

An abstract architectural photograph featuring a large, light-colored concrete wall in the foreground, sloping upwards from the bottom right. Behind it, a dark structure with a white arched opening is visible. Above the arch, a pentagonal window looks out onto a clear blue sky. The composition is dominated by strong geometric lines and high-contrast lighting, creating a sense of depth and architectural form.

FORUM



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Le Corbusier
(page 82)
Ueli Roth photo

PUBLISHER'S NOTE

To Francis Booth of New York City, Maurice Rockman of West Paterson, N. J., and Paul Turner of Cambridge, Mass., go our congratulations. Each has won a lifetime subscription to THE FORUM for identifying the components of our May cover skyline.

Whereas only Mr. Turner, among the winners, correctly identified the Palazzo Vecchio, Messrs. Booth and Rockman, with a sharper perception than our own, agreed that the ship was actually S.S. United States. Though we hadn't previously thought about it, and Mr. Turner ignored it, we accept it as correct without further research.

For the edification of the unsuccessful entrants and the still curious, here is the official answer:



1—Statue of Liberty; 2—S.S. United States; 3—RCA Building (from 6th Avenue); 4—RCA Building; 5—Palazzo Vecchio; 6—Alamo; 7—Empire State Building; 8—Chrysler Building; 9—truncated Empire State Building; 10—Il Duomo; 11—Woolworth Building; 12—U.N. Secretariat.

While on the subject of winners, some pleasant news just came in from a survey recently conducted among architects dealing with their reading habits. We learned that among architects whom manufacturers consider "prominent," the professional magazine read most frequently and most thoroughly is THE FORUM. We appreciate that.

What was remarkable about the research study was that the questionnaire, though mailed right before the 4th of July weekend, still generated an 81.6% response before closing on July 31.

We see three winners in this result: 1—Our editors for having so successfully engaged the interest of our readers, 2—Erdos & Morgan, the research firm, for being so proficient in their job, and 3—Buzz Mack and his FORUM sales staff who can now prove to the customers what they have been telling them all along—L.W.M.

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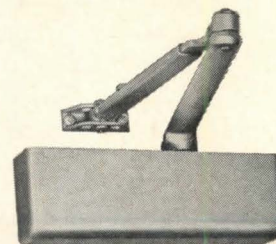
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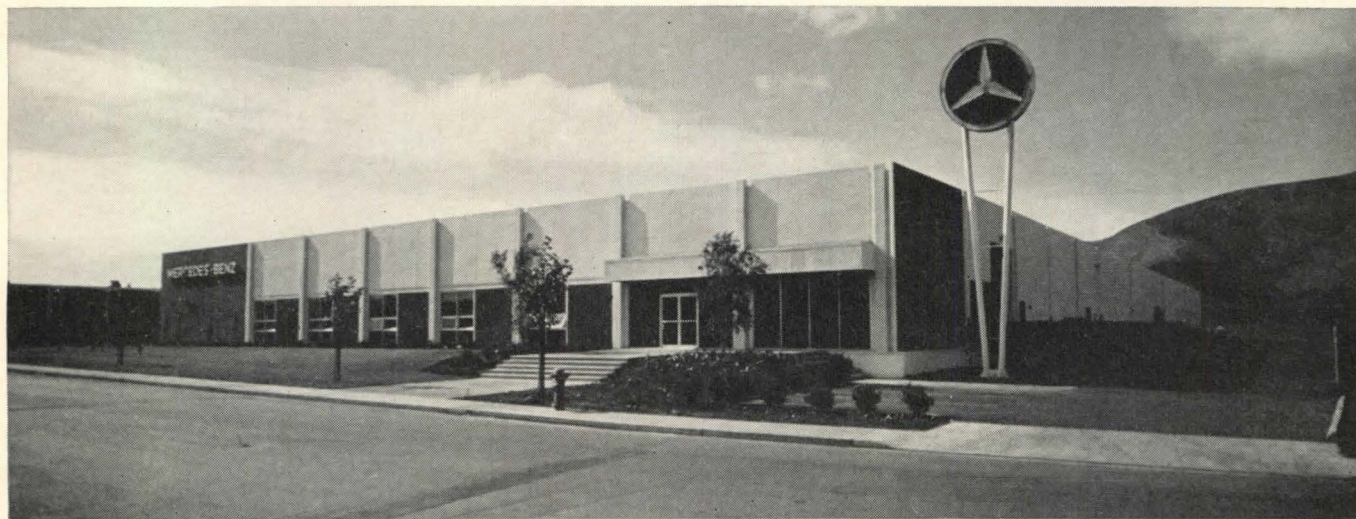
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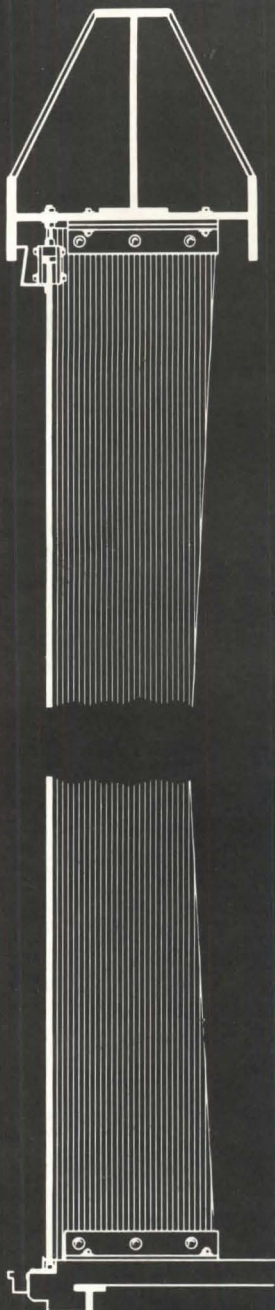
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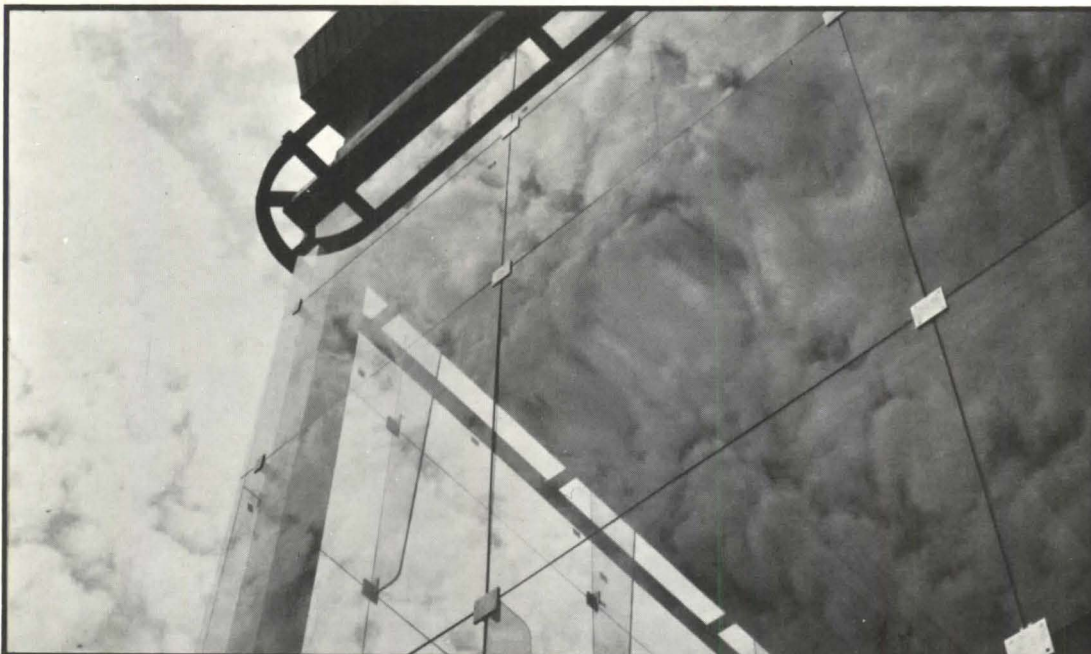


Section through assembly showing method of mounting.



This picture, taken during the construction of the Laurel assembly, shows how the glass panels are hung from the top.

A detail of the assembly showing the vertical fins and their mountings from different angles.



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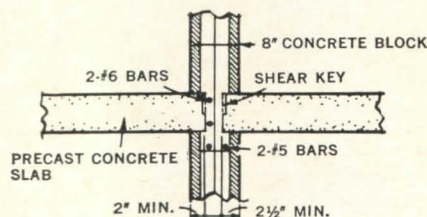
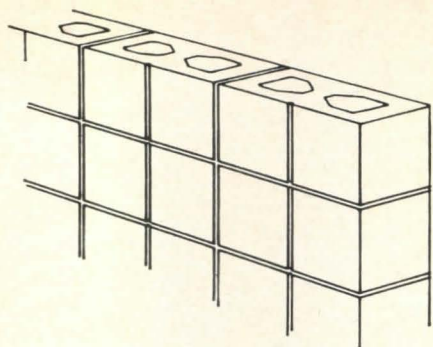


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Architect: Hendrik & Mock



The Hanalei Hotel • San Diego

Modern masonry is reaching new heights with loadbearing concrete block

The high rise—Newest concept in concrete masonry construction.

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signs; the most demanding loadbearing requirements to new highs. And with these structural advantages go the many traditional qualities of block always held in high regard: complete fire-safety, extremely high sound isolation (perfect for party walls) and impressive self-insulation head the list. Little wonder, concrete block is the building material more people are looking up to in high rises of every nature: hotels, condos and apartment buildings, college dorms, hospitals and office buildings.



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LETTERS

A&A DIALOGUE

Forum: Any windfall speculator can do no better these days than subscribe to the leading architectural journals. Their efforts to run down the architect as designer have by now become so beautifully coordinated that it makes no difference whether one reads *Progressive Architecture* or the Forum. (And there were times when it *did* make a difference.)

Ellen Perry's piece on "Paul Rudolph's celebrated Art & Architecture Building after four years of use—and misuse" [July/Aug.] is a mean and in the long run suicidal death sentence on architecture whose argumentation has nothing at all to do with architecture. The main force in the destruction of the A and A building are the students, and the driving force behind their destructiveness is a spineless, indifferent administration which would rather be loved than authoritative. This is by no means confined to Yale. It is the rampant disease of all schools of art and architecture in this country. The sick frustration of the young generation at being taught a profession which at this moment of total reorientation is all but unteachable, vents itself on a total contempt for their environment, unless they are physically and judicially prevented to do so.

We all know that Rudolph's building had faults; but its main aspect was that it was conceived for a specific kind of architectural training. Any school administration and students who did not want to participate in this kind of training should have kept out of it. It is precisely the same as if a director had taken over the Beaumont Theater with the intention of forcing on its three-sided open stage a closed square arrangement with cardboard, rags, and loud wails of unfunctionality.

How cheap can you get in blaming an architect for four cartons under a staircase (have you ever photographed the filth under the steps of Crown Hall?), a student napping in the Library, or a university of Yale's endowment re-

fusing to clean the windows? How wise not to include in your diatribe a view of the building's exterior! Some of your readers might have been reminded that great architecture is impervious to pranks by students and journalists.

SIBYL MOHOLY-NAGY
Pratt Institute Professor of Architecture

Forum: What a great disappointment to re-examine the A & A Building at Yale and to discover what the students have done to it. Any building has some flaws, but the most serious flaw of this building is the attitude of the students who work there.

Perhaps in their disrespect for this work of art, they manifest a disrespect and distrust in their own talents.

Columbus, Ohio JOHN E. MAKRIS

Forum: A beautiful review of the Arts and Architecture Building.

It is most encouraging to see the Forum devote space to the re-evaluation of a building (four years following construction) which has been acclaimed as a contemporary landmark.

How people and time change architecture is more important in many respects than how things are conceived.

New York City MALCOLM HOLZMAN

Forum: Ellen Berkeley's report of Yale's Art and Architecture Building in use and Sim Van der Ryn's study of Student Housing at Berkeley are, I hope, indicative of a new interest in the question of how people use buildings. Mrs. Berkeley's calm and reasoned fact-finding is far more useful and relevant than any amount of subjective esthetic criticism. It substantiates the fact, abundantly demonstrated elsewhere, that an architectural concept that ignores the real needs of the users contains the seed of its own destruction. . . .

A continuation of this kind of reporting would be a great service to the profession and to the public.

C. M. DEASY
Chairman
AIA Committee on Research for Architecture

CONFIDENCE CONFIRMED

Forum: I am not renewing my subscription right now because I entered the May issue's lifetime subscription contest and am supremely confident of victory. I

notice that Mr. Mester says in the current Forum that the winners will be announced in the September issue, so I will have to wait 'til then to verify my optimism—but at any rate, *don't stop* my subscription. If by some dreadful chance I made a misidentification and do not get Forum free, I assure you I will renew it in the conventional way.

Cambridge, Mass. PAUL TURNER

See Publisher's Note, page 1.—ED.

RELAXING WITH VENTURI

Forum: Your June review of Robert Venturi's book *Complexity and Contradiction in Architecture* tells us that "If [Venturi] were really serious, his proposals... would make the mind boggle: 'accidentalism' has been elevated to a discipline. . . ."

Relax!

Venturi tells us in the second sentence of the main text that he "does not like the arbitrariness or incoherence of incompetent architecture." He is not advocating "accidentalism," neither is he manufacturing a "discipline." Indeed, "elevated to a discipline" is a phrase that characterizes a fascination for absolutes; a preoccupation for what Venturi rejects as an "either-or," "black or white" limitation of alternative. The on-off, stop-go, yes-no *really* serious digital mind might well boggle at Venturi's analog because this book is a scheme for eliciting an architectural response—not a scheme to which architectural response must correspond.

Robert Venturi writes with a perfect lucidity and his point is clear, he is arguing for an organized situation of controlled permissibility that can accommodate, include, and therefore use, not deny, reality. He recommends an architecture where invention and elaboration is possible and permissible, but not necessarily requisite. . . .

Venturi recommends an architecture of "accommodation" to varying levels of fineness of finish, fit, and resolution; an architecture of varying levels and interpretation of meaning—meanings that may be at once confirmed and confounded. He recognizes that a state of order can be most vividly measured against the anomaly; that the module is most vital when it is broken "from a position of strength, not weakness"; that "a building with no 'imper-

fect' part can have no perfect part, because contrast supports meaning." He agrees with a line from Gilbert & Sullivan's *The Gondoliers*, "When everyone is somebody, then no one's anybody!"

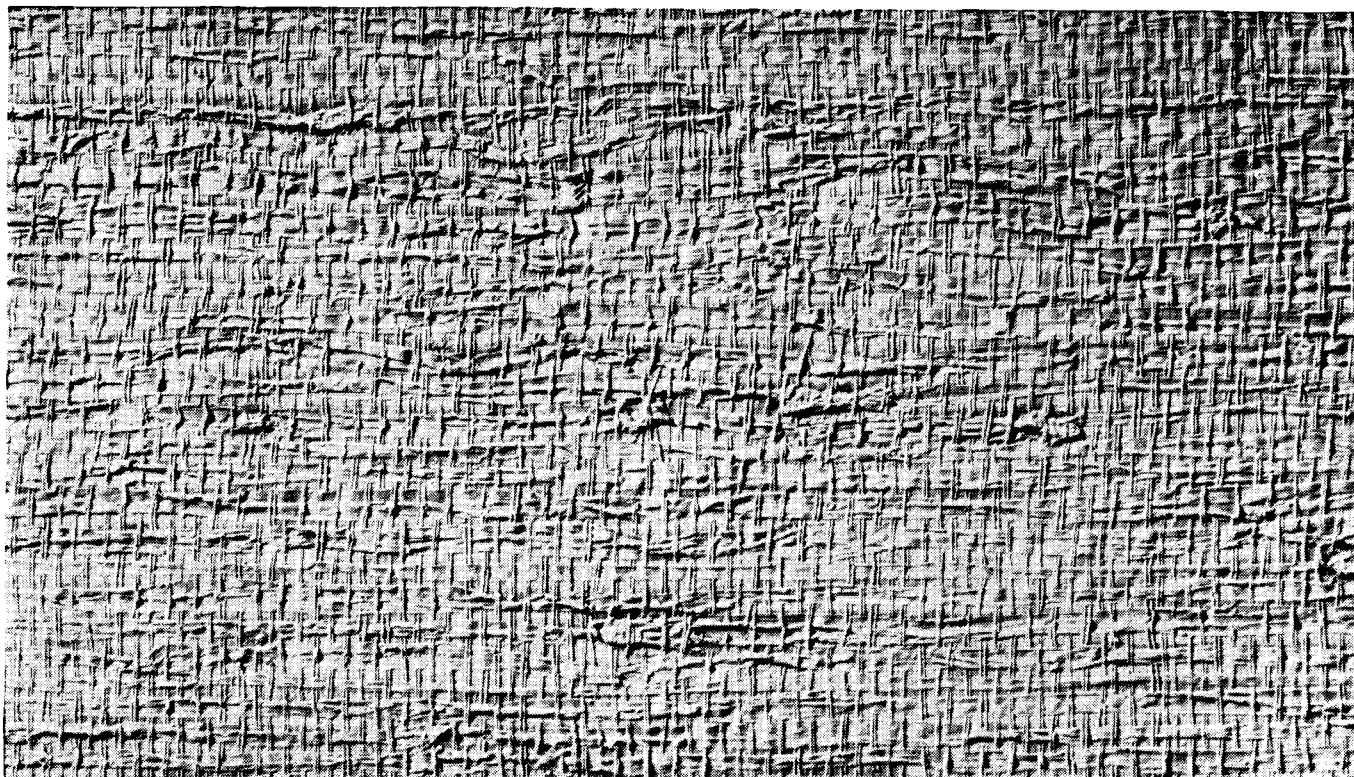
Venturi rejects regulated expressionism (see his most agreeable and un-CIAM-like *Manifesto*), and he sees that no combination of architectural, programmatic, structural, mechanical, or procedural requirements can ever be brought together in a single absolute. Indeed, the urge toward absolutes is an urge toward the static and the dead. He speaks of an architecture that can stop short of the deadly total exploitation of potential; "But an architecture of complexity and contradiction has a special obligation toward the whole: its truth must be in its totality or its *implications* of totality" (*italics mine*).

A deliberate situation of less than totally exploited potential implies rather than defines meaning, and it is beyond question that the fascination of what Venturi calls Orthodox Modern Architecture has been for the all-encompassing supergenerality; the subordination of the specific to the general; the glorification of what Arthur Drexler has elsewhere identified as "that general term which can account for the greatest number of particular cases." This kind of preference for ground over figure can of course be seen; for example, in OMA's confused impressment of door/window (or apartment/office building) into one codified form. In Venturi's recommendation of the specific, he removes architecture from the ken of the mechanic and again urges it onto the level of the artist.

Your reviewer infers that Venturi's ideas are "not particularly startling." I disagree. Clarence Brown, in a superb critical estimation accompanying his translations of *The Prose of Osip Mandelstam* tells us that the Russian poet "was attempting to do what is done successfully only in the greatest art: to advance the frontier of vision by creating something new out of the resources of a strong tradition," and I suggest that this is what Venturi is attempting to do and that it is irrelevant to denigrate either his buildings or his words because they may depend in part upon previous insights.

I reject your reviewer's rela-
(continued on page 16)

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LETTERS

(Continued from page 12)

tionship of Pop Art to Bauhaus design as confused. Pop Art was a response to and an interpretation of a cultural reality. It was as dependent upon its time for subject material as it was upon the ability and willingness of its time to accord it widespread formal recognition and acceptance. Bauhaus design was "ahead of its time"; Pop art was not only "of its time," it was immersed in it. Bauhaus design was a wishful indication of things as they might be, Pop Art was a full scale comment on, reaction to and recognition of things as they were and are. The real connection between Venturi's ideas and Pop is this: both are concerned "with the present, and with the past in relation to the present" and neither attempts "to be visionary except insofar as the future is inherent in the reality of the present" (quotations from the Preface).

Your reviewer tells us that "Mies's whole notion of 'universal space' implies unpredictable changes, contradictions, etc." I disagree. Mies van der Rohe's clear spans and great rooms are stylistic devices encompassed within a model form and their relationship to a kind of expedient provision for flexibility and change is incidental. It should be pointed out here, with all respect to Mies, that the geometrical consistencies and self-referential qualities of flat-pattern-making kinds of architecture are most important in the "relationships" evident in the flat-pattern representation, and it is this kind of surrogate architecture that Venturi dismisses.

But it is inevitable that reference be made to Mies van der Rohe. (When Miss Phyllis Lambert was searching for an architect to design the Seagram Building she is to have reported, "Everybody seemed to be talking in Mies's terms or denying him." (*Time Magazine*, March 3, 1958, p. 52.) Of course! His buildings are among the most significant in the history of architecture and he is all around us; but Mies hasn't made that many buildings. He usually comes under attack when he is being witlessly defended, but Mies requires no defense. His chief fault lies outside the area of his responsibility, and that fault is simply that his style is (osten-

sibly) available to the mechanic (architecture is when things line up) imitator. And, as I have said, it is precisely this accessibility that Venturi's thesis denies the geometer, the manipulator of things, the *mechanic*; whether he be architect, historian, or critic.

But yes, the implications of the Venturi Principle are depressing because past performance indicates the inevitability of the mechanical appliqué of any stylistic device once a systematized declaration becomes generally available; one can only hope that these kind of ideas are so far beyond the capacity of the panalized mind of the mechanic architect as to be incomprehensible. . . .

But however this book is seen, as the truth revealed or as a message from the enemy, the fact remains that here is the attitude and the urge, the understanding and the interpretation that one must inevitably align with or resist—it cannot be ignored. And one thing is certain, the only relevant architecture to be made now or in the near or middle future will be made by Robert Venturi and men like him.

DONALD R. KINGMAN

Assistant Professor

School of the Art Institute of Chicago

Want to bet?—ED.

NO FUN, NO PROFIT

Forum: In your April issue, you claim that our experience in rehabilitation failed "precisely because [Citizens' Housing and Planning Council] neglected to take advantage of a wide range of Federal programs."

You might, with similar relevance, accuse Noah of gross negligence for failing to equip the ark with diesel engines. The scheme with which we became involved began several years before passage of the limited Federal rent supplement program to which you are presumably referring.

The Ridge Street tenement house rehabilitation had the simple purpose of testing whether a deteriorated structure in a discouraged section of the city could be reconstructed with private funds for continued low-income occupancy, on a basis sufficiently profitable to encourage responsible private industry to go elsewhere and do likewise. We concluded that without subsidies far greater than below-market interest rates and tax abatements, the return on such an investment

(Continued on page 21)



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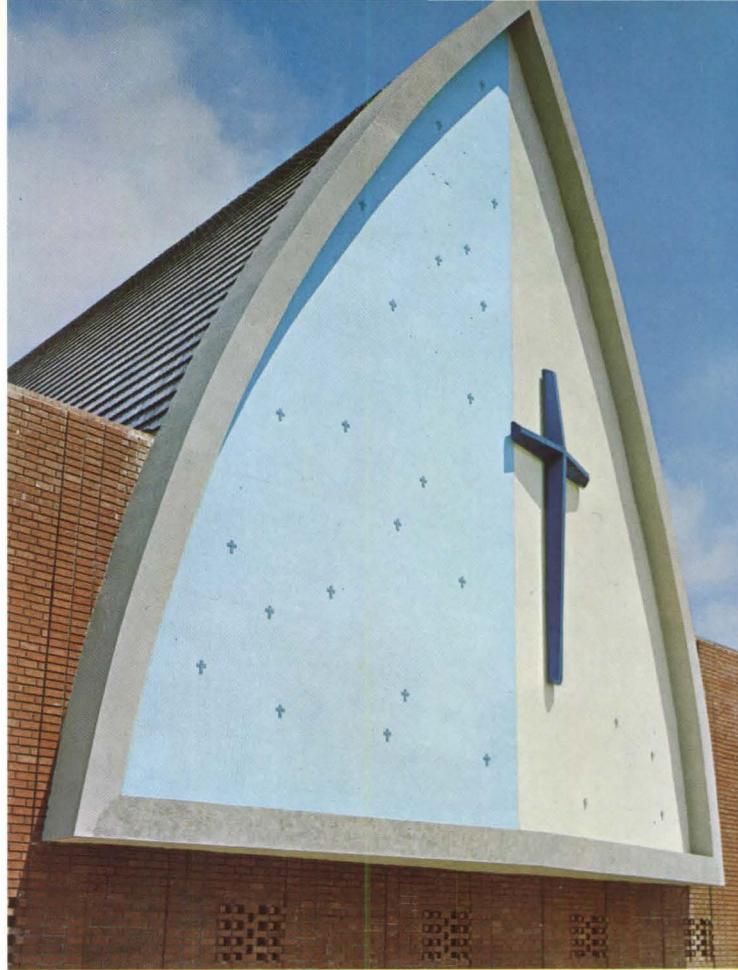
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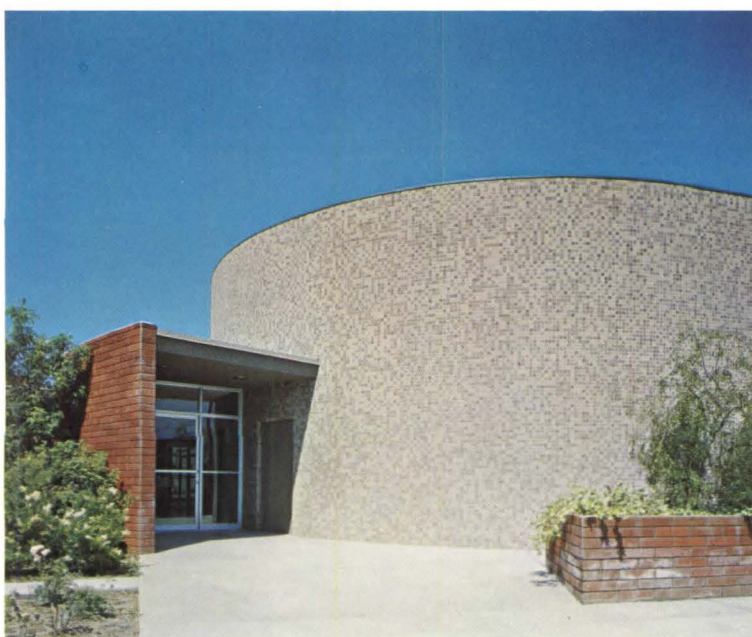
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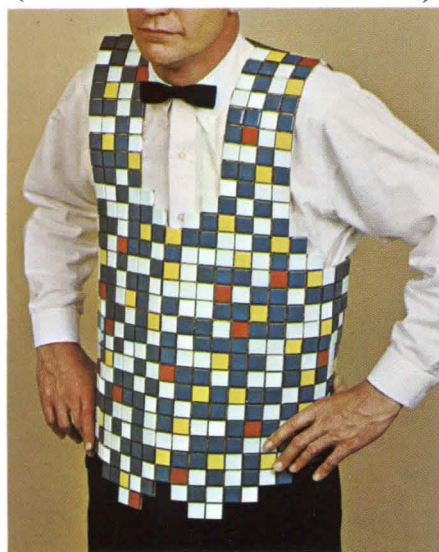
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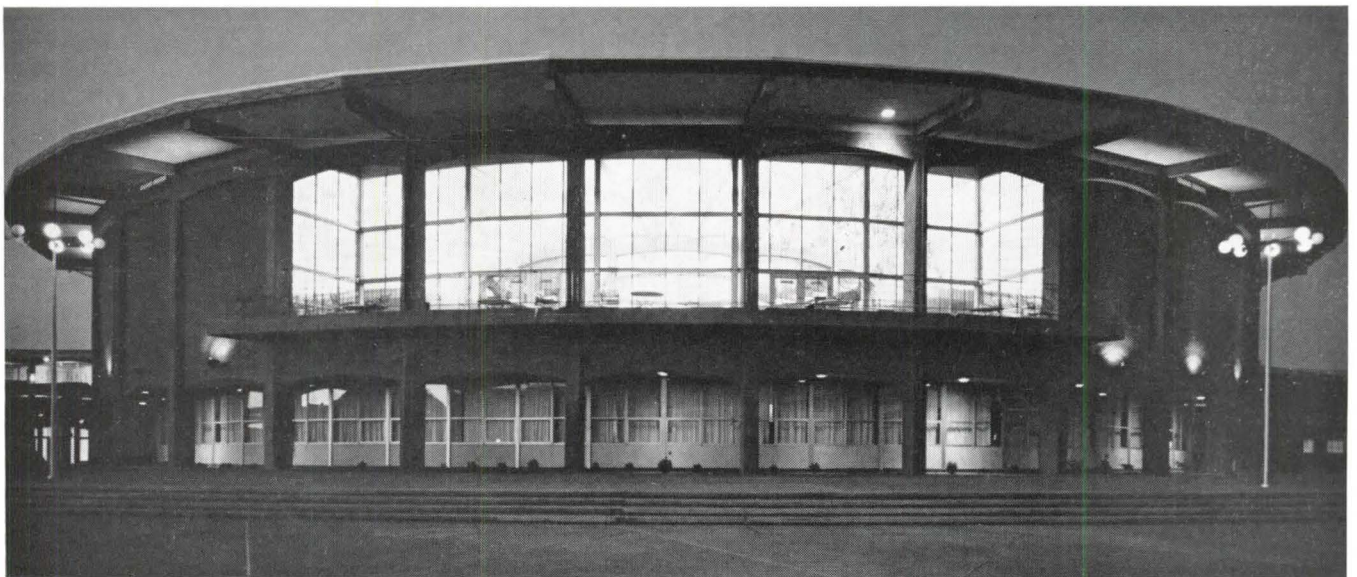
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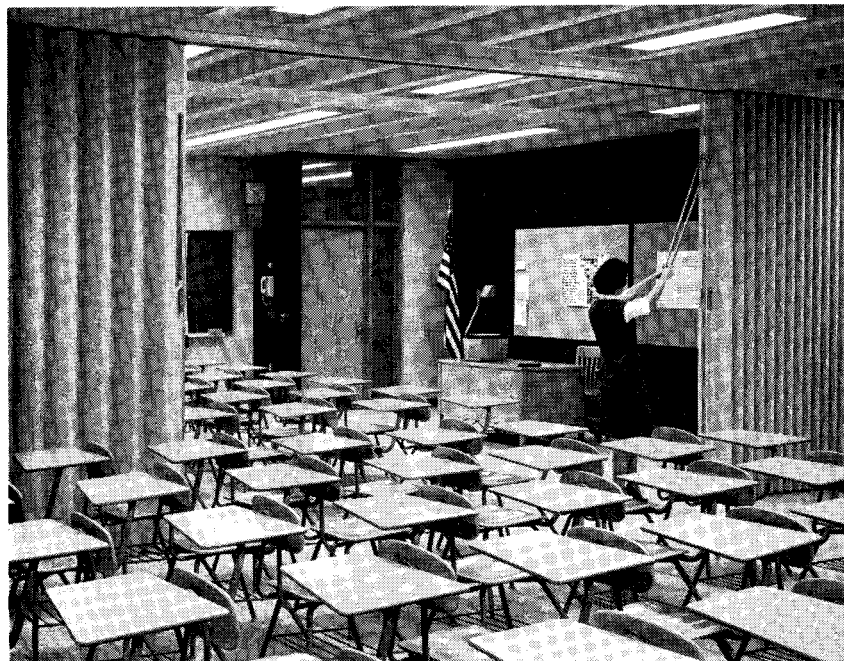
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LETTERS

(Continued from page 16)

would not encourage private industry.

For the nonprofit agency, ownership of rental housing poses difficult management problems, particularly when the rental property caters to low-income families. It is no answer to say that managing agents can handle the day-to-day problems, because in many areas of the country these specialists are increasingly unwilling to work in low-rent developments, the costs of management being far greater than the fees paid. In any case, the use of a paid managing agent for the day-to-day work means that the nonprofit group has become, in effect, the same kind of remote absentee landlord which the use of such group was intended to avoid.

Furthermore, managing agents are unable to handle important policy decisions concerning rent levels, reinvestment, tenant selection and education, and government and community relations. Any attention given either by the voluntary board, or the staff, to these matters diverts the group from its main corporate purpose; at the beginning of the housing rehabilitation their absence can be covered by some vague rationalization about "housing as a demonstration of the community responsibility" of the voluntary agency. Ultimately, it becomes clear that the moneys in the corporate treasury were given to the nonprofit group for a purpose other than housing; the possibility that these funds will be invaded to meet deficiencies in rental income becomes more serious as time passes.

Finally, from the point of view of such a nonprofit sponsor there arises the specter of organizational embarrassment. What might a fatal fire do to the corporate reputation? What will be the public relations effect of rent increases? Of a disagreement with a tenant organization? What might be the result of *de facto* racial integration, continuing despite the best corporate intentions? Considerations like these have convinced the life insurance companies that they are too vulnerable to own housing developments; the role of mortgages is more sheltered.

From the point of view of the housing also I would urge an

evaluation of nonprofit agency ownership. In their concern with community relations, existing philanthropic agencies may well find themselves eschewing rent increases that are truly necessary for adequate long-term housing maintenance. If such agencies need new funds for repairs, who will subscribe them over and above the ordinary budgetary needs of the agencies?

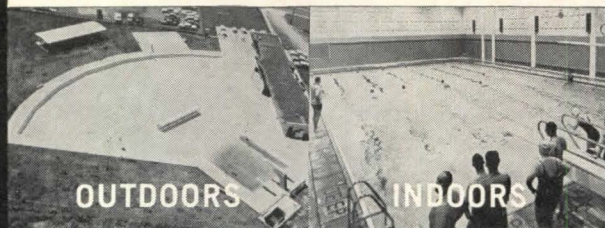
To keep residential buildings in good condition, long-term, its owners may often be required to adopt policies that conflict with the wishes of the present tenants. Will existing philanthropic agencies find themselves able to do this, or will they be blocked by their own constitutional benevolence? Might they *per contra* become so righteous in the defense of their original non-housing purpose that they will oppose costly legislative reforms in the manner of Trinity Parish as land owner 80 years ago? To what extent are the absent profits exceeded by the additional costs of nonprofit operation? No one has, to my knowledge, studied this difficult question.

I have been criticized before on the grounds that existing local philanthropic groups are discouraged by any report of the problems of rental housing ownership. The criticism is just. I have deliberately tried to discourage these fine people. The provision of housing is an economic activity, not a question of good-will merely, though none would deprecate the value of good-will as an admixture to economics. Before the nation irrevocably commits its housing future into the hands of local groups with only their high hopes to recommend their managerial talents, a study of past experience might provide effective immunization.

It would be tragic to develop national indigestion from the too rapid swallowing of half-baked ideas about the importance of housing rehabilitation as part of an effort to increase "participatory democracy" in American life. Such ideas—including sometimes the suggestion of tenants' do-it-yourself repairs in multiple dwellings set in crowded American cities—may have been cheerfully dredged from the embers of a distant Peace Corps campfire, but before ordering a meal one might wish to taste a small mouthful.

ROGER STARR
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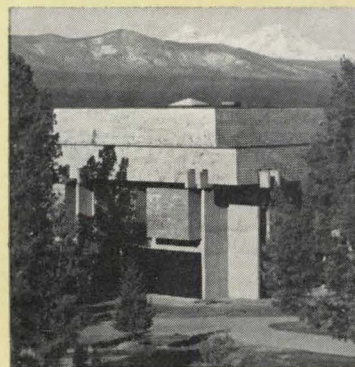
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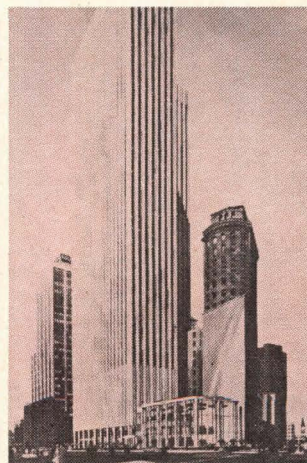
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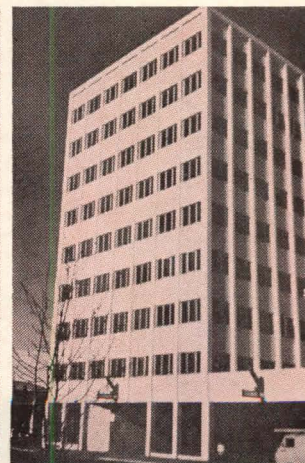
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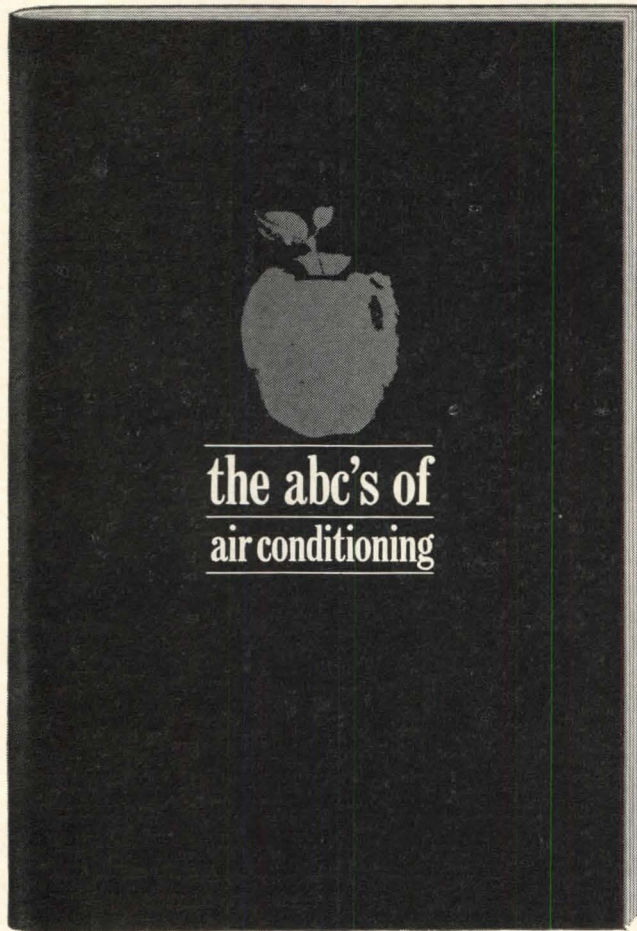
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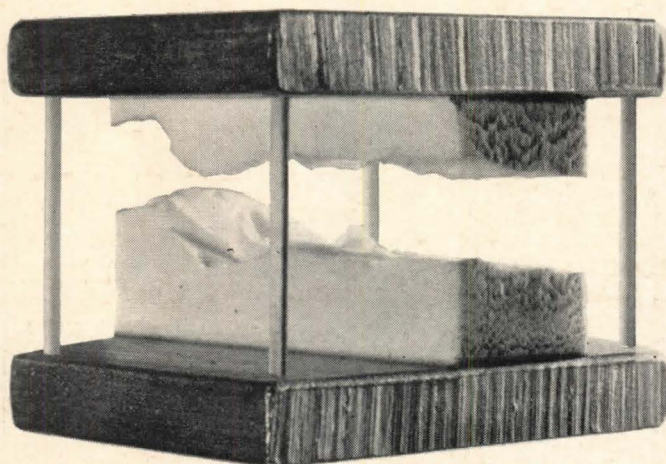
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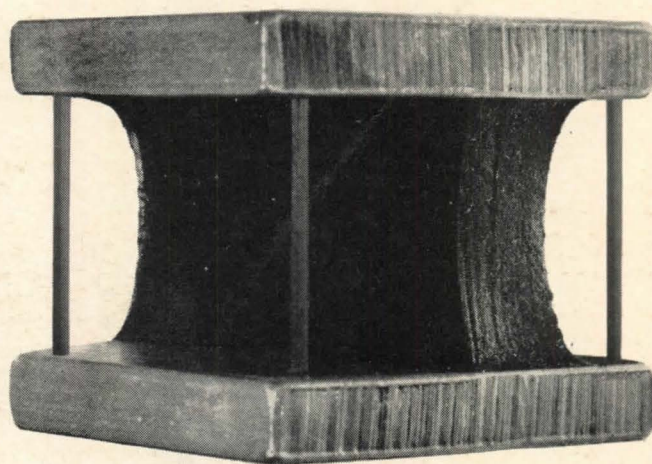
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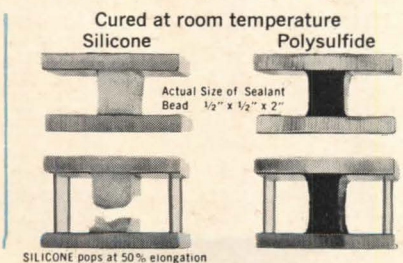
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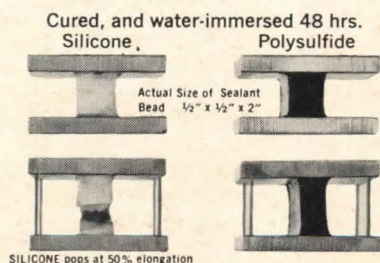
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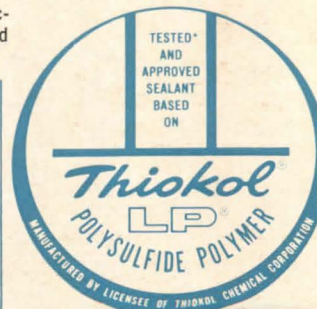
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Roger Schafer

Vincent Scully Jr.

Bernard P. Spring, AIA

Douglas Haskell, FAIA

CORRESPONDENTS

Francoise Choay (Paris)

Philip H. Hiss (Southeast)

Benita Jones (London)

Donlyn Lyndon, AIA (West)

Roger Montgomery, AIA (Midwest)

PUBLISHER

Lawrence W. Mester

FORUM

The spontaneous reaction of a good many people to the summer's riots in and around our urban ghettos was to ask Congress to pass a law against crime.

This is just fine. We, too, deplore crime—especially such crimes as sniping, burning, and looting which we (members of the white, urban or suburban middle class) are not often tempted to commit.

But to some people, who are not members of the white middle class, there are other crimes that seem more serious—and that seem to go unpunished most or all of the time.

For example, ever since the passage of the Full Employment Act of 1946, it has been "the continuing policy and responsibility of the Federal Government" to provide "useful employment opportunities . . . for those able, willing, and seeking to work."

Now, the unemployment rate among black residents in the urban ghettos is about double that among whites—so someone seems to be violating the law. But that someone has gone unpunished for more than 20 years.

The trouble is that people who live in "Underdeveloped Areas" don't quite see that there is a difference between the Rule of Law, say, and the Rule of Cash. In fact, they often feel that the Rule of Cash is what really counts and that their credit ratings may be more important than their civil rights.

While the Rule of Law tells them that they have Freedom of Choice in matters of housing, employment, education, etc., the Rule of Cash seems to suggest that, in

fact, they have very few (if any) of those Freedoms of Choice. (A citizen of a ghetto, for example, cannot take his rent supplement—if any—out of the ghetto . . .)

And, so, some inhabitants of Underdeveloped Areas, inspired perhaps by those sentiments we have inscribed in marble, are sorely tempted to strike out to assert "certain unalienable Rights." As Sister Mary Corita put it at last year's Urban America conference: "Where humans have been denied the right to express need or anger or love, they respond in chaotic, destructive ways. We can only be grateful that they respond at all—that we have not fully killed them."

This sort of rationalization will not console the relatives of the 86 black and white Americans killed in riots between April 1st and August 1st. Still, it seems a more enlightened response than that of Sister Mary Corita's fellow Californian who called the rioters "mad dogs." The denial of the right to express need, anger, and love does drive some people mad; it rarely turns them into dogs.

Nor does it show much insight to suggest that Federal aid to cities won't help because Detroit received \$100 million in renewal funds since 1960, and look what happened! (See below.) Well, \$100 million for a city of 1.7 million people comes to about \$60 per Detroiter. That really isn't so generous by Congressional standards: 169 members of the House of Representatives recently built themselves an office building that cost \$122 million—or about \$720,000 per Congressman.

We are not suggesting that it will take \$720,000 per inhabitant to help avoid riots in ghettos (Congressmen are much more volatile than ghettoites, so it costs more to tranquilize them). We





are suggesting that, to the inhabitants of the Underdeveloped Areas, there appears to be a vast gulf between promise and performance, between the sort of commitment of which President Johnson spoke at Howard University in 1965, and the sort of cash that Congress is willing to spend on housing the urban poor.

COMMITMENT VERSUS CASH

Here are some random examples of what we have promised—and what we have done:

• *Promise:* The President (1965)—“I believe that we can continue the Great Society while we fight in Vietnam.” *Performance:* The Administration (1967) requests \$40 million for rent supplements, estimates that \$22 billion will be spent in the same period on Vietnam (authoritative, private groups believe \$28 billion is a more realistic figure), and the House votes all of \$5 million for rent supplements (which will barely cover commitments already made). Congress was, however, moved to appropriate \$10 million for a new Washington, D.C., aquarium. A planning request from the capital for \$525,000 on the other hand, will probably have to be cut because HUD is not getting the modest funds it has asked for.

• *Promise:* Secretary Weaver (1966)—“The Model Cities Program . . . is the one, single proposal . . . [to] bring about . . .

constructive, revolutionary change.” *Performance:* The Administration (1967) requests \$662 million for the program, and the House votes \$237 million—or a little more than \$1 million per town and city under consideration. The House Appropriations Subcommittee did, however, vote to appropriate \$4.6 billion for the usual “pork barrel” projects.

• *Promise:* Vice-President Humphrey (August 2, 1967)—advocates a “Marshall Plan for America’s impoverished areas,” adds—“Whatever it will take to get the job done, we must be willing to pay the price.” *Performance:* Vice-President Humphrey (August 8, 1967)—“People say the Vice-President proposes billions more—that isn’t what the Vice-President talked about.” And *The Christian Science Monitor* reports on the same day—“Asked about financing, the Vice-President . . . stressed the opportunity, as well as the responsibility, for local initiative.” Still, for fiscal 1967-68, the Administration has budgeted about \$4.2 billion for various forms of foreign aid, to be made available, it seems, without much concern about “local initiative.”

• *Promise:* The President (1965)—“[Let us] bring the most urgent decencies of life to all of [our] fellow Americans.” *Performance:* The Administration (1967) requests \$20 million for 1968, plus another \$20 million for 1969, to fi-

nance the “Rat Extermination Act of 1967.” The House (whose quarters are not believed to be rat-infested) votes 207 to 176 against even debating the bill—the non-debate on the vote being marked by much hilarity on all sides. But since Capitol Hill is car-infested, Congressmen have appropriated \$13.5 million, approximately, for additional parking spaces (underground as well as open-air), which will bring parking facilities up to ten spaces per Congressman. (Admittedly, there is only one rat per inhabitant in New York City.) The new parking facilities for Congressmen will cost \$10,000 per car, which is about two to three times more than the unit cost of ordinary, commercial parking garages.

“Can’t You Dig Up A Treaty Or Something To Show That Kind Of Commitment To Us?”



© 1967 Herb Lubner in the Washington Post

• *Promise:* The President (1965)—“More than 73 per cent of all Negroes live in urban areas . . . Most of these Negroes live in slums . . . We are trying to attack these evils.” *Performance:* To quote Columnist Joseph Alsop (1967)—“No less than \$2 billion (annually) is spent on roads and airports. This annual outlay . . . equals the entire sum spent on public housing subsidies in the last 17 years; and college housing in that period has cost above 50 per cent more than housing for the poor. The money going into the ghettos themselves is in fact a pitiful trickle” (our italics). Incidentally, Mr. Alsop might have added that the U.S. Government has been spending about \$250 million, annually, to find out what is at the bottom of the ocean (answer: fish).

AND SO IT GOES

It would be easy to cite further examples, almost *ad infinitum*, of the vast gap between promise and performance. In months to come, we will cite them.

Meanwhile, it may be worth quoting some remarks, a month ago, by the national director of CORE, Floyd B. McKissick—if only to suggest that what happened in our cities during the past summer is open to more than one interpretation. Mr. McKissick said, in part:

“We are given rhetoric about . . . ‘The Land of the Free. Home of the Brave. With Liberty and Justice for all.’ I could name dozens of others. . . .

“They were never intended to mean anything to black people. They were written when we were still slaves. . . .

“As whites quietly exit to the comfortable suburbs, they do not relinquish the economic control of the ghetto; they maintain control of the city agencies and the political scene. . . .

“[Their] concept of ‘law and order’ means the legal methods of exploiting blacks. . . .

“Even our [white] friends . . . cannot see ten blocks away, where many black people are the walking dead—dead in mind and spirit, because of lack of hope and lack of chance.”

Sister Mary Corita said a year ago: “We can only be grateful that we have not fully killed them.” But Mr. McKissick said a month ago: “. . . black people are the walking dead.” Time is running out at a terrifying rate.

NON-NEWS FROM NEWARK

One of the controversies that helped to light the fires of Newark continues to send off sparks.

For several years, Mayor Adonizio has pressured for the New Jersey College of Medicine and Dentistry to locate in Newark rather than in suburban Madison. Negro residents in the path of the redevelopment have objected, on the grounds that some 22,000 would face removal (Newark officials say only 3,500) and that they haven't had a say in the development of the area.

After the riots, and in an apparent effort to find a new approach, Governor Hughes sat down with college officials for a three-hour meeting. At its conclusion, they announced an agreement for "full participation of the Negro community" in the development of a 66-acre portion of the total 150 acres. There would be an "urban welfare center" with low-income housing, child care and health centers, schools, etc.

However, two days later, the "agreement" turned out to be only a rumor, the "urban welfare center" only a hope. The total acreage that Newark is giving the college, reduced in some accounts to about 100 acres, was back up to the full 150. College officials said they would need it all, after all. The first 46 acres, in the angry Central Ward, would be needed immediately, followed by a 35-acre parcel, and (at least five years later) by the additional 66 acres.

There will, however, be an attempt to include residents in the planning of the 66 acres; its future development (according to Hughes's office) "need not preclude other interim uses of the 66 acres consistent with the ultimate need for the land by the college and with the orderly relocation of families now living on the site."

It doesn't take an "outside agitator" to see that this isn't much different from what helped spark the trouble in July.

EMERGENCY CONVOCATION

The Urban Coalition, which was formed on July 31, by 20 prominent leaders of business, labor, religion, civil rights, and city government, has conducted an Emergency Convocation on August 24, at the Shoreham Hotel in Washington, D.C., to mobilize the nation's public and private resources in a concerted attack on urban

problems. Urban America has acted as the catalyst to bring together the coalition.

Three major programs were discussed: an emergency work program now being drafted into specific legislation to provide job training and employment for the urban poor; a major expansion of the private sector's efforts to train and provide jobs for the hard-core unemployed, such as the "Earn and Learn" programs underway in several cities; a long-range program for the physical and social reconstruction of American cities "to break up the vicious cycle of the ghetto."

Co-chairmen of the steering committee are Andrew Heiskell and A. Philip Randolph. The 20 members of the committee were joined by 12 more by Convocation time. Details will follow.

GOOD NEWS

SWITCHED ON

For the architecture-buff-who-has-everything, there is one more treat after all: for his (or her) birthday, his (or her) loved ones can light up bits of Paris in his (or her) honor, at bargain rates! To light up the Eiffel Tower (below) for one hour costs Fr. 166; the Arc de Triomphe costs Fr. 76.20; Sacré Coeur costs Fr. 27.20; the Place de la Concorde Fr. 55; Place Vendôme Fr. 48, and the Opéra is dirt cheap—Fr. 25. All



you have to do is call up M. Courseault, at the Cabinet du Préfet de la Seine, and he'll pull the switch.

TEAMWORK

New York's architectural firms, ever competitive, have hit upon a new way of working out their mutual hostilities: baseball. The N.Y. League is made up of teams from 13 architectural firms, and their performance to date has been terrible. However, they do wear smashing T-shirts (below): The I.M. Pei Team wears a bright red affair, emblazoned on the back with white Chinese characters that spell "Pei." The Breuer Team wears jerseys with a draw-



ing of Breuer's head on the front. Before the Pei Boys got their red T-shirts, they had a losing streak; since they got them they've been winning steadily. The Breuer Boys are doing pretty well, too: three wins out of five games played to date. We'll report other scores as time goes on.

ARTS

BICENTENNIAL BUST

Reginald Beauchamp, assistant to *The Philadelphia Bulletin Magazine* and longtime planner of Philadelphia spectacles, is a man of foresight and ideas.

The Philadelphia Bicentennial is still eight years away, but he has been thinking about an appropriate monument to celebrate the event ever since 1955. Paris has its Eiffel Tower, New York has the Statue of Liberty, Brussels the Atomium. Philadelphia should have something equally stunning, so his thinking goes. And he has come up with an idea stunning enough to fell the city: a 14-story-high bust of Benjamin Franklin to be put up on the Belmont Plateau in Fairmount Park, a site overlooking the city (below).

The monument would be wrought of horizontal stainless steel tubing contoured to form the Franklin image. The tubes, 6 in. thick, would be set 1 in. apart, allowing a bright interior light source to illuminate the bust from within.

At the base might be a museum of Franklin memorabilia, and tourists would be able to go up into the head. The whole would cost a cool \$5 million, which would make it just about the most expensive lightning conductor to date—but a most appropriate one, of course.





A SECOND-CITY FIRST

"Both Picasso and Chicago are innovators," observed National Arts Council Chairman Roger L. Stevens. "The city and the artist were almost made for each other." The occasion was the unveiling of a 50-ft.-high sculpture on the Chicago Civic Center Plaza, and the work is so closely identified with both city and artist that it is called simply the Chicago Picasso (above).

The sculpture (if not the artist) was made for the city. It was made of the same self-oxidizing steel as the Civic Center building at a cost of \$300,000 (from private sources), according to a design contributed by Picasso. The man largely responsible for getting the artist to give his work and for raising the money to build it was William Hartmann, a partner in the Chicago office of Skidmore, Owings & Merrill.

Despite their undisputed history of innovation, neither Chicago nor Picasso seems to have gone out on a limb this time. The city could hardly have found a living artist with a more solid reputation; and the artist (more fanciful conjecture notwithstanding) seems to have based the work on sketches of a woman dating from the late 1920s.

Perhaps the most exuberant praise of the work came from President Johnson, who told the city in a congratulatory telegram, "You have demonstrated once again that Chicago is a city second to none." Well, at any rate, it is the biggest city in the country with a Democratic mayor. Though obviously less enthusiastic, Mayor Daley could hardly spoil such a consensus.

AUTO LAND

ROAD SHOW

The American Association of State Highway Officials, not one to be left by the wayside, is already at work pressing Congress for a vastly increased interstate highway program when the present one expires. The present program will have spent about \$46.8 billion between 1956 and 1974 (which comes to about \$400 per private car manufactured in the U.S. during that period); and now the association is asking for \$78 billion for the ten-year period following.

Charging that the new Department of Transportation will probably ignore state highway officials, or at least keep them out of policy planning, AASHO has bypassed the department and presented its recommendations directly to Public Works Committees in the House and Senate. From data assembled by state highway departments, AASHO has documented for Congress "the indisputable need for a continuing Federal-aid highway program of considerable magnitude."

AASHO gives lip service to a coordinated transportation system. But then: "We feel that in the United States, the transportation agencies must furnish transportation in line with the public's desires, instead of imposing some transportation system on the public that would require their regimentation and realinement of their travel habits and some system that someone thinks might be better for the public or more efficient in the long run." (AASHO has embarked on a \$285,000 research project, to be completed early in 1968, to determine the public's transportation preferences. Don't look for any surprises on this one.)

Final recommendations will be submitted to Congress in 1969. By 1969, the \$78 billion figure will certainly have been increased, since the preliminary report is based on 1966 construction costs.

CLEARING THE (GASPI) AIR

During the summer, the Senate passed and sent to the House a bill that would give the Secretary of Health, Education, and Welfare power to bring commerce and transportation to a virtual halt in case of an "air pollution emergency" anywhere in the country. Along with this power would

(continued on page 89)

MINIATURE MEGA- STRUCTURE





**Principles that shape
Kenzo Tange's Yamanashi
Communications Center
are relevant to similar
problems at city scale**

BY VICTOR C. MAHLER

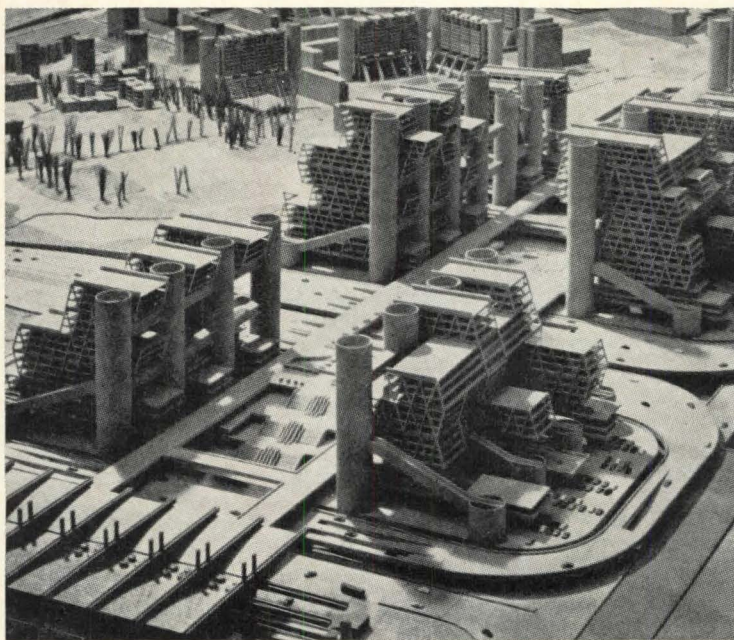
Tange's newest work is without doubt the most far-reaching, comprehensive, and original design for a publishing and broadcasting organization produced anywhere in the last 40 years. The Yamanashi Communications Center is not only a great step forward for its type, but also a harbinger of megastructures to come, pointing to immense structures in the future as the solution to large, complex, and changing programs (see Tange's model for the Yugoslav town of Skopje, below).

As a newspaper building alone, it is far more successful than anything inhabited by the 20 largest papers in North America, all of which function in outmoded, cramped, and inflexible quarters. Even those making large additions have simply extended concepts inherited from the turn of the century.

Today the printing and communications industries are undergoing revolutionary change. The field is on the threshold of automation, and there are exciting possibilities in the new duplicating techniques, rapid color printing, and instantaneous global and space communications. The large publishing empires are continuously in flux, and although the Yamanashi organization is small, the same patterns apply. Growth or change in any department can often be unpredictable and sudden.

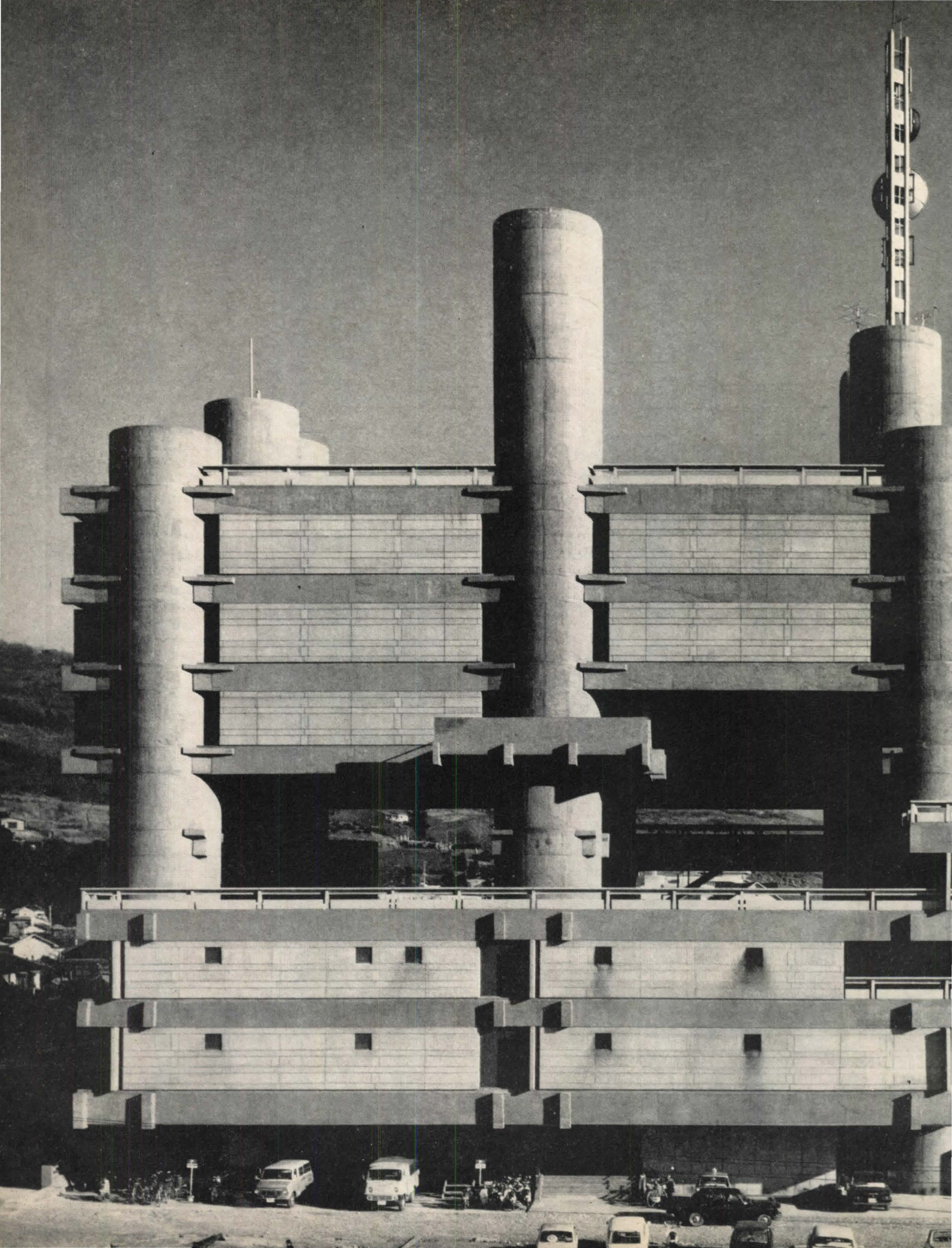
The program can thus be expected to change throughout the life of the building, calling for space that is flexible well beyond former limits. A further complication in programming is the likelihood of conflicting interests among the strong personalities heading the various departments of such an enterprise; planning is certain to be intricate and difficult. Yet Tange and his colleagues—a group of architects called the Urtec Team (for urban technology)—have achieved a brilliantly clear result.

Mr. Mahler is an architect with I. M. Pei & Partners, where he is currently a project architect for the new Washington Post complex. He has an M. Arch. from Harvard Graduate School of Design, and has traveled widely in Japan and the Far East.



Set against the panorama of the Japan Alps, the Yamanashi Communications Center is one of two focal points in the wine-growing, manufacturing, and trading town of Kofu, the other being the remains of a 17th-century castle. Kofu, southwest of Tokyo and seat of the prefecture of Yamanashi, sits in a bowl dominated by hills, on the eastern watershed of

the ridge that forms the backbone of Japan. The resemblance between the Yamanashi building (left) and Tange's proposal (above) for the reconstruction of Skopje is more than a coincidence; the shafts or dispersed cores that make for utmost flexibility and organic growth in the self-contained building, operate in the same way at city scale.



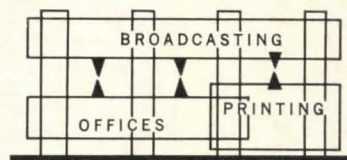
**The four zoned blocks
are supported on only 16
hollow concrete shafts**

The architects have divided the organization into four zoned blocks, allowing for internal circulation of people, materials, information, etc., while allowing great flexibility in function and size of space. Growth or change anywhere can be accommodated either by moving partitions, or by adding whole or partial floors in the voids between blocks. In addition, rental areas serve as buffers for expansion.

The zoned blocks making up the building are clearly indicated on the exterior—an office block on one side, a printing block on the other, a TV-production block spanning above them, and a ground-floor zone moving people and materials in and out.

To support the four zones, the architects have used a pattern of 16 round shafts which carry all vertical services including elevators, stairs, heating, ventilation, piping, and wiring. The structure has been organized as a long-span grid so that no columns occur in the building except for these hollow cores (of 8 ft. outside radius). By giving each core an individual function, the architects have built a three-dimensional grid that supports the spaces, distributes services, and protects against earthquake shock. On the exterior of the shafts can be seen seats for future beam connections so that additional floor space can be added later. Special design of the cores, with very sophisticated reinforcing and an interior stepped ring beam, allows attachment of beams to the hollow cylindrical cores while resisting earthquake shock and preventing the collapse of the cylinders. Concrete is bush-hammered inside and out, and either glass or panels of precast concrete occur along the exterior as required.

The dispersed structural core idea is an exciting step taken by Tange. He has dispensed with the central core commonly used in office buildings and has pointed the way to much longer spans and larger structures that can have a sort of Tinker Toy flexibility during their lifetimes. The Yamanashi building is a stage in the development of a new spatial city.



The beam ends (some of which are seats for future beams) are expressed on the exterior as though a reminder of wood construction of the past. Tange and others in Japan do this frequently with concrete, and although structurally unnecessary, it breaks the monotony of a continuing horizontal span and gives scale much as the Greeks did when they translated wooden structural elements into stone. The play of surface stops where the cores appear on the upper floors. From the outside you know what to expect inside. Similarly, the functional layout, as seen in the diagram above, is immediately expressed in the building's massing. Zoning is clearly shown on the exterior.

The largest and most important interior spaces are the three-story main lobby, the press room, and the main TV-broadcasting studio. These and the newsroom and production areas take full advantage of the large column-free spaces.

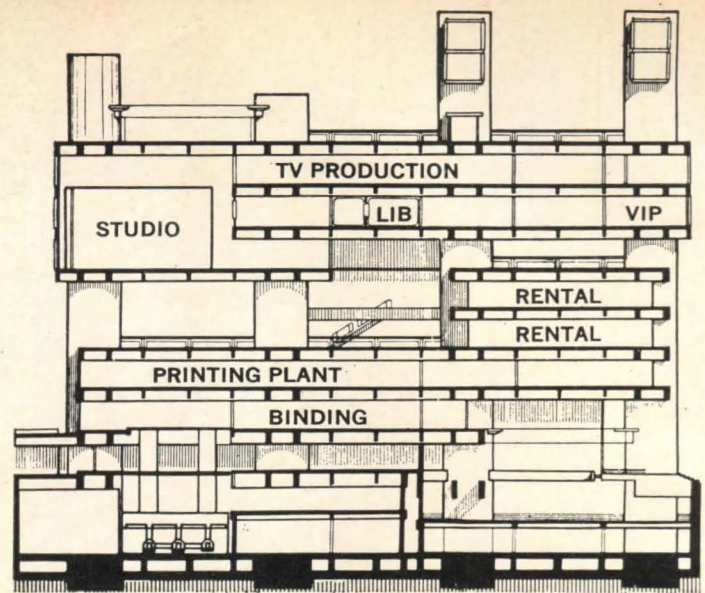
Clear span between the concrete cores is 42 ft. 6 in., with a 10 ft. 7½ in. module used throughout in plan. The floor-to-floor heights are 11 ft. 9 in., except at the TV-broadcasting levels where they are 12 ft. 9½ in. Structural floor depth is 3 ft. 8½ in. The two closely spaced rows of shafts along the center-line of the building increase resistance to earthquake shock along the east-west axis. A double foundation slab allows easy access to pipes and wiring going to the cores, and ties the structure together.

Of the 16 shafts, three are for stairs, four are for elevators (two passenger and two freight), three are for toilets and plumbing stacks, and the remaining six are for air conditioning equipment. The combination and arrangement of these cores was considered especially vital in establishing energy and information contacts among the four functional blocks.

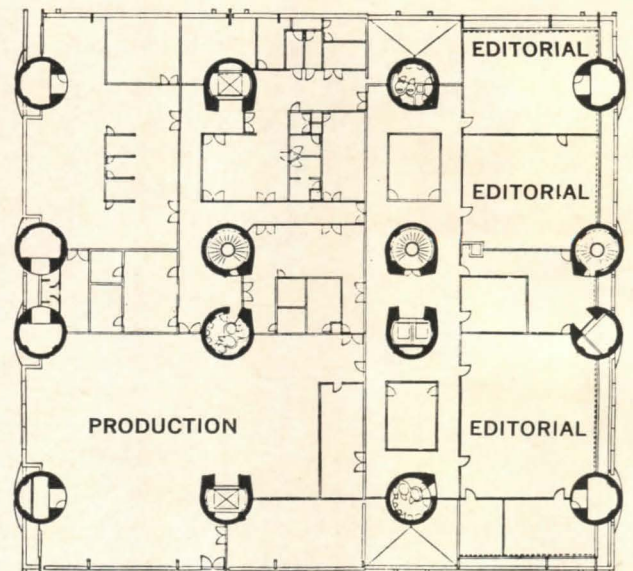
Although the building primarily houses an institution of private enterprises, it can be considered a public building, too, with space available for a variety of social and cultural functions. This center at Kofu is intended to be an integral part of all levels of Japanese life, much as the temples and shrines were, in traditional Japanese religious and secular life.

It seems entirely reasonable for a communications enterprise to move in this direction. Information media are usually engaged in some direct public service, and the more effectively they are involved, the more successful in many ways their operations are likely to be. At the Kofu center, there is indoor and outdoor space for public meetings, poetry readings, festivals, etc. The Japanese name for this center, in fact—Bunka Kai Kan—means Cultural Meeting (or Doing Together) House.

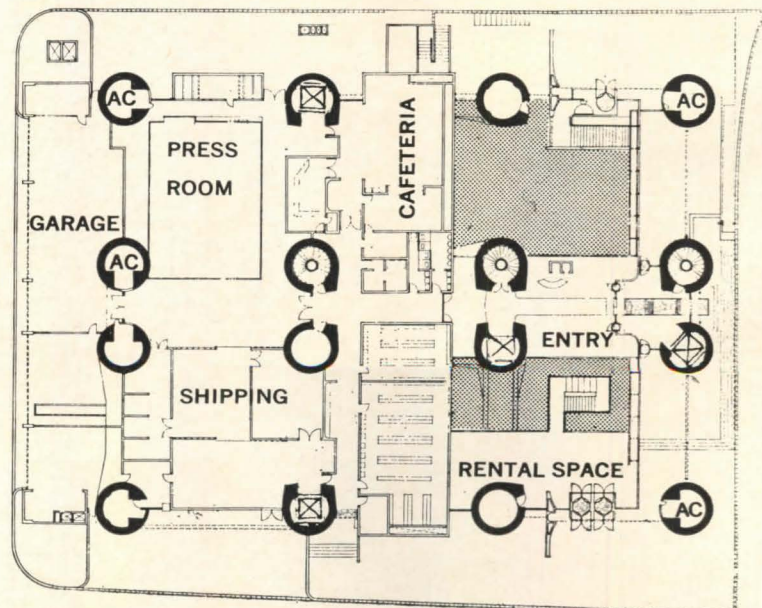
Communications functions are met in column-free spaces; and the community can use the building as a social-cultural center



SECTION



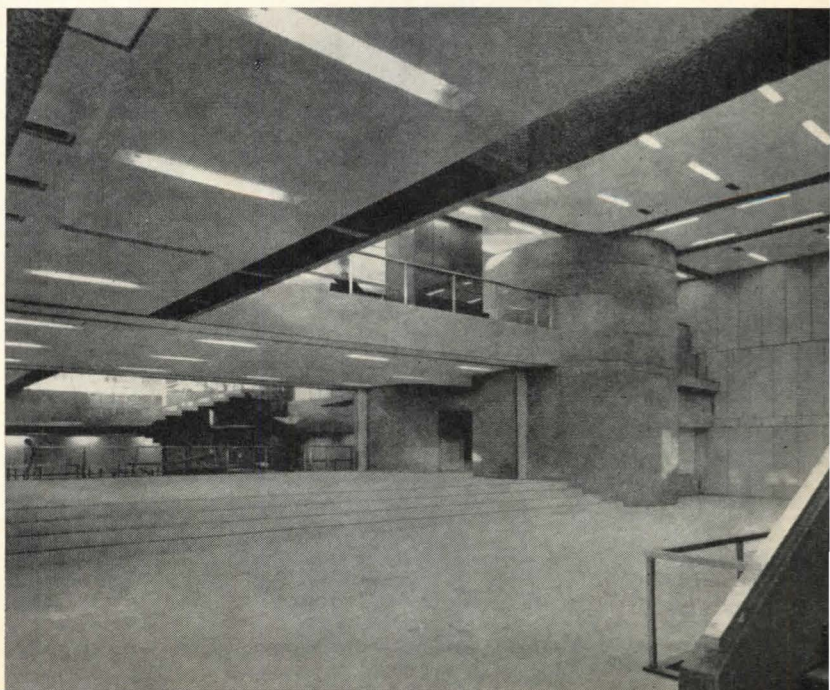
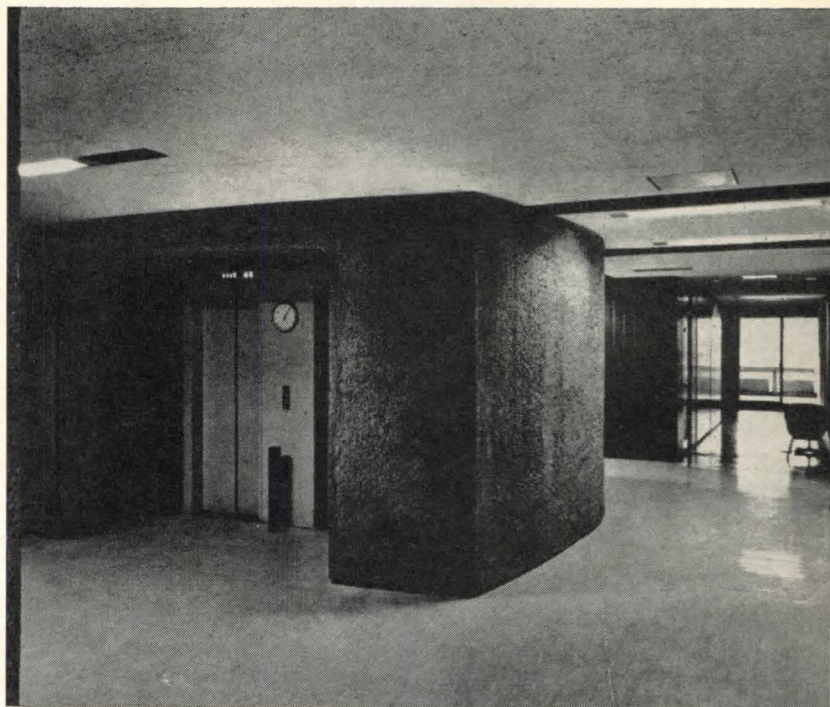
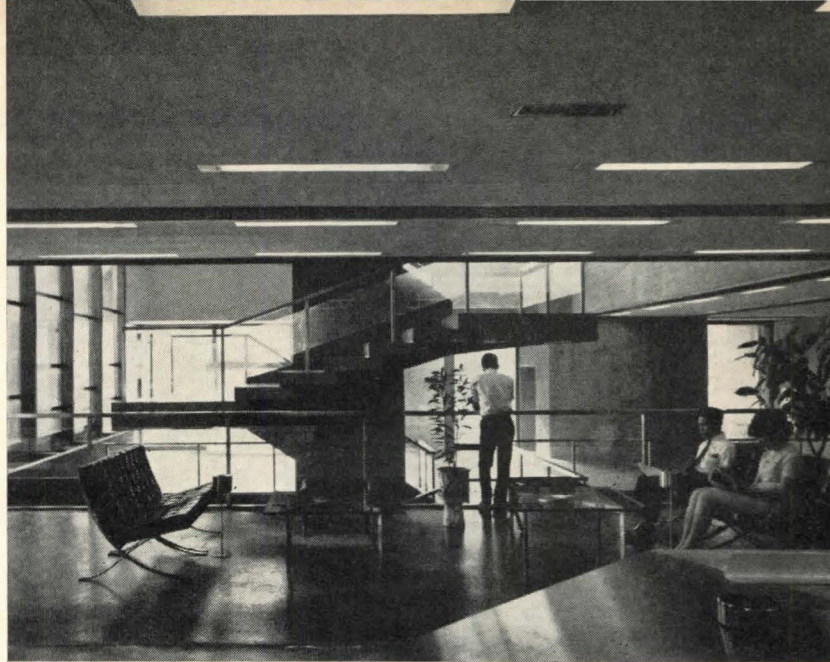
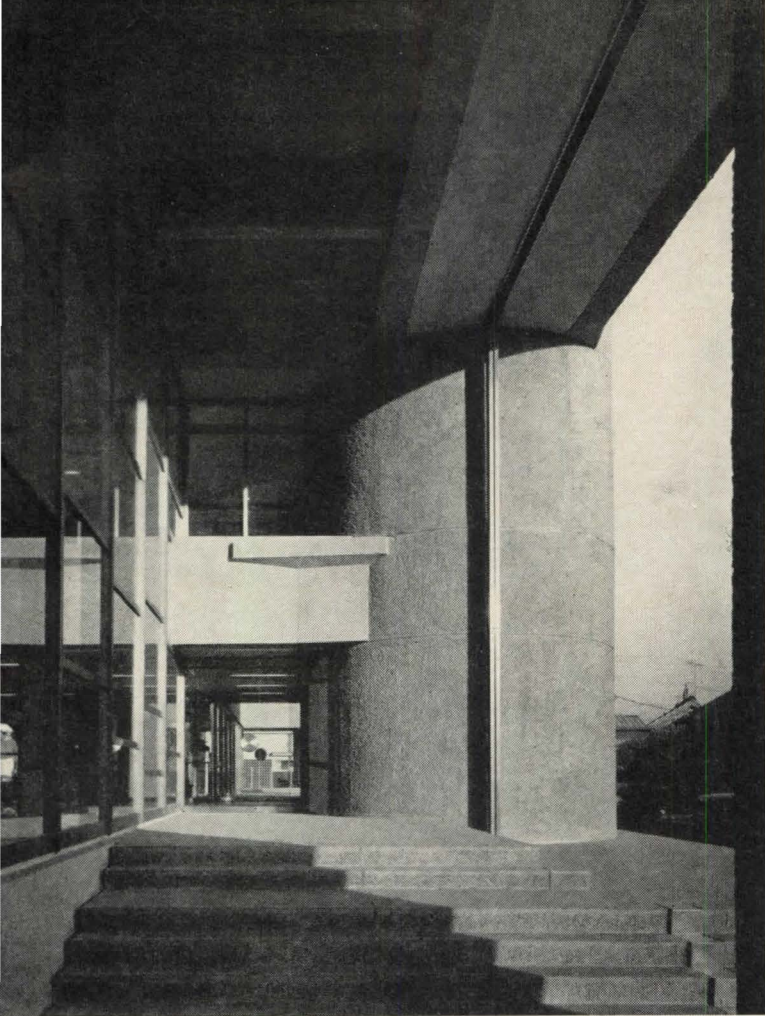
THIRD FLOOR



GROUND FLOOR

1	3
4	
2	5

1. Main entry. 2. Main stair, used to tie together offset levels in a sculptural way. 3. Stair and entry court from the side; lounge is used by newspaper offices. 4. One of the 16 structural shafts, this one housing an elevator. 5. The main entry court, used both by communications center and by tenants. The section (above) shows much open space at present. The increased initial cost of this kind of flexibility is balanced by substantial savings in the future. The design seems strong enough to carry itself even with the voids filled in, although Tange has expressed concern that the building may become too massive.



The Yamanashi organization has a long tradition of far-sighted pioneering in Japanese communications, and this new center carries pioneering into a new dimension. Yet the building is still rooted in tradition, as indeed many good, new buildings in Japan are a continuation of the Japanese tradition.

There is abundant evidence in Japan of large-scale civic undertakings that have been very successful artistically, executed under centralized organization. While broadcasting and publishing are products of modern Japan, there are parallel examples in history of complex, many-sided organizations, touching the politics, economics, and culture of a place, and seeking a strong symbolic statement from the best artists and artisans of the time. Best known to Westerners may be the Katsura Palace in Kyoto; other examples are Edo Castle in Tokyo, Nagoya Castle, and Himeji Castle near Kobe.

The particular success of this approach is not in the tradition of the single great genius, as in the West. If genius at all, it is genius at the service of the power enabling him to present his work in concrete form.

Beauty meant wealth and wealth meant power in Japan. They have always been interconnected. Japanese in the most powerful places have traditionally understood the meaning of quality. Art was never a by-product but an organic part of society, so that Japanese artisan-builders (there is no term for architect in Japanese) were well aware that their products had to have authoritative backing. The most successful buildings have, without exception, had institutional backing. Institutions that stood for an idea (Buddhism, for example, or the imperial household) deserved the most beautiful, expensive, and demanding works.

The Yamanashi building is thus doubly meaningful in a Japan emerging from the past. It advances the best traditions of the past, and it shows the respect for cultural undertakings in the Japanese mainstream of 20th-century consciousness.

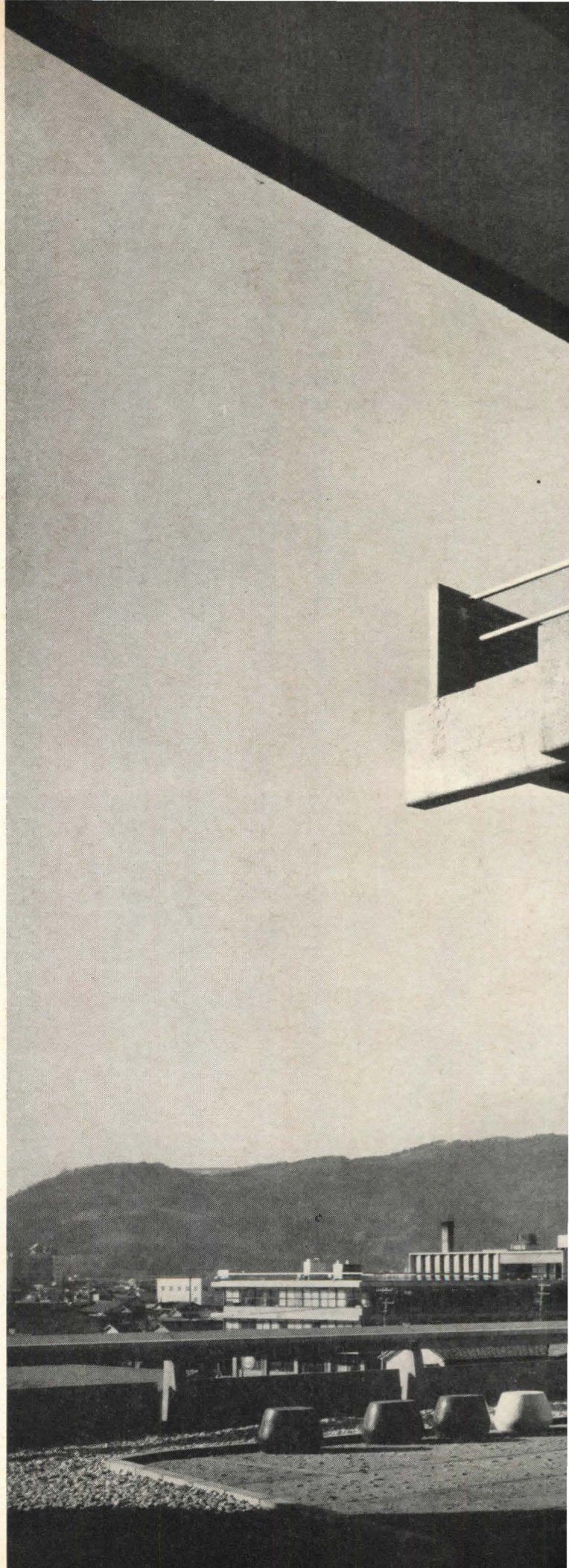
A building that looks to the future but is still firmly rooted in the traditions of the past

There is a feeling of openness and generosity that invites the beholder to enter and take part here. The open terraces halfway up the building have a park-like feeling, reminiscent of Le Corbusier's roof gardens at Marseilles and Chandigarh, except that here, in the middle of the building, they are more accessible to people and contribute more to the interest and drama of looking out over the city. They enrich the office spaces that look down on them, and offer spectacular vignettes and panoramas of the city and surrounding region, somewhat like the moon-viewing platforms of classical Japanese palaces, and like the effects by Tange in his city halls at Kurashiki and Takamatsu.

FACTS AND FIGURES

Yamanashi Communications Center, Kofu, Yamanashi, Japan. Architects: Kenzo Tange and the Urtec Team (Koji Kamiya, Koichiro Okamura, Kozo Yamamoto, Shiro Ejiri, Masamitsu Nagashima, Jiro Inazuka). Structural Engineers: Fugaku Yokoyama & Associates.

PHOTOGRAPHS: Osamu Mural, except page 38 and page 41, number 2, by Shigeo Okamoto.





NEW TOWN

Grand Isle is the first completely prefabricated mining town ever erected in the Gulf of Mexico

BY JOHN JOHANSEN

What an architect reacts to so strongly when he sees this mining operation is the direct way these engineers have gone about it. Their purpose is simple: to bring sulphur out from below the gulf floor; their methods are logical: to drill, put the sulphur in liquid state, then pump it to shore; their structures are specific and specialized: drilling platforms, power plant, dwelling units, and heliport, all connected by bridges. What of esthetic considerations? Happily, they have been ignored.

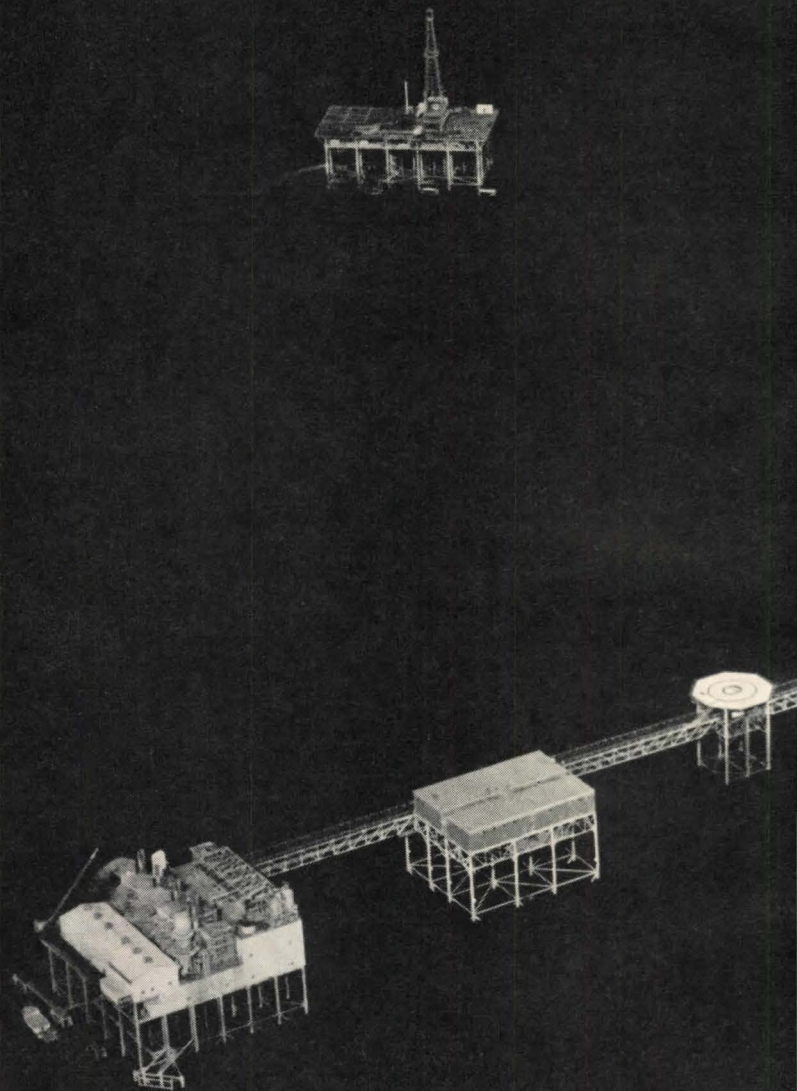
The island-mine shown here belongs to the Freeport Sulphur Company. It is called Grand Isle and was opened in 1966. Grand Isle produces over 1 million tons of sulphur per year from a deposit 1,600 ft. below the gulf floor. Freeport Sulphur is completing a second mine nearby, to be known as Caminada.

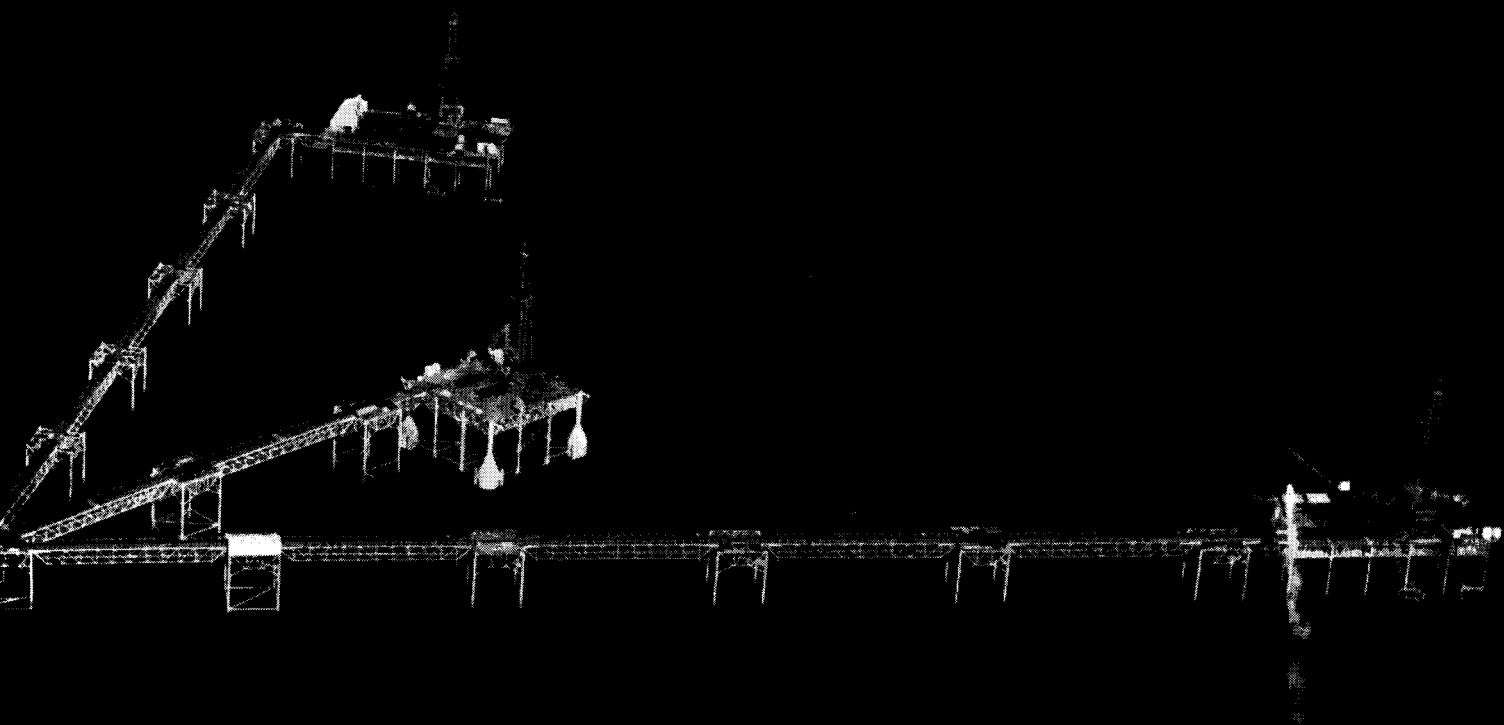
The islands lie six and nine miles off the Louisiana shore, respectively. Sulphur is much in demand on the world market today, and ingenious mining methods such as these are being developed wherever valuable deposits are found. The challenge here was to set up normal and comfortable working conditions for drillers and pumpers miles out in a gulf known for its severe hurricanes.

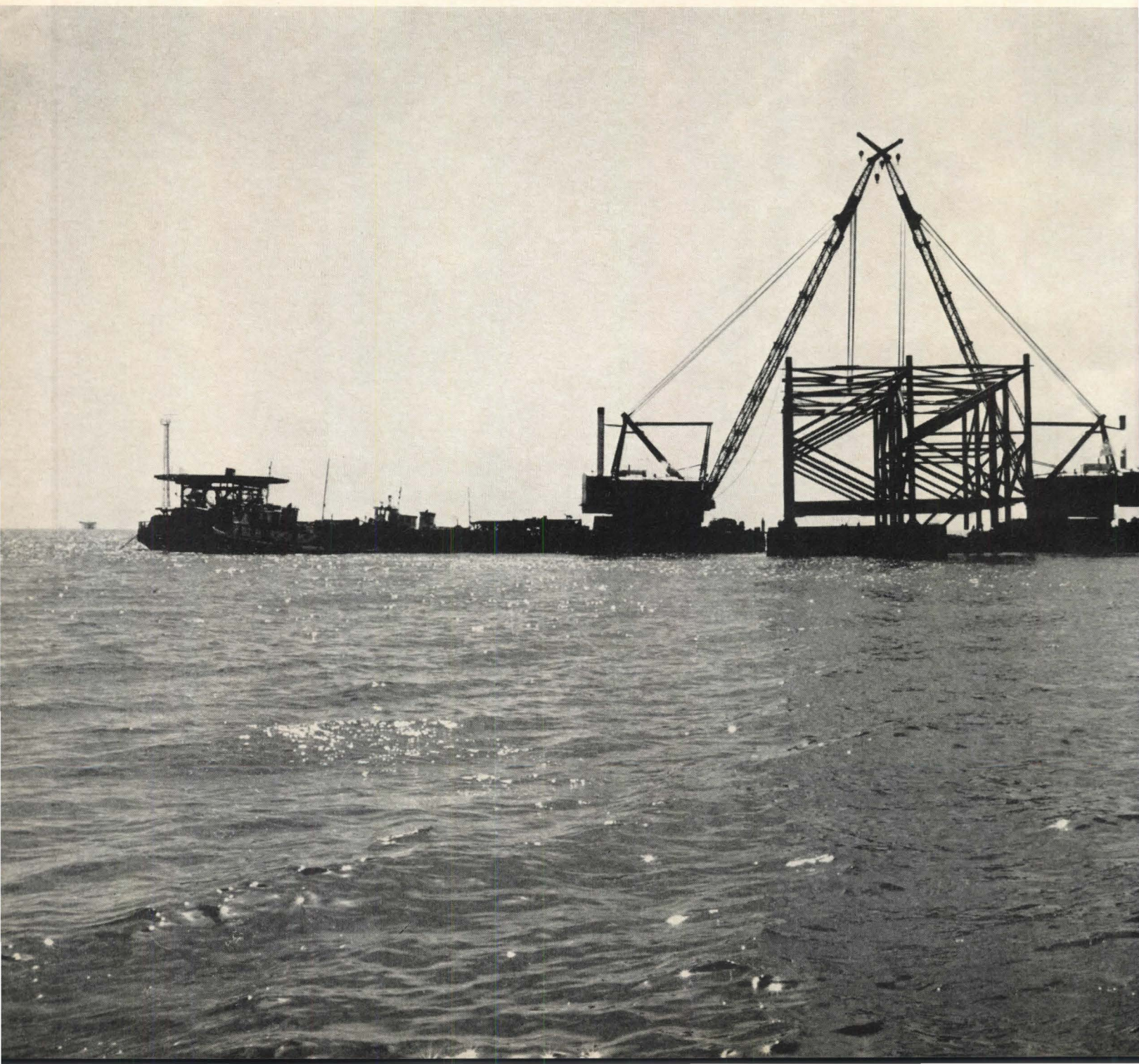
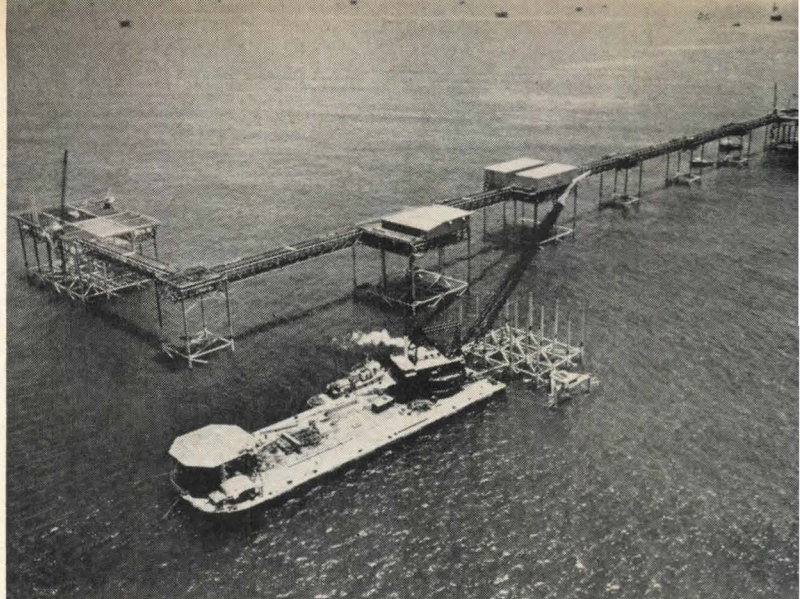
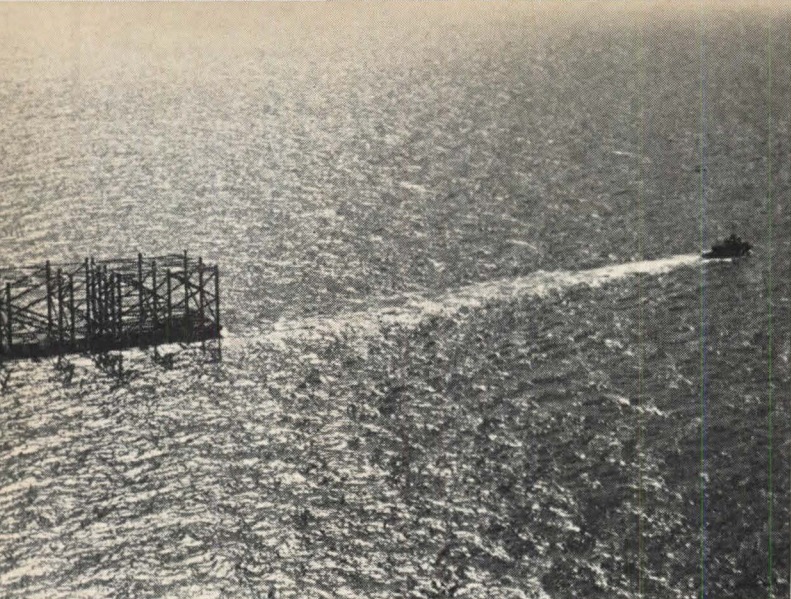
In contrast to open or surface mining, the so-called Frasch process employed here involves the drilling of wells into the sulphur-bearing strata. It also requires heated water to be forced down in pipes to melt the sulphur in its limestone bed, and then pumping this ore to the level of the gulf floor in molten form by means of compressed air.

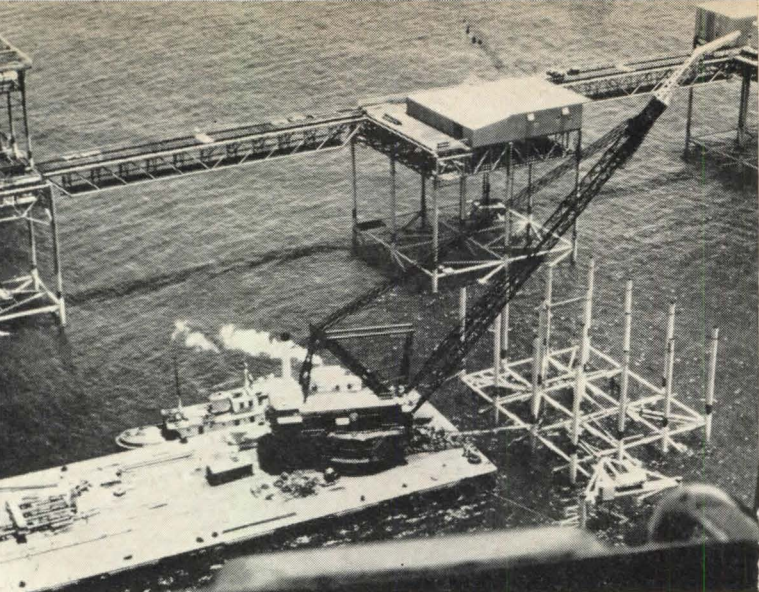
Next, the ore is pumped to the shore at 250° or more, through a heated, insulated pipe line trenched into the floor of the gulf. Super-heated (350°) water is produced by the steam plant, which also generates compressed air and electricity. The plant is visible at far left in the aerial view shown.

Mr. Johansen, the architect whose theater in Baltimore's Charles Center appeared in our May '67 issue, was asked by us to fly down to the Gulf of Mexico last month. He did, and this story describes what he saw.

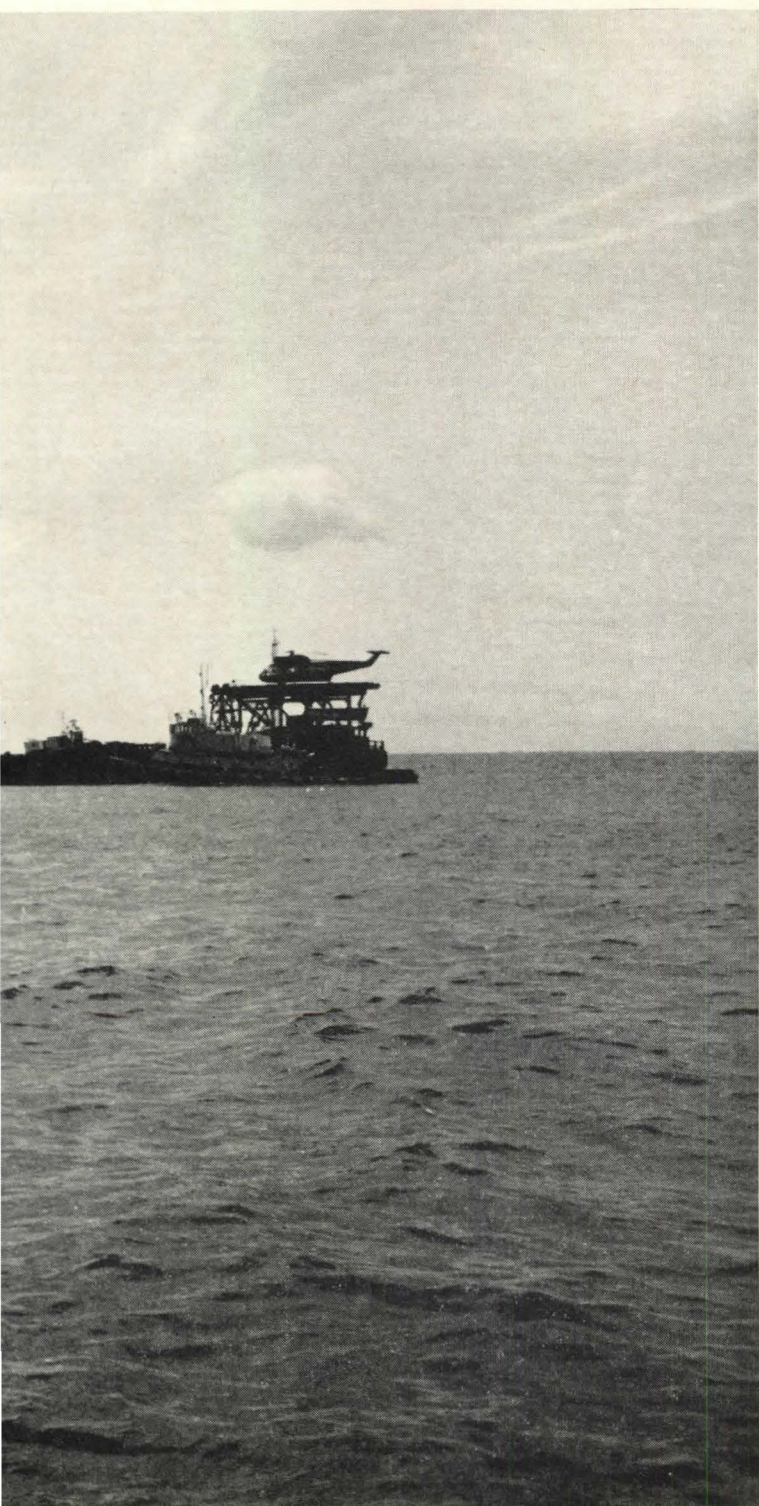








A second town, Caminada, is being floated out to sea and rapidly assembled on its site in the Gulf



Photos show prefabricated sections of the new Caminada mine being towed out to sea from the prefabbing plant in Morgan City, La. Big towers will support major structures; smaller, four-legged towers will form intermediate supports for 200-ft.-long bridges. Once a platform is erected, it serves as a base on which specific structures are placed.

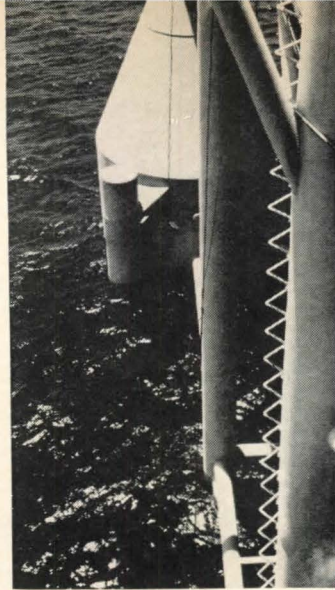
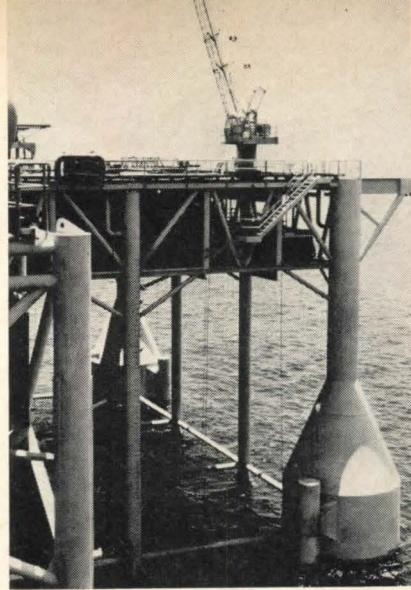
To carry on these mining processes, it was necessary to simulate all usual and normal mechanical and environmental conditions that would exist on land. "Islands" at the new Caminada mine provide the working platforms to erect the structures: islands and bridges using 7,000 tons of steel, with 90 legs; each leg 300 ft. long and of 30 in. diameter pipe embedded 200 ft. into the gulf floor. Pipe was selected for all structural members rather than flanged sections, because of easier anticorrosion painting, and less resistance to wind and water.

Because working conditions are far easier on land, the "islands" of Caminada were prefabricated in Morgan City, La., and are being floated out to sea, at this moment, on an armada of 16 barges. (One shudders to think of what might happen to this armada if piracy were still rampant on the high seas.)

When the armada reaches its destination, the prefabricated sections are lifted onto steel piles by two huge 250-ton derrick barges. One tower supports each island or bridge, and each tower is a multilegged unit, 50 ft. square, rising 75 ft. above the water surface. The towers are fabricated in 14 days, erected in seven. Bridges, 200 ft. long are prefabricated in 21 days *and erected in 30 minutes.*

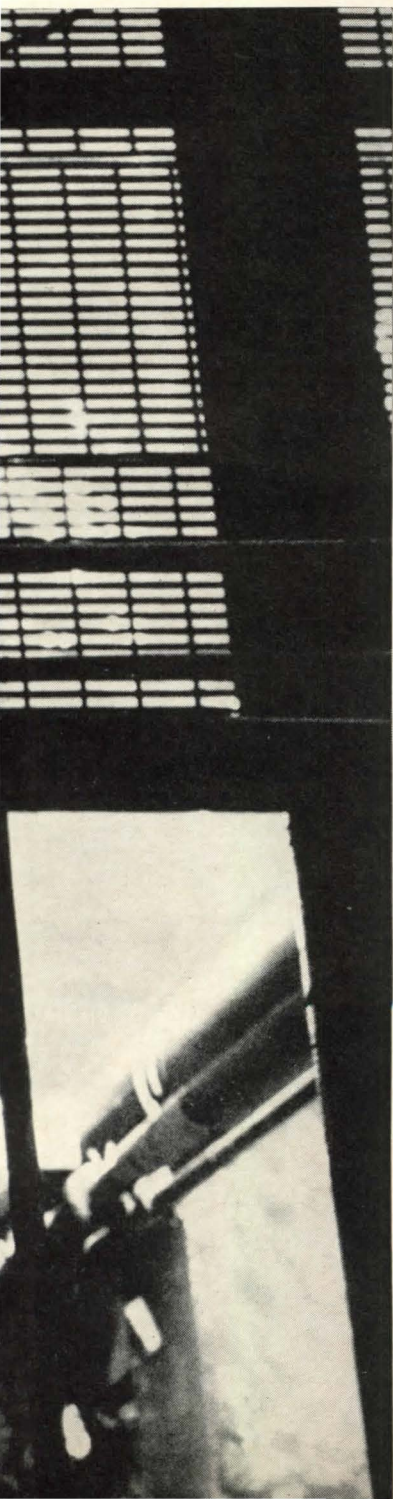
To withstand hurricanes (Grand Isle successfully withstood "Betsy"), these islands were designed to take winds of over 160 mph, and waves over 60 ft. high. The steel is corrosion-proofed.

It is on these "islands," then, that the various components necessary to the mining process are placed: the power plant producing steam, electricity, and compressed air is one; the drilling platforms support towers and pumps and have a production deck beneath. Another island supports the living quarters for a crew of roughly 120 men — dormitories, dining rooms, kitchen, recreation rooms, and offices, swung into place completely furnished and equipped. A circular pad, painted like a target, serves as a heliport.





**Grand Isle, the first
of the two mining towns,
is detailed to solve
clearly stated functions**



Closeup views of Grand Isle show (top row) the central heliport, the special, adjustable drilling platform which was added later in the form of the "Y," a typical stair connecting different decks, and (at left) a view down through typical steel grating used for floors of working platforms.

The message of these islands to the architectural profession is again, as so often before, the success of a program clearly stated, and the direct simple design to accommodate it, without architectural pretensions or self-conscious posing.

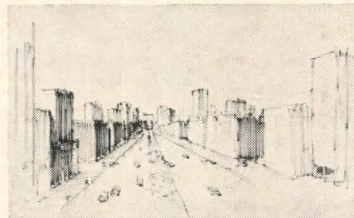
The forms of these island-clusters evolve: they happen! They are unashamed, sometimes impudent revelations of themselves and what they do. The detailing, which is a form of slang or jargon, rather than eloquence, is direct and forceful; a refreshing sight at a time when architects, in general, are saying so little, so beautifully.

The established architect feels already corrupted or over-conditioned and no longer able to accommodate needs so simply. These structures are highly advanced technically, yet they have the simplicity of peasant art. The mistaken thought is, of course, to imitate them. For the value of their message is their faithfulness to an organizing idea: that of components selected to perform specific functions, supported and flexibly connected. Inherent also in this organizing idea is growth, adaptation, dismemberment, and death.

Space saving was, naturally, a major concern in the design of an offshore mining operation. Grand Isle is noticeably more compacted than the earlier shore or swamp mines. The new Caminada mine will have an equal capacity power plant occupying only one-half the space—dwelling quarters compacted into two stories, and drilling platforms one-fifth the size of Grand Isle's, with two towers each.

Communications are maintained with the company's office in New Orleans by means of an elaborate microwave network. Crews put in an average four-day week and are flown to their families for three to five day rests on the mainland by two ten-passenger helicopters. Some of the men own small plantations, others fishing fleets. Sociologically, this may offer us a look into the future when, it is predicted, greater leisure time will allow for the pursuit of one's personal fulfillment.

These structures suggest ways of dealing with other problems with which the architectural profession is faced, possibly those of urbanism: the structures may well lend themselves to concepts of a new urban grid. Certainly the scale is comparable. Prefabrication of towers, bridges, superstructures is more appropriate than the on-site erection methods presently used in busy cities where short construction time is so important in terms of economy. The city must continually renew itself, new tissue for old. The legged platform or tower, perhaps, will rise as easily above existing and still occupied city buildings as they

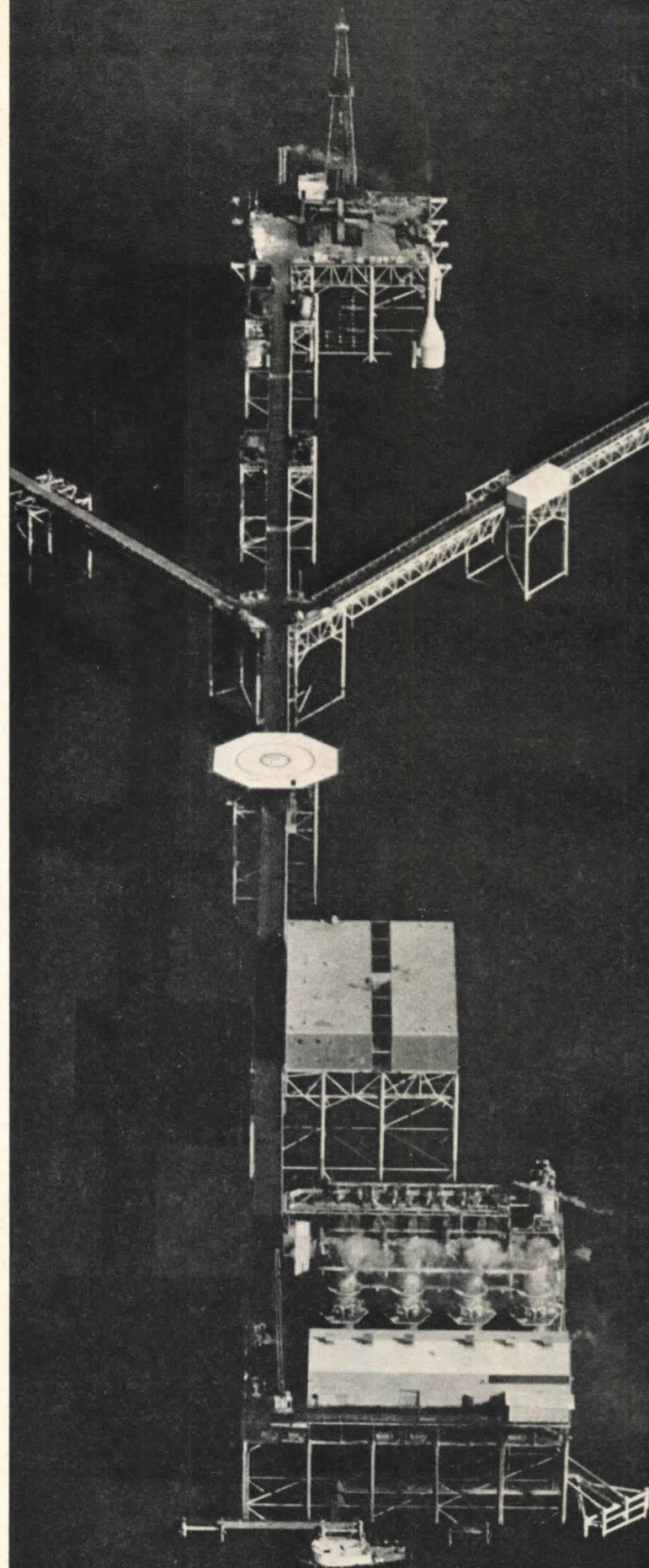


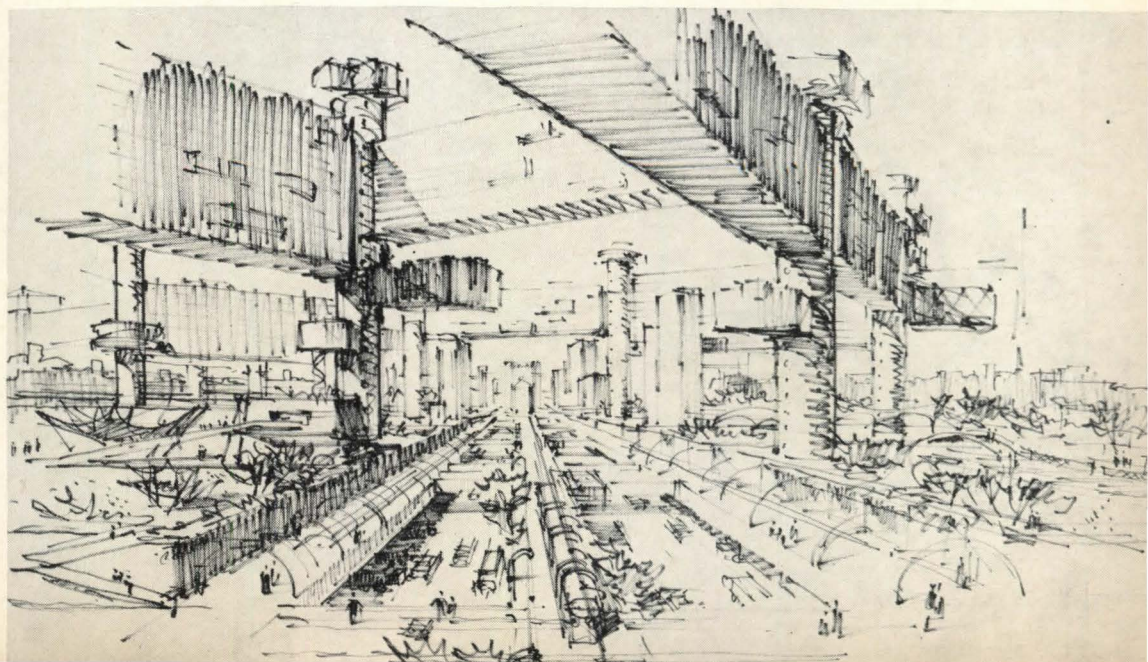
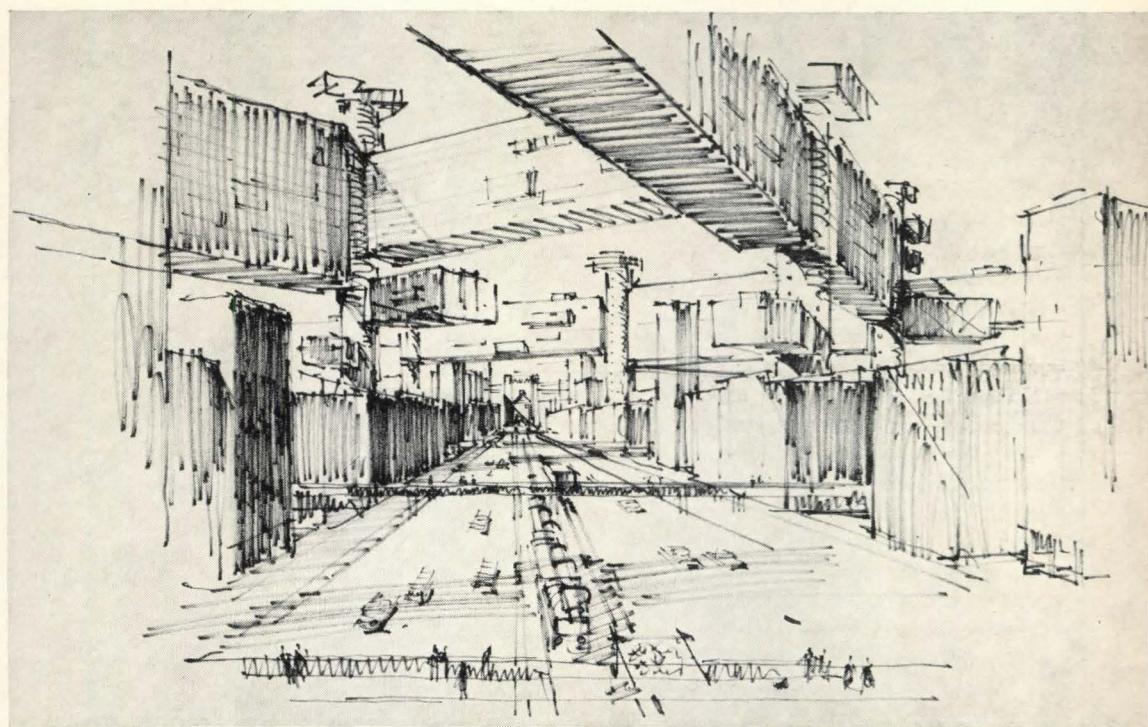
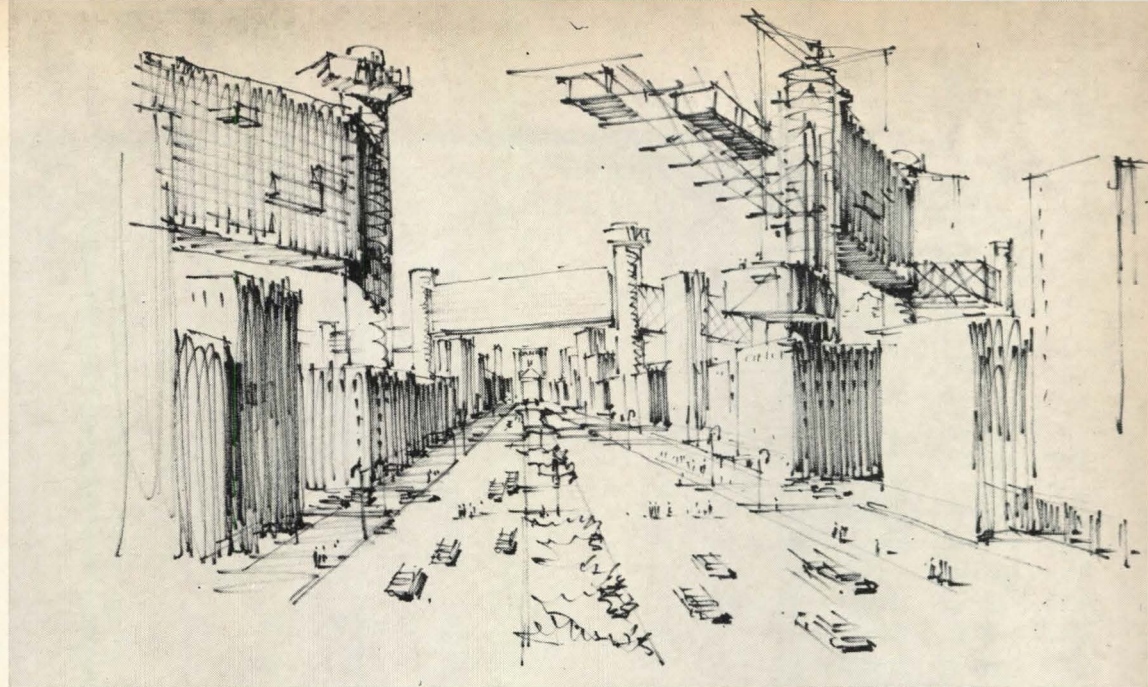
rise above water. My proposal of a new structural fabric for New York, "Leapfrog City," (applied to Park Avenue, above and right) illustrates one application of such a system. If we are to double the extent of our cities in the next 40 years, a concept, an organizing idea, a solution as direct as this one, making complete use of air-rights and disregarding the existing street patterns, must be found. It may be a framework, severe in appearance, yet supporting any and all functional components of a city, which in themselves may be intensely human and personal; a concept or organization so positive that additions, removals, permutations, growth, and rebirth may be life-generated, not, as at present, just tastefully composed. The esthetic—and indeed there will be one—will be in the organizing idea, and this esthetic will delight in the unpredictability of change.

The change and growth of nearly all towns and cities in history have been prompted by some activity or purpose: commerce, defense, administration, or religious convocation. Each has had its distinct evolving form, and is "true," to the degree it expresses those conditions which prompted its growth.

The principles that shaped Grand Isle and Caminada suggest radically new ways of restructuring cities

Left: aerial view of Grand Isle, with power plant in foreground, dormitory building behind it, heliport in the center, and drilling platforms in the distance. Drawings at right illustrate, step by step, Johansen's 1966 proposal for a radical system of renewing New York City's grid: towers would be erected in middle of blocks, behind present Park Avenue buildings, then connected diagonally with prefabricated bridge-structures containing offices, apartments, etc., built over air-rights. Eventually (bottom, right), old buildings would be removed entirely. Note similarity of proposal to Tange's Yamanashi and Skopje schemes, page 37.





This island cluster, with its connecting elements, is contrived and designed as a living, growing, permutating organism—as a multicentrist, multilegged organism. Sprawled out over the water, Caminada (right) will be half a mile long. Grand Isle is nearly one mile long. When seen from the helicopter these two installations resemble giant water bugs, or monstrous insects of the sort that have terrified us in horror movies.

The 200-ft. long bridges join these component islands. Flexible bearings at the ends of each bridge will allow for differential settlement. Drilling towers can be relocated, or new ones can be added, if other areas of the ore deposit are to be tapped.

The tower platforms support their own working cranes, while the bridges support a continual flow of small electric driven trucks. So these organisms are very much alive. They feed on fresh water and natural gas; they generate electricity and super-heated water, and excrete wastes through their own sewage treatment plants and incinerators.

Freeport's Grand Isle and Caminada are indeed small towns; their purpose is mining, their functions and accommodations are for mining, and their expression is mining. In this sense, these two islands, by revealing themselves truly, speak something important, I believe, to the architectural profession.

FACTS AND FIGURES

Grand Isle mine—7 miles off the Louisiana Coast in the Gulf of Mexico. (Caminada mine is under construction). Owner: Freeport Sulphur Co. Engineers: Freeport Sulphur Co. Engineering Department. Consultants: W.S. Nelson Engineers (design of facilities); A.H. Glenn Associates (wave forces); Eustis Engineering Co. (soils investigations); Brown and Root Engineers (construction feasibility); Gulf Consultants (oceanographic consultants); Sargent and Lundy (power plant design review); J. Ray McDermott (construction lifts and fabrication); Moran Towing and Transportation (feasibility reports-water transportation). Cost: \$33 million.

PHOTOGRAPHS: Pages 44-45, 50: Industrial Photography, Inc. Page 53: Life Photo by A. Y. Owen.

Caminada, almost complete, is more compact, farther-out technologically, than the earlier Grand Isle

The organization of these islands permits addition and subtraction of tentacles, platforms, and structures as requirements change. This view of the new Caminada mining town in the process of assembly shows basic structural elements, dormitory building, and heliport already in place.





CONGRESS AND THE CRISIS IN OUR CITIES

Congress continues to be complacent about our urban problems, but a few legislators have adopted a sense of urgency and inspired hope that a change may be forthcoming

"Congress," observed St. Louis' Mayor A. J. Cervantes last month "is losing touch with urban America."

Cervantes was being overly optimistic. This summer's urban explosions have made it glaringly obvious that Congress has never really been in touch with the cities—neither fully aware of the enormity of their problems nor of the horrible consequences inherent in these problems.

Negro Psychologist Dr. Kenneth B. Clark has given some thought to what these consequences might be. "If we intend to preserve the injustices that afflict both white and black," he observed in a recent interview with the *St. Louis Post-Dispatch*, "we must be prepared to use military force to maintain order. This means racial compounds that actually and psychologically are concentration camps."

What is needed, said Dr. Clark, is a massive urban program—something like the urban "Marshall Plan" that Vice-President Hubert Humphrey (speaking, apparently, for himself, not for the President) and others have been advocating. But Dr. Clark holds out little hope that Congress will even come close to carving out a program of the size needed, which he thinks would "cost no more than the war in Vietnam" (now running at an estimated \$28 billion a year). "I'm afraid we're going right back to trying to treat the problem with gimmicks, the way we always have," he warned.

As of mid-August, Congress was weighing more than 40 different pieces of urban legislation—many of them gimmicks, none of them, not even collectively, remotely analagous to an urban Marshall Plan. Among them were the inevitable emergency programs hastily produced after Newark and Detroit: a bill by Senator Thruston B. Morton (Rep., Ky.) to let the President

spend 10 per cent of all funds authorized for urban programs however he sees fit; and a bill introduced jointly by Senators Charles H. Percy (Rep., Ill.) and Abraham Ribicoff (Dem., Conn.) that would authorize the President to divert 2 per cent of the entire nondefense budget for use in the cities.

But some of the proposals embodied promising long-range attacks on pieces of our urban problems, and went far beyond anything the Administration had come up with this year (the rat bill was its only innovation). They offer Congress real opportunities to redeem at least some of the past sins against our cities and their people.

1 A pair of measures by Robert Kennedy would operate together to alleviate two slum conditions: unemployment and poor housing.

The most publicized of these are two companion bills introduced (pre-Newark) by Senator Robert F. Kennedy (Dem., N.Y.). In Kennedy's words, they are designed to "engage the resources, talents, and energies of American private enterprise" in producing better housing and more jobs in the slums.

Kennedy's housing bill, in its initial phase, would produce some 400,000 units of new or rehabilitated rental housing in poverty areas by offering a system of tax incentives that would give builders and other businessmen a return of 13 to 15 per cent on their investments. Thus, for the first time, the business of rebuilding the slums would become, on a large scale, an attractive and lucrative field for the private sector.

The initial owner of a project (which must include at least 100 units) would receive a tax credit ranging from 3 per cent for a

minimum equity investment of 20 per cent, to a 22 per cent credit on a 100 per cent equity. He would also receive an accelerated depreciation allowance, depending again on his equity investment. With a 20 per cent equity, the owner could depreciate the project over a period of 20 years; with 100 per cent, the progressive scale would permit a ten-year depreciation.

Kennedy's housing bill sets a goal of 400,000 low-cost units—but not low enough to reach the millions who are at the bottom of the scale.

To lower the cost of the projects, and thus bring down the rents for the tenants, the bill would employ extended low-interest mortgage loans of 2 per cent over 50 years, plus a provision requiring cities to lower their property taxes on projects built under the program to a maximum of 5 per cent of total rents. A Federal tax abatement fund of \$30 million would be set up to reimburse the city for 50 per cent of its tax loss, and to match, dollar for dollar, any contributions the state would make toward the other 50 per cent. Thus, with state aid of only 25 per cent, a city could be totally reimbursed.

To administer the program, the bill would set up a new Low-Income Housing Administration within HUD, keeping it out of the hands of the FHA, whose preoccupation with middle-class housing makes it, in Kennedy's words, "neither appropriate nor effective" in administering programs for the poor. "A small, active, new organization within HUD," says Kennedy, "will allow the different problems each to be handled in a manner appropriate to the housing being constructed."

Kennedy claims his bill "would

produce the needed new housing at the lowest possible cost to the government." The initial volume of 400,000 units calls for a Federal expenditure of about \$50 million a year to cover all the costs of the program. "Moreover," says Kennedy, "much of the direct dollar cost will be offset by increased Federal tax collections on increased construction activity."

For all its innovations, the Kennedy bill will not begin to reach the nation's seven million families whose incomes are less than \$3,200 a year. Tenants living in Kennedy-plan units costing, say, \$12,500 to build or rehabilitate, would have to pay a monthly rent of about \$86. Based on the standard that families should pay no more than 20 per cent of their income for rent, this would work out to a needed annual income of \$5,160.

Kennedy's job program, like his housing bill, would offer tax incentives to entice private enterprise into the poverty areas of cities.

The problems of impoverished citizens are, however, directly dealt with in Kennedy's second bill. It, too, takes measures to attract private enterprise into the slums, but for the purpose of creating new jobs and incomes for slum dwellers. It would offer a system of tax incentives to businesses willing to locate their plants in poverty areas.

Under the plan, a business willing to participate in the program would agree to create at least 50 new jobs; to fill at least two-thirds of these jobs with residents of the area or other unemployed persons; and to continue its investment for at least ten years. In return, the business would receive no less than six different tax benefits: an increase in the normal 7 per cent

investment credit on machinery to 10 per cent; a 7 per cent credit on the cost of building a plant or leasing space; a rapid depreciation (two-thirds of normal life) for the total cost of the building and of the machinery and equipment; a deduction of 125 per cent of the salaries it pays over a period of ten years to employees it hires from the slums; either a carryback on all these credits for three taxable years or a carryover for ten taxable years.

These incentives would not apply to relocating businesses, only to companies that agree to build new plants or expand existing ones in the slums. Nor does it apply to retailers or other businesses that would compete directly with local firms. Qualified businesses would have to hire "a significant number" of unskilled or semiskilled workers and train them—or have them trained by a local agency—to fill specific jobs. The bill calls for a \$20 million Federal appropriation to reimburse businesses for their training costs.

Significantly, Kennedy's job program places most of the responsibility on the cities. It would be they, not the Federal Government, that would control the speed of the program and do the work of attracting companies. Washington would merely dispense the tax incentives.

Kennedy claims that the program would actually pay its own way, with no net revenue loss to the Federal Government. He figures it this way (using "very conservative assumptions" all around): Every \$1 million of private investment would create 50 new jobs representing an annual payroll of \$250,000. Not only would the Federal Government collect income taxes from these 50 new jobholders — it would also be able to remove them, and their families, from the welfare rolls.

In addition, for every two jobs created directly by the program, one new job would be created indirectly in the area. This would mean another 25 new jobs, and still more income tax revenue. Thus, for every \$1 million of private investment, says Kennedy, the Federal Government would dispense \$91,000 in tax savings to the businessmen and would get back at least \$115,000.

2 Charles Percy's home ownership plan has led to a rash of similar schemes from the other side of the political aisle.

While Kennedy's bills have received the most public attention, Congress itself has thus far given more serious scrutiny to a handful of bills that seek to encourage home ownership by less affluent families. Freshman Senator Percy started the trend several months ago when he put forth such a scheme (Jan./Feb. issue), calling it "a new Republican approach to meeting the challenge of our cities and their people." The plan was promptly embraced by all of Percy's Republican colleagues in the Senate.

Later, Democrats Ribicoff, Joseph Clark of Pennsylvania, and Walter F. Mondale of Minnesota all brought forth home-ownership programs of their own, as if in answer to Percy's bill. At this writing, in mid-August, the Senate Banking and Currency Subcommittee on Housing and Urban Affairs is reported to be disassembling all the home-ownership bills and putting their best features together into a single program.

The Percy bill, like Kennedy's, also seeks to lure private capital into the slums, though in an indirect way and with less profit. It would set

up a new semipublic agency, the National Home Ownership Foundation, capitalized by up to \$2 billion of taxable, guaranteed-return debentures bearing market rates of interest. The funds would be lent to nonprofit housing corporations to finance the construction of new or rehabilitated houses for low-income families, who would take out 30-year mortgages at $2\frac{1}{4}$ to 3 per cent.

Any private profit from Percy's scheme would go to the bondholders. It would amount to about $6\frac{1}{2}$ per cent, well below Kennedy's promise of up to 15 per cent. But Percy's bondholders would not, like Kennedy's investors, have to go into the slum housing business.

Percy's plan would also produce fewer units than Kennedy's. Assuming a cost of \$12,500 per unit, the most that could be financed by the \$2 billion fund would be about 165,000 units. And the average homeowner would be required to pay about \$100 per month in interest payments and other charges. This would require a yearly income of \$6,000—which places Percy's plan even higher above the reach of the rock-bottom poor than Kennedy's housing bill.

The Democrats who have introduced home ownership bills in the Senate don't go along with Percy in setting up a semipublic bureaucracy.

The bills offered by the three Democratic Senators are more or less variations on the Percy theme, though they would carry out their home-ownership programs within the wheels of existing Federal machinery. Mondale's bill would authorize FHA insurance of loans of up to \$12,250 for the purchase of ex-

isting single-family homes by low- or moderate-income families. HUD would subsidize the loans by paying mortgage lenders an annual sum large enough to reduce the interest amount to 3 per cent. To induce private lenders to make the loans, the bill authorizes FNMA to buy up to \$200 million in such mortgages. The program would aid families in the \$4,000 to \$6,000 income category.

Clark's bill would assist families in about the same range. It would lower the FHA mortgage insurance standard and, to offset the additional risk, would authorize a special FHA mortgage insurance program. HUD would be directed to give financial counseling to mortgage holders, whose payments could not exceed 25 per cent of their family income.

The Ribicoff bill is aimed at a slightly higher income range: \$5,000 to \$8,000. It would set up a flat 3 per cent rate for FHA-insured loans and would authorize FNMA to buy up to \$270 million in mortgages. Under the terms of the bill, a house selling for up to \$13,500 (\$15,000 in high cost areas) would require payments of about \$100 a month by the purchaser.

All four bills assume, of course, that home ownership is a Good Thing, on the ground that it promotes neighborhood stability by giving families a sense of pride in their communities, by encouraging them to take better care of their property, and by increasing their stake in community affairs.

As the middle-class suburbs have amply shown, home ownership can contribute to community stability—when times are good. But for lower income families, whose jobs are less certain and whose incomes fluctuate more, a mortgage could compound their problems during

times of need. If enough of them were forced to default in a single neighborhood, stability might quickly disappear.

The home ownership bills also assume that nonprofit sponsors can do the job. If so, they will have to multiply at a much faster rate than now seems possible.

3 Three Democratic Congressmen are pushing a plan calling for ten million new or rehabilitated housing units within 20 years.

Meanwhile, over in the House, three Democratic Congressmen, all members of the Banking and Currency Subcommittee on Housing, have introduced a bill that calls for the construction or rehabilitation of more low-income housing units than provided for in Kennedy's and Percy's bills combined. It would encompass both rental and home ownership, and it would accomplish its goals, not by appealing to the profit motive or setting up a new bureaucracy, à la Kennedy and Percy, but through existing Federal programs.

The bill, authored by Thomas L. Ashley of Ohio, William S. Moorhead of Pennsylvania, and Henry S. Reuss of Wisconsin, would require HUD each year for the next 20 years to prepare "an action program to see that at least 500,000 low- and moderate-income housing units are constructed in that year." This would add up to ten million units over the next two decades, an amount equal to the present number of deteriorated and dilapidated housing units in the country. And the annual rate required by the bill would be nearly ten times the current rate of about 60,000 units per year.

To accomplish this, the program would depend heavily on two existing Federal programs,

221d3 and 221h, both of which would be considerably broadened and expanded. They would have to be: 221d3 has produced a grand total of 50,000 units during its six years of existence, all of them for middle-income families; 221h, a home-ownership program passed last year, is just getting started, but it has only \$20 million of FNMA mortgage funds available to it.

The 221d3 program currently provides 3 per cent, 40 year FHA-insured loans for construction or rehabilitation of moderate-income rental or cooperative housing by nonprofit and limited-dividend groups. The House bill would replace the fixed 3 per cent interest with a rate graduated down from 3 to 0 per cent. The effect would be to extend the programs benefits to families with lower incomes, the amount of the interest depending on the family's ability to pay.

Ashley, Moorhead and Reuss want to expand and broaden current Federal programs and to make it mandatory that HUD produce the results.

The bill also would amend the 221d3 rental program to include the sale of units, and would permit local housing authorities to participate alongside private nonprofit groups. And, most important, it would increase the size of the program by providing an additional \$2 billion (to be shared with 221h) in FNMA funds.

The 221h program would also be broadened, as well as enlarged. The section now provides 3 per cent, 20- to 25-year loans for the purchase and rehabilitation of rundown housing by nonprofit groups for resale to low-income purchasers. Like 221d3, it would be given

a graduated 0 to 3 per cent interest rate, and public housing authorities would be permitted to participate. The program's \$20 million limit would be removed and the President given the authority to decide what size it should be, using monies from the \$2 billion fund provided in the bill.

The 221h program does not cover the rehabilitation of houses already owned by their low-income occupants. As a result, large, contiguous blocks of houses cannot often be acquired and rehabilitated by 221h sponsors. To remedy this, the bill establishes a new section, 221i, which allows 221h sponsors to use urban renewal rehabilitation grants and loans to combine the houses in one package.

The authors by no means expect 221d3, 221h, and 221i to produce all the ten million units required in the bill. They assume that other ongoing Federal programs, such as public housing and rent supplements, will continue at their present rate at least, and their bill provides for a 100 per cent increase, from \$750 million to \$1.5 billion, in authorizations for the urban renewal program. The bill does not dictate to HUD how it should come up with 500,000 units a year, it only requires that it be done, unless fulfillment in any year would "generate damaging inflationary pressures."

The House bill would dry up the flow of Federal funds to suburbs that discriminated and to cities that put off adopting better codes.

The House bill goes beyond merely providing new financing schemes for the construction and rehabilitation of dwellings: it contains provisions designed to correct a number of social

and economic conditions that have hindered the development of such housing in the past.

Under the bill, suburban communities that continued the practice of zoning against low- and moderate-income housing would be denied the use of such Federal subsidies as open space grants and urban renewal assistance. And Federally insured banks and other lending institutions would be prohibited from discriminating in making mortgage loans or in lending to persons who discriminate. The authors claim this section would extend fair housing guarantees to 70 per cent of the housing market.

The bill also would get tough with cities that continued to operate under outmoded building codes which contribute to the cost of housing construction. First, it would require HUD to develop a modern building code within one year. Then, three years after that, it would cut off a wide range of Federal assistance programs, such as sewer and water facilities grants, open space grants, community facilities grants, urban renewal programs, and even FHA insurance, to cities that failed to adopt an acceptable code.

Tucked into the bill, looking somewhat out of place, is a section authorizing HUD to provide social services, such as job counseling, guidance in money management, and instruction in good housekeeping practices, to residents of public housing projects, without increasing rent. It is the bill's only gesture to families whose incomes place them at the bottom of the economic scale; though in introducing the bill, the three Congressmen did call upon the Administration "to develop promptly an Emergency Work and Reconstruction Program to provide new jobs for the unemployed" as a counterpart to their measure.

4 Promising though they are, the schemes don't solve the hard-core problem—and none could be called an urban Marshall Plan.

All of the housing bills from both chambers of Congress have one aspect in common: they attempt to bring decent housing within the means of poorer citizens by modifying conventional methods of financing home construction. As each of the bills proves, this is a road that can lead only so far—not nearly far enough to help those millions who need help the most.

Obviously, their special problems require special solutions. Either their incomes must be brought up to within the range of housing costs dictated by conventional financing methods, or they must be provided decent housing despite their inability to pay for it.

Kennedy's job bill recognizes the first of these alternatives, but its benefits would be painfully slow in coming. Congressmen Ashley, Moorhead, and Reuss also acknowledge it, but their appeal to the Administration seems certain to go unanswered.

There is even less reason to believe that Congress and the Administration are ready to consider more radical solutions, like those put forth recently by urbanist Daniel P. Moynihan, among others. "The United States Government," said Moynihan in a recent article for *Newsday*, "must become the employer of last resort, so that anyone looking for work and not finding it is automatically given a job. Put to work." And beyond this, he argued, "we have got to get more money directly into the hands of the poor. The best way to do this, or at least the best known way, is through a family allowance."

The United States, noted Moy-

nihan, "is the only industrial democracy in the world that does not have such a system of automatic payments for families who are raising minor children. We are also the only industrial democracy whose streets are filled with rioters each year."

But, in the absence of a massive Federal program for producing jobs or other forms of income for the poor, decent housing would be better than nothing. The Federal Government already has two valuable tools in hand for this purpose, though it hasn't chosen to tap their full potential. One is public housing, which has been limping along at a rate of about 35,000 units a year, but could be expanded well beyond that if more money were provided. The other is the newer, even more promising, rent supplement program, which is in grave danger of being scuttled by Congress.

The House already has slashed all but \$5 million off the Administration request of \$40 million for rent supplements in fiscal 1967-68 (leaving only enough to meet commitments made in the first year of the program). But its chances for survival have picked up considerably in the Senate, where GOP Minority Leader Everett Dirksen recently hinted broadly that he just might reverse his long-standing opposition to the program.

"Maybe rent supplements are the best answer to our low-cost housing problems," Dirksen allowed during one of his regular Tuesday press conferences. "Maybe in this way we can get the government out of that field and rely on private enterprise."

Maybe so. It hardly matters how Congress wishes to rationalize its support of a program—just as long as the program is bold enough to do the job.

So far, nobody has come up with that urban Marshall Plan.

—JAMES BAILEY

THREE CUBES

The Venezuelan Pavilion at Expo 67 has been overlooked by most critics—perhaps because it is a fine example of what is being called “Minimal Art.” The pavilion is so minimal, in fact, that Architect Philip Johnson thought it was really much too small. Still, it is probably the biggest example of Minimal Sculpture ever constructed anywhere—and certainly one of the best.

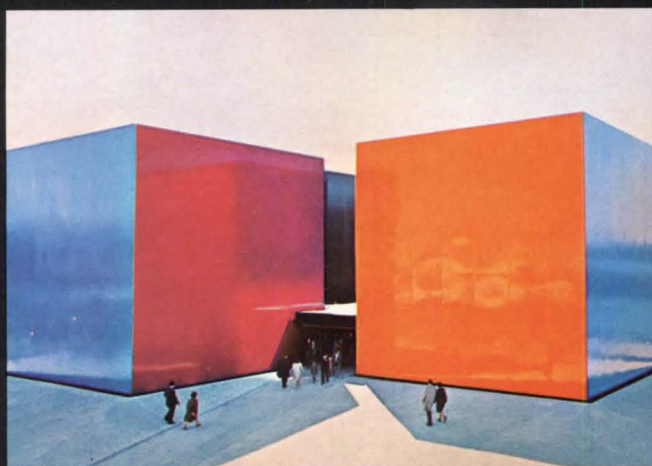
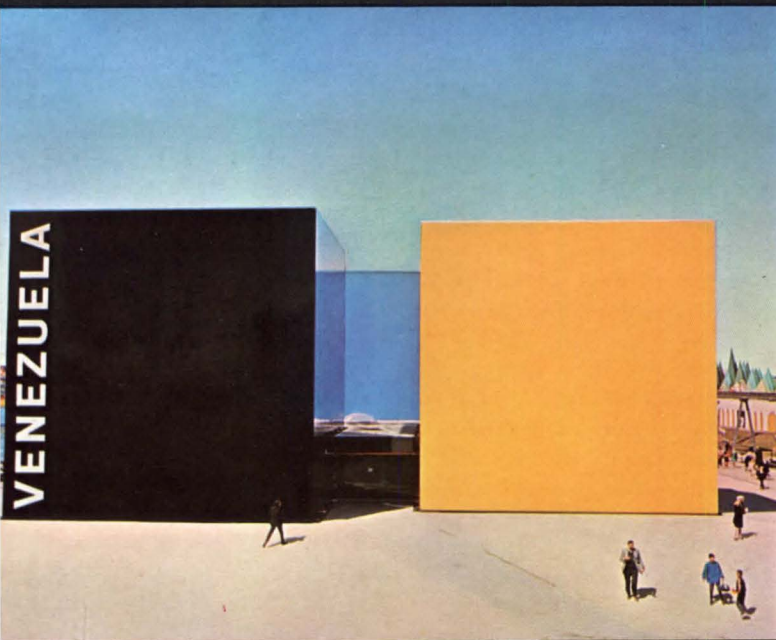
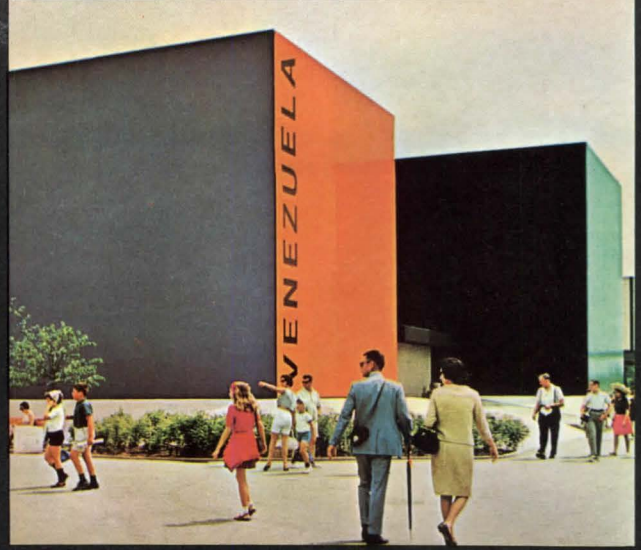
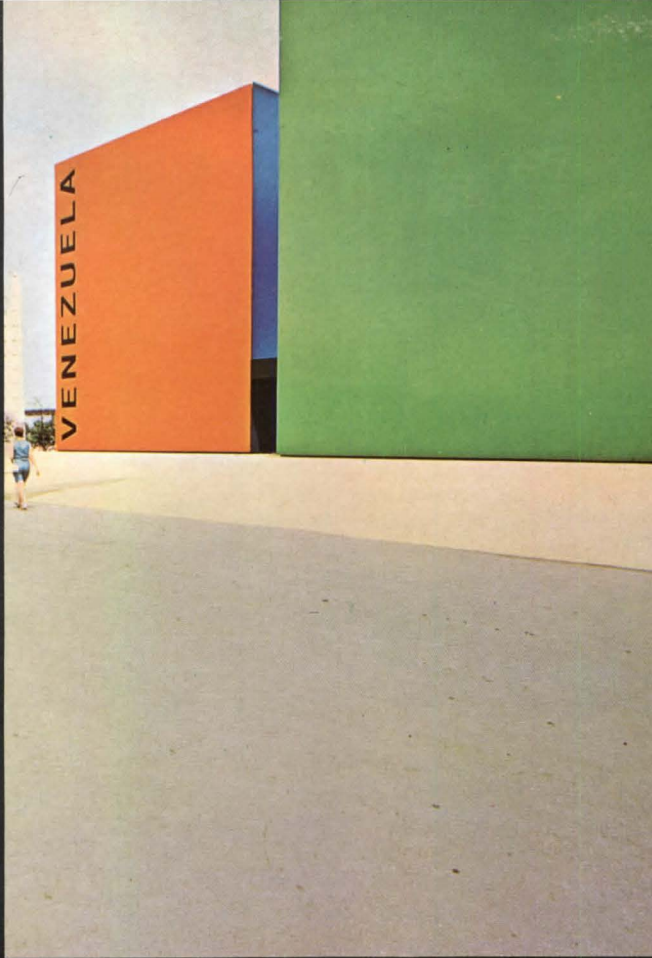
The pavilion consists of three cubes, about 45 by 45 by 45 ft. They are arranged in pinwheel fashion, sheathed in aluminum, and painted in very bright colors. The cubes sit on a sloping pedestal; they are linked by a low, mostly glass entrance lobby; and they easily outshine all the surrounding architectural pastry served up by Asiatic Disneylands. (Inside, the cubes are pretty standard—a bar, exhibits, audiovisual messages, a “tropical forest,” etc.)

The three shiny cubes were designed by Carlos Raul Villanueva, and they are an impressive demonstration of what can be done with bold form, bold color, bold typography—and bright sunlight: as you walk around the pavilion, you discover that the sides of the cubes reflect in each other, that the colors of some of the surfaces change dramatically as colors of opposite surfaces are bounced off them, and that the shifting composition of the cubes, as you catch them from different angles, can be quite stunning.

On the opposite page, we have tried to record Villanueva's handsome exercise in solid geometry. Compared to most of the fairly pretentious outdoor sculpture visible around the Expo grounds—and elsewhere, for that matter—Villanueva's three cubes are great art, and great fun.

FACTS AND FIGURES

Venezuelan Pavilion, Expo 67, Montreal, Canada. Architects: Dr. Carlos Raul Villanueva and Dr. Eduardo Trujillo. Canadian associate architects: Erickson-Massey. Structural engineers: Baracs & Gunther. Mechanical and electrical engineers: Brais, Ouellette, Frigon, Brett, Hanley, Berthiaume. Contractor: Allan Construction Ltd.



CLEVELAND ARCADE



BY MARY-PEALE SCHOFIELD

Those fantasies of iron and glass, the light courts of the late 19th century, flourished during the decades before the development of artificial lighting had caught up with the needs of large, multistory buildings. One of the most delightful of these courts is this arcade, built in 1890 and still busily serving downtown Cleveland.

The Cleveland Arcade is actually a complex of two office buildings, each nine stories high, joined by a skylighted link five stories high. In many ways this link is a cross between a light court and an arcade. Functionally and commercially it is an arcade—a passage between two of Cleveland's busiest streets, Superior and Euclid—containing offices and shops. Architecturally, it is closely akin to the light court, with its tiers of galleries and dramatic use of interior space.

Four tiers of delicate gilt-grilled balconies rise approximately 100 ft. to the pointed arch of the iron trusses that support the skylight. There are no continuous verticals, but the stepping back of the first three balconies leads the eye upward toward the source of light and the vast arch of the roof. Though the actual form of the skylight is a gable with central light monitor along the ridge, the visual effect is of an arch.

There is little feeling of weight. The repetition of the structural members, the glass fronts of the stores, and the delicacy of the balconies seen in the even diffused light from the skylight make a patterned enclosure for the interior space rather than a structural frame. Even the heavy roof trusses seem merely a stereometric pattern of lines against the light.

The severely monumental facades of the office buildings which front the arcade add an element of surprise to the revelation of the interior. The architects, John Eisenmann and George H. Smith, designed them

in the Romano-Byzantine style typical of the period. The two lower stories are Pennsylvania red sandstone, and the upper floors brown brick. The hardness of the Roman brick imparts a sharpness of edge to the main forms of the composition and a flatness to the whole design which is subtly enriched by a restrained use of decoration.

On both facades the richest textures were reserved for the central towers, with their massive Richardsonian archways, decorated with foliage tracery in the Byzantine style. The Superior Avenue facade (shown at left) remains essentially unchanged. The first two stories of the Euclid Avenue front were drastically modernized in 1939.

Neither architect of the arcade had a notable career in architecture, even locally. Little is known about George H. Smith, and only two domestic and a few commercial buildings have been identified as his work. John Eisenmann is and was better known. Trained primarily as an engineer (University of Michigan, 1871), he also studied architecture at the Polytechniques in Munich and Stuttgart. He came to Cleveland as professor of civil engineering and drawing at the Case School of Applied Science. He is known as the architect of both Case's and Western Reserve's "Old Mains," and the director of Cleveland's first building code.

The architects took full advantage of the possibilities of a difficult site. As the Euclid Avenue entrance is 12 ft. higher than that on Superior, the arcade benefits by having, for shopping purposes, two ground floors. Moreover, the two streets are not parallel. The architects turned this problem into drama. From Euclid Avenue one enters a tall one-story passage at a 23-degree angle to the main axis of the arcade. A rotunda rising four stories makes the transition, slowly revealing the full blue and gilt glories of the 300-ft.-long space.

The columns framing the rotunda entrance and the overhang of the first balcony inten-

Mrs. Schofield is a historian on the faculty of Case Institute of Technology. An earlier version of this article appeared in the *Journal of the Society of Architectural Historians*.



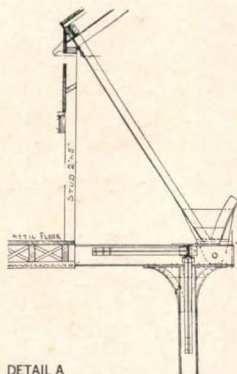
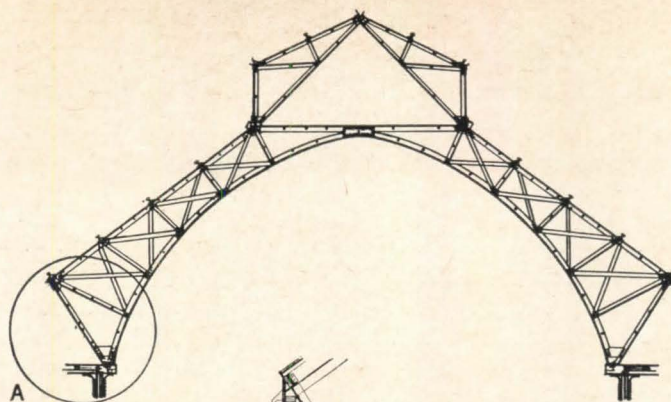


sify the perspective. The predominant lines are horizontal. The parallel balconies and the perspective procession of gilt lampstands and blue columns make the eye aware of distance. The slight swell and rounding of the rotundas prevent any abrupt termination. At the same time one senses the rise and opening out of the space above.

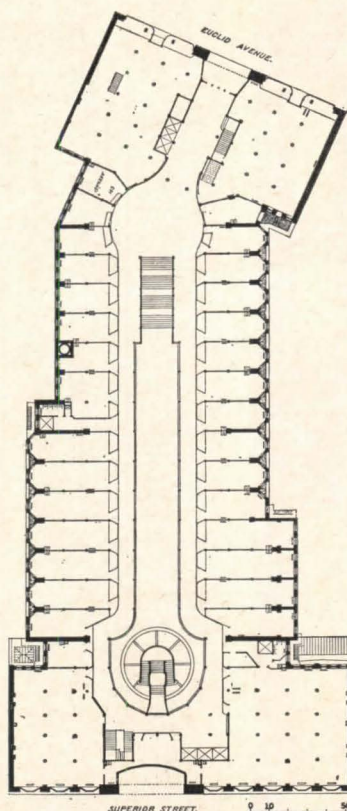
The only real structural innovation in the arcade is in the trusses that support the skylight. These trusses spring from steel beams projecting out from the office fronts of the fourth balcony, terminating in a series of 44 cast iron griffins of six varieties which serve as introduction to the "Gothic" roof. The trusses seemingly spring from these griffins; actually they are pin-connected to the beams 15 in. out beyond the supporting column by a firm system of knee bracing. The trusses are three-hinged arches of 49 ft. 10 in. span and 23 ft. rise, surmounted by a monitor 10 ft. high and 20 ft. wide, which is also pin-connected. The radial trusses of the rotundas are similar to half the roof trusses and are connected to the end of the last main truss.

The *Engineering Record* of March 21 and 28, 1891, remarked, "The truss which covers the passage is of a new type in construction, above all for buildings..." It seems to have been a type in which local contractors had no faith, for the story is that no Cleveland company entered a bid for its construction. It was erected by the Detroit Bridge Company. The main concern was the lack of tie-rods across the arch to counteract the thrust of the roof.

Instead of tie-rods the architects used a system of cross-bracing between the outer columns of the arcade section of the building and the floor beams. Except in the wider section of the arcade, this system is sheathed by masonry connected with the outer wall. The *Engineering Record* described the system: "The external columns are built into buttresses but are free from them.... The arch



DETAIL A



This page, Top: the roof truss of the arcade. Center: detail of the pin-connection of the roof trusses to the supporting column. Bottom: plan of the first floor. The Superior Avenue entrance is at the bottom of the plan. No monumental stair for the Superior entrance is shown on the original plan but one is shown in the earliest pictures. Opposite: The great skylight, looking toward Euclid Avenue.





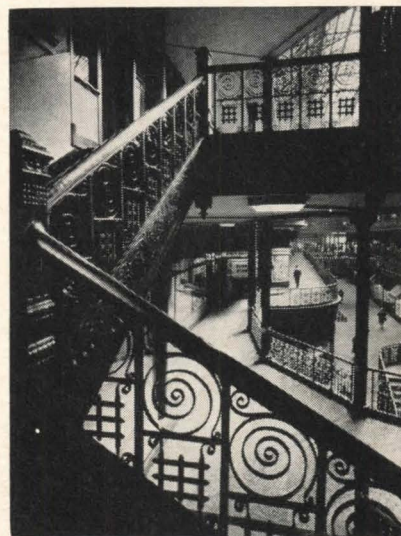
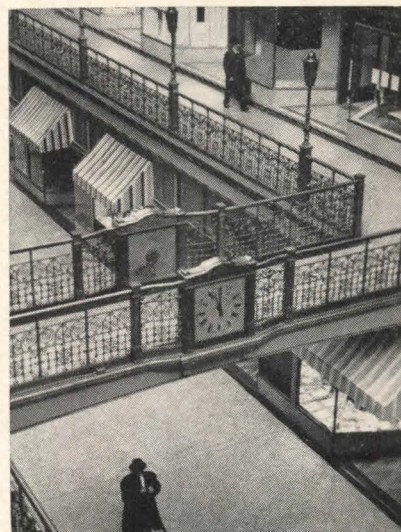
feet are not connected by any tension members, nor are they otherwise braced against thrust, except by the outer trussed column system."

It would seem, however, that the buttresses must contribute considerably to the stability of the system. The article concludes with a report that "the building has been completed and occupied for several months, and the columns are said to [be] perfectly vertical, and the trusses within $\frac{1}{8}$ in. alignment, and not a single pane of glass cracked by distortion or temperature movements." By 1937, the settlement was less than $\frac{1}{2}$ in. and equal in all parts of the structure.

The remainder of structure is mixed in techniques and materials, reflecting the rapid changes in high building construction at the time. Roof and floor loads are carried on a skeleton of cast iron columns and wrought iron (in some areas oak) beams. Because of the sandy soil and quicksand subsoil, the columns are set on spread footings varying in size from 3 ft. square to as much as 8 ft. square.

In the arcade part of the building, the columns and beams carry the entire load, the walls supporting only themselves. In the office buildings, the side walls support the ends of the floor beams. Both the central towers and corner piers were originally self-supporting masonry. (The Euclid Avenue tower was later braced with steel.)

During its 77 years of use, the arcade has undergone many changes. Lighting has evolved from palm-like "electro-gasoliers" through two generations of electric lighting standards; incandescent bulbs no longer spangle the columns of the upper balconies or the lower chords of the trusses. Stairs at both ends of the arcade have been rebuilt to new designs, and a bridge has been built at first-balcony level midway along it. But unlike the ill-conceived efforts to update the exterior of the structure, changes inside the arcade itself have, on the whole, improved it.



This page, top: skylights and balconies of the Superior Avenue rotunda; the post is one of the lamps on the stairs. Upper center: bridge between Euclid-level balconies midway down the arcade. Lower center: view from the corner stair at the Superior Avenue end, showing original balustrade details. Bottom: cast iron griffins at the bases of the trusses; incandescent light once glowed inside their mouths. Opposite: stairs in the Superior Avenue rotunda, built in 1930 to replace an earlier, simpler stair. PHOTOGRAPHS: Frank Aleksandrowicz.



On March 28th, New York's Mayor John V. Lindsay announced the completion of engineering plans for what has proved to be the most controversial, expensive, and longest debated road in the nation's history. It is the Lower Manhattan Expressway, and the story of the road reads like a lesson in urban politics.

Since the 1920s, the area around Broome Street in Manhattan has been busy with commercial traffic and private cars. From Long Island, many vehicles arrive on the Brooklyn, Manhattan, and Williamsburg bridges and then cross to New Jersey. In 1927, the first professional proposal for a solution to the early lower Manhattan traffic problem was published; the Regional Plan Association, an organization of planners, advocated a highway across Manhattan to connect the

State Legislature, and in 1945 a revised "Master Plan" was produced by the City Planning Commission. In 1946, after consideration of "at least eight alternatives," City Construction Coordinator Robert Moses and Manhattan Borough President Hugo Rogers submitted a report to the mayor calling for the construction of an elevated highway between the Manhattan and Williamsburg Bridges and the Holland Tunnel. But financing remained elusive, although tentative working drawings were completed by the engineering firm of Madigan-Hyland in 1947. By 1949, the project had been adopted by the Triborough Bridge and Tunnel Authority, a semipublic body with Mr. Moses as its chairman, even though that agency was unable to raise the money at once. The TBTA and the Port Authority, both created by the State Legislature with in-

ways Act. Under this law, certain approved projects would receive 90% of their cost from the Federal Government. The bill suddenly made the financing of the expressway project possible. Following the requirements of the Federal highway bill, the New York City Planning Commission held public hearings on the economic (but not social or esthetic) impact of the highway in December of 1959, and a year later the project was approved by the Board of Estimate. The board also approved \$24.6 million of city-expense alterations to the Manhattan Bridge necessary for it to connect to the highway.

Two years after the public hearing, a new situation arose: the Department of Real Estate released an economic study indicating that the expressway would displace 2,000 families, and industry employing 10,000. The release of the study was not

despite all those years of the city's changing operations and requirements.

The main advocate of the expressway was the Triborough Bridge and Tunnel Authority. Like any other large civic body, the TBTA could only maintain its power with constant work that demonstrated its importance to the community. Without such work other civic agencies would possibly displace it with a consequent loss of power to the TBTA and money to their bondholders. In his book, *Political Influence*, the political scientist, Edward Banfield, suggests that all such large semipublic organizations strive for two separate goals. First they must try to maintain their power and influence; second, they must, if possible, serve their perception of the public interest. They necessarily seek self-preservation before they attend to community

LOWER MANHATTAN

East Side bridges and the West Side Holland Tunnel. But the Depression kept the plan from receiving official consideration.

By 1941, traffic was worse than ever. In that year the City Planning Commission adopted a "Master Plan of a System of Expressways, Highways, Parkways and Major Streets," attempting to predict most of the city's traffic needs far into the future (though this was not a master plan in the sense used by planners, because it considered only the needs of automobile traffic and paid no heed to the growth and change of the generators of traffic).

In 1943, Edgar J. Nathan Jr., the borough president of Manhattan, submitted an engineer's report to the Board of Estimate pressing for the highway across Manhattan. The following year, the Lower Manhattan Expressway was included in the State Arterial Highway System by the

dependent powers for financing, planning, and construction, in 1955 issued a "Joint Study of Arterial Facilities, New York-New Jersey Metropolitan Area" which again advocated the road. The design at this time called for ten lanes of elevated highway and eight lanes of "buffer" road connecting the four-lane bridges and tunnel, which were to become themselves the bottlenecks.

Prices had, of course, gone up. That year, the 2.5-mile-long highway was expected to cost at least \$90 million, of which nearly half was needed to acquire the property in the road's path. Engineering fees ran to over half a million dollars. The expressway was in fact slated to be the most expensive road ever; it neither looked like a bond-issue proposition nor was the city or the state prepared to pay for it.

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The TBTA: main advocate

The last disinterested analysis suggesting the need for the highway had been its first, by the Regional Plan Association, nearly 40 years before. The expressway plan had been reviewed, approved, and promoted with no significant alterations in its route, let alone its concept,

needs. (If Banfield's analysis is correct, it is not then surprising that the TBTA has recently refused to give up some of its funds to offset losses in New York City public transportation. Since the TBTA has no stake in rapid transit, it would tend to dissipate the agency's power if the agency was to support what it saw as rival systems run by rival authorities). In Banfield's language, there is "public-regarding and private-regarding power" in politics. Public-regarding power is valued by an individual or group for reasons that transcend private concerns. If a mayor were to be convinced that a proposal was backed by the majority of the people he would be more likely to support it than were the opposite the case. On the other hand, private-regarding power is valued for the gains it gives to the individual: for example, a city councilman might



support a highway bill if let in on the plans early enough to invest in land along the route.

In the Lower Manhattan Expressway proposal, the TBTA apparently exploited the possibilities inherent in private-regarding power to a high degree. The fact that Triborough was concerned with large construction projects gave them the opportunity to exert influence by economic favors, or through the exercise of what the old Tammany leader George Washington Plunkett used to call "honest graft." The writer has made a study of tax assessment records which indicated that Broome Street land values doubled over a 20-year period before 1965, when surrounding areas exhibited only a slight increase. It is difficult to say who profited by this speculation (speculation is common to all sites of future public works), but the Internal

Manhattan Expressway and to his frequent use of Madigan-Hyland in studies and work. Neither objection was heeded.

The firm's TBTA traffic studies were mainly used for public consumption. In one colorful brochure, the expressway was said to rest on "long tapering cantilever arms" over a "mall" for parked cars. The highway was an "improvement." The opponents didn't have a viewpoint; they "engaged in procrastination." On the other hand, those favoring the road were "blazing a trail which can ultimately be followed by others."

Different studies were produced for different occasions. In 1964, Madigan-Hyland was hired as consulting engineers by the New York State Department of Public Works. The firm produced a study for the department indicating that 80% of the Lower Manhattan Expressway's

EXPRESSWAY

Revenue Service finds that investment in development land by public officials is common.

Promotional efforts

In another sphere of activity, the TBTA sought to influence officials through expensive promotional efforts. Triborough made use of "official" studies by seemingly impartial engineering firms which had the prestige of scientific and technical competence. Not to run the risk of studies in opposition to their plans, the TBTA consulted firms whose outlook was similar to their own. Robert Moses often commissioned work from the firm of Madigan-Hyland. Both as analysts of traffic situations and, later, as the engineering contractors, the firm scarcely was a disinterested professional organization. At one time, George V. McLaughlin, one of the TBTA's commissioners, objected to the Moses plan for the Lower

traffic would be interstate. A year later, in order to convince the City Council of the plan's worth to the city, Madigan-Hyland produced a study for the TBTA saying 80% of the traffic would be local. Clearly at least one and perhaps both "studies" contained juggled data, and were undertaken as strategically justifiable promotion jobs meant to produce the conclusions that were legally necessary. TBTA was aided in its statistical effrontery by Robert Moses' double positions as TBTA chairman and as the coordinator of Federal and state projects.

As another method of gaining support, Triborough offered opponents of the plan the possi-

Mr. Silver is a student of architecture at Cambridge University, who became interested in the Lower Manhattan Expressway while he was studying urban politics at Queens College, N.Y. He is the brother of Architect Nathan Silver, mentioned in the text.

bility of different projects the opponents strongly favored. Louis DeSalvio, assemblyman for the district through which the road would run, was one of the expressway's most vocal critics. He wished, however, for the construction of some middle-income housing in the district, financed by the state Mitchell-Lama act. In a letter independently made public by another opponent of the expressway, Paul Douglas Jr., it was revealed that Triborough had quietly offered to support DeSalvio's request for housing. Sell-out charges were immediately heard and De Salvio had to reaffirm his opposition to the highway, thereby losing the likelihood that the TBTA would support his housing proposals.

To win adherents, Triborough might also have gone to the expense of amending their plans in order to satisfy various detailed objections, but, since this had rarely been found necessary to gain support for their projects in the past, the TBTA vigorously opposed all variations in its expressway plan as untenable. In fact, when it was suggested that an underground expressway might be more desirable than an elevated one, Moses attacked the suggestion with great vigor. Presumably the TBTA felt that any change might hurt its image as the only source of competent projects.

Opponents of the expressway

The opponents of the TBTA plan had none of the advantages that Triborough had as a large structured organization. Their main problem was one of coordination of opposition, and they were unable to unite effectively. Among the opponents were several civic organizations. These groups, unlike the TBTA, had to reflect more or less democratically their members' opinions and attitudes and avoid antagonizing any significant element. When issues are highly controversial this is often impossible. The New York Chapter of the American Institute of

Architects (although not the Bronx and Brooklyn Chapters) tentatively favored the highway plans, but under conditions that the TBTA was unwilling to fulfill. As a result, in October of 1965, a memorandum was sent out to members by the New York AIA saying that a new opposing statement on the expressway was being drafted in the form of a letter to the mayor. However, on October 29, Mayor Wagner said he was considering the construction of a depressed highway, and this sufficiently confused the issue to prevent the AIA from ever issuing the opposing statement. The contemplation of a depressed highway soon evaporated, but the AIA had been effectively checked.

Other organizations were no more successful in their opposition. Another architects' group, the New York Society of Architects, together with the Bronx and Brooklyn Chapters of the AIA, issued a joint statement calling for the construction of a bypass tunnel from Brooklyn and Queens to New Jersey, connecting with Manhattan only at the West Side Highway. In their statement they made no detailed proposal. As support for the feasibility of the plan, each of the three organizations cited the Mont Blanc automobile tunnel, which they incorrectly located in Switzerland, "a country with a total population no larger than New York City." The inadequacy of the Mont Blanc tunnel comparison demonstrates the difference between the TBTA's large research staff and public relations facilities and the amateur effort of the opposition.

The divergence of opinion between the different chapters of the AIA was generally symptomatic of expressway opposition. Different groups saw the plan as threatening different interests. Assemblyman DeSalvio thought the road was a threat to the ethnic makeup of his constituency. His opposition was not to the roadway itself but to its location. Paul Douglas Jr.,

president of the "Citywide Organizations Against the Lower Manhattan Expressway," represented mainly those business interests along the route that would be eliminated. His objections were also mainly about the road's location. In one interview he spoke with favor of a route farther south (connecting the Brooklyn Bridge and Holland Tunnel). But since Douglas could not be appeased by a housing project or the like, he was free to successfully oppose Assemblyman DeSalvio's potential deal. The Regional Plan Association saw the controversy as an opportunity to exercise its own abeyant influence, so it produced plans for a depressed road along the proposed route and backed them with its own studies.

Borough President Constance Baker Motley opposed the elevated expressway, but, as her strategy of opposition, merely called for an independent study to resolve the difference of opinion between Triborough and the Regional Plan Association. Mayor Hugh Addonizio of Newark got into the act by objecting to the effects the highway would have across the river.

Some individuals exercised their personal influence in opposition. Mary Perot Nichols frequently wrote articles against the expressway which appeared in *The Village Voice*, the local weekly. William Haddad, Carol Greitzer and Arthur Stoliar, neighborhood leaders, worked against the proposal. Rachele Wall and Jane Jacobs—Mrs. Jacobs as an outspoken critic of the automobile in the heart of the city—organized action and publicity for the opponents, including participation for the opposing speakers on a debate held by a local television station. Paul Douglas Jr. and Nathan Silver, chairman of the subcommittee on the Lower Manhattan Expressway of the New York AIA, spoke against the highway on the program. The proponents were Ralph C. Gross and John B. Goodman, both of whom were

officers of financial and real-estate groups.

In the fall 1965 election, the New York mayoral candidates took their stands. Abraham Beame and Paul Screvane favored a depressed road. William F. Ryan called for ground level improvements. Almost alone among political voices, John V. Lindsay at that time strongly opposed the expressway plan in its entirety and all other similar projects through the city core. Each of the opponents fought not only against Mayor Wagner's approved expressway, but against the perceived positions of the other opponents.

Mayor Wagner's statements

Throughout the long period of public debate, New York showed little concern with conflicting "facts" in planning the expressway. This is demonstrated by a comparison of Mayor Wagner's 1962 opposing and 1965 approving statements. In 1962, the Mayor said that traffic congestion "will be significantly relieved by . . . imminent removal of the fruit and vegetable market [and] the Fulton Fish Market . . . to facilities in other areas." In 1965, he found that the "removal of the Washington Street produce . . . and other [markets] will not tend to alleviate this condition [of congestion] because the new facilities which replace these markets will unquestionably generate at least as much if not more traffic movement." In 1962, the traffic was said to be soon dropping off in downtown Manhattan because of the construction of the Verrazano Narrows Bridge. In 1965, the mayor said, "it has not done so to any meaningful extent," despite the fact that the *New York Times* reported that the bridge traffic was 34% higher than expected and much of this increase was removed from the Broome Street area. In 1962, the Mayor said that the project would cause "economic and social blight in the shadow of the elevated expressway, the loss

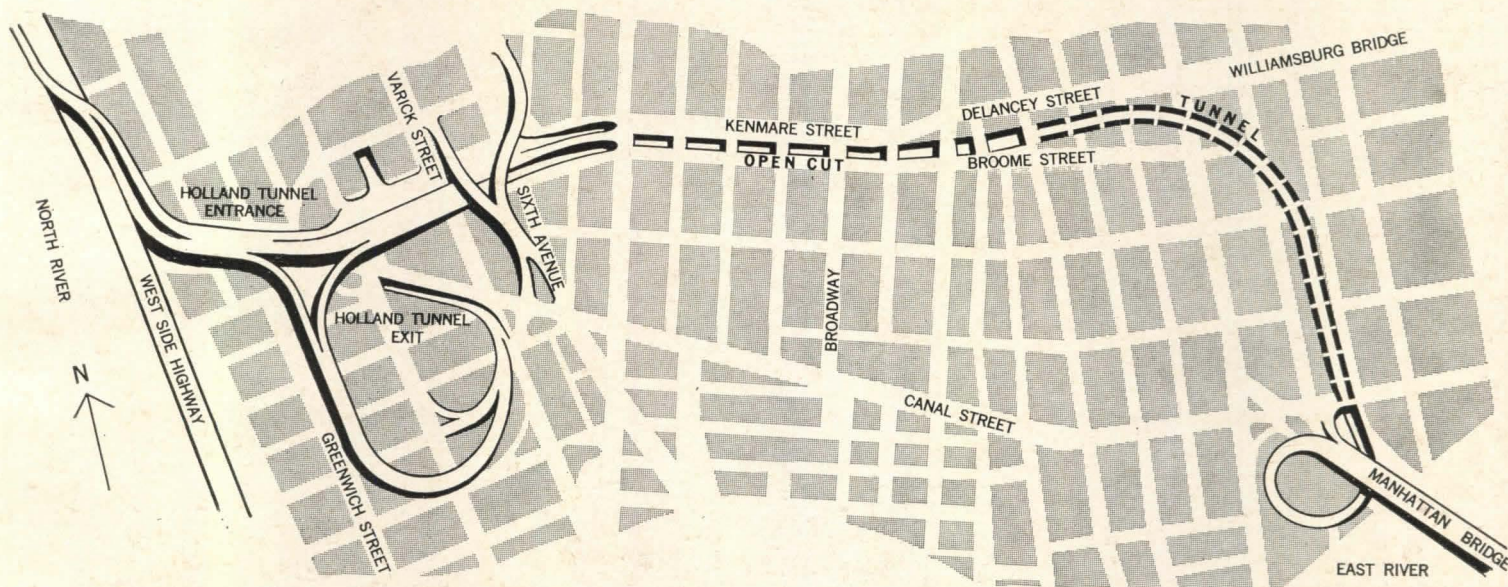
of revenues from taxable properties demolished, and the decrease in the value of properties adjacent to the expressway." In 1965, the story was that "the possibility of any economic or social blight which might result . . . will be forestalled, and the commercial life of the community will be strengthened." There were no significant changes in the highway plans between 1962 and 1965, although Triborough did promise to provide a small part of the funds for "new relocation housing, on a site adjacent to police headquarters." The New York press never commented on these swiveling positions. The *Herald Tribune* merely

ever, when the TBTA continued its campaign and some of the opposition disbanded, the mayor decided that he had made an error in picking the most powerful group. In 1965, he reversed himself. A few months later, when the cry that an elevated road would cause blight grew loud, he again amended his decision. This time he said a study should be made of a depressed road, which was the course proposed by the Regional Plan Association. Other pressures must also have played a part. Many millions of dollars were to be poured into the city if the decision was "yes." Harry Van Arsdale's construction unions

outspoken opponent of the expressway, and in 1966 he refused it Planning Commission approval. Lindsay also stripped Robert Moses of his position as coordinator of Federal and state projects, although Moses retained control of the Triborough Bridge and Tunnel Authority (his term runs until the 1970s). The proposal seemed cold and dead, to all but a few pessimists—we should now rather say realists—like Jane Jacobs. Less than a year ago, Robert Price, then deputy mayor and Lindsay's erstwhile campaign manager, announced that the Lower Manhattan Expressway would not be built in any form. But like Pro-

mains so on the West Side. The connection with the Manhattan Bridge is now by the tunnel, and the Williamsburg Bridge connection is to be a surface boulevard. In essence, however, it's the same project, even juicier with extra construction expenses.

At bottom, planning in New York is not a social, architectural, economic, or scientific process, but a political one. Certainly political means are necessary in determining urban policy. A group's right to seek its own planning objectives is vital and must be maintained, but private power motivations among government agencies should not be. The Lower Manhattan Express-



lambasted Mayor Wagner for "indecision." The *Times* backed up the discernible bias of its highway reporter, and urged construction without noticing inconsistencies in positions.

Catching a politician making contradictory statements is an old American sport, but was a regard for the public interest involved in decisions in either the proponents' or opponents' case? Mayor Wagner was apparently responding to the situation that he thought was most favored by involved participants. In 1962, opponents of the expressway made themselves effectively heard, and the mayor came out in opposition to the plan. How-

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Death and transfiguration

The "final" death of the Lower Manhattan Expressway was only accomplished through John V. Lindsay's election as mayor. Lindsay had been a long and

way war had been fought over whether a highway should be above or below ground level, on or south of Broome Street. Each of the multitude of conflicting groups had sought to enhance its position with no regard to a determination of public transportation policy or a needs analysis. Only a very few people had taken a disinterested stand. The history of the Lower Manhattan Expressway proposals shows the faults of having multiple planning organizations. But most of all, it reveals how easy it is to turn private ends into public policies—an unplanning process cloaked in the respectability of civic improvement.

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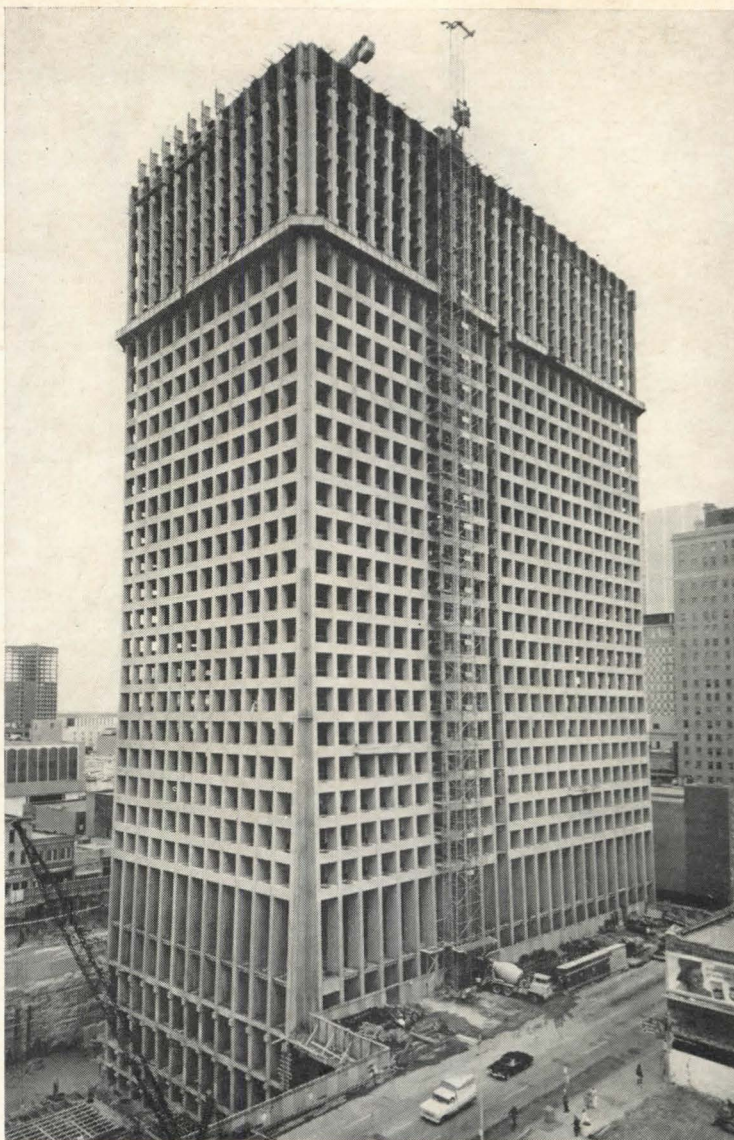
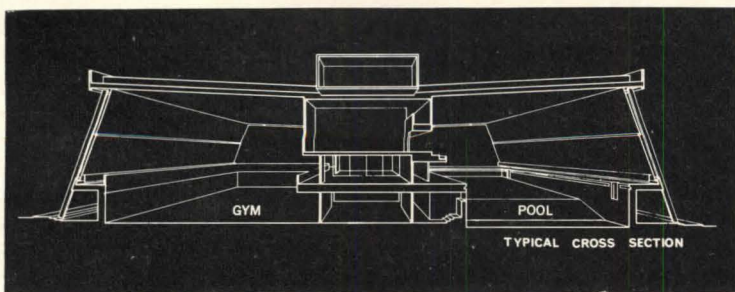
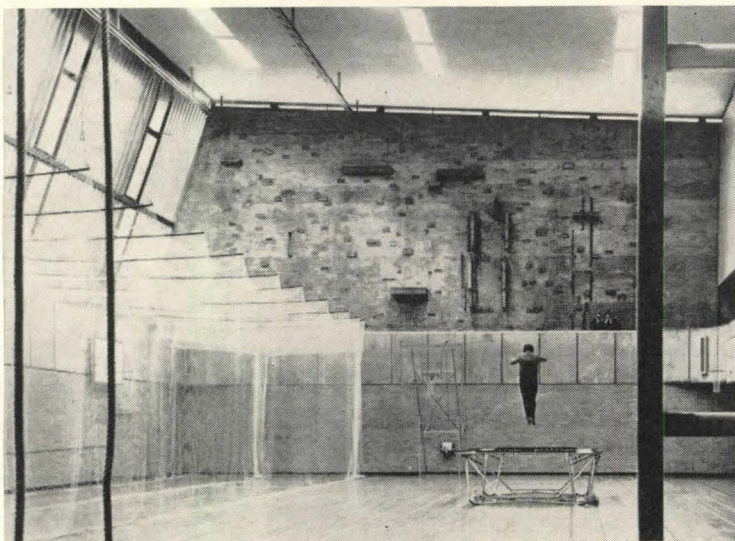
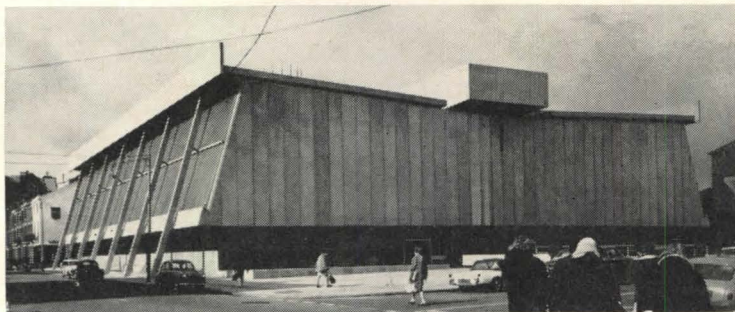
The history of the Lower Manhattan Expressway proposals shows the faults of having multiple planning organizations. But most of all, it reveals how easy it is to turn private ends into public policies—an unplanning process cloaked in the respectability of civic improvement.



RECREATION IN LIVERPOOL

Architects Denys Lasdun & Partners have arranged the diverse components of the University of Liverpool Sports Center to fit a simple, bold envelope (below). Two major spaces, for a gymnasium and a swimming pool (see section), flank a central spine that houses vertical circulation, changing rooms, offices, and spaces for fencing, squash, judo, etc. Boxes perched on top of the spine contain ventilating equipment. One unusual appointment is a "climbing wall" of brick and concrete at

one end of the sports hall (bottom photo), used for rock-scaling practice. Ove Arup & Partners' structural design uses a rigid system of concrete walls and floors in the spine as an anchor for open-web steel beams spanning the big spaces. Pre-cast, prestressed columns along the outer walls (left) are canted to direct horizontal wind forces to the central spine. The concrete floor slab at mezzanine level also absorbs wind forces, as well as the outward pressure of the swimming pool.

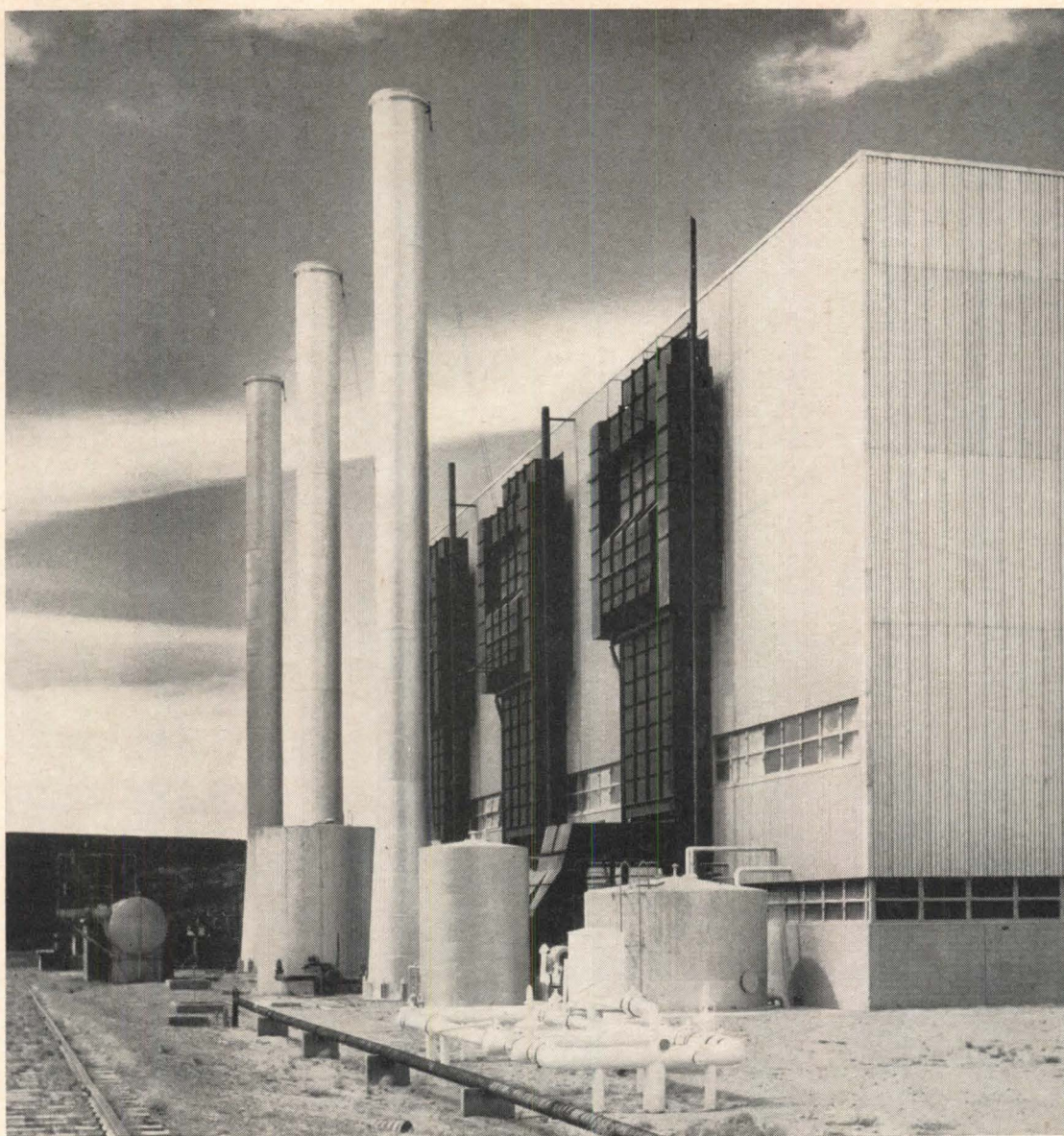


REDEVELOPMENT IN DALLAS

The external concrete skeleton of the One Main Place office building in Dallas has reached almost its full height of 34 stories. This tower and the adjoining sunken plaza, which will have shops around it and parking beneath it, constitute the first phase of a 10-acre privately sponsored development, designed by Skidmore, Owings & Merrill (New York) with Harwood K. Smith of Dallas. Main Place will eventually include a 400-room hotel, 500,000 sq. ft. of retail space, and a second office building 50 stories high (right in model photo below), which will span 100 ft. across Main Street. The project will be tied together by underground malls, connected to new buildings planned for adjoining blocks. Before selecting architects for Main Place, the developers spon-

sored a study by Columbia University graduate students, confirming its value as a catalyst for further downtown redevelopment (May '62 issue, page 42).





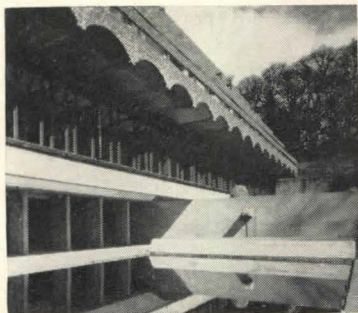
POWER ON THE PLAINS

The Algodones plant of the Plains Electric Generation and Transmission Cooperative is one of those rare industrial structures which actually has that unselfconscious expression of function revered by generations of architects. The plant, located about 23 miles north of Albuquerque, N. M., was designed by the engineering firm of Laramore and Douglass. No doubt its visual impact is strengthened by its position along a main highway, with a backdrop of New Mexico's vast landscape. But the design is worthy of its setting. Three sturdy stacks announce that there are three generators inside the crisply rectangular box of insulated aluminum panels; accessory tanks and outbuildings cluster around these major forms in the kind of composition so many architects work hard to achieve.

HOME FOR HUD

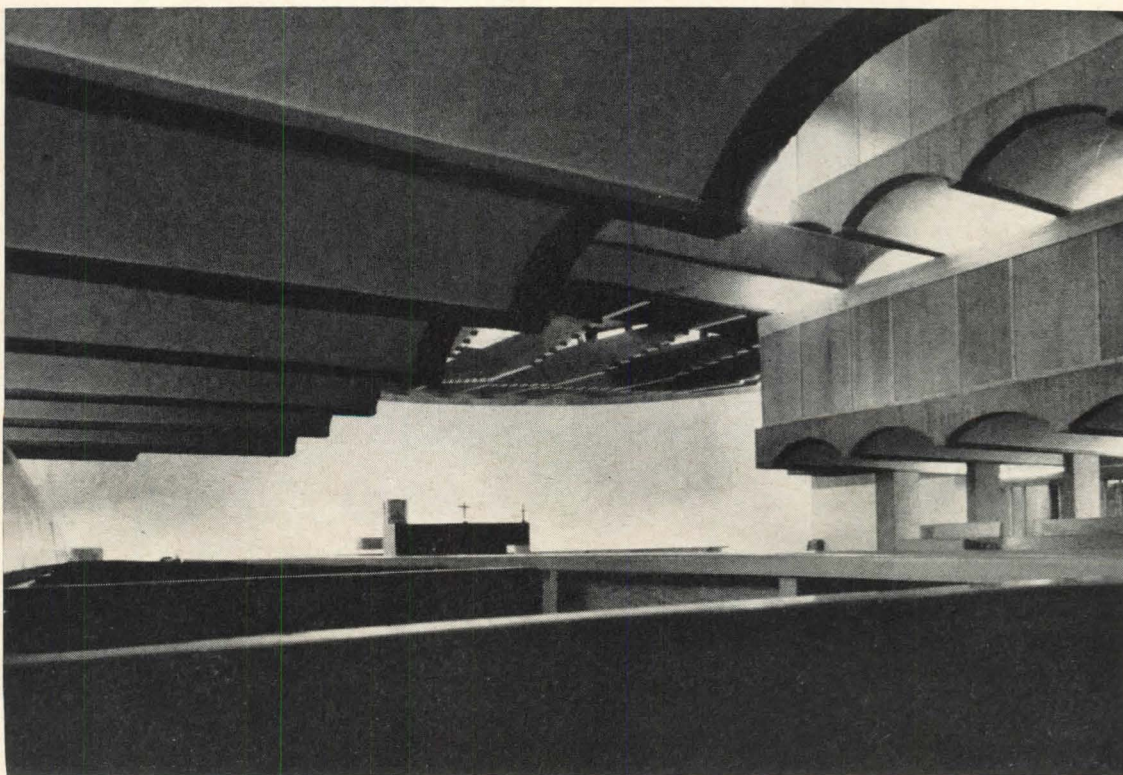
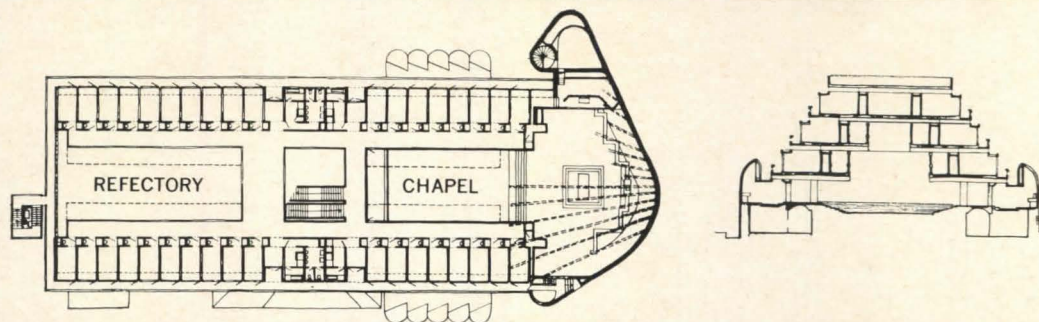
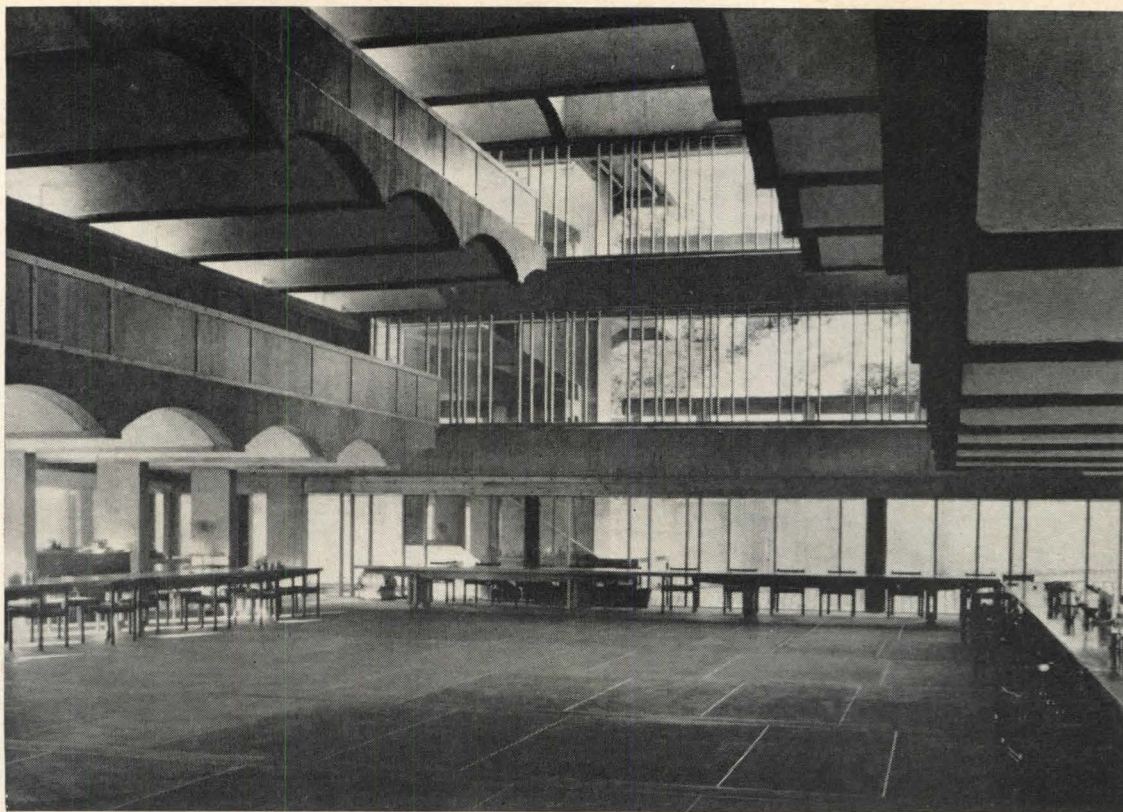
The curved masses of Washington's new Housing and Urban Development Department office building can now be seen in virtually final form. Designed by Marcel Breuer with Nolen-Swinburne & Associates, the building is similar in plan to Breuer's UNESCO and IBM buildings in France, but unlike anything the General Services Administration has ever put up. Hemmed in by massive structures (existing or planned) on three sides, the HUD building extends out to the limits of its site only at the corners, leaving inviting voids at the center of each side. The plan increases the amount of prized exterior office space—all the more prized here because the precast concrete walls will keep out excessive sunlight.





STRONGHOLD OF FAITH

The main building of St. Peter's Seminary at Cardross, Scotland, has a chapel and a refectory at its core, enclosed by three tiers of individual rooms. Architects Gillespie, Kidd & Coia designed it that way to express the unity of the student-priests' lives. The symmetry of the arrangement (section, far right) gives great formality to the refectory (top photo), which is lined with balcony-corridors, and the chapel (bottom), where the corridors are screened. At the end of the chapel is a dramatically curved, top-lighted sanctuary. The slope of the land allows for cloisters beneath the chapel (photo above). The shallow vaults and pebble-faced concrete of the exterior are meant to harmonize with an existing Victorian mansion (now faculty quarters), around which this building and several auxiliary structures are clustered.



PHOTOGRAPHS: Page 70, page 71 (left), Richard Einzig. Page 72 (top), Todd Webb; (bottom), J. Alexander. Page 73, Bookless.

DROP CITY

new life for junked cars

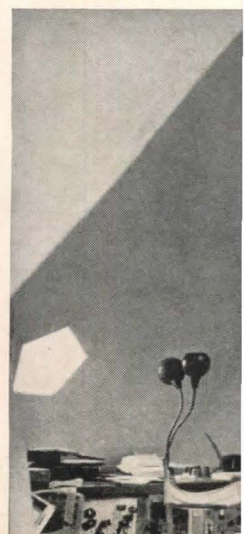
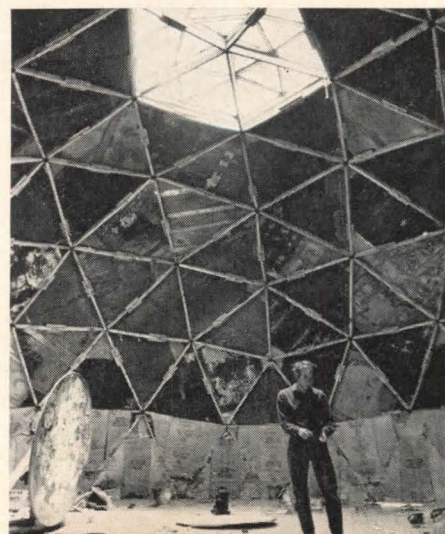
In Southeastern Colorado, 25 miles from the town of Trinidad, on a dusty, sunbaked prairie 5,750 ft. above sea level, there is a small community consisting of nine rather unusual geodesic domes. The domes are framed in wood and covered with old car tops in their natural, bright colors—flattened out, cut up to fit the geometry of the domes, and hammered together. Last year, Buckminster Fuller presented to this community his 1966 Dymaxion Award for Architecture.

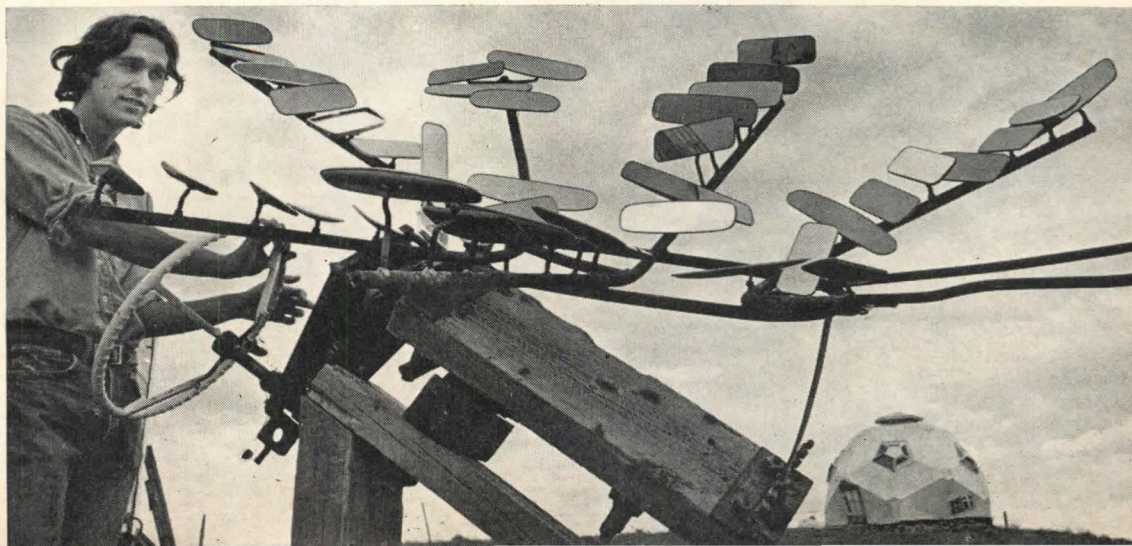
The community is called Drop City, and its population, at the moment, is about 18 young people and children who have dedicated themselves to a simple, communal life and to creativity in the arts. Most of the residents of Drop City are involved in writing, painting, sculpture, or making films. Frequently, Drop City welcomes transients who share the basic goals of the permanent residents. There is no dope or LSD in Drop City.

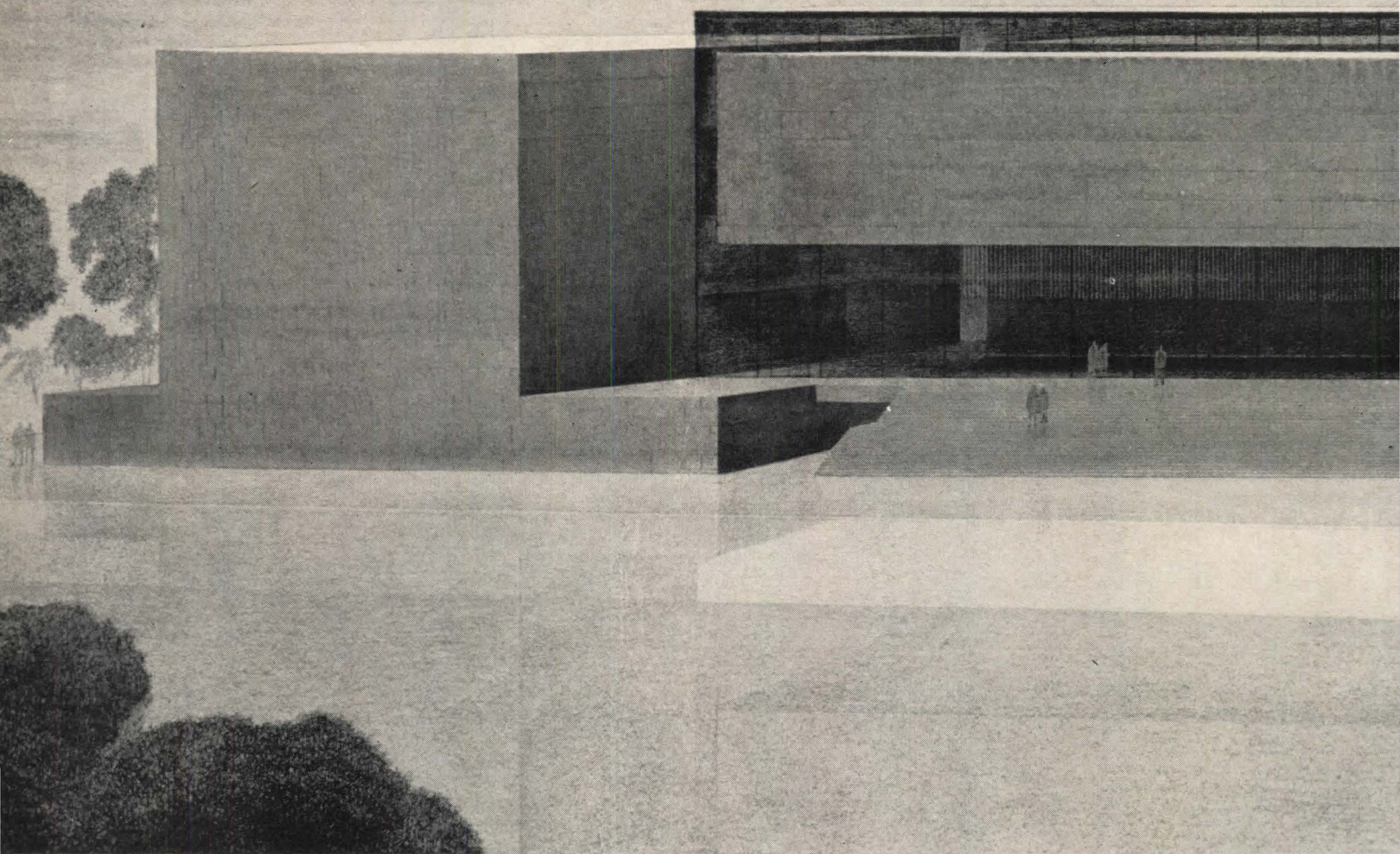
The community was started two years ago, and the largest building to date is a triple-fused rhombic dodecahedron (near right) which serves as a community hall. (It cost all of \$300 to build). Another, larger geodesic structure is in the works and will serve as a theater for electronic psychedelics. Still another remarkable construction is a "solar heater" (far right), which consists of several dozen old rear-view mirrors, taken from junked cars and mounted on long steel bars. The idea is that the mirrors can be adjusted and steered to pick up the rays of the sun and redirect their heat to warm a given space. It hasn't worked so far. The other dome-like structures serve as family quarters and workshops.

The "Drop" in Drop City does not mean "drop-out." According to the residents, a "dropper" is "someone who creates," and Drop City is their remarkable creation.

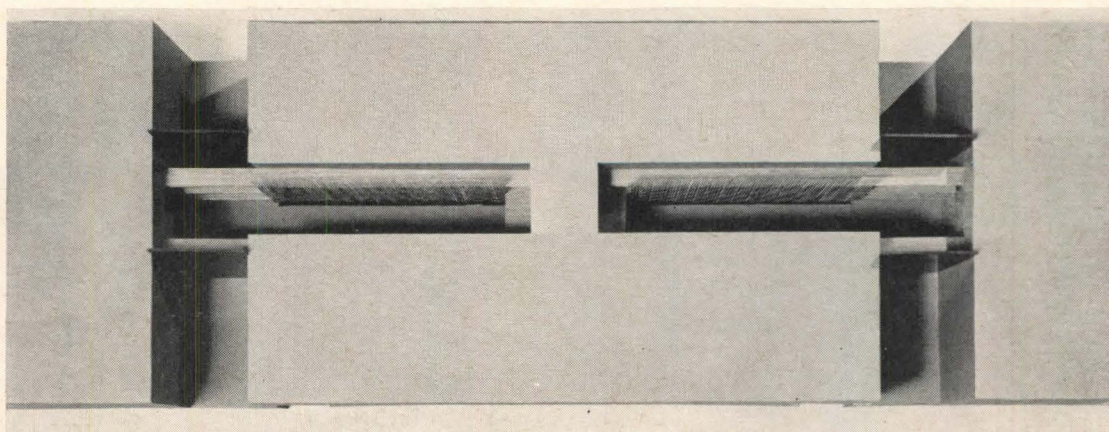
Miss Trego is a free-lance writer who regularly covers the scene in her native Colorado.

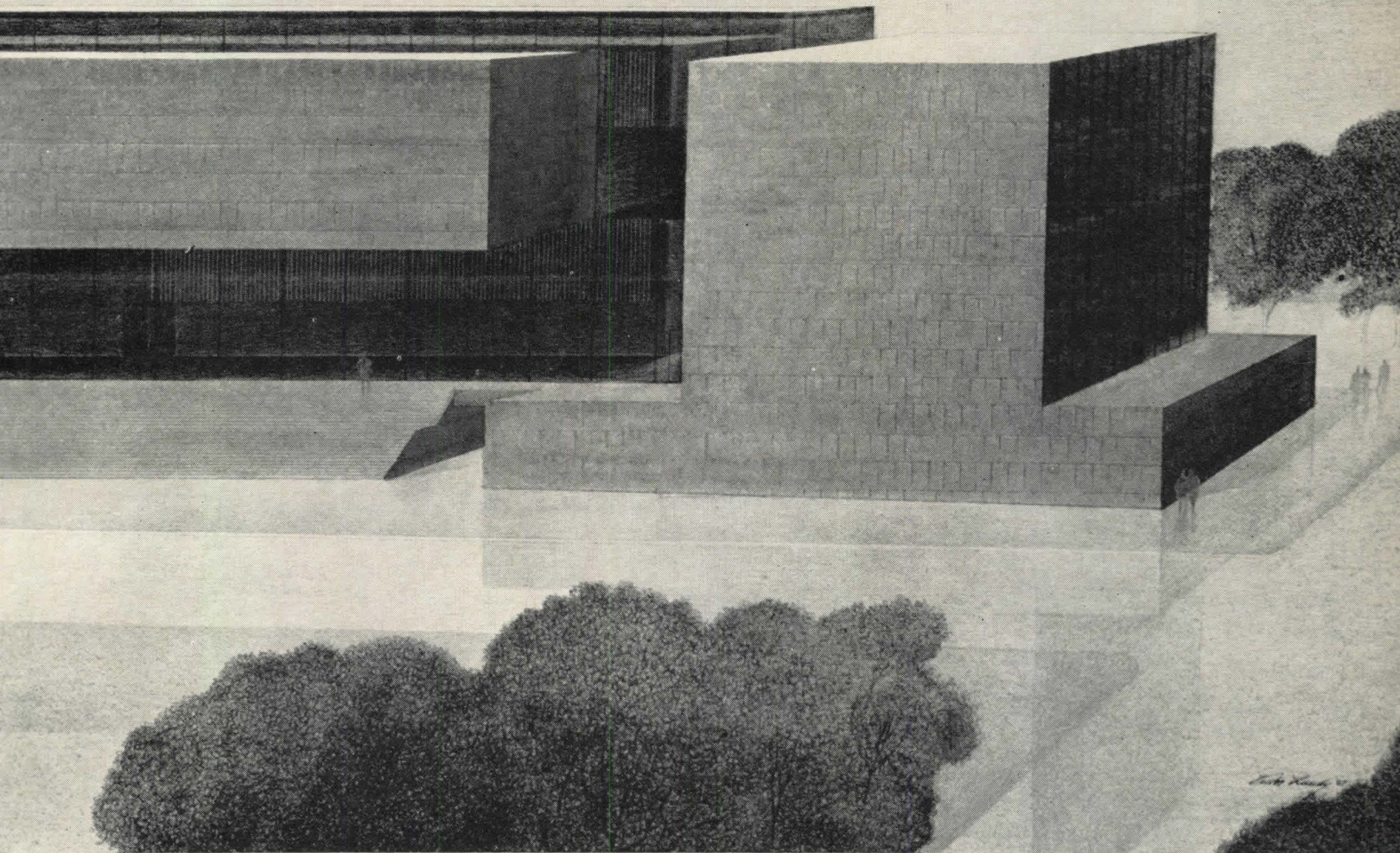






JUSTICE ON A PEDESTAL





Victor Lundy's design for the U.S. Tax Court building in Washington already has made history of sorts. When it was presented to the Fine Arts Commission last November it received swift, enthusiastic, and unqualified approval, a reaction almost unheard of from those official guardians of architectural quality in the nation's capital.

It is easy to see why the commission was so pleased. Lundy's design, carried out in joint ven-

ture with the firm of Lyles, Bissett, Carlisle & Wolff, gives the impression of great serenity and repose—and it is thoroughly modern. It also happens to be one of the most daring structures, in terms of engineering, ever proposed for the capital (see page 78).

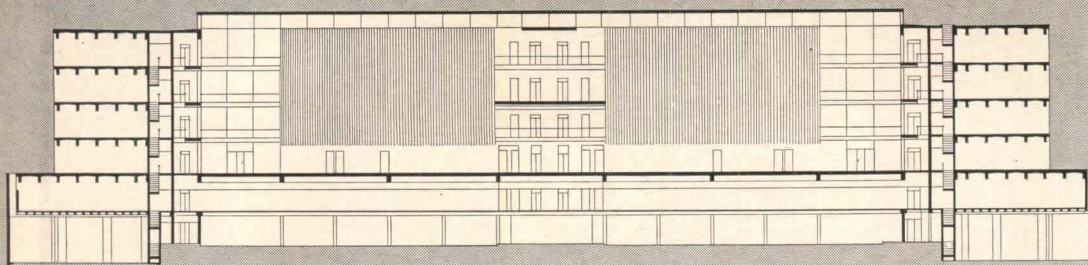
The five-story building will serve a small but essential aspect of government: the disposition of tax disputes between the revenueurs and citizens. It will house suites for 32 Tax

Court judges and their staffs, plus courtroom facilities.

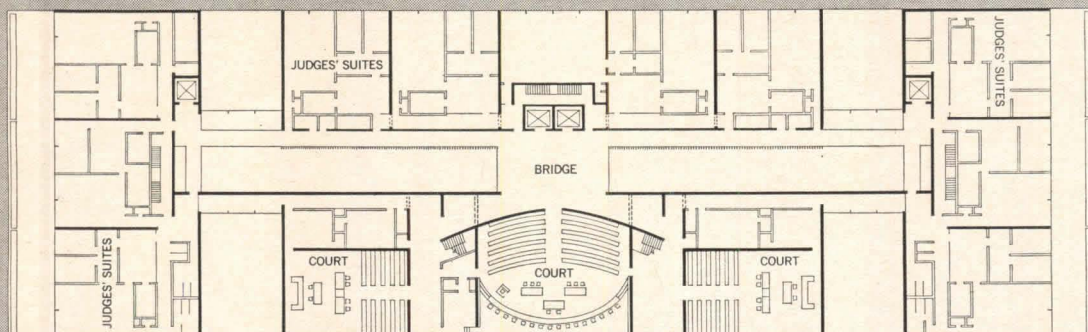
In form, the structure is essentially a block pulled apart to make four "buildings" (office blocks on both ends and at the rear center; a cantilevered courtroom block at the front), all set on a ground-floor podium. This separation allows space to break through the building, creating through the center a great glassed-in public hall reached by the monumental steps that rise under the courtroom block. These

public spaces are joined by a clerestory roof (removed on the model photo opposite) that brings daylight deep into the building.

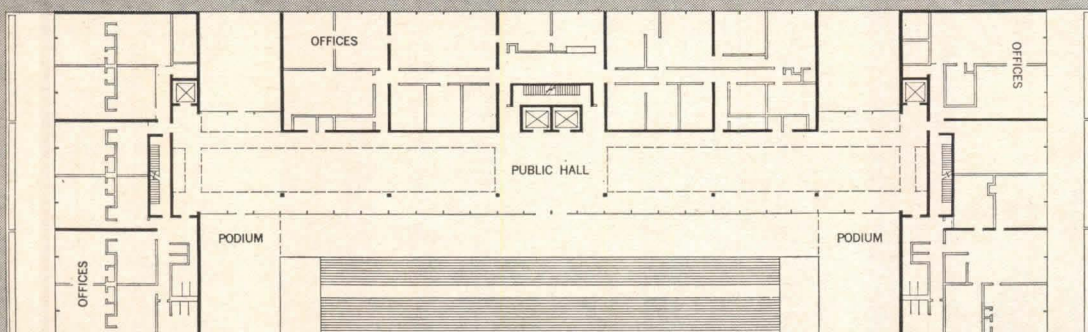
The building's simplicity of form is carried through in the restrained choice of materials. The exterior walls will be faced in gray granite and bronzetinted glass held in place by slim bronze mullions. The dominant materials inside will be granite, bush-hammered concrete, and fire-treated teak wood.



LONGITUDINAL SECTION



THIRD FLOOR



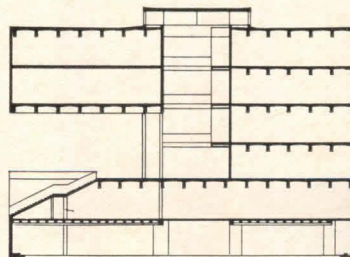
ENTRANCE LEVEL

0 25 50'

With one major exception, the physical requirements of the Tax Court are much the same as those of a conventional office building, and Lundy's response to these needs has been direct and literal. The three blocks that rest upon the podium are office blocks, housing standard-sized suites for each of the 20 judges of the court and their staffs in the longitudinal center block; and smaller suites in the two end units for 12 recalled judges.

Though the three office blocks

tie in with the podium, which contains administrative offices, a library, and other auxiliary functions above a basement-level parking garage, each is an independent unit structurally and mechanically. Each block is made up of continuous vertical reinforced concrete shear walls spaced 40 ft. apart, which form the divisions between judges' suites (see floor plans). The floors are supported by precast, prestressed concrete tees spanning between shear walls.

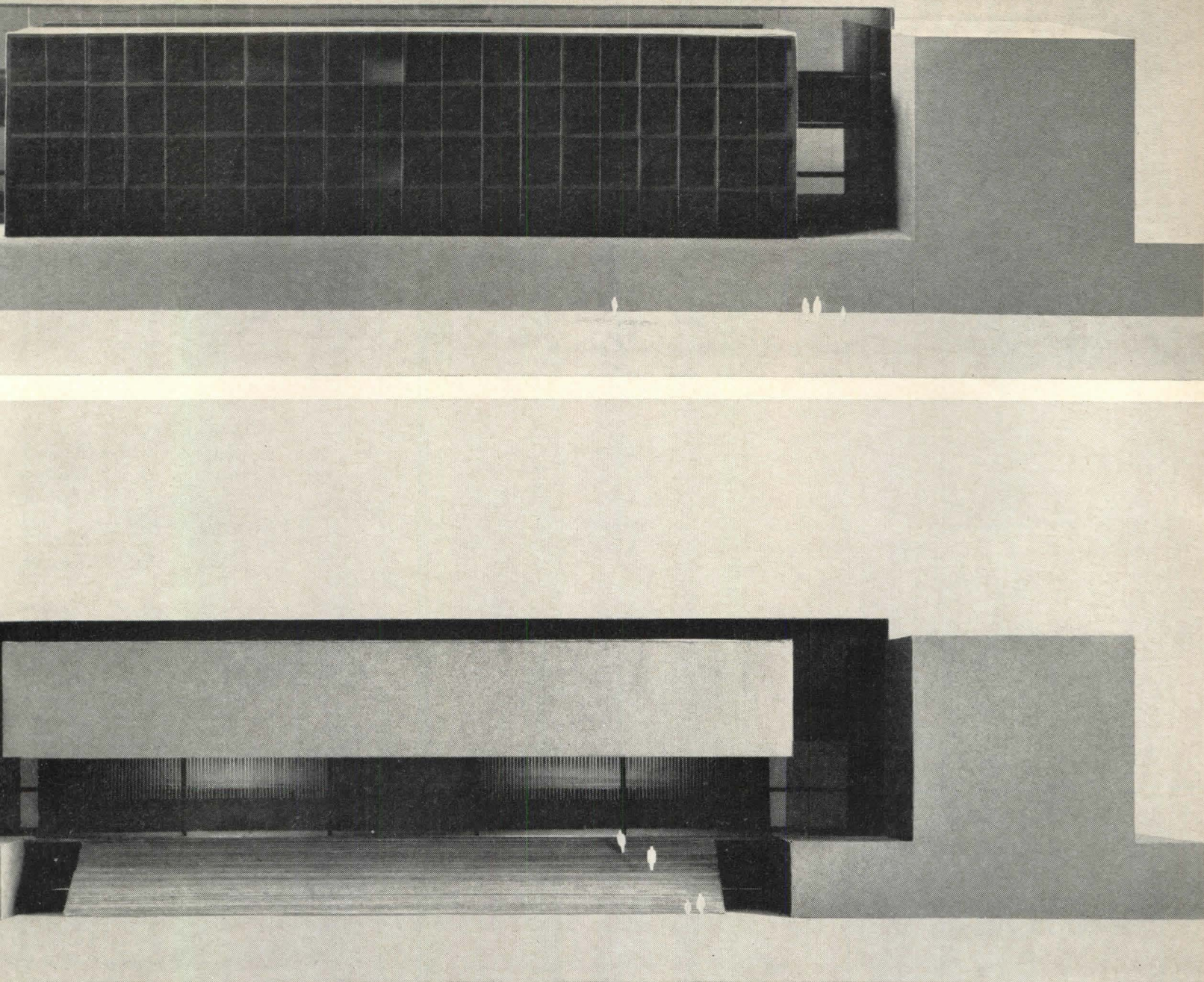


CROSS SECTION

The major exception to the office building requirements is, of course, the courtrooms themselves, and Lundy has chosen to make the most of this exception by giving them powerful sym-

bolic expression. Rather than burying the courtrooms inside the structure, he has placed them in a concrete box that "floats" two stories above the podium and cantilevers 55 ft. out over the entrance stairs.

The act is as daring structurally as it is symbolically. The airborne box, which is made stable by four interior shear walls and its two exterior side walls, is supported vertically only by six columns spaced along its rear wall.



To keep the big box in place horizontally, its post-tensioned floor and roof slabs (see reinforcing diagrams at right) are tied to the third floor and roof of the center office block—the floor by a 40-ft.-wide compression link, the roof by a 20-ft.-wide tension link. (The third-floor link becomes a ceremonial bridge connecting the courtrooms with the judges' offices.)

Thus the fixed center office block counteracts and absorbs the forces of the cantilever. The

courtroom box is further stabilized by corridors connected to the two end blocks (see longitudinal section).

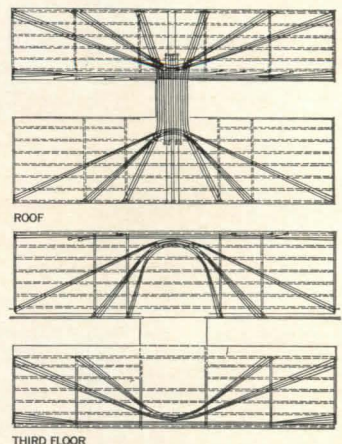
In effect, says Dr. Hannskarl Bandel of Severud-Perrone-Sturm-Conlin-Bandel, consulting structural engineers, "we have replaced the vertical columns at the front with two horizontal columns." The penalty was small, he claims, because "those floors were there anyway." Besides, he adds, the solution was cheaper than a more conven-

tional Vierendeel truss system.

For all its structural sophistication, the building does not show off its muscle. "I tried," says Lundy, "to reduce the choices to a simplicity that makes the building timeless though of its own time."

FACTS AND FIGURES

United States Tax Court Building, Washington, D. C. Owner: General Services Administration, Public Buildings Service. Architects: Victor A. Lundy and Lyles, Bissett, Carlisle & Wolff. Engineers: Severud-Perrone-Sturm-Conlin-Bandel (structural); Jaros, Baum & Bolles (mechanical).



THIRD FLOOR

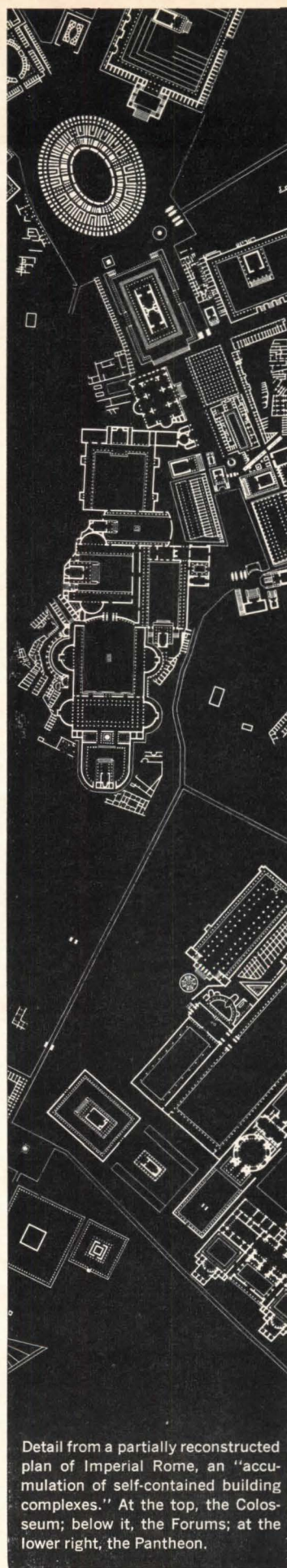
DESIGN OF CITIES. By Edmund N. Bacon. Published by the Viking Press, Inc., New York, N.Y. 296 pp. Illustrated. 8½ in. by 11¼ in. \$15.00.

REVIEWED BY DOUGLAS HASKELL

If this book is accepted for what it is, it will be found quite gorgeous. What it is actually about is the design of the central-city framework; the stunning illustrations, the extraordinarily lucid plans—often diagrammatic and semipictorial—and the text all deal with the disposition of those key features which can be called civic. Bacon says he writes not as scholar or historian but as “a participator in the recent history of the rebirth of Philadelphia,” which is becomingly modest. In actuality, Philadelphia is the only city on the North American continent which during the last three decades has had not only a system for developing coherent plans but a system for developing a form concept. Bacon has been an indispensable leader in this, and here are “the moments of historical development [in cities] which have been particularly helpful” to him—a rich couple of dozen of them.

It is not only a beautiful book but a breakthrough in beautiful art book making because of a clarity which art book publishers have for 38 years obtusely avoided. During all that time the editors of every quality architectural magazine knew that the unit of printed illustrated exposition is the two-page spread or multiples thereof, so that text and pertinent illustrations could be on the same page or opposite pages and could thus be directly related to one another in a single educational adventure. That art books by contrast should require ten index fingers and six book markers and three indexing systems and a seeing eye dog if one wishes to get hold of a single idea in them is I hope on the way out, and high time too, before the new McLuhanacy of seeing entirely by ear overtakes us. Ba-

Mr Haskell, a member of our Board of Contributors, is the former editor of *The Architectural Forum*.



Detail from a partially reconstructed plan of Imperial Rome, an “accumulation of self-contained building complexes.” At the top, the Colosseum; below it, the Forums; at the lower right, the Pantheon.

con not only relates text and illustration by position but has evolved singularly adept and unostentatious presentation techniques accompanied by succinct brief text passages, both of which every architect must study as an act of genius. For one of the subthemes of the text itself is the need for presentation techniques somewhere near adequate to the subject.

Bacon's controlling assumption is that the design of a city can be, and for success must be, an act of will pursued with a purpose. Such an assumption in itself takes courage in this scatterbrained age, and moreover requires utterly that the act of will must be applied to an idea, a concept—it cannot remain a vague generality like “we must have planning.” What kinds of ideas or concepts he considers to be urban ideas is clarified in a tightly written introduction talking about urban-scale architecture in terms of space, form, articulation, time, movement, and involvement. That the idea cannot succeed until it is shared and accepted and has received the benefit of enrichment and correction by “democratic feedback” is the message of an important closing section on “putting the ideas to work in Philadelphia.” The organized systems which are required if planning is to be carried into a city are described, and should be required reading for all municipal government officials involved in the process (and especially in urbanistically near-bankrupt New York City).

The book's main bulk is in a central section rich in city ideas and more fascinating than most dramas. Stress is on the Mediterranean tradition but, refreshingly, examples are found from around the world including—he got in under the wire—Peking in historical China. Considering what tourists architects are, many are in for the surprise of finding revealed some hidden treasure they had been hoarding up, places like Todi, Ischia, Camiros and the like, in addition to the surprise of new elucidations of the stock examples, such as the route of the

Panathenaic Procession in Athens, the watery plan of Venice, the two climactic Romes, Peking, Hadrian's Villa, and the others. Individual opinions are aired on modern work, too, in places like Stockholm, Chandigarh, and the much libeled Brasilia.

Perhaps the idea which leads all others in its present interest to Bacon is that of "simultaneous movement systems." Movement is seen to have been of paramount concern to urban designers long before the present day of "plug-in" or "clip-on" excitement. Another idea could be called "leadership and feedback." It describes how the first carrier of a new idea can secure that it will live and spread after his own day, and also tells how the "second man"—how vivid!—has an obligation to amplify and not destroy the first man's contribution. The example praised: Sangallo following Brunelleschi.

Two limitations of such a book have to be mentioned. One is that there is never an acknowledgment that Philadelphia does not everywhere come up to the diagrams (nor does Rome either)! The other limitation is related but is charmingly admitted. Bacon says we do not know yet just what is the wholly new form of city our times want worked out. All the past that we see so piercingly analyzed does not cover it, much as it helps us; we are, like the early Renaissance, just beginning something. If it may be said, perhaps an element not fully weighed is democratic feed-in, as distinguished from democratic feed-back into ideas brought in from above and laid before the people. But they may have to come from other sources.

The special value of Bacon is that he does come before the citizens with ideas that are intelligent, and are developed, and have form and persuasion in them. He is never dissuaded from holding the gist of what he has learned steadily before him, and putting his will into getting it realized, to the advantage of his city. We can be thankful that he so clearly gives us his sources.

LIVING ARCHITECTURE series. Published by Grosset & Dunlap, New York. Four Vols. Ea. 192 pp., illustrated, \$7.95.

EGYPTIAN ARCHITECTURE. By Jean-Louis de Cenival. Preface by Marcel Breuer. 1964.

ROMAN ARCHITECTURE By Gilbert Picard. Preface by Paolo Portoghesi, photographs by Yvan Butler. 1965.

OTTOMAN ARCHITECTURE. By Ulya Vogt-Goknil. Photos by Eduard Widmer. Preface by Jurgen Joedicke. 1966.

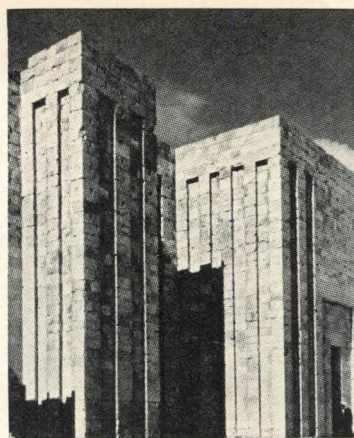
MAYAN ARCHITECTURE. Text and photographs by Henri Stierlin. Preface by Pedro Ramirez Vasquez. 1964.

REVIEWED BY SIBYL MOHOLY-NAGY

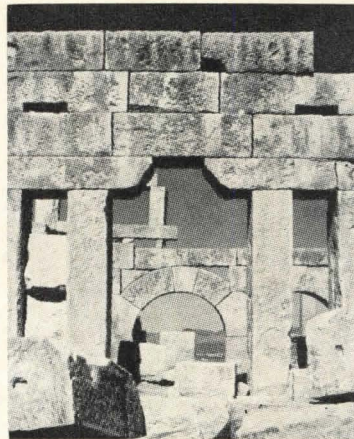
We are plain lucky that Le Corbusier never made it to Yucatan because if he had, we would have to accept him not only as apologist for Egyptian, Roman, and Ottoman architecture but for the Mayas as well. Jean-Louis de Cenival arrives at the equation: "As Le Corbusier regards a building as a machine for living, so the Egyptian temple was a machine for maintaining and developing divine energy." Paolo Portoghesi introduces "Rome and Organic Architecture" with a quotation by Le Corbusier from 1929: "Today I am accused of being a revolutionary. Yet I confess to having had only one master: the past, and only one discipline: the study of the past"; and Jürgen Joedicke illustrates his thoughts on the Turks with ten sketches from the *Carnets de Voyage*.

All of these incantations of the unassailable genius of 20th-century architecture are very illuminating. They explain a good deal about the current revival of architectural history as a concern of architectural curricula and office practice. With the gradual fading of the cultural amnesia imposed by The Master Builders of the Modern Movement, the dull eclecticism of their epigones has become almost unendurable. Faced with, say, the Honor Awards of the AIA this year, triumphantly carried

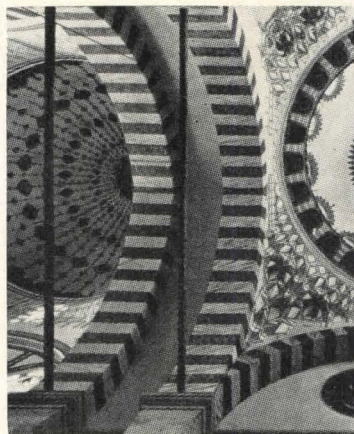
Mrs. Moholy-Nagy is professor of architecture at Pratt Institute and is a member of Architectural Forum's Board of Contributors.



Egyptian: tomb complex at Sakkara



Roman: factory at Brisgane, Algeria



Ottoman: Mosque of Suleyman I



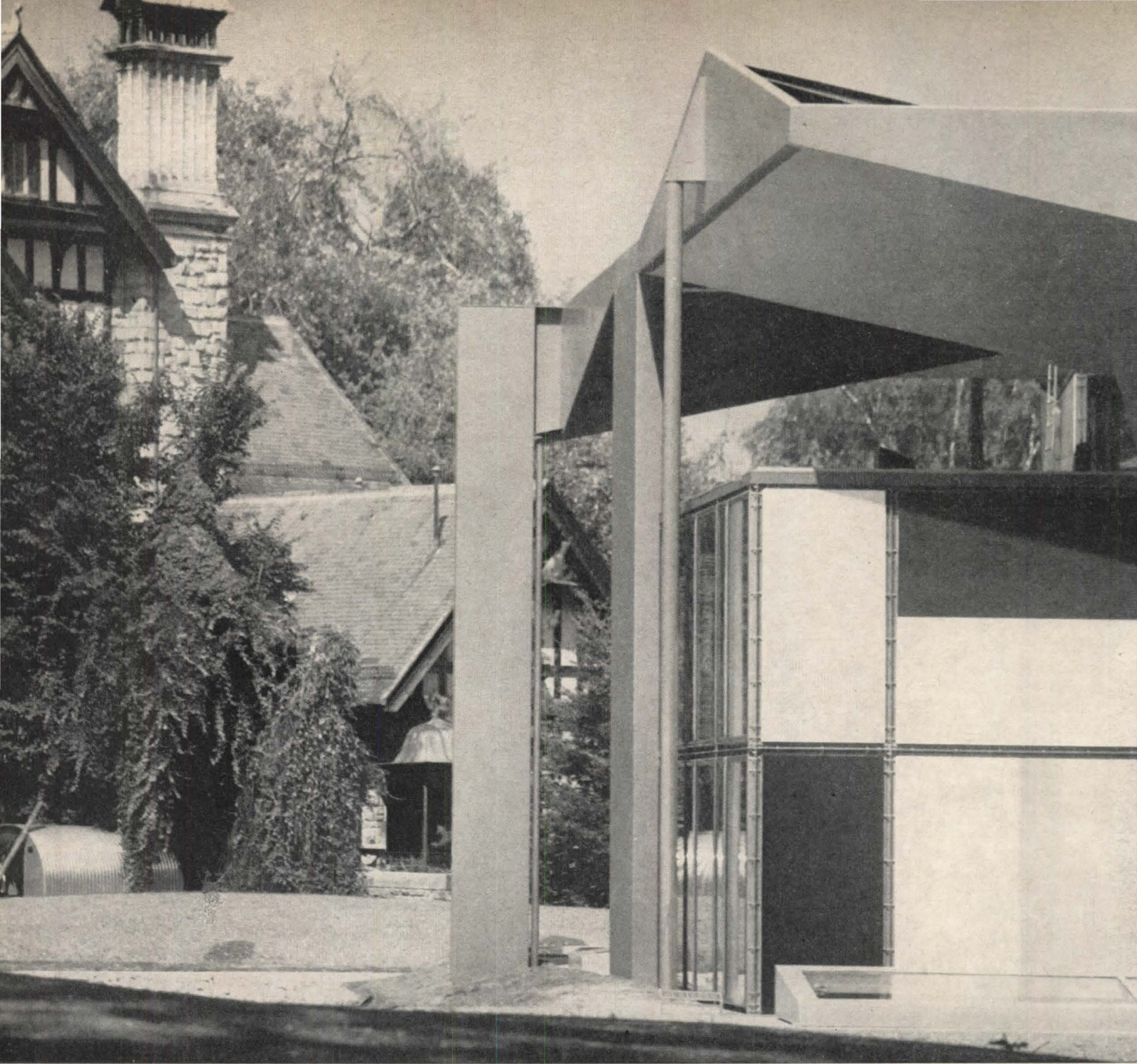
Mayan: palace at Sayil, Yucatan

away by SOM, PEI and The Architects Collaborative, the intellectual minority of the profession splits into two proselytizing congregations: the post-architectural system makers and the historical continuity scholars. The *Living Architecture* series is clearly directed toward the latter, although its editors do not burn their Bauhaus bridges.

EGYPTIAN ARCHITECTURE is introduced by Marcel Breuer. His premise that Egyptian architecture is "modern" through "responsibility toward the material of construction . . . basic and unmistakable expressions of their technology . . . the utmost function and the potential form," is illustrated by a juxtaposition of the Hunter College Library in the Bronx and the Bent Pyramid of Dashur. The main text of the volume is based on this identity of Pharaonic and 20th-century design. "Their architecture aimed to be purely functional, just as ours often does," writes de Cenival, falling victim to the Loosian doctrine that cubic form plus absence of ornament equals functionalism. Unless we state explicitly that function in architecture is not a structural-expedient accomplishment but a total response to the spiritual purpose of a building, the claim to functionality in Egyptian architecture is absurd. The perpendicular load of enormous boulders, piled vertically around an upright core to neutralize load on barely existing foundations, was structurally as precarious as the limestone cladding on steeply angular planes.

It is not the pyramids, their picturesqueness notwithstanding, which were the great contribution to the genesis of Western Architecture. These were the temples. From the (here as elsewhere) unjustly slighted Middle Kingdom to the end of the 20th dynasty one thousand years later, Egyptian temple builders created the first totally designed, totally man-made environment. While this key aspect is not mentioned in the text, it becomes beautifully evident in superb photographs and attractively drawn sections

(continued on page 102)



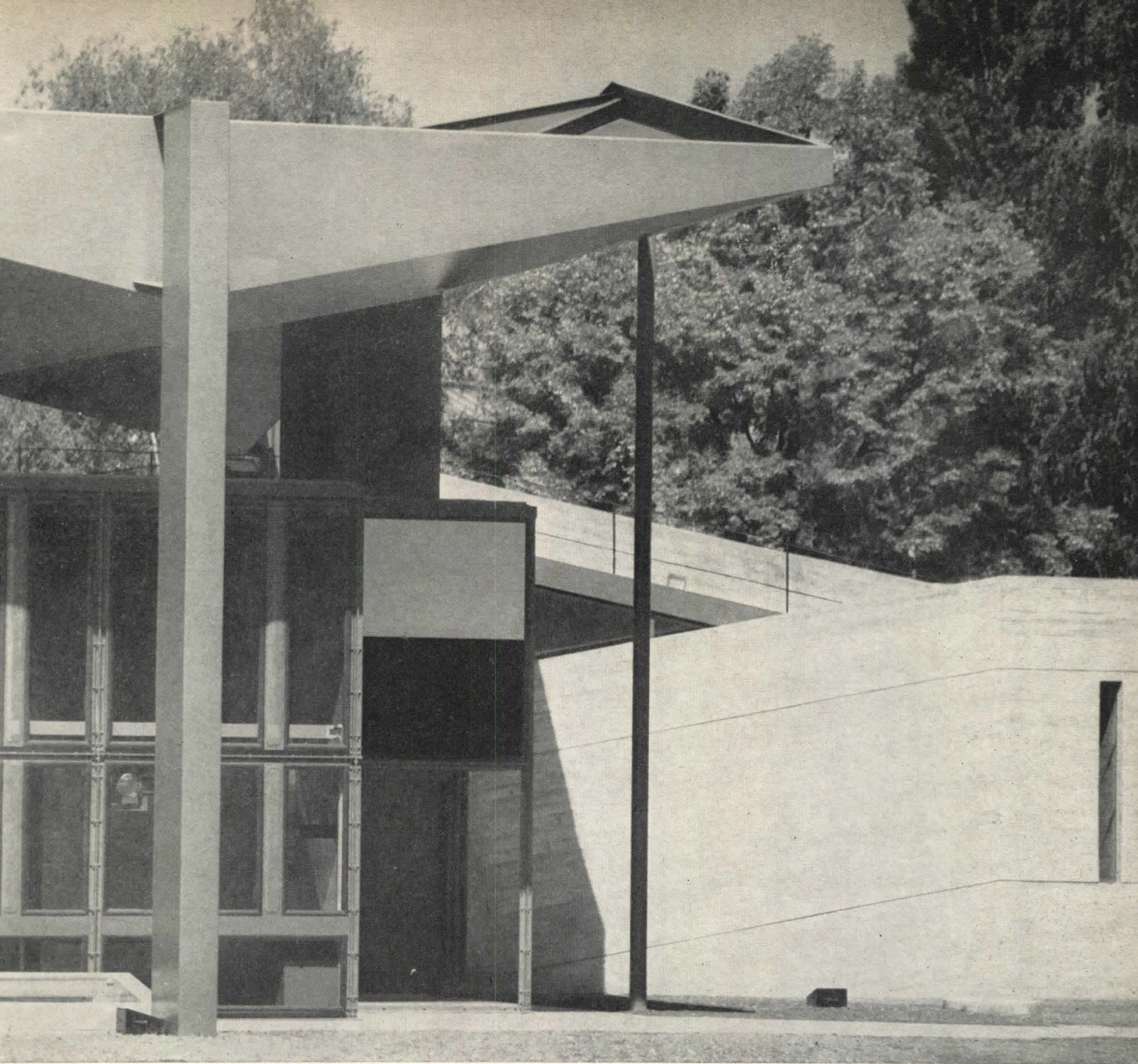
CENTRE LE CORBUSIER

In the end, the man who invented concrete
“brutalism” returned to the precision of steel

BY UELI ROTH

This is the late master's first building in his native country since the Clarté apartments built in Geneva 35 years ago. It is also his last, and was inaugurated in Zurich on July 15.

The idea of an exhibition pavilion under an umbrella dates from the late pre-World War II years, when Le Corbusier drew



sketches for the pavilion at Liège. The same idea appeared in his proposals for Porte-Maillet in Paris in 1950, for Tokyo in 1957, and for Stockholm in 1962. None of these projects was executed, however.

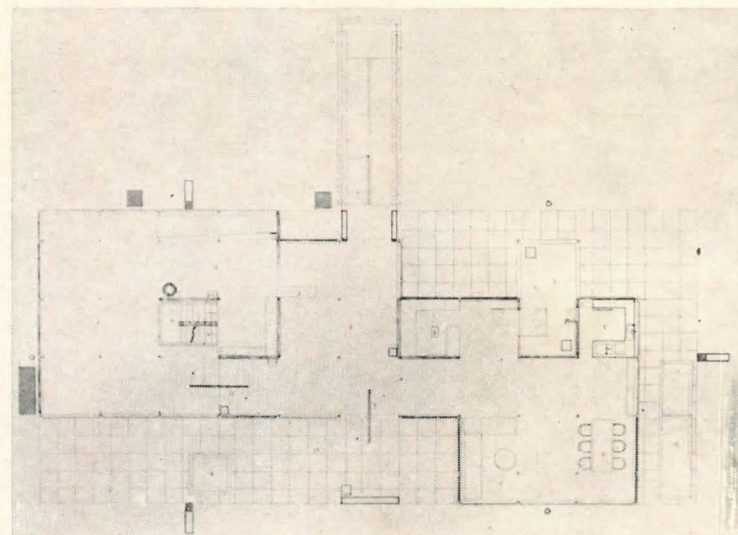
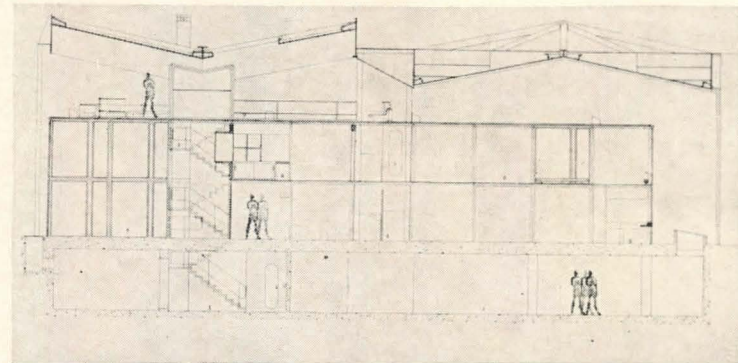
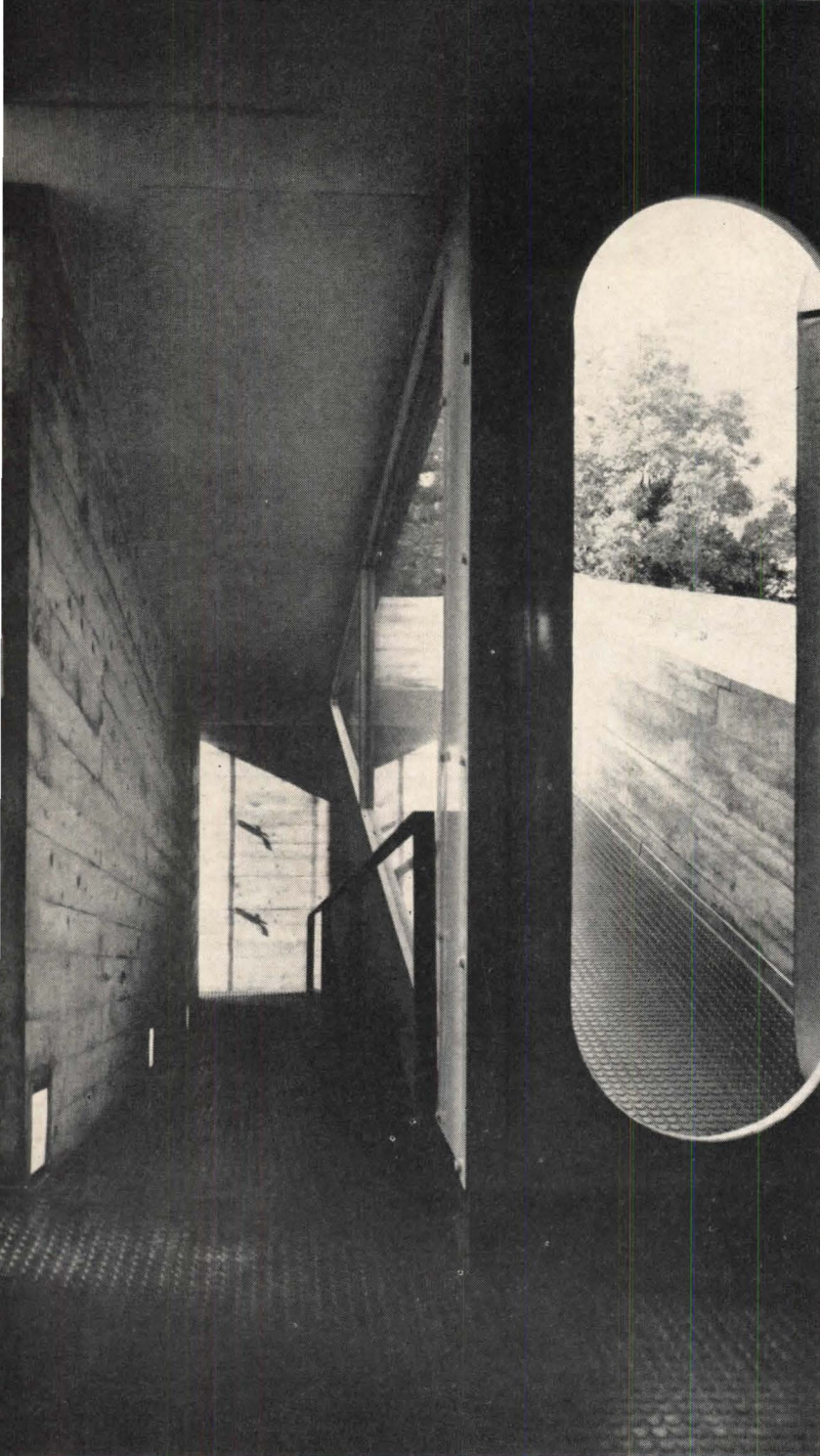
The "Project B" of Porte-Maillet concentrated its exhibition space under a permanent

metal structure, where temporary exhibitions could be arranged at will, demounted and then sent to other countries. The permanent shelter offered by "Project B" and the use of Modulor-sized panels on which to mount pictures could accommodate every imaginable shape and size of exhibit.

In 1949, Le Corbusier designed a project of vacation houses for Cap-Martin on the Côte d'Azur which were based on a modular grid of 226 cm by 226 cm by 226 cm. A similar universal structure was adopted for the enclosed exhibition spaces under the umbrella of the Zurich pavilion. At Cap-Martin, the

steel space-frame was to house people; in Zurich it houses objects for exhibit and for sale: sculptures, paintings, lithographs, tapestry, and furniture by Le Corbusier. The sense of

Mr. Roth is a Swiss architect, critic and photographer, whose office is in Zurich. He has taught at Berkeley, and practiced in the Bay Area as well.



Left: view up and down ramp, taken at second-floor level. Door with rounded corners recalls ship technology. Above: section through the pavilion, and plan of main floor. Basement shown in section was required under Swiss law, which makes

air raid shelters mandatory in public buildings. It is used for mechanical equipment and to house a lecture hall and additional exhibition space. Opposite page: details of the interiors, showing modular, bolted steel frames used to form spaces.

a residential space, however, may still be felt in part the result of the history of this pavilion. It all started in 1958, when Mrs. Heidi Weber opened a shop for modern interior decoration at a corner of medieval downtown Zurich, where she sold approved copies of Le Corbusier's 1927 furniture.

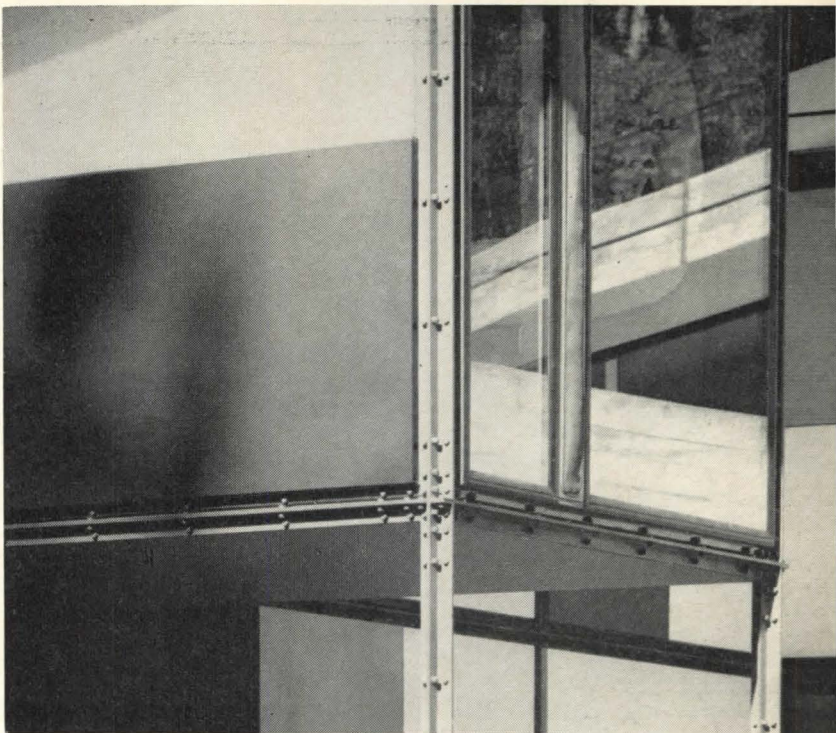
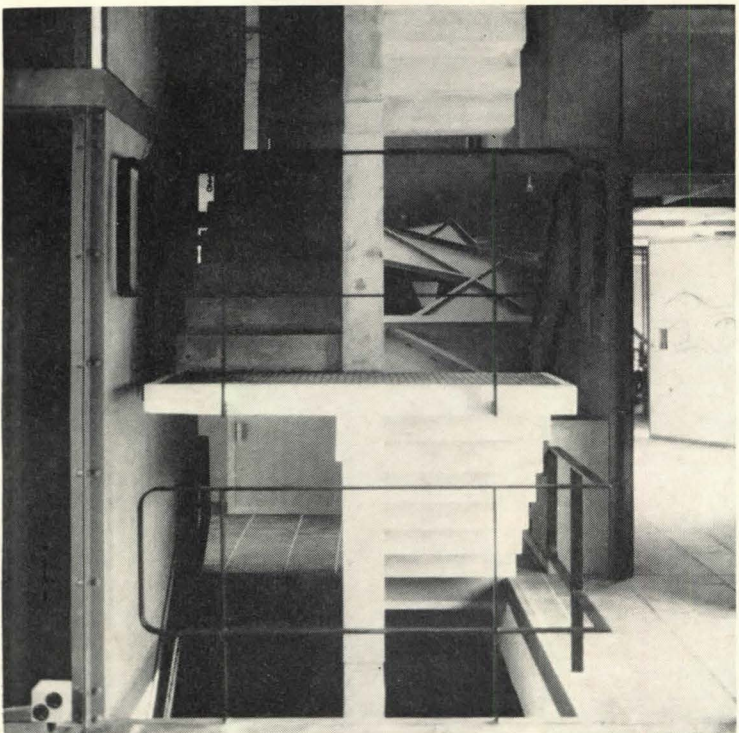
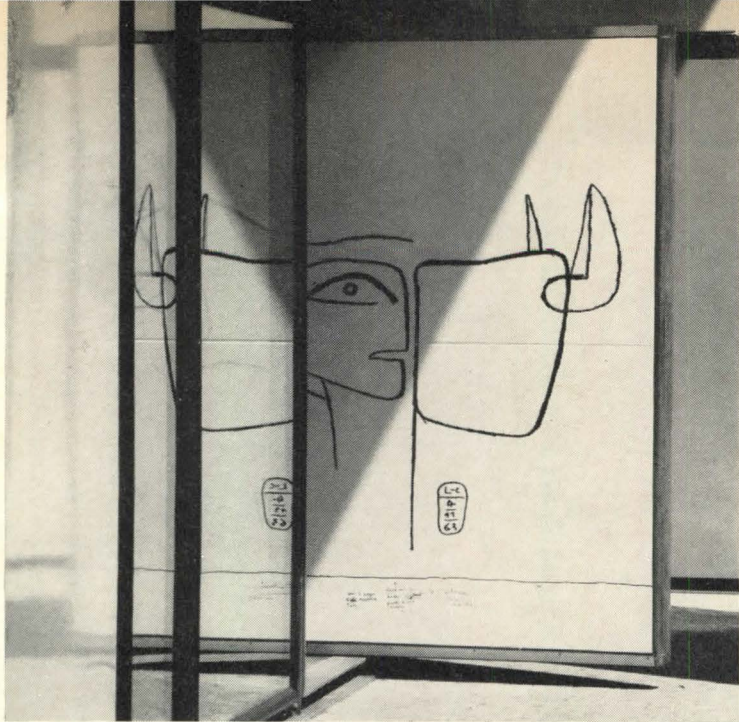
Earlier Mrs. Weber had enthusiastically traded her car for a Le Corbusier watercolor. And having "discovered" Le Corbusier's paintings, she persuaded him to print a few thousand lithographs for her and to give her patterns for tapestries, which were subsequently woven in France, for sale in her shop.

Then came talk of having Le Corbusier build a house for her. But, she avowed, the idea of living in a mecca for architects was unpalatable. Instead, Le Corbusier agreed in 1960 to build an exhibition pavilion. A splendid park site, bordering on Lake Zurich, was loaned by the city to house the Weber gallery.

The building is to become public property in 50 years.

Le Corbusier's first scheme was a project in concrete; it showed the heritage of the Porte-Maillot and related plans. Later, however, he decided to change the structure to steel, except for the connected ramp.

In the Porte-Maillot pavilion



the circulation had been designed to guide visitors through a variety of spaces: along an esplanade, through one- and two-storied covered spaces, past a garden with monumental sculptures, and over a ramp beneath the umbrellas. In contrast, the ramp of the Zurich pavilion was moved outside the building.

The study model by Le Corbusier for the earlier concrete scheme shows a strong relationship of ramp and exhibition structure; whereas, in the executed design, the independence of the ramp is emphasized by the contrast in materials.

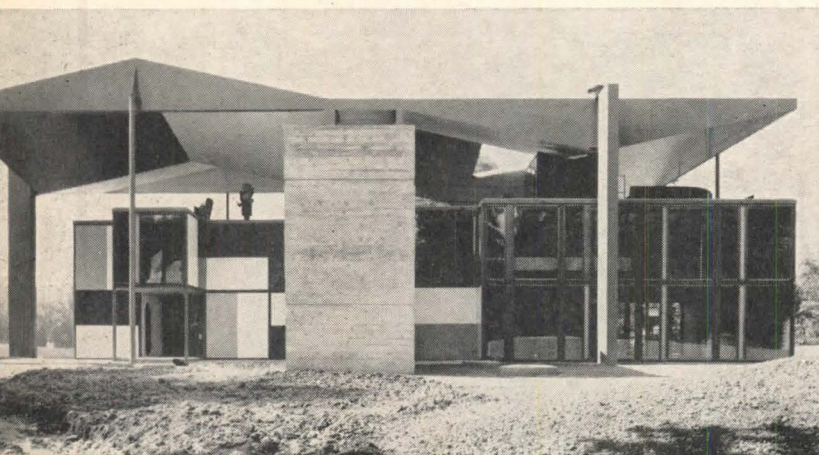
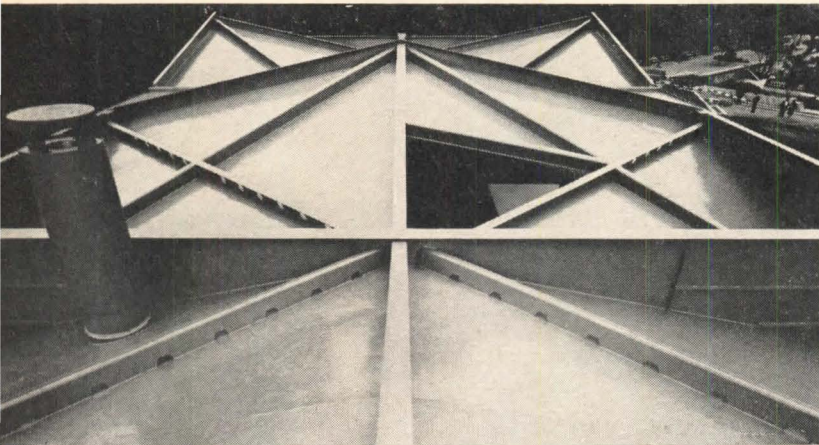
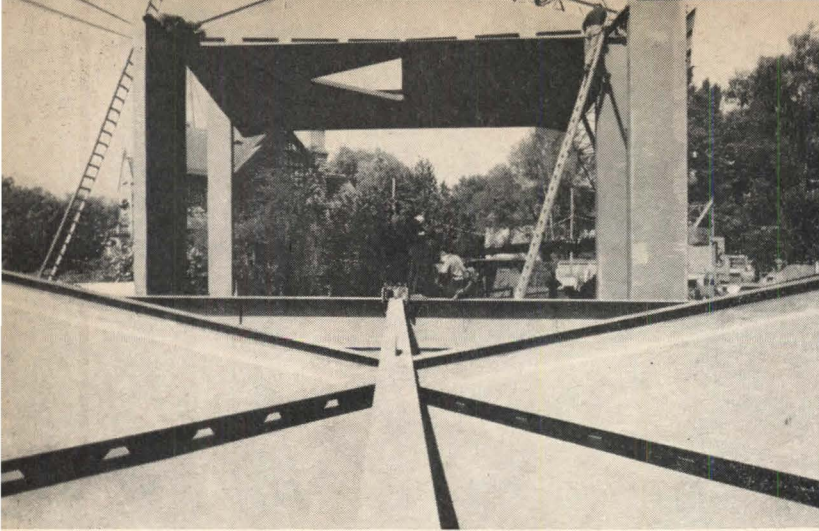
Now it is the narrow and steep stairs of the pavilion that

offer a complete spectrum of spatial experiences—an exhibition drama with peek-through openings, exposures that can cause dizziness, and vistas in all directions over the extensive lakeside park.

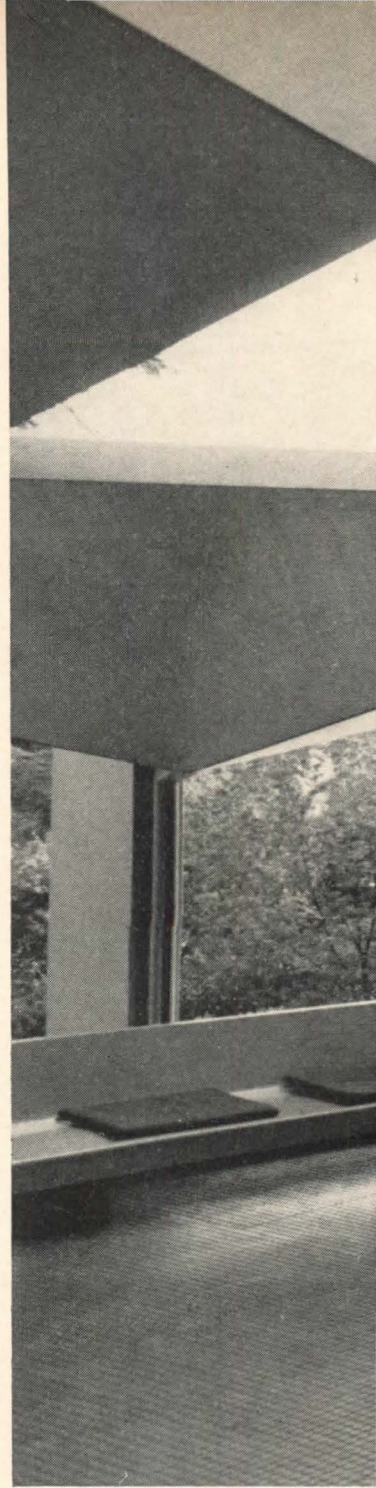
The roof consists of two square, saddle-shaped steel umbrellas measuring 12 m by 12 m,

connected by a link 2.3 m wide. This protective structure weighs 40 tons, and is surfaced with 5 mm-gauge sheet metal.

The cubes that form the enclosed spaces under the umbrellas are framed with L-shaped steel profiles bolted together on the site. The walls are glass and multicolored enamel panels, and



Left: close-ups of steel roof during erection of its prefabricated, pleated elements. Side of pavilion punctuated by free-standing, concrete ramp is shown at bottom, left. Right: steel roof forms an independent umbrella high above the enclosed spaces of the pavilion. The roof garden thus created is reached both by an interior stair, and by the exterior ramp.



create the gay feeling of a temporary fair, combined with the sophisticated precision of a painting by Mondrian.

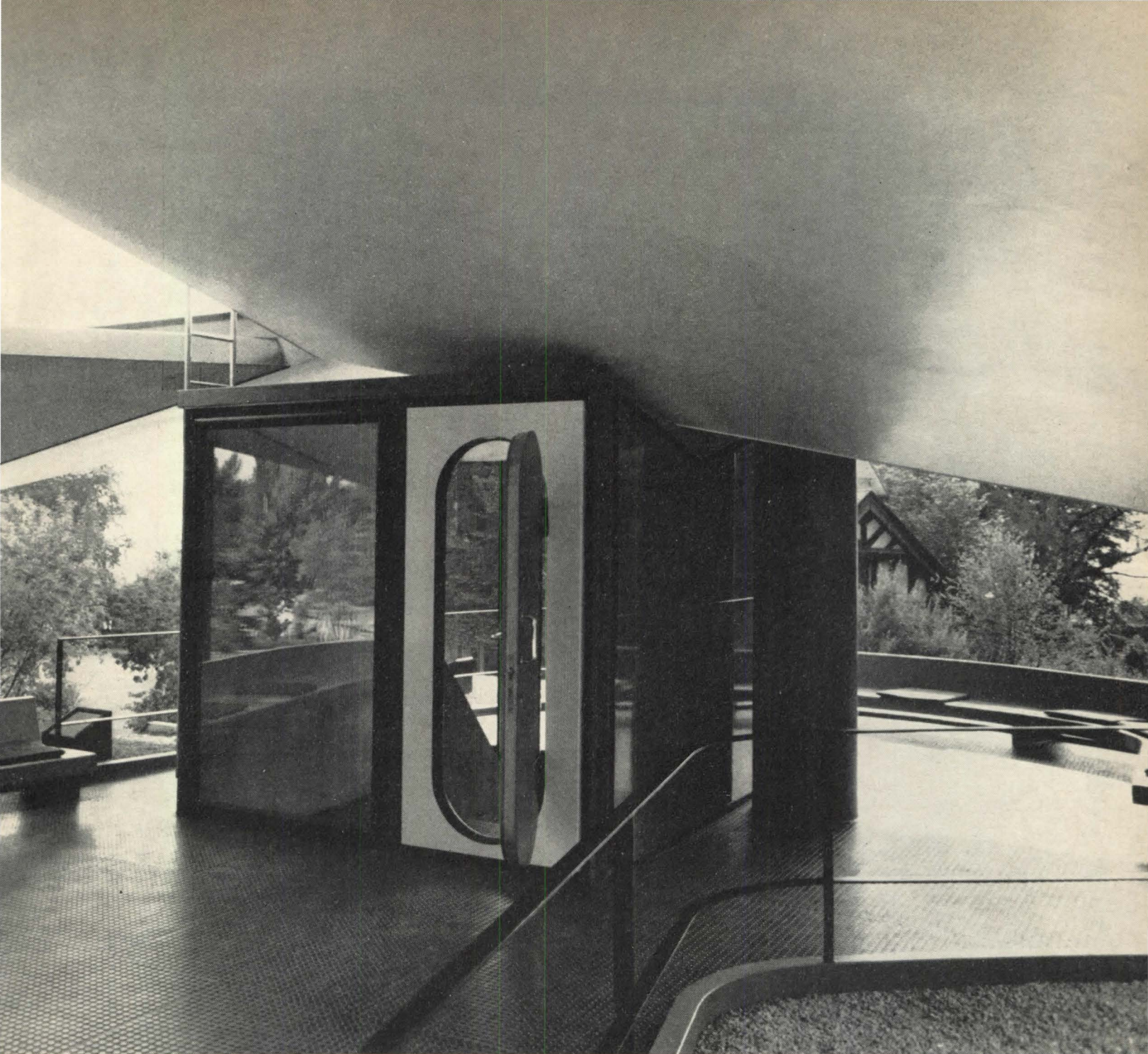
At the time of Le Corbusier's death in August, 1965, the building was under construction. But many details had not been drawn up. There developed a long series of discussions be-

tween the Paris office, various architects, numerous "consultants" and Mrs. Weber. Because the pavilion's kitchen had not been designed in detail by Le Corbusier, it was patterned after the kitchen in the architect's own Paris residence.

According to Stanislaus von Moos, a Swiss architectural

critic, the work of every important architect includes buildings which open new perspectives and others which are variations on themes already known. This building may belong to the latter category. Within the confines of a small site, the pavilion is a recital of the vocabulary of Le Corbusier's architecture.

The bolted frames and panels are reminiscent of the esthetics of the transatlantic steamer which formed an important source of inspiration to Le Corbusier in the days of *L'Esprit Nouveau*. It was no accident that his 1923 book, *Vers une Architecture*, pictured the deck of a steamer on its jacket—and



some of the doors of the Zurich pavilion have the rounded corners of ship's doors. The independence of the roof is not new either: the chapel of Ronchamp and the High Court of Chandigarh preceded it. So the pavilion has been called an inspired, but somewhat condensed compilation of forms and for-

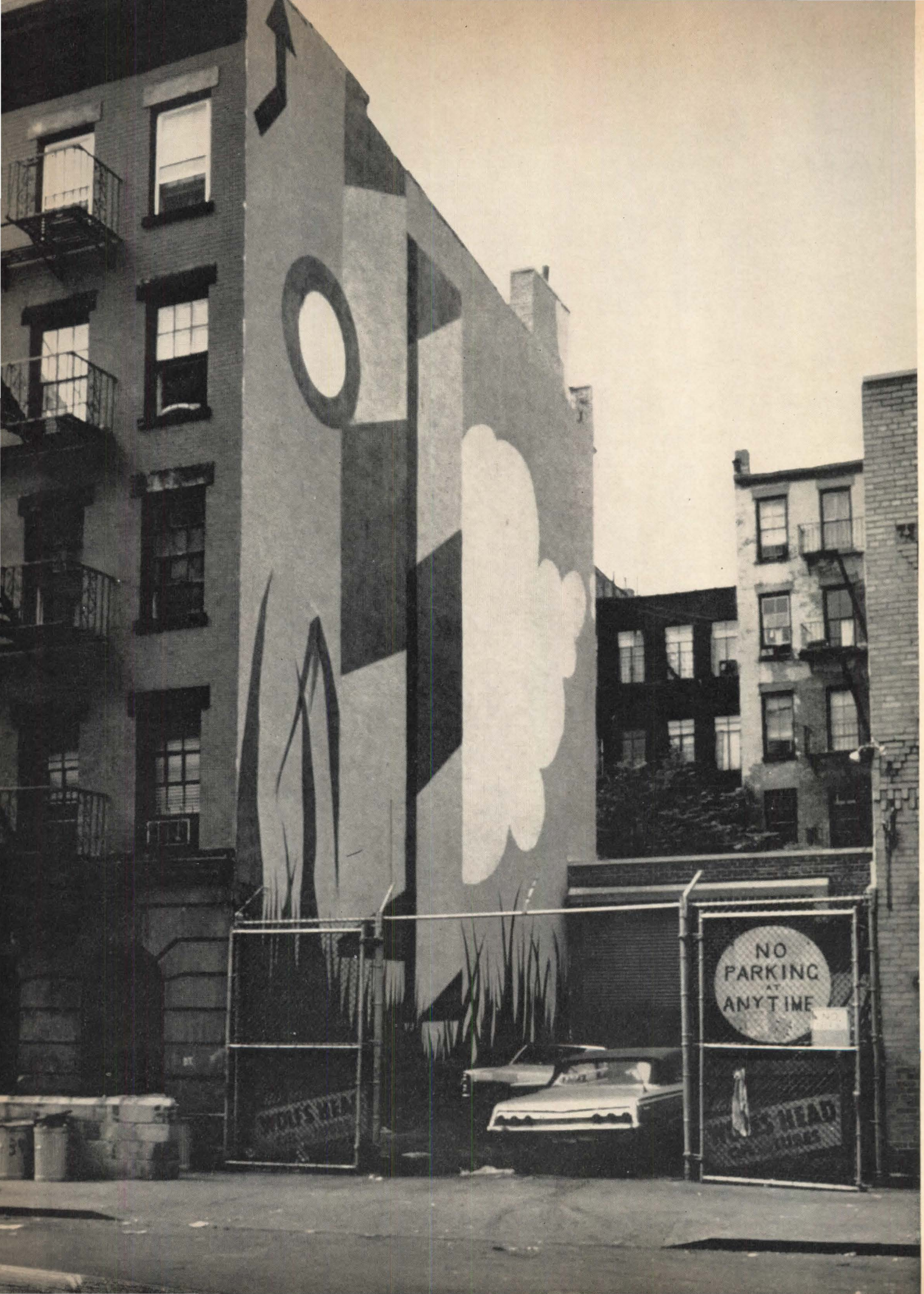
mulas which were conceived by Le Corbusier at an earlier time, and a lesson in their potentials.

Mrs. Weber has perhaps done the best possible job in a most difficult situation. Questioned about a few details of the pavilion, she replied by quoting Le Corbusier: "It's the spirit that counts." The building cer-

tainly shows Le Corbusier's stamp, though his death excluded the possibility of leaving on it his complete signature. One wonders what changes he might have made when faced with the challenges and problems of construction in steel—a material he had not used in many years.

FACTS AND FIGURES

Centre Le Corbusier, Zurich, Switzerland. Owner: Mrs. Heidi Weber. Architects: Le Corbusier; after his death: A. Taves and R. Rebutato. Engineer: M. Fruitet (structural). Steel roof construction: Wartmann. PHOTOGRAPHS: Pages 82-83, 85, Ueli Roth. Page 86, Jurg Gasser.



go \$375,000 (several times what the Administration requested) for research on the causes and cures of air pollution. The Administration did *not* get the go-ahead it was seeking to set up "national emission standards," and the Senate may have been wise to reject uniform nationwide regulations in favor of research.

For the present, there is obviously little scientific agreement on just which pollutants are dangerous or how to control them. Emission of pollutants, which the Administration wanted to regulate, is only one factor; pollution is as much influenced by distribution of sources and climatic conditions.

The current lack of reliable criteria was demonstrated by a



report last month from the U.S. Public Health Service. It listed 65 metropolitan areas with severe air pollution problems, in order of seriousness. A quick look at the list (New York, Chicago, Philadelphia, Los Angeles-Long Beach . . .) shows a suspicious correlation with the *population* of areas listed. A look at the factors behind PHS's ratings shows why: some of them ("area's total gasoline consumption" and "area's total emission of sulfur dioxide," for instance) are measurements of total quantity, rather than concentrations or observed conditions.

Little wonder then that New York came out first (or worst, see above) while Jersey City, a relatively small but smog-bound enclave just across the Hudson, ranked 17th (just after Louisville and just ahead of Washington).

Jersey City's rating obviously does not account for the oil refineries and railroad freight yards that ring it, or the fact that most of the truck traffic between New York and points south and west passes through it (unaccounted for in PHS statistics because so little of the fuel *burned* there is *bought* there).

The lesson of this pollution list is clear: before the government can set standards, it must have reliable means of measuring pollution. And when it does set standards, they should probably be, as the Senate concluded, flexible ones that would allow for regional and local geography.

NEVER TOO LATE?

About a year ago (Sept '66 issue, page 30), New York's venerable Robert Moses announced another of the many improvements he has bestowed on his city. His quasi-public Triborough Bridge and Tunnel Authority was going to spend some of its excess millions for a few vest-pocket parks and playgrounds on patches of land scattered along the city's expressways. He pointed out that TBTA had always included such amenities along its own bridge and tunnel approaches, but an obscure clause in its charter allows it to make improvements along any roads leading to them.

Now the first half-dozen parklets, all of them in Brooklyn, have been completed, and it is clear that recent innovations in park design have gone unnoticed by Moses' staff. The authority has built a patchwork of asphalt-paved, cyclone-fenced ball courts alternating with Depression-era concrete benches (below)—all overwhelmed by the shadow and roar of the Brooklyn-Queens Expressway. If the neighborhood kids are looking for places to play, they could find more inviting ones in a reform school.



THE SOUND OF HEARINGS

Opposition to the World Trade Center and/or the Port of New York Authority continues to be heard. In fact, since our last report (May '67 issue) there were these hearings:

- By the City Planning Commission (in May) and the Board of Estimate (in June), each body giving its blessing to the WTC. One hundred architects and other design professionals made a last-ditch stand in May, signing a petition that opposed the project on various grounds.

- By the Federal Communications Commission (in July) on the TV question. The TV antennas of the nine local stations were finally set to move to the WTC from the Empire State Building, but various people (among them the owners of the ESB) charged that television reception would be impaired during construction and even afterward. Each side brought its own experts to the duel; the upshot of it was, according to FCC Commissioner Robert E. Lee, that reception as far away as Baltimore and Philadelphia may be threatened.

- By the state's Democratic Controller Arthur Levitt (in August) on whether the state should lease office space in the WTC. The state had been scheduled initially to take almost one-fifth of the World Trade Center's 10 million sq. ft., with expansion as needed after that. At Levitt's hearing, 18 Congressmen went on record in opposition, favoring instead the location of state offices in depressed areas of the city.

One lone state Assemblyman, S. William Green, joined the opposition: "I am no foe of good architecture . . . But I do not believe that the Ozymandias-like gargan-

FOOTNOTE

Pop tenement—"Something there is that doesn't love a wall," the late Robert Frost wrote. However that may be, somebody certainly does—specifically one Allan D'Arcangelo, a youngish New York painter who was delighted to do this 50 ft. by 60 ft. pop job on a Lower East Side party wall, when the other party was torn down. The man who asked him to do the job was Planner David Brumberg, who has been trying to jazz up the neighborhood—rather successfully, we think. The paint (acrylic) is probably no more than a tenth of a millimeter thick—but, still, that's trespassing on one tenth of a millimeter of the next door property. Lots of luck to A.D.A., Brumberg, and the Justices of the U.S. Supreme Court.

tuanism which the Port Authority apparently insists on for the WTC necessarily equates with good architecture, nor should the New York taxpayers be called on to subsidize it at a time when the state is once again facing serious fiscal problems."

The day after Levitt's hearing, Governor Rockefeller backed a study prepared for Levitt by the engineering firm of Madigan-Hyland: the study concluded that it would cost more for the state to construct its own building than to move into the Port Authority's building. An aide of Levitt's then divulged that Madigan-Hyland's construction figures had come from the Port Authority, a fact confirmed, uncomfortably, by Madigan-Hyland.

PLANNING ALERT

Planners for Equal Opportunity, a nationwide group of 250 urban planners, has announced a Planning Alert—"a call to the profession to take action on the basic issues: ending poverty and racial discrimination, ending the war in Vietnam, giving Negroes and the poor decision-making power." The alert will take place in Washington October 1-3, concurrent with the AIP national convention.

PEO's plan is for a series of meetings and workshops to be held at the Shoreham and Sheraton Park Hotels, also for a tour of Washington slums. Their hope will be to arouse members of a profession that PEO feels is basically conservative, to move planners toward a re-examination of existing national priorities, and to redefine the traditional relationship between planners and the people they serve.

HEAT OVER HAWAII

The heat generated over possible changes in the zoning of Diamond Head seems enough to rekindle this long-extinct volcano. The battle is over a ten-acre strip of land along the shores of a mountain that is almost the symbol of Hawaii (Nov. '66 issue); the landmark is unfortunately in a strategic location 20 minutes from downtown Honolulu and 10 minutes from Waikiki Beach.

The Honolulu City Council will shortly be deciding the issue. Already, some 25,000 orange bumper stickers urge them to SAVE DIAMOND HEAD. Among the various proposals are these:

- Build a group of 20-story high-rise hotels, reaching halfway

up the 761-ft. slope, and accessible by a four-lane highway. This vision is entertained by the Diamond Head Improvement Association, a small group of property owners who would bring 2,000 hotel rooms, 3,500 jobs, and an additional \$4 million annual tax revenues to the area. For promotional efforts, the Improvement Association has hired a major advertising agency.

- Build no more high-rise structures, but create a low-rise resort of high quality, stepping down from the existing high-rise buildings into buildings of three and four stories. This proposal was the essence of a study done for the City Planning Department last year by John Carl Warnecke & Associates. The planning director of Honolulu favors apartments two stories high.

- Maintain single-family residential use, as voted, late in June, by the Honolulu Chamber of Commerce and as also recommended by the Honolulu City Planning Commission.

- Leave Diamond Head in its natural state, ultimately for development into a park. Behind this proposal is the Outdoor Circle, a group of conservationists who, 40 years ago, waged a successful fight against billboards when a huge sign for chewing gum briefly graced the side of Diamond Head. To this day, Hawaii remains the only state without billboards.

Also with the conservationists are the Hawaii chapter of the AIA, the International Longshoremen's and Warehousemen's Union, and the Oahu Development Conference, a five-year-old group of leading figures in banking, industry, and civic affairs. They quote Governor John Burns that "the ownership of land, whether public or private, does not carry with it the right to deface its natural beauty in the name of progress."

VISIONS

PAST AND PRESENT

Visionary architecture constitutes the theme of two exhibitions, one currently at the Museum of Modern Art in New York City until September 23; the other at the art gallery of the University of St. Thomas, in Houston, Texas, to run from October 15 to January 3.

The 147 drawings, plans, and engravings at Houston, by the

late 18th-century Architects Etienne-Louis Boullée, Claude-Nicolas Ledoux (shown below), and Jean-Jacques Lequeu, represent a break from the then current baroque style. While the subject matter is often drawn from classical antiquity, the simplicity and geometric quality of its treatment reflect totally new concepts of form.

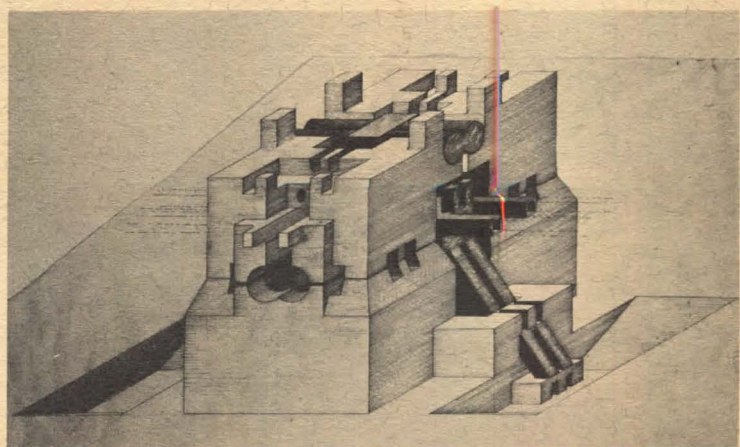
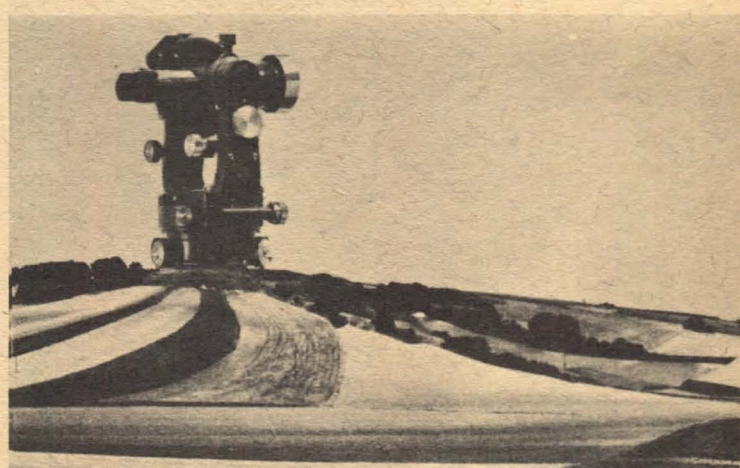
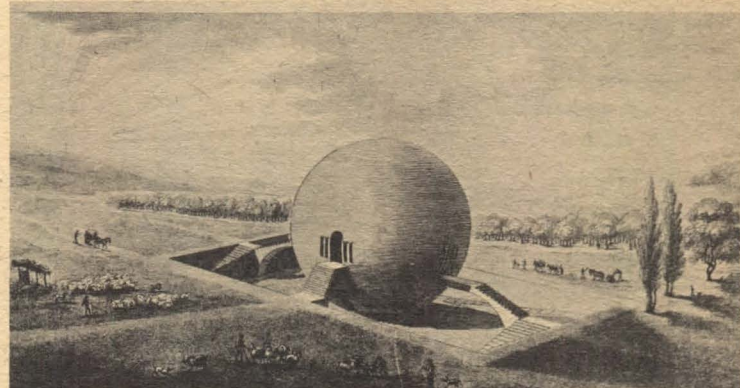
The drawings and photomontages of Hans Hollein (center), Raimund Abraham, and the sculptor Walter Pichler (bottom) in New York are patently futuristic. Their sources of inspiration are industrial forms. But both groups achieve their mysterious effects by means of exaggerated scale and by placing recognizable forms in

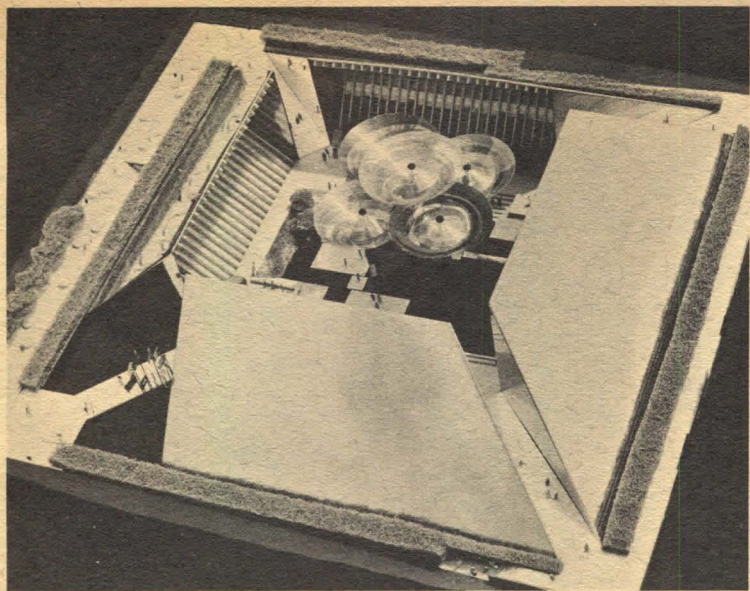
totally unrelated contexts. The experience may not be psychedelic, but it does induce a good old-fashioned *frisson*.

OFF TO THE FAIR

Canada, whose Expo 67 is still drawing crowds to Montreal, already has a head start toward the Osaka fair of 1970, which the Japanese (wisely adopting Canada's new international word) are calling Expo 70.

Fairest of the 207 entries in a national design competition for Canada's pavilion (in the judges' eyes) was a scheme by Erickson-Massey of Vancouver, a firm noted for its design of Simon Fraser University (Dec. '65 issue) and the Man in his Community





Pavilion at Expo 67. Jeffrey Lindsay of Montreal and Los Angeles was a "prime consultant" on the design.

The pavilion will actually be four buildings around the edges of the square site. Their uniform structural frame of precast tees tilted at a 45-degree angle will be clad on the outside with planes of mirror glass, which will look from the ground like fragments of sky (above).

Entrances at three of the corners will be mirror-lined slots, yielding endlessly repeated reflections of people passing through; the main entrance at the fourth corner will be wider, with pools reflecting mirrored walls (which will in turn reflect the rest of the fair) to produce something like a walk-through kaleidoscope.

The opening in the center will be a "gathering place," where revolving umbrellas designed by Vancouver Artist Gordon Smith will put on a continuous kinetic art show. One drawback is that the kinetic art, and the mirrored walls as well, will lose some of their impact if the sky is overcast, as it may well be for half the summer in Osaka.

BEAUTY

POWER POWER

When the Potomac Edison Company decided to put a transmission line 110 ft. high through the Potomac Valley in Western Maryland, a universal cry of dismay went up. No one liked the location—neither private property owners nor any level of government from local to state to Federal.

But dismay has no legal weight

against the unlimited powers of condemnation that Maryland has given its public utilities. Maryland's House of Delegates may perhaps be moved to rescind these absolute powers in the future; as for the present, Congressman Henry S. Reuss (Dem., Wis.) has introduced a bill that would at least give the Secretary of the Interior power of review on the location of interstate transmission lines.

BILLBOARD BOOM

"It is the largest outdoor showing ever in New York State." This cheery remark by an ad man for the billboard campaign to popularize the State Lottery marks another slap in the faces of the crusaders for natural beauty. Slogans promoting the lottery (below) will grace 2,100 outdoor billboards, 1,800 subway station posters, 12,855 cards in every subway car



and almost every bus in all of New York's major cities.

One reason for resorting to public eyesores is that the FCC has banned lottery promotion on the air, and the Post Office Department has banned lottery promotion in third-class mailings of newspapers and magazines. The state's budget for promoting the lottery is \$1.2 million, so the billboard industry may be in for quite a boom.

GLORY

FINE ARTS COMMISSIONERS

The President has named two new members to the 7-man Commission of Fine Arts and reappointed the commission's present chairman, William Walton, to another four-year term.

The two new members are John Walker, director of the National Gallery of Art, who replaces Burnham Kelly, dean of Cornell's College of Architecture; and Chloethiel Woodard Smith, Washington architect, who replaces Architect John Carl Warnecke. Architect Gordon Bunshaft, Sculptor Theodore Roszak, and Critic Aline Saarinen, three members of the present commission, whose terms expired this summer, were asked to stay on for an additional year without formal reappointment. The term of Hideo Sasaki, professor of landscape architecture at the Harvard Graduate School of Design, expires in December, 1970. Thus the system of staggered terms has been reestablished.

William Walton's reappointment does not automatically carry with it the position of chairman. This question will be decided when the commission reconvenes in September.

STAMPS OF APPROVAL

Modern buildings are not often depicted on postage stamps—and when they are, the resemblance of the stamp to the building is purely coincidental (see the West German stamp commemorating Scharoun's Berlin Philharmonic Hall, reproduced in our Jan./Feb. '66 issue).

This is to record a welcome exception to the rule: the U.N. has issued this stamp (top right) to mark the opening of its handsome pavilion at Expo 67. The architects for the building were Eliot Noyes of New Canaan, Conn., and Donaldson, Drummond & Cankey of Montreal. The designer of

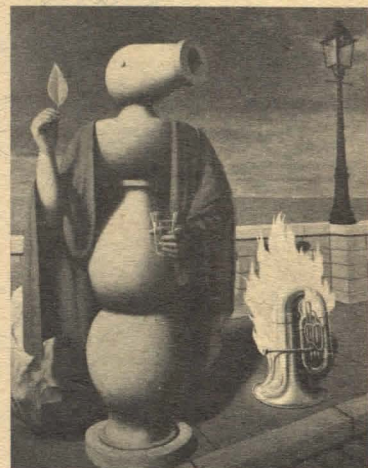


the stamp was Olav Mathiesen. The stamp costs eight cents (Canadian), and will deliver an airmail letter from the U.N. Pavilion to any part of North America for the duration of Expo.

PEOPLE

DIED

• Stanley McCandless, professor emeritus of lighting at the Yale School of Drama, died on August 5, at the age of 70. He originally joined the architectural firm of McKim, Mead & White in 1924, and subsequently taught stage lighting at Yale for 40 years. He served as lighting consultant for the United Nations Assembly Hall, Radio City, the National Gallery, the Trans-World Airlines Terminal at Kennedy International Airport, theaters at Yale, Amherst, Sweetbriar, and Williams College, and on Broadway.

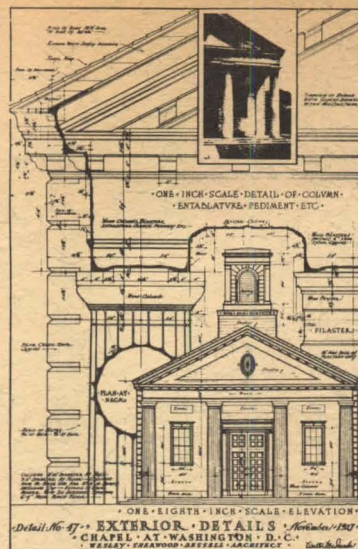


• René Magritte, the Belgian surrealist painter, died in Brussels on August 15, at the age of 68.

He founded a Belgian surrealist group in 1924, then moved to Paris in 1927, where, during a three-year stay, he became associated with the French surrealists. He was close to the poets André Breton and Paul Eluard.

His characteristic paintings consist of disparate forms in strange spatial relationships, rendered with a meticulous technique that often produced a *trompe l'oeil* effect (above).

Walter McQuade



JARGON—

PAST AND PRESENT

Even as a child, I became aware that architects talked a little differently from other people. My father would say "like so" instead of "like this." (I should add he more than made up for this awful eccentricity as a father by being able to draw freehand, without a compass, a virtually perfect circle.) There was also the more specific trade jargon of course—mullions, entasis, double-loaded corridors, etc.—but I have more in mind the frequent use of certain nontechnical words.

One of these words, for example, was *swell*. He would recall a swell

rendering by Hugh Ferriss or a perfectly swell stairway in one of Harry T. Lindeberg's or Aymar Embury's country houses. The word wasn't flip; it was said with real persuasive admiration. *Grand* was another of the words. His was an architectural generation that had been schooled in grandeur in *ateliers*, and they made both words stick in the years after World War I and through the 1920s in places such as Grosse Pointe and Glen Cove, with their rolling slate-roofed residences, etc. They knew how to draw too. I, for one, am always particularly flattered when an elder architect thinks it was this McQuade, not my father, who produced one of the measured drawings such as that shown above in the November, 1927, issue of *The Architect*. (Their architectural magazines were pretty swell as well; *The Architect* always had a Piranesi print as cover and used only one side of its fine paper on which to print plates or photographs. The other side simply was left blank.)

Today, architects still talk a special way, but the words have a different ring. Only a few, such as Philip Johnson, will bravely use the direct approach to formal grandeur. By report, Ed Stone, while touring one of his completed buildings with a client, still will sometimes stop walking and step back and nod that formidable Arkansas countenance and drawl, "Isn't it the most beautiful damned thing you ever saw?" But the kind of jargon we go in for at present is much heavier on such words as *viable*, *discrete*, *expertise*, *massive*, *thrust*, *enormous*, *grim*, *innovative*, *bland*, and *upwardly-mobile*, with a *chiaroscuro* dropped in only now and again

to hold the artistic franchise.

I think I know where this vocabulary comes from, and it may well be a good sign for the profession. It has the ring—or should I say the soft, folding sound—of the language of governmental sociology. I have even noticed a couple of architects recently dropping that professorial phrase *to be sure*, a give-away that they've been listening to a sociologist.

What I hope is that architects are talking to the sociologists, too, not just listening. When more governmental sociologists recognize genuinely that the quality of urban design and architecture is more and more one of the relentless shapers of a city's mood—of, perhaps, some of a city's very sociology—we'll all be making some progress. Maybe we'll be able to recognize that point has been reached when a few sociologists begin to drop words like *fascia* into their discourses, and to carry felt-point pens for making little sketches.

At any rate, it is comforting to remember that when architects' language becomes actually oppressive, and their verbalisms downright pretentious, something usually happens to clear the air. That happened to the scientific jargon we all picked up in the 1950s. Remember bi-nuclear? It was, again, Ed Stone who shattered that one, as I recall.

The story goes that Stone was doing a visiting critic stint at a campus where all student designs were as bi-nuclear as possible. All the functions of the programs were cut up into as many freestanding, articulated (aha!) structures as possible, connected by one-story corridor structures, with both walls glazed, like test tubes.

Stone came to one student's drawing board which had on it drawings for a windowless manufacturing plant to the left and a windowless administrative office unit to the right, connected by one of those test tube corridors, with a glass door at the midpoint. The visitor would enter the transparent door, turn left for manufacturing, right for administration.

Stone studied the drawings quietly. The student, to break the silence, nervously said something about bi-nuclear, and Stone grunted. Then he said, "Why, boy, you can't make both those walls of that bi-nuclear link out of glass. That would be like looking down a man's throat and seeing out his anus." To be sure.



PHOTOGRAPHS: Page 31, for Time by J. Edward Bailey. Page 32, for Time by J. Edward Bailey (top); Herblock in The Washington Post © 1967 (bottom). Page 33, French Government Tourist Office (left); Ann Douglass (center); Bob Mattis for The Sunday Bulletin Magazine (right). Page 34, for Time by Nelson M. Morris. Page 90, the New York Times. Page 91, courtesy of the St. Thomas Art Gallery, Houston, Tex. (top); courtesy of The Museum of Modern Art, New York (center and bottom).

To keep the Conflex* laboratory furniture up to date, Hoffmann-La Roche scientists keep a screwdriver handy.

That and a moment's notice is all they need.

Hoffmann-La Roche selected Blickman to fabricate an ultra-modern laboratory installation featuring Conflex construction. This permits them to change cupboards to drawers, switch deep drawers to shallow ones, and to mix drawer and door sizes, as the need for new storage arrangements is indicated. Over 1,000 variations of drawers and cupboards are possible. The only tool needed to perform the transformation:

A SCREWDRIVER.

The 5 floors of laboratory furniture which Blickman installed are of phosphatized-bonderized enameled steel that provides a non-rust, chemical-resistant and impact-resistant finish. In choosing Blickman Conflex furniture, Hoffmann-La Roche achieved the ultimate in flexibility and endurance.

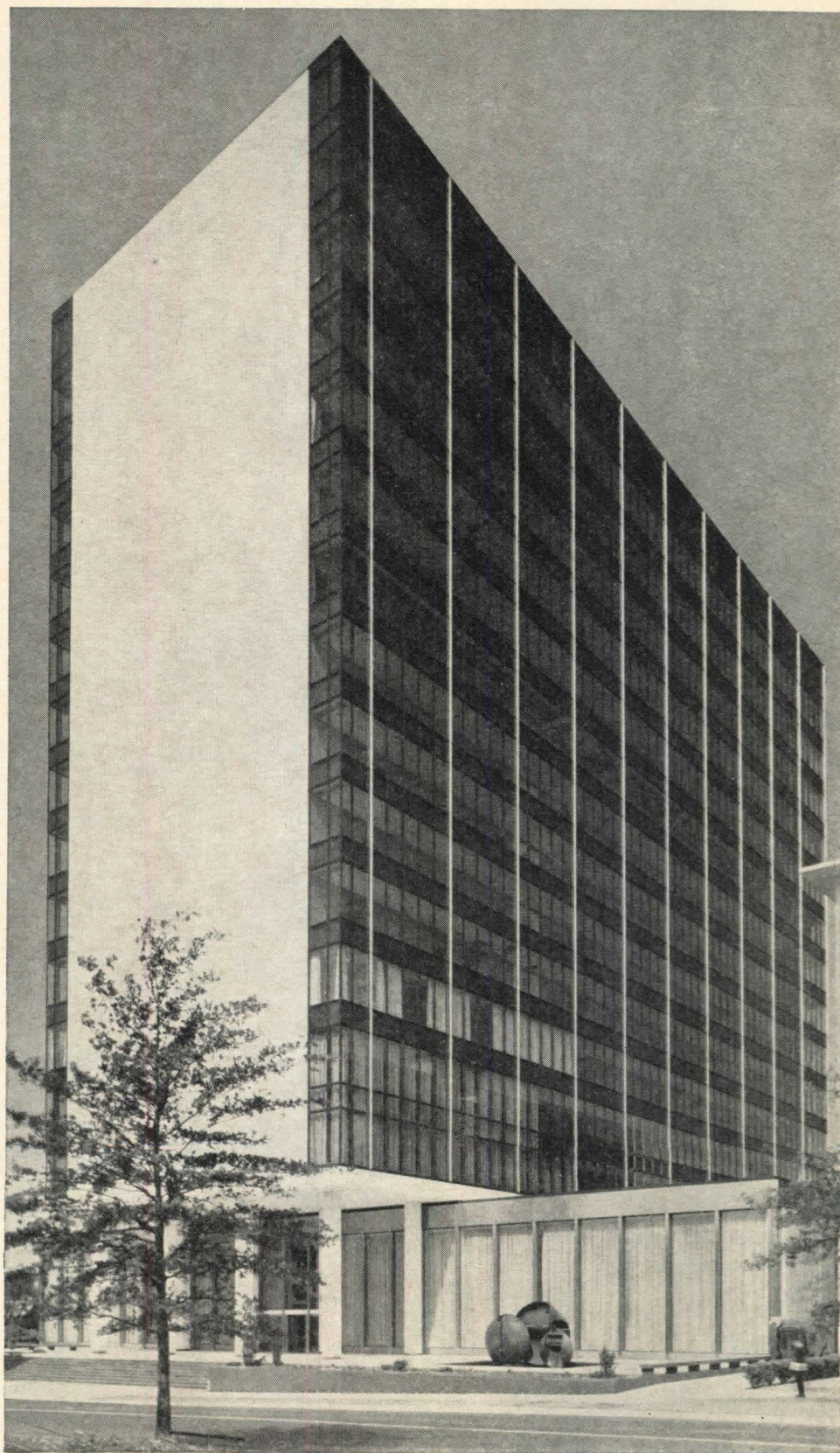
For more information about Conflex laboratory furniture, write S. Blickman, Inc., 6908 Gregory Ave., Weehawken, N. J. 07087.



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AGAIN and AGAIN and AGAIN

The E. F. Hauserman Company used S&G overhead stops, roller latches and custom flush pulls on moveable partitions in Bell Telephone Laboratories' modern, glass-walled research and development center at Holmdel, New Jersey. In many new industrial buildings, apartment complexes, schools and hospitals, architects again and again specify Sargent and Greenleaf hardware.



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PREVIEW

To accommodate 1,500 trainees on rigid daily schedules, Marquis & Stoller's U.S. Coast Guard barracks at Alameda, Calif., will be laid out in three clusters around a central assembly area (site plan below right). Ramps 16-ft. wide will give men in the second-floor quarters as direct a route to formations as those on the first floor.

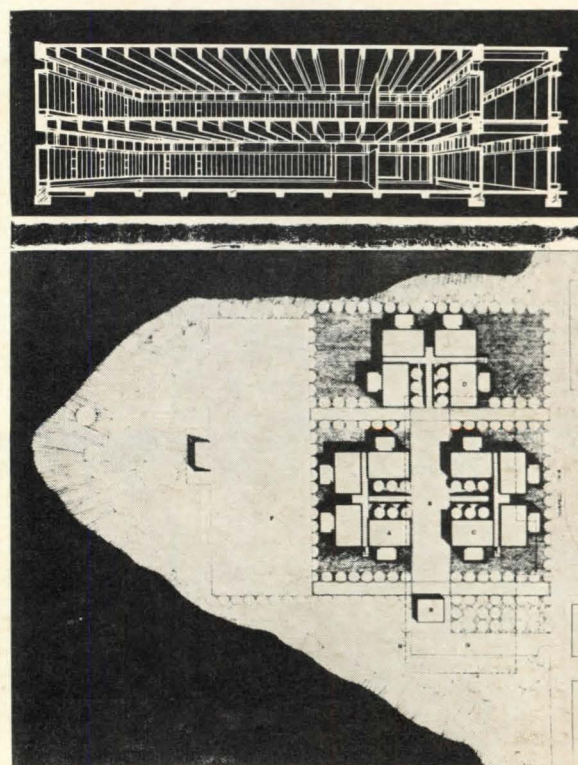
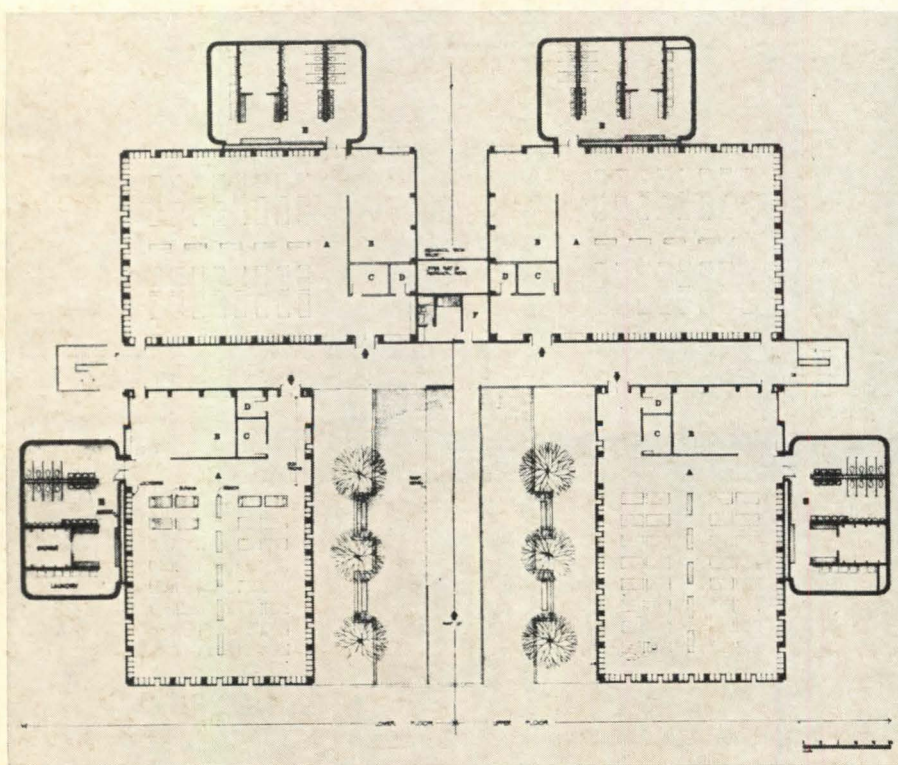
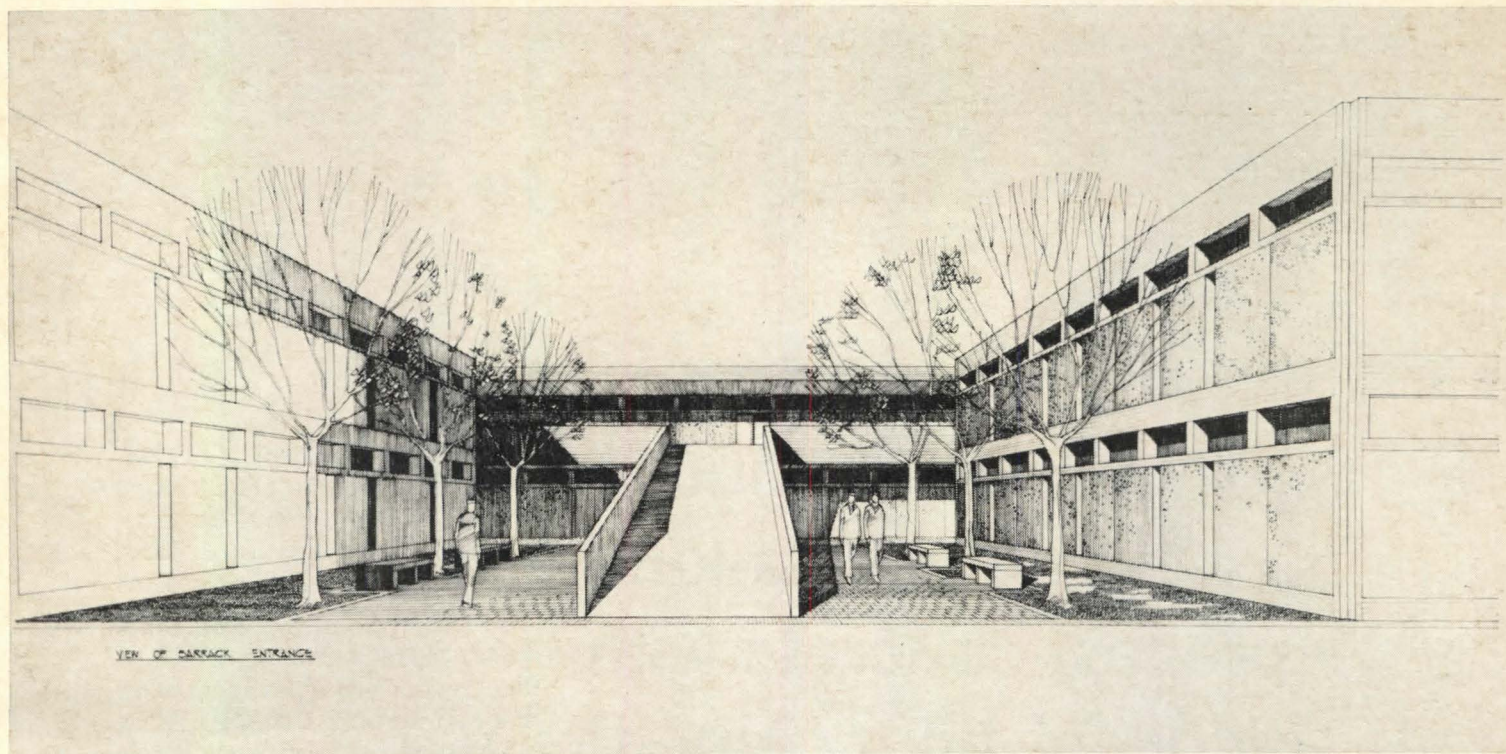
Each barracks cluster will consist of eight separate units, four per floor (plan below left), each

unit housing 64 men in double-deck bunks. They will be constructed of concrete, poured in place except for precast T-beams and precast exterior wall panels. Trainees' lockers will be fitted between the columns, interrupted here and there by narrow, full-height windows. Above the lockers will be continuous strips of windows, opening toward three exposures in each unit for maximum natural ventilation. Day rooms

will have large full-height windows facing away from the other buildings, most of them toward San Francisco Bay.

Attached to each unit will be a washroom-laundry wing, mechanically ventilated by rooftop equipment. The poured-in-place concrete walls of these wings—vertically textured, windowless, and curved at the corners—will distinguish them emphatically from the main structures.

BUILDING BETTER BARRACKS



(continued on page 97)



KING COUNTY MEDICAL SERVICE BUILDING; Architect: GRANT COPELAND & CHERVENAK; General Contractor: BAUGH CONSTRUCTION CO.; "Incor" Cement Precast Units: OLYMPIAN STONE CO. (All of Seattle, Washington)

Mass produced or one-of-a-kind —precast concrete with Incor® 24-hour cement

Two brilliant examples of precast concrete in Seattle are the King County Medical Service Building, above, and the Library Building at Seattle Pacific College, below.

The use of lightweight concrete saved 150 tons of facing weight in the precast window wall units for the new Medical Building. These 844 precast units are each one story high and three feet wide, and have built-in grooves for the window frames.

The College Library shows the visual impact of concrete murals, designed as an integral part of the structure. The specially designed precast concrete units have an exposed surface of Steilacoom pebble aggregate.

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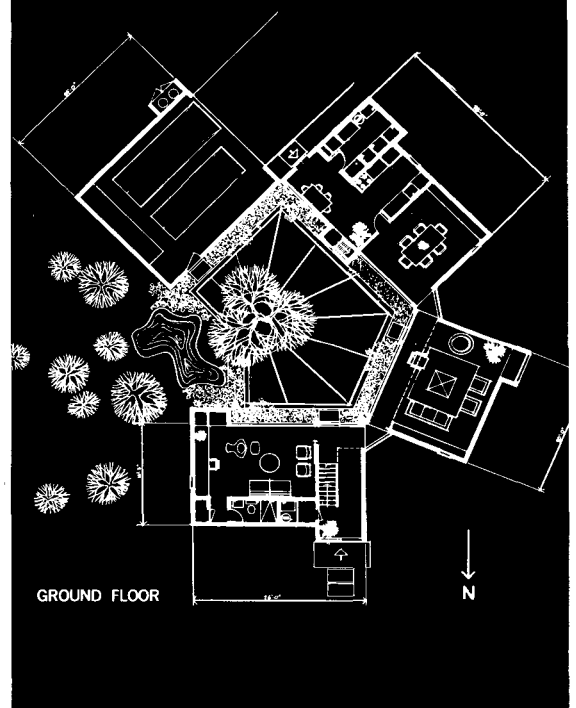
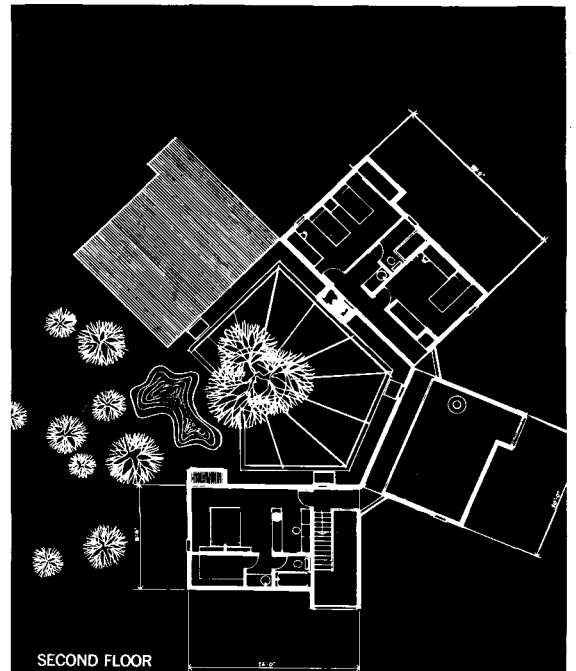
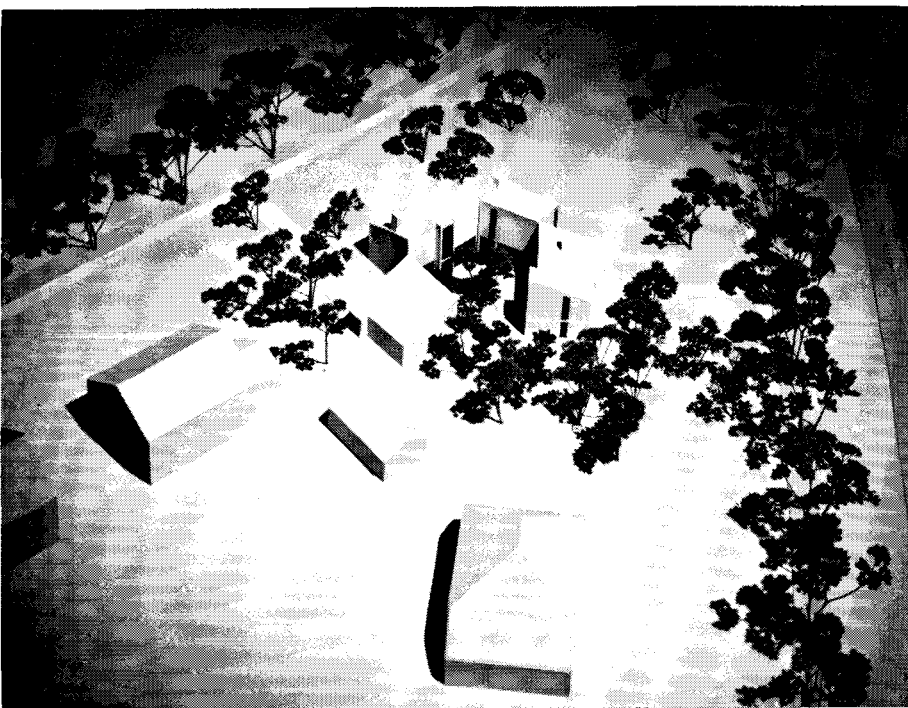
When Cleveland Architect Don Hisaka bought an angular corner lot in suburban Shaker Heights, he was well aware of the nearly paralyzing design limitations that came with it. Deep mandatory setbacks from each street cut the buildable area to a mere fraction of the lot. He had to use steeply sloping roofs and convince a design review board that the house would be compatible with the architecture of the neighborhood.

Hisaka designed a house of three linked pavilions, the end ones lined up with the next house on either street and the center one turning the corner between them. This scheme not only fits its site limitations, but completes and emphasizes the layout of the neighborhood. Moreover, it will give his family the one amenity hardest to get on such a site, private outdoor space, sheltered within the open-U form of the house and

screened by the attached garage.

Almost uninterrupted walls of glass extend around this court at first-floor level, without either threatening family privacy or outraging Shaker Heights design conventions. Second-floor bedrooms (situated in the two end pavilions only) have only small openings, even toward the court. The house will be of standard frame construction, with vertical board exterior walls and wood shake roofs.

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(Continued from page 81)

and plans. No complete interior courts or hypostyle halls are shown, but the highly sophisticated transition from mundane to visionary spaces and from direct to graded and manipulated light can be read from the light and shadow play on reliefs and column capitals, especially from Abydos and Medinet Habu.

It is unfortunate and confusing that the author decided to sum up the very essence of Egyptian design with three Greco-Roman temene: Edfu, Denderra and Kom Ombo, which are travesties of the original temple temenos. The degeneration of their plans and their art work almost vitiates the simple greatness of the beginning in Imhotep's first temple district at Sakkara. It is small wonder that confusion breeds contradiction. After having insisted on the absolute technical functionality of the first master builders, the author sums up the purely symbolic purpose of their architecture: "For our purpose, a building is symbolic when it attempts to evoke or reproduce elements which, from our point of view, are irrelevant to it. In this way it attaches to itself the feelings and ideas which are linked to these elements in the minds of its creators and beholders."

Gilbert Picard's **ROMAN ARCHITECTURE** and Ulya Vogt-Göknil's **OTTOMAN ARCHITECTURE** should be considered together although they differ widely in subject matter and quality. The account of Rome as *Living Architecture* lacks competence and accuracy while the Ottoman panorama is highly informed and beautifully presented. Their common ground is the attempt to turn two of the most evidently eclectic style periods of history into fountainheads of originality. The textual and visual persuasion that "genius must work in complete freedom; it should take over and make use of what is best in each style" almost succeeds through the high qualifications of the Turkish author and blatantly fails for the obverse reasons in Gilbert Picard. As with the Ruskinian quote on architectur-

al irrelevance, we are back with 19th-century art history when Greek architecture was derived from the Germanic *Urhütte*, and The Greatness of Rome conquered 3,000 years of previous development without a sideways glance at adoptable architectural solutions. If architectural students were not prone to buy books like the attractively priced *Living Architecture* series, one could overlook the numerous errors in the text. But there is a heightened responsibility today in the production of potential textbooks by nonacademics who simply are dutybound to know the difference between Trajan's and Caesar's Forum, the origin of triumphal arches in Assyria, that the Aula of Trajan's Market is not the Basilica, that the Mausoleum of Halicarnassus was built in BC, not AD, that the Corinthian capital of the Olympeion, acclaimed as a Roman original, was a copy of the capital from the Temple of Apollo at Didyma, etc., etc.

There are some well-drawn plans in the book, meant to prove without a shred of visual evidence that the Roman basilica did *not* descend from Egyptian Festival Halls and Doric temples but from the Baroque bumps and grinds of late late Imperial baths. Roman town foundations in Africa are well described. Otherwise the profusion of late Hellenistic cribbings by a nation which by the author's own account had other things to do than further architectural originality proves two things: that in architectural history as everywhere else silk purses have a different origin from sows ears, and the need for a long overdue history of Roman civil engineering. "Let others," wrote Virgil, "mold the breathing bronze, plead causes, and tell the motion of the stars. Your task, Romans, shall be to govern nations, to spare the conquered and defeat the proud," a purely semantic distinction which they eliminated in favor of the latter.

The architecture of the Ottoman Empire in the 200 years of its greatest expansion from the middle of the 15th to the middle of the 17th century is an all-

together different story of syncretic historicism from that of Rome, although their world empire fixation was similar. Jürgen Joedicke's preface, with the help of Le Corbusier's youthful sketches, celebrates the mosque as "a formation of nature emphasized by architectural means." It is meant to convey the topographical selectiveness of Ottoman architects, which might be one reason why eclecticism comes off so well compared to Roman vulgarity.

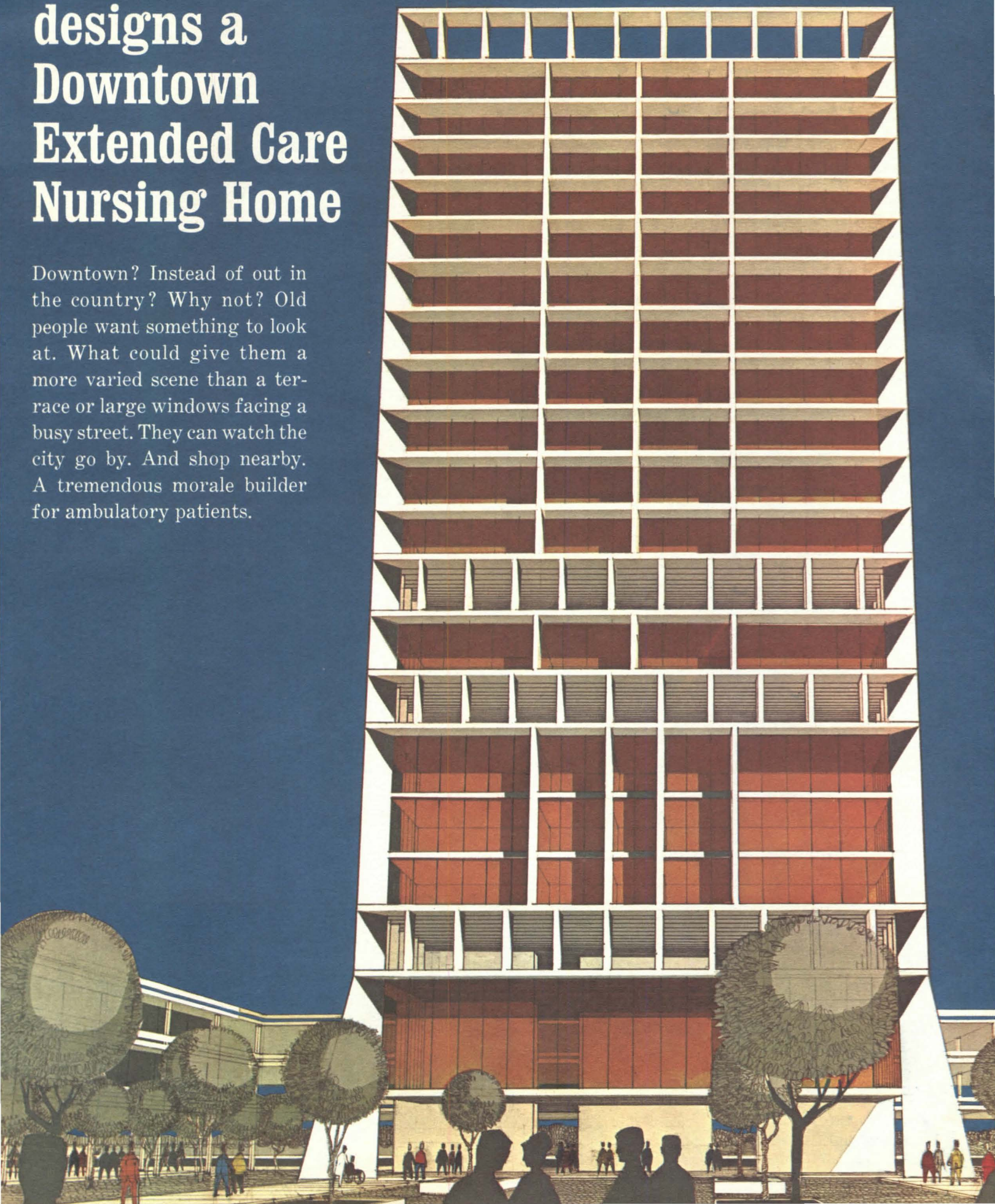
But the main cause of the surprising genuineness conveyed by Edward Widmer's excellent photographs lies in a reversal of the adoptive process from that of Rome. There the structure was largely original and the esthetics were grafted on. In Turkey, or let us face it, in the architecture of Sinan, the structure is borrowed and the esthetics are genuine. And since buildings are judged, in Walt Whitman's words, by "what they do to you when you look at them," no amount of structural genius can make up for incongruent eye appeal. Ulya Vogt-Göknil's introduction tells the Seljuk-Ottoman story with exciting conciseness and then proceeds to the climax, the Islamization of the Byzantine heartland. She may be forgiven for simply omitting the shady side of that bloodstained chapter, although her tactful replacement of "demolition" with "superimposition" for building mosques where once the Holy Apostles and the Palace of the Emperors stood in Constantinople is carrying it a bit far.

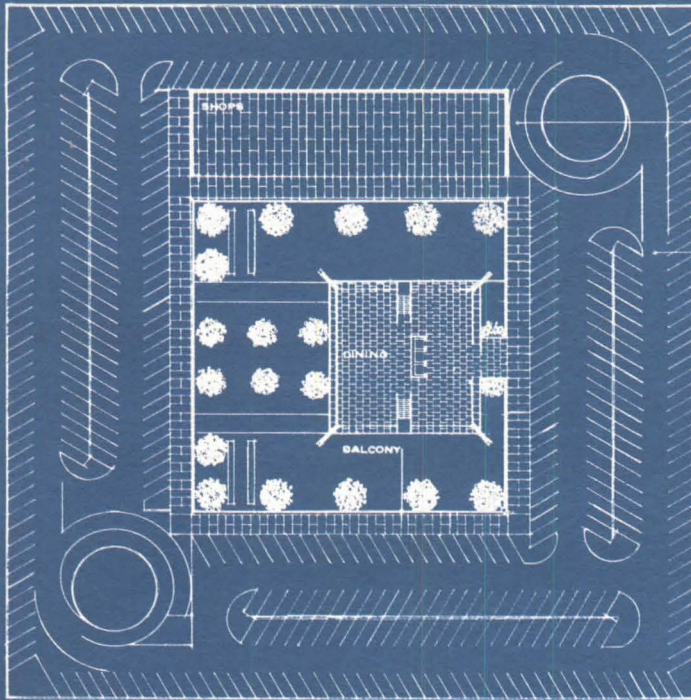
More important is her history and pictorial demonstration of the Külliye, a cluster of mosque, medresse (school), hospital, almshouse, medical school, and public bath. Here were truly civic centers, donated as all public buildings in the Islamic world by rulers or wealthy merchants. Their modular geometry is not, as the author asserts, new, nor are multiple cupolas as repetitive space-form units. Right in Turkey are the early Christian prototypes of Hierapolis (Pamakkule) from the 5th

(continued on page 108)

Herbert H. Johnson Associates designs a Downtown Extended Care Nursing Home

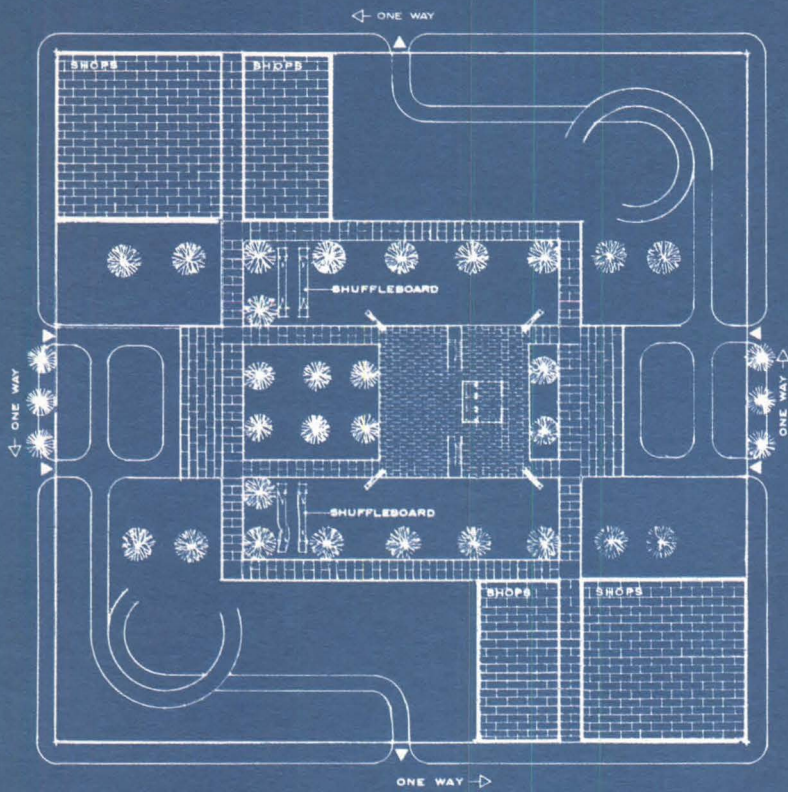
Downtown? Instead of out in the country? Why not? Old people want something to look at. What could give them a more varied scene than a terrace or large windows facing a busy street. They can watch the city go by. And shop nearby. A tremendous morale builder for ambulatory patients.





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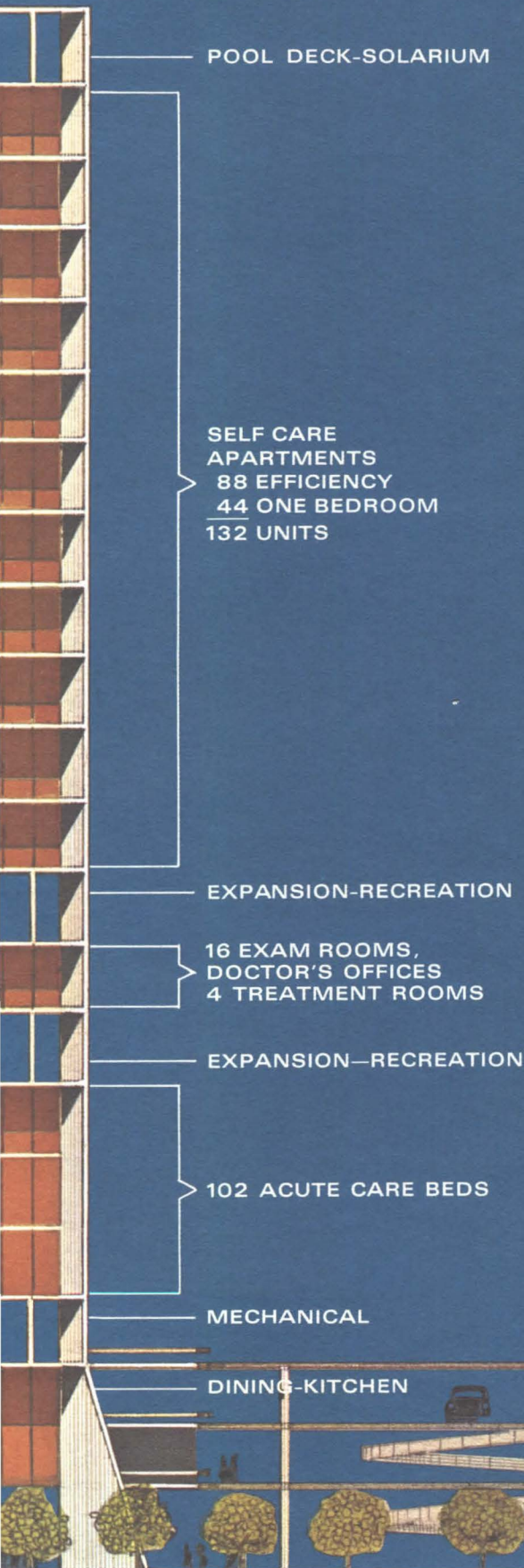
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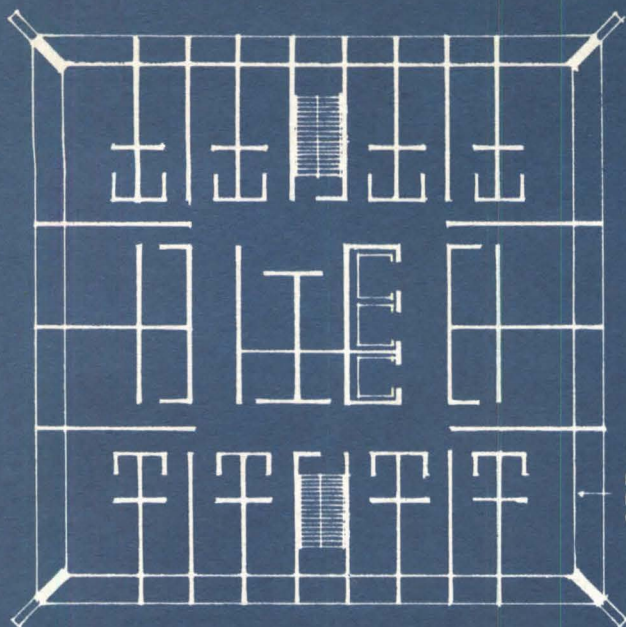




A downtown location, perhaps in an urban redevelopment area, would have many practical advantages. It would be more convenient for doctors, nurses and visitors. Public transportation would aid recruitment of employees. And it would be closer to major hospitals, increasingly important with Medicare.

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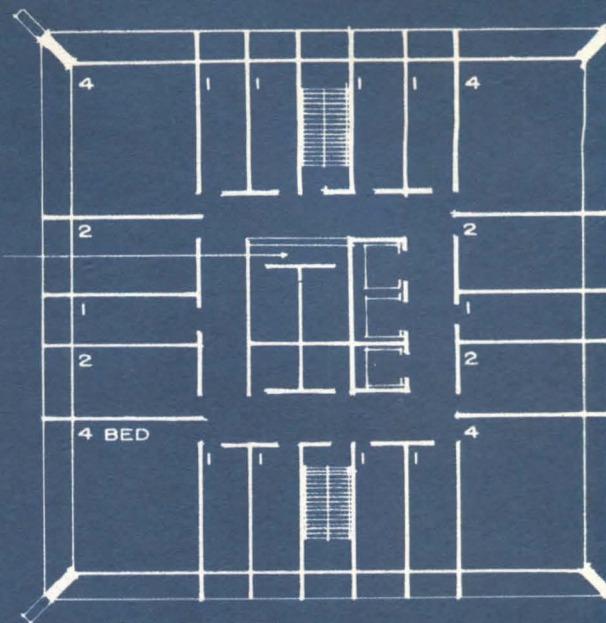


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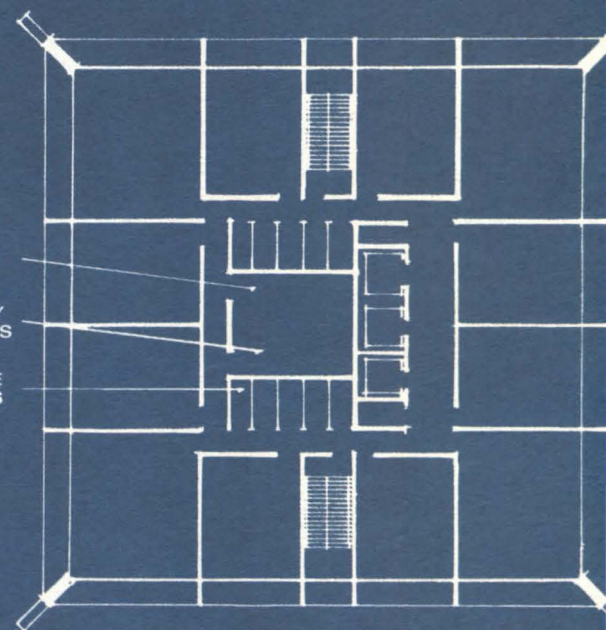


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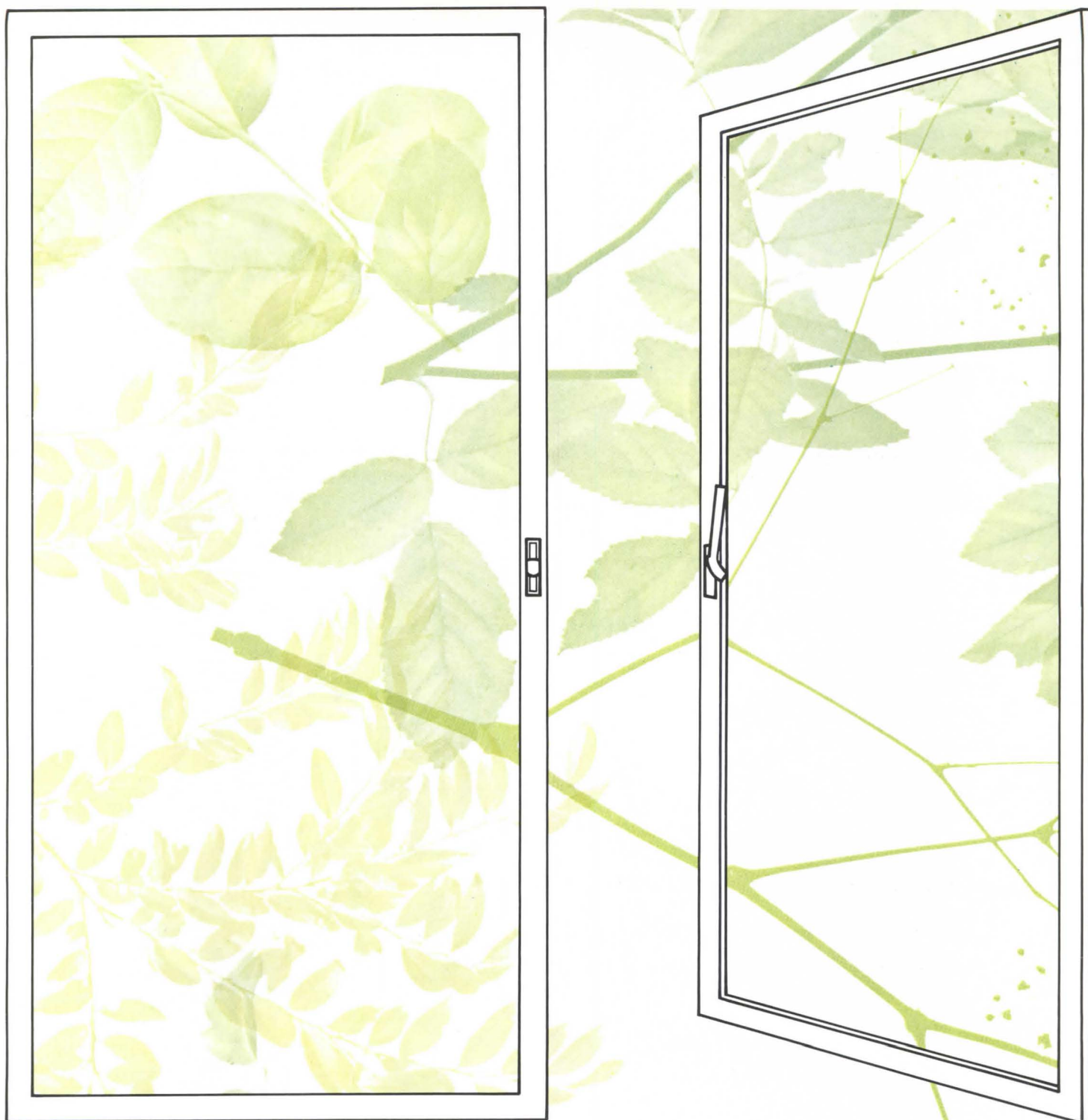
(continued from page 102)

century, and Justinian's multi-domed St. John at Ephesus, completed in 565, where a standard element is multiplied to form a cohesive composition. The Turkish town emerges from this book as a refuge center, forever determined by the congenitally antiurban mentality of former nomads whose only visual identification is with the religious structure. Sinan emerges from the sequence of mosques shown as a self-taught former army engineer who at first copied Sancta Sophia and at last found his own space-form identity in which all foreign parts submit to a new—if not original—entity. It is the very logic of Ottoman structure, whether in a gigantic mosque, one of the ubiquitous Turkish bathhouses, or the last remaining overshot wood villas on the Bosphorus, that makes any claim to "functionality" (if such a claim *has* to be made) the most convincing in this functionality-obsessed series.

Only Henri Stierlin's **MAYAN ARCHITECTURE** can afford to waive the Modern Masters as god-fathers. Their claim is established in a moving preface by Pedro Ramirez Vasquez as providing an environment of "form, texture, and open space." And it is precisely this which Stierlin gives us in the proudly unfunctional pyramid towers of Guatemala as pure form, in the stone mosaics of exquisite lintels and roof combs of the last great epoch of the Puuc style as pure texture, and in well-drawn maps of the great acropolises of Copan, Tikal, Palenque and Uxmal which are pure space. Stierlin's text guides through the three specific spatial experiences of Mayan planning: the private court, the closed quadrangle, and the open plaza. Each serves a specific aspect of community life, and each had its own designed emphasis of access. The public plaza, always elevated and terraced, used the surest means of

ceremonial dignity—the broad sets of steps, lifting the ordinary man gradually from the domestic level into the presence of the gigantic pyramid staircase and the religious ceremony. The quadrangles, surrounded by long public structures with small modular rooms, like the offices of today's administration buildings, were connected with each other and the city by high corbeled arches, magnificent in structure, outline, and textural treatment, of which Labna and Uxmal are shown as brilliant survivals. The palaces, Palenque shown here in great detail, had sunken private courts for daily outdoor living. Stierlin is most instructive in showing the transition from pure Mayan concepts to the amalgamation with Toltec columnated halls at Chichen Itza and the dispersion of the single-focused acropolis. Such difficult subjects as Mayan mathematics and astronomy are ably hinted at, and building technology is explained with useful diagrams.

It must be seriously doubted that the architect of today can learn as naively and directly as the Romans learned from the Hellenistic Age and the Ottomans learned from Christians; but it cannot be doubted that at least three of the volumes here considered offer a rich *conceptual* stimulus for basic approaches to man's unchanged environmental, formal, spatial, and structural desires which is well worth the purchasing price of the books. The publishers should, however, be admonished to change the system of captions and dates. To identify a picture, the reader has to refer to tables appearing long before the picture, and to identify dates he has to go back over the text to pick out the historical continuity. The bibliographies would be more complete and useful if they were geared to the English-speaking reader and contained fewer foreign publications. And, if it is not asking too much, perhaps Le Corbusier could be left resting in peace. The history of world architecture has stood up for and by itself for five millenniums. It will continue to do so.



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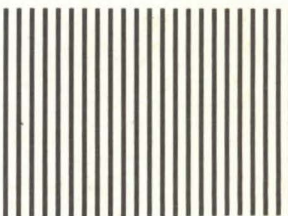
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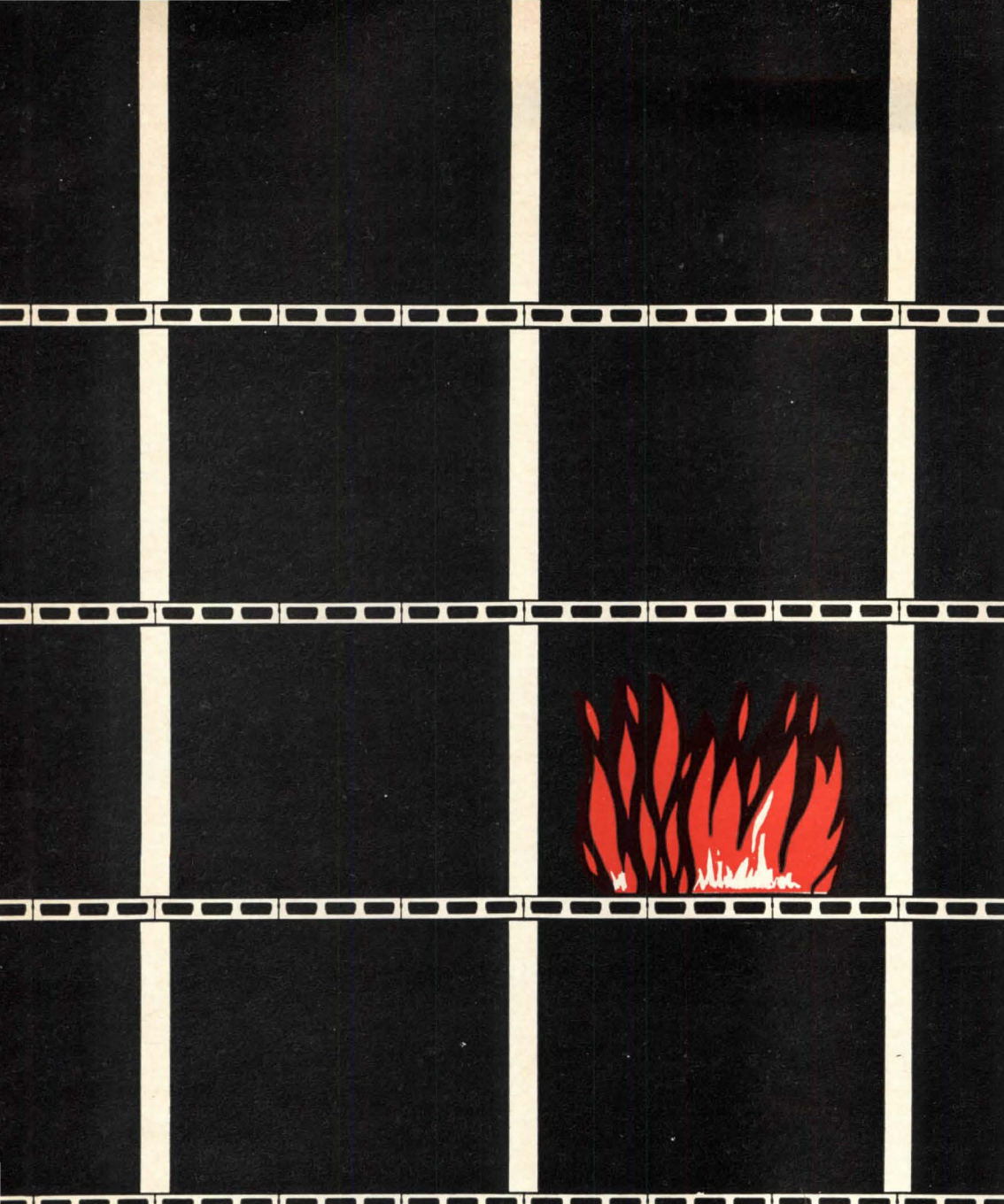
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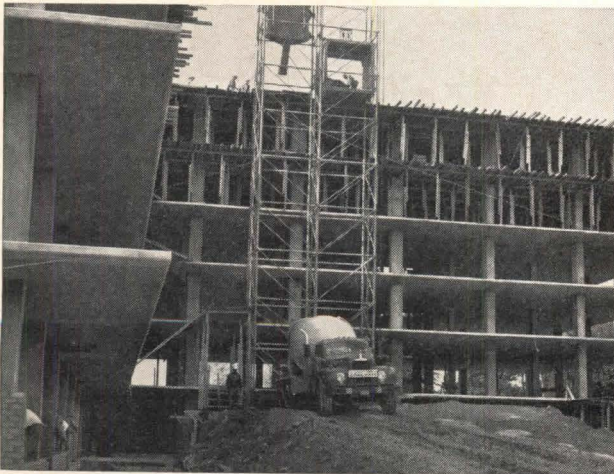
The creative design of the Dolley Madison Apartments couples maximum structural efficiency with an interesting architectural effect. And does it at a most economical in-place cost. The post-tensioned, short span design reduced the thickness of the floors to 5"—a saving of at least 1" per floor. This reduction in dead load resulted in a saving in columns and caissons. Post-tensioning also eliminated 790 lineal feet of expansion joints and all beams at openings.

With a rigid construction schedule and a minimum amount of labor, the contractor constructed 13 floors in 13 weeks and 1 day. To help maintain this schedule, the contractor used concrete made with Lehigh Early Strength Cement for completion of certain slabs to permit post-tensioning the next day. All other concrete for this project was made with Type 1 Lehigh Cement. Lehigh Portland Cement Company, Allentown, Pa.

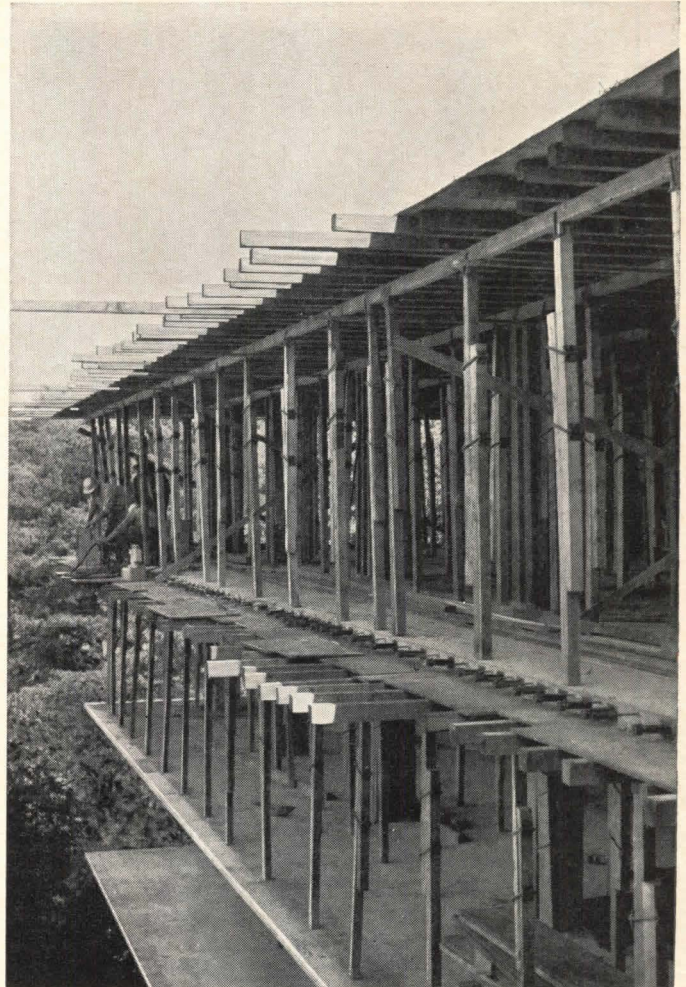
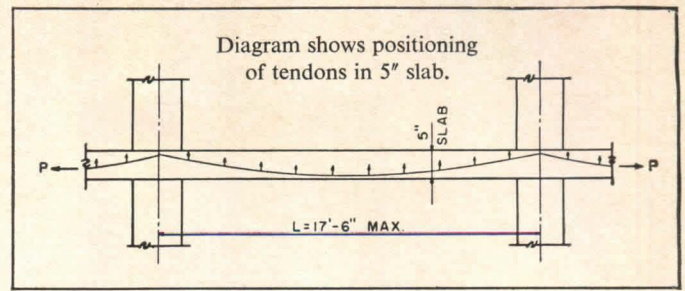
Owner: Dolley Madison Associates, Arlington, Va.
Architect: Sheridan, Behm & Associates, Arlington, Va.
Structural Engineer: Horatio Allison Associates, Rockville, Md.
Builder: Dittmar Company, Inc., Arlington, Va.
Ready Mix Concrete: Virginia Concrete Co., Springfield, Va.

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(Right) Floors are made with lightweight concrete. As concrete reached 2000 PSI, stressing began with a pressure of 11,000 lbs. After post-tensioning was completed for each floor, a closure strip was placed to cover button heads around perimeter.



Spans between columns are 15' 4" x 17' 6". Post-tensioning the 393' length of this structure was done in three sections. The center 209' 4" was placed and tensioned with jacking force at each end. Then the two remaining outside 92' sections were placed, tensioned, and tied to the already tensioned tendons of the center section. Floors are also post-tensioned in a transverse direction.



The building has an offset "T" shape. It is 65' 4" wide and 393' 4" in length. Offset T's extend 92' to front and rear and are also 65' 4" wide.

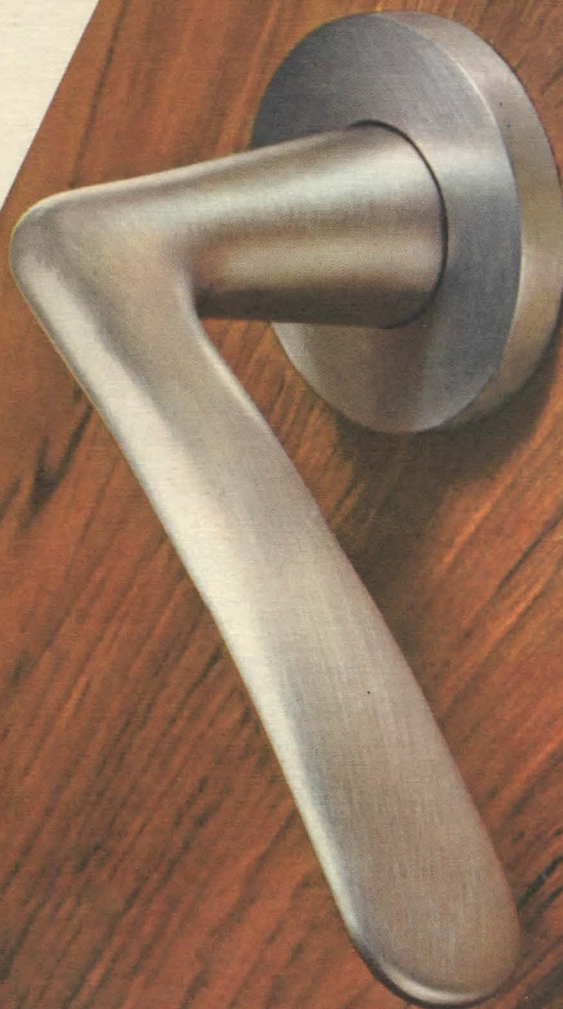
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is there a ceiling lighting-concept
designed to answer this modular
building's changing needs?

"Providing flexibility for future interior needs is a big problem with any commercial structure, as it was here," advises Harry J. Devine, architect of Sacramento's Wells Fargo Bank building. "The building was under construction before there was any determination of partition layout for the upper floors. This meant that both lighting and air handling be versatile enough to anticipate any kind of interior arrangement. Day-Brite's Clymatron with Barber-Colman air handling components supplied the perfect answer. A Clymatron in each basic 5' x 5' module provides complete flexibility of interior layout and control of environmental comfort (lighting, ventilation, heating, air conditioning). Thanks to Clymatron's pre-tested record of performance, the installation has received the highest praise . . . from building custodians right on up to top management."

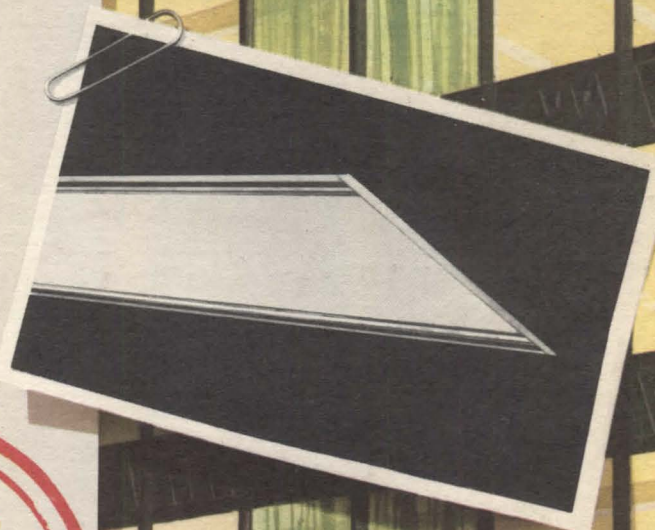
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