself to classroom use particularly since there are no pillars or posts to hinder movement or sight, while the high arching ceiling and translucent walls offer a feeling of openness, Dome East Corp.
Circle 109 on reader service card

Literature



DIVIDER MOLD APPLICATION





DIVIDER MOLD

Paneling system. Four different systems of laminated plastic are available in a choice of 150 woodgrains, solids or patterns. One system carries a Class 1A fire hazard classification, and the other three can be specified with Class I or Class II panels. An illustrated color brochure giving detail drawings and specification of each panel system is available from Ralph Wilson Plastics Company.
Circle 110 on reader service card
[continued on page 134]

EXIT

Enter the Corbin Vertical Rod Exit Device. Double-bolted, dashing. Lean. A graceful oval crossbar for greater strength against stress. A touch of art to match your architecture. And a touch of ease: fingertip operation when the rush is on. An instant opener, yet a real grabber when it's locked. Corbin is a master at this device. We'll show you the way out of conformity, into a whole new world of solid hardware innovations. Get in touch with a Corbin distributor, or write us direct.

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For information write P & F Corbin, Division of Emhart Corporation, Berlin, Conn. 06037. In Canada, Corbin Lock Division.

Products continued from page 132

Fire protection guide. Specification considerations involved in selection of appropriate fireproofing for structural steel framing and a checklist for comparison of various fireproofing materials suitable for such uses are offered in this guide. Glossary of terms commonly used in relation to fire protection given. Carboline Co.
Circle 111 on reader service card

Reflective glass. 16-page publication suggests the design potential of reflective glasses and gives performance data for a wide range of reflective products. Glass with an ultra-thin transparent metallic coating that mirrors a building's surroundings and reflects the sun's brightness and heat are described. PPG Industries, Inc.
Circle 112 on reader service card

Nuclear power. The second edition of "HVAC data file" summarizes current developments in nuclear power generation. Explanations are offered of various types of reactors, construction and operating costs, present nuclear capabilities of on-line plants and estimates of new facilities. Comparisons of natural and nuclear power plants presently under construction are provided as well as projected operating costs. Newsletter BHC 186-2, Better Heating-Cooling Council.
Circle 113 on reader service card

Water purification. Ultraviolet water purifier capable of disinfecting water at flow rates of 75 to 20,000 gallons per hour is described in this brochure. The system utilizes short-wave ultraviolet energy to rapidly destroy water-born bacteria without affecting the water's taste or chemical composition. Approximately 1000 gallons can be treated for each penny of operating cost. Atlantic Ultraviolet Corp.
Circle 114 on reader service card

Plaques and tables. "Art in Bronze" catalog features plaques, architectural letters and custom sculpture with complete specifications. Sheidow.
Circle 115 on reader service card

Ceilings. Photographs of installations and isometric drawings of the various ceiling systems available are shown in this catalog. The systems are designed to eliminate the scheduling and interfacing problems in the component approach to ceiling installation. Five different systems are illustrated, some using vaulted modules with mineral board, some with perforated metal coffers. National Ceiling Systems.
Circle 116 on reader service card

Aerobic sewage treatment. An electrically-driven air compressor helps mix sewage, water, air-breathing bacteria and air together to promote bacterial decomposition of waste at 99 percent efficiency, maker claims. Intended to replace septic tanks where outlawed or where central sewage facilities are uneconomical or impossible, the unit is shown in booklet which outlines operation, design data and specifications. Bio-Pure, Inc.
Circle 117 on reader service card
[continued on page 137]

AT ORONOQUE VILLAGE, 1200 FAMILIES ARE GOING TO LIVE UNDER THE SAME ROOF.

In Oronoque Village, a condominium community in Stratford, Connecticut that will stretch for over 300 acres, GAF Timberline® Asphalt Roof Shingles is the only roofing being used.

It's not hard to see why. Timberline combines the rugged good looks of wood shake shingles with the safety and maintenance-free convenience of modern asphalt shingles. That's a tall order for one roofing.

Moreover it won't rot, crack, warp or split. It's fire resistant. And it has a special self-sealing adhesive to keep it down in high winds.

Timberline's woodlike texture comes in 6 authentic shades. All with that rich, varied shadowing that really makes a home appealing to a potential buyer.

There was one final reason why Timberline was chosen for Oronoque Village. GAF. The company that warrants this great roofing for 25 years against manufacturing defects.

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Oronoque Village wouldn't put 1200 families under it if it weren't. For further details, call your GAF Building Products distributor, or write:

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gaf® ROOFING

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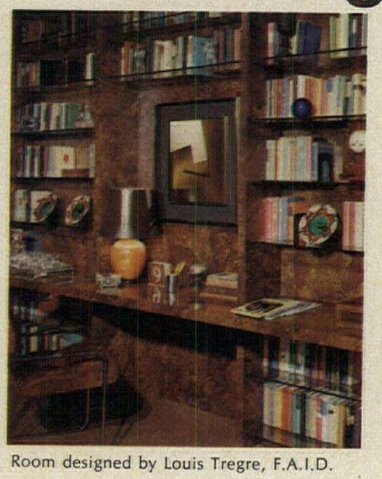
Bewitching bronze.



Room designed by Louis Tregre, F.A.I.D.

Bronze Tableau from Formica. It's classic, contemporary, mysteriously timeless. Its uniquely dimensional surface invites your touch. Its warm earthen tones complement both casual and formal interiors.

Louis Trege utilized the practical beauty of Bronze Tableau for the walls, shelf unit and study desk in the den shown above. His intent was not only to provide a comfortable, chic retreat, but to keep maintenance at a minimum.

We offer you scores of exciting colors, patterns and woodgrains in Formica® brand laminated plastics, including 14 contemporary new designs in our Formica '73 collection.

Your Formica representative has all the details. If you prefer, consult Sweets Architectural File 6.14/Fo or write Dept. PA-4.

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FORMICA® BRAND
laminated plastic

Bronze Tableau, 797.

Products continued from page 134

Engineering document control. Color booklet explains how engineers, architects and draftsmen can benefit from storing their documents on microfilm, then reproducing them either on microfilm or on paper. It covers techniques and materials for scissors drafting, paste-up drafting, revisions and opaquing and drawing restoration. Eastman Kodak Company.
Circle 118 on reader service card

Pass windows. Comprehensive brochure contains 18 details of various types, including special arrangements. There are 11 different specifications, and a pass window specification guide compares features, the cost relationship between types of windows and also materials, such as plain steel, aluminum and stainless steel. The Peelle Company.
Circle 119 on reader service card

Epoxy coating. Color brochure details uses, advantages and coverage of three epoxy coatings designed for application to dry, damp or wet structural materials. Six colors are available. Sika.
Circle 120 on reader service card

Fire/life safety products. This three-color catalog includes specification and selection data on door closers and pivot sets, door holders and stops, and smoke and ionization fire detectors and door releases. A combination ionization fire detector-door release-door closer is also featured. Rixson-Firemark, Inc.
Circle 121 on reader service card

Contemporary copper. Illustrated handbook on sheet copper describes fundamentals, designs, details and specifications. Included are physical properties, structural requirements, available sheet sizes, types of joints and seams most commonly used, weathering characteristics, details most often used in typical applications and specifications following the outline established by the Construction Specifications Institute. Copper Development Association Inc.
Circle 122 on reader service card

Hospital equipment. This 20-page buyer's guide includes photos and brief descriptions of sterilizers, nursing floor and patient-care equipment, surgical tables, surgical lights and cabinetry, washing equipment, water processing equipment and supplies and casework. It also describes various processing and material-handling systems. American Sterilizer Co.
Circle 123 on reader service card

Drawers. Injection molded plastic drawers which are interchangeable and need not be individually fitted are shown in this brochure. Suitable for hospitals, schools, motels, dorms. Amos Molded Plastics.
Circle 124 on reader service card

Commercial furniture. Catalog features a variety of stacking chairs and tables to counter stools and coat racks. Categories of furniture are color-keyed for easy reference. Fixtures Manufacturing Corp.
Circle 125 on reader service card

Owner: Sears, Roebuck and Co.,
Chicago, Ill.
Architect: Albert C. Martin and Associates,
Los Angeles, Calif.

The idea for a perfect cube went into PPG's computer. What came out was the perfect performance glass.

PPG Solarban® 480 Twindow® insulating glass.

When the architects of Sears' Pacific Coast Headquarters Building designed a perfect cube for this office/retail complex, they wanted a reflective glass that would satisfy both esthetic demands and long-range cost and comfort considerations.

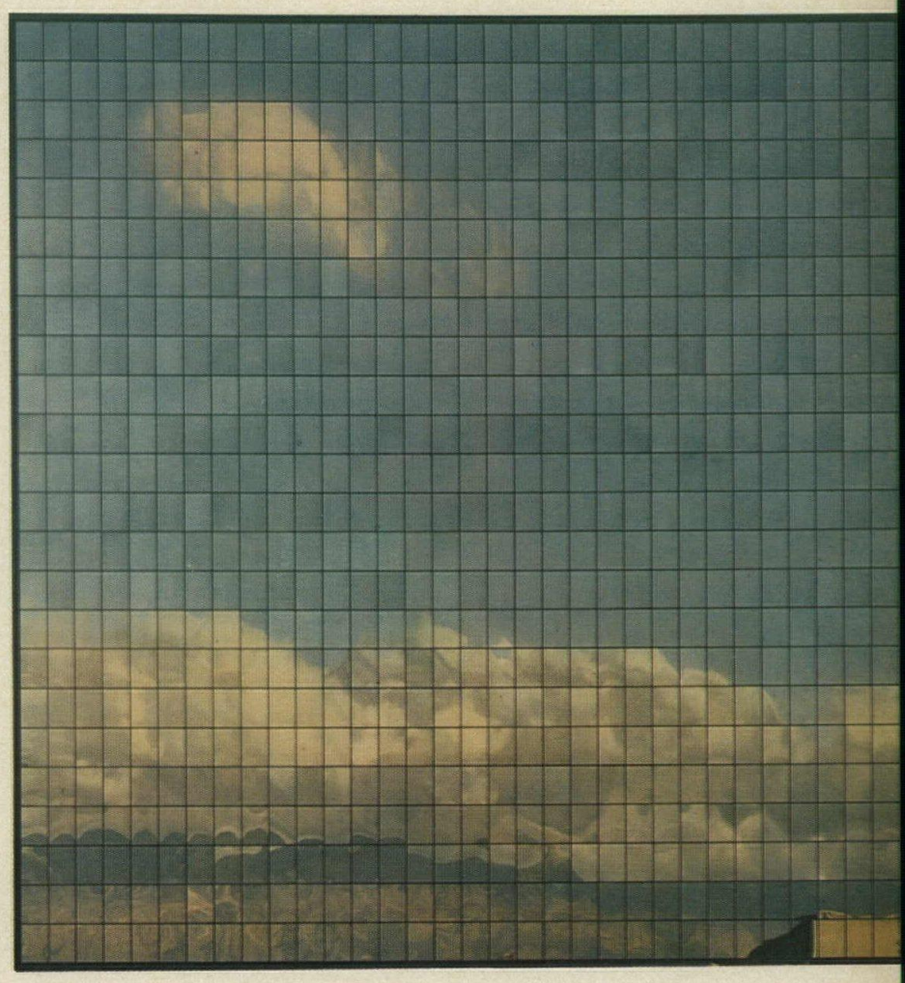
Which is quite a challenge in southern California, where a building's most powerful enemies are brightness and solar heat.

To simplify the decisionmaking, PPG ran a computer analysis, combining site characteristics with eight sets of performance figures for the building's skin.

From this analysis, the architects selected the most desirable glass. PPG *Solarban* 480 *Twindow* insulating glass.

Result: A cube reflecting 168 feet of cloud, sky, and California sunset. While inside, Sears people have everything. Visual comfort, economically controlled temperature, and an open, space-age quality that complements the building's pristine shape.

Look into the advantages of *Solarban* 480 *Twindow* insulating glass—or the others in our family of Environmental Glass—for your next building. Write PPG Industries, Inc., One Gateway Center, Pittsburgh, Pa. 15222.



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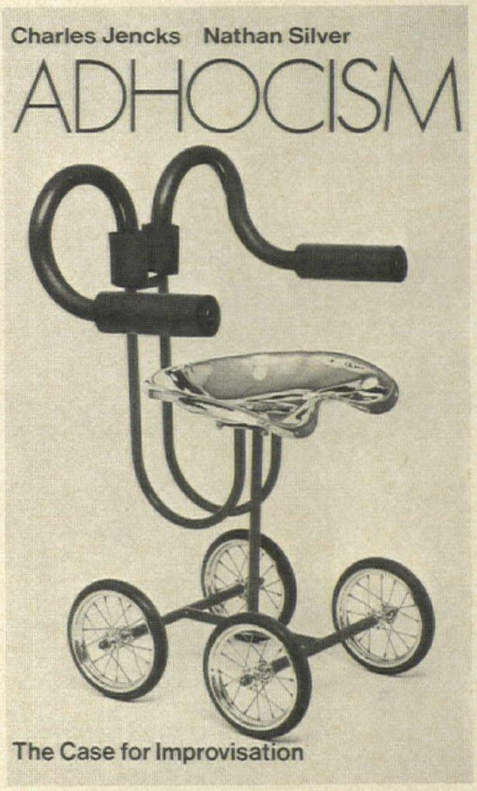

Adhocism: The Case for Improvisation *by Charles Jencks and Nathan Silver. Garden City: Doubleday & Co., Inc., 1972, 216 pp. $10.*

Reviewed by Sam Davis, assistant professor of architecture at the University of California, Berkeley.

Adhocism is a book about improvisation in design. In fact, it is supposed to be a justification of improvisation. Since improvisation is the most prominent form of design process, for both professionals and laymen, it seems presumptuous for anyone, especially an architect or an historian, to legitimize its use for us. As Silver notes at the beginning of his portion of the book, "adhocism" appears everywhere, and "discovering adhocism is ad hoc, and everyone knows all about it. . . ." Then why write this book?

Writing about improvisation, and thus making the process self-conscious, eliminates it from being ad hoc. Most other forms of the design process are very self-conscious and have shown themselves to be without spirit. The most publicized examples are those developed by Christopher Alexander in *Notes on the Synthesis of Form.* It was not long before Alexander realized that conscious ordering is not sufficient for design, and in "A City is not a Tree" he rejected the earlier disciplined process mostly because it was not intuitive and ad hoc. Since all other methods that are not ad hoc are not spontaneous responses to the environment, they must be studied and exposed to be understood. Improvisation needs no such exposure or academic analysis, since it is an individual's logical combination of components as a solution to an immediate problem. Jencks admits that "nothing can be created out of nothing," so all design must be ad hoc at some stage. Then why write this book?

Perhaps we can view it as a catalog of especially inventive, bizarre or obvious designs. Seeing these improvisations may help us spin our wheels; we may even ad hoc an "adhocism." But if exposure and broadening horizons is the intent, an exhibition and a published catalogue without comments would have been more appropriate; certainly the designs are basic enough to be understood on their own—each of us could have projected our thoughts to each piece. The cover of *Adhocism*—a dining chair made from a handlebar, carriage wheels and tractor seat being used as a step ladder—is an excellent and sufficient comment. The focus of the book should be on the improvisations themselves. Although *Adhocism* has many photographs, they are surrounded and smothered in redundant and unnecessary text. The quality of these pictures—black and white, small and without contrast—further emphasizes the empty text.

It is fun to see design, and I welcome the opportunity to see so much in one place, but this attempt is to give us a glass of water and tell us it will quench our thirst. Well of course! At least the container could be ad hoc. Perhaps we can remove the cover, use it as a placemat, and, once we look at the designs, use the book to press leaves.

Facilities for Secondary School Science Teaching, Evolving Patterns in Facilities and Programs, *National Science Teachers Association, Joseph D. Novak, Project Director and Editor. National Science Teachers Association with assistance of the National Science Foundation, 1201 16 St., N.W., Washington, D.C. 20036; $15; paper $12.50, 173 pp. illustrated.*

Reviewed by William Maxwell Rice, AIA, who practices in New York City.

"Demountable partitions are the best way to provide potential flexibility. It costs about $100 to move a full-size partition." If any architect finds such information illuminating and useful he may uncritically proceed to read this book by a team of educators and administrators intended to aid other educators and administrators and, incidentally, architects. The team visited 60 secondary science teaching facilities to "discern significant and desirable trends from exemplary examples." The resulting publication is thoroughly illustrated with clear photographs. What remains unclear is convincing evidence that the educators can support their basic conclusion: change is so rapid in facilities planning that space age science teaching has already been outmoded by ecology. Further, we should be even prepared for the possibility that "5 or 10 years from now, youth may again seek material success as other generations did after World War II." Students fickle, yes. Science, no! Architects will be wise to read this book thoroughly if only to know the thinking processes of their clients, many of whom accept the Educational Facilities Laboratories philosophy as gospel. While EFL is in no way responsible for this book, the educators confess concurrence of views at times "almost embarrassingly in agreement." Examples of unanimity: The "open" school is definitely best (not debatable as some of us naively believe); carpeting is a shoo-in everywhere including chemistry labs; island locations for wet tables are in—wall plumbing was evidently just too easy. The reasons become even more unclear when we are told all furniture must be movable and islands must have flexible drain connections. Yet the center of all rooms must have space for informal furniture arrangements. Indeed the old one-room schoolhouse with students of all ages, if "supported with modern materials and instructional technology," would have much in its favor.

Archigram *edited by Peter Cook. New York: Praeger Publishers, 1972. 144 pp. Hardbound, $12.50, paperbound, $6.95.*

Archigram, a group of young London architects, has produced some vividly original and controversial architectural ideas over the past several years. In this book,

[continued on page 146]

Even in the Dark Ages of audio-visual presentation, nobody was ever in the dark long about its effectiveness.

Here was an indispensable tool for enlightened corporate communications, on every level. Audio-visual equipment was a must!

So they took professionally designed and efficiently planned interior space, and cluttered it up with unwieldy screens. Took acoustically engineered conference areas designed for noise reduction, and moved in clattering projectors. Took painstakingly designed rooms with controlled illumination for esthetic effect and maximum visibility, and turned off the lights.

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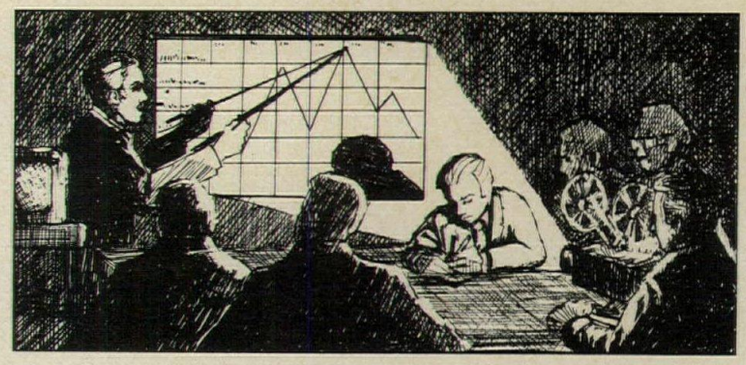

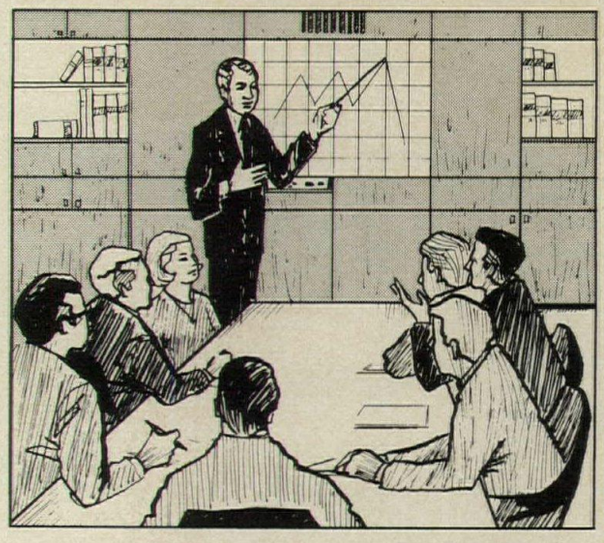

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Now with the AV-COM you can design in an entirely self-contained rear projection audio-visual presentation system — providing your client with most of the advantages of sophisticated and expensive custom facilities — but at the cost of a single, completely prefabricated module.

Ready to use, the AV-COM plugs into any convenience outlet. Simple in its basic components, it has a patented optical system, which includes pre-set special front surface mirror and projector positions. This permits the projectors to be used separately and returned to the unit without re-adjustment. All projectors are in true optical alignment.

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With models measuring from 33 inches in depth, the AV-COM can be recessed into any wall, fitted into a shelf arrangement, or installed to meet any interior design requirements.

The non-glare rear projection screen accommodates horizontal, vertical or square images. Features include remote control, custom accessories and cabinets in a choice of finishes. Guarantee covers optical alignment and electrical controls.

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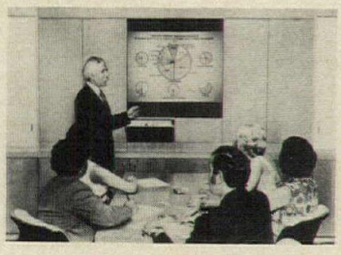

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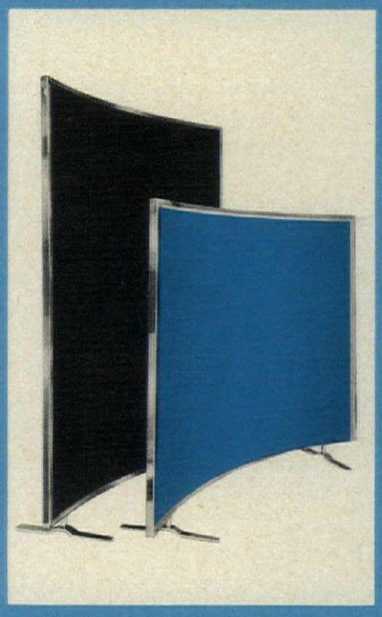
The Sound Swallower



The moment you unpack The Sound Swallower screen it happens. The first thing you notice is your voice sounding a little different . . . muffled. Then the clicks and clacks that you always thought were a necessary office evil somehow don't seem so loud. You open another carton, and the difference is even more noticeable. Now it's *really* getting quiet. So you open another . . . and another.

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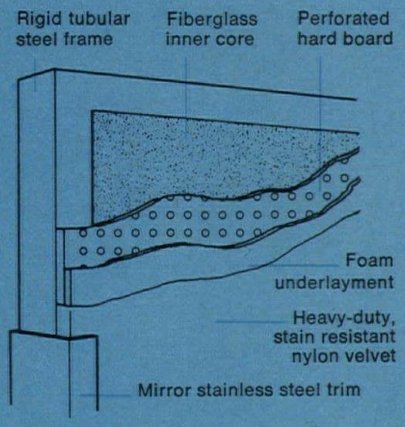
There's really no magic to our screen. We've just engineered the materials of today into this most efficient sound sponge.



Send for our free brochure and sound absorption test data and see exactly how our Sound Swallower works. Better yet, order one from your V-P dealer and put it to work for you.

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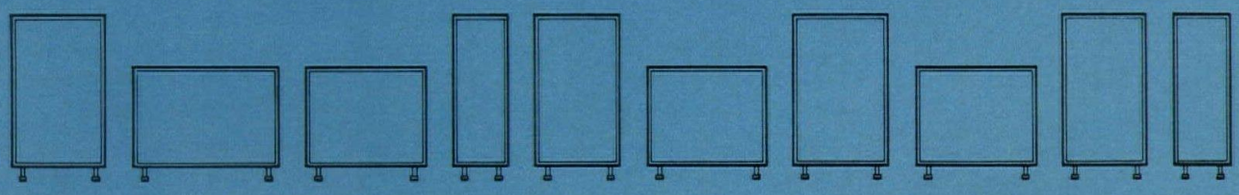


Books continued from page 141

they suggest that in order to survive we must invent new artifacts, new situations, and regard shelter or urbanism as a term of reference that does not demand a "house" or a "city." They presume the eventual use of super-rapid transportation and robots. One of their major projects, the Monte Carlo Entertainment Center, is extensively featured.

Le Corbusier *edited by Willy Boesiger. New York, Praeger Publishers, 1972. 254 pp. Hardbound, $8.50, paperbound, $3.95.*

Based on two earlier books edited by Boesiger, this volume fulfills Le Corbusier's own wish for a moderately priced study of his work. It surveys and illustrates in photographs, plans and sketches a large selection of the architect's principal works, including some of the lesser-known earliest projects. The text includes summaries of Le Corbusier's theories in his own words, as well as extracts from his diaries, conversations and letters. Supplemented by a biography and a complete list of projects, it is an invaluable quick reference to the work of this modern master.

A Visual History of Twentieth-Century Architecture *edited by Dennis Sharp. Greenwich, Conn., New York Graphic Society Ltd., 1972. 304 pp. $27.50.*

In one large volume, Sharp chronologically surveys every building he considers significant completed between 1900 and 1970. An introduction looks back to the achievements and aesthetic problems of the 19th Century. From 1900 on, Sharp prefaces each decade by a short evaluation of developments within those years, and then discusses each important building of the period. Over 1000 black and white and color photographs and drawings contribute to make the book a most satisfying and useful reference of the architecture of the past 70 years.

The Barn: A Vanishing Landmark in North America *by Eric Arthur and Dudley Witney. Greenwich, Conn.: New York Graphic Society Ltd., 1972. 256 pp. $25.*

The barn I knew as a kid didn't look at all like the ones shown in *The Barn;* there were no hex signs, no significant architectural or structural details, no sense of its place in American social history. It was simply a barn, complete with random width planked walls and floors and redolent with hay, leather and grain. I don't know if it still stands, but the odds are probably against it, since Eric Arthur and Dudley Witney have subtitled their book "A Vanishing Landmark in North America."

The book—lavish is the only word for it—looks at barns in every possible way: historically, structurally; from a distance and in detail; in photos and in drawings. It's all done well, and lovingly illustrated in color and black and white. Vanishing though the real things may be, *The Barn* will give anyone—country boy or city slicker—who can come up with the requisite $25 a course in history, a nostalgic treat and a beautiful book. [CP]

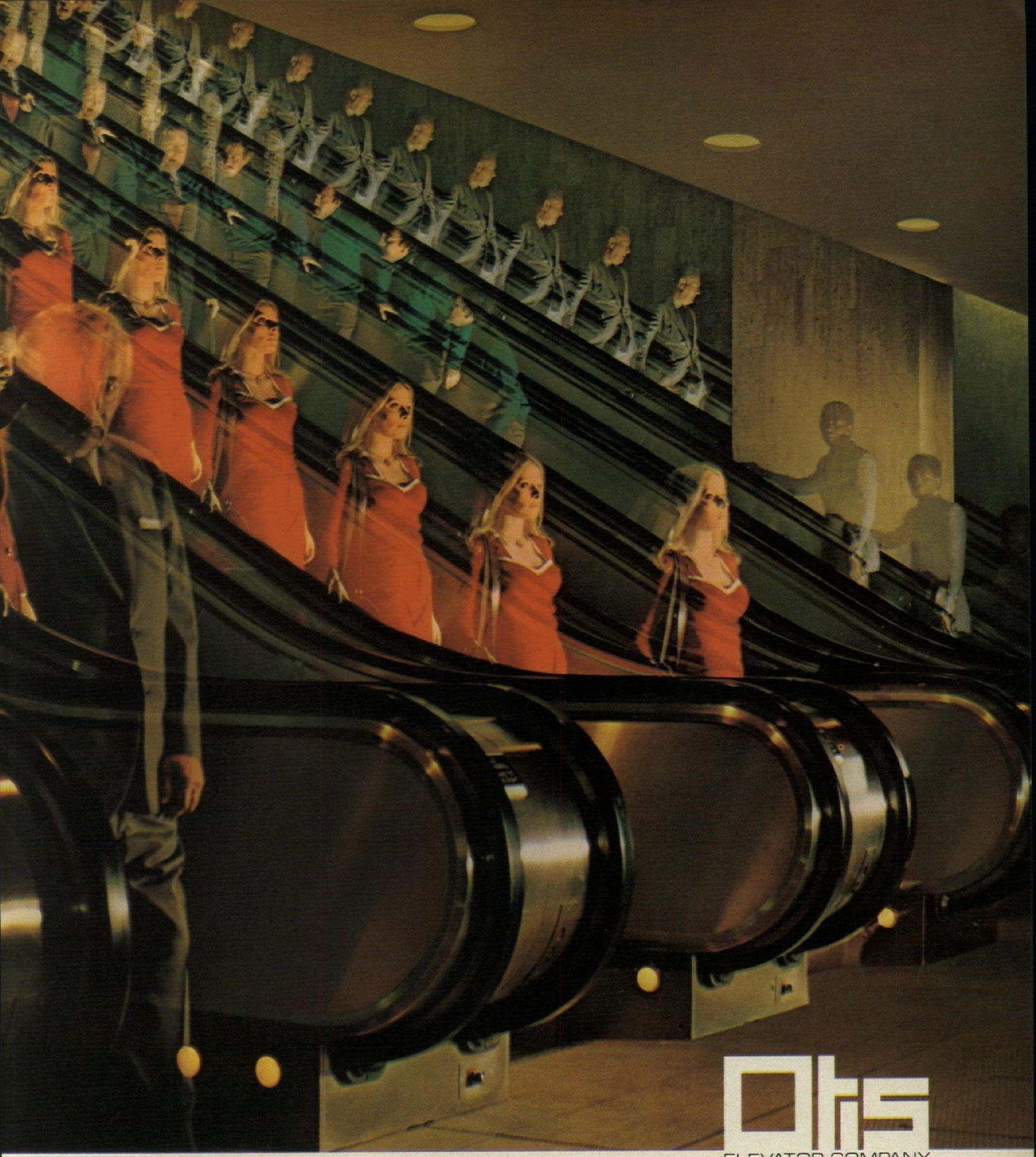
Documents

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

Bibliography of the Computer in Environmental Design *edited by Kaiman Lee. Center for Environmental Research, 955 Park Square Building, Boston, Mass. 02116. Two volumes, ring bound, approx. 600 pp. $110.*

More than 1000 articles, books, conference papers and unpublished literature on

[continued on page 151]



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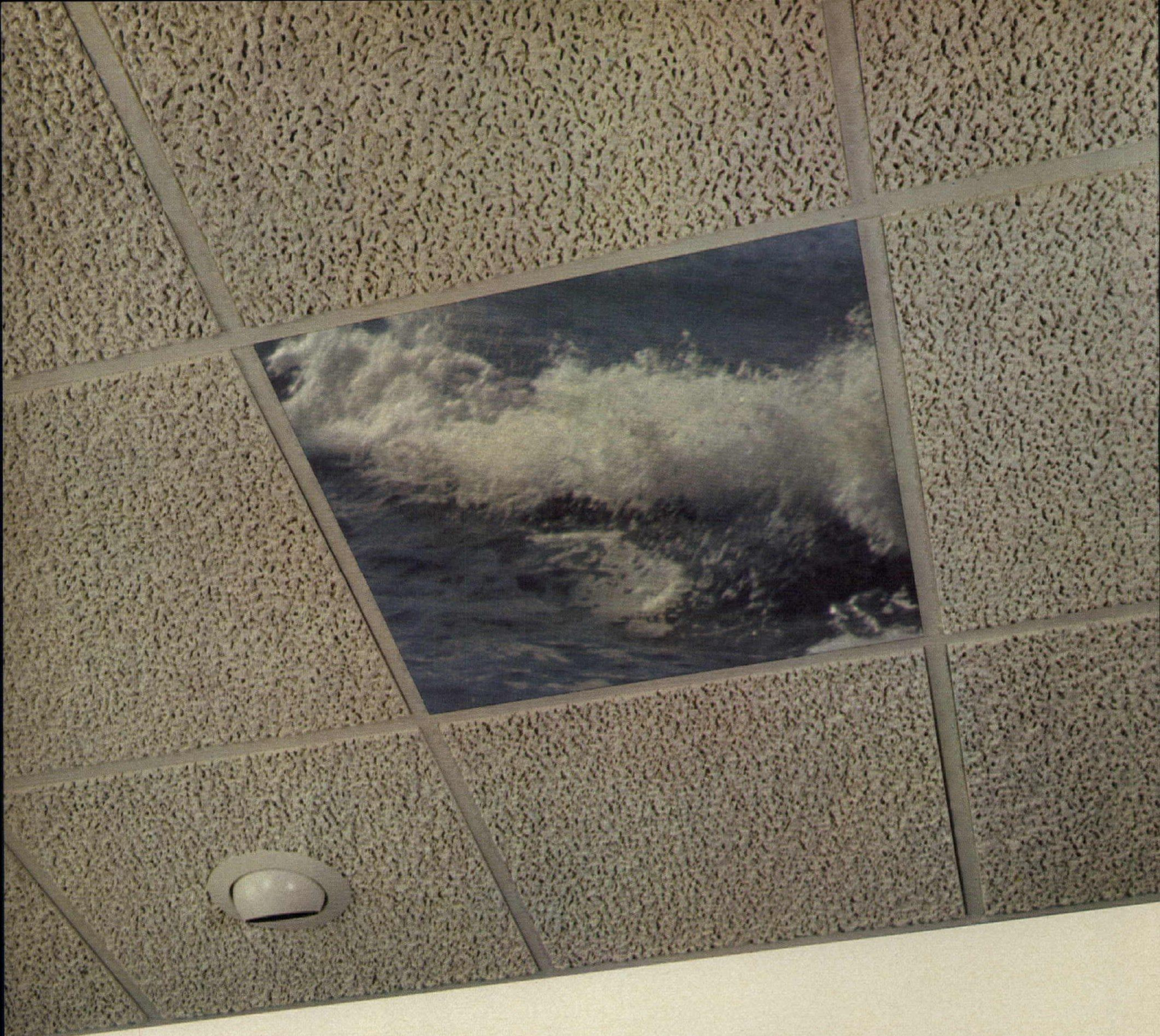

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Books continued from page 146

the computer and environmental design comprise the data base collected since 1967 by the Center for Environmental Research. The bibliography lists them all, both by author and by more than 80 categories ranging from "aesthetic" to "space allocation" and "urban planning." Every entry lists keywords, and keyword search lists are included. The format, quite naturally, is computer printout.

A Model for an Industrialized Housing Industry in the United States. BOSTI, *812 Kenmore Ave., Buffalo, N.Y. 14216. 100 pp., $18.*

This report examines the feasibility of alternative strategies for major corporations to enter a housing industry with vastly increased production capability. Prepared for Industrialized Housing Committee of the National Academy of Sciences, it analyzes the present industrial network and examines critical gaps and problems and explores alternative ways to significantly increase production.

Paints & Coatings Handbook *by Abel Banov. Structures Publishing Co., P.O. Box 423, Farmington, Mich., 48024. 404 pp., $20.*

Sixty-six highly complex federal specifications and 14 commercial specifications are unscrambled and organized into charts for rapid comprehension for anyone interested in cutting the unnecessarily high cost of repainting. The problem of selecting paint is simplified by the arrangement of individual specifications into 12 performance charts, whereby one can scan the various performance characteristics pertaining to a job to select the coating that best meets his needs.

Student Housing. *A report from Educational Facilities Laboratories, 477 Madison Ave., New York, N.Y. 10022. 72 pp., illustrated, $2.*

Since no one knows more about dormitories than the students who occupy them, this report suggests that the students themselves play an important role in influencing the design of new facilities. It gives examples of such student involvement and also documents new and economical ways to provide better student housing at a time when college enrollments are swelling, budgets are decreasing and students are insisting on expressing their identity in living styles.

Notices

Appointments

Jaquelin T. Robertson, former director of New York City's Office of Midtown Planning and Development, was appointed to the New York City Planning Commission.

E.E. Dockstader, AIA, Fort Worth, Tex., is now The Dockstader Partnership with the admission of **William L. Bess, Jr., AIA.**

Arthur G. Selbert has been appointed a principal in The Landplan Partnership, land architects and site planners, Fairfield, Conn.

Bernard W. Colton, AIA, Leo G. Shea, AIA and **Samuel Redstone, AIA** have been elected principals of Louis G. Redstone Associates, Detroit. **Jayant P. Desai, PE,** has been elected an associate.

Clarence M. Horton and **Divyakant S. Parikh** have been named associates of Pfisterer, Tor & Associates, New Haven, Conn. and New York City.

Gerald Hallissy and **James Howie** have been named associates of Hoberman & Wasserman, PC, New York City. **Jacques H. Gerstenfeld** has joined the firm.

John Muhlhausen has been named director of visual communications of Jova Daniels Busby, Atlanta, Ga.

Lloyd W. McCorkle has been appointed special consultant on health care and social service facilities for Gruzen & Partners, New York City.

Charles T. Goulding has been named director architect and an associate of The George M. Ewing Company, Philadelphia. **William G. Gove** has been appointed chief mechanical engineer and an associate.

Miles Perlis was appointed chief architect of correctional facilities for Albert C. Martin & Associates, Los Angeles.

Allen D. Thurman has been appointed a principal of the firm, Aehle & Thurman, Architects, Seattle, formerly Norman G. Aehle AIA & Associates.

George Riemer has been named head of the construction department of Gruen Associates, Los Angeles.

David Lawrence Ginsberg, AIA has been named partner-in-charge of the New York offices of Perkins & Will.

Robert W. Hill was promoted to vice president in charge of the architectural department of Ballinger, Philadelphia.

Donald E. Grossmann, AIA has been elected a member of the board of directors of Shreve Lamb & Harmon Associates, PC, New York City.

Richard L. Henry has been appointed an associate of Mirick Pearson Ilvonen Batcheler, Philadelphia.

Robert R. Wilson, AIA and **William R. Webster, AIA** have been appointed vice presidents of Harvey Greene & Associates, Inc., Tampa, Fla.

Donald C. Burleson, Jr. and **Joseph R. Gibbons** have been named associate architects of Wheeler & Stefoniak, Inc., Dallas.

Major General Robert Seedlock (Ret.) has joined Parsons, Brinckerhoff, Quade & Douglas, New York City, as an associate.

Jarvis, Putty, Jarvis, Inc., Dallas, has announced the following promotions: **Bill D. Smith**, principal; **William H. Workman**, associate architect; **Richard E. Morgan**, associate architect; and **Pat Johnson**, associate.

Curtiss D. Lischer has been appointed an associate of Peter Muller-Munk Associates, Pittsburgh.

Kenneth H. Pukita has been appointed first chief engineer of Russoniello, Russoniello & Domanish, Scranton, Pa.

David V. Barry has joined Farr-Biggerstaff, AIA, Portland, Ore., as project architect.

Michael D. Shotwell is now an associate and director of design for Jerry L. Pollak, AIA & Associates, West Los Angeles.

Arthur De Leo was made president of Design Three, Philadelphia.

Enrique M. Marcet and **Al Willingham, Jr.** have been named principals of Harvard & Jolly, St. Petersburg, Fla.

John Durant Cooke, AIA has been appointed Deputy Commissioner of the Department of Buildings for New York City.

William C. Beard, AIA, Herman W. Blomberg, David H. Partenheimer, AIA and **Donald C. Rennard, AIA** have been made associates of The McQuire & Shook Corporation, Indianapolis.

Dennis W. Rainoshek and **Daniel R. Gutierrez** have been named associates of Engberg Simmons Cavitt McKnight Weymouth, formerly White, Engberg & Associates, Houston, Tex.

[continued on page 161]

Versatile Electric Heat Recovery System Provides Multiple Zone Space Conditioning and Optimum Energy Use

Capitol Federal Savings Building, Overland Park, Kansas, is built adjacent to a shopping center.

PROJECT: Capitol Federal Savings Building, Overland Park, Kansas. ARCHITECTS AND ENGINEERS: The Kiene & Bradley Partnership, Topeka, Kansas.

DESIGN CHARGE: To design a branch bank that would have a large banking lobby with six teller stations, two drive-in teller stations, conference rooms, a vault, employee lounges, private and general offices, and two floors of rental space into which the bank could eventually expand. It was further required that the design project a feeling of "quality and strength" in keeping with the Capitol Federal Savings and Loan Association's position as the largest financial institution in the State of Kansas.

DESIGN RESPONSE: The resulting building is a four-story structure of white precast panel and light blue curtain wall construction. Situated at the edge of a large suburban shopping center, the new structure, with its strong but simple form, the assurance of its detailing, and the amenities it offers, is a welcome addition to the area's inventory of commercial space.

For those who prefer to do their banking by automobile, there are two drive-in teller stations. For those patrons who prefer a more leisurely route, there is a large banking lobby with six teller stations and on-site parking. The bank's operations take up three floors, including one below grade. The top two floors are divided into rental offices with space arranged in accordance with tenants' needs by means of moveable partitions.

The electric space conditioning system chosen for the building is a versatile design that treats the differing requirements of the interior and perimeter zones independently. It is a ducted air heat recovery system in which return air passes through special lighting fixtures into the ceiling plenums. There are two air handling units that supply cool air only year around to induction boxes in the plenums above the central portions of the structure. Cool primary air is tempered with plenum air as needed. The perimeter spaces are divided into four separate zones as determined by the orientation of the building and these receive either warm or cool air from a four-zone air handling unit. Two chillers, rated at 55 and 124 tons, and a 180-kw electric boiler serve the water coils of the air handlers. Supplementary heating is provided by electric baseboard units, panel heaters and cabinet heaters.

SEE REVERSE SIDE FOR DETAIL INFORMATION

1 CATEGORY OF STRUCTURE:

Commercial—Office Building

2 GENERAL DESCRIPTION:

Area: 44,000 sq ft
Volume: 585,000 cu ft
Number of floors: four and a full basement
Number of occupants: 400
Number of rooms: 100
Types of rooms: banking lobby, private and general offices, vault, employees' lounges, kitchen, storage

3 CONSTRUCTION DETAILS:

Glass: single
Exterior walls: 4″ precast concrete panels, 4″ mineral wool batts (R-13), 1″ metal lath and plaster on steel studs; U-factor: 0.06
Roof and ceilings: built-up roof on 2″ rigid glass fiber insulation (R-6), 4½″ concrete deck, suspended acoustical ceiling; U-factor: 0.1
Floors: concrete slab
Gross exposed wall area: 19,700 sq ft
Glass area: 4019 sq ft

4 ENVIRONMENTAL DESIGN CONDITIONS:

Heating:
Heat loss Btuh: 1,136,253
Normal degree days: 5390
Ventilation requirements: 5465 cfm
Design conditions: 5F outdoors; 75F indoors
Cooling:
Heat gain Btuh: 2,000,000
Ventilation requirements: 5465 cfm
Design conditions: 100F dbt, 79 wbt outdoors; 75F, 50% rh indoors

5 LIGHTING:

Levels in footcandles: 50-100
Levels in watts/sq ft: 2-4
Type: fluorescent

6 HEATING AND COOLING SYSTEM:

The building is conditioned year-round by an electric ducted air heat recovery system incorporating air-return fluorescent lighting fixtures. Exterior spaces are zoned according to exposure and supplied from a four-zone air handling unit equipped with a 40-hp blower and coils for chilled and hot water. Independent zone thermostats control dampers within the air handler to provide warm or cool air as required. Two separate air handling units supply cool air only to induction boxes in the interior zones where it is tempered as needed by warm plenum air. The sources of water for the air handlers are two chillers, rated at 55 and 124 tons, and a 180-kw electric boiler. Supplementary heat is supplied by electric baseboard units, heating panels and strip heaters in the inlet ducts.

7 ELECTRICAL SERVICE:

Type: underground
Voltage: 277/480v, 3-phase, 4-wire
Metering: secondary

8 CONNECTED LOADS:

Heating, Ventilating & Cooling (179 tons)	568 kw
Lighting	123 kw
Cooking	74 kw
Water Heating	24 kw
TOTAL	789 kw

9 INSTALLED COST:

General Work	$ 973,500	$22.17/sq ft
Elec., Mech., Etc.	326,500	7.43/sq ft
TOTALS	$1,300,000	$29.60/sq ft

Building was completed 12/68

10 HOURS AND METHODS OF OPERATION:

9 a.m. to 5 p.m. Mon.-Thurs.; 9 a.m. to 6 p.m. Fri.; 9 a.m. to noon Sat.

11 OPERATING COST:

Period: 1/72 through 12/72
Actual degree days: 5339
Actual kwh: 1,312,600*
Actual cost: $24,829.86*
Avg. cost per kwh: 1.9 cents*
*For total electrical usage

Month	Degree Days	Demand	kwh	Amount
1/72	1163	397	171,200	$ 2,897.78
2/72	920	362	102,240	1,949.90
3/72	558	346	123,360	2,189.85
4/72	246	354	91,840	1,820.36
5/72	71	362	83,360	1,729.18
6/72		378	105,440	2,015.81
7/72		381	106,560	2,034.09
8/72		376	90,880	1,865.53
9/72	37	405	109,280	2,122.00
10/72	353	349	92,600	1,833.55
11/72	751	336	112,640	2,065.17
12/72	1240	403	123,200	2,306.64
TOTALS	5339		1,312,600	$24,829.86

12 FEATURES:

The recovered lighting heat satisfies a major portion of the heating needs of the building, thereby optimizing energy use. The combination of the heat recovery concept with the multiple-zone air handling unit and the induction boxes provides very effective means for regulating temperatures under the different design conditions of the interior and exterior zones. The interior cooling zone can be shut off during unoccupied periods.

13 REASONS FOR INSTALLING ELECTRIC HEAT:

A study of various types of space conditioning systems indicated that an electric system would be competitive in operating costs with systems using other energy sources, would more easily provide the extensive zoning desired and would require less maintenance.

14 PERSONNEL:

Owner: Capitol Federal Savings & Loan Association
Architects & Engineers: The Kiene & Bradley Partnership
General Contractor: Rau Const. Co.
Electrical Contractor: Kaw Valley Elec. Co.
Mechanical Contractor: D & D Sheet Metal & Air Cond. Co.
Utility: Kansas City Power & Light Company

15 PREPARED BY:

M. C. Mandacina, Sales Engineer, Kansas City Power & Light Company.

16 VERIFIED BY:

Jack R. Bradley Jr.
J. R. Bradley, Jr., AIA

C. Elmo Wagner
C. Elmo Wagner, P.E.

ENERGY MANAGEMENT PROGRAM
A Resource Conservation Activity Of The
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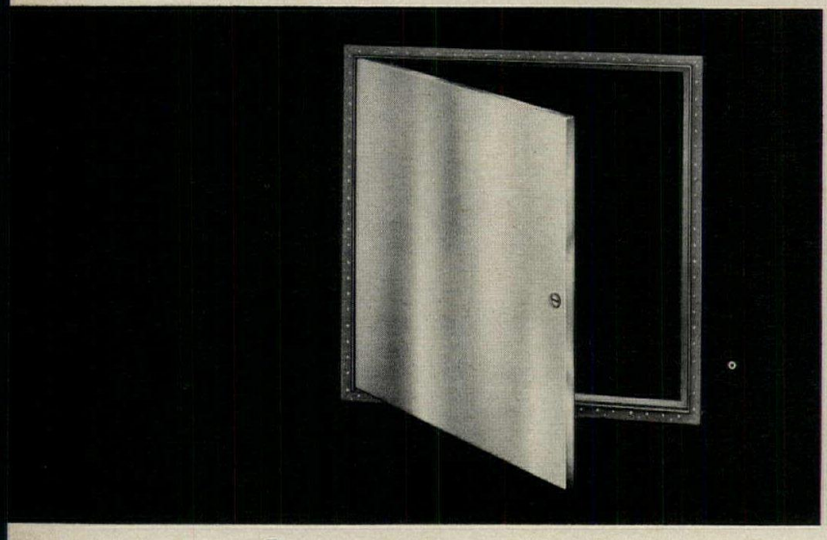

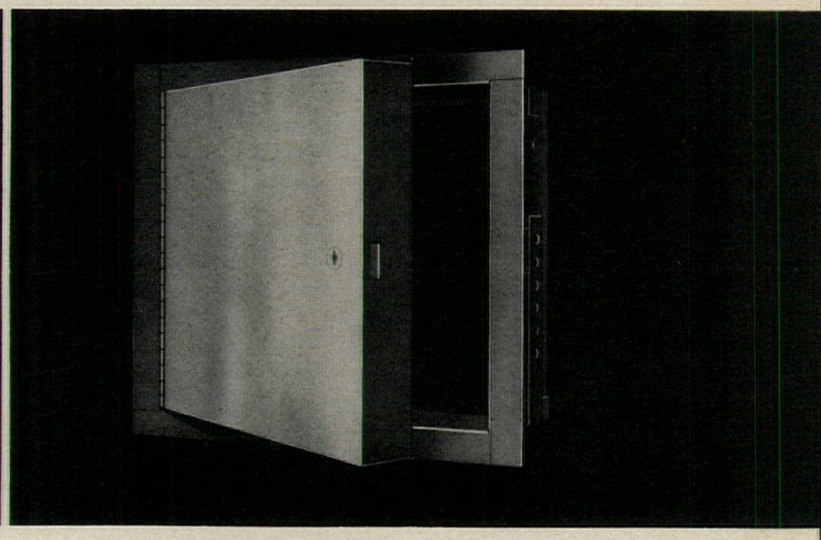

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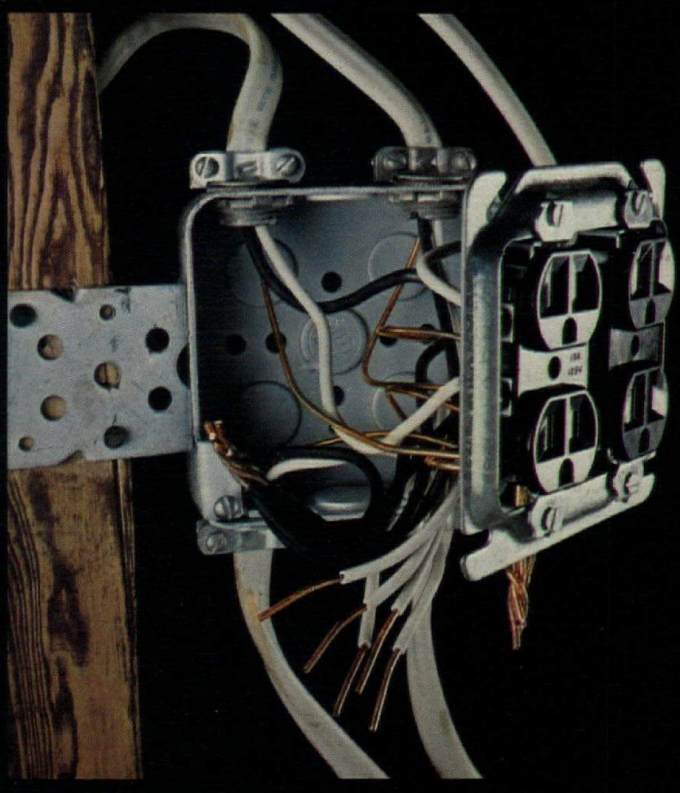

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Notices continued from page 152

Expansions, reorganizations and mergers

The **Sippican Corporation,** Marion, Mass., and **LeMessurier Associates, Inc.,** Cambridge, Mass., have established an engineering group combining Sippican's Francis Associates Division and Tighe & Bond with LeMessurier Associates, Inc. The group, headed by William LeMessurier, is headquartered in Cambridge.

Enloe, West & Associates, Inc., Atlanta, Ga., and **James M. Hunt, AIA, Architect** of Elberton, Ga. have merged into Hunt, Enloe, West, McLean & Associates.

Rockrise Odermatt Mountjoy Amis have opened an office at 900 S.W. Stark, Pittock Block, Portland, Ore. 97205.

Peckham-Guyton, Inc., has opened an office at 10 S. Broadway, St. Louis, Mo.

Bagley-Soulé & Associates and **Lee & Associates** have formed Bagley, Soulé, Lee, Architects, 8555 Connecticut Ave., Chevy Chase, Md. 20015.

New firms

Gerald T. Quick, AIA and Ronald L. Collier, AIA have formed the **Quick-Collier Partnership,** 2315 Myron Dr., Raleigh, N.C. 27612.

Walter S. Fullerton & Associates, 242 Winter St., Reno, Nev. 89503.

Zalman Y. Alper has formed **Alper & Alper Associates,** 233 N. Michigan Ave., Chicago, Ill. 60601.

Artspeak, Inc., a communications/design group, has been formed with offices at 2 Park Ave., New York City 10016.

Meyers, D'Aleo & Todd, Inc., One Plaza East, Salisbury, Md.

Maurice W. Kley has opened a specialized consultation service in merchandising and architectural planning at 143 E. 19 St., New York City 10003.

New addresses

Pak C. Kwong, AIA, FASCE, CSI, 25 E. Broadway, New York City 10002.

Joseph L. Alfano, architect and general contractor, Huntington Professional Bldg., 305 Orange Ave., Huntington Beach, Calif.

Ben H. Dyer, AIA, CSI, 65 Franklin St., Annapolis, Md. 21401.

William Morgan Architects, 220 E. Forsyth St., Jacksonville, Fla. 32202 and 1508 19 St. N.W., Washington, D.C. 20036.

Jacqueline Rose Seligson Architect, 3800 Baltimore Ave., Kansas City, Mo. 64111.

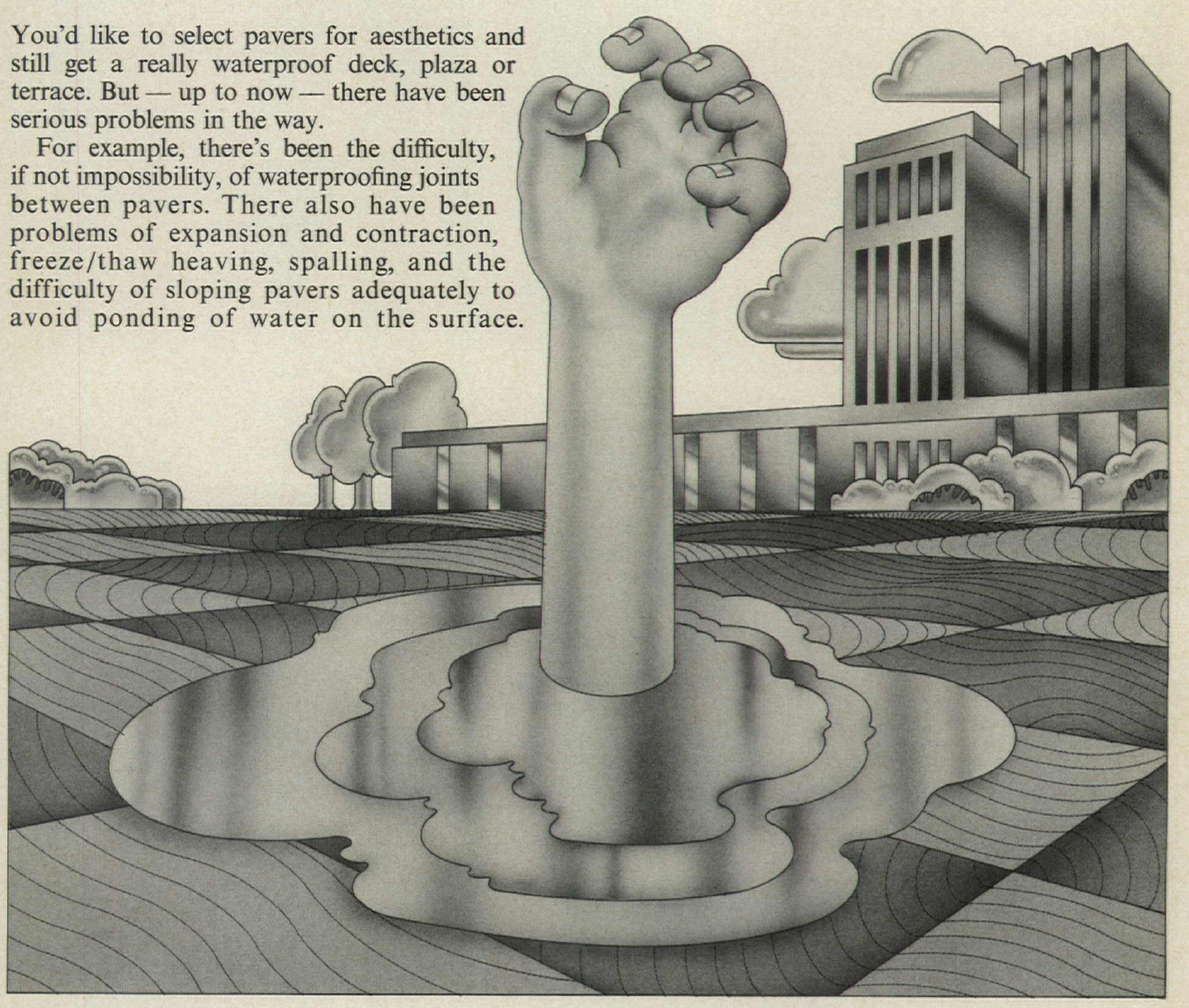
Engberg Simmons Cavitt McKnight Weymouth, Suite 110, 4600 Post Oak Place, Houston, Tex. 77027.

← Circle No. 343, on Reader Service Card

How to keep a beautiful plaza from drowning.

You'd like to select pavers for aesthetics and still get a really waterproof deck, plaza or terrace. But — up to now — there have been serious problems in the way.

For example, there's been the difficulty, if not impossibility, of waterproofing joints between pavers. There also have been problems of expansion and contraction, freeze/thaw heaving, spalling, and the difficulty of sloping pavers adequately to avoid ponding of water on the surface.



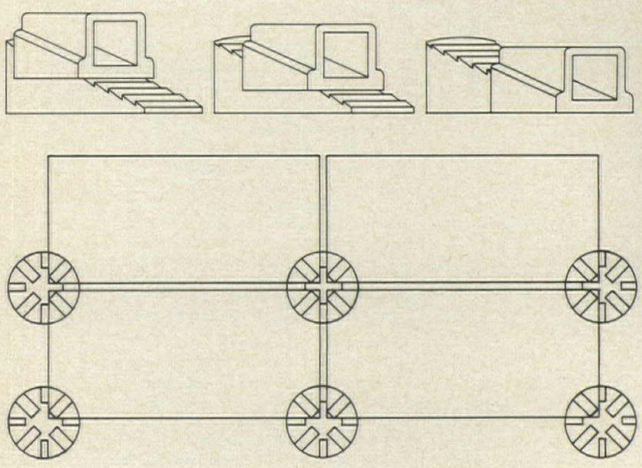
One solution could be laying your pavers in a setting bed spread over the waterproofed surfaces. The trouble here is the necessity for surface drains, which don't exactly contribute to an aesthetically pleasing job. A second problem is the settling or wash-out of this setting bed, which causes the pavers to shift.

You can eliminate both the aesthetic and technical drawbacks by raising your traffic surface above a suitably waterproofed structural slab so water can run down through the joints between the pavers, and be carried off by drains in the structural slab. With this method, waterproofing your structural slab is simple — especially when you use our Tremproof® Liquid Polymer, which is cold-applied and adheres to both vertical and horizontal surfaces to form a flexible, seamless blanket.

But how do you raise the pavers above your waterproofed surface? Till now, the most common way was casting concrete pedestals. But this job is cumbersome, time-consuming and requires individual shimming of the paver corners.

Now we have developed an uncomplicated, economical device called the KingPin™. It's an adjustable pedestal that goes a long way toward simplifying the job of installing pavers.

How KingPins save time.
Once the waterproofing has been applied to the structural slab and covered with a protection board, you simply place KingPins on your protection board. Then you set the KingPin to the approximate height you need, making fingertip adjustments as you set the pavers to allow for deck or paver irregularities. Pavers line up instantly using the KingPin controlled-joint spacers. KingPins work equally well set on rigid insulation.



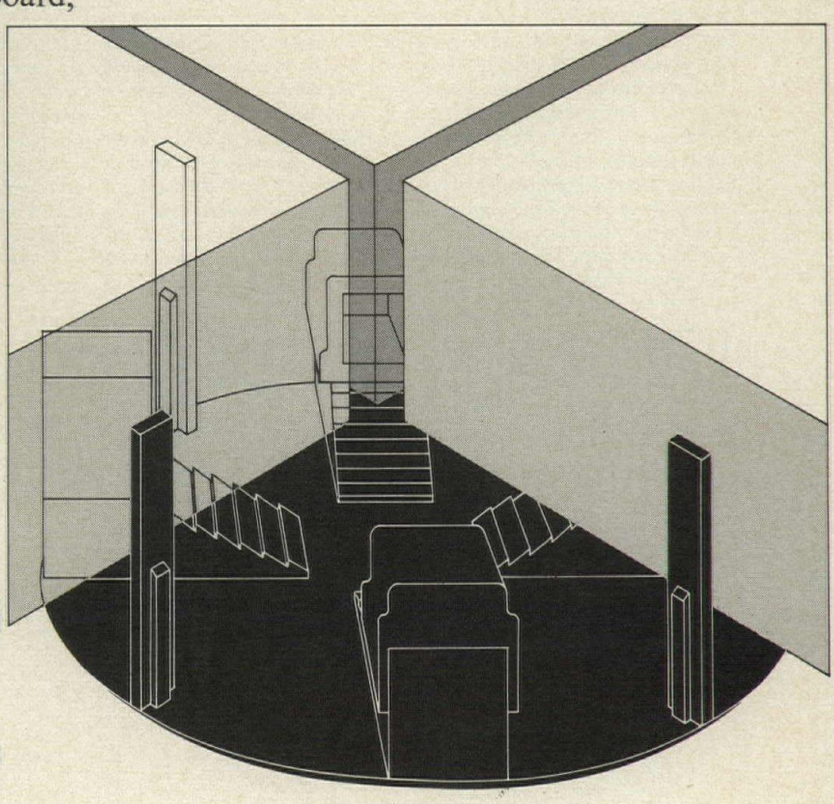
KingPins are tough.
When you use KingPins, your only load limit is the strength of your pavers. KingPins can take up to 10,000 pounds with zero deformation; And because they are high grade plastic polymer, they won't rot, crack, melt or absorb water in normal use.

Why jobs look better.
When you use KingPins, design freedom is almost unlimited. You don't need surface drains. You don't need joint sealants. Joint size is controlled, for beauty. Each paver will be drained so there'll be no ponding. When maintenance is needed below the surface, just lift the pavers off the KingPins and out of the way. When the repair is done, your plaza looks as good as new, without patching.

One more thing. If you have any caulking, glazing or waterproofing problems, your Tremco man can help. For more than 45 years, our business has been providing top-quality leakproof systems and products such as our job-proven sealants, MONO®, DYmeric® and Lasto-Meric®; and our roof-edging system, Tremline™.

The Tremco Manufacturing Company, Cleveland, Ohio 44104. Toronto 17, Ontario.

TREMCO®
The water stoppers



The 1973 International Design Conference in Aspen, June 17th through June 22nd

The Idea

A week-long series of performances exploring "Performance" will serve as content and format for this year's International Design Conference in Aspen.

From the great to the sublime, performance characterizes man's striving for achievement, recognition, identity and immortality. For the designer it is at the core of his work. Designing a building, an object, a poster or an event is itself a performance. What makes a great performance? What motivates the performer to pursue quality, perfection or self-fulfillment through his work? What forces in our society shape mediocrity in performance? What aspects of performing does the designer share with the artist, the writer, the musician, actor, scientist?

Performing, and viewing performances, puts the design process in new perspective and ultimately provides the best insight into the intricacies of design performance.

Performances:

☐ To illuminate the confrontation between the designer's expectations as encouraged by his education, and the realities of the social realm and corporate economic system.

☐ To reveal the underlying impetus of our own performance as revenge, the search for power, the confirmation of our identity, or as gesture expressing sexuality, guilt, remorse, etc.

☐ To provoke some thoughts on the audience (broadly defined as the spectator, the user, the consumer, anyone who experiences any kind of performance), and the presumed mediocrity ushered in by the passivity of spectatorship in post technological society.

In short, the exploration of performance through performances—direct, experiential, participatory and introspective. Co-designers and directors of the conference are Milton Glaser and Jivan Tabibian.

The Performances

Therapist George De Leon will explore the erosion of self from school to work by probing the feelings of a group of practicing designers.

Illustrated presentations on the decline of audiences in theater and film will be given by John Simon.

Anti-human architecture will be analyzed by Reyner Banham.

Robert Rauchenberg will plan a major art work and execute it in full view of the conference in team performance with 50 or 100 Aspen conferees.

The Julliard Brass Ensemble will hold public rehearsals every afternoon and a full-length concert on the last conference day.

J. Paul Friedberg will design a garden to be landscaped by all conferees for their own use.

Miralda will direct a food event, infusing color and pattern into thousands of dishes of rice.

Marie Cosindas will extend the limits of instant color photography, performing with a Polaroid.

Bob Benton will screen *Bonnie and Clyde* and *Bad Company* and discuss his role in creating them.

Brendan Gill will show and discuss films and sequences from his extraordinary collection of blue movies.

J. R. Worsley will take pulse readings of conferees.

Posters from an international competition encouraging people to perform for their own well-being will be exhibited.

Gerald Sykes will explore the positive contributions technology can bring to people seeking more individual control over their lives.

Tai' Chi Master Marshall Ho' will tune the minds and bodies of the conferees.

Films from Columbia University's film festival on "The Built Environment" will be shown.

Richard Goldstein will focus on performance in journalism.

We will all perform at our own dances on three evenings.

The Cast

Everyone attending the conference.

Robert Rauchenberg, called the artist who in this century has invented the most since Picasso.

Bob Benton, co-author of *Bonnie and Clyde* and *What's Up Doc*, and director and author of *Bad Company*.

George De Leon, therapist at New York City's Phoenix House.

Gerald Sykes, author and Professor of Interdisciplinary Studies at the New School for Social Research.

Miralda, artist and culinary esthetician.

Marie Cosindas, photographer

M. Paul Friedberg, landscape architect.

Brendan Gill, theater critic for the *New Yorker*.

Reyner Banham, architectural critic, historian, and educator.

The Julliard Brass Ensemble.

Professor J. R. Worsley, Master and Doctor of Acapuncture M. Ac., DR Ac., F.C.C. Ac. (China), F.R. Ac. President: College Chinese Acapuncture (U.K.).

Milton Glaser, graphics designer; co-founder of Push Pin Studios, design director of *New York* magazine, faculty member of the School of Visual Arts.

Jivan Tabibian, social planner and social scientist; lecturer in social psychiatry at UCLA, urban and regional planning at the University of Southern California, and design at California Institute of the Arts.

Marshall Ho', Tai chi master; Chairman of the National Tai' Chi Chuan Association, President of the National Acapuncture Association.

John Simon, drama critic of *New York* magazine and *The Hudson Review* and film critic of *The New Leader*.

Richard Goldstein, writer on new politics and popular arts, former pop/rock critic for the *Village Voice*.

Robert Simon, planner and developer of Reston, Va.

Aspen Notes

Aspen, Colorado, scene of the annual International Design Conference since 1951, is located in a beautiful valley high in the Rocky Mountains. It has an abundance of excellent hotels and lodges with a wide range of summer rates. There are generous camping facilities as well.

Aspen is renowned as an outdoor sports center, and boasts such cultural resources as the Aspen Music Festival and Music School, the Physics Institute, and the Institute for Humanistic Studies. These facilities combine to make Aspen an ideal setting for the 23rd International Design Conference.

Daytime temperatures range from pleasantly cool to warm. Because of the mountain setting and high altitude (7908 feet above sea level), Aspen's evenings are often quite chilly. Heavy sweaters and jackets are recommended. Otherwise, dress is informal and casual throughout the week.

REGISTRATION

Reservations by mail only. Deadline is May 28 or cutoff number, whichever comes first. Your check will be your receipt.

Due to limitations of conference facilities, all conferees *must be* pre-registered, or they cannot be admitted.

Registration fee, $100
Companion, $50
Student (school registration proof required), $35

Make your check payable to IDCA and send it with this coupon to:
IDCA
P.O. Box 664
Aspen, Colorado 81611 USA

The Coupon

Please reserve _____ places for Performance, IDCA 1973

Name _____

Address _____

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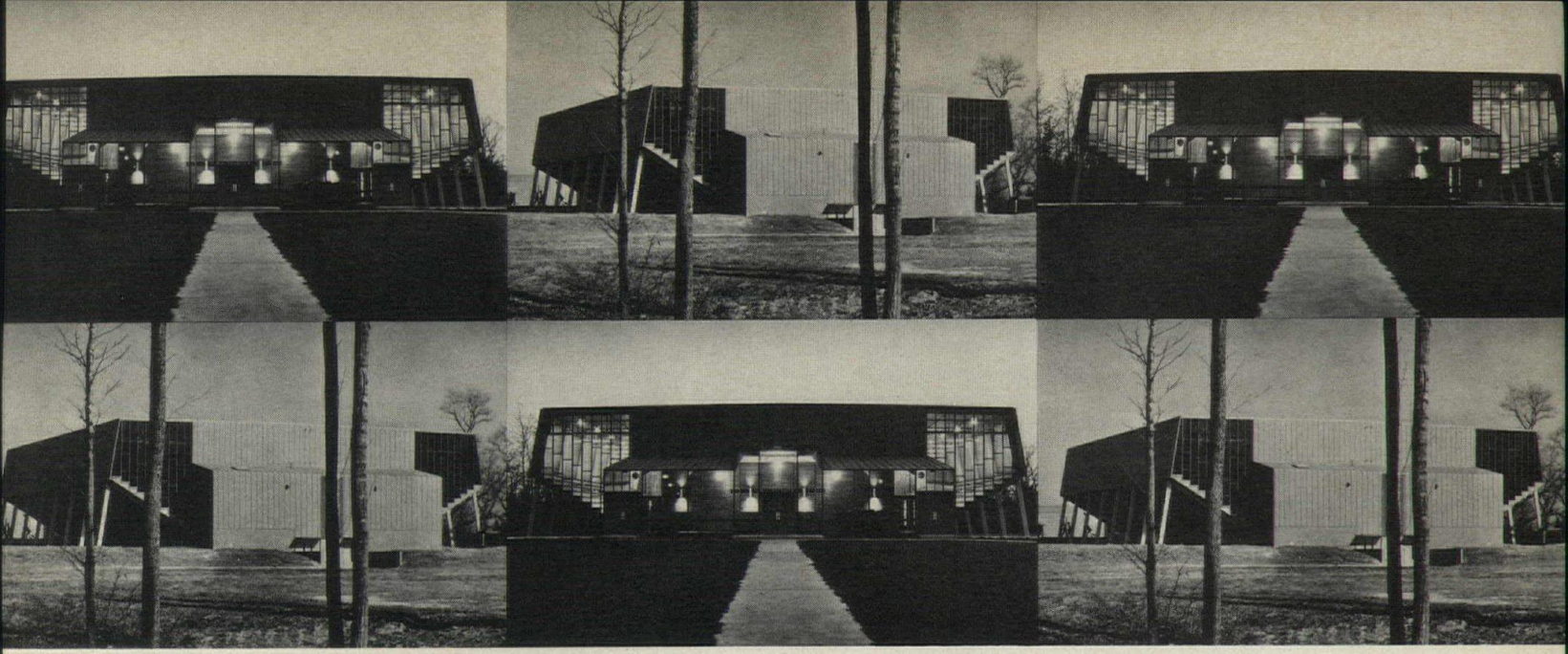
State Zip _____

My check for _____ is enclosed.

PERFORMANCE



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These are, of course, the usual criteria of most architects in selecting any major building component, and wherever metal roofing is involved, we believe Follansbee Terne unique in the degree to which it satisfies them. For Terne delights the eye, lasts indefinitely, and is relatively inexpensive when measured by the standards of those to whom ultimate performance is no less significant than initial cost.

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Job mart

Situations open

Architect: Director of development and public relations for rapidly expanding architecture-engineering-planning firm in New Jersey. Work-in-progress for health, education, and industry has tripled to $50,000,000 in three years. Compensation arrangements open. Send resumé. Reply to Box #1361-490, *Progressive Architecture.*

Architect: Large national development corporation headquartered in Dallas is looking for a design oriented architect to be in charge of small architectural staff. NCARB required. Salary open to discussion. Excellent opportunity for right person. Staff advised about this ad. Centex Homes Corporation, a subsidiary of Centex Corporation. Reply to Box #1361-491, *Progressive Architecture.*

Architect: National developer seeks senior man with 10 years design oriented experience in single and multi-family high and low rise to head up in-house staff and handle administrative duties. $20,000-$30,000. Design Personnel Consultants, 1 Lemmon Park North, Dallas, Texas 75204, (214) 521-2636.

Architect: Newly formulated construction company, division of older well established firm, specializing in commercial construction and design, seeks young aggressive architect to head the architectural phases of its operation. Company benefits. Salary open. Send written resumé. Reply to Box #1361-492, *Progressive Architecture.*

Architect: Outstanding opportunity for right individual. Key position. Young, growing St. Louis firm. Exciting diverse practice in architecture, planning and landscape architecture. Must be competent in design and working drawings. Committment to better environment and modern design essential. Individual with initiative and capability to assume complete responsibility. Reply to Box #1361-493, *Progressive Architecture.*

Architect: State of Alaska. $1,579-$1,699 (depending on qualifications). Bachelor's with major course work in architecture or architectural engineering and 5 years experience as a professional architect. Professional registration required. Send resumé to: Paul Oles, Personnel Division, Pouch C, Juneau, Alaska 99801.

Architect/draftsman: Permanent position available for an architect and a draftsman who enjoy design of commercial and industrial structures. Work with registered architects on a variety of design problems in an expanding system. Experience required. Salary commensurate with education and experience. Send resumé to: Alabama Power Company, Employment Department, 600 North 18th Street, Birmingham, Alabama 35291. An Equal Opportunity Employer.

Architect/experienced architectural draftsman: Degree helpful but not necessary. Firm has general practice including residential, institutional and commercial projects. Good working conditions in small city surrounded by superb recreational opportunities. Contact: George W. Tresler, AIA, Box 1050, Cody, Wyoming 82414.

Architects: Design and systems oriented expanding middle Atlantic planning and architecture firm seeking experienced designers, management and production-inspection staff, civil engineered. For dedicated capable hard workers, unlimited opportunity for personal leadership advancement; established exciting growing quality organizational framework. References. Reply to Box #1361-494, *Progressive Architecture.*

Architects for Peace Corps/Vista-Action: Volunteer overseas and U. S. Low-income housing projects, design of schools, hospitals, community centers, etc. Most openings — singles; some couples. Information: Bruce Mazzie, Action, OCP Box 10, Washington, D. C. 20525.

Architects: Rapidly developing architectural program at a predominantly black college in the southeast seeks additional faculty for innovative teaching of architectural visuals, design, planning, materials and environmental systems. Opportunity for research, private practice and community work. Salary and ranking commensurate with educational experience. Send viate. Reply to Box #1361-495, *Progressive Architecture.*

Architects/architectural draughtsmen: English architectural practice offers opportunity for architects and architectural draughtsmen with minimum two years experience to widen experience in an expanding office near London on town centre, office, shopping, industrial and commercial projects in Britain. Interview in New York. Air passage and first fortnight's accommodation paid. Reply to Box #1361-496, *Progressive Architecture.*

Architects (R.A.) and architectural lead draftsmen: If you have been involved in architectural planning of educational, institutional and industrial facilities for more than 5 years and feel that you have not received the recognition you deserve, then you will want to investigate this ad today. Comprehensive hospitalization, life and disability insurance, vacation, sick leave and profit sharing plan all company paid. Credit Union privileges. Send resume or contact: Personnel Director, Buchart Associates, 611 West Market Street, York, Penna. 17405. Phone: 717-843-3854. An equal opportunity employer.

Architectural draftsman/detailer: Internationally famous interior design organization seeking lead architectural draftsman/detailer. Willing to relocate Miami area. Excellent opportunity for right person. Salary open. Reply to Box #1361-497, *Progressive Architecture.*

Architectural representatives: Exclusive national distributor of foremost line of ceramic wall and floor tile has opening for achitectural representatives working in the Philadelphia, New York and San Francisco areas. The company offers the broadest range of patterned and solid colored tiles of the highest quality available; strategically located warehousing for prompt service. Products are backed by extensive national advertising program. Generous salary plus commission arrangement. Reply to Box #1361-498, *Progressive Architecture.*

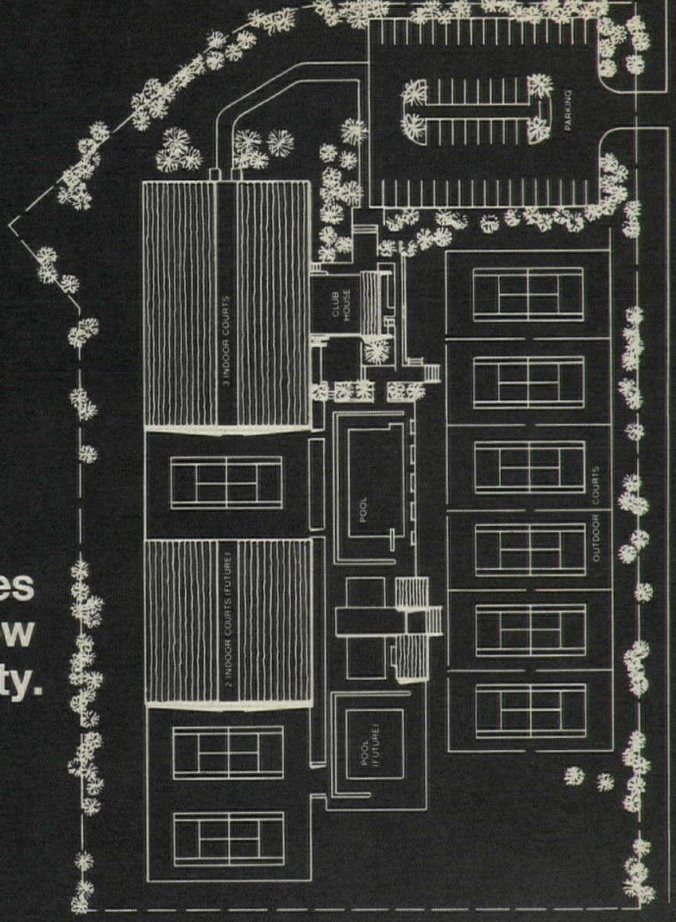
Artists/architectural illustrators: Nations top architectural illustration firm seeking finest artists and illustrators with a desire to reach highest pay level in field. Present needs require specialists in cars, figures, lettering, interiors, product illustration, landscapes and building details, plus opportunities in graphic design and model building. We are also establishing representatives in all major U. S. cities and are seeking individuals with a sales approach plus a knowledge of architecture and perspective layout. Further information will be supplied upon receipt of samples, all promptly returned prepaid. Top pros can expect pay scales on a level with their abilities. Inexperienced talent can expect highest starting salaries in the art field. Art Associates Inc., 4041 W. Central Ave., Toledo, Ohio 43606.

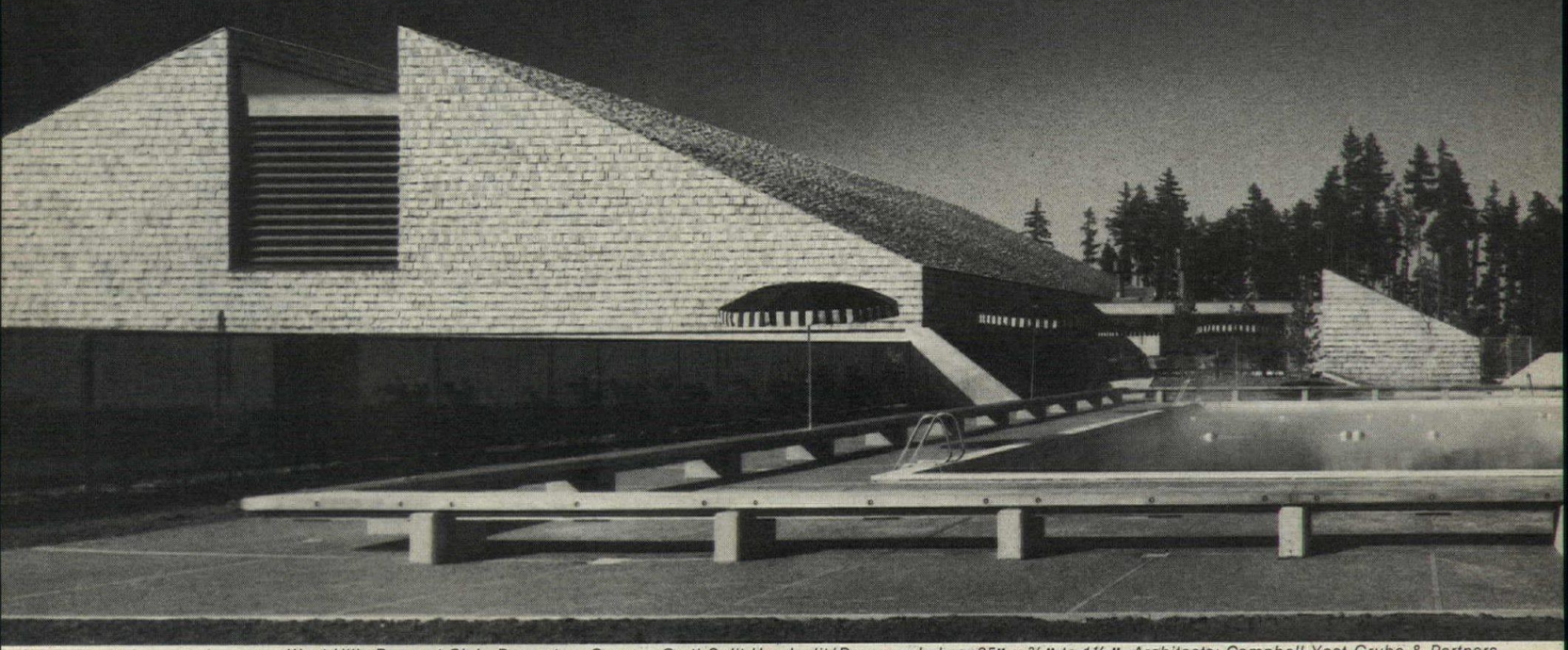
Assistant professor: Department of Architecture, California State Polytechnic University, Pomona, California 91768. Master's Degree required. Teach design and related subjects. Equal opportunity employer. Qualified minority applicants encouraged to apply. Send resumé: Attention of Dr. J. Ingraham Clark, AIA.

Assistant to the university architect: Excellent professional opportunity at West Virginia University located 70 miles south of Pittsburgh, Pa., in mountain resort area. Will assist the university architect in all phases of physical development of the University. Five-year terminal professional degree in architecture from N.A.A.B. accredited School of Architecture. Three years

[continued on page 168]

Red cedar shakes help a tennis club grow in beauty.





West Hills Racquet Club, Beaverton, Oregon. Certi-Split Handsplit/Resawn shakes, 25" x ¾" to 1¼". Architects: Campbell-Yost-Grube & Partners.

This elegant tennis club near Portland, Oregon, is designed for the future as well as the present. Architects anticipated construction of an additional three-court building to meet the needs of an expanding membership.

Red cedar shakes helped in more ways than one. The richly textured handsplit shakes bring beauty and unity to the club's original buildings. And they'll ensure continuity in its future structures.

Red cedar's look of natural warmth complements the rustic setting. Its traditional charm helps promote neighborly feeling toward the club in the surrounding community.

And red cedar shakes are practical. Their beauty lasts for decades with little or no maintenance.

For details and our specification guide on Certi-Split shakes and Certigrade shingles, write us at 5510 White Bldg., Seattle, WA 98101. In Canada, 1055 W. Hastings St., Vancouver 1, B.C.

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Red Cedar Shingle & Handsplit Shake Bureau

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

Circle No. 368, on Reader Service Card

Job mart continued from page 166

of work experience in facilities, planning, and production required. Qualified as architect in training. Starting salary based upon qualifications. Apply by resumé to: E. J. Podeszwa, Personnel Office, West Virginia University, Morgantown, West Virginia 26506. An equal opportunity employer.

City planner: Registered architect or civil engineer with strong city planning background will qualify for this position in ski country U.S.A. Will be responsible for organizing consulting city planning department. Rush resumé to J. R. Nelson & Associates, Consulting Engineers, 7625 West 5th Ave., Lakewood, Colo. 80226.

Coordinator: Retiring to Florida? Part time services of senior draftsman, job captain, or architect needed by established architectural office for coordinating contract documents and checking shop drawings. Office is a respected growing firm with numerous interesting projects in production and prospective. Send resumé. Reply to Box #1361-499, *Progressive Architecture*.

Director of architecture: The School of Architecture as Pratt Institute is seeking a director to work with faculty and students in a new and more responsive form of governance requiring energy and dedication. Interested candidates are requested to submit a resumé, including references and a statement of their qualifications. The School of Architecture at Pratt offers a creative and innovative curriculum leading to the undergraduate degrees of Bach. of Arch. and a combined Bach. of Arch./M.S. in city and regional planning. Graduate degrees of M.S. Arch., M.S. in tropical arch., M.S. in urban design, and M.S. in city and regional planning. Pratt students use New York City as an environment for living and studying, especially because the metropolitan setting and the school's programs have a natural relationship. All responses should be addressed to: The Search Committee, School of Architecture, Pratt Institute, 215 Ryerson St., Brooklyn, New York 11205.

Land planner: Degree in land planning and 5-10 years experience in low and high rise residential planning are needed to develop and administer land planning activity. $15,000-$25,000. Design Personnel Consultants, 1 Lemmon Park North, Dallas, Texas 75204, (214) 521-2636.

Land planner: Large national development corporation headquartered in Dallas is looking for a design oriented, qualified land planner to start up and to be in charge of our in-house land planning staff. Excellent opportunity for th right person. Staff advised about this ad. Centex Homes Corporation, a subsidiary of Centex Corporation. Please send resumé and samples of your work. Reply to Box #1361-500, *Progressive Architecture*.

Landscape architect: Participate in master plan and detailed design in award winning environmentally sound new communities. Opportunity for idealizing environment for living. Good L. A. design capability required. Send resumé and earnings history to J. Gruner, AIA, Linganore Center for Design, Eaglehead, Frederick, Maryland 21701, phone (301) 662-9023.

Advertising Rates

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

[continued on page 170]

Next month in PA

The May "Places to Live" issue will bring you a challenging look at what is being accomplished in the field of housing, from publicly supported to personally improvised.

Genuine Breakthrough: Low-rise apartment complex by architect Werner Seligmann, built with wood frame modules, for the New York State Urban Development Corporation.

Britain sets another example: Foundling Court, London, mixes unique apartments with shops.

Hopeful sign in public housing: A tower for the elderly designed by Ulrich Franzen symbolizes regeneration of a small city.

A unique public participation concept of multi-family housing in Canada that preserves neighborhoods and cuts building costs.

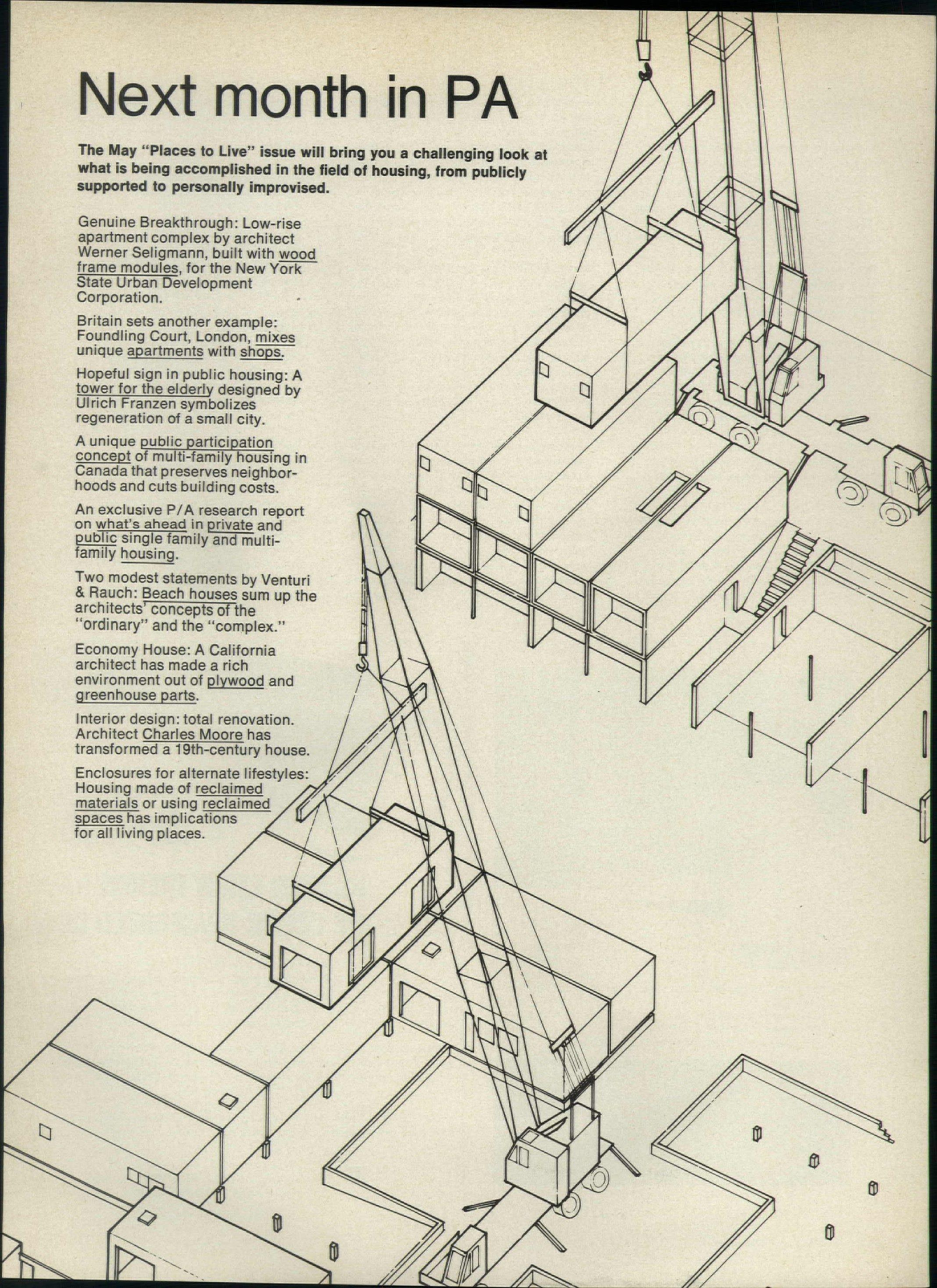
An exclusive P/A research report on what's ahead in private and public single family and multi-family housing.

Two modest statements by Venturi & Rauch: Beach houses sum up the architects' concepts of the "ordinary" and the "complex."

Economy House: A California architect has made a rich environment out of plywood and greenhouse parts.

Interior design: total renovation. Architect Charles Moore has transformed a 19th-century house.

Enclosures for alternate lifestyles: Housing made of reclaimed materials or using reclaimed spaces has implications for all living places.



Job mart continued from page 168

Manufacturers reps: Manufacturers reps wanted by long established aluminum metal pan acoustical ceiling tile manufacturer with new and proven items to merchandise. Looking for agents who call on architects for our "Spec" items; and general contractors, acoustical contractors, lumber yards, building supply houses, etc. for our "Direct Sale" items. Many territories open. Commission basis. Flexible agency policy. No stock to carry. Write to Simplex Ceiling Corp., 663 Fifth Avenue, New York, N. Y. 10022.

Professional engineer: Architectural/planning firm has opening for imaginative engineer with 3 years A/E consulting experience. Primary responsibilities include project management, definition client programs, design and coordination environmental systems. Opportunity for associateship. Submit confidential resumé of experience and earnings: Personnel Manager, 545 Congress Street, Troy, New York 12180.

Project architects: Architectural job captains and architectural draftsmen. Expanding 200-man A/E/P firm with openings in both Toledo, Ohio and Flint, Michigan offices, challenges those experienced, ambitious, decision-making individuals who desire responsibility to match their talents. Degree or registration is fine, but not necessarily required, as performance is the name of the game. What you can do is what counts! Complete fringe benefit package including a vested retirement program. Send resumé, salary requirement and technical references to: Samborn, Steketee, Otis and Evans, Inc., 600 LOF Building, Toledo, Ohio 43624 (419) 248-6271. An equal opportunity employer male/female.

Senior architectural designer: Permanent position with major A-E firm based in Honolulu. 10 years minimum experience required, primarily involved with design of highrise apartments, commercial and hospital facilities. Full company amenities (group medical, life, retirement, etc.). Send complete resumé. Correspondence will be held in confidence. Give earliest availability. Reply to Box #1361-501, *Progressive Architecture.*

Teaching position: Principal assignment to coursework and supervision of student work in the Doctor of Architecture program. Required qualifications: Master of Architecture, professional registration and field experience, excellent knowledge and experience in the use of computer as applied to architectural problems. Desirable: Ph.D., research experience and potential, teaching experience, publication in the field of computer applications in architecture. The University is a non-discriminatory, affirmative action employer. Send vitae to Department of Architecture, University of Michigan, Ann Arbor, Michigan 48104.

Teaching positions: Small but rapidly growing Department of Architecture located in the Tidewater area of Virginia, is seeking faculty to fill the following positions for the 1973 academic year: architect or landscape architect to teach second year design studio and site planning; architect to teach third year design studio and computer applications to architecture; architectural engineer to teach structures and mechanical equipment; architect to teach fourth year design studio and environmental system. Required: a Master's degree in the specific area mentioned; desired experience in teaching and architectural practice. Please reply with resumé and names of three references to: Professor John H. Spencer, Chairman, Department of Architecture, Hampton Institute, Hampton, Virginia 23368.

Situations wanted

Architect: AIA, NCARB. Over 16 years diversified design experience with large well known firm. Desires position as partner in charge of design or chief designer with large firm. Salary in the 30's. Reply to Box #1361-502, *Progressive Architecture.*
[continued on page 172]

Job mart continued from page 170

Architect: AIA, NCARB certificate. Sixteen years diversified architectural office and field experience with emphasis on project development and management. Educational, multi-family housing, and commercial projects. Seeking responsible association with progressive architectural engineering firm or land development corporation in southwest area, Arizona preferred. Resumé available. Architect, P. O. Box 5688, Milwaukee, Wisconsin 53211.

Architect: NCARB, 14 years diverse experience. Ability to handle all phases of architectural work. Strong design background. Extensive project architect/project manager, programming, client relations experience with industrial, government, housing, educational and corporate clients. Resumé upon request. Reply to Box #1361-503, *Progressive Architecture.*

Architect: NCARB, twenty years experience all phases of Architectural practice involving residential, commercial and educational projects. Ten years private practice in commercial and financial field. Desires to relocate in the South or Southwest area with medium size firm, looking for a responsible person with management potential. Reply to Box #1361-504, *Progressive Architecture.*

Architect: Mature architect, 20 years as partner in firm, responsible for all phases of wide variety of quality work, seeks affiliation in Boston area or within commuting distance where his expertise will be valued. Would like to hear from an institution, private or public, collegiate to corporate. Reply to Box #1361-505, *Progressive Architecture.*

Architect: Registered architect, NCARB, age 36 seeks permanent design oriented responsible position with medium or small size firm located in Atlantic coast area. Diversified background experience including historical preservation, project and office management. Reply to Box #1361-506, *Progressive Architecture.*

Architect/designer: NCARB, AIA, 42, family, Illinois graduate, principal of firm. Sixteen years diversified, comprehensive experience. Organizational ability. Desire position (with partnership potential) directing design and production in ethical, progressive, medium to small firm interested in producing best contemporary architecture. Prefer Rocky Mountain area — will consider others. Reply to Box #1361-507, *Progressive Architecture.*

Architect/industrial designer: Seeks employment in Massachusetts or California, graduated in Britain, age 27, details of experience and a curriculum vitae on request to: Alistair Macbeth, Dip Arch, RIBA, M. Des RCA, LSIA, 14 Gayton Crescent, London NW3 ITT, England.

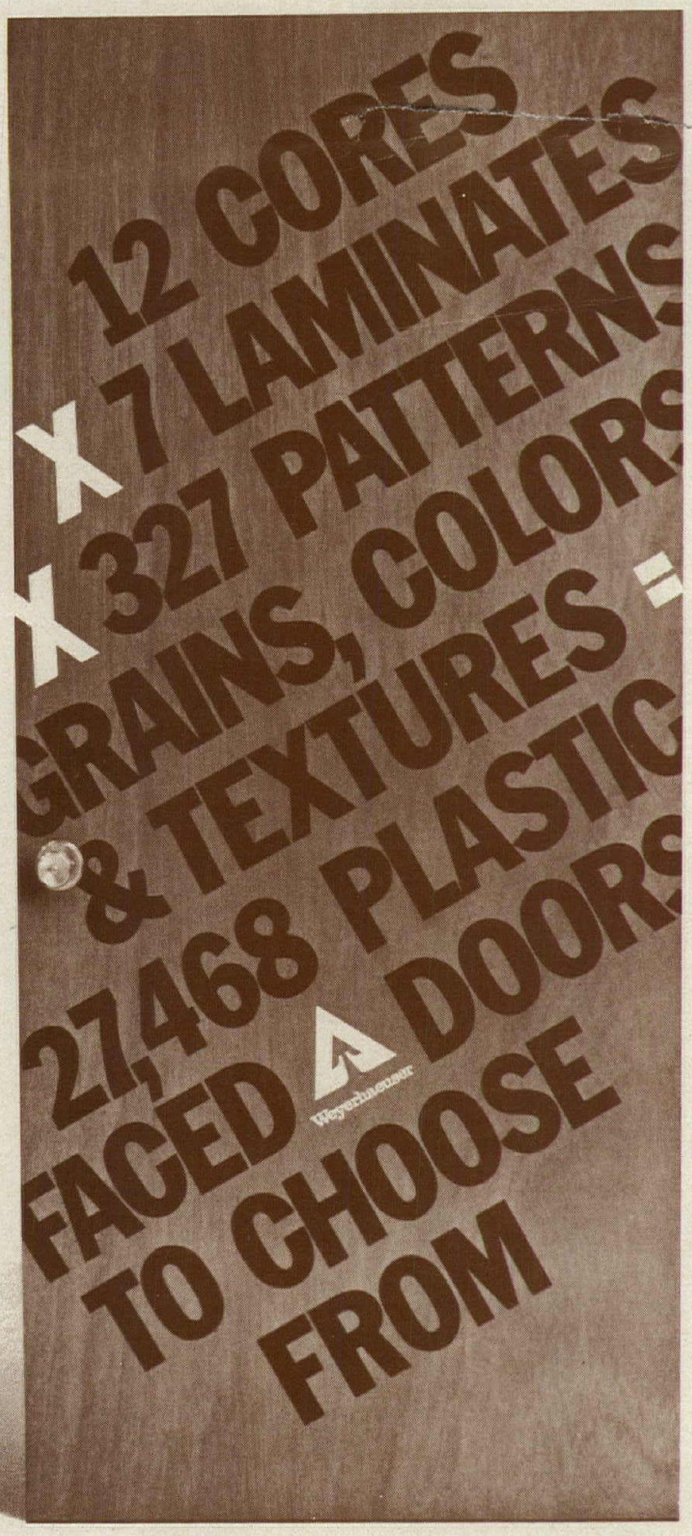
Architectural graduate: 23, married, B. A. in architecture, 2 years diversified office experience. Desire permanent challenging position in design conscious firm with advancement potential. Willing to travel, prefer relocation to Arizona, Florida or other warm climate in or near metropolitan area. Reply to Box #1361-508, *Progressive Architecture.*

Mechanical engineer: P. E., HVAC and plumbing specialty. Will accept short term or long term contract. Geographical area no barrier. Reply to Box #1 — Fern Hill, Tacoma, Washington 98412.

Architectural services

Acquisitions desired: Major architectural/engineering firm based in the East seeks similar firms interested in joining forces for common cause, expanded activity and increased challenges. Preferences are for firms with revenues of $500,000.00 and over. All replies confidential. Reply to Box #1361-509, *Progressive Architecture.*

American Professionals: Our agency has a complete range of Architectural openings. A "low key" approach is used with our client companies. Complete confidence is maintained at all times. All positions 100% Fee Paid. Send resume, location and salary



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Weyerhaeuser

requirements to 10730 Pacific St., Shaker Place Suite 226, Omaha, Nebraska 68114.

Architectural partnership: High level design and construction oriented architect in small expanding private practice (New York state capital district) is seeking a partnership or joint venture with another architect of complementary skills. Architect must be thoroughly professional individual with N. Y. S. registration. All replies answered in strict confidence. Reply to Box #1361-510, *Progressive Architecture.*

Architectural representation: Florida architect with office in Miami seeks representing firms in projects throughout the state of Florida. Wide diversified practice includes high and low rise apartments, townhouses, single homes, modulars, FHA and HUD projects, offices, shopping centers, warehouses, industrial buildings, schools, etc. Reply to Box #1361-511, *Progressive Architecture.*

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

ComTex Industries: Distributors, representatives wanted. Woodsticks — Dramatic new three dimensional wooden wall paneling consisting of strips of exotic Brazilian Pau Ferro of varying lengths and thicknesses glued to hardboard backing. Two foot sections interlock forming perfect surface ready for nailing. Free brochure: ComTex Industries, P.O. Box 355, Miami, Florida 33138 Tel: (305)751-5563.

Design Personnel Consultants: Is a Dallas based architectural and engineering recruiting firm. Due to the constant expansion in the Southwest we are continually searching for qualified architectural draftsmen to fill a variety of top paying positions with leading design-development, consulting, and construction firms. Design Personnel Consultants, 1 Lemmon Park North, Dallas, Texas 75204, (214) 521-2636.

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