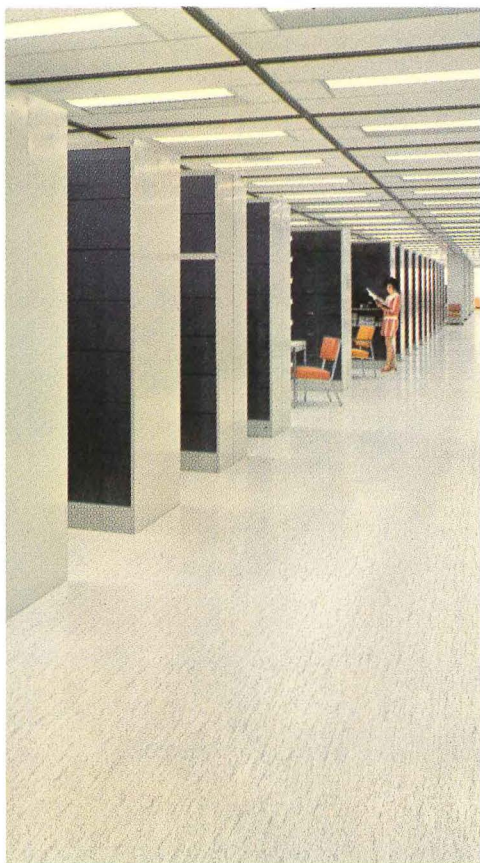


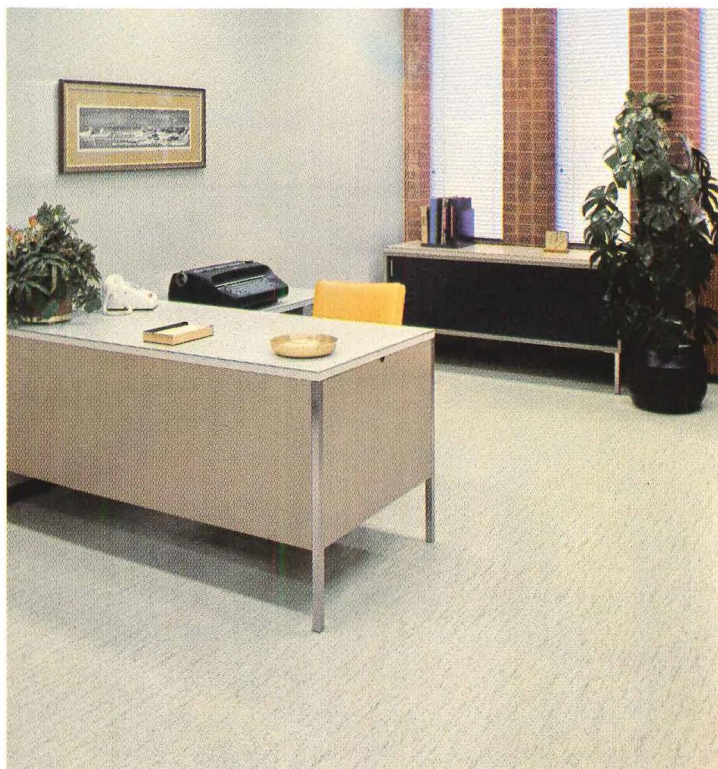
PROGRESSIVE ARCHITECTURE

A Reinhold Publication • February 1970

Restoration Sparks Renewal



Travertine Embossed Excelon (vinyl-asbestos) more than meets the appearance requirements of the new St. Louis office facility. They wanted a rich-looking but relatively economical floor. Embossed Excelon is luxurious in appearance, but it's low-cost vinyl-asbestos.



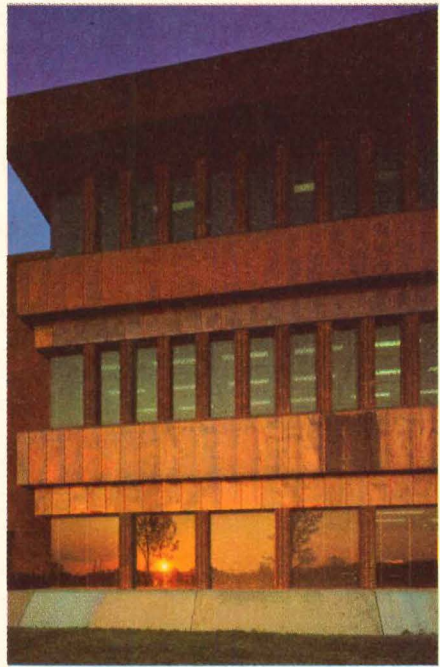
The embossed surface of Travertine Excelon Tile conceals scuff marks and scratches. And when tiles are laid with the grain running in the same direction, seams virtually disappear.



The next time you have to plan a floor, talk with your Armstrong Representative. He's the one who can show you the largest line of resilient flooring available... and he'll make sure your flooring needs are met precisely. Call him. Or write Armstrong, 502 Watson Street, Lancaster, Pa. 17604.

The planned floor.

160,000 sq. ft. planned for outstanding appearance and durability. Planner's choice: Armstrong Travertine Excelon® Tile.



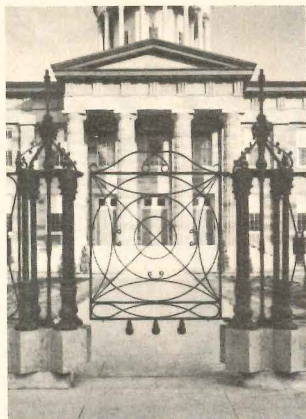
This is the gleaming, new, copper-clad building occupied by Western Electric in St. Louis. The sweep of line, glint of glass and texture of brick combine for a truly distinctive exterior. The building's interior was planned to accommodate a constant flow of traffic. The use of Travertine Embossed Excelon Tile enabled the planners to combine ruggedness with beauty.

ARCHITECTS: Peckam-Guyton Assocs., 73 Maryland Plaza, St. Louis, Mo.
CONTRACTOR: Linclay Corp., 38 Worthington Drive, Maryland Heights, Mo.
FLOORING CONTRACTOR: Lindberg Acoustics, 60 Progress Parkway, Maryland Heights, Mo.

Armstrong



Cover: Illinois State Capitol Building restored. Photo: Orlando Cabanban.



P/A

THIS MONTH

Progressive Architecture® February 1970

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Restored National Monument Sparks Urban Revitalization

Through intricate and painstaking demolition and reconstruction, the historic Illinois State Capitol Building in Springfield has been completely restored, at the same time revitalizing the surrounding central business area. The complex provides the community with a two-level underground parking garage as well as an area for performing arts and a research library. *Ferry & Henderson, Architects.*

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Co-op City: Learning to Like It

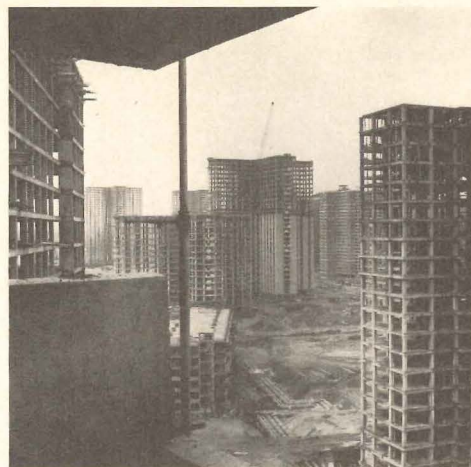
Robert Venturi, one of this country's most original and controversial architects, and Denise Scott Brown discuss the aims, achievements, and significance of Co-op City, a low-cost project that will house over 60,000 people. The authors suggest that if carefully considered, Co-op City should shake up some newer planning and urban design theories. *Herman J. Jessor, Architect.*

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Four Proposals: Rapid Economical Production of Mass Housing

Two Connecticut architects have developed an unusual series of solutions related to research in housing and urban development, that will also meet the challenge of HUD's "Operation Breakthrough." Solutions that will permit the use of different structural techniques with such basic materials as concrete, steel, plastics, as well as a combination of these, are illustrated. *Wojciech G. and Urszula Lesnikowski, Architects.*

74



World's largest cooperative housing development.

Illinois' restored State Capitol Building.

Architectural Faberge'

An exquisite art gallery located in a New York City townhouse, provides a rich spatial experience. Extraordinary details, combined with a unique ability to carve complex and subtly interrelated spaces out of relatively small sites, results in an architecture of great sophistication. *Hans Hollein (Vienna), Architect.* 88

Alienation Reveals the Familiar

Italian architect Gae Aulenti, the designer of Knoll International's new Boston showroom, brings to this country the Italian display technique of alienation. By placing the displayed items in a foreign, alien, and ambiguous context the Knoll furnishings are seen in a fresh new light. *Gae Aulenti, Architect.* 96



Knoll's imported display techniques.

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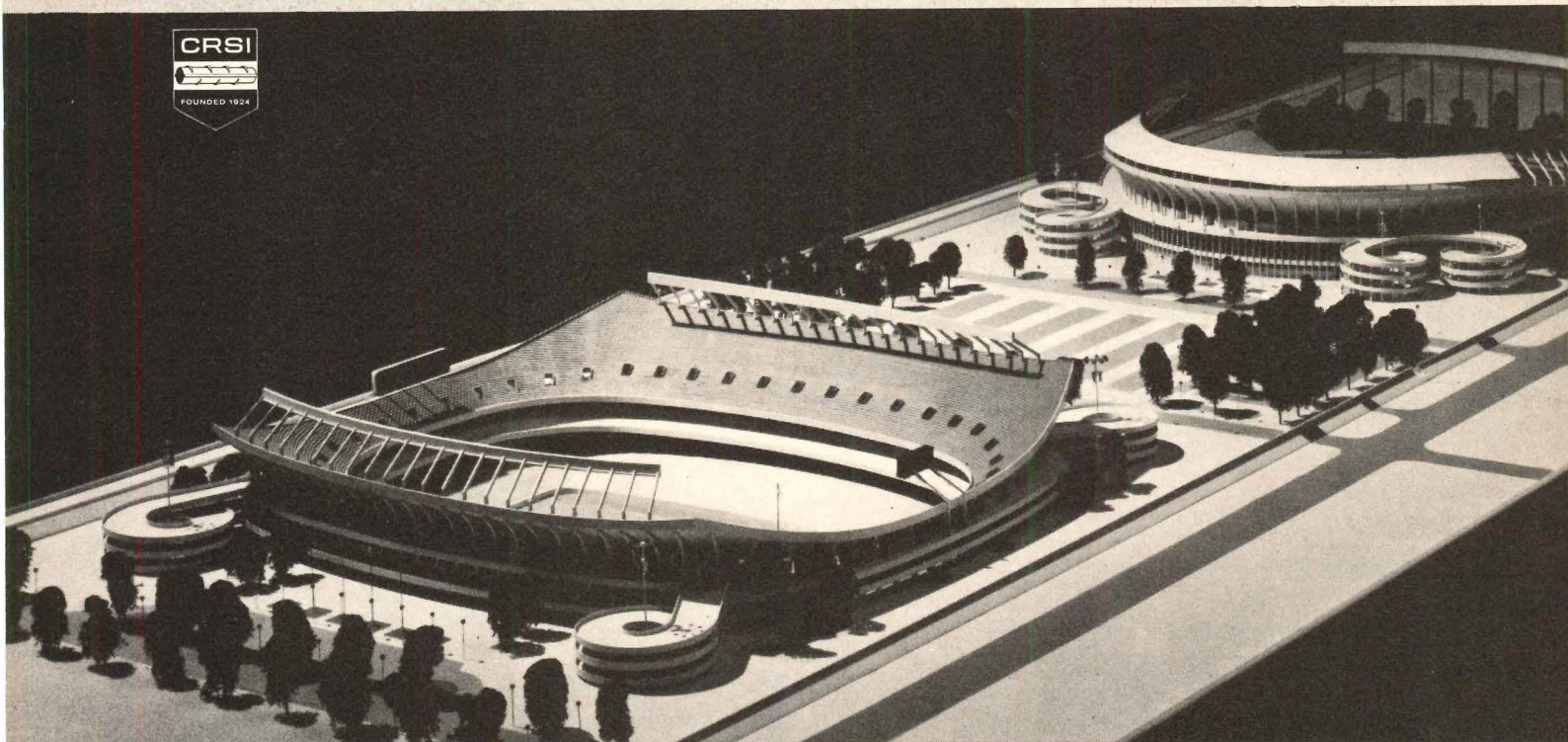
Progressive Architecture, published monthly by Reinhold Publishing Corporation, 600 Summer Street, Stamford, Conn., 06904. A subsidiary of Litton Publications. James F. Mottershead, President; Philip H. Hubbard, Jr., Group Vice-President; Harry I. Martin, Group Vice-President; Leonard F. Miraglia, Treasurer; Kathleen A. Starke, Secretary; Henry R. Clauser, Robert W. Roose, Vice-Presidents. Executive and editorial offices, 600 Summer Street, Stamford, Conn. 06904.

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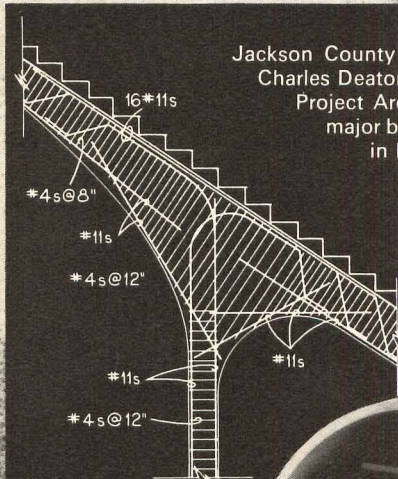
the beautiful world of reinforced concrete is a climate of excitement



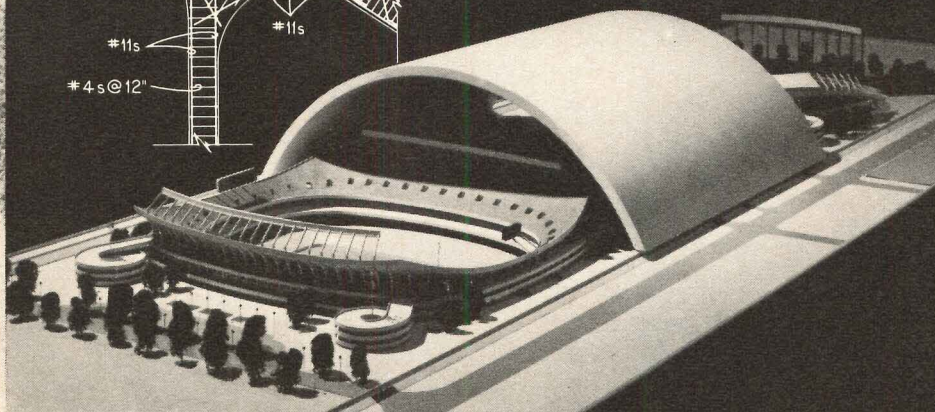
Excitement for all seasons is planned in Kansas City. In reinforced concrete. This new Jackson County sports complex, created by architect Charles Deaton, is a spectacular for spectators inside and out. Both stadiums offer every fan an unencumbered view of the action. Football stadium seats 75,000. The baseball structure holds 45,000. The graceful sight lines and sculptured beauty of the Deaton design demonstrate why the trend to reinforced concrete

grows bigger by the day. There's new utility, flexibility and economy in this medium. New design freedom. A greater opportunity to run with bold concepts and score. New high-strength reinforcing steel is one of the reasons why. It offers 50% greater yield strength. Faster, more practical construction. Almost limitless design possibilities. New high-strength reinforcing steel makes everything your mind's eye can imagine build better in reinforced concrete.

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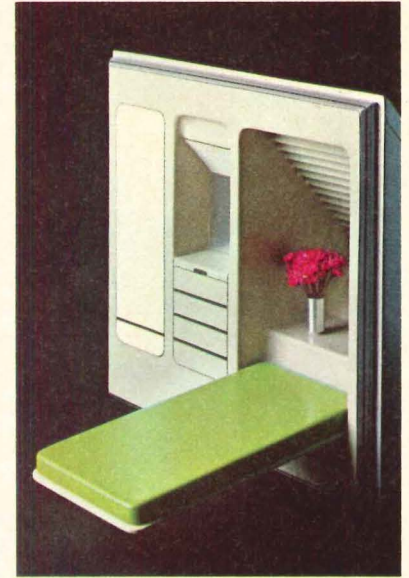
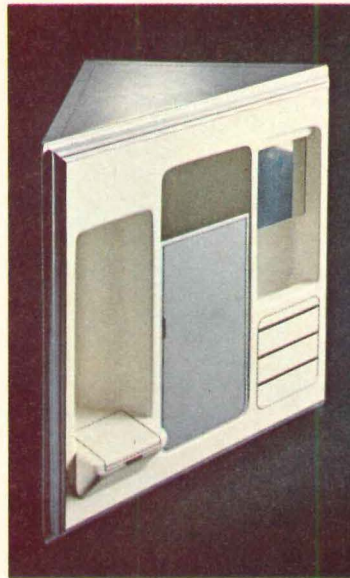
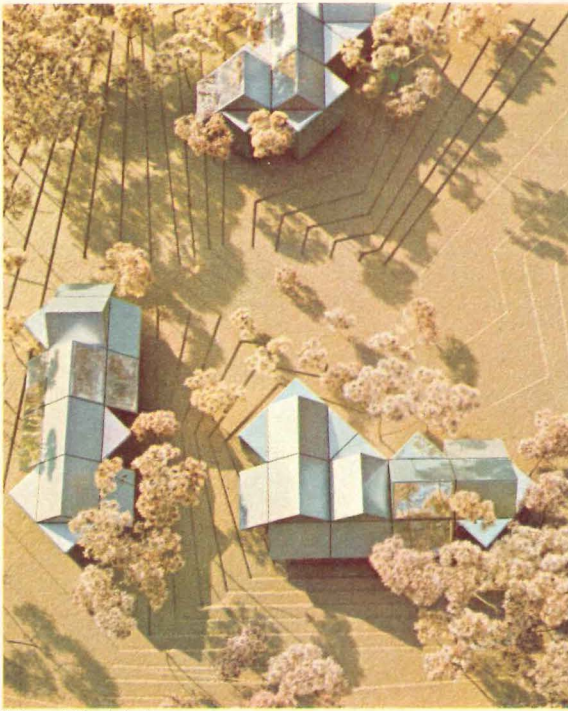
Jackson County Sports Complex, Kansas City, Mo. designed by Charles Deaton, Architect, in association with Kivett and Myers, Project Architects. Sketch of rebar placement at one of the major bents supporting stadium seating (structures similar in both). All bars to be lap spliced. Rebar assemblies "prefabricated into cages". Approximately 8,000 tons of Grade 60 high-strength reinforcing steel will be used. Completion scheduled for 1971.



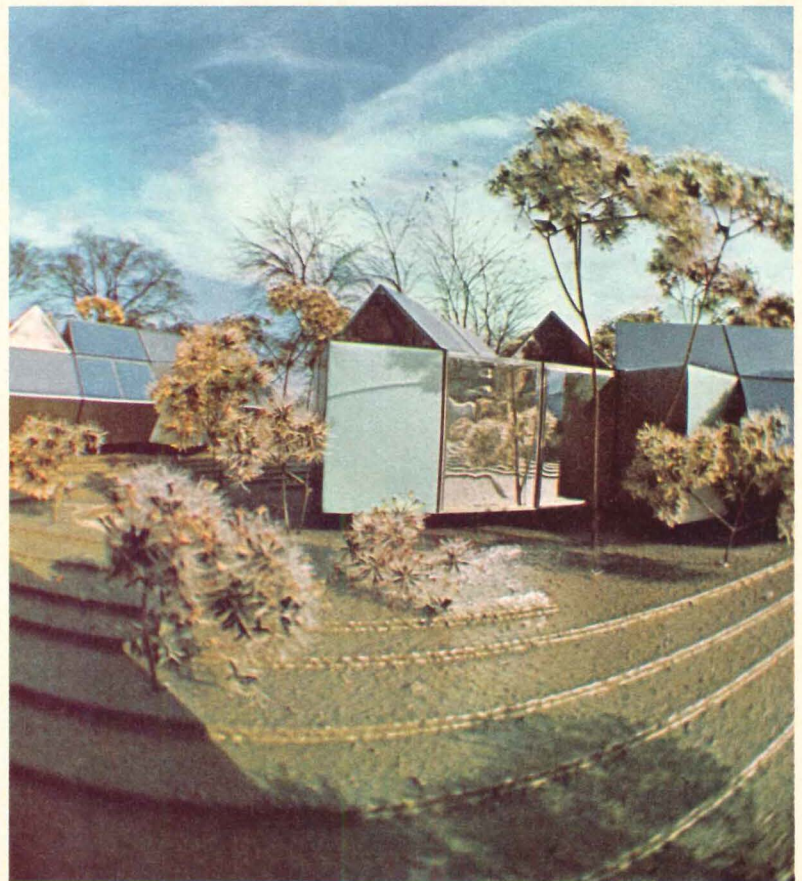
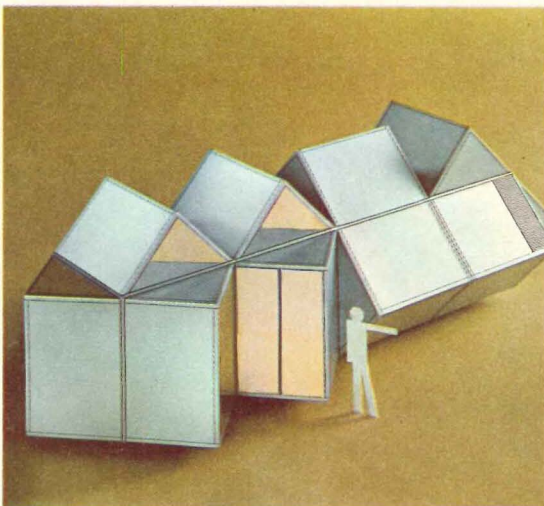
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*"Grade 60" the new term that describes ASTM specs for 60,000 psi reinforcing steel as upgraded in 1968.



(above) Model of community built with Phillip Brookshire's geotechnic building system. (above, center and right) Single modules with built-in fixtures and furniture. Sanitation module in center. Bedroom module at right. (below) Model of single-family housing unit. (right) Eye level view of model community.



Ventures In Design

NO. 4 IN A SERIES BY ALUMINUM COMPANY OF AMERICA

The Geotechnic Building System By Phillip Brookshire

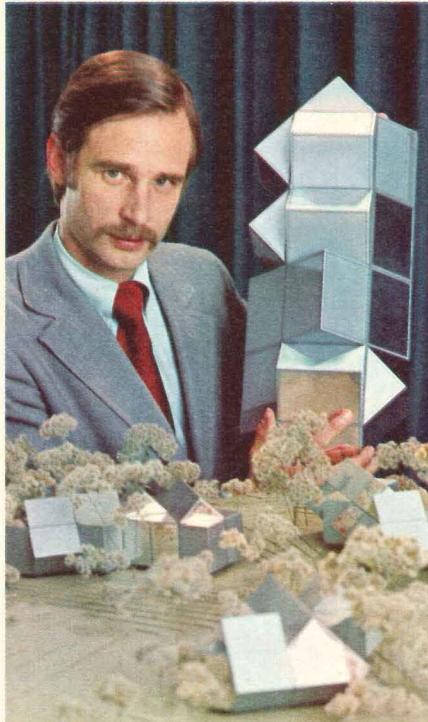
Phillip Brookshire received the fourth commission from Alcoa in our "Ventures In Design" program. The 30-year-old Ohio industrial designer feels that the challenge facing his profession is "to apply the advanced technology we already possess in an effort to solve our staggering problems in such areas as housing and transportation." His design of a modular, aluminum housing system featuring the use of the prism is a thoughtful and creative effort to do just that.

The designer.

Phillip Brookshire lives in Cincinnati, Ohio and is vice-president in the consulting office of Craftsman Designers, Inc. He received his Bachelor of Science degree from the University of Cincinnati, graduating at the top of his class in the College of Design, Architecture and Art. As an undergraduate, he received two scholarships, the college tribunal award for the outstanding senior design student and the Industrial Design Society of America annual award of merit. He was recently elected to membership in the IDSA. Brookshire's other interests include contemporary music, cinematography and experimental painting and sculpture.

Selection.

The "Ventures In Design" program was conceived in an effort to "create a fresh and effective method of recognizing young designers who have shown real ability and promise." Recipients of commissions receive a cash award and necessary material and technical assistance from the Alcoa design division. Their designs are to utilize aluminum functionally and esthetically in practical but innovative solutions of current problems. Alcoa was assisted in choosing recipients by a panel of outstanding design educators including: Arthur J. Pulos of Syracuse University, John Andrews of the Philadelphia College of Art, James M. Alexander of the University of Cincinnati and Jack Crist of



San Jose State College.

The design.

Phillip Brookshire's unorthodox modular housing system features the use of dimensionally identical prisms as the major components. The prisms are made from Alcoa "Alply" panels, an insulated building panel consisting of a plastic foam core sandwiched between two sheets of aluminum or between aluminum and almost any other interior facing material. They are joined by a series of extruded aluminum connectors. One set of extrusions is bonded to the panel edges which form the base of the prism. An interface extrusion allows the prisms to be assembled in any orientation or combination. All plumbing and wiring runs through the interface extrusions. Integral gaskets complete the weather-tight connection.

Single- and multiple-family houses of almost any size and of an infinite number of configurations would be made from the modules. Many of them would include built-in furniture or utilities for areas such as bathrooms, bedrooms, kitchens and utility rooms. Many would be multi-purpose rooms to increase the use of space. Some

of the prisms would have one facet fitted with thermo-formed acrylic "windows." These would be vacuum aluminum coated to reduce solar transmission and insure privacy. The whole housing system would be relatively easy to mass produce, warehouse and ship by truck or train. The houses would be erected on concrete slabs, footers or stilts, depending on terrain. Their relative lightness also would make water mooring feasible. And it would be easy to change the arrangement of, or add to, any house at any time.

Aluminum, the designer's metal.

Brookshire chose Alcoa Alply panels because they have structural integrity, provide excellent insulation values, have good acoustical properties, require little maintenance and can be produced in a wide variety of colors and finishes. And in his opinion aluminum is the logical material to provide a strong, lightweight joining system because it can be extruded into the necessary intricate shapes. We agree. Designers and manufacturers have great latitude with aluminum. No other material can be formed, fabricated and finished by so many methods yet have such a high strength-to-weight ratio. Alcoa is the designer's ally.

Alcoa believes that good design is a major ingredient of good marketing. We've supported this belief with both student and professional design awards for years. And we staff a design division to communicate with designers about special Alcoa aluminum alloys, fabricating techniques and finishes. This consultation is just one of the services Alcoa makes available to you, your staff designers or independent designers you have retained. For more information call your nearest Alcoa sales office listed in the telephone directory, or write Robert P. Eganhouse, Manager of Design, Aluminum Company of America, 1055-B Alcoa Building, Pittsburgh, Pa. 15219.

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YOUR POINT OF VIEW

P/A Under Pressure?

Dear Editor: The arguments relative to mergers tendered by P/A in the November issue (Mergers, Con-

glomerates, Time and Money) constituted, in my opinion, a weak, specious, and rather unprofessional coverage of an important current issue. Some of the questions raised by content of both the "pro-" and the "anti-" sides of the discussion, as well as by P/A's editorial methods are:

1) Were the best interests of your readers served by the selection of adversaries who are obviously involved in a personal, as well as a professional dispute (Lerner: "... limited

understanding ... fledgling knowledge ... so-called independent...")?

2) Is it only coincidence that the writer chosen by P/A to prepare the pro-merger position is a corporate member of the same conglomerate (Litton) as this journal? Or is this not another example of the pressured preferences required by group professional activities, as noted by Mr. Manhoff in his article?

3) Since earning profits in architectural practice is a facet of the profession that even the AIA feels strongly positive about, why did P/A's Editor permit the negative side of the argument to stress the simplistic implication that profit-making is generally inhibitive to creativity? The reader is thus presented with many vulgar arguments related to finances and economics, and only a few cursory notes concerning the sociological, environmental, ethical, and esthetic considerations of the professional organization in a conglomerate.

I trust that in future issues, P/A will, despite its new conglomerate affiliation, adhere to its previous standards of erudite journalistic content.

*Jess Berkman, Architect
Facility Design Consultants Corp.*

(Mr. Berkman's comments are a welcome addition to the ongoing discussion about this vital issue. Although we obviously disagree, we are happy to provide the platform for what has become a stimulating dialogue. Ed.)

Jetport for Florida

Dear Editor: Because of your interest in airport design, and because of the excellent coverage you gave the subject in the September issue of PROGRESSIVE ARCHITECTURE, I thought you would be interested in reading *Overview's* report on the Dade County jetport in Southern Florida.

Our proposal of an intown terminal, linked by a very high speed ground transportation system to a remote landing strip, not only can go far toward meeting the special problems of the South Florida situation, but we believe may be applicable in other instances requiring minimal environmental disturbance.

*Stewart L. Udall
Chairman of the Board*

(A digest of Overview's report will be printed in P/A's NEWS REPORT next month).



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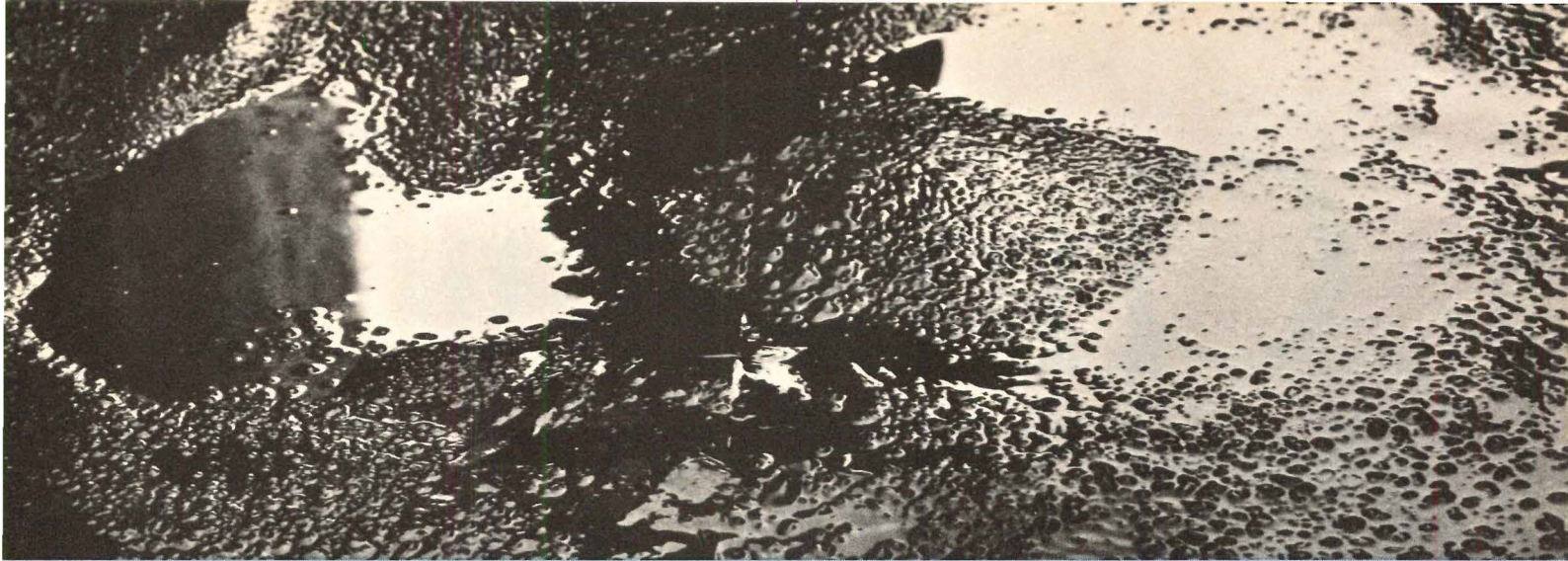


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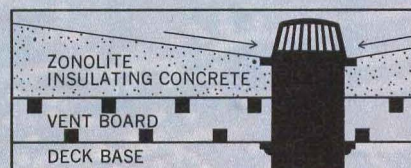
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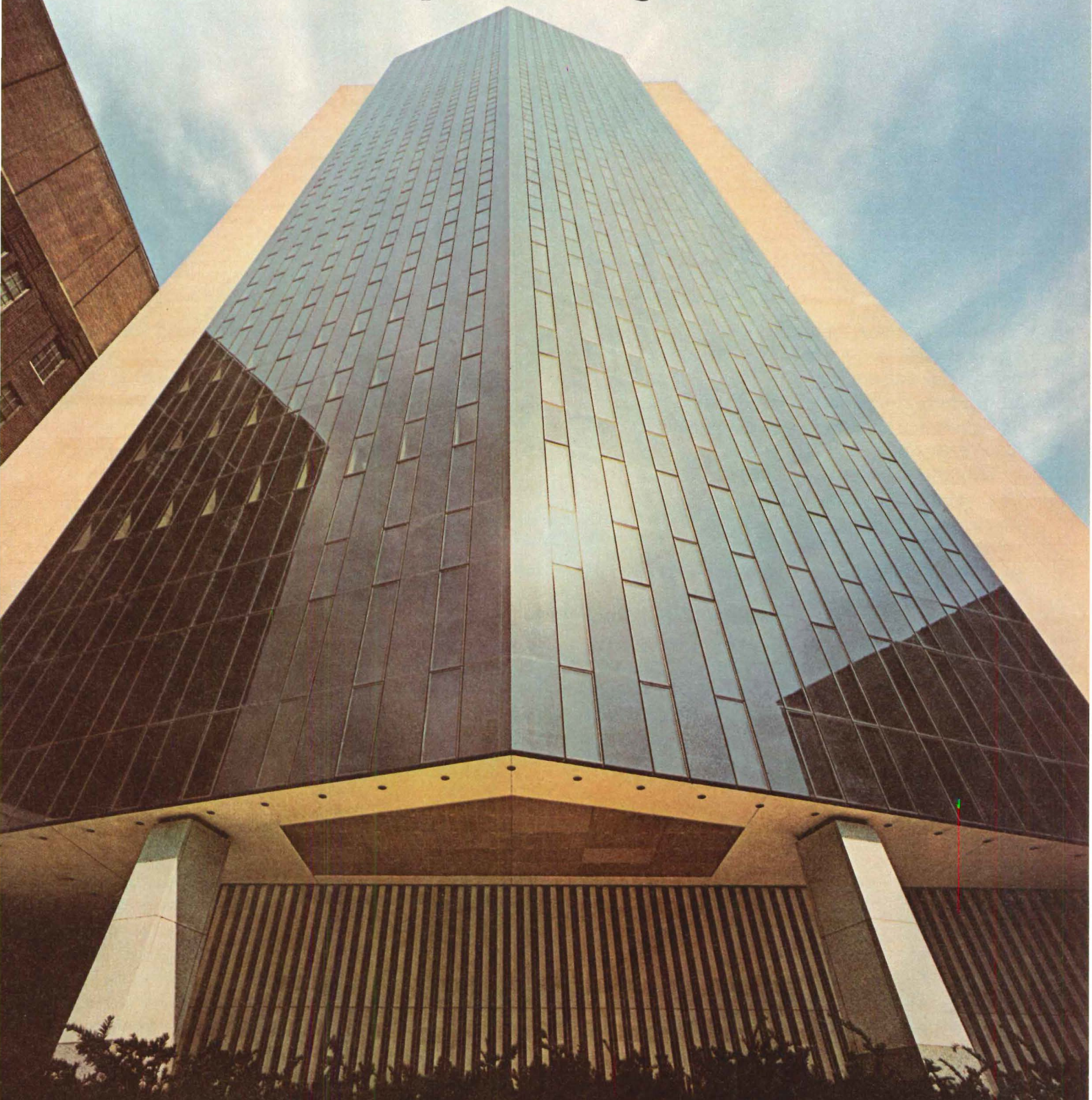


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WCC-131

What's new about the new New York Telephone Building?



ARCHITECT: KAHN AND JACOBS

Among recent additions to Manhattan's skyline, one of architectural distinction is the 24-story building of the New York Telephone Company.

One of its unique features is the way in which black Glasweld® was incorporated in its window wall design. Glasweld was used as an opaque panel behind glass in the spandrel area. (See installation diagram on the next page.)

Why put Glasweld *behind* glass when it retains its look

of newness for years on exteriors with no protective cover at all? Because it enabled the architects to emphasize the verticality of window treatment—an element of design that greatly enhances the building's striking appearance.

This unique use of Glasweld exemplifies the versatility of the material or how—in the hands of innovative architects—it can be used to achieve distinctive effects.

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Glasweld® for skyscrapers
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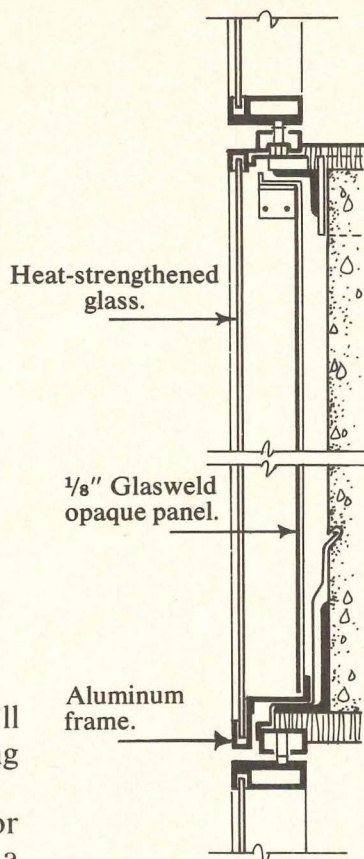
Why the upsurge in its uses? For one reason, Glasweld comes in a choice of 26 colors that retain their integrity for years on exteriors and in interiors. Regardless of the most rigorous climatic or environmental conditions.

In fact, Glasweld installed on buildings more than ten years ago still retains its original condition—a testimonial to the material's long "life expectancy." Indeed, the surface of Glasweld is comparable in durability to the best grades of exterior porcelain enamel and ceramic tile.

But durability and looks aren't everything. Equally important, Glasweld is easily and quickly installed. It's also simple to cut and drill. Only ordinary power tools are needed.

Glasweld is economical, too, when it comes to maintenance. It requires no painting or refinishing for at least 15 years. Cleans easily, too.

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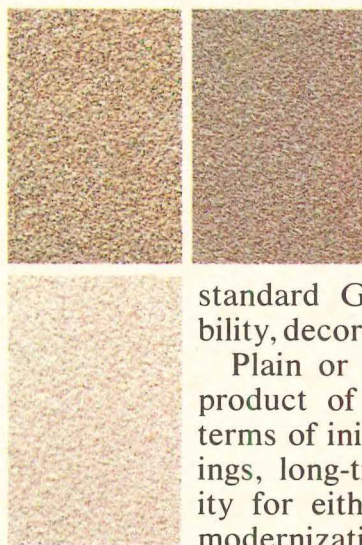
Section through Exterior Wall,
New York Telephone Building.

Glasweld is also noted for its immense versatility. It has been widely used for curtain wall panel facings, fascias, soffits, opaque window inserts, balcony panels, and interior linings. Moreover, it is an excellent material for use in rooms—such as laboratories—that must be kept dust-free. Since Glasweld is virtually free from static buildup, dust will not readily cling to its surface.

New textured Glasweld.

In addition to standard Glasweld in a range of 23 colors, U.S. Plywood, recognizing that architects have many uses for textured materials, now offers new sand-surfaced Glasweld with a distinct textured appearance. The new textured designs of Glasweld include Rhine Sand, Moselle Sand and

Champagne White Sand. (As shown at left.) And the aggregate is adhered with an inorganic bond.



These new textured designs retain all the qualities for which standard Glasweld is noted: durability, decorative value, and economy.

Plain or textured, Glasweld is a product of unusual practicality in terms of initial cost, installation savings, long-time service and durability for either new construction or modernization.

For further information on Glasweld, call the Architects Service Representative at your nearest U.S. Plywood office or write:

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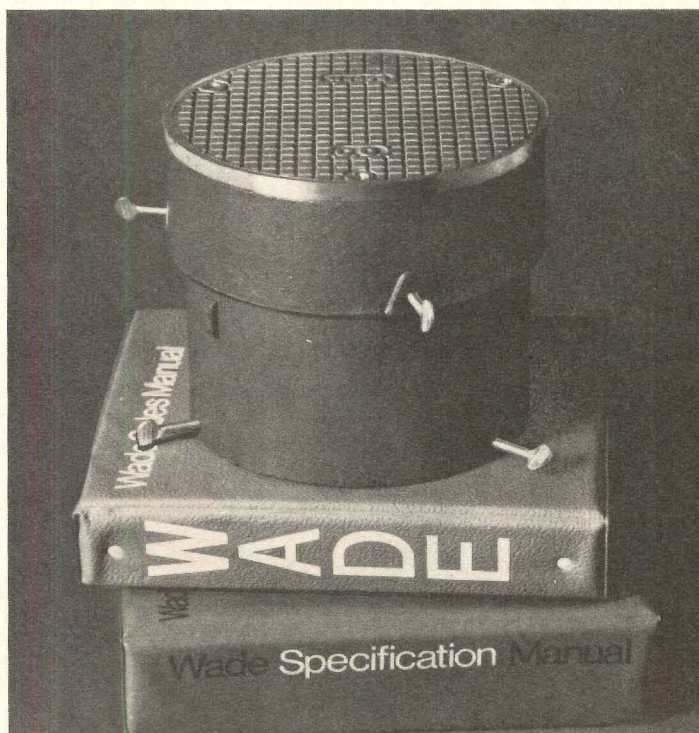
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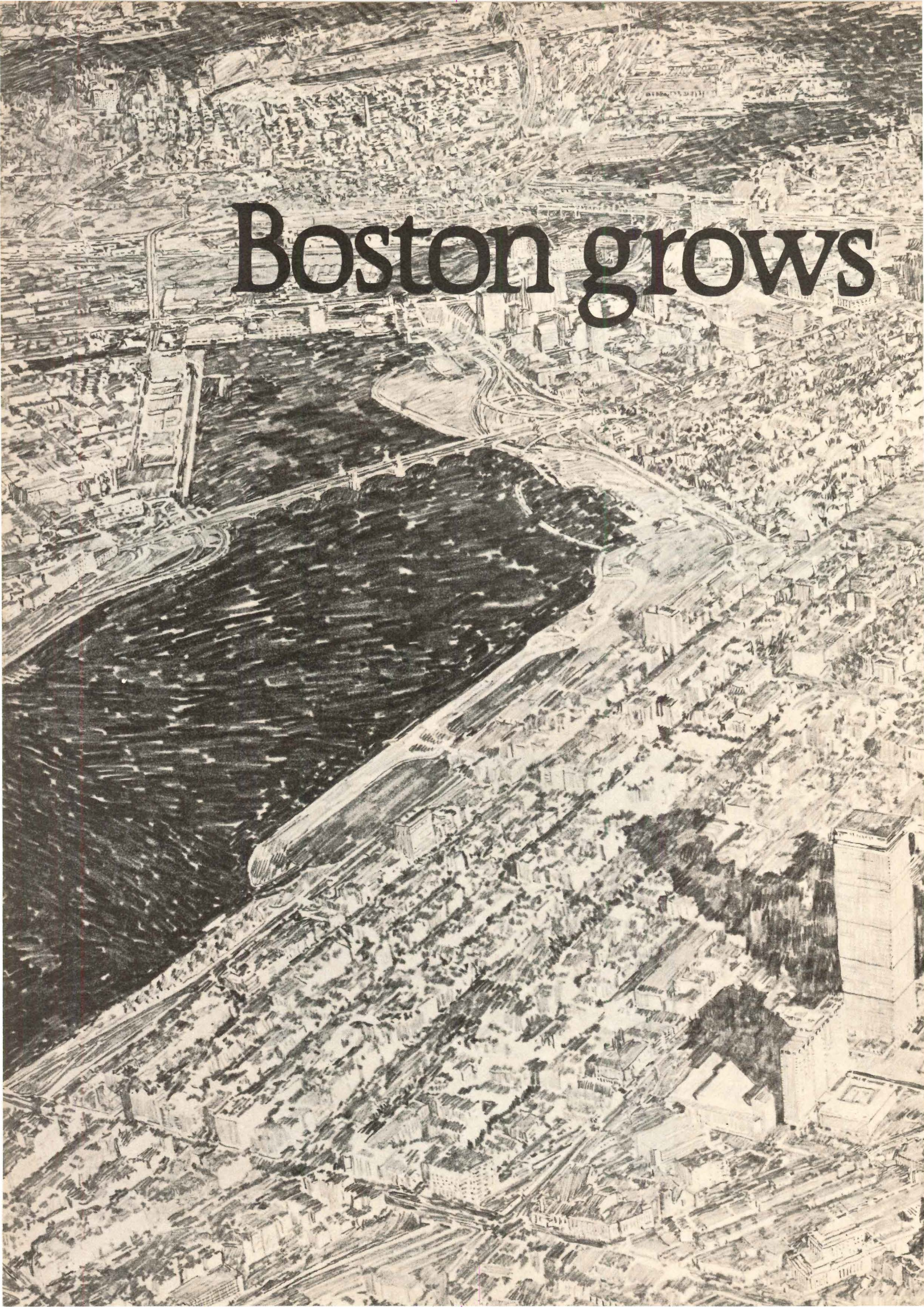
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Boston grows



An aerial, sepia-toned illustration of Boston, Massachusetts, in 1969. The image shows a dense urban landscape with numerous buildings, streets, and green spaces. The skyline is visible in the background, with several tall buildings. The foreground shows a mix of residential and commercial areas. The overall tone is historical and nostalgic.

younger. Permalite® helps.

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BOSTON - SIXTY NINE



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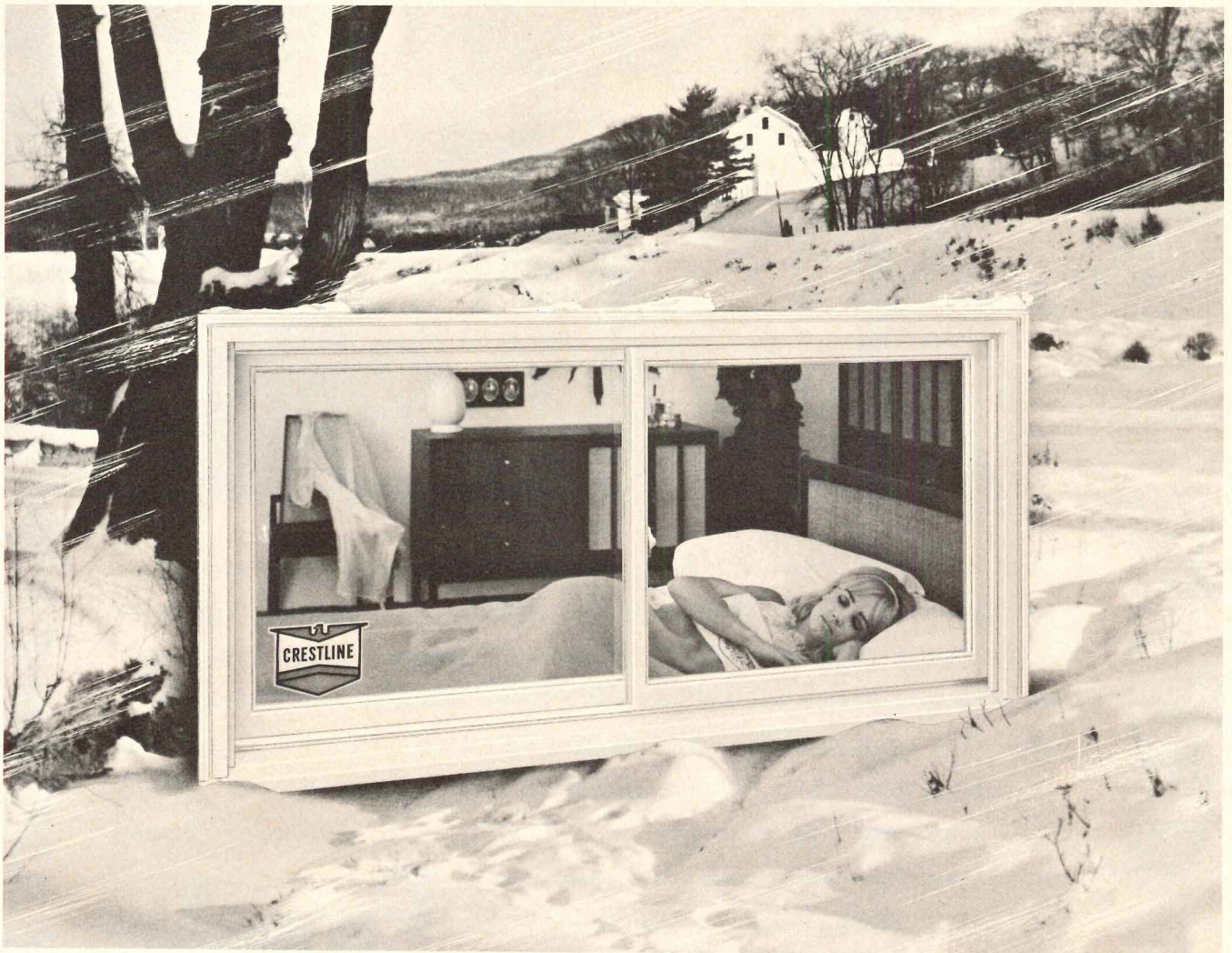
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Los Angeles, California

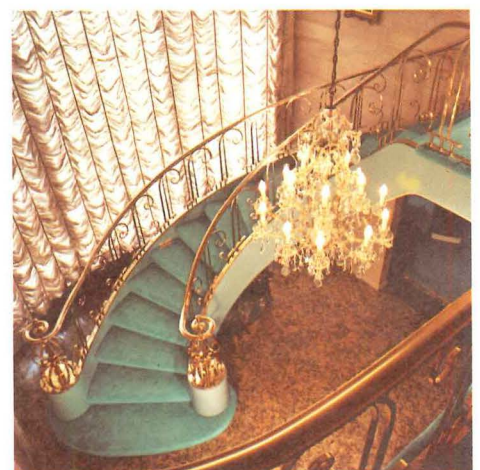
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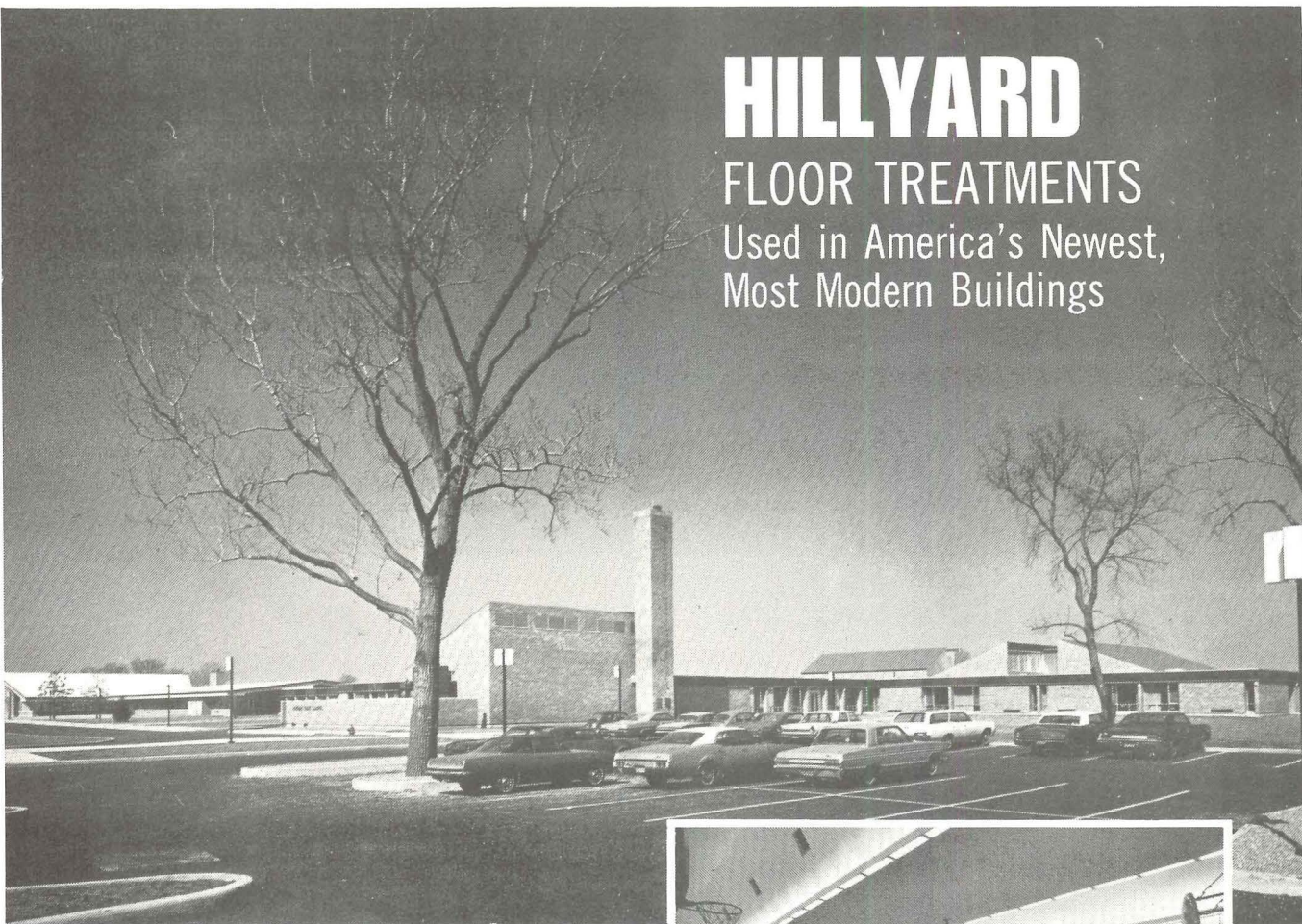


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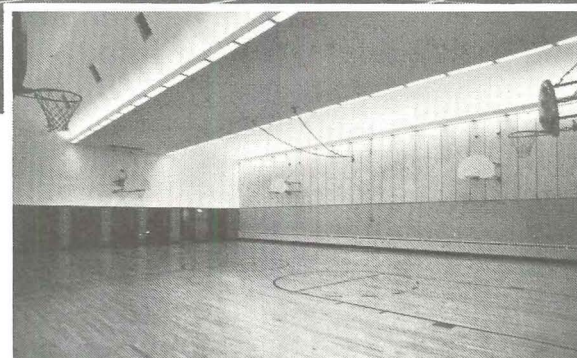
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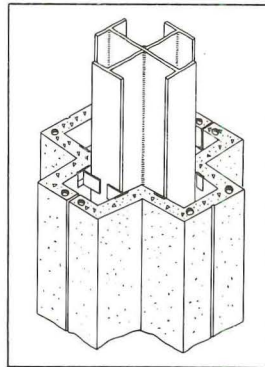
Owner: Mutual of Omaha
Architects: Houstoun, Albury, Baldwin and H. Maxwell Parish, Coral Gables, Florida
Design Consultants: Leo A. Daly Co., Architects-Engineers-Planners, Omaha, Nebraska
Structural Erector: Poston Bridge and Iron, Inc., Miami, Florida
Structural Engineers: Breiterman, Jurado and Associates, Coral Gables, Florida
General Contractor: M. R. Harrison Construction Corporation, Miami, Florida
Structural Fabricator: Musselman Steel Fabricators, Inc., Tampa, Florida

The original design of the Mutual of Omaha Regional office Building in Miami, Florida, was converted from concrete to an all-steel frame. Acceptance of the steel design was based on a structural study which indicated that a steel frame would be economically competitive and would more effectively satisfy the principal requirements of the owners. These prime requisites were early occupancy and flexibility in the layout of electrical and communication services in office areas. The steel design also provided Mutual of Omaha with an economically functional building which would be in keeping with the Company's policy of providing maximum benefit at minimum cost.

This eight-story structure has a moment resisting bolted steel frame which provides effective wind bracing against the high design loads required by the South Florida Building Code. The floor-to-floor height was kept to a

minimum by allowing the passage of air conditioning ducts through fabricated holes in the beam webs. Thus, an additional floor was obtained. The owners reported that rentable floor space amounts to 80 percent of the building's gross floor square footage.

All structural steel members are A36 steel. Each of the 74-foot high free standing exterior columns consists of two ST9WF25's welded to an 18WF50 to form a cruciform cross section, (see detail drawing).



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State Office Building a little Rocky

Construction continues and confusion still reigns regarding the controversial New York State Office Building in Harlem. Most recent developments have the omnipresent Urban Development Corporation coming to the rescue.

Following the heavy protest in September by Harlem residents over the newly begun construction of the State's headquarters on the basis of the building being irrelevant and detrimental to community needs, the UDC volunteered to consult with the community to determine their wishes. They found that originally much of the Harlem community supported the project which was to provide a state office building on one part of the site and a cultural center on the other. Albany legislators, with characteristic insight, appropriated money for the state facilities but not for the cultural center.

UDC's original intention was to restore the cultural facilities by their own means, but found from community discussion that resistance to the state office building being there at all overshadowed considerations of the cultural center.

UDC thus presented a proposal to Governor Rockefeller that the state office building be changed into a Harlem "service center" to house Federal, State, and City agencies providing services directly to Harlem. The plan also calls for community organizations to be located there, as well as housing on the unused part of the site.

A number of Harlem community groups subsequently had a joint meeting to discuss this plan along with several others. Sponsored by the United Federation of Black Community Organizations, the convention, hoped to influence Rockefeller by deciding on a single proposal endorsed by church, labor, business, and civil-rights groups. Surprisingly for the UDC, the convention rejected the UDC-Rockefeller approved plan. Instead they voted on one set of proposals: an end to present construc-

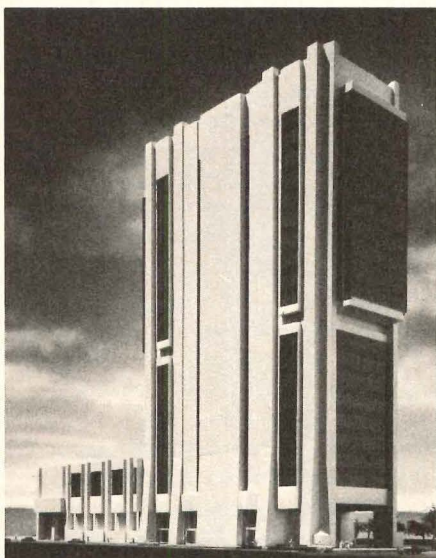


Photo: Louis Checkman

Model of State Office Building design by Ifill, Johnson and Hanchard, now in construction.

tion, ownership of land by local citizens, construction of low-income housing, stores, and a cultural day-care and information center.

Yet even in this case, there seems to be some question that the convention was representative, a question most explicitly expressed by one local newspaper, *The Amsterdam News*. So the UDC is back consulting with the people (and trying to determine why there seems to be so many separate community voices).

In any event, UDC agrees with the convention proposal of the feasibility

of the community owning the site: a subsidiary corporation of the UDC could be formed which would sell shares of the property to community residents. Thus UDC is also studying mechanisms applicable to the formation of a community corporation and is determining availability of potential backers for the community ownership plan.

Joseph Black, a city planner working as a consultant on Harlem's Model Cities program, suggests that this community ownership be a consortium of public and private interests. In this way shops and office space could be financed and provided here for small businesses that otherwise would be unable to afford occupancy. Also important, Black suggests, is emphasizing the role of the center in maintaining the nighttime activity of 125th Street.

Nevertheless, through all of these decisions, revisions, and researches, the building is still being constructed. Since the \$27 million has already been appropriated and the contracts signed, problems naturally confront the Legislature regarding reappropriation and defaulted contracts if they were to abandon the project now. The architectural firms of Ifill, Johnson, and Hanchard state they have designed as flexible space as possible, for whatever uses may occur inside. Meanwhile another firm, Bond and Ryder, is ready to prepare a scheme for the remaining portion of the site.

All Over for Storm King?

The Storm King Mountain controversy starring Con Ed as the cattle rustler and New York State's Scenic Hudson Preservation as the defender of the land, may be over in 40 days unless the Lone Ranger shows up. A Federal Power Commission examiner has ruled that Con Ed should be allowed to build its power plant at the Storm King mountain site, even rejecting the added protests of New York City officials that the plant will endanger the nearby

underground water pipe carrying 40 per cent of the City's water. Unless parties in the proceedings take exception to the examiner's findings or the full commission decides to review the decision, it will become final. Meanwhile Scenic Hudson Preservation and other conservationists battling Con Ed in the courts for nearly seven years, on the grounds that the plant will spoil the natural beauty of the area and endanger fish life, claim they will keep going to court. (For a description of the Con Ed project, p. 151 April 1967 P/A.)

Computer Attacks Social Problems

The peculiar nature of urban growth and deterioration has often eluded the grasp of even the most perspicacious city planners and urban specialists. But perhaps not for long. The computer has now been harnessed by MIT professor Jay W. Forrester to simulate the interaction of major factors that cause our cities' rise and fall.

The mathematical equation-based model of a typical city is of necessity a general one but nevertheless produced several surprising projections regarding the long-range effects of housing construction and job training programs for the poor.

When fed a program for building housing for five per cent of the "under-employed" (unemployed and marginally employed), the computer predicted that at the end of 50 years there would be a 30 per cent drop in the skilled urban population, denser slums, higher rate of "under-employment," a 32 per cent reduction

in housing facilities for the under-employed, and a drop of 49 per cent in new business and 45 per cent in mature business. The results of the program for job training showed that creating new jobs for ten per cent of the underemployed would cause more poor to be drawn to the city, creating even more crowded slums. This influx of people represents a single "rate" or change variable that would affect "level" variables of increased or decreased housing, business, and employment. The determination of this particular rate variable was regulated in the model by thirty-one feedback factors.

In analyzing these results, Forrester suggests that the best means for dealing with urban problems would be gradual demolition of slums, coupled with new business incentives. There is no housing shortage in these areas, he says, pointing to abandoned buildings. The housing is there but the economy of the area

is not able to sustain it. Since the shortage of money in the area is the basic problem, empty houses ought to be torn down in order to bring in new income-earning activities. Thus "the income for the underemployed would go up and the middle-income housing market would increase to accommodate them."

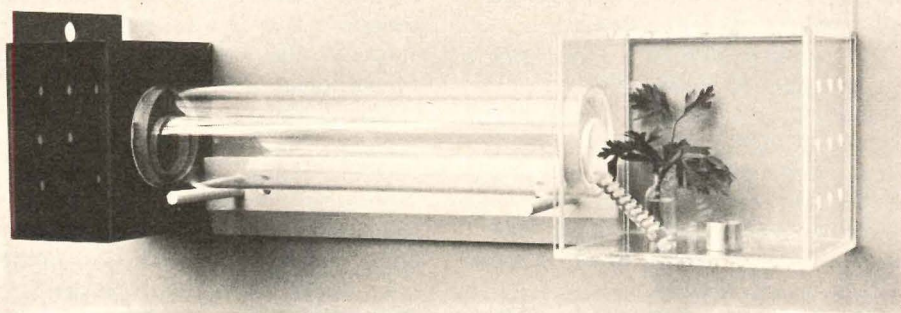
He warns, however, that results from this experiment cannot be regarded as conclusive until the model is tested, corrected, and improved. Nevertheless this study raises some vital questions about current methodology for solving urban problems, including the fallibility of intuitive solutions. These and other issues are discussed in detail in Forrester's book *Urban Dynamics* published last spring by MIT press.

American-Hawaiian Steamship Company Not in "Financial Trouble"

In our May 1969 issue we erroneously reported that "American-Hawaiian Steamship needed substantial seed money and that 'The Prudential Insurance Company of America had bailed the project [Westlake Village] out of financial trouble in December 1968 with an investment of \$50 million.'"

Fact: Late in 1965 The Prudential Insurance Company of America negotiated a loan to American-Hawaiian Steamship Company of \$30,000,000, the largest land loan ever authorized in Prudential's Western Home Office. The loan was disbursed early in 1966, and activity at Westlake has never halted since then. In May of 1969, the two companies entered into a general partnership which enabled Prudential to acquire one-half of the equity interest in the remaining development, and to participate 50 per cent in all future revenue and equity buildup. Management and development of Westlake Village remains under direct control of American-Hawaiian Steamship Company. At no time has Westlake Village or American-Hawaiian Steamship Company been in "financial trouble."

Photo: Heff Heisler



Plexiglas House for Year-round Living

Some architects like to begin their architectural career designing vacation houses, projects that offer a relatively simple program and a desirable degree of design freedom. Bix Lye, a sculptor, began his "architectural career" with a home for his pet cockroach, Lloyd.

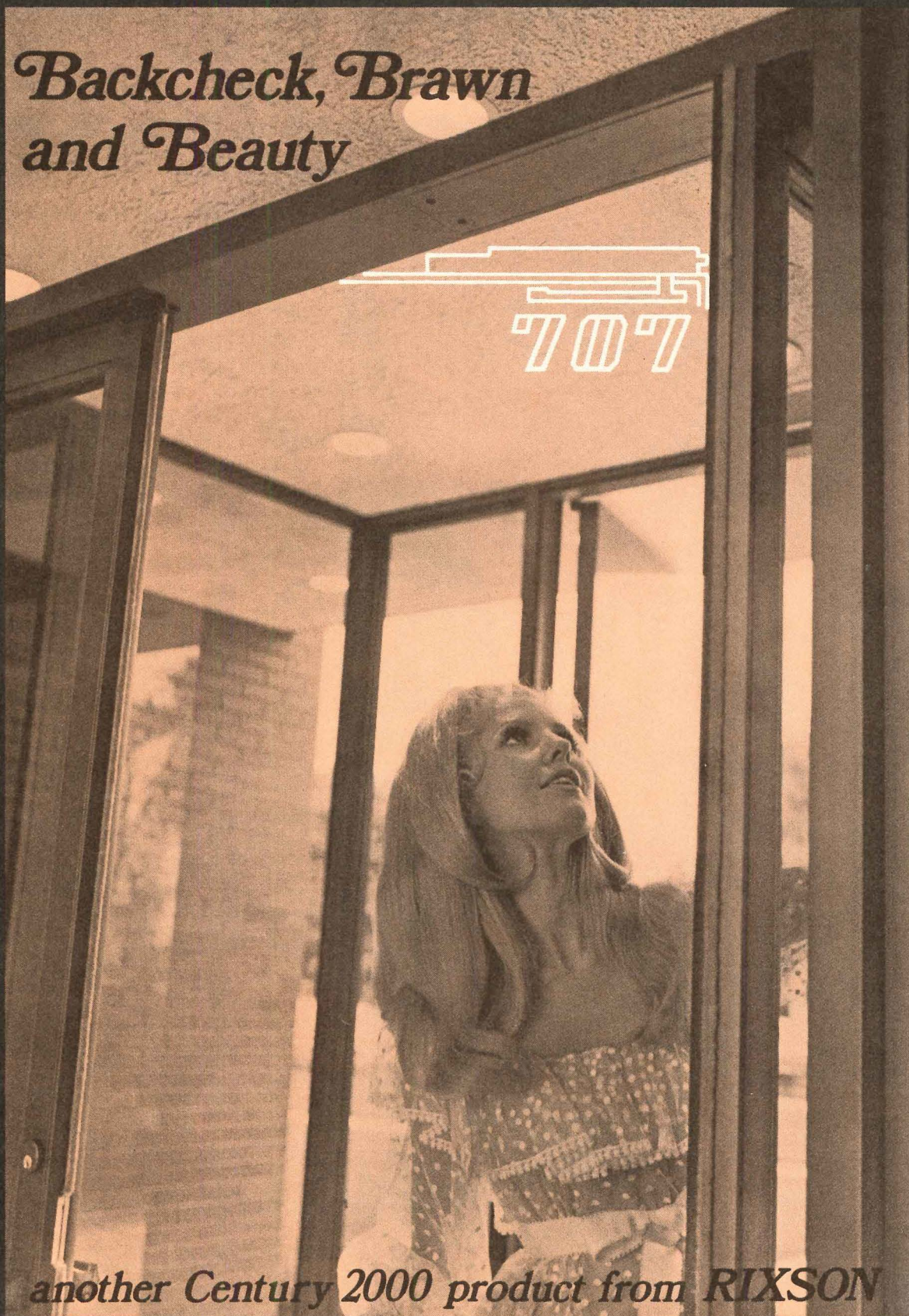
The house, is a well thought-out solution to Lloyd's daily activities. Constructed of plexiglas (glued at the joints), it is divided into three functional areas: the rest area, a tall smoke-tinted slab where Lloyd sits on branches most of the day; a clear circular walkway; and a clear cubic dining area. By separating living

from dining activities by the long tube, the plan provides for Lloyd's exercise.

In addition, the owner divided the space with a small stairway to help Lloyd climb from the corridor down to the eating area. Air-conditioning provisions are achieved through perforations in the movable end walls. These walls are made to extend above the roof line so that rope may be looped through the topmost holes for easy transportation of the cage. When stationary, it rests on two pegs projecting from the wall — where it (and Lloyd) metamorphose into an art object.

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HUD Proposes New Standards

Recognizing the needless disparity between government established design/construction standards for private housing (under FHA programs) and public housing (Housing Assistance Administration Programs), the Department of Housing and Urban Development has drawn up a set of its own standards. This document is to combine the diverse governmental criteria now used, and in its final form will supersede the

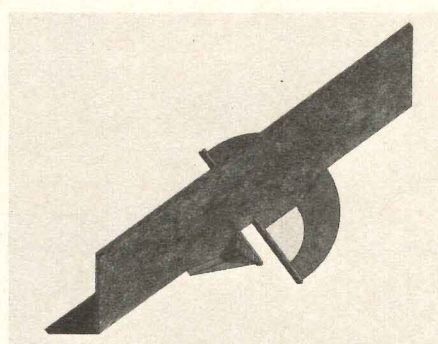
other documents for government projects.

Another interesting sidelight of this standardization revision is that HUD hopes to introduce the regulation that a *registered architect* must be employed to prepare all necessary design and working drawings and specifications for HUD housing projects. (The only exception to this requirement would be an FHA mortgaged project of less than 16 units.)

LIFE in the City

The increasing interest in alternatives to unneighborly high-rise towers for high-density housing has prompted the study of an English building system. This low-cost, low-rise high-density housing system, called "high-deck housing" has been built on prototype scale in London by Higgins Ney & Partners. Together with two American firms — Brown-Wright-Mano and Sulton & Campbell — they have (under the firm name of Architects' Coalition) been commissioned by the Mayor's Reconstruction and Development Corporation of the District of Columbia to investigate the system for application there. The concept, as adapted to American needs, is to be named Low-Rise In-City Family Environment (LIFE) and is based on construction by stages to replace older existing housing.

The scheme, as it was built in London, employs three building units. The "terrace block," a unit containing duplex apartments for families, is organized so that entry is via a second floor pedestrian deck. Under the deck are a service lane and car parking. The walkway links to the other two units; a seven-story "stub tower" and a five-story "end block." The "stub-tower" contains apartments for two-person households, while the "end block" provides apartments and duplexes for two to five persons. The system allows approximately 200 persons per acre density, a number that indicates the system is not the ultimate panacea needed for urban America, but nevertheless will answer moderate needs with maximum amenities.



Onyx Exhibits at Wittenborn

A number of architects and architectural schools recently received a large orange broadsheet splashed with drawings, explanations, and allusions — the second "visual tone poem" produced by the Onyx group. Among other things, the tone poem describes two design projects Onyx member Ron Williams has executed, both of which will be the subject of a gallery exhibit at Wittenborn book store in New York City. Represented by 18 drawings, the two projects are entitled "Daily Earth Chronicle" and "Head Start Movement" and deal with conceptual architectural structures (that serve no obvious purpose).

Essentially the youthful Onyx group, formed in 1968 by several New York architects and artists, has been exploring two basic ideas: one is the set of premises on which we perceive our environment and conceive space; the other is our present methods of communication. The broadsheet and the drawings relate specifically to these explorations, but are only two of the many imaginative, far-fetched and often zany enterprises of this experimental group.

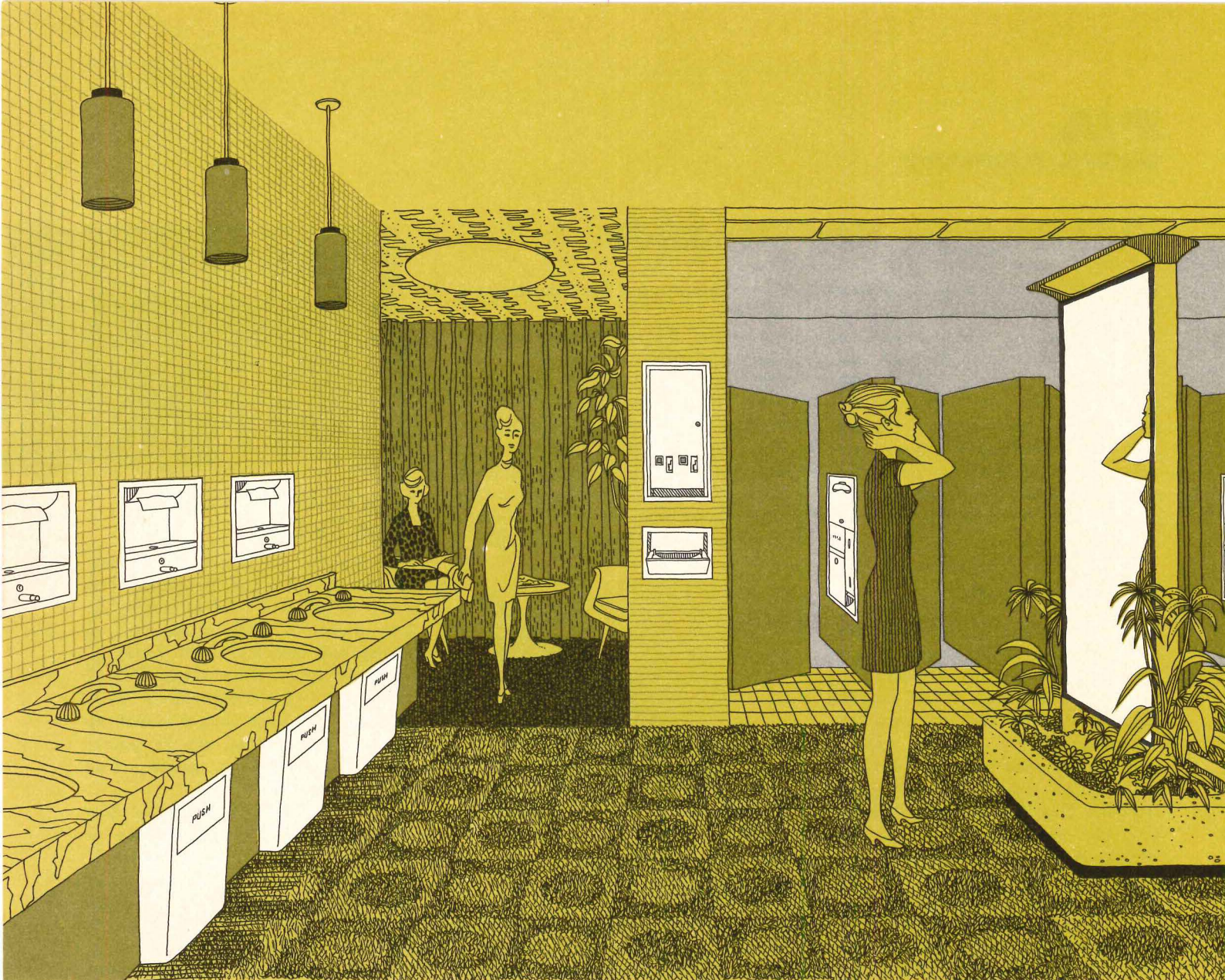


Purcell-Elmslie Bank Next To Go!

The Merchants Bank of Winona, Minnesota (now the Merchants National Bank) will soon be completely torn down to make room for an uninspired circular bank building. Designed by William Gray Purcell and George Grant Elmslie in 1911, this bank will form part of vanishing America, retrievable only by photographs and drawings, unless action is taken immediately.

David Gebhard, Director of The Art Galleries at the University of California, Santa Barbara, has provided P/A with the following brief description of this historically valuable building: "In 1911 Purcell, Feick and Elmslie received a commission to design the Merchants Bank of Winona, Minn., not too far from the National Farmers Bank of Owatonna designed by Louis Sullivan (with George Elmslie). With this challenge before them the Midwestern architectural firm naturally wished to equal if not surpass their mentor's landmark. Their solution was similar to that of Sullivan, that of housing all of the banking facilities into a square volumetric box. The interior was a single two-story space divided into secondary enclosures at the ground level. This single space was illuminated by two glass walls and a large central skylight; the smaller secondary spaces received part of their light from the rows of small deeply set windows at the street level. The exterior and interior terracotta design stained glass in the fenestration represents a high profit in Elmslie's ornamental work; the two sets of piers supporting their respective lintels and the corner curtain walls indicate how Purcell visually sought to symbolize the structured forms of the building."

Photo: Jane Grundy



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B-269 Waste Receptacle installs under countertop.

B-290 Stainless Steel Framed Mirror is integral part of planter, separated from lavatories.

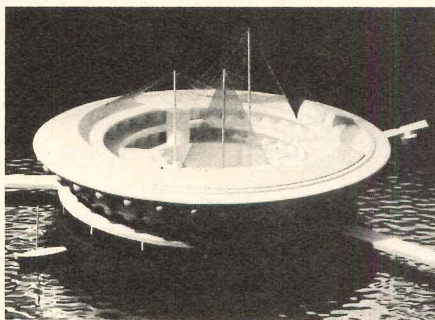
B-352 Recessed Combination Feminine Napkin and Tampon Vendor has separate dispensing mechanisms in a single cabinet.

B-376 Recessed Wall Urn Ash Tray.

B-357 Partition Mounted Units combine Toilet Seat Cover Dispenser, Feminine Napkin Disposal and Toilet Tissue Dispenser in one unit serving two adjacent toilet compartments.

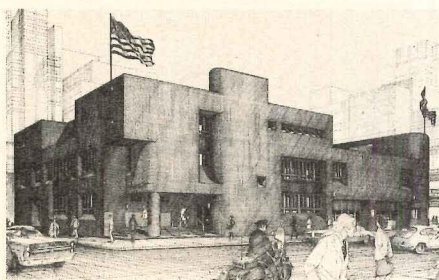
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Athens Seatel
Athens, Greece
Justus Dahinden, Architect

The Greek Government evidently is not completely lacking in an *esprit de vivre*. After noting Justus Dahinden's floating cultural center on the lake at Zurich, the Greek Government (with the backing of an American financial group) commissioned him to design a floating hotel five minutes from Athen's airport, in the bay of the Saronic Gulf. The reinforced concrete Seatel will be encircled at waterline by a stabilizing floating ring on which a walkway is to be constructed. The hotel portion itself is arranged around an open amphitheater-like sundeck shaded by three colored sails.

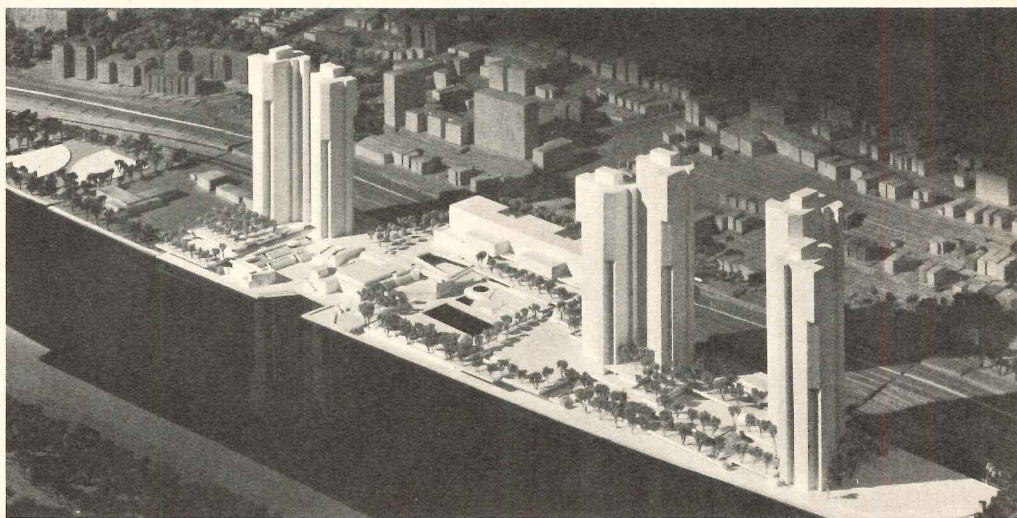


Seward Park Police Station and Fire House

New York, New York
William F. Pedersen and Associates, Architect

An integral part of a nearby urban renewal plan, the design of this building complements the architect's previously projected Seward Park housing units. The solution calls for separating the two facilities completely with a three-story police station to the south (front center) and northwest, extending around the two-story firehouse to the northeast. (right rear). The fortress-like building will be built in firehouse red brick.

Buildings on the Way Up



Harlem River Park Housing

First Project Area
The Bronx, New York
Davis, Brody Architects
M. Paul Friedberg and Associates, Landscape Architects

The Urban Development Corporation, the state agency with powers of planning, building, and managing housing projects despite local zoning ordinances and municipal procedures, has announced yet another project for New York City. It will be a government subsidized housing project planned in conjunction with the State Park Commission for a 22-acre area of a 65-acre strip of land on the Bronx side of the Harlem River. Presently strewn with junkyards,

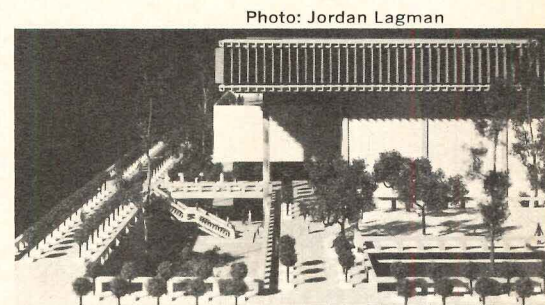
coal piles, empty lots, and shacks, the strip will eventually be transformed into a usable waterfront parkland with housing, recreation, and education facilities centralized in four nodes throughout the park. This project, the first of these nodes, contains three pairs of 40-story towers providing 2000 apartments, plus an activities building, swimming pools, and commercial and cultural facilities. Included is a 2000 seat amphitheater that can be used as a theater and roller skating or ice skating rinks.

Seventy per cent of the housing will be middle income, 20 per cent for the elderly. Most apartments range in size from three to five bedrooms at rents from \$30 to \$60 a room.

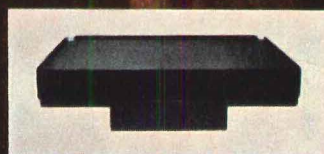
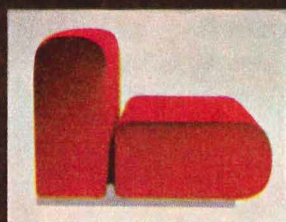
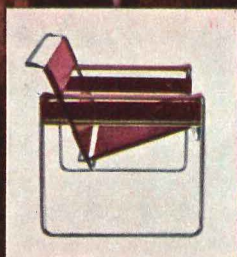
California State College

Dominquez Hills, Los Angeles, Cal.
Jones and Emmons, Architects

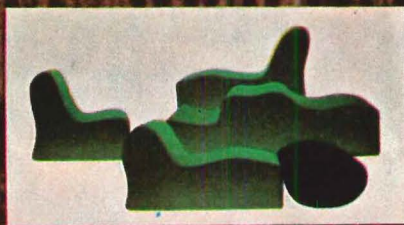
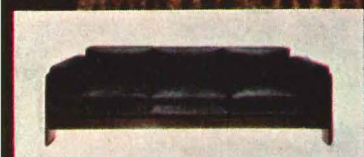
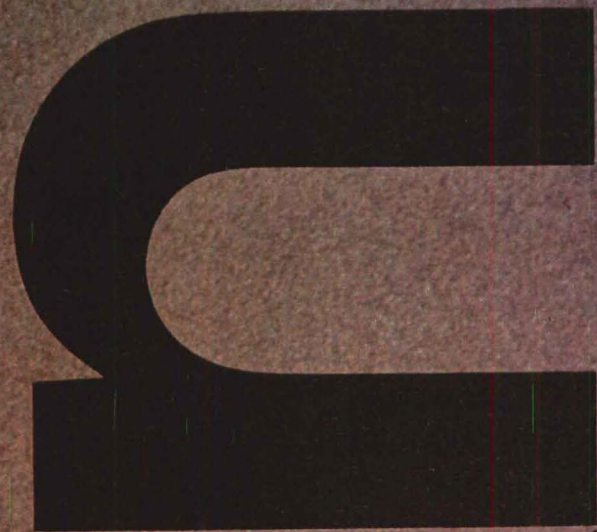
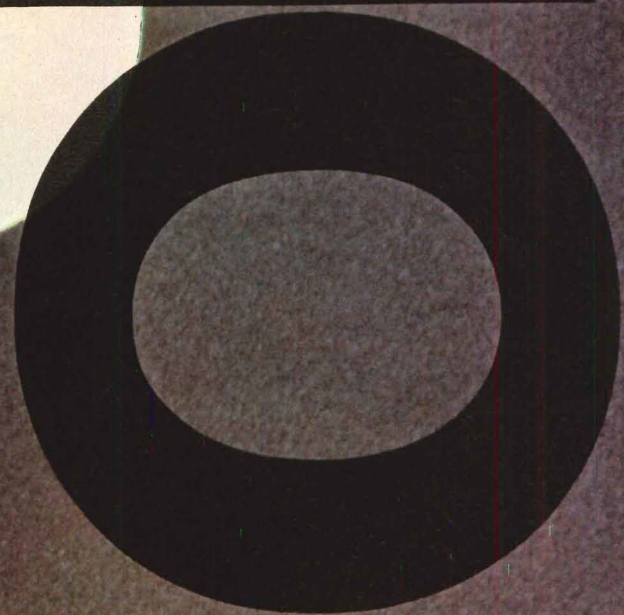
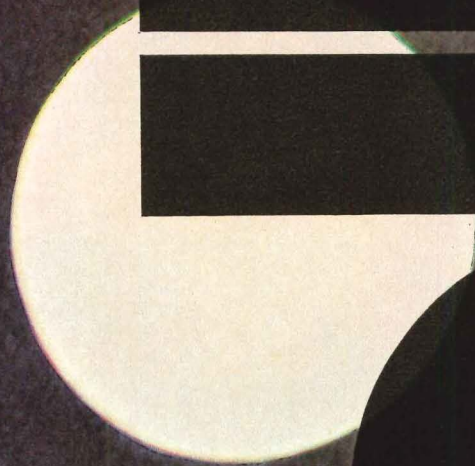
Step one of this new college is a library that at first will also house administrative offices and classrooms. Planning for such dissimilar needs over the next three to seven years, plus the creation of a permanent, well organized library, presented a problem to the architects who are also master planners of the campus. The problem was solved by placing the classrooms below grade and extending teaching courts out from them. The library will now occupy the second, third, and fourth floors, and administrative offices the fifth. Circulation between the library and

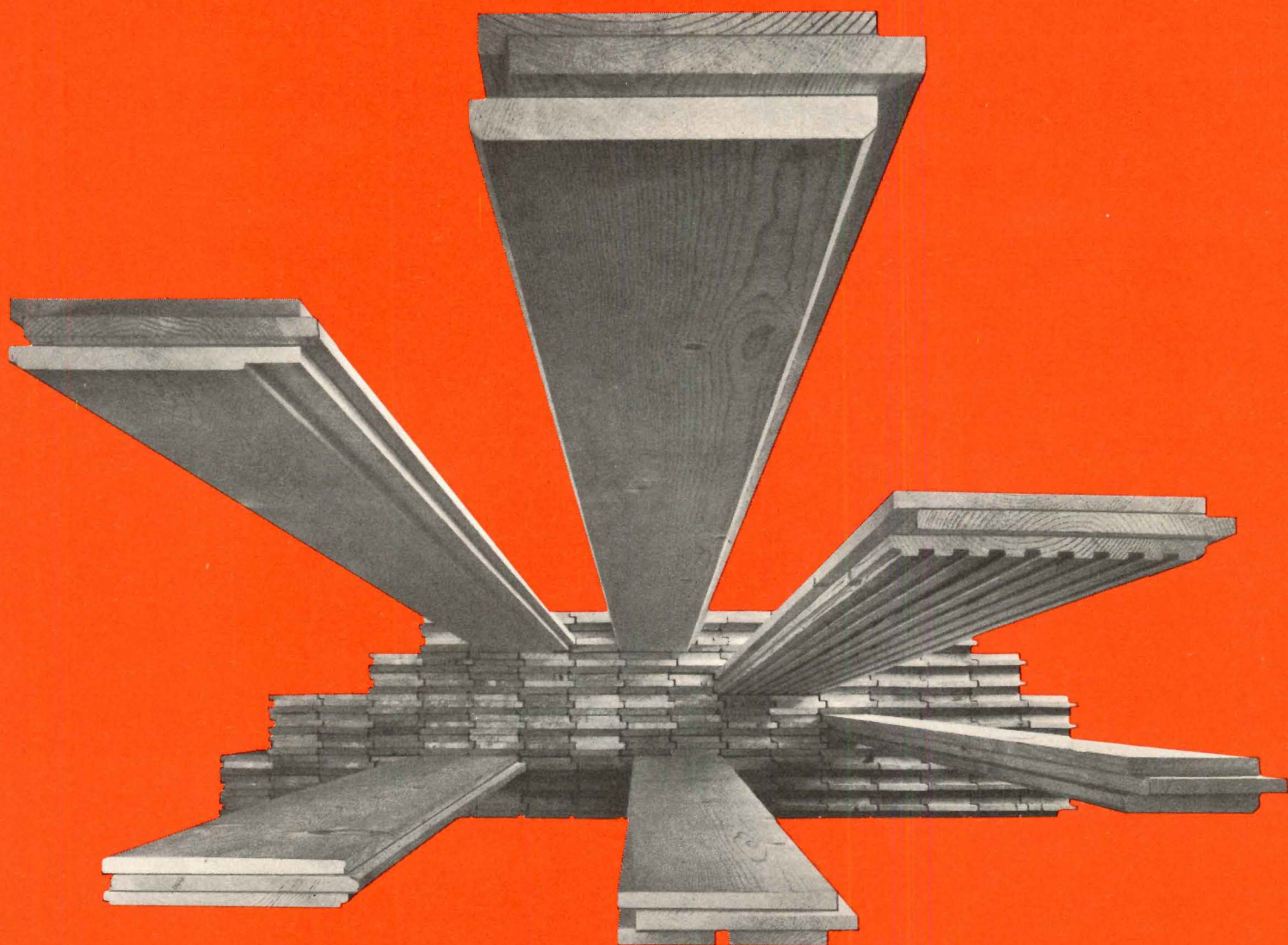


other buildings occurs on several levels, in this tightly cohesive campus in which the library acts as a hub. The structural system of the building provides for loft space that can be rearranged economically, based on a column spacing of a 30-ft module in both directions, and a 3-ft two-way module for the waffle slab floors.



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Recent Washington Developments: Capitol's West Front, Philadelphia Plan, Operation Breakthrough

BY E. E. HALMOS

West Front of Capitol

Congress put off, for a while, the annual battle over what to do about the visibly decaying West Front of the Capitol building by knocking out a House provision of several million for work on rebuilding a new wall, in favor of a \$250,000 appropriation for studying the possibility of renovating the West Front. (The non-architect Architect of the Capitol wants to rebuild the wall, extend it outward some 40 ft; many groups — including AIA — oppose this idea.)

Philadelphia Plan

Bowing to White House pressure, Congress decided against an appropriations bill "rider" that would have outlawed the controversial "Philadelphia Plan" for virtual quota hiring of minority workmen on construction jobs. Thus the way is left open for court tests of whether the "goals" set by the Labor department are in fact "quotas" — which the Controller General says they are, and thus unconstitutional.

Operation Breakthrough

In approving funds for HUD's hopeful "Operation Breakthrough" program, Congress directed the HUD Secretary to prevent labor unions from blocking the use of pre-fabricated or factory-fabricated components in its new housing experiments. Incidentally, Chicago's powerful Rep. John Kluczynski, said that a subcommittee he chairs will look into HUD's "Operation Breakthrough" with a somewhat jaundiced eye to see if: (1) there's anything beyond publicity puffery behind it; and (2) to block attempts by "geniuses" at HUD to force some sort of a national building code on local communities, (details on p. 29).

Nevertheless "Breakthrough" seemed to be off to a definite start,

with HUD's announcement that it had narrowed some 500 proposals down to 37 (which will, in turn come down to a final 20). HUD boss, Romney, said he hoped to produce some housing under the program before the end of the current year — on some of the 8 prototype selected sites (all on government or state-owned land, where local building codes needn't apply).

One point of interest, perhaps, was the type of firms that were listed as leaders of the 37 groups whose proposals were selected: None were architects (though architectural firms were members of almost all the groups); none were civil engineers; only three were major contractors or

builders (and in fact only seven other major construction firms were listed anywhere). Chemical companies, research organizations, manufacturers of components and materials were predominant.

To many observers, it substantiated the beginning of a long-predicted era in which companies not basically in the construction industry — but accustomed to mass-production methods and materials — would take over at least the housing field. However, they do provide a unified approach — consciously sought by HUD — that would take a project all the way from financing, assembly of land, through design and construction and include management of the finished project as well.

It was also notable that more than 50 per cent of the proposals submitted called for use of concrete in some manner; 10 per cent for the use of plastics, the rest for more conventional materials.

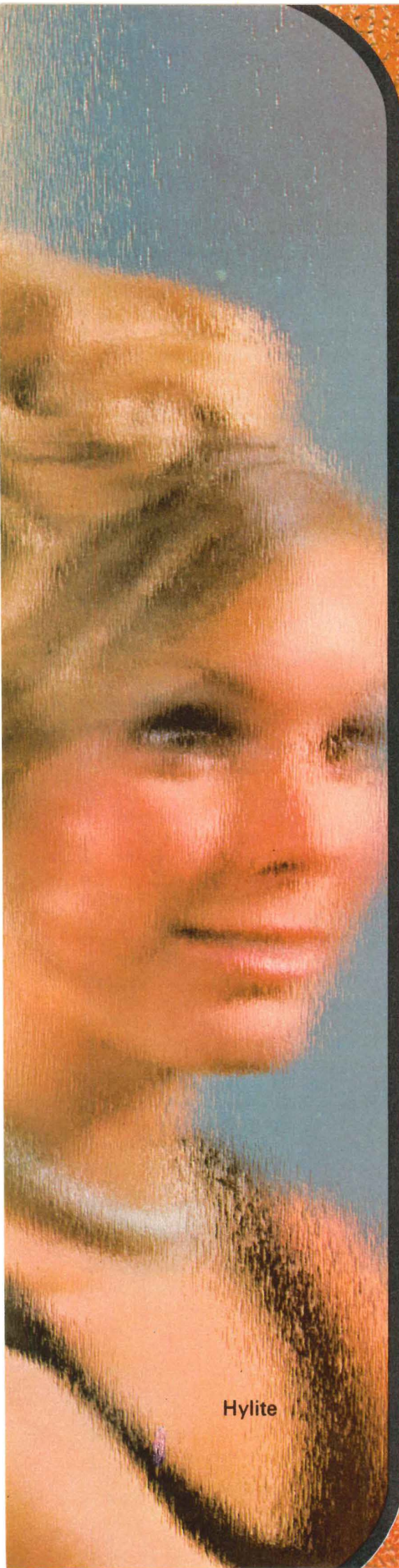
Competitions

An International Design Contest is being sponsored by France's Prisunic store chain, Shell, and Routtand, S.A. The purpose is the creation of an original design for a piece of furniture, any type, that can be produced industrially in Polyurethane foam Carapor and suitable for sale by Prisunic. Registration before March 14, 1970: write Secretariat du Concours, International de Design Prisunic/Shell Centre de Creation Industrielle, 107 rue de Rivoli, Paris 1er France.

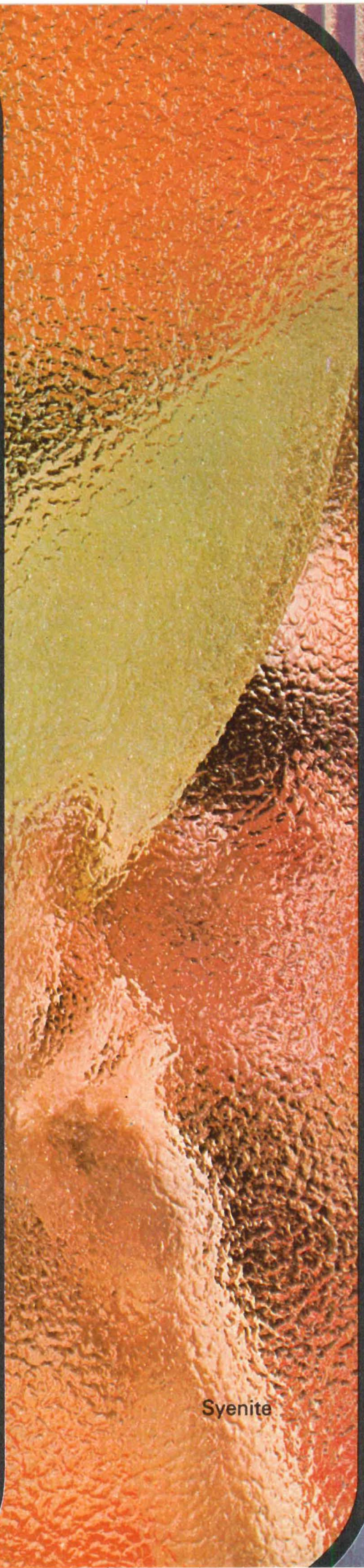
Calendar

The International Union of Architects (UIA) meeting May 24-31 in Vienna, is expected to attract architects from 30 nations, according to Mario Celli, FAIA, of Pittsburgh, the general chairman for the seminar. . . . The 102nd AIA Convention and Building Products Exhibition will be held in Boston, Mass., June 21-26, 1970, with a recessed convention in London, England on June 29. The convention theme is "The Architect in a Dynamic Society." . . . The Annual Apartment Builder/Developer Conference & Exposition,

April 14-16, 1970, will be at the Miami Beach Convention Center. . . . A Better Living Expo/70 will open at the New York Coliseum May 29-June 7. . . . The University of Cincinnati is offering **Health Planning Workshops** during the first half of 1970, in "Environmental Health Planning" and "Spatial Concepts Affecting Health Facility Planning" along with related courses. Information is available from Carol Harten, Graduate Department of Community Planning, University of Cincinnati. . . . The Fifth annual ACM Urban Symposium, sponsored by the New York metropolitan chapters of the Association for Computer Machinery, will be held on Monday, August 31, 1970, at the New York Hilton Hotel. . . . The AIP annual conference will be held in Twin Cities, Minn., at the Hotel Raddison on Oct. 18-21, 1970. . . . The Prestressed Concrete Institute is sponsoring an inspection tour of European plants. The tour will culminate the FIP Congress in Prague on June 6-13, 1970. . . . The establishment of the **Harvard Summer School Institute in Arts Administration**, with an initial four-week program in July 1970, has been announced by Thomas E. Crooks.



Hylite



Syenite



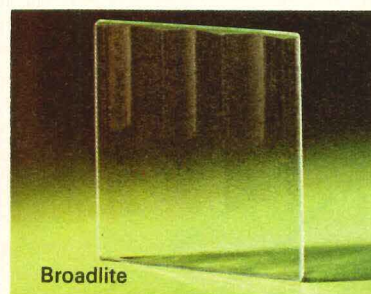
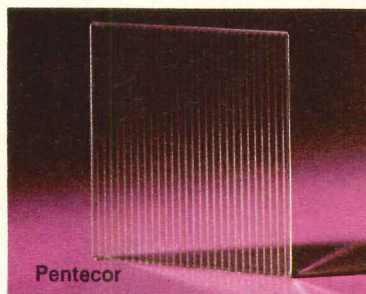
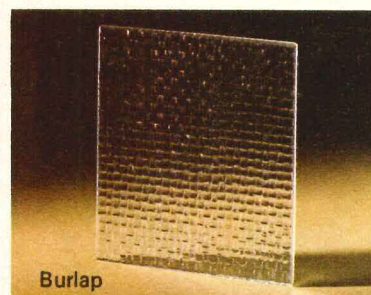
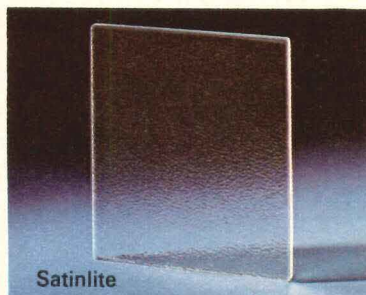
Pluralite

Selections
that give
imagination
full sway

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Smooth Rough



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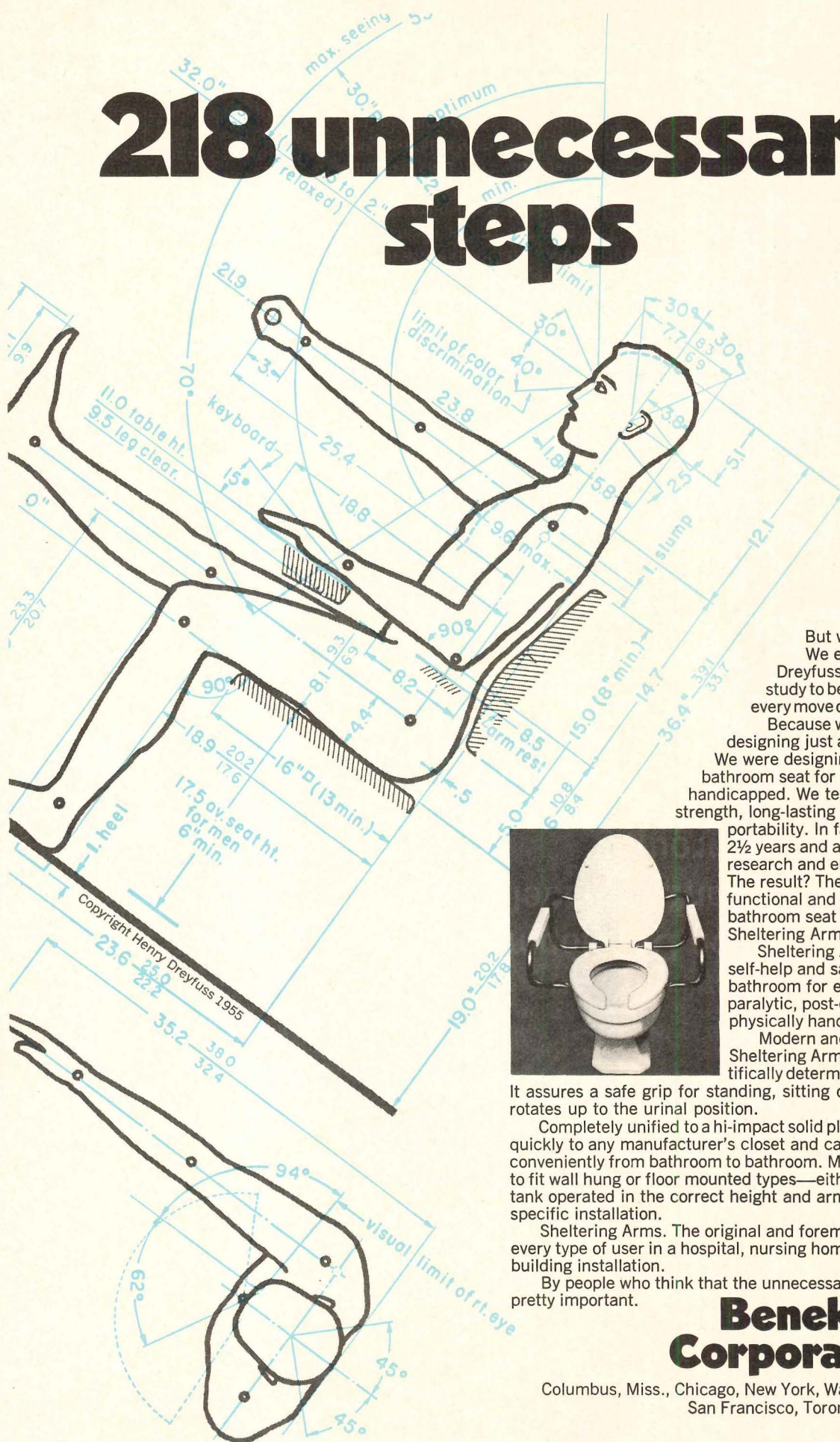
MISSISSIPPI GLASS COMPANY

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NEW YORK • CHICAGO • SAN FRANCISCO • FULLERTON, CALIF.

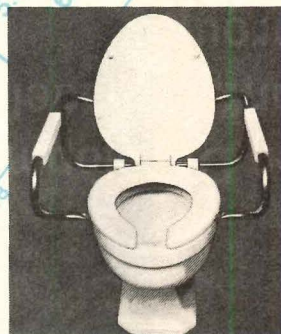
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On Readers' Service Card, Circle No. 353

218 unnecessary steps



But we took them. We evaluated Henry Dreyfuss' anthropology study to be knowledgeable of every move of the human figure. Because we weren't designing just any bathroom seat. We were designing the first bathroom seat for the physically handicapped. We tested for support strength, long-lasting usage, and portability. In fact, we tested for 2½ years and added our own research and engineering skills. The result? The simplest, most functional and durable self-aid bathroom seat ever engineered, Sheltering Arms®.



Sheltering Arms, providing self-help and safety in the bathroom for elderly, infirmed, paralytic, post-operative and other physically handicapped persons.

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It assures a safe grip for standing, sitting or rising and easily rotates up to the urinal position.

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and **non-handed**. At highly com-
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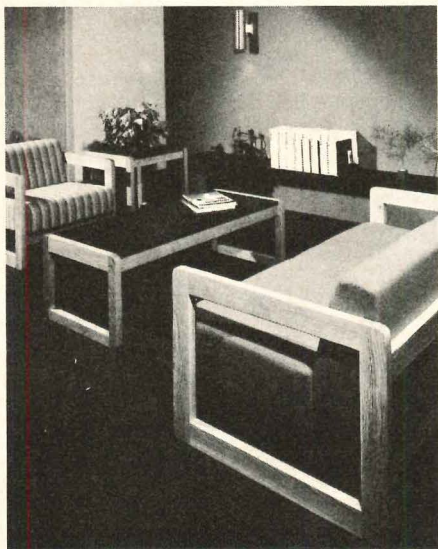


CHECKMATE

A Division of Rixson Inc.
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On Readers' Service Card, Circle No. 373

PRODUCTS & LITERATURE



Linear Oak Seating

Harter Corp. has introduced a complete new line of exposed oak furniture for public and institutional use. The new series includes nine seating units and four tables enabling the designer to express a unified yet diversified theme.

Circle 100 on Readers' Service Card

"Interlude" Whirlpool Bath

Harbor Island Spa Enterprises has recently introduced the Interlude Whirlpool Bath. The Interlude is a larger than average, recessed, whirlpool type bath constructed of 14 gage enamelled steel in a variety of colors. Five year guarantee.

Circle 101 on Readers' Service Card

Acrylic Corrugated Fiberglass

Johns Manville has just updated their Corrugulux panel catalog to include all the latest materials available including specs, installation, and typical applications.

Circle 102 on Readers' Service Card

Snap Together Paneling

Panel-Loc Inc. is currently distributing a 32-page catalog complete with specifications and typical installation procedure illustrating the variety of possible uses for the snap-in-place system.

Circle 103 on Readers' Service Card

Carpet Calculator Kit

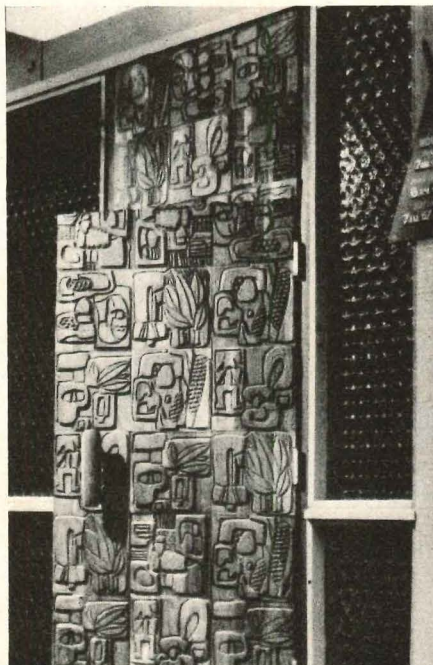
The Commercial Carpet Corp. is currently offering a calculating kit to aid interior designers and specifications writers in calculating the amount of carpet to be used on a particular job. The Carpet Calculator enables the designer to convert full and partial widths of carpet into square yards and determine where seams will go.

Circle 104 on Readers' Service Card

Complete Fencing Guide

Brinkman Manufacturing and Fence Co. is currently distributing their fence and enclosure catalog which features a wide variety of galvanized wire enclosures. In the 50-page catalog special attention is given to animal enclosures and security installations, complete with specifications, prices, and typical installations.

Circle 105 on Readers' Service Card



Custom Carved Doors

Architectural Specialties, Inc. is currently manufacturing custom carved doors for domestic and institutional installation. Available in either mahogany or laminated redwood, the doors may be selected from stock or carved to order.

Circle 106 on Readers' Service Card



Terminus Seating

Ryman Conran, the London firm that designed the furniture for the new terminal at London Airport is planning to export their Terminus Seating for the United States market. Available in a wide variety of colors and several styles, Terminus Seating adapts very well for office and reception room use.

Circle 107 on Readers' Service Card

Expansion Installation

Greffco Inc. is now distributing a booklet showing the proper installation of expansion joint covers above the high water line on roof decks. The catalog also includes specifications and available materials.

Circle 108 on Readers' Service Card

"T" Reveal Molding

Fry Reglet Corp. has devised a way to separate a plaster soffit from a decorative wall. "T" Reveal Molding provides a nice clean edge thereby eliminating the need for calking. Made of .050 aluminum, "T" Reveal Molding is coated with clear plastic to resist acid, etc.

Circle 109 on Readers' Service Card

Illuminated Plexiglass Panels

Rohm and Haas Co. is currently offering information on the application and installation of illuminated plexiglass facing panels for contemporary architectural applications. The eight-page brochure offers specifications, installation procedures, and examples.

Circle 110 on Readers' Service Card

(More products on page 48)



Bold breakthrough in plastic laminate finishes!

New Guero.

See the difference...

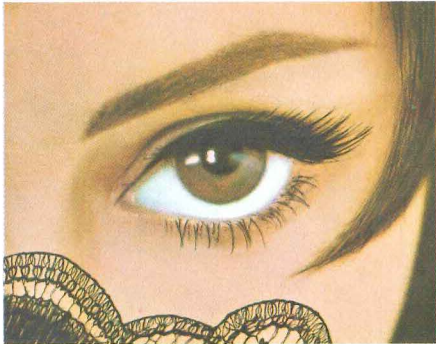
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The difference of a dramatic, new
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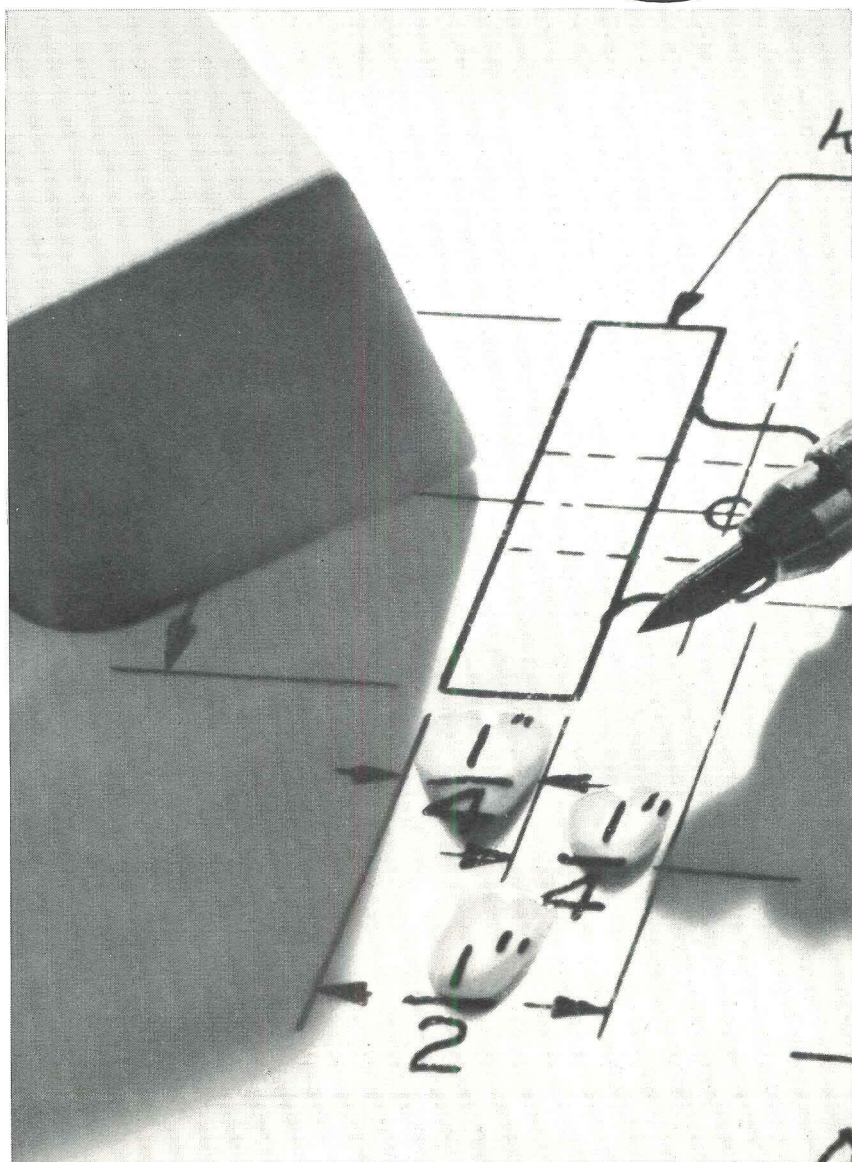
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DRAWING REPRODUCTION SYSTEMS BY KODAK

Kodak



Architects for the Armstrong Rubber Building were Marcel Breuer and Robert F. Gatje. General contractor: The Dwight Building Co. Structural engineer: Paul Weidlinger. Mechanical engineer: Segner & Dalton/Consulting Engineers. Steel fabricator: The Standard Structural Steel Co.

Four-story office tower suspended from overhead steel trusses

This is the new corporate headquarters and research and development laboratories of Armstrong Rubber Co. in New Haven, Connecticut. In order to emphasize the two separate functions of the building—research laboratories and executive offices—yet express their interdependence, the architect has hung the office tower from seven huge steel trusses over the two-story research and development wing.

The seven steel trusses from which the tower is suspended weigh about 50 tons each. From the end of each truss, a 14-WF steel column drops 52½ ft, the height of the four office floors. These hanging columns are held in place by single pins measuring 4½ in. in diameter and 19 in. in length. Thus, the four floors are suspended by 14 huge pins. The structural steel for the four floors is connected to the columns that support the trusses, and to the hanging columns as well. The steel is Bethlehem A36 structural shapes.

Steel is versatile, adaptable, economical. It can lighten a structure, shorten construction time, provide more usable floor space. We'd be happy to discuss your next building with you. The Sales Engineer at the nearest Bethlehem office is available to talk with you at any time. Or write us at Bethlehem, PA 18016.

BETHLEHEM STEEL



Emphasizing the separate functions of headquarters and research, the office tower is suspended over the laboratories.

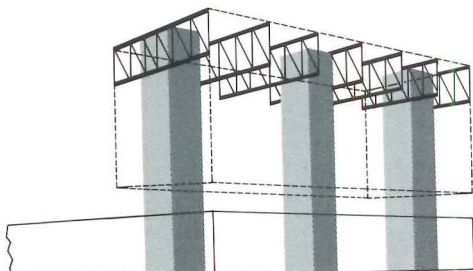
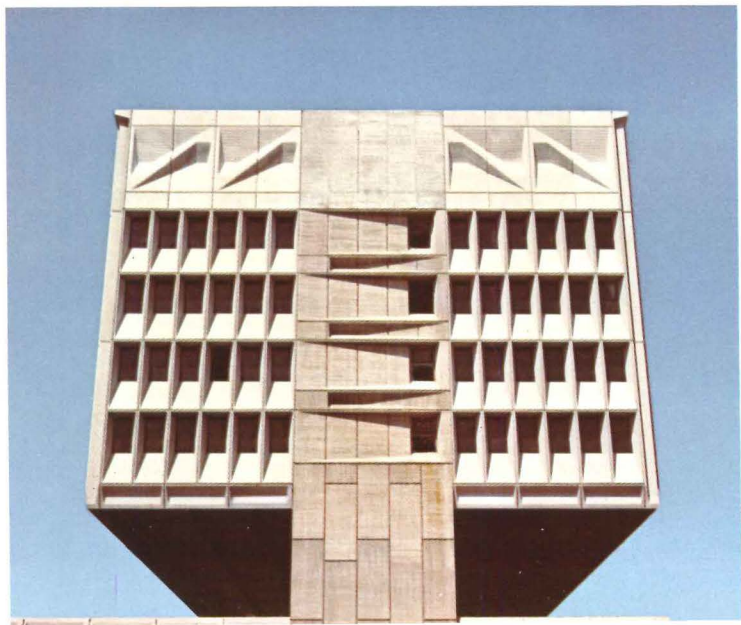
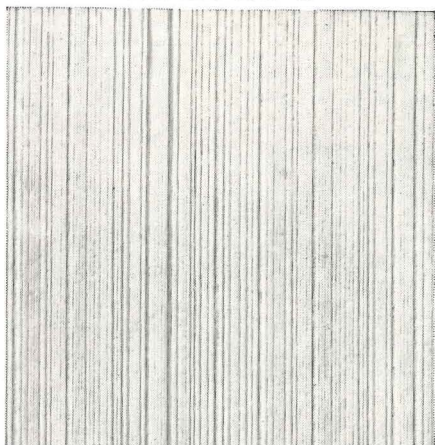


Diagram shows the cantilevered trusses and suspension system of the office tower.



NEW!

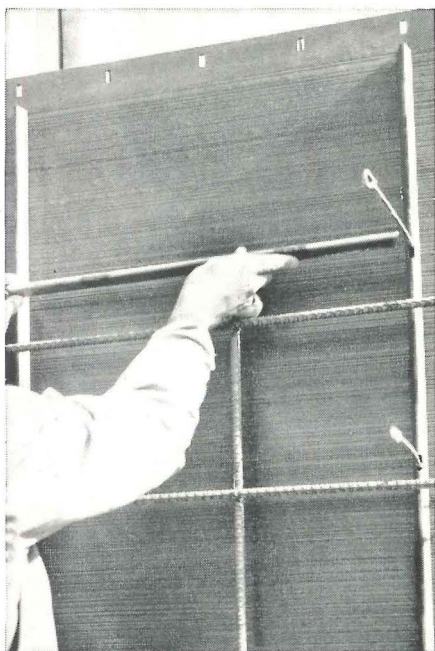


SYMONS DEEP GROOVE STRIATED FORM LINER

Symons Deep Groove Striated Form Liner leaves a soft, handsome effect to exposed concrete surfaces. Of prime benefit to the architect is the manner and ease of finishing the deep groove striations, reducing the exposure of any imperfections that may be present due to rock pockets, honeycombs and bug holes.

Normal size of the liner is 4' x 8', but can be ordered in any size up to 4' x 16'. It is made entirely of a wood composite, which can be easily attached to the forming surface.

Striated form liner may be used in conjunction with Symons Rustication Strip, illustrated below. Ties are inserted through the Rustication Strip, leaving the tie hole in the impression, and not in the face of the concrete. Complete details about the striated form liner and rustication strip are available upon request.



CONCRETE FORMING EQUIPMENT
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MORE SAVINGS WITH SYMONS

On Readers' Service Card, Circle No. 375

PRODUCTS & LITERATURE

Steelcase Stacking Chairs

Steelcase is offering an eight-page brochure on their complete line of Steelcase Stacking Chairs. Included in the brochure are pictures, specifications, and construction features of various chairs intended for educational and institutional use.

Circle 111 on Readers' Service Card

New Fiberglass Pages

Architectural Fiberglass is offering a package of the latest pages to supplement their AF catalog. Included are numerous examples of outdoor furniture, sand urns, seat planters, benches, shelter systems, trash receptacles and other Fiberglass items.

Circle 112 on Readers' Service Card

Brick Vents

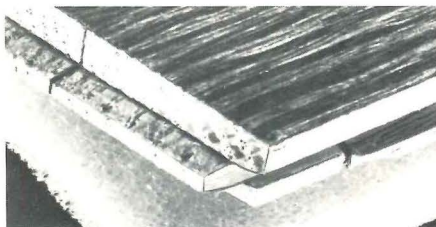
Construction Specialties Inc. has published a four-page catalog of their C/S Modular Brick Vents. Included are styles, specifications, and typical installations using C/S Brick vents.

Circle 113 on Readers' Service Card

Spray Insulation Foam

A two-component spray foam insulation has recently been developed by M-R Plastics. Mistafoam 880-S/800 is suited for both industrial and residential construction applications.

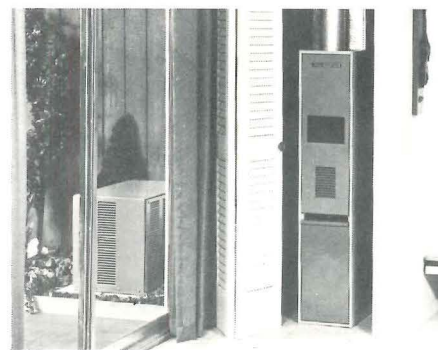
Circle 114 on Readers' Service Card



Parquet Sound Control

Tibbals Flooring Co. is currently manufacturing a foam-backed mosaic parquet flooring marketed under the Hartco Wood Foam-Tile name. The flooring was developed to give better sound control in multi-family dwellings.

Circle 115 on Readers' Service Card



Comfort Package

The Airtemp Div. of Chrysler Corp. is offering a CARE package which includes literature and photos of their heating-cooling units for apartment and small home application. Information includes specs and sizes of all small and intermediate units and typical applications.

Circle 116 on Readers' Service Card

Bathroom Furniture

Williams Products Inc. is distributing their 20-page catalog and price list containing their latest designs in bathroom furniture. Included in the pamphlet are complete specifications.

Circle 117 on Readers' Service Card

Interior Redwood

The Simpson Co. has offered the latest information on their complete line of interior redwood. Included in the 8-page color brochure are listings of redwood paneling and trim, Ruf-Sawn redwood plywood and Decra-Guard overlaid panels.

Circle 118 on Readers' Service Card

Non-Ferrous Heating

The Crane Co. has developed a complete new line of non-ferrous baseboard heating. The Petite 7 will be sold and distributed under the Crane and National-U.S. labels. The panels are designed for easy installation and easy cleaning.

Circle 119 on Readers' Service Card

Luminous Crystal Globules

The Lightolier Co. is announcing a new type of lighting innovation, the Constella family, a type of globular incandescent light which is offered in 68 different sizes and shapes to meet any lighting requirement.

Circle 120 on Readers' Service Card

For air terminal floors. COMPARE MEDUSA WHITE TERRAZZO.

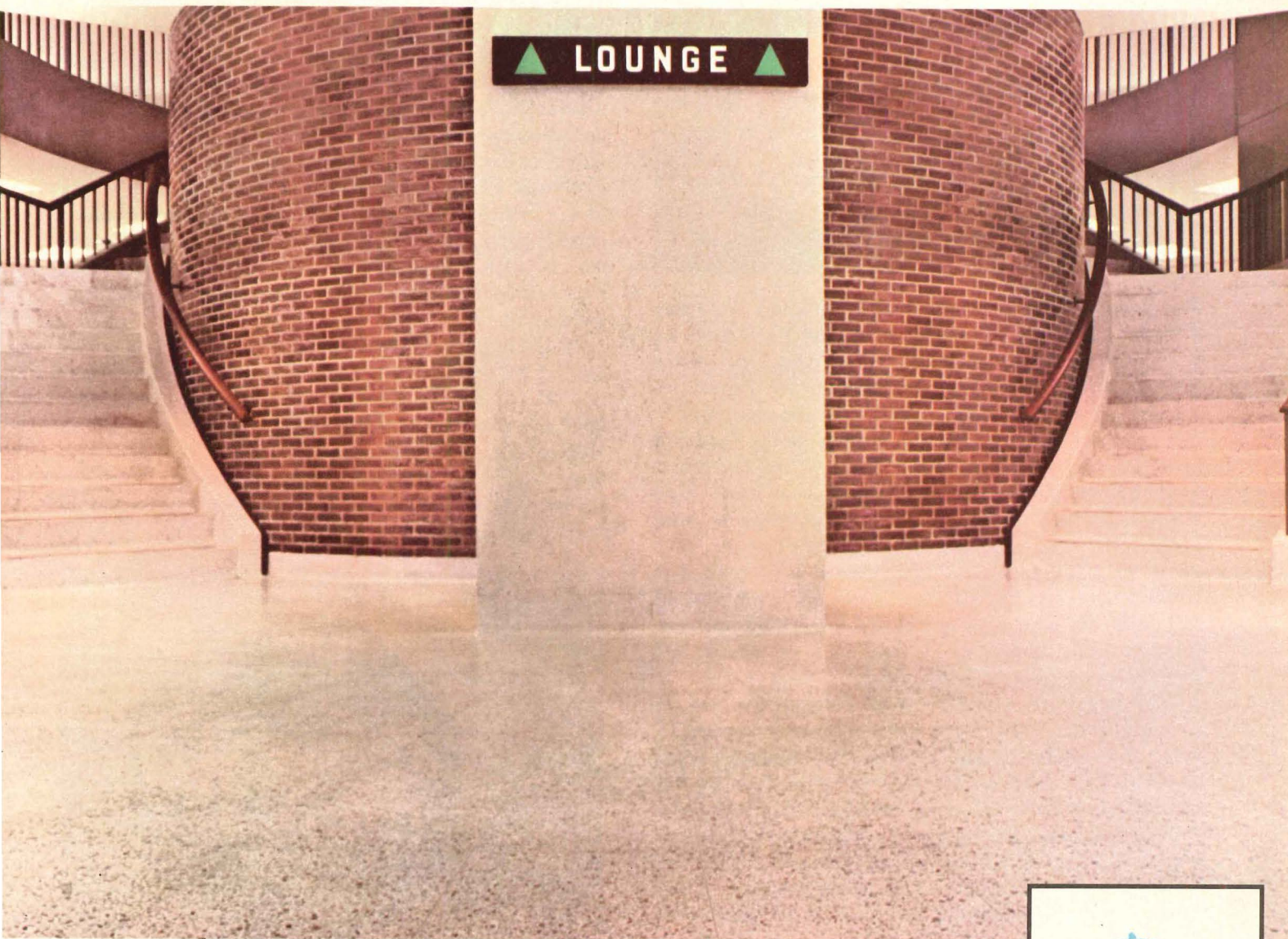
Compare permanent Medusa White Terrazzo flooring with carpeting, epoxies, organic thin-sets, vinyl tile. From all standpoints, Medusa White Terrazzo is superior and modern.

For instance, Medusa White Terrazzo is economical. Low initial cost combined with minimum maintenance, *minus* early replacement makes terrazzo the obvious choice. □ It is also flexible as to color, textures, designs and shapes. Permanent for the life of the building. □ It is sanitary. Easily and economically maintained. □ Compare. Then specify. Medusa White Terrazzo. □ Write Medusa, P.O. Box 5668, Cleveland, Ohio 44101.

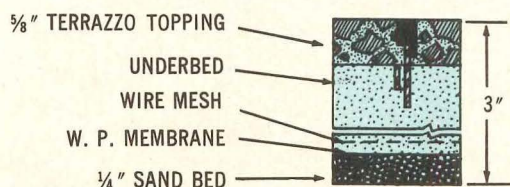
CLEVELAND HOPKINS INTERNATIONAL AIRPORT (South Concourse.)
Architect: The Outcalt Guenther Partners, Cleveland Ohio
General Contractor: W. Passalacqua Bldrs., Inc., Cleveland, Ohio
Terrazzo Contractor: The Interior Marble & Tile Co., Cleveland, Ohio
*Craftmanship Award 1969 from Builders Exchange Inc., Cleveland



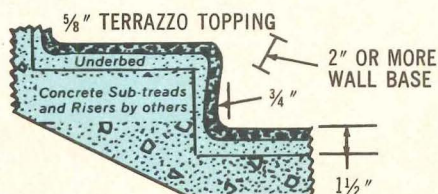
Fisheye view
looking down
terrazzo stairway.*



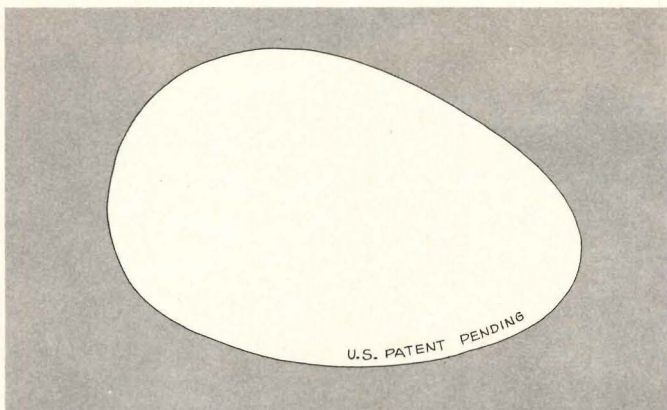
SAND CUSHION OVER CONCRETE



STAIRS CAST IN PLACE



MEDUSA



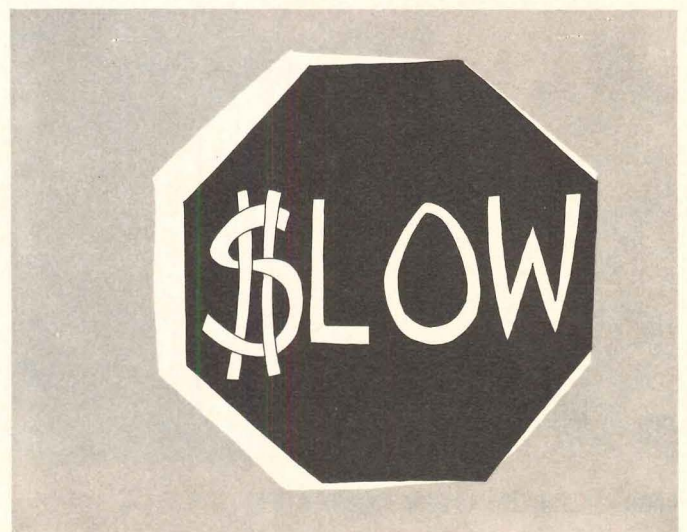
Bad design pays off. If good design cannot be determined by the intrinsic value of an artifact, then we need other criteria to determine value, or other definitions of good design. The objectives of good design have been to render an artifact more pleasing to our sensibilities, improve the quality of its function or of its workmanship, or all three. When the value of an object is not determined by these criteria then it is questionable if "good design" is possible, or even desirable. From eggs to guns it seems apparent that what we have formerly termed bad design, that is indifference to appearance, function, and workmanship, not only does not depreciate value but contributes appreciably to our affluence. In short, bad design seems good for business.

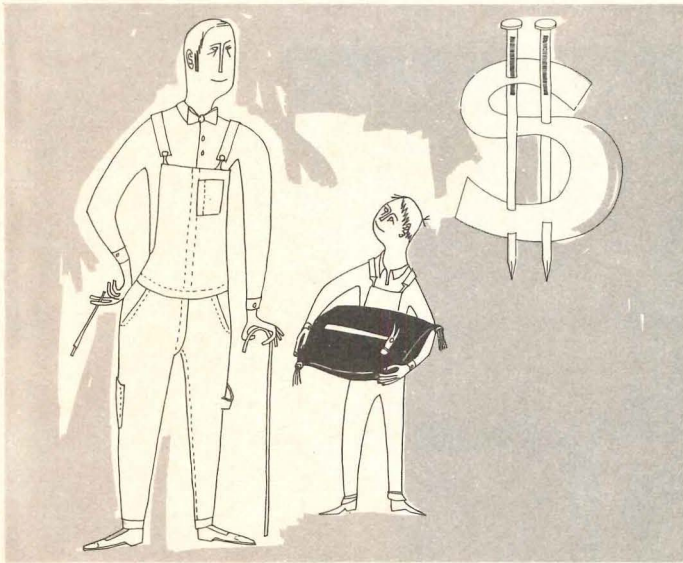
Bad design or no-design-at-all-value has a way of increasing by itself. Eggs are an excellent example, since they seem exempt from standard design techniques which increase the cost of other food stuffs; that is, they have not been repackaged, vitamin enriched, fortified, or induced to act twice as fast as aspirin but, nonetheless, eggs increase in value. The Associated Press reported that egg prices are for the most part determined at the New York Mercantile Exchange, in a city where one four-hundredth of one per cent of the country's eggs are wholesaled. Prices are determined, according to the AP story, by egg

traders and egg market analysts who never see the product. Design and production efforts of egg farmers, egg candlers, or chicken pluckers are irrelevant.

Federal highway programs, rarely accused of good design, have nevertheless proven a valuable national economic asset. Most highways are constantly under alteration. Improvements are invariably let to local contractors who work crews during normal daytime working hours to save paying overtime. The result is constant traffic congestion of primary traffic arteries, idling engines, motor wear, useless gasoline consumption, and air pollution. It is hard to assess the incalculable economic stimulation rendered the petroleum and automotive industries by highway congestion.

Home builders have devised innumerable means of adding to national affluence. The primary technique is that of passing along to the purchaser the debt that must be paid for lack of housing design. Lack of adequate housing insulation provides a veritable gold mine for fuel vendors while materials manufacturers, lumber yards, and local handymen prosper on house repairs and alterations.





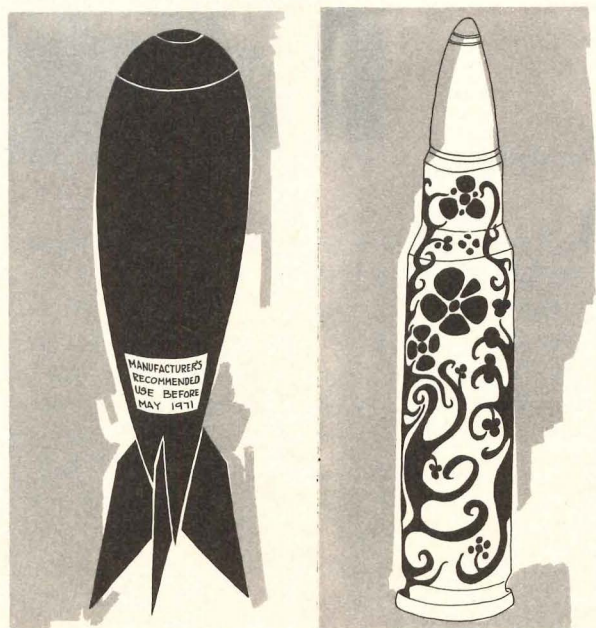
designed with such objectives as use, repair, maintenance, and minimal fuel consumption, pennies would be expanded on design and construction with thousands saved on repairs and alterations. If Congress were told the real price of guns they might find peace a viable alternative. The "If" in each instance is the if of good design.

Good design of systems or products would obviously reduce the gross national product. Bad design systems are costly, and these are the costs that help create affluence. A bookkeeping system that does not compare the value of egg production to egg speculation, of highway construction to wasted dollars in gasoline and burnt-out engines, of house construction to unnecessary fuel consumption, of peace to the real cost of guns, such a system cannot respect, recognize, or value good design.

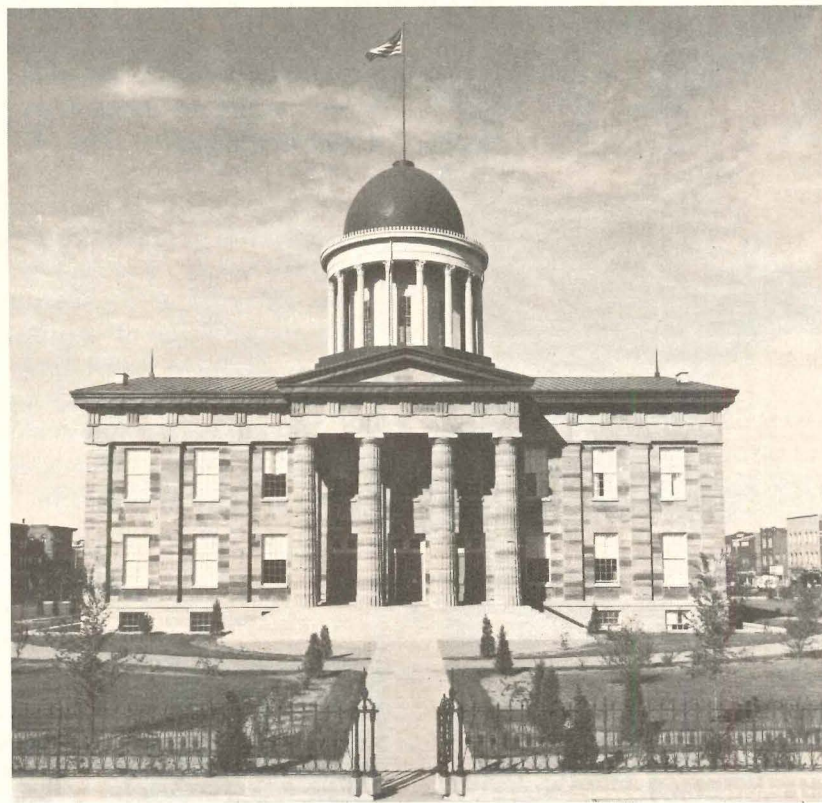
Forrest Wilson

The value of guns and jets is the most curiously derived of all. In a recent Sunday Times book review, Senator George McGovern described some of the soft sell tactics of munitions makers. Military contractors, it was reported, deliberately underestimated cost when appearing before government committees. An arms representative candidly admitted that accurate bidding might influence the Congress into rejecting weapons systems as too costly. Thus a procedure that, if used in architectural practice, would imply bad design at best and malpractice at worst, assures a healthy thriving arms industry.

It is obvious from these random but typical samplings that good design as we have defined it creates very little value. In fact it could be a cause of economic devaluation. For example, if egg prices were reasonably fixed to adjust to a chicken system of feed cost, maintenance, transportation, and equitable profit, egg prices would be halved. If highways were intelligently designed for expansion during off hours, millions of dollars would be saved in petroleum and automobile depreciation. If housing were



Restored National Monument Sparks Urban Revitalization



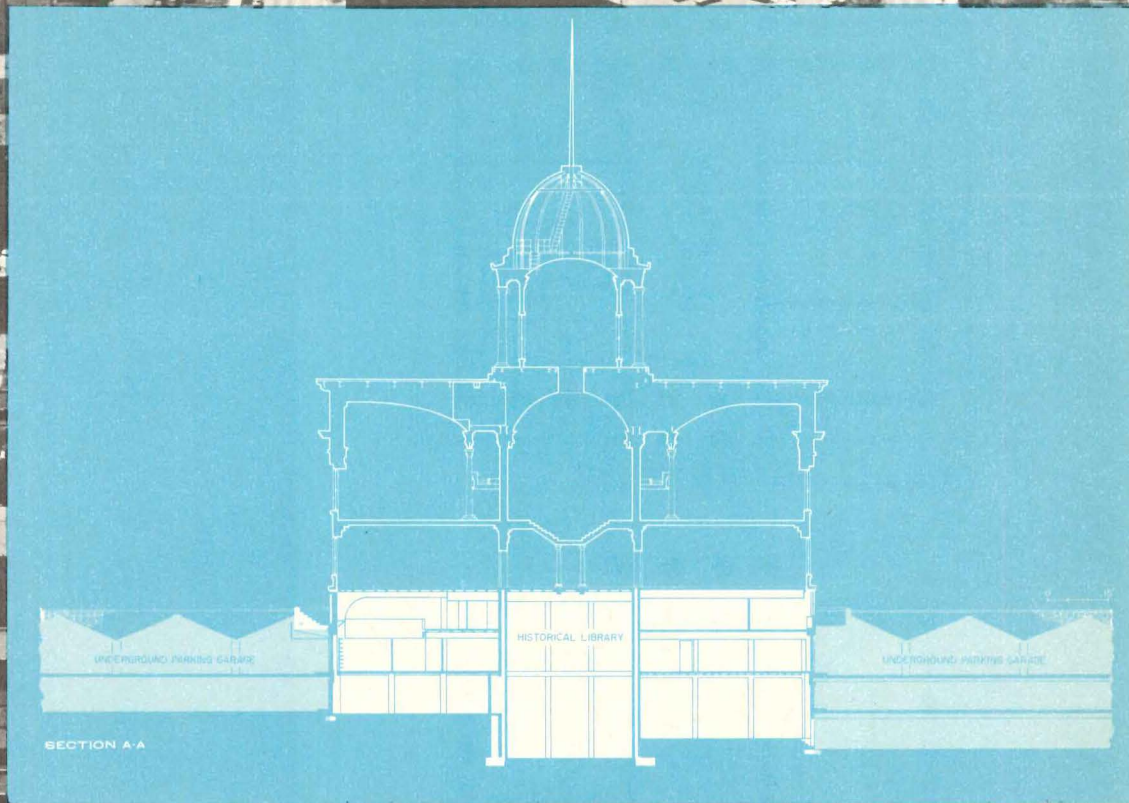
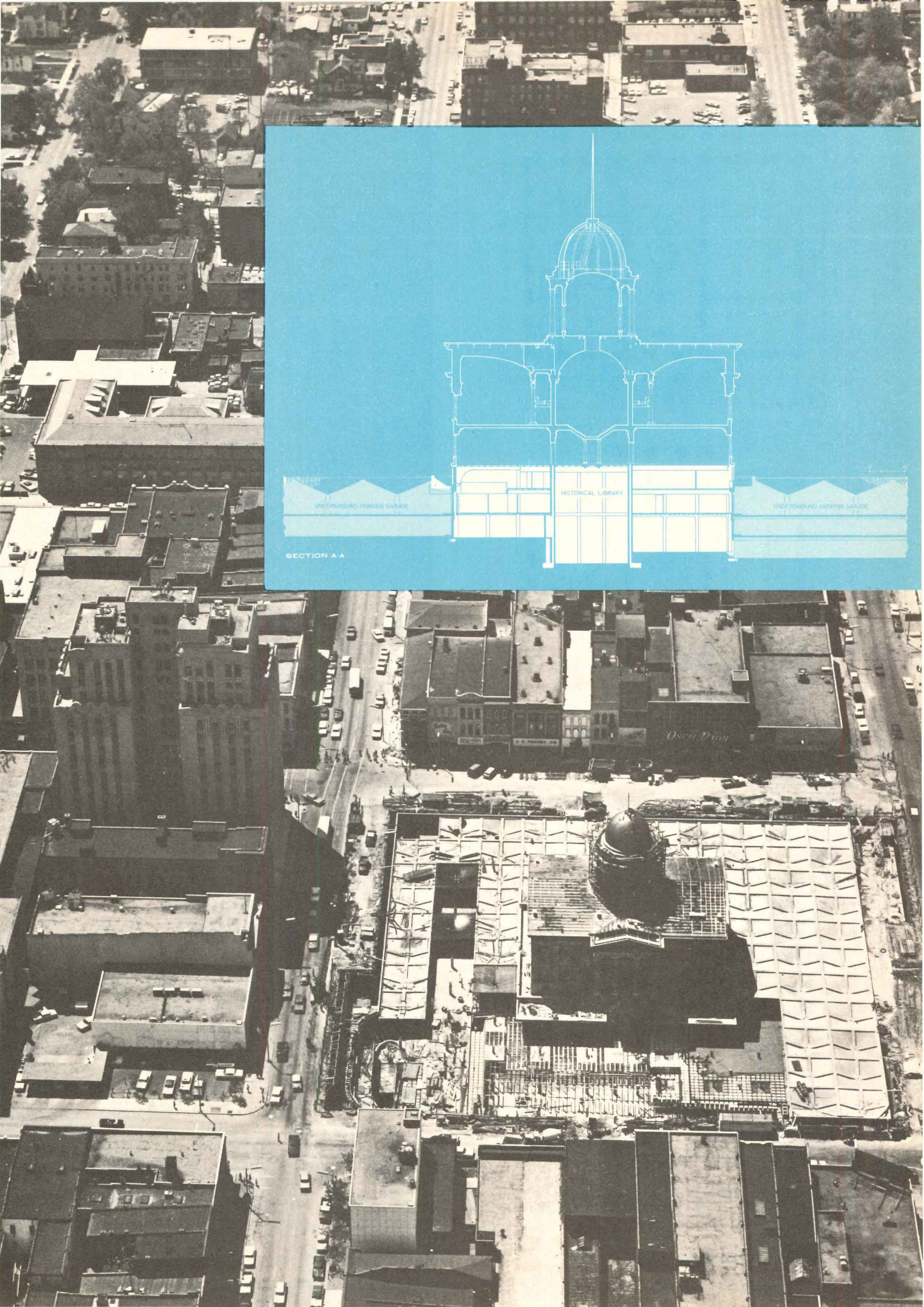
By C. Ray Smith

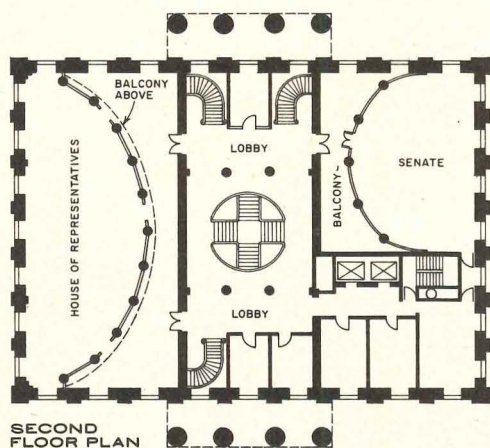
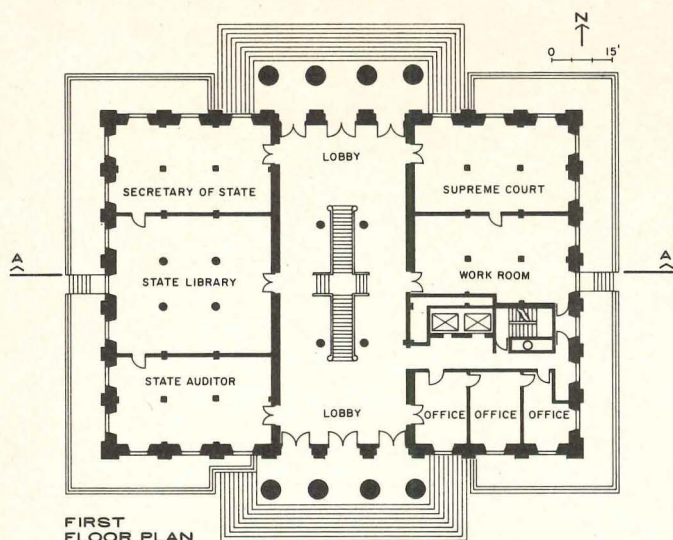
“A house divided against itself cannot stand,” Abraham Lincoln proclaimed in the old Illinois State Capitol building in Springfield. That 1858 address caught the imaginations of Lincoln’s contemporaries and began his ascent to the Presidency. Now the implications of his words have fired the imaginations of state and city officials and of architects Ferry & Henderson of Springfield to restore the building to the unified condition it was in when Lincoln made his often quoted address.

Not only have those responsible preserved a national monument that was once threatened with almost certain demolition and replacement, not only have they accomplished a singularly faithful restoration and preserved the historical fabric of the city, but, more importantly, they have, by that work,

sparked a movement toward urban revitalization of the central business district, which surrounds the Capitol. Now, a two-level, 465-car municipal parking garage, which has been built under the block-square Palladian park where the State Capitol had sat, constantly invites shoppers to return to the city center. Shop fronts have been facelifted and pedestrian ways are being planned, including the closing of two streets bounding the Capitol and the financing of pedestrian plazas in their place by voluntary assessment of local businesses. No other historical preservation can make such a claim as a catalyst of urban unification.

In addition, the restored Senate Chamber and the Chamber of Representatives, where Lincoln spoke in the old State Capitol, provide two halls for the city



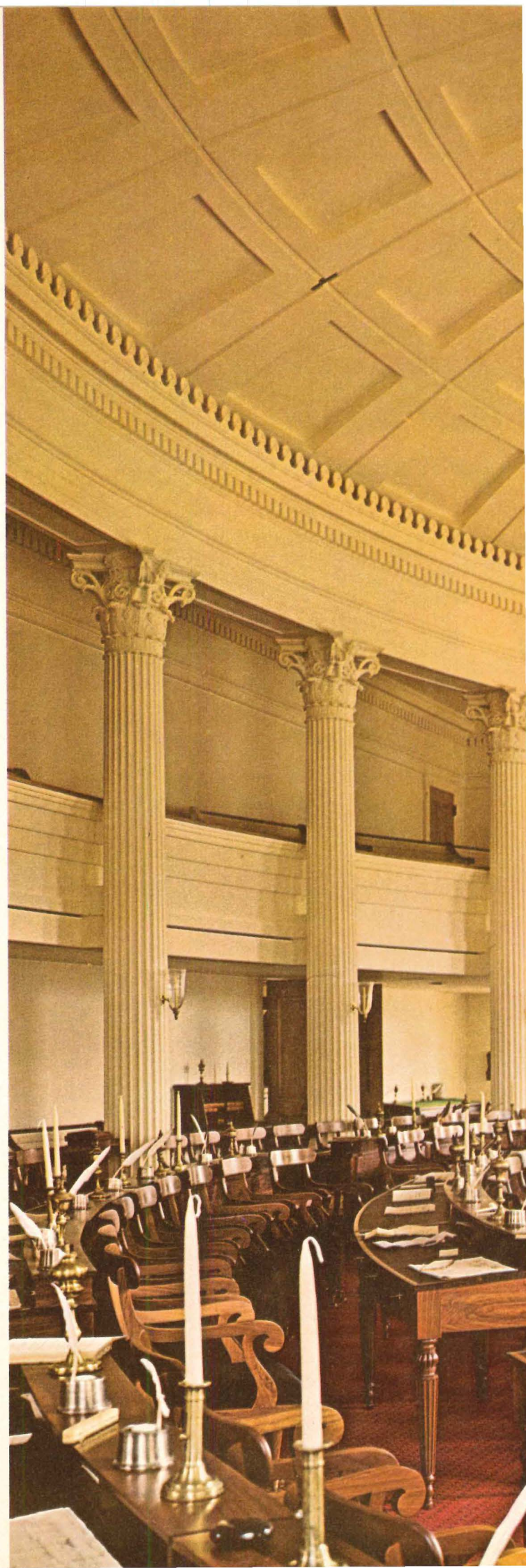


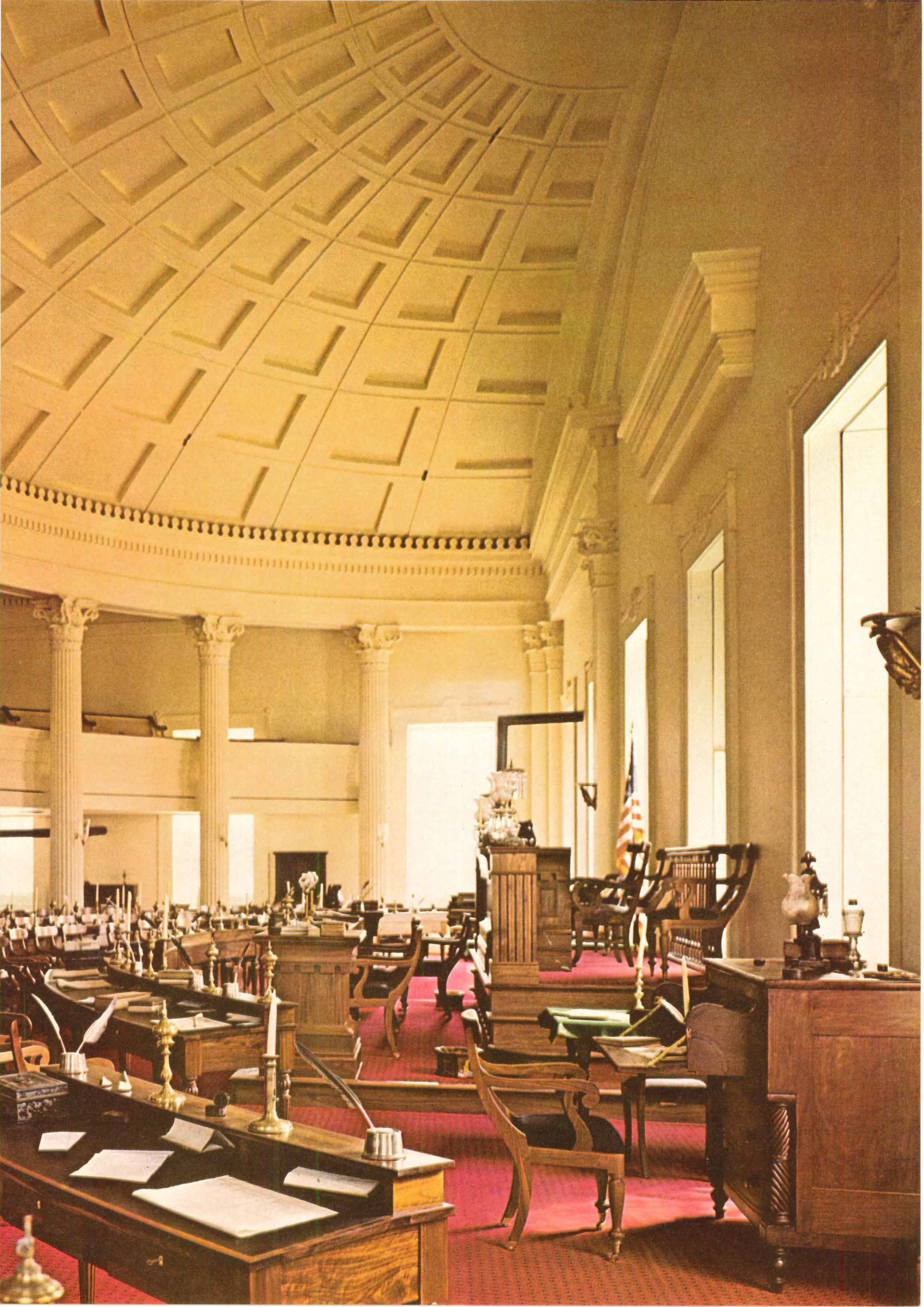
that enable the building also to serve as a performing arts center—for chamber music, lectures, or small thrust-stage productions. There is a precedent for this performance aspect of the restoration. Many an aspiring president has gone to the building to make some proclamation as an expression of his heritage; performers as well as orators used the stair landing in the rotunda as a performance space during the 19th Century. Also, in the building program, it was specifically determined that the restoration “should not under any circumstances be a museum in which people walk through spaces that are otherwise unused.”

To make the restoration more a place of involvement, therefore, the architects provided for an electronic program to tell the Lincoln story with sound and light. A taped version of the “House Divided” address is being considered as the first stage of this kind of participatory-involvement exhibit.

“We have now recreated a building that is part of history and that has the potential of being used for public performances,” architect Earl W. Henderson, Jr. observes. “I can envision that this monument

The chamber of representatives (right) has been restored to the appearance it had when Abraham Lincoln delivered his “House Divided” address there in 1858.





Crowds once more look up to the stair landing (bottom photo) of the rotunda (photo right) where aspiring presidents and performers have spoken since the 19th Century. The smaller Senate Chamber (middle) is across the rotunda from the House of Representatives.



Photo: State of Illinois Dept. of Conservation



would be used by our universities, individual groups, and government for significant activities of public interest. The community has never had this potential before."

A restoration that sparks urban renewal and undivided urban unification and that also provides a quasi-performing arts center is an architectural project of the broadest urban significance. It is a model of architectural practicality and perseverance. The very concept of a restoration being a center of urban revitalization as well as a "cultural center" is also the most eye-opening and promising discovery about urban planning since Jane Jacobs put into words the supremely logical and historically evident idea of urban mix and urban growth. Both concepts should provide a balance to the Baron Haussmann procedure of bulldozing and razing.

The Restoration

Ferry & Henderson were guilty of razing also, but only to rebuild in accurate restored form. They razed the old Capitol stone by stone — preserving and cataloguing the 3300 numbered pieces as they went, and storing them under guard on the Illinois State Fair grounds.

They did not decide on the demolition by fiat, however. The Illinois State Department of Conservation had asked them to write a feasibility study of what should be done with the national shrine when the State reacquired it from the county in 1963. The building had had a varied history; first serving as the Illinois State Capitol from the time it was begun by Springfield architect John F. Rague in 1837 until a new Victorian Renaissance agglomeration was built in 1876, the building was sold to Sangamon County in that year and served as the County Court-house until 1965.

In the intervening years, the interior had been partitioned off in the expected series of gutting and botching "renovations" and in 1898 the entire structure had been raised 11 feet to provide an additional floor at ground level. That remarkable engineering feat was accomplished by a corps of men and wooden screw jacks placed every four feet under the building; at the signal of a foreman each workman gave 10 jacks a quarter of a turn. The process took 12 days.

In advising the Illinois State Department of Conservation how the reacquired building should be restored and how it should be used, former State Historian, Clyde C. Walton, envisioned the old State Capitol as a living monument of the day in 1858 that Lincoln began his rise to the Presidency. The architects envisioned that it would have to accommodate an increase in the 750,000 visitors who annually travel by automobile to tour the Lincoln shrines — his house, his tomb, and the depot where he gave his farewell address on leaving for Washington. The two-level underground parking garage and its access routes therefore became part of the archi-

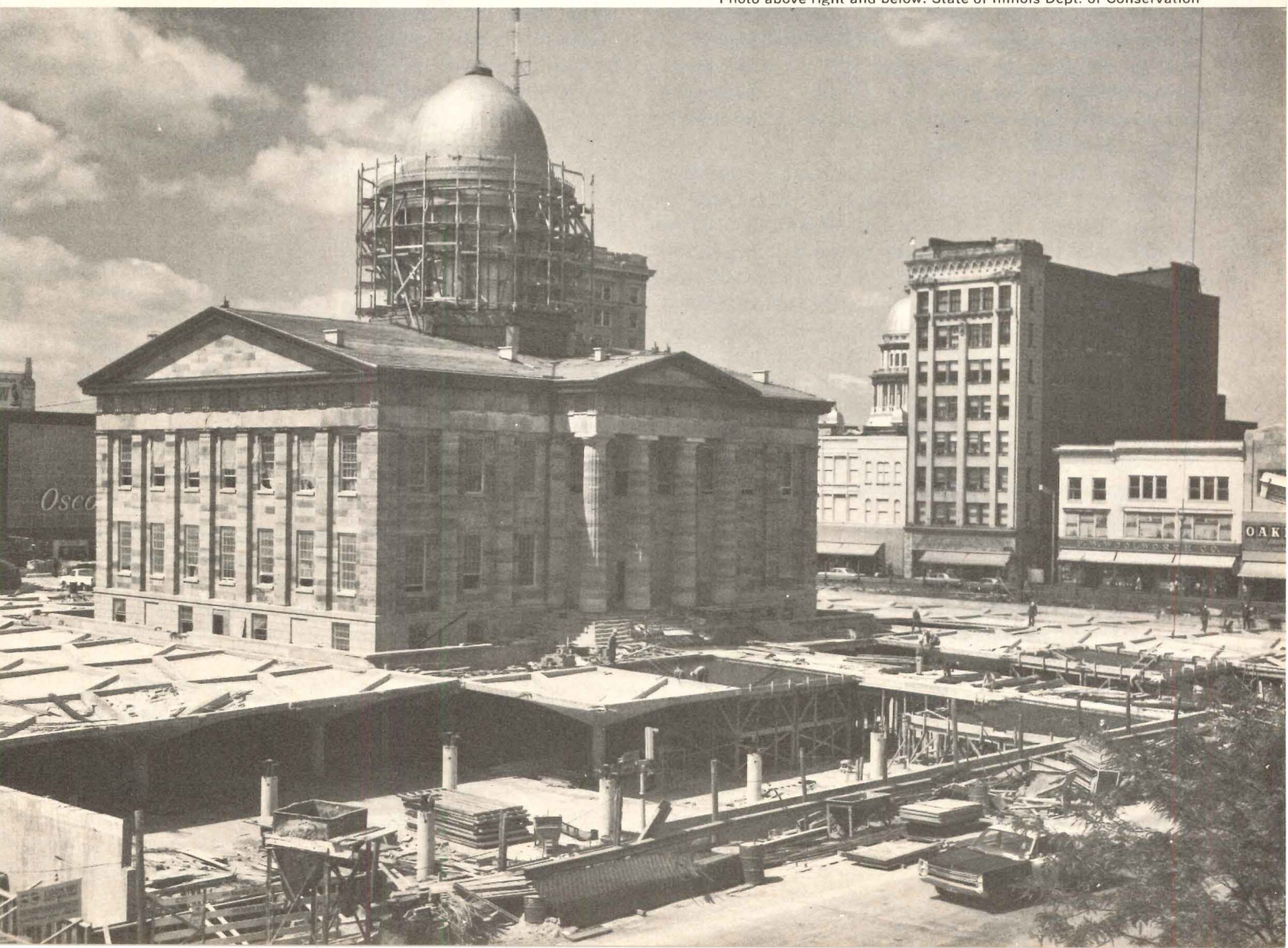


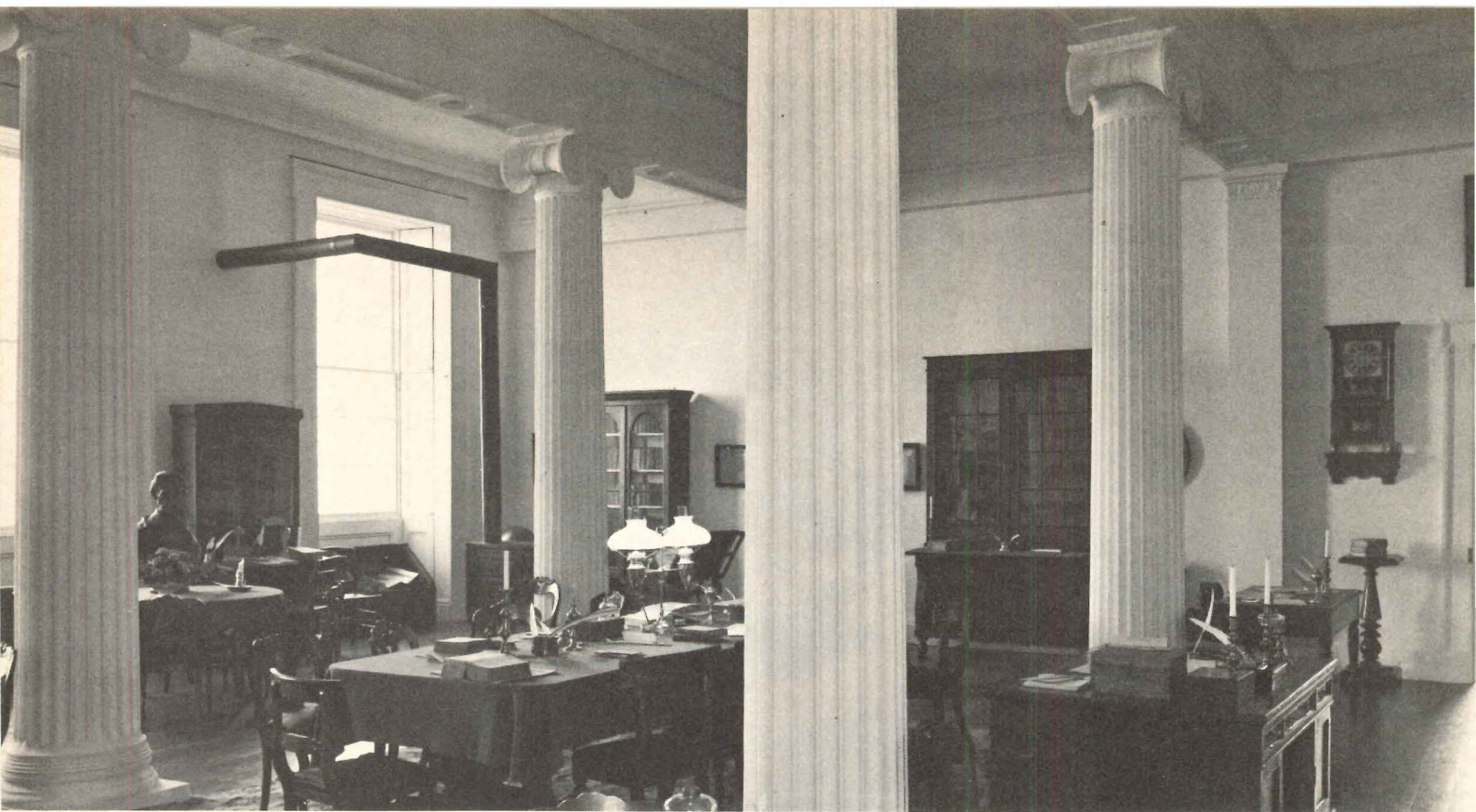
Photo: Galloway News and Photo Service



Construction included cataloguing and storing the original stones of the old building (above left), then the building of a concrete and steel frame for the restoration, which sits atop the new State Historical Library (above right). A 40-ft excavation surrounded this structural frame. As the original stone facing was replaced (below), a two-story parking garage was built around the Old State Capitol, bringing the ground up to its original level.

Photo above right and below: State of Illinois Dept. of Conservation





Hollow ceiling beams in the old State Library (above) and other lower floor rooms (facing page) carry lights for "light and sound" presentations, smoke sensing devices, quartz-light wall washers, intercom system, a sonic burglar alarm system, and forced air ducts (detail facing page). Photo: State of Illinois Dept. of Conservation

pects' proposal, making the project truly the Old Capitol complex. In addition, former Governor Otto Kerner, along with State Historian Walton, envisioned incorporating the State Historical Library of Lincoln memorabilia and other 19th-Century documents within the complex. That three-level reference and research facility is accommodated in the underground base of the building.

Documentation of the building's original condition was scarce: a drawing of Lincoln's body lying in state on the way to burial in Springfield, and a few documents of the changes made to the building in the intervening years—including the lifting of the building on jacks. The original architectural drawings of the building had been destroyed in a fire and no clear details or specifications were known to exist. However, after a volume of research on its original design and subsequent renovations (see the architects' description of this research in *AIA Journal*, November 1967), the building rose again, lower by one floor, looking exactly as it existed in 1858.

The Structure

The process of rebuilding was different from what might be expected. The underground parking garage was not built first and then the Capitol erected on top of it; rather, the building and its library substructure were built as a separate tower surrounded by the 40-ft deep pit of the garage excavation; then the garage was constructed and landscaping above it restored to its appearance in the Lincoln era.

The Capitol was rebuilt on a reinforced concrete frame up to the roofline with a steel frame for the

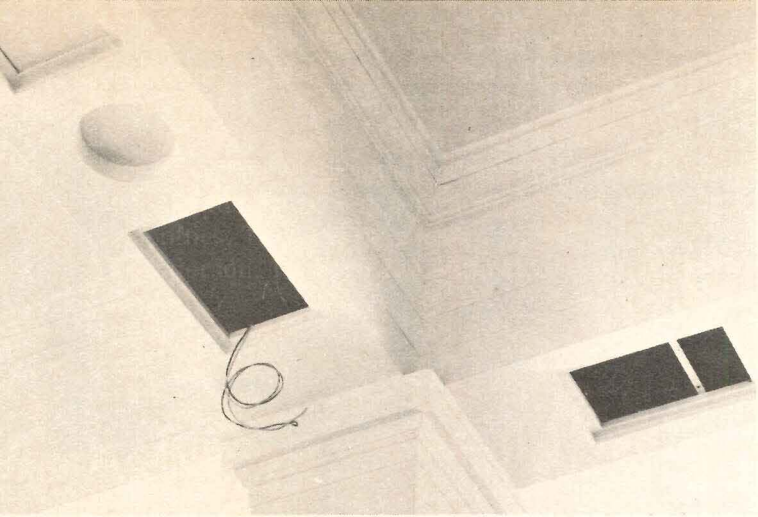
roof and cupola, which were surfaced with terne metal as the original building had been. Brick exterior walls were faced with 10-in. thicknesses of the original 2-ft thick golden tan dolomite stones, which had been cut with a wire saw. They were put up by the numbers to their original places. Interior walls are of plaster on metal lath leaving a 9-in. chase the depth of the concrete frame in which to conceal mechanical and electrical systems.

Subsystems

The mechanical system is trickily incorporated into the structure and virtually invisible on the interior. The heating system is a hybrid combined of hot water radiant panels (at the windows) along with forced air over reheat water coils warmed by a gas fired boiler. Cool air is forced over chilled water coils, (details, p. 61).

The hollow beams of the ceiling carry lights for "light-and-sound" presentations, smoke sensing devices, quartz-light wall washers, and intercom systems as well as a sonic burglar alarm system. All are concealed in the ornamental moldings and plaster details of the beam design, (details, p. 59). Closed-circuit television cameras, which permit traffic flow of visitors to be observed, are also hidden in the walls.

The plasterwork is a feat of rare craftsmanship in the machine age. Artisans were assembled from across the country to execute the complicated lathing with its sometimes complex curved rods, to run the ornamental molds in place, and to apply pre-molded classical ornaments. One ornament



One plasterwork detail shows that government architecture is not all high seriousness: Since a number of recessed circular ornaments 10-in. in diameter and 3-in. deep in the ceiling beams (above and below) were difficult and time-consuming to form by hand, as an efficiency measure, 12 dozen 10-in. aluminum cake pans from a kitchen supply house were simply inserted into the mesh lathing and plastered over. It is the Lincoln State House Memorial Cake Pan plaster form. For future restorers, the labels were left in the pans.



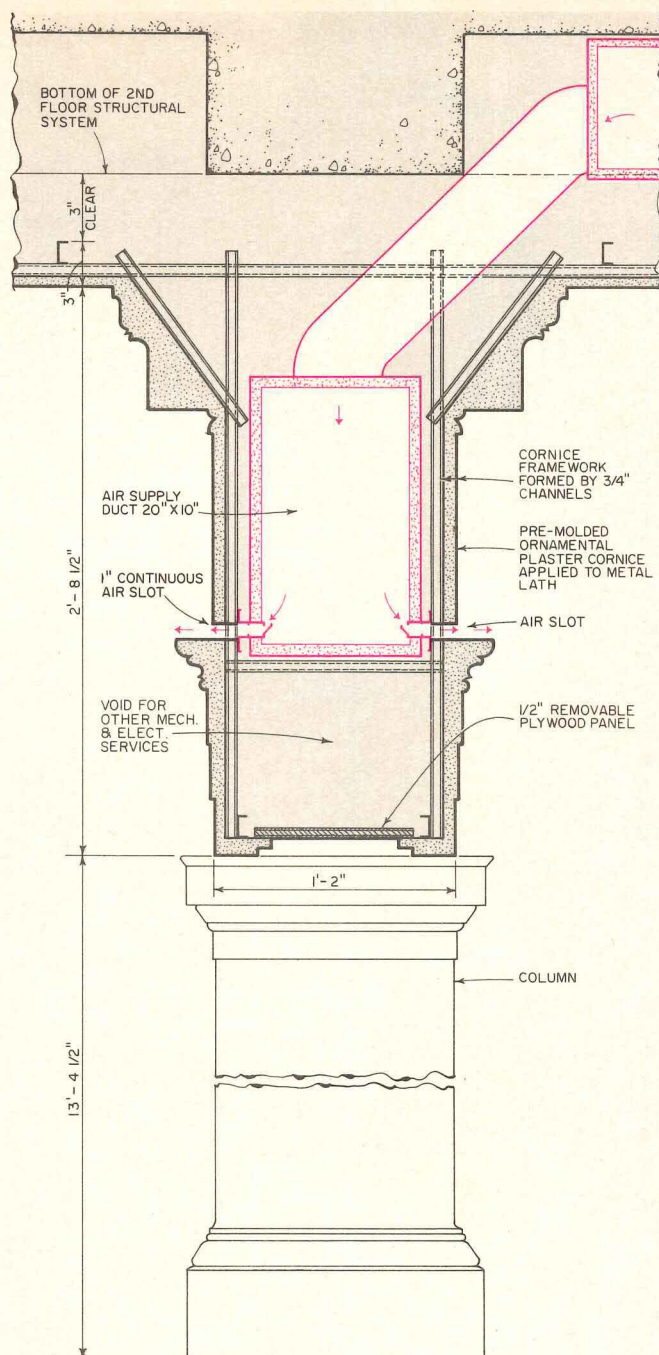
Photo: State of Illinois Dept. of Conservation

was an improvisation of craftsmanly knowledge and pop availability: the use of 12 dozen 10 in. aluminum cake pans, which give new meaning to the term “pan ceiling,” (details, p. 59).

The orientation to mid-19th-Century construction techniques and handcraftsmanship was new ground for a firm of 20th-Century architects who had done only contemporary work before. The months of research seem to have bridged the gap between their vision and the previous state of their craft.

The Historical Library

Beneath the old State Capitol, at ground level and below, the new home of the State Historical Library is a completely modern facility for the care of some 130,000 books (most of them housed on five levels of stacks below the rotunda), along with several thousand manuscripts, microfilm reels, paintings, and mementoes. The design of this facility, also by Ferry & Henderson, is more the subject of a separate re-

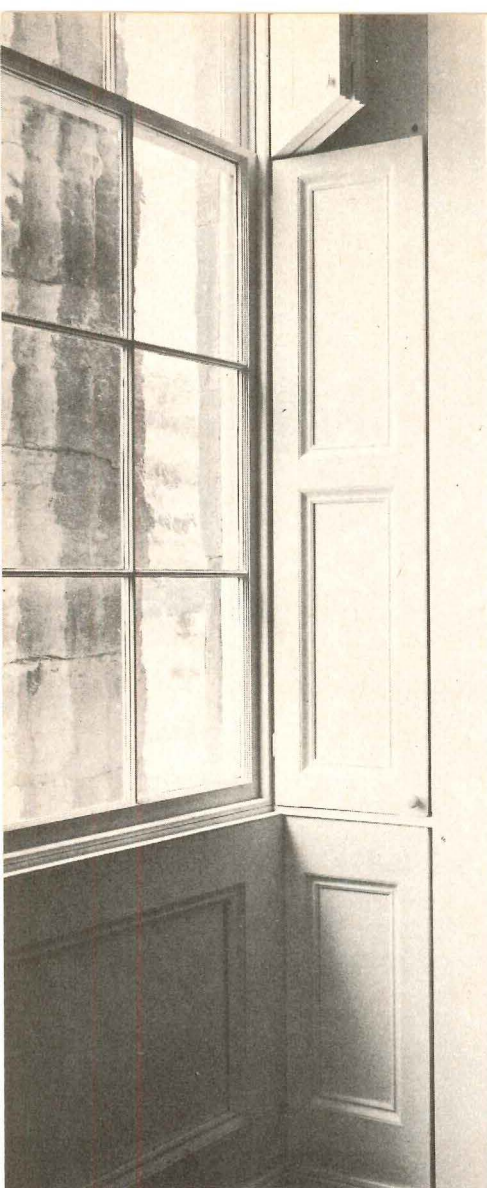


port, since it is entirely a contemporary work that provides temperature and humidity control throughout its area, vaults for storage, study cubicles, conference areas, and up-to-date research and study equipment for scholars.

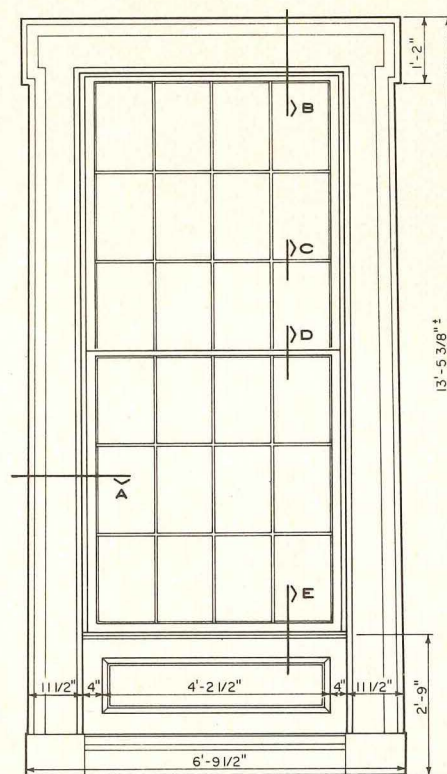
As a planning solution, incorporating the library under the old State Capitol volume was a thoughtful and sensible bit of squeezing and juggling that not only preserves the integrity of the old design and minimizes modern distractions to its historical restoration but also effects economies through the multiple utilization of mechanical and electrical systems for the library and the adjacent parking system.

The Parking Garage

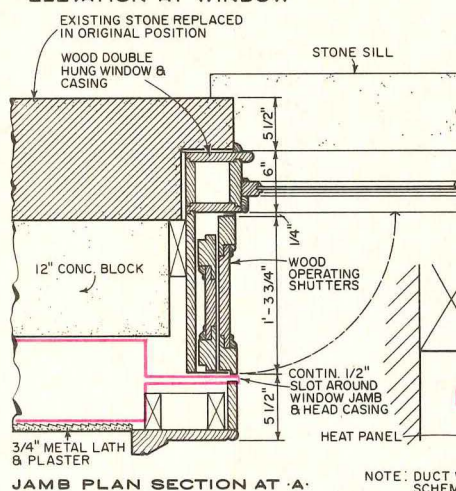
Virtually hidden beneath the park surrounding the Capitol and Library, is the 465-car, 2-level garage. As urban planning, the placement of the garage in the very center of the city and underground, rather than in the customary low-rise structures, is both



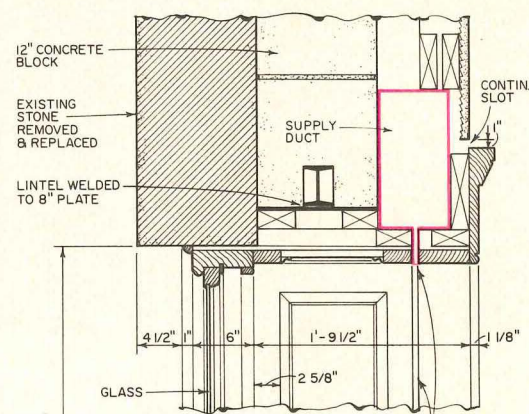
Supplementary heating is provided by radiant metal panels beneath the windows that are designed to look like traditional carpentry panels. Conditioned air is supplied through slots above the window cornices, through spaces between the window shutters and their surrounding mouldings (above and details right), and through reveal-like slots in the balconies of the two Chambers (details facing page).



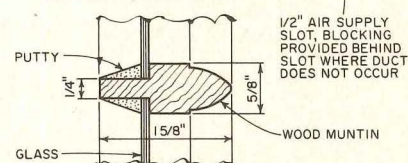
ELEVATION AT WINDOW



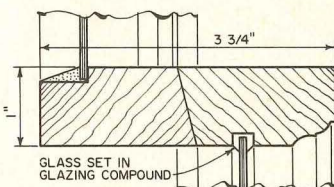
JAMB PLAN SECTION AT A-A



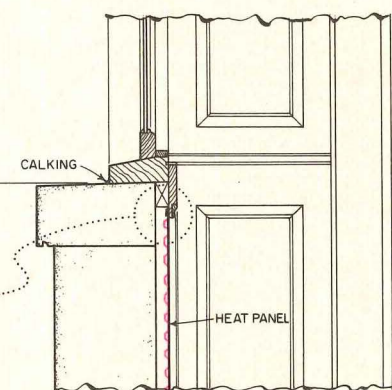
HEAD DETAIL AT B-B



SASH BAR DETAIL AT C-C



MEETING RAIL DETAIL AT D-D



SILL DETAIL AT E-E

NOTE: DUCT WORK SHOWN SCHEMATICALLY

enlightened and exemplary — even though some distinguished architects might question the apparent 20th-Century shame in hiding the automobile.

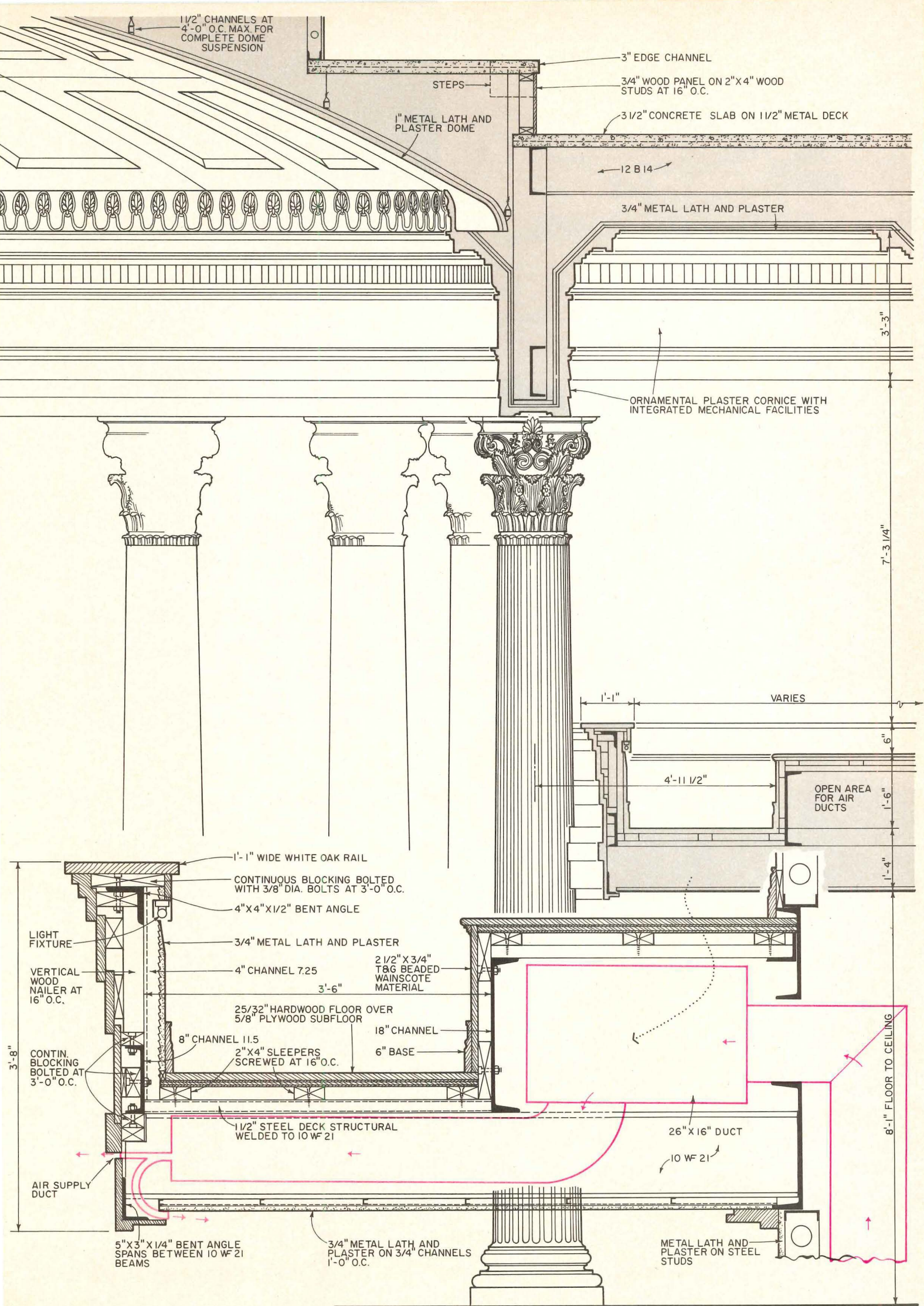
The lower level of the parking facility is of standard concrete construction with a low coffered ceiling. The upper level, however, is another matter: its vaulted ceiling, aglow with quartz uplights, creates a special space that serves almost grandly as the main public entrance to the State Historical Library and as the transition between the exterior view of the old Capitol and entering the actual building. As an underground foyer for a Lincoln Shrine, the upper level of the garage is a laudable work of municipal — and national — architecture.

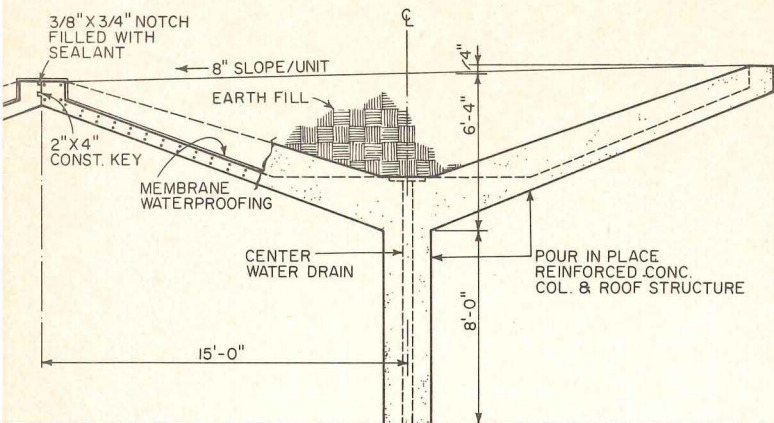
To form this space, 90 concrete hyperbolic paraboloids (each 30 ft square and 6 in. thick) rise from 7½ ft high columns to an apex of 12½ ft. Formwork

was made in quarter sections and bolted together so that it could be moved from column to column. Precast wall panels have brown Merimac gravel aggregate exposed, according to the architects, "to suggest an earthy subterranean space."

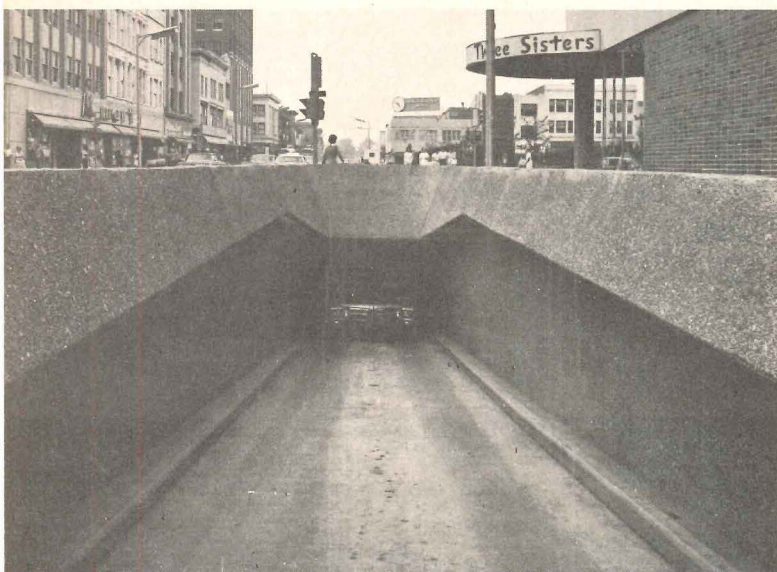
Although the hyperbolic paraboloid construction makes a handsome modern crypt, aesthetics were not the sole determinant of its selection. The form was also economical and reduced dead load structural considerations while still providing sufficient depth to accommodate the soil for trees planted in the plaza above. At the column points, then, the soil is 5 feet deeper; there, also, is integral drainage down through the columns. This, the architects rightly call "creative engineering."

The plaza is a properly flat Palladian greensward for its Palladian building. Research through photo-

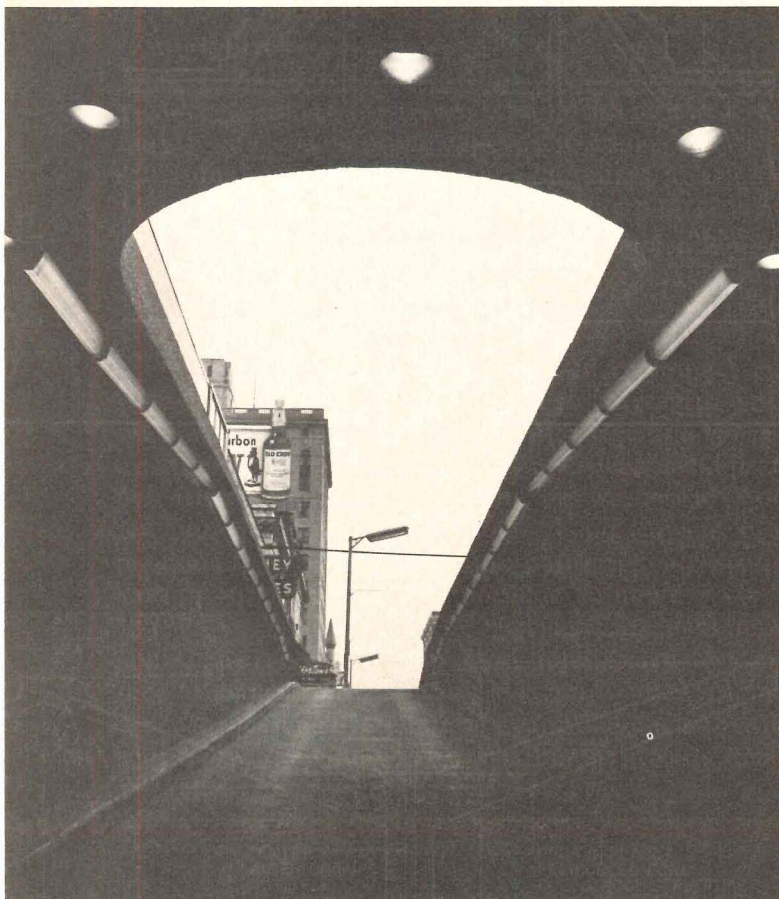




DETAIL OF TYPICAL HYPERBOLIC PARABOLOID COLUMN



The underground parking garage surrounding the Old State Capitol complex serves both as a handsomely designed and executed entry to the restoration and to the historical library and also invites shoppers back to the central business district of Springfield.



As an underground foyer for a Lincoln Shrine, the upper level of the

graphs led to its recreation and to the reconstruction of the ornamental ironwork fence that encloses the plaza.

Sociological Benefits?

Inevitably the question must come up about the priority of a monumental restoration costing \$2.7 million (including demolition) and the modern improvements and additions (including both the library and the garage) that bring the total cost to \$7.3 million. With all our needs for housing blacks and other ghetto dwellers in better than slum conditions, how can we justify the State Capitol restoration as a priority item? "The question is usually asked," architect Earl W. Henderson says, "as 'How many boxes of milk will \$7.3 million buy?'" He explains that only \$2 million were State funds to restore the Capitol building itself and that the remainder was raised through self-liquidating bonds. But further, he adds, "After the slum questions and the black questions are admitted, we still have to have national purpose and a national symbol. And Lincoln was the first



parking garage surrounding the Old State Capitol complex is a laudable work of municipal — and national — architecture.

champion of this new movement.”

“The total project has been an inspiration to the community in general,” architect Henderson exults. “It has been a positive force through the participation of private, State, and Federal figures and monies in a common project. Through the expenditure of public monies, architectural spaces have been created that have caught the imaginations of private citizens as well as of both large and small business concerns, who in fact welcome this project as a hard core and expression of potential future growth of the downtown area.”

Among the improvements already made to the area since the Capitol complex project began are several shopfront faceliftings, other restorations, and a number of proposed new building programs. “Even greater endorsement of the project,” architect Henderson notes, is the creation of special self-taxing districts to create additional subterranean exits from the underground parking garage to the surrounding blocks.” For, the parking is open to the public and not intended only for visitors to the Capitol complex itself.

That the old State Capitol could become such a strong force in uniting a citizenry to concerted efforts toward urban revitalization shows the powerful mystery of a symbol. The project is an architectural symbol of the very words of our pioneer champion of such unification of national purpose — Abraham Lincoln:

“A house divided against itself cannot stand. I believe this government cannot endure permanently half slave and half free. I do not expect the Union to be dissolved — I do not expect the house to fall — but I do expect it will cease to be divided.” Such great expectations we may have for the unified growth and strength of Springfield from now on.

Old Capitol Complex, Springfield, Illinois. Architects: Ferry & Henderson, Architects, Inc. **Consultants:** Walter E. Hanson & Co., structural; Carroll & Henneman & Assoc. Inc., mechanical; Collins & Rice, Inc., consulting engineers. David P. Spencer, landscape. **Client:** State of Illinois, Department of Conservation, Director William L. Rutherford. **Area:** Old Capitol — 26,025 sq ft; Library — 40,616 sq ft; Garage — 180,218 sq ft. **Completed:** 1969. **Costs:** Demolition & Site — \$.7 million; Old Capitol reconstruction — \$2.0 million; Library — \$2.1 million; Underground parking — \$25 million; Total complex — \$7.3 million. **General Contractor:** Evans Construction Co. **Photography** except as noted: Orlando Cabanan. Photos p. 52 and 53: State of Illinois Dept. of Conservation.

CO-OP CITY LEARNING TO LIKE IT

A new view of the generally criticized project suggests that it may be more successful than housing based on more recent planning theories.



By Denise Scott Brown and Robert Venturi
*Partners in the Philadelphia Architectural and Planning firm
of Venturi and Rauch.*

Scratch an architect and you find a frustrated low-cost housing designer. Low-cost mass housing is high on the list of interests of most young architects. When young radicals meet at conventions in Athens, Otterloo, and Folkestone, the projects displayed are

mainly large-scale housing, although their titles — “Radiant City,” “Cluster City,” “Computer City” — suggest something broader. In fact, it is a criticism of architect-urbanists that they confuse “cities” with “housing.” Why, then, in the world’s mass housing, barring some famous examples, does good architecture as defined by the profession appear to be slighted?

The answer may lie in a paradox: architects, when they approach the question of housing, become hind-



sighted and farsighted. Some dream, with Jane Jacobs, of street-and-piazza urbanity, small-scale, incremental growth processes and New England towns; and others dream of new technologies that miraculously reduce construction costs and seduce the populace out of "Mon Repos" and into a plug-in space capsule hitched to a megastructure. But outside in the real world, the great mass-building ventures (again, a few prestige examples excepted) invoke neither urbane historicism nor avant garde technology.

We can understand why no "history"; it costs too much and belongs in upper-income, high-style, urban renewal projects. But why no technical efficiency? The truth is, what the young radicals define as technical efficiency — megastructures — costs too much; except perhaps on sites over railroad tracks in central areas.¹ (*Footnote numbers refer to the rebuttal comments of Herman Jessor, Co-op City architect, which appear on page 72-3.*) Innovations, even technological innovations, are found in mass housing, but the great savings lie in organizational innovations. Levitt used traditional construction methods but far from traditional integration techniques within the building industry to achieve the best value for money on the housing market. But Levittown has become an architects' cautionary tale. No one will praise the 50,000 four-square little houses that Johannesburg built to offer blacks a scaled down "South African way of life," but they were built in five years, using and training unskilled labor in the process. All that will be said for Russia's mass housing is that she produces over 100,000 apartments a year; and the same goes for Hong Kong and Singapore and for the "other," not photographed, Eu-

ropean projects. And the same goes for Co-op City.

Here, about 50,000 people will be housed in 15,382 units over a period of seven years from conception to completion. A typical two-bedroom apartment with terrace will cost \$129 per month with an equity investment of \$2250. This averages out per room at a \$450 equity and about a \$27.50 monthly charge, including utilities. A comparison of Co-op City and "Brand X," a recently published, similarly-financed, moderate-cost housing project in the development phase in the office of a well-known architect gives:

	Brand X	Co-op City
Living Room	173 ft ²	226 ft ²
Bedroom	130 ft ²	177 ft ²
Kitchen	56 ft ²	59 ft ²
Dining	0	112 ft ²
Foyer	0	60 ft ²
Cost/apt unit	\$36,000	\$18,000
Parking/car	\$ 6000	\$ 1400

Granted such comparisons are unfair, since the two projects faced different constraints, but when these differences allow Co-op City to provide almost twice the space at about half the cost then we should be interested in what some of them are. In any case, the time seems ripe for an investigation of Co-op City, its aims and achievements, and of what they mean for the rest of us architects and planners; for while we theorize, the United Housing Foundation, sponsor of Co-op City, has built 50,000 moderate-cost housing units.

The completed project will consist of 35 high-rise apartment buildings, 472 apartments in town houses, eight parking structures, three shopping centers with community facilities, and 300 acres of landscaped setting including a riverside park and a 26-



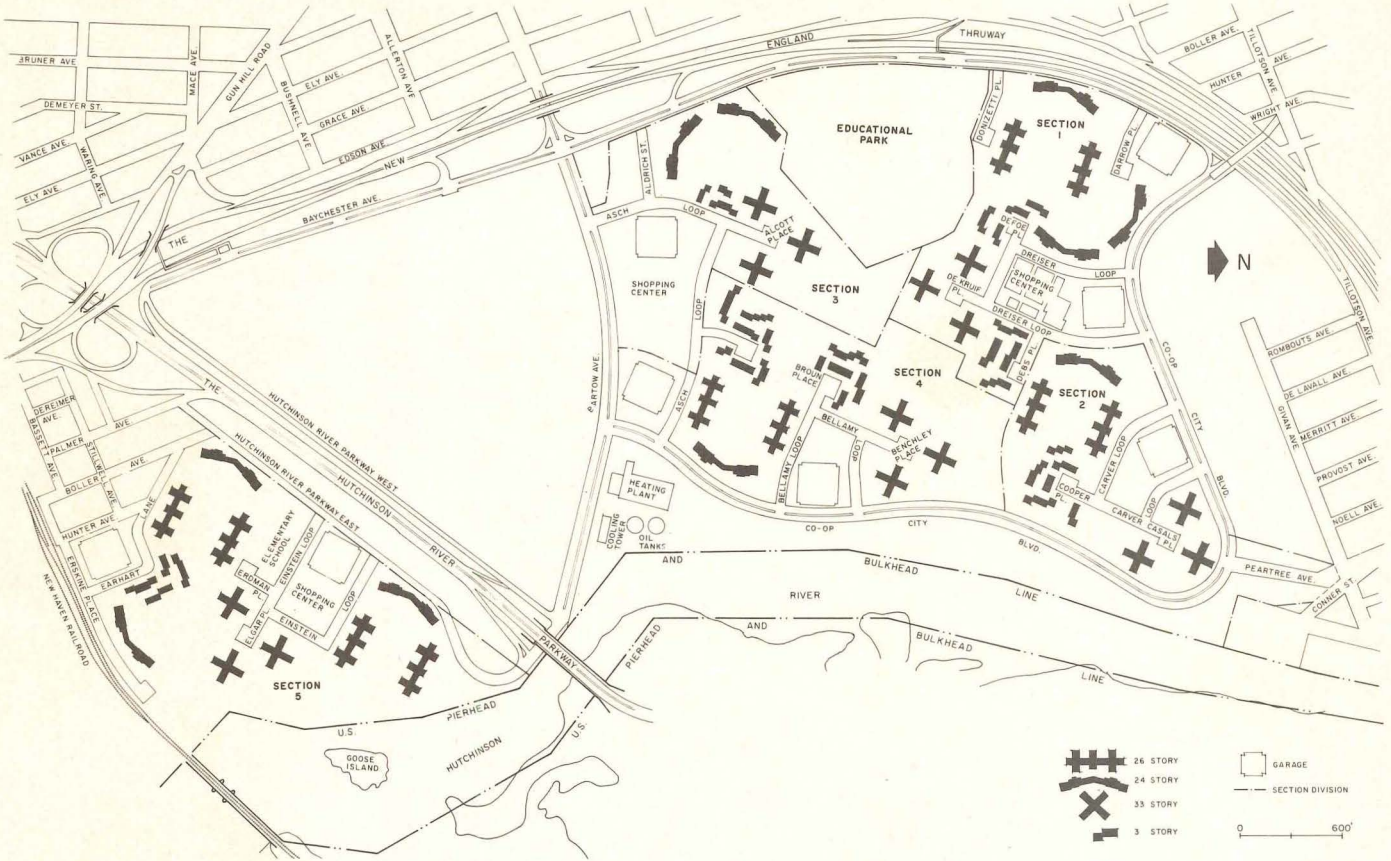
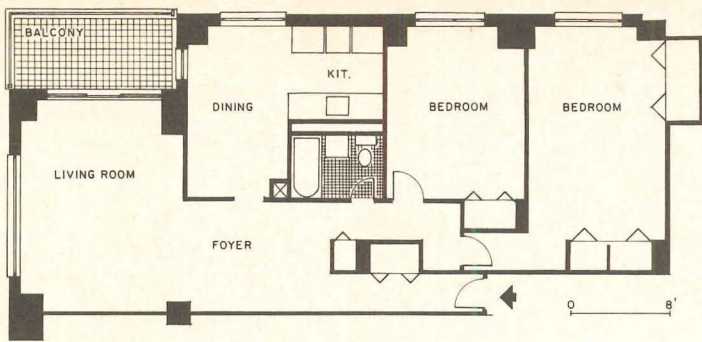
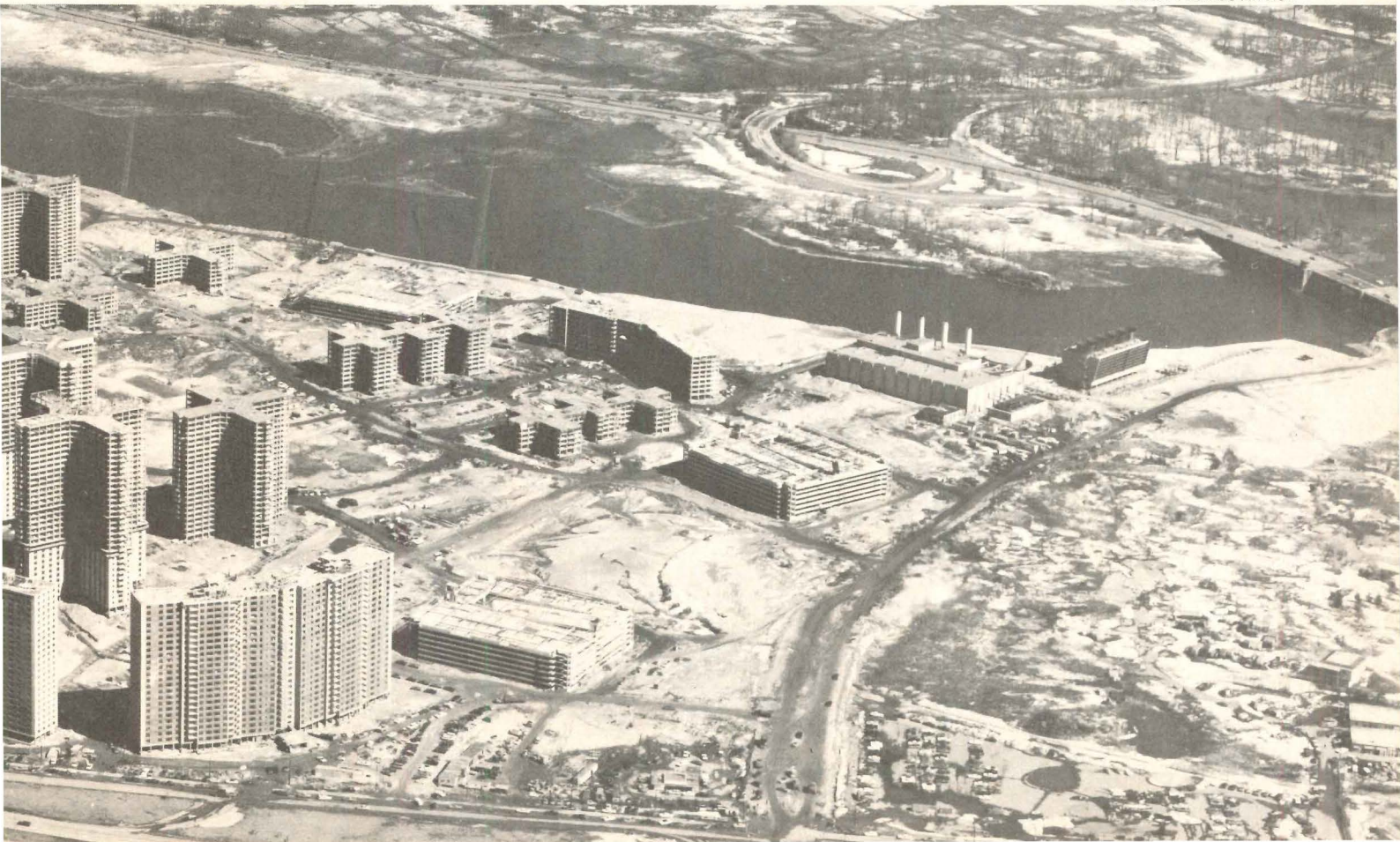


Photo: Thomas Airview



acre education park, serving 10,000 children. Incomes of residents will average around \$7000 to \$7500, and the range (in accordance with government income limitations) will lie between \$3000 and \$12,000 for apartments, and up to \$16,000 for town houses. A broad spectrum of occupations will be represented, but the family pattern is skewed toward the established families and the elderly. Residents, "co-operators" as the Co-op movement calls them, come not from detached houses but from old apartments in the Bronx.

The architect, Herman J. Jessor, and the UHF vice-president for new development, George Schechter, are justly proud of the quality of construction and finish (necessary for the intense use and long life-expectancy of noncommercial housing), of the space standards they have achieved, and of the inclusion of such traditional elements as the separated dining area and the foyer, which they feel are desired by their clients as part of the middle-class family life-style. It was they who made the comparison with Brand X designed by the famous architect. "A *very good* architect. We wish we had his budget," they say, without irony.

How do they manage at half the unit cost of Brand X? What makes UHF's projects possible in the first place are the 90 per cent loan at 5.2 per cent provided

the 50 per cent, 30-year tax abatement granted by the City of New York. But these are aids available to and used by other nonprofit housing groups. The Co-op system which provides, through equity, the remaining 10 per cent of costs, also provides to the community cohesion that differentiates UHF projects from either public housing or upper income high-rise housing, and keeps their turnover low.

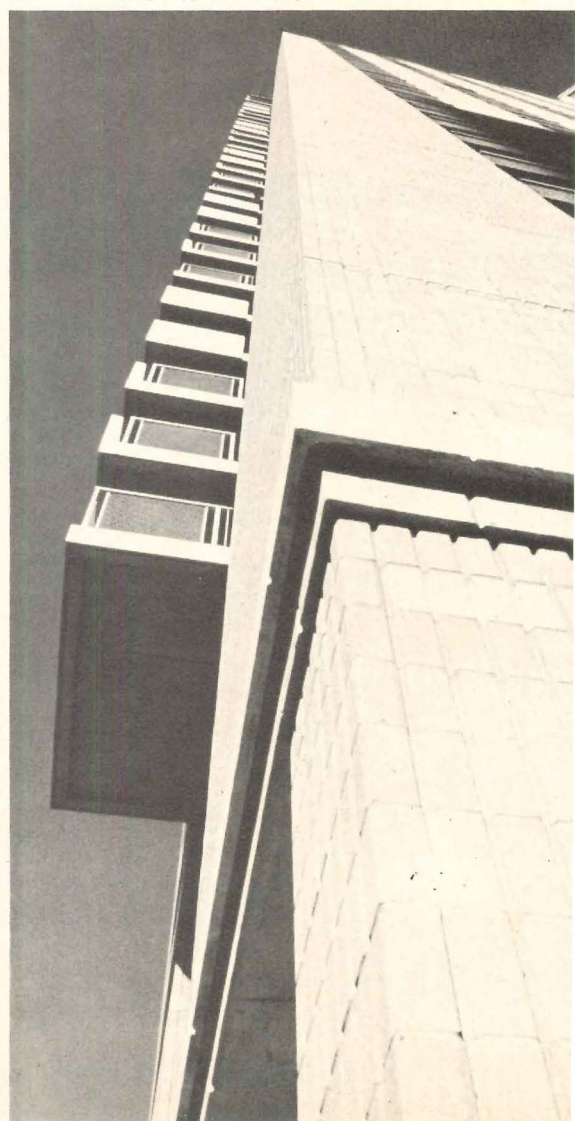
Technical innovations there are: beach sand, to raise the general ground level 14 ft, was pumped by pipe three miles from Orchard Beach, at a cost of \$25,000 per acre (low, apparently), and the Co-op has its own power plant. But the economies lie more in the use of *conventional* building methods and materials than in new departures — slab-and-beam construction, standard New York State red brick, above-ground rather than underground parking — and particularly in the systematic organization for building that is open to large-scale developers with 40 years of experience in building and operation.

The UHF buys directly from suppliers and subcontractors, but has not, like some major tract builders, acquired their providers and suppliers and coordinated a construction industry within their own organization — probably because high-rise housing techniques do not lend themselves as easily as do the simpler techniques of precut housing, and possibly

The 35 high rise apartment buildings will range from 24 to 33 stories high. Concrete block used on some buildings (photo right) will serve as a relief from the ever prevalent Hudson River red brick of other buildings (photo left).



Photo: United Housing Foundation

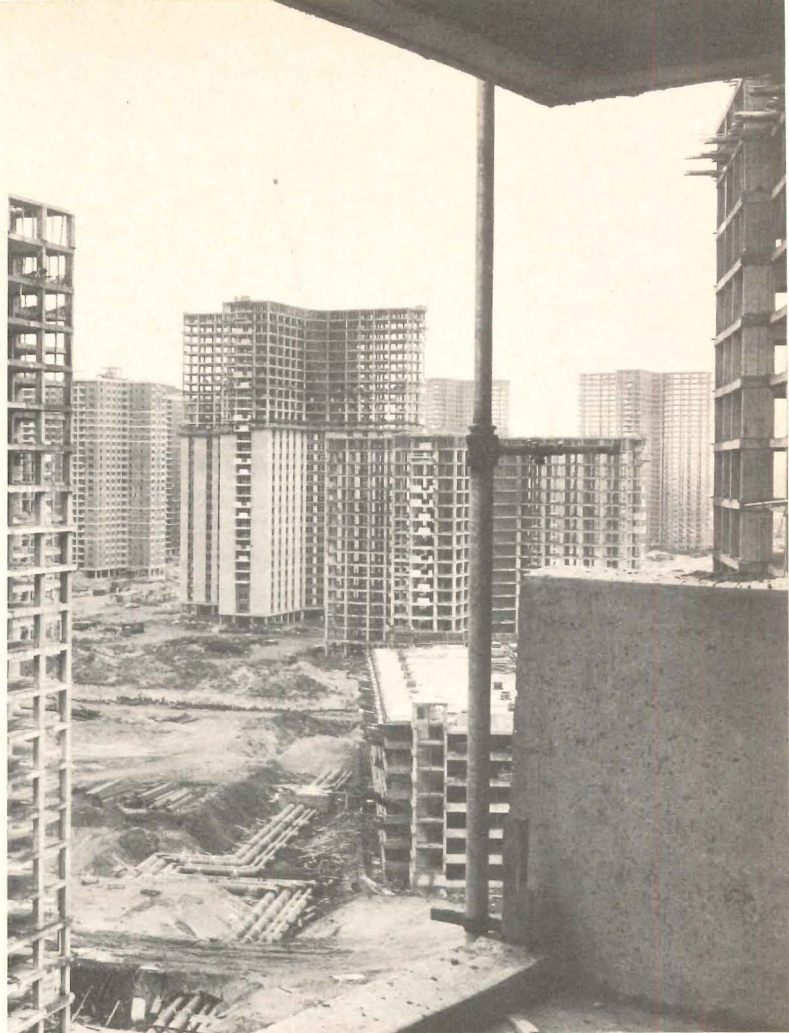


because as a labor group they are unwilling to become themselves the employers of mass, organized labor. They say they avoid the delivery hang-ups and delays that wrack the industry and smaller developers by careful scheduling and ordering far in advance, and they suggest wanly that more delays are caused by government than by the private sector. On the other hand, the organization's mass buying power (the concrete contract was for \$55 million) gives them a bargaining lever in the construction industry. A contractor, bidding for such large work, where the payments, being State made, are prompt and dependable, insures himself several years of guaranteed overhead. With this behind him, he can afford to bid competitively on other work. But the large saving, 6 per cent on contract fees of \$265 million, comes from avoiding a general contractor. The UHF is its own general contractor, and its \$2,250,000 contract cost compares favorably with the \$2 million that New York State requires to supervise Co-op City's construction.

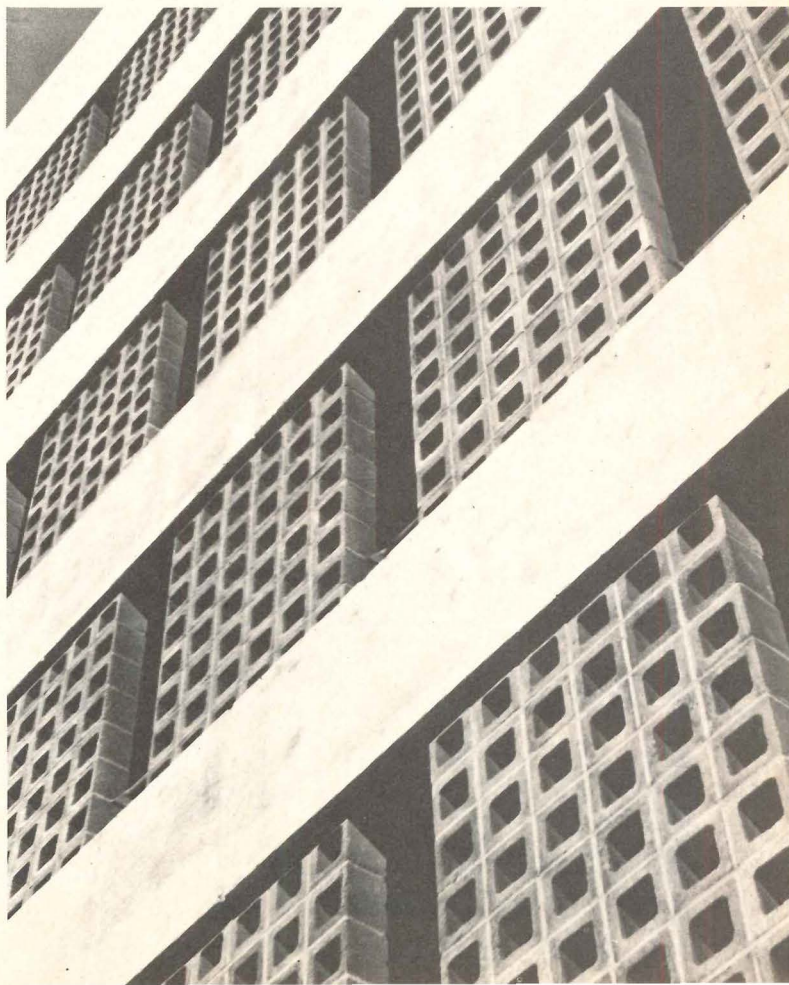
Learning to Like It

The architecture critics have reacted with dismay. Ada Louise Huxtable bemoans Co-op City's "sterile site-planning and uninspired architectural design." To her, though she grants it provides "good apartments at unbeatable prices," "its environmental and social planning is minimal"; it is not a community "in the urban expert's sense or according to the standards of the more urbanistically enlightened countries of the world," and it is part of that New York which is "producing a bumper crop of human failures through environmental failure." Walter McQuade adds a qualifier, "some people believe," to his warnings on social pathology, but uses telephotography to make the buildings look worse than they are. Government, he feels, since "it is paying most of the ticket on this trip," should insist on more sociology and something less "sterile and blunt" architecturally. Peter Blake is the most agonized and also the most interesting. The buildings are "fairly hideous" from the outside, and also "the view from the *inside* is going to be of somebody else's *outside*." But "it is all very well for those who can afford to pay a little more than \$110 in rent to insist that their less fortunate fellow-men ought to pay higher rents to help beautify the Bronx." And sadly, good design, "in the image of, say, Le Corbusier," would cost more, and to get it throughout the nation would require the nationalization of land, banks, and the building industry, the busting of all building trades unions, and the reintroduction of slavery — "and, come to think of it, the former site of Freedomland may not be the best place to start."

The UHF has reacted defensively to the criticism. George Schechter says the apartments will be "as 'depressingly similar' as my automobile." He maintains, with as much sociological evidence on his side as Ada Louise Huxtable has on hers, that buildings are not to blame for the faults of our society. And if



Eight 6-story parking garages are spaced around the perimeter of the development and will accommodate a total of 10,850 cars. The decision to provide garages rather than open air parking fields has resulted in an additional 60 acres of land for recreational purposes. It was the City Planning Commission who suggested the use of concrete block grilles at the parking structures (photo below).



people live out on Jane Jacobs' streets, it is because the insides of their buildings are so unpleasant. As for aesthetics, if the city feels this project has a civic importance beyond its importance to the people who live in it, then the city should contribute to its civic beauty — as they do, Mr. Jessor adds, agreeing with Ada Louise Huxtable, in urbanistically enlightened Europe.

Socially, we believe the case is not proven. There exists no body of evidence linking social pathology with bleak or beautiful architecture and some evidence that people carry their social patterns, as well as their social ills, with them from housing type to housing type. In fact, Co-op housing could be defended on social grounds for the stress it places on community autonomy and decision-making by vote. There is also some question as to how much "community" middle-class New Yorkers want.

Aesthetically, we are in disagreement with both sides. Co-op City is not "hideous" or "sterile," but "conventional" and "ordinary," and these are good, or potentially good qualities. The city or state should not be asked for extra funds for "urban design." If government has more money it should go for more housing and we architects and planners are going to have to learn, as painters and sculptors have learned before us, to accept the ordinary on its own terms and do it well. If "good design" costs twice as much, then good design is out of step and needs redefinition.

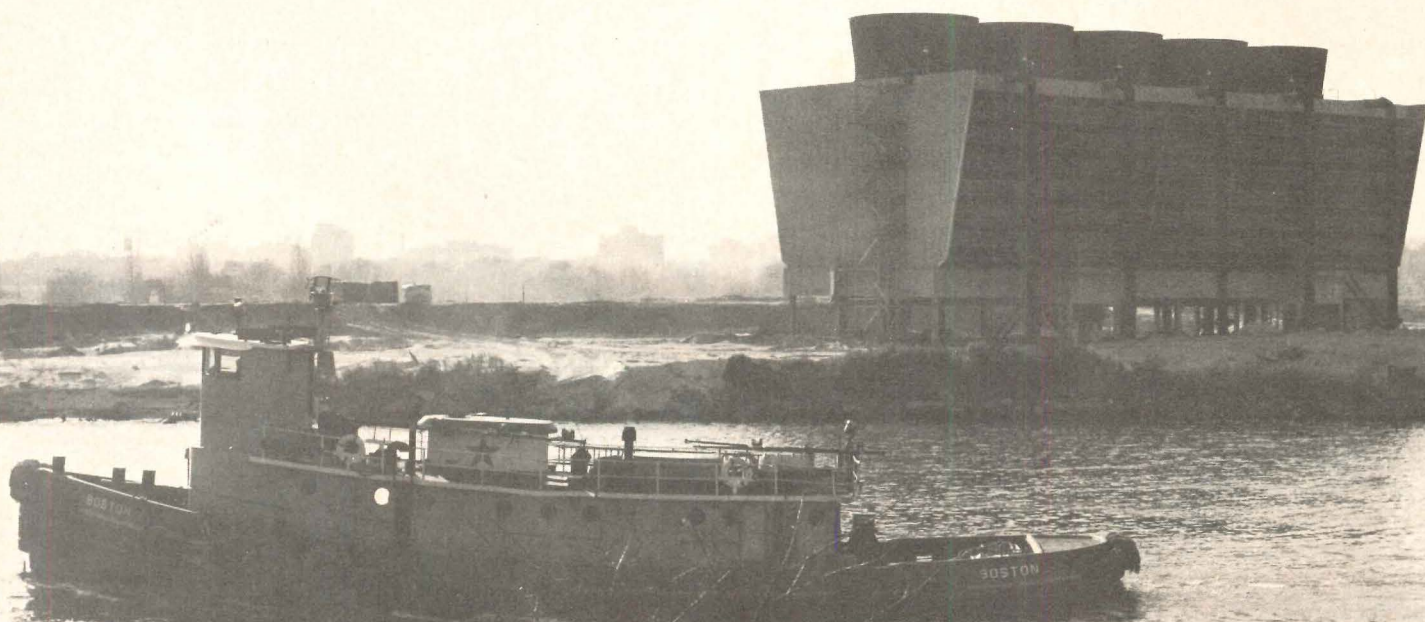
Good design, although it flies in the face of modern architectural orthodoxy to say so, will probably always cost a little more, but the question is how much more? There ought to be a sliding scale. For build-

ings of unique civic importance or those where prestige means money, perhaps we should spend "much more." For the everyday structures of the private city we can justify no more than a "little more," and that only if judiciously spent. Our contention is that architects spend too much on decoration. Not decoration in the traditional sense (this might cost less) but in the sense of contorting what should be ordinary building to fit preconceived, high-style models based on the work of Le Corbusier, Kahn, Rudolph, and other admired masters.

Even Co-op City has not escaped. The respectable Model-T Ford, high-rise structures have gathered a little Rudolphian, concrete-block, Cadillac styling: town houses, not yet visible on the site, will be added for an extra \$1.5 million above the cost of housing the same population in a high rise to give "human scale" (who says the UHF will not spend for beauty)?² Both, according to Ada Louise Huxtable, were included at the urgent behest of the City Planning Commission, who also required and chose the garish grills around the parking structures. Zion & Breen, the landscape architects for Paley Park, have been called in, again through the Planning Commission, and we wonder, not having seen their plans, whether they will produce something green and luscious but fenced off, as in the English public housing projects, or something that 50,000 people can walk over — or both.³

So the critics are finally getting at the UHF — just as the young radicals, here and in enlightened Europe, are turning to Levittown, Los Angeles, and Co-op City as examples to be learned from, because, whatever the critics feel, they seem to give

A central power plant (cooling tower is at left and heating plant is at right of the photo) will provide community with i



the people something they want.

Co-op City is not all right: it is *almost* all right. But we must start from where it is and advocate small but telling changes: when faced with "ordinary" building and ordinary budgets, we must learn to rejoice in ordinariness, since, as the Pop artists have shown with their ironic hamburger and deadpan soup cans, this is the way to make necessity good. We would have stuck with the red brick and used the concrete block or white brick judiciously and frankly decoratively at low level, to mark entrances and important thoroughways. And "urbanity" does not necessarily require connected buildings. Co-op City may be a set of objects in space because of economics, zoning and planning regulations or the taste of its sponsors; the point is, these objects could still be urbanistically related to each other in a lively way through their positioning on the site, and here is where the value of the project to the community as a whole would come in. The buildings are grouped around service loops to save roads and keep the interior free for pedestrians. We would have tried, too, to keep two important vistas clear right through the site, oriented toward good views, and made the important community facilities visible and accessible from them and oriented as many of the apartments as possible toward them;⁴ for it is true, as Peter Blake says, that the view from the inside of most apartments is mainly of someone else's outside, and that a longer view of the river, school fields, or the distant city — of something frankly pretty — would be welcome, and not, given the ample site, excessively costly.⁵ Finally, although Mr. Schechter disagrees and feels the UHF should not take commercial

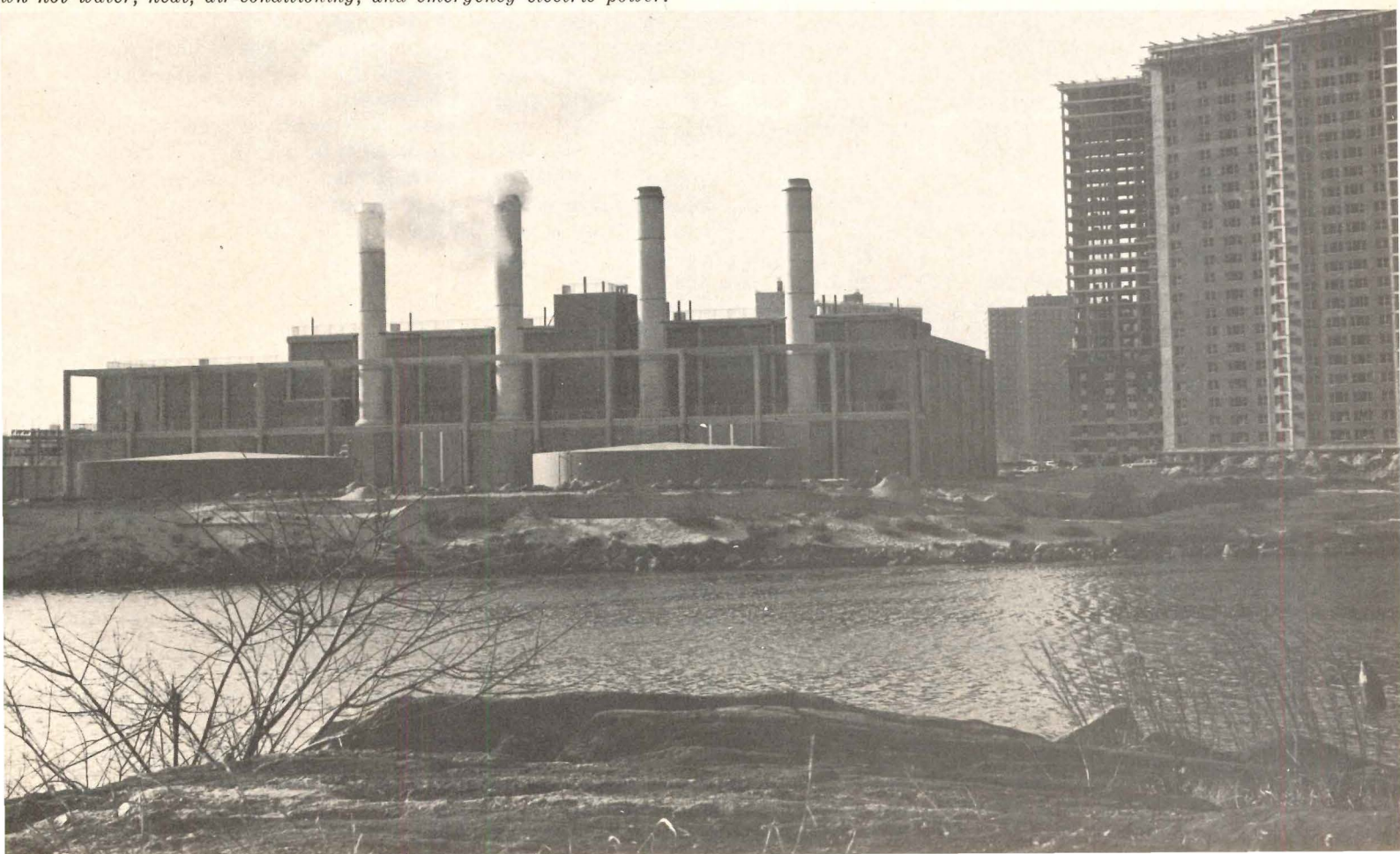
advantage of what should be a public facility, we do feel that the way to finance a fountain or two in the civic landscape may be to sell hot dogs and hamburgers and perhaps even boat rides at the riverside park.

Planning and Urban Design Theories

Co-op City should shake some planning and urban design theories — the most fashionable ones included. The friendship between planners and urban designers was an early casualty of the urban revolution, but if recent graduates into both professions agree on one thing it is that large-scale, mass-housing projects are bad because they disrupt the lives and social patterns of those who must move out to get them built and "stigmatize" and "alienate" those who move in; and also because they destroy through demolition the physical fabric of the city and much that is of architectural value.

A host of smaller-scaled, high-priced alternatives are being investigated in the name of not disrupting the "social fabric"; but any advocate planner or architect butting his head against the unrememberable numbers and letters of the numerous housing "options" soon finds that they merely cover the scandalous fact that the United States has little to spend to house the poorest in her population.⁶ How could one city in South Africa build 10,000 units of lowest income housing per year when the U.S. for 10 years averaged about 20,000 units per year for the whole country? And whatever we may feel about public housing, the poor, as Robert Cane wrote in *The New York Advocate*, know a bargain when they see

own hot water, heat, air-conditioning, and emergency electric power.



one, and there are 135,000 families on the "cleansed" waiting list for public housing in New York City. It is inconceivable that a city like New York, if it ever became serious about housing the urban poor, would not have to turn for its models to something like the projects of the UHF. The problem is just too big for vest-pocket solutions. If the poor had decent alternatives, some planners and urban designers might part company on the evils of large-scale urban renewal. The whole city is not for tearing up, for both social and architectural reasons, but if there were better places for the relocated to go, perhaps we would not mind as much when needed changes cause large-scale clearance.

We are not taking sides on the high-rise low-rise argument and are certainly not advocating a whole city of Co-op Cities. We recognize that by far the majority of the population would rather live in a little house with a garden all around it, and that Los Angeles is a wonderful place. But also that the demand for apartments is soaring in Los Angeles now, and that all the world over there are people dreaming of little houses but living in apartments, often for very good reason.

There can be nothing simple in the housing strategy of a great metropolis. It must range from new cities of 100,000-500,000; to low-income and no-income Co-op Cities, strategically sited on almost non-existent land to cause minimal disruption to living patterns and land values; to turnkey and scatter site projects in areas of slow change, and to methods not yet devised for upgrading and maintaining the exist-

ing stock. No one solution is correct: the big problem is to evolve an over-all, city-wide policy that is non-coercive, that has something for almost everyone.

If we will accept this, it is then in order to ask of Co-op City several questions: at approximately 73 units per net residential acre, what alternative solutions were possible and why was a high-rise one chosen? Where are the real savings from scale, and are all of these applicable only on large, cleared sites? If sequential operations, for example, were important, could not these be achieved, perhaps with the help of temporary street closings, on sequential but noncontiguous city sites? Surely a well set up and experienced organization such as UHF could achieve more economies than anyone else in rehabilitation work if it were to apply itself to the problem, and also help us to define when such activity is to be preferred? Because a project is large and quickly built, must it be planned and designed as a whole? Are there examples of fast, mass building that follow more traditional, piecemeal city building techniques from which we can learn valid lessons for large-scale housing? (The Las Vegas Strip is one example.)

But none of this should permit us, as we tend now to do, to castigate Co-op City as something we grew out of in the 1930's. A 30's air does hang over Co-op City and the rental offices of the UHF; an air of New-Deal idealism, a little shaken but resolved. It should make us reconsider and augment our aesthetics and philosophies, because Co-op City is more successful than some newer ideas. Perhaps we have seen the past and it works.⁸

(NOTE BY THE AUTHORS: We did not choose the photographs which, in attempting to make the buildings seem "interesting," fail precisely to capture those conventional qualities that are the chief virtues of Co-op City.)

Herman J. Jessor, Co-op City architect, comments upon the authors' text.

(Page 66-1): Construction over railroad tracks is very expensive. Foundations and other wall bearing elements of special construction contribute to this extra cost plus the fact that there is a rental charge for air rights over the land.

(Page 70-2): Concrete block does not cost more. Mason contractor admits that use of this block is less costly than Hudson River red brick. A "Rudolph" block has not been used at Co-op City; but a very simple, easily laid element used as a relief from the ever prevalent Hudson River red brick.

In view of the limitations placed on the budget in order to achieve an average rental of \$27.50 per room per month (including utilities and air-conditioning), a more studied observation of the repetition of types of buildings placed on the site, declared to be "ordinary" by some critics, would reveal that these buildings are pleasant in proportion and color values. The open colonnades on the

ground floor lighten the buildings and give a see-thru effect so that the viewer is not faced with a solid monolith, but instead has a view of vistas of parks and playgrounds.

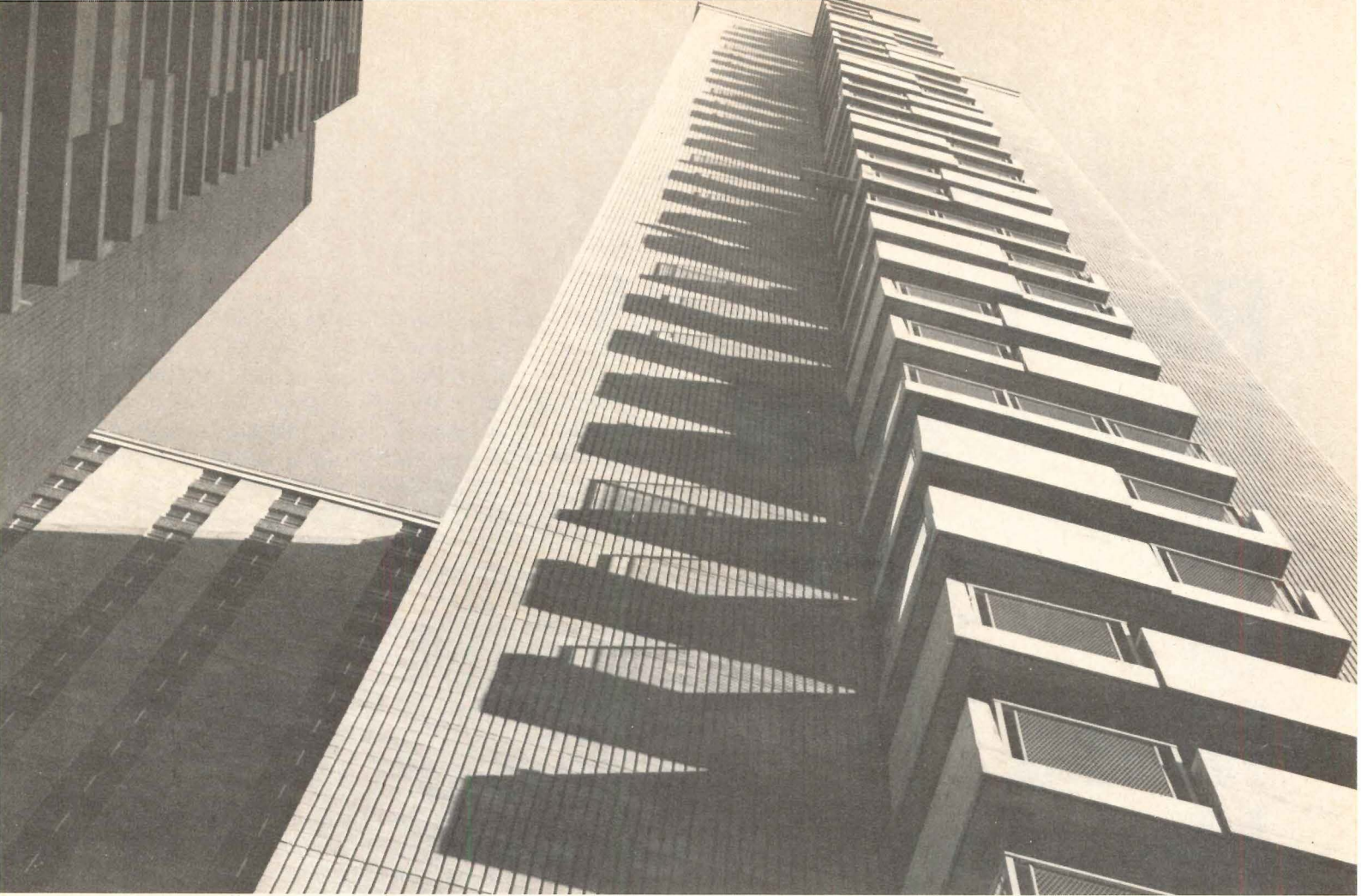
(Page 70-3): Ada Louise Huxtable is partly right; the City Planning Commission suggested the inclusion of town houses and the use of concrete block grilles at the parking garages. It was the United Housing Foundation and the architect who decided on the use of the concrete block to achieve a different design element at no greater cost than Hudson River red brick. Zion & Breen Associates were selected by the architect, and the landscaped areas will add immeasurably to the entire design.

(Page 71-4): A modified civic center had been considered to accommodate community facilities, theater, etc., but was rejected because of cost. Moreover, the inclusion of community facilities within the shopping areas would more likely draw trade

to the stores, an important factor in maintaining the lifeline of business.

(Page 71-5): This is debatable. There are open vistas between the buildings. Large as the site is, it is impossible to give every building a view of the river and the distant city. I quite agree that there should have been fountains and a marina. But where is the money? At the outset we thought of creating a miniature Venice. Since the existing level of the site was only a few feet above sea level, it would have involved the digging of canals to let the water in. But the cost of embankments, locks, bridges, etc., ruled it out.

(Page 71-6): The "social fabric" so dear to the hearts of Jane Jacobs and her ilk does not exist. The people living in the miserable slums are not there by choice. The original settlers moved out long ago to the Upper West Side, East Side, or to the suburbs. The immigrants took over—the Irish, the Jews, the Italians, then the Negroes, Puerto Ricans, etc.



The people have no "grass roots" in these foul rookeries. They live there because it is the cheapest place they can find, horrible as it is.

The only solution is large scale urban renewal—the "Bulldozer Approach." United Housing Foundation has been very successful with this method as exemplified by the Penn Station South Development located within the area between Eighth and Ninth Avenue, from 23rd to 29th Street in Manhattan, housing 2820 families; and Co-op Village located on Grand Street between the East River and Essex Street, also in Manhattan, housing about 4400 families. All of the families residing in the area prior to demolition of these old rookeries were relocated to habitations superior to the ones they had formerly occupied, and after the projects were built with triple the capacity or more, many of these families returned to occupy new modern dwellings, having had first choice in the selection of apartments.

Cities are here to stay and this is the only solution. The building of Co-op City presented a unique opportunity for large scale rehabilitation. Many of the residents came from specific areas in the Borough of the Bronx—rundown slum areas. Careful statistics were kept of the rook-

eries that were to be vacated and it was suggested to the City that it condemn these properties and when vacant, demolish them and build large scale housing developments. The bugaboo of dislocation was nonexistent because these buildings were being voluntarily vacated.

The City had ample time, but nothing was done. When the inhabitants move out to Co-op City, the landlords will apply a fresh coat of paint, install a new refrigerator and a gas range, hike the rents, and the slums will continue to grow. And Jane Jacobs will be happy—the "grass roots" will not have been destroyed. . . .

(Page 72-7): High-rise buildings were chosen because up to a certain height there is economy in their construction. Also, with a limited area, the taller the buildings, the greater the open spaces for a required number of housing units. Since it is impossible in a city such as New York to give each family a little house with a garden all around it, the best thing to do is to provide as much open space as possible for the occupants of city buildings.

Co-op City will be set within a park-like area with sitting spaces, playgrounds, walks, bicycle paths, and hopefully, swimming pools.

The larger the project, the greater the economy. Smaller projects can be built successfully; but rehabilitation cannot be achieved.

(Page 72-8): The New Deal idealism was a giant step forward in American society. It gave us social security, the minimum wage, welfare relief, which have now progressed into Medicaid and Medicare and Government-aided housing. The final solution to housing for the masses is that it be a government function such as streets, highways, sewers, water, subways, post office, parks, etc. It is too vital for the needs of the people to be subject to the profit motive.

The success of the United Housing Foundation testifies to this need—housing without profit. Of the 15,382 apartments in Co-op City, 14,000 are already gone; 2000 families are now living there—happily—and there will be a long waiting list, as has been the case with all other United Housing Foundation Developments.

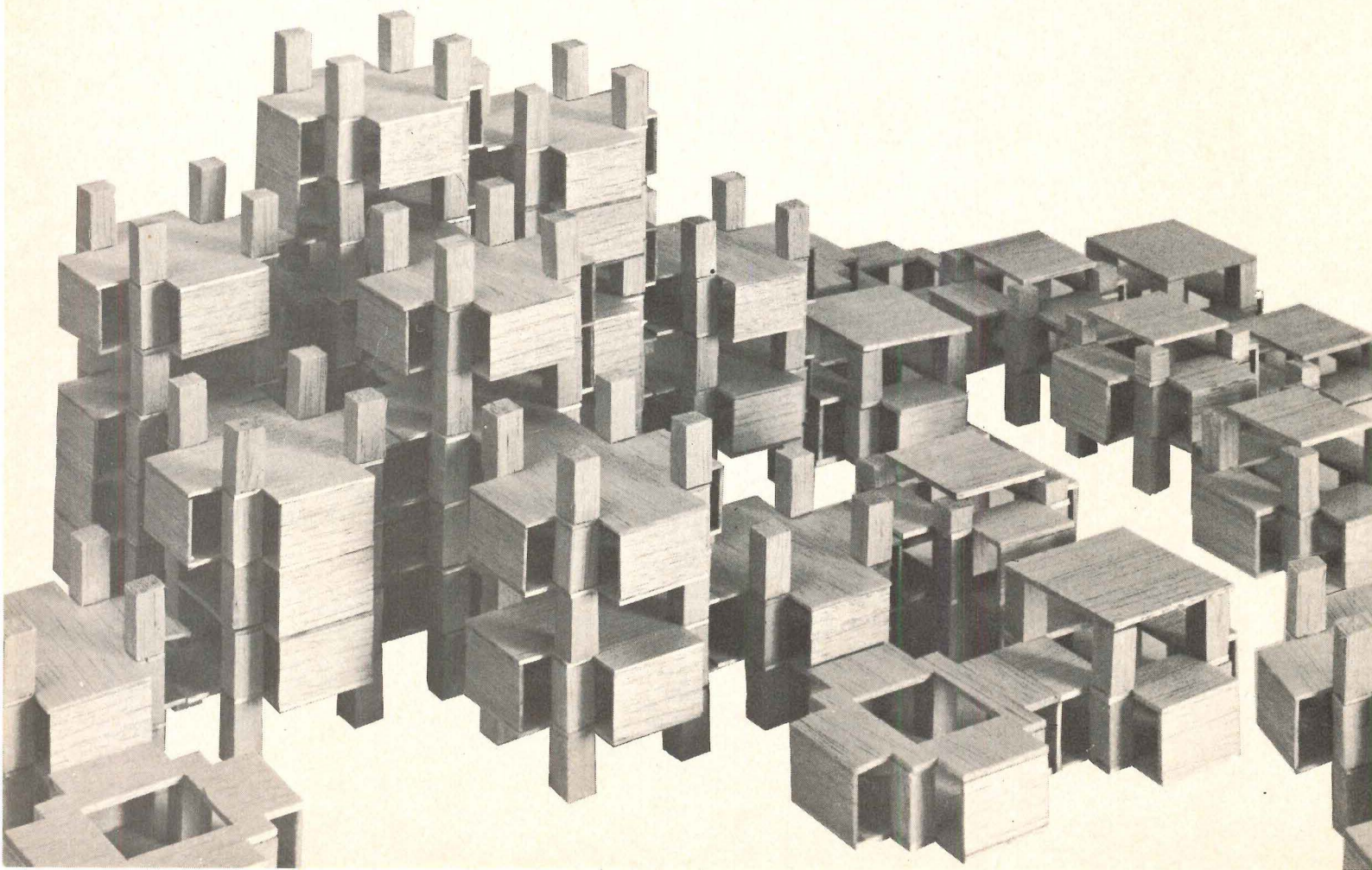
CO-OP CITY, Bronx, New York. Owner: Riverbay Corporation. **Sponsor:** United Housing Foundation. **Architect:** Herman J. Jessor. **General Contractor:** Community Services, Inc. **Mechanical Engineers:** Frankblau & Fitzsimmons. **Structural Engineers:** Farkas, Barron & Partners. **Plumbing Contractor:** Wachtel Plumbing Co. **Landscape Architect & Site Planners:** Zion & Breen Associates. **Garage Consultants:** Seymour Gage Associates. **Power Plant Engineers:** Utilities Engineering Associates. **Photography:** (except as noted): Chet Mantolesky.

FOUR VARIATIONS:

Rapid Economical Production of Mass Housing

A visionary solution for one of today's most challenging architectural/social problems—the rapid and economic production of mass housing—has been proposed by two New Haven, Connecticut, architects, Wojciech G. and Urszula Lesnikowski. Their scheme was evolved as a result of intensive research in housing and urban development both abroad and in this country. Although started before HUD's announcement of "Operation Breakthrough," these architects consider their proposal an imaginative answer to the housing crisis facing the nation—not only for today but also for the future. Their projects do not solve any particular conditions of a program, but rather they represent a general research, having as its principal aim the creation of some specific architectural and technical logic.

Their system is called "Urban Organic, Modular, Element." To these architects, urban organic means the research of the free extension of the urban structure, modular conveys the study of the specific related technologies, and element means the architecture of free living elements. Their attitudes toward the research of urban structures is based



upon personal experience in Europe where mass-production has become a requirement and where prefabrication was born not only as a result of the disasters of war, but also as the result of the work of a number of architects anticipating the future. Unfortunately, most good theories turned out to be architectural failures. Thousands of repetitive houses, schools, and other building types developed, creating a horror of monotony, lifelessness, and lack of spirit in spite of some improvements in the conditions of life.

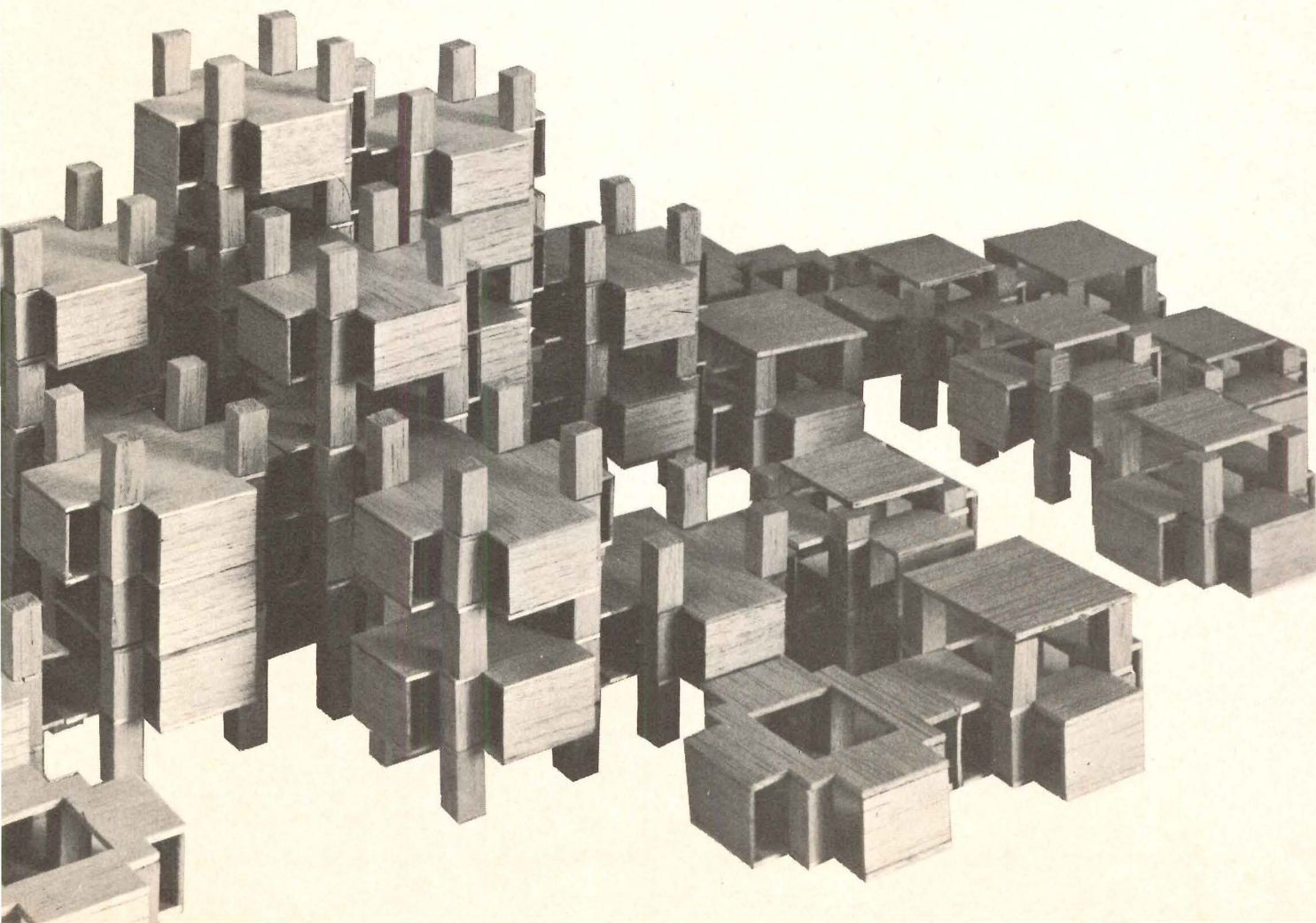
Although a number of solutions have been developed, only one with variations is illustrated here. Interwoven through all of the studies, however, is a concern for three major related problems: 1) urban development and the analysis of its related problems; 2) the architectural expression of this urban development; and 3) the use of total technology to solve both of the foregoing problems. It is held by these architects that three considerations reflect the human needs of the total community.

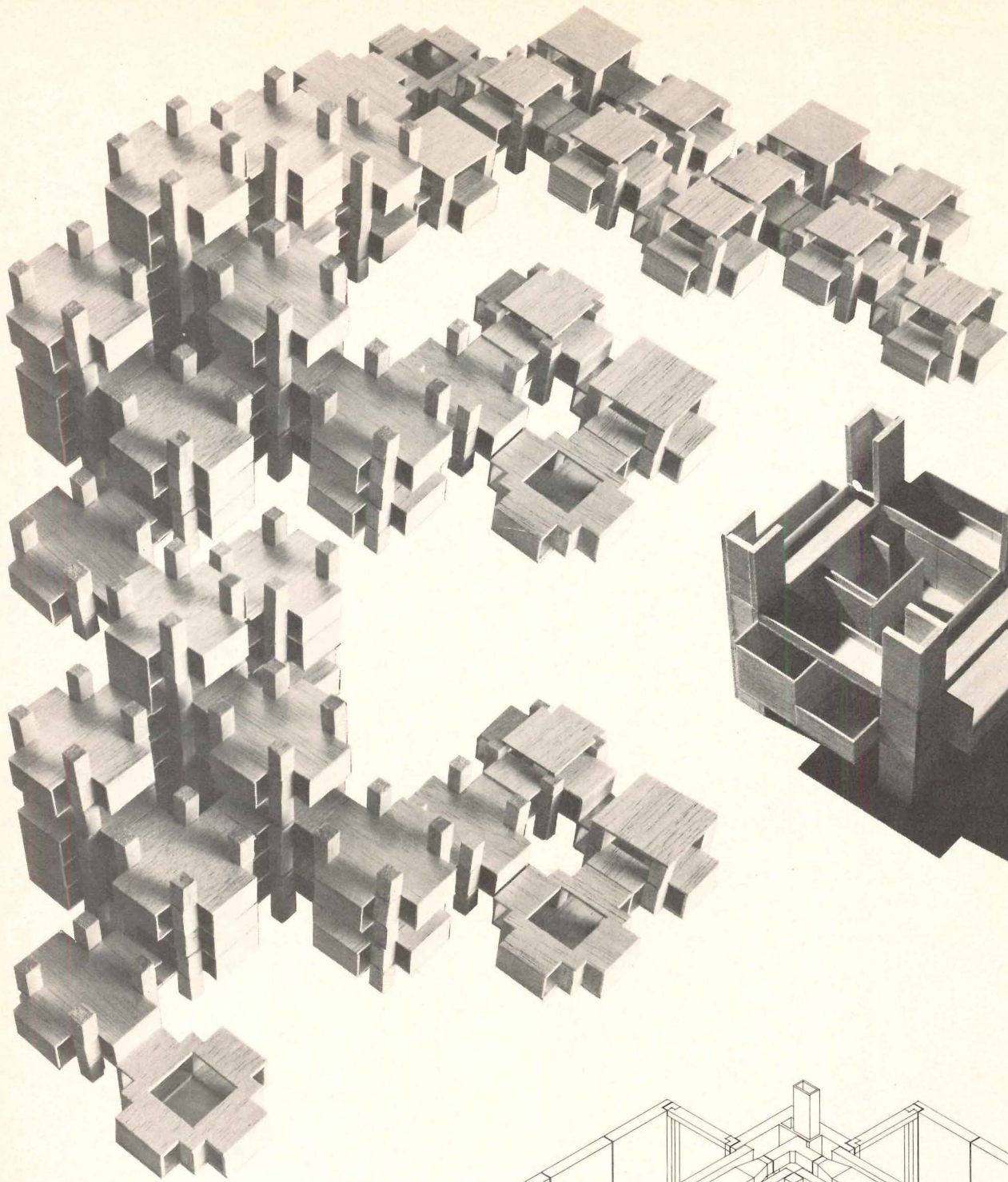
Urban Development. The Lesnikowskis are convinced that there can be no separation between ar-

chitecture, technology, and urban planning. Their goal is to face the population explosion and the eventual disappearance of cities and communities as we now know them. Most of the present concepts of urban communities still reflect 19th Century planning principles. The city of today, therefore, no longer provides a valid answer to present human needs. Nor will *villes-satellites* or *villes-lineaires* furnish adequate solutions for the population explosion. Furthermore, due to existing regulations, we may not expect to find radical changes in urban planning in the near future. Therefore, the creation of a new, realizable architecture that is related to the culture of the times is proposed.

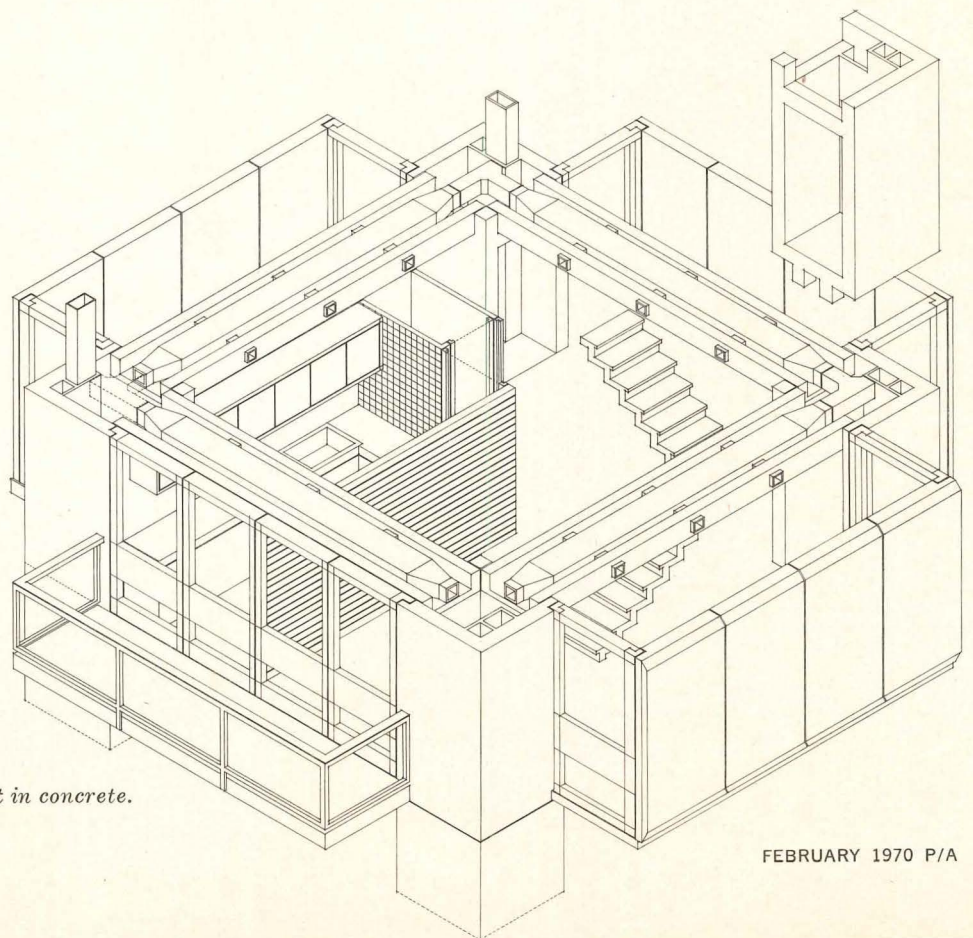
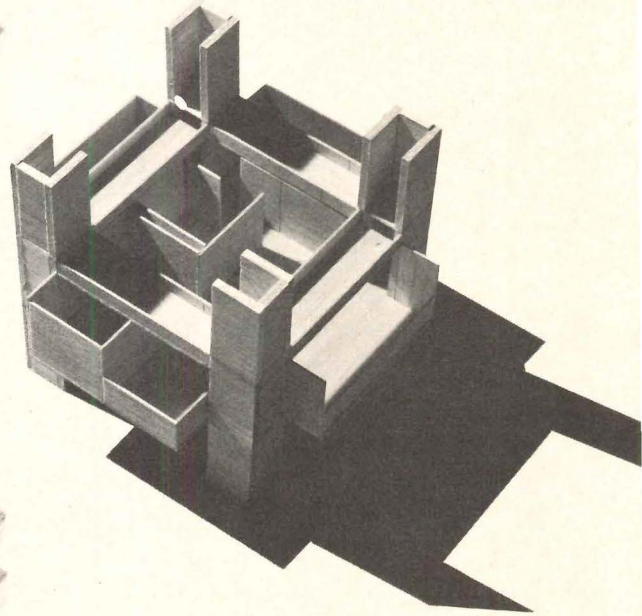
Based on these observations, Lesnikowski and his wife believe that the urban process of today should find an appropriate expression of its general chaos. Urban development should be based on the disappearance of the classic type composition, on the elimination of "the building" which stands in the way of continuous development, and on the creation of a system of independent urban organic communities.

(Text continued on page 80)





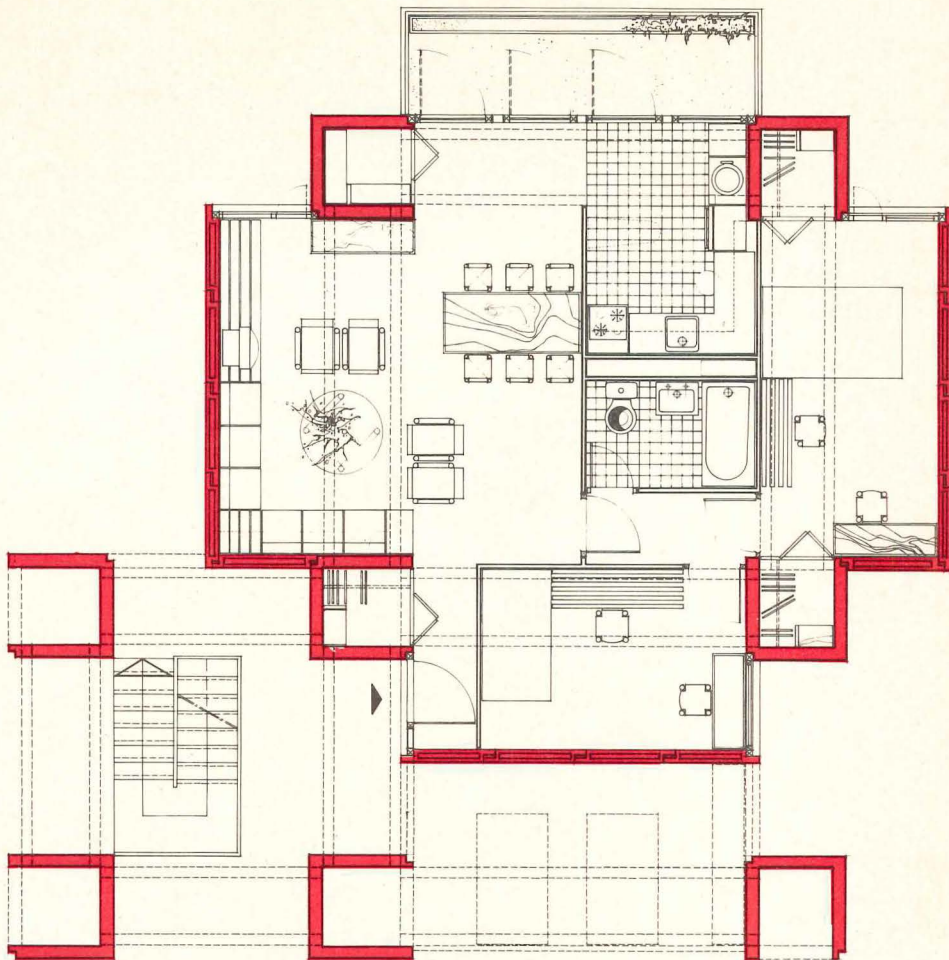
Model of system in concrete.



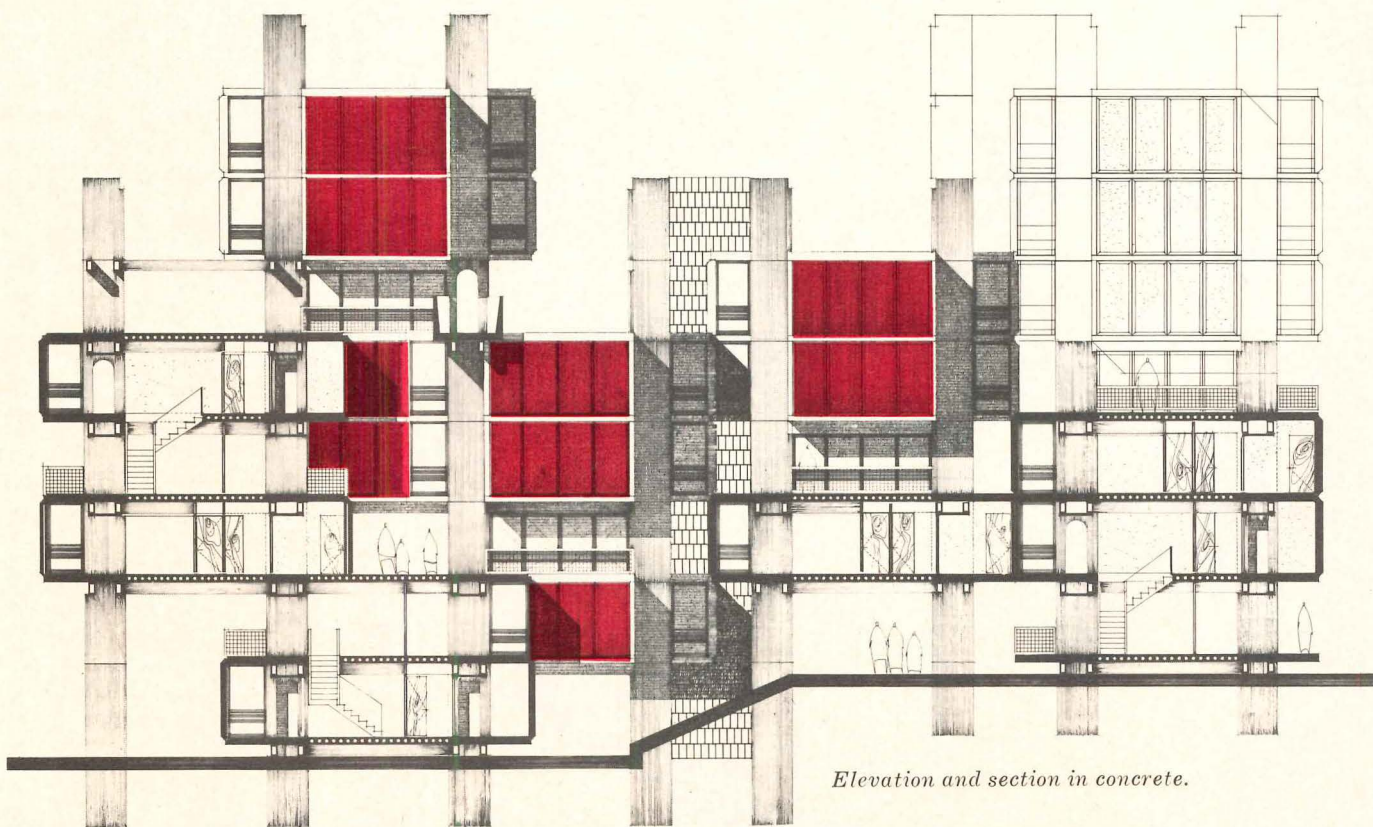
Isometric view of basic two-bedroom unit in concrete.

Concrete

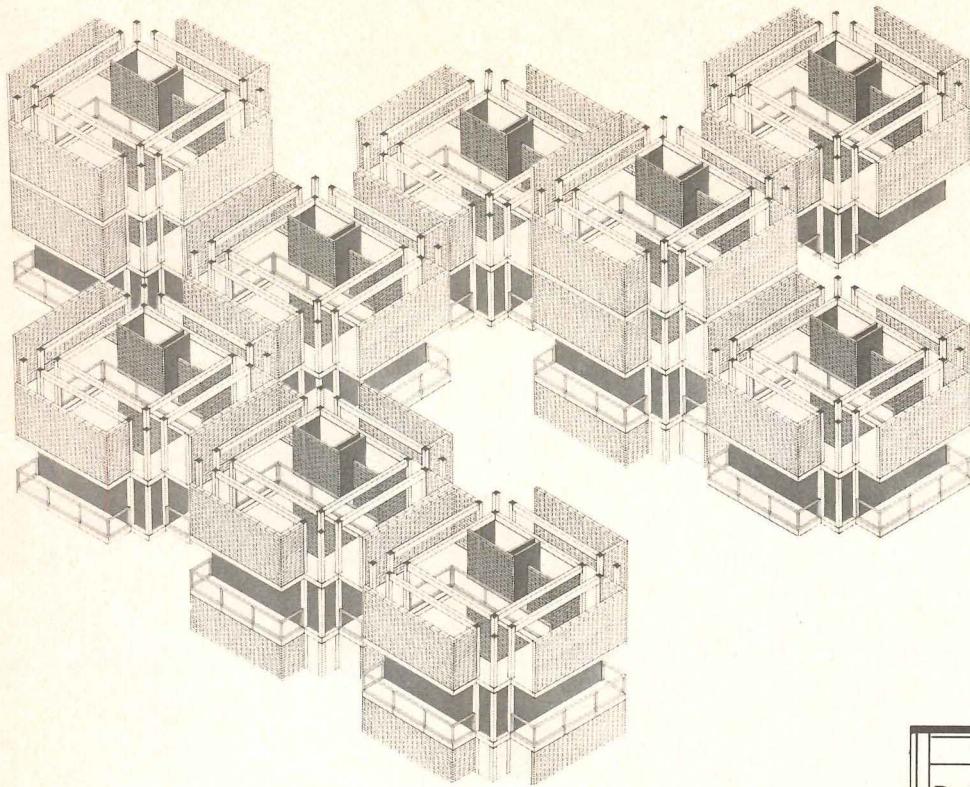
The primary purpose of the module in concrete was to integrate the structural system with the unit floor space. This was accomplished by providing only a floor suspended between concrete caissons, walls and mechanical systems to be added later. The concrete caissons are to be three-sided with the internal area utilized as closet space and mechanical systems space. The concrete examples are shown completed for the sake of continuity.



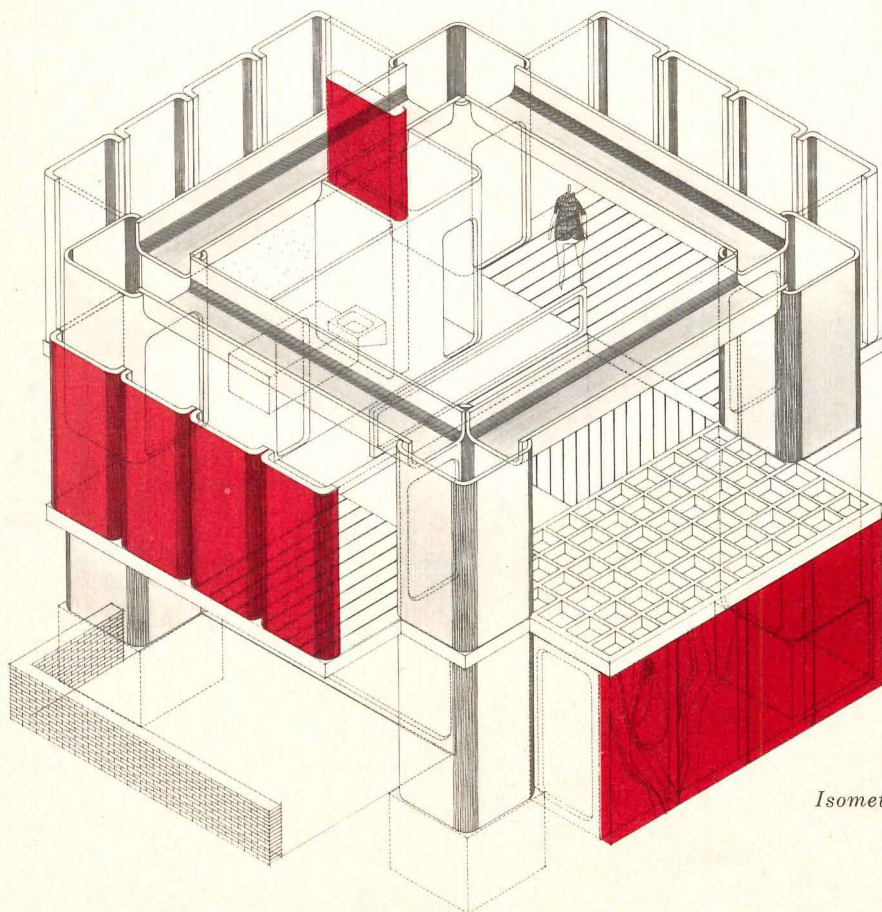
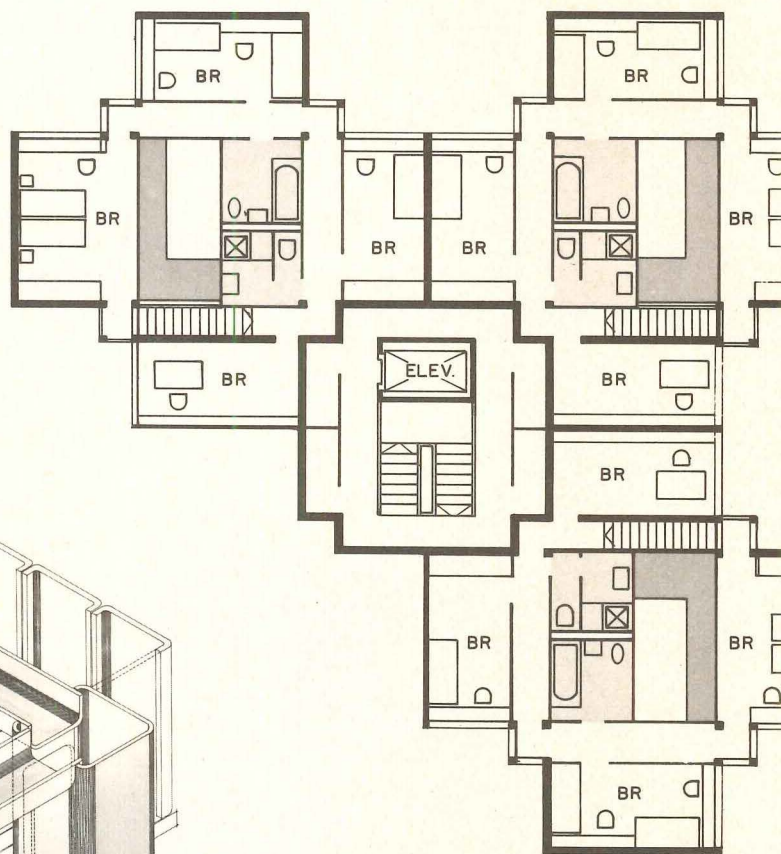
Plan of basic unit in concrete.



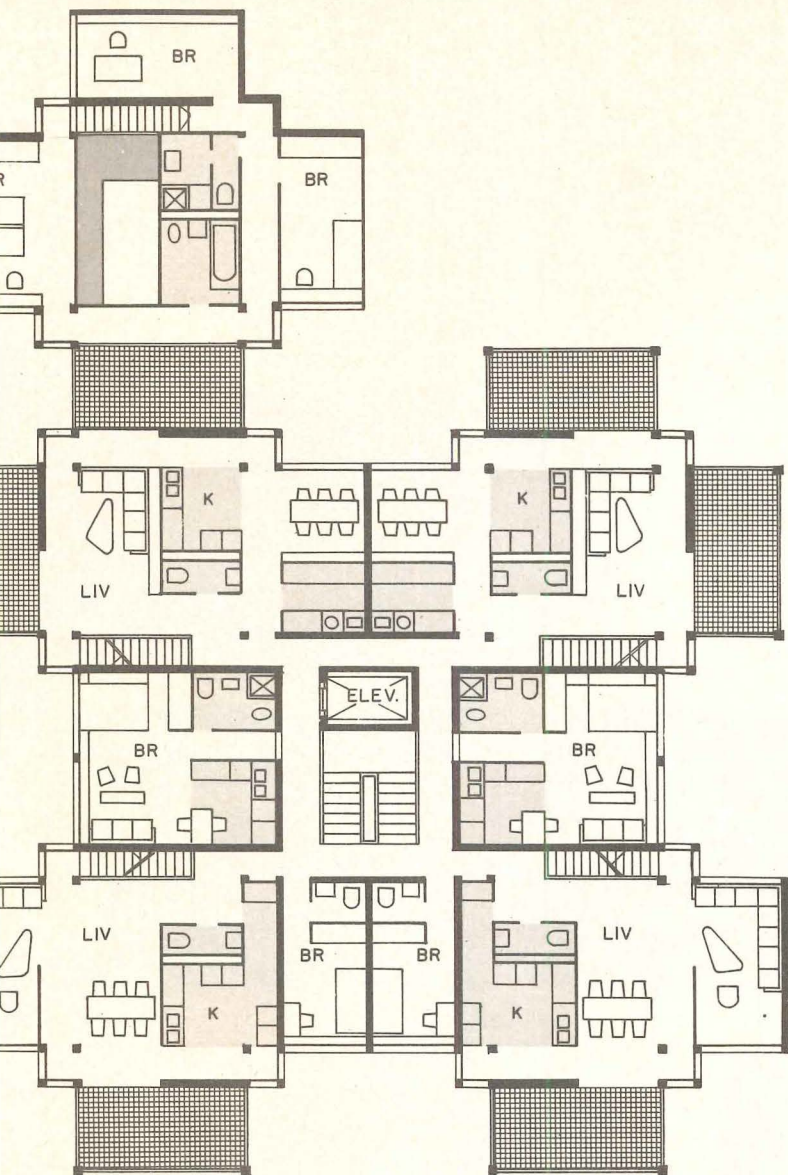
Elevation and section in concrete.



Isometric view of several typical units of steel.



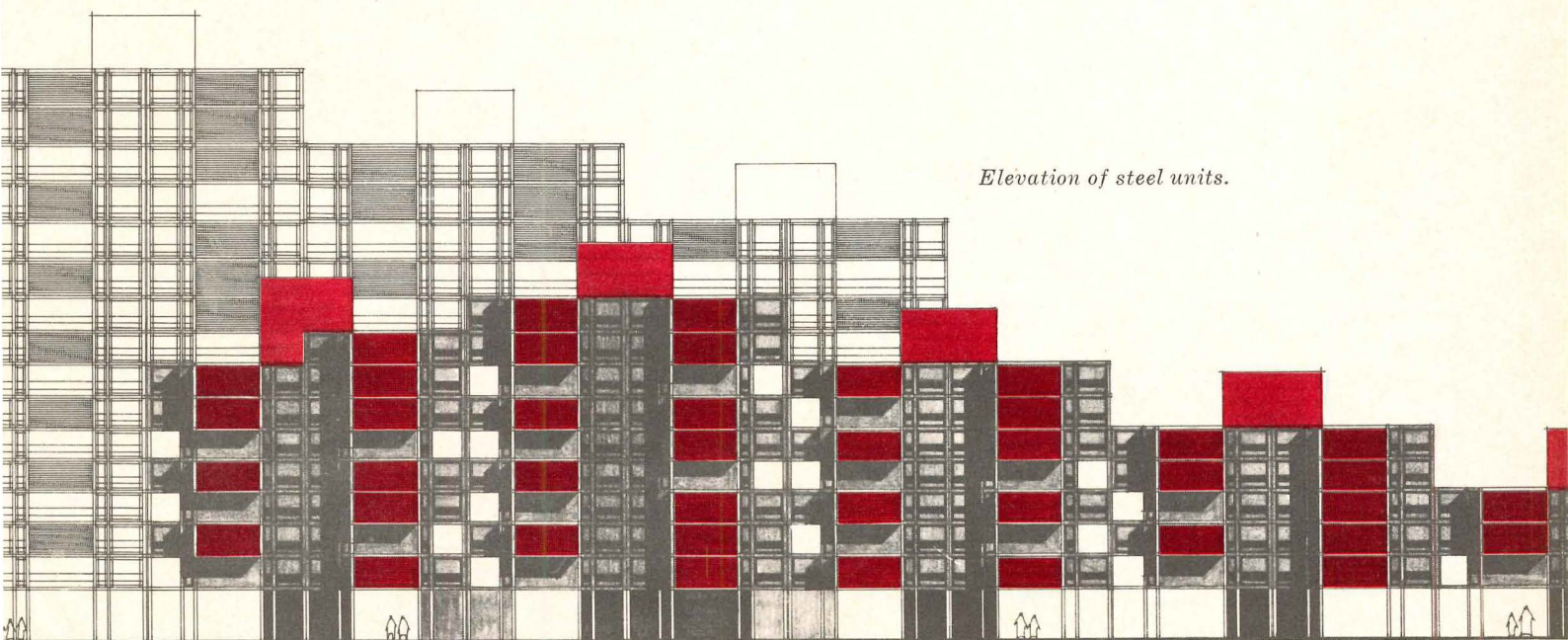
Isometric of single steel unit (variant).



Plan of several typical units in steel.

Steel

In the case of steel construction the concrete caisson would be replaced with four steel columns. This particular form of construction would allow windows to be placed in any corners that were not being used for mechanical systems or closets. In the event that windows were highly desirable the mechanical systems could be internal.

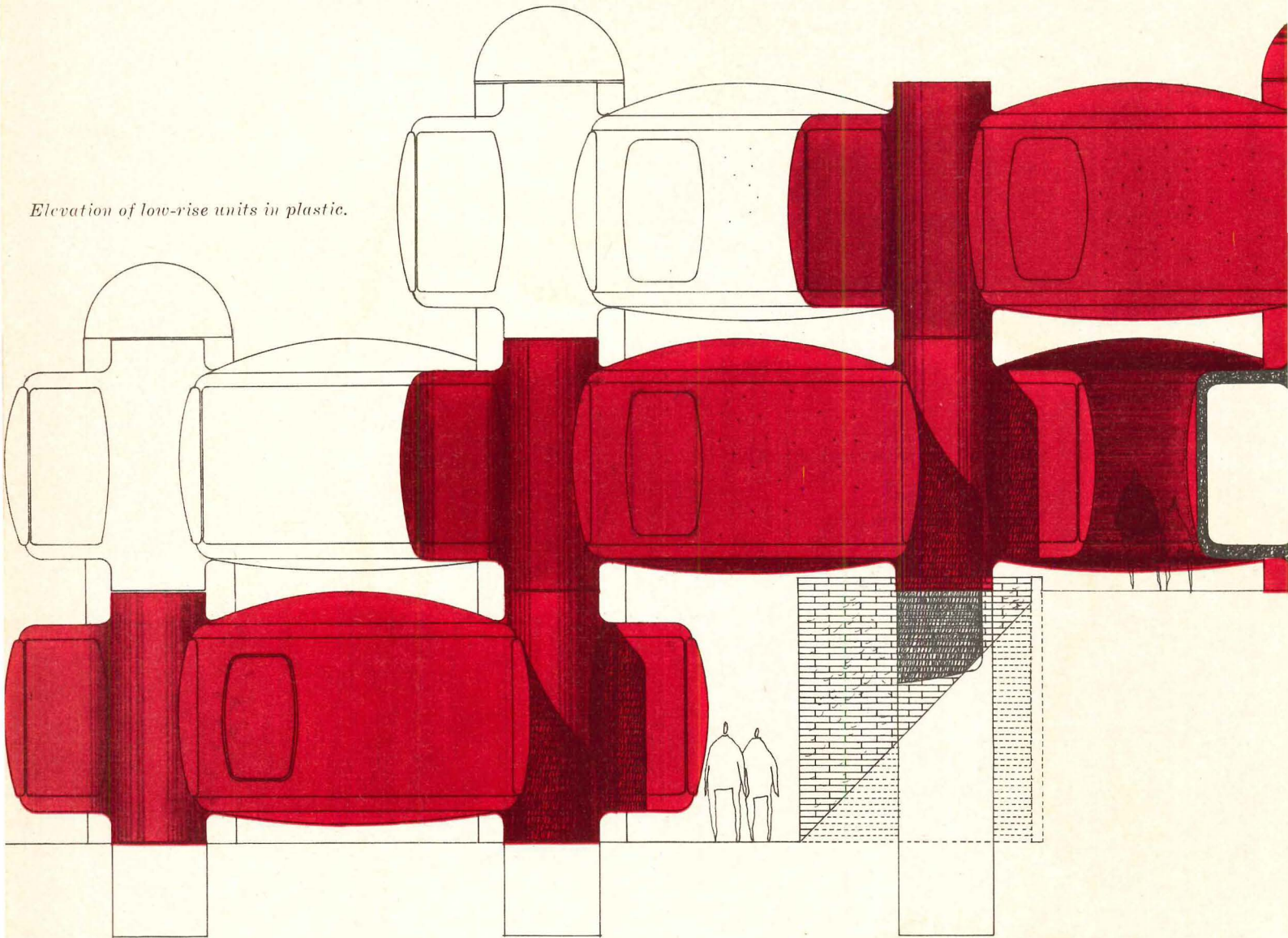


Elevation of steel units.

Plastic

In the case of the low-rise system in plastic the supporting caissons would be structurally integrated into the unit module itself. The units would then be placed on top of one another in a more or less random manner with the lower units supporting the upper units, their roofs providing patios and walkways etc. In the case of the high-rise system in plastic, the module unit would be complete with walls and ceiling etc., but would have no integral caissons. The units would be supported by round concrete caissons much the same as the concrete system.

Elevation of low-rise units in plastic.



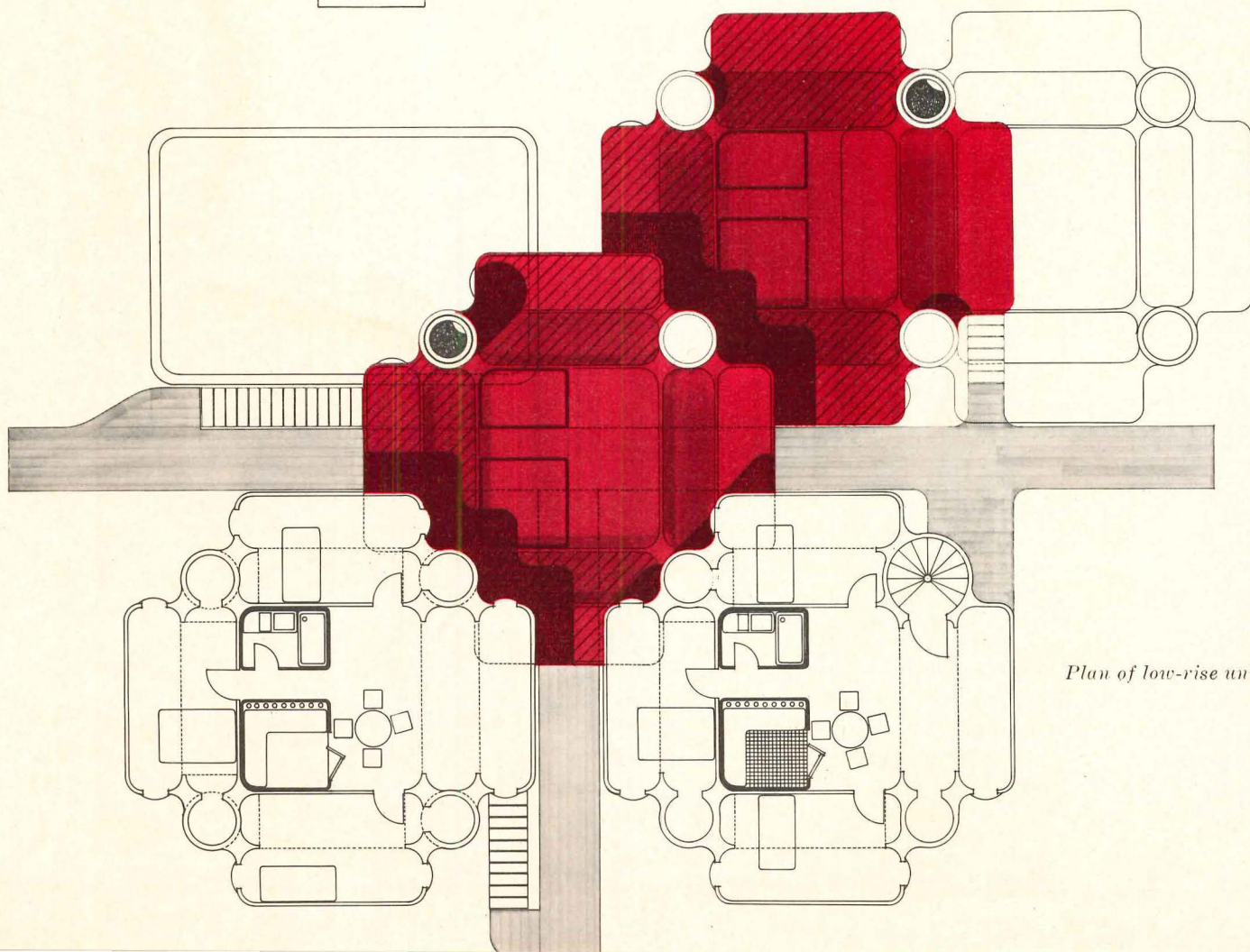
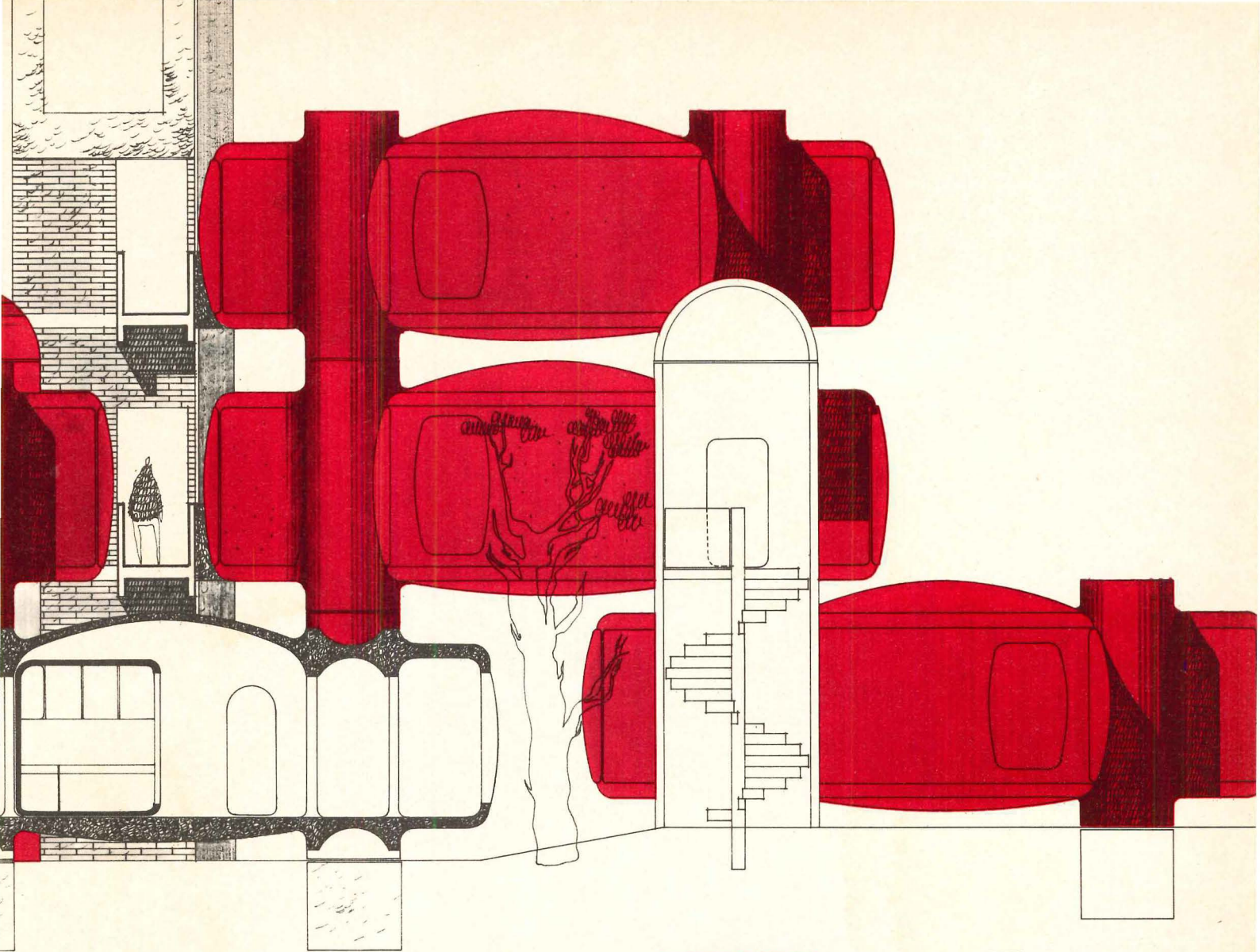
Architectural Development. The architecture representing tomorrow's urban community will demonstrate the need for privacy and isolation, as well as for private green spaces. Living units should be both visually and physically independent. One should get the impression of a free structure with an independent communications systems. There should be a progressive use of the same base element to establish the character of the entire community.

Technology. The application of total technology, required for the solution of this urban problem, will permit the use of different structural techniques and basic materials such as concrete, steel, plastics, as well as combinations of these. To achieve an elasticity in the design of this project, a number of prin-

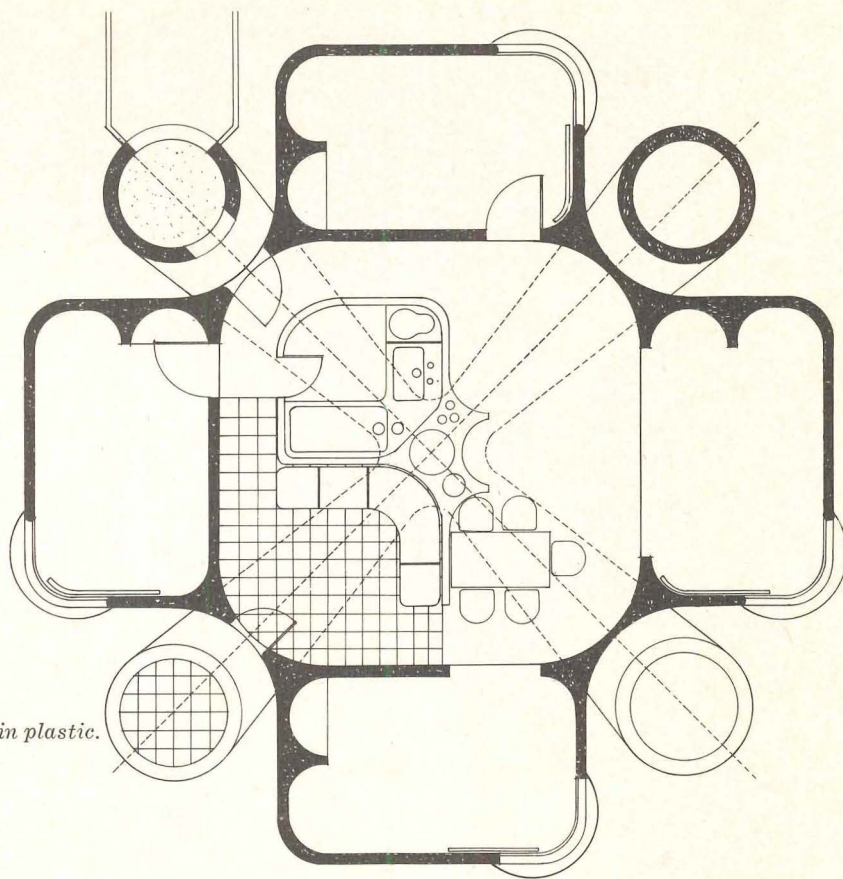
ciples have been introduced and the resulting architecture will be of free-form character and will not produce the ponderous composition that would result from an assembly of individual buildings. Separation of the horizontal and vertical communication of the components is essential, and separation of the supporting structure and the individual elements will be found.

In the system shown, the configuration and space required for one dwelling (not the whole building) represents the key design element. Structurally, this element has as its base a cross-shaped floor slab supported at four locations on its periphery and in such a manner that optimum structural performance of the floor is assured. Since the supporting members

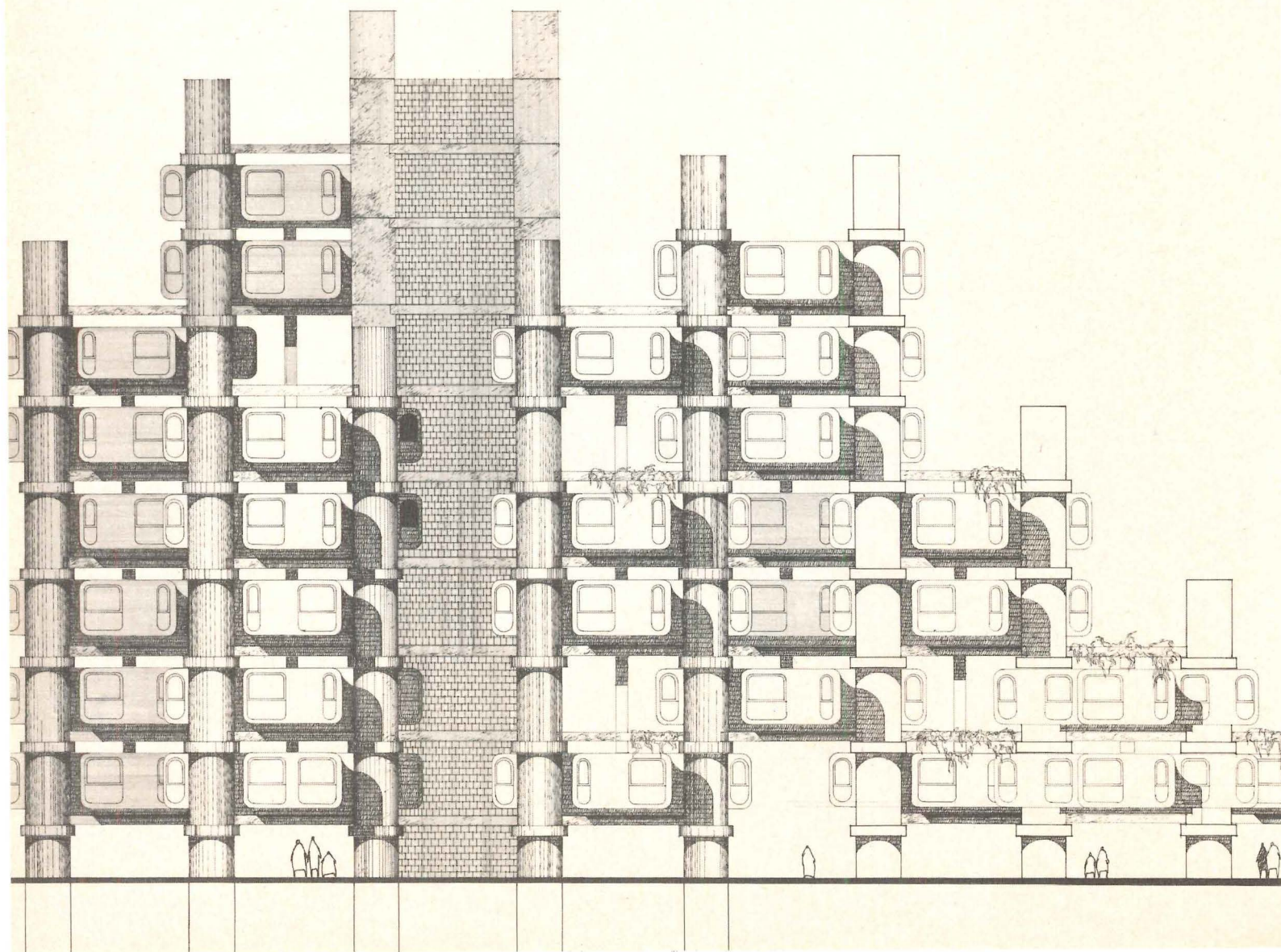
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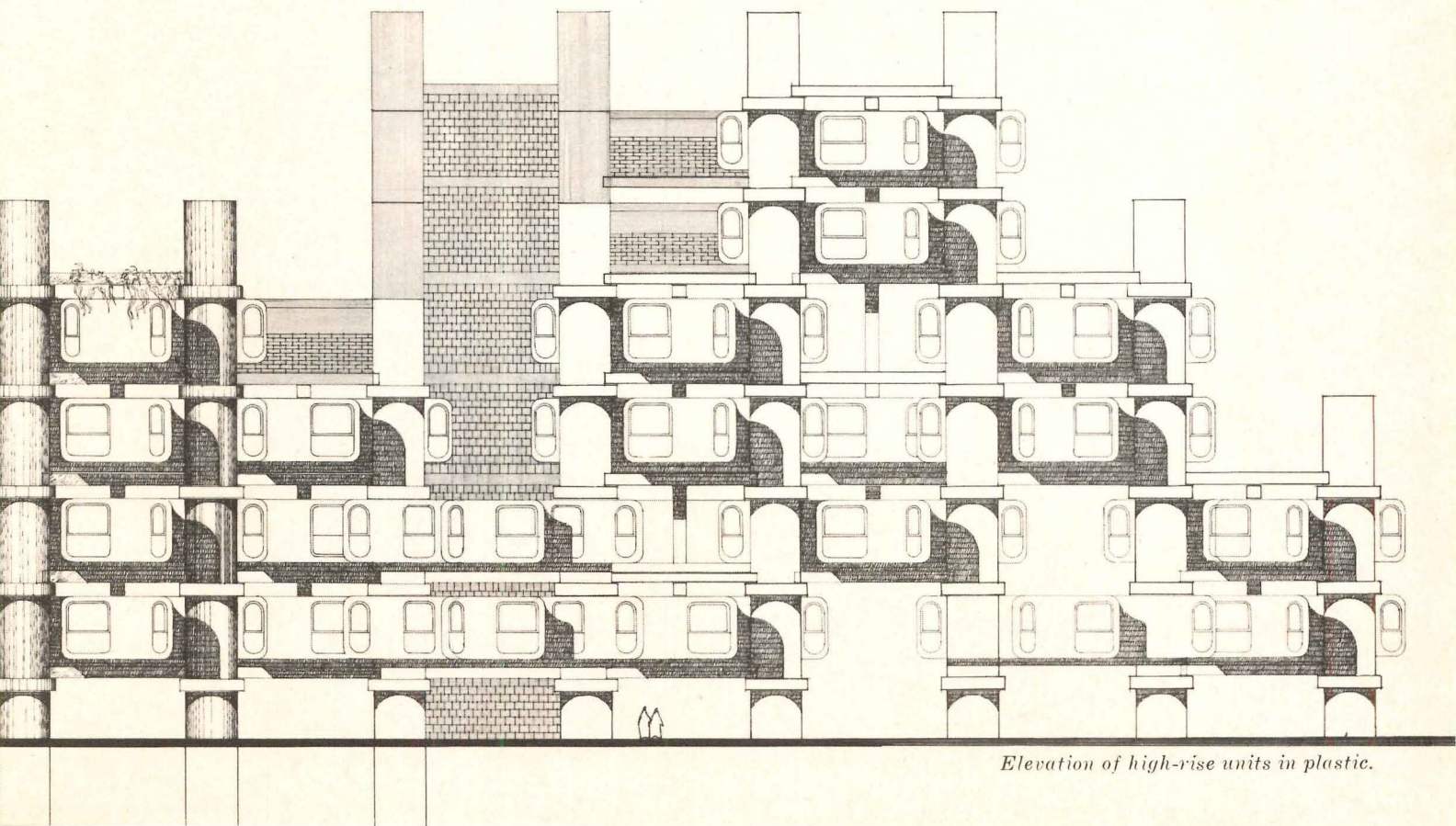
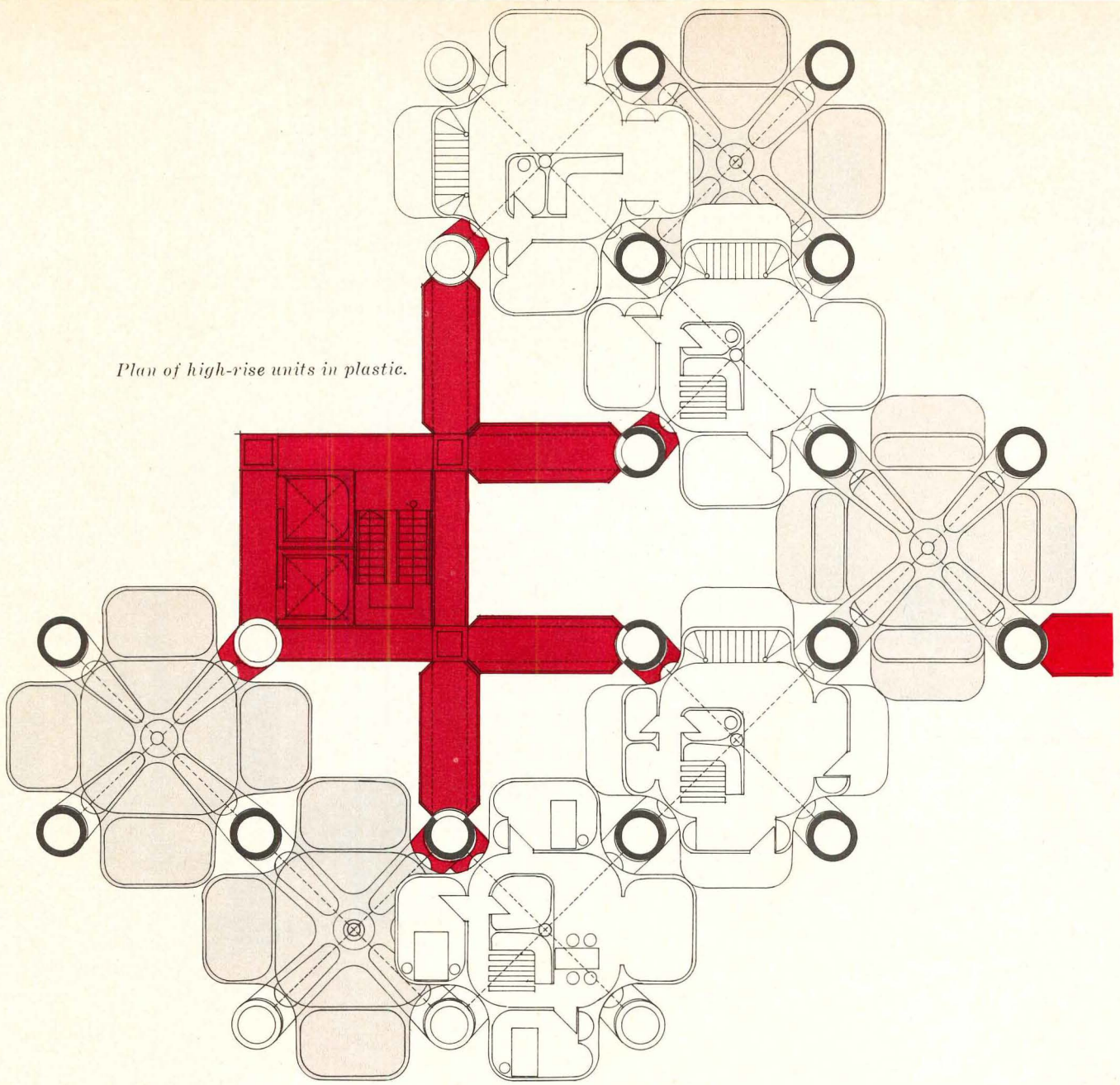
Plan of low-rise units in plastic.



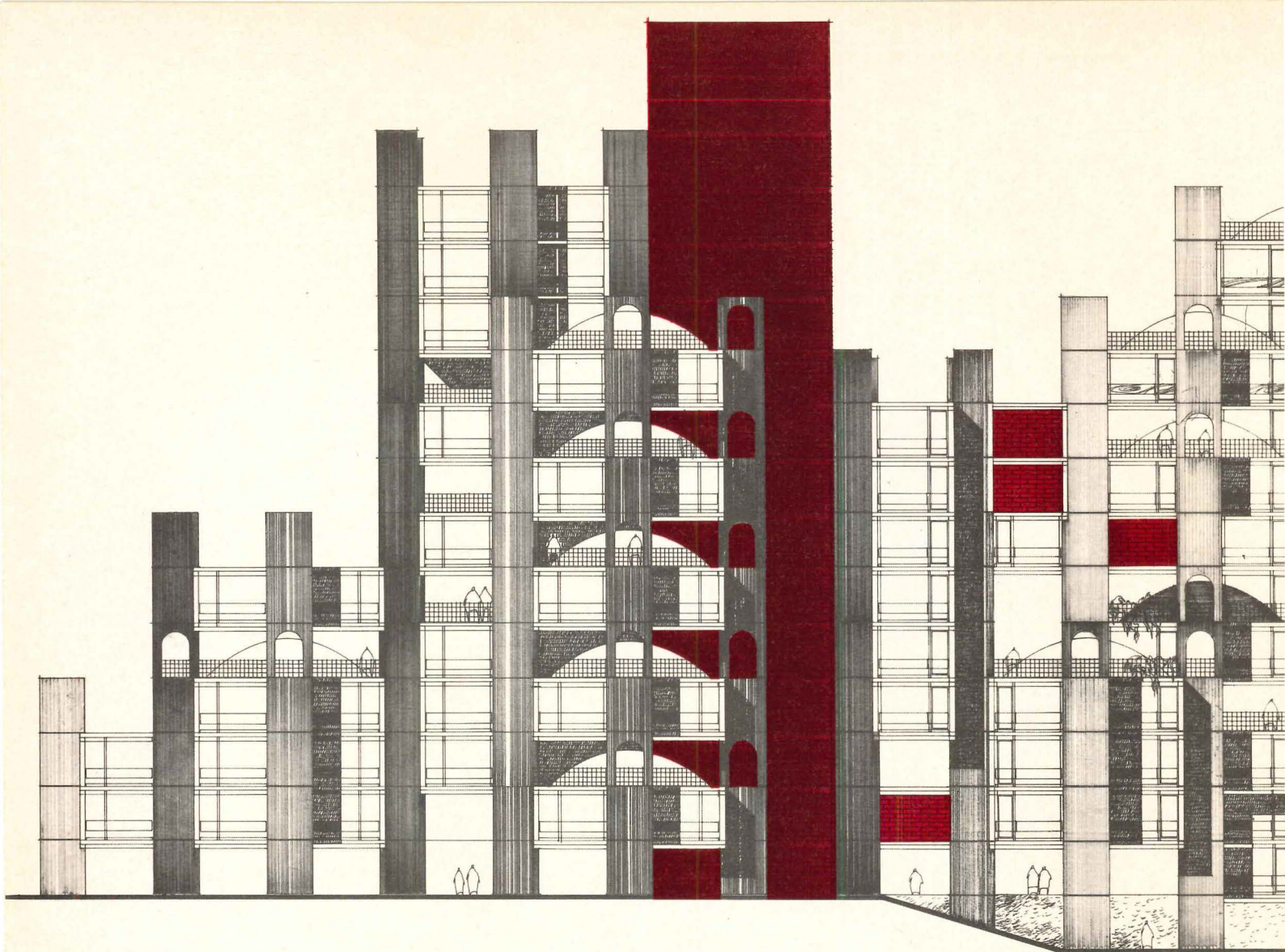
Basic high-rise unit in plastic.



Plan of high-rise units in plastic.



Elevation of high-rise units in plastic.

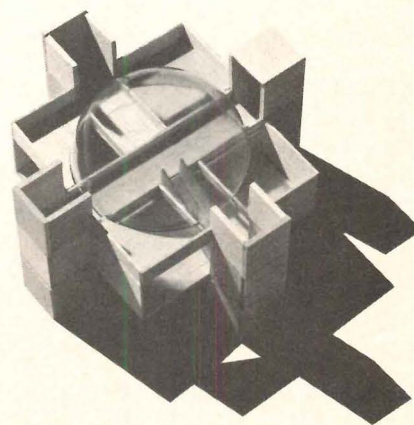


occur only along the edges of the slab, the entire interior area is free of structural obstacles so that free organization of the living spaces is possible. As the number of supports is limited to four for the basic design units, each support carries more load than a column of a conventional framing system. Thus, because of the external position and greater load carried, the horizontal cross-section of the supports may be designed in the form of thin-wall boxes, or similar shapes. The spaciousness of the supports allows the designer to develop his interiors into useful spaces such as closets, toilets, etc. Meanwhile the unusual structural rigidity of the box-shaped supports provides a unique opportunity to investigate the application of new structural techniques that are radically different from those forms in older or even more recent construction systems. As a result of this new concept, the construction process follows the path of continuous production methods so successfully applied by industrial manufacturers in producing millions of cars, appliances, and other products annually.

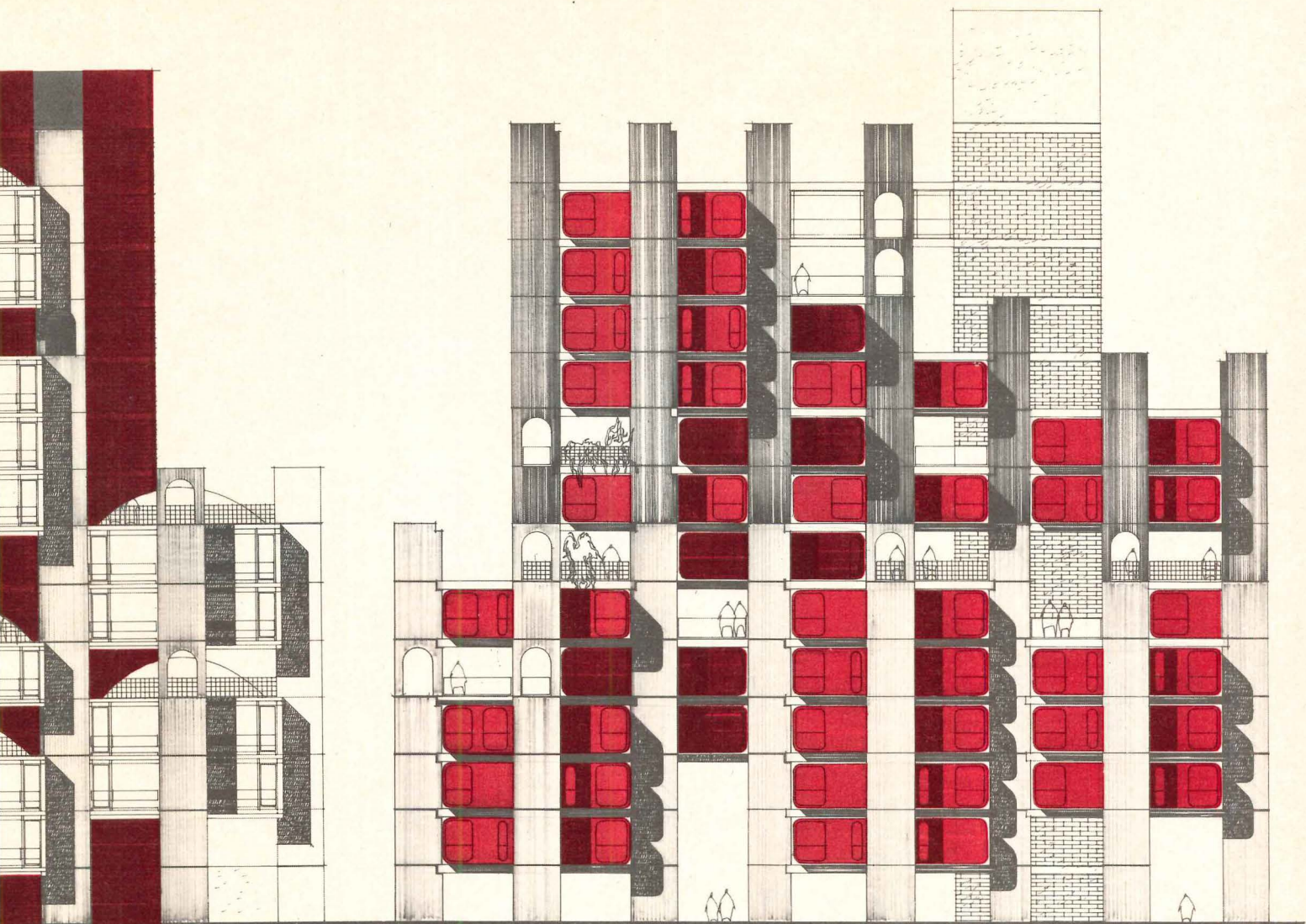
Lesnikowski is teaching at Yale's School of Art and Architecture in the "Modular Housing Studio," and is also teaching at Pratt Institute Department of Architecture.

Alternate System

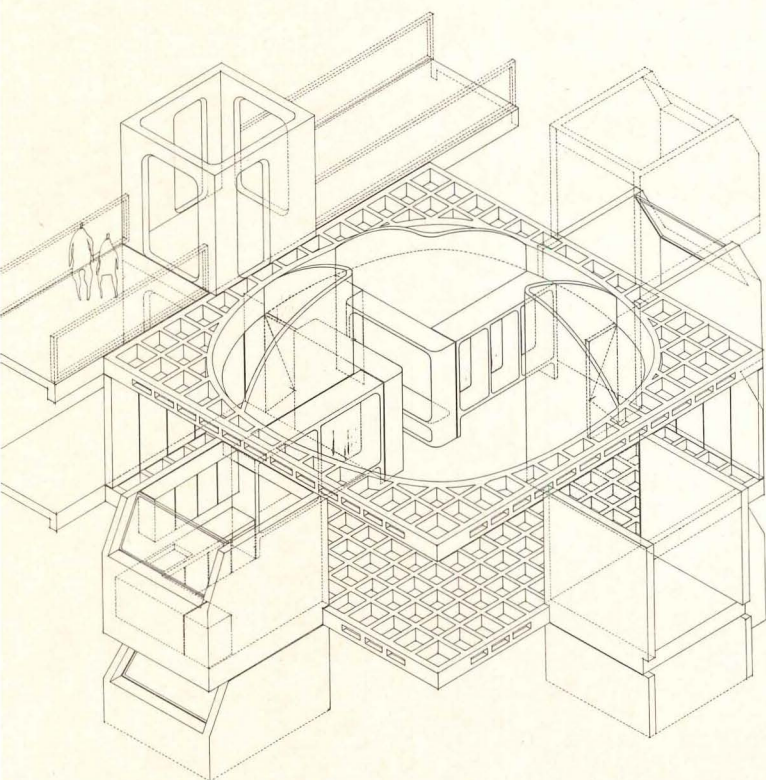
This system is very much like the previously mentioned concepts with the primary difference being that the support caissons would be located mid-wall rather than on the corners.



Model showing mid-wall support system.



Elevation of alternate subsystem.



Isometric of basic three-room unit.

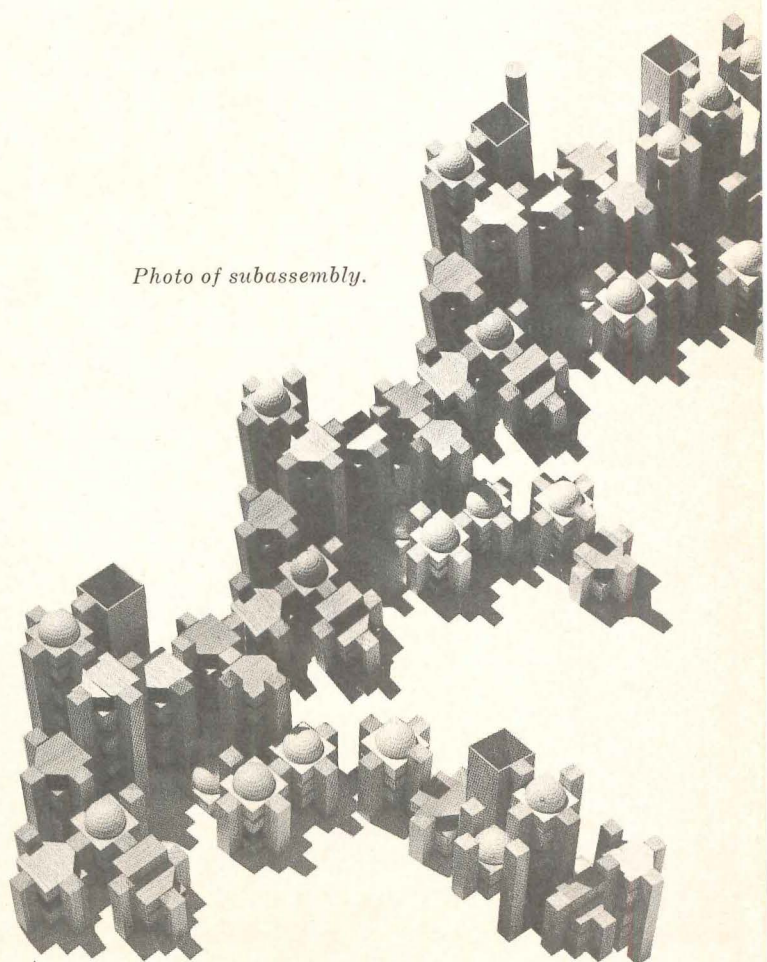


Photo of subassembly.

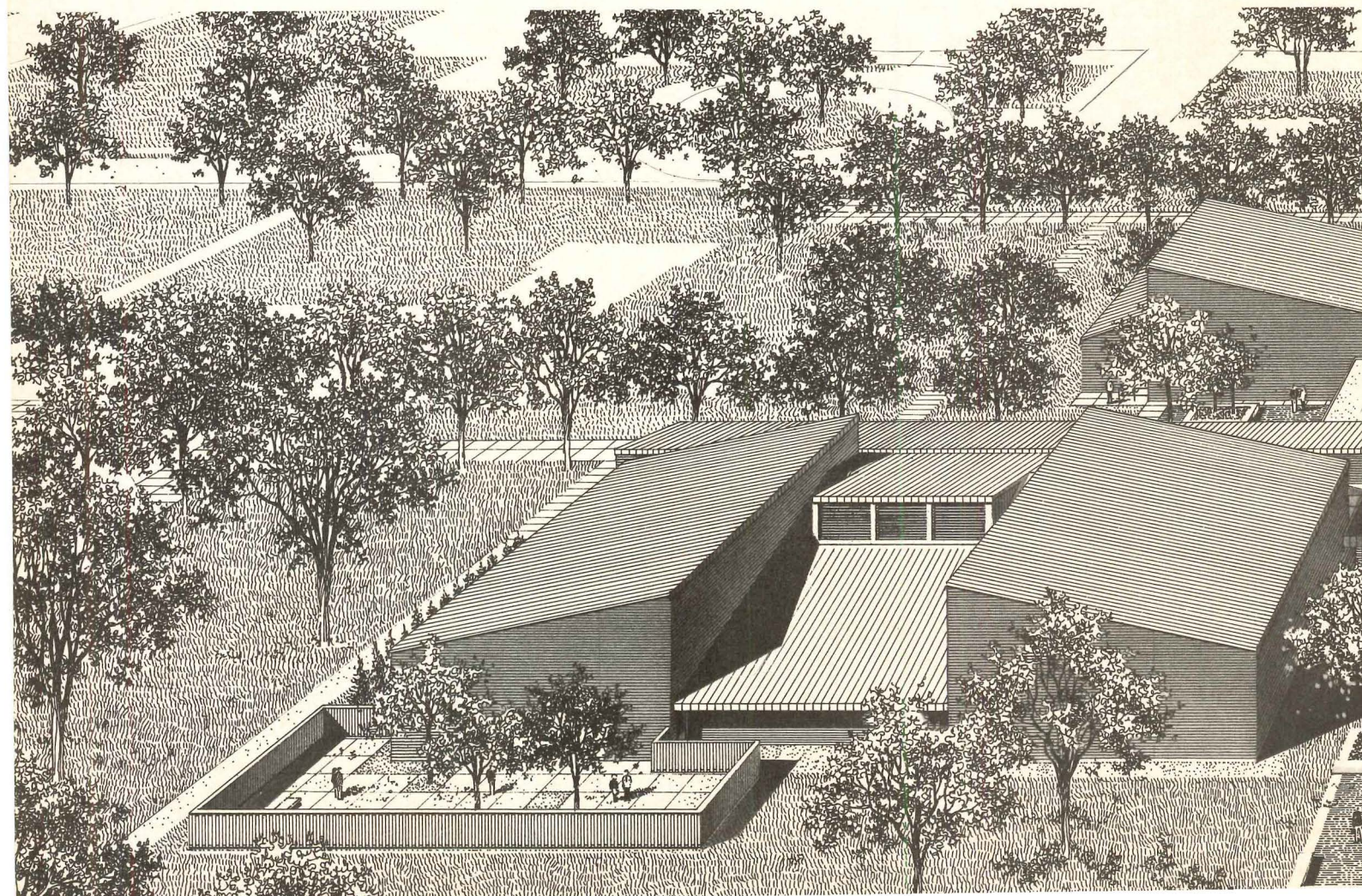
TCS:

Rehabilitation Center
Buffalo State Hospital
Buffalo, New York

Rendering by Brian Burr

Architects: Milstein, Wittek, Davis & Hamilton
Buffalo, New York

A project of the New York State Health and Mental Hygiene
Facilities Improvement Corporation for the New York State
Department of Mental Hygiene



THE LOGIC OF ITS USE.

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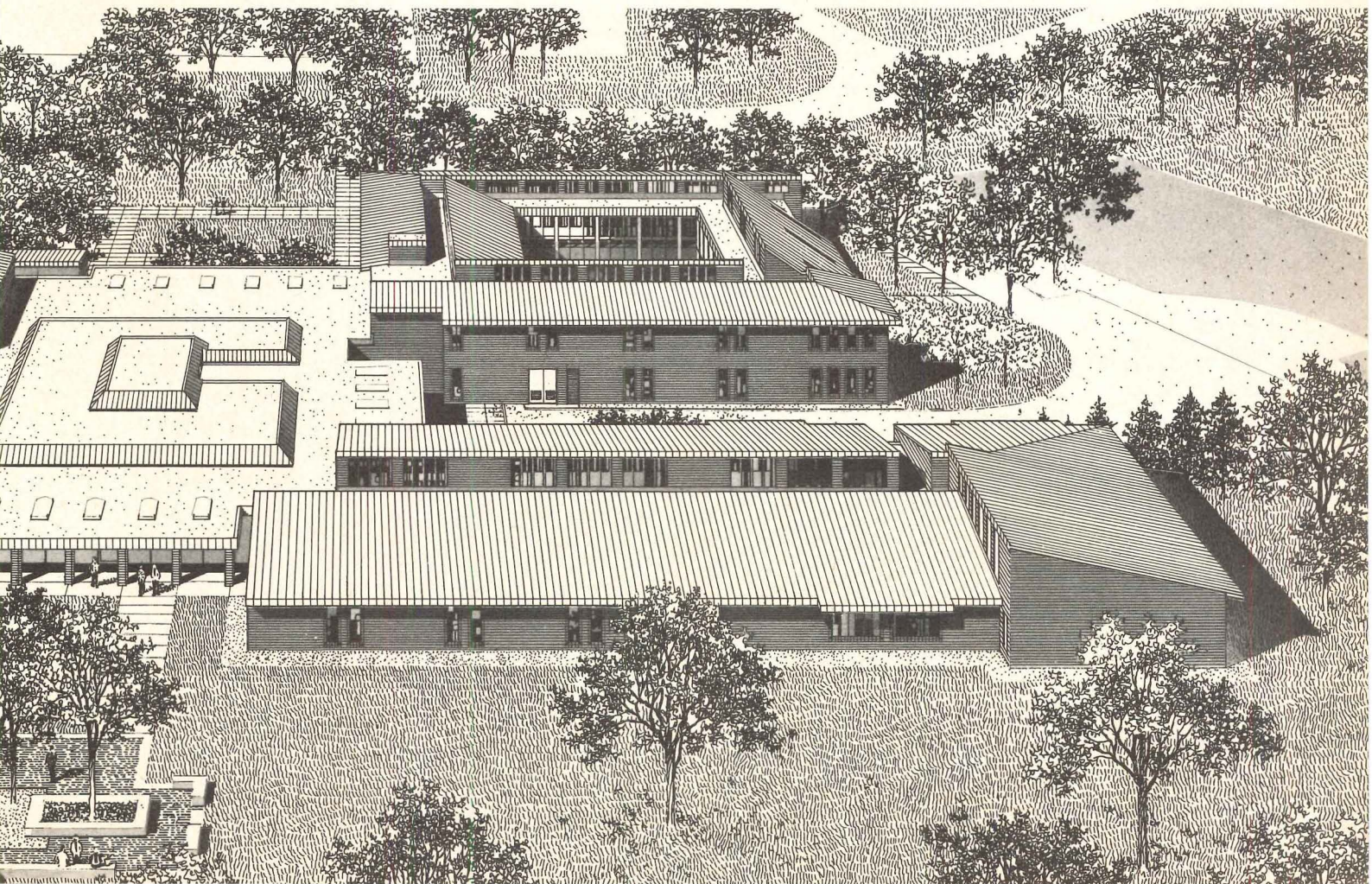
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Architectural Fabergé

The design of New York's Richard Feigen Gallery combines an architect's sense of space with a goldsmith's sense of craft to produce an exquisite ambiance for art.

Duality is the leitmotiv of the new Richard Feigen Gallery, architect Hans Hollein's first New York commission. The Austrian designer, whose success in the very specialized genre of shops and showrooms has won him a series of important awards, has created an exquisitely crafted intricate space of unsurpassed elegance. Hollein is one of the few contemporary architects with the skill, the wit, and the financial backing to recreate the intimate luxury of Versailles' private chambers — those padded cells of silk and *boiseries* where the Ancient Regime passed its last halcyon days.

Hollein's gallery invites comparison with 18th-Century France on several grounds. First, those exquisite little interiors seem, in retrospect, more the work of *ébénistes* and goldsmiths than they do of architects. Second, both are the products of an indulgent aristocracy living dangerously among a restless proletariat.

But Hollein is a great deal more than a master craftsman. The gallery provides a rich spatial experience independent of the beautifully handled materials it incorporates. Moreover, it is not Hollein, as it was not Gabriel, who said, "Let them eat cake" — and the gallery is open to the public. In fact, its second exhibition was a benefit show for the Harlem Preparatory School!

As in Hollein's earlier masterpiece, Vienna's Retti Candleshop, the entrance is given a striking treat-



The First Main Exhibition Space of the Richard Feigen Gallery (27 East 79th Street) is shaped by a double-curved break in the gallery above.



The Intimate Galleries Beyond, to the left of a sinuous steel banister, are carpeted in a rich, burnt-orange pile.

ment that hints at the quality, but not the function, of the interior. A magnificent steel-sheathed double column divides the two-story opening unequally, reflecting and distorting an image of the three townhouses opposite. With this simple device, Hollein introduces intriguing complications and sets the stage for an equally complex experience within. A slight overhang to the left of the columns indicates the entrance to the private apartments (and reflects the existence of two exhibition levels), while the higher and wider opening on the right leads to the

Beneath the Stairs, an oval door conceals a fantastic moonlit bathroom of black porcelain and silver metal.



gallery. It is on this right-hand wall, perpendicular to the façade, that the gallery's name first appears.

The sheltered entrance way is floored in white marble that carefully follows the contours of the double column. This flooring, which continues on into the first main-floor space and up a broad flight of stairs to cover most of the second level, acts as a quietly rich unifying element. Behind the steel column, a glazed bronze grid marks the gallery's entrance. It is the only instance of this metal in the entire space, reportedly forced on the architect by an uncooperative contractor, and it strikes the one discordant note.

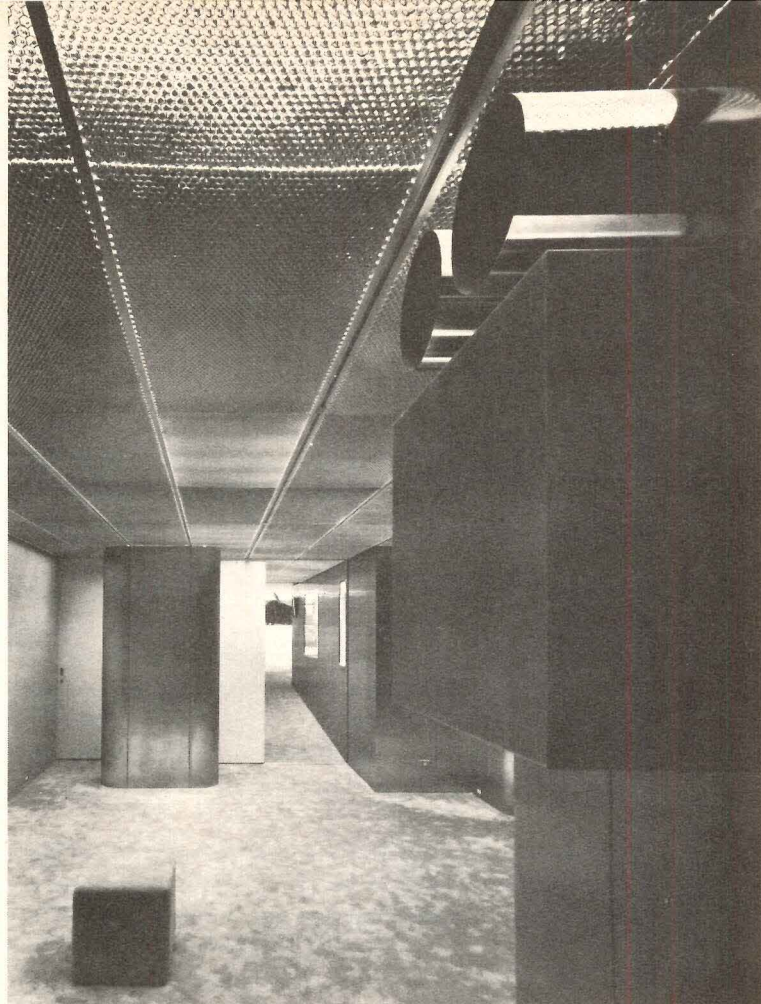
Once inside, duality is reasserted in a double-curved break in the gallery above that overhangs and intrudes into the first, two-story-high exhibition space. The lower surfaces of these curves, which dip in sharply to the left above a small reception alcove, are punctuated by conventional fluorescent rings that look remarkably elegant in this precision-tooled context.

Directly ahead, the sinuous curve of a stainless steel banister relieves the hard edge of the stair. The sudden shift of a plane from straight to curved, with a concomitant shift in direction, is a favorite device of the architect. It lends the gallery a distantly *Arte Moderne* quality reminiscent of ocean liners in the 1930's — but the reference is subtle and quite lacking in camp.

A descent of two steps next to the marble staircase leads to the more intimate spaces of the remaining main-floor galleries — all carpeted in a rich burnt-orange pile. The north wall of the first rectangular room is broken by a very narrow, very red, and very mysterious recessed door. Then the wall plane breaks again into the narrow convex curve of an air-conditioning unit that carries the eye to an inclined gangway leading to the rooms beyond. The luminous ceiling of the gangway and of the gallery to which it leads, consists of a metallic plastic grid whose hexagonal parabolic cells appear pleasantly dark when viewed obliquely.

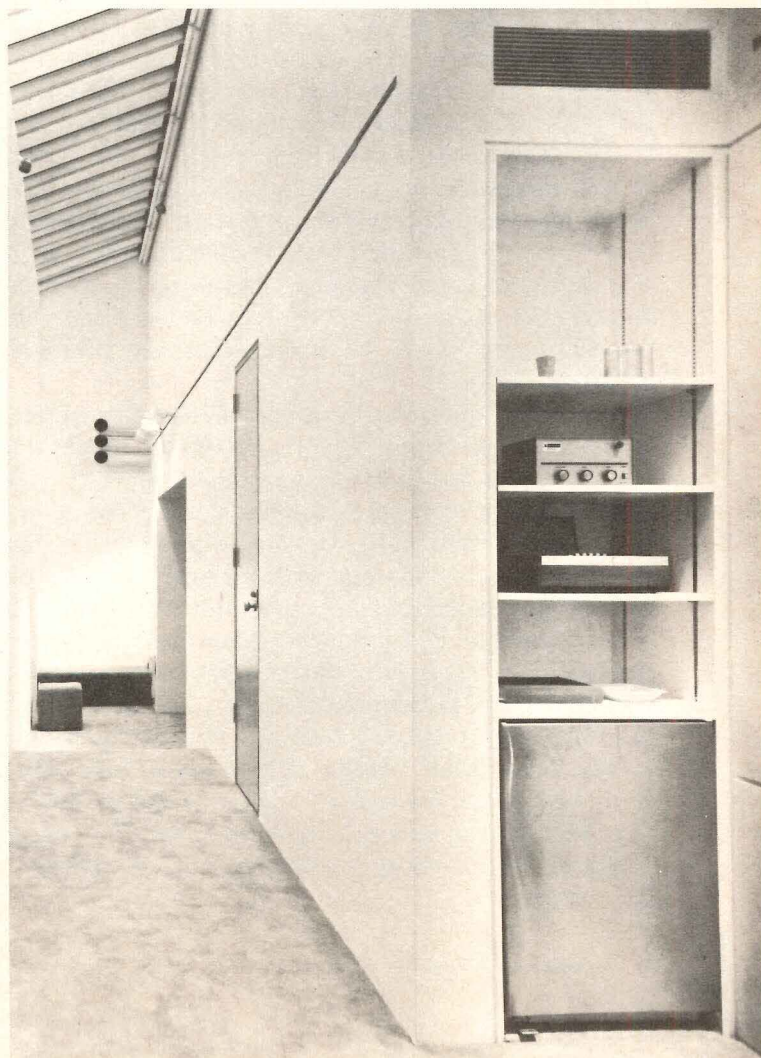
An oval door cut into the right-hand wall preceding the narrow corridor leads to a fantastic moonlit bathroom of black porcelain and silver metal. Further down on the left wall, two showcases are recessed for small and precious objects.

Burnished metal surfaces and yellow silk paneling make the back gallery the most luxurious of all.



The Back Gallery's burnished steel surfaces and yellow silk paneling make it the most luxurious of all.

The Narrow, Alcoved Office, containing beautifully crafted shelves and cabinets, is partially covered by a glazed roof.



From the North, the bronze grid of the entrance is visible, the only use of this material in the gallery (right). From the South, the upper level's principal feature is a hand-forged stainless steel railing that provides a striking linear accent (right).

As in many of the exhibition rooms, air-conditioning units and columns are used, as in the entrance, with a strikingly plastic effect to divide and complicate the space. Here there are two such shapes — one, a free-standing oval, placed close to the wall, leaving a passage so narrow that a small and intricate Tanguy must be viewed, as indeed it should be, from a few inches away. The other, an air-conditioning unit, is set in a wide, convex metal curve, itself a handsome minimal sculpture, surmounted by tubular steel vents whose biased openings reveal bright red interiors.

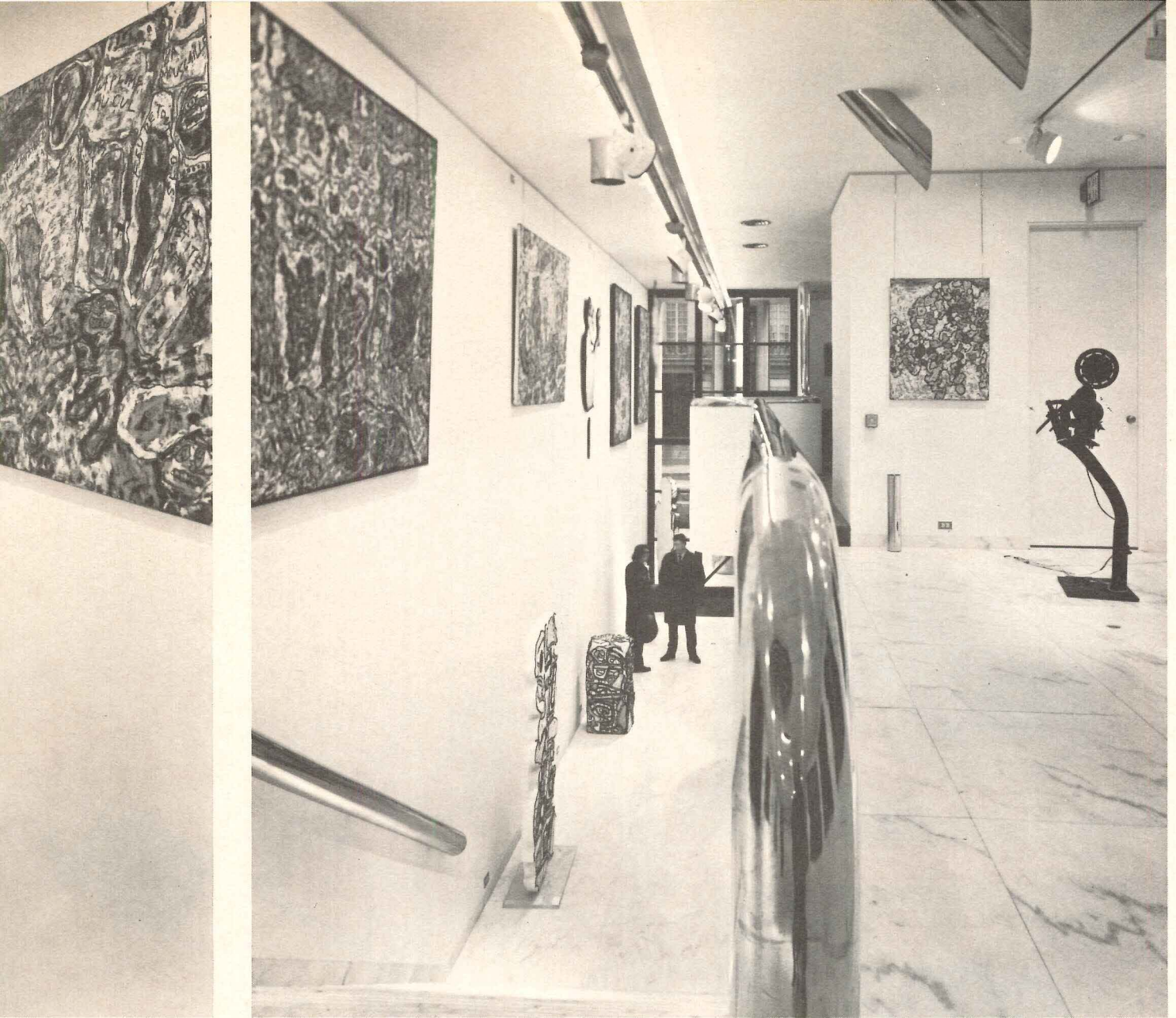
A thin yellow door in this gallery's west wall leads, it turns out, to the same very high, very narrow, glass-roofed chamber as did the mysterious red door in the first small room. This private office contains the most luxurious and intimate space of all. From the concave negative side of the air-conditioning housing mentioned earlier, a delicious velvet alcove has been made. The care lavished on this tiny space is typical of Hollein's extraordinary attention to detail. Although its lush, tufted upholstery would not be out of place in a Victorian parlor car, it is accompanied by a tiny, gemlike plastic table, lit by a splendid metal fixture, and, again, air-conditioned by a handsome semicircular vent (similar to that used in Hollein's *Christa Metek Boutique*; (p. 123, Dec. 1967 P/A) to compose a strikingly modern and sophisticated space. Above the alcove, three curved, pipe-like vents, painted a bright yellow, add another ship-board reminiscence and help informalize the space. The architect's supreme craftsmanship is again evident in the woodwork of shelves and cabinets that line the walls of the southern, relatively functional end of the room.

The upper galleries have the colder, more formal look of a public salon. Floor and ceiling heights are again varied to individuate subspaces, but steel, marble, white walls and aqua carpeting combine to bring the temperature considerably down. A free-standing air-conditioning unit is again used sculpturally and architecturally to divide the two northernmost spaces, distinguished otherwise largely by a change in ceiling height. But the principal feature of the upper level is the hand-forged polished steel railing that spirals upward from the stair, runs parallel to the floor, then breaks dramatically left into a double curve before making a final ascent to the ceiling. This linear accent, marking a parallel planar evolution, is the most striking use of this device in the gallery.



Along the high ceiling of the entrance space, and running parallel to this railing, a media spine has been hung to which lights, detection devices, and slide projectors can be attached. Although slightly heavy for this restricted space, it emphasizes the direction of the room and provides an interesting contradiction to the curve of the railing. The upper part of the long (eastern) wall opposite is ideal for the display of large-scale horizontal paintings and was used during the opening exhibition for one of Monet's environmental *Waterlilies* panels. Two aquacarpeted offices are also provided on the upper level, including one more public alcove (for a secretary) with an intriguing champfered corner, and another more private one on the southern wall for the gallery's director. The lighting fixtures for the space preceding the offices repeat the dual column motif of the entrance — visible from this level, where its duality is emphasized by a Flavin-like fluorescent strip running from top to bottom.

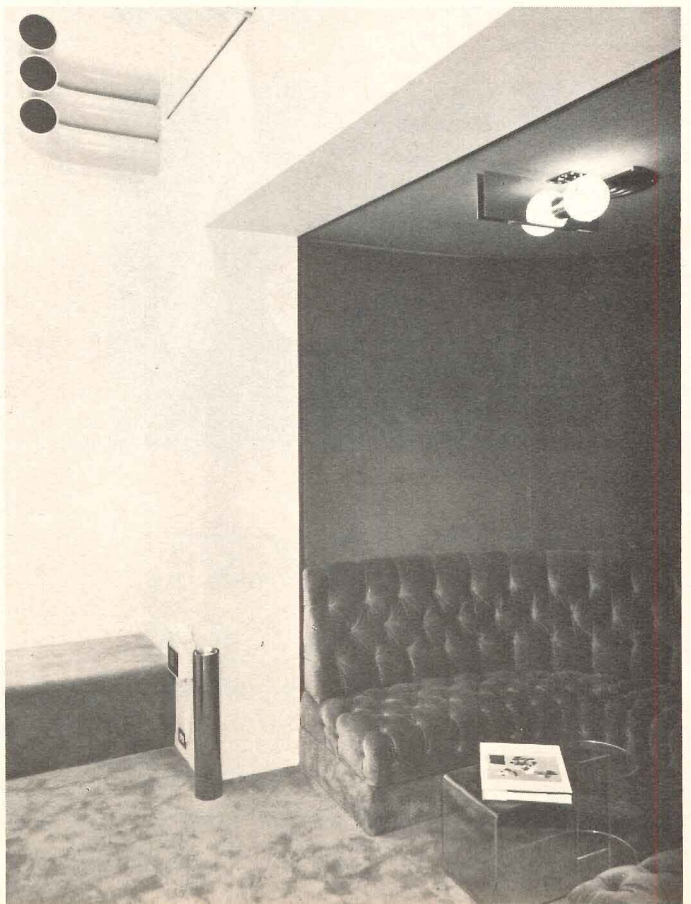
Hollein's brilliant and very personal style depends, in part, on an exhaustive attention to detail in the design and placement of such conventional elements

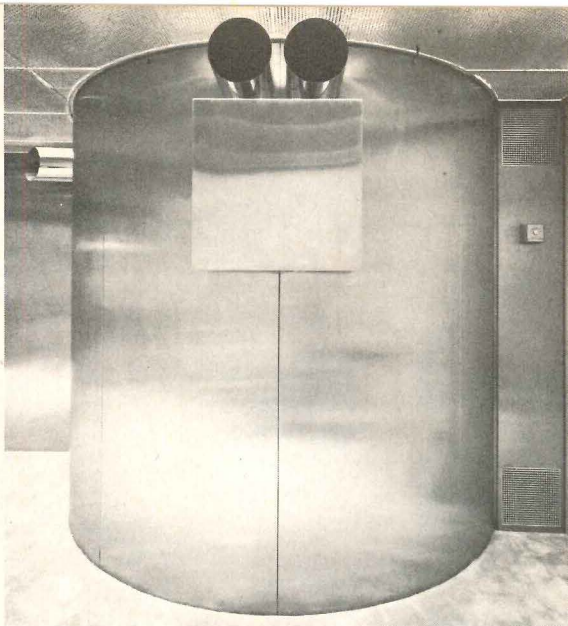


A Luxuriously Appointed Alcove at the office's north end is formed from the negative side of the air-conditioning housing in the preceding gallery (right).

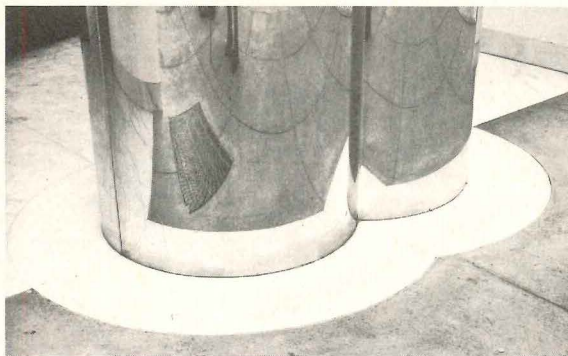
as air-conditioning units, electric outlets, and lighting fixtures. When combined with a unique ability to carve complex and subtly interrelated spaces out of relatively small sites (understood best in section), the result is an architecture of great sophistication.

The Feigen Gallery is a unique spatial experience. Whether it will be an equally satisfying viewing space will depend largely on the quality and quantity of work the gallery chooses to exhibit. The Monet collection with which it opened, for example, appeared unfortunately crowded. So large a grouping of pictures does a disservice both to the works themselves and to the space that contains them. The intimacy of its rooms does suggest that the gallery is best suited to small and rather exquisite works since there are few spaces sufficiently large and neutral to take *anything*. This becomes a criticism only if the gallery's interests should span highly diverse styles. The large scale, dense surfaces, and soft edges of

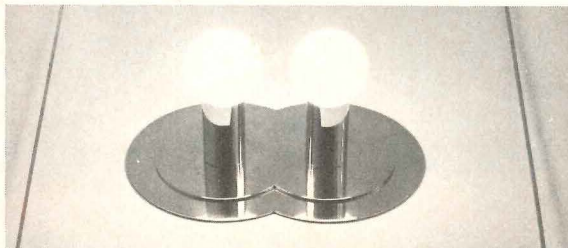




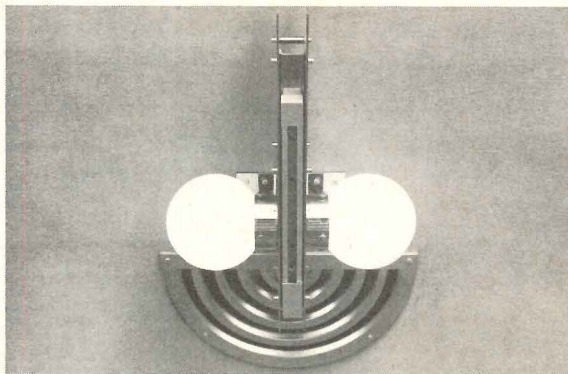
Duality is expressed through exquisite craftsmanship in air-conditioning units...



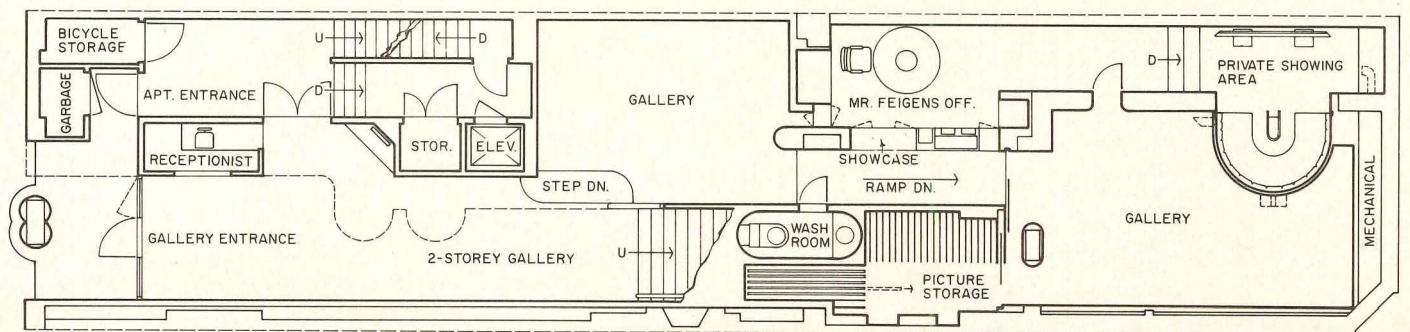
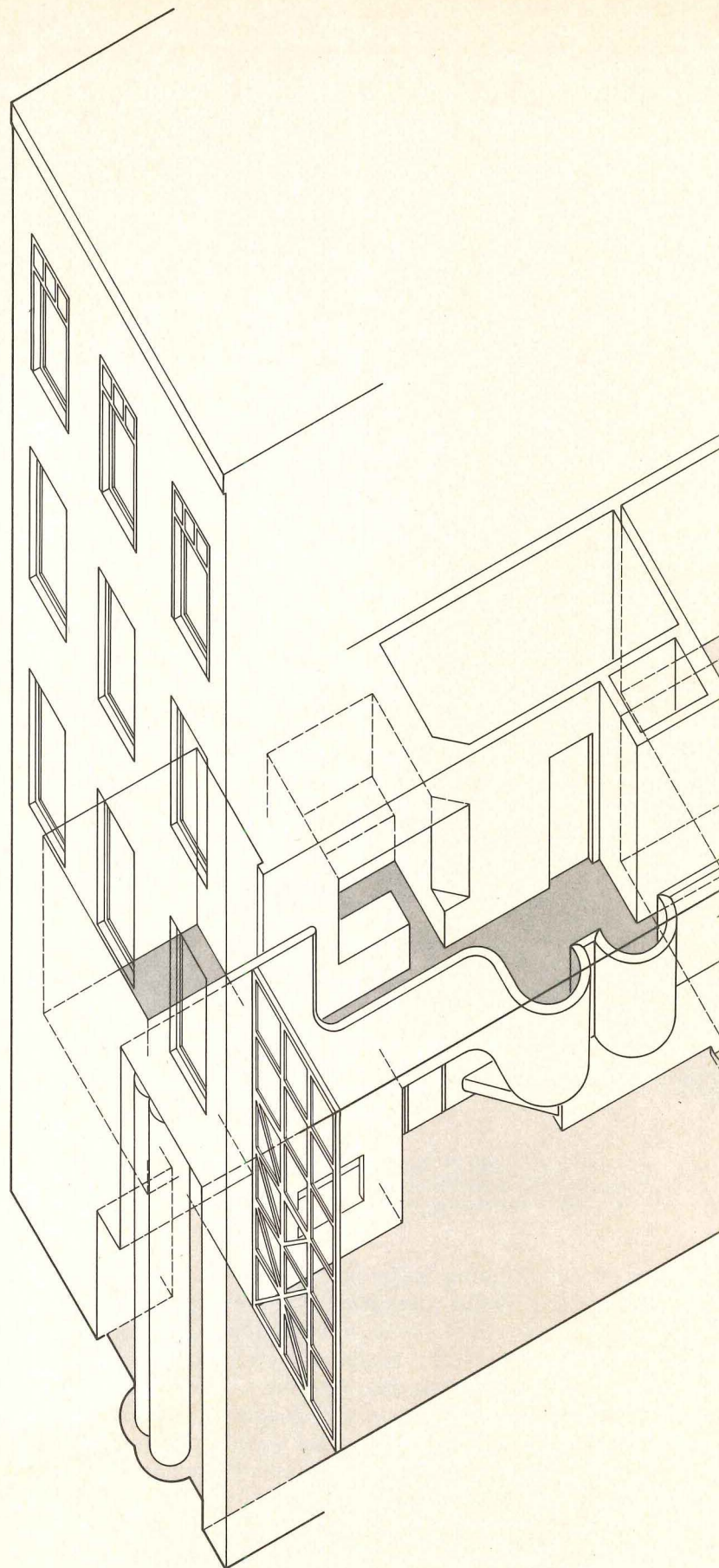
...columns

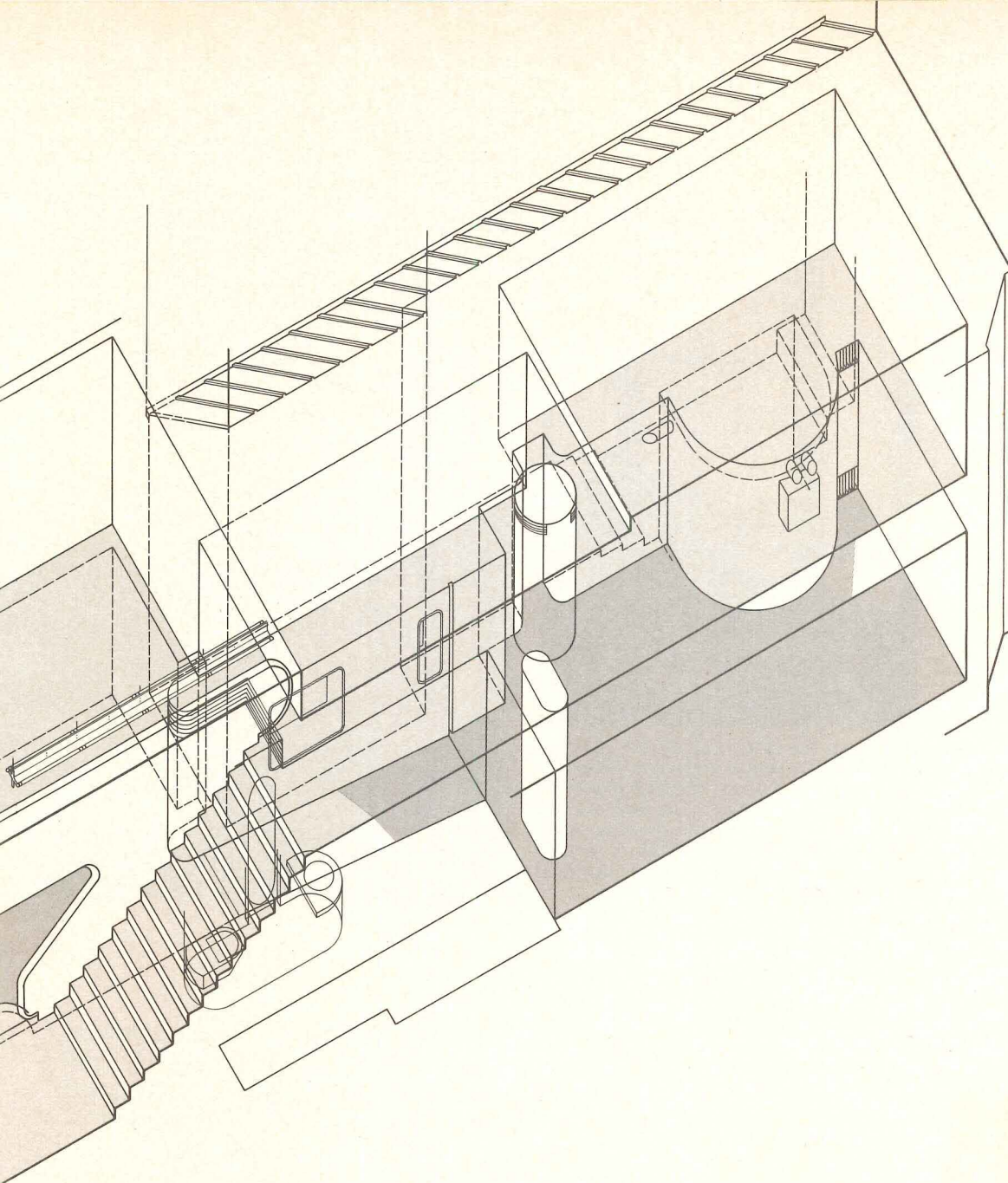


...wall fixtures



...and ceiling fixtures

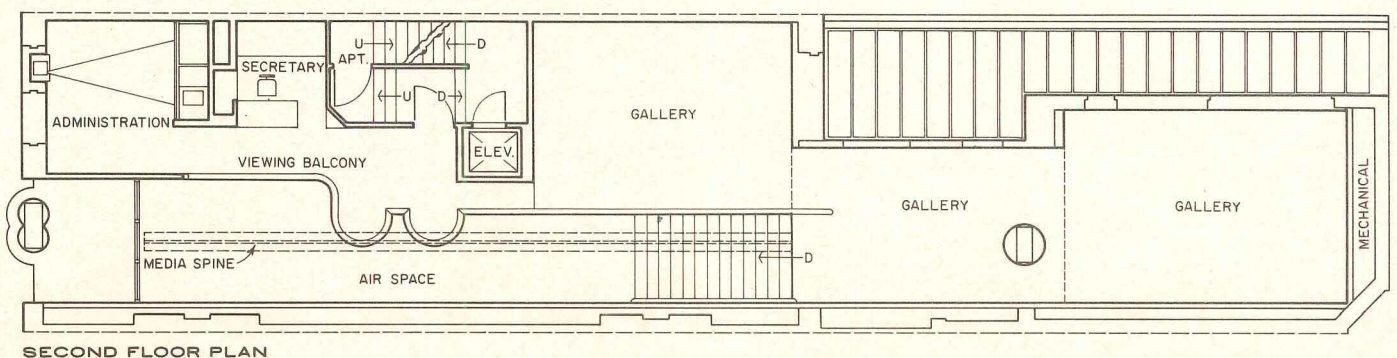


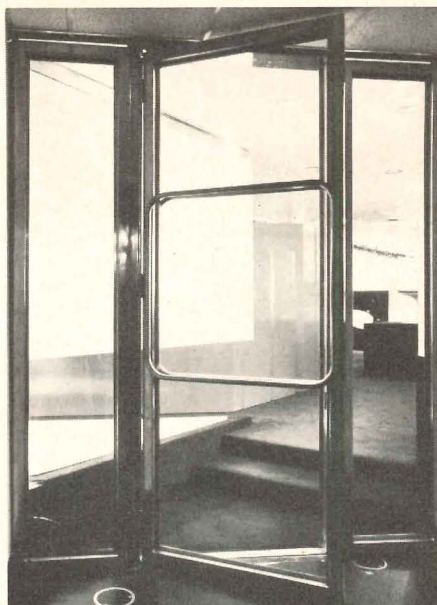


most Abstract Expressionist paintings, for example, would present overwhelming and visually disturbing contrasts in these hard-edged, complex, and assertively three-dimensional little rooms. Small scale, then, is a primary requirement, which omits much of contemporary American painting. Also, one feels that hard-edged, complex, and precise styles, from the Northern Renaissance through many Surrealist, Cubist, and de Stijl studies, are particularly suited to these spaces. It is to be hoped that the gallery can afford to assert this degree of selectivity.

Hollein is in the tradition of the golden age of modern architecture, when the perfect machine, achievable only through great craftsmanship, became the builder's paradigm. For most large scale construction this image may no longer be viable. But Hollein's Feigen Gallery demonstrates that it is still capable of yielding small spaces of great elegance.

RICHARD FEIGEN GALLERY, New York, N. Y. Architect: Hans Hollein, Vienna. Consulting Architects: Baker & Blake, New York, Dorothy Alexander. Consulting Engineers: Slack & Kurtz. Structural Engineer: Robert Sillman. General Contractor: Dunhill Construction. Photography: p. 88, p. 93 (bottom right) Stan Ries. All other photographs, Louis Reens.



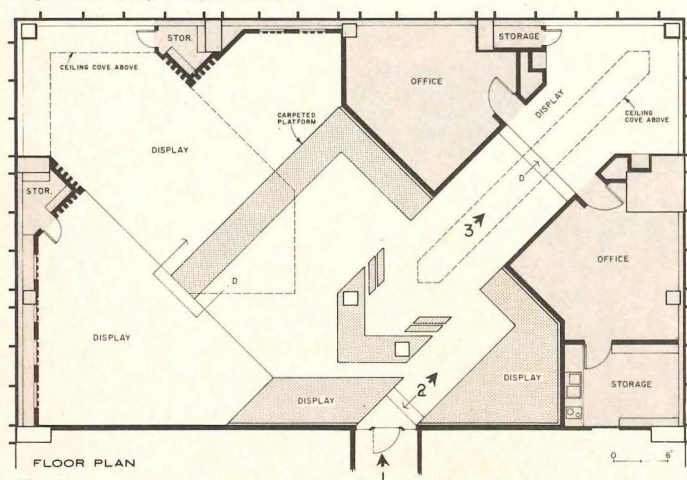


1. Down the off-white, narrow building corridor, the visitor proceeds toward a chrome-framed glass door with a tubular push-pull bar (above). It announces the beginning of something different and special. Chunks and slashes of glossy red, matte white, and woolly chocolate brown show beyond.



Alienation Reveals the Familiar

Map numbers refer to photographs



Knoll International — font of Bauhaus furniture in America, sire of the most exquisitely orderly interiors of the past quarter century — has espoused this decade's diagonal disorder. Order moves on to new orders. All-at-once-ness produces a new clarity.

The occasion of the firm's new image is its recently opened showroom in Boston. There, not far from Government Center — with the "Action Architecture" of its City Hall and the soft-focus monumental cubism of its Health Center — the showroom hides in an ordinary, rigid office block, tucked away like a web of tangled arrows on one end of the fifth floor.

Although bright and crisp, the tangle is immediately disorienting. There is a method in its perverse obfuscation.

Italian architect Gae Aulenti, who designed the space, has delighted her clients with this new-image showroom and with the reactions of visitors and customers. They should be delighted — not only because of the manipulation of masses and forms but also because the showroom provides the furniture displayed with a setting that, mystifyingly, forces one to see the long-familiar classics with the fresh eye of rediscovery. It is as though one were viewing the old favorites with the naked excitement that they created for many of us in the early 50's. The effect is a slow-burn startle.

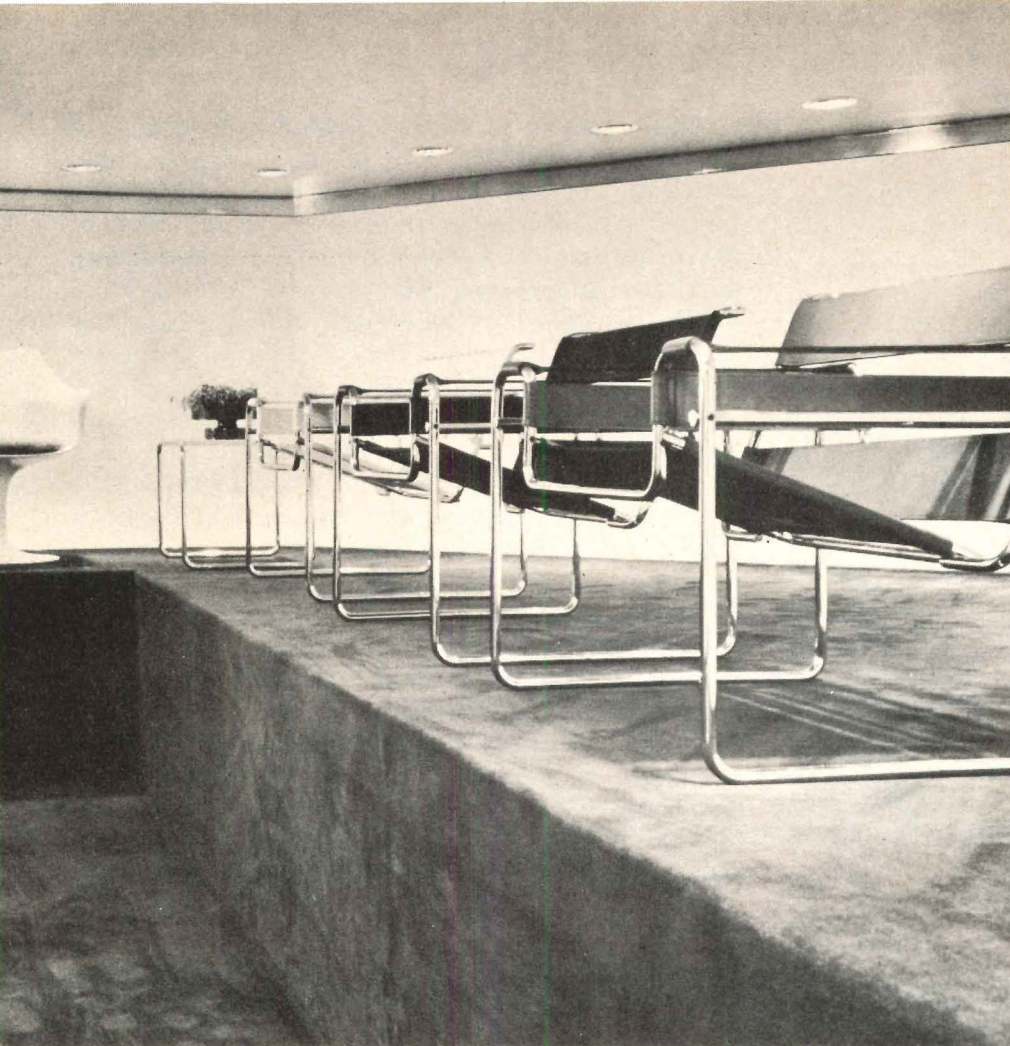


Photo: Idaka

2. Inside, hung from the ceiling and slashed below by a lighted horizontal void, a massive form of white immediately blocks the entry. As a circulation indicator, it forces one to turn sharp right, forces the visitor to mount several brown-carpeted steps, to proceed further into a corner that is barricaded by a waist-high platform used for chair display (left).

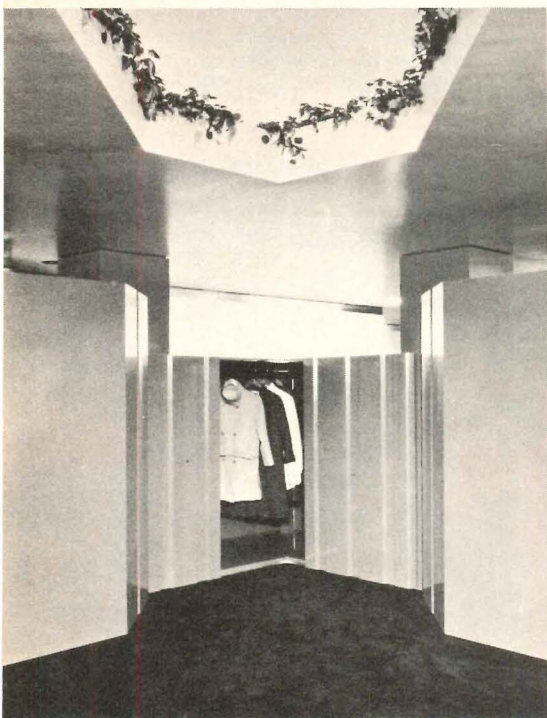
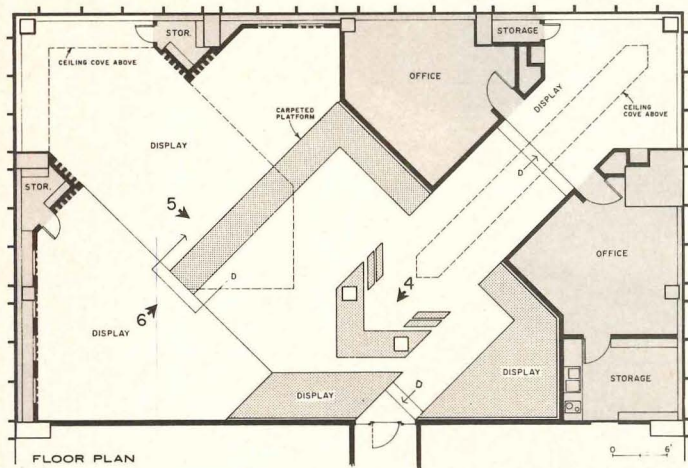
3. At this corner, the circulation pattern takes a 90° turn to the left—and the space explodes: To the right, a wide gallery shoots over a reception desk and down a few steps, arrow-like into a windowed corner display area (below).



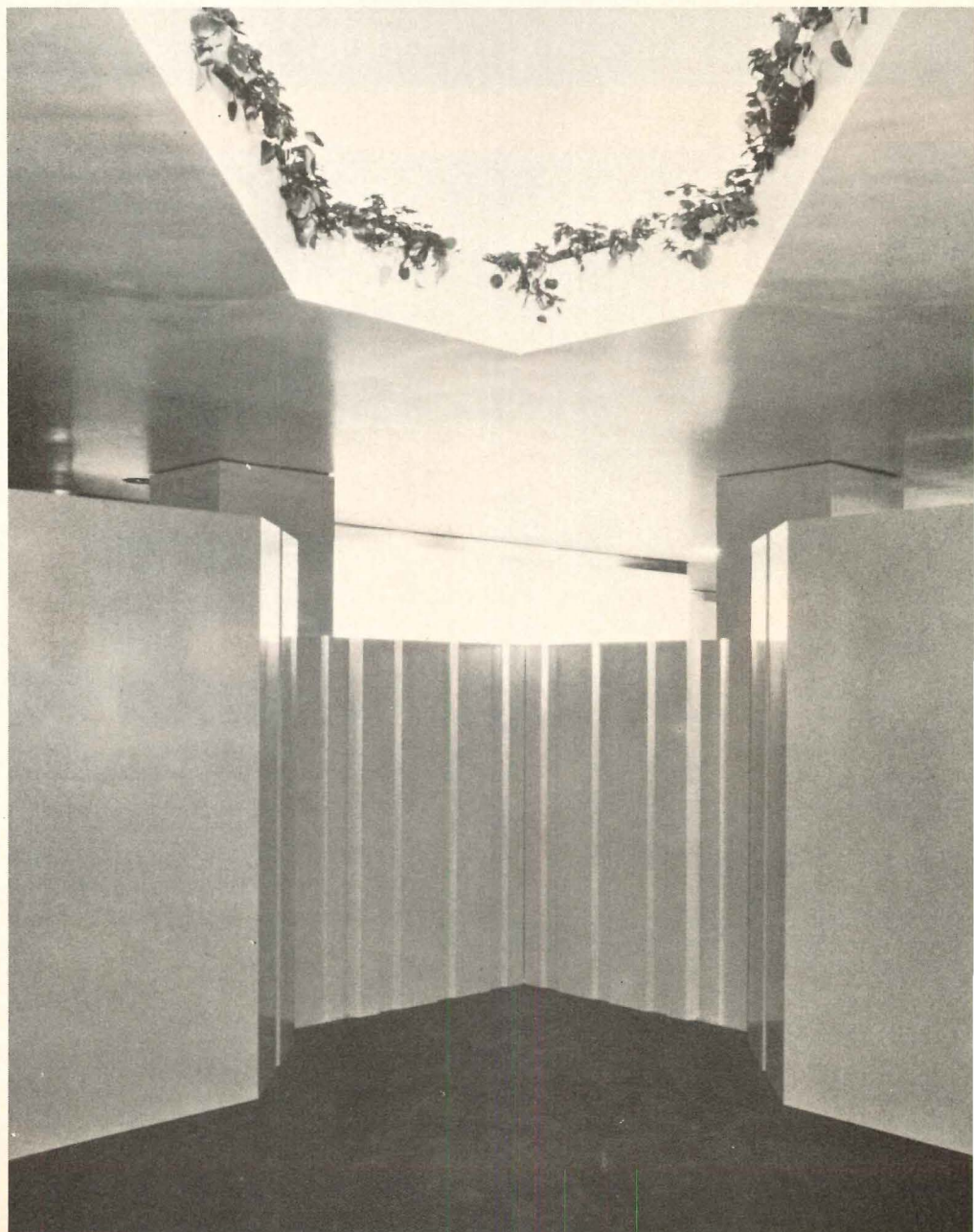
What operates in the new design is the effect of alienation created by juxtaposing a literally diametrically opposed style and approach as the setting for the old and familiar. It is the same technique of alienation that we have seen used by other Italian architects in art museums — such as Carlo Scarpa's and Franco Albini's steel I-beams and wood scaffolds as the mounts and easels for Renaissance paintings. In their work, the steel I-beams associate the viewer so inseparably with today that the paintings read more strongly as artifacts also existing today and independent of their Renaissance associations. The confusing contradiction forces a new and fresh vision. And that is the goal of art.

Surely no other showroom in several years has so effectively yet subtly forced the visitor to see its displayed items as clearly and objectively. In terms of the art of architecture then, the design fulfills its applied program perfectly.

As pure sculpture, the design is less startling than one might have hoped — it might be more strongly diagonal, more confusingly ambiguous, less open after the closeness of the maze-like entry, and less obviously indebted to Frank Lloyd Wright in its vine-



4. To the left, this central point leads into another arrow-shape, which is formed by a head-high, free-standing, glossy red closet unit (closed at right; open above).



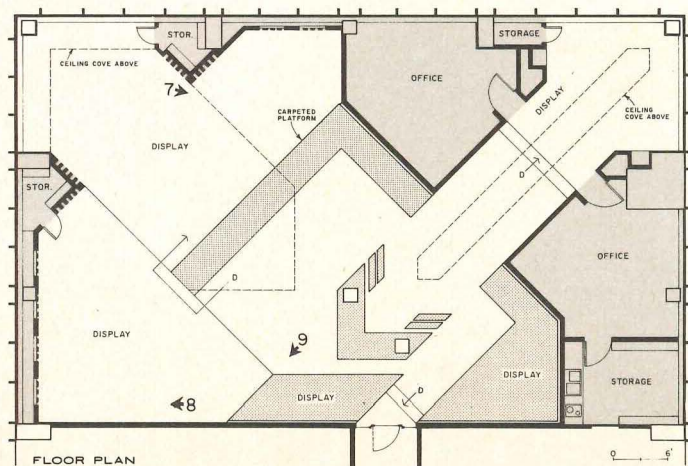


5,6. Straight ahead of this point, the space explodes to the large main display area — across the continuing waist-high display platform, down several steps into a number of seemingly inexplicable corners, and up into a lighted ceiling cove trailing with vine leaves that crisscrosses the circulation pattern. "Am I lost?" asked the new mailman as he got to this central point. "What kind of office is this?"





7. A striped wall motif permits certain areas to accommodate the hanging of fabric swatches in recesses lined with peg-board and hooks.



dripped light coves. Yet had it been stronger as pure sculpture, it could not have fulfilled its applied purpose so successfully. As an importation to this country of the Italian technique of alienation, it provides a beneficial first-hand lesson for our display techniques and for our philosophy of display.

KNOLL INTERNATIONAL SHOWROOM, Boston, Mass. Designer: Gae Aulenti (Milan, Italy). Project Architect: Richard Owen Abbott. General Contractor: Ideal Const. Co. Inc. Interior Designer: Knoll Planning Unit. Area: 3300 sq ft. Photography (except as noted): Jon Naar, courtesy Knoll International.

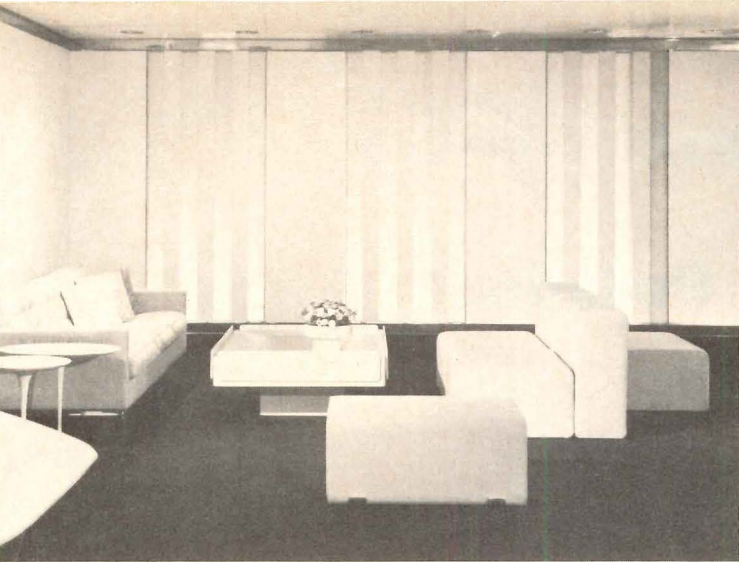
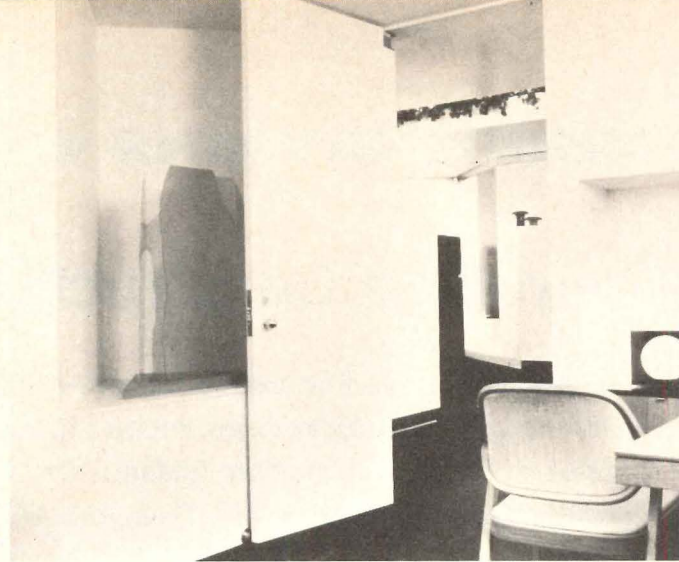
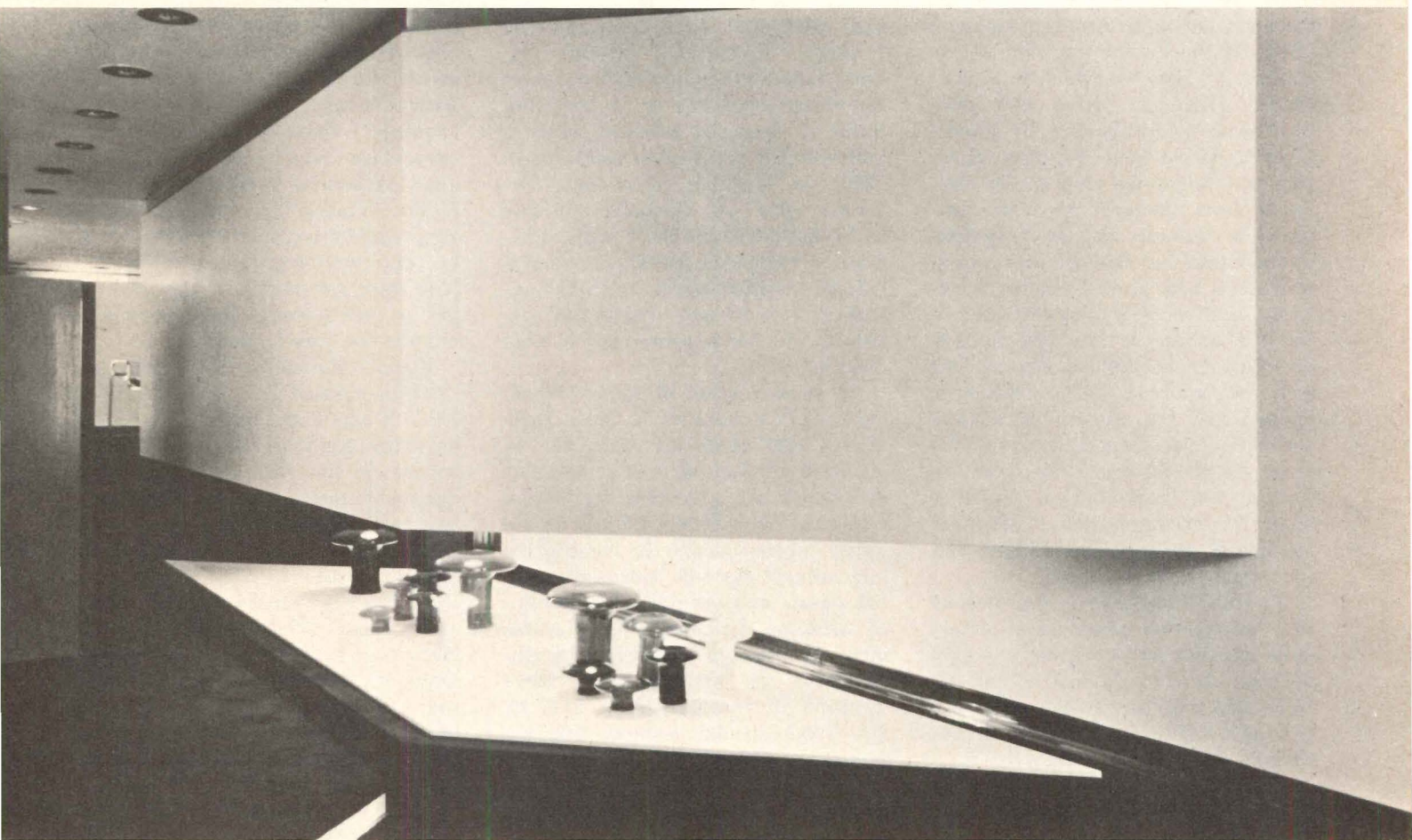


Photo: Scott Hyde

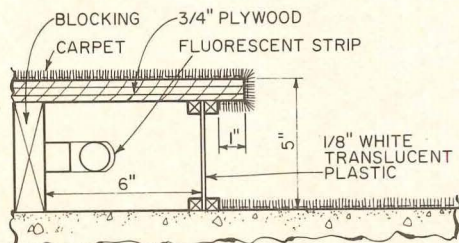
8. Other areas of striped wall are window coverings composed of alternate panels of white-painted plywood and nylon mesh — the mesh used in the manufacturer's outdoor furniture.



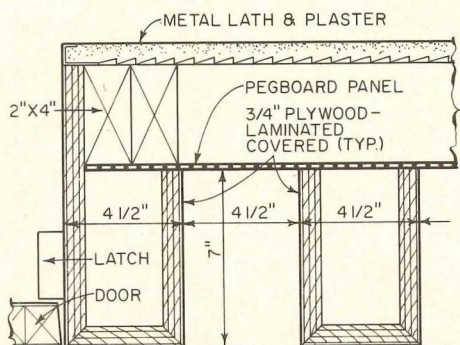
The built-out shapes that form extra corners in the space serve both as storage areas for fabric samples and supplies as well as forming interesting display nooks in some of the offices.



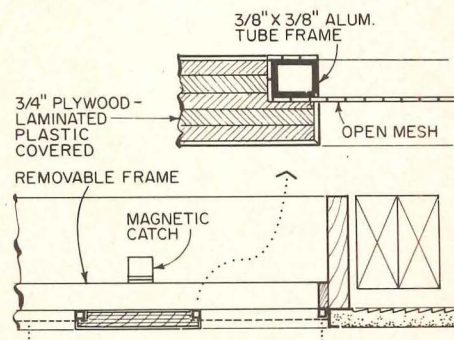
9. The massive parallelogram chunk of ceiling-hung white that blocks the entry is a lighted overhang of a low display area.



STEP DETAIL



PLAN SECTION : DETAIL AT FABRIC SAMPLE WALL



PLAN SECTION : DETAIL AT MESH PANEL WALL

Controlling Construction Pollution

This column concludes that due to its contribution to air pollution, asbestos-sprayed insulation must be eliminated in future construction. Rosen is Chief Specifications Writer of Skidmore, Owings & Merrill, New York.

The hazards of air and water pollution are slowly being recognized as more statistical information on their effect on the human environment is coming to the attention of a concerned citizenry. Since the publication of *Silent Spring*, by Rachel Carson, people have begun to question the dangerous side effects that result from chemical pesticides, automobile fumes, and raw sewage dumped into our streams and rivers. Industrial and human wastes, carelessly or innocently disposed of into the atmosphere or into rivers, have an effect on nature's biological balance that governs the production of oxygen and the growth of marine and animal life. In addition, as architects, we should decry the despoilation of our environment resulting from the accumulation of physical mounds of garbage, junked cars, and industrial waste products.

We should also take a closer look at our construction practices to determine whether we are a party to this pollution as a by-product of our designs, and whether we can reduce or eliminate some of our own contributions to this problem area.

Certainly in demolition of existing structures in urban centers, we should restrict the amount of dust that develops. In some European cities, barriers consisting of plastic envelopes are utilized around demolition sites to confine the dust resulting from these operations. Perhaps our Building Departments and our Air Pollution Control Departments should institute stricter controls over such procedures.

A more striking example of how architects can reduce pollution that actually contributes to fatalities is in the selection of certain sprayed-on fire proofing and insulating products.

In 1900, a London physician, in performing an autopsy upon the

body of an asbestos-textile worker found asbestos particles in the lungs and attributed this death to the worker's occupation. Several isolated instances occurred subsequently where an examination of the lung tissue of deceased asbestos workers indicated the presence of asbestos. In 1924 an English physician, Dr. Cooke, after an extensive autopsy and subsequent search of medical literature, concluded that the death of a patient resulted solely from the inhalation of asbestos fibers and assigned the name asbestosis to this disease.

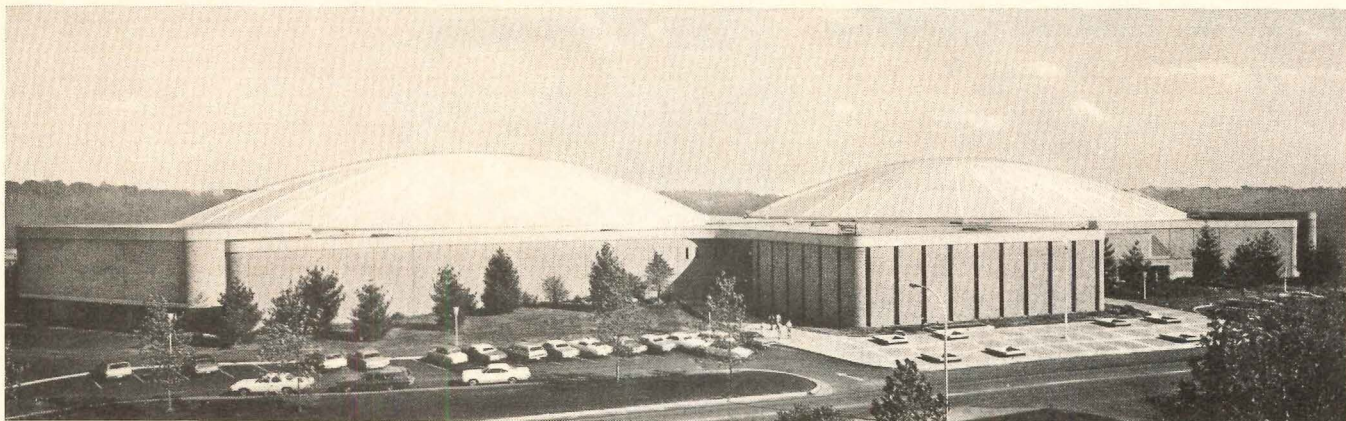
An investigation of some 363 asbestos-textile workers in Great Britain in 1928 disclosed that 95, or about 25 per cent, showed evidence of asbestosis. As a result, legislation was enacted in Great Britain to require improvements in ventilation and exhaust systems in asbestos-textile plants and periodic examination of workers. Although this improvement in working conditions lengthened the life expectancy of these workers, it was learned in 1935 by Dr. Lynch in this country that asbestos workers were dying of cancer as a result of their association with asbestos. Independent investigators in many parts of the world were likewise coming to the same conclusion based on their studies of the association of workers with asbestos.

Dr. Selikoff, of New York's Mount Sinai Hospital, had an opportunity to examine the records of members of the Asbestos Workers Union. The study covered a total of 1522 insulation workers between 1942 and 1962. It was found that the death rate from cancer among these asbestos workers was about seven times greater than that of the general white male U. S. population. These observations are staggering. In addition, one must conclude that

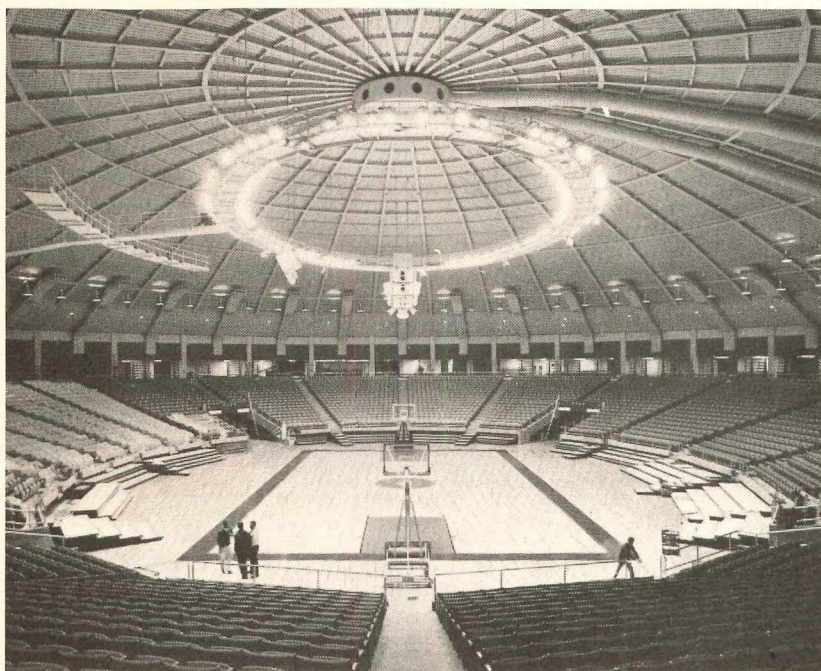
not only are people who actually work with asbestos exposing themselves to asbestosis and cancer, but also that allied tradesmen in the building construction industry, closely associated with this work, are subjected to this exposure. Steam fitters, electricians, carpenters, acoustical workers, masons, structural steel erectors, and others employed on projects using spray-asbestos insulation in the area of this contamination, and who inhale these asbestos particles, are exposing themselves and are likely candidates for this disease.

Equally disturbing is the fact that asbestos is practically indestructible; while it may disintegrate, it is an everlasting contaminant in the atmosphere. It has been estimated that during its application as fireproofing to structural steel members and metal decks, about 10 per cent overshoots and is projected into the atmosphere. On high-rise structures in urban areas, spray-asbestos fireproofing has been found three and four blocks from the construction site, so that the unsuspecting general public is likewise subjected to this hazard as well as the tradesman directly involved in its application. While this relationship between a casual encounter with asbestos and possible development of disease in the public has not been established, it behooves the architectural profession to consider other materials to perform the work of sprayed-on fireproofing and insulation.

Not only is there a clear and present danger in the initial application of asbestos on the health of the installers, but 30 or 40 years hence, when these buildings are torn down, the demolition operations, if not properly controlled, will add more asbestos fibers to the atmosphere. The time to use substitutes for asbestos-sprayed insulation is now.



ELLERBE ARCHITECTS, *architect* • SLUTSKY PLUMBING & HEATING CO., *plumbing contractor* • NATIONAL MILL SUPPLY, INC., *plumbing wholesaler*
AMERICAN STANDARD, *fixture manufacturer*



Notre Dame's Athletic and Convocation Center

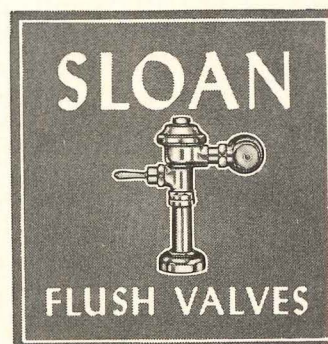
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houses sports, trade shows,
conventions,
simultaneously,
—rain or shine*

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The Cornell Campus

By Kermit Carlyle Parsons

Cornell University Press, Ithica, New York. 1968. \$15.00.

Reviewed by Richard P. Dober, AIP. *The reviewer is a partner in the firm Dober, Paddock, Upton and Associates, Inc., Planning Consultants, Cambridge, Mass.*

Architecture is recognizable when a building or set of buildings can be fixed in time and space as a technical feat, symbolic act, or an aesthetic aberration that overthrew earlier ideas of scale, massing, and articulated parts. But there are other forms of architecture that are not so static, and that possess intrinsic characteristics of continuity and change. They particularly manifest themselves as an art in which many designers contribute to the form over an extended period of time. At the microscale, the campus is a rich example of this special expression. As the practice of architecture shifts from the province of a master designer to group practice, a historic appreciation of campus design can be quite instructive—particularly if the general environment is to be improved, and if the traditional design professions are to participate. It may offer clues as to how future-oriented complex designs, with multiple points of intervention, have been achieved in the past and how that process can be improved. To the small body of extant literature on this important subject, we can now add a large book: Kermit Carlyle Parsons' *The Cornell Campus*.

Parsons, in an easy narrative style, has economically documented the historical development of a memorable physical place. He covers a hundred years of construction, not all of it advantageous to the eventual design on the Cornell Campus. In the beginning, three diverse personalities focused their ideas on a singular site.

They included Ezra Cornell, millionaire industrialist and founder of the college, who persevered in his dream of placing the college on top of the hill; of equal consequence, Andrew D. White, Cornell's first president and a professional art historian, pushing for a tasteful solution in

building design; and Frederick Law Olmsted, whose original advice was rejected but who still found a way to influence the campus plan well into the 20th Century. The architects were there from the beginning, at least four giving contradictory suggestions and not one of them understanding "that a competition had been conducted." The most successful one, Russell Sturgis, later helped to found the American Institute of Architects, "standardizing the forms of agreement for services and payments between architects and their clients"—an outgrowth of his Cornell experience, Parsons hints.

For all their effort, the Cornell campus remained for many years a raw and dreary place with large and imposing buildings in an unenjoyable context, deplorable roads and walks, little landscape, and a raw winter climate that mocked an earlier observer's comments that the setting was the most "beautiful site west of Naples." By the end of the third decade, however, Cornell's and White's optimistic goals had been realized, Olmsted's intuitions had flowered, and subsequent building successfully accommodated within a striking and distinctive campus design. How this all came about between groundbreaking in June 1866 and 1925, when the University Plan Commission published their General Plan, is a story Parsons tells thoroughly and well.

Building at Cornell from the inauguration of Edmund Ezra Day in 1937 through 1968 is politely summarized in less than thirty pages, and so the cause of the gradual decline (in my view) of the quality of campus design at Cornell is left to the next generation to locate and understand.

With an account that substantially ends thirty years ago, why is Parsons' work germane to contemporary problems? First, I believe no other form of group art so well mirrors the mood, temper, and vicissitudes of institutional action as does campus design. Institutional action is the one vehicle remaining for shaping our

environment in the future. The physical form of Columbia University cried for relief long before the students could find a voice to encourage reexamination of development policies and priorities. Harvard University's very uneven and, in some instances, poorly planned physical development reflects an institution where decision-making in environmental design matters is fractionalized and bureaucratized to the point of ineptness. City and campus suffer accordingly. Every state college that gets stuck with a politically appointed architect demonstrates the deficiencies of that lugubrious system. From what source then does art arise? *The Cornell Campus*, without moralizing, tells how it happened at one place. Finally, he who does not know his history is doomed to rebuild it.

The Euston Arch and the Growth of the London, Midland & Scottish Railway.

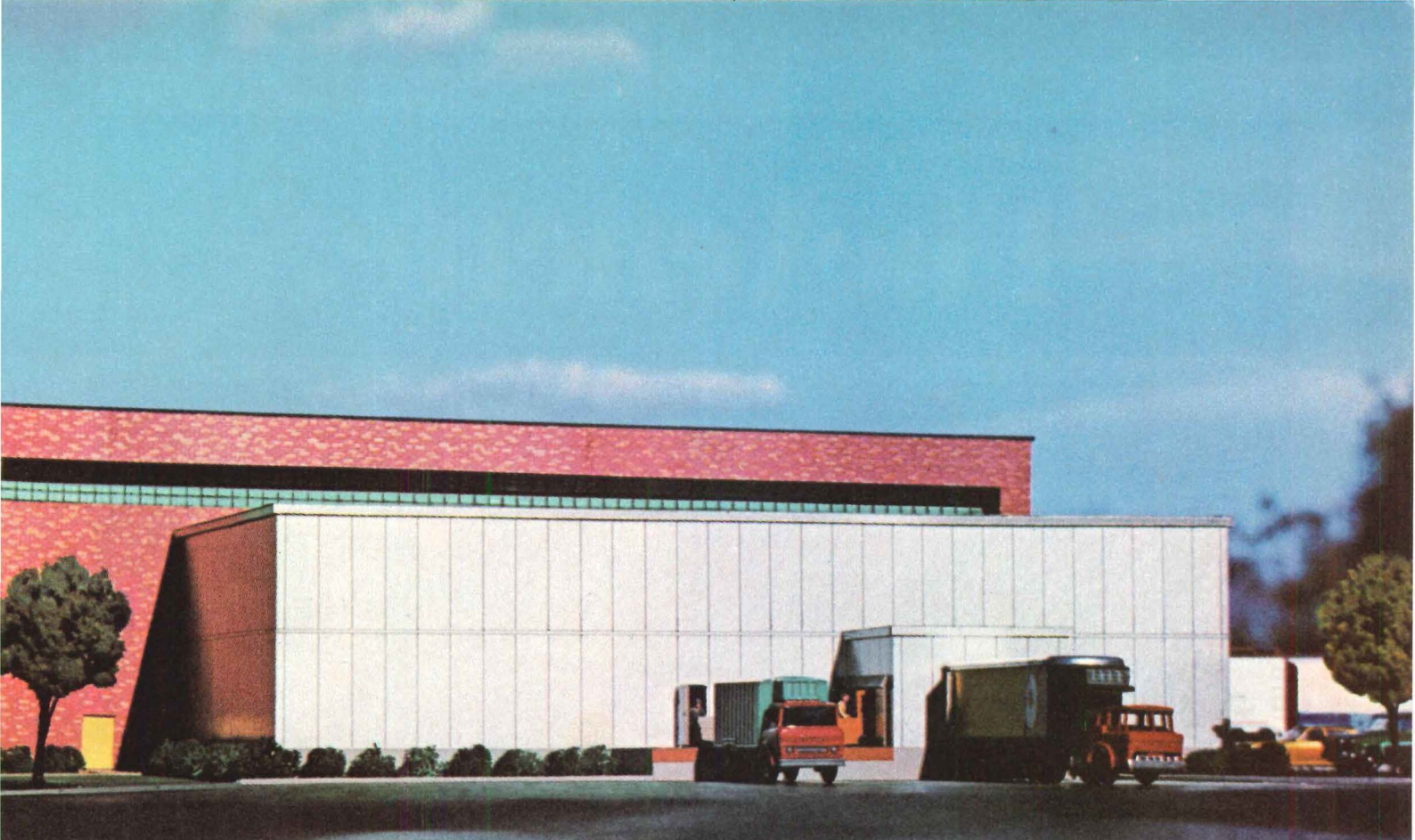
By Alison and Peter Smithson: Forward by Nikolaus Pevsner.

Thames and Hudson, London, 1968. 72 pp., 42 shillings (\$5.00 approx.).

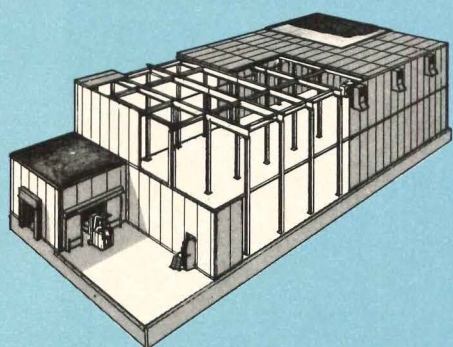
Reviewed by Walter C. Kidney. *The reviewer is a former Associate Editor of P/A.*

The Arch (a propylaeum, actually) at Euston Station was a colossal Grecian Doric gateway erected to mark the completion of the London & Birmingham, first major railway to enter London. It was finished in 1838 and destroyed in 1961. To the English, it was what the destruction of Pennsylvania Station was to us, and even more. The three contributors have produced a very strange book, emotional and even hyperemotional, on the circumstances that created and destroyed the Euston Arch. They say different things, but underlying them all is a celebration of the railway itself, a late Georgian or early Victorian combination of grim energy, inventiveness, improvisation, and

(Continued on page 126)



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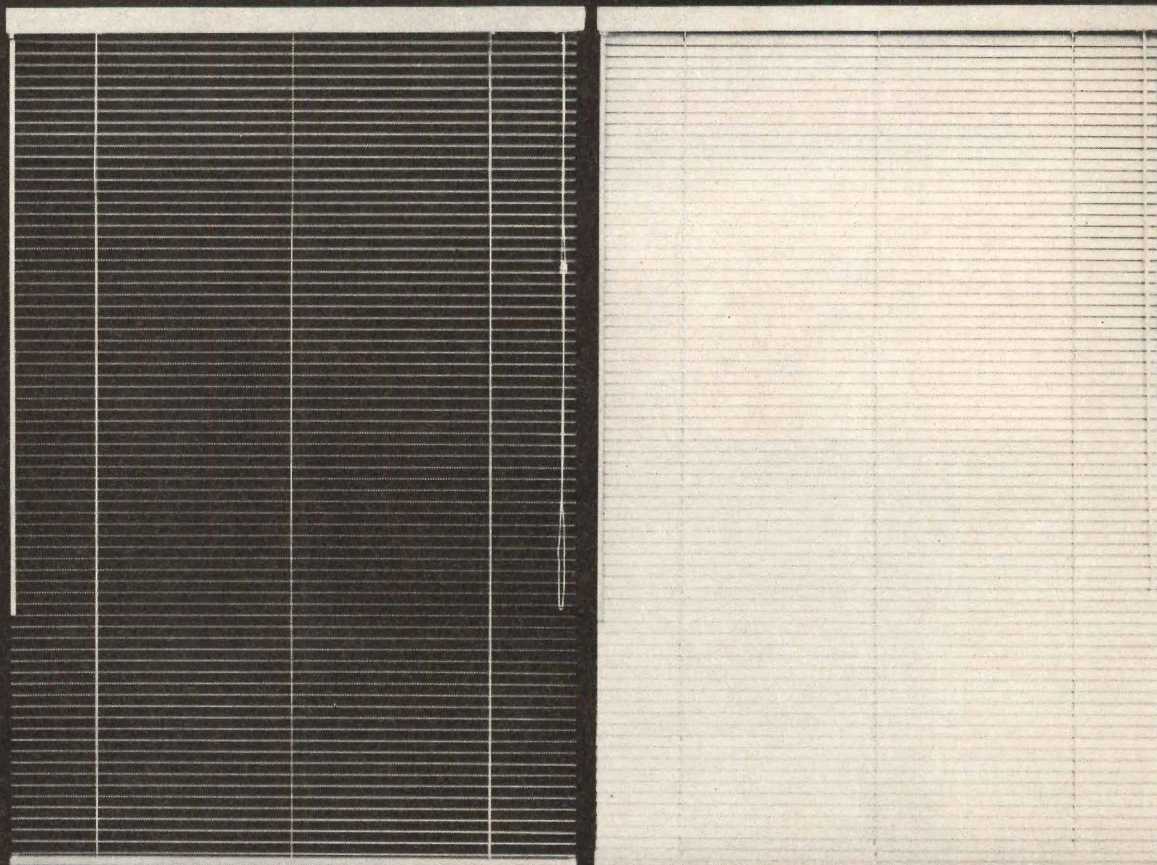


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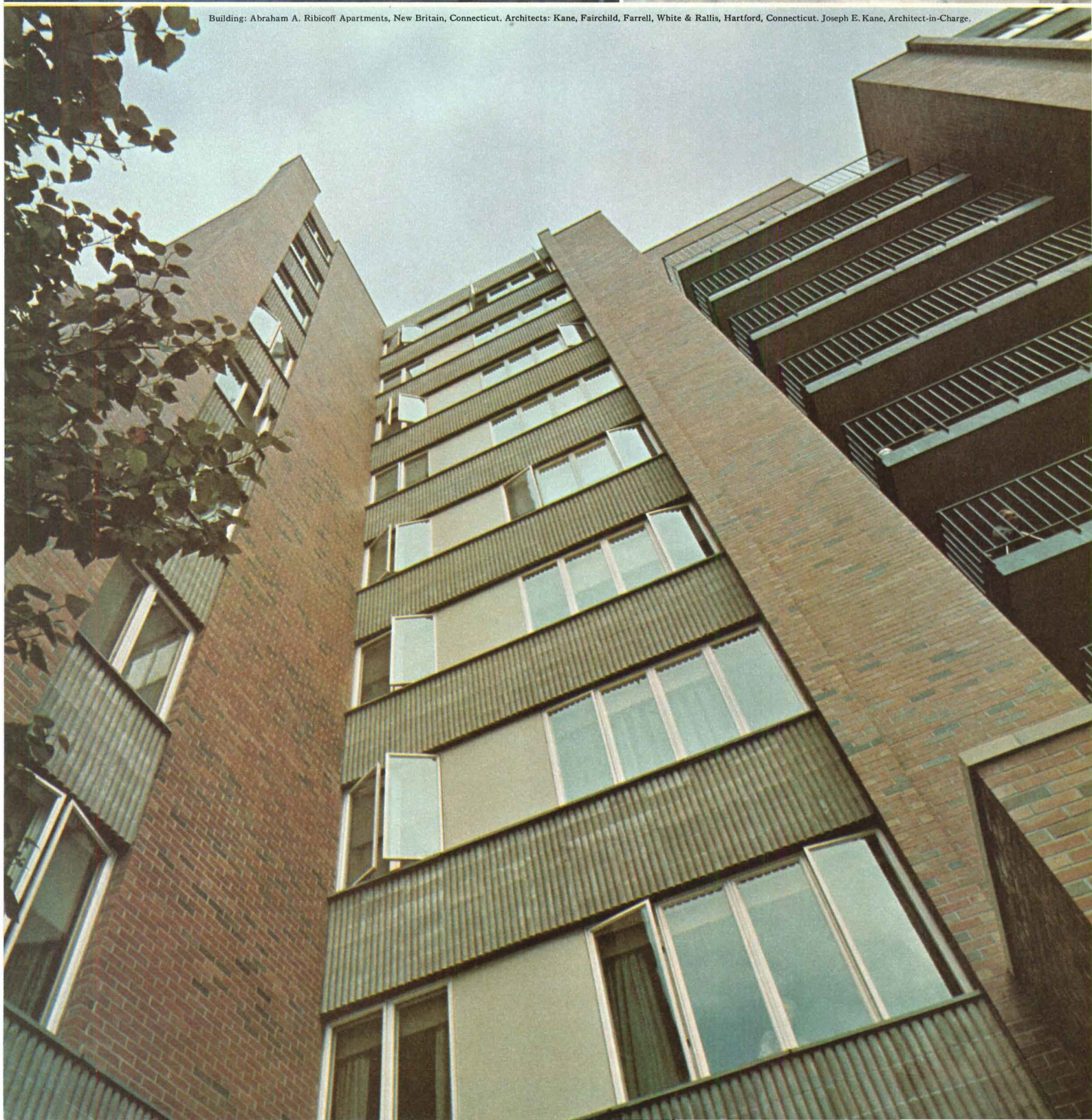
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or... Sweet's Interior Design File Volume 3, Location F3/a



Building: Abraham A. Ribicoff Apartments, New Britain, Connecticut. Architects: Kane, Fairchild, Farrell, White & Rallis, Hartford, Connecticut. Joseph E. Kane, Architect-in-Charge.



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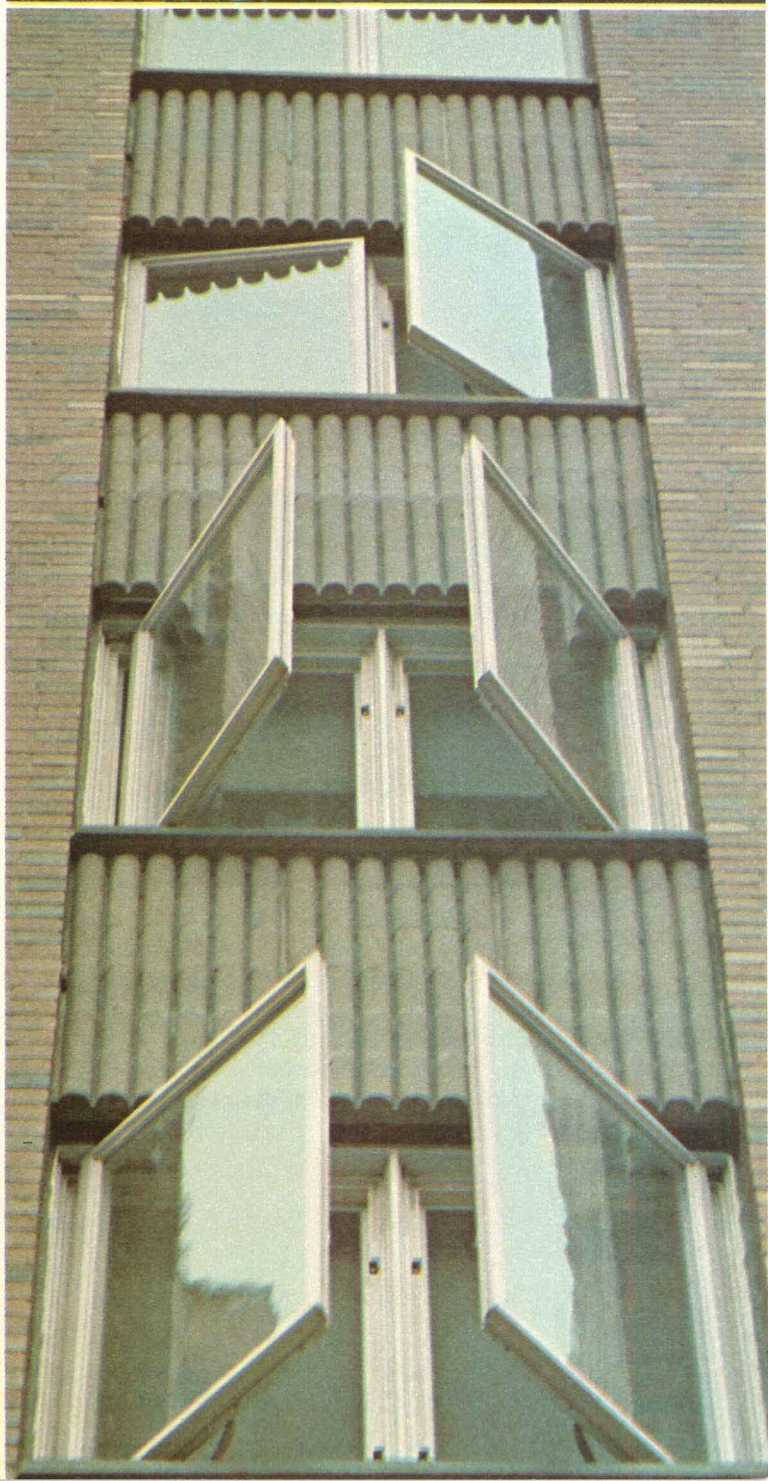
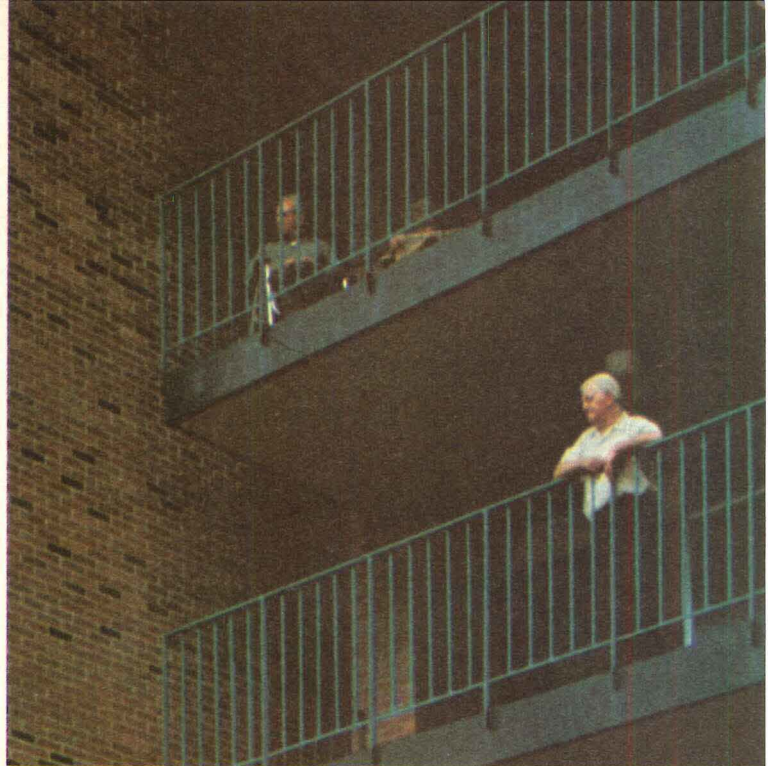
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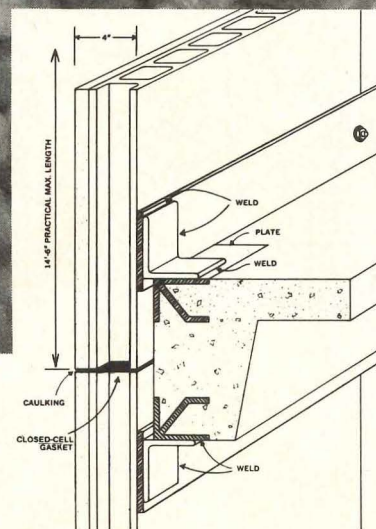
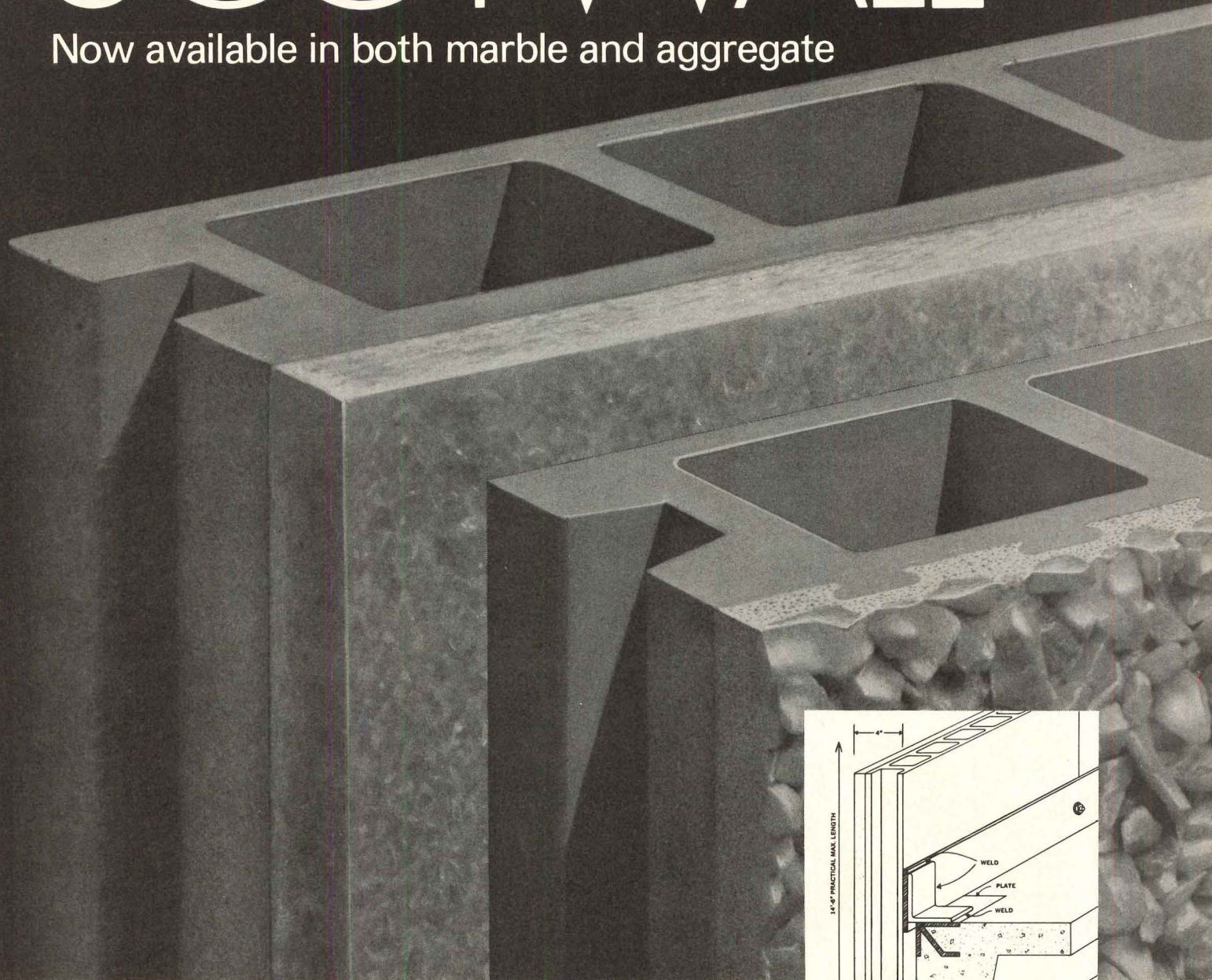
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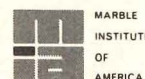


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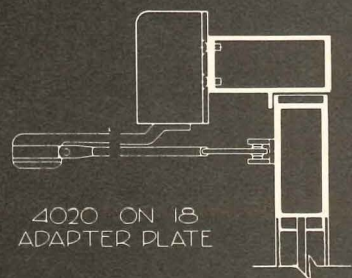
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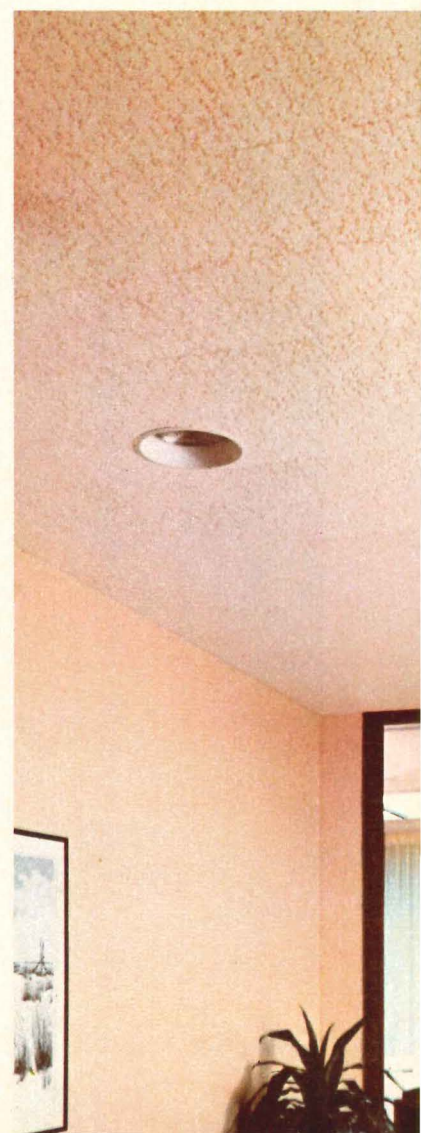
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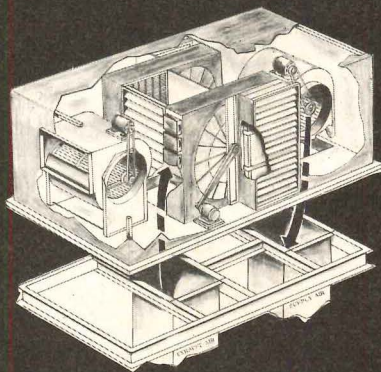
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(Continued from page 104)

patience that revolutionized life in the British Isles.

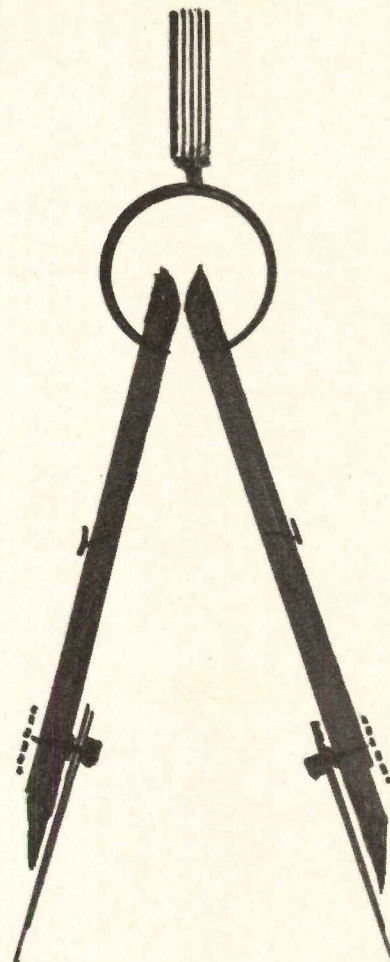
Dr. Pevsner's sadness over the Arch is mainly aesthetic. He goes so far as to say that the London & Birmingham Railway (later part of the LMS of the book title) is "one of the great achievements of man," and that "to celebrate it and then to commemorate it, only that style of architecture is worthy which stands in everyone's mind associatively for the greatest human achievements, the style of the Age of Pericles." This, from the man who said of 1930 functionalism, just a few years ago, "This is my style," is a remarkable statement and a tribute, perhaps, to the "eternal" and therefore coeval nature of all great things, the Doric order and the railway included.

Alison Smithson's lament for the Arch is of a moral order. In her running text, which sometimes verges on monodrama, even psychodrama, she contrasts the England that built the Arch with the England that destroyed it. The vigor, courage, and resourcefulness of the industrial North, symbolized by the Northumbrian George Stephenson that dominated the 19th Century is contrasted with the timidity, muddle, and buck-passing of the South, symbolized by the anonymous civil servants working for agencies with trios of initials, that administer various aspects of the 20th Century. The latter, she feels, were rebuked by the sooty Doric monument at Euston, and at last got rid of it for being, not unfunctional, not ugly, but actually and personally hateful.

Peter Smithson, in a "postscript," explains the genesis of the book. The Smithsons' frustration over the fate of their embassy design for Brasilia came just a few years after the destruction of the Arch, and gave them both the unexpected leisure and the impetus to put their strong feelings about the destruction into words.

Perhaps fortunately, the three contributors occupy only a small proportion of the total page area. The rest of the book is given over to a celebration of the Arch, the London & Birmingham Railway, and the age of steam railroading that is now ending. Aside from the little vignettes in the lower corners of the right-hand pages that take the demolition of the Arch in *reverse* order, there is no particular order to the sequence

(Continued on page 136)



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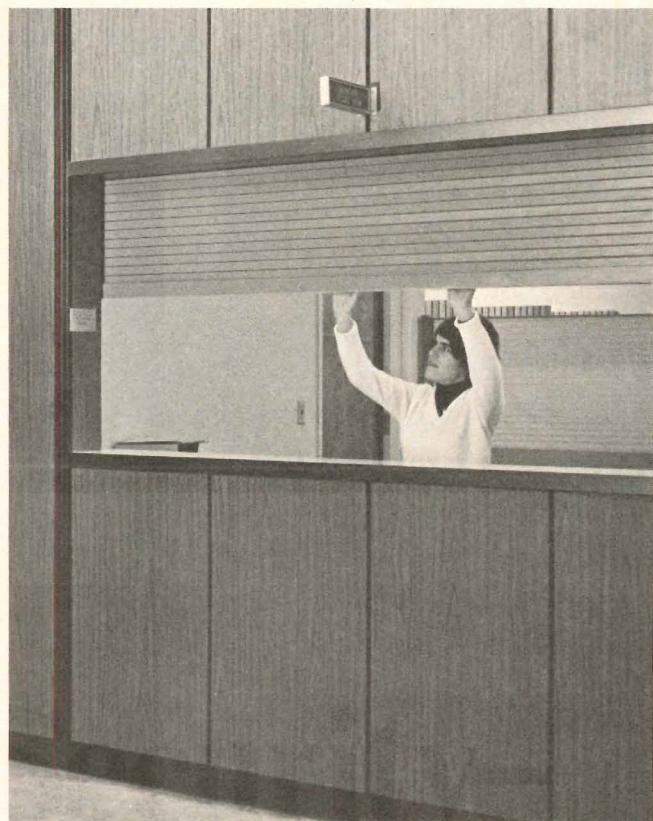
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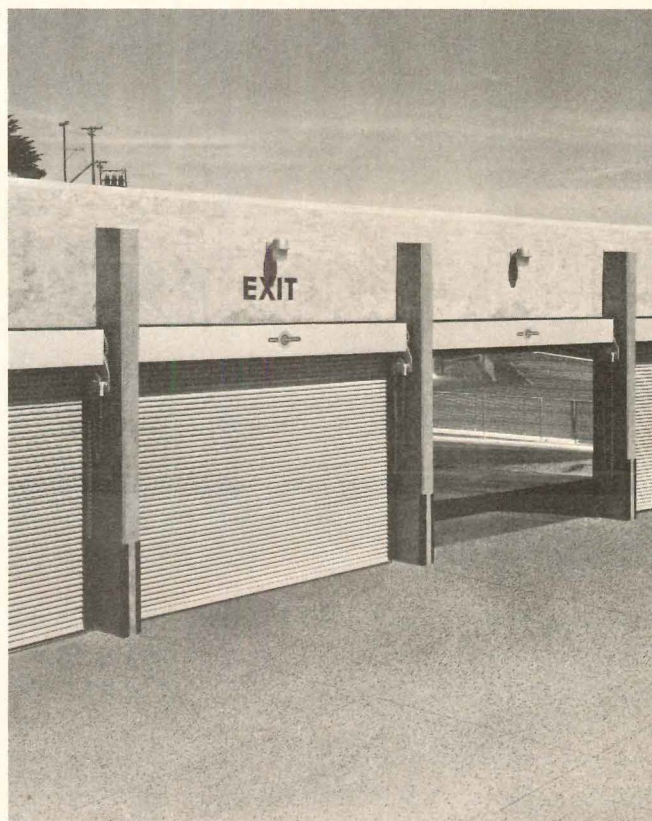
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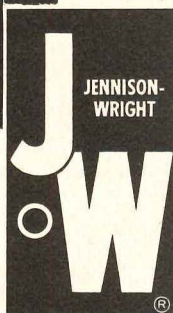
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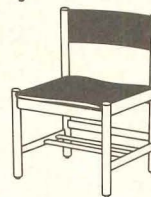


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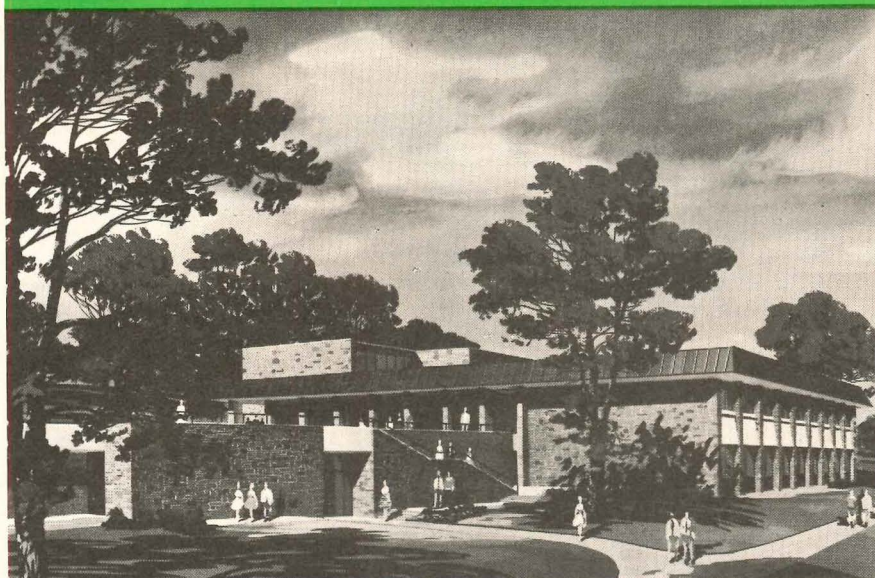
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(Continued from page 126)

of photographs, engravings, lithographs, and textual quotations. The intention is to dip you, so to speak, in the subject, to give you a crash-course in the quality of the steam-age railway, and this is very well done. There are builder's photographs of locomotives (many of them about the finest works of Victorian design in any area), cuts from old instruction manuals, details of track construction, J. C. Bourne's magnificent lithographs of railway construction under way, pictures of signals, stations, and so on, and architect's drawings of the Arch itself. The textual quotations are partly for information, and partly a gentle shower bath of technicalia, intended to stimulate rather than enlighten. (One quotation, in its entirety: "The interlocking frame is underneath the floor of the cabin.")

So far this may seem like a book for railway buffs, or for admirers of the Euston Arch, despisers of the British civil service, preservationists, students of the *oeuvre* of Dr. Pevsner or the Smithsons, etc., and of course it has something for all of these. But it has a subject of remarkable interest when you consider what the Arch symbolized — what grand departures those early railways were. In the 1830's some engineers and their backers, with the help of a horde of mechanics and navvies, created a megastructure 80 miles long. Across every kind of country they extended parallel rails, spaced exactly, and laid as near to dead level as possible, and designed machinery to travel on and to stand beside the rails. The early railway histories are full of stories of dubious financial operations, draftsmen collapsing at their boards, months of pumping to empty flooded tunnels, roadbeds built across quagmires, free-for-alls between the navvies of rival lines. But behind all this picturesque detail is the remarkable inventiveness and order that made the whole thing possible, that created the great machine that a railway is. Bridges, tunnel portals, stations, designed with ponderous Early Victorian dignity, worked architecture into this great machine, and it was architecture that finished the whole thing off at the terminal stations with triumphal gateways: that at Birmingham feminine, arcuated, and Ionic — a foretaste of London perhaps; that at London masculine, tra-

(Continued on page 144)



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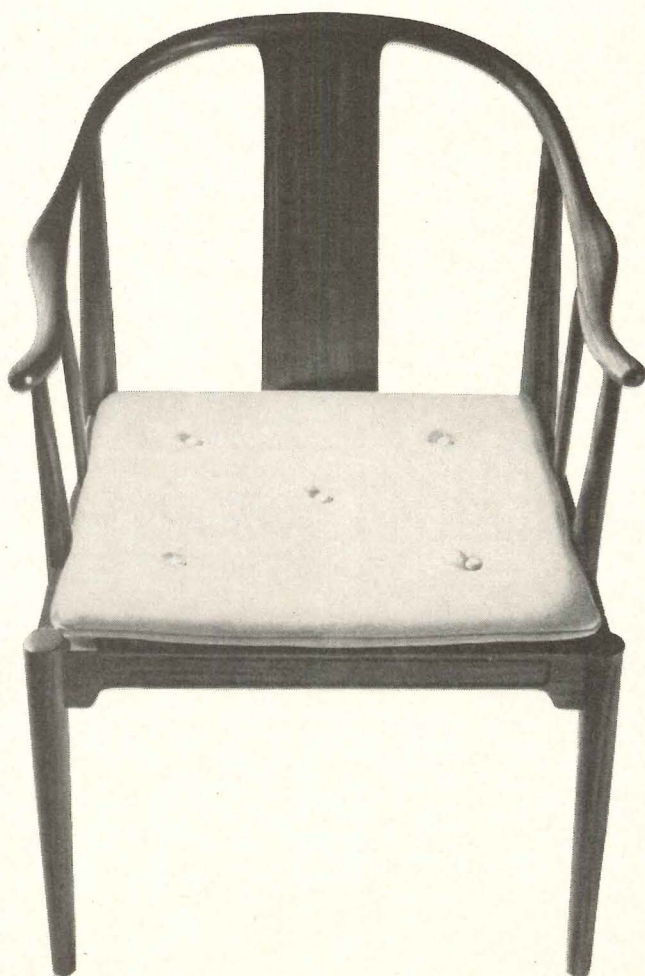
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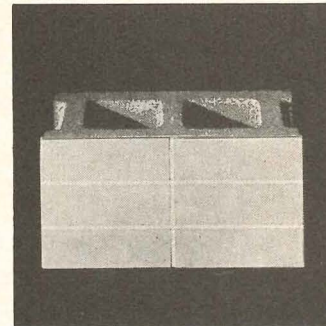
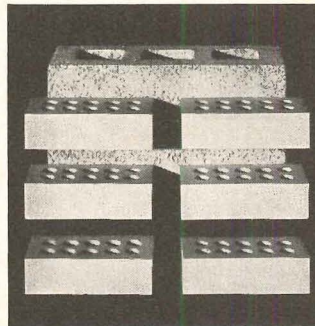


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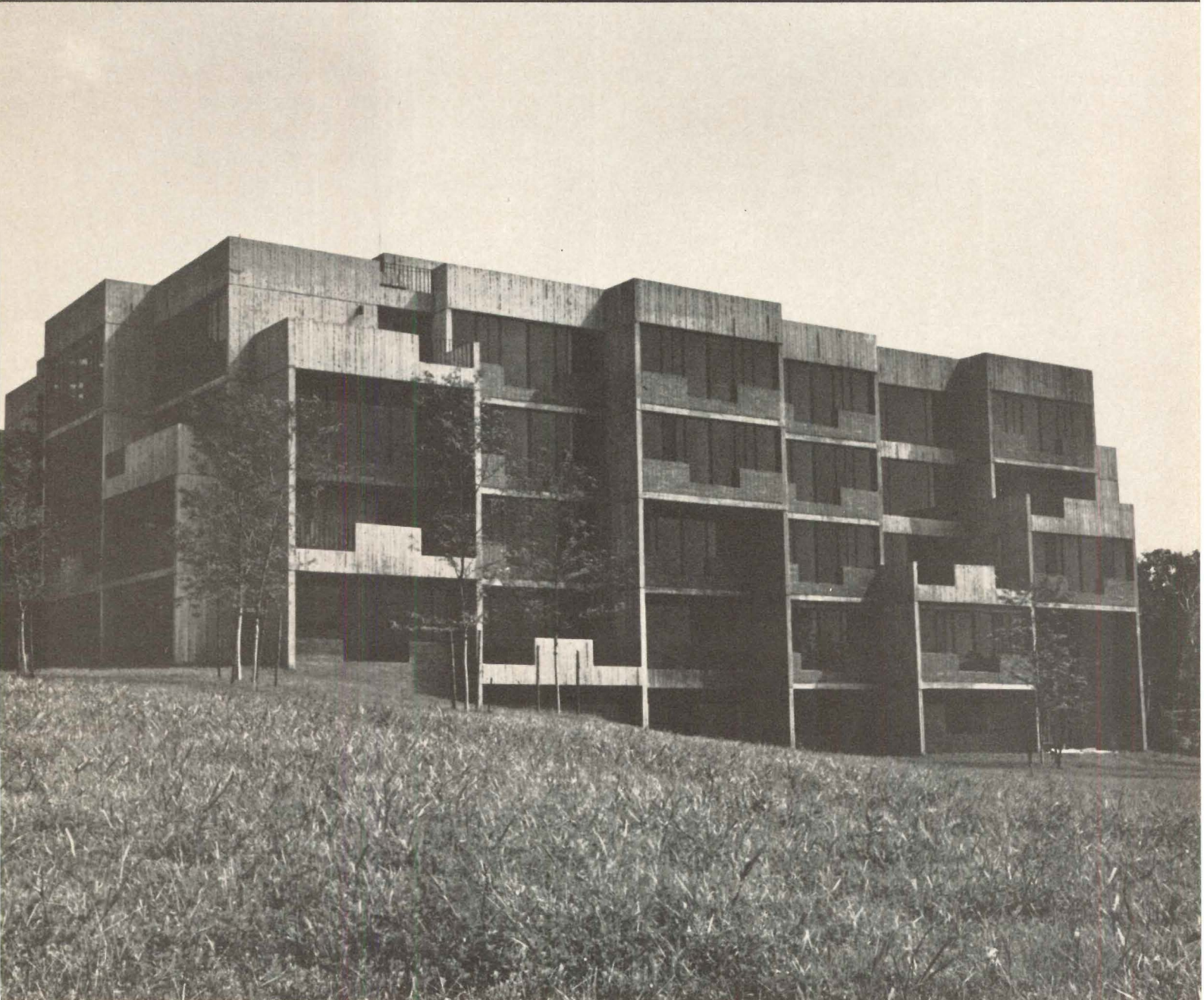
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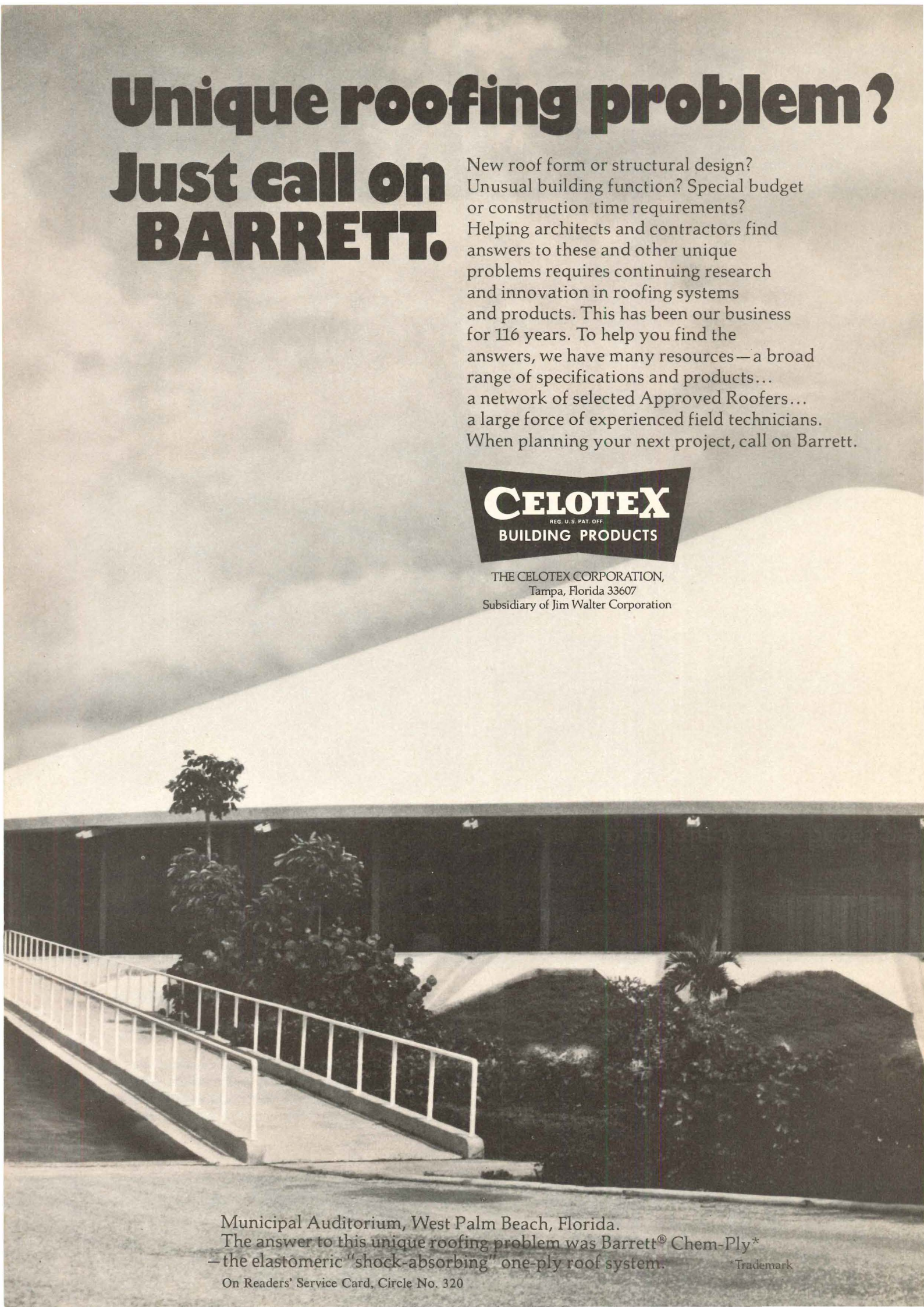
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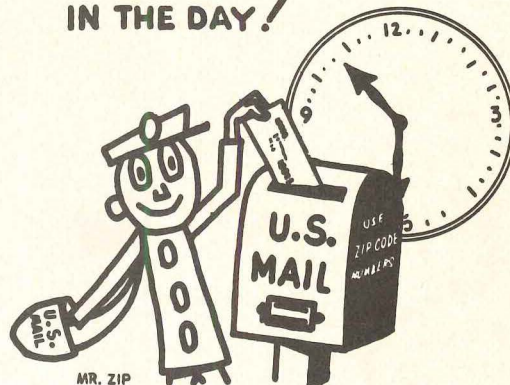
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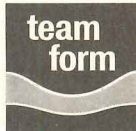
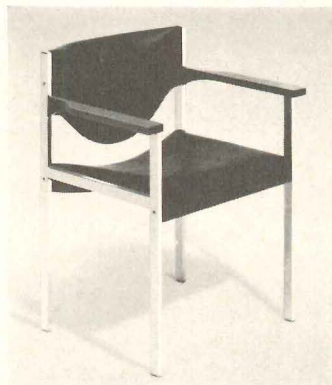
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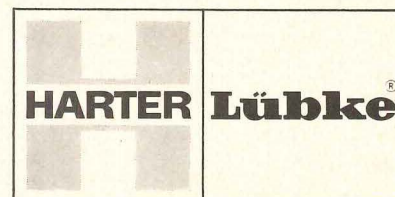
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Steel Joist Institute adopts

specifications for steel joist shop protective coatings

After extensive research, the Steel Joist Institute has adopted specifications covering the shop paints of open web steel joists. Now you can specify joists with confidence that they're effectively coated and protected from manufacturing plant to jobsite.

SJI requirements now demand that the standard shop paint shall conform to one of the following:

- (a) Steel Structures Painting Council Specification 15-68T, Type 1 (red oxide)
- (b) Steel Structures Painting Council Specification 15-68T, Type 2 (asphalt coating)
- (c) Federal Specification TT-P-636 (red oxide)

- (d) Or, shall be a shop coating which meets the minimum performance requirements of one of the above listed specifications.

Standardization of shop painting is the latest in a long series of positive contributions by the Steel Joist Institute towards the advancement of open web steel joists, the versatile structural members of modern building practices.

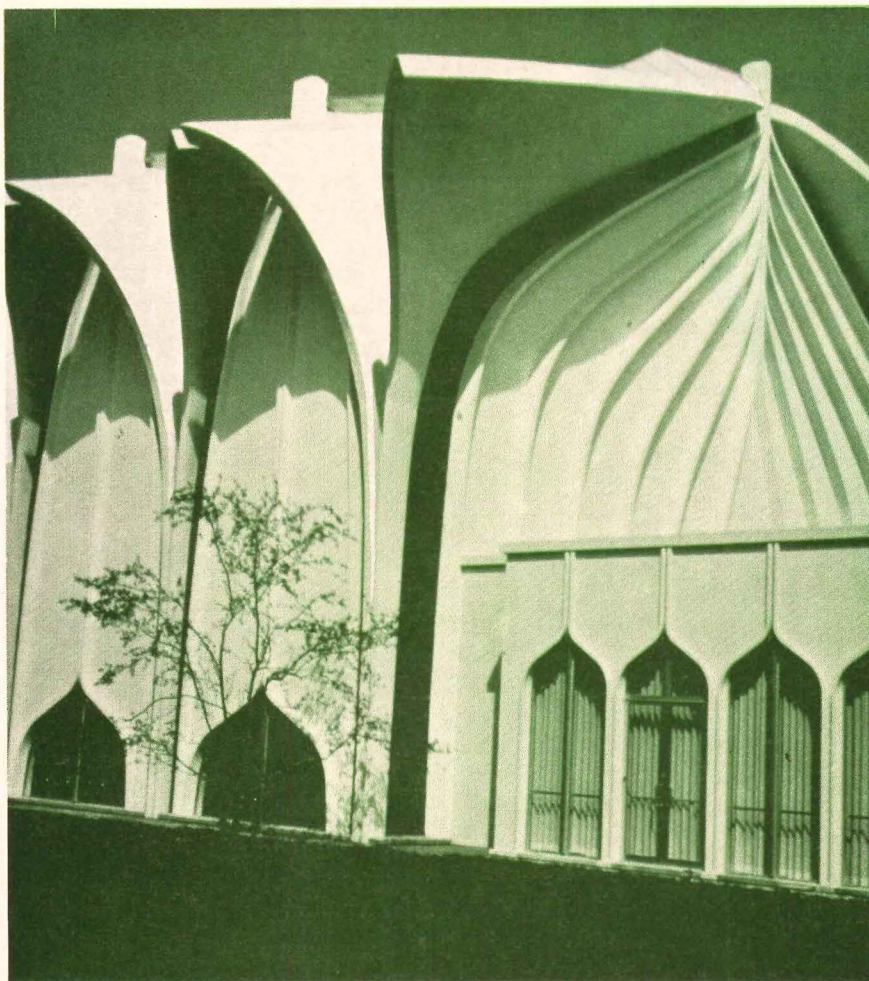
■ If you would like a copy of the Steel Structures Painting Council Paint Specifications, write us at the address below.



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(Continued from page 136)

beated, and Doric — definitely of the North.

Do we have occasion for such monuments today? Probably not. There is a certain routineness about our great constructions, big and useful as they may be. They change the face of the land, but only according to formula, and a simple plaque, with the date of completion and the names of the engineer and the governor, is enough ordinarily. The conquest of the moon is perhaps a candidate for something Eustonian in scale, and yet it is hard to see what form the visible monument would take. That little, round, shining thing up there in the night sky is probably statement enough.

NOTICES

Partners — Associates

T.M. PRENTICE and LO-YI CHAN are pleased to announce that ROLF OHLHAUSEN has joined them as a partner.

ARMAND BARTOS and ASSOCIATES, New York, N.Y., announce the appointments of MARTIN RICE as partner and AUGUSTO MORPURGO and ROBERT RHODES as associates.

HAROLD E. WAGONER announces the advancement of ANGEL B. CHORNO to position of associate.

Mergers — Office Expansion

HILL & ASSOCIATES, INC. and FENTON HOLLANDER/ARCHITECT announce that their architectural practice will be called HILL MILLER FRIEDLANDER HOLLANDER, INC./ARCHITECTS, to be located at 16 Eliot St., Cambridge, Mass. 02138.

Appointments

HUGH McKITTRICK JONES, JR., FAIA, of Guilford, Conn. has been appointed national chairman of the 102nd convention of the American Institute of Architects, to be held June 21-25 in Boston.

The American Institute of Architects Foundation today announced the appointment of MRS. MABLE S. DAY, as the Foundation's Executive Administrator and MISS SARA ELIZABETH JAMESON as Octagon House Curator.

New Addresses

ALLAN JAMES ARCHITECTS, 6516-D Westheimer, Houston, Tex. 77027.

MAX O. URBACH ASSOCIATES, INC., 521 Fifth Avenue, New York, N.Y. 10017.

P. E. MARTIN & ASSOCIATES, 1160½ North High St., Columbus, Ohio.

TALLEY & ASSOCIATES, landscape architects, 4534½ University Way N.E., Seattle, Wash. 98105.

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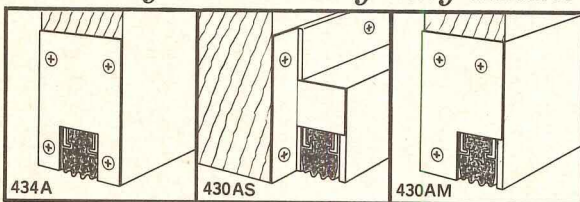
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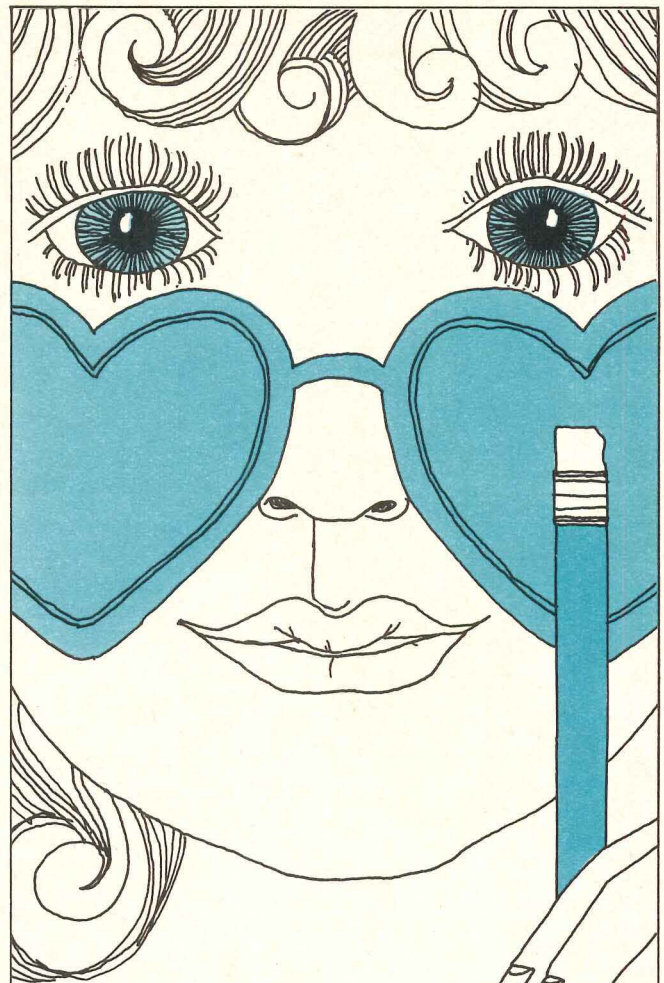
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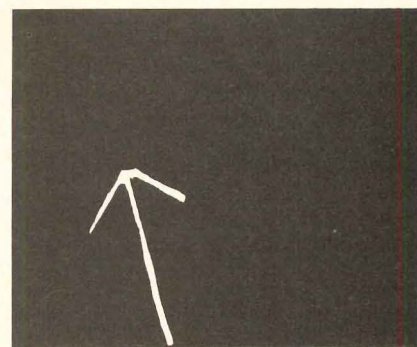
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