



**FORUM**

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Cover: James Stirling's History Faculty building at Cambridge, England. Photo by Norman McGrath.

### THE ARCHITECTURAL FORUM

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### PUBLISHER'S NOTE

When we set out to describe the editorial preparation of a FORUM story, "going to great lengths" becomes more than an empty phrase. The editors actually do go to wherever the stories are, shunning the comfortable (and economical) alternative of staying home and writing articles based on hand-out photos and canned text.

This month, for instance, our Editorial Associate Eva Wyler's article on the reconstruction of parts of the old city of Jaffa in Israel (p. 66) is on-the-spot reporting. She interrupted her vacation last fall to get the story. Our old friend, Victor Zevallo, was in Mexico City last Spring. He brought back with him first-hand observations and story material for the piece on the Camino Real Hotel which appears on page 86. Our Senior Editor Ellen Berkeley, about whom we wrote last month, went to St. Louis for her story on LaCledde Town (p. 57). The report on the Barton Apartments in Indianapolis (p. 70) by our Senior Editor John Dixon was written after he went there to see for himself. Last month's presentation of Mies van der Rohe's monumental new museum in West Berlin was written by Peter Blake, who was there for the opening. Incidentally, he was the only editor of a U.S. architectural magazine attending the ceremonies.

When our staff can't make the scene, our contributors do. Kenneth Frampton was going back home to Britain this past summer, so we asked him to do our story on James Stirling's extraordinary library in Cambridge (p. 37). And Robin Boyd, Australia-based member of our Board of Contributors, who wrote "Antiarchitecture" (p. 84) cites examples from Britain to Japan. He has seen them all—first-hand and frequently.

We mention this not only to boast. We mention it also because we want to underline just one minimum requirement for creative criticism which should be sustained. Architects who read their press to learn of the work of others, or submit their own work for publication, should insist on first-hand reporting too, even though it presents the risk of adverse comment.—L.W.M.



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For information, samples, any sort of help, please write to: Contract Department, Kentile Floors/Hightstown Carpet, Brooklyn, N.Y. 11215. We'd welcome a chance to show you how nice it can be to have a Grand Old Name like Kentile in the carpet business.

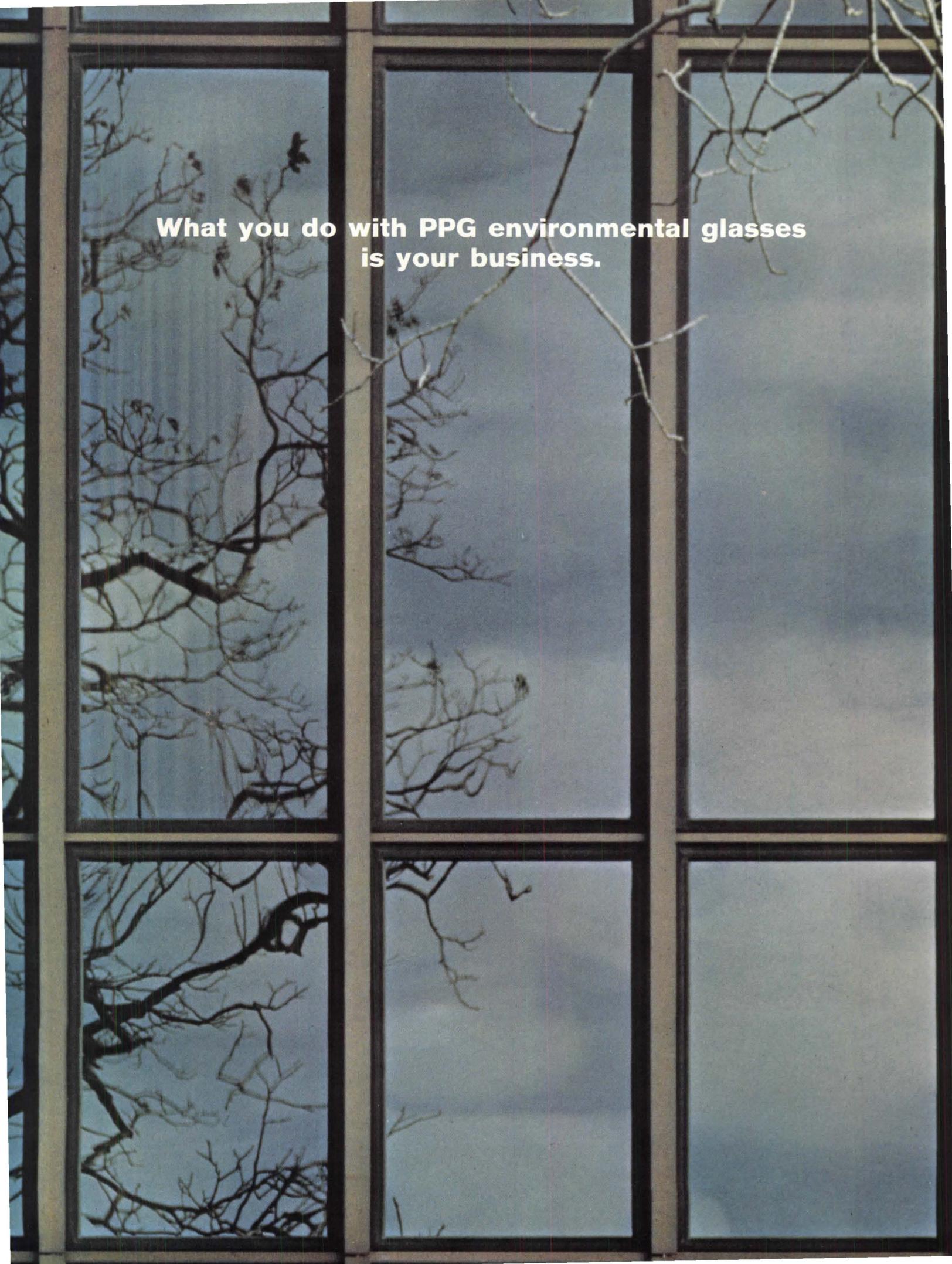
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National Guardian Life Insurance Building, Madison, Wisconsin  
Architect: John J. Flad & Associates

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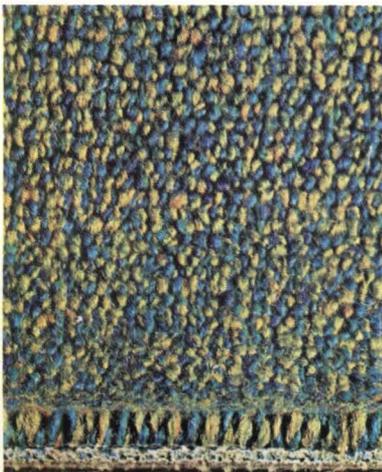
Selected 8 times for Eli Lilly and Company by interior design firm Business Furniture Corporation of Indianapolis. Jerry Lakin, Sales Director of that firm, tells why. "These carpets are unique. Just what we needed: a wide variety of color mixtures in a luxurious, durable fabric. We wanted each room to be in perfect harmony with the next, yet retain a sense of individuality. And that's exactly what these Cabin Crafts carpets gave us. The overall design effect is stunning!"

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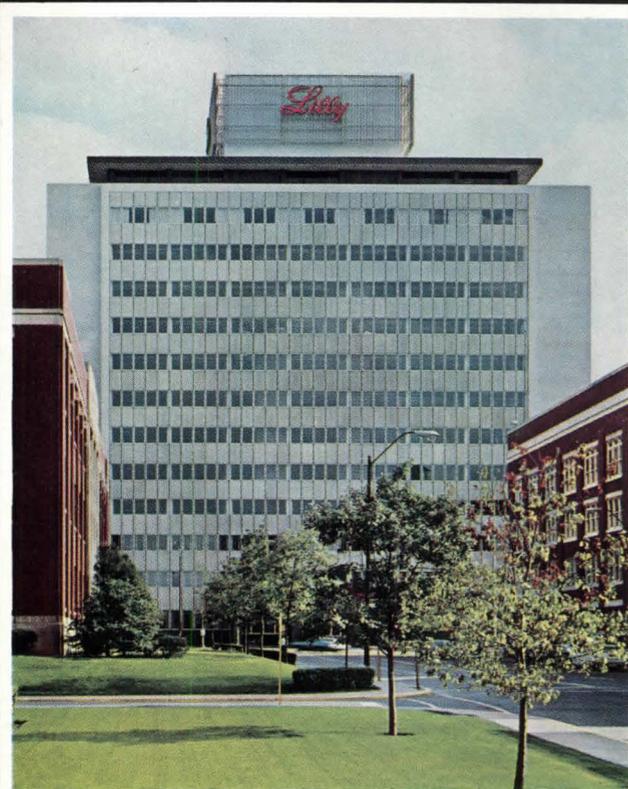
The Eli Lilly employee lounge and library. Beautifully carpeted in Cabin Crafts Cimarron. Eight shades, in greens predominately, give this area a feeling of quiet serenity. A big plus is the carpet's acoustical value.



One of several employee cafeteria dining areas gets its look of understated elegance from Cabin Crafts Cimarron. A beautiful look that stays that way! Its dense construction keeps soil on the surface. Spills and stains are no problem. Cleaning is easy.



Cabin Crafts Cimarron graces this office area. Notice how Cimarron blends with a wide range of colors. Gives the whole room decorator continuity.



This is the new administration building of Eli Lilly and Company, international pharmaceutical manufacturer.

## This administration building is "painting" itself



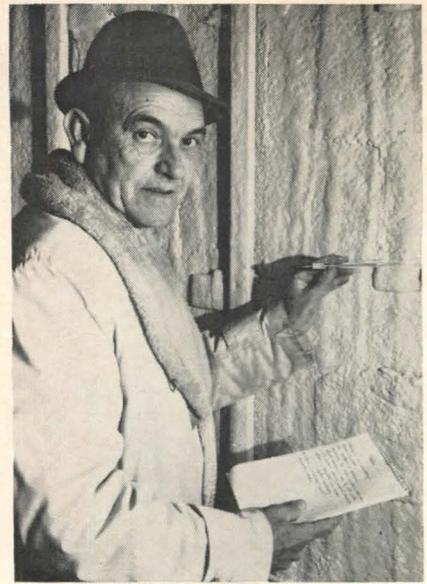
Rocky Mountain National Park Administration Building. Owner: National Park Service, George B. Hartzog, Jr., Director. Architect: Edmond Thomas Casey, Taliesin Associated Architects of The Frank Lloyd Wright Foundation. General Contractor: Kunz Construction Co., Arvada, Colorado. Structural Fabricator: PeCo Steel Corp. (formerly Aladdin Iron & Steel Corp.).

Location: Rocky Mountain National Park, Estes Park, Colorado. Exterior: bare USS COR-TEN Steel that "paints" itself as it weathers and needs no painting. COR-TEN steel develops a tight, dense, attractive oxide coating that inhibits atmospheric corrosion, heals itself if it is scratched, and looks better the longer it weathers.

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## Something-for-everybody package clicks in D. C. townhouse society

### Capital idea: D. C. developer uses 1/4" urethane foam insulation to pare costs; boost comfort, floor-space and profit in townhouse units.

Town Square Townhouses, a creation of architects Macomber & Peter, masters of the Federal style, is an ambitious urban renewal project in Washington, D. C. Being built by Bresler and Reiner, when complete it will consist of 116 garden apartments and 180 3-story, single-family units, priced up to \$54,500.

Of brick construction, nearly all of the townhouse units are insulated with sprayed-on urethane foam applied by Bilton Insulation & Supply, Inc., D. C. specialists in this type of contract insulation since 1952.

Because of urethane foam insulation, each Townhouse unit gained a living space bonus worth \$572-\$1144\* to the buyer.

Here is how the urethane foam gains were measured by the principals involved:

**C. V. Davenport, Bilton executive vp and gen. mgr.:** "The arithmetic is there for all to see. Urethane enabled

\*Computed on basis of 2400 sq ft of living space in unit selling for \$54,500. Buyer is paying about \$22 per square foot. Better insulating ability of rigid urethane foam saves 26 sq ft to 52 sq ft or \$572 to \$1144.

the developer to gain up to 52 sq ft of extra floor space per unit. Urethane foam is a cryogenic insulant. With a k factor of 0.11 and as used in this instance (1" wall space consisting of 1/4" of urethane foam and a 3/4" air space), urethane foam replaces a 3 5/8" glass fiber batt. In addition, urethane foam is moisture-proof, the need for a vapor barrier is eliminated, and it safeguards electric wiring and plumbing fixtures against fire, freeze-ups and corrosion."

**Potomac Electric Power Company** determined that this wall design met their Gold Medallion insulation requirements. They estimate it will cost the average Town Square Townhouse owner about \$305 a year to heat his home, \$60 to cool it. A dollar a day for a \$54,500 home investment isn't bad.

**B. Reiner, Bresler & Reiner builders:** "There is no question about the customer benefits of urethane insulation. I would be sold on it just for the space savings it offers. Most home-buyers don't care what insulation is used, but we publicize urethane as a key selling

point. We translate the measurable extra floor space, consistent comfort, warmer wall areas, lower heating and cooling bills, and they are impressed."

**R. A. Dwyre, Bilton sales mgr.:** "With batt-type materials, builders often have an expensive, irksome problem of securing dry wall to the studding. Because of the slick vapor barrier necessary, nails keep popping out. With urethane, one man can complete two walls each on three floors (1140 sq ft) in about 30 minutes."

**H. White, project mgr. and supt.:** "I've been in the construction business for 30 years and I have never seen an insulating material that provides a better seal than sprayed-on urethane. It's clean, simple and fast in application, and leaves no mess of scraps to clean up."

The foam chemicals system for this project was supplied by Isocyanate Products, Inc., New Castle, Del. 19720. For the full story on urethane foam insulation in a wide range of projects, write MOBAY CHEMICAL COMPANY, Code AF-118, Pittsburgh, Pa. 15205

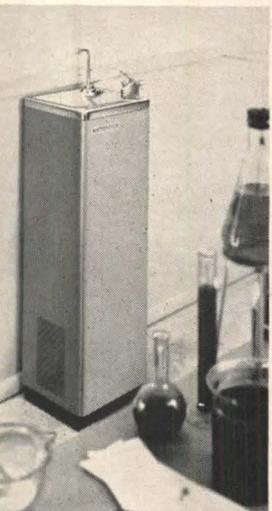
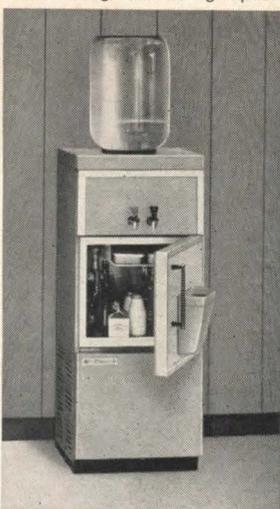
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Cordley Bottle Cooler—all they require is an electrical outlet.



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## LETTERS

### TANGLED WEB

Forum: It is my conviction that the action taken by the AIA board of directors in accepting the resignation of Mitchell/Giurgola as architects for the new AIA headquarters building [Oct. issue, page 93] is a real blow to our profession. As I see it:

1. The AIA sponsors a competition for a responsible and informed client, i.e., the AIA.

2. A talented jury selects an outstanding design.

3. The winners of the competition are a reputable firm and one of the principals is the chairman of a prestigious school of architecture. There is no question that the firm is qualified to carry out the work in a professional manner, as is shown by the board's statement that "their submission displayed a formidable degree of talent and design competence."

4. The Fine Arts Commission rejects elements in the design as not being in conformity with their notions of esthetics.

5. The architects make substantial changes in the original conception designed to meet the objections of the commission, but without compromise to the integrity of the building, for the board believes this to be "a building of special architectural significance, establishing a symbol of the creative genius of our time, yet complementing, protecting, and preserving a cherished symbol of another time, the historic Octagon House built in 1798."

6. The changes are turned down by the commission, which asks for other changes which the architects find will destroy the artistic qualities sought by the architects and their clients.

7. The architects conclude that the difference between what the Fine Arts Commission considers to be the art of architecture and what Mitchell/Giurgola seeks is so great that there is no honest recourse but to resign, which they offer to do.

8. The board of AIA accepts the resignation, thus showing (a) it shares the Fine Arts Commission's view, or (b) it finds the matter not worth fighting for; after all, it's only a building and not a big one at that.

I find the action of the board

disgraceful and contrary to the interests of the profession for these reasons:

1. It destroys the validity of the AIA-sponsored competition as a method of selecting architects.

2. It wasted the time of all the competitors, for the result might have been the same no matter who won.

3. It suggests that the jury was incompetent.

4. It suggests that those charged with organizing the competition were incompetent, for if the Fine Arts Commission was to judge the design, members of the commission should have had veto power on the jury. Or, perhaps the Fine Arts Commission should have been the jury.

5. Finally, the board has shown by its action an inability to defend the AIA's decision and so lacks the qualities of leadership we members need.

I, for one, believe the board should resign and that no architect with any interest in the profession should accept the commission if it is offered.

I trust there will be wide support for these views.

PERCIVAL GOODMAN, FAIA  
Architect and Planner

New York City

### BECAUSE IT IS THERE

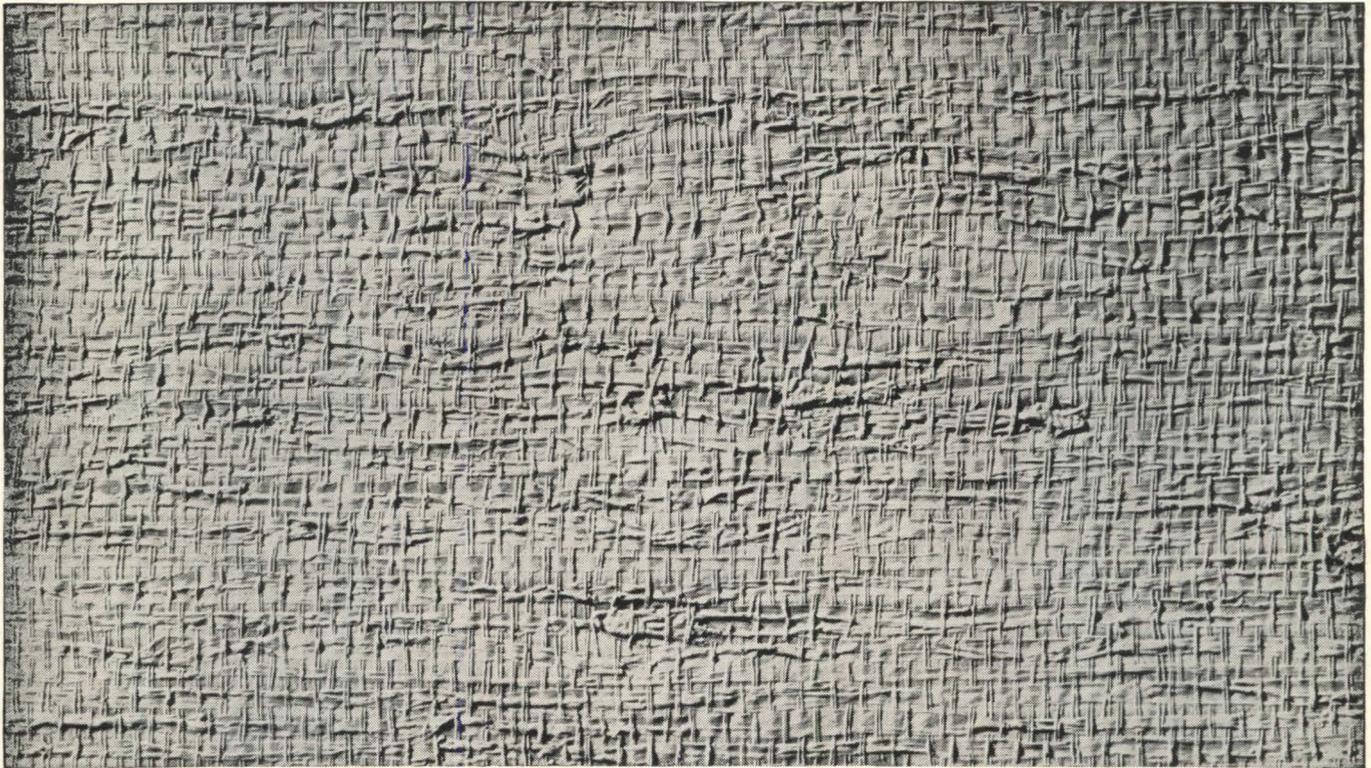
Forum: Until reading the letter in the September Forum from Mr. Charles E. Peterson, Architectural Historian, Restorationist, and Planner of Philadelphia, I had not known that anyone thought we were involved in Preservation at The Cannery or that what was undertaken there could be referred to as Historic Preservation. I have no idea who claims this; certainly my notes and those of Charles W. Moore in the June Forum suggest just the opposite.

Nevertheless the view expressed by Mr. Peterson, Architectural Historian, Restorationist, and Planner, suggest a new—and perhaps ultimate — use for George Hubert Leigh Mallory's classic reply when asked why he wanted to climb a particular mountain. That simple and direct reply — "Because it is there"—can become the rally cry of Preservationists everywhere.

But an exchange such as this always has its positive side. I have learned from Mr. Peterson, Architectural Historian, Restorationist, and Planner, that Preservation and Historic Preservation are to be capitalized. Thus in debt to

(continued on page 12)

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# Who needs a lightweight pool, welded and warranted not to leak?



## Beaver Area High School did and Overly made it.

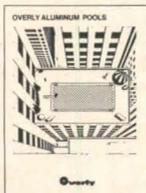
When Beaver Area High School, Beaver, Pa., puts 161,800 gallons of water into its new Overly pool, there won't be a gallon lost to leakage.

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Architect: Edwin M. Wallover, Jr., Beaver Falls, Pa.



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## LETTERS

(continued from page 10)

Mr. Peterson (A.H., R., & P.) I offer important news he may not have noted: there is now an active and serious move to tear down San Francisco's beloved Embarcadero Freeway. There has always existed a dissident minority that sought the destruction of this grand monument but new power in this movement suggests there exists a genuine threat to this noble structure. Mr. Peterson, Architectural Historian, Restorationist, and Planner, could do great service to Preservation (as I gather he sees it) by uniting all to Save the Freeway — under the grand and uncomplicated slogan "Because it is there."

JOSEPH ESHERICK  
San Francisco Architect

### MUSIC ON THE HEIGHTS

Forum: For the record and to avoid further recurrence, as trustee and general counsel for Manhattan School of Music I wish to call to your attention a misstatement about the school in the article by C. Richard Hatch concerning Columbia University, first appearing in the July/Aug. '67 issue and then reprinted in the June '68 issue.

The misstatement obviously arises out of either a lack of information about or a misunderstanding of an arrangement between Juilliard Musical Foundation and Manhattan School of Music, under which the latter, when the Juilliard Music School moves to Lincoln Center from its present building at Broadway and Claremont Avenue, will purchase the building from the foundation and occupy it for its own educational uses. None of these institutions has any connection with Columbia University and the sole purpose of their arrangement is enlargement of Manhattan's facilities so that it can pick up and possibly expand some of the musical education activities that would otherwise terminate on Juilliard's move to Lincoln Center.

However, under point 3 of the section entitled "Toward the scholastic ghetto" the article states:

"The university has succeeded in attracting (through cash loans and other incentives) Bank Street College of Education from the lower West Side and the Manhattan School of Music from East Harlem. These institutions have his-

torically played an important cultural function in their working-class neighborhoods. On Morningside Heights they deny their previous ideals as they participate in a major community transformation which, according to official institution figures, will displace between 2,000 and 3,000 families and hundreds of roomers."

The first sentence of this statement is completely untrue with respect to Manhattan School of Music. Columbia University never requested or suggested that Manhattan move to the area and it most certainly did not "attract" the school through "cash loans and other incentives." Manhattan's decision to move to Morningside Heights was completely independent of Columbia University and any of its plans for the area. . . .

The second sentence is also in error in its possible implication that Manhattan is simply a local neighborhood or settlement house type of school. This is not the fact. . . . Manhattan is one of the country's major conservatories with a national and international student body . . . there is no preponderance of youngsters from the immediate neighborhood.

The implications of the final sentence are also completely erroneous. Whether Columbia's building plans will displace these families and roomers we have no way of knowing. However, Manhattan is not contributing to any displacement that may or may not take place, since it is purchasing an already existing building and not building a new structure. . . .

HAYDEN SMITH  
New York City Attorney

### MR. HATCH REPLIES

Although the Manhattan School of Music has not had the benefits of the incentives offered to the College of Pharmacy and Bank Street College, its move to Morningside Heights will cause grave hardship to hundreds of area residents just the same. In the attempt to create the "Acropolis of America," Columbia University's trustees—at last getting their comeuppance from the students and faculty they are supposed to serve—have not only encouraged footloose institutions to join them, but have ordered detached faculties like the School of Social Work back onto the Heights. Had the Manhattan School of Music stayed away, the vacant Juilliard buildings might have accommodated some of the

(continued on page 20)

# Globe-Union builds a "jewel box."

Highlighting the superb design by Harper-Drake & Associates, Inc., Architects, of Milwaukee, is the arrangement of the facility's three buildings around a reflecting pool. This two-story executive office building is completely surrounded by the pool's expanse. Glass-walled enclosed bridges span the pool to join the various buildings.

Floor-to-ceiling walls of bronze-tinted Thermopane® insulating glass give the structure a "jewel box" elegance, enhance the corporate image of this manufacturer of electronic components, batteries and other packaged power units.

Thermopane with Parallel-O-Bronze® plate glass contributes more than beauty

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## **A suspended acoustical ceiling with a 1-hour fire rating under an insulated steel deck.**

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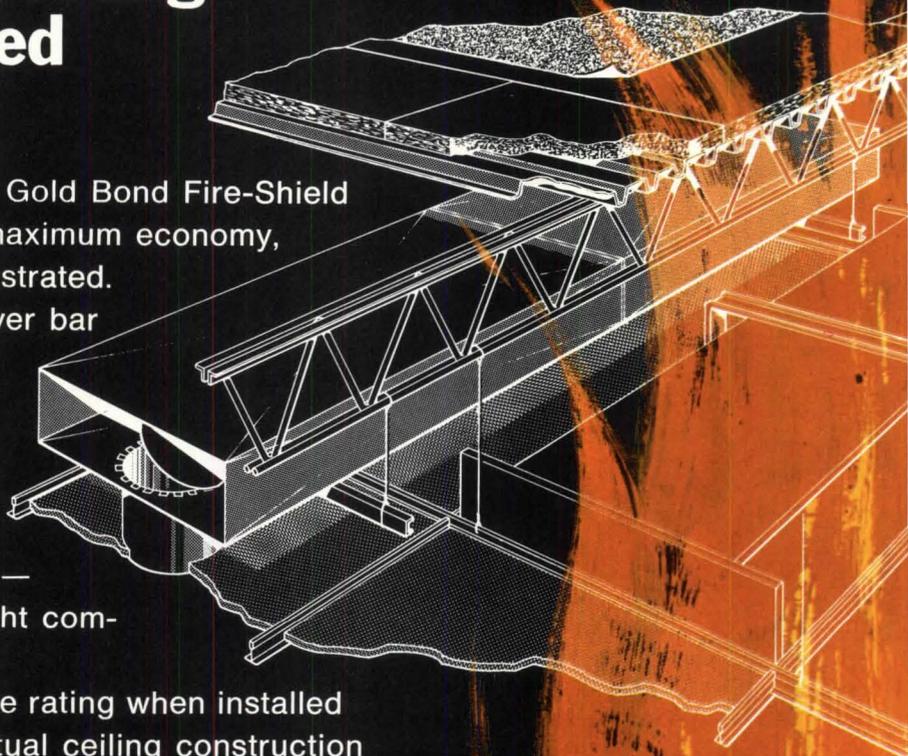
This system earns a 1-hour fire rating when installed in compliance with Factory Mutual ceiling construction designs. And it offers a lot more, too.

Good acoustical absorption and sound attenuation values.

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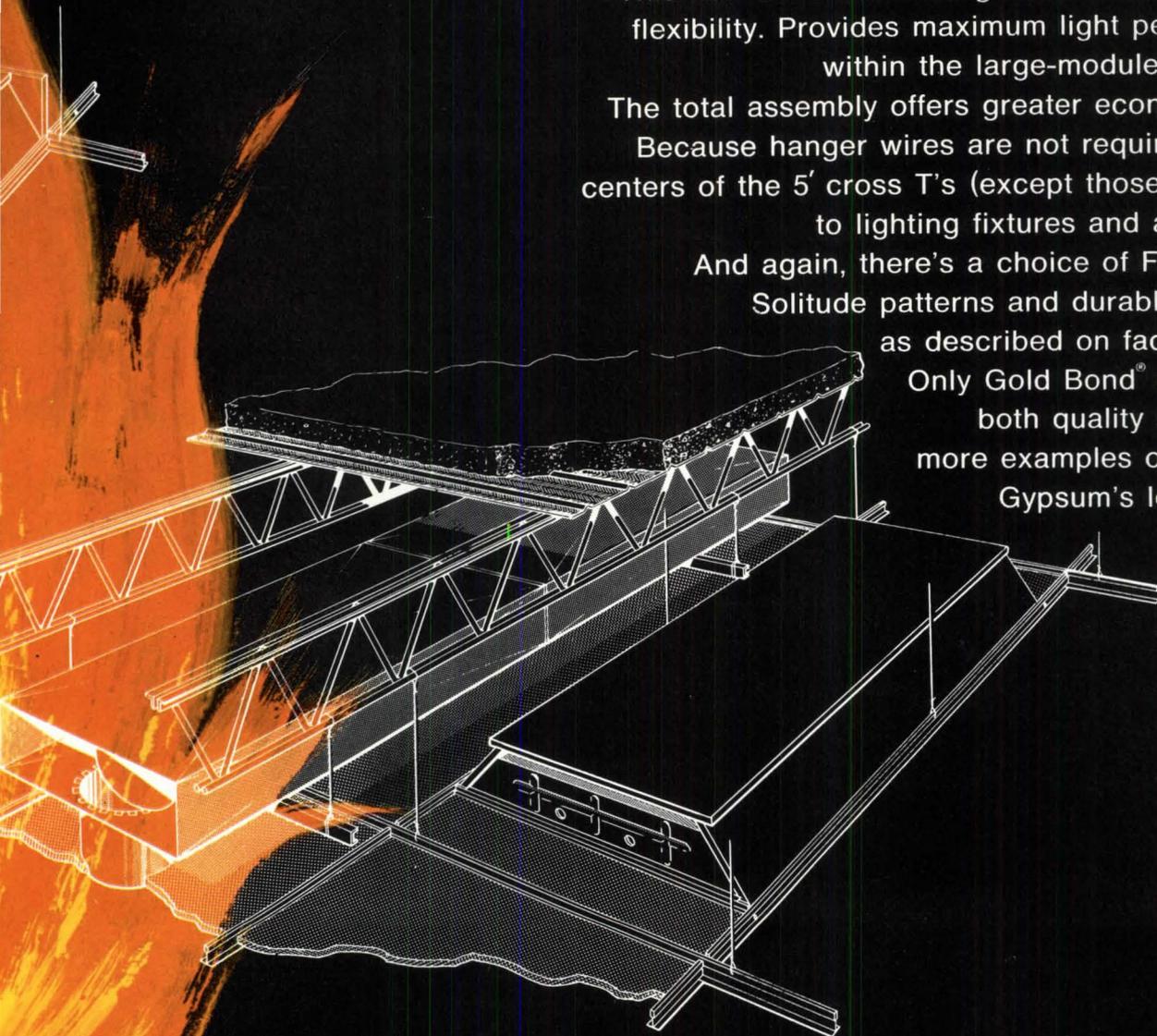
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offers you both:

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*FMC Corporation, Packaging Machinery Division, Philadelphia Plant, Horsham, Pa.; Architects & Engineers: Alexander Ewing & Associates, Philadelphia, Pa.; General Contractor: Irwin & Leighton Inc., Philadelphia, Pa.*

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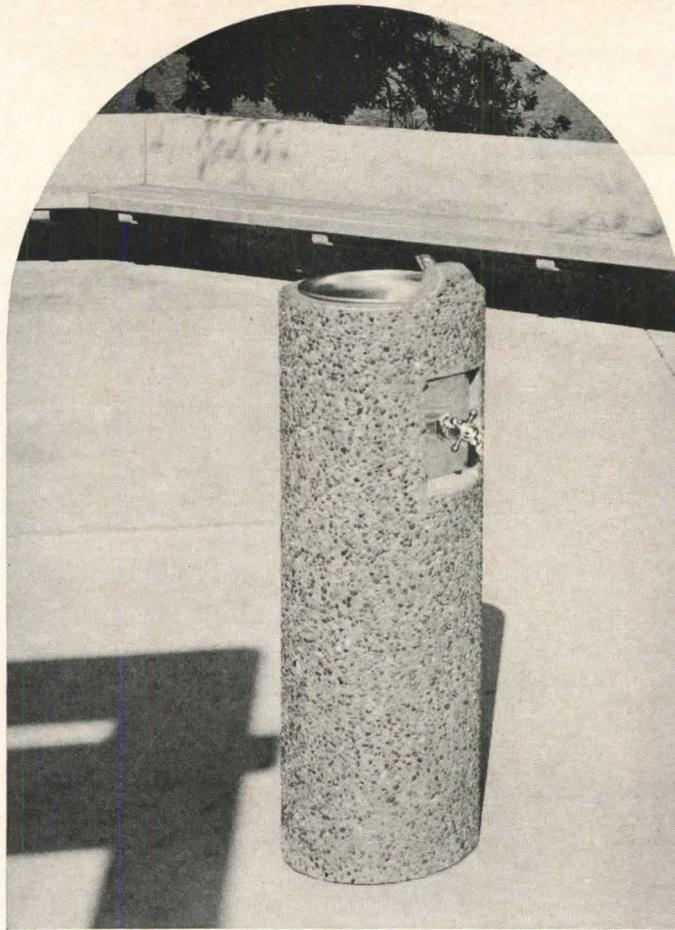
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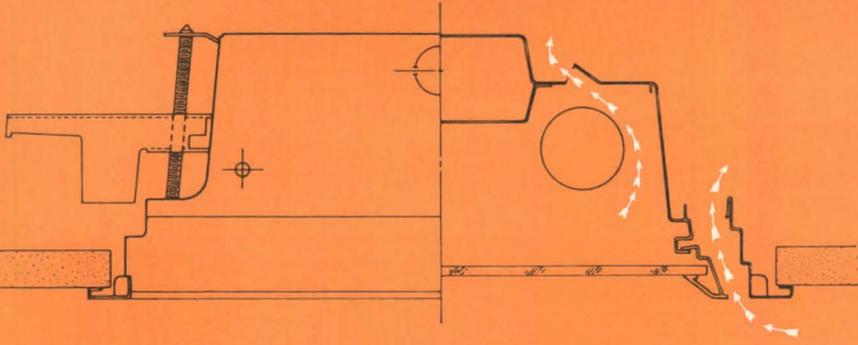
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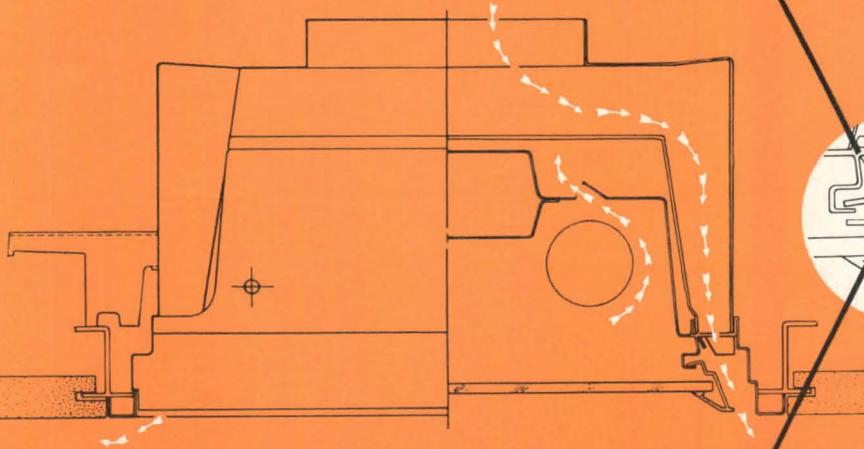
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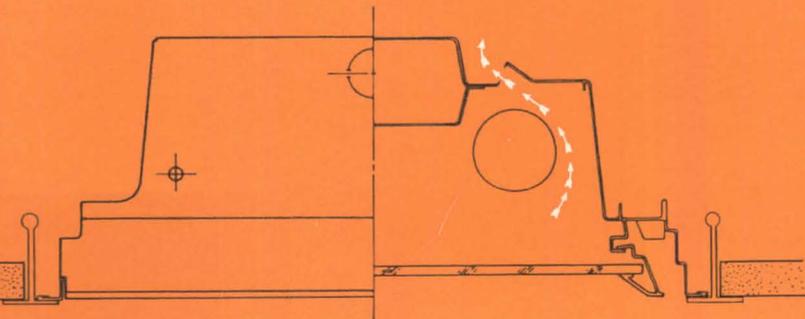
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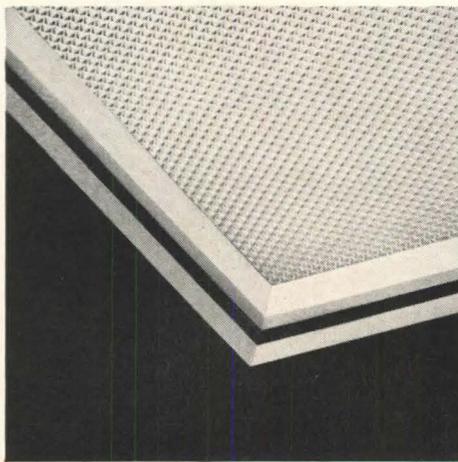


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TROFF-AIRE II SYSTEM BY  
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# LETTERS

(continued from page 12)

university's own expansion—with-out the displacement of so many unfortunate families.

That Manhattan's move has nothing to do with any plan of Columbia's is a pleasant surprise and I suppose that Mr. Smith, as a trustee, turned up the ex-Juilliard buildings in a small ad at the back of the Saturday Review. Still, I wish that they had stayed in East Harlem whether they served it well or not—the continued presence of cultural institutions in residential neighborhoods is a good thing.

## SPIRIT OF THE MUSE

Forum: Knowing only that the Forum was going to carry an article about Muse (Sept. issue), I am most impressed with the results. My congratulations!

It is heartening to see a project with a small budget (\$33,150), but with large implications (how to provide architecture now for current ghetto problems, how to deal with city bureaucracy, and how to encourage community participation) receive such grand coverage.

New York City **MALCOLM HOLZMAN**  
Architect

Forum. Your article was a delight and caught the spirit of what we are trying to do. In addition, I would not change the placement of the article for anything. To follow that god-awful House Office Building with a tiny little \$33,000 project was terrific.

Brooklyn **RICHARD A. MADIGAN**  
Director, Muse

## BLUEBEARD'S CLIENT

Forum: While we were delighted to see the complimentary article on Bluebeard Hill Apartments, St. Thomas, Virgin Islands, in the July/Aug. issue of the Forum, we were disappointed that the role of the developer in the creation of this outstanding middle-income project was not recorded.

Without detracting from the excellent work of the architects, Kramer, Kramer & Gordon, it should be borne in mind that outstanding architecture requires the partnership of architect and client—a client with high standards for design and esthetics, receptive to innovation, and knowledgeable with respect to economics, par-

ticularly in these islands where cost factors are so important.

The Association for Middle Income Housing, as a nonprofit housing development organization dedicated to the building of better housing for families of moderate income, was invited by the Governor, Ralph M. Paiewonsky, to assist the housing department of the Islands administration in solving the problem of developing housing for families who could not qualify for public housing but were unable to afford the high cost of housing on the private market.

It is our somewhat less than modest position that the philosophy and policies of this organization have made it possible for the architects who have designed projects for us to realize results which are more representative of the full capacity of their respective organizations. . . . In the case of Bluebeard Hill Apartments, we not only pressed to have the architects produce a superior design and quality within the limitations affixed by the federal agency, but also we made sure that the minimum standards permitted did not become a maximum. We further directed the architects to achieve a plan which was not bound by the old conventions of temperate zone design and construction, speaking firmly for a contemporary architecture designed and built specifically for Caribbean conditions.

Kramer, Kramer & Gordon responded creatively and effectively to the project requirements we presented to them. Our confidence in them was fully justified. The publicity that has been given them is well merited.

I close, however, with my initial proposition. Good architecture needs both a good architect and a good client.

New York City **S. F. BODEN, President**  
AMIH Housing Services Inc.

*We couldn't agree more. Our apologies for failing to give credit where credit is eminently due.*

—ED.

## FUN SPOILERS

Forum: The reason underlying architects' reluctance to use computers for design ["Computer Technology," Sept. issue] may be quite simple. Design is the part of the job that gives the most pleasure — with all the reams of yellow tracing paper, 6B lead, and midnight oil. So why spoil all the fun?

Washington, D. C. **PAUL D. SPREIREGEN**  
Architect

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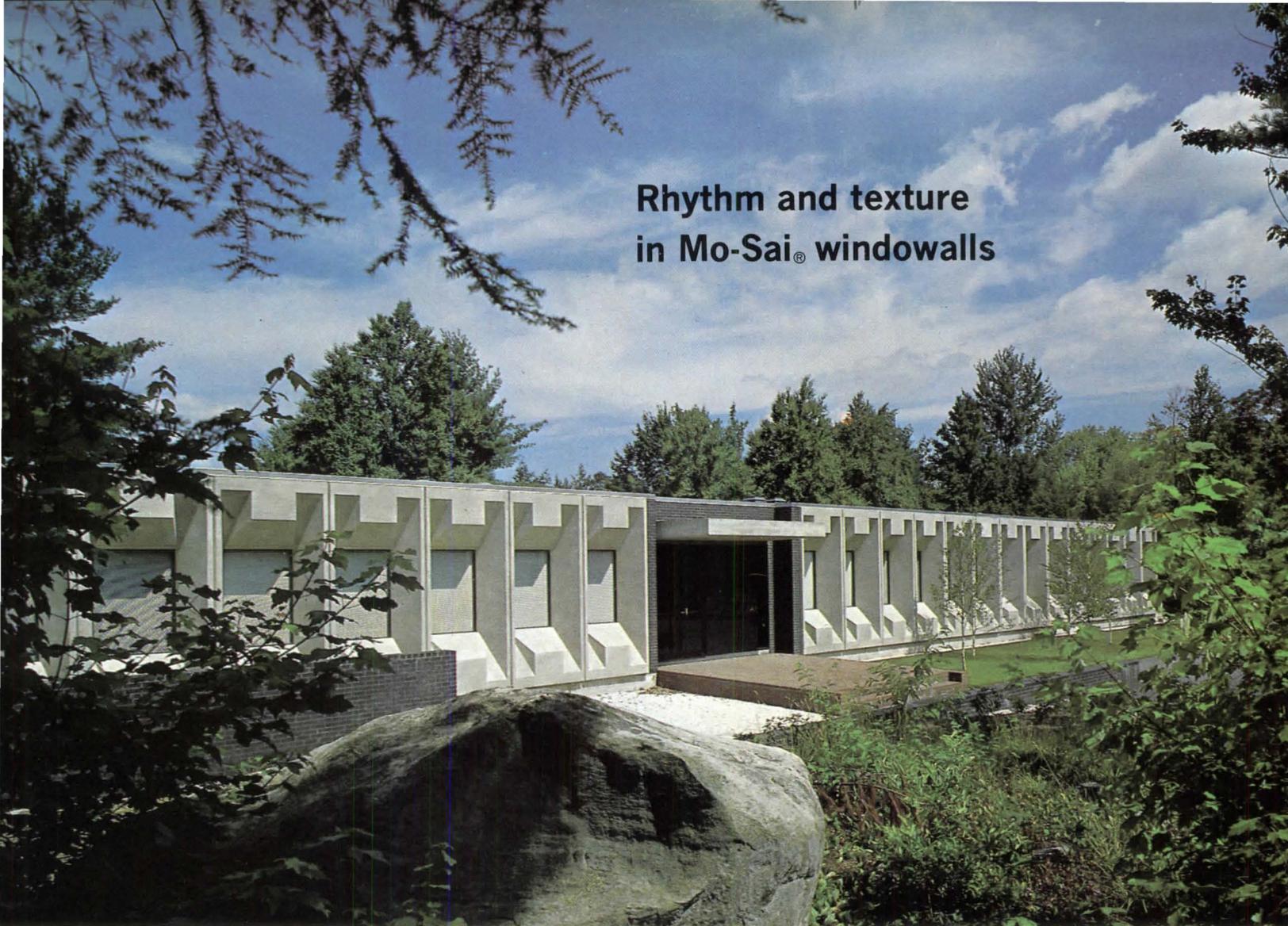
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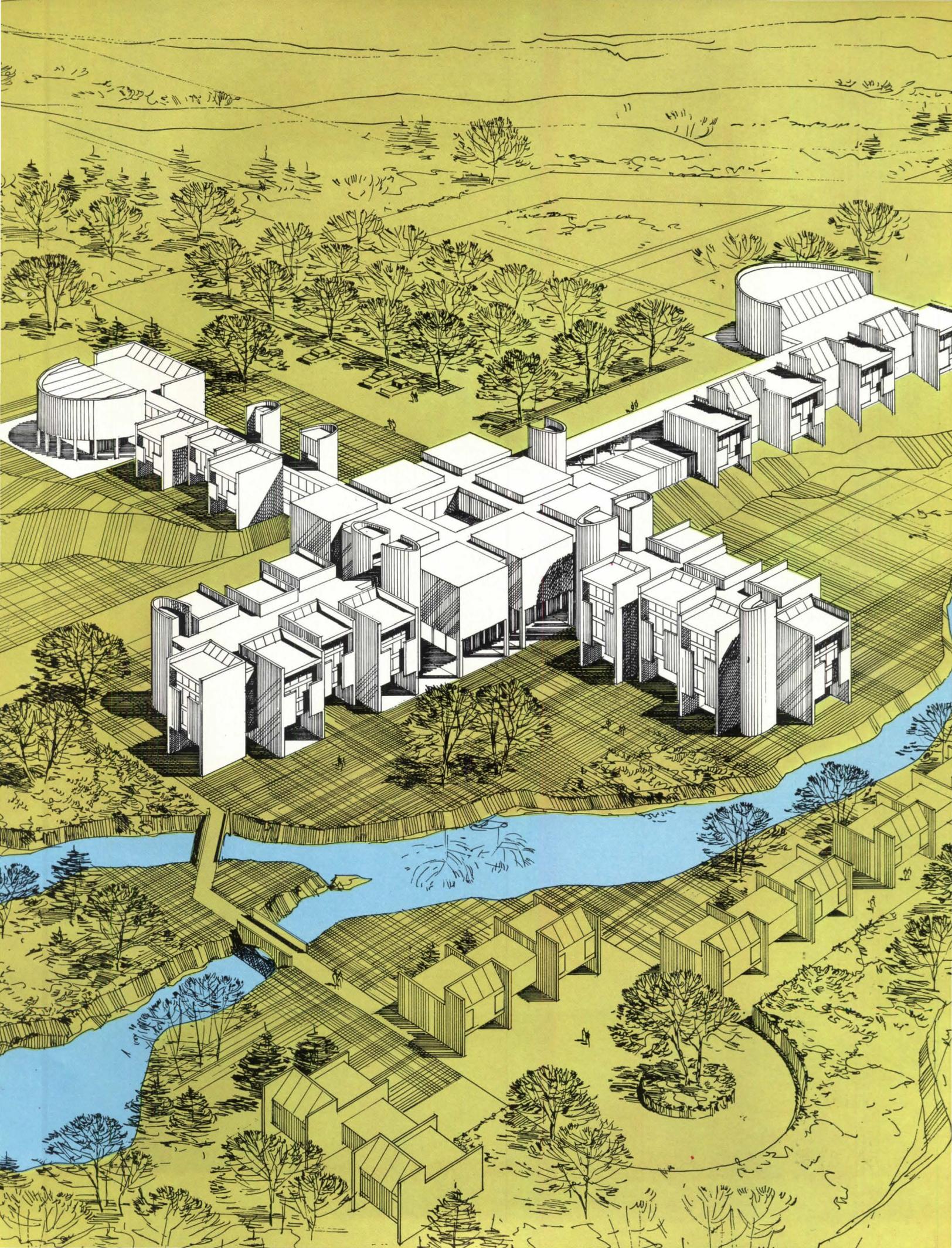
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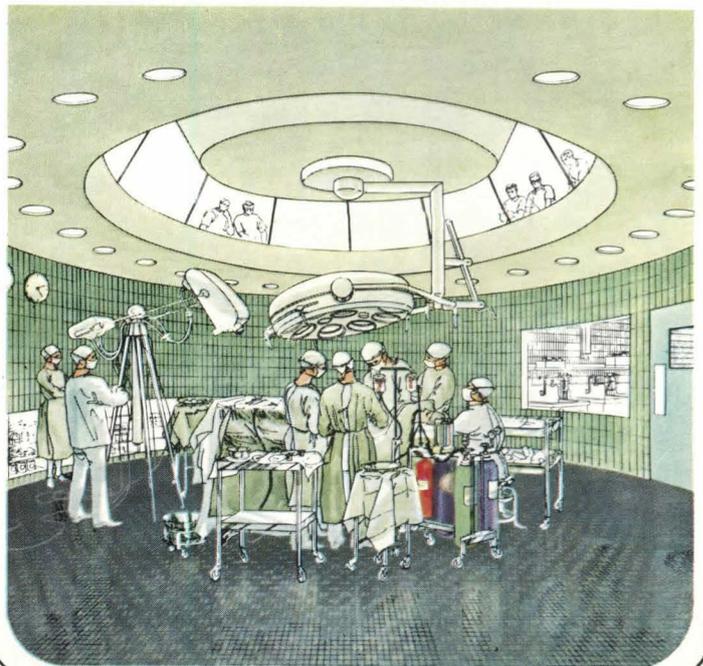
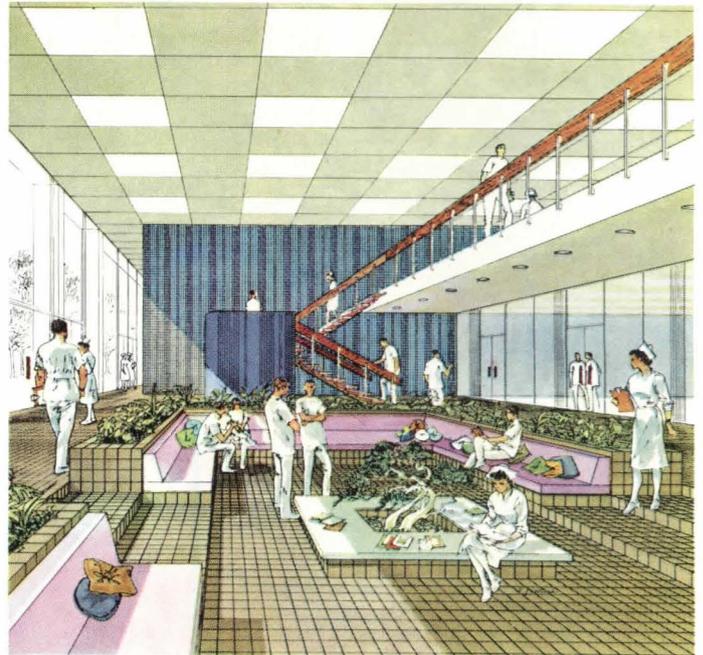
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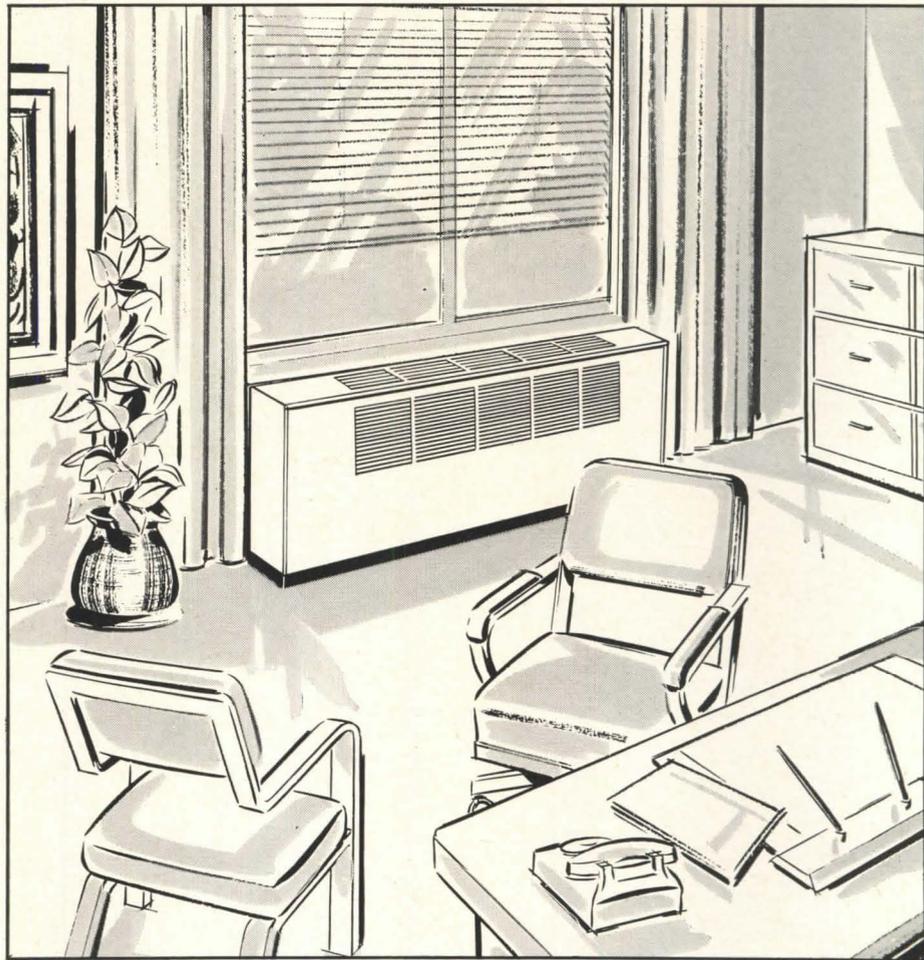
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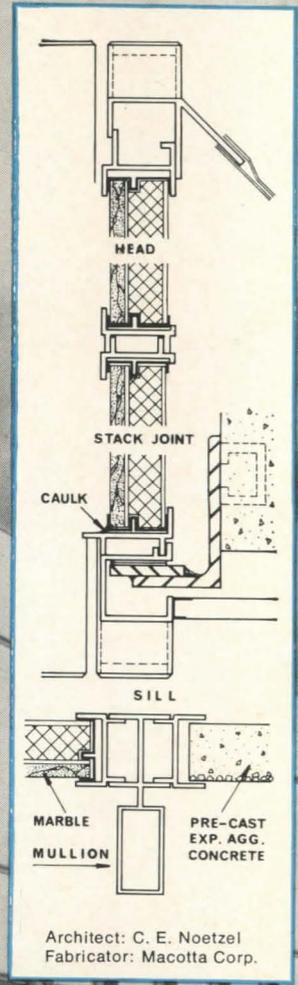
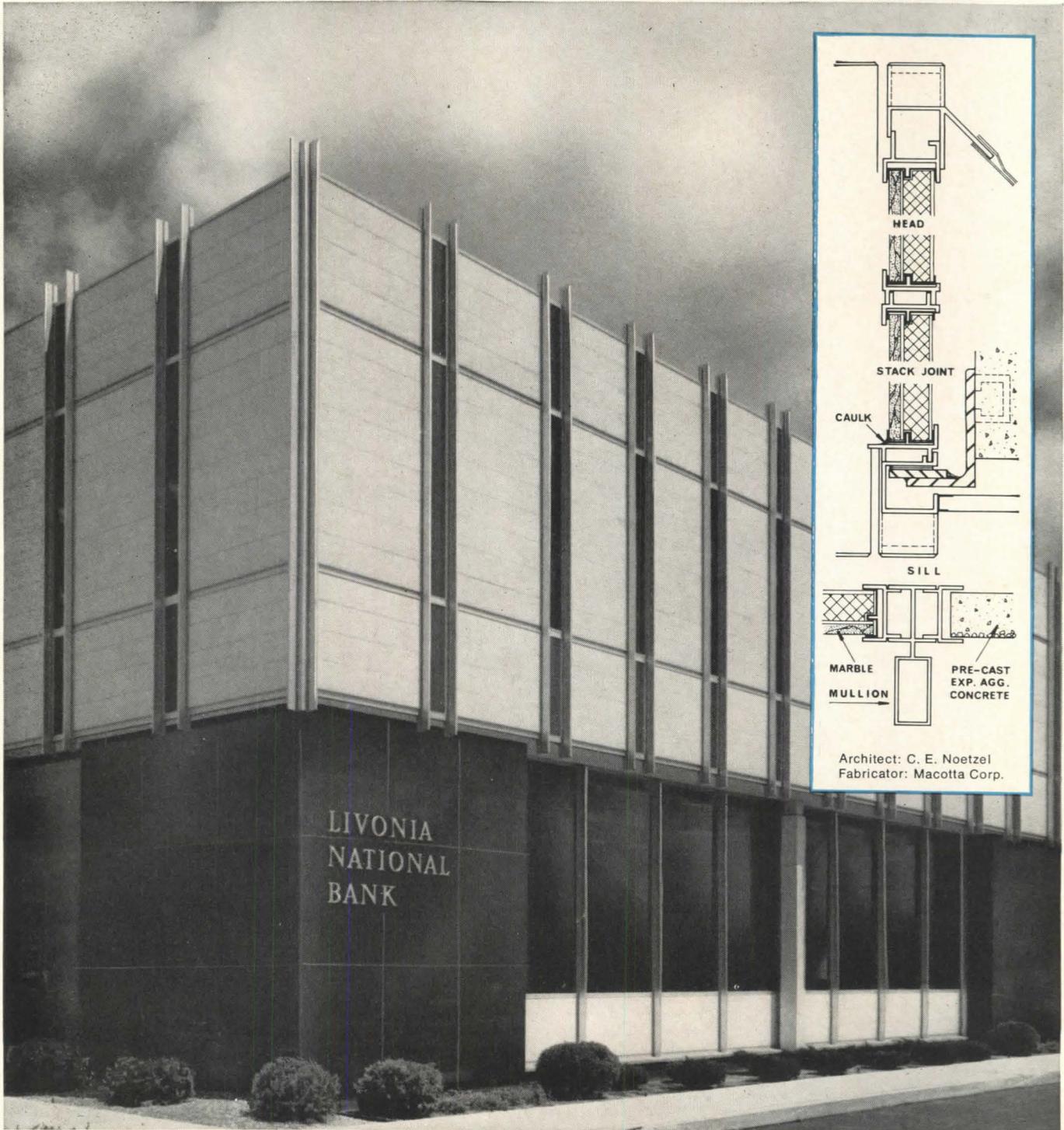
The example shown here is the Livonia National Bank, Livonia, Michigan, one of six banks in a chain using the same construction technique. Vermont Pearl Danby

Marble was chosen for this particular project, but any other exterior Vermont marble could have been used.

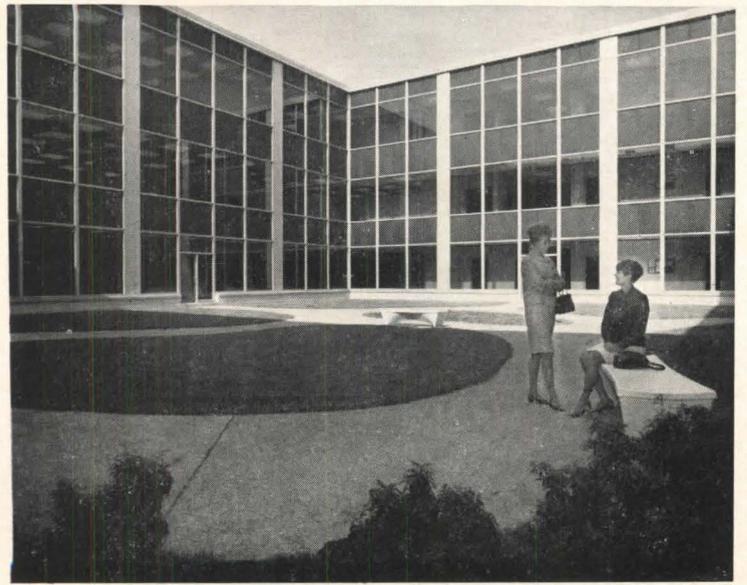
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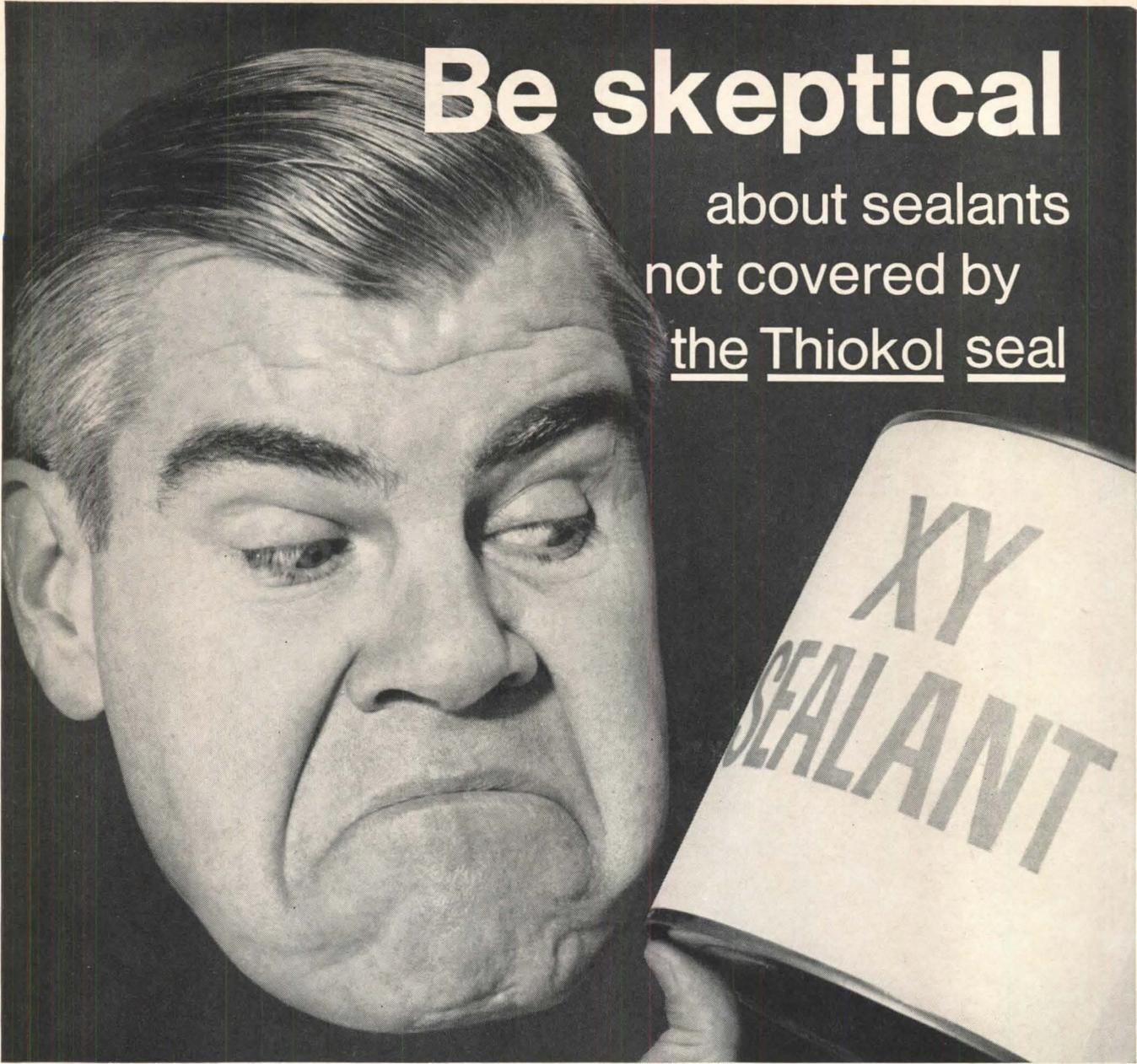
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**FORUM**

Congress giveth and Congress taketh away. In July, with much self-congratulation, it passed two massive housing subsidy programs as the start of a ten-year plan to replace the nation's entire stock of six million substandard units (Sept. issue). Last month it severely crippled both programs by slashing millions from their first-year appropriations.

The Administration had requested \$75 million in first-year contract authority for each of the two programs; Congress appropriated \$25 million each. The Administration had asked for \$7 million in mortgage subsidy payments for the home-ownership program, and \$4.5 million for the rental program; Congress allowed \$4 million and \$3 million respectively.

The Congressional hatchet job means that only about a fifth of the first year's projected 200,000 units can be built or rehabilitated. More tragically, it almost certainly means that the ten-year goal will not be realized.

And Congress didn't stop there: it slashed away mercilessly at virtually every new HUD program. A proposed \$5 million fund to aid nonprofit sponsors of low- and moderate-income housing projects was cut to \$500,000; an \$8 million request for HUD staff additions to enforce the open housing provisions of the 1968 Civil Rights Act was chopped to \$2 million; and a request for \$15 million to provide tenant services to occupants of public housing—one of this year's few gestures to the hard-core poor—was eliminated altogether. In all, HUD had asked for \$54.6 million to fund its new programs; Congress appropriated \$12.1 million. Congress did appropriate \$44 million, however, for a reservoir at Bruce's Eddy, Idaho.

**FRONTIERS****DEFENSE ON THE OFFENSIVE**

Clark Clifford, Secretary of the Department of Defense, has pledged his efforts in support of "justice, domestic tranquility, general welfare, and the blessings of liberty." Believing that a department which spends half the federal tax dollars ought to pay more attention to social needs, Clifford outlined a series of ideas by which

military expenditures could aid the nation in housing, education, health care, and unemployment.

Speaking before the National Security Industrial Association, he urged his listeners to heed General Eisenhower's warning about the "military-industrial complex" (leading members of which, he acknowledged, were assembled before him at the moment), and gave his own warning that if the resources of this complex were to be "misdirected, squandered, or consumed inefficiently, the American people would be poorly served indeed."

Clifford advanced the concept of "total national security," defined as consisting not only of weapons and armed forces, but also of a unified American people, sharing ever more fully in the benefits of society. For total national security, then, Clifford believes that the Defense Department must become involved in housing research, exploring new materials and techniques in the Department's own housing (\$200 million a year in new construction, \$450 million in maintenance, operation, and leasing of existing housing). The Department expects to design a prototype project for George Air Force Base in California, utilizing modular design, factory assembly, and volume procurement. "Should this project turn out as we hope," said Clifford, "we will have better military housing at lower cost, higher morale and thus improved military effectiveness. These innovations, passed along to the private economy, should have a beneficial impact" on the nation's low-income housing problem.

Because the Department of Defense is "one of the world's largest hospital customers" (sic!), Clifford hopes to implement a systems approach to hospital design. His expectation is that "a whole new generation" of automated hospitals will result in "better, more accurate, and less costly hospital management" for the military, and ultimately for civilians.

Forestalling any objections, the Secretary said, "There will be those . . . who will contend that [the Department] has no business interfering in the internal welfare of our country." Defense's latest and largest budget, in fact, will probably put the squeeze on many programs of social welfare conceived or operated outside the Department of Defense. While some people conclude that the best hope for improved hospitals, housing, etc., is a smaller Department

from offshore oil for the purchase of new parkland.

In all, LBJ has signed some 250 separate conservation measures during his presidency. It is a record unmatched since the days of Theodore Roosevelt.

#### BRIDWELL TO THE RESCUE

Federal Highway Administrator Lowell K. Bridwell has told the California State Highway Commission where to get off—and he has made it stick. It marks the first time that this most arrogant of state highway bodies has buckled under.

After ten years of bitter wrangling between the commission and the city of San Francisco over the routing of a freeway near a city-owned reservoir, Bridwell issued an ultimatum to the commission in mid-September: build the freeway where the city wants it, or build it without federal aid.

Since the federal government's share of the bill was 92 per cent, Bridwell's language was the kind the commission could understand. Ten days after he left town, the commission voted to "reopen" the subject.

At issue was the 4.5-mile section of the Junipero Serra Freeway that is to run near the Crystal Springs reservoir south of the city. For ten years the commission has stuck to its original plan to put the road along the water's edge; and for ten years the city has been fighting to get it built along a nearby ridge. This route, the city claims, would eliminate the threat of polluting the reservoir and would greatly facilitate the city's plan to turn the reservoir's 2,300-acre watershed into a recreational area.

The city's position has the backing of the San Mateo Planning Commission, which represents 18 communities, Senator Thomas H. Kuchel, the California State Assembly, and Interior Secretary Stewart L. Udall. But all this support has never cut any ice with the commission. It has taken Bridwell to do that.

## TRANSIT

#### BAD NEWS FOR BART

Unless somebody comes up with \$144 million, the Bay Area Rapid Transit (BART) system may well become the biggest unfinished relic in history.

That prospect took on new significance in late September when

a special session of the California state legislature failed to agree on a plan for giving BART the extra funds it needs to complete its \$1.2-billion, 75-mile system.

There is no lack of proposed schemes for raising the money, but so far every possible solution has been defeated by strong opposition from one quarter or another. The scorecard:

- *Doubling tolls on the Bay Bridge to 50 cents.* This has the backing of virtually all the legislators from the three counties served by BART, but Governor Ronald Reagan is opposed to it. He has threatened to veto any such measure because it would mean refinancing the present bonded debt of the bridge, which would cost millions in added interest. Also, bridge tolls already account for \$180 million of BART's budget.

- *Using motor vehicle registration fees or highway tax funds.* Reagan likes both ideas, but they are anathema to the highway lobby, which has a powerful guardian in the form of State Senator Randolph Collier, "the father of California highways."

- *Increasing the sales tax in the three counties by half a cent.* The Governor doesn't object to this device either, but the boards of supervisors of the three counties do. They are afraid that such a conspicuous new tax burden would not set well with the voters, and they have the authority to overrule such a legislative measure.

- *A bond election.* Nobody takes this idea seriously, simply because the voters in the three counties would almost certainly defeat it. They passed a \$792-million BART bond issue in 1962, and little has happened since to confirm their faith in the system.

- *Federal Aid.* David W. Schuh, a Republican congressional candidate from the East Bay city of Orinda, is seeking an interest-free loan or an outright grant from Uncle Sam, and claims that he is being "favorably received" in Washington. BART officials aren't nearly so optimistic.

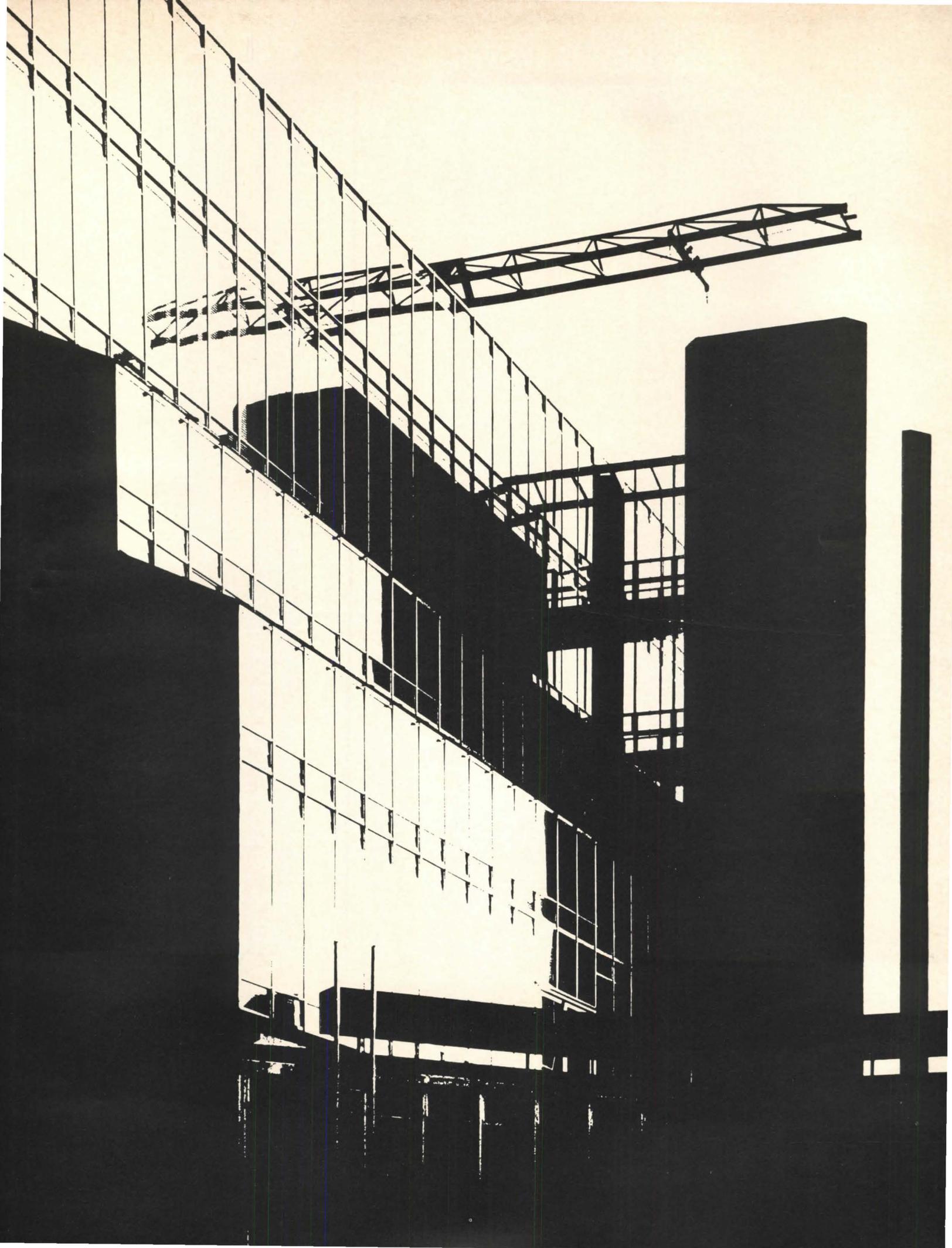
Any one, or a combination, of these proposals could save BART, but none seems likely to surface in the immediate future. And each month of delay adds an estimated \$1 million in interest charges to BART's already staggering deficit.

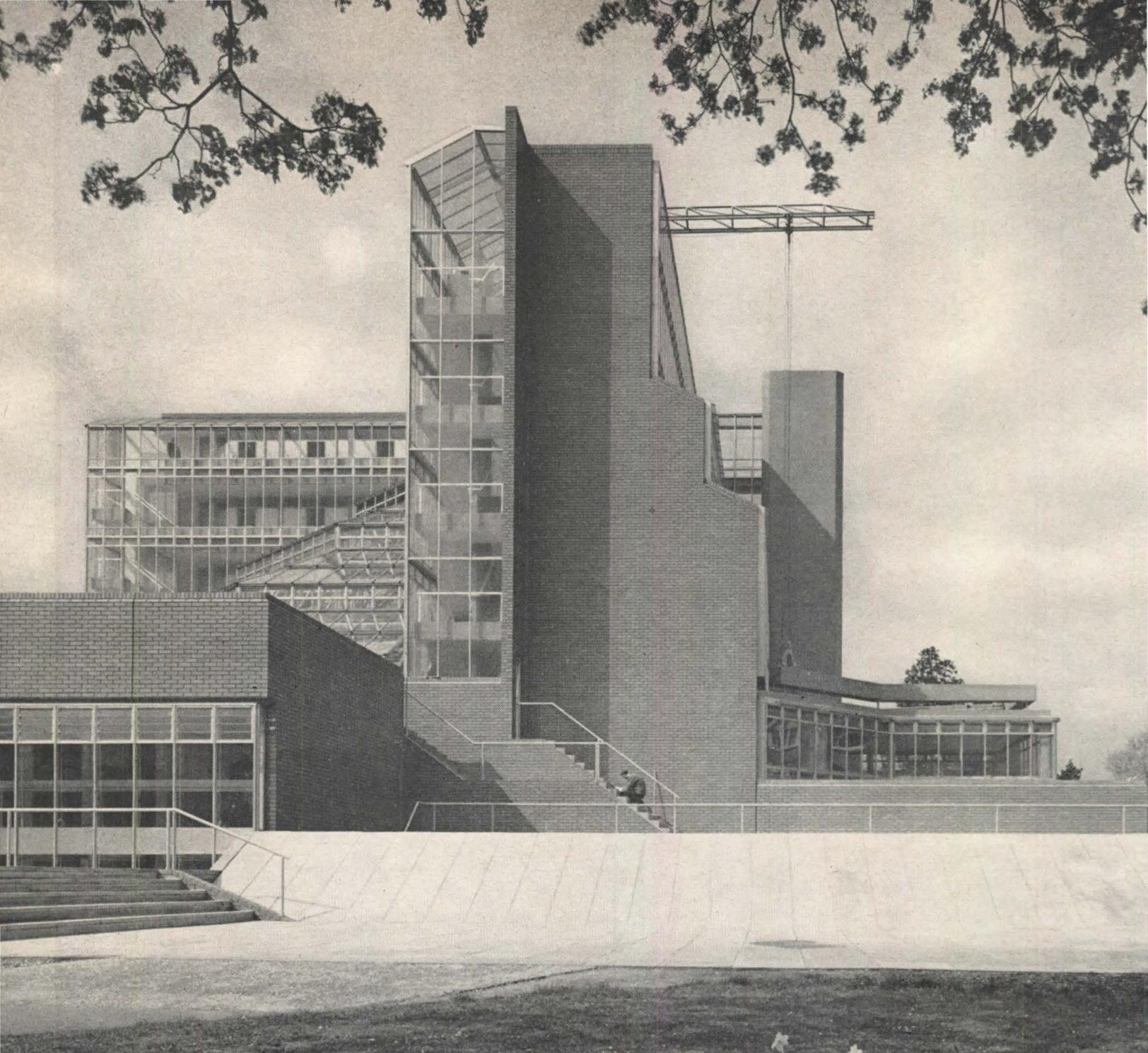
Meanwhile, BART vows not to award any new contracts until it has the money in hand to com-

(continued on page 93)

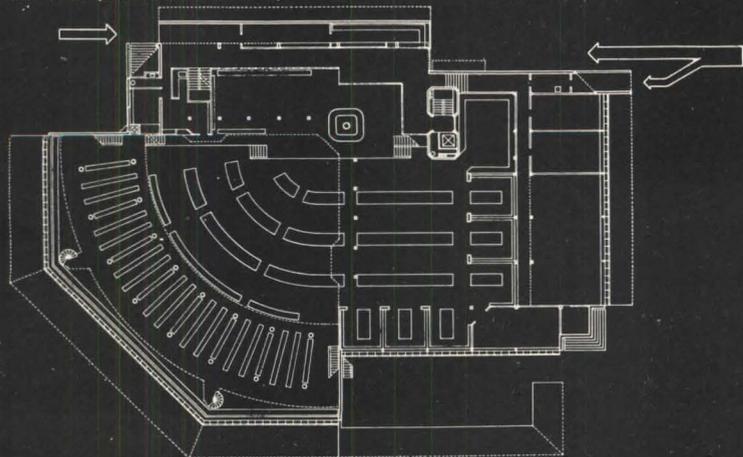
# Information Bank

James Stirling's latest building—the library, offices, and seminar rooms for the History Faculty at Cambridge University in England—is a composite of glassy and structural images, and a significant extension of the architect's impressive work. On the next eleven pages the building is described in pictures, drawings, and words. And on page 44 begins a critical evaluation of the building by Kenneth Frampton, the British architect and historian.

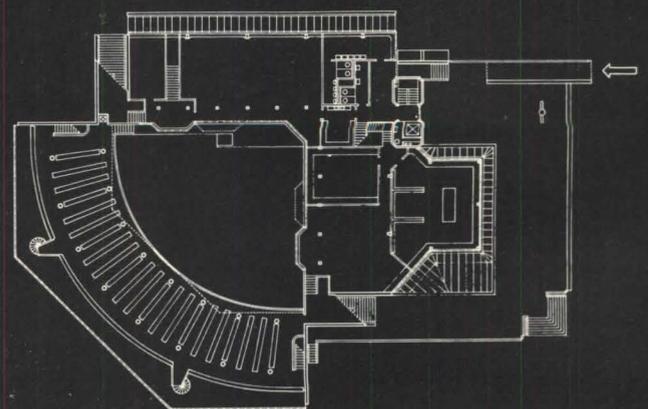


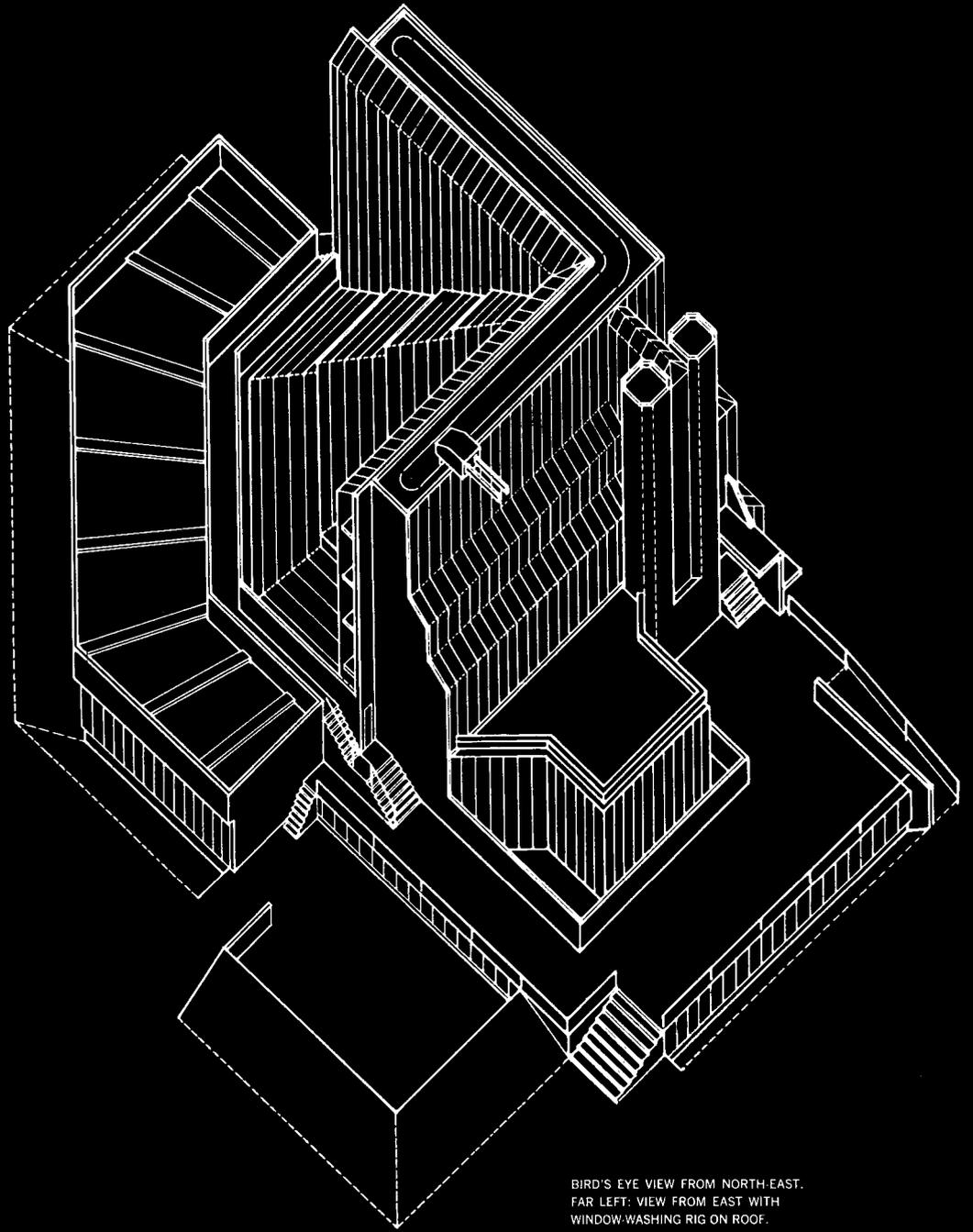


FIRST FLOOR (STUDENT ENTRANCE LEVEL)



SECOND FLOOR (FACULTY ENTRANCE LEVEL)



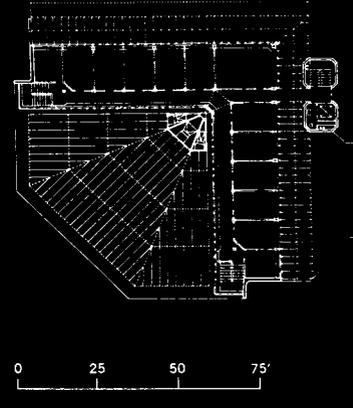
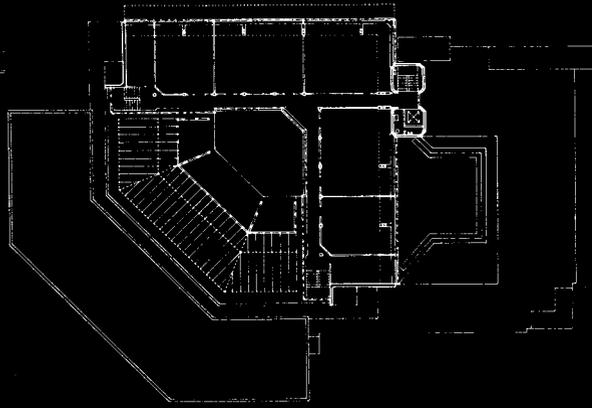
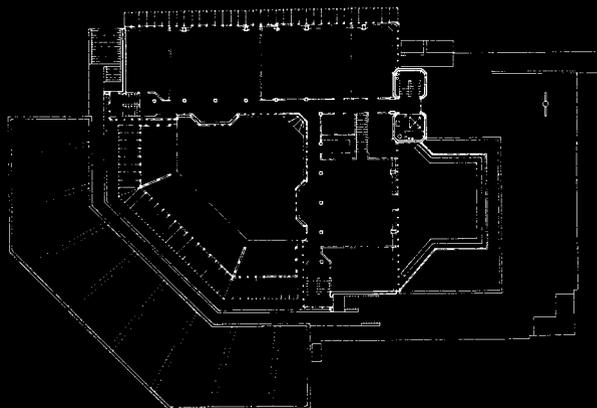


BIRD'S EYE VIEW FROM NORTH-EAST.  
FAR LEFT: VIEW FROM EAST WITH  
WINDOW-WASHING RIG ON ROOF.

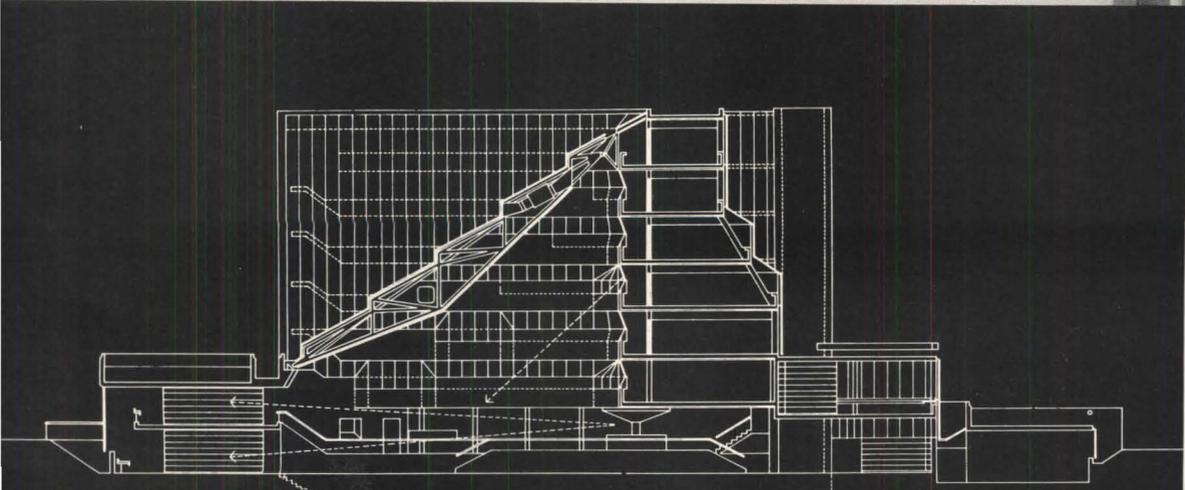
THIRD FLOOR

FOURTH FLOOR

SIXTH & SEVENTH FLOOR



0 25 50 75'



SECTION LOOKING WEST

0 25 50'

Left: Section and corresponding view through reading room, showing several levels of common rooms, seminar rooms, and staff offices that overlook the space. The reading room holds 300. Parapets on different floors are surfaced with sound-absorbing materials. Right: View up into apex of glass roof, showing three separately operating air exhaust machines (single-stage axial flow fans fitted with silencers). Roof is framed with steel trusses which carry an outer and an inner skin of glass. The outer skin contains adjustable louvers that help ventilate the space formed by the roof trusses. The inner skin is of translucent glass which supplies shadowless natural light. Catwalks in the truss space permit cleaning of glass surfaces with long-arm vacuum cleaners. (Exterior glass surfaces are cleaned by means of a mobile, roof-mounted gantry—see page 37.)







## STIRLING'S BUILDING:

"Images of the Zeiss Planetarium, the Berlin radio tower, the skeleton of a Zeppelin, Paxton's Palace, Brunel's Paddington, the engine rooms of the Titanic—and a Trinity of exhaust fans."

BY KENNETH FRAMPTON

A decade ago Summerson suggested that an architecture could only have *one* source of unity and that this, in the case of the 20th century, divorced from the standards of antiquity, could only be the Building program.

This austere proposition was amplified soon after by Christian Norberg-Schulz who argued that the description of an *architectural totality* must comprise three basic dimensions: Form, Technic, and the Building Task; the latter being the building program broadly considered under the interrelated aspects of its physical and social milieu.

This outline does not, of course, furnish concrete criteria but at least it affords a matrix in which to evaluate a given solution and its semantic; thereby to attempt to reveal that missing architectural language whose absence Summerson regretted but chose to dismiss, 'as nothing but a scar left in the mind.'

In an architecture whose prime authority is the building task, this matrix cannot be instructive without the recognition of a perceivable architectural intention. Where a definite *Gestalt* be intended, a dialectic invariably occurs in which the initial model of the concept must incur certain distortions due to the input of an empirically determined program. In this the semantic of a building must ultimately derive from the consistent relation between the absorption of this

input and the consequent distortion of the initial model.

In Le Corbusier's work these distortions are frequently to be found absorbed in the "elisional" format of the free plan—incompatible elements being articulated out of the system, as appendages to the ideal model.

In Stirling's work, atypical empirical elements are either expressed as being extraneous to the general model, or are totally absorbed into an overall repetitive system.

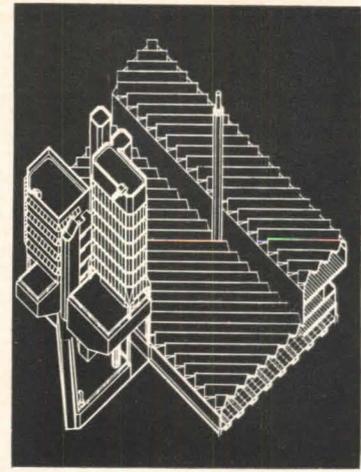
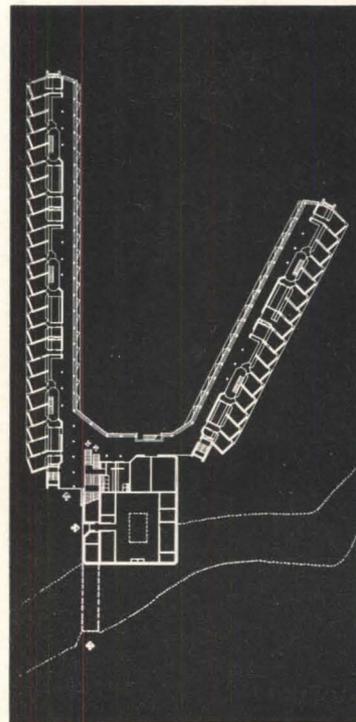
The new History Faculty building at Cambridge, of course, falls into the former category. Here the initial model is a seven-story L-shaped block, symmetrical about its diagonal axis and containing within its closed arc a prismatic tripartite roof, raised upon an irregular pentagonal plan. The distortion herein entails, firstly, the impingement on the basic form of major service elements articulated out of its general system; secondly, the distension of the bounding walls of the model in order to accommodate inner programmatic pressures; and, finally, the gradual erosion or diminution of the model as it develops in height.

Of relevance to these various distortions is the fact that the other entrants to the limited competition for this building all selected a *parti*, in which the library was conceived as a semi-self-contained prism, linked to office and seminar space housed in a freestanding slab. The now realized fusion of these two elements into a composite geometric model, arose out of the architect's conception of the building as a particular "type." This concern for building typology in respect of particular programmatic content, now appears as central to Stirling's latest work. Thus, in this History Faculty building, as in his recently completed hall residence for St. Andrews University (right) the architect has displayed an almost instinctive concern for the direct expression of the building as an institution. That the Cambridge History Faculty library is an information bank attended upon by those who utilize its wealth and minister to its order is now

to my mind directly expressed in its physical form; while at St. Andrews the whole complex social structure of university residence finds an equally direct, if somewhat naive expression in the hierarchy of its exfoliated order.

In both instances, determined attempts have been made to invent a new "type" out of the demands of a given program. At Cambridge the venerated library models of Wren, Scott, and even those deriving to some extent from the exemplar of Aalto's Vipuri have been resisted; while at St. Andrews the traditional quadrangular model has been eschewed in face of the splendors of a sloping site facing out over the sea. In this, Stirling follows in the mainstream of the 20th-century "pioneer" tradition which at its best has concerned itself with the formulation of new types for the accommodation and expression of socially unprecedented solutions—with the creation of that which El Lissitzky chose to call the new "social condensers."

The models thus invented both for Cambridge and St. Andrews structurally designate themselves as institutions of a particular "order" and "type," yet if we perceive the structural order of these types as auto-designated, their intrinsic syntactical systems remain relatively inexplicit,



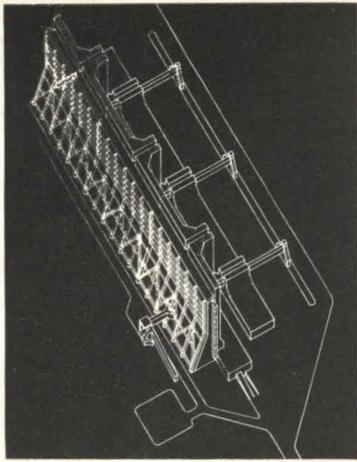
and for these to be revealed we need to concern ourselves with the phenomena of distortion previously mentioned.

If we remove those elements which are unambiguously articulated as being outside the initial model (such as the twin towers housing the elevator and main stair systems, the low brick podium, and the tiled ramp and entrance canopy), we are left with two major distortions to the initial *Gestalt*.

The first and most significant is the first and second floor distension to the north, in the form of a blunt projection to accommodate specialist research space in close proximity to the main library level. The second is the setback recessions occurring on the northern and western facades above the levels of the fourth and fifth floors. These recessions, however they may be rationalized, weaken the initial form and destroy this form as a "field" against which the more major distortions may be clearly read.

These recessions have internal repercussions inasmuch as the structure also has to be cranked back in order to accommodate these displacements. Are we to regard these glazed setbacks as a partly unconscious attempt to unify a composition which perceptually tends to split apart along the seams of its paper-thin brick gable returns (i.e., at its SW and NE corners)? Or, rather, should we see it as a particular architect's obsession with the attenuation of built form as it rises in height? The latter seems the most plausible explanation, for, from the Leicester Engineering building of 1960

Kenneth Frampton, a former associate editor of the British magazine *Architectural Design*, is now an associate professor at the School of Architecture at Princeton University. In addition to his theoretical work, he practices architecture in the London firm of Douglas Stephen & Partners.



(isometric drawing, opposite page), to the Dorman & Long project of 1965 (above), Stirling has consistently exploited patent glazing as a *matière* whose spectacular qualities are to be most effectively revealed, through draping it like a giant curtain over a configured shell; a seductive form of material expression, on occasion irrelevant to the intrinsic syntax of a particular structure.

If we now turn our attention from the exterior to the interior we find that the negative of this composite form comprises elements related to each other at a smaller scale. These elements may be identified as follows:

(1) The reading room itself recessed some 4 ft. below grade radially focused but extending beyond the domain of the roof into the major projection on the north face. This distension is emphasized internally by the concentric library tables, which extend the radial space by their straight-line formation towards the north.

(2) The "control deck" at grade, comprising the entry foyer, the card catalogue and the control desk; the latter being situated at the focal center point of the radial reading room (right). In accordance with the initial brief, this point affords total surveillance over the entire library and "controls" the entry to the graduate study room. It is also literally the structural centerpoint of the scheme, being under both the apex of the inclined roof and the inner intersection of the arms of the L—a system which directly unites function, technic, and space-

form. In addition, the external glazing of the inclined roof is layered in horizontal steps, so as to coincide with the floor levels of the L-shaped slab.

(3) The access corridors of this slab overlook the reading room for as much of their length as falls within the inclined plane of the roof. This visual participation in the central institutional space naturally diminishes towards the top and on the final level is virtually reduced to zero; a diminishing which results from the basic character of the initial composite form.

Five viewing bays project out from these corridors into the reading space and these are arranged in a pyramidal pattern which further emphasizes the space form. A similar diminutive device occurs in the roof apex where three extract fans are visibly suspended in the depth of its structure.

The reading room roof, theoretically, rests on the upstand rim of the book stack mezzanine, its apex counterbalanced by the axis of the L. Its welded tubular structure separates two layers of glass; the one transparent, tiered in contours with ventilation steps between each tier, the other opaque and hung as a six-faceted continuous flat membrane from the underside of the trussed structure. This results in a kaleidoscopic roof which constantly responds to the play of natural light.

In the bright sun, the diffused shadow of its structure evolves across the surface of the opaque



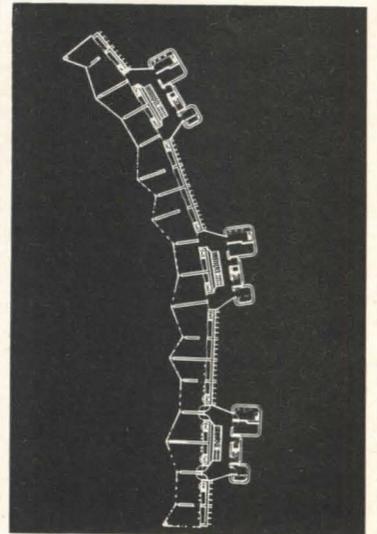
glass. At night, neon strip, hung off the truss chords, yields a controlled pattern of diffused light ethereally suspended over the reading space. The whole, illuminated from the outside at night, gleams like the silvered airframe of a dirigible, its structure laced with the gridiron catwalks that are essential to its maintenance.

The mythological secret Pantheon of Stirling's architectural imagination, at once nostalgic and futuristic, finds expression within this nine-sided volume—the evocation of Laszlo Moholy-Nagy's *Von Material Zu Architektur*—the condensation of a constructivist iconography. Here, in one composite image, is the Zeiss planetarium, the Berlin radio tower, the skeleton of a Zeppelin. Here, suspended within the industrial brick skin of a once massive 19th century, lies Paxton's Palace and Brunel's Paddington and the countless engine rooms of innumerable Titans; while at its apex, a Trinity of exhaust fans, in the primary colors of a pure plasticity, point towards the technical aspirations of a future totally transformed.

The emergence of such a glass architecture in Stirling's work occurs within a definite period: between September, 1959, and March, 1960, when he and James Gowan finalized their design for the Leicester Engineering building. This design crystalized for Stirling, in more ways than one, a totally new point of departure, one that was first anticipated in his designs for Selwyn College of approximately the same date (right). This was a deliberate turning away from an architecture of mass and form, to one composed of the dynamics of reflection and the luminosity of light; to an architecture of literal transparency. The origins of this translucent lyricism can surely be traced historically. Stirling has long been an admirer of the *Maison de Verre* in Paris and other possibly more directly influential structures, such as the Van Nelle factory in Rotterdam; but this sudden reversal from mass to light is, in retrospect, still hard to account for. One has only to look at his

article that appeared in *Perspecta No. 6*, published in October, 1960, to realize the dramatic nature of this change. Every source illustrated therein served only to substantiate the functional brute tradition as exemplified in works of great mass.

Stirling's reaction of 1959 from mass to light, was accompanied by a strong feeling for the erosion and disillusion of form per se. In contrast to the Selwyn College scheme, where the form was laterally and prismatically dispersed, Leicester rose from the solidity of its brick podium into an effervescence of translucent light that diminished ultimately to nothing. From this zero point the patent glazing cascaded down over ever increasing areas of circulation. Thus the history faculty building falls in a line of development that leads directly from Selwyn College to the Dorman & Long



project of 1965, and finally to the misconceived Florey building for Queens College, Oxford, which is now under construction.

Outside of this context, the architectural intention of Cambridge remains only partially revealed. For the Dorman & Long project is really Selwyn recast as a straight block, with three twin cores (as in Selwyn) to stiffen its spine against the thrust of its sloping front. These coupled cores appear again in Leicester and again in Cambridge, always as solid towers which designate them as elements of service. The real counterpart of the heavy brick false podium

employed at Leicester is overwhelmed by the profusion of patent glazing that envelops Cambridge, while in Dorman & Long this vestigial podium suffers total eclipse—a mere ghost of its form remaining in the fattening of the block towards its base.

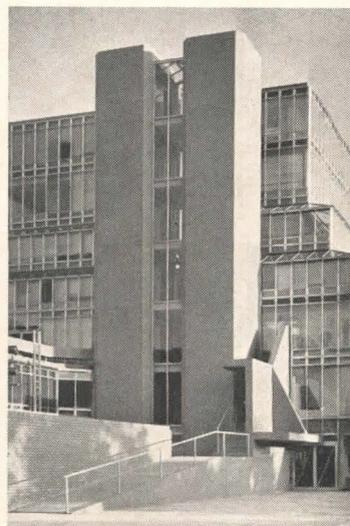
In this genealogy, two generic types are to be found. The generically parallelepipedal type with its glazed front and solid back such as Selwyn etc. (c.f. Pavillon Suisse and Ville Radieuse) and the pyramidal type (see Le Corbusier's composition, No. 1), with its solid base and glazed apex, as aspired to in the glazed circulation and north light roof of Leicester. Cambridge, despite its pyramidity, appears as a paradoxical fusion of these two types. Its glazed facades are as materially translucent as the compositional pyramid which they perceptually tend to obscure, but which remains to be revealed in actuality on the south and east, only again to be supplanted on the north and west by the transparency of their adjacent frontal planes. (In this context the brick returns of these planes, rendered almost as fins, are only to be interpreted as vestigial fragments of Selwyn's spire wall. This ambiguous compression of the parallelepipedal type is avoided at Leicester where the laboratory and administration towers, respectively, take on the dialectical roles of solid and transparent. In this light, the frontal planar recessions at Cambridge may be regarded as an unconscious attempt to resolve an irresolvable concept.)

Three points remain. Firstly, to question whether the building task has been adequately formulated from both a physical and social point of view; secondly, to ask whether this task has been so construed as to permit an adequate task coordination of its physical form, and, finally, to question the relation of the building to its site.

In regard to the first question, one can only take a critical attitude to a reading room that has been conceived in the form of a winter garden. Yet the light

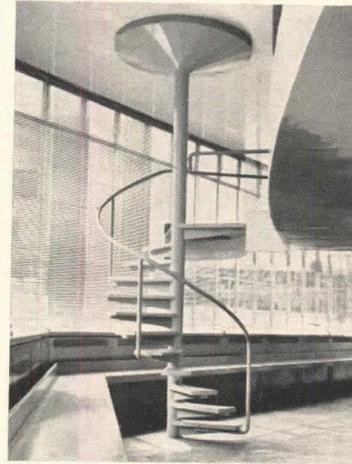
appears to be adequate, fully diffused and even of a sublime quality—so on what grounds can one raise an objection? It is heartening to realize that the reading room of the British Museum was, and still is, lit in a very similar manner. Even so, from the point of view of environmental control, the use of so much glass throughout the rest of the building is still cause for considerable reservation, particularly as it has been largely introduced for iconographic and sensory reasons. Furthermore, the problem of heat gain in the apex of the roof is still a little short of its technical resolution; while sun control to the inclined office glazing has proved somewhat awkward to effect by the use of Venetian blinds.

On the grounds of its actual operation, the building appears to be as fully integrated as the initial brief required. The necessary hierarchies of separation and the stringent conditions of library surveillance appear not only to have been met but also clearly expressed. A dividing rift, in the form of an entry ramp and a double-sided porch (below), expressively separates the students on grade from the faculty who are elevated by ramp prior to their actual entry. Doubtless, such an arrangement would never be endorsed by a Marxist-Leninist student; but Cambridge has yet to suffer its revolution. One may question, of course, the articulation of this element, its brutal abutment to the glass etc., but such a finely detailed critique is almost beyond



the scope of this essay.

The coincidence of the control desk with the focal and structural center of the library space has already been remarked on, and clear expressions, at this level of social and operational consequence, occur throughout



the building. Thus the staff common room finds its external expression in a roof terrace over the graduate study facility, a device which evidently derives from the podium terrace at Leicester. At another level, the spiral stairs to the mezzanine library floor (above) are supported off mushroom columns, elements which in turn can only be identified with the central mushroom supporting the roof apex. As a result of this formal association, these three columns appear as the symbolic supports of the reading room roof.

Finally, there remains the structural relation of building to site: the system of access, the degree of orientation, the disposition of the mass in relation to other volumes.

Again it is instructive to make a comparison with the Leicester building. A potentially greater operational and formal relation of building to site is to be found at Cambridge where the building is now placed so as to front on to a projected mall that will eventually serve as a spinal link to a whole series of new faculty structures. Its orientation is thus determined entirely by its composite form and its siting. It is disposed indifferently towards the sun, in contrast to the Leicester building, which, crowded in an extremely cramped site, is dependent for the critical ori-

entation of its elements upon the interaction of siting constraints with the mandatory north lighting of its major space.

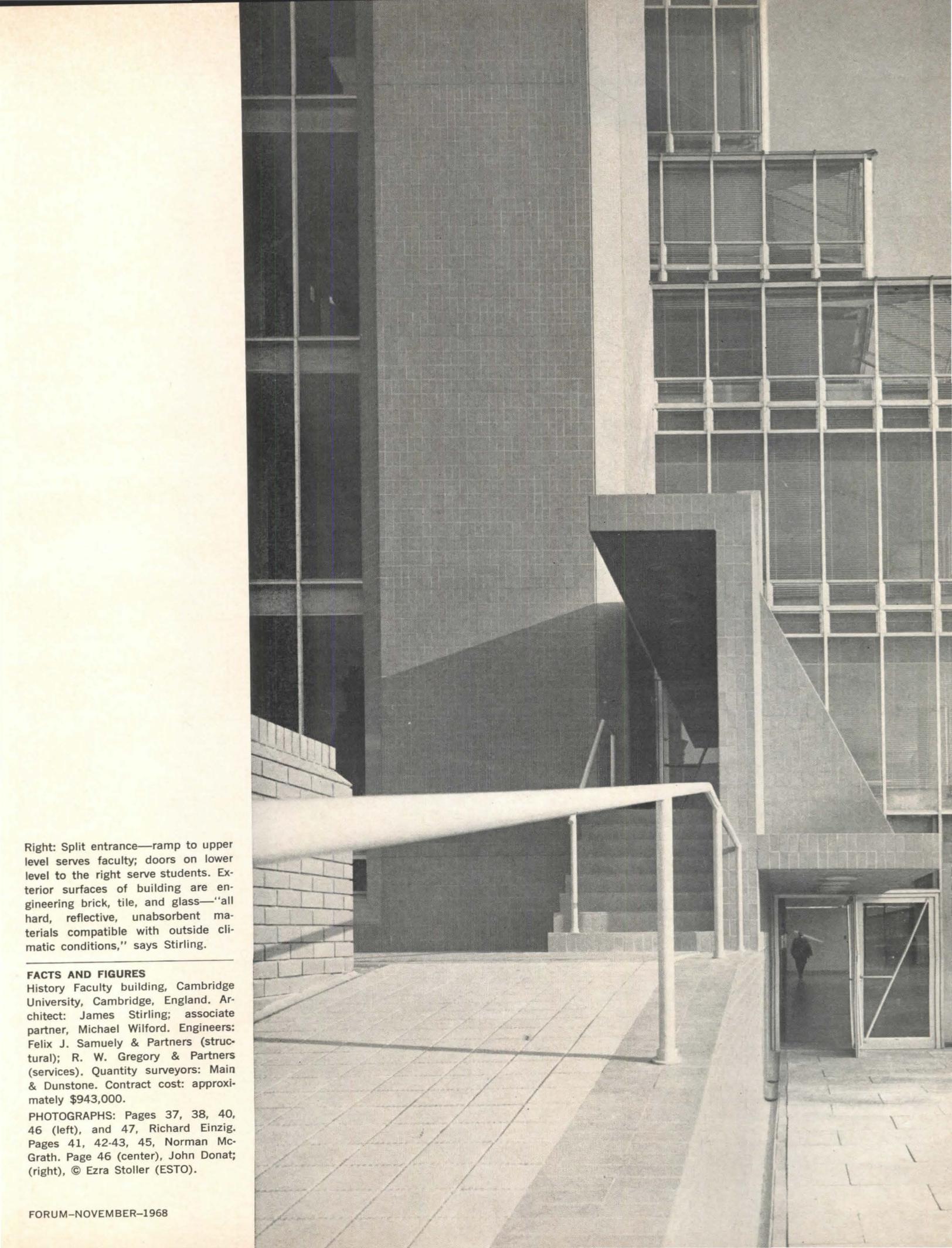
In both buildings service access is achieved away from the main entrance. Mass for mass, the contours of neither building have been seriously determined by their surroundings, although the pyramidity of Leicester was determined in its plan profile to a considerable degree by the restrictions of light angles. Both Cambridge and Leicester comprise essentially symmetrical masses grouped in each case around a central axis, off which adjunct elements are asymmetrically placed.

The similarities between the new Cambridge faculty of history and the *parti* of the recently completed headquarters of the



Ford Foundation, in New York City (above), can hardly be overlooked; yet in their scale and program no two buildings could be more unlike. All the same a winter garden paradigm is common to both and while in the Foundation building this garden forum is quite literal, in the History building its appearance is merely metaphorical. For in its central space, there are no plants but only men studying the flora and fauna of our human past. In the parallel space in the Foundation building however, there are no men, in any permanent sense, but only plants.

This paradoxical reversal, of a forum that is *not* a forum, in a winter garden that *is*, is in telling contrast to a winter garden that is *not* a winter garden but which is, nonetheless, in a very special sense, a forum.



Right: Split entrance—ramp to upper level serves faculty; doors on lower level to the right serve students. Exterior surfaces of building are engineering brick, tile, and glass—"all hard, reflective, unabsorbent materials compatible with outside climatic conditions," says Stirling.

#### FACTS AND FIGURES

History Faculty building, Cambridge University, Cambridge, England. Architect: James Stirling; associate partner, Michael Wilford. Engineers: Felix J. Samuely & Partners (structural); R. W. Gregory & Partners (services). Quantity surveyors: Main & Dunstone. Contract cost: approximately \$943,000.

PHOTOGRAPHS: Pages 37, 38, 40, 46 (left), and 47, Richard Einzig. Pages 41, 42-43, 45, Norman McGrath. Page 46 (center), John Donat; (right), © Ezra Stoller (ESTO).

# MANHATTAN REORGANIZED

HERMANN HERREY's proposal calls for  
a ring of new land around the island  
to provide housing for half a million people

The white outlines on the aerial view at right represent the key element of Hermann Herrey's plan for the rebirth of Manhattan: six square miles of totally new land completely surrounding the island and its southernmost satellite, Governors Island.

Turn the page, and the ring of new land (plus the existing acreage of Welfare, Ward's, and Randall's islands) is revealed as a staging ground for the development of new residential communities; commercial, cultural, educational, and recreational facilities; and an uninterrupted, 38-mile-long Shore Park encompassing all of Manhattan.

Turn further, and the circumferential development emerges as the topping for a multilevel urban transportation system containing highways and parking decks for autos, trucks, and buses; long-distance and commuter railroads; and a mass transit line that loops the island.

To create this new "city around the city," Herrey proposed the adoption of techniques developed by the Allies in producing beachheads for the 1944 invasion of Europe, and later perfected by the Dutch in the postwar rehabilitation of their polder areas. Huge concrete structures containing spaces for all the transportation modes would be precast on a production line, floated into position off the Manhattan shoreline, and sealed together.

**Hermann Herrey's death on October 7 (see page 95) occurred just as he was completing arrangements with the editors for publication of this long-planned article. Final arrangements were carried out with the aid of his son, Antony Herrey, institute real estate officer at MIT, who participated in the development of the proposal and will continue to carry the work forward.**

Then the water between the new structure and the existing shoreline would be pumped out, and the space packed with landfill.

Thus, in one stroke, Manhattan would increase its land area by 26.6 per cent (all of it in the most desirable locations), and would gain a new transportation network—without causing disruption of its existing areas. The additional land would give the city a totally clean slate on which to create the kinds of environment that would attract thousands of new people and vast sources of new income.

That would be only the beginning. Herrey conceived of the new land as the essential first step toward the ultimate goal of revitalizing the entire core of New York City. It would, he felt, give this most impacted of all urban centers the elbow room it so desperately needs in order to attack its multitude of existing problems. The proposal combines far-reaching programs in four categories—land, economic, social, and technical-physical. Each recommends specific solutions (see page 56), but the four are carefully integrated to produce a single, coordinated approach to Manhattan's problems.

The new residential areas, for example, would provide housing for thousands who now live in Manhattan's slums, thus relieving overcrowding and making slum rehabilitation far more practical. Herrey's plan calls for 45 self-contained "Green City Communities" housing half a million people. Of these, he estimated that 175,000 would be resettled from Manhattan's existing slums, and 325,000 would move back into the city from the suburbs.

Similar multiple benefits to the city would result from the new

commercial developments contained in the plan. At the lower tip of Manhattan, 381 acres of new land would be used for expansion of the badly congested Wall Street area and the development of a new ocean harbor with modern docking facilities, hotels, office buildings, warehouses, and other travel-related facilities.

A permanent international sample fair and free port would be developed on the 205 acres of new land surrounding Governors Island. Designed to establish New York's preeminence as the world's trade capital, the sample fair would serve as a kind of international supermarket where buyers from around the globe could inspect all types of U.S. and foreign goods and services (from thimbles to jet airplanes), and arrange for purchasing, financing, shipping, and insurance. As a free port, all the products displayed and sold there would be duty-free.

The new transportation network would, of course, benefit all of Manhattan. The four levels of high-speed traffic lanes and the mass transit belt beneath the new land would permit fast and convenient access to every part of the island, and would alleviate greatly the congestion on existing streets and transit lines. Parking decks, also prefabricated and floated into position, would be located at convenient intervals alongside the transportation structure.

Herrey further proposed a system for revamping the island's existing traffic patterns. Based on a concept which he first developed in the early '40s, it would make use of the new circumferential highway as the means of vehicle travel for all

but purely local journeys (see page 53).

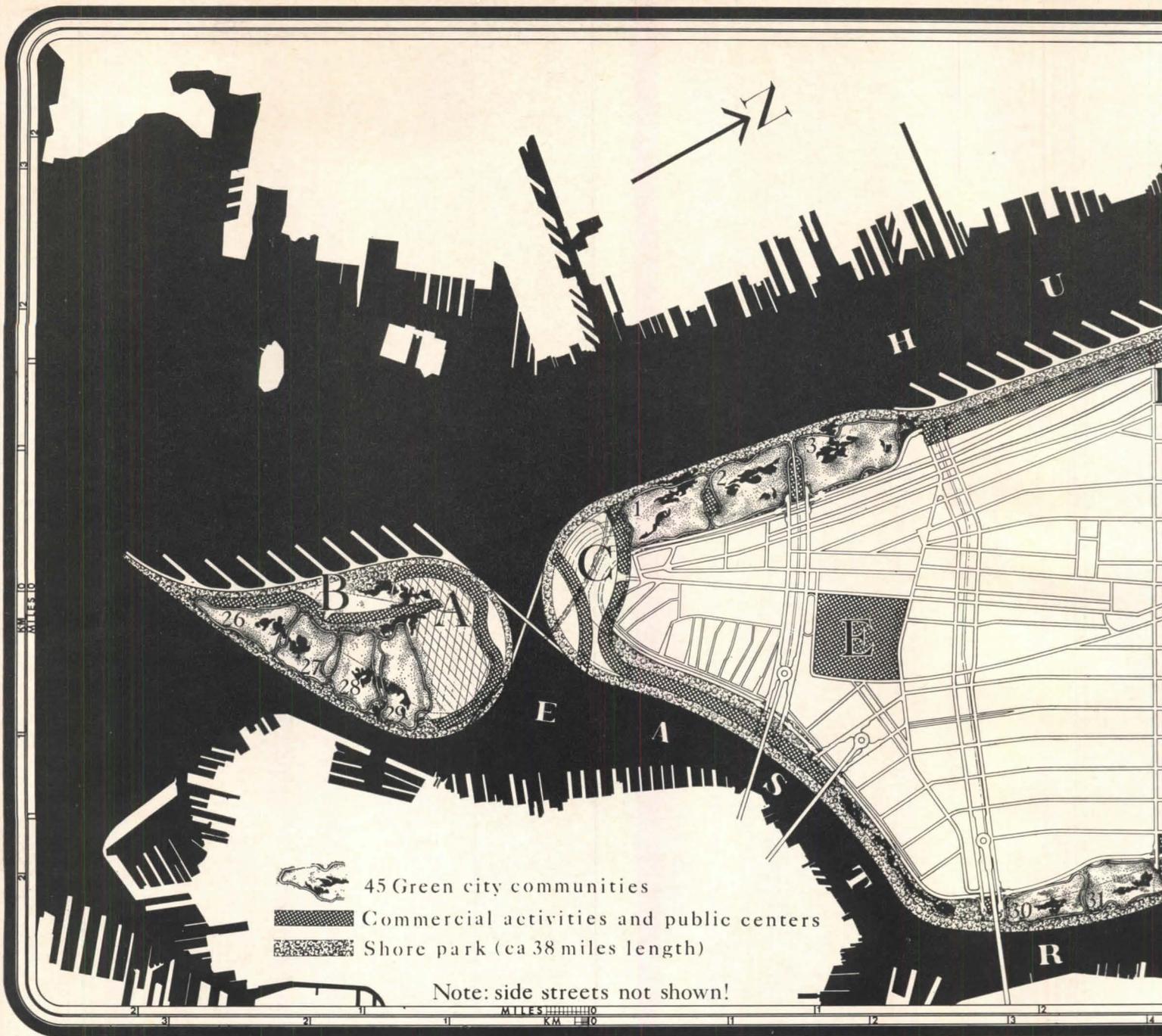
Under Herrey's plan, the city government would stand to gain vast new sums of critically needed revenue. Herrey considered it essential to the public interest that the city have permanent ownership (and thus permanent control) of the new land, leasing it to commercial developers and others under carefully drawn, long-term contracts.

Based on recent studies conducted for the City Planning Commission, Herrey estimated that the new land would cost about \$8 per sq. ft. to create, and that its average market value would be over \$25 per sq. ft. The total value of leasable new land (excluding the Shore Park and streets) would come to about \$3 billion, and the city would gain an estimated \$300 million per year in lease revenues, plus massive new sums from real-estate taxes.

The proposal is less specific about the economic benefits to be gained from improved mass-transportation programs and others which it recommends. But they obviously would be considerable. Beyond these, of course, would be the great benefits of a more healthy, more efficient, and more humane environment, which cannot be measured in dollars.

It would be an enormous undertaking, of course. Herrey estimated that execution of the plan would require an investment of \$25 billion to \$30 billion over a span of 20 years—comparable to the TVA project or NASA's moonshot program. But he was convinced that action on this massive scale is not only practical and feasible, but necessary if the city's mounting problems are to be overcome.





The ring of totally new land encircling Manhattan and Governors islands—plus the use of existing islands in the East River—would create 2,221 acres for new residential communities 1-45; 586 acres for new commercial developments A, B, C; and a 1,041-acre circumferential Shore Park around the now almost inaccessible waterfront.

Because of its continuous distribution around Manhattan's periphery, no part of the new land would be large enough to cause severe dislocation of the island's existing patterns of living, transportation, or commercial activities. The long-neglected satellite islands would be utilized

and developed as part of the plan: 13 of the 45 self-contained Green City Communities would be situated on Governors 26-29, Welfare 35-38, Ward's 41-43, and Randall's 44-45 islands. Governors Island also would support a Permanent International Sample Fair A and Free Port B.

A 381-acre crescent of new land around the southern tip of Manhattan C would provide expansion space for the congested Wall Street financial area; a new ocean harbor on the West Side D would replace existing obsolete facilities. Three large developments would be carried out on existing land within the island: enlargement of the Civic Center

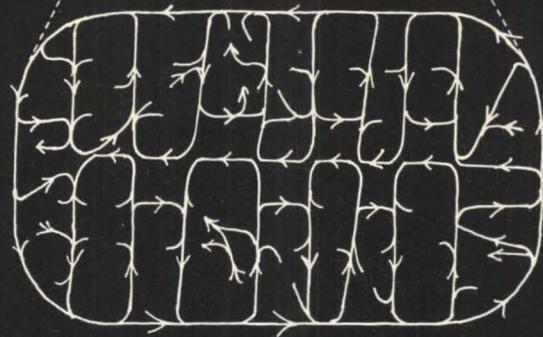
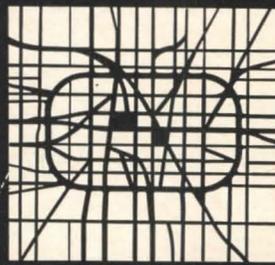
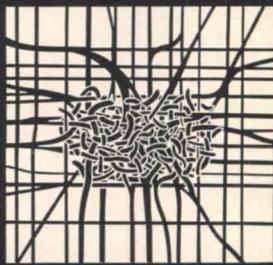
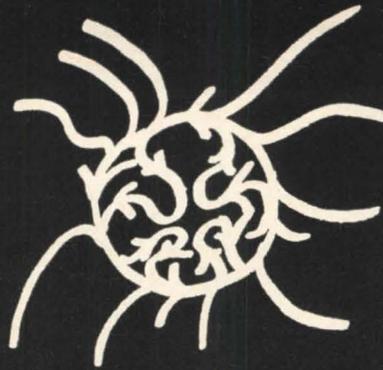
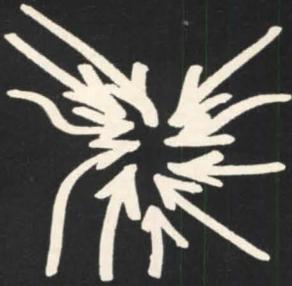
E, reorganization of the Garment District F, and a Permanent Congress of International Scientific Exchange at the northern end of Central Park G. In the badly clogged Garment District, inefficient structures would be rebuilt, and a continuous, two-level underground concourse would be built to improve the movement of goods into and out of the area. The Scientific Exchange would replace the scattered, inadequate facilities now available for scientific meetings.

The plan's proposal for re-vamping Manhattan's traffic patterns (see page 53) would make it possible to develop several pedestrian "bazaar streets"

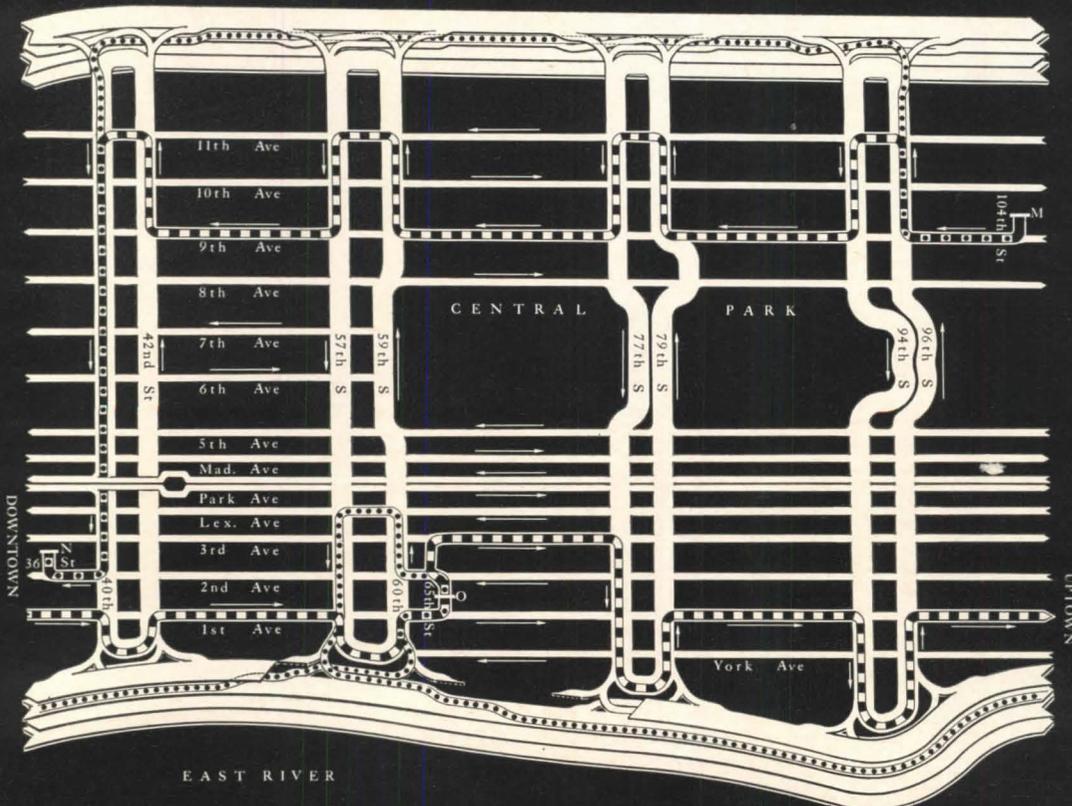
throughout the island—without impeding the overall traffic flow. Most of these traffic-free walkways would lie between the newly converted, one-way crosstown loops shown on the plan. In addition, a traffic tunnel would be built under Fifth Avenue, and the surface would be converted into a bazaar street.

If all the proposals contained in the plan were carried out, Manhattan would gain an estimated 500,000 new jobs and \$6 billion to \$8 billion annually in new income. Moreover, the city government would gain millions in new public revenues from leases on the new land and from a vastly enlarged tax base.

## Traffic revamped



HUDSON RIVER



EAST RIVER

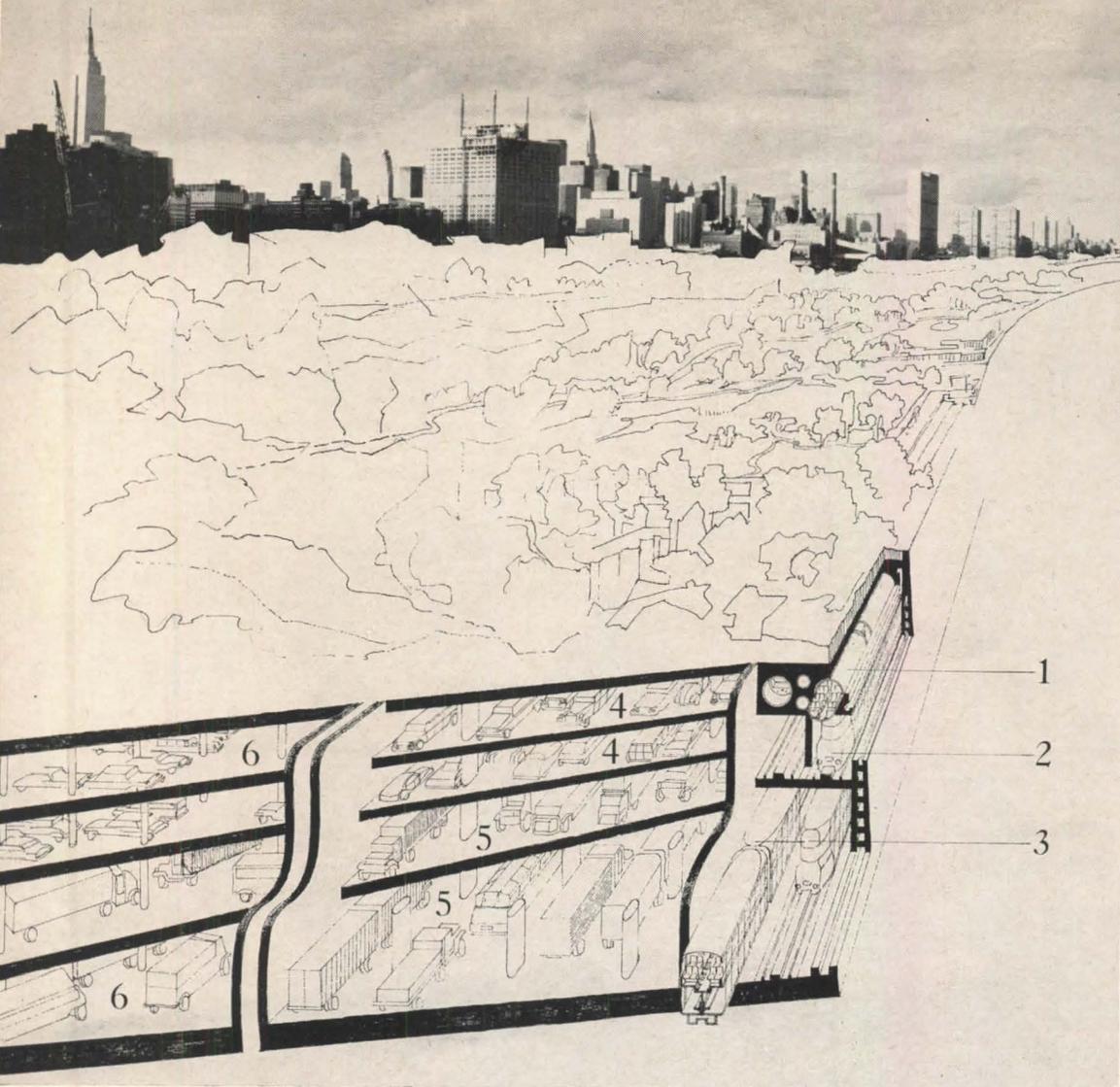
The sketch and diagram at far left typify the current pattern of street traffic in Manhattan: vehicles converging centripetally on the city's center and creating stifling congestion. Those at the immediate left demonstrate the principle of circumferential traffic that is proposed in the plan: a system of one-way loops in which all intersections of traffic flow would be eliminated. A vehicle moving along a one-way loop would weave into any other tangentially connecting loop without stopping or crossing any traffic flow.

Through vehicles, which constitute the majority of Manhattan's traffic, would be dealt with through a "syphoning-off process" that would make it highly desirable for them to use the peripheral expressway and extremely cumbersome to travel through the interior streets (see plan, below left: the two dotted lines—one going uptown, the other downtown—represent the easy way to get from one point to another, using the peripheral expressway; the meandering dash lines show what's in store for a vehicle that chooses to travel through the center.) Existing wide crosstown streets (such as 42nd, 57th, 79th, and 96th on the plan) would be combined with parallel streets two blocks away to form one-way crosstown loops for channeling traffic to and from the expressway.

A vehicle on the peripheral expressway would enter the crosstown loop nearest its destination and proceed to the appropriate avenue. Then it would weave into the avenue and proceed to the street of its destination, which it also would weave into. The entire system would be a hierarchy of one-way loops, the smallest being an existing city block, and the largest the peripheral expressway.

The peripheral parking structures would induce commuters and shoppers to leave their cars next to the expressway and reach their destination by transit, taxi, or on foot—thus further alleviating midtown traffic congestion. The proposal also recommends staggered working hours for Manhattan businesses.

## Transportation precast



A multilevel mass-transportation belt is housed entirely within the precast concrete structure which would form the new shoreline of Manhattan (left). Three levels of rail transportation are stacked at its outer edge; four levels of express highway are at the center; and four levels of parking are on the inside. The parking decks would not be continuous, but distributed along the belt wherever demand required.

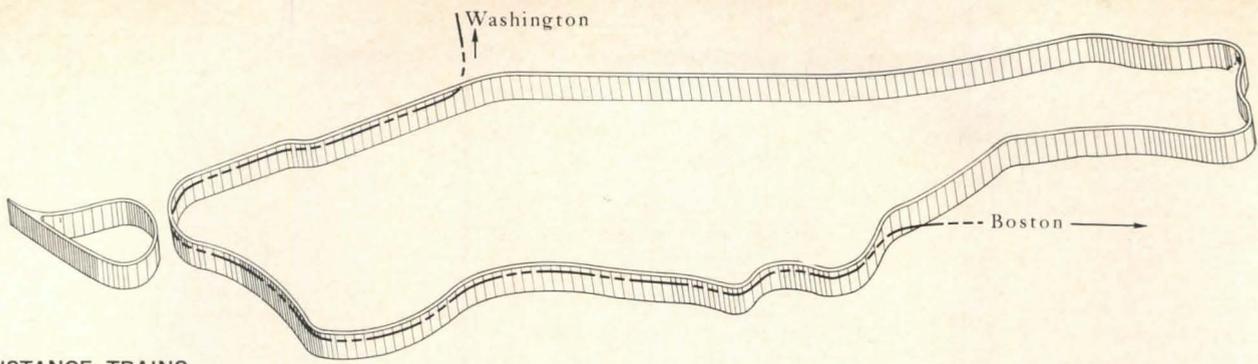
The concrete structures forming the mass-transportation belt would be similar to those used by the Dutch for reclaiming land from the sea (photo, below left). They would be produced at various points along the East River and Hudson shores opposite Manhattan, floated into position, and sunk atop continuous fibermat foundations laid at a depth of 40 ft. below the waterline. Then they would be joined together to form a watertight seal and a retaining wall.

The diagrams at right identify the different modes within the mass-transportation belt and indicate how each would relate to the city's existing systems: 1 high-speed express trains for the Northeast Corridor route from Boston to Washington; 2 commuter transportation lines which also would serve as subway express trains within Manhattan; 3 a new subway belt completely encircling the island and providing access to all existing subways at transfer points; 4 a 40-to-80 mph, two-level expressway for autos; 5 a 30-to-60 mph, two-level expressway for trucks and other heavy vehicles.

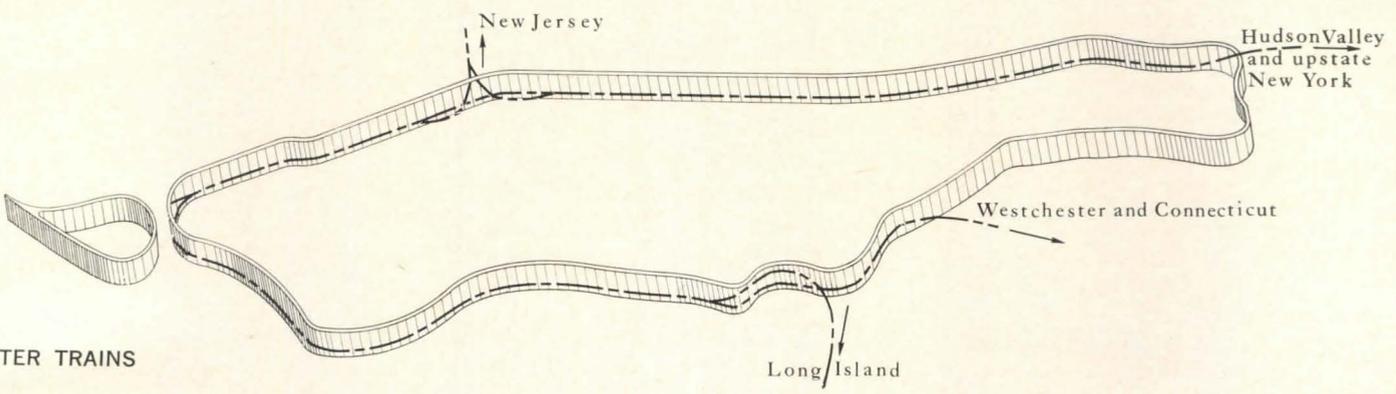


NETHERLANDS INFORMATION SERVICE

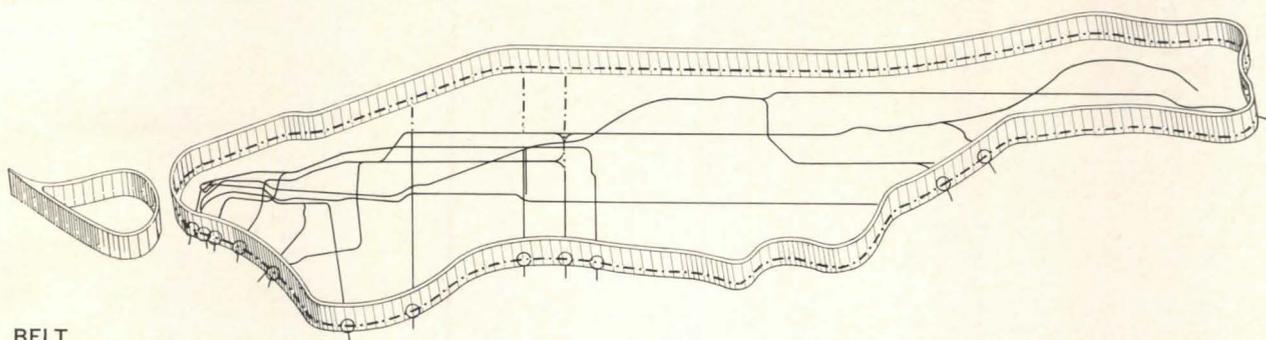
ACKNOWLEDGMENTS: Roger Katan and three of his students at Pratt Institute—Madeleine Almqvist, Allen Weitzman, and Mete Göktug—assisted in some of the basic research and developed some of the plan's concepts; Jens Grossman-Hensel, Elinor Shanbaum and Pietro Ferri helped produce the drawings.



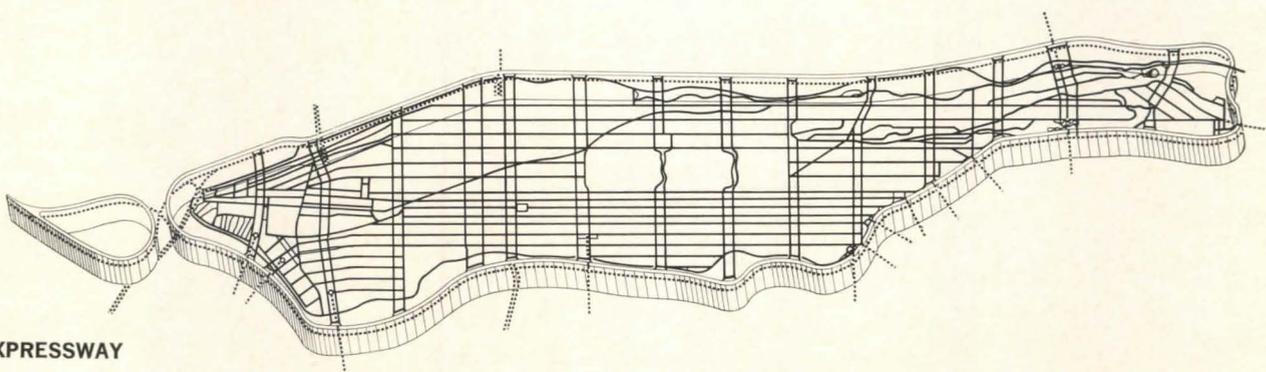
1. LONG-DISTANCE TRAINS



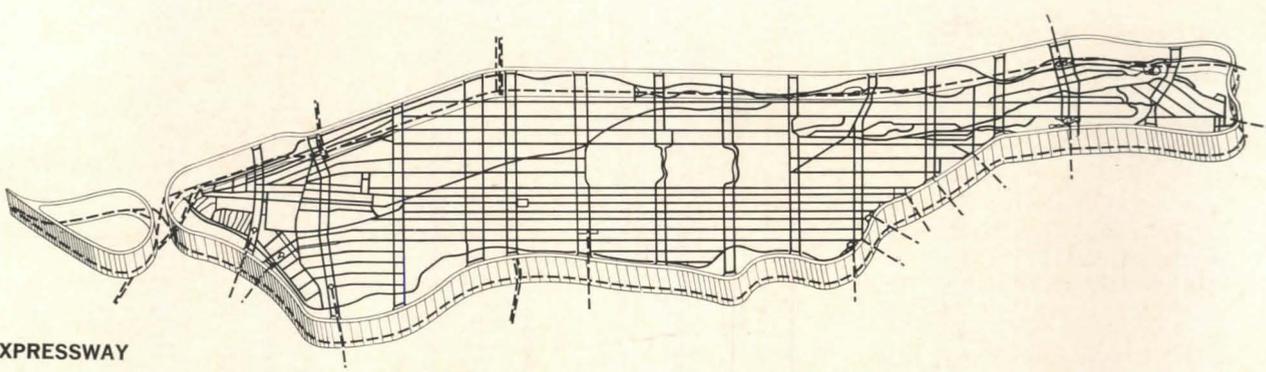
2. COMMUTER TRAINS



3. SUBWAY BELT



4. AUTO EXPRESSWAY



5. TRUCK EXPRESSWAY

**LAND PROGRAM**

Create 6 sq. mi. of new land, on a sound economic basis, to:

- Provide more space for all activities;
- Permit resettlement of 500,000 people;
- Develop new commercial, social, cultural, and technical facilities to realize New York's great potentials.

FABRICATE STRUCTURES FOR NEW SHORE LINE—TRANSPORTATION BELT  
 CREATE NEW LAND  
 DEVELOP ISLAND AREAS  
 CREATE SHORE PARK  
 REHABILITATE EXISTING SLUM AREAS

**ECONOMIC PROGRAM**

Create half a million new jobs, substantially increase per capita incomes, and dramatically improve the city government's financial position, by:

- Reorganizing, rationalizing, and improving existing facilities and institutions;
- Creating significant new sources of income that complement existing ones.

CONSTRUCT PERMANENT INTERNATIONAL SAMPLE FAIR—FREE PORT  
 EXPAND DOWNTOWN FINANCIAL CENTER  
 CONSTRUCT NEW OCEAN HARBOR  
 REORGANIZE GARMENT CENTER  
 CONSTRUCT PERMANENT CONGRESS OF INTERNATIONAL SCIENTIFIC EXCHANGE  
 REORGANIZE NEW YORK CITY GOVERNMENT CENTER  
 CREATE AND OPERATE TOURIST PROMOTION AGENCY  
 DEVELOP 400 SOCIAL AND CULTURAL FACILITIES IN SHORE PARK  
 ORGANIZE BAZAAR STREETS  
 CREATE AND OPERATE NEW YORK CITY LAND BANK

**SOCIAL PROGRAM**

Create 45 new Green City communities, that will:

- Stimulate in every individual a strong sense of responsibility to his community and encourage him to grow permanent roots;
- Provide for every family, especially in housing, the best physical conditions possible;
- Permit the testing and improvement of planning solutions that can serve as models for the reorganization of the rest of the city.

CREATE 45 GREEN CITY COMMUNITIES  
 RESETTLE 500,000 PEOPLE IN GREEN CITY COMMUNITIES  
 ORGANIZE AND PROMOTE COMMUNITY-BASED ADMINISTRATION  
 ORGANIZE AND PROMOTE COMMUNITY-BASED HEALTH SERVICES  
 ORGANIZE AND PROMOTE COMMUNITY-BASED SCHOOLS  
 ORGANIZE AND PROMOTE COMMUNITY-BASED JOB-TRAINING AND LEISURE ACTIVITIES

**TECHNICAL—PHYSICAL PROGRAM**

Create basic new technical and physical facilities and improve existing ones, to:

- Ensure efficient, economic, and humane operation of New York's essential services;
- Correct the stark imbalance in Manhattan's present development.

INSTALL NEW SUBWAY IN MASS TRANSPORTATION BELT  
 REORGANIZE COMMUTER TRANSPORTATION SYSTEM  
 INSTALL BOSTON—NEW YORK—WASHINGTON EXPRESS IN BELT  
 REORGANIZE TRUCK TRAFFIC  
 ADJUST STREET TRAFFIC PATTERNS TO NEW SYSTEM  
 ADAPT EXISTING STREETS AND PEDESTRIAN WAYS TO NEW SYSTEM  
 INSTALL PARKING FACILITIES ADJOINING BELT  
 INITIATE SERVICE IN MASS TRANSPORTATION BELT  
 EXPAND AND OPERATE ENVIRONMENTAL CONTROL AGENCY  
 REDEVELOP AND IMPROVE CITY PARK SYSTEM

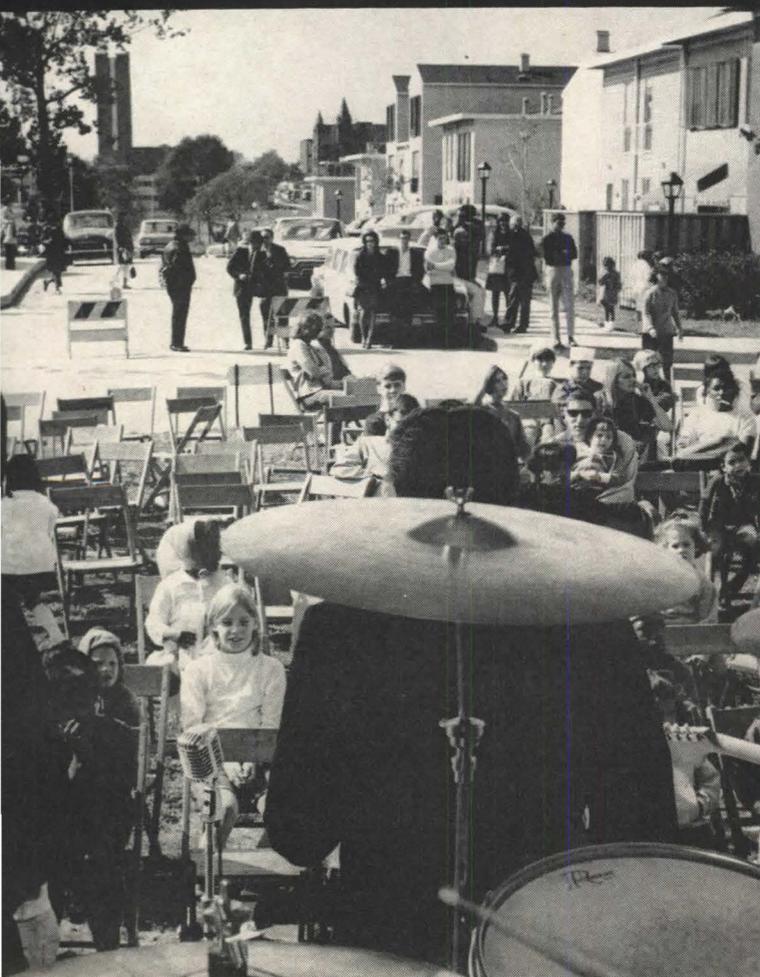
**MANHATTAN'S 20-YEAR ACTION PLAN**

Hermann Herrey's Manhattan proposal combines four separate but closely coordinated programs (left column) for achieving the goal of reorganizing New York's central core. These would require some 31 major actions (right column) to be carried out in carefully staged sequences over the course of 20 years. Execution of the plan would begin on several fronts: while the new

land and transportation belt is being developed around the island's perimeter, a number of projects, such as reorganization of the Garment District and construction of a new Scientific Exchange, would be initiated in existing areas. Rehabilitation of slum areas would begin once low-income families were resettled in the newly developed Green City Communities.



# LACLEDE TOWN: THE MOST VITAL TOWN IN TOWN



When a rumor circulates that people choose to live in a community having strict income limits, and prefer earning *less* money in order to do so, one wonders what magical community they have found. (One also wonders whether the rumor can possibly be true, in reaction to the dearth of desirable communities in this country.)

Whether the rumor is true or not, even the most casual look at LaCledde Town, a 221d3 housing project in St. Louis, suggests that it is an unusual community, exerting an unusual magnetism on residents present and future. Three years old, LaCledde Town has a stable racial balance, a growing number of vital nonresidential uses among its 680 units of housing, and a high sense of community pride.

What causes these things to occur, and permits them to remain? Why do they happen in one place rather than another? Are there any rules, or is it all a product of lucky accident and/

or one person's effort? Because LaCledde Town even at the beginning was something of a unique place, and because its vitality has grown during the past few years, it seems worth taking a look at this community—how it came into being, how it is run, and how it maintains itself.

LaCledde Town was sponsored by James H. Scheuer's Renewal & Development Corporation; it was designed by Chloethiel Woodard Smith & Associates (in association with Leo A. Daly Company); and it was built by Millstone Construction Inc. Millstone and the Scheuer group are co-owners. The FHA mortgage for 90 per cent is \$10 million.

Scheuer, now a Congressman from New York, had just put up 120 units of highrise housing with Millstone in this large St. Louis urban renewal area; assisting the Scheuer firm was H. Ralph Taylor, now assistant secretary for model cities and governmental relations at HUD. Mrs. Smith, one of the few suc-



cessful women architects in the United States, had been doing multifamily housing for some years, notably in the Southwest renewal area of Washington, D.C., and later in Reston.

They all wanted something different from the standard, something workable in human terms as well as economic terms. "We wanted to give them something to identify with," says Chloethiel Smith, "not a huge housing project." They encountered some opposition from the FHA—to the lowrise units, the wood-frame construction ("you're building just what was torn down"), and to the inclusion of a pub and other facilities. Chloethiel Smith recalls that the plans were in the regional office of the FHA for a year; among other objections, "they thought the stores were the living end." (Taylor recalls no objection to the commercial facilities, but "great skepticism" as to whether a market existed here for a middle-income community that would

be racially integrated.

In the end, though, LaCledede Town became a town of two- and three-story houses, and when the first 279 units were completed in 1965 (at an average cost of \$16,500), the community already had five stores, a sports program, a newspaper, the only swimming pool and only pub in a 221d3 project, and a head start toward becoming what has been called the "swingiest" 221d3 in the country.

#### An old-fashioned vitality

It didn't just happen, though. Responsible for a good part of LaCledede Town's vitality was (and is) Jerome Berger, president of LaCledede Town Company. When no one else would manage the project, Millstone had to do the job, and the responsibility fell to Berger. At one time in his 41 years, Berger had been a disc jockey; more recently, after joining Millstone in 1960, he had sold luxury coop apartments.

A very definite personality—

an unlikely cross between a savvy politician and a beat poet—and an unlikely looking caricature of a young Charles Laughton, Berger has some very definite ideas about people and community. People want to be able to share their experiences, he believes, and they want to have an effect on their environment. (An upper-income person can alter his surroundings fairly easily, having financial resources and independence of action, but a lower-income person is often not allowed even to paint his own apartment, much less make any of the more meaningful decisions about his environment.) Nor is money the problem. "We've seen today's communities with their adventures in bed, and in alcohol," says Berger. "Is this all there is for the last third of this century?"

At LaCledede Town, there is emphatically something else. "We plug the people into where they live," says Berger. There is interaction among many kinds

of people, and participation in many kinds of activities. Berger's philosophy is simply stated: "I think of re-olding, not re-newing," he says. "I try to think of what made it great 35 years ago, when I was growing up in Belleville, Illinois, just across the river. A community needs its folk heroes, and its nuts, and all the simple, easy, generous, loving kinds of things." To the credit of Berger, and to the joy of LaCledede Town residents, this community has just such an old-fashioned quality.

LaCledede Town is also involved in some very current problems. An integrated community, says Berger, "is that community into which people are integrated. It doesn't have anything to do with black or white." Yet LaCledede Town is also integrated in the more familiar sense of the word: its 680 families are about 30 per cent black, 10 per cent foreign nationals of color, 60 per cent Caucasian. "If it were all black or all white, not everyone could

LaClede Town's 680 units of 221d3 housing are primarily in two- and three-bedroom sizes (although there are also units of one and four bedrooms. Among the units are numerous nonresidential uses—an English-style pub (far left), a delicatessen (top left), and an art gallery (bottom left). Guide to LaClede Town's facilities (see map opposite): 1 office; 2 delicatessen; 3 play areas; 4 laundromats; 5 pub; 6 coffee shop; 7 dry cleaner; 8 church; 9 park; 10 newspaper office; 11 art gallery; 12 wading and swimming pools; 13 bath house; 14 maintenance; 15 radio school; 16 confectionery; 17 hair-dresser; 18 ladies clothing.



come here. I want *anyone* to be able to live here."

Asked if he wants a balance between black and white, Berger replies that he does. "But I've seen communities where even 5 per cent black is too many, because they're not part of the community." He doesn't believe there's a tipping point. "Balance is that percentage that enables a community to function freely. It may mean that whites are in the minority. The basic question is whether it is a community where *anyone* wants to live." The 40 inquiries he receives every day, asking about possible vacancies, are an answer to this question.

#### A broad mixture

Residents are mostly families; less than 10 per cent are single. Contrary to some reports, this is not a hippie town. There are a few older people, over 70 and retired, and some quite young, in college and medical school. But the average age of the adults is 28; the mean age is about 40. It

is not a transient population, although there is some mobility because of the students. "The area always had stable black families, and now there are stable white ones too," says Berger.

The income range is mixed, too, more mixed than usual for a controlled project. Theoretically, the limits are between \$7,250 and \$11,050 (the federal government has raised income limits three times since the project opened). But some people are below the lower limits (students), some have received "scholarship" help on the first part of their rental, and some are beyond the upper limits, allowed by law to stay on. (They must pay 27 per cent of the increase over the income limit, or 27 per cent of the base rent, whichever is less. Income can go up 5 per cent without a rent increase, but cannot be above the limits at the start.) The income range, says Berger, is between 0 and \$12,000.

The mix at LaClede Town goes further: it includes right-wing

segregationists and Black Is Beautiful people; it includes nurses, interns, laborers, librarians, firemen, policemen, construction workers, bus drivers, brewery workers, teachers, assembly-line workers, bartenders, public agency employees, cub reporters, painters, musicians, writers, poets, city planners—and bums. Political signs in the windows and nameplates on the doors give some indication of LaClede Town's diversity, and of its collective pride in its individualities. "We see here that very different people *can* get along," says Berger. "Yet our community is no melting pot. Everyone does his own thing."

But they do their own things *together*. LaClede Town is busy with organized events in various sports and arts. A sophisticated newspaper is published every month. An annual festival ("Urban Fair") celebrates the existence of the community.

Some of this has been sparked by the management, to be sure.

Berger prefers to spend his advertising budget seeding programs in "community making," and to attract new tenants by word-of-mouth. But to some extent, these activities have simply grown by themselves. What started as a game of catch in 1962 in the courtyard of LaClede Park (the highrise renewal that preceded LaClede Town), soon developed into the St. Louis Association for Open Competitive Sports and Related Activities, which became, in 1966, the Mill Creek Valley Athletic Union. Newcomers found an immediate way to belong, and the spin-offs for the community were an on-going communication, a neighborhood pride and tradition, and a variety of supporting activities—the after-game beer parties on Saturdays, and the newspaper that developed from a mimeographed sports bulletin. (Named *The Intelligencer*, after the earliest newspaper west of the Mississippi, the paper is a lively potpourri



of political discussion, creative writing, local news, and features for children—including a cut-out and paste-up LaClede Town.)

“If a thing is going to happen, it’ll happen,” says Berger. The art gallery that has just opened in one of the houses is the project of an artist-resident who wanted to have a show of his own, after another resident had had a show. Berger said, in effect, OK, just move upstairs, stop paying rent on the full apartment, and let’s see what happens. If it lasts, fine; if not, it has been an interesting experiment.

Curiously, one of the few ventures that did not last was a group for self-government; the Mill Creek Valley Residents Council disbanded soon after it started two years ago. Its first order of business had been a request for speed bumps on the roads, but these had just been ordered by the management.

There is plenty of interaction on an unorganized basis, too.

Designed into LaClede Town are places where people can meet: many walkways, various courtyards and public areas, several play areas, a pool, a “Town Circle.”

And 13 units in nonresidential use draw people together at laundromats, a saloon, coffee house, general store, sample dress outlet, hairdresser, dry cleaner, take-out food shop, delicatessen. All these are run by residents of LaClede Town; all pay rent except the newspaper and the gallery. The coffee house is a unique focus of commercial, cultural, and social life, with theater improvisations and poetry readings, a varied menu (cheeseburgers, chili dogs, and “Kosher Polish sausages”), and a private club soon to open upstairs. Planned for the future, on adjacent acreage, are 800 high-rise units, among which Berger hopes to build a theater. (The site for this addition is one of the most compelling in the city—on the rise between LaClede

Town and the Saarinen arch.)

Is LaClede Town a frenzy of community participation and group activity? Most people undoubtedly do *some* of these things; some probably do none. But the activity is there for those who want it, and those who live in LaClede Town consider themselves part of a unique way of life. They build deep relationships upon everyday experiences, and across boundaries of color, income, and age. These relationships are the stuff of real community. People who have left LaClede Town find themselves forever changed as a result of having lived there.

#### A sense of place

It is unquestionably a special community. It has what architects call “a sense of place”—a term usually reserved for unworldly cathedrals or old piazzas, but rarely applied to ordinary housing developments.

What makes it so? Perhaps its connection to the rest of the

city has something to do with it—its view of the Saarinen arch; or its proximity to one of the liveliest churches in the inner city (Berea Presbyterian Church, which was almost renewed, but stood its ground and renewed itself from within, selecting a white minister for its black congregation, and enlarging its outlook so that it draws people from all over the city). Or perhaps it is the link to nearby Waring School, which was not a neighborhood school when LaClede Town started (students were bussed to the school from a wide area), but upon pressure from the earliest LaClede Towners became a local school again, is now a demonstration school run by Harris State Teachers College, and is considered one of the best elementary schools in the city.

All of this helps to make a project that is plugged into its surroundings. “Why should this kind of community be an exception?” asks Berger. “There are

Careful site planning has created many places where people meet—far left, on a walkway, and left, at the Town Circle, during the annual "Urban Fair." The town also has a number of paved courtyards, including the large one (opposite) that faces front doors of some apartments and back yards of others. The architect comments that LaCledde Town was designed "at a moment in time when it was supposed to bring people together, and it did, but it's working today not because of any gas lamps, but despite them."



no special rules. There could be more if people simply wanted them." He denies paternalism on his part, considers his activity part of the partnership between management and tenants. But, like the educational program of preventive maintenance his staff has instituted, it is also simply good business. There are no vacancies at LaCledde Town.

#### Architecture and community

People look happy at LaCledde Town, or at least "more willing to be vulnerable," as Berger puts it. To what extent does the architecture make them feel at home? The outdoor spaces are not unusual—these courtyards, back yards, play yards, can be found in many developments. Yet here they are used freely; a courtyard, once a lawn, becomes a croquet field and then a soccer field. The grass wears down, but there are ample compensations as a sense of community builds up.

Gardens are plentiful, in every

style. Fences are varied, the more homey ones being white picket and painted orange-crate. Everyone is doing "his own thing," as the expression goes, and for some, it is freedom to do nothing.

LaCledde Town strikes some professional designers as pure kitsch; at Washington University, professors have called it Nome Alaska and suggest that it would be a good place to stage shoot-outs. One critic called it an attempt (presumably successful) to "recreate the spirit of old St. Louis." This is denied by the architects, who also want no credit for the later installation of gas lamps on the sidewalks. The only imitation of old St. Louis, says Chloethiel Smith, is in the site planning, which recalls some private streets and their grand houses—a few still remain in St. Louis. "It's a great way of controlling traffic," says Mrs. Smith, and there is a definite sense of one's own enclave.

Within an undeniable con-

temporary idiom, the housing is familiar in an archetypal sense, comfortably old, even old-fashioned. Early designs had a range of heights, Mrs. Smith recalls, "which would have made it more interesting," but the taller buildings were dropped because of cost. The individual units are well-planned but not innovative. The three flower pots that grace an occasional facade, and are occasionally planted with plastic flowers, give the town a finishing touch that is gently nostalgic yet existentially contemporary. Is the whole human or is it corny? It depends on whether one thinks the architect's primary role is to elevate the public taste or to provide a backdrop where a reasonably satisfying life can go on. It has been suggested that avant-garde design should not be inflicted on those with the lowest incomes, who have other struggles to wage and who may have the least inner resources with which to withstand experimentation. If the

architecture of LaCledde Town were "far-out," would the residents have taken possession of their surroundings in quite such a free and whole-hearted way? One cannot know.

A place is obviously more than what it evokes just by looking at it. A place is where things happen—it is a stage set in more ways than one. LaCledde Town suggests (as does Levittown, seen through the eyes of Herbert J. Gans in *The Levittowners*) that a community must be seen in terms of what really happens in it, and how people feel about it, which may be irrespective of what it looks like.

—ELLEN PERRY BERKELEY

#### FACTS AND FIGURES

LaCledde Town, bounded by LaCledde and Compton Avenues, Olive and Ewing Streets, St. Louis, Mo. Architects: Chloethiel Woodard Smith & Associates, and Leo A. Daly Co. Builder: Millstone Construction, Inc. Dwellings: 680, renting for \$75-120 per month. Average cost: \$16,500. PHOTOGRAPHS: Larry Block, except page 58, right, top and bottom, and page 60, left, Ellen Perry Berkeley.

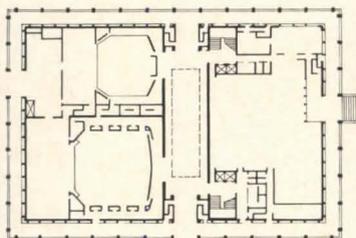
# FOCUS



**ART BOX**

Of the Brobdignagian cultural centers built across the U.S. in the 1960s, the Atlanta Memorial Arts Center is the first to bring together the visual and performing arts under one roof (right). Also beneath that 50-ft.-high roof is the High Museum of Art, a 1955 building now completely encompassed by the center's massive, white-painted concrete walls. A 20-ft.-wide, uncovered promenade (opposite) extends around the building, bounded by the walls and a nonsupporting peristyle of precast members. The peristyle does function as a "lighting fixture," says Joseph Amisano of Toombs, Amisano & Wells, co-architects with Stevens & Wilkinson. The building itself,

232 ft. by 294 ft., is organized around a three-story-high central hall known as the "Galleria," which divides it in half (see plan). One half is composed of two theaters, the Atlanta Symphony concert hall and the smaller Municipal Theater for drama, opera, and ballet. The other half contains lobbies, the High Museum, an area for museum expansion, and, at the top, the Atlanta School of Art.

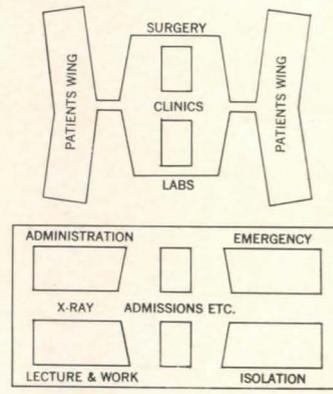


**MEDICAL MEGASTRUCTURE**

What Atlanta's cultural center does for the arts, the new Medical Center of the Free University of Berlin does for medical science: puts nearly all its related fields in a single building—if not exactly under one roof. It, too, is the first of its kind, in Germany, where hospitals have traditionally been comprised of separate, self-contained clinics. Designed by U.S. Archi-

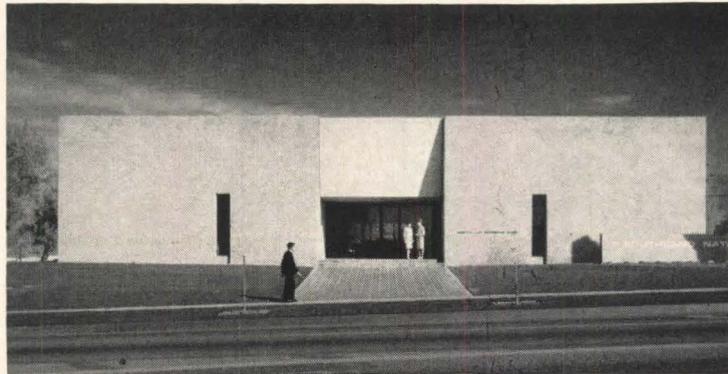
tecs Curtis & Davis and Berlin Architect Franz Mocken, the center was funded by the West German government, the city of Berlin, and the U.S. Department of State. The rectangular base, 373 ft. by 769 ft., encloses six interior courts and houses emergency aid stations, infectious diseases, X-ray diagnostics, and administration. Above it rise three superstructures connected by glass-walled corridors: a cen-

tral, hexagonal treatment building, containing clinics, labs, research institutes, and surgery; and two gently V-shaped patient wings. A staff of 2,500 will care for 1,400 in-patients, treat 755 ambulatory patients per day, and teach 1,000 students. To efficiently service 1,750,000 sq. ft. of floor space, elevators and horizontal conveyor belts speed drugs, food, linen, and supplies throughout the complex.



#### ABOUT FACE

The two buildings at right—both in California, both by Architects Honnold & Rex, and both banks—demonstrate the effects of their respective environments on their mutual heredity. Or do they? The open, sleek showcase (top) entices customers in from a prominent intersection of a major commercial center on Los Angeles' busy Wilshire Boulevard when, perhaps, they would welcome the seclusion of the other bank—mostly closed, solid, slightly rough-edged—which sits, ironically, on a broad plain in Yucaipa Valley, in the heart of the apple country, surrounded by mountains and hills.



#### OUT OF THE WOODS

The first 3,000 residents are now moving into Nun's Island, the projected community for 50,000 people, three miles up the St. Lawrence from the Expo 67 site (top right). The overall plan for the 1,000-acre tract, by Johnson, Johnson & Roy of Detroit (Dec. '66 issue, page 19), calls for several self-contained neighborhoods of rental units, plus a major commercial center near the bridges to Montreal and large recreation areas at the opposite end of the island.

The completed portion (plan right) has mixed clusters of rowhouses and lowrise apartments inside a bend in the island's main loop road. Cul-de-sacs between the clusters lead to underground parking (one space per unit) and provide for 25 per cent more spaces on the surface. Landscaped courts within the clusters are linked by uninterrupted walks to the shopping-social-education-sports center (upper left on plan), which can grow to serve future surrounding housing. At the opposite end, the walkway system leads to the riverfront, where there are more rowhouses, a highrise, and a park.

The Chicago-based developers, Metropolitan Structures (sponsors of many landmarks by Mies van der Rohe) have shown their commitment to good design in the residential buildings at Nun's Island (far right, top to bottom): rowhouses designed by Stanley Tigerman of Chicago; four-story apartment buildings by Philip David Bobrow of Montreal (the coordinating architect for all of the completed buildings); and the highrise slab designed by Mies. The most unconventional structure on the island is a service station by Mies (below right), a superbly simple drive-through structure with all of the usual paraphernalia sorted into neat compartments.

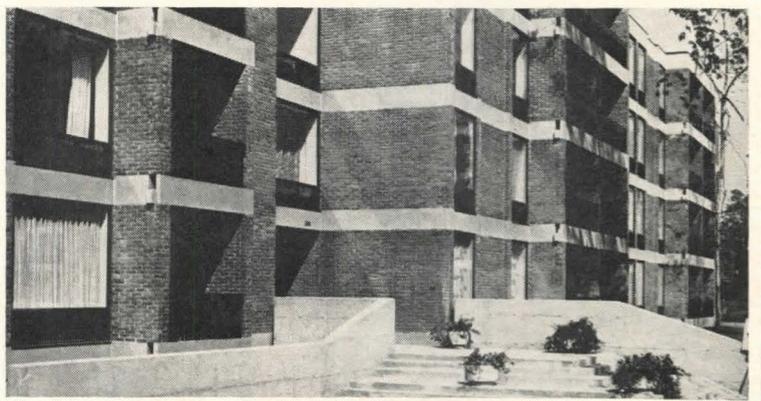
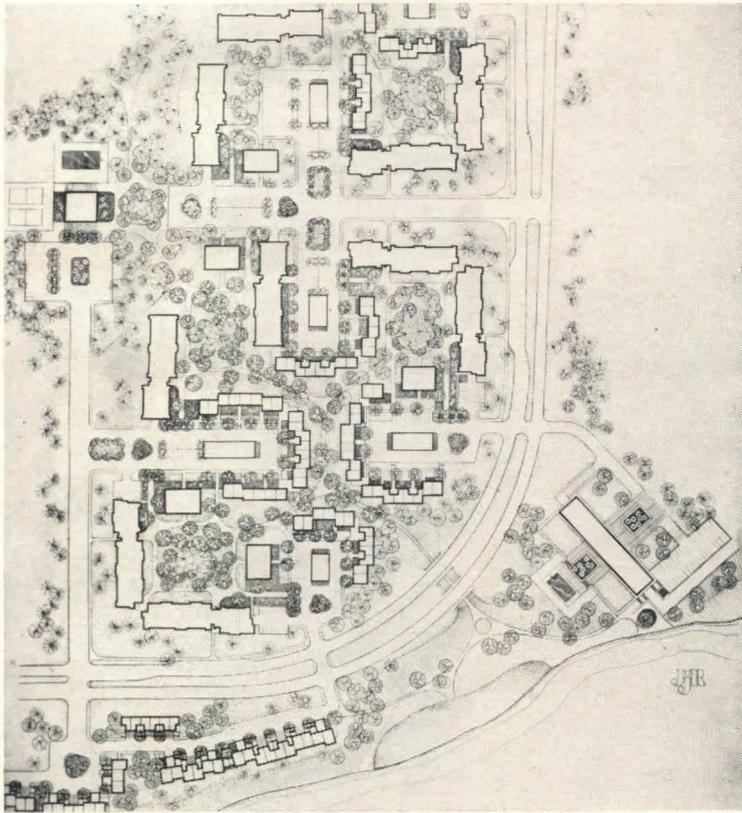
#### EYES RIGHT

New Yorkers, inured to construction blasting, jackhammers, and falling bricks, are, more and more, getting an edifying—and silent—jolt back into awareness of their changing streetscape.

Construction barricades and walls exposed by demolition are satisfying the artist's predilection for expansive surfaces. The barricade below conceals a remodeling job on Fifth Avenue. Its bold chevrons in black, red,

blue, and orange, by Graphic Artist Barbara Stauffacher, will eventually come down; but Architects Damaz & Weigel promise that the emerging Banco do Brasil, too, will be "of a bold contemporary design."







# JAFFA BUILDS ON ITS PAST

The Old City of Jaffa, Israel's major seaport until Haifa succeeded it in 1929, is a once cosmopolitan city now fallen into decay. It is being brought back to life through a combination of slum clearance, urban renewal, and historic preservation.

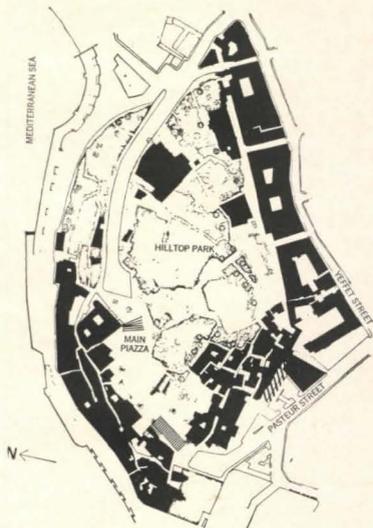
Architects Yaakov Yaar, Eliezer Frenkel, and Saadya Mandel have devised a plan, 75 per cent executed, that would repopulate the 35-acre site (containing remnants of settlements dating back to Egyptian times) by establishing a self-supporting art, entertainment, and tourist center.

The Old City is atypical Turkish town, founded around 1600 and gradually built and rebuilt by artisans coming from every corner of the Mediterranean world. The plan would preserve its architectural character: the densely clustered houses connected by inner courts; the balconies and arched doorways; the maze of alleys.

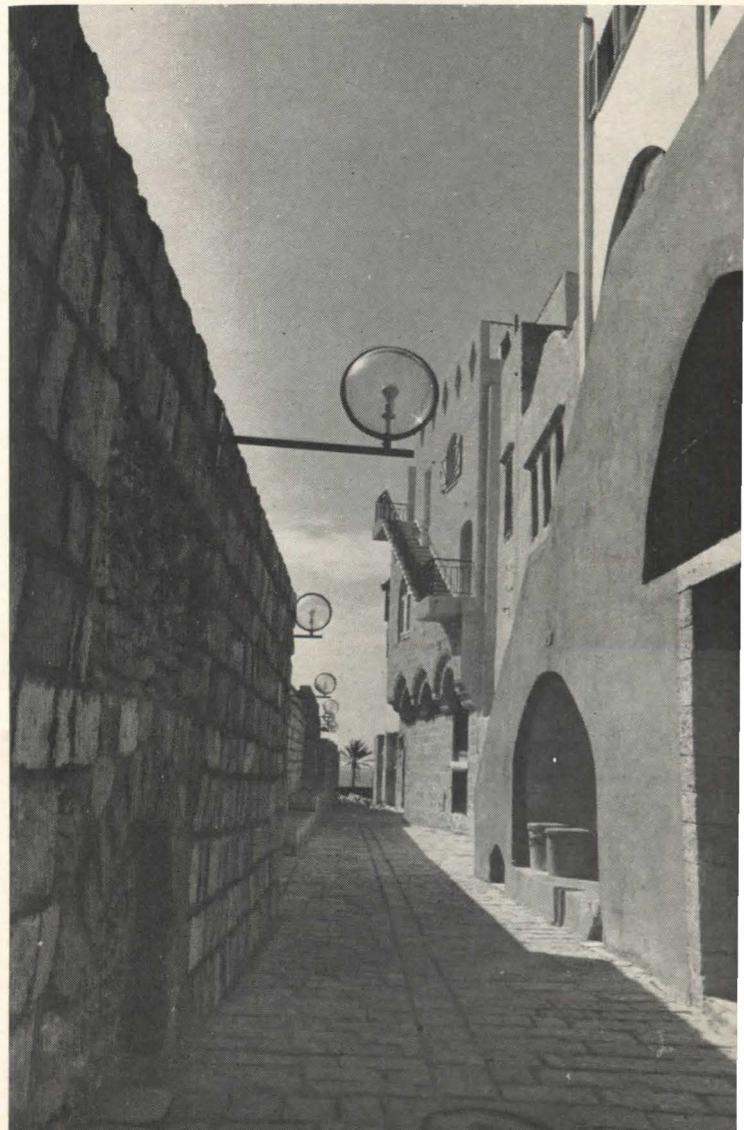
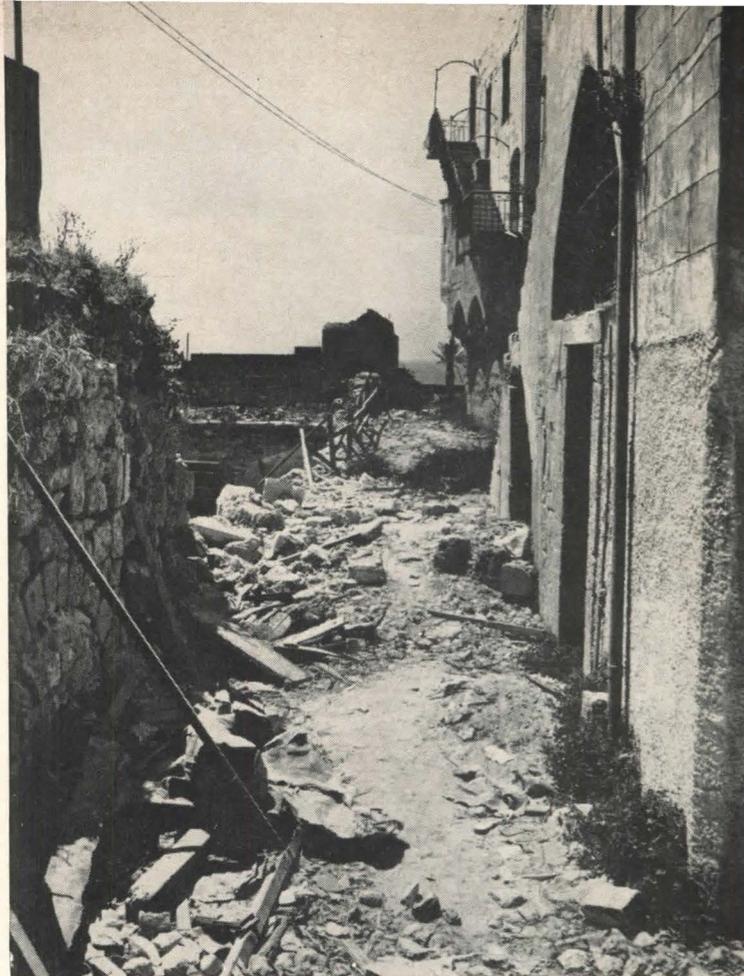
Compounding the problem of renovation was the fact that much of the area had been destroyed. The British razed about half during the Arab revolts of the 1930s. Additional damage was caused during the 1948 War of Independence. In 1960, a major slum clearance campaign was begun to rid the area of its brothels and criminal elements, perpetuated by new immigrants who had replaced the Arab population after 1948. The Israelis evacuated the area, relocated about 200 families, and demolished a number of buildings before the government, in a belated effort, declared it a historic site.

The razed center of the city (now an archeological preserve) was turned into a green park with a large piazza at one end (plan, left). Elsewhere, buildings too greatly impaired were cleared to create small piazzas. Others were repaired or rebuilt quite freely, continuing the vernacular tradition rather than imitating existing buildings.

The renovation is a harmonious blending of new and old. Repopulation has been equally successful: about 100 units, containing galleries, studios, shops, restaurants, and apartments, are occupied.—EVA WYLER



The two sets of before and after photos shown on these pages illustrate the method of renovation. Design elements of new structures, such as balconies and lozenge-shaped openings, were patterned after those of the old buildings (left). Fragments of the 19th-century wall, joined by new segments and braced by concrete buttresses, now delimit a parking lot (shaded on plan above). All vehicular traffic has been relegated to the site's periphery. At right, a typical alley.



**TENSILE STRUCTURES** Volume 1. Frei Otto, editor. Published by The MIT Press, Cambridge, Mass. 320 pp. Illustrated. 8 3/4 x 11 1/4 in. \$22.50.

REVIEWED BY WALTER W. BIRD

Frei Otto has won world recognition as a leading advocate of and authority on tensile structures. He has lectured at a number of American universities and is perhaps best known to the American architect for his work on cable-tensioned membrane structures and those constructed of cable networks, as so well represented by the West German Pavilion at Montreal's Expo 67.

His original interest in mechanically tensioned structures was dealt with in his book, *Das Hangende Dach*, the manuscript for which was prepared during the period of 1950-53. However, his "search for structures demanding a minimum of material and time" led naturally to an interest in pneumatic structures, a form of tensile structure now recognized as being one of the most efficient structural systems available to today's architects and engineers. While his ideas and studies have been widely published in German, publication of this volume on pneumatic structures now makes his works available in English.

This first of two volumes planned on tensile structures is devoted to a study of pneumatic structures which, in this country, are more frequently referred to as "air-supported structures" or simply as "air structures" or "inflated structures." Such structures, differing from conventional buildings constructed from rigid materials capable of supporting bending and/or compressive loads, are constructed from high strength, flexible membranes capable of resisting only tension loads. They are made semirigid and capable of sup-

**Mr. Bird**, an aeronautical engineer, developed the first modern air-supported structure, a radar dome, in 1946. Since 1956, he has been president of Birdair Structures, Inc., which has designed and fabricated most of the notable air structures erected to date.

porting wind and snow loads by maintaining a small pressure differential within the structure which pre-tensions the membrane and makes it capable of supporting compressive loads (to the extent of the pre-tension) as a relaxation of the pre-tension. Air structures normally require no supporting beams or columns; they are supported solely by the air contained within them.

In attempting to trace the history of the pneumatic structure, Frei Otto points out that, while the use of air-supported buildings was apparently first advocated by the English engineer, F. W. Lancaster, the first real breakthrough was achieved with the development of the air-supported radome here in the United States, which started back in 1946. In an article published in the June 1959 issue of THE ARCHITECTURAL FORUM, the pioneering work done in the United States on air structures was described; it was predicted that, to the building industry, the development of air structures could prove to be a historic event, for the "air-supported structure brings to building a new potential, the ability to cover great areas with an easily portable and demountable structure." In this article the air structure was described as "the most exciting idea to come of age in building since Buckminster Fuller's geodesic dome."

Worldwide acceptance and use of the air structure quickly developed after they were first introduced for commercial applications and demonstrated to be a useful building form. However, because of the unique characteristics of the air structure and the rather special properties of the high-strength coated fabrics used as a structural material in fabrication, the problems facing the architect or engineer in planning the use of air structures are quite different from those encountered in the normal building practice. While a number of reports have been published on the design of spherical air-supported radomes, there is little published information available to the architect or engineer interested in the use of pneumatic structures for archi-

tectural applications. This book helps satisfy that need.

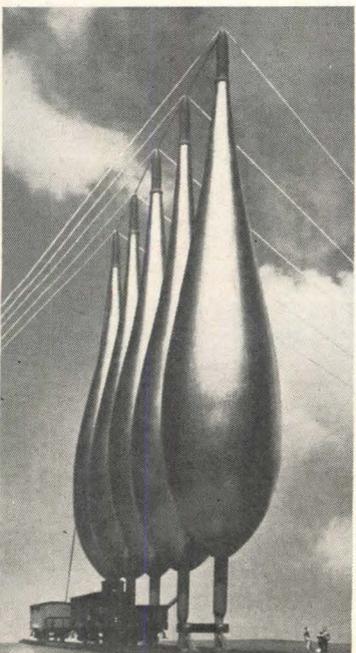
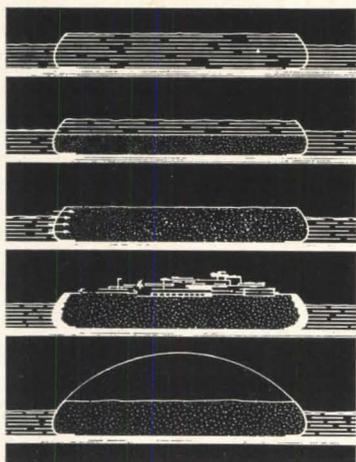
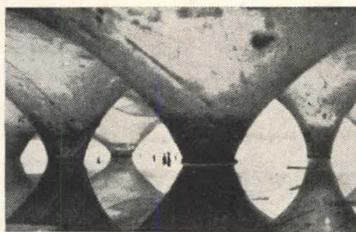
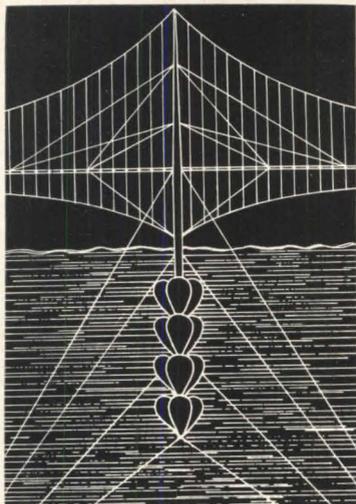
In the foreword to his book, Frei Otto states that his purpose in writing this book is to indicate the present state of the technical development of tensile structures and to provide new stimuli for further explanation. I believe he fully accomplishes this objective. He makes no claim that he is providing a textbook detailing methods for the design of air structures, only that he is describing the basic principles governing the shape and loading of air structures in order to create a better understanding of their potential. While a chapter, "Calculation of Membranes," is included which provides information on the mathematical determination of membrane stresses in structures of definite geometric shape, these analyses serve primarily to indicate the nature of the loading on membrane structures and they are not offered as a basis for detailed design. While this book indicates the general nature of aerodynamic and snow loading on simple geometric shapes, no attempt is made to define the loading and distribution of stresses for structures of unusual form under combinations of inflation, aerodynamic, or snow loading, such as would be encountered in actual service.

The value of this book to the architect or engineer exploring the potential of the "pneumatic structure for new applications" is the understanding of general principles governing their design which it provides, and the wealth of ideas presented on form and application. Through his detailed and imaginative presentation of studies made with soap bubbles and models, Frei Otto shows that the pneumatic structure need not be used only in simple geometric shapes, but with proper patterning and cabling can be designed to provide a wide variety of unusual and interesting building forms. The book is profusely illustrated with pictures and diagrams. Included are pictures of many of the air structures which have been designed and built both in the U.S.A. and abroad, as well as pictures of models de-

veloped by Frei Otto and sketches of many different possible designs which will stimulate the creative architect in the use of this new building form in developing designs to meet new challenges.

In studying this book, the reader is cautioned to thoroughly familiarize himself with the basic limitations in the shape possible with pneumatic structures. While the many shapes illustrated by the use of soap bubbles and elastic membranes may give the impression that the possible shapes are limitless, the form of an air structure is controlled by strict principles and, as the shapes become more complex, the practical problems of patterning and stress distribution become more difficult. It must be remembered that elastic materials have limited application as a building material, as the structure must be able to withstand variations in loading without excessive distortion. Because of the relatively low modulus of elasticity of materials used as membranes and the lack of bending stiffness, the dynamic stability of the design under aerodynamic loading conditions is frequently the major design problem. In working with air structures, this unique characteristic must be recognized.

While I was working with Victor Lundy on the design of the award-winning AEC Atoms for Peace exhibit, he commented that the only thing he had against air structures was that they "had a mind of their own." The architect can "design" an air structure only if he fully understands the principles governing its shape and stability under varying conditions of loading. The photographs of the AEC Atoms for Peace exhibit building which are shown in the book clearly illustrate the way unusual and interesting forms can be developed if the principles governing shape are fully recognized and taken into account. Frei Otto's model experiments, so profusely illustrated in this book, show many of the unusual forms possible with proper use of cables. The use of cables is particularly desirable on large structures as it allows the designer to



redistribute the load and keep membrane stresses to reasonable and acceptable values.

In addition to the many illustrations of existing air structures and of models developed to illustrate other possible building forms, Frei Otto demonstrates the almost unlimited application of pneumatic structures by illustrating such applications as floating planting fields, underwater storage tanks, floating vehicular tunnels, inflatable structures for space applications, etc. In his book Frei Otto even explores the feasibility of enclosing entire communities to provide a controlled environment. While many of the applications illustrated are not presently practical with the materials now available and may not be economically feasible when compared with other design approaches, they are not simply idle dreams, but are an imaginative forecast of things to come when suitable materials are developed. No other type of structure offers the potential for efficiently enclosing large spaces. Frei Otto suggests that the earth could be enclosed in a plastic skin, but concedes that this would have little practical value. However, he suggests that we may one day wish to enclose small natural or artificial satellites with pneumatic structures in order to maintain a controlled environment. Frei Otto's approach should not be criticized as impractical, but accepted for what it is: a stimulant to others to apply the principles of air support to the solution of new problems.

While the majority of the work described in this book relates to the simple air structure in which the entire interior is maintained at a pressure slightly

Pneumatic concepts, top to bottom: submerged floats support a prestressed suspension bridge; shelter formed of tensed membrane stiffened by reinforced polyester resin to act as rigid shell without interior pressure; a half-submerged membrane, filled with water, then sand, and grouted through membrane to form retaining wall, becomes an island settlement with optional dome; a row of tear-shaped silos.

above atmospheric, Frei Otto has included a section in the book on what he calls "cushioned structures" in which the pressure is enclosed between two membranes. This type of structure can be made in many different forms, such as the lenticular shape used to provide inflatable radar antennae, and the 150-ft.-diameter roof used on the Boston Arts Center Theater. The Goodyear Inflataplane and the low-pressure dual-wall entrance sections used on the AEC exhibit building are other forms of what Frei Otto calls a "cushioned structure." Many other possible shapes are illustrated by sketches and models.

In his review of applications for pneumatic structures, Frei Otto also briefly describes a number of other possible applications, including gas and liquid containers, water dams, pillow structures, etc. These illustrations of unusual applications help to illustrate the almost limitless possibilities of the principle of pneumatic support.

While the major portion of this book is devoted to the fundamental problems associated with the design and form of the membrane, Frei Otto recognizes that the practical application of the principle of air support depends largely on the design of suitable accessory equipment, including pressurization equipment, special entrance doors and airlocks, and anchorage. He has therefore included sections dealing with these problems in order to acquaint the reader with some of the special requirements.

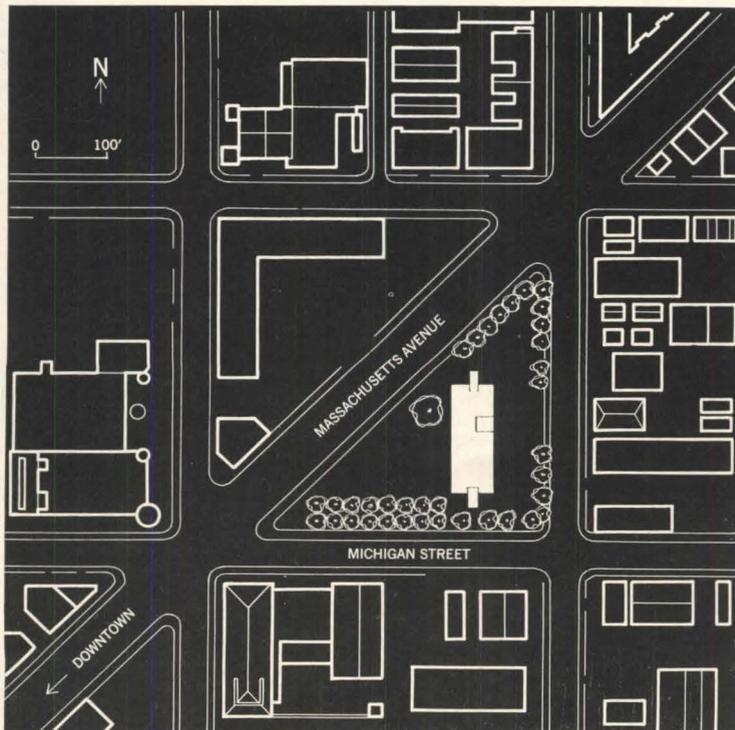
As the membrane of an air structure is supported and stabilized against external loading by the pressure differential maintained across the membrane, it is essential that this pressure be reliably maintained under all conditions of operation. Pressure levels, while low, depend on the wind and snow loading that must be withstood, which in turn depend on the shape of the building. A thorough understanding of the aerodynamic loading and distribution of stress is therefore essential to the proper design of an air structure. A structure with

(continued on page 120)



# PALAZZO VECCHIO Indiana Style

The 21-story concrete shaft of Indianapolis' first public housing project, an apartment tower for the elderly, rises over a motley neighborhood on the edge of the downtown core. The 1.4-acre triangular site is located on one of the city's main diagonal avenues (map below), only a half mile from the monument at the center of its Baroque street plan.



The most striking form on the skyline of Indianapolis, ironically, is a public housing tower for the elderly. "Ironically," because until recently Indianapolis prided itself on being one of the largest U.S. cities (population: 530,000) with no public housing whatsoever.

Architect Evans Woollen, a Yale-educated native of Indianapolis, has given the city's first public housing structure the assertive silhouette and rugged texture of a medieval campanile—or, among recent prototypes, the Torre Velasca in Milan (Feb. '58 issue). His design may look like stylish Brutalism, but it is actually a hard-headed response to economic circumstances.

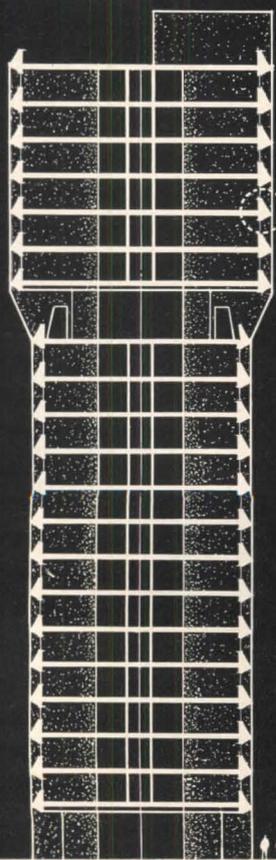
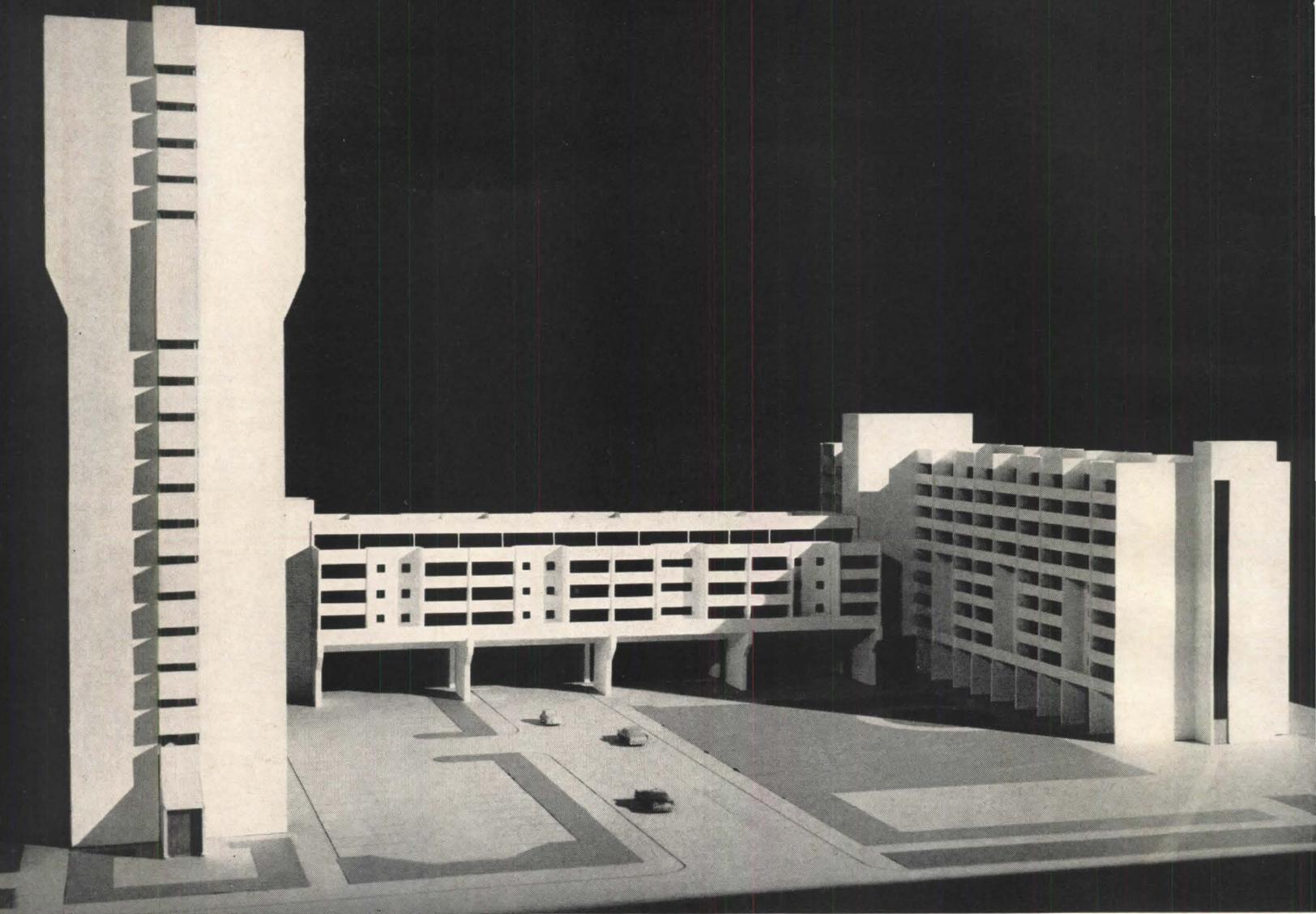
Given the small, odd-shaped site (plan below), it was least expensive to stack all 247 units in a single tower, with cast-in-place bearing walls that divide the whole building into apartments of uniform width. The double-loaded corridor plan, unbeatable for economy, is indicated on the exterior by the projecting stair towers at both ends of the structure. The broad-shouldered silhouette is simply a result of stacking six floors of larger apartments above thirteen floors of smaller ones (page 73).

The tower was sited well back from the busy avenue that leads to the center of the city, so that a landscaped "front yard" is exposed to passing motorists. Visually, at least, a rudimentary public square is defined by the buildings around this green patch.

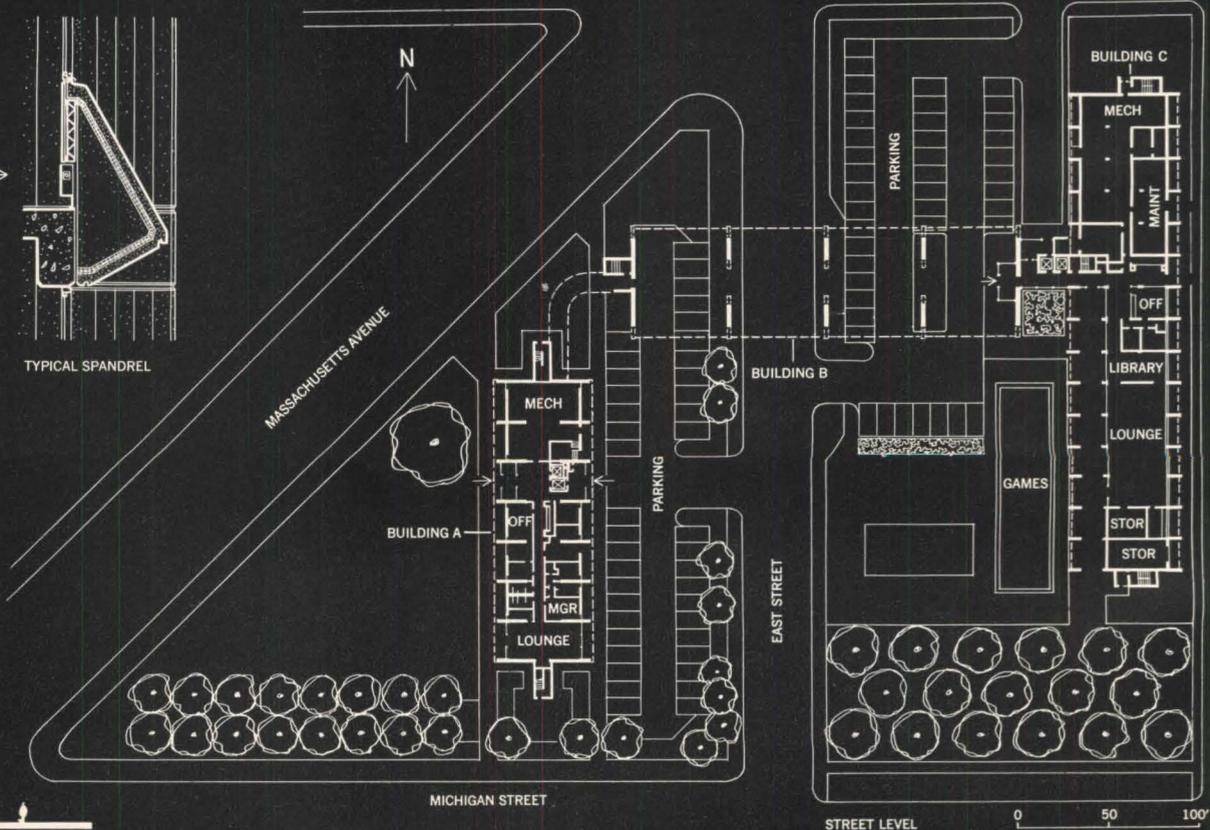
This project is the only one in Indianapolis built specifically for the elderly. Like other apartment buildings for the elderly, it has relatively large common spaces—divided in this case between the ground floor and the glass-walled 15th floor (where the structure makes its angular transition).

The residents are racially mixed (69 per cent white, 31 per cent black). As in other projects for the elderly, they seem unconcerned about color.

The city has been so pleased with its first housing for the elderly that preliminary plans have already been approved for a second project—also designed by Woollen—adjoining this one.



TYPICAL SPANDEL



STREET LEVEL 0 50 100'

**A second project—spanning the street—will be linked to the completed tower**

Although it has only recently accepted federally aided housing, Indianapolis has already begun to challenge long-standing Public Housing Authority conventions. While this initial tower was hardly typical of U.S. public housing, the proposed project adjoining it includes an air-rights structure which is unprecedented among public projects.

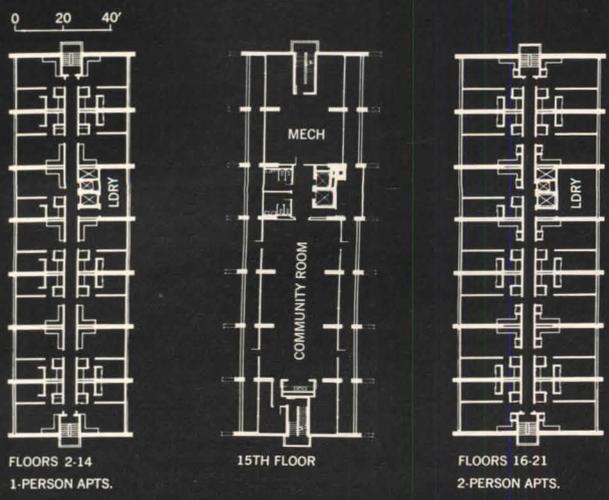
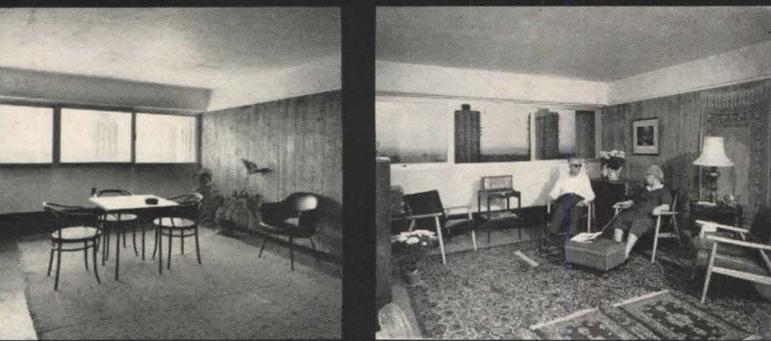
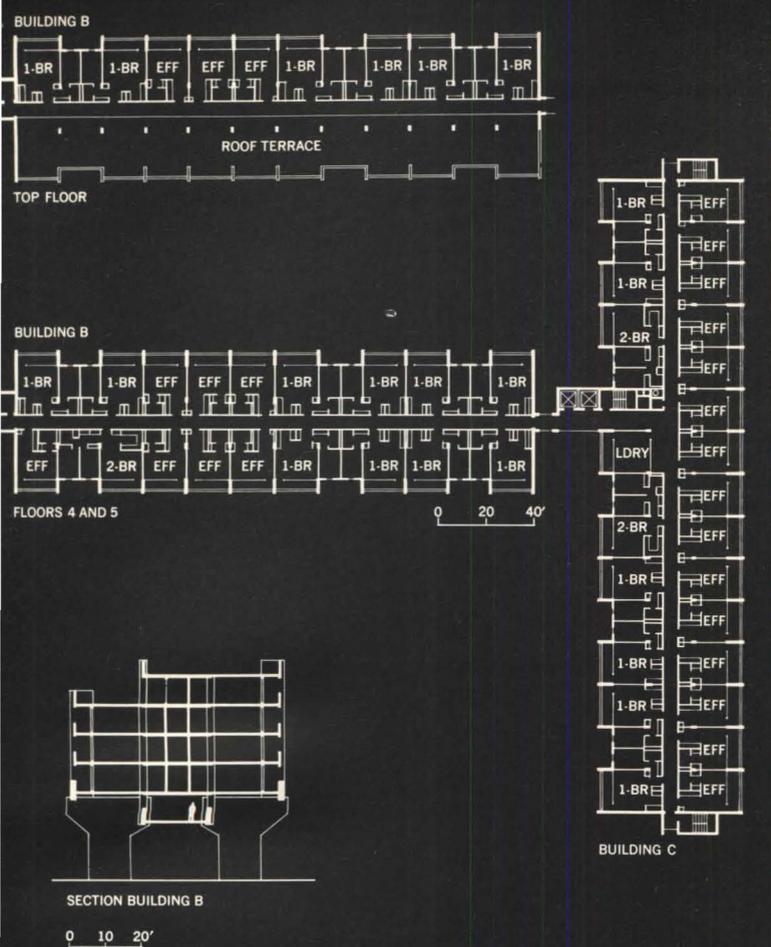
When the additional project was proposed, the most expedient scheme that came to mind was simply to duplicate the tower on the new site. Architect Woollen was convinced, however, that the two projects should be linked together in a single complex, so that all residents would have safe, weatherproof access to a variety of common facilities. With the support of local officials, his scheme has won regional and federal approval.

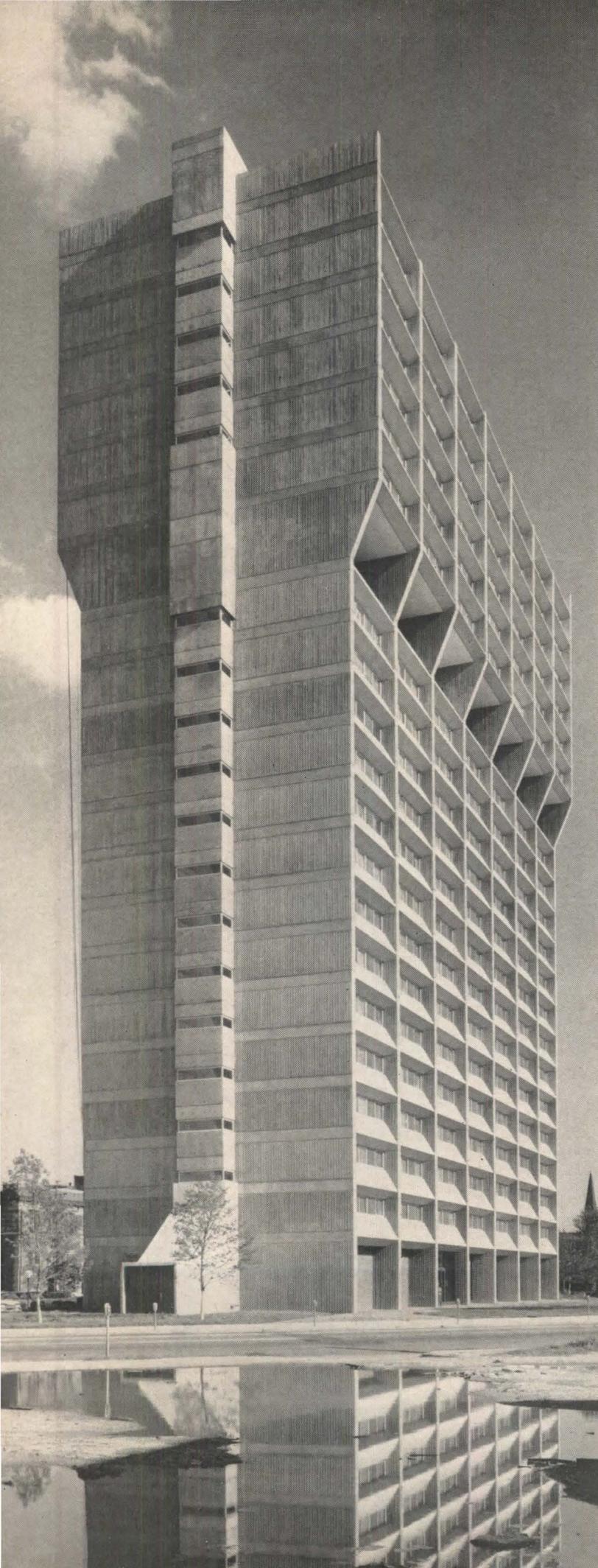
Apartments in the new project (plans, above left) will be quite different from those in the tower (below left), which were designed three years earlier to meet distinctly different program requirements and design standards (issued by the regional PHA office). Changes in unit layout and structural bays have prompted changes in the types of windows used. The uniformly high windows of the tower units (photos, left) were designed to meet federal requirements that occupants be able to wash both sides of the glass (in this case, by removing the relatively small sliding sash). In the new units, balconies will make it possible to wash larger living room windows (and make the minimal "efficiency" units seem larger).

When the proposed buildings are completed, they will enclose a U-shaped urban space, bisected by East Street. The portion of this space on the new site will be largely recreation area, adjoining the ground-floor community room through a deep arcade.

The automobile traffic passing through this "court" may not be as undesirable as it seems at first; experience here (and elsewhere) shows that the elderly enjoy watching cars come and go, and the roof terrace on top of the "bridge" building will give them an ideal vantage point.

All apartments in the completed tower (building A) are similar in layout (plans left), and fit between structural walls spaced 23 ft. apart. Units in the proposed structures (buildings B and C) will vary in layout (plans, above left), each unit occupying one, one-and-a-half, or two of the 17 ft. 10 in. structural bays. Every corridor will end with a window, the "light at the end of the tunnel" that Woollen now feels is necessary. Instead of the high, wall-to-wall windows used throughout the tower, there will be large living room windows, opening onto balconies, and small "punctured" bedroom windows. Interiors will still have a spartan look, which most residents overcome with their belongings (before and after photos).





Seen from across the avenue (left), the tower has a vigorous play of light and shadow that contrasts sharply with the pallid shells of most public housing. The relatively small apartment windows are made to seem larger by the wall projections and the angular spandrels.

The stair towers at the ends of the building, which get a surprising amount of daily use, have strip windows at eye level on each landing (except for a windowless "knuckle" at the high-eilinged, glass-walled 15th floor). At the ground, the stairs unwind in angular extensions that express their function as emergency exits and help, visually, to stabilize the top-heavy building form. These stair exits, among other features of the design, show something in common between Woollen's approach and that of John Johansen, for whom he once worked and with whom he collaborated on the best-known modern building in Indianapolis, the Clowes concert hall at Butler University (Dec. '63 issue).

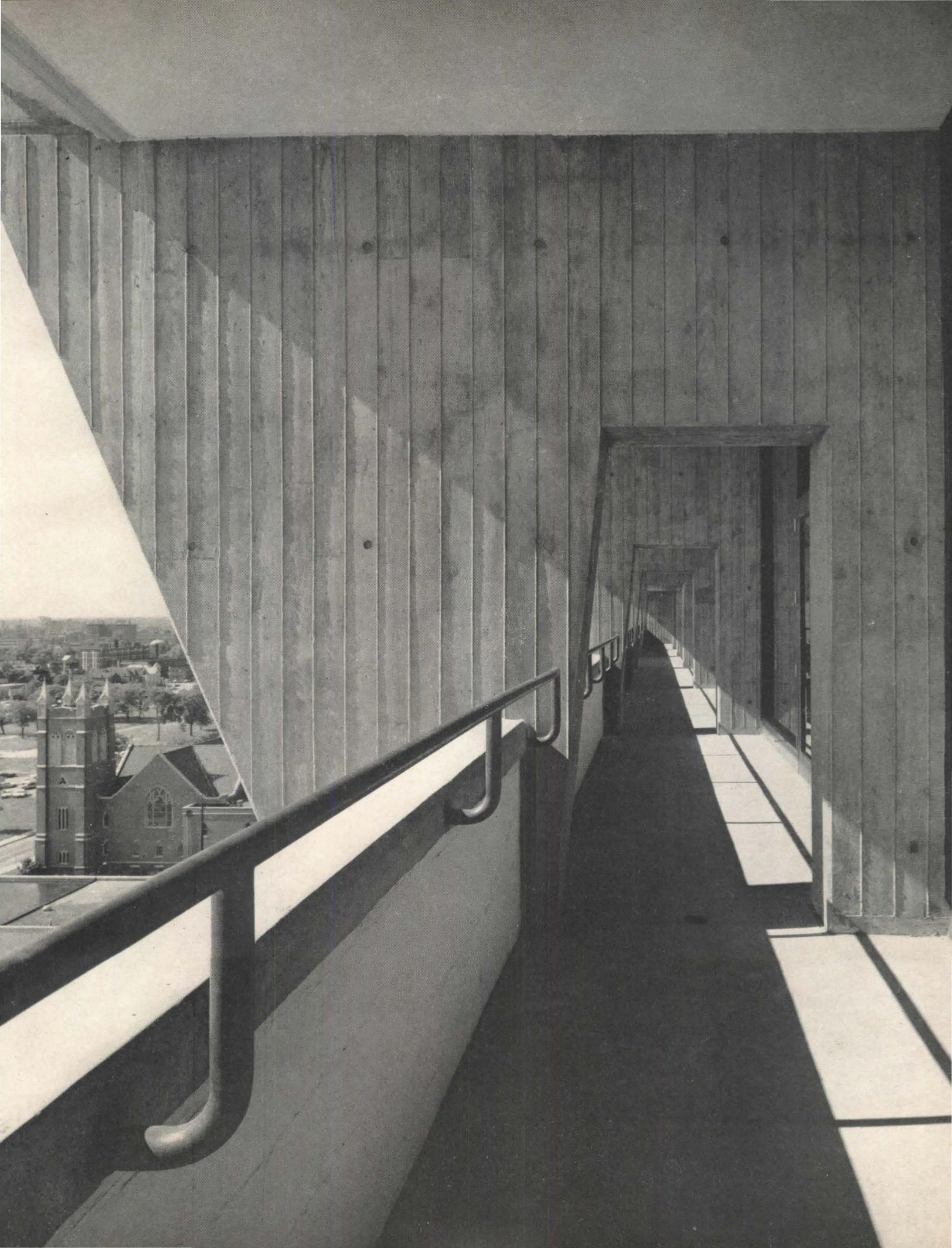
The same no-nonsense design approach is illustrated in the board-formed fin walls (facing page), which reach out at 15th-floor level to support the larger floors above. Angular portals through these walls link the balconies outside the community rooms on this floor. Recreation spaces here are in frequent use; a program of regular activities is run by an outside agency, Senior Citizens Center Inc. When the second project is completed, all 690 residents of the combined complex will have access to this floor, with its sweeping views of Indianapolis.

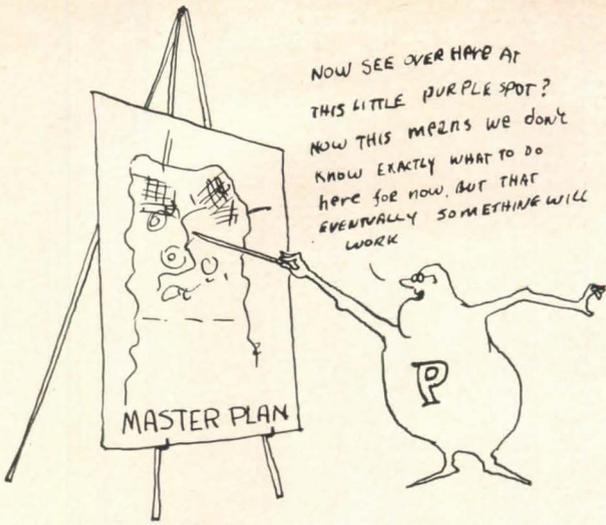
The one vital facility that the project lacks is a good, convenient grocery store. Since there is no adequate one nearby, the architects and housing officials are trying hard to include one in the second project, but no way has been found to finance it. Meanwhile, the residents themselves have banded together to establish a co-op shop for staple items, operating out of the kitchenette of the ground-floor lounge. Maybe they will find a way to make their "housing" into a complete community.

The tower is as good to look at as it is to look out of

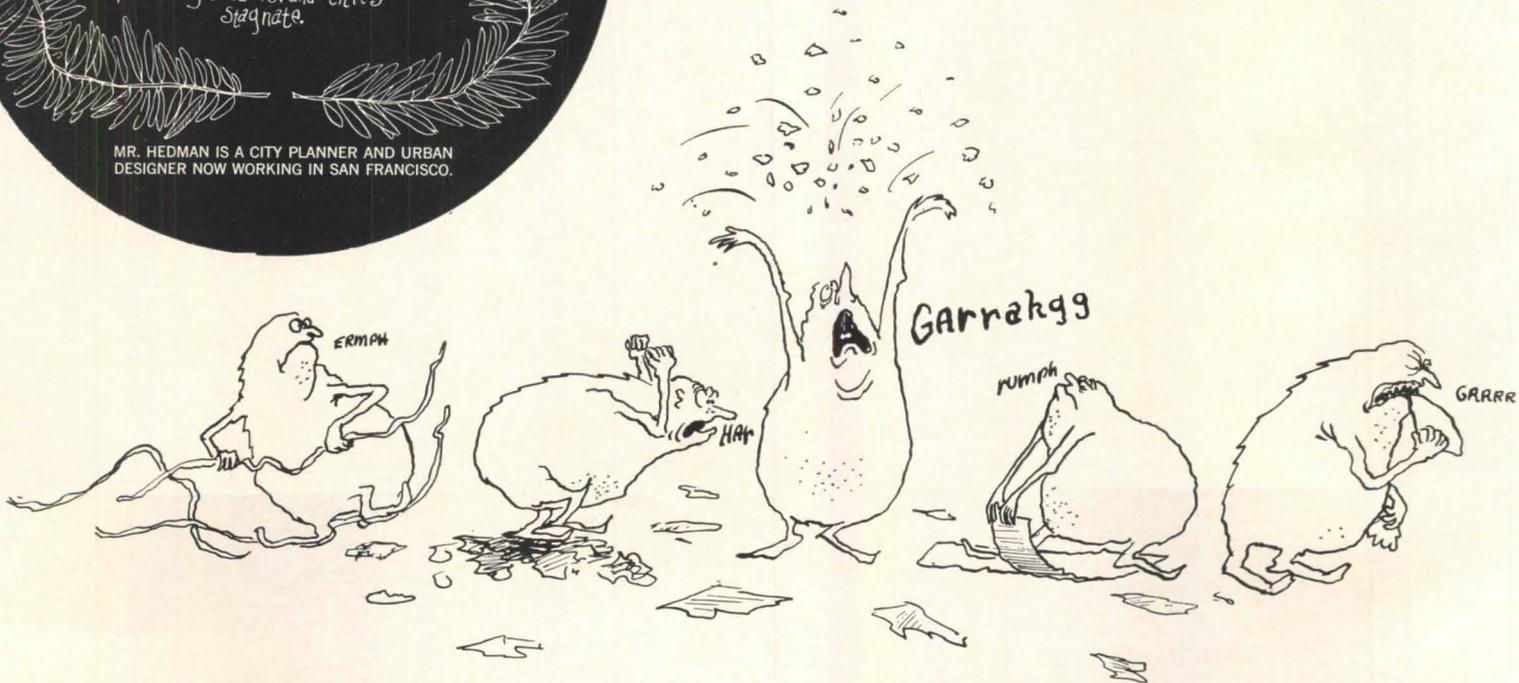
#### FACTS AND FIGURES

John J. Barton Apartments, Indianapolis, Ind. Owner: Indianapolis Housing Authority. Architects: Evans Woollen & Assocs. Engineers: Fink, Roberts & Petrie (structural); J. M. Rotz Engineering Co. (mechanical). Consultants: Kolbjorn Saether & Assocs. (structural); James Browning (landscape). General contractor: George Bahre Co. Building area: (completed building) 175,000 sq. ft.; (proposed buildings) 167,000 sq. ft. Apartments: (completed building) 170 one-person units, 78 two-person units; (proposed buildings) 157 efficiency units, 90 one-bedroom units, 10 two-bedroom units. Construction cost (completed building): \$2,847,000, including site work and demolition. PHOTOGRAPHS: Pages 70 and 72, Robert Young Studio. Pages 74 and 75, George Cserna.

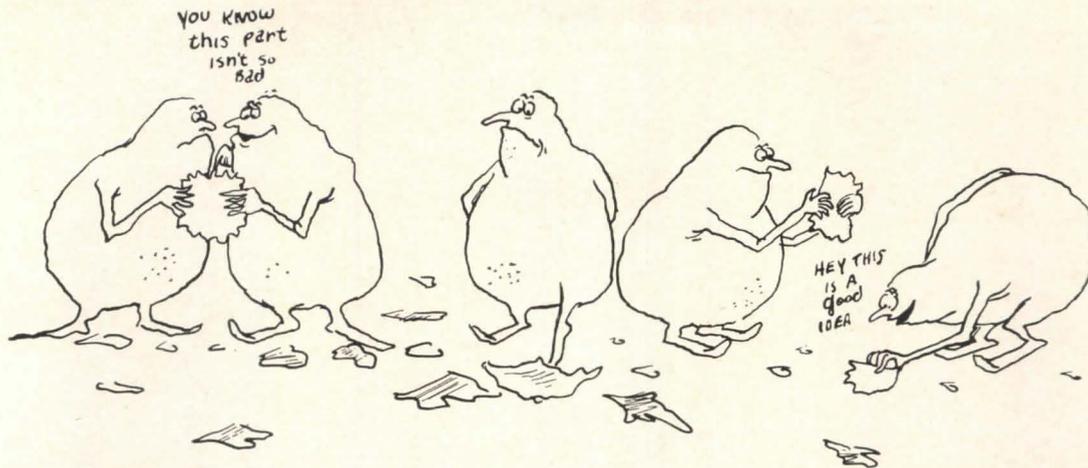




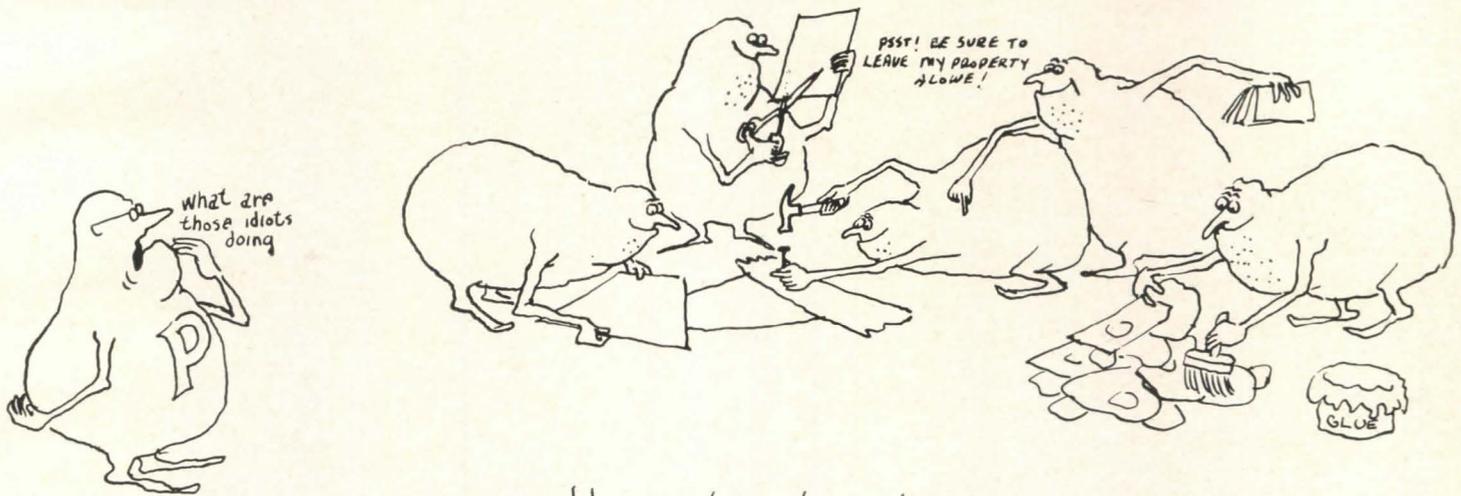
presentation to the public



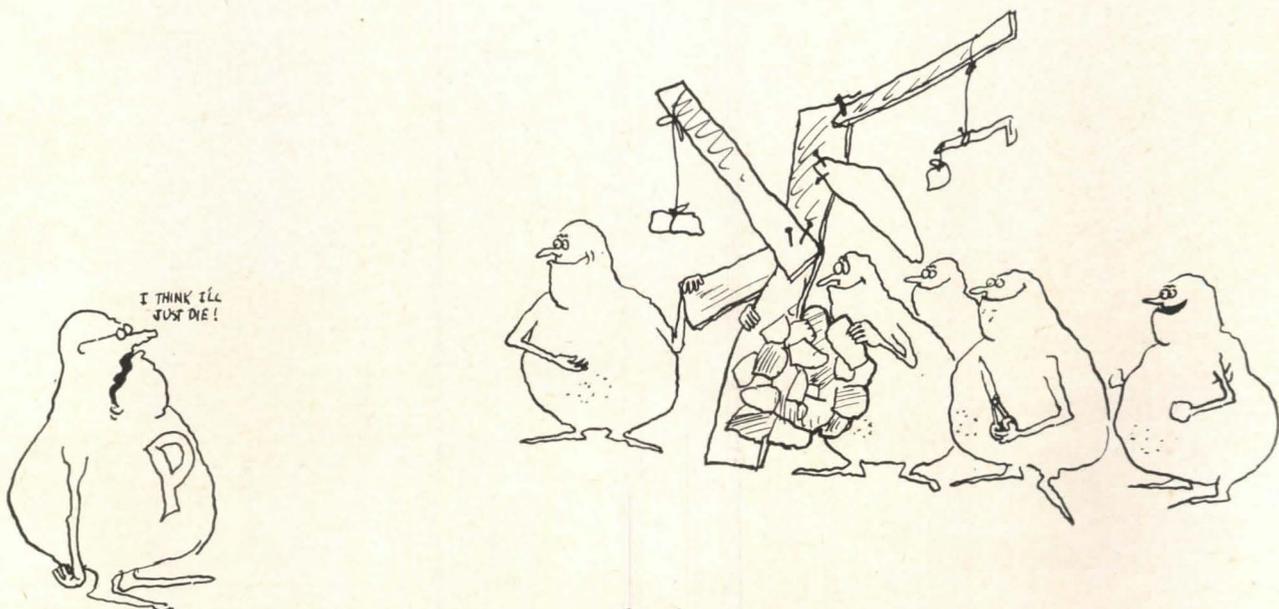
public response



public evaluation of the plan



public participation in the planning process



final presentation of the plan

**A PLAY  
SPACE  
ANY  
PLACE**



The deteriorating areas of most cities are spotted with temporarily vacant lots that might be developed as recreation spaces, if only the investment could be retrieved later, when the site is redeveloped. One approach to making such spaces useful is being tested in ten "portable vest pocket parks" designed for the New York City Parks Department by Landscape Architects M. Paul Friedberg & Associates and constructed under a HUD

urban beautification grant.

In the conventional park or playground, more than half of the construction cost may be buried below grade in footings. A temporary installation—whether it is to last two years or 20—should have virtually all of its components above ground, so that they can be moved elsewhere if the site is needed for some other purpose.

Since the vest pocket park serves a small area—a city block

or two—it is most valuable for the groups that stay closest to home, the very young and the very old. To meet their needs, each of these ten parks is divided into two areas: a sheltered seating area for adults and an active play area for young children.

For this "experimental program," Friedberg's office designed demountable play equipment, using four different sets of materials: pipe and cable (below), steel tubing, bolted timbers, and

The pipe-and-cable system was used at a park on East 5th Street in Manhattan. The kids respond to the unconventional webs of plastic-coated cables by inventing new chase games and gymnastic maneuvers. The space-frame "shelter" near the street counts for little here, visually, but it does support improvised swings.



precast concrete (all shown on the following pages). The objective, with each system, was a framework that would provide play opportunities in itself (things to climb over, crawl through, hang from, etc.) and also support play equipment such as swings and seesaws. When assembled on the site, the equipment had to absorb the stresses of all these activities without footings. At the same time, it had to be demountable, using light construc-

tion equipment, yet immovable against the assaults of kids.

It was hoped that the city's Parks Department could stockpile components of the systems and move them from site to site to meet changing needs; and that individual parks could be laid out by nonprofessionals, using design manuals, and constructed by teams of unemployed ghetto residents. In actual fact, the parks were designed, put out for bid in the conventional way, and built

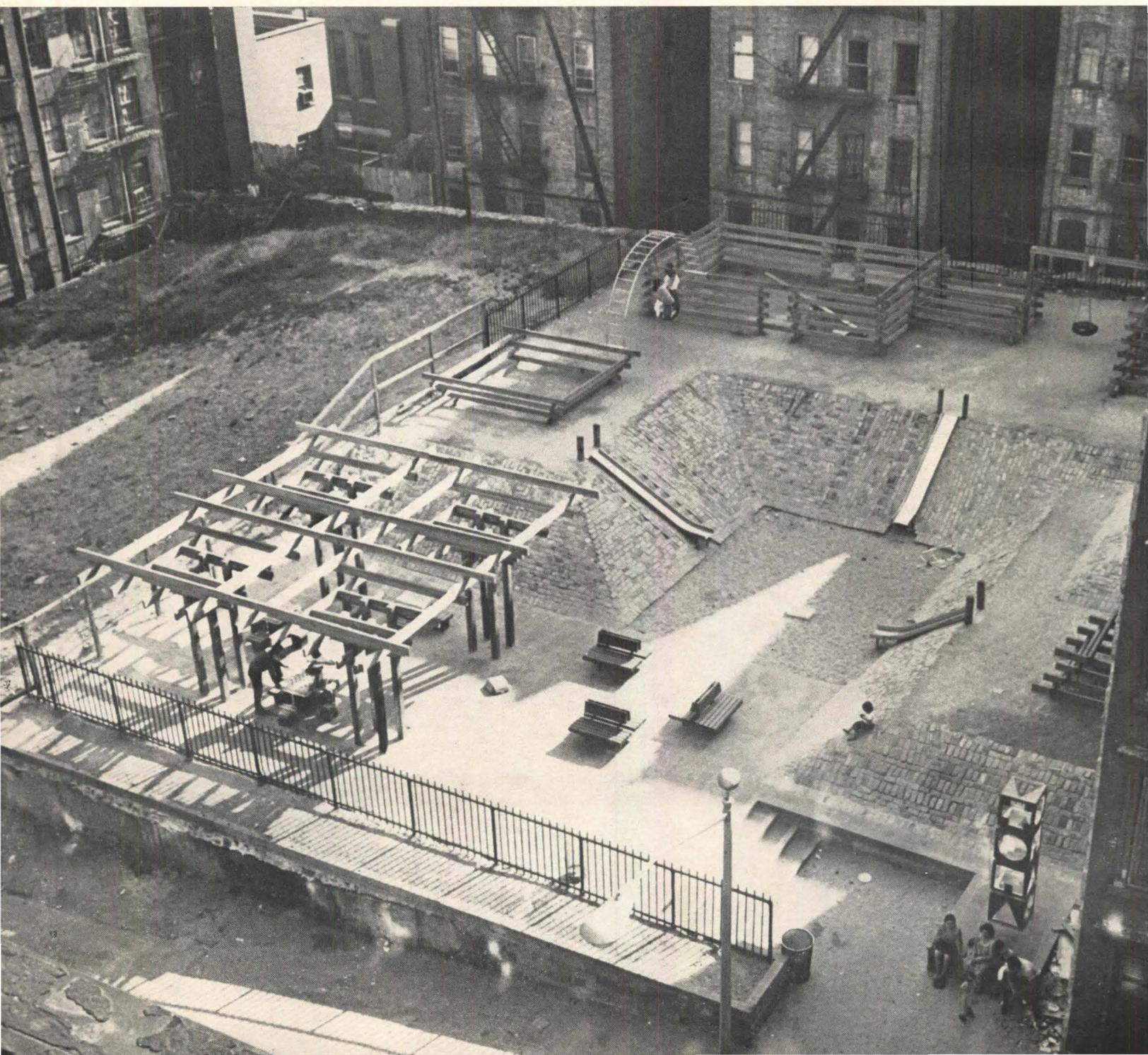
by union construction workers.

The community did participate, however, in the planning of the ten parks. Once a potential site had been pinpointed, a group was designated to represent the community. In some cases, local groups had taken the initiative by proposing sites.

These neighborhood groups helped to establish the program for each park—the allotment of space to adults and children, the age range of children likely to

use the park, etc. Later, they reviewed the designs in model form. Once the parks were constructed, the same groups kept in touch with the Parks Department, reporting maintenance problems and requesting changes.

On the whole, the play equipment is remarkably successful. The kids who use it, as the photos show, enjoy it thoroughly. A few structural weaknesses have turned up: the stresses imposed by a whole family group



on a swing or a couple of adolescents chinning on a bar exceeded all estimates.

The designers now feel that some of the systems look too bulky in their settings (the pipe-and-cable structures on a constricted site) or too inconspicuous (the steel-tube units on a large site). They are pleased with the bright-colored panels on the steel tube equipment (page 82), and now wish they had introduced color and pattern into

other systems—especially the concrete one.

Although these lively panels are the only work by an artist (Sam Wiener) incorporated directly into the demountable systems, each of the parks includes art works of some kind. They range from the small painted steel climbing sculptures by William Tarr to a vast paint and relief mural on the side of a brownstone, by Tania Milicevic. At some of the parks, the gloomy

blank walls abutting the site have been painted a bright color, and may yet be turned into murals.

The least successful parts of the parks as a group are the "shelters" over the seating areas. They were meant to fill the functions usually served by trees—providing shade and a sense of visual enclosure. (Actual trees would have violated the principle that all parts of the park had to be salvageable, and at most of the sites they would not have

Timber play structures and shelters were used on a sloping site in East Harlem. Granite block banks are used for climbing, slides, and riding-down-in-a-carton (far right). The massive timbers are chamfered on all edges to make them safer. As at other sites, adjoining buildings have already been demolished.



survived.) The two varieties of wood shelter used for these parks cast a little welcome shade, but the steel-framed ones, still lacking the intended metal panels, provide virtually none. Both kinds are a constant temptation to the kids who are agile enough to climb them. These adventurous kids like the shelters; their elders, however, consider them dangerous and have already had them removed from one park.

From HUD's point of view,

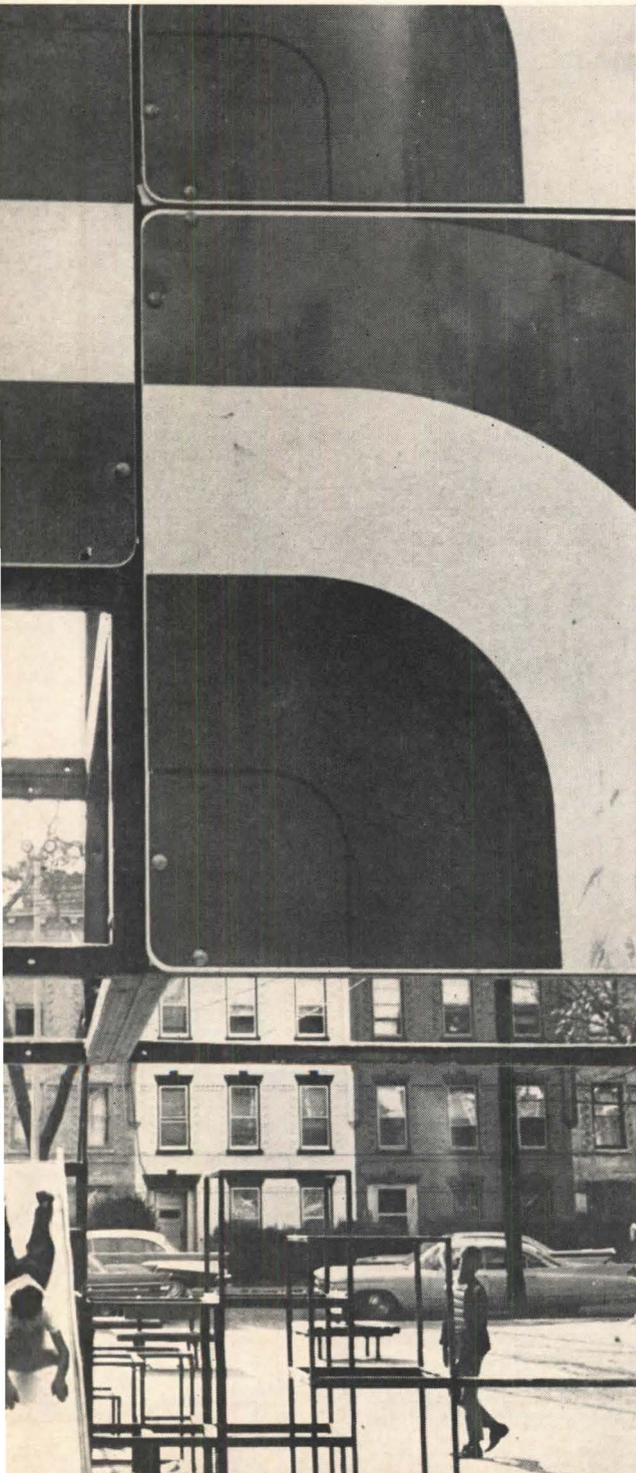
the program has demonstrated a way to use vacant, tax-delinquent land to meet a vital need. Meanwhile, New York City is richer by ten small parks—with a total area of less than 1½ acres—but accommodating an astonishing amount of activity.

An unexpected by-product of this program is the interest shown by manufacturers in fabricating the play equipment, or variations of it, and selling it nationally. Besides parks depart-

ments, the market for this equipment might include housing authorities, public and private schools, etc.—not only in the inner city, but in the suburbs, where patterns of land use are at least as fluid.

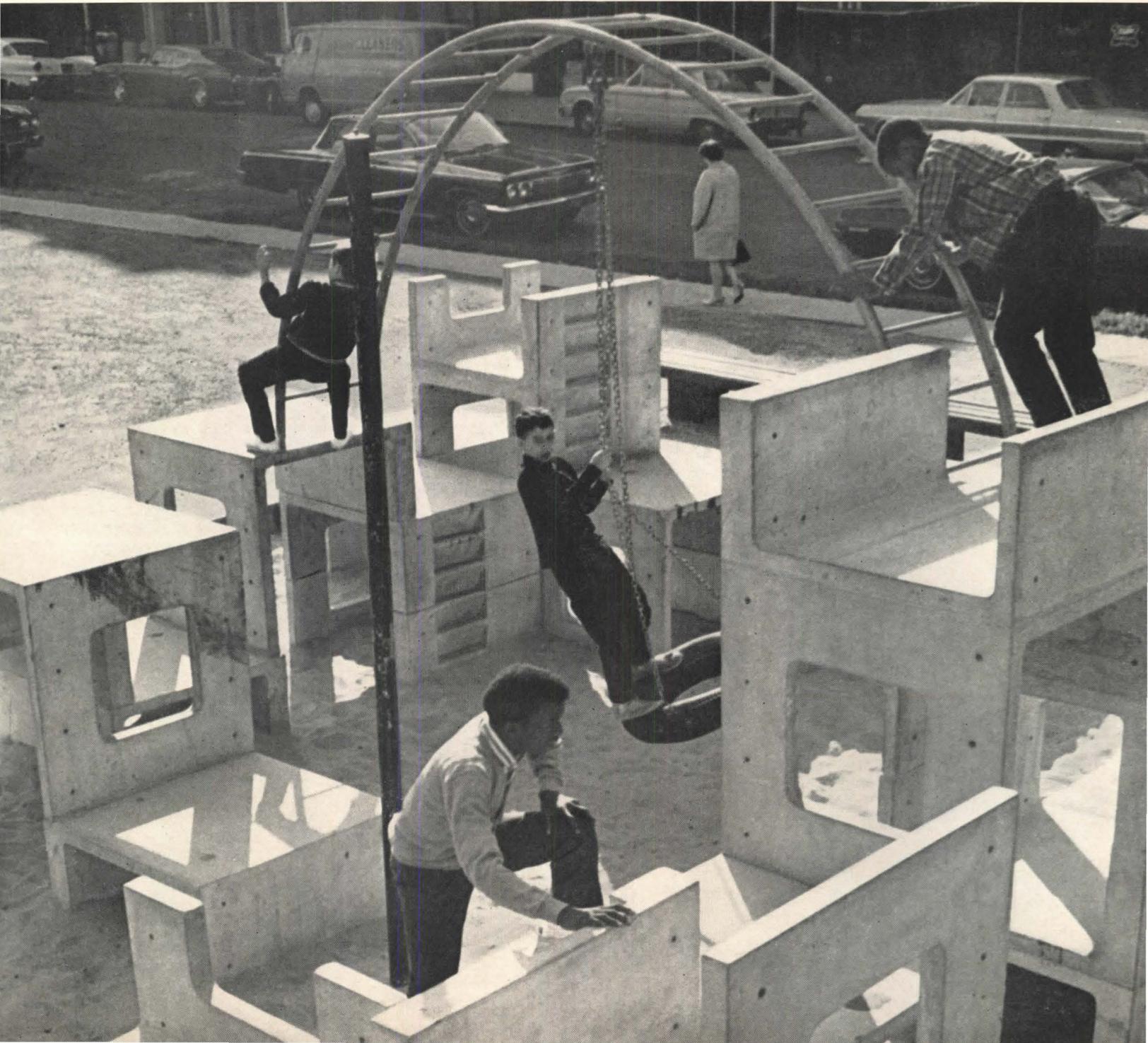
For Paul Friedberg, these parks are one more step in a whole design sequence that is essentially experimental. "We make a few new mistakes on each job," he says, "and we apply the lessons to the next one."

Prefabricated tubular steel frames of three simple shapes have been assembled to form an intricate play structure for a site in Brooklyn (below). Porcelain enamel panels designed by Sam Wiener add color to the black-painted units. At a Bronx site (facing page), three different precast units form a similarly intricate play environment.

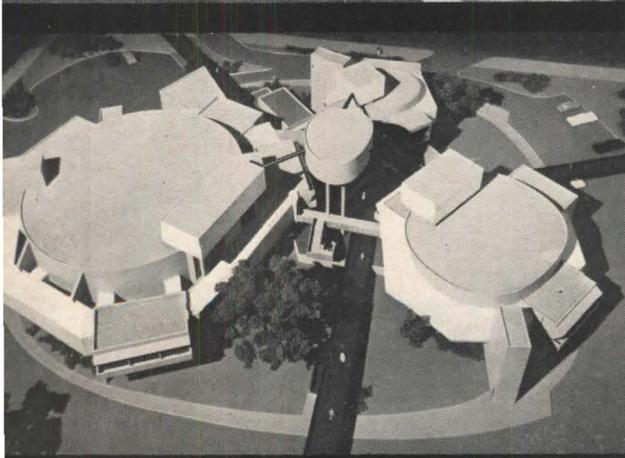
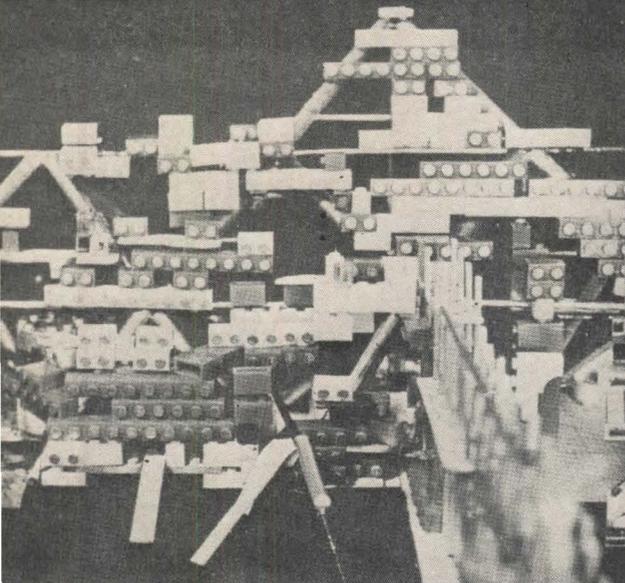
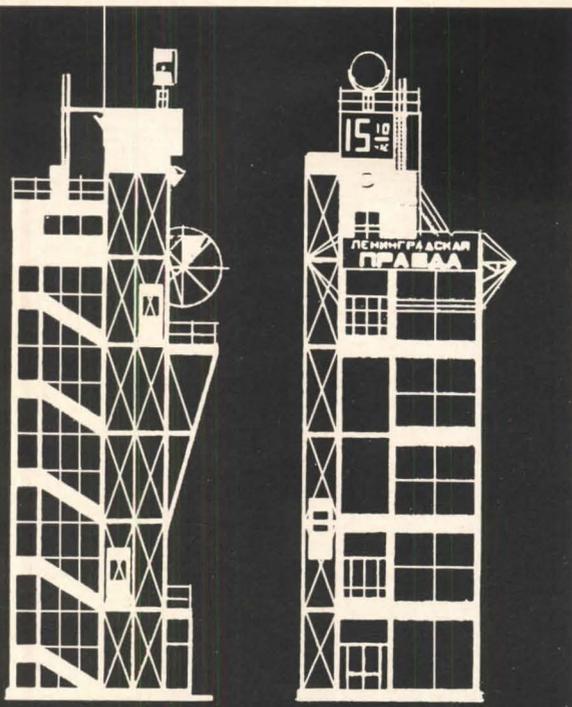


#### FACTS AND FIGURES

Experimental Park Program, New York N. Y. Owner: City of New York, Department of Parks. Landscape architects: M. Paul Friedberg & Assocs.; project landscape architect, Sonja Locke. Consulting architect: Samton Assocs. Structural engineer: Robert Silman. General contractor: Durante Bros. Area (ten parks): 61,080 sq. ft. Construction cost: \$385,000. Design and supervision fees: \$33,500. Financing: HUD Urban Beautification Demonstration Grant, 90 per cent; City of New York, 10 per cent. PHOTOGRAPHS: David Hirsch.



# ANTIARCHITECTURE



ANTIARCHITECTURE: Alexander and Vladimir Vesnin's 1923 "Constructivist" project for the Pravda Building in Leningrad (top); Peter Cook's "Plug-In City" for Archigram (center); and John Johansen's Mummers Theater for Oklahoma City (above).

BY ROBIN BOYD

A protest movement had to happen in architecture as in everything else. It was a bit late on the scene and sometimes even now it seems to lack real anarchical heat and a true sense of purifying destructiveness. Symptomatically, the architecture students in their various universities around the world have been among the last to jump on the Student Power steamroller. But the more interesting phenomenon is the thinness of the attack so far by the practicing avant-garde on architecture itself, compared with the attacks on every other kindred activity from art to religion, drama, and the novel.

For instance, an acceptable antihero of a satisfying anti-novel is unquestionably a nauseating slob bearing no resemblance whatsoever to the traditional product. Beside him Venturi is a square and the Archigrams are Tories. Perhaps it is, as Reyner Banham once suggested, that architects make poor revolutionaries because they don't like the idea of buildings being blown sky-high. Banham is a true revolutionary, and so is Buckminster Fuller, but neither is an architect, strictly speaking, and to be an effective antihero you must first be cast in the hero's role. Nevertheless an architects' antiarchitecture movement is at last warming up. It is not to be confused with any of the stylistic revisions that have swept through modern architecture since the revolution. Throughout the first 60 years of this century most of the avant-garde in each succeeding generation was loyally fighting on architecture's side. Sometimes the revolutionaries were romantics, like the Utopians of Germany after World War I, embarrassing architecture with claims of cosmic immortality. Sometimes the revolutionaries were dour realists, like the New Brutalists of Britain in the 1950s, intent on scraping away all sticky accretions and getting down to the core. The aim with one exception, was to find, cleanse, and elevate the spirit of architecture.

The one exception was the Constructivist movement of the

1920s, which gives antiarchitecture a nice ancestry. Its revival is a product of the '60s. Antiarchitecture promises a more radical revolution than that of any new design style. It is fascinated by the population explosion and plugging-in and pop, by McLuhan, of course, and by systems and electronics; and it yearns for the day when it will be able to surrender itself entirely to the computer. All this leads to a concentration on open-ended planning, subdivision of elements, changeability, even portability. But these qualities are found in a lot of advanced architecture. Antiarchitecture goes further. It is compulsively opposed to visible concepts, design, and order. It wants desperately to be in with the big league revolutionaries of the other arts and to smash open the core of architecture and find something absolutely different inside. Its credo goes something like this: burn, form, burn; only social pressures and technological development will shape buildings from now on.

John M. Johansen is one of the latest to voice it. "The 'form giving' period is waning," he wrote, apropos of his design for Oklahoma City's Mummers Theater (May '68 issue). "Architecture as we knew it is no longer effective in its solutions," Johansen declared, but he betrayed a sneaking regard for it, just the same, when he added "—nor even compelling in its esthetic expression." A really determined antiarchitect has no time for esthetics of any sort, and is not looking for alternative expressions.

Sooner or later we will all have to declare ourselves for or against it. Some pattern in the tangled web of current architectural theories and practice (or at least some harmless amusement) may be found in the exercise of categorizing any advanced architects who come to mind into those who have and those who have not yet declared. On the right you place all those

Mr. Boyd, architect, and well-known author and critic, is a member of our Board of Contributors.

still seeking architecture in the Vitruvian sense: with strength, utility, and appearance (however odd) balanced somehow. On the left you put those seeking antiarchitecture by kicking away the third leg of the tripod.

For instance, while John Johansen has now all but declared himself for antiarchitecture, not so long ago he and Paul Rudolph could be, and frequently were, associated among the leaders of the space-makers. The whole corpus of Rudolph's work, however, indicates that he stands for architecture forever. So, undoubtedly, does Louis Kahn, but not necessarily all the Diagonalism set that follows him.

Again, Robert Venturi is edging always closer to antiarchitecture and will finally eliminate his own contradictions only when he actually achieves it. Yet Charles Moore and all the New Barnists are confirmed on the side of architecture. (Incidentally, unfamiliarity or ugliness are in themselves no reliable indicators of antiarchitecture. The fashionable clumsy look is deliberately created, positive architecture. Shattered forms and complexity are esthetic devices. Contradiction, however, is a splendid antiarchitectural invention.)

Then, the English Archigrams and the Japanese Metabolists may be easily dropped into left and right groups respectively. Their fanciful megacities have much in common, but at heart the two movements are very different. While the Archigrams have visions of freedom from all esthetic rules and demands, the Metabolists are deeply concerned with the traditional qualities of composition and unity. Their motivating concept of orderly growth and change is meaningless except in the framework of architecture.

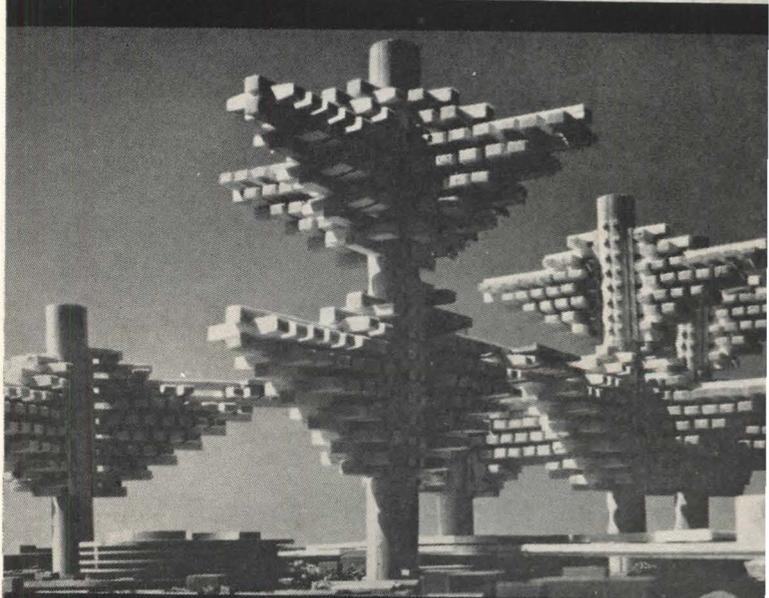
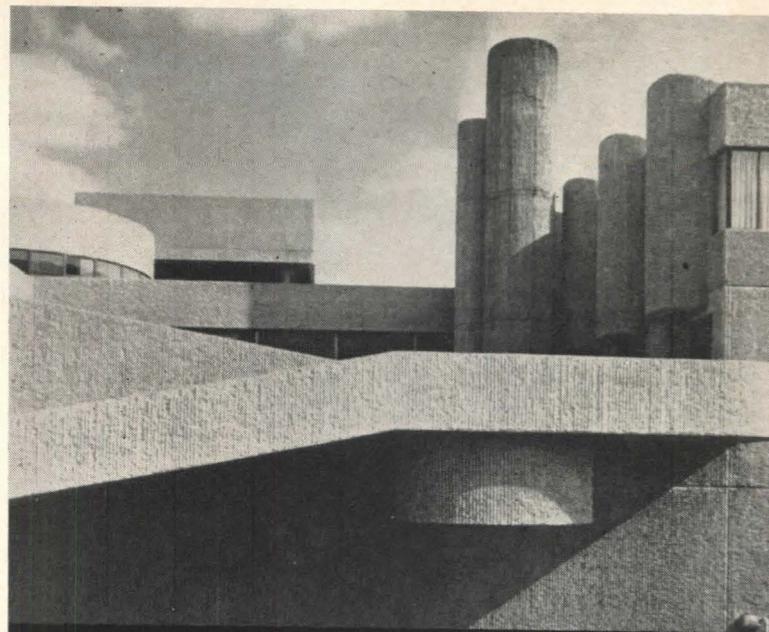
Antiarchitecture has its foot in the door to architectural theory, but it is hampered by two or three realities. One is that all the examples we have seen so far are only on paper. Antiarchitecture has not been built—yet.

Another disability is that every successful example of antiarchitecture seems to be doomed

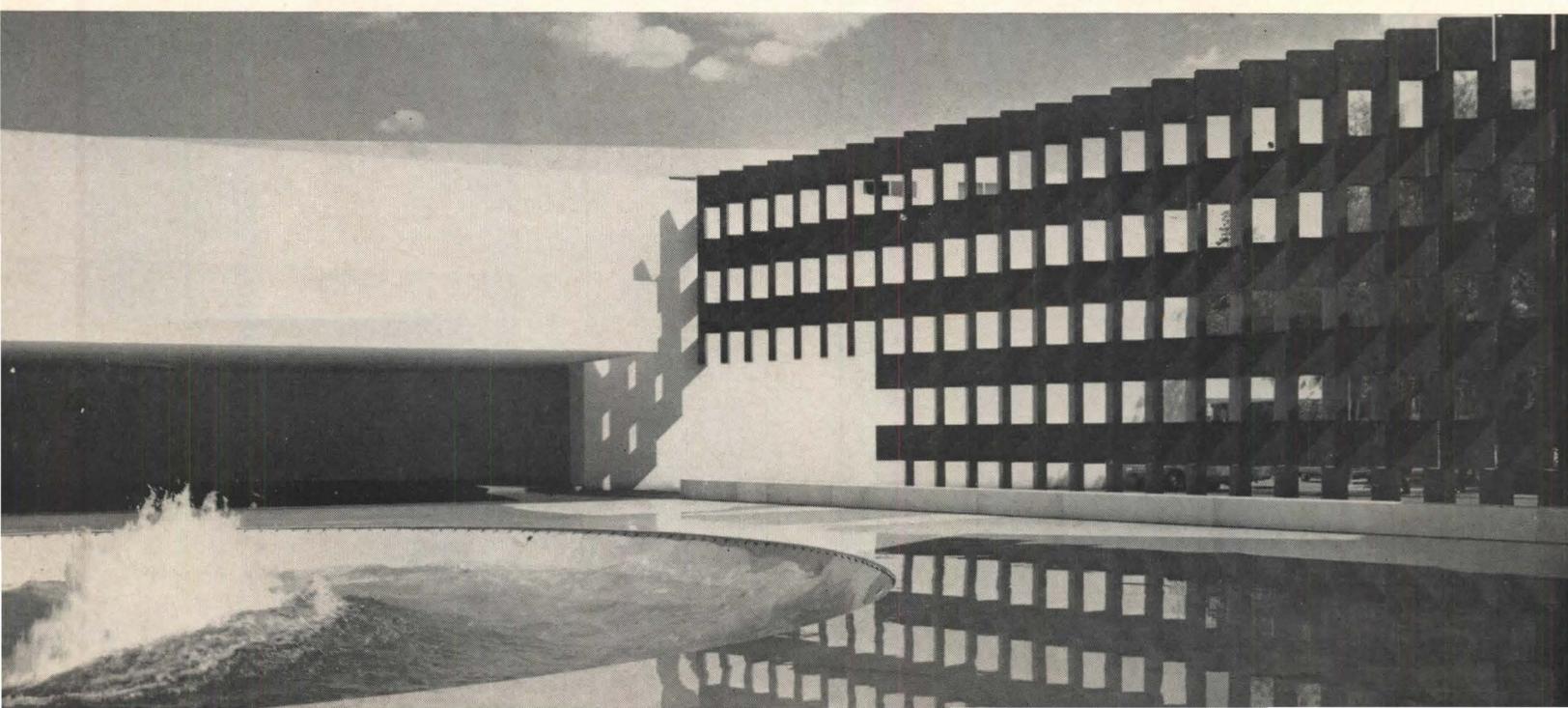
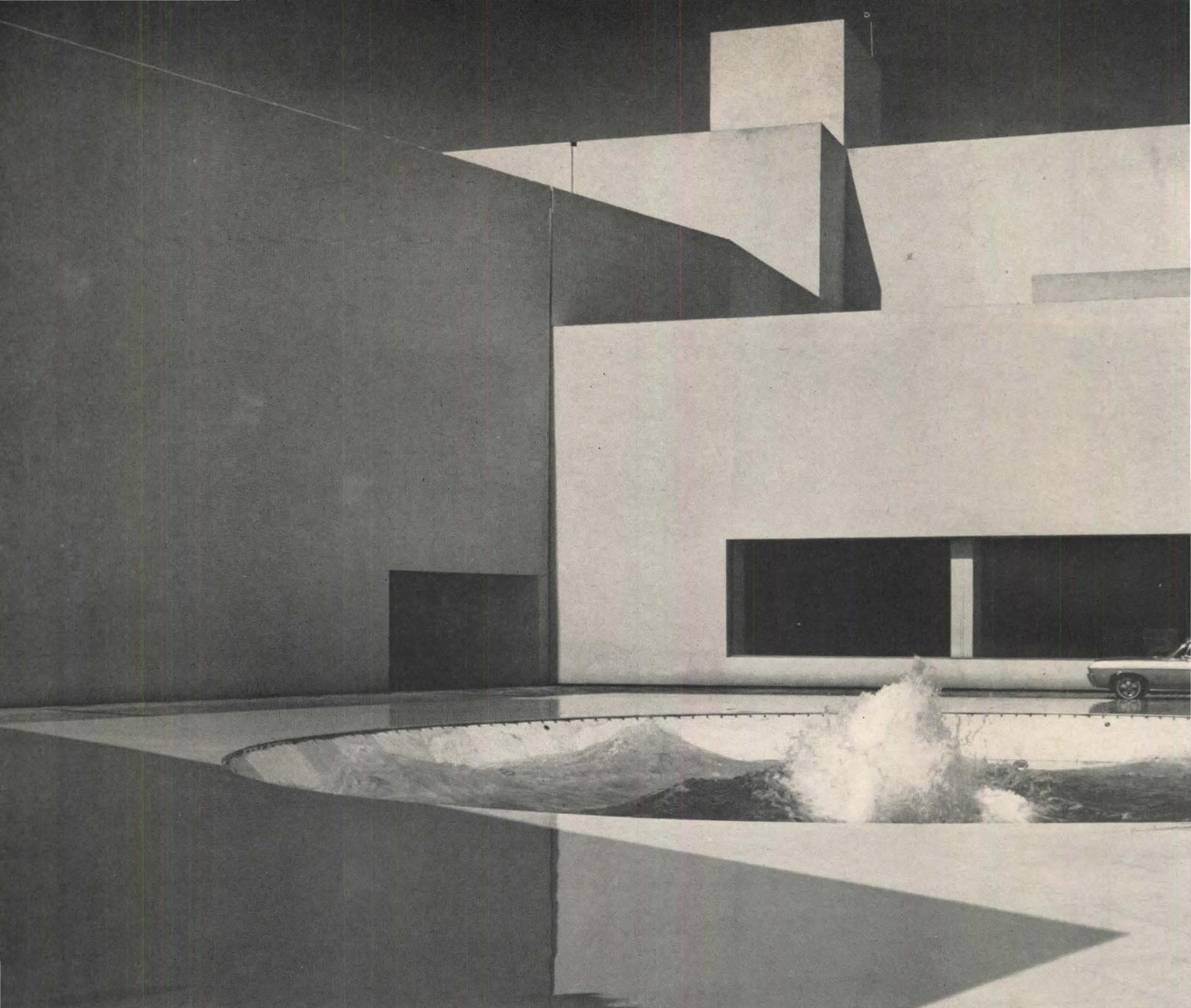
to almost immediate self-cancellation. Just as soon as anyone does manage to achieve antiarchitecture—that is, a building purified during its creation by total and deliberate disregard for appearances—just as soon or an instant later it will become architecture. For immediately someone is bound to like the way it looks, if only for its novelty. The visual quality will thus be extracted. Then someone else or the originator himself will repeat the formula. The purity will be gone. The new thing will be a new style or at least a new esthetic influence. The best projected attempts to reach antiarchitecture—from the Vesnins' design for Leningrad's Pravda building in 1924 to the Archigrams to Johansen — already have merged into a recognizable image. It has a diversity of unrelated shed shapes and cylinders connected by tilted service pipes and conveyor belts. In short: Minehead style.

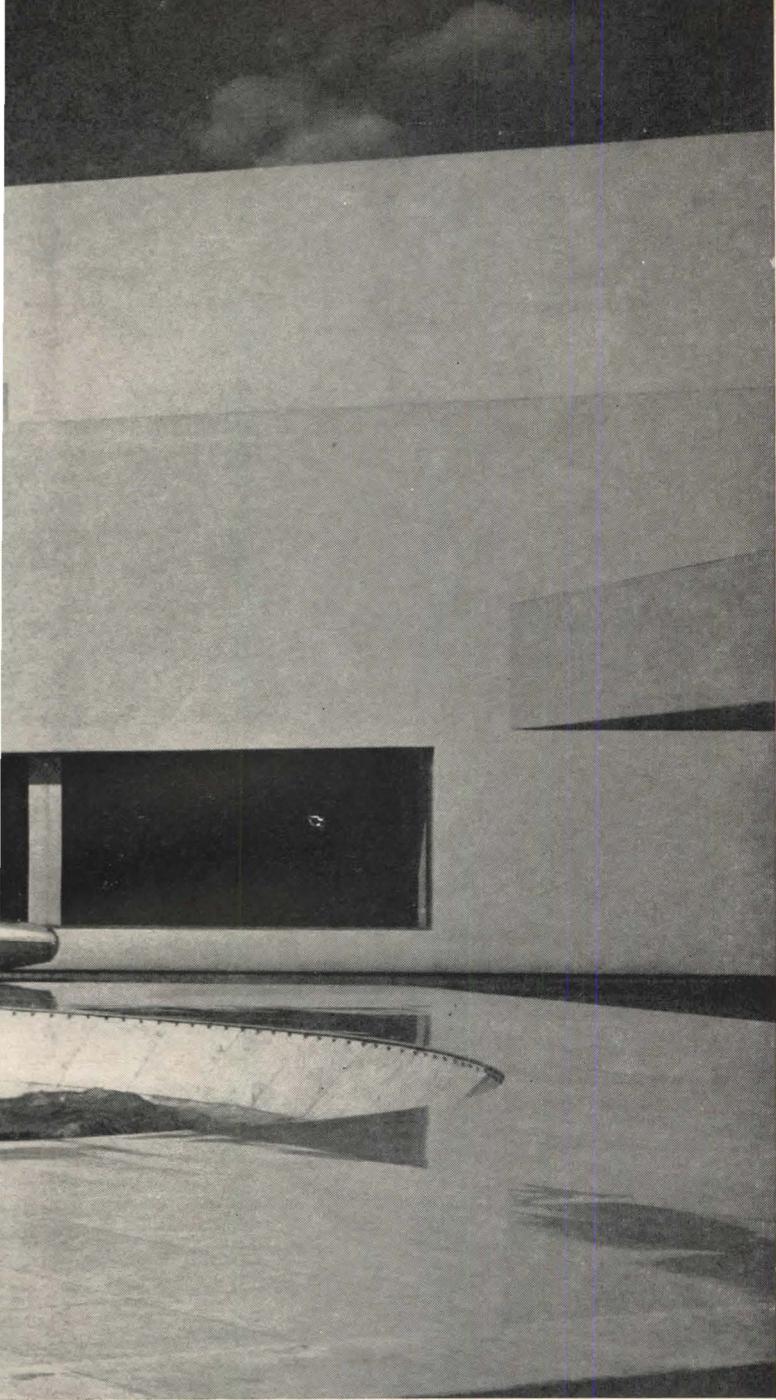
The secret of the weakness of the antiarchitecture movement is in the strength of architecture: not necessarily as it was, is, or will be practiced, but as an idea. Its strength is in its suppleness. It is as loosely defined as art, and so can slip out from under any attempt to squash it. It can comply with any new demand of society or technology without losing its inspirational quality as an idea. So the forces that are potentially antiarchitectural are fragmented and diverted. They become focused on side issues and finish up as being merely antistyle or antigeometry or antiart or anti the architect. Architecture can take all such attacks and keep standing.

So architecture will bend to meet antiarchitecture and immediately will spring up again. This is inevitable because, while to its planner and its computer programmer and its owner and its occupiers a building may be reduced to matters of strength and utility, no one else cares much about its strength or gives a damn about its utility. To all the rest of the world it is important only as part of the environment and a machine for being looked at.



ARCHITECTURE (far out, but loyal to Vitruvian principles): Paul Rudolph's Endo Labs, Long Island (top); Jack Lynn's and Ivor Smith's "Brutalist" Park Hill Housing, England (center); and Arata Isozaki's "Metabolist" city in the sky (above).





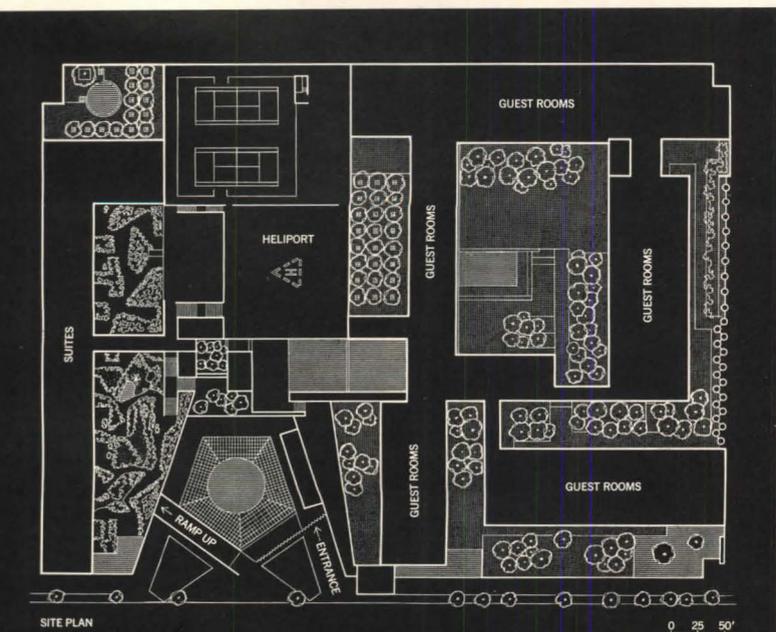
# CAMINO REAL

BY VICTOR R. ZEVALLOS

There is a strange correctness about the \$24-million Hotel Camino Real in Mexico City, a feeling that this is how an urban hotel should be—luxurious, reclusive, a little ostentatious, and with a distinctive accent. It is the kind of building that is bound to be used as a movie set. But the Camino Real is also interesting in less obvious ways. Philosophically, it represents a swing away from what its architect, Ricardo Legorreta, calls the “impersonality and inhumanity” of most new urban hotels—in particular the New York Hilton, where Legorreta says, “You are given a number or treated like one.” From a real-estate man’s point of view, the Camino Real violates the basic tenet for a luxury hotel: it stands neither downtown nor in a prestigious residential area, but in-between, in a slightly seedy neighborhood several blocks away from the fashionable shopping and business districts.

The story begins in the early '60s when Western Hotels of Mexico, a partly owned subsidiary of the Western Hotel chain of the U.S., bought the site of the old Cowdry Hospital. José Brockman, president of the Mexican company, recalls that the land seemed perfectly suited for a highrise complex of buildings, including a hotel, office and apartment towers, and a shopping center. But the twin pressures of time and money precluded such an undertaking. Says Brockman, “A tall hotel would have cost three times more and taken twice as long to build as a low one, and we wanted to be ready in time for the opening of the Olympic Games. The whole trick was to convince my group to think of the land not as a \$2.4-million parcel, which seems to demand the fullest use, but as 30,000 square meters at only \$80 each. Not one of them had paid so little for the land under his own house. They agreed to build low.”

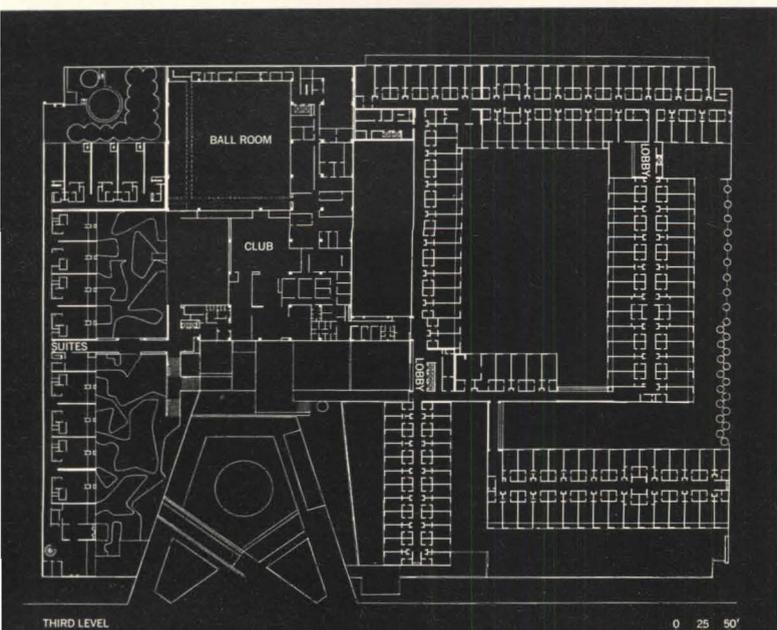
Brockman chose Architect Legorreta, because they had worked together before—on Western’s Camino Real in Juarez and the Alameda Hotel in Mexico City. He knew that Legorreta, too, would have strong ideas, and he



It is a superb introduction to a hotel. Dominating the grand, austere entrance plaza is a 33-ft.-wide, active fountain. Guests' cars come in past the high serrated screen, circle the whirling waters to the front door, then proceed up a ramp to a separate parking wing. The Camino Real follows a decentralized plan, with guest rooms placed far from the noisy lobby, and other public spaces. Architect Legorreta says, “This way, guests can gain peace and quiet.”

Mr. Zevallos, himself an architect, has written many articles on the contemporary and pre-Columbian architecture of Central America.





Every one of the hotel's 750 guest rooms looks over a landscaped interior court. The informal main court (above) is rimmed by some 335 rooms, each with a shallow terrace. The five-story building's walls slope to enhance the feeling of spaciousness. At far left is another court, this one with an elegant, restrained air. Connecting parts of the big, decentralized hotel are corridors that are designed, says the architect, "to make the long walk enjoyable."

was not disappointed. The architect wanted the hotel to be introspective. He turned blank exterior walls to its neighborhood. "In this way," says Legorreta, "you can put a luxury hotel in any halfway decent area of any city. All you need is a nice big piece of land. Then, by arranging all the guest rooms so they look inward, over gardens, you can give refinement, peace, and silence to the guests."

Legorreta's key decision was to build the Camino Real of brick, the cheapest material in Mexico and one which the Mexicans handle beautifully. A study proved that he could use brick bearing walls up to a height of five stories, and, in so doing, avoid a problem that nags Mexican builders of highrise structures. "Earthquakes do not topple the big buildings down here," Legorreta says, "but they do cause the joints between partitions and skeleton to crack. This gives the high buildings a shabby look. In the Camino Real, the walls will remain solid even in a bad earthquake."

From the air, the hotel looks like a bewildering maze of courtyards, buildings, ramps, walls, and levels. But the organization is simple. The Camino Real consists of three major, separate blocks: (1) a 570-car garage, on top of which stand the most expensive duplex suites, each overlooking a private garden; (2) the public areas, including reception lobbies, a ballroom big enough to hold 1,500 people, four restaurants, seven bars, and two clubs; and (3) some 750 guest rooms grouped around any of several courtyards, plazas, and gardens that, in total, cover 65 per cent of the site. The point of this layout, of course, is to remove guests from the determined babble of conventioners. Says Legorreta: "Here, the guests have an easy, elegant, serene life."

But it is peace at a price. Guests have to do a lot of walking. Brockman briskly remarks that "If the guests don't like to walk, they can always go to another hotel." Legorreta, however, tried to design the hotel in such a way that the walk would be enjoyable. Corridors are not

familiar, bleak runways, but spacious (10 ft. wide), and punctuated by windows with a view of the gardens, sudden widenings, and, now and then, an art work.

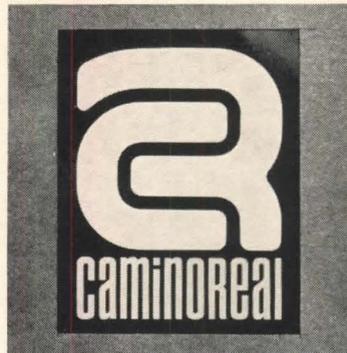
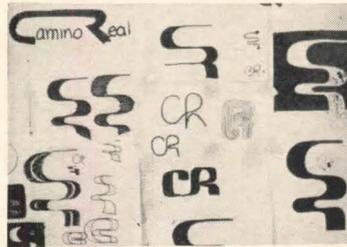
The bedrooms themselves are unusually large, for "space is the greatest urban luxury," the architect believes. Craig Claiborne, food critic of the *New York Times*, wryly noted of the Camino Real, "It is certainly a place of extravagant space—exaggerated to some minds." Legorreta himself has noticed that "Guests sometimes seem a little bewildered by the emptiness and vastness of the rooms." Even outdoor areas are made to seem larger than they really are. Some of the courtyards have one wall painted yellow or blue to enhance the feeling of space. And the walls surrounding the biggest, central garden slope to allow light to pour in.

An international team of consultants helped Legorreta with the hotel's design. Architect Luís Barragán and Sculptor Mathias Goeritz advised on landscaping, exterior color, and art (among other works are a giant Calder stabile and an Annie Albers tapestry). Graphics was handled by Lance Wyman and Peter Murdock, whose posters, stamps, logo, and industrial designs for the Olympics have received much praise and publicity. In the stylized CR they devised for the Camino Real, they capture that faintly Aztec, faintly hokey—just right—feeling that characterizes the whole hotel.

**FACTS AND FIGURES**

Camino Real Hotel, Mexico City, Mex. Owner: Camino Real S.A. Architects: Ricardo Legorreta; Carlos Hernandez, Ramiro Alatorre, and Noé Castro, associates. Engineers: Leonardo Zeevaert (foundation); Bernardo and José Luís Calderon (structural); Ingenieria Panamericana (mechanical). Interiors: Knoll International, Peter Andes, project director; Charles Seigny, consultant. Textiles: Barbara Rodes. Graphics and uniforms: Lance Wyman and Peter Murdock. Consultants: Luís Barragán and Mathias Goeritz (landscaping and art); Wheel Garon Inc. (lighting). General contractor: Constructora Ballesteros. Building area: 900,000 sq. ft. Cost: \$14 million (excluding land, fees, and furnishings).

PHOTOGRAPHS: Pages 86, 88 (bottom left), and 91: Armando Salas Portugal. Page 88 (top, bottom right): Peter Anderson. Page 90: Lance Wyman.



That the Camino Real's stylized logo has a truly Mexican quality is reflected in its obvious kinship with the pre-Columbian decoration at Tula (top). But it is also thoroughly up-to-date and looks equally well on a plaza, menu card, or a waiter's back. Graphics Designer Lance Wyman, a North American, was influenced by the meaning of the hotel's name—royal road. At right, another court is bordered by a line of almost sculptural cylinders, painted brilliant yellow.





# FORUM CONT'D

plete the entire system. As of now, 38 miles of the line are in place, but 100 contracts totaling more than \$200 million have yet to be awarded by BART.

## CLEVELAND'S BRAVE GAMBLE

Cleveland's Hopkins Airport will move considerably closer to downtown this month—not in distance, but in time, which is what really matters. On November 15, the city will inaugurate the nation's first rapid-transit connection linking downtown with airport (below).



The Cleveland Transit System's \$18-million airport extension will mean that airport patrons can board an air conditioned train at the terminal, put their bags on a specially designed luggage rack, and arrive at the center of town in 22 minutes, cutting more than half an hour from the limousine schedule.

The airport line will be watched closely by other cities, since it will be the first to test the theory that rapid transit is the answer to the mushrooming problem of ground congestion around airports. Cleveland's transportation planners express confidence that passengers will ride the new line in enough numbers to make it pay—if not right away, at least when the new jumbo jets start landing and disgorging 400 to 500 people at a time.

Other cities are taking a wait-and-see attitude, no doubt grateful that Cleveland has had the courage to take on the gamble.

## GOLDEN CHARIOT

Harried bus riders can take heart: General Motors cares about them too. The company's GMC Truck & Coach Division has developed the Rapid Transit Experimental



(RTX) Coach (above), a sleek, comfortable vehicle that makes conventional buses look like covered wagons.

The 40-ft. RTX is 14 in. lower than current models and can actually "squat" at stops that have no curbs, thus reducing the step height as much as 3 in. It has a "lounge-type" seating arrangement which provides 55 to 60 cu. ft. of space per passenger. "This compares with first-class air travel," says GM Vice President Martin J. Caserio.

Other features: extra-large glass areas; zoned heating and air conditioning (passengers on the sun side could be cooled without affecting those across the aisle); a gas turbine engine that generates less noise than present diesel units; and special features for handicapped persons, including a braille information panel for the blind and a ramp arrangement for wheelchairs.

It all sounds too good to be true—and probably is. If cities don't want lounge seating, quieter turbine engines, and other amenities, GM says it will be happy to eliminate them.

# REMEDIES

## LET NEW TOWNS DO IT

Are new towns the answer to our urban crisis? Most urbanists would say no, but two executives of a development-construction firm have proposed an intriguing urban strategy that calls for a massive program of building new towns as the key to eliminating the ghetto, achieving desegregation, and righting a host of other urban wrongs.

Conceived by Bernard Weissbourd and Herbert Channick, president and vice president, respectively, of Metropolitan Structures Inc. of Chicago, the proposal was published recently by the prestigious Center for the Study of Democratic Institutions, an intellectual think-tank in Santa Barbara, Calif.

The author's scheme combines

a nationwide new-towns program with two other essential elements: the construction in these towns of some 350,000 subsidized housing units each year for ten years, and the withdrawal of government support from conventional subdivision developments, including funds for housing, sewers, water, roads, and mass transportation.

Weissbourd and Channick use what they call "powerful arithmetic" to show how the scheme would work if applied to a hypothetical metropolitan area of one million population, of which 750,000 are white, 250,000 are Negro:

Well planned, self-sufficient new towns would be built in the outlying areas to accommodate a fourth of the ghetto population and three times as many white people. Then 62,500 Negroes would move from the ghetto into the new towns' subsidized housing, and 187,500 whites would also move out. After that, 187,500 more Negroes could move into housing vacated by the whites.

As a result, states the report, "The ghetto has been eliminated, the outlying area population is now 25 per cent Negro, and what had been metropolitan white is now 25 per cent Negro." Voila!

# PROGRESS

## RURAL HOUSING

Developed under the direction of the Department of Agriculture, a series of three wood-frame housing designs is now available to low-income residents of rural communities. Providing approximately 1,000 sq. ft. for approximately \$6,000, the three designs were developed by the Southeastern Forest Experiment Station's Forestry Sciences Laboratory in Athens, Ga. (example below).



The laboratory has been working on the project since 1966, conducting extensive research in pole-frame construction, and in effects of hurricane forces. "We have incorporated much of what we have learned," says Dr. Richard F. Blomquist, director of the research, "and we have also been

# FOOTNOTE

**Adulation**—What is going on here is not some mysterious Shinto ceremony, but Mr. Craig Ellwood, the architect, closing in on *L'Automne*, the nude lady by Henri Laurens, in the sculpture garden of Mies van der Rohe's New National Gallery in West Berlin. Closing in on her with a Nikon, that is.

able to take advantage of techniques developed at the U.S. Forest Products Laboratory in Madison, Wis., which is a branch of the Forest Service's research in wood utilization. Thus, while our plans call for economy, they also provide strength, safety, easy maintenance, and durability."

Harold F. Zornig, architect for the three houses, has kept costs down by using conventional framing and stock doors and windows, by eliminating almost all hallways, and by making each element serve more than one function, whenever possible. For instance, space under the floating wood floor serves as a return-air plenum for the central heating, and eliminates the need for costly ductwork. All three designs have been approved by the Farmers Home Administration, and detailed plans and specs are available without charge from the Forest Experiment Station.

## INS & OUTS

### A LURE WITH ALLURE

André Malraux, French Minister of Culture, has gone underground to stimulate a keener interest in France's greatest cultural institution, the Louvre. As part of a general overhaul of all Paris Metro stations, that of the Louvre has been transformed into an antechamber of the museum, with about 20 spotlighted reproductions and photographs of the museum's major works (below, a replica of Olivet's *Virgin and Child*).

But the real impresario of the underground extravaganza is the municipal subway authority, which wanted to see the Louvre stop used by more people. It put up the money for the reproductions and the station's face-lift: white marble walls (without ads), indi-

rect fluorescent lighting, and frosted glass benches.

The Louvre provided the lights in the exhibition cases, financed the publicity, and the opening night party.

It is also getting all the credit.

### A FEDERAL CASE

Though esthetics are not exactly the overriding issue confronting the planned "Metro" in Washington, D.C.—that being the lack of funds to get it off the ground in the first place—a minor squall has been stirred up over the subway's graphics.

Architect Harry Weese has designed vaulted stations for the Metro, which do not lend them-



selves to wall or ceiling signs; so upright pylons, standing diagonally at the center of the platform (and containing air conditioning ducts) will be used instead. The lettering will run vertically down the pylons because they are too

narrow to permit horizontal lettering large enough to be legible.

The problem is this: should the letters lie on their sides, or should they be upright, Chinese-style (both examples in photo below left).

Massimo Vignelli of Unimark International, designer of the signs, favors the lying-down style, which he considers distinctive and easy to read. But the directors of the Metro authority prefer the Chinese approach. They are afraid that Vignelli's way, though attractive, is unreadable.

Vignelli defends his preference with a question: "Have you ever been traumatized by reading book titles, which often run vertically and on their sides when a book stands on the shelf?" He also points to the results of a reading test given to 30 passersby, the majority of whom said they found the lying down letters easier to read.

Before they cast a final vote on the question, maybe the directors ought to have their eyes examined.

### A GOOD SIGN?

Within six months, every sign in Montgomery County, Maryland, that moves, spins, blinks, flashes, or pulsates will be at a dead halt. A new ordinance just passed by the Montgomery County Council will also (within eight years) outlaw rooftop signs, billboards on sites with buildings, signs that look like traffic signals, and signs on public rights of way. (Signs attached to buildings will be controlled in size by a formula based on the building frontage. Special provisions will govern shopping center markers, street banners, advertisements for temporary events, real-estate signs, civic signs, and political posters.)

The council has established a review board of three members, to include one architect and one businessman. It will be their job to approve new signs, review existing ones (estimated at 15,000 to 20,000), and give variances or rejection to those that are nonconforming (estimated at 5,000). The county's Department of Inspections & Licenses has advised that \$27,000 will be needed to hire two additional inspectors and to purchase cars and equipment.

The vote in the council, 6-0, does not reflect the opposition of one councilwoman, who left before the vote was taken. She had made repeated attempts to soften the ordinance, including the accepted

suggestion that signs resembling people or animals be allowed, if passed by the review board. The original ordinance would have prohibited such signs.

Despite the undoubtedly Good Reasons for the passage of this ordinance—the dangerous distractions to motorists, the general tawdriness of many signs—we can't help wondering about its effects. With this kind of control, a good bit of life will go out of the city streets, streets that are already dreary in many ways. We doubt that the Montgomery County ordinance is the thoroughly "good sign" that *The Washington Post* proclaims it to be. And, while we're being skeptical, may we ask, "Who reviews the review board?"

### CORNERSTONE

A bill passed by Congress last month—and, at press time, awaiting the President's signature—would establish the long-planned Woodrow Wilson International Center for Scholars in Washington, D.C. It would create not only a living memorial to the 28th President of the United States but it would draw closer to realization the seven-year-old Pennsylvania Avenue Plan (July '64 issue). The Center would be the first structure to rise on the new Market Square, focal point for the future Eighth Street Mall, which will connect the Archives Building with the National Portrait Gallery.

The primary function of the center would be the study of problems pertaining to world order, specifically such fields as American government and politics; the legislative process; international law; the peaceful settlement of international disputes; and social ethics. The center would contain a nucleus of some 40 prominent scholars, drawn from all parts of the world and from many intellectual fields. It would serve as a meeting place for scholars and experts providing information about and access to the resources of the Washington area.

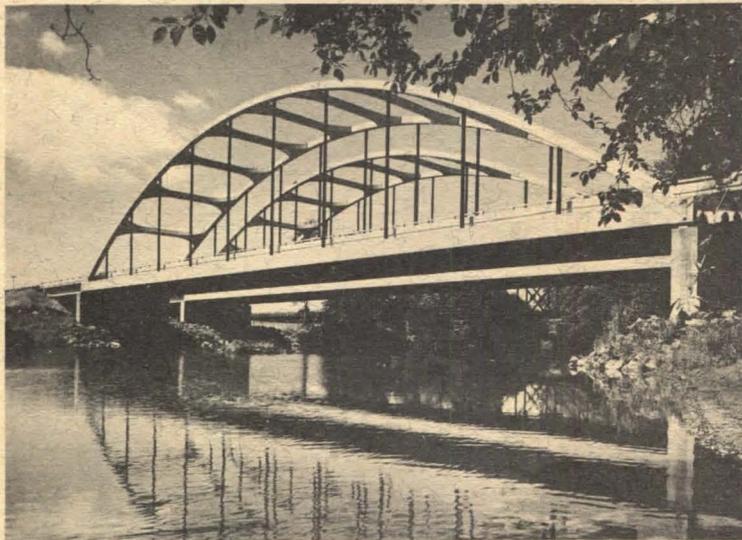
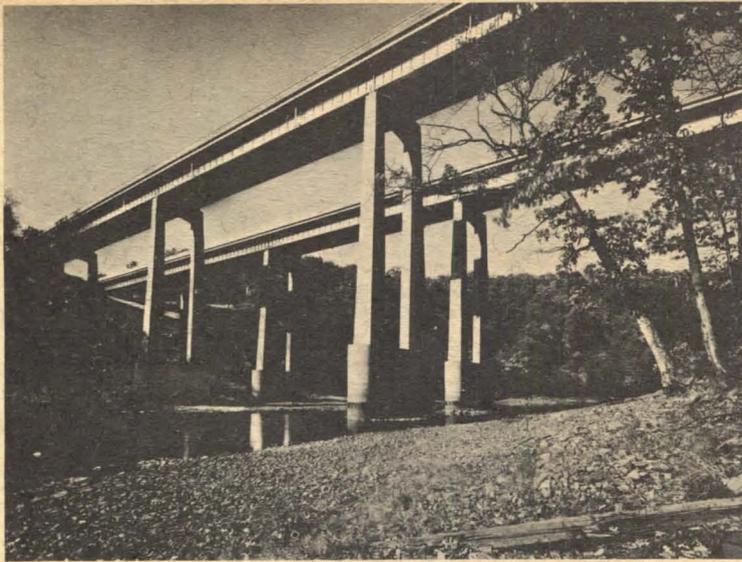
Cost of land and construction, estimated at \$8,155,000, would be met by a Congressional appropriation, but operating funds would be provided by an endowment.

## AWARDS

### INDEFINABLE, BUT BEAUTIFUL

Have you been wondering what is the most beautiful medium span, high clearance bridge with vertical clearances of 35 ft. or more, cost-





ing over \$500,000, having no single span (as measured by the supporting foundations) longer than 400 ft. in length, and opened to traffic in 1967?

Well, according to the American Institute of Steel Construction, it is the Fulton Bridge (actually two identical, parallel spans—top) over the west branch of the Susquehanna River in Clearfield County, Pa. Designed by Brookhart & Tyo of Harrisburg, it is one of 15 U.S. bridges in six painstakingly precise categories selected by the AISC as the most beautiful of those opened last year.

AISC winners in other categories included the twin Satsop River Bridges (above) in Satsop, Wash., designed by the Washington State Highway Commission; and the Guy A. West footbridge (not shown) in Sacramento, Calif., by The Spink Corp. The Satsop was named the best short span bridge having fixed spans and costing less than \$500,000. The West won out in the "Special Type" category,

which included pedestrian overpass bridges and other special purpose bridges not identifiable to one of the other categories—in other words, even the AISC couldn't quite describe it.

## PEOPLE

### NEW DIRECTIONS

• Industrial Designer Henry Dreyfuss, 64, will turn over his firm, Henry Dreyfuss & Associates, to his partner William F. H. Purell, as of January 1, and will devote his time to counseling clients "on every aspect of their contact with the customer." In thus broadening his sphere of activity, Dreyfuss continues a process that began in the late 1920s when he and a handful of contemporaries, individually and coincidentally, created the industrial design profession. Since then, Dreyfuss' firm has styled products ranging from razor blades to jet planes, from buildings to bowls.

He will also give added attention to a project, funded by the National Endowment for the Humanities, to develop an International Symbol Dictionary.

• Wilhelm V. von Moltke, while continuing as head of the urban design program of Harvard's Graduate School of Design, has joined the Perkins & Will Partnership. He will be staff consultant on the master plan and urban design projects for that firm's offices in Chicago, White Plains, N.Y., and Washington, D.C.

• Joining von Moltke at Harvard for the 1968-69 academic year is Charles Abrams, on leave from Columbia University's School of Architecture, where he is chairman of the division of urban planning. Abrams, author, urban planner, and housing expert, will be visiting Frank B. Williams professor of city and regional planning.

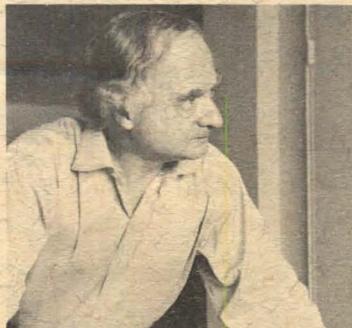
• Thomas R. Vreeland Jr. has been appointed to head up a new architecture program at UCLA, beginning in the fall of 1969 with courses at the graduate level. Previously, the scope of the School of Architecture and Urban Planning had been confined to urban design. Vreeland was formerly chairman of the department of architecture at the University of New Mexico.

### DEATHS

• Hermann Herrey died suddenly in New York on October 7. He was 64.

Though he was educated as an architect, his professional activities also encompassed planning, theater direction, and stage design. He never considered his diverse interests as separate disciplines, but as part of a single profession, and he practiced most of them concurrently.

A star pupil of Hans Poelzig at the Technical University of Berlin, Mr. Herrey established his



practice in that city in 1927 and quickly became an influential figure among the young architects, artists, and intellectuals who helped to establish prewar Berlin as a world center of creative ferment.

He was also an outspoken critic of fascism, and the advent of the Nazis forced him to flee the country in 1933.

Mr. Herrey practiced for a time in London, where he first gained prominence as a city planner. Then, in 1940, he accepted an invitation from his longtime friend, Walter Gropius, to lecture on city planning at Harvard. He set up a U.S. practice that continued to his death. It was interrupted only by a five-year period (1955-61), when he practiced as a theater director and stage designer in Europe.

At the time of his death, Mr. Herrey was working with the editors of the FORUM on publication of his planning and development scheme for Manhattan (see page 48). It was the culmination of more than three decades of work.



• Marcel Duchamp (above) died in Paris on October 1. He was 81 years old.

Enigma, enfant terrible, and chess aficionado, he is perhaps best known for his 1912 painting, *Nude Descending a Staircase*, which caused an outrage at the 1913 Armory Show of modern art in New York.

Duchamp was briefly associated with the Dada movement. He flouted public sensibility and anticipated Pop Art by a half-century with his "ready-mades," common objects to which he gave a new twist by taking them out of their ordinary context and affixing his signature.

Duchamp stopped painting and any other major artistic activity around 1923, but he remained until the end of his life an influential and familiar figure in the art world of New York and Paris.

**GOD, MOTHERHOOD, AND MASS HOUSING**

For a time this 300-acre site in the north Bronx of New York City was called Freedomland—an odd enough name for an amusement park. But Freedomland was one of the promotions that ultimately dragged William Zeckendorf down from ebullience into bankruptcy. The site isn't trying to be amusing any longer. It is called Co-op City.

Here are being built the immense concrete and brick-veneer banalities of what may be the single largest housing development in the freedomland world. When completed, Co-op City will have one fewer than three dozen immense apartment house structures—24 to 33 stories in height, some of them two blocks long. It will also have several large shopping centers, eight parking structures (each a block square and seven decks high), assorted service buildings, a half dozen public schools, and—evidently as a gesture toward human scale—118 town houses.

These accommodations are going to make a good many middle-income urbanites happy, keeping them warm in winter and air conditioned in summer. What may make them even happier will be the opportunity to escape here from the deteriorating lower Bronx, which is discoloring, sinking fast into slumdom. The population of Co-op City will be about 60,000 people, they will live in 15,372 apartments, and, moreover, will own them, paying a modest \$450 per room down plus monthly charges that will average about \$25 per room.

Architecture? Listen to the architect, Herman J. Jessor, as quoted in *Engineering News-Record*: "The main thing is that the moment you depart from standard materials and construction, it is going to cost more. The cheapest wall is still a plain brick wall. We are willing to pay for something practical, but are unwilling to pay for art. And good architecture is an art. Look at Europe. All the arts are subsidized. We are the wealthiest nation on earth; our government should subsidize good architecture, especially on low-income projects."

This righteous statement de-



serves examination. For when one looks at the financial facts of the matter it is evident that the governmental role in the finances of Co-op City is overwhelmingly large. Add up several elements of assistance from government to the sponsors of Co-op City, a non-profit organization headed by labor unions. The first is that the city has granted the sponsors of Co-op City an exemption of 50 per cent of their real-estate taxes for the period of 30 years. With a construction cost of about \$293 million, this tax exemption is probably worth about \$240 million over the 30 years. Next is the matter of the 90 per cent mortgage financing, which is being provided by the State of New York to Co-op City at far below the prevailing market interest rates.

The mortgage on Co-op City is set at approximately 90 per cent of the cost, and runs 40 years. The interest rate is only 4½ per cent. Compare the cost of a \$261 million mortgage at 4½ per cent with the same amount at commercially available financing charges. Over the course of 40 years this will add approximately \$130 million more of government assistance.

There are other contributions the government must make, as well. There will be at least \$75 million in capital improvements, from schools to sewers. Also, the

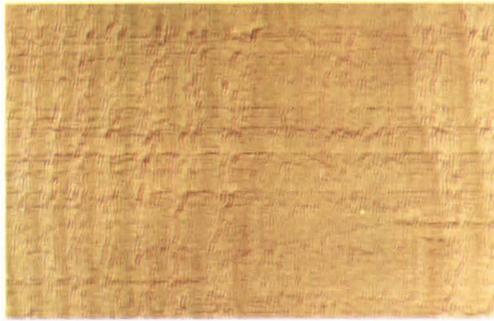
white-collar residents of Co-op City who travel to work in Manhattan will have a rather miserable time of it until new subway lines are added running out their way. These are being scheduled for the present residents as well as the coming residents of the area at a cost perhaps of \$80 million. The four forms of governmental participation total something like a half billion dollars.

Mr. Jessor wants us to look at Europe, where the arts are subsidized. I would suggest we do not have to look farther than the Bronx. We can all be glad that those 15,000 families in Co-op City will be able to live decently, insulated somewhat from inflation. They are getting a pretty good deal for their money. But what is the rest of society getting in return for the immense governmental assistance involved? Not much.

It is time for the sponsors of such housing to accept the fact that it is a city they are helping to build, not just so many thousands of indoor rooms. Government is paying most of the ticket on this trip, and government has the right to insist that the destination be pointed not only by economics and engineering, but by sociology and architectural talent as well. It is either practically insane to go on building Co-op Cities, or insanely practical.

PHOTOGRAPHS: Page 34, Pictorial Parade (center and top right), Page 35, The New York Times (top left); Historic American Buildings Survey (bottom), Page 93, General Electric (left), Page 94, Pictorial Parade (bottom); Matthew Lewis—The Washington Post (center), Page 95, Maurice Miller, courtesy The St. Louis Post-Dispatch (right).

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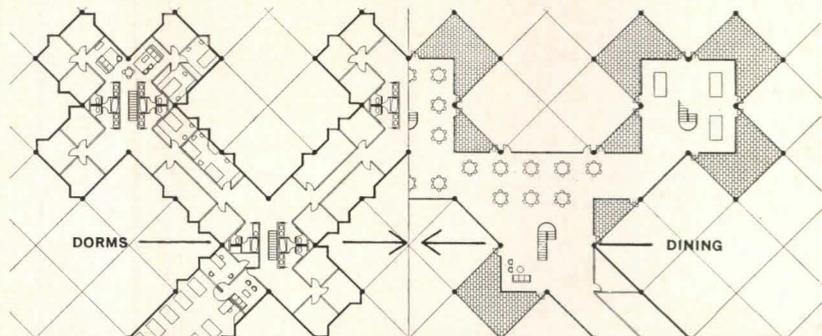
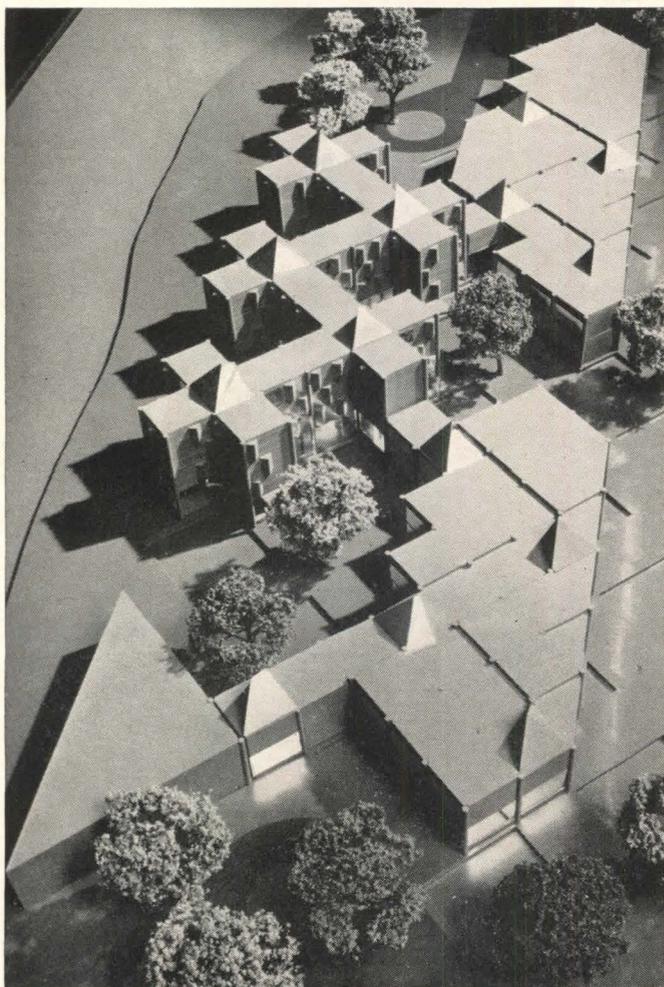
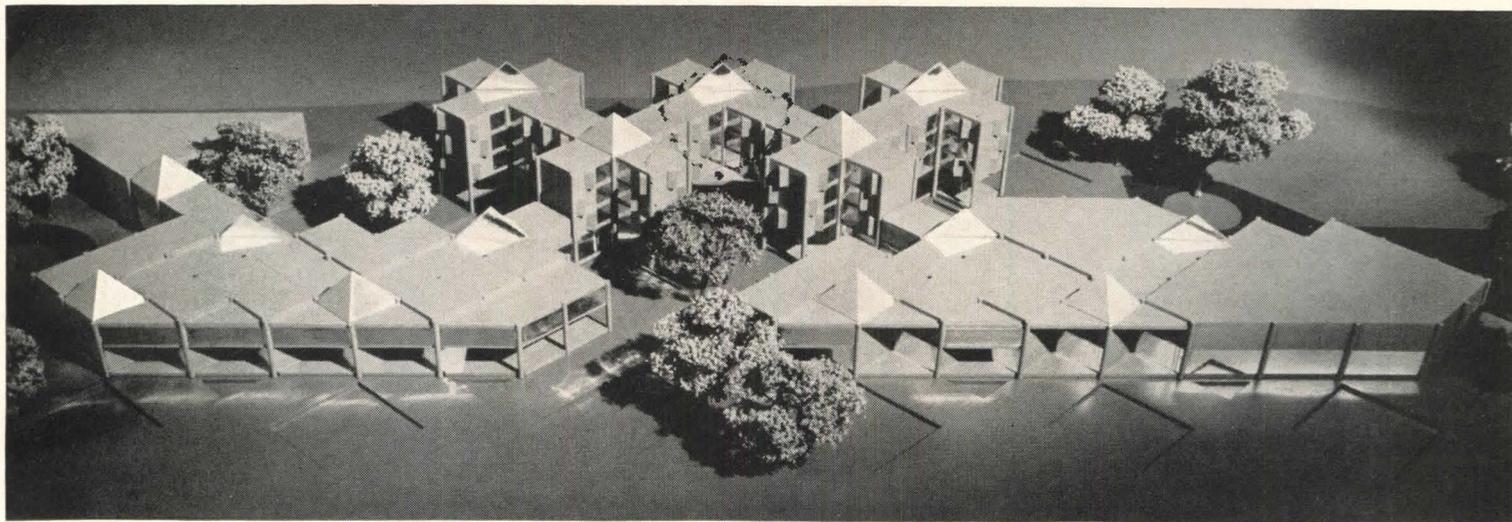
# PREVIEW

A comprehensive facility for Kemper Hall School for Girls, in Kenosha, Wis., "is ordered around principles related to recent developments in bio-molecular research," say the architects, Booth & Nagle. The building's repetitive elements are connected in such a way that there is open-ended freedom within an ordered system. "Interior and exterior flexibility can accommodate any development in the future," says Laurence

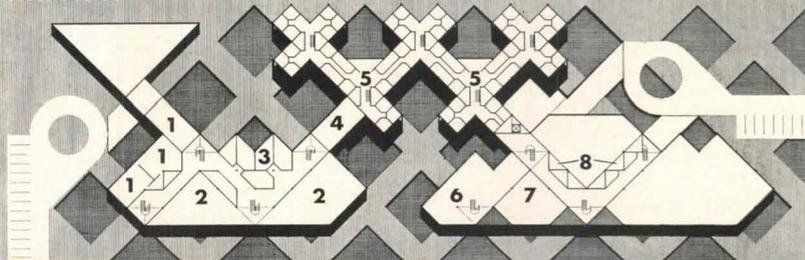
Booth. He calls it "Mies a-go-go." During successive phases of the building, different functions will move to different locations. In Phase I, for instance, dormitory spaces will be used as classrooms; later, these spaces will be developed into dormitory rooms. The Episcopal school will ultimately have 170 girls in residence, and 130 day students. (The school's existing facility, not shown here, will slowly diminish as the new

structure grows up next to it.) The system's unity is in its 22 ft. bay of reinforced concrete. (Exterior panels will be glass and prefabricated metal.) However, the concrete frame is as free as the overall plan; it is not a finite determined form, although it is directed within certain guidelines. The bay size was derived by analyzing all functions and finding a common denominator. Architect's cost estimate: \$25 per sq. ft.

MIES A-GO-GO

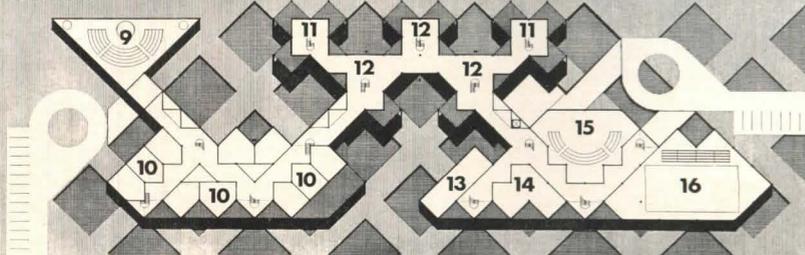


SECOND LEVEL



1 science classrooms; 2 resource center; 3 seminar rooms; 4 infirmary; 5 dormitory rooms; 6 art; 7 music; 8 practice rooms; 9 chapel; 10 classrooms; 11 games; 12 dining; 13 arts/crafts; 14 administration; 15 theater; 16 gym.

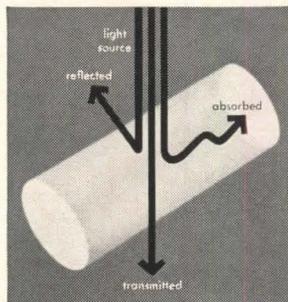
FIRST LEVEL



(continued on page 101)



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# PREVIEW

On an 18-acre site along the Fox River in downtown Oshkosh, Wis. (population: 45,000 plus), a \$16-million project, to be called Park Plaza, will "interrelate retail, commercial, social, and cultural activities in one congruous environmental setting," according to its architect, Welton Becket. The project—financed by the Miles Kimball Co. of Oshkosh, without benefit of government aid—is unusual in scope for a city of this

size and will contribute greatly to its rejuvenation, by checking downtown deterioration, and restoring to its citizens a large segment of riverfront (formerly obscured by more than 20 aged industrial buildings).

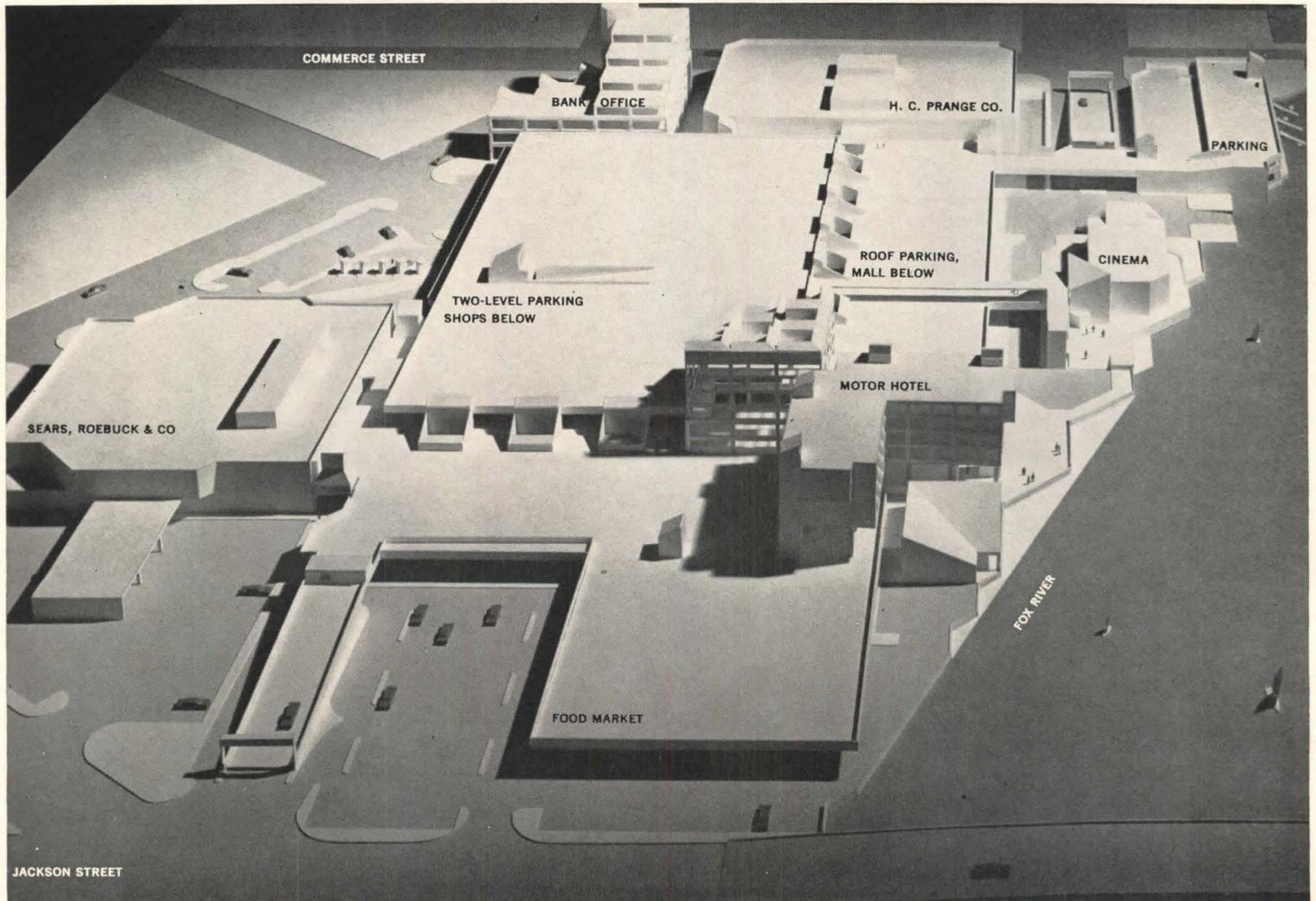
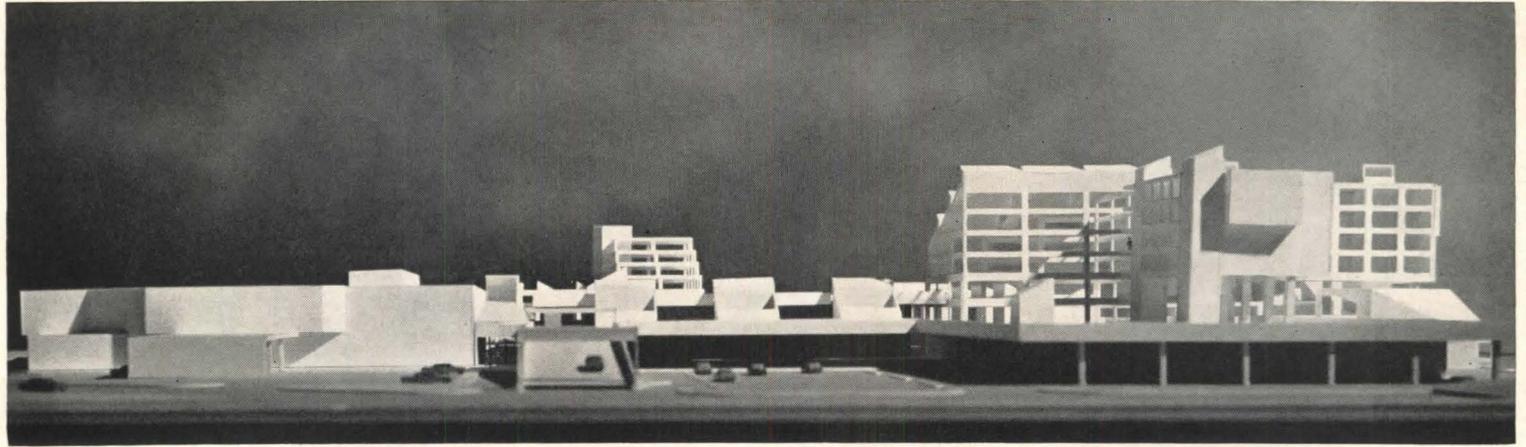
To be completed in the first phase of construction are: two department stores, connected by an 800-ft.-long, L-shaped enclosed shopping mall, topped by two levels of parking; a food market;

a three-level parking structure along the shore; and a restaurant. At the juncture of the mall's two wings will be a seven-story, glass-enclosed court, which may be used for meetings, exhibits, etc.

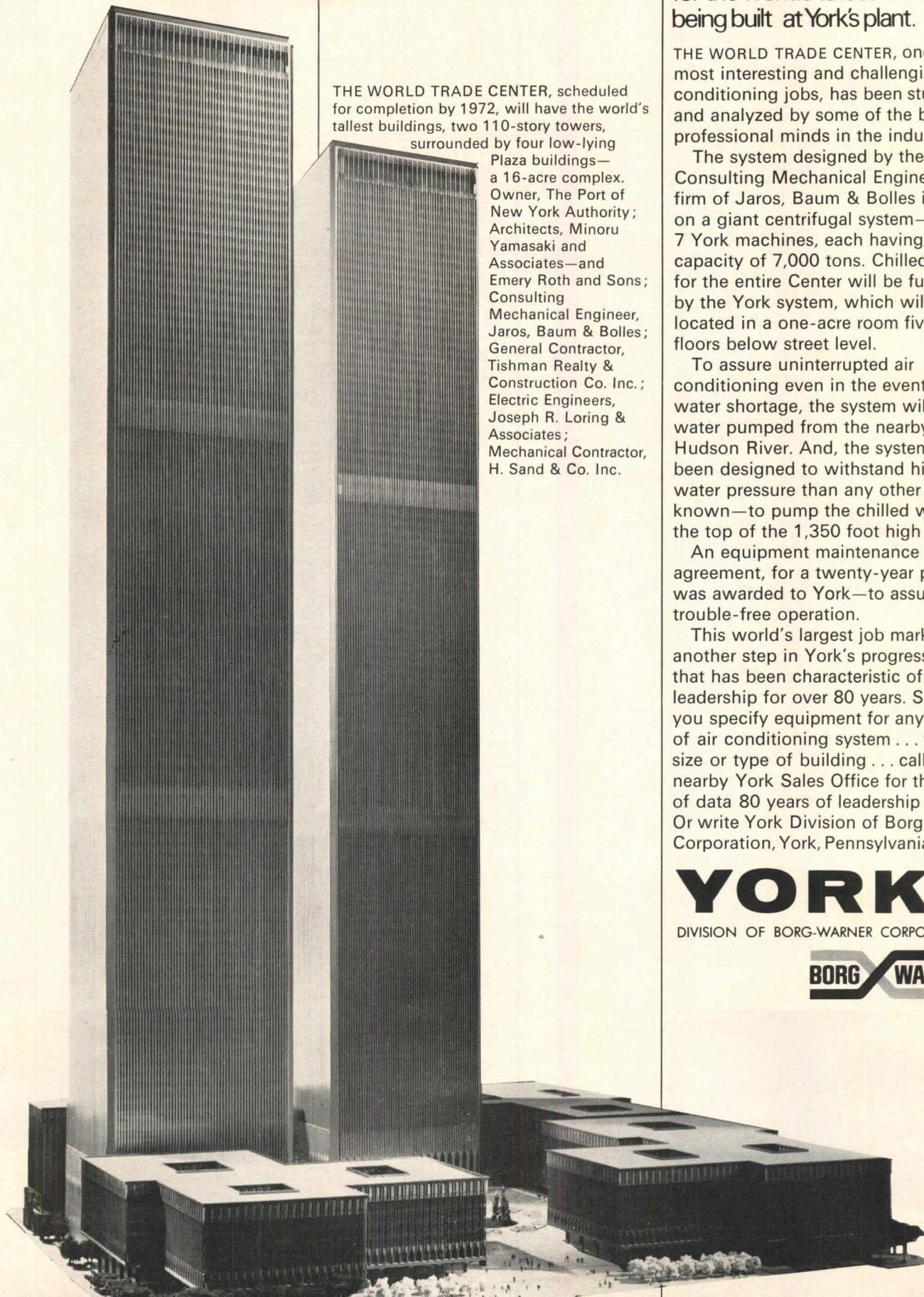
Completing the project will be a motor hotel, an 800-seat cinema on a promenade above the river, and a bank-office tower.

Future plans call for an outdoor skating rink on the riverbank, convertible to other seasonal uses.

## CONGRUITY IN OSHKOSH



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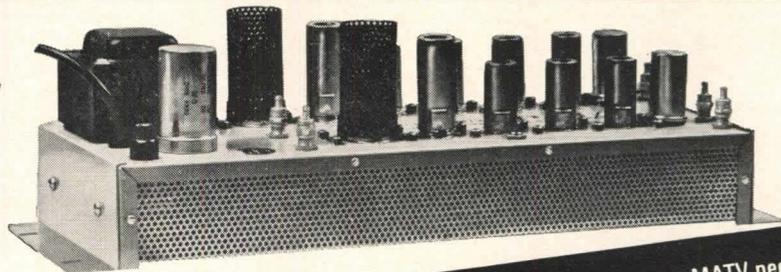
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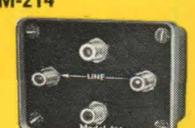
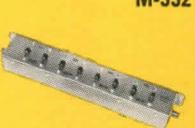


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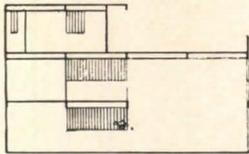
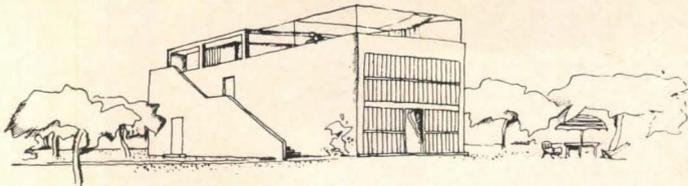
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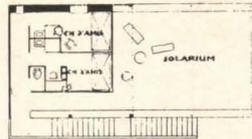
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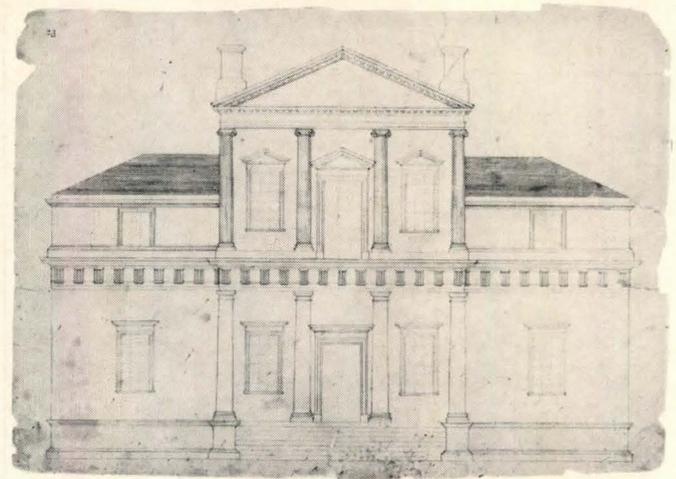
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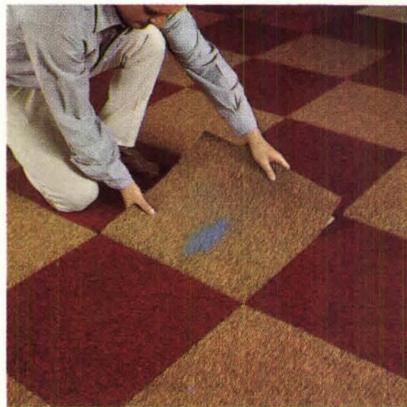
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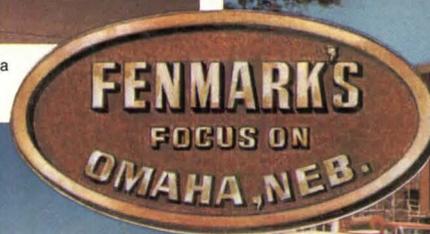
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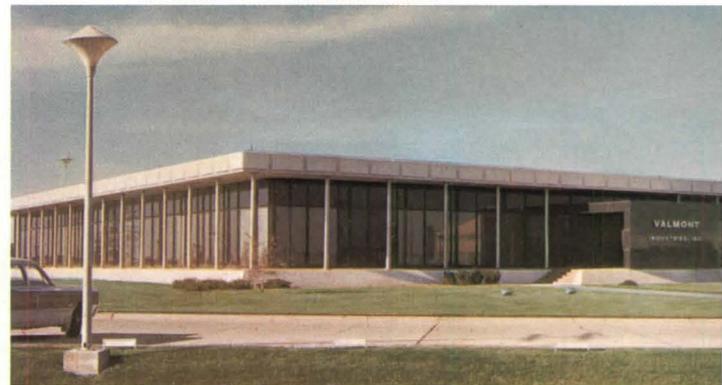
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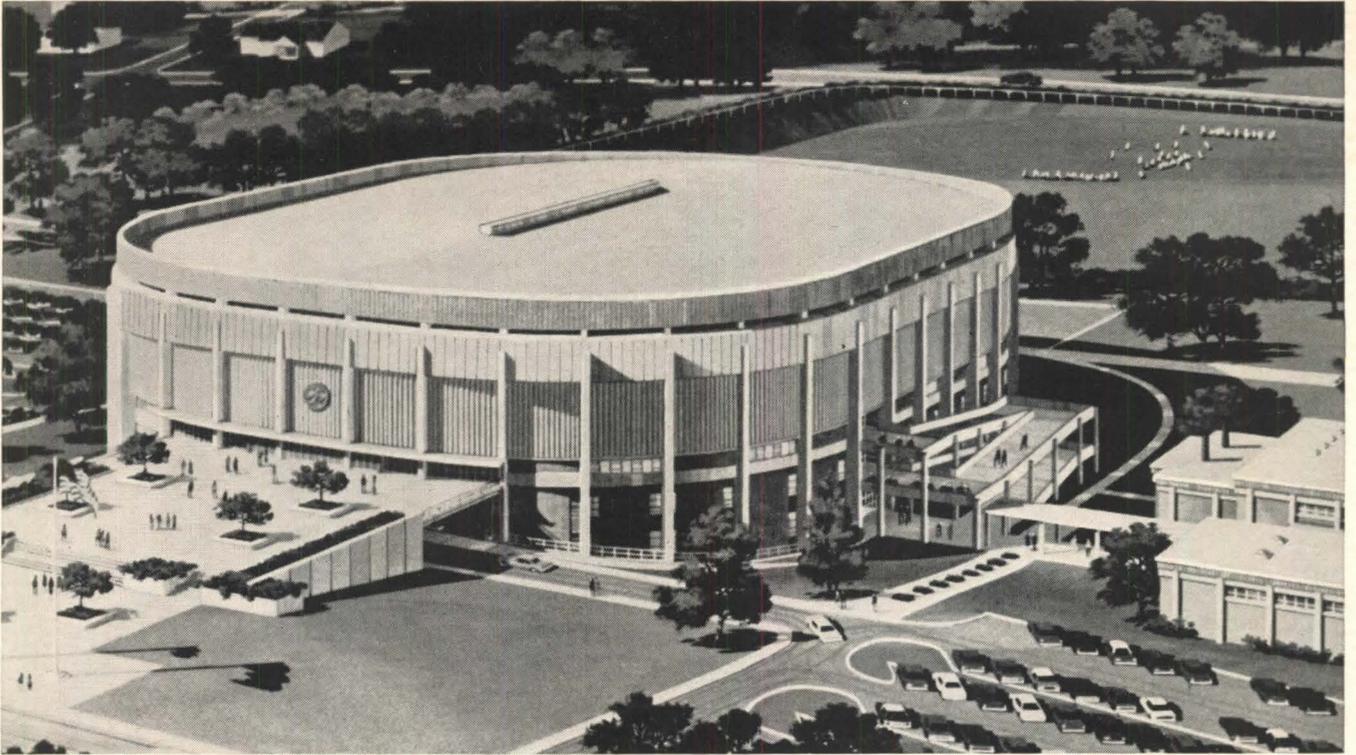
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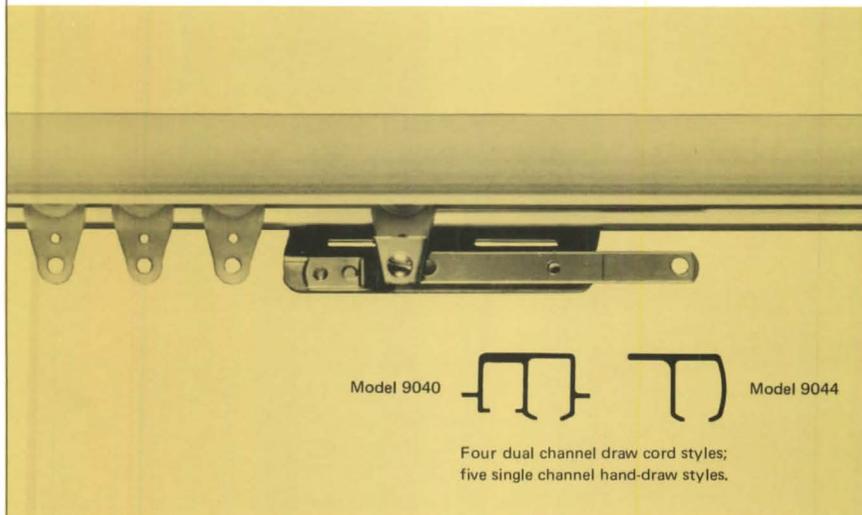
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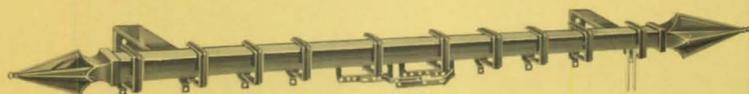
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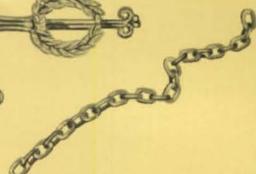
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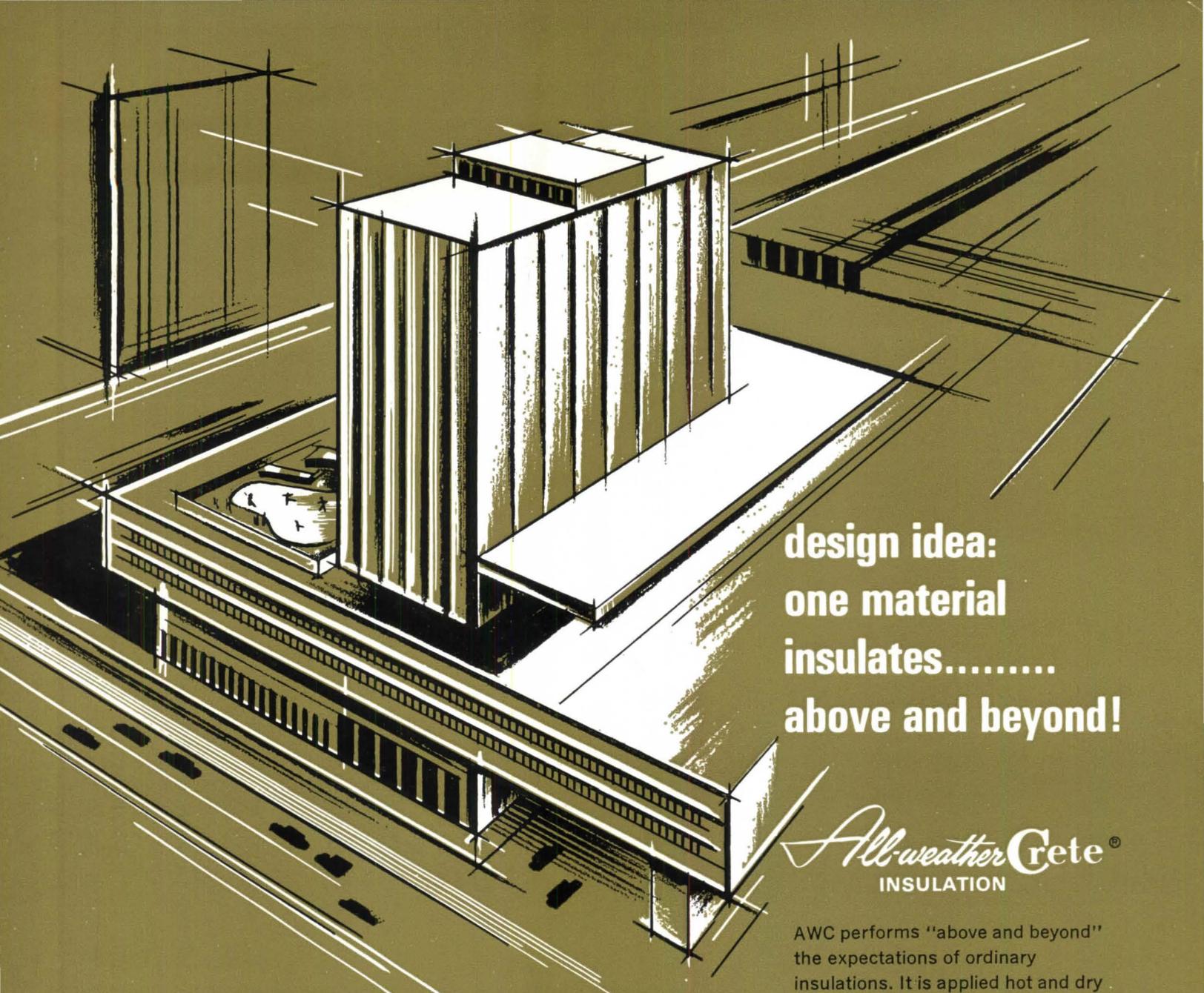
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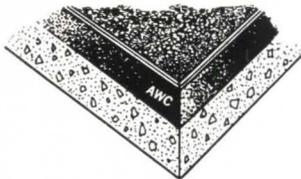




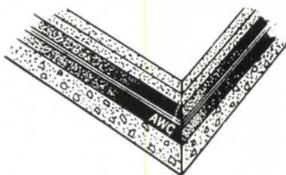
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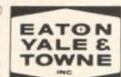
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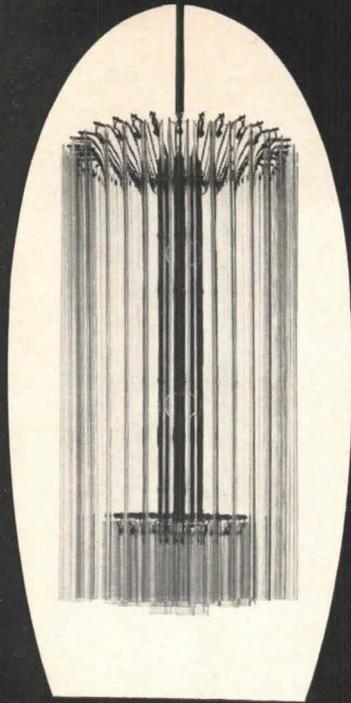
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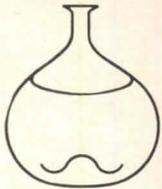


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(continued from page 69)

a smooth, low silhouette requires relatively low inflation pressures to stabilize it against high wind loads, whereas, a more than hemispherical dome or other up-standing building or tower-type structure could require inflation pressures two to three times as great. The usual criteria for wind loading used on conventional buildings is of little practical value.

A number of different kinds of pressurization equipment that can be used with air structures are briefly described, but no attempt is made to establish criteria for determining required pressure levels. These problems must therefore be dealt with by an engineer familiar with aerodynamics. On large buildings of unusual shape, wind tunnel test data should be obtained in order to determine the pressure distribution over the surface and the resulting loading.

Because of the need to maintain pressure within an air structure at all times, means of access which will not result in loss of pressure are required. Revolving doors, airlocks, or other means of air control are required and are briefly discussed.

The importance of these requirements to the successful development of an air structure should not be judged by the limited space devoted to these problems in Frei Otto's book. One possible criticism of the book is that it devotes too little space to this extremely important, but admittedly less dramatic or interesting aspect of the design. The success of any design depends on the proper selection and reliability of the air control equipment.

Another important aspect of the design which is explored in somewhat more detail is that of anchorage. The air structure is unique in that it must be tied down, not only to resist the upward loading resulting from inflation pressure, but to resist aer-



odynamic lift loads, which can exceed the inflation loads by three times or more. While the air structure may be subject to somewhat higher aerodynamic lift loads due to the smooth contour, the major difference in requirements is that the air structure is so light in weight that its dead load contributes little to the anchorage.

Air structures require ballast or anchors to resist upload, not footings or foundations to support the weight of the building. In this book Frei Otto illustrates many varieties of anchor, any one of which could do a particular job. The designer's problem is to select that type of anchor which best satisfies the requirements for load-carrying capacity in the particular soil conditions encountered. Due to variations in soil conditions and the uncertainty of what will be encountered until the anchorage is actually installed, improper anchorage is one of the problems most frequently encountered in the use of air structures and thus warrants special attention.

Frei Otto's book on pneumatic structures should be recognized for what it is: not a technical design manual, but a treatise on a unique and exciting new field in building design. If the reader is interested in new and exciting approaches to the problems of enclosing large spaces economically, this book will help stimulate his imagination, yet provide him with a fundamental understanding of the problem to help him determine the feasibility of his approach. Frei Otto's book on pneumatic structures is recommended reading for any architect or engineer interested in air structures.

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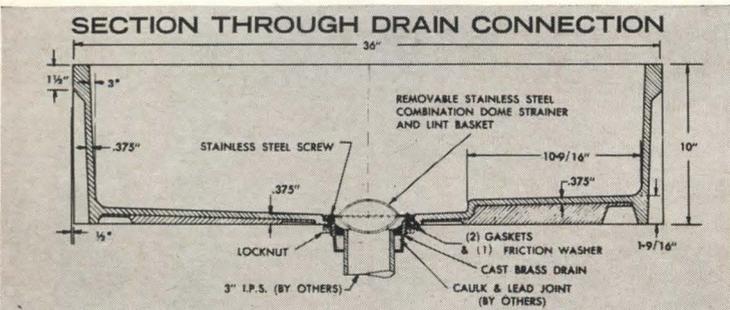
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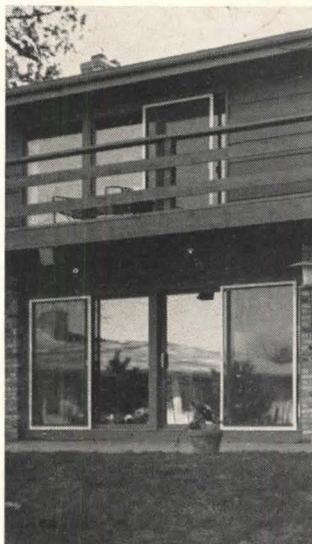


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3. 32-pg. catalog "Malta Wood Windows". Casement, vent, double hung, glide, basement types. Wood patio door with insulating glass. Malta Mfg. Co. Please request **A-3**.
4. Catalog 170/OV covers typical installations specs, test performance data, ASTM acoustical testing and rating procedure. Door, frame and acoustical seal details. Overly Mfg. Co. Please request **A-4**.
5. 4-pg. 2-color folder on "Weather Chamber Windows" weatherproofing system combining Neoprene weatherstripping with pressure equalization. Republic Steel Corp. Mfg. Div. Please request **A-5**.

### B. ELECTRICAL EQUIPMENT

1. Complete line of UHF and 82 Channel MATV equipment for hotels, motels, commercial buildings. The Finney Co. Please request **B-1**.

### C. FLOORING

1. 1968 Designers 32-page guide to glazed tile, ceramic mosaics and quarry tile. Includes colors, shapes and textures. American Olean Tile Co. Please request **C-1**.

### D. FLOOR COVERING

1. Brochure "Successful Contract Carpeting with Du Pont Fibers" discusses fibers, lists carpet mills using Du Pont fibers. E. I. Du Pont de Nemours & Co. Please request **D-1**.
2. Full-color brochures, literature; carpet with built-in sponge rubber cushion, for institutional/industrial

installations. Seamloc Loma-Loom Carpet Co. Please request **D-2**.

3. Heugafelt 12-pg. full color brochure shows wide variety of installations. Van Heugten U.S.A. Inc. Please request **D-3**.

### E. FURNISHINGS

1. Courtroom furniture for public, jury and judge areas. Room layout assistance available. Letterhead only. American Seating Co. Please request **E-1**.

### F. HARDWARE

1. Lever Handles by Corbin. Designs available for mortise locks, Corbin unit locks; Maywood Design combining wood with metal. P. & F. Corbin Div. Emhart Corp. Please request **F-1**.
2. "Electrac by Kirsch," 12-pg. full-color brochure with complete technical information on linear motor-powered drapery traverse rod. Kirsch Co. Please request **F-2**.
3. "Door Closers & Controls," 16-pg. brochure, illustrated, door control products. Norton Door Closer Div., Eaton Yale & Towne, Inc. Please request **F-3**.

### G. HEATING/VENTILATING/AIR CONDITIONING

1. "ABC's of Air Conditioning", a brief analysis of methods and systems, with diagrams and illustrations. Non-technical booklet. Carrier Air Conditioning Co. Please request **G-1**.

### J. INSULATION/THERMAL

1. Well-illustrated 20-page brochure presents technical and structural design data on practical and economical values of rigid urethane foam as a structural insulating material. Mobay Chemical Co. Please request **J-1**.
2. Illustrations showing ways to insulate and waterproof plaza decks. Please request **J-2**.

### K. LIGHTING FIXTURES/EQUIPMENT

1. Environmental Lighting. Wide selection of expressive geometric

shapes to integrate with every architectural theme. Descriptive and technical information. Kim Lighting, Inc. Please request **K-1**.

2. AREALUME CATALOG: Ball-light post-tops, pendants, brackets for plazas, malls, parking areas. Stonco Electric Products Co. Please request **K-2**.
3. Lighting fixtures, ceilings, partitions designed with handmade glass components for architectural concepts. Stock items in 26-pg. catalog. Venini Ltd. Please request **K-3**.

### L. LIGHTING SYSTEMS

1. TROFF-AIRE II. Air handling/heat removal, recessed lighting system. Complete data. Smithcraft Corp. Please request **L-1**.

### M. MASONRY AND BUILDING STONE

1. Mo-Sai Design Detail Manual-structural elements, window-walls, precast concrete with exposed aggregate. Mo-Sai Institute, Inc. Please request **M-1**.
2. Exterior marble 4-pg. 2-color folder illustrates, describes major methods of installing natural marble, new construction and remodeling, lists varieties of Vermont Marble available. Vermont Marble Co. Please request **M-2**.

### N. METALS IN BUILDINGS

1. Metal Wall Panels, including new Foamwall, 20-pg. catalog. Complete specifications with color photos of walls in place. Elwin G. Smith & Co., Inc. Please request **N-1**.

### P. OPERABLE WALLS

1. Full color 16-pg. catalog on Demountable Partitions. All heights. Technical information. National Gypsum Co. Please request **P-1**.
2. Operable wall flexibility in schools, churches, institutions. 16-pg. full color catalog A-600. Richards-Wilcox Mfg. Co. Please request **P-2**.

### R. PAINTS/COATINGS/SEALANTS

1. Stain samples; on wood; AIA information manual and 16-pg.

Stained Wood Idea Book. Olympic Stain Co. Please request **R-1**.

2. Thiokol's licensing program provides assurance of Quality for specifiers and buyers of LP polysulfide base sealants. Thiokol Chemical Corporation. Please request **R-2**.

### S. PLUMBING EQUIPMENT

1. Personal Hand Showers; 12-pg. full color 2-section catalog residential/institutional; complete technical info. Alsons Products Corp. Please request **S-1**.
2. 32-pg. color catalog No. 168: drinking fountains, water coolers, includes specs and drawings. Haws Drinking Faucet Co. Please request **S-2**.

3. 32-pg. color booklet, electric water coolers and drinking fountains. Specs and application chart for wall-mounted coolers, semi-recessed floor standings, cafeteria, remote package units. The Halsey W. Taylor Co. Please request **S-3**.

4. Form C 150. 12-pg. color catalog of water coolers. Architect illustrations. Temprite Products Corp. Please request **S-4**.

### T. ROOFING/SIDING/FLASHING

1. 8-pg. 2-color brochure on seamless Terne roofing contains standard and seam specs. Illustrated. Follansbee Steel Corp. Please request **T-1**.
2. "Building Facades of Kydex 5000" 8-pg. booklet. Flame and weather resistant, thermoformable material for opaque facings. Rohm & Haas Co. Please request **T-2**.

### V. WALLS/CEILINGS/PARTITIONS/MATERIALS

1. Koroseal Vinyl Wall Coverings. Over 480 colors in 26 patterns. 4-pg. color brochure with complete technical information. B. F. Goodrich Co., Consumer Products Mktg. Div. Please request **V-1**.

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In this critical situation, personalities, organizations and businesses have drawn together, to give their moral and financial support to the Hochschule für Gestaltung, in order to secure the continuity of this school which is so important for the Federal Republic and its international prestige. On March 26, 1968, the "Association for the Advancement of the Hochschule für Gestaltung, Ulm" was founded.

The cooperation of professional associations,

the engagement of many personalities and international repercussions led to a first success: The Parliament of Baden-Württemberg decided on July 18, 1968, to support the proposal of the Regional Government, according to which its subsidy of 900 000.— Mark (225 000 Dollar) should be secured once again for the fiscal year 1968/69. This decision is a chance which must be used for the analysis of proposals concerning the future status of the HfG and the collection of additional funds.

**Therefore, all people, associations and businesses are called upon to become members of the "Association for the Advancement of the Hochschule für Gestaltung, Ulm", and to support it with membership fees and contributions.**

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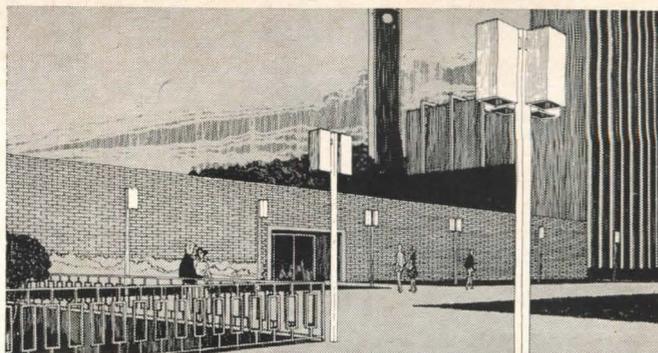
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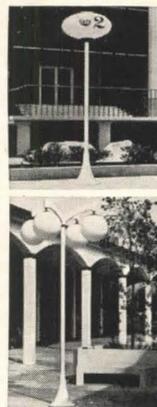
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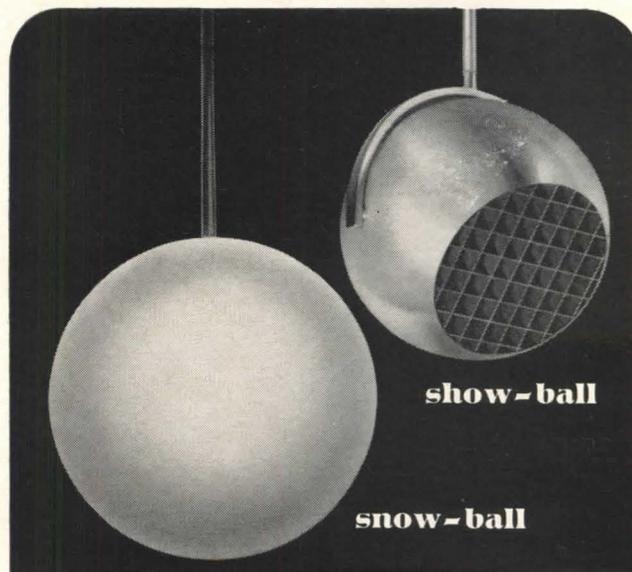
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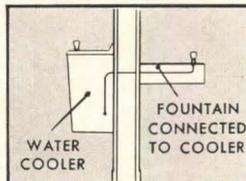


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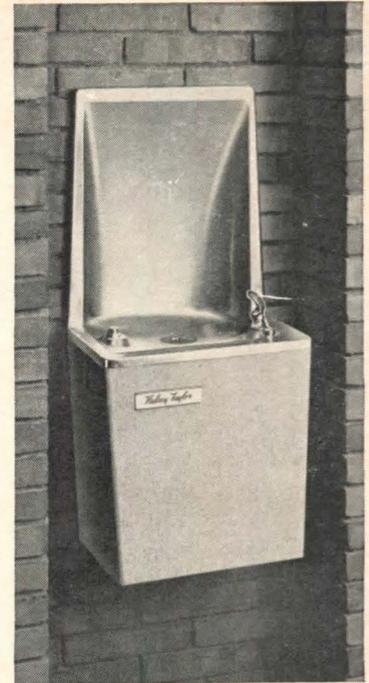
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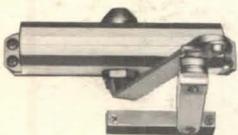
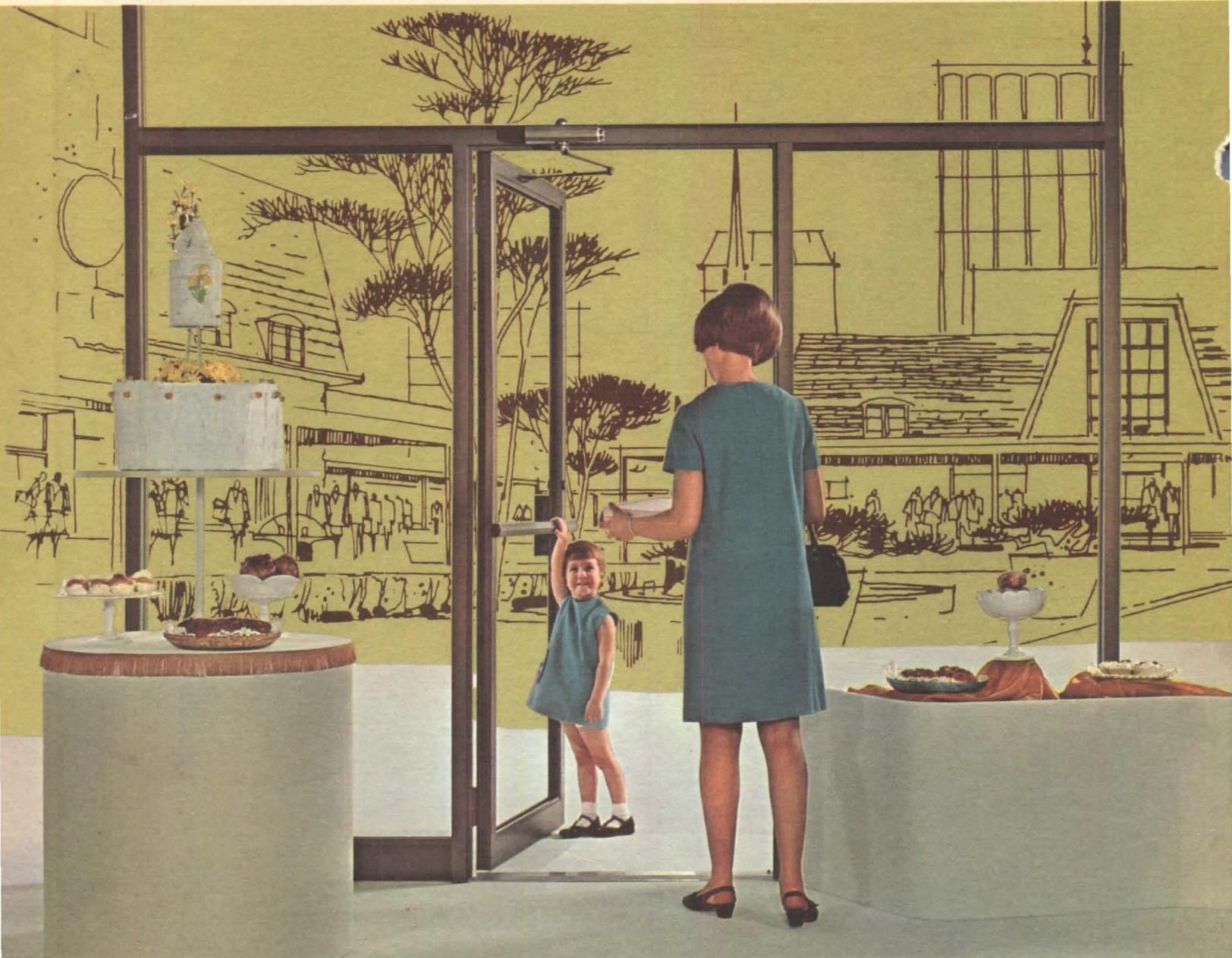
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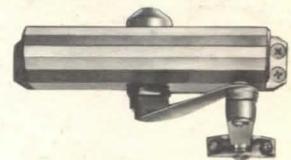
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