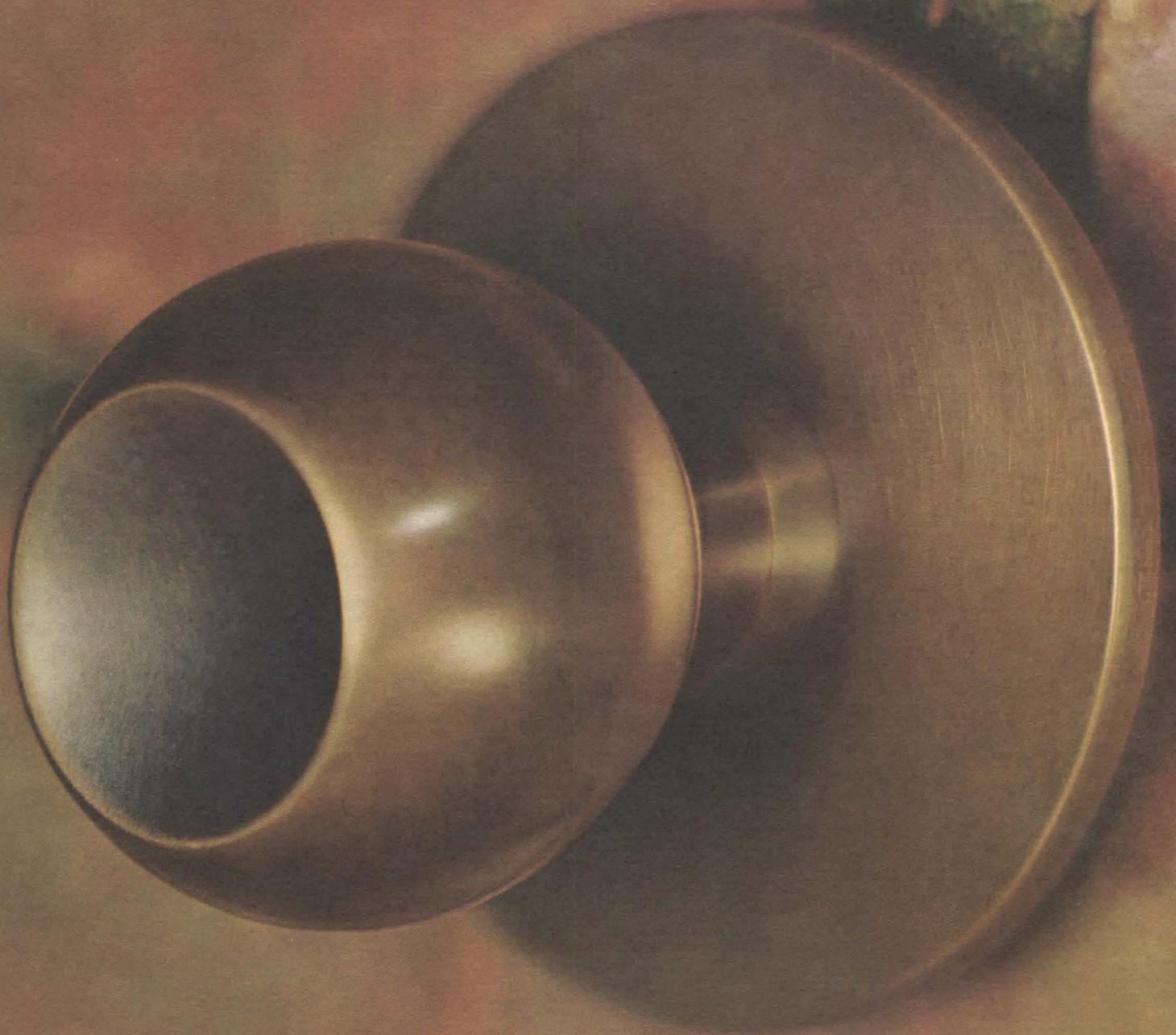
The image is an abstract geometric composition. It features a background of a muted, reddish-brown color. Overlaid on this background are several large, dark brown and black geometric shapes. These shapes include vertical bars, horizontal bars, and various angular forms that create a sense of depth and shadow. The overall effect is that of a stylized architectural drawing or a modernist graphic design. The word "FORUM" is printed in a dark, sans-serif font on the right side of the image.

FORUM



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A monthly review of events and ideas.

TOWERS IN THE SKY 31

A Colorado research lab designed by I. M. Pei echoes—in form, scale, and color—its backdrop of lofty peaks.

SOLAR SCULPTURE 44

The Kitt Peak Observatory is a gigantic, and beautiful, precision instrument. By Charlotte M. Cardon.

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More than half a century ago he proposed urban systems that anticipated today's problems. By Peter Wolf.

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A house of worship for office workers boldly exerts its place among commercial structures in Lower Manhattan.

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The sculptor's monument to a poet encompasses an entire town square.

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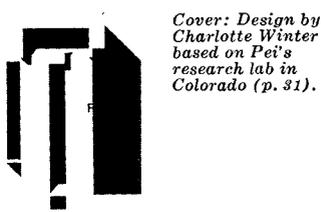
A new edition of Fitch's history.

EVOLUTION IN DUBLIN 78

Trinity College Library is basically a box—but a far different box than it started out to be. By John Donat.

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Gaudian culture center in Spain; Corbusian school in San Francisco.



Cover: Design by Charlotte Winter based on Pei's research lab in Colorado (p. 31).

THE ARCHITECTURAL FORUM

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PUBLISHER'S NOTE

In these times, scarcely a day goes by without someone telling the country that we don't stand a chance of fixing our cities, or housing enough of us decently, or transporting us comfortably, or employing more of us, unless the "Private Sector" gets more involved. As is becoming increasingly apparent by the number of advertising pages in THE FORUM, we, too, solicit the involvement of the Private Sector.

I suppose that nobody talks more about our editorial product, our editors, their professional credentials than our sales people do. Mostly the talk goes on in the halls of the Private Sector, at advertising agencies and company headquarters where decisions about buying advertising are made. Popular misconceptions notwithstanding, more and more of these media decisions are being made only after earnest evaluation of editorial relevance to a company's particular marketing needs.

THE FORUM's growth makes the point: more of the Private Sector in building are coming to believe that an architecture responsive to human needs on a broad environmental scale will insure a continuing and expanding market for producers' goods. The alternative is a shrinking, disintegrating market.

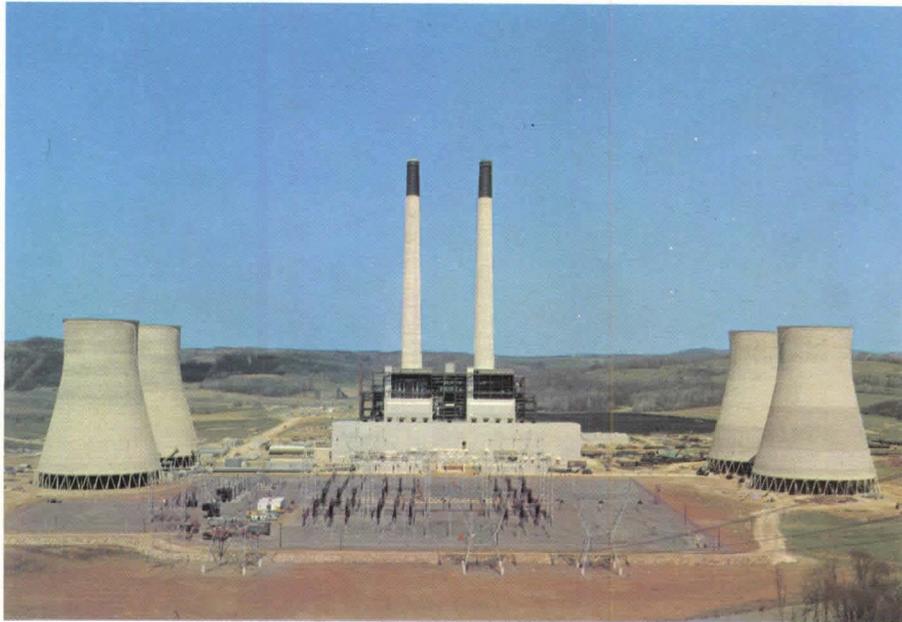
A large share of the credit for these conversions must go to THE FORUM's editorial missionaries. (In other magazines they are called salesmen.)

So, for this month at least, in front-of-book recognition of major editorial effort, and without the prerequisites of sales title, we salute Mack and Pettitt, Remington and LaJoie, Lawson and Glass . . . and of course, Miss Dorothy Henderson, the lady who makes them go. L.W.M.



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**It had to be more
than aluminum.
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The new Keystone generating station, largest in North America, had to be aluminum by Alcoa. The very size of the plant is staggering: Over 340,000 sq ft of Alcoa® Industrial Siding sheathe the main building; stacks reach 800 ft into the sky; four cooling towers are higher than a football field is long (wider, too); and there's a boiler structure the size of a major music hall. The 1.8-million-kilowatt plant is so large, in fact, that it was located at the mouth of a coal mine—from which it will yearly draw 5.5 million tons of coal when fully operational.

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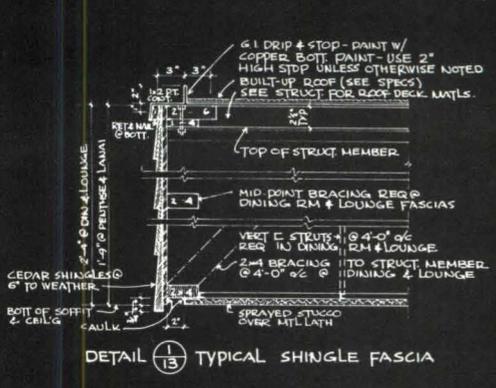
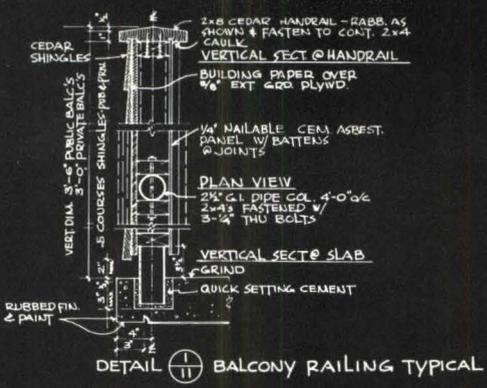
Gone is conventional chrome's mirror-like finish . . . in its place a smooth, subtle, sophisticated surface with all the warmth and beauty of a hearth-fire. Gone, too, is enamel's reflective sheen . . . dissolved into velvet tones so soft, so flat you wonder if it's really paint at all . . . until you test it and find it's just as tough and rugged as regular Steelcase

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Sands Harbor Inn, Orlando, Florida ■ Architect: Paul Robin John/Certigrade Shingles, #1 Grade, 18" Perfections with staggered butts, 6-7" to the weather.



Red cedar shingles: to keep a "high-rise" down to earth.

One of the most difficult design problems facing the architect of the modern high-rise, is to find a way to fit his building naturally into its setting.

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St. Gilles, near Arles in southeastern France. 1140-60. Provençal with overtones of Corinth and Burgundy. If you would like a specially prepared reproduction made from this photograph, write to Schlage Lock Co., Box 3324, San Francisco 94119.

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A lock that will stand the test of time. A lock that has no equal. And a lock that in terms of maintenance and longevity, makes economic sense. But, then, who should know more about cylindrical locks than the people who invented them?

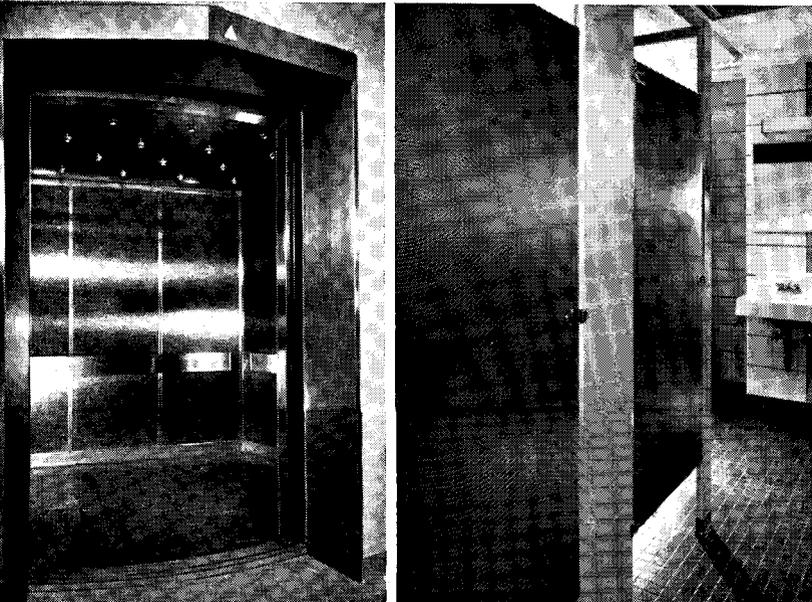
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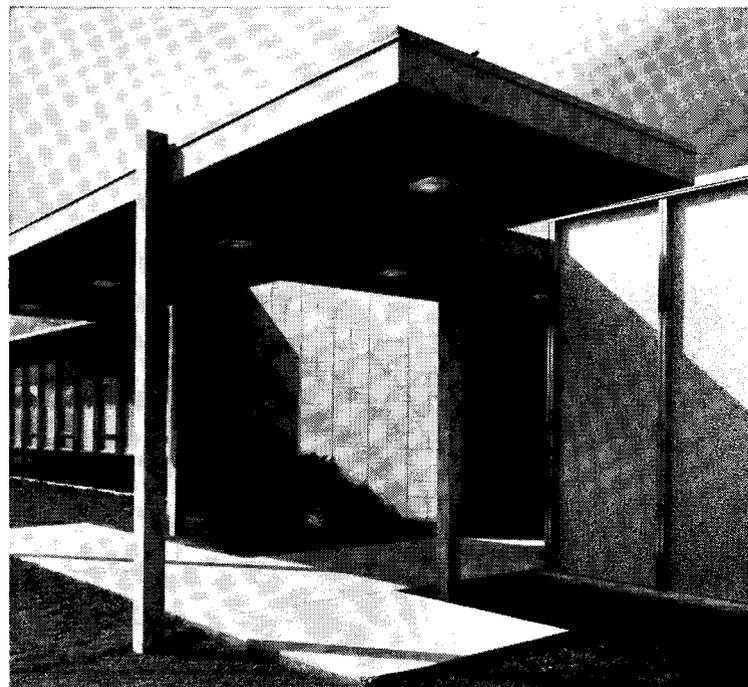
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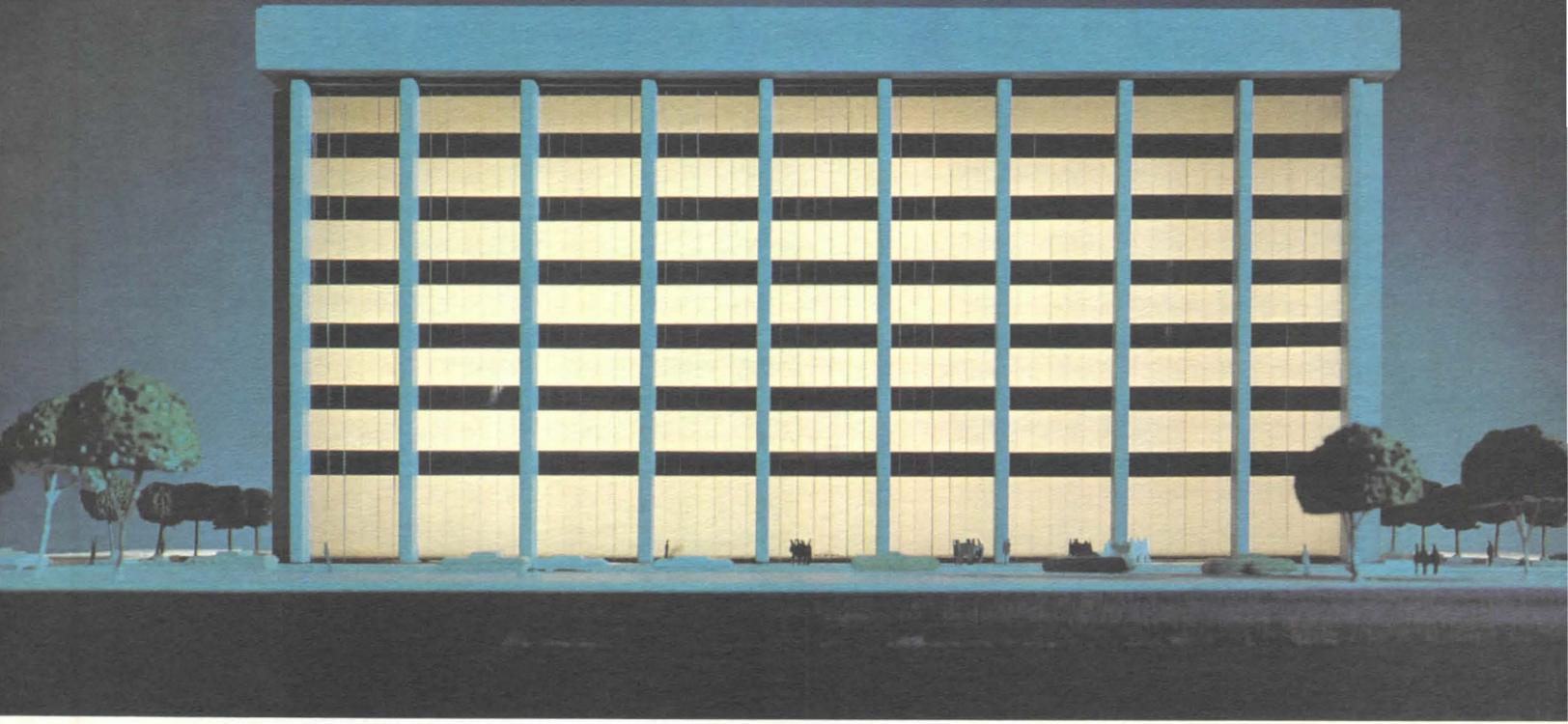


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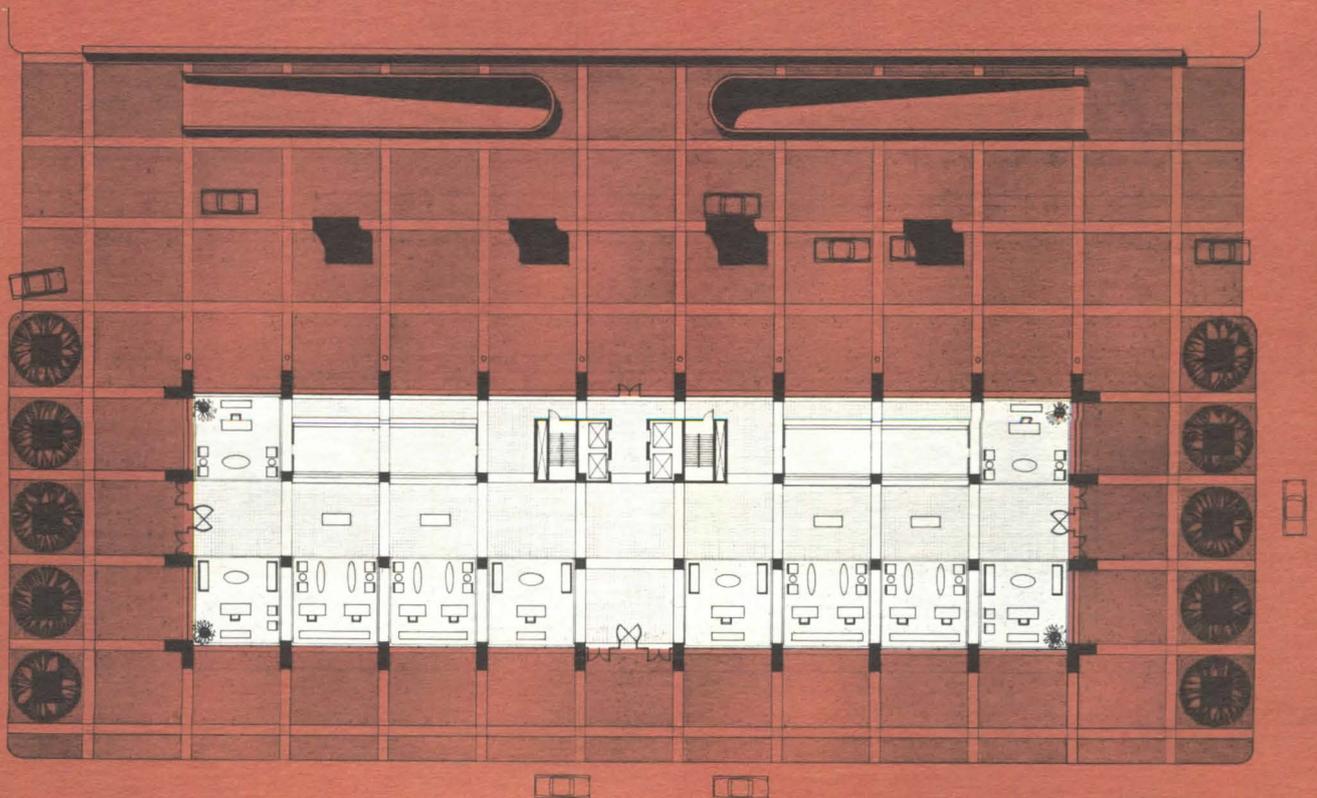


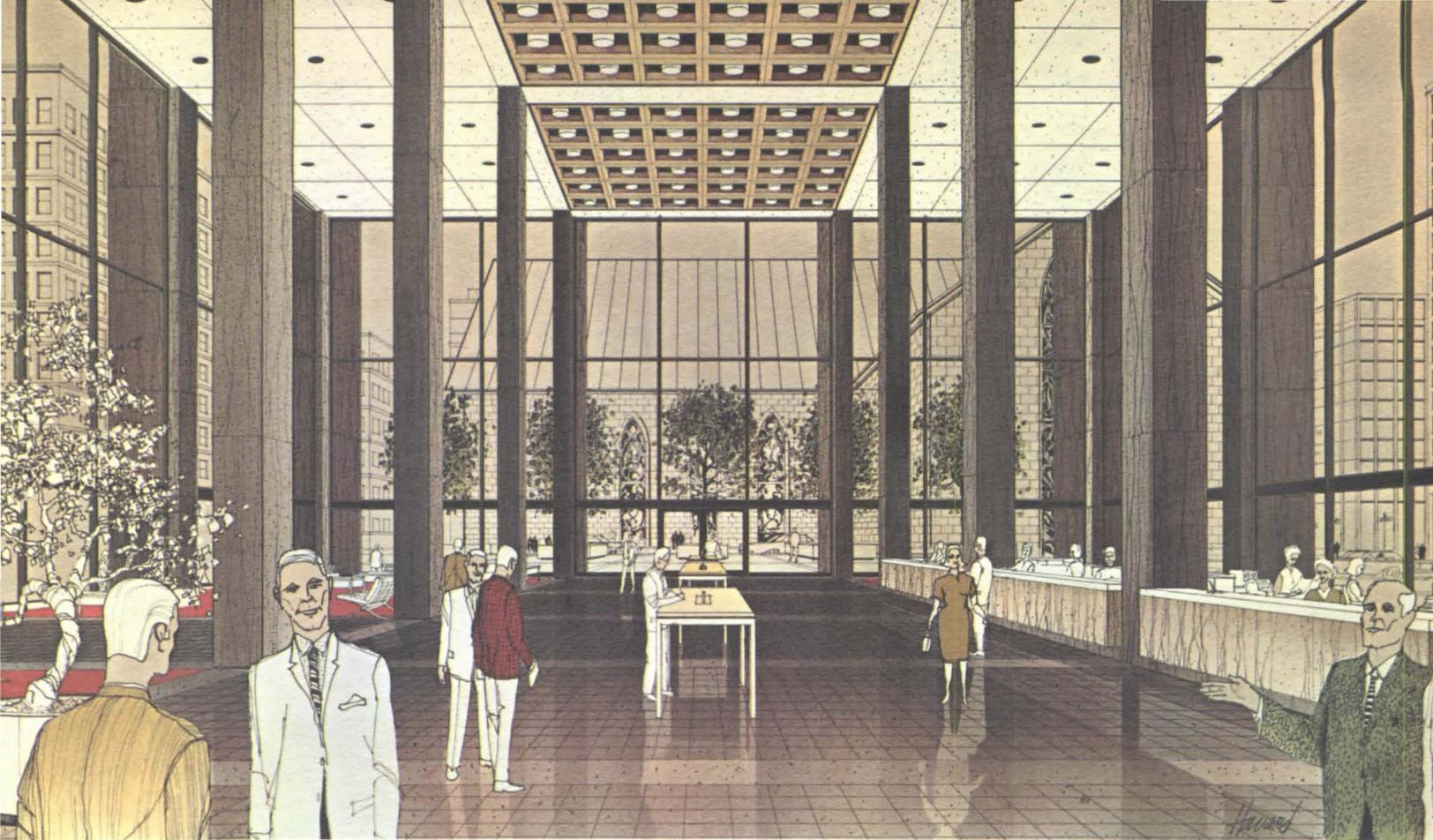
The proposed location: a downtown area of an affluent southwestern city on a 1.65-acre site adjacent to a park.

The proposed structure: a reinforced concrete skeleton frame faced with Italian travertine. Curtain walls of warm, friendly Parallel-O-Bronze® plate glass and Bronze Vitrolux® spandrel

glass. These to be glazed into bronze anodized aluminum mullions designed on a 4-ft. module, and a 24-ft. by 28-ft. column bay.

The building, designed by George R. Richie of Harwood K. Smith & Partners, Dallas, would house facilities for a progressive bank. Leased tower floors





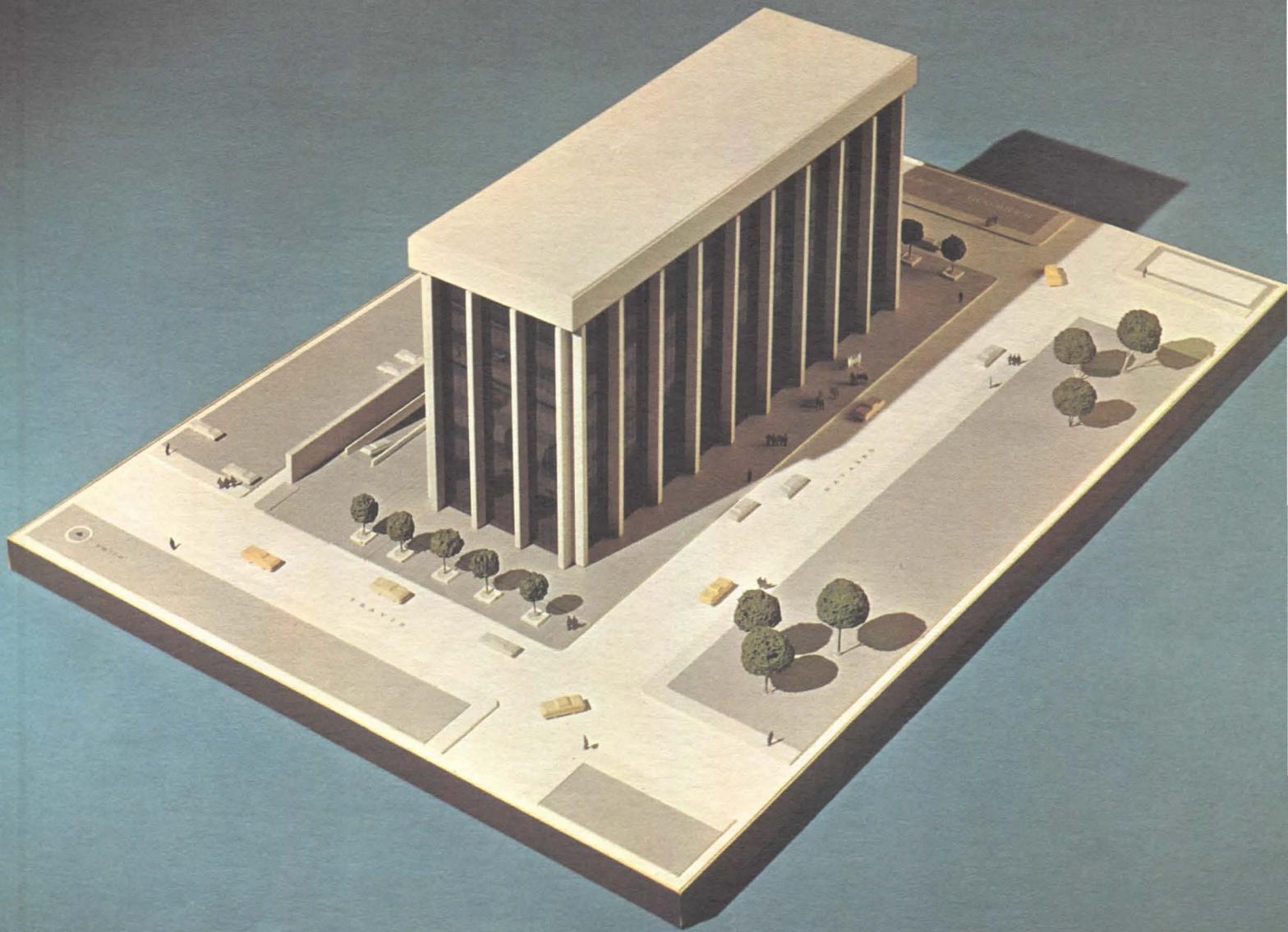
will provide future expansion space. Below-grade parking has provision for 300 cars.

The banking floor, with floor-to-ceiling Parallel-O-Bronze windows and bronze-tinted Tuf-flex® doors, provides excellent views of surrounding properties and landscaped park. Glare-reducing Parallel-O-Bronze lowers solar heat gain and makes air conditioning more economical.

Two center-island teller systems are designed with dumb-waiters to carry records and daily receipts to lower-level vaults.

Working with two levels, the bank uses a portion of the first basement for work space, offices and records. Safety deposit boxes and





computer rooms are located here. Armored cars serve the bank at this level.

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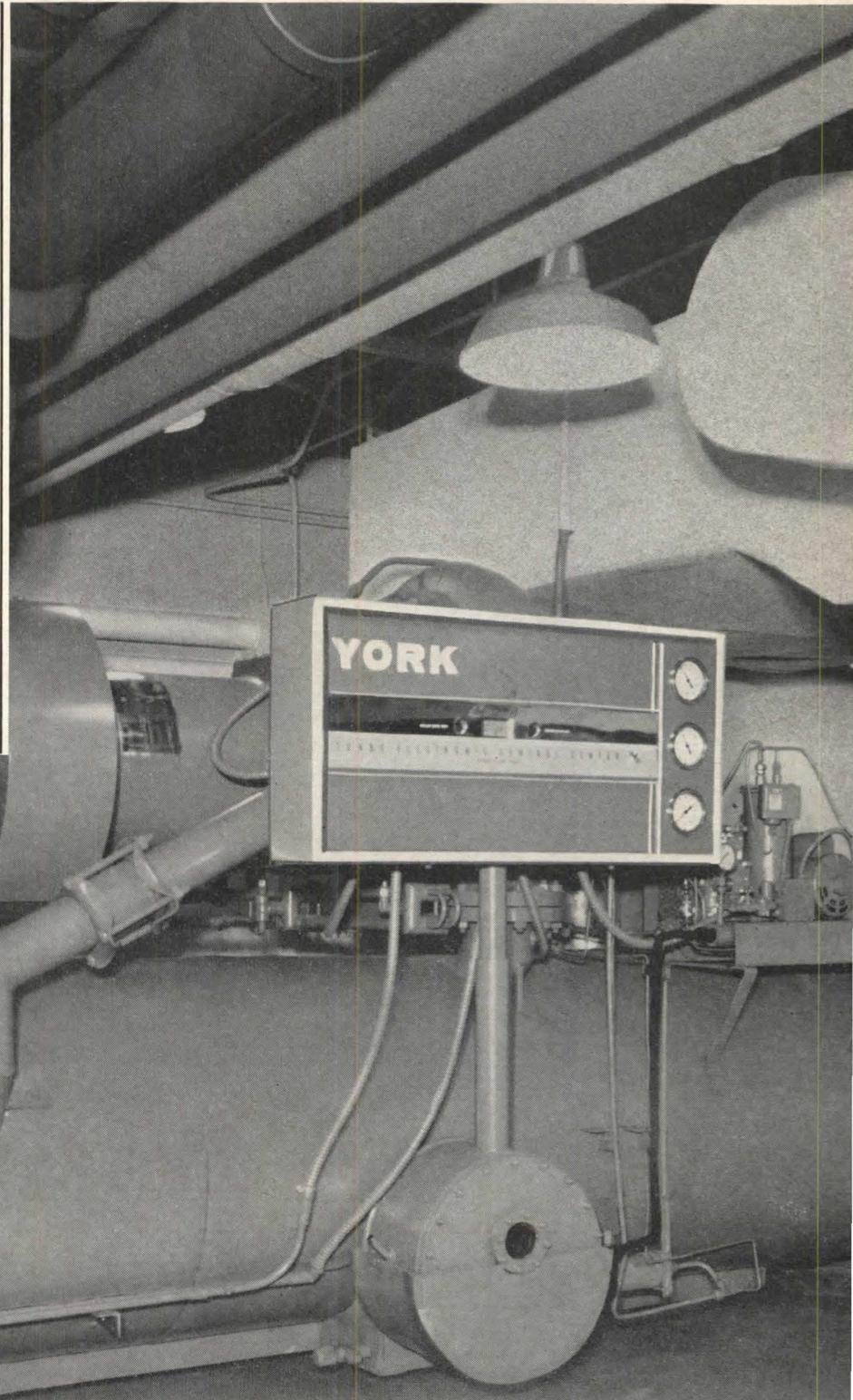


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York air conditioning provides freedom of design for modern auto agency

Schilling Motors, Inc., of Memphis, Tennessee, called on its architect and engineer to select the best possible way to air condition its new building. The architectural design of the building—with a concrete vaulted ceiling—made it necessary to use a floorline diffuser system. Five York air handling units circulate tempered air throughout the entire building—even to the service garage. Each zone is individually controlled by its own thermostat. Chilled water is supplied by a York 125-ton Hermetic Turbopak centrifugal machine.

This expert application of York equipment is just one more example of how architects and engineers depend on York units and systems to meet design problems. When you design or specify air conditioning for any kind of building, get complete specification data from your nearby York Sales Office. Or write York Corporation, York, Pennsylvania.



Mechanical equipment room at Schilling Motors, Inc., Memphis, Tennessee. All water lines are color-coded and clearly marked. Thermometers and pressure gauges indicate readings at boiler and chiller as well as at each air unit. Basic system consists of a York Hermetic Turbopak of 125 tons capacity. Chilled water at 44° is circulated to five York central station air handling units, both single-zone and multi-zone. Architect, Roy P. Harrover and Associates; Mechanical Engineer, Office of Griffith C. Burr; Mechanical Contractor, George Wilson Company; General Contractor, M. C. White Construction Company.

YORK
air conditioning
and refrigeration **BORG** **WARNER**



REVERE COPPER makes possible



THE UNUSUAL fascia design that is also used as soffit trim, shown above from various angles, is of standing seam construction, fabricated from 25,000 lbs. of Revere 16-oz. cold rolled copper. Structure is the W. J. WOODHAM HIGH SCHOOL, Pensa-

cola, Florida. *Architect: ELLIS W. BULLOCK, JR., A.I.A. . . . General Contractor: DYSON & COMPANY . . . Sheet Metal Contractor: MCCORMACK ROOFING COMPANY . . . all of Pensacola, Florida. Revere Distributor: MOBILE STEEL COMPANY, Mobile, Alabama.*

Because of the versatility and workability of copper, architects today are using it to create many unusual effects. The new conception of the old cornice you see on these pages is one of them.

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With the virtually unlimited designs which copper makes possible, an increasing number of architects are

using man's oldest metal to help create the newest in architectural construction.

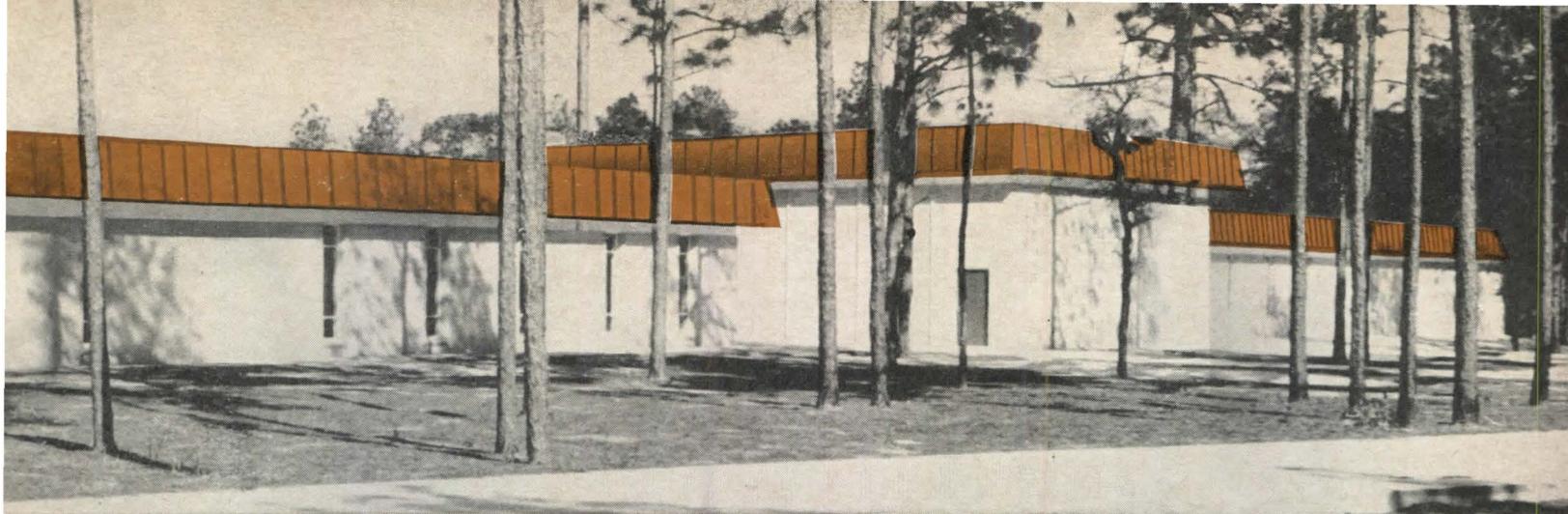
What other building material combines such beauty with utility? What other building material gives such service year after year? What other building material takes on the desired natural patina with age, or the popular bronze tones accomplished by oiling? And, when properly designed, copper is rated at the lowest cost per year of actual service of all roofing and flashing materials.

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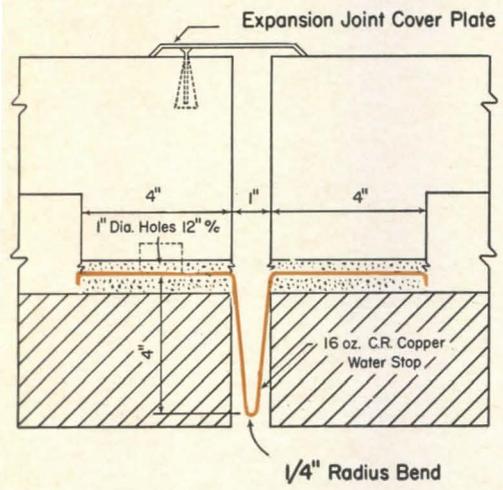


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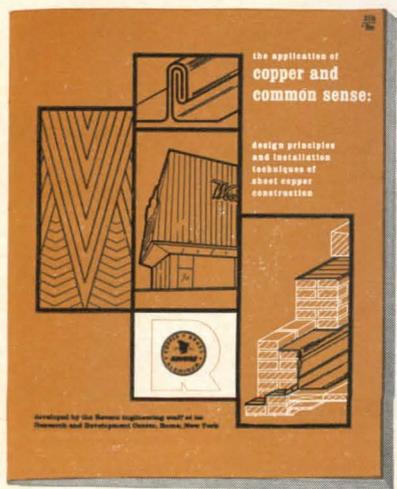
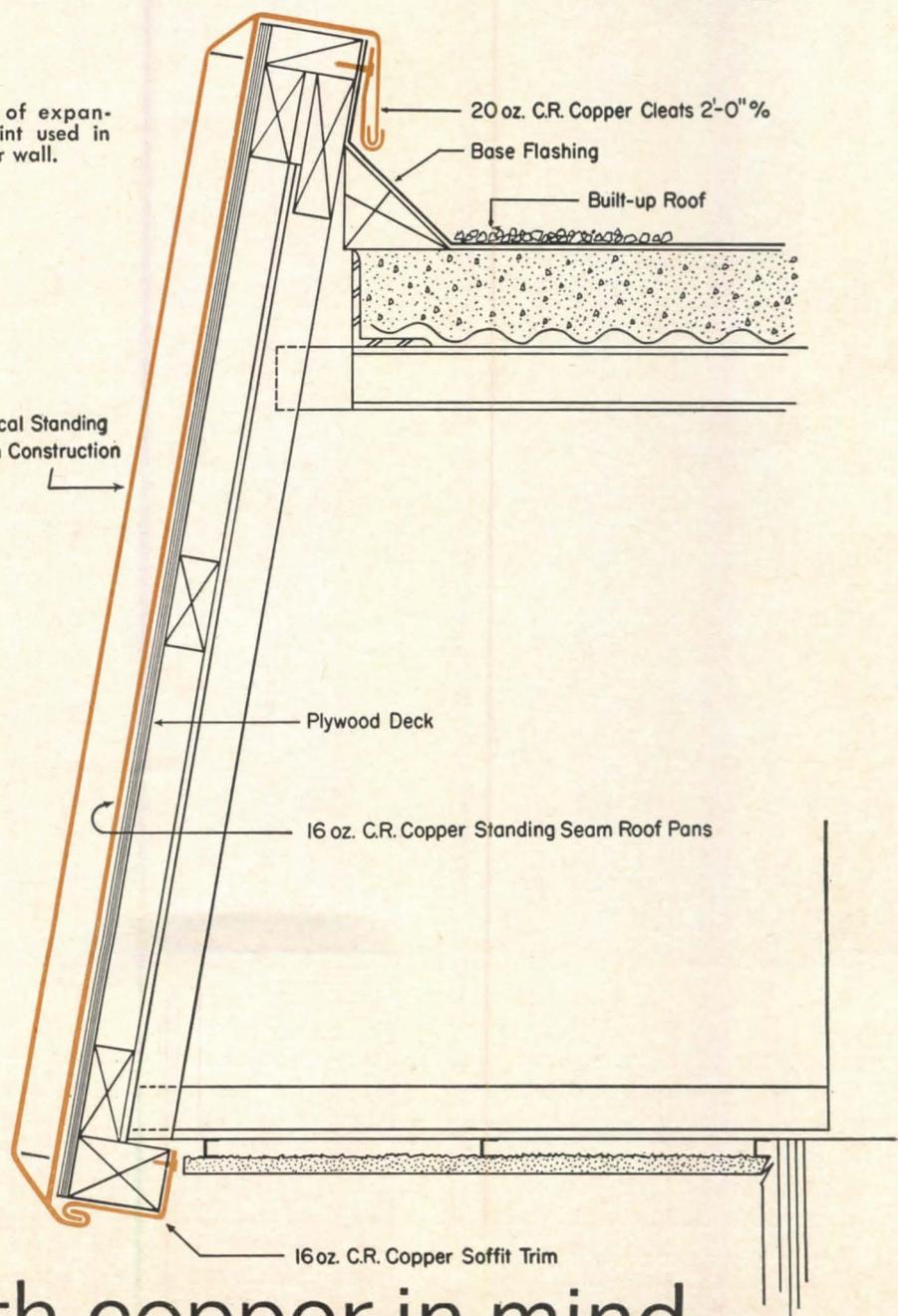


a new concept in cornice design



Detail of expansion joint used in exterior wall.

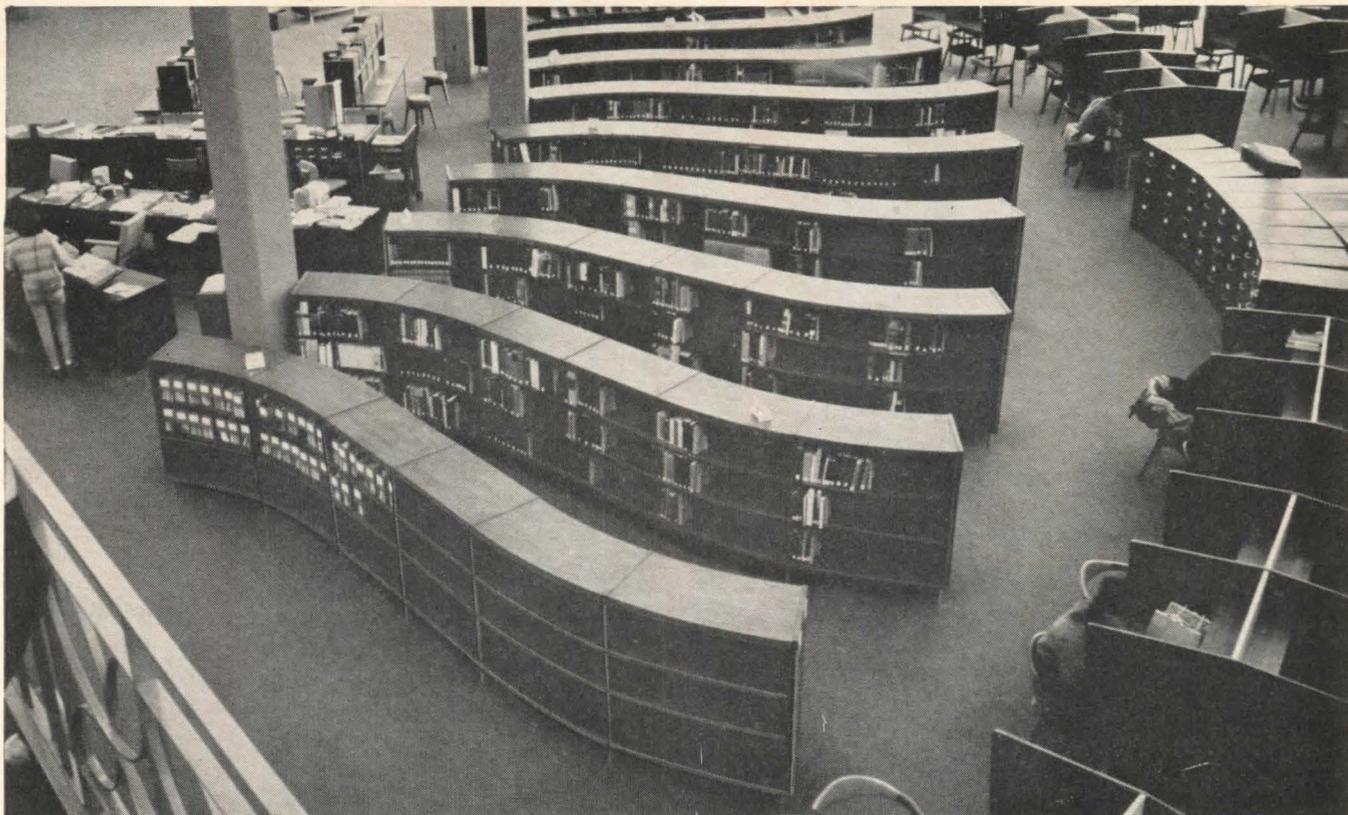
Typical Standing Seam Construction



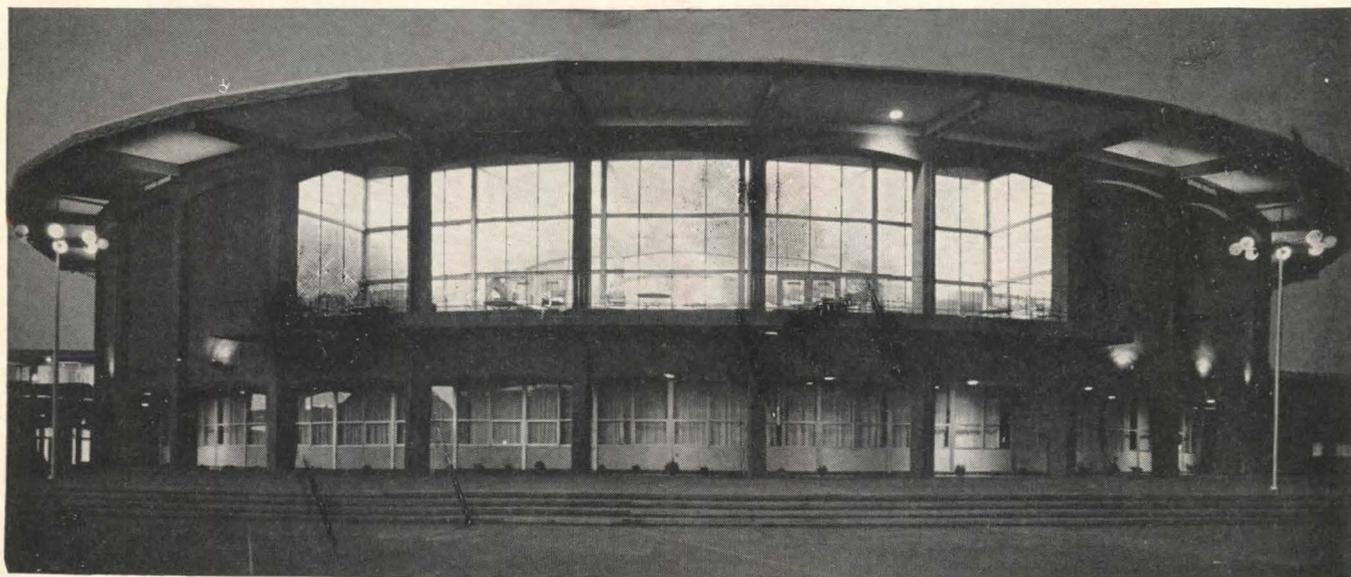
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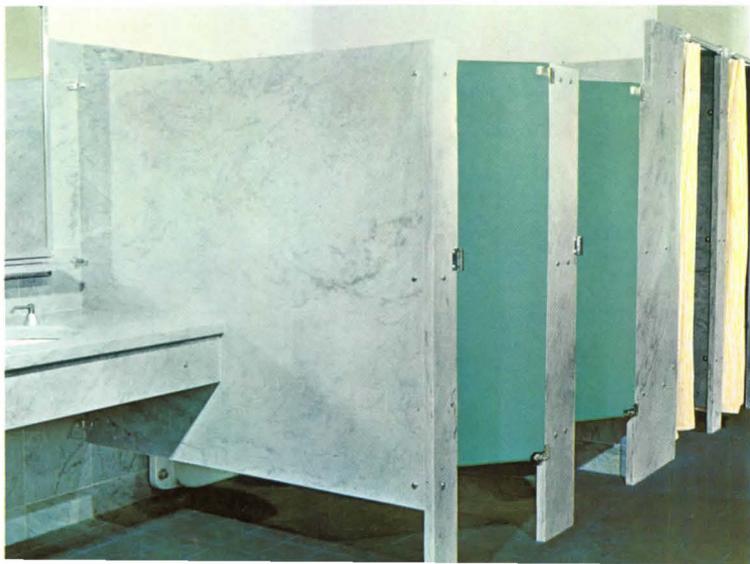


VERMONT MARBLE COMPANY

PROCTOR, VERMONT 05765

Above, left: Republic National Bank, New York City
Interior Design: Ernest Bonnamy / Kahn and Jacobs, Architects

Below: Woodstock (Vt.) Golf and Tennis Club
Architects: Charles Hood Helmer & Associates



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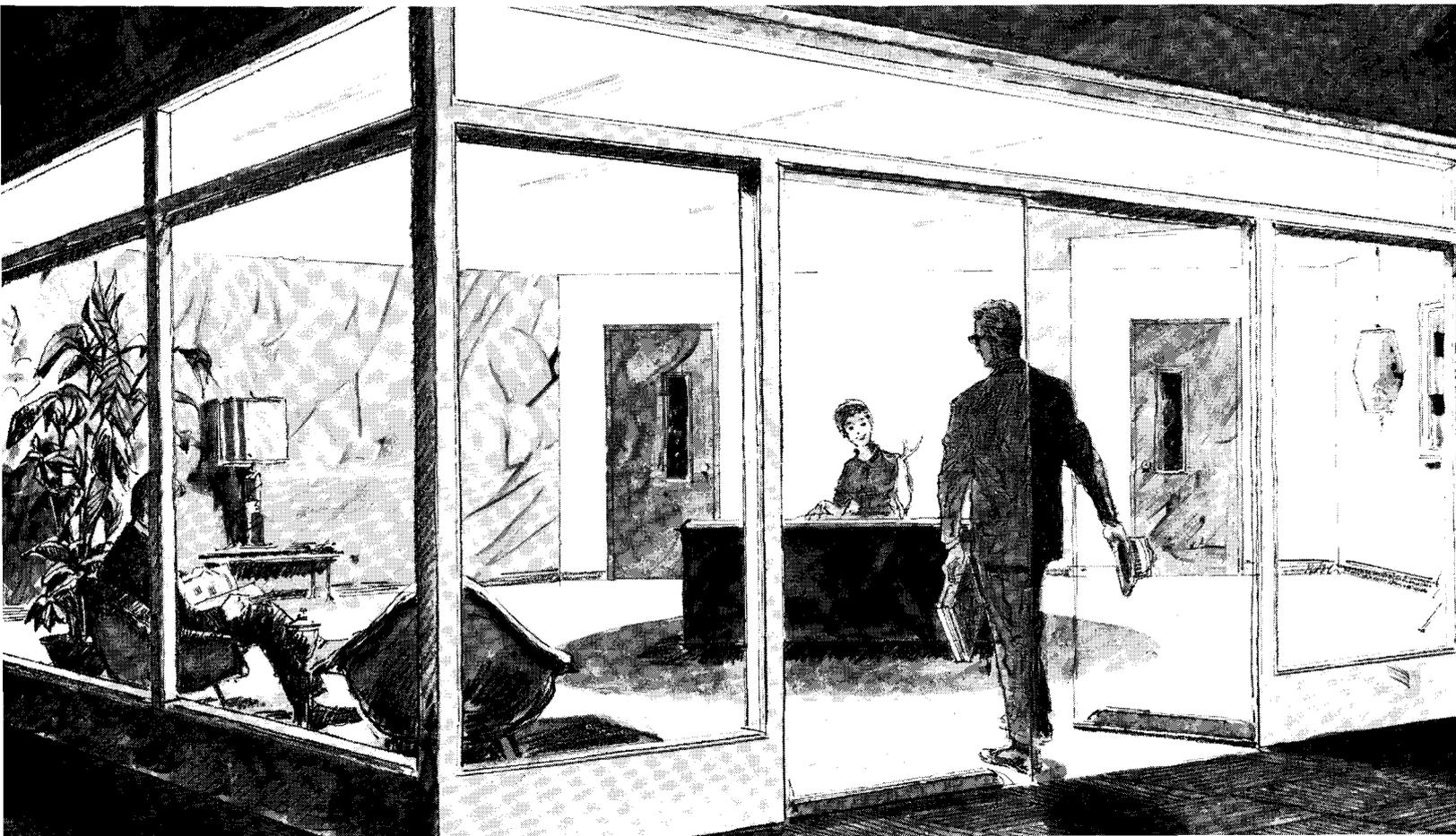
This STEELMARK of the American Steel Industry on a product assures you it is modern, versatile, economical Steel. Look for it on products you buy.

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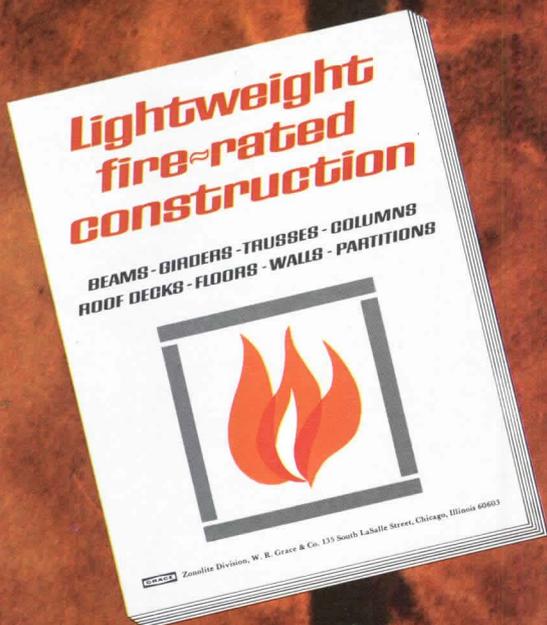
And send along information about the vertical seam in Universal Frames. I understand it loads up to 450 pounds on a single corner.

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LETTERS

COVERING VS. CONSIDERING

Forum: The September issue is great fun. Wouldn't it be useful if someone were to pursue the analogies between the Rudolph building at Yale [July/Aug. issue] and Tange's Communications Center; then, to draw the obvious conclusions about their differences? More useful, that is, than Sibyl's far too unsibylline scoldings and than Mr. Mahler's symphonizing? Mind you, I enjoyed them both, but don't we deserve more, and deeper? . . .

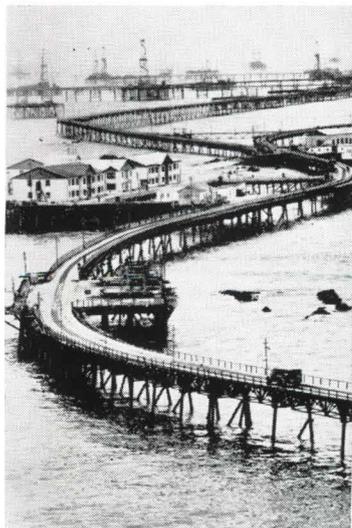
You cover the growing edge of architecture very nicely; couldn't you stretch to considering as well as covering, on more frequent occasions?

New York City EDGAR KAUFMANN JR.

AN OLDER "NEW TOWN"

Forum: I read with interest the article on the "new town" in the Gulf of Mexico [Sept.]. However, as is well known, the principles underlying this "new town" have been utilized in the Soviet Union since 1947.

Only two years after the end of the Great Patriotic War, Soviet technology had built the city of Aryemneft in the Caspian Sea, consisting of 40 miles of wooden trestles. Two years following, the oil city of Neftyaneye was built, consisting of 124 miles of wooden trestles, with hostels, cafes, sports palaces, and trees. Three thousand six hundred workers live and work at this installation. Neftyaneye is now commencing to build the world's tallest sea structure, an 11-story hostel.



The Caspian Sea is excessively stormy, as is well known, and a tragic loss of life occasionally took place in these oil cities. The deaths were especially liable to destruction by storm. However, Soviet technology has been applied strenuously to these structural problems, and there has been no fatality for the past ten years. They compensate for the hardship and danger of their labor, workers receive a 60 per cent bonus. The men work for seven days, followed by ten days with their families in Baku. Last year, 50 per cent of the oil produced by the Soviet Republic of Azerbaijan came from the sea.

It is respectfully suggested that persons from the United States would find much of interest in visiting the above-mentioned cities. Visitors are now welcome at both sites, and foreign visitors, especially, during this year which commemorates the 50th anniversary of the Bolshevik Revolution.

I. G. SEMYONOV
Assistant Commissioner
Bureau of Information
Ministry of Construction
Moscow

LUNDY'S TAX COURT

Forum: It is both refreshing and thrilling to see a large building that is both significant and beautiful. I think it is great.

It may be a sign of more to come.

RICHARD OWEN ABBOTT
Architect
Boston

THE ALMIGHTY IN DUBLIN

Forum: I refer to the article on the Madrid and Dublin embassies in the July/Aug. issue.

Although I do not usually reply to criticisms of this nature, I have decided to do so in this case in view of the wide circulation of your journal and in fairness to my associate, Senor Blanco Solar, who might well suffer as a result of the biased and vicious attack. Therefore, I accept full responsibility for my design.

The profane use of the Almighty's name which the writer has called upon is, presumably, a substitute for lack of knowledge—both professional and literal—suggests that he, or she, has an axe to grind. There can be no such justification for a circular plan form on other than a triangular site, and surely such a shape is not the prerogative of any architect—living or dead!

The site was too restricted to provide all the parking facilities

(Continued on page 20)

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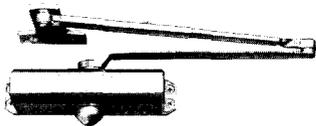
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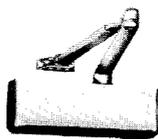
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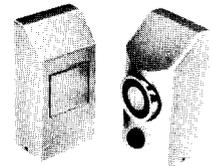
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LETTERS

(Continued from page 20)

required and, therefore, it was necessary to elevate the building so that staff and public cars could be parked on the podium. This also avoids stopping on the very congested roads around the site, and visitors can gain access to the building under cover.

The presence and purpose of the fountain is to cool the water for air conditioning and this requirement largely dictated its form. The open court and elevated superstructure form a natural funnel which ensures a constant flow of air to cool the fountain.

Not all architects accept exposed aggregate as the right finish to a building, nor do they like to distort prefabricated units to gain effect. Exposed aggregate has not been used on this building.

The punctuations providing the deeply recessed windows in the Madrid Embassy give suitable sun protection and minimize solar gain.

I trust your critic will not be closely associated with the Almighty when the time comes for distributing haloes.

W. S. BRYANT
Assistant Chief Architect
Ministry of Public Building and Works
London

REDWOOD STAND

Forum: In view of the continuing political fight over establishing a national redwoods park, and the increasing possibility that adequate protection for these irreplaceable trees will not be forthcoming [April and July/Aug. issues], this office has decided to avoid using redwood.

We urge other architects concerned with preserving our national heritage to join our stand and to make their decision public. In this way, perhaps, the lumber companies will understand that they too have a responsibility to our descendants.

ROLF MYLLER
Rolf Myller & Associates
New York City Architects and Planners

LEVITTOWN REVISITED

Forum: Judging from Mr. Montgomery's review of *The Levittowners* [July/Aug.], he may misunderstand the difference between a technician and a designer. A technician simply takes the values given to him and solves the problems in terms of those values—

there is very little creative effort, especially if a current model is to be duplicated, as in Levittown. The designer's responsibility lies in creating alternatives to established values, to speculate on what might be.

If there is no one to do this job (and this applies to political leadership as well as any other task), people will continue to have little choice, since few are able to speculate. The fault of our suburban environment lies not at the designer's doorstep (for countless alternatives have been raised in the last few decades), but at the lack of leadership in effectuation of these proposals.

One can argue to what extent this is the environmental designer's responsibility, but in most instances he does not control the money and votes, or have the power. We may certainly lack competent technicians, but few intelligent people care for this surrogate existence.

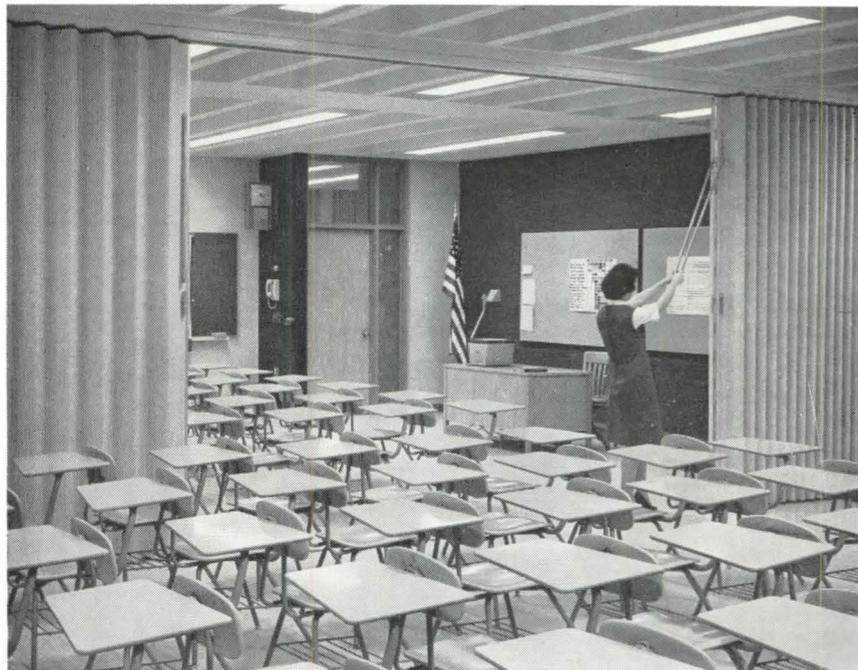
A second quarrel I have with Mr. Montgomery rests with his legitimization of the "social science method." Having been exposed to a number of examples of the sociologists aping the "hard" scientists in surveys, it is ludicrous to me to see their small samples, which are arbitrarily chosen, subjectively analyzed, and containing value-loaded questions, called scientific. . . .

A third objection I must raise is with Mr. Montgomery's implication that people in this country have choice and even that they know what they want. I would hardly consider choice to be offered to people who do not wish to live in the city by the endlessly repetitive developer-inspired suburban sprawl that results in only one "life style," movement system, and perceptual form. As to the second point, having conducted 62 citizen interviews this past year in a suburban community, it has been indicated to me that people do not know what they want. Try asking your neighbor over the back yard barbecue what his ideal community would be like and see if he can articulate it.

As an intuitivist I would argue that much of what people desire lies in the unconscious and that our conscious perceptions are censored and altered by our unconscious mind. Until psychology can probe the unconscious, I am afraid all we can do is speculate on what people might want. . . .

Rye, N. Y. ALAN MELTING

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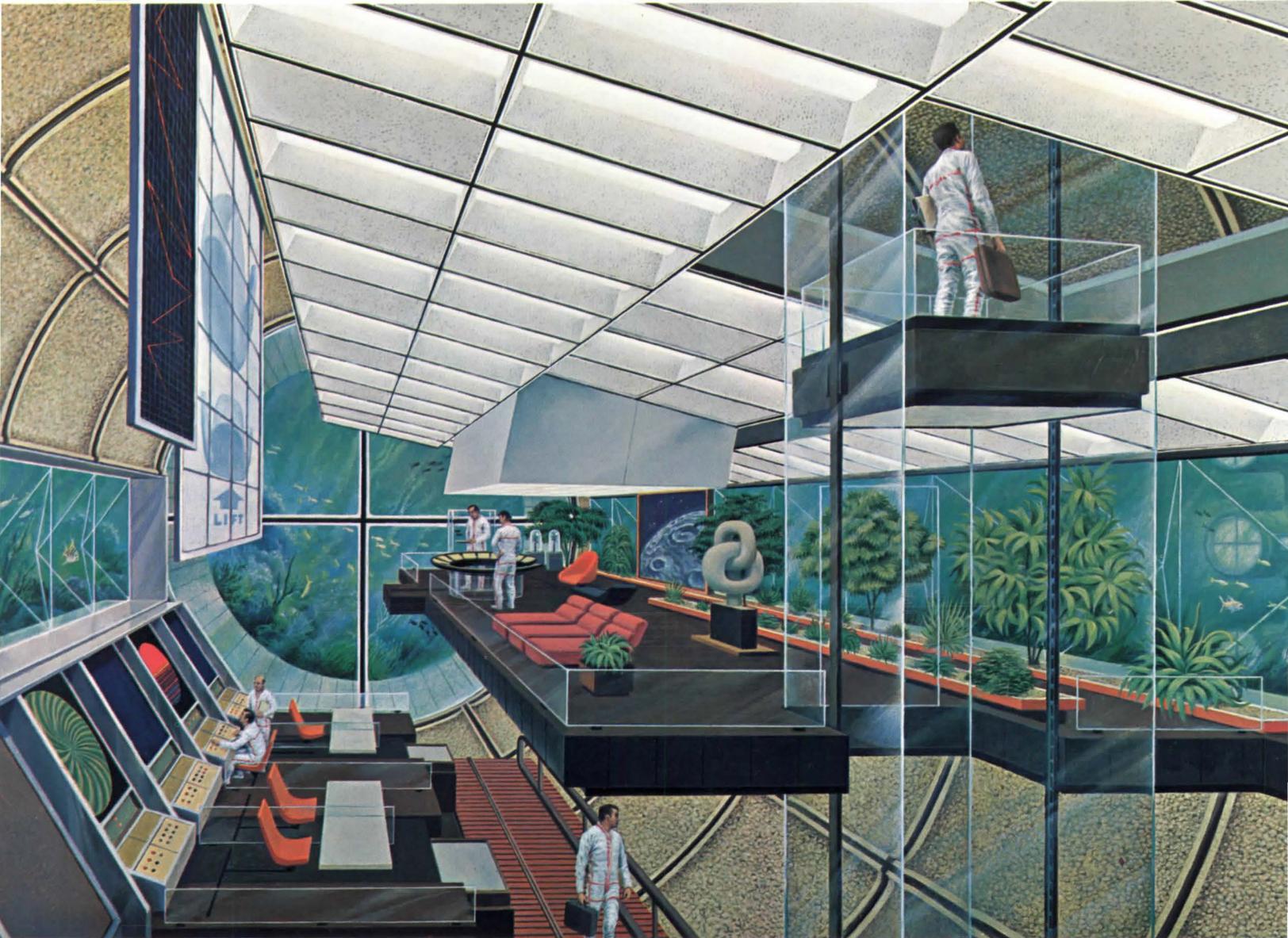
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FORUM

Last month Rustum Roy, who is professor of geochemistry at Pennsylvania State University in University Park, Pa., wrote a letter to the Lonely Hearts column of the *New York Times* suggesting that cities were no longer needed because the telephone and the airplane had made proximity unnecessary, and because the computer had made museums, libraries, etc., obsolete too. (He also said one or two intelligent things about the dispersion of certain facilities.)

It happens that we, too, have served time at University Park, Pa., and so we sympathize with Professor Roy. University Park, Pa., is one pretty terrible place to be in proximity to.

But Professor Roy's type of argument is no more convincing just because it is being repeated with increasing frequency all over the map. Modern science and technology are awfully nice, of course, but the advent of artificial insemination, for example, has done very little, if anything, to make lovemaking obsolete. And the advent of geochemistry (whatever that may be) isn't about to make obsolete the rubbing together of elbows, of noses, or of ideas—activities that have always made a lot of people want to live in cities. Even in "cities" like University Park, Pa.

COALITION

THE CALL

An all-star cast of notables, not ordinarily known for working together with singularity of purpose, gathered in Washington August 24 and hammered out a sweeping set of goals and commitments to meet the crisis of American cities.

They were leaders in business and organized labor, religion and the professions, civil rights and local government. They included Henry Ford II and David Rockefeller, Walter Reuther and George Meany, Richard J. Daley and John V. Lindsay, Whitney Young Jr. and Roy Wilkins, Rabbi Jacob P. Rudin and Bishop John E. Hines.

They and more than a thousand others, were summoned by the newly formed Urban Coal-

ition (Sept. issue) for a one-day Emergency Convocation led by cochairmen Andrew Heiskell, chairman of the board of Time Inc. and of Urban America Inc., and A. Philip Randolph, president of the Brotherhood of Sleeping Car Porters. By day's end, they had approved a statement calling for a national emergency public works program, an urgent commitment by industry and labor to create new jobs and job training programs, and a massive program of urban reconstruction, urban investment, and education.

The statement called upon the Federal Government to "assume the responsibility and act as the employer of last resort," and to develop an emergency work program whose first goal would be "putting at least one million of the presently unemployed" into productive work at the earliest possible moment.

From the private sector, it pledged an "all-out attack on the unemployment problem," including moving systematically and directly into the ghettos to enlist the jobless in private training and employment programs; the promotion of "Earn and Learn Centers" in depressed areas; and expanded on-the-job training programs to advance the careers of employees now caught in low-level jobs because of educational and skill deficiencies.

Finally, the statement promised that the Coalition's next order of business would be the development of a "broad program of urban reconstruction," including the construction of at least a million low-income housing units a year.

THE RESPONSE

"That this coalition of American leadership has come together is profoundly significant," said Whitney Young Jr. (below), executive director of the National Urban League, to the assembled delegates. "It can be our greatest hour of hope or it can be our greatest



hour of shame. What we say here is extremely important, but what we do when we leave here is even more important."

Implicit in Young's statement was a warning that the Emergency Convocation must not be just another meeting—a warning that the Urban Coalition gave every intention of heeding.

The Coalition appointed five task forces and set them to work immediately preparing action programs on five fronts: public service employment, private employment, educational disparities, equal housing opportunities, and reconstruction investment and urban development. The task forces are expected to present specific recommendations within a few weeks.

To bring the national effort down to a grass-roots level, local coalitions patterned after the parent group are being formed in at least a dozen cities across the country—and many others are contemplated.

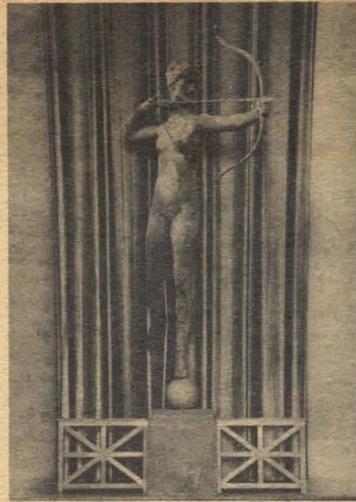
On September 17, the Coalition announced its endorsement of the proposed Emergency Employment Act introduced in the Senate by Joseph Clark (Dem., Pa.) and Jacob Javits (Rep., N.Y.), which provides \$2 billion for the immediate creation of jobs in public social programs for ghetto residents. The Coalition's statement called the bill "a significant step toward an urgently needed national emergency program to provide at least one million jobs."

The Coalition also commended the insurance industry for its commitment of funds for core-area reconstruction (see page 87). Gilbert Fitzhugh, board chairman of Metropolitan Life and a member of the Coalition's national steering committee, is head of the new program.

ARTS

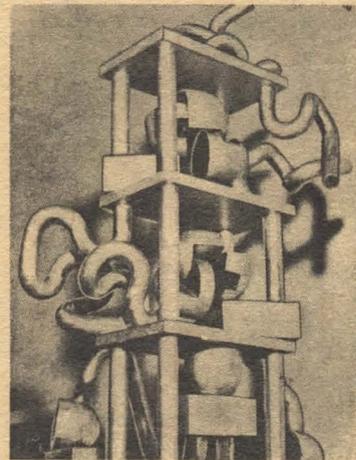
SCULPTURE ON THE RUN

September was a bad month all around for civic sculpture. Items: ► In Philadelphia, the Museum of Art is jealously guarding Diana, a lyrical bronze creation by Augustus Saint-Gaudens, which is being ardently rewooded by New York City. In a grandiose gesture, New York gave Diana to Philadelphia for free in 1932, after she was removed from the tower of Madison Square Garden. Now the city wants her back to grace the new Garden, which will occupy, if not grace, the site of the late,



lamented Pennsylvania Station.

Nothing doing, says Philadelphia's Mayor James H. J. Tate. "When no one wanted the orphan girl [above] Philadelphia took her in," he told New York's Mayor John V. Lindsay. Lindsay has pressed no charges of alienation of affection and, in the manner of a rejected suitor, claims that, anyway, there are lots of Dianas around by Saint-Gaudens, a New York boy who began his illustrious career in the 1850s as a cameo cutter at Cooper Union.

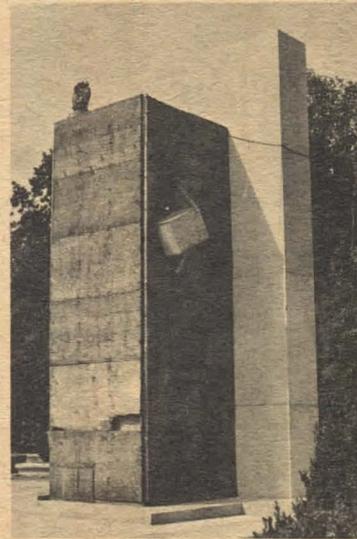


► In San Francisco, after a year-long Bay Area design competition, Sculptor Peter Voulkas won a \$45,000 commission to create his monument to justice (above). When photos of his conception were released, the Society of Western Artists promptly polled its members and found 90 per cent opposed to what the society's president, Raymond Radiff, called "a lot of junk."

► In Washington, a 17-ft. bronze rests in a crate on Theodore Roosevelt Memorial Island in the mid-Potomac. The bronze is a likeness of Teddy himself—and it has been secreted in the box, only

its right hand exposed (below), for the last two years. Nobody knows exactly why Teddy has been concealed all this time. The National Park Service, which commissioned the work, isn't talking.

Paul Manship, his sculptor, has died; and Alice Roosevelt Longworth, 83, his daughter, doesn't seem too interested. "I only wish



there was nothing there but the island itself," she said recently. Apparently her sentiments are shared by the group of conservationists who originally raised funds to purchase the memorial island in 1931 so that it could be kept in its natural state.

GIFTS

NEW TOWN IN TOWN

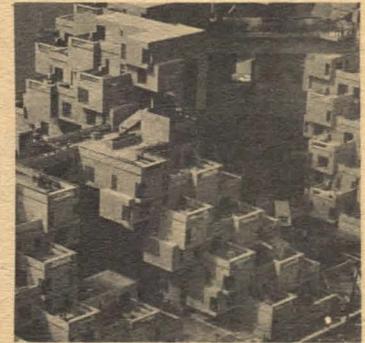
President Johnson's urban fist opened slightly last month, and out came a lovely gift for the nation's capital: 335 acres of valuable Federal land on which will be built a "new town in town" for 25,000 Washingtonians.

The site is now occupied by the National Training School for Boys, which will move to the suburbs next year, and the land almost got grabbed up by the Government Printing Office. But the President's action last month took the place away from the printers (and the General Services Administration, which controls it) and gave it to the people of Washington, who badly need decent low-income housing.

Development plans have yet to be worked out for the site, but the community—bigger than Georgetown—probably will contain about 1,500 low-income housing units, 2,200 units for moderate income families, and 800 high-

income apartments, homes, and townhouses; plus schools, recreational, shopping, and service facilities, and possibly some light industry.

The President's gift may be the first of many to be offered to other cities. He named a Cabinet-level task force (Weaver of HUD, McNamara of Defense, and Knott of GSA) to conduct a survey of surplus Federal properties across the country and "evaluate the prospects of transforming these lands into vital and useful community resources."



NEW ARCHITECT IN TOWN

A week after the President's announcement, HUD let it be known that it had asked Moshe Safdie, the brilliant architect of Habitat 67 (above and May issue), to submit ideas for a 600-unit public housing project for Washington. Though HUD didn't specify where the housing would be built, the Training School site is surely in the running.

EXPO FOREVER

The enormously successful Expo 67 will close this month. But, if Montreal's Mayor Jean Drapeau has his way, more than just its memory will linger on.

Drapeau hopes to convert the fair into a permanent exhibit center with the same theme, Man and His World, and wants to keep as many of the pavilions as possible. "I have many ideas for the empty buildings to make it a great attraction for many years to come," Drapeau said last month. "Nothing commercial. I want it to be educational, cultural, and artistic."

Specifically, Drapeau let it be known that he wants to convert the amusement area into a Canadian-style Tivoli Gardens and to turn the U.S. Pavilion into an "encapsulated park." Drapeau said that 20 of the 77 nations represented at Expo already have offered to donate their pavilions for continuing use, and he predicted that the rest will follow suit.

"When Expo is over, we will have had 50 to 60 million visitors," Drapeau noted proudly, "but even on this continent there are 225 million people." And Drapeau believes that a good many of these 225 million would come to see Man and His World—at least as many (14 million) as now visit Niagara Falls each year.

WATERSCAPE

LONDON BRIDGE IS COMING DOWN

Not with a bang nor a whimper, historic London Bridge, which has been slithering into the Thames at the rate of one inch every eight years, is coming down.

The Sir John Rennie period piece of 1831 (bottom photo) is up for sale for \$300,000, and Her Majesty's official seller, the London Corp., will not sell it piecemeal. Preferably the corporation wants it to go "to someone with a conscience for British history."

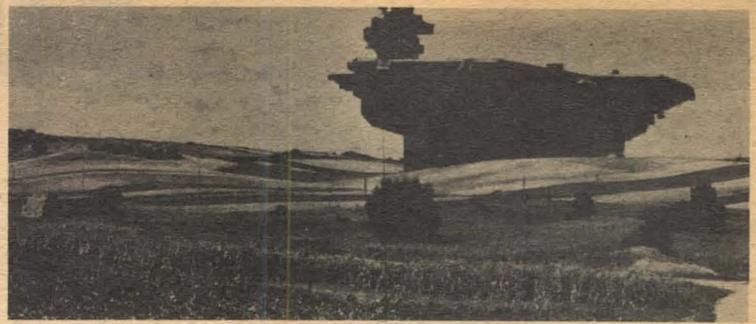
This rules out Universal Studios in Hollywood, which wanted a portion for its museum, and

puts London, Ontario, with a river Thames of its own, in front.

From 43 A.D., when the Celts chased a Roman general across a wooden span, to the bridge of nursery rhyme fame (1209) lined with shops and houses, London Bridge has held a noble place in British history. Witches were drowned from its parapets, and heads chopped off at London Tower were displayed there on pikes. It is curious that the principal reaction to its replacement has been criticism of the unadorned concrete span which has been proposed (below); and others, led by Professor Colin Buchanan, have objected to the additional traffic the six lanes would dump on central London.

SPRAYSCAPE

New York's Mayor John Lindsay has thrown a water screen over the highly controversial and atrociously sited sewage disposal plant slated for construction on the Hudson River bordering West Harlem. The water screen, 250 water jets set amidst low misty



sprays, will spread over the 22-acre roof of the plant which juts 500 ft. into the river.

Sketches of two plans of this sprayscape, designed by Philip Johnson, are currently submerged in the mayor's office awaiting an opportune time to surface. One plan includes a 15-acre park which will connect the fountained roof with Riverside Drive; the other plan is parkless.

The mayor's touchiness on the subject is understandable. The fountains are a watered-down answer to the five-year-old pleas of residents and the Regional Planning Association to utilize the 22-acre roof for a park, promenade, or playground of some kind for West Harlem, desperately starved for park space.

Although Johnson has admirably retrieved 15 acres in his park plan, streamlined a hodgepodge of ventilators and sewage paraphernalia, and given the river site the monumental scale it needs, it still gives West Harlem residents only half a loaf. It is still only a demi-victory for New York's New Look which, among other things, aims to restore the waterfront to human and social uses; and the plant still juts 500 ft. into the Hudson instead of following the natural shoreline.

"I tried my best to get people on that roof," explains Johnson, "on walks which would go up, over, or around it, but the Department of Public Works was adamant. Ozone [an effluence from sewage processing] and people don't mix, and there was the policing problem. . . . I am not unhappy . . . there is nothing comparable to the fountains for sheer scale."

BEACHING THE BOAT

Austrian Architect Hans Hollein's *Carrier City in Landscape* (above), part of the Museum of Modern Art's recent "Architectural Fantasies" exhibit, is less fantasy and more reality than Arthur Drexler could have imagined when he planned his far-out ex-

hibition some two years ago.

Snaring a ship for landside use is the hottest vogue among city mayors. New York and Philadelphia both bid for the aircraft carrier *Tarawa* to convert to a school, but they lost out to Providence, R.I., which wants it for a war museum. New York also set its cap for that grande dame of the high seas, the *Queen Mary*, but Long Beach, Calif., outbid on that one.

New Brunswick, N. J., has grounded Manhattan's venerable sightseeing boat, *Miss Circle Line IV*, as a community center for senior citizens. And Senator George Murphy (Rep., Calif.) has submitted a bill to Congress which would permit the Department of Commerce to transfer mothballed ships to school districts, thus launching a flotilla of schools for the nation's coastal cities.

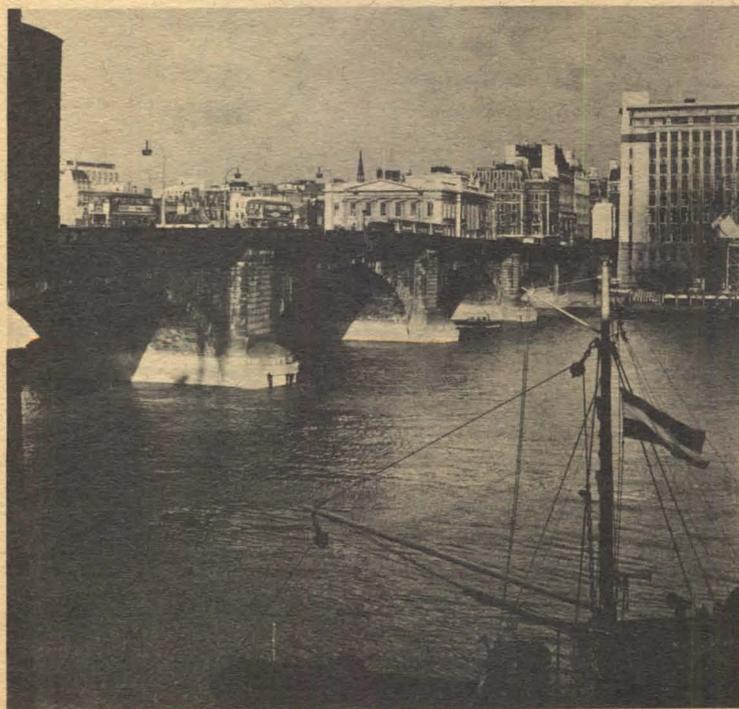
EGG BEATER FOR A DEAD RIVER

Take one part sludge, two parts sewage, moisten with septic water and beat until fluffy. This is the singular recipe of retired Army Engineer Brigadier General William Whipple Jr. for regenerating dead rivers, in this case the Passaic in New Jersey.

An engineer's definition of a dead river is one in which the oxygen content is zero—or fully septic—and the cleansing cycle of oxygen-carbon dioxide, decay, and regeneration comes to a halt.

"Our problem is to get the oxygen content of a river up to two-to-four parts in one million and keep it there. Below that, fish are in trouble. When a river can maintain that average on its own, we pull our beater out."

Whipple's experimental egg beater is a submerged rotary fan with spade-like blades which float from three glass fiber islands, the whole thing measuring 25 ft. across. The Passaic was chosen by the Water Resources Institute at Rutgers, sponsor of the Federally financed project, for several reasons: its small size (100 ft. across), its shallowness, the growing num-





ber of towns and industries which border it, and "because it is a dirty, stinking mess, a cesspool," comments Whipple.

After a month and a half of operation, Passaic's egg beater (above) has been dry docked, but results are sufficiently promising for Whipple to proceed to bigger, muddier waters next summer—the Delaware River.

DESIGN

CONTINUITY ON THE HILL

J. George Stewart, the non-architect Architect of the Capitol, unveiled his latest extravaganza on August 26. It was the long-awaited design for the new \$75 million James Madison Memorial Annex to the Library of Congress.

The design (below) should have surprised no one. After all, it was executed by Stewart's favorite architects, the same group that performed the extension of the Capitol's East Front and have come up with an equally sensitive scheme for extending the West Front. Why does Stewart continue to commission this group of architects? Because, he says, their "kind of architecture . . . is not being taught today."

When Congress approved funds for the library annex in 1965, it stipulated that Stewart was to consult the American Institute of Architects in the interest of good design. The AIA was consulted all right, but not until after the "preliminary design" had been com-

pleted. A committee set up by the institute to work with Stewart didn't like that design, and it doesn't like the virtually unchanged final design any better.

The AIA wasn't invited to, or even informed of, the unveiling of the final job, but on the same day it issued a "public report" calling the design "visually unsatisfying and functionally inadequate." The report pulled no punches, but verbal punches have yet to dislodge the Architect of the Capitol.

AIRPORTS

THE SKY BLUES

People who had to stagger through a major metropolitan airport over Labor Day weekend didn't need the recent Senate Aviation Subcommittee hearings to tell them that airports are on a collision course. Traffic jams at New York's Kennedy were so bad that motorists, after circling filled parking fields for an hour, abandoned their cars by the side of the road. At Lambert Field in St. Louis, the airport was handling 98 takeoffs or landings per hour (100 is maximum for safety).

All this was wrapped up in a four-day nutshell by Senator A. S. "Mike" Monroney (Dem., Okla.) in his subcommittee hearings held in Washington in early September. Representatives from city, county, state, and Federal governments, from the pilots association, airlines, and Air Transport Officials Association testified generally: things are a mess.

Nobody disputed that \$3 billion will be needed by 1973 for airport expansion; that in the next decade travel on major airlines will triple, and that it will increase a hundredfold on smaller feeder airlines. The number of noncommercial airplanes, now 90,000, will jump to 180,000.

Nobody disputed that the present system of financing construction and maintenance of landing and terminal facilities is a night-

mare, involving city, state, county, and Federal decisions in the most miniscule matters.

But in a real Alphonse & Gaston routine, when the question of Who Is Going To Pay? came up, everybody deferred to his neighbor:

► Neither the Federal, state, nor local governments can be expected to cough up much more money, claimed Alan S. Boyd, secretary of transportation. However, he added, "in 1966 the airlines themselves paid only \$45.9 million of their total [operational] costs, which was 1.5 per cent of the bill, and yet spent \$97.4 million for advertising and publicity." Further than that, he offered no master plan.

► Neither can cities foot the bill, declared Sam Massell Jr., vice-mayor of Atlanta, representing the National League of Cities and the U.S. Conference of Mayors. "Present revenues from air terminals are pledged to paying off existing bond issues," and there simply is no capital available for new expansion.

► Count out counties, stated Richard J. Coffee, president of the National Association of Counties, who felt that airports, like interstate highways, are national assets and should be Federally financed.

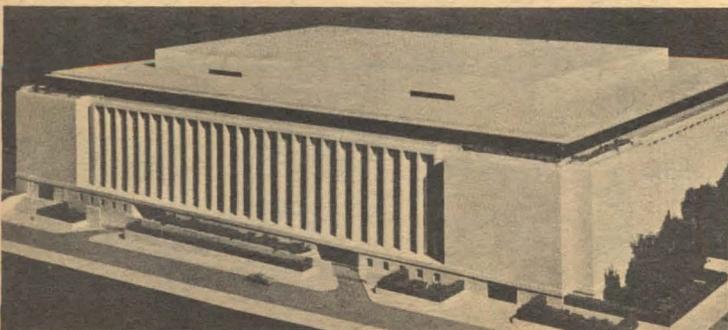
► Absolutely not, replied the Airport Operators Council International, which staunchly opposes "nationalization" of airports. But why not an Airport Trust Fund, like the Highway Trust Fund, for runways and instruments? Then charge each passenger a \$1 surcharge per flight to finance improvement of terminal facilities.

Senator Monroney made short order of that: "It is awfully hard to tell the customer he is going to be taxed more because the [airline] business is having such a big boom in volume and traffic."

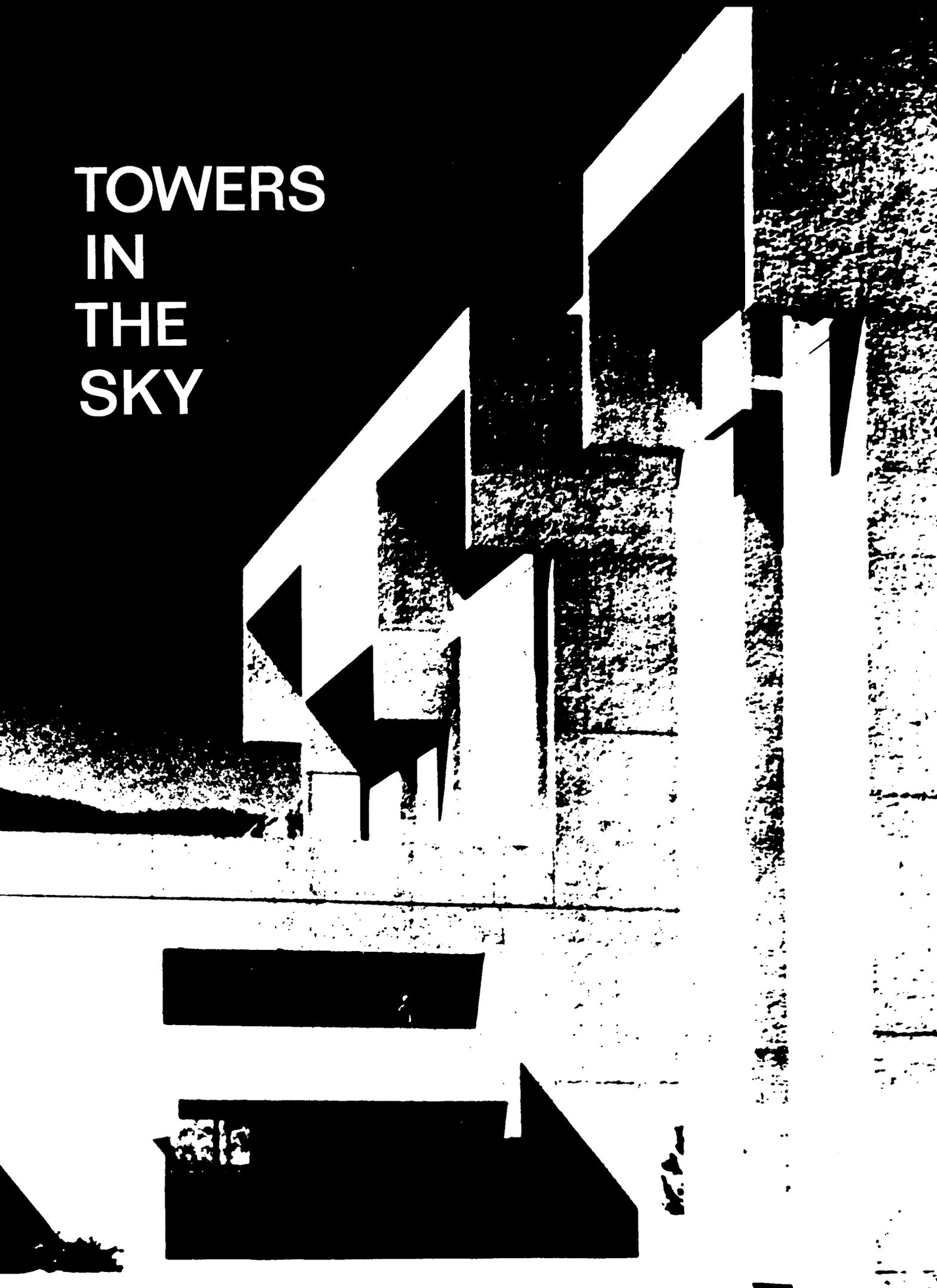
The only possible solution, countered the airlines, is a government corporation to guarantee local borrowing for airport construction and make direct loans from a revolving fund in the U.S. Treasury.

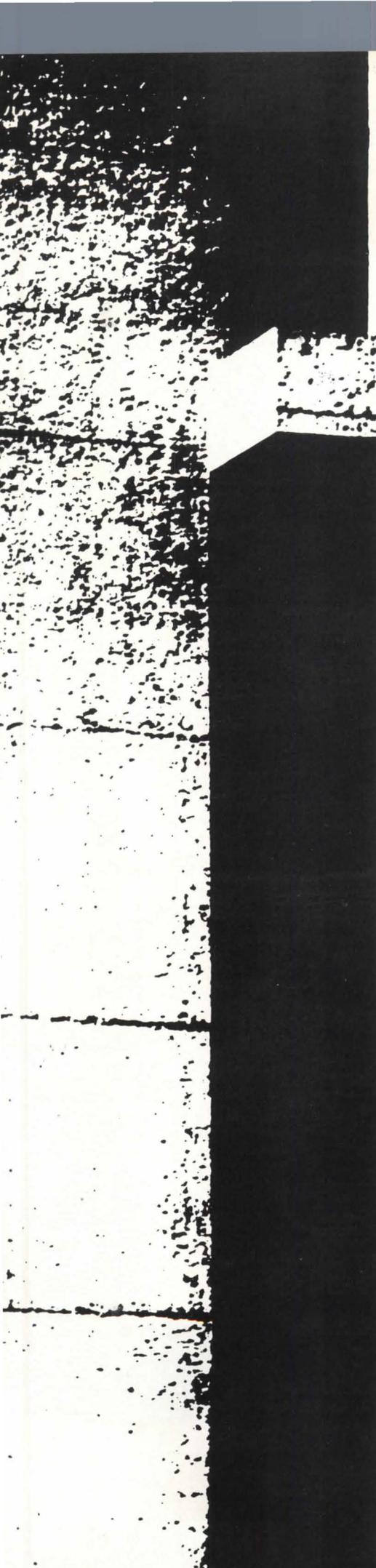
► In part, Charles S. Murphy, Civil Aeronautics Board chairman, agreed: collect all airport responsibilities under one roof. As it is now, funds for landing facilities come from Federal grants combined with local bond sales, taxes, or profits from existing facilities. Funds for terminals come from local bond issues backed by revenues from landing fees, leases, and

(continued on page 87)



TOWERS IN THE SKY





**New research labs
on the edge of the Rockies
are I. M. Pei's
best buildings to date**

You drive up from Denver on the turnpike, and just before you reach Boulder you catch the first glimpse of them: a cluster of concrete shafts, pink like the rocks behind them, and standing guard, high up on a mesa, in front of the Flat Iron Range of the Rocky Mountains. It is quite a sight, as stark and imposing as the view of any medieval monastery on a rock in Catalonia or in Tuscany.

And then you turn off the turnpike and are briefly transported back into 20th-century U.S. Suburbia. But a few moments later, there it is again — tightly massed, sharply angular, clearly visible in the crisp mountain air. The road winds up to the mesa, carefully plotted to offer a succession of glimpses of the "monastery" above. Then a final turn, and you are there.

"There" is a very special place: the labs and offices of the National Center for Atmospheric Research (NCAR), the headquarters for what is probably the most sophisticated work in the atmospheric sciences carried on anywhere in the world today. NCAR is headed by Dr. Walter Orr Roberts who, only 20 years ago, conducted his studies in a pup tent on a desolate slope in Climax, Colo., some 65 miles to the southwest of his

new headquarters. Dr. Roberts chose the site for these new headquarters, wrote the program for the buildings, and selected their architects—I. M. Pei and his associates. What has now been built on this 28-acre mesa is the direct product of the interplay of those personalities and facts.

Here are some of the ingredients, in capsule form. The program: "The qualities we seek . . . may seem architecturally paradoxical: something symbolic, important and dignified, but not monumental; something that expresses both the contemplative and the exciting aspects of scientific activity; something that is efficient without a straight-jacket feeling. . . . Our architectural sights are, obviously, set as high as our scientific sights." Dr. Roberts: "The best office for me would be the hardest one for people to find." The site: a 28-acre mesa (Elev. 6,200 ft.) in the midst of a 530-acre expanse that is pine-studded, green, backed by the pink rocks of the Flat Iron Range, and dominates the plains of Boulder below. The architect: "You just cannot compete with the scale of the Rockies. So we tried to make a building that was without the conventional scale you get from recognizable floor heights—as in those monolithic structures that still survive from the cliff-dwelling Indians."

The interplay of these attitudes and requirements produced the complex of buildings shown on these pages.



THE SITE—At left, the view of the mesa from the east. At right, the various elements of the center, both built and projected: 1. office complex; 2. laboratory complex; 3. future office and laboratory complex; 4. future laboratory; 5. enclosed plaza; 6. open plaza; 7. future conference building; 8. ramp to west mesa; 9. parking lot; 10. sculptured gatepost at main entrance; 11. approach drive to NCAR complex. PHOTOGRAPH: Ezra Stoller Associates



**Monolithic concrete forms
match their setting
in color and in scale**

NCAR's shafts of concrete look like an elaborate exercise in sculpture; and, to some who are accustomed to standard column-beam-and-glass grids, NCAR's forms may seem quite arbitrary.

In fact they are nothing of the sort. The NCAR buildings are monolithic, largely wall-bearing concrete; they have no scale in the ordinary urban sense, because such a scale would have seemed absurd against the vastness of the landscape. Yet these towers have a clear structural consistency.

There are basically three elements that shape these buildings: first, the pinkish-brown concrete walls, bush-hammered throughout except where the concrete acts as a coping or as some sort of applied "trim." Second, there are the areas of gray-tinted glass. These are kept down to a minimum (only 10 per cent of the exterior surface), since the light up on the mesa is strong and the wall surfaces inside labs and offices are badly needed for charts, maps, and scientific equipment. Finally, there are two devices to shade the glass: concrete hoods and louvers, or vertical slots so the glass is deeply recessed between concrete walls. These shading devices account for most of the modeling of the exterior, and they give it much of its sculptural drama.

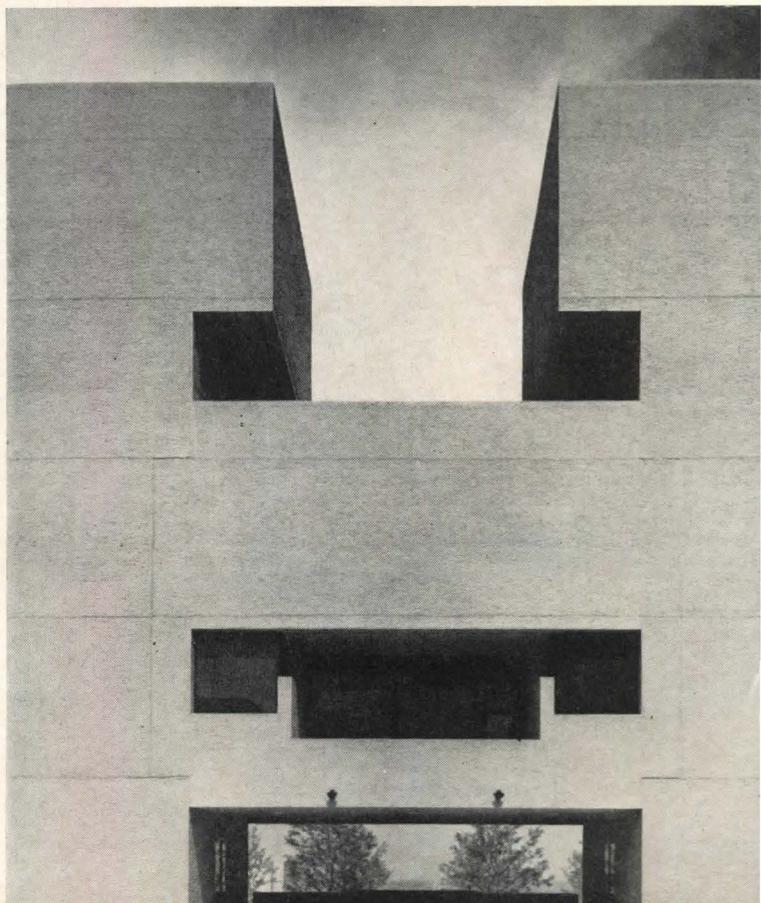
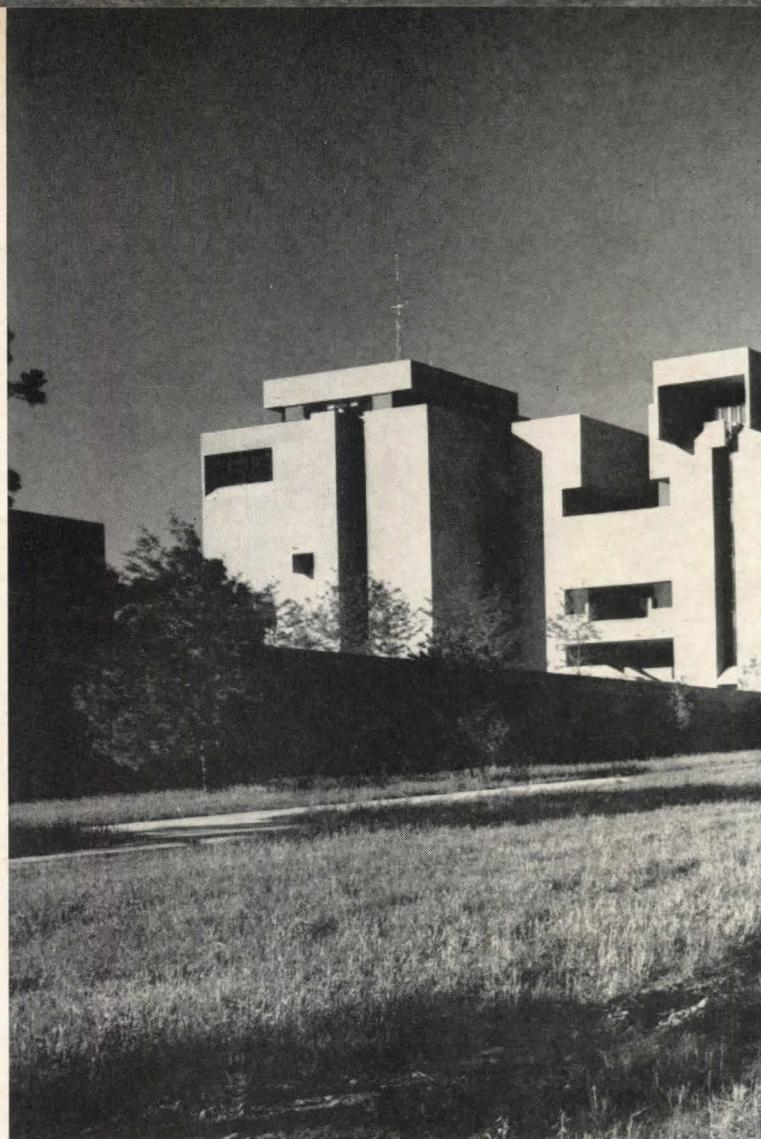
The aggregate for the concrete came from a quarry some 20 miles away, and the bush-

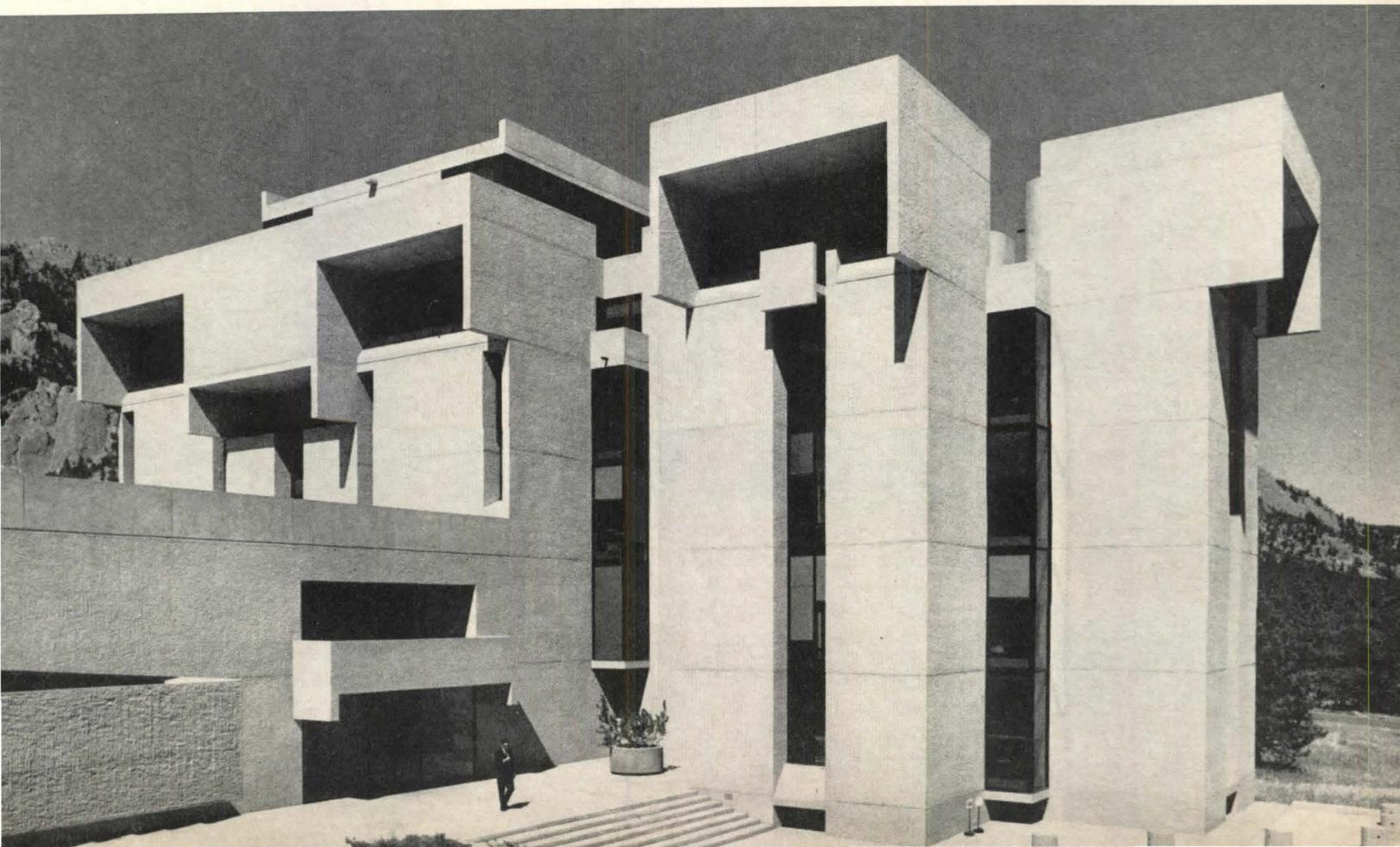
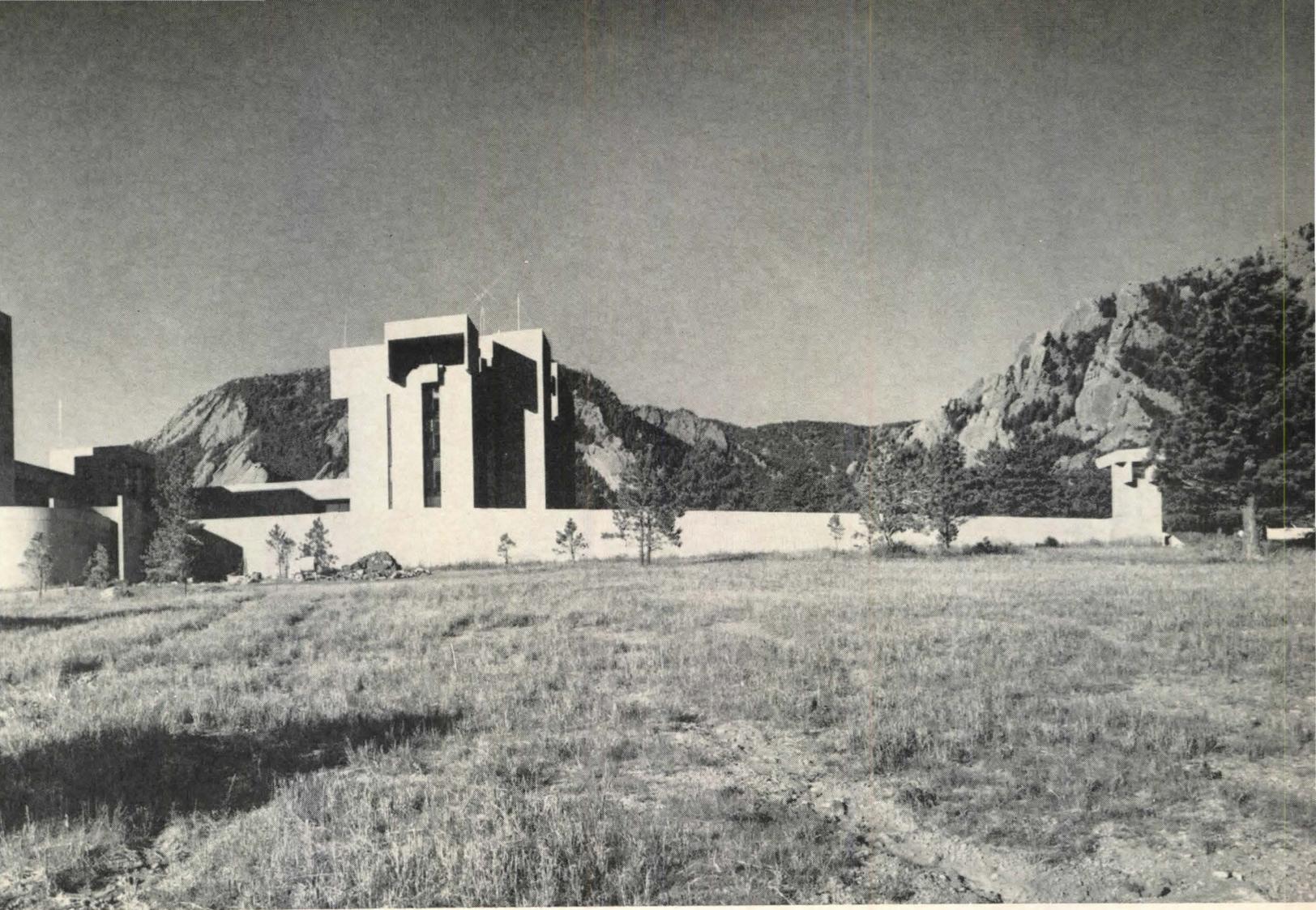
THE FORMS—Opposite is the view from the parking lot. The visitors' entrance is marked by the sculptured gatepost at far right. The first cluster of towers encountered by visitors is an office block; next comes the low entrance wing; finally, another cluster of towers, containing offices and labs. Bottom, right, a view of the plaza with its pool and fountains; and a close-up of the main entrance.

hammering and sandblasting applied to the surface brought out the distinctive color. There are noticeable horizontals that mark the different concrete pours and interrupt the vertical striations produced by the bush-hammering machines. Pei regrets this, but feels that only the expensive Norwegian process of injecting the cement admixture into the rough aggregate could have produced a completely uniform pour and surface.

There are also some thin cracks in the concrete parapets, since the temperature differentials between exterior surfaces exposed to the hot sun and interior surfaces in the cold shade can be very great in this area. These might have been avoided by additional expansion joints, but only at the expense of too much scoring of the concrete surfaces. Still, there are few architects in the U.S. who know more about concrete than Pei; and, by and large, the NCAR job is of high quality.

The climate on the mesa presented several unusual problems: wind velocities on this site may reach 125 mph; and there are days when NCAR's staff must form a human chain between the parking lot below the buildings and the entrance hall 30 or 40 ft. above. On such days — they occur only during two months out of the year — the semi-enclosed courts and terraces are hardly usable, and the locust trees planted in rows on the big terrace to the east of the main buildings (aerial, page 37) may have a difficult time surviving the coming winter.





Complexity of interiors reflects special needs of occupants and special privileges of visitors

NCAR is subsidized by the National Science Foundation; and so the taxpayers (and their children) have access to these buildings. This is great fun for the children, especially, but not so much fun for the scientists who are trying to concentrate.

The plan developed by Pei, in association with Dr. Roberts and others, is a kind of labyrinth in which the scientists play hide and seek with the public — and win. (The NCAR complex is actually built on seven levels; only the three most important ones are shown in these plans.)

Visitors enter at the main floor level, into the lobby pictured at far right. From here they can go to look at exhibits on two floors, peer into the computer room on a lower level, wander through some of the plazas and over the eastern meadows of the mesa. At no point are they tempted to enter the scientists' offices and labs (below), their meeting room or

THE SPACES—At near right are the plans of the three principle levels. On the opposite page is a view of the main entrance lobby, and of a typical discussion group in one part of the commons room. Bottom row: exhibit space for visiting public; and the commons room on second floor, overlooking the west mesa.

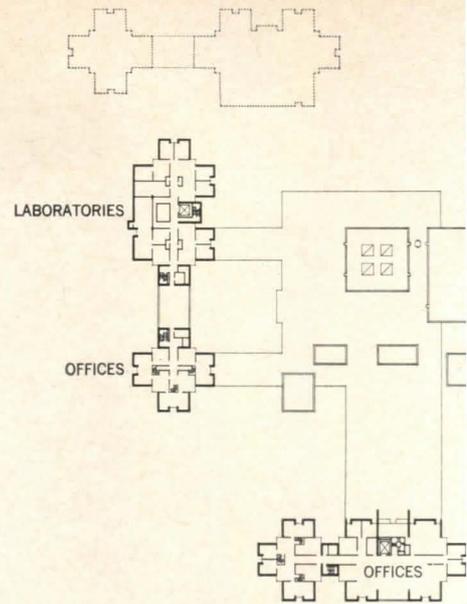
commons room (bottom, right); these private areas are, somehow, out of the way. Even the west mesa, which the scientists like to use for leisurely strolls and conversations, is accessible only by a ramp from the terrace outside the commons room.

Despite the seeming complexity of the plan, it is governed by a 23-ft. module (with a smaller, submodule to increase flexibility of layout). Unlike most modular buildings, NCAR's headquarters has none of the sameness found in many offices or labs: each space seems quite distinct because of the skill with which the module was manipulated.

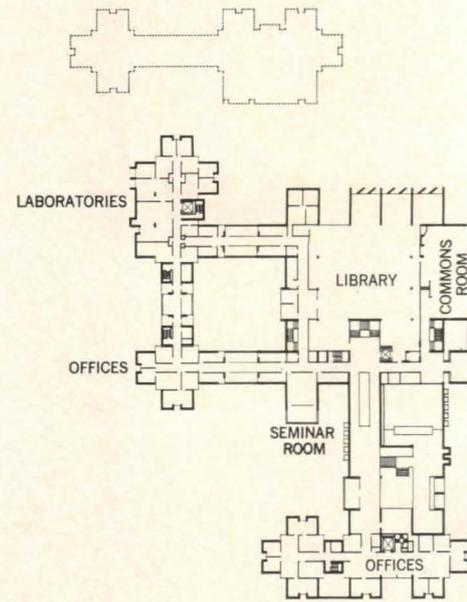
NCAR (in its present, first stage) was planned to house a total of about 300 people — scientists from all over the world, and other staffers. It is currently accommodating about 420 people. "When Pei first presented his plans," one of the administrators said recently, "most of our people were dead set against them. What they really wanted was something like a big loft space with all the flexibility in the world. Well, as the buildings started to go up, we took them to the site from their old building down on the University of Colorado campus. There were still a few skeptics after that, but not many. Now that we are badly overcrowded, we have asked for volunteers to move back, temporarily, into the old building down in Boulder. There haven't been any volunteers."



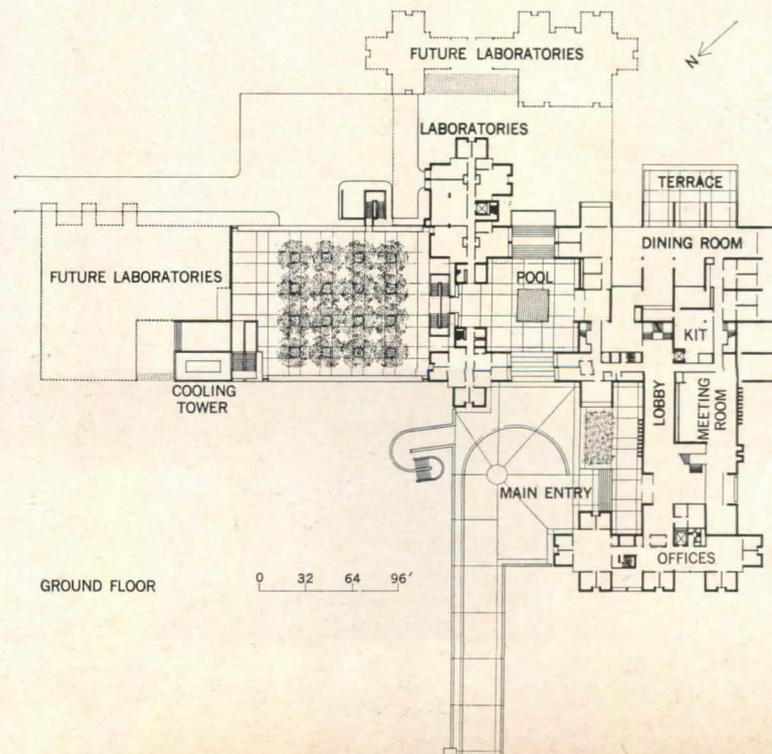
FOURTH FLOOR

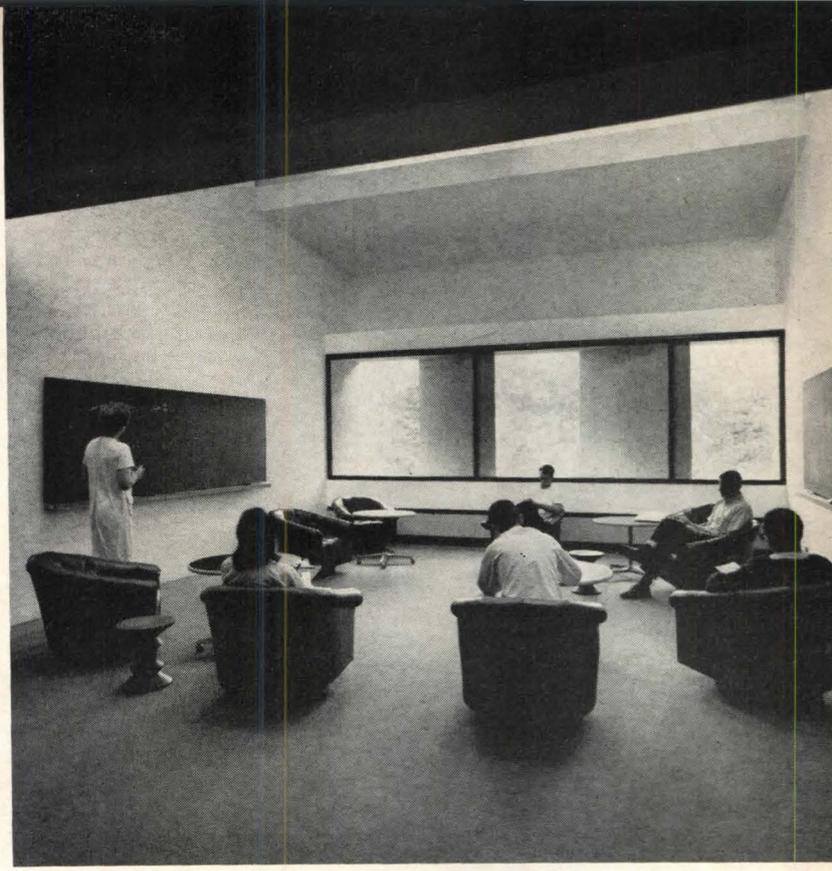


SECOND FLOOR



GROUND FLOOR





**Towers, parapets,
and battlements
are an appropriate
symbol of a special task**

When NCAR was first conceived, Dr. Roberts stipulated that the new buildings should be arranged so as not to detract from the natural appearance of the mesa or disturb existing topography and vegetation.

This accounts, in part, for the fact that Pei's buildings are so tightly concentrated on their large site. But Pei did more than merely cluster his buildings; he made them grow out of the mesa and surrounding slopes. (Wings to be added in the future — see site plan, page 35—will actually overhang the edge of the mesa.) So this complex is quite "organic" in feeling, without any sentimental echoes of the forms of nature.

As sculpture, as a working plan, as a very special sort of place, the NCAR complex is a great success. It fails in only minor respects: the one, self-conscious bit of "sculpture" — Pei's concrete gatepost at the visitors' entrance drive (below)

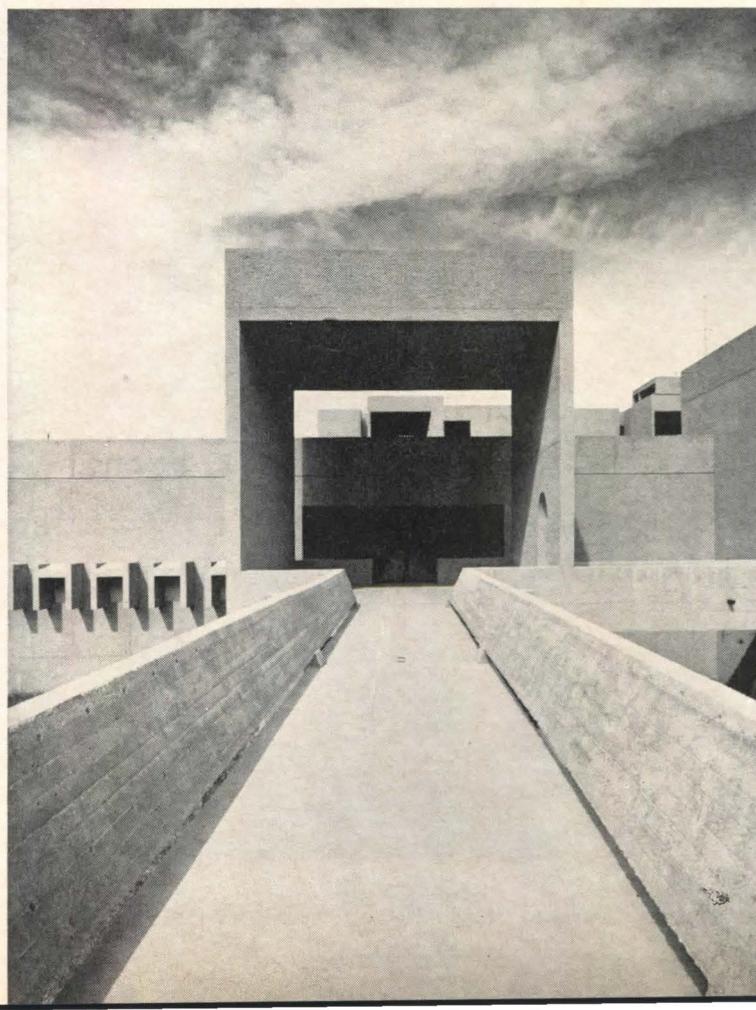
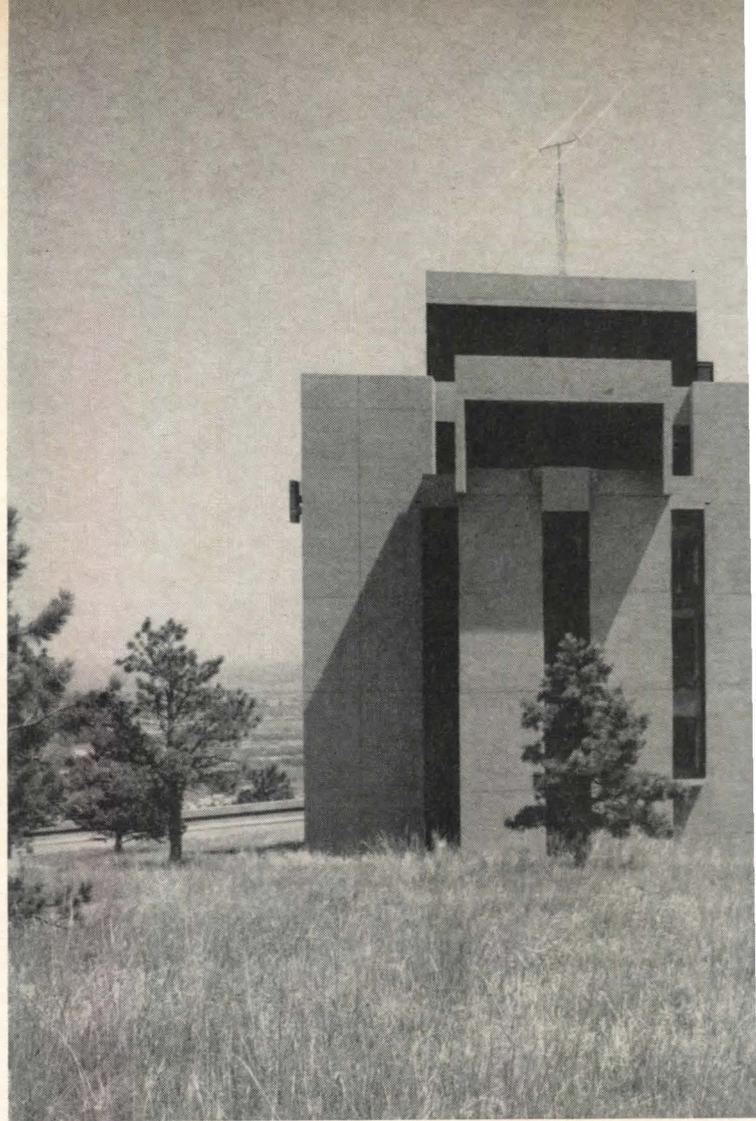


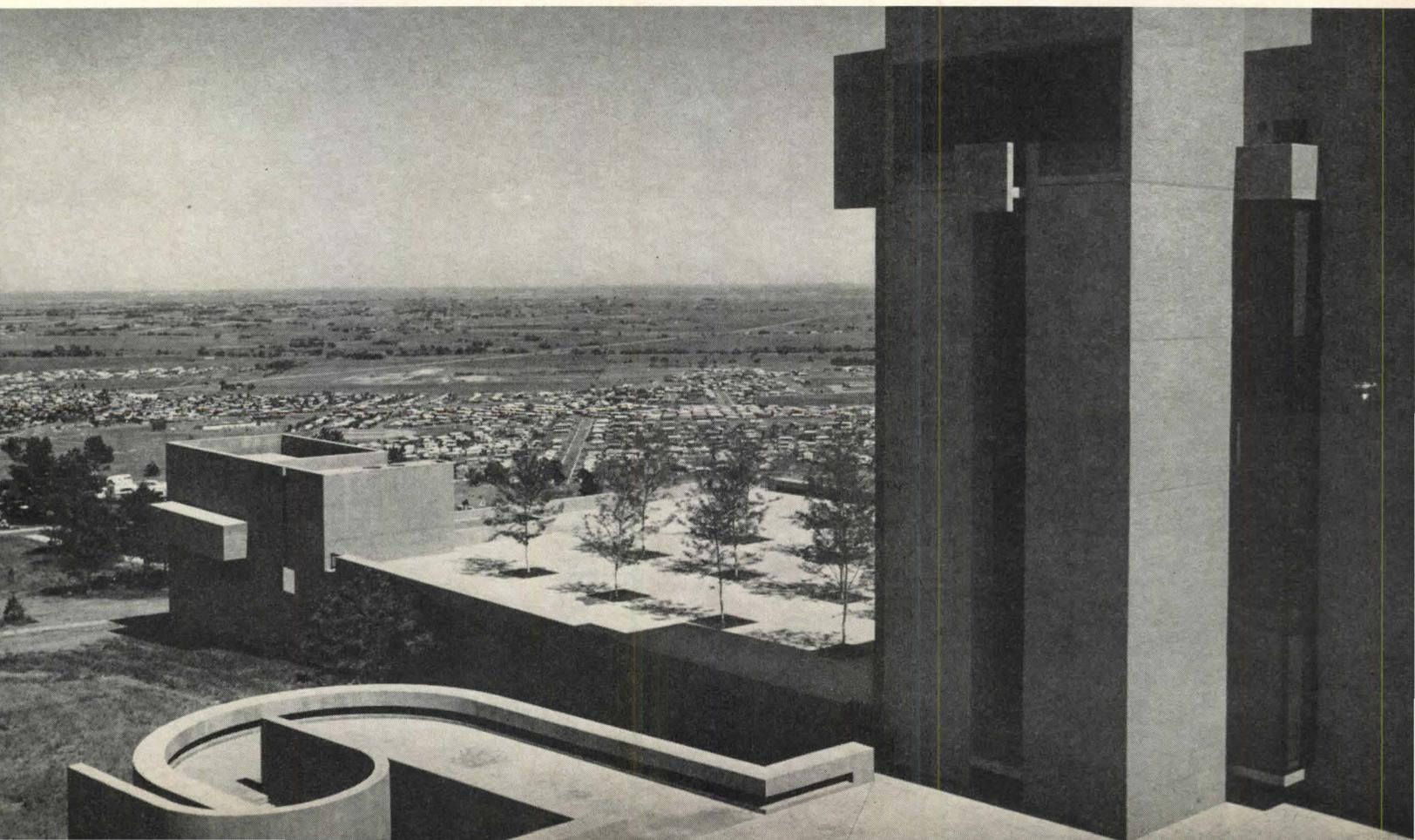
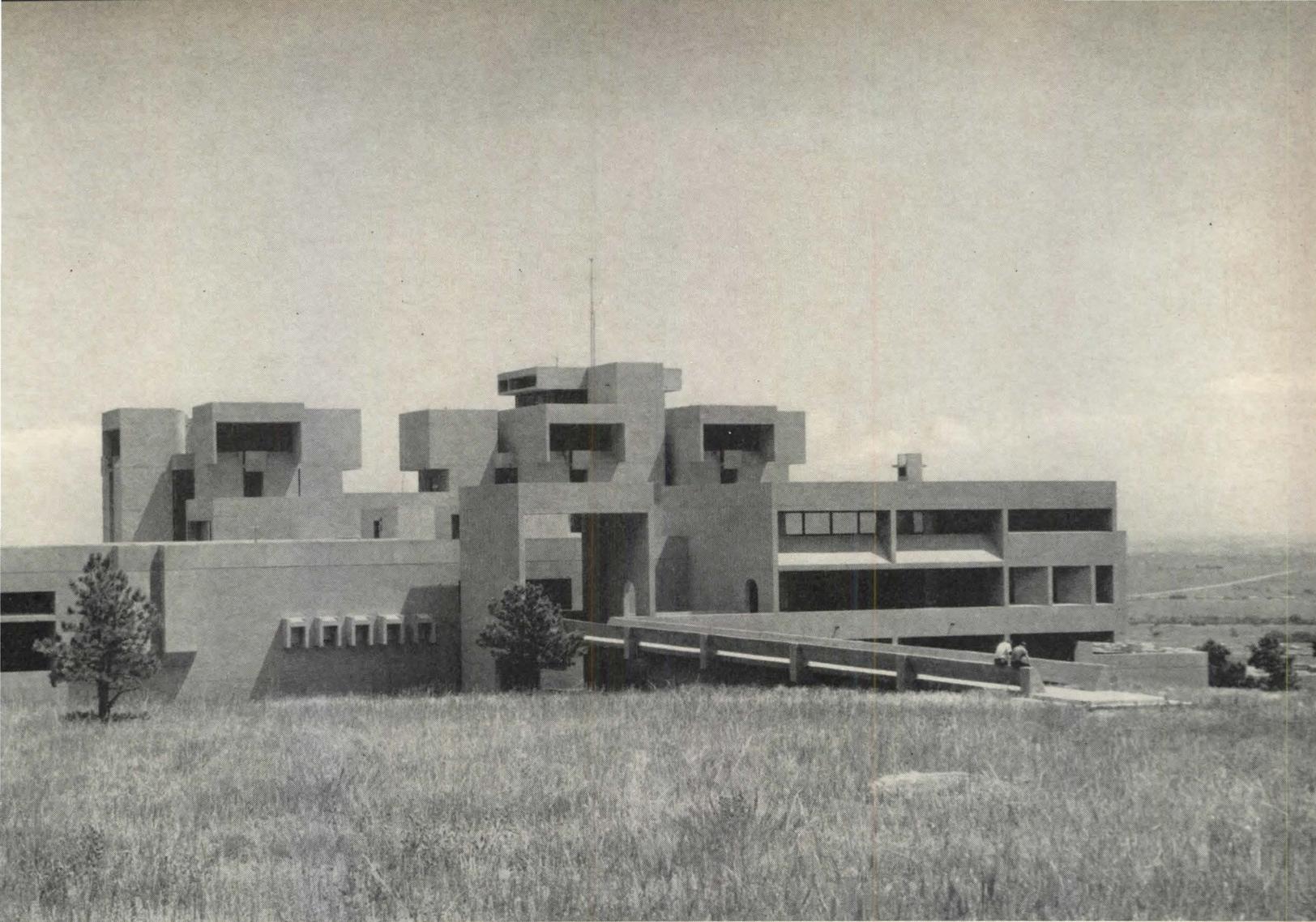
THE SYMBOL—Top right, views of the NCAR complex from the west mesa. Future wing of labs and offices will be added to northern end of the buildings (far right). Bottom right, ramp leading from commons room terrace to the west mesa; and view from visitors' entrance level down upon tree-planted plaza (with mechanical equipment underneath), and toward suburbs of Boulder beyond.

—is just that: a bit too self-conscious, and not as good sculpturally, as the buildings themselves. The plan, like all plans for research facilities, is frequently criticized by those who use it; but research scientists are congenitally incapable of predicting their own future needs, and chronic complainers whenever their unformulated needs are not met. Besides, what research lab can boast such exquisite "think tanks," indoors and out, as have been provided here? Finally, there are some complaints about excessive winds, excessive ice and snow on the terraces, and, sometimes, excessive glare. But no client has ever been better qualified to predict such problems, and one feels that NCAR, consciously or not, may have wanted to brave the elements on this exposed and dramatic site.

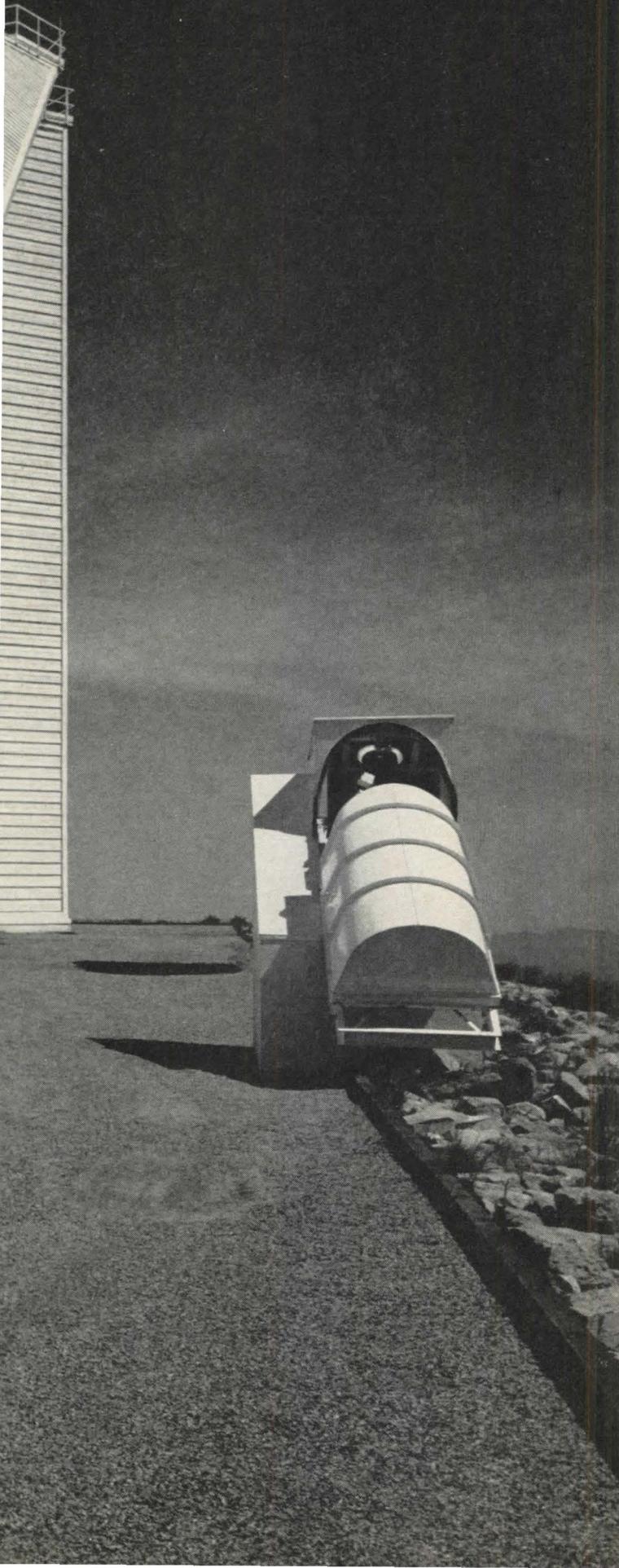
Some may feel that the building complex is a little too much ado about research. But this research complex is no ordinary lab — it is an institute intended to attract the best brains in various disciplines from all over the world. It is unlikely that Pei would have designed labs like these for scientists in search of a better toothpaste.

So NCAR works — esthetically, functionally, symbolically. It is entirely appropriate to its site and to its purpose. And it will, unquestionably, be imitated by all sorts of people straining for the latest in building shapes, and that will be funny rather than sad. — PETER BLAKE









THE WORLD'S BIGGEST CAMERA

BY CHARLOTTE M. CARDON

A great primary structure stands on the brink of a mountain top in southern Arizona, a gleaming white polygon thrusting to the sun. It looks like a magnificent piece of sculpture; but, in reality, it is one of the world's most remarkable scientific tools—the Kitt Peak National Observatory (KPNO) solar telescope.

The sun's brightness (viewed from the earth) is ten billion times that of any other celestial body. As the sun telescopes have grown larger and more powerful the problems of studying the sun have grown more complex.

The 60-in. telescope at Kitt Peak was largely conceived by Dr. Robert McMath and Dr. A. Keith Pierce. It was designed by Skidmore, Owings & Merrill (Chicago), with William E. Dunlap as partner in charge.

According to Dr. Pierce, this is the largest solar telescope (by a factor of more than three) in the world. It is used to study the basic physics of the sun—pressure, temperature, density and magnetic field—plus its chemistry. "The slanting shaft carries the sun's image deep into the mountain where instruments can analyze it with a precision never before approached," Pierce says.

The telescope was the dream of Robert McMath, director of the University of Michigan's ob-

servatory before he died in 1962. One year later the \$6 million solar telescope was dedicated in his name.

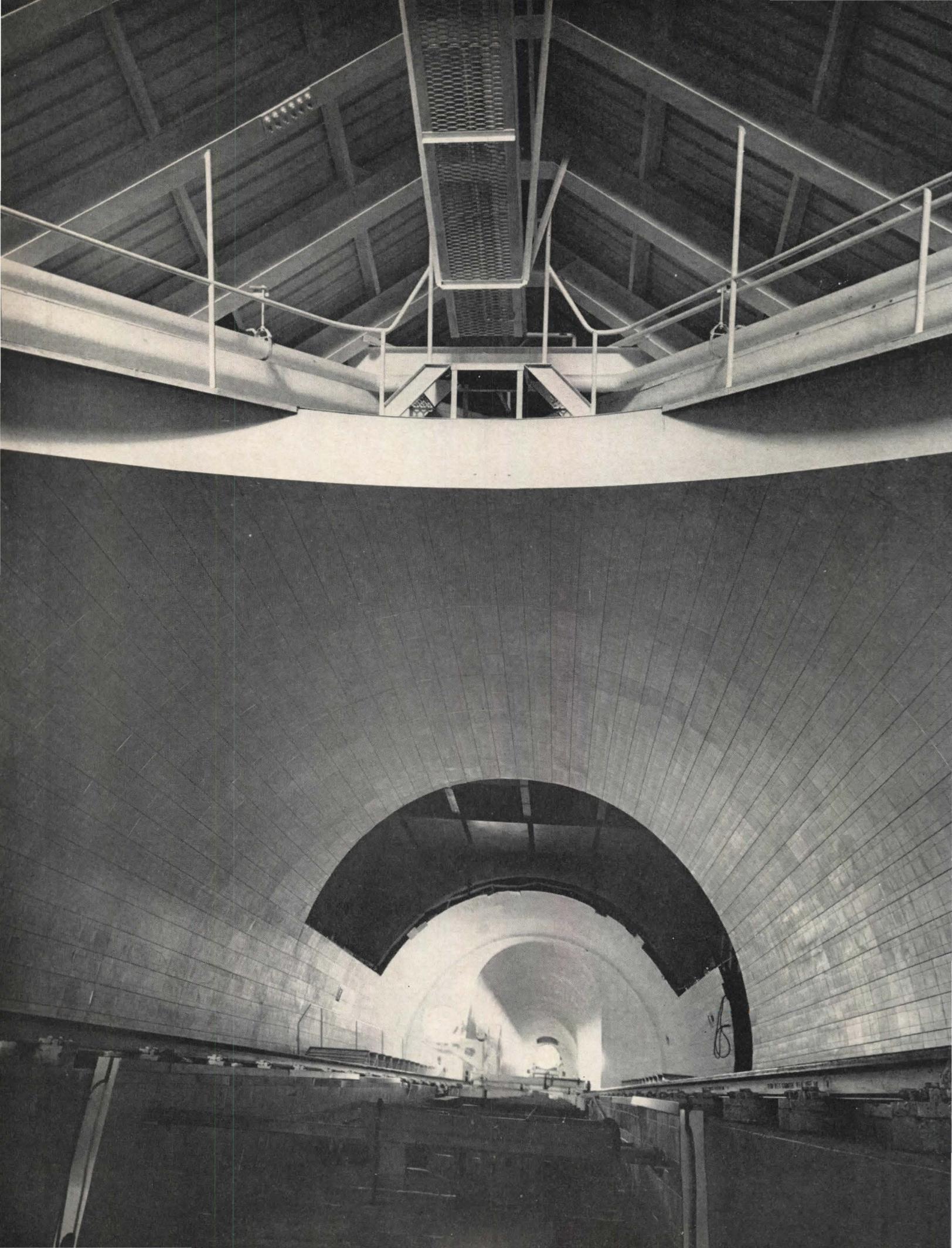
Pierce heads a team of six astronomers who use the solar scope for about 40 per cent of the available time. Astronomers from other parts of the country and abroad may use the facility the rest of the time. The 40-60 policy is on a 24-hour basis—not possible with stellar telescopes which can view the heavens only from dusk until dawn. At night, astronomers observe stars and planets with the 80-in. solar reflecting mirror.

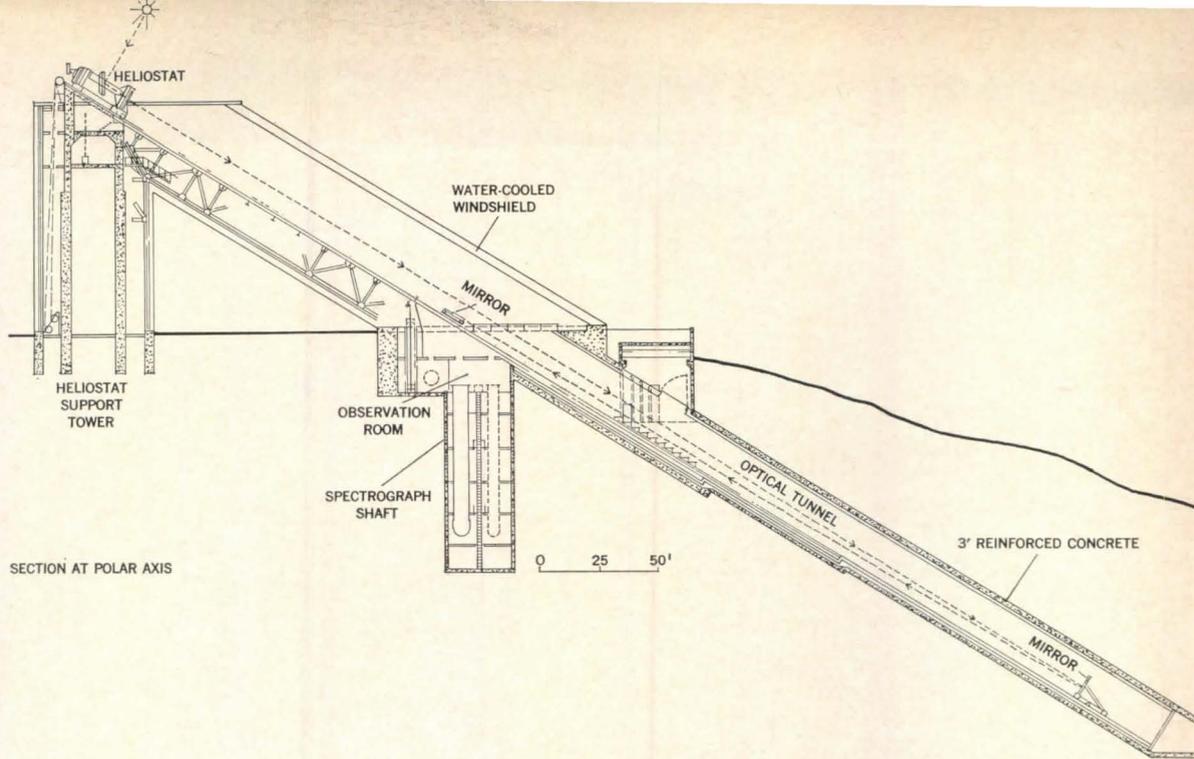
Many months before construction was started on the peak, William Dunlap, Myron Goldsmith, and Sachs met with the astronomers Dr. McMath, Dr. L. D. Shane, and Dr. Pierce to learn to understand their needs and the telescope's functions.

"The Kitt Peak solar scope is the most interesting building we have ever worked on," one of the chief engineers for SOM said when it was completed.

"We never had problems like this before. The scientists wanted to bounce the sunlight around long enough to get, in effect, a camera with a 300-ft. focal length.

Mrs. Cardon is a free-lance writer and regular contributor to the local press in Tucson, Arizona.





"In order to take very sharp pictures they wanted their mirrors so steady that they wouldn't move 0.001 of an inch in a 40-mile wind. It was important the telescope wouldn't heat up and add to the air turbulence on the mountain, which would interfere with the sharpness of the pictures. We finally decided that the best way to keep the telescope surface cool was to cover it with a skin of copper sheeting with tubes of cooling liquid running through it.

"This worked very successfully. We were able to keep the skin within one or two degrees of the atmosphere.

"The inside of the tunnel shaft through which the sun beam passes also is cooled when the rocks of the tunnel are warmer than the outside temperature. Otherwise the tunnel would act like a chimney.

"Ideally the best design would have been to set the top mirror which catches the sun's rays out in the air without supports. Since this wasn't possible we first thought of simply shooting a shaft out of the earth on a diagonal.

"To keep this steady as required would have been very expensive and so the triangle shape was decided upon. The final configuration is like an iceberg, with a 100-ft.-high triangle above ground and a 300-ft.-long

optical tunnel below the surface.

The basic design solution consists of a vertical reinforced concrete tower of a circular cross section, with walls approximately 3 ft. thick for heliostat support. The wind shield and supporting arm are independent of the tower and are constructed of structural steel and covered with cooling panels. This tower stabilizes the diagonal shaft. The latter is square in cross-section but set at an angle to let winds slide past the shaft rather than hit it head-on and, possibly, shake the mirror inside.

Westinghouse made the \$350,000, 50-ton heliostat that tracks the sun and shoots it down into the tunnel. At the present time the heliostat (reflecting mirror) is of quartz. The objective mirrors in the tunnel are interchangeable; one is metallic and the second is of quartz. Every six months the mirrors are lowered into a vacuum tank in the aluminizing room.

The 100,000-lb. heliostat rides on .006 in. of oil film and is turned with a one-quarter horse power motor. As for the gear that rotates this mirror, it has teeth machined to .0002 in. And according to one of the engineers involved in the design of the telescope, this gear is much more accurate than the most accurate watch gear.



PROBLEM

To obtain a picture of the sun 33.5 in. in diameter, it is necessary to have a focal length of 300 ft. Because of this long focal length, and because the portion of the sky in which the sun appears is limited, solar telescopes are generally mounted with their mirrors or lenses in a fixed position.

The requirements for the Kitt Peak telescope included the following:

1. The center line of the heliostat mirror had to be 100 ft. above grade.
2. Mirror rotation was not to exceed 1/6 second of arc under a wind velocity of 25 mph.
3. All surfaces exposed to sunlight had to be thermally controlled.
4. Distortions created by warm air rising from the ground had to be avoided.
5. Thermal currents in the enclosed portion of the light paths had to be controlled.
6. Structure supporting the heliostat had to be shielded from wind.
7. Enclosure of the structure had to be as compact as possible to reduce the surface area that must be cooled, and to minimize disturbance from air currents.
8. The enclosure should not be curved, since it is difficult to control expansion and contraction due to temperature changes in such surfaces.
9. The sloping south face of the shaft should be angled, not flat, to offer the least wind resistance.

SOLUTION

The 500-ft.-long shaft of the Kitt Peak telescope has been inclined 32 degrees to the horizontal, pointing to the north celestial pole. About three-fifths of the shaft is underground, and the remaining 200 ft. is above ground, supported and stabil-

ized at its upper end by a concrete tower 100 ft. tall. As much of the light path as possible was put underground to take advantage of the relative stability of ground temperature.

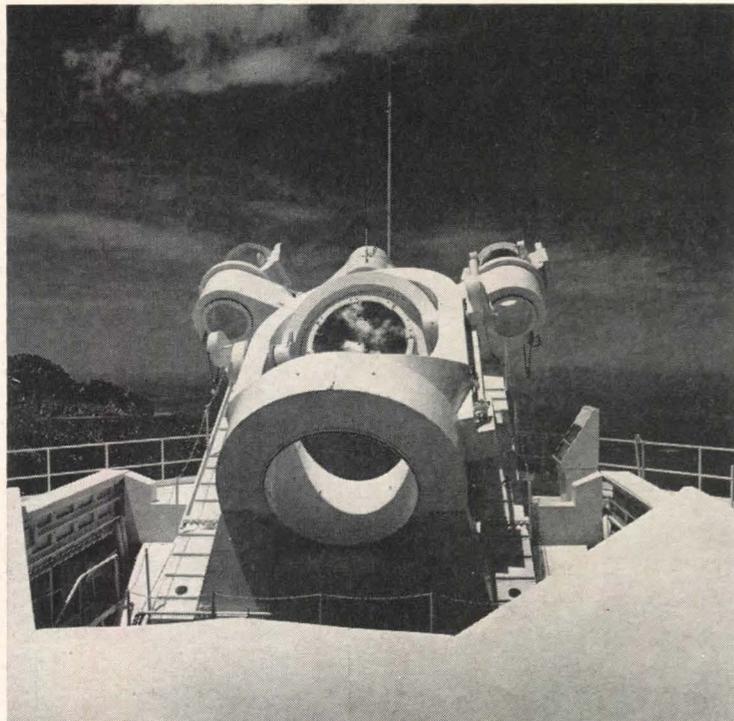
Space for the aluminizing room and the spectrographs was provided by tunneling into the rock. The triangular tube supporting the heliostat is protected from the wind by a parallel and independent steel structure, covered with cooling panels.

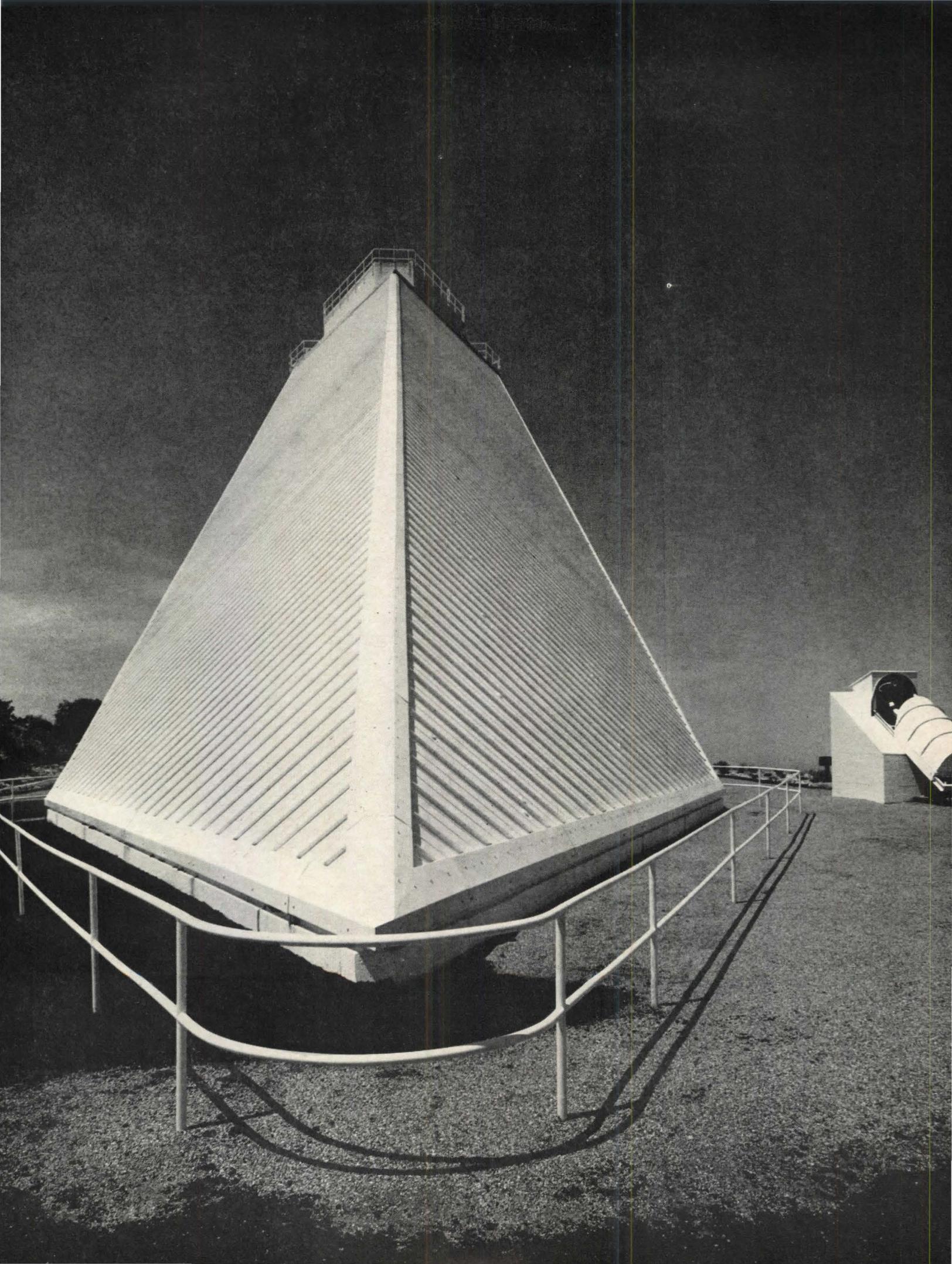
A liquid cooling system was used with a nonfreeze liquid to meet the severe winter drop in temperature.

A white acrylic paint was used on the exterior because of its high solar reflectivity, low solar absorptivity, ease of maintenance and application. This white paint reflects and dissipates solar energy back into space so that the energy is not working against the "seeing activities" of the solar telescope during the day and of the stellar telescope during the night.

FACTS AND FIGURES

Robert R. McMath Solar Telescope, Kitt Peak National Observatory, Kitt Peak, Arizona. Owner: Association of Universities for Research in Astronomy, Inc. (Dr. R. R. McMath, chairman of the board of AURA; Dr. Nicholas Mayall, director of the observatory; Dr. Keith Pierce, associate director, solar division; James Miller, associate director, administration; W. William Baustian, chief engineer; Dwight Ludden, manager of engineering services). Architects and engineers: Skidmore, Owings & Merrill (William E. Dunlap, partner in charge; Myron Goldsmith, senior designer; Frank Weisz, job captain; Alfred Picardi, chief structural engineer; Robert Serwatkiewicz, senior structural engineer; Sam Sachs, chief mechanical engineer; Arthur Smetko, senior electrical engineer). Contractor: Western Knapp Engineering Co. PHOTOGRAPHS: Bill Sears.





THE FIRST MODERN URBANIST

Engène Hénard (1849-1923), whose work is now generally forgotten even in his native France, was architect for the City of Paris between 1900-1914. He was also perhaps the first modern urbanist.

Throughout his active career in complacent, conservative, fadish, Art Nouveau Paris, Hénard proposed solutions to housing and transportation problems in the high-density city that are astonishingly similar to our present preoccupations. He anticipated the crisis city in which we now live. And he offered several solutions which, lamentably, we have begun to embrace only recently.

Before the mass-produced automobile had proliferated he recognized the inevitable consequences of the impact of the motor car on the city—and tried to soften the confrontation between the two. Before any other architect-urbanist, and within years of its original invention, he began to plan for the accommodation of air flight to the city. And before the profession of city planner existed, he developed analytical and statistical means for study of city problems.

In his own day, Hénard was a prominent international figure. Between 1900-1914, he presented papers in Washington, London, Paris, Berlin, and Brussels—at major architectural meetings and at the first international city planning conferences ever held. With Camillo Sitte, Joseph Stübben, and Charles Buls he served on international juries throughout Europe. But he was more progressive than any of his contemporaries.

In 1913, Hénard was a founder and was elected the first president of the Société Française des Architectes Urbanistes. This was the first group anywhere in the world in which sociologists, economists, politicians, engineers, and architects associated to collaborate on city planning problems. In the new field of urbanism practiced by this group, Hénard was known as "*le chef éminent de notre profession.*"

The list of city planners of the 1920s, the first generation to work within an organized planning profession, who acknowledged their dependence on Hénard is substantial. Many others were unaware of their debt to him. Futurism, through F. T. Marinetti (Antonio Sant'Elia's principal informer) gathered inspiration from Hénard. Le Corbusier, who gleaned from many fields, misunderstood and misused several of Hénard's most seminal ideas, above all the idea of accommodating air flight to the central city.

In our own era, many of Hénard's suggestions are becoming realities, though his own prophetic and practical pioneering effort has long been obscured.

The quality of Hénard's foresight and the command he exercised over advanced thinking in his own day is revealed in the following selection of diagrams and suggestions which he published and advocated between 1900-1910.

BY PETER WOLF

"The modern house," Hénard said, in 1910, "still includes ridiculous chimney stacks which discharge volumes of unwholesome smoke over the town. The removal of ashes and of every sort of refuse is carried out in a most barbarian fashion by means of filthy bins, which are deposited every night along the pavements." As a replacement Hénard recommended interior vacuum systems that deposited garbage into subterranean hoppers serviced by rail. The underground rail network was to be used for commercial delivery of goods and freight as well.

The roof of the future urban house should be flat so that it could be

used in a variety of ways, including outdoor terraces. Hénard realized that the flat roof could eventually provide a landing platform for light airplanes. Before the helicopter was invented, or even envisioned by Jules Verne, Hénard, at the 1910 London Town Planning Conference, said, "We may, I think, imagine some form of light aeroplane, equipped with horizontal helices . . . and capable of remaining stationary in the air, hovering over a given point."

This same flat roof might be, in part, Hénard suggested, the top of an elevator. With it small aeroplanes could be stored below grade; and the automobile too might be carried un-

derground for storage. And unlike his contemporaries, or most planners until the 1930s, Hénard differentiated with accuracy between the requirements of small in-city aircraft and large, heavy planes. For these he proposed that large land reserves at the periphery of each quadrant of major cities be reserved immediately and used as needed.

Mr. Wolf teaches architectural history at New York University. This article is the outgrowth of a year's work in Paris, where he studied the origins of modern city planning under a Fulbright Fellowship. He is now working on a book on urban design under a grant from the Graham Foundation.

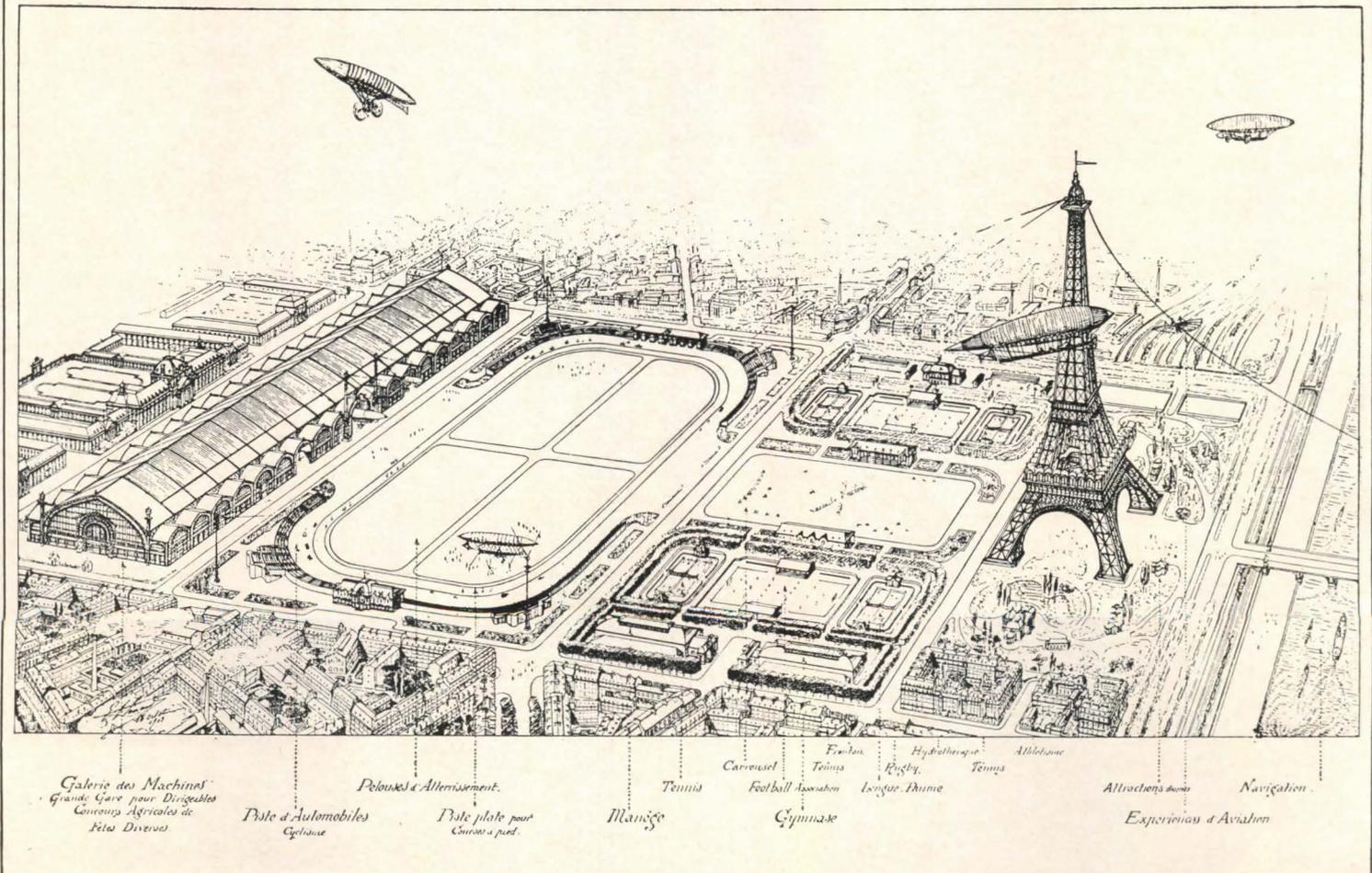
The Champ de Mars was constantly threatened during Hénard's career. The conservative Conseil Municipal wanted to sell it to land developers. As a means of preserving most of the area from sale, Hénard suggested in 1904 that part of the Champ de Mars be converted into the first in-city landing field for aircraft anywhere in the world.

The Wright Brothers only came to France in 1907-08. And Hénard's vision was still dominated by the dirigible. Nevertheless, he foresaw before his contemporaries that air flight would cause a revolution in the means of interurban transportation. And using a part of the Champ de Mars was a preliminary response to these new conditions.

With Hénard's scheme, Dutert and Contamin's brilliantly designed and very beautiful Galerie des Machines would have been preserved as a storage and repair hangar. The Eiffel Tower would have served as the signal tower. And much of the valuable Champ de Mars would have been preserved for gardens and recreation.

Hénard's proposal was defeated. Nearly half of the Champ de Mars was subsequently sold. And the Galerie des Machines, now a landmark in the history of architecture, was destroyed. Paris still has no facility within the city for helicopters, much less for the vertical-takeoff-and-landing (VTOL) or short-take-off-and-landing (STOL) aircraft of the future.

PROJET D'AMÉNAGEMENT DU CHAMP DE MARS - PORT D'ATTACHE DES DIRIGEABLES ET PARC DES SPORTS -



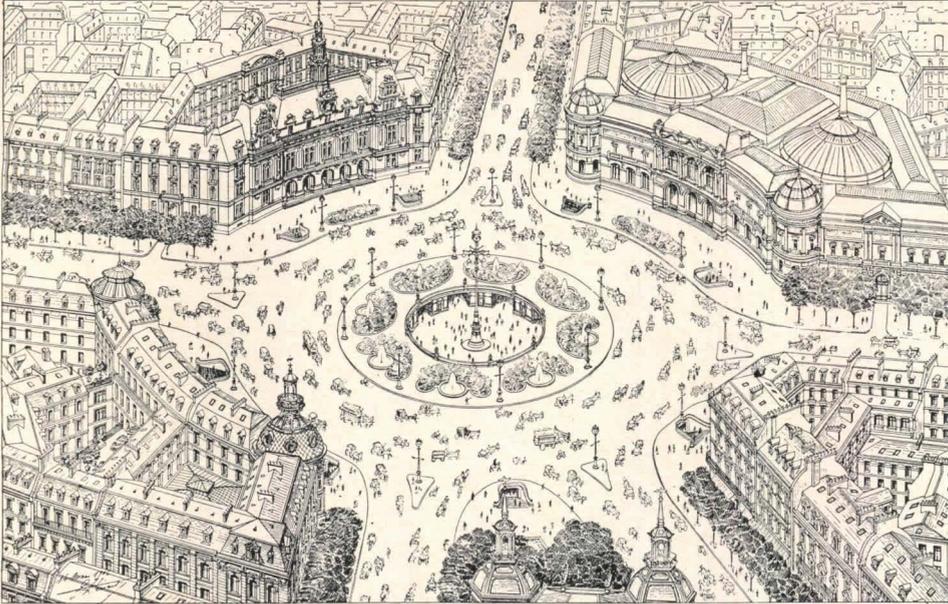
CARREFOUR A GIRATION DES GRANDS BOULEVARDS

MAIRIE DU IX^e ARRONDISSEMENT

BOULEVARD MONTMARTRE

HOTEL DES VENTES

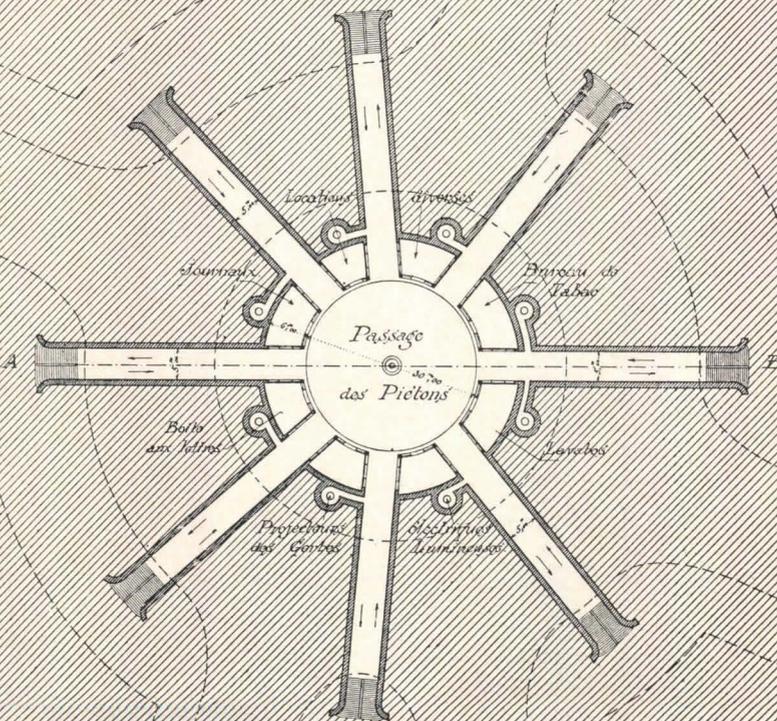
PL. I



BOULEVARD HAUSSMANN

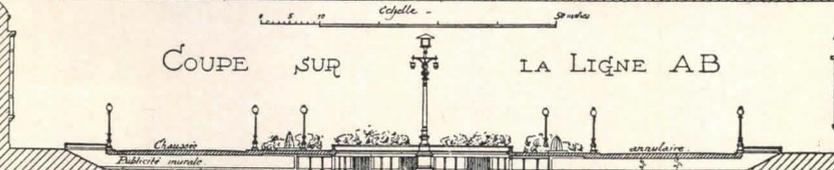
BOULEVARD DES ITALIENS

PLAN DU SOUS-SOL



couloir - 50 mètres

COUPE SUR LA LIGNE AB



Hénard isolated the intersection as the critical point in the surface web of the city circulation system.

Before his investigation, vehicles were allowed to traverse étoile intersections in any desired direction—left, right, or diagonally across. Hénard proved that single direction circulation would greatly speed movement and reduce accidents. Traffic regulations were soon promulgated enforcing Hénard's discovery.

Hénard also proved that elimination of the center of any intersection would greatly reduce the number of collisions within it. He recommended the elimination of the intersection center at grade. In place of it, Hénard provided a light court. At the street surface this court was ringed with fountains and plants. Below grade the light court became the center of an attractive pedestrian shopping area and underpass network.

As early as 1887, Hénard suggested electrically powered moving platforms as a convenient means of traveling between buildings and even within them.

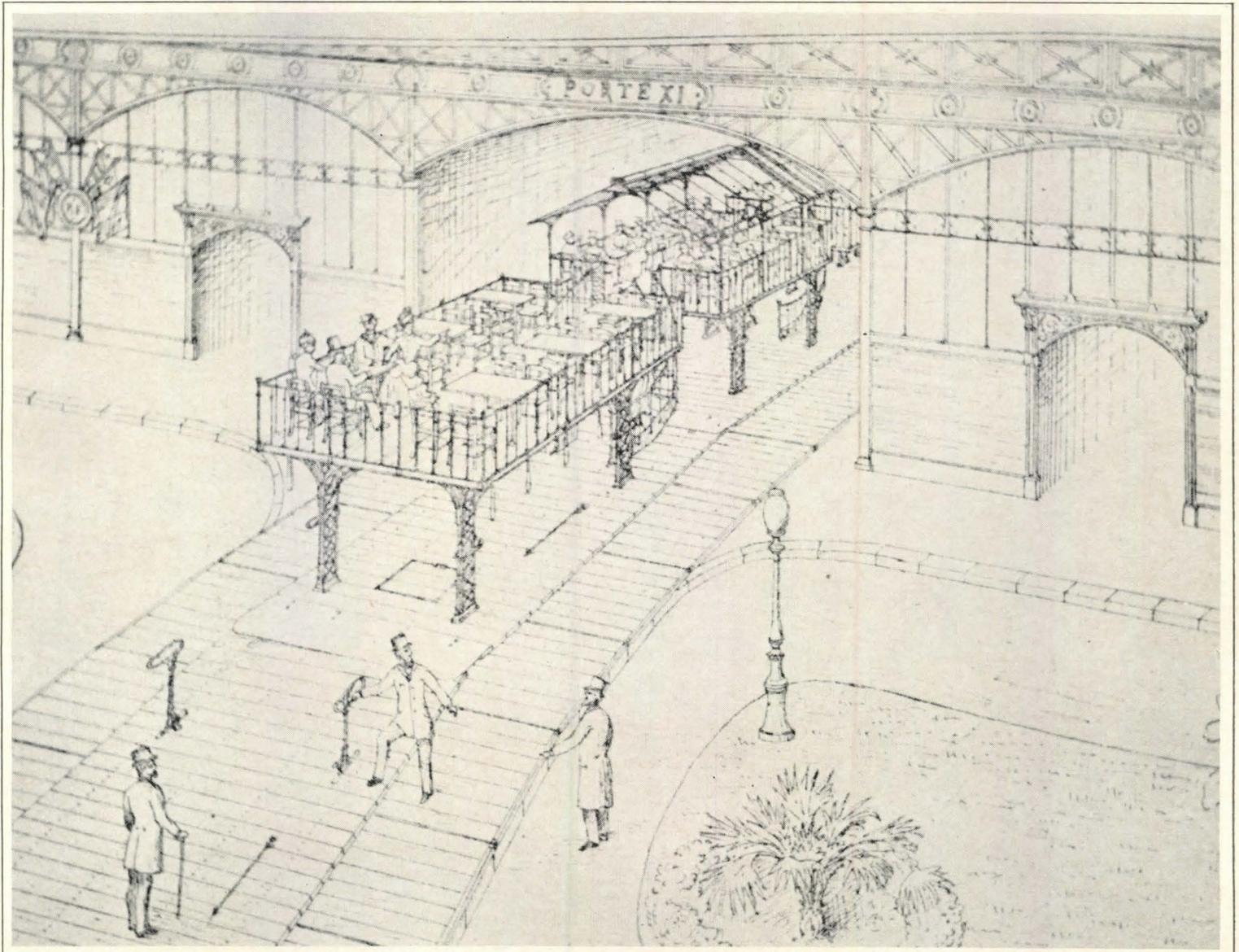
Moving pedestrian conveyors did finally appear at the 1893 Chicago World's Columbian Exposition, the 1900 Paris Exposition Universelle, and in many subsequent expositions.

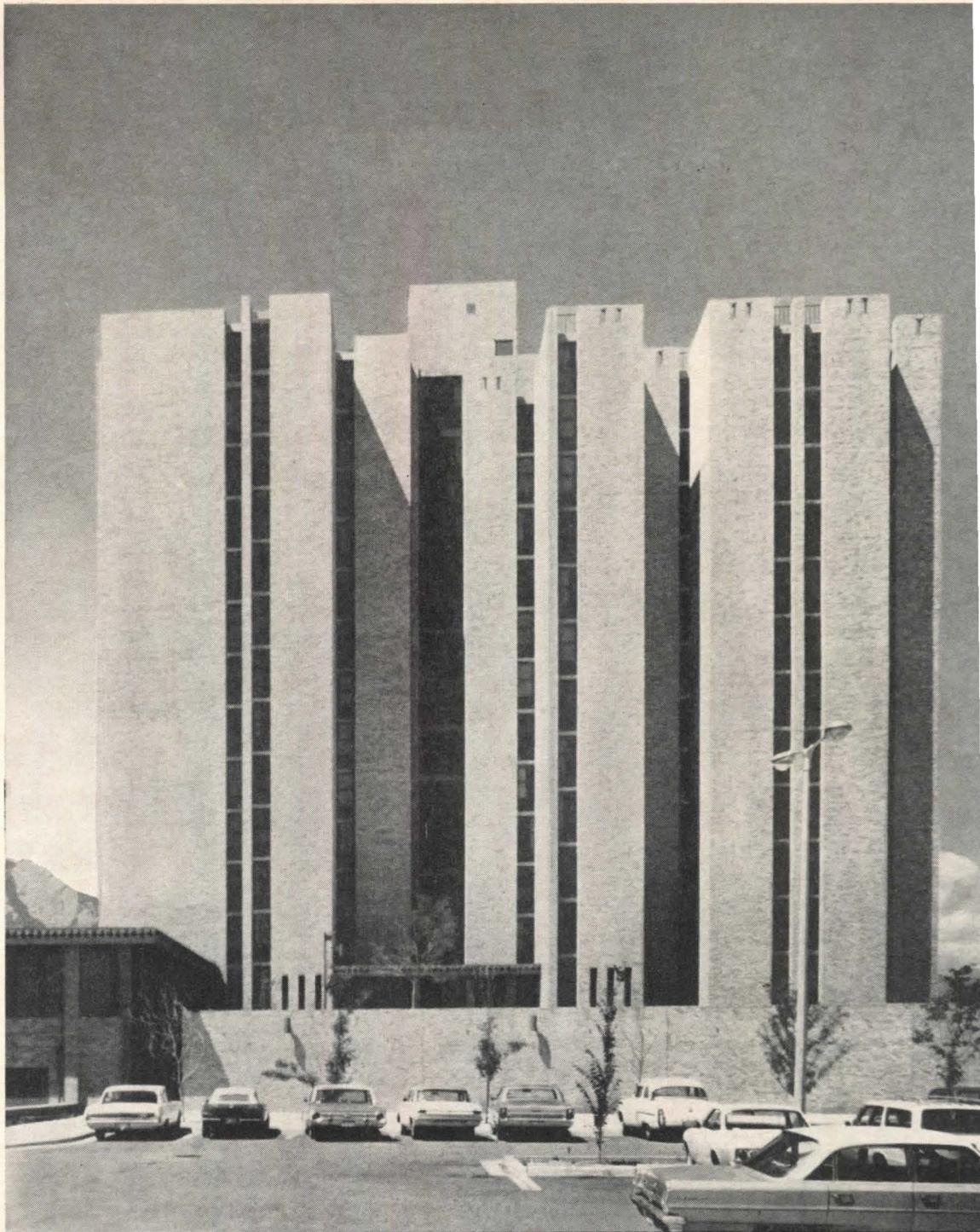
This project which Hénard recommended for the 1889 Paris Exposition Universelle, was calculated to reduce visitors' fatigue as they traveled between and within major exposition buildings. For special purposes of the exposition, open and roofed pavilions were attached to the belt, which is

seen here emerging from the Galerie des Machines.

By 1910, Hénard incorporated the use of moving pedestrian platforms into his recommendations for the successful city of the 20th century.

Only recently has the validity of Hénard's idea been affirmed through practical application in cities. At scattered shopping centers, airports, and subway stations there are now moving pedestrian conveyors. Without question, the advantages of speed, economy, and efficiency which result from a continuous flow of people within the high density city will be broadly recognized and thoroughly utilized in the near future.





DORMITORY FLOORS

0 10 20 30 40'

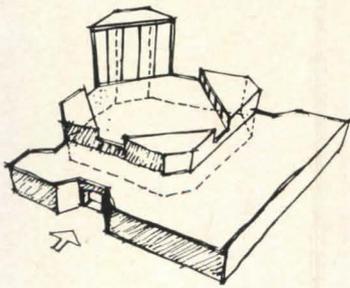
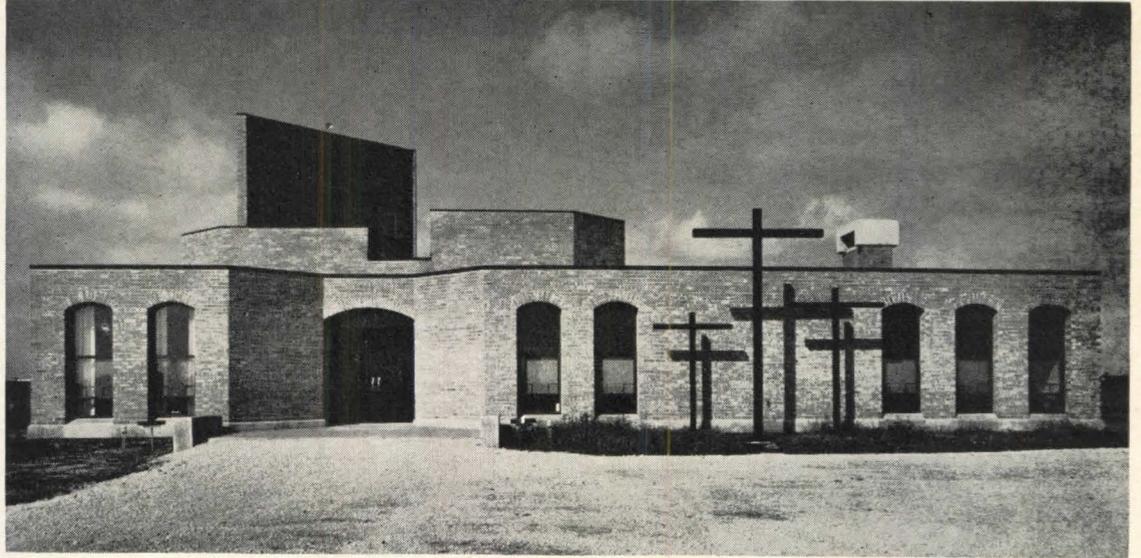


APARTMENT FLOORS



STUDENT CITADELS

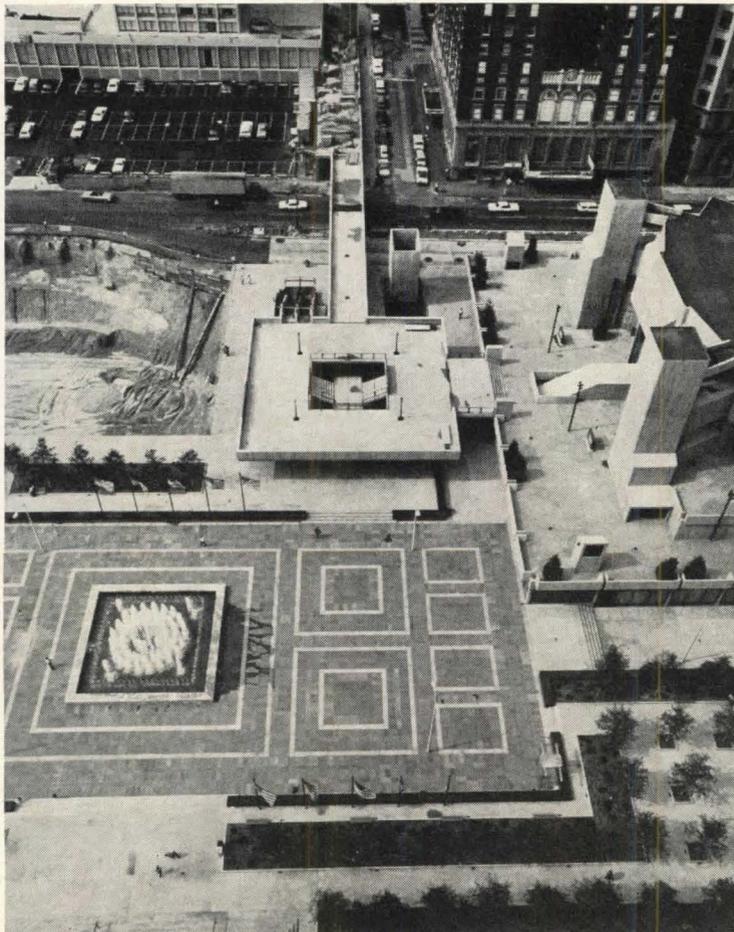
Seen from across the plains near Boulder, Colo., or from the mountain slopes above it, Williams Village looks like two clusters of Medieval Italian towers massed for a final showdown between Guelphs and Ghibellines. It turns out that the sheer ochre brick shafts enclose quite a different pair of opposites: men and women attending the University of Colorado. Although the buildings are now one-half mile from the rest of the campus, Architects Hobart Wagner & Associates must have considered the Italian hilltown inspiration of its earlier buildings (see Oct. '66 issue) when they designed Williams Village. One building houses 425 men, and the other 425 women; a one-story dining room and lounge structure links them at ground level. The tall buildings are similar to each other in layout. Although they appear uniform from top to bottom, each of them has eight floors of dormitory rooms topped by three floors of apartments (ingeniously fitted into the same irregular envelope) for students who want to share house-keeping chores (see plans below left). The deeply recessed slot windows (actually 3 ft. 3 in. wide) fragment the fine views of the campus and the Rockies, but they reduce exposure to Boulder's severe winter winds and intense all-year sunshine.



DOWN-TO-EARTH CHURCH

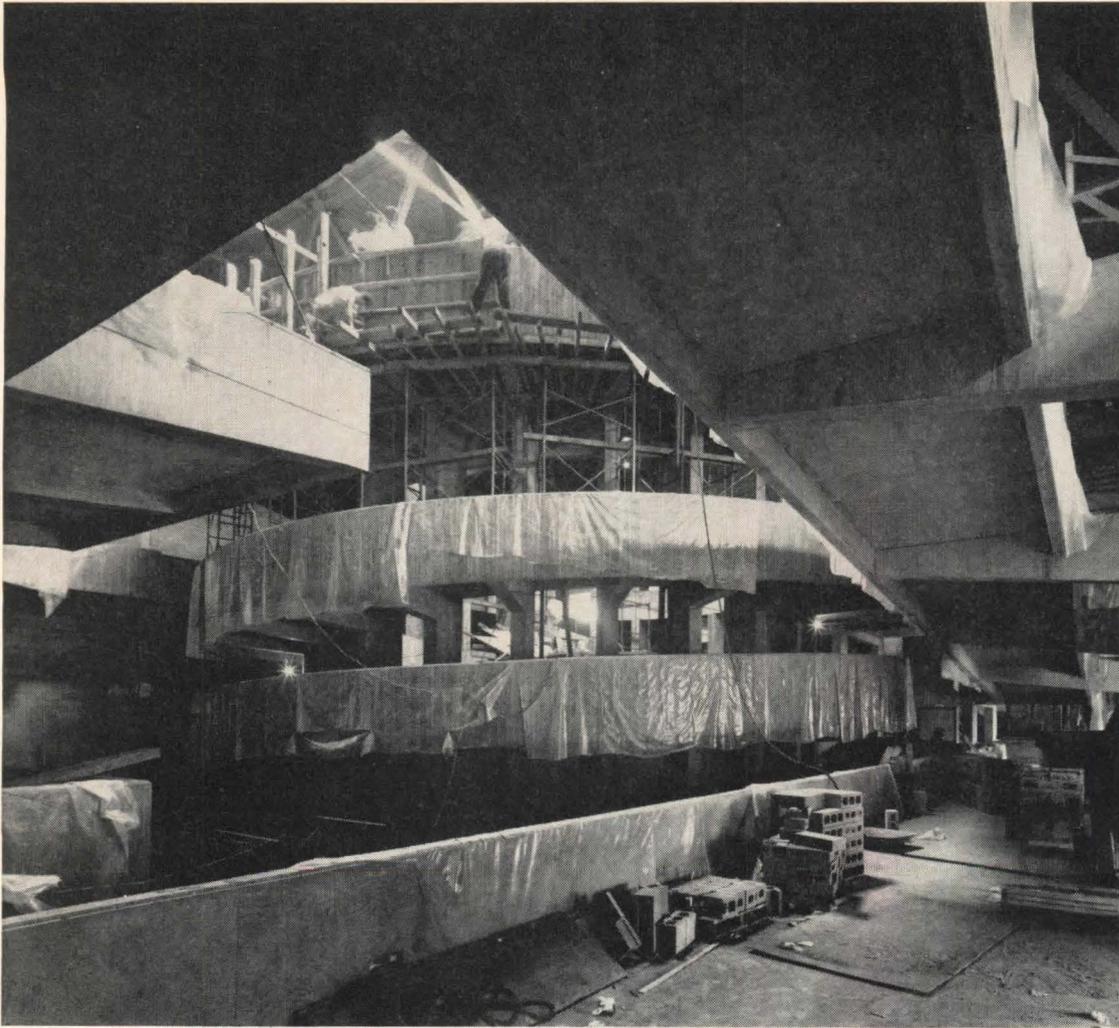
The secular-sounding community of Country Club Hills, Ill., has a new church by Architects Loebel, Schlossman, Bennett & Dart that emphasizes the simplicity of faith. It is called the House of Prayer Evangelical Lutheran Church, and it is easy to see from outside where the prayers are held—in the high portion

bounded by four corner clerestories (sketch at left). The rugged brick walls and arched openings pass right through to the interior, enclosing its four major divisions: church proper, minister's office (left of entrance), classrooms (right of entrance), and multipurpose room (right rear corner).



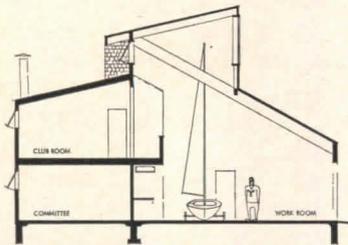
ESSENTIAL VOID

Hopkins Plaza, the open space at the heart of Baltimore's Charles Center, is now substantially completed. Both the plaza and the multilevel garage beneath it were designed by Rogers, Taliaferro, Kostriksy & Lamb. The portion in the foreground is paved in bluestone slabs and granite strips, in a symmetrical pattern aligned with the facade of the Federal Building (from which the photo was taken). At its center is the France Fountain (a memorial to Jacob France). The elevated concrete platform (upper center) is linked to the north half of Charles Center by a bridge over Baltimore Street, and joined to the terrace of the theater building (right; see May '67 issue). Another elevated walk will tie it to the 23-story British-American Building, now in the early stages of construction (left).



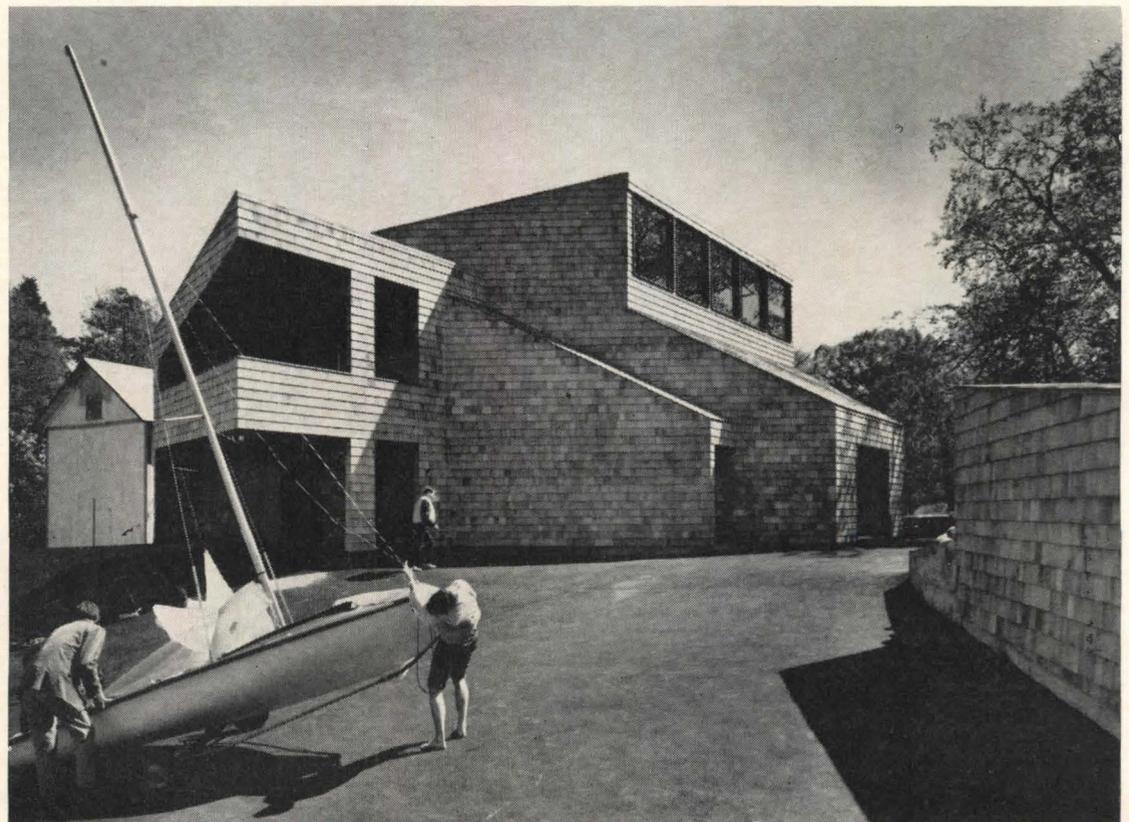
FISH ON THE PIER

The massive concrete structure on Boston's Central Wharf (above) now looks a lot like one more cold storage warehouse for the busy fishing port. But by the end of the year, when fountains and penants are added, it will be clear that the New England Aquarium is open for visitors. The simple exterior will give no hint of what the architects, Cambridge Seven Associates, have done inside. Visitors will view exhibits along a ramp that rises gradually around a six-story central well (left). At the top they will look down into a 200,000-gallon tank containing a simulated reef, then descend a helical ramp around it for a closer look at the inhabitants.



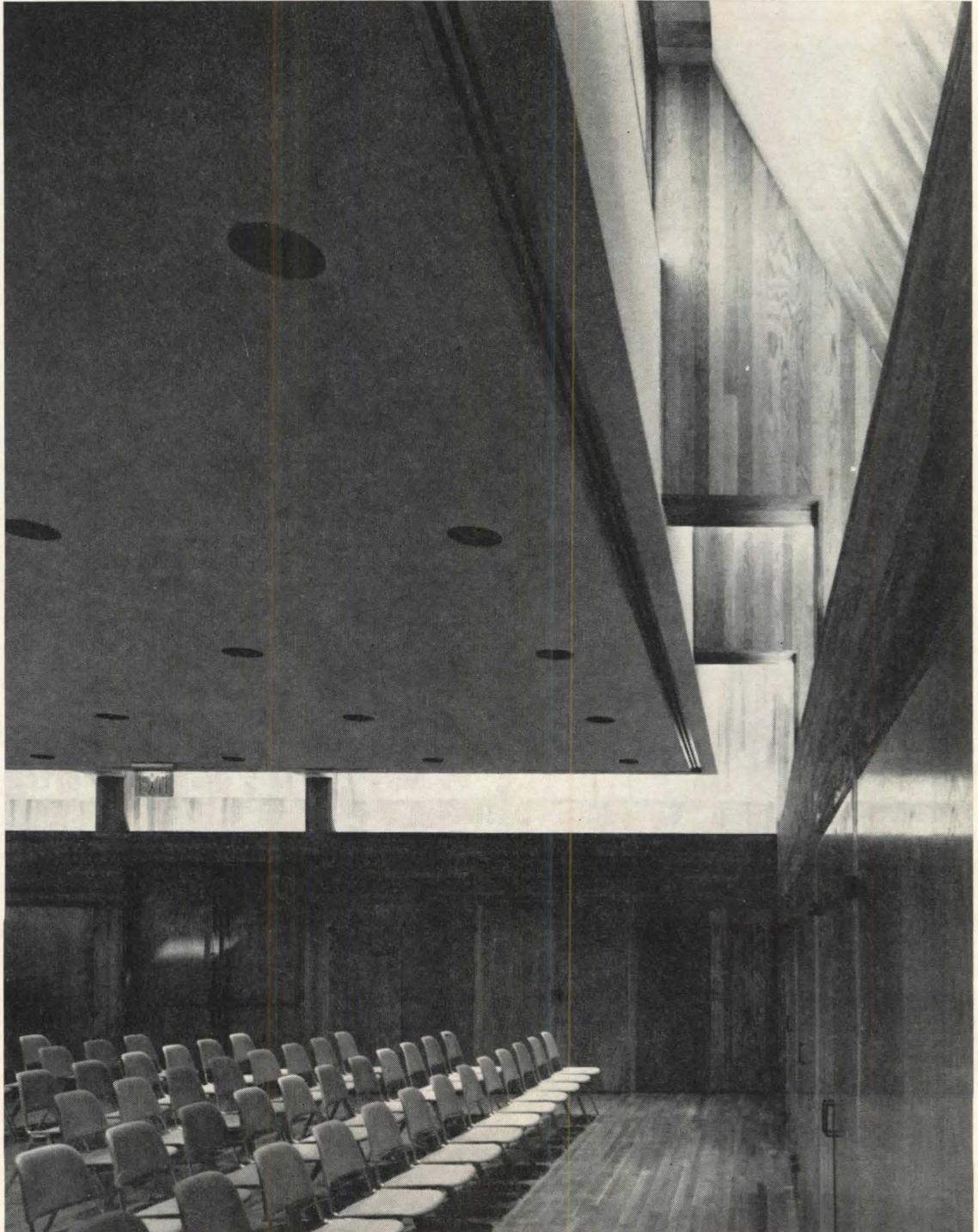
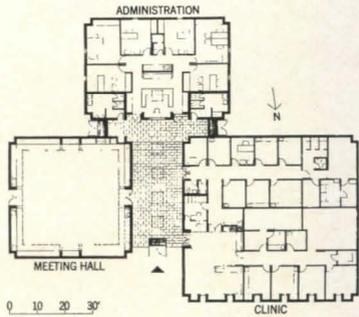
SAILBOATS ON THE SOUND

Two modest shingled buildings on Long Island Sound at Branford, Conn., make up the new home of the Yale Corinthian Yacht Club. Once as aristocratic as its name, the club now uses craft like the one at right, both for intercollegiate competition and for recreation. The core of its clubhouse is a repair shop (section above) where members work. A double-decked boat shed (visible at right) fits into the bank so that boats can be wheeled in from either level.



RESTRAINT ON THE HIGHWAY

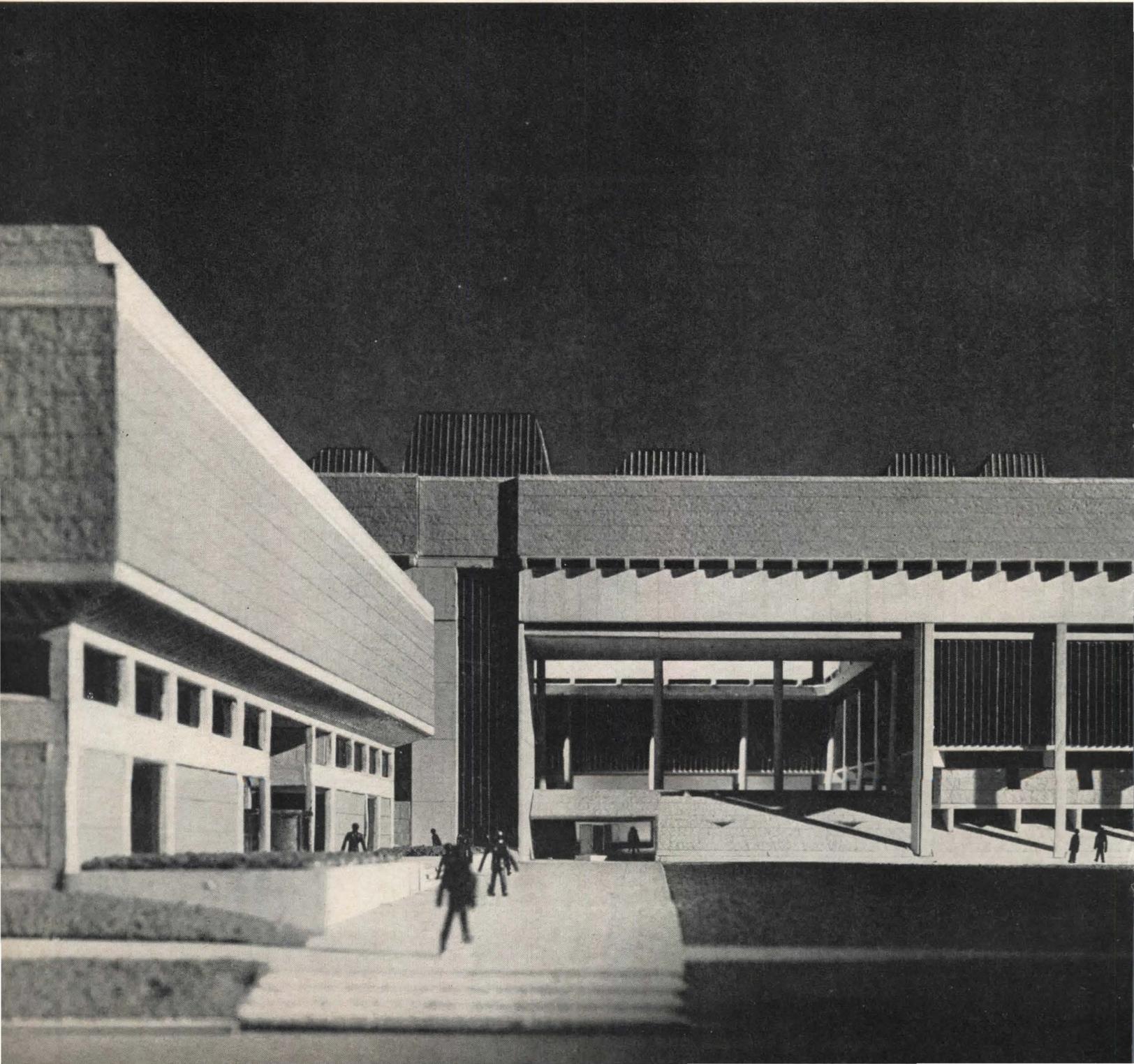
Among its commercial neighbors along the highway in Islip, Long Island, the International Production Service and Sales Employees Union building stands out by being unobtrusive. Architect Bernard Marson (with his associate, Arthur Lutzker) has placed the building's three distinct functions—medical care, meeting, and administration—in three related but subtly different pavilions, joined by a low lobby. Sloping terne parapets (painted bronze color) cap the buff brick bearing walls, concealing mechanical equipment and skylights on the flat roofs behind them. In the meeting hall (left), the parapets enclose tall light scoops running around the entire perimeter; closets beneath the deeply recessed bronze-tinted windows are used for stair storage. Oak flooring has been used here and in other areas for wall surfaces and for the sides of counters and desks.



PHOTOGRAPHS: Page 56, James H. Roberts. Page 57 (top right), Warren Meyer; (bottom right), George Cserna. Page 58 (top), David Hirsch; (bottom) John T. Hill, Page 59, Louis Reens.

A BUILDING TO WALK THROUGH

The vast building now under construction at the University of Wisconsin will have so many functions that it is known simply as the South Lower Campus Project. This name tells only where the building stands: on the south side of a quadrangle at the foot of the main campus hill. It gives no hint of the diverse activities that the archi-



tect, Harry Weese, has assembled in this single structure.

SLCP will house the departments of history, music, art history, and art education, as well as an art museum. None of these uses will be any more important than the walkway system that will pass through the structure one story above the ground.

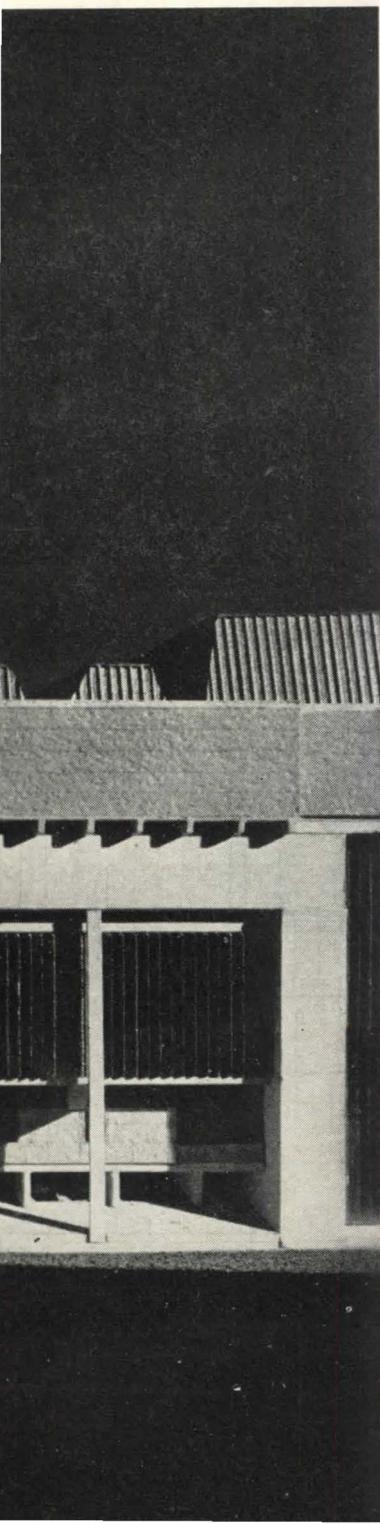
The university originally in-

tended to house the functions of SLCP in four separate buildings on the same site, each of which would have had to be quite high. Weese pointed out that combining them would permit a lower silhouette, corresponding to the cornice lines of existing neighbors. With this lower, denser structure, he was able to define one corner of the open

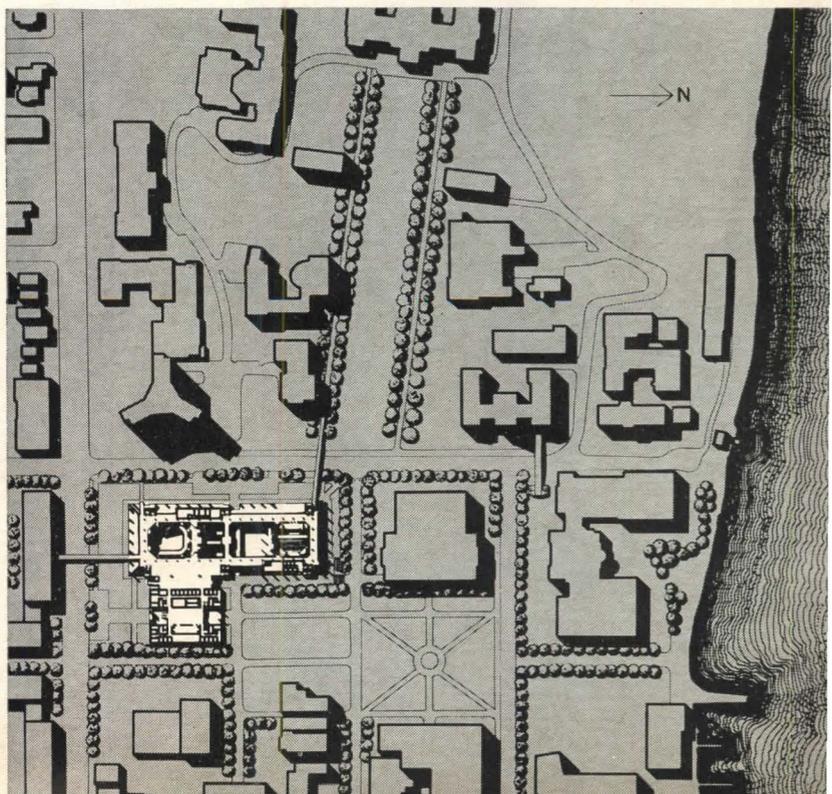
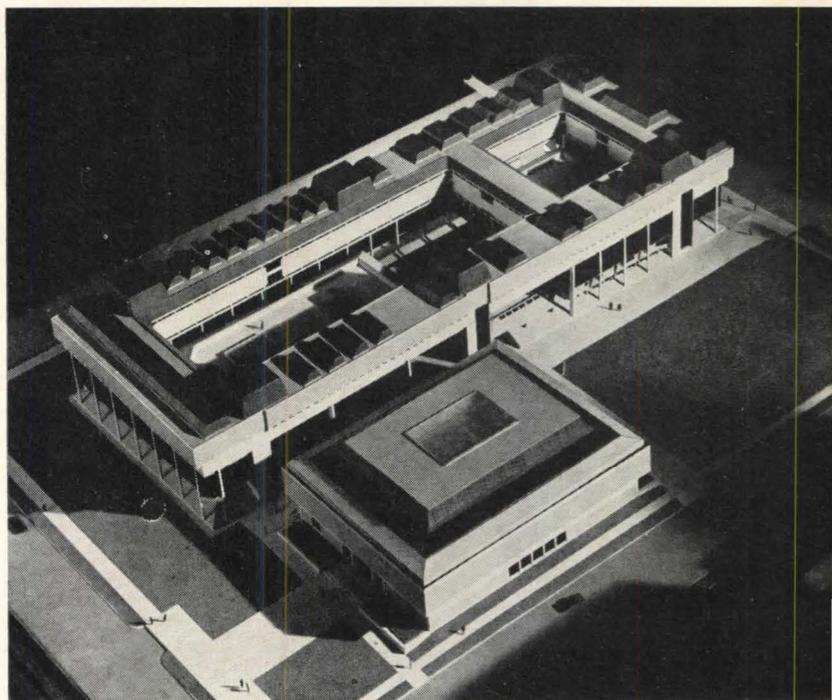
rectangle that will emerge as the center of the lower campus. Combining departments also yielded the economies of shared vertical circulation and allowed for space to be reshuffled when one or more of the departments outgrows the building.

SLCP's walkways will run around the edge and through the center of its long main block.

They will collect and disperse traffic passing over a bridge connecting the lower campus with the central mall of the main campus. New overpass connections can be added later at any point (to the south, for instance, as on the site plan below). Ideally the entire main campus mall could be extended above the intervening street to link



The approach to the building from the east (left) will offer the choice of walking straight through (with a surprise view over a central court one story below) or going up one flight to the main walkway level. This elevated pedestrian system will be connected by a bridge to the formal mall leading up the main campus hill (site plan). The lower campus, of which SLCP forms one corner, is bounded on two sides by the city of Madison, on the other by Mendota Lake. The university and the city will share the art museum wing (foreground in photos).



with the SLCP walkway system.

Below the walkway level will be two floors of practice rooms and classrooms (section at right), lighted by openings in the sloping outer walls. Rising up through these lower levels to several stories above the walkways will be two core blocks—one housing concert and recital halls and the other lecture halls.

Above the walkways there will be two floors of offices, slung beneath the top two floors of art studios, which will form a projecting band tying the whole block together at the cornice line. The roofs of the two core structures will be accessible from the lower tier of art studios—available for outdoor art projects and deftly concealed from

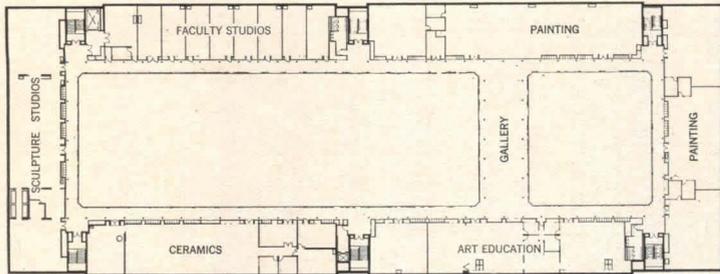
any philistines who walk below.

The art center has been treated as a clearly separated wing, partly to indicate its semipublic, community-university status, partly because its spans and floor heights differ from those in the rest of the building. But it, too, has distinct layers: a lecture hall level below grade, a library at grade,

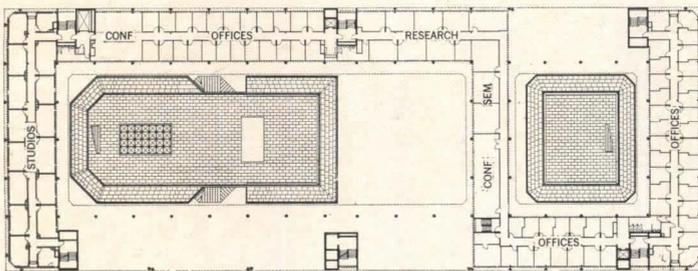
offices at elevated walkway level, and galleries above.

To articulate the parts of the structure, Weese has used a series of advancing and receding wall planes, then topped off the structure with mansard-like forms in the studio light-scoops and art center roof.

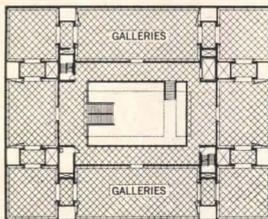
The visible structural members will be of exposed concrete



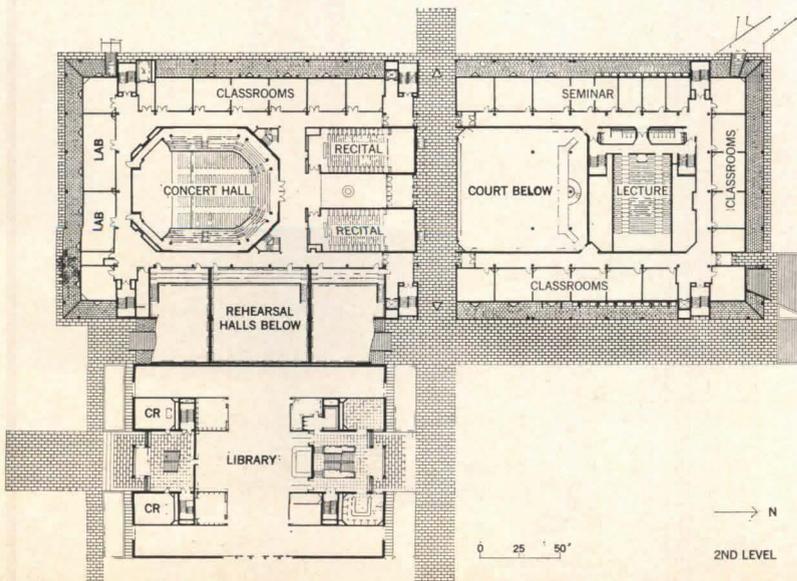
7TH LEVEL



5TH LEVEL



4TH LEVEL

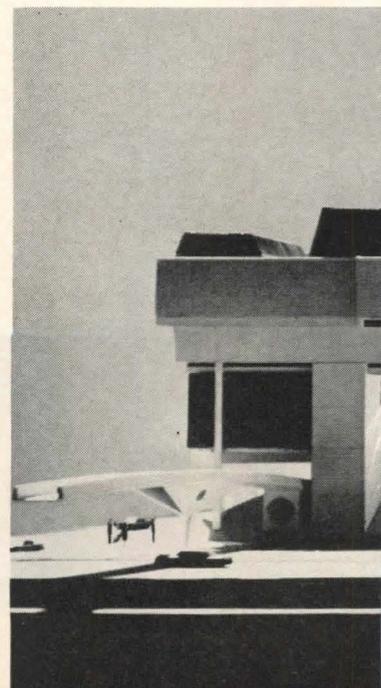


2ND LEVEL

Plans of three floor levels (left) show the complex spaces fitted into SLCP's relatively simple overall form. The first level will be largely below grade, but rooms at the edge of the building will catch light admitted to the two bottom levels through openings in the sloping podium walls (photos right). On top of this podium, at the third level, will be the walkway system. Offices and studios with copper-finned window walls will occupy most of the fourth and fifth levels. The almost windowless sixth and seventh levels will be topped by copper-clad skylights, which will add interest to the roof as seen from the hill above.

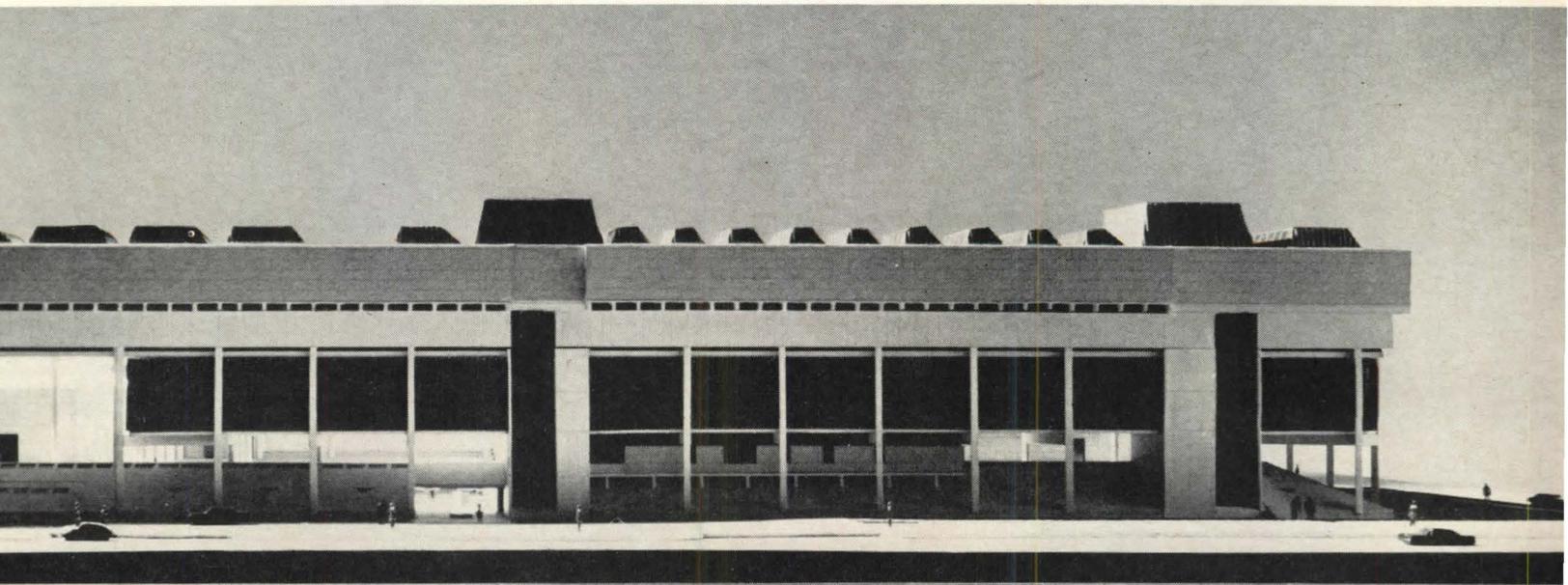
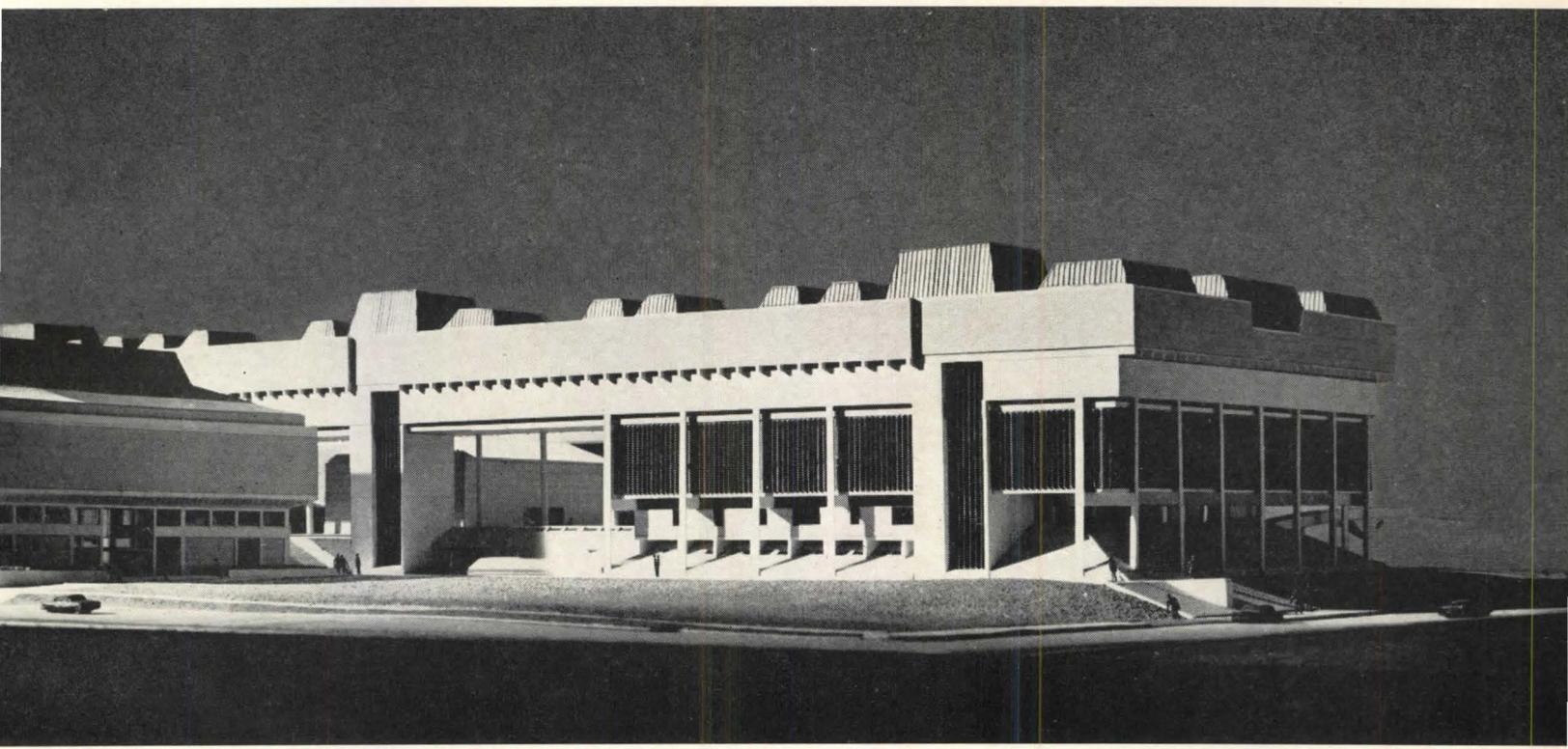
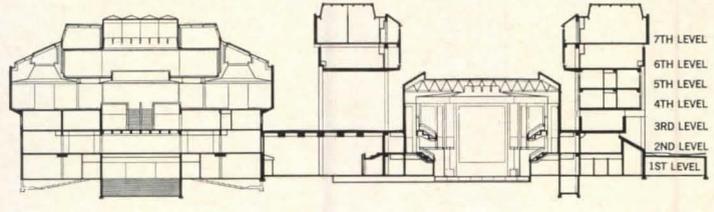
FACTS AND FIGURES

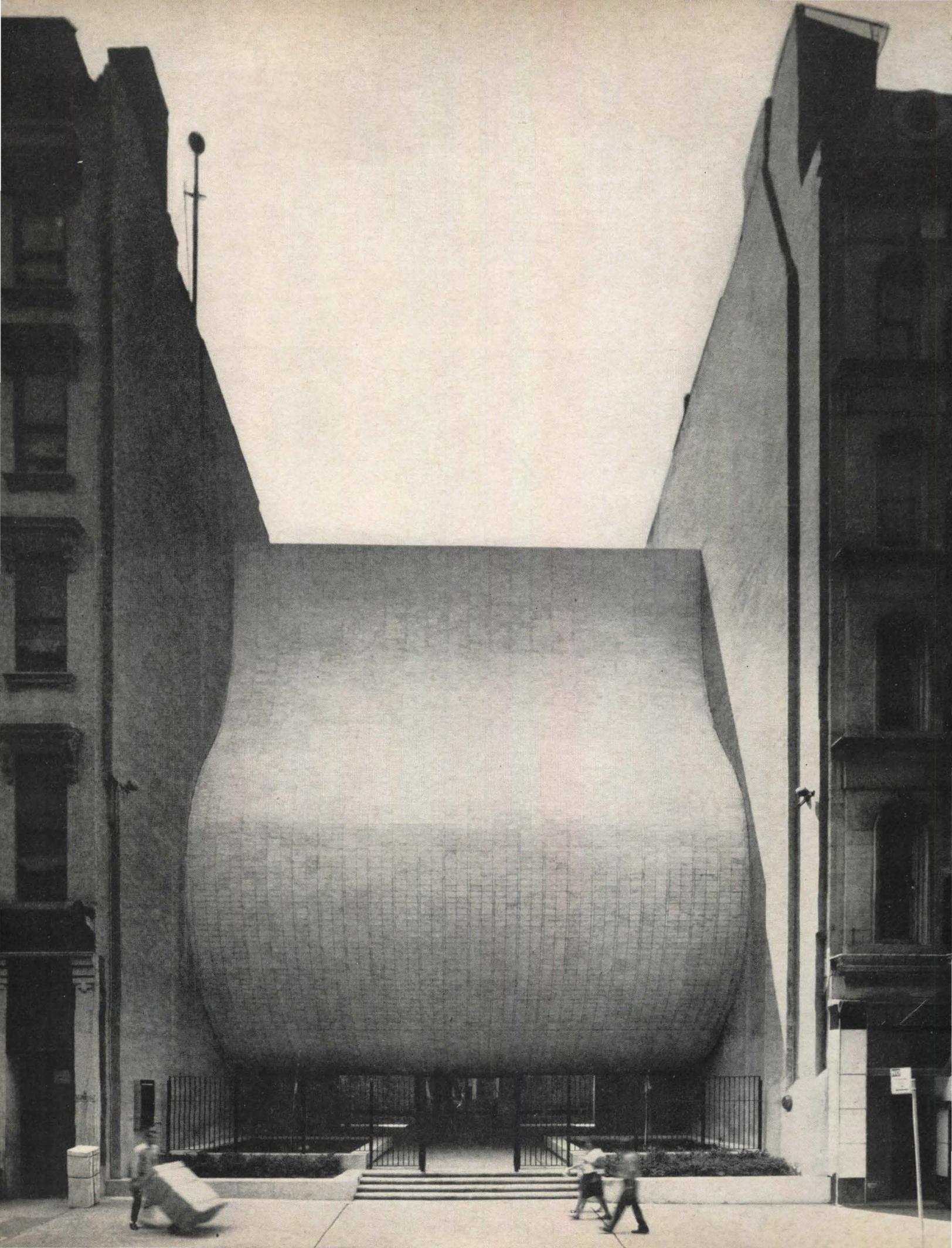
South Lower Campus Project, University of Wisconsin, Madison, Wis. Architects and engineers: Harry Weese & Associates. Consultants: The Engineers' Collaborative (structural); S. R. Lewis & Associates (mechanical and electrical); Dan Kiley (landscape). Contractor: Corbetta Construction Co. Building area: 384,057 sq. ft. Estimated cost: \$10,426,703. PHOTOGRAPHS: Balthazar Korab.



(straight out of its plywood forms); solid exterior walls will be of local dolomitic limestone trimmed with Indiana limestone; finned window walls and sloping roofs will be of copper.

Only a careful look at the finished building will show whether all of this variety of form and surface will reinforce or distract from its underlying logic.



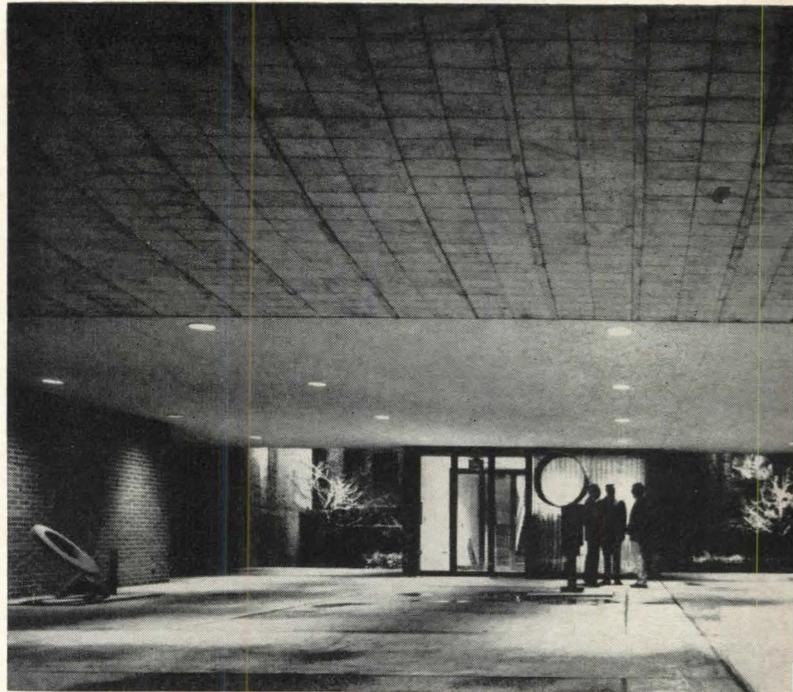


INTERVAL IN A STREET

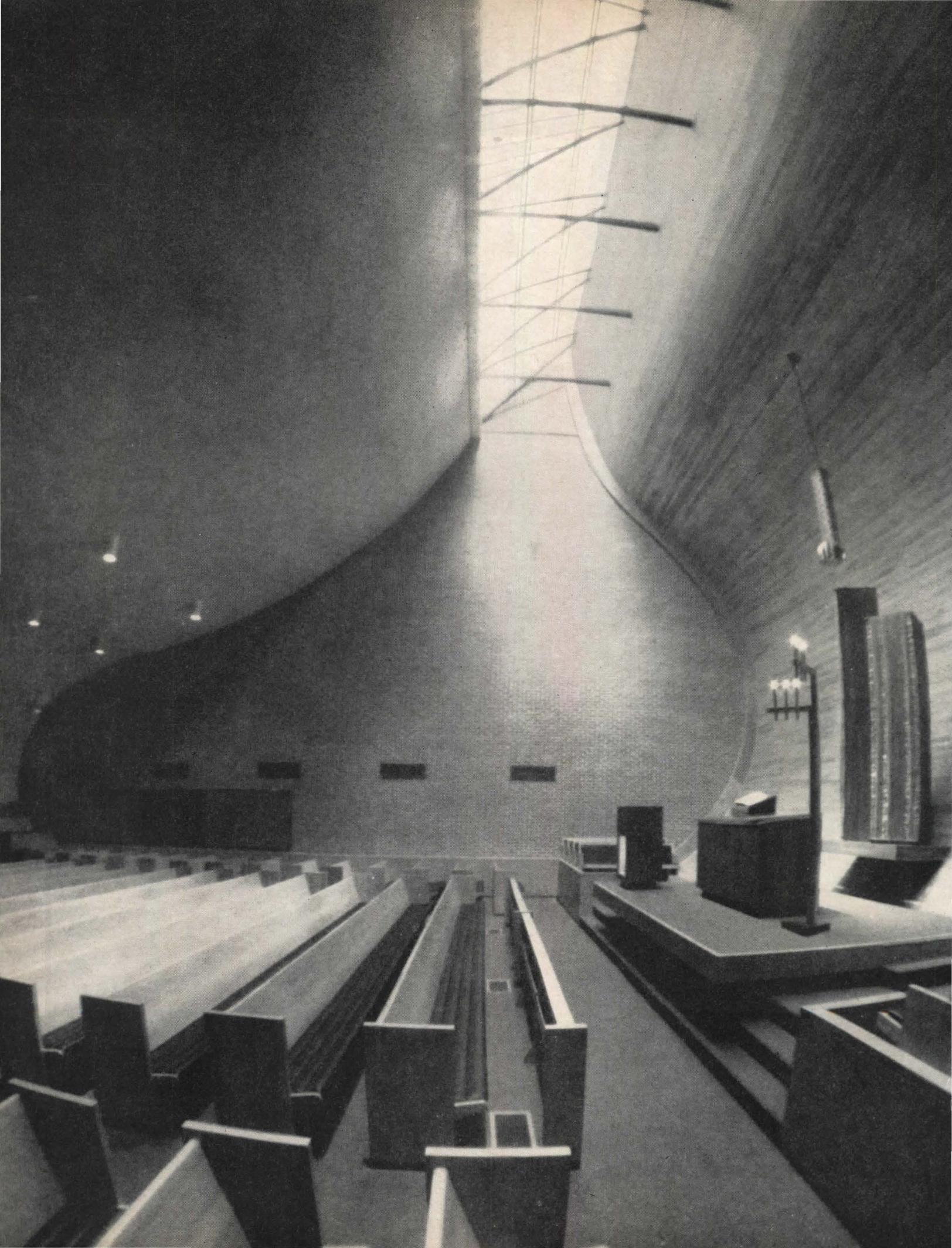
White Street, in Lower Manhattan, is lined with those impressive, cast-iron-and-glass facades so fashionable in the late 19th century. In the middle of one of these blocks there is now a slot 50 ft. wide between party walls. In this slot, Architect William Breger has built a fluid structure in striking contrast with the modular loft buildings next door.

The contrast was deliberate, for this fluid structure is the new Civic Center Synagogue. Although Breger disclaims any search for symbolism, he admits that the unusual form of his building was "meant to generate a religious feeling." Quite obviously he did not want the synagogue to blend in with the commercial structures up and down the block. Yet, although he wanted contrast, he also respected the unity of the street—its general form and its scale.

Strictly speaking, the Civic Center Synagogue has no congregation at all. New York's Civic Center is about two blocks to the east of the new building, and orthodox Jews who work in the various branches of New York's government wanted a place to come and worship, occasionally, in the mornings or in the evenings. Most of them live somewhere else, and belong to congregations in other parts of the city, or in nearby suburbs. This means that the synagogue required no real classrooms, that its social hall was not likely to get much intensive use, and that the attendance, despite a nominal "congregation" of 1,000 members, would rarely exceed 300. So the visible part of the building is, simply, the sanctuary. The social hall, conference rooms, and related facilities are in a basement that occupies the full 100-ft. depth of the site.



Opposite page: The concrete shell that forms the front wall of the sanctuary is faced with narrow slivers of marble. The sanctuary seems to float above the entrance court, with glass screens around the lobby forming the only interruption to the flow of space (right). The sculpture in the court is by Alexander Liberman.



Three shells shape the sanctuary

The sanctuary floor is located about 11 ft. above the level of the paved entrance court, and it is reached by a flight of stairs from the small lobby located on that level. (The stairs continue down into the basement areas—see section.) Because, in this case, the sanctuary is the synagogue, most of the effort (and money) was expended on this part of the building.

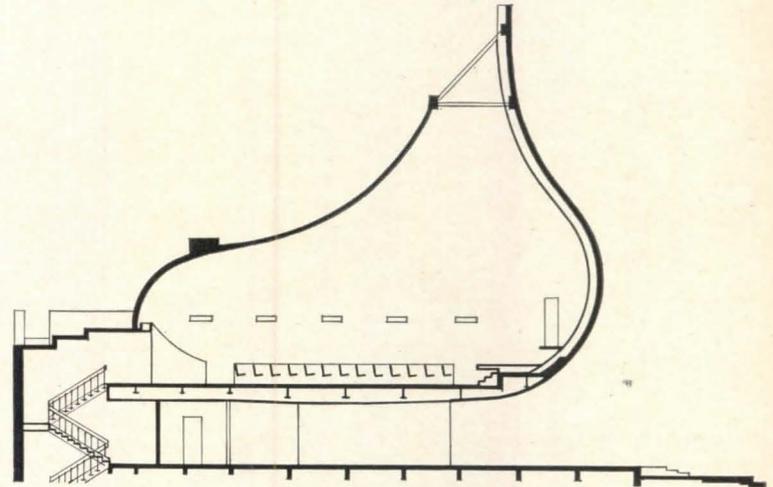
The sanctuary is enclosed by three concrete shells that are carried on the existing party walls. The front wall shell is 7 in. thick, and acts as a reversed-curve beam, “developing opposing torsional moments at the top and bottom curves,” according to Paul Gugliotta, Breger’s structural engineer. The roof shell is 5 in. thick, and is in tension. The rear wall shell is 4 in. thick, and completes the enclosure. The configuration of the three shells permitted the re-use of parts of the formwork in the pouring of all of them. A space frame (topped by a skylight) separates the front and rear shells, and helps carry and brace them. The floor is framed in steel. The entire enclosure, incidentally, braces the existing party walls also.

The result is an impressive space, beautifully lit by day and night. It has been suggested that the form of the sanctuary was inspired by that of the flame in an eternal light. However that may be, it is an unmistakably religious space: Breger says that he wanted to give the space fluidity to contrast with what he considers to be the “directional quality” of a Christian church. It is certainly unlike the latter.

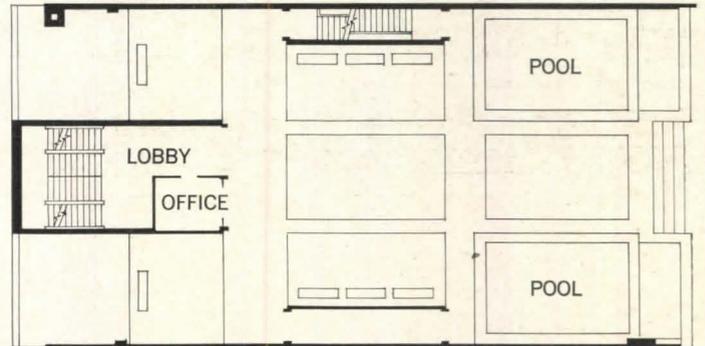
The level of the entrance court, shown in the section (top, right), is a combination of pools, planting beds, slab benches, and walking surfaces of varying texture.



Left and above: interior of sanctuary, showing space formed by concrete shells. Front wall shell is finished inside with horizontal birch slats; rear wall shell is plastered. Space frame skylight is concealed from view of congregation so as to heighten dramatic effect. Section and plans (far right) explain the organization of the principal spaces. Basement plans (with social and conference rooms) are not shown here.

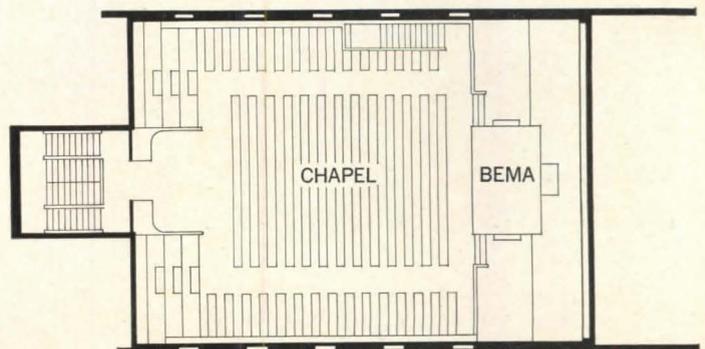


SECTION



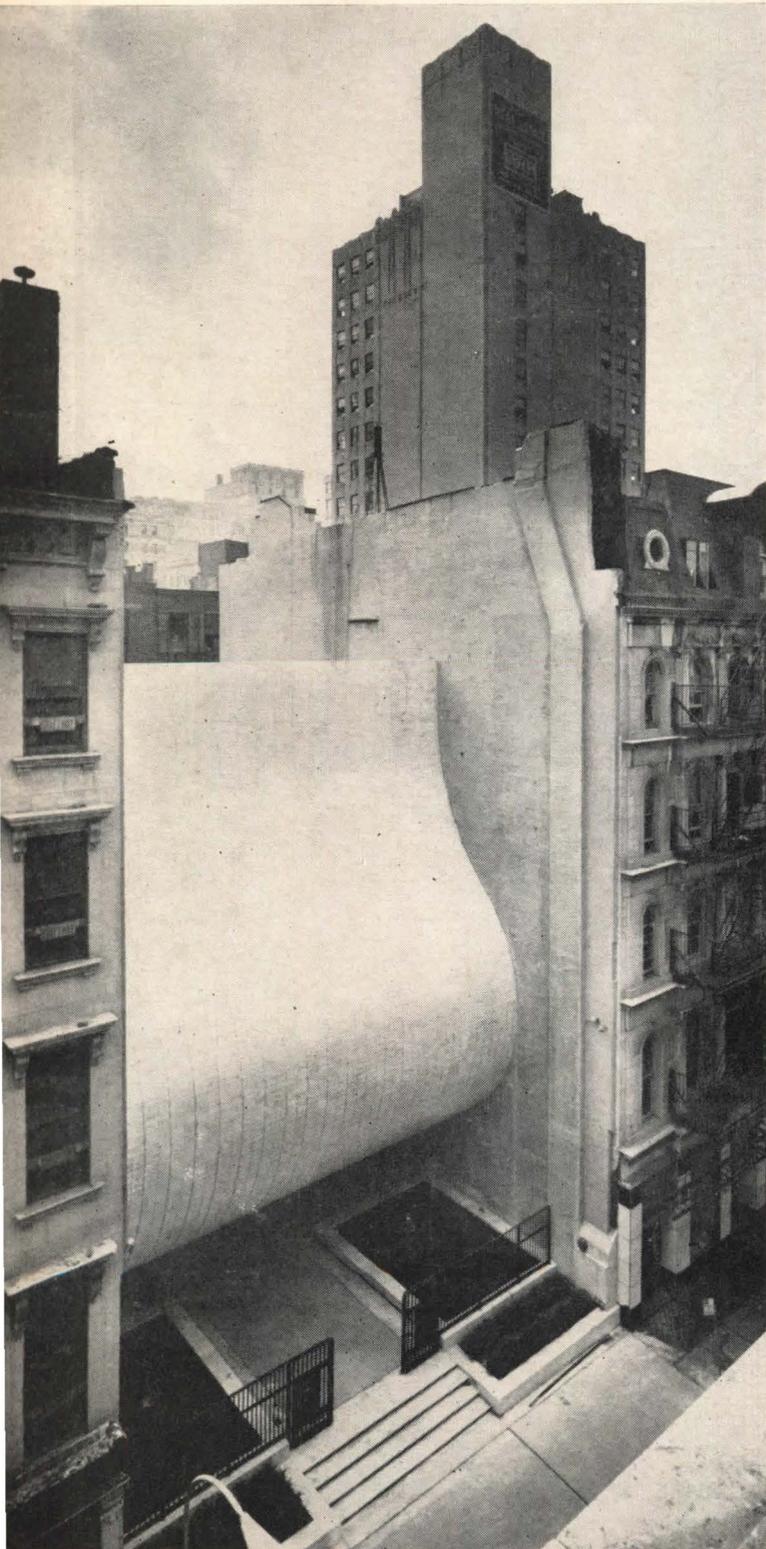
STREET LEVEL

0 10 20 30'



UPPER LEVEL





Contrast as well as unity on the street

"I didn't choose the street or the site, but I liked both of them," Breger says. In his effort to respect the unity of the street, he could have done the obvious—i.e., push the new building up to the sidewalk, and make it align with its neighbors.

This was impossible for two reasons: first, because the requirement was for a much lower building; and, second, because the requirement was for something unlike the congregation's "ordinary" synagogue that was razed to make room for the new Civic Center.

So Breger tried to break away from the ordinary without breaking away from the street. The line of the street is continued by the low walls that define the entrance court. And the scale of the street is continued because, to the pedestrian walking past this 50-ft. alcove, the height of the new, recessed building seems similar to that of its neighbors.

An alcove in a unified street can be a very pleasant surprise, and this one certainly is. The trouble is that one alcove inevitably seems to lead to another; and, before long, each new building boasts a piazza or a piazzetta. The result is irreparable damage to the streetscape.

Breger's little synagogue in Lower Manhattan is an excellent demonstration of the need for more imaginative controls, rather than the rule-of-thumb zoning regulations that encourage the indiscriminate and unrelated building of plazas. The Civic Center synagogue is successful because of the way it relates to the street; if the street were to change, and its new buildings were to try to relate, insensitively, to Breger's synagogue, the result could be a minor disaster.

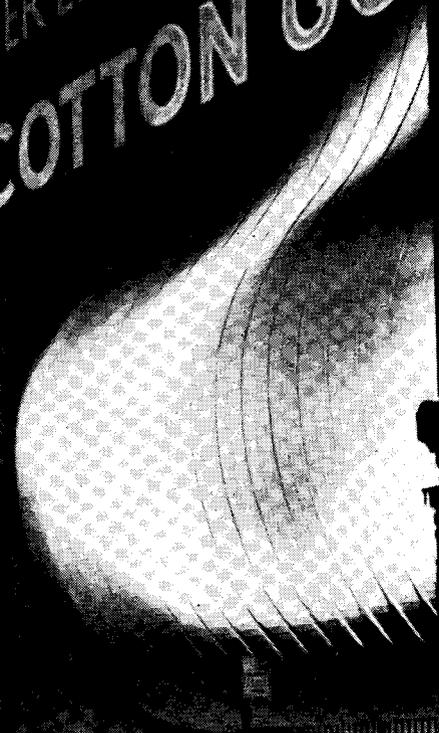
Left: view of synagogue from one of the old cast-iron buildings across the street. The synagogue, incidentally, is practically next door to the Badger Iron Works facade shown on page 68, May issue. Right: reflection at night of the synagogue in a commercial building on the opposite side of the street.

FACTS AND FIGURES

Civic Center Synagogue, 47 White Street, New York. Owner: Civic Center Synagogue. Architect: William N. Breger. Landscape Architect: M. Paul Friedberg. Engineers: Paul Gugliotta (structural); Batlan & Oxman (mechanical). Consultants: John Maguire (lighting); Melvin Smith (interior design); Tania Milicevic (ark designer). Contractor: Sherry Construction Corp. Building area: 12,300 sq. ft. Cost (with furnishings and fees): \$490,000. PHOTOGRAPHS: Robert Galbraith

1971-8

BAYER-EISENBERG
COTTON GOOD





THE POET IN THE PIAZZA

When the town of Nuoro in Sardinia asked the locality's best-known sculptor, Costantino Nivola, to design a plaza honoring its best-known poet, Sebastiano Satta, the town got both more and less than it expected.

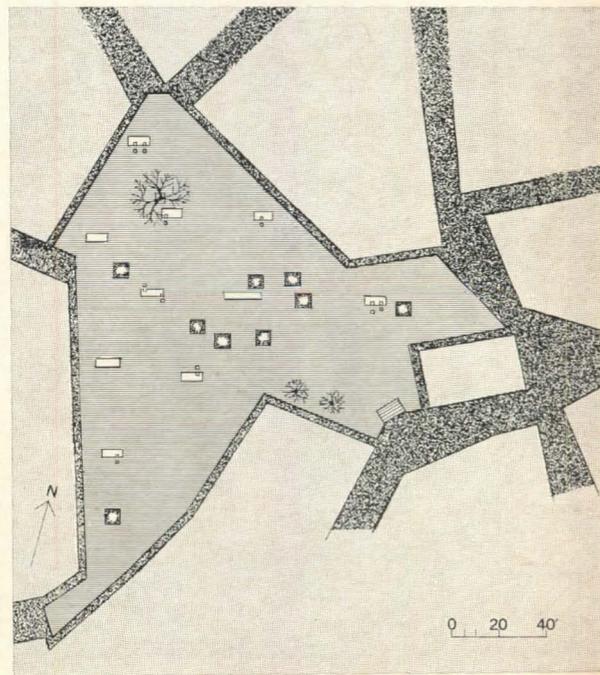
The original intention had been to hold a design competition, until Nivola announced his unwillingness to participate. The town wanted Nivola more than it wanted a competition, however, and once having selected him, gave him fullest freedom.

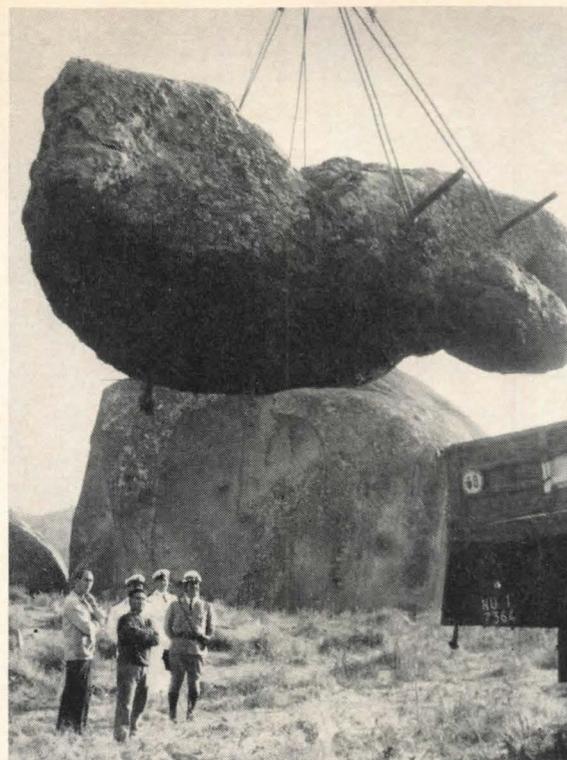
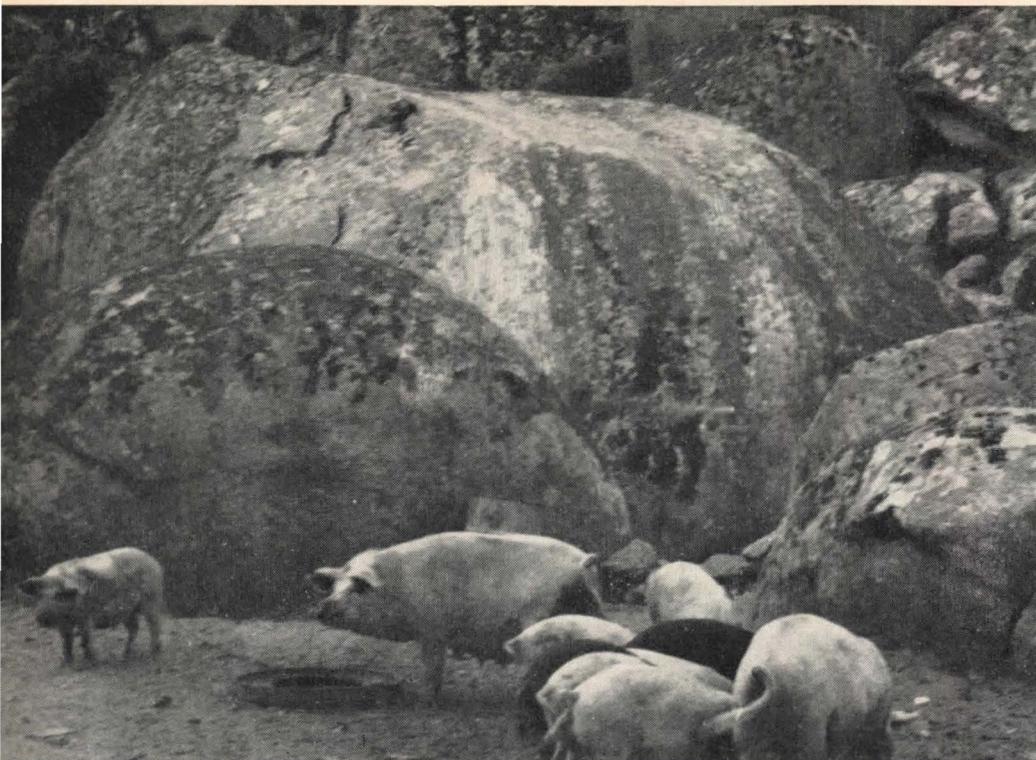
The square had long been a combination crossroads and parking lot (top, right), and Nivola's first design decision was to bar autos. On other matters, too, the Nuorese relinquished their preconceived ideas. Townspeople had suggested greenery; Nivola answered that it would soon be scorched. They had suggested water; he reminded them of the scarcity of water. They had suggested trees; he pointed out that the square was already well shaded at all times.

But if firm towards his client, Nivola had a rare humility towards his media and his subject. From the surrounding hills, he brought into town the huge rocks of mossy granite, dignifying them for the first time with the title of sculpture.

He was particularly anxious that the piazza not become a permanent exhibition of his own work. Yet weaving through this "poetic landscape made by hand," as he calls it, is Nivola's very personal commemoration of Satta. The human dimension of Satta breathes out from small niches in the rocks, where Nivola has placed miniature bronzes of the poet. At eye level, and above and below, the Nuorese discover Satta the poet, the socialist, the lawyer, the epicurean, the father, the friend. It was the very complexity of the man that led Nivola to the device of portraying the many facets in as many sculptures (see following pages). Nivola and Satta (1867-1914) had never met, but Nivola studied Satta through his poetry and through those who had known him. Now, through Nivola, the poet lives again in the new life of this urban place.

Without the usual formal fountains and ceremonial sculpture, Costantino Nivola has created a civic place of rich urbanity for this Sardinian town of 25,000 persons. It had always been a well-peopled square (a school is at one "corner," and many townspeople regularly pass through). They now pause on new granite benches, among newly whitewashed buildings, to contemplate the massive granite boulders brought in from the countryside and to discover the tiny sculptures of the poet Satta that Nivola set in niches in the rocks.





Granite boulders were brought into town, and small bronzes of the poet set in geometric niches



The local rocks (above, far left) were hand-picked and carefully transported into town (above, left). Nivola explains his multiple depiction of Sebastiano Satta: "I did not know how I could reconcile within the same pose or gesture the rhetoric of the lawyer, the sobriety and commitment of the young socialist, the uninhibited epicurean, and the romantic contemplator. Yet Satta was all of these. (Perhaps, even Satta himself, as is often the case with talented men, probably found it difficult to reconcile all these dimensions, these antithetical instincts and aspirations.) Consequently, I resorted to the simplest solution: I chose to represent separately the many different facets and moods of the poet." A group of Nivola's studies is at left; one of the finished sculptures, cast in bronze and set into a niche in the granite, is at right.

AMERICAN BUILDING: THE HISTORICAL FORCES THAT SHAPED IT. By James Marston Fitch. Second edition, revised and enlarged. Published by Houghton Mifflin Co., Boston, Mass. 350 pp. Illustrated. 6 by 9½ in. \$12.50.

REVIEWED BY HENRY MILLON

A second edition of a book should be reviewed only when there are significant revisions. When the author, in the preface to the second edition of the book, says, "I have not found it necessary to alter either the point of view or the basic format of the work," it would seem to argue more strongly against review. But Mr. Fitch is not quite accurate in his statement.

The point of view is the same, to be sure, but the revisions and enlargements have greatly altered the character of the book. Many statements that were assertions before now are enriched by basic documentation. In addition, since the subject has grown too large for a single volume, the format is basically altered. A "Historical" volume published first will be followed by a "Theoretical" one. This separation into two volumes will be thought a good thing by those who may have been dismayed by the apparent discontinuity that occurred in the first edition.

In the new edition there is also an abrupt shift in emphasis from historical account to the arguing of proposals on page 280. These remaining 37 pages of text, completely new in the second edition, are devoted to an examination of problems in contemporary architecture and city planning. Those familiar with the author's other publications (*Architecture and the Esthetics of Plenty*; "The Forms of Plenty," *Columbia University Forum*, summer 1963) will find in this section a restatement and refinement of some of his views.

Fitch argues for diversity instead of homogeneity within the city. He proposes multi-use buildings with horizontal street

Henry Millon is an associate professor of the history of architecture at MIT. He is a Fellow of the American Academy in Rome, where he is currently doing research on Guarini. His books include *Baroque and Rococo Architecture and Key Monuments in the History of Architecture*.

connections at upper levels. He contends that streets (pedestrian) are for "people who are already where they want to be," and that roads (vehicular) are for moving people and goods from where they are to where they want to be; that large squares without amenities are not meant for people; that the skyscraper has functional problems for those with large families; that working conditions in a skyscraper inhibit the enjoyment of existence. And he makes a special point of the discrepancy between private luxury and public amenity. Each of the proposals and citations is naturally fraught with detailed problems that are neither examined nor discussed; they may well be in the second volume.

But it is the first 279 pages I would like to examine in more detail. This section, very pleasantly reworked, is a documented socio-historical account of architecture in the U.S.A. from colonization to the Second World War. In the new edition some revisions and additions have been made to the sections on Washington, Jefferson, Paxton, Sullivan, Wright, and Le Corbusier. In the first edition, for example, Le Corbusier's works were barely mentioned and characterized as having a "certain aridity," while in the second edition Le Corbusier is "the most subtle of them all, for he combined a poetic imagination of great range and power with a truly philosophic approach to social reality."

Completely new sections deal with the Midwest and Far West in the period 1893-1933, discussing works of Elmslie, Mahoney, Walter (not William) Burley Griffin, the Greenes, Wright, Schindler, and Neutra. Also new is the treatment of the Museum of Modern Art's architecture show of 1932, the Johnson-Hitchecock book, and the early International Style in the U.S.

Mr. Fitch is a historian who is not loath to state his premises. He bases his criticism and analysis on the "social realities of the day." For example, in discuss-

ing the concern for mass-housing developments between the two World Wars, he says that the few projects realized "had the salutary effect of shifting the architect's attention from esthetic abstractions to social reality." Clearly "esthetic" is a bad word in his vocabulary; esthetic reactions and esthetes are suspect. "What the modern esthetician forgets in smugly dismissing the [Victorian] period as an 'all-time low in taste,' is his own history." Or again, evaluating the accomplishments of the Victorian age, "more than refined esthetic standards are necessary to such an exploration, for their task was gargantuan and complex, and there was no time to be finicky." And in discussing H. H. Richardson, Fitch says that the esthetic character of his work has been amply treated and "too much has perhaps been made of this aspect of his work."

Yet we should not accuse Fitch of blind consistency. When speaking of Wright (and of Le Corbusier, as above) it is their quality as poets of form that is cited. And in fact, with Wright, the bad word becomes a compliment. After citing Wright's phenomenal ability with plan, structure, and mechanical equipment, he says, "But it is in the field of sheer *esthetics* that he is unique. In this specific area he was for half a century an incendiary, putting outworn prejudice and accumulated historical bric-a-brac to the torch."

A major theme throughout the book is the preeminent role of building technology in the evolution of building. Fitch starts by defining the "technological level of building" as a relationship "between structural theories, materials, and technique." The interaction of these three is "the mainspring of evolutionary development." Buildings that are *not technologically progressive* have therefore limited value. Buildings by Bulfinch, McIntire, Mills, and Latrobe belonged "more to the period which was closing than to the century which lay ahead. They were grounded upon the building technology of preindustrial society." Their fault, it would seem, was

to be of their time. Rather than these buildings that reflected the architectural aspirations of the new republic, the author says, it was the factory that was "at once the parent and first born of modern building technology." And, in spite of "unparalleled ugliness and squalor . . . all major advances in building were to be based upon the factory." Still further, the author says the factory "was often to establish new standards for the building field."

The factory is seen in its largest sense both as a means of mass-producing consumer goods and building materials, and as a building with special requirements of open space, light, humidity controls, and fireproof construction. The author, however, confounds his thesis with many examples of the contrary. I will cite two instances. There is a stimulating account of the early development of standardized prefabrication techniques for wood frame houses independent of the factory or factory system. Elsewhere is an account of the development and spread of the balloon frame in house construction. The latter admittedly requires sawmills and machine-made nails for full exploitation but is still, to a degree, independent of the factory system and certainly independent of the factory structure.

Concerning the relation of industrial production and esthetics: in discussing Walter Gropius' advent in the U.S. as one of the maturing forces in architecture, the author cites one of the salient points of Gropius' theory as being "industrial production must necessarily be the basis of the modern esthetic." It would probably be closer to the Gropius intention, though he might not admit it, to say "industrial products must necessarily be based on the modern esthetic."

Industrial products or production or indeed a highly developed technology of building is hardly an aim in itself—while it may be the means to attain some aim. Technology may in some instances—treated in bold relief in

this book—appear to provide the stimulus—as Gropius' theory quoted above would have it—for the formation of esthetic standards. More often this is not the case, particularly with developments in architecture from 1920-1950, as an article by William Jordy in the *Journal of the Society of Architectural Historians* has shown. It is technology that follows an esthetic aim.

Le Corbusier, Gropius, and others wanted their creations to look as if they had been machined and produced industrially. There was an intuitive leap, from a base that was firmly planted in technological awareness, that pulled building technology along with it. Wright did the same in the Larkin building much earlier. The industrial product then strove to look industrial. The magazines of the 1930s are filled with "industrial design." Fitch's book does not state that it is men who decide what an industrial product should look like. The product of factory or industry is just as subject as was the classical temple to design considerations that result in form. The factors considered may simply be different.

Today we have reached the point where industrial concerns make products that try to look like they might be used to achieve buildings that architects strive to fashion in such a way that they will appear to be mass-produced industrial products. Technology may not be the mainspring of development in building.

Fitch is pessimistic about capitalists and their influence on society. In discussing Montgomery Schuyler's pertinent criticism of the widening gulf between the architect and engineer written in 1894, Fitch says, "However clearly Schuyler saw the dichotomy in 19th-century building he remained the prisoner of his time and class. He could not see that the harsh divorce between architect and engineer was the inevitable product of the social order." "Social order" here has been substituted for "capitalism" in the first edition. Later, in discussing buildings built for these capitalists,

there is the following pronouncement: "Everywhere, the rich and powerful were compressing the functional content of architecture into formal configurations antithetical to it." Here Fitch appears to be "smugly dismissing" these buildings, as the "esthete" he criticized earlier dismissed Victorian achievements.

Fitch quotes from Louis Sullivan's *Kindergarten Chats*: "Architecture is not merely an art . . . it is a social manifestation." His own position seems to agree. In the preface he says, "It is only from the consumer's point of view that the social function of building can be fully seen and understood." Indeed in a post-Burkhardtian world it would be hard to argue otherwise, since Burkhardt and his successors made it clear that artistic goals and societal goals are inextricably intertwined. Our knowledge of the past and present has greatly benefited by seeing the works of art and architecture in their context. If Fitch were to fully espouse his stated position he would have to see Victorian buildings—Mrs. Potter Palmer's house on Chicago's North Shore and the Vanderbilt House on Fifth Avenue in New York, which he denigrates—as what they were: exemplary productions. Far from "compressing the functional content of architecture into formal configurations antithetical to it," they gave eloquent formal evidence of the political, social, and functional aspirations of their builders. They were built and used as palaces. The fact that they may not be to our liking today is irrelevant.

The use of these palaces in their time (consumer's time as stated in the preface) is neglected by the author because they did not meet the needs of the "people" at large. They certainly did not and were never intended to do so. According to the author, apparently, these patrons and commissions seduced architects and architecture away from a supposed path of virtue and progress. This is certainly a moral judgment made with hindsight.

Fitch has the right to all the moral judgments he wishes, and I find myself agreeing with many, but when they interfere with his avowed purpose as "historian" (preface) of deepening our understanding, then he has been betrayed by his method.

When Fitch says that it was historically inevitable that the Chicago World's Fair be a "shattering blow at the only consciously progressive effort of the century to resolve the growing contradiction between the ideology and the mechanics of American building," we are misled.

The author explains that Chicago's capitalists had been absorbed by the modern structure of national monopoly. He says that the architecture of the fair, Classical, united the new non-provincial interests, and he quotes John Ingalls as saying that Chicago had "established her claims to take first rank among the great capitals of the world." Easterners and perhaps Chicagoans felt Chicago had arrived. But was the selection of Beaux-Arts Classicism "historically inevitable"? I think not.

Discussions leading to the selection of Classical as the "style" that would dominate the fair are described quite well. Burnham's deferral to the opinions of the suave easterners was described by Sullivan as a betrayal of the Midwest. However, neither the direction taken by those at the meeting nor the outcome was historically inevitable. Different men or even one man with stronger ideas, less insecure, a stronger will, more stubborn, or less influenced by some external force, might have made the meeting and the decisions different, and the Chicago Fair something other than it was—perhaps better, perhaps worse. The author employs a deterministic method that sees the actions of men as resulting from forces that may not or cannot be altered.

This book is a great improvement over the first edition, but since the author has "not found it necessary to alter . . . the point of view," it still contains the same methodological faults.



MAGIC BOX

Trinity College Library in Dublin

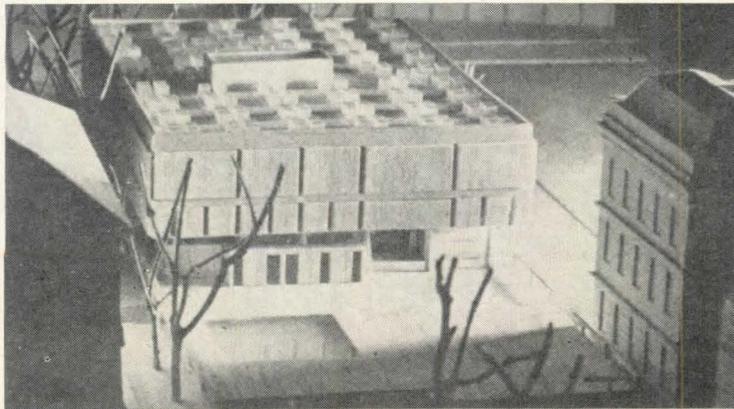
BY JOHN DONAT

When Paul Koralek won the international competition for a new library for Trinity College in Dublin, in 1961, he was working for Marcel Breuer in New York. Shortly thereafter, he went into partnership with two old friends: Peter Ahrends and Richard Burton. They set up their office in London, and the completed building is the product of their collaboration. Ahrends had been a part-time teacher at the Architectural Association in London, and Burton had been working in the office of Powell and Moya, also in London. As students, Ahrends, Burton, and Koralek had been inseparable; the winning of this competition effectively established their partnership.

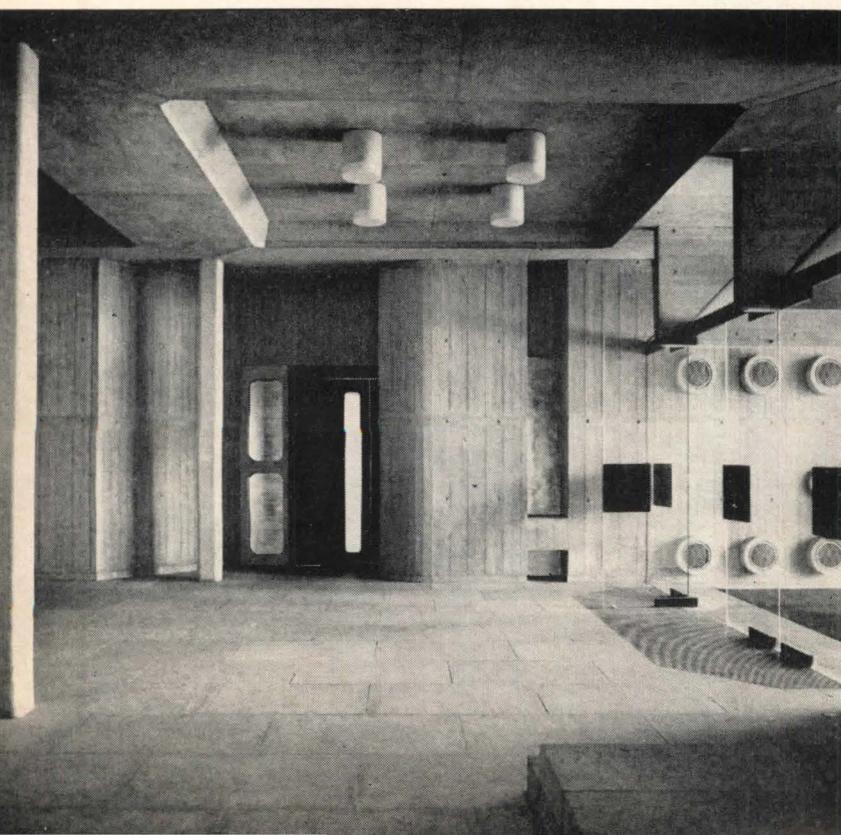
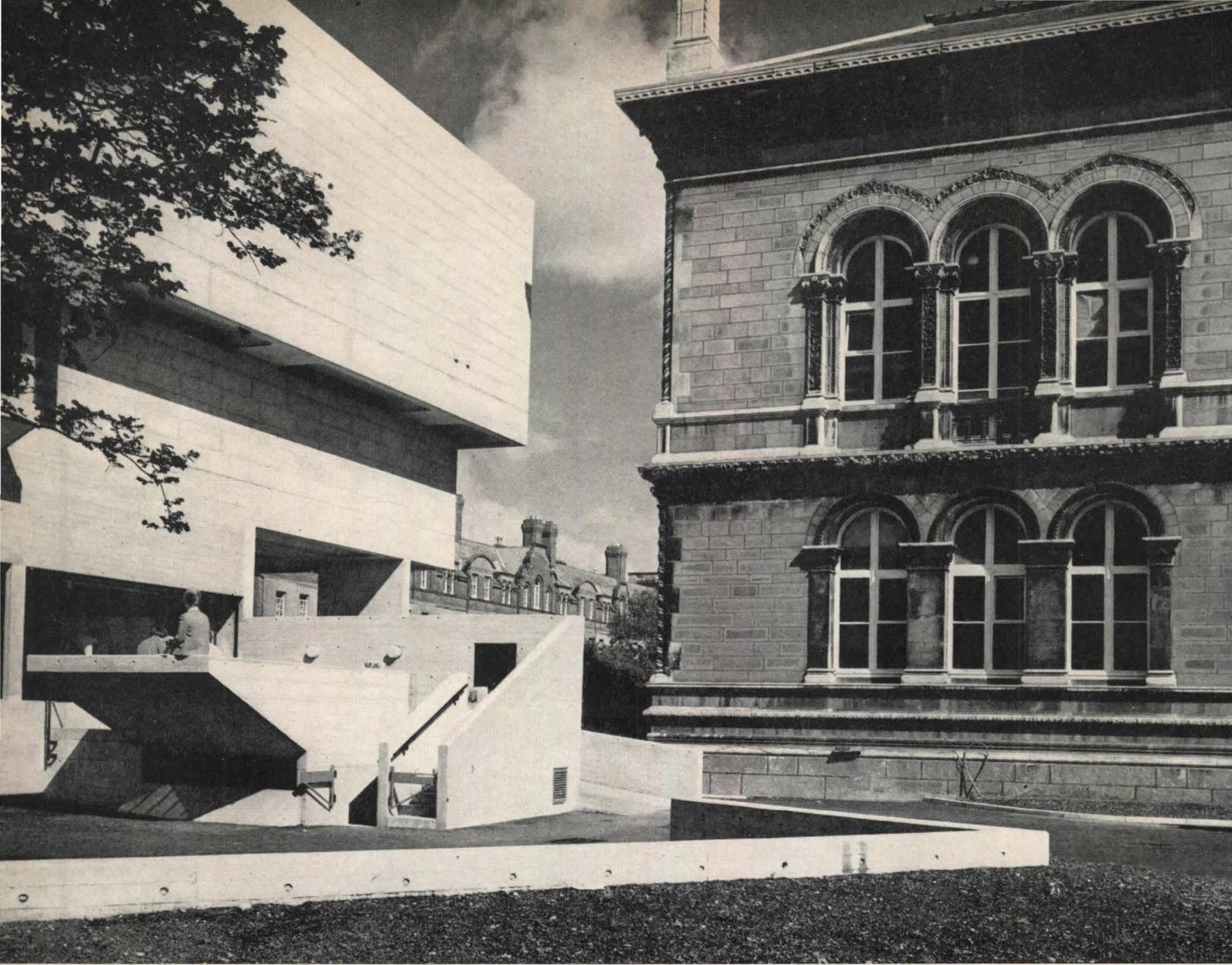
The Trinity College Library as we see it today is the result of three very different but complimentary temperaments reacting to Koralek's original rather cool and underplayed design: a simple rectangular box linked to the 18th-century library and

19th-century museum by an open podium and connected to the library underground, with its flanks overlooking the Fellow's garden on one side and playing fields on the other. This basic disposition, its organization and logic, survive in the final design—but, one feels, only just!

Almost by definition, Ahrends, Burton, and Koralek are anti-box architects; so what could they do with a winning scheme that was clearly, unmistakably, and irrevocably a *box*? The final design indicates their dilemma: how to revolt against the box without destroying its fundamental organization. A long, hard, closely fought transformation took place: the building changed from cool to hot, from gentle to strong, from simple to complex, from underplayed to overplayed. A bland, neutral, quiet building became an aggressive, outspoken and challenging individual. Koralek's box became Pandora's box, became a box of tricks—a magic box.



Mr. Donat is both the author of this article, and the photographer of the new library. He is best known as the editor of the excellent series on *World Architecture*, and he has contributed to the Forum in the past.



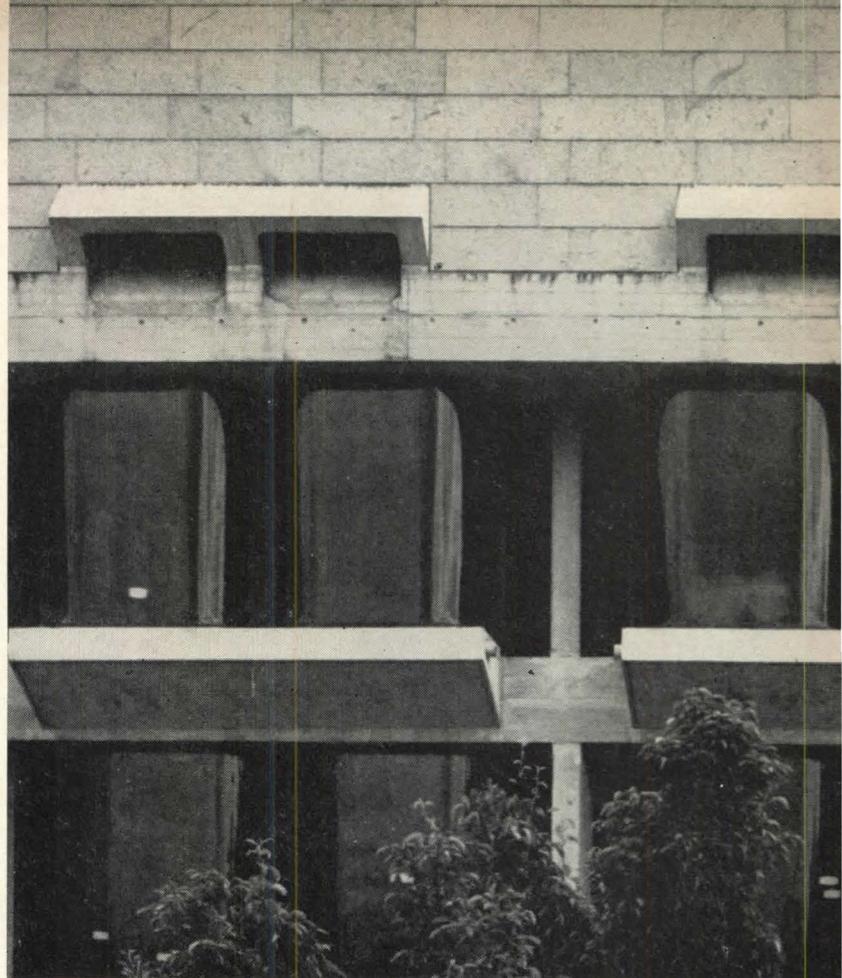
Until recent moves to amalgamate with University College, Trinity has been a Protestant island in a Catholic city—walled round. Its architecture is a succession of courts and spaces, inward looking, self-sufficient. Changes take place within the walls. The new library, off the edge of the second main court, is concealed from view until the very last moment. Its relation to the greater space and to the 18th-century library and 19th-century museum (one of Ruskins favorites) is entirely successful—three centuries' buildings regard one another across the podium with complete equanimity. "A building with four backsides" complained an irate correspondent to the *Irish Times*—but the deliberate restriction of views in and out of the building heightens the sense of enclosure and intensifies the effect of looking out.

A sense of arrival has been achieved without resort to obvious gimmickry. The entrance hall and spiraling movement up from level to level reveals the basic planning organization quickly and easily—you know where you are. Beyond the basic simplicity and directness, complexities begin to operate: you discover odd corners, quiet areas, secret places. Light bathes the whole interior, not as a dead white blanket, nor in melodramatic contrasts, but subtly and decisively. The integration of structure, light, space, material, and detail is disarmingly as-

sured. Whether the process of reworking should ever have been undertaken, or carried so far, is a moot point: the result is certainly a place to use, to inhabit and to enjoy.

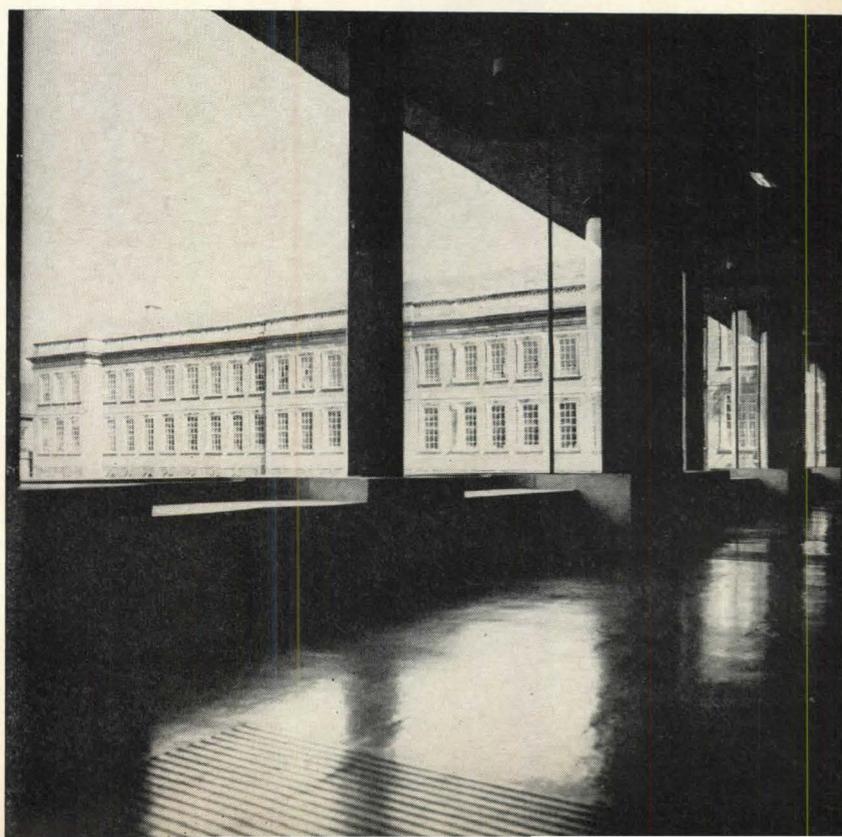
The process of reworking the box was self-indulgent, willful and precocious. So much about it is anachronistic, that one approaches the completed building in an ambivalent frame of mind. Should the process of reworking have been attempted at all?

For example, at some point the architects had the crazy idea of making bay windows out of huge single sheets of curved plate glass. "Out of the question," said the glass manufacturers, "we wouldn't touch it." But the idea had taken root and was pursued until a glassmaker (presumably as crazy as the architects) was found who could, would, and did do it—and there they are, absurd by one standard, marvelous by another. Another example: the building is a virtuoso orchestration of light; it comes in sideways through the bay windows, vertically through skylights, and in any number of ways through slots and slits. It is funneled down from the upper story through giant concrete funnels onto reading desks below (the amount of light that descends from these is negligible—"they must be the most expensive 100 watt light bulbs ever made," said one of the architects). This example, too, is absurd—but the quality of light in the building is superb.

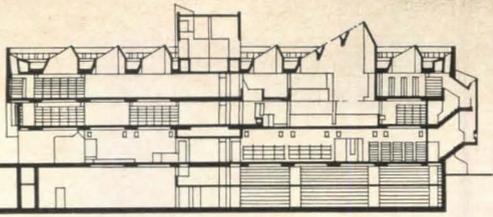


The library sits with equanimity between an 18th-century library and a 19th-century museum. East elevation (left, above) shows junction of the new library with the museum. Main entrance is beyond this juncture, on a podium to the north of the library. At the entrance

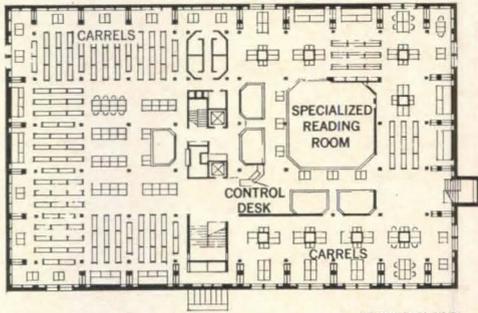
hall (left and far left, below) one begins to see the excitement of the interior. Bay windows made of huge sheets of curved glass (above, from the outside; below, from the inside) are one example of the reworking of the box that preoccupied the architects.



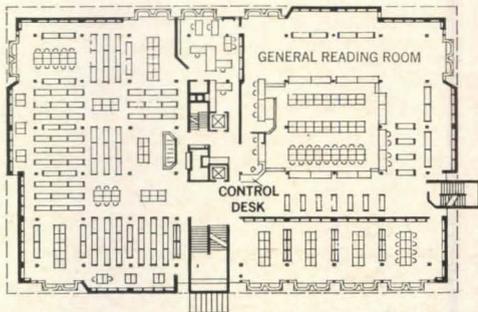




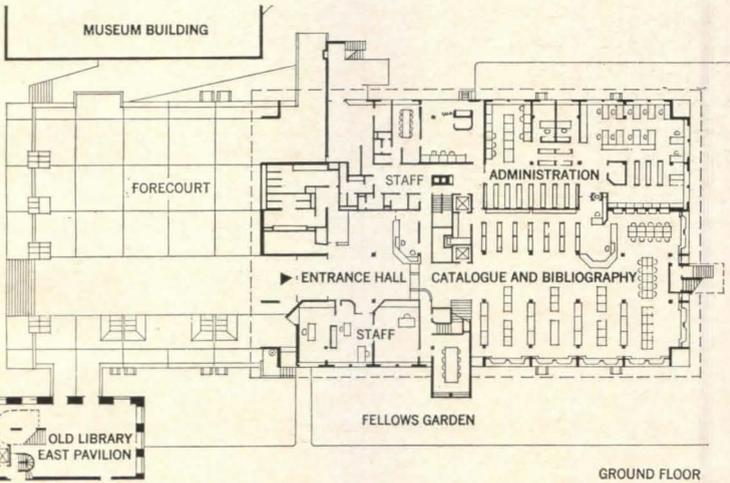
SECTION



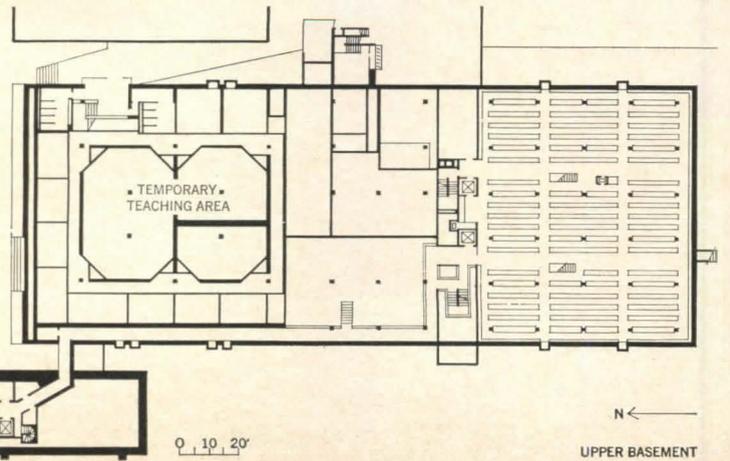
SECOND FLOOR



FIRST FLOOR



GROUND FLOOR

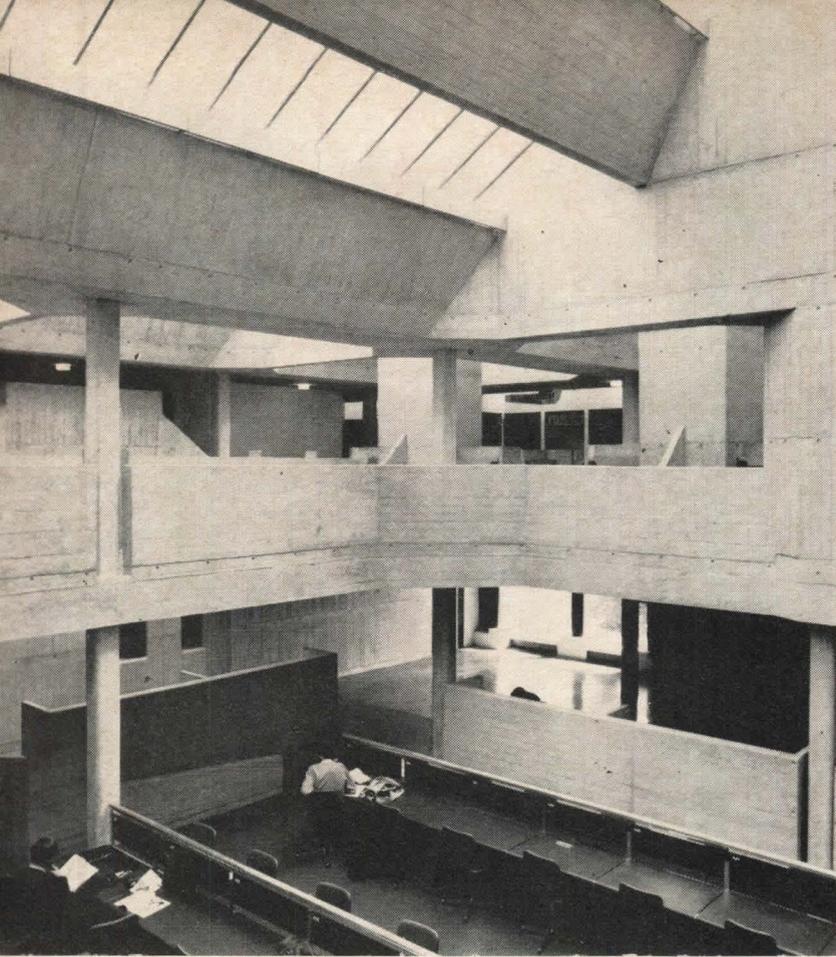


UPPER BASEMENT



Light bathes the interior in many ways, here flowing in through giant concrete funnels (left)—“the most expensive 100-watt light bulbs ever made,” said one of the architects. Above, the desk at the main entrance. Below, a student’s quiet corner on an upper floor. Most of the furniture, like the building, is made of concrete.





The building is a virtuoso orchestration of light: double-height reading room (above and right); main stairway (below). Despite the fixed and immutable program, and the fixed nature of the building, it may prove to be more responsive in use than a so-called "flexible" building.



The anti-box philosophy is by no means a superficial stylistic matter. Box architecture ends with built organization—anti-box architecture begins with it. It is the antithesis of anonymous, "universal" space. It is built experience. No doubt an elegant solution could have been conceived providing a vast, unbroken reading hall diagrammatically related to the bookstacks and with a circulation pattern as simple (and as interesting) as ABC. This is no such building, it is a place of wonders, delights, and experiences—a celebration of almost religious intensity.

Every student can find his own personal corner here, a place of his own where he can get on with some quiet work—individual work, not mass work. Implicit in the design is the idea of just being alone with a book.

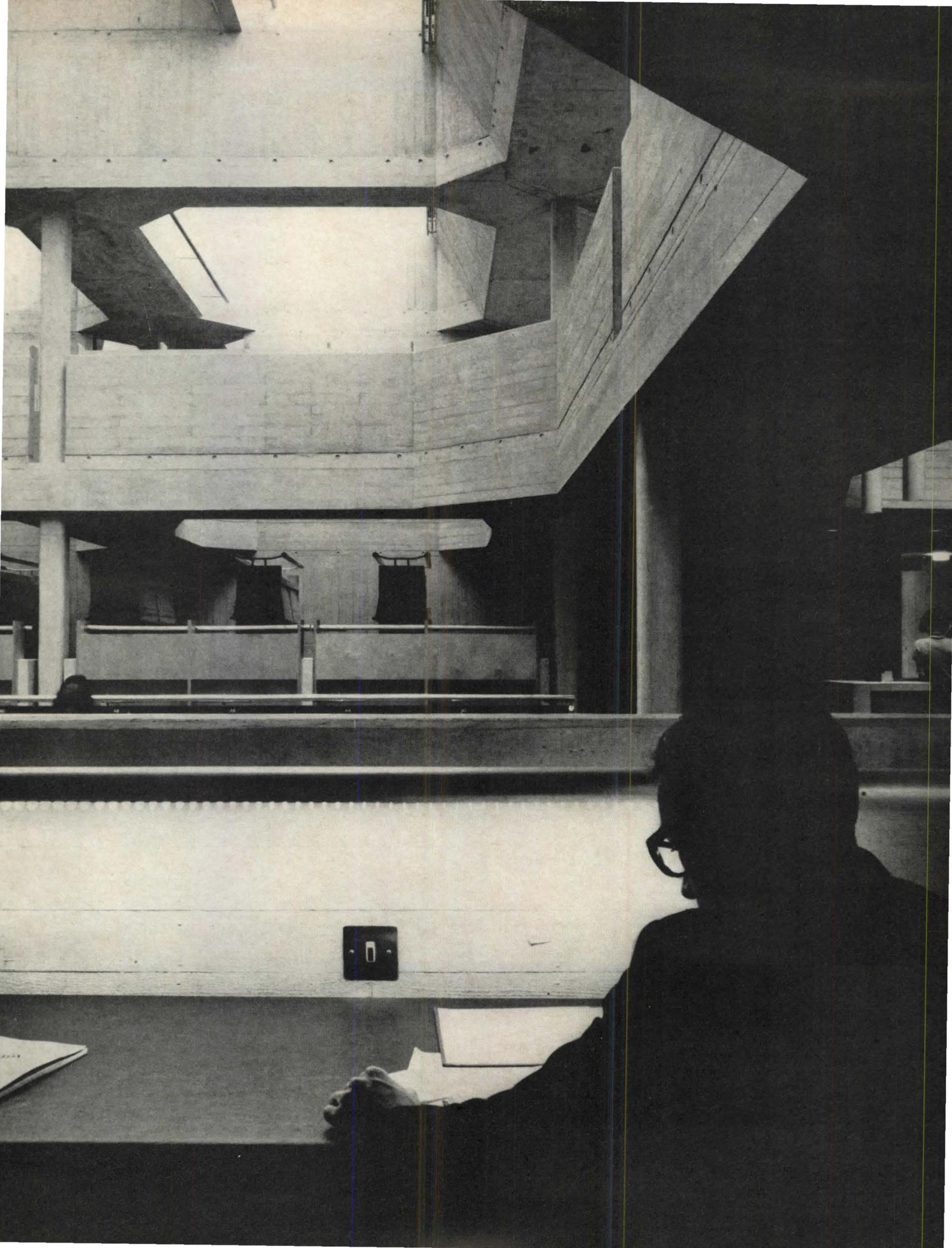
The library is artificially ventilated (but not cooled). The building makes no fetish of its services which are discreetly and efficiently integrated into the total organization.

Everything in the building is fixed: most of the furniture, like the building, is made of concrete of eternal permanence; but it is not as inflexible as this suggests—it presents such a wide range of choices and possibilities that it may prove more responsive in

use than a so-called "flexible" building that may be petrified in its first arrangement.

The most severe limitations of the building (its rigidity and absoluteness) are a direct product of a competition program that was inherently limited by its own exactness. Such a fixed, immutable program robs the architects of their essential opening dialogue with the client (and these are architects who might ask questions like: "Do you need a library at all? What is a library for? What will a library be in twenty years time?"). Their program, formed in exact detail in advance and locked into the winning design, precluded any such questions being asked; so the program must be held responsible, in part, for the fixed nature of the building.

Set against some of the paradoxes and anachronisms discussed earlier is the undeniable fact that something comes through the totality of the building that is completely convincing. It is a conviction that blunts the edge of criticism and evaporates reservations. Everything is deliberate and demanding. Anything ordinary is made excellent—and is seen to be excellent. An apparently limited building confounds you by making a virtue of its own limitations.





so forth, which brings up the messy business of airport authorities, those quasi-public bodies (such as the Port of New York Authority which runs Kennedy and LaGuardia), whose books remain closed to the public.

Meanwhile, for three years running, Congress, busy with wars at home and abroad, has cut the Federal Aviation Administration's budget requests for additional funds for air traffic controllers and electronic equipment.

STRATEGY

THE FARM IS A CITY PROBLEM

Keeping 'em happy down on the farm is really a city problem, contends Secretary of Agriculture Orville L. Freeman. The exodus of more than half a million unskilled farm laborers annually swells the dilemma of cities, he professes.

Two farm-state Senators, Fred R. Harris (Dem., Okla.) and James B. Pearson (Rep., Kans.) agree, and to that end they have introduced a rural Operation Bootstrap bill to lure industry to counties that have no city of more than 50,000 people. The bill is a rural counterpart to one introduced earlier this year by Senator Robert F. Kennedy (Dem., N.Y.) that is designed to lure new industry into the urban slums (Sept. issue). Like Kennedy's, the rural bill would offer a string of tax incentives to industry.

THE CITY IS A FARM PROBLEM

Urbanist Charles Abrams, on the other hand, thinks that HUD should be abolished and the problems of cities turned over to the Department of Agriculture. And he says he is dead serious.

Testifying before a hearing in New York City last month of the National Commission on Urban Problems, Abrams pointed out that the Department of Agriculture spends over \$7 billion a year on farm programs, while Federal aid to center cities amounts to about \$400 million. Agriculture, he said, "doesn't need more than \$1 or \$2 billion at the most; so that's where the money is." Thus the department is in "a far better position than HUD" to handle urban problems.

Besides, said Abrams, "80 per

cent of metropolitan growth is in the suburbs, which is mostly agricultural land." In California alone, he noted, three million acres of orchards and farmlands will yield to subdivisions in the next 20 years. "San Francisco and Los Angeles will be linked by hundreds of shrapnel subdivisions, and if that's not an agricultural problem, I don't know what is."

Abrams offered two other arguments in support of his theory: (1) "I did a study on rats recently, and the most valuable information I got came from the Department of Agriculture." (2) "It has been said that grass will soon grow on the streets in the city, and that certainly will be an agricultural problem." At which point the question of how you're going to keep 'em down on the farm will become quite academic.

SCARE TACTICS

That terrifying man pictured below is wearing a "Fun City survival kit," courtesy of *Forbes*, the business magazine.

Forbes splashed him over seven columns of the *New York Times* on August 22 in an ad whose point was that making cities liveable again can be Big Business.

"Isn't it possible the cities' problems could open up a whole new



market for business?" asked *Forbes*. "And that market will make our cities better places to live? Before they become frightening places in which to survive?"

THE BUSINESS OF SLUMS

The questions posed by the *Forbes* ad were indirectly answered with an emphatic "yes" last month by the nation's major life insurance companies. They told President Johnson they were ready, willing, and able to invest \$1 billion in slum programs immediately, most of it for housing.

The huge capital commitment,

which will be diverted from the companies' normal stream of investment, was brought about by the Life Insurance Committee on Urban Problems, a group created last May to encourage investment in slum areas. To start with, most of the money will go into housing whose tenants qualify for rent supplements—provided Congress comes up with the \$40 million requested by the Administration for the next fiscal year.

Even if Congress does come through, however, the money pledged by the insurance companies alone could produce 80,000 rent-supplement units, which is twice as many as could be subsidized by the \$40 million. So presumably the insurance companies will put some of their money into other kinds of ghetto housing, or possibly even into other much-needed enterprises, such as job-producing industries.

MOSES TO THE RESCUE

Robert Moses has developed (presumably in his spare time) the answer to our slum problems.

He revealed it all last month to the National Commission on Urban Problems, which held public hearings in New York City. "It is my thesis that slums must be wholly eradicated," Moses told the 16-member panel appointed last January by President Johnson. "The logistics of slum clearance are simple."

All you have to do, according to Moses, is find areas of vacant land in cities, build new housing there, then evacuate a section of an existing slum and move the residents into the new housing. After that, you tear down the abandoned slum area, rebuild it completely, and move the people back. Then you start on another section, repeat the process and, before long, no more slums.

Moses even had a planning formula all worked out for the rebuilt slums. There would be one small playground per block, a larger one covering a full block for every ten blocks, and one school for each 20 blocks. Shops and other small businesses would be provided, and the housing would be "easy to keep clean inside and out," but not necessarily pleasing to the eye. "Manifestly fine architecture, ornamentation, and new forms," noted Moses, "can be encouraged only if they add little to the cost and do not interfere with standardization, prefabrication, and Spartan simplicity."

FOOTNOTE

With humb'e apologies to Sgt. Pepper's Lonely Hearts Club Band—Picture yourself in a boat on the ocean/With tangerine crab grass and marmalade skies/There on the sand-dune you see it quite clearly/The house with kaleidoscope eyes. Designer: Andrew Geller.
Photo: Frank Hinds

UPS & DOWNS

SACRED . . .

Architecture's place in religion was the theme of the first International Congress on Religion, Architecture, and the Visual Arts, which met this summer in New York City. Architects, artists, and representatives of all faiths met to expatiate on such awesome topics as "changing forces in religious institutions," and "the role of architecture and art in suggesting the religious answers to contemporary man's predicament." But the scope of this convocation seems to have transcended the spatial, temporal, and spiritual resources at hand, the result being that more questions were asked than answered, and discussion shifted to tangential problems (such as extremism and urban despair) with which the majority seemed more at ease.

Some pertinent remarks were made by Professor J. G. Davies of Birmingham, England, who said that the church must fulfill human and social needs; that most religious structures today are anachronisms, and that monumentality and revivalism must be discarded. Philip Johnson, however, disagreed entirely with this point: "What is worth building holy places for, if not religion?" he asked regretfully.



Other noted speakers were Buckminster Fuller, Marshall McLuhan, Senator Abraham A. Ribicoff, and Dr. Harvey G. Cox. Also attendant was an exhibition of pop religious art (above) by that inimitable iconoclast, Sister Mary Corita.

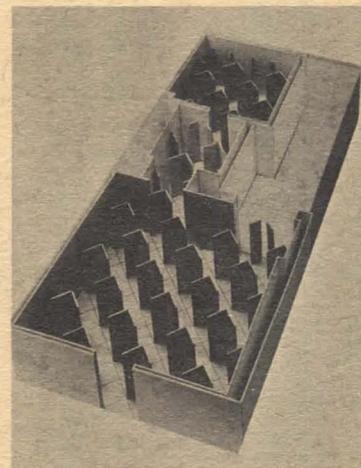
. . . AND PROFANE

Those with a more terrestrial bent who cared to explore the nature of reality took potluck with Architect-to-be John Lobell

and Sculptor Michael Steiner at an exhibition entitled *Environment IV: Corridors*, seen last month at the Architectural League in New York City.

Lobell's premise is that the structure of our organizational relationship with other people and with the environment—a major aspect of our reality—is today undergoing a revolutionary change (to support this, there are parenthetical references to Newton, Einstein and Cézanne).

Lobell feels the role of the artist is to be a researcher into the nature of reality, and that he must present situations or works of art which will "educate the perception and consciousness of his audience toward the reality he discovers." The work of art in question is, as the title indicates, a sort of corridor, consisting of a series of L-shaped screens placed on a diagonal grid. The screens are 2 ft. 8 in. by 2 ft. 8 in. by 8 ft., painted red on one side, yellow on the other (only one color visible to the viewer at a time), fabricated of painted hollow core doors (below). The spectator



is to walk through these corridors, the idea being that in the absence of a conventional (perpendicular and parallel) relationship to walls and ceiling a "new organization and orientation is set up within this context." To disorient the spectator even further, there are large boxes that he is to place at random, so as to close off accesses and change the possible patterns of movement through the piece.

There are also electronic sounds, activated when the spectator passes in front of strategically located electric eyes. Possibly because of an overly pragmatic bias, our own perceptions were not altered perceptibly. We have been assured, however, that the corridors represent a disciplined concept, very expressively realized.



THE LADY VANISHES

\$750,000 for emotional distress; \$250,000 for loss of the Pink Lady of Malibu Canyon, all 60 ft. of her. Total: \$1 million. So calculated Sunday Painter Lee Seemayer, a 32-year-old divorcée and legal secretary from Northridge, Calif., who is suing the Los Angeles County Road Department for snuffing out Pink Lady with 14 gallons of brown paint (right and above—before, during, and after).

A traffic hazard not to be tolerated, claimed the road department. "A desecration of private property without my consent," retorted Miss Seemayer.



SIMON SAYS GOODBYE

Long beset by financial troubles, Reston, new town near Washington, D.C., got a new boss last month.

As he relinquished control of his six-year-old brainchild, founding father Robert E. Simon Jr. lamented, "We always knew we would need fresh infusions of capital all along the way. Reston's industrial program was way ahead of schedule, but the residential curve just wasn't ascending as fast as it was supposed to. The government's high mortgage interest rates killed housing sales and me too."

Simon's departure is more sorrowful than fatal to Reston, which will "continue exactly as planned," assures Gulf Oil, which bought controlling interest (\$24 million) along with John Hancock Life Insurance Company (\$15 million).

The Gulf-Hancock interests have appointed Robert H. Ryan, former vice-president with Cabot, Cabot & Forbes, Boston real estate development firm, as new operating head of Reston. Ryan

has had a hand in such monetarily successful ventures as Litchfield Park in Arizona and San Francisco's Golden Gateway urban renewal project. "We will rely heavily on his advice," said Gulf Vice-President W. L. Henry, "and of course, Bob Simon is now chairman of the board."

AWARDS

INSTANT HISTORY

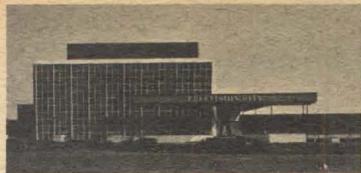
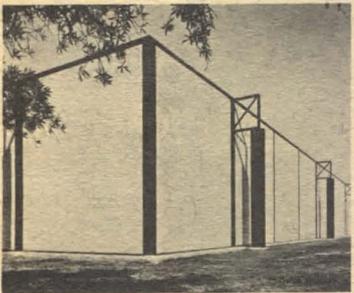
Last month the city of Los Angeles, in cooperation with the AIA's Southern California chapter, announced the winners of Grand Prix awards for the best buildings erected in the Greater Los Angeles area in the past 20 years.

Ancient history in Lotus Land got hardly a nod: of the 36 buildings singled out for honors by the jury (five for Premier Grand Prix, 31 for plain old Grand Prix), only two were more than 15 years old, and 25 were less than five years old. The oldest antiquity of them all was the famous house that Charles Eames designed and



built for himself out of standardized industrial materials back in 1949 (above and Sept. '50 issue).

Of the five buildings picked for top honors, two were completed this year, two last year, and one dated back to the middle ages (1953). The big winners (below and at right in the following order): Department of Water & Power Building, Civic Center (1966), Albert C. Martin & Associates; Scientific Data Systems Building (1966), Craig Ellwood Associates; School of Business Administration, University of Southern California (1967), I. M. Pei & Partners;



Columbia Broadcasting System's Television City (1953), William L. Pereira and Charles Luckman; and Union Bank Square (1967), Harrison & Abramovitz and Albert C. Martin & Associates.

Members of the jury were John Merrill (chairman), of SOM San Francisco; Sam Hurst, dean of the School of Architecture and Fine Arts at USC; George Dudley, former dean (see below) of the School of Architecture and Urban Planning at UCLA; Art Seidenbaum, culture columnist for the *Los Angeles Times*; and Kenneth Ross, general manager of the city's Municipal Arts Department.

PEOPLE

SEARCH FOR URBAN SHAPES

Architects Paul Rudolph, Ulrich Franzen and I. M. Pei jointly expressed a major urban design dilemma recently: "When considering the most urgent task facing the architect today, namely the rebuilding of urban America, one certain overriding problem emerges: we do not know what the shape or life of the 20th century should be . . ."

To remedy that problem, the Ford Foundation has granted Franzen and Rudolph \$488,000 to explore what the shape of a 20th-century city might be. Each was asked to study a specific problem, but develop concepts applicable generally.

Franzen's specific will be Lenox Avenue in Harlem, a 200-ft.-wide, 35-block-long boulevard that serves as a commercial and industrial focus for a large part of Harlem. Franzen will seek ways of making the street a more vital, integrated part of the adjoining areas.

Rudolph will study Canal Street, long embroiled in a controversy over a route for the Lower Manhattan Expressway (Sept. issue). He will explore how freeway structures, properly conceived, might complement and reinforce, rather than blight, surrounding neighborhoods.

Pei, whose project has not been announced, will receive an additional grant, pending final acceptance of his program.

APPOINTMENTS

► George A. Dudley gave up his post as the first dean of UCLA's fledgling School of Architecture and Urban Planning last month to take on two assignments from New York's Governor Nelson A. Rockefeller. He was named chairman of both the State Council on Architecture and the New York State Pure Waters Authority.

The council has been set up to aid the state in getting architectural design of high quality in state buildings, and to make grants-in-aid to local governments for the rehabilitation of public buildings of architectural or historic importance. The water authority was set up to help local governments meet their responsibilities for sewage collection and treatment, and solid waste disposal.

► Continuing its efforts to encourage better design in Federally assisted projects, HUD has announced the appointment of Architect Charles E. Thomsen of New York as special assistant for design policy in its Renewal Assistance Administration. Thomsen will work with Architect George T. Rockrise, HUD's overall special consultant on design. His special concern will be the improvement of urban design in such HUD programs as urban renewal, rehabilitation, central city parks, and neighborhood facilities.

► Allan R. Talbot, a seven-year veteran of New Haven's urban redevelopment programs, has been appointed director of Urban America's Urban Policy Center. He is author of *The Mayor's Game*, a book about New Haven Mayor Richard Lee.

The Urban Policy Center was formed by Urban America to examine crucial issues dealing with cities, and to develop specific proposals based on interdisciplinary, multiphased research. Its attention will be directed to such concerns as the pattern of urban growth, the channeling of metropolitan development in coherent patterns,

ways to reconcile the differences between city and suburbs, and new mechanisms through which cities can play an entrepreneurial role in their own development.

DEATHS

► Ad Reinhardt, who suffered a heart attack and died at his New York studio on September 1, was to painting what Mies is to architecture. "The busier the work of art, the worse it is," he declared ten years ago. "More is less."

Reinhardt had been producing "minimal art" long before the term came into vogue. His works produced during the last decade of his life are entirely black—or so they seem until, upon closer inspection, they reveal nearly black purples, blues, and greens.



An often forgotten phase of Reinhardt's career was his work as a cartoonist for the now-defunct New York newspaper, *PM*, and other publications. Reinhardt turned out biting, sardonic drawings that rank among the best of their day (samples above).

► The Rev. Lawrence M. Upton, assistant director for the Midwest region of Urban America's Non-profit Housing Center, died August 29 at the age of 52. An expert in housing for the aged, he was on leave to Urban America from the urban church department of the United Church of Christ, which sponsors nonprofit, open-occupancy housing.

Walter McQuade

THE MAILMAN COMETH

The subject is Midwest functionalism, new and old. In the same mail recently came two documents.

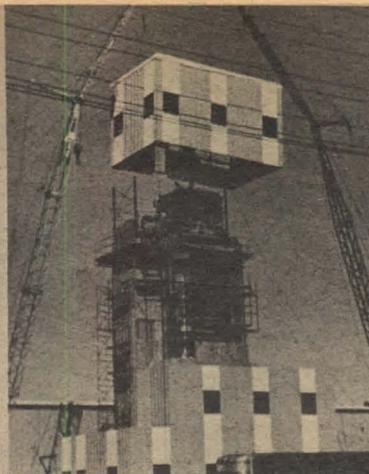
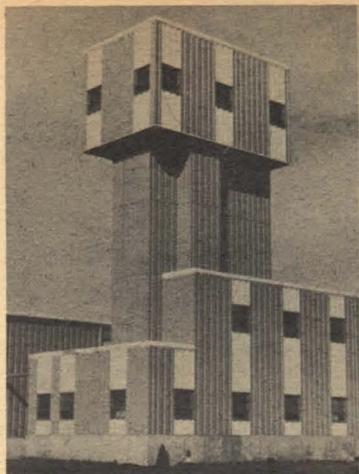
First, the photographs (above) sent by a public relations agency representing Armco Steel Co. Let the release which accompanied them sing for itself:

GIANT PRESSURE COOKER IMITATES CONTEMPORARY SCULPTURE

"Who says a hard-working pressure cooker has to be dull?

"One of the world's largest, at Hill Packing Company's Topeka, Kansas plant, looks more like a glamorous piece of contemporary sculpture than a mundane item of food processing equipment.

"Its unusual looks are a combination of modernistic geometry dictated by function and a color-



ful two-tone covering of sculptured architectural steel panels manufactured by Armco Steel Corp.

"It is no coincidence that the cooker blends so well with an adjoining plant structure. It was designed to match the 83,000-sq.-ft. Armco Steel building system, also covered with two-tone sculptured steel panels.

"The only problem was putting the lid on the cooker. It was finally preassembled on the ground and hoisted into place by a pair of long-boomed cranes."

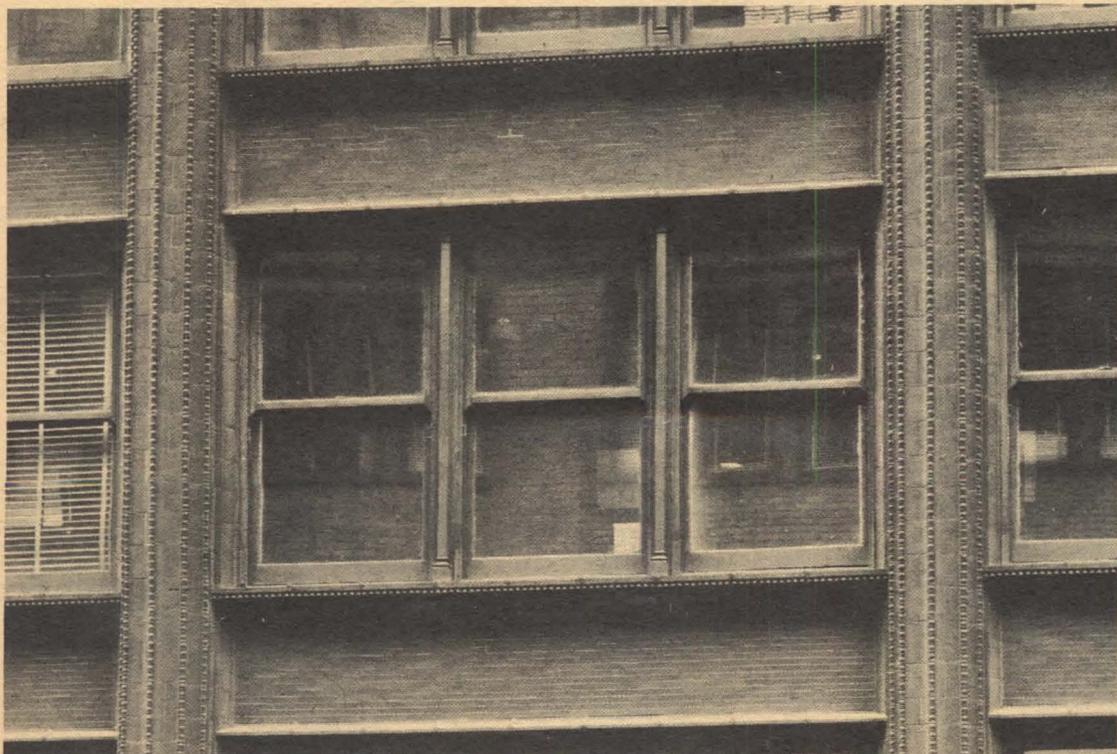
It's fine to hear functionalism being talked about again, and with such energy. It's been a long time; takes one back to student days, with Professor Detweiler relating, with some poetry, the rise and reach of the Bauhaus. Today, of course, such language is as rare as the voice of the turtle, or the

song of the long-boomed crane.

The second document was a postcard (below) from Chicago sent by Photographer John Szarkowski, author of *The Idea of Louis Sullivan*. The card is one of the series put out by the Chicago Heritage Committee, showing architectural landmarks of that city. The identifying text on the back of this particular postcard reads (the underlining is Szarkowski's):

CABLE BUILDING
57 EAST JACKSON BOULEVARD,
CHICAGO. HOLABIRD & ROCHE,
ARCHITECTS, 1899. WINDOW BAY
WITH CAST-IRON MULLIONS,
FLUTED TERRA COTTA COLUMN
FACING, AND ROMAN BRICK
SPANDRELS, ALL BUFF COLOR.
THIS BUILDING WAS CITED IN 1959
BY THE COMMISSION ON CHICAGO
ARCHITECTURAL LANDMARKS.
DEMOLISHED 1960.

Perhaps the U.S. Post Office should charge a special rate for irony.



Photographs: Page 27, Rowland Scherman. Page 28, Philadelphia Museum of Art (top); The Washington Post (center, right). Page 29, Keystone Press (center); British Travel (bottom); The Museum of Modern Art (top). Page 30, Rutgers News Service (top). Page 88, Marjorie Hyer (left); United Press International Photo (top and right). Page 89, Art News, March 1952 (right).

What does Filene's



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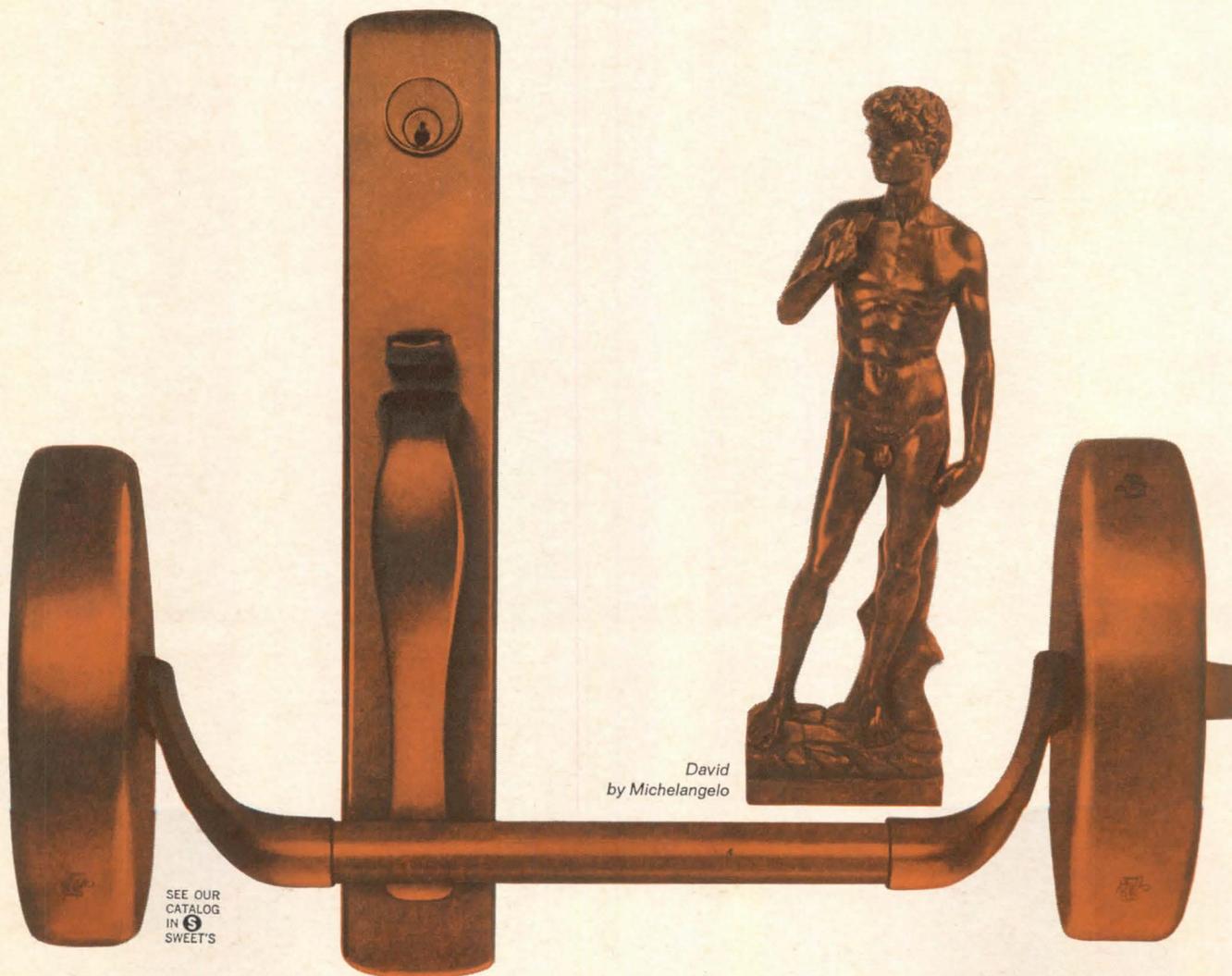
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*David
by Michelangelo*

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PREVIEW

The winning scheme in a national competition for a cultural center at Burgos, Spain, puts the principal space, a theater, below ground with the cars. Submerging the theater, claim Architects Higuera & Miro, will insulate it against noise, heat, and cold, and leave the light and views above available for office space and a penthouse library.

The 800-seat theater, which will be adaptable for concerts, cinema,

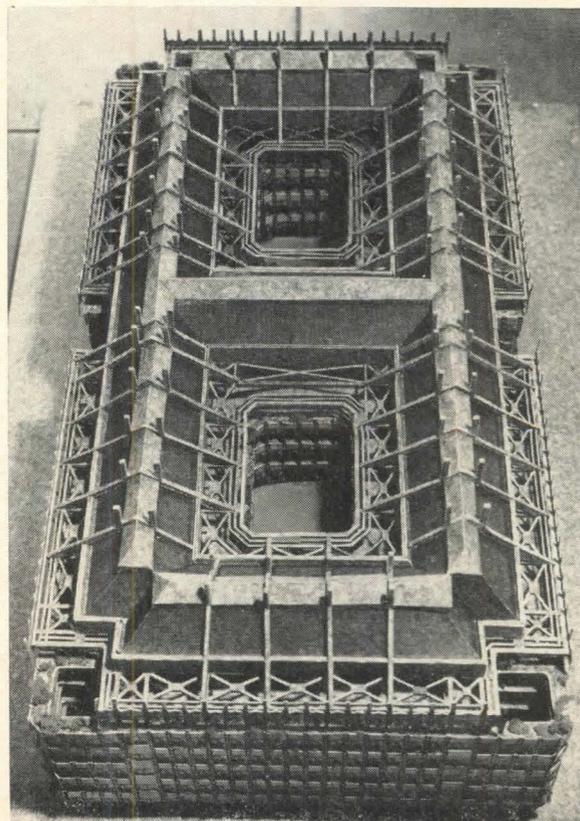
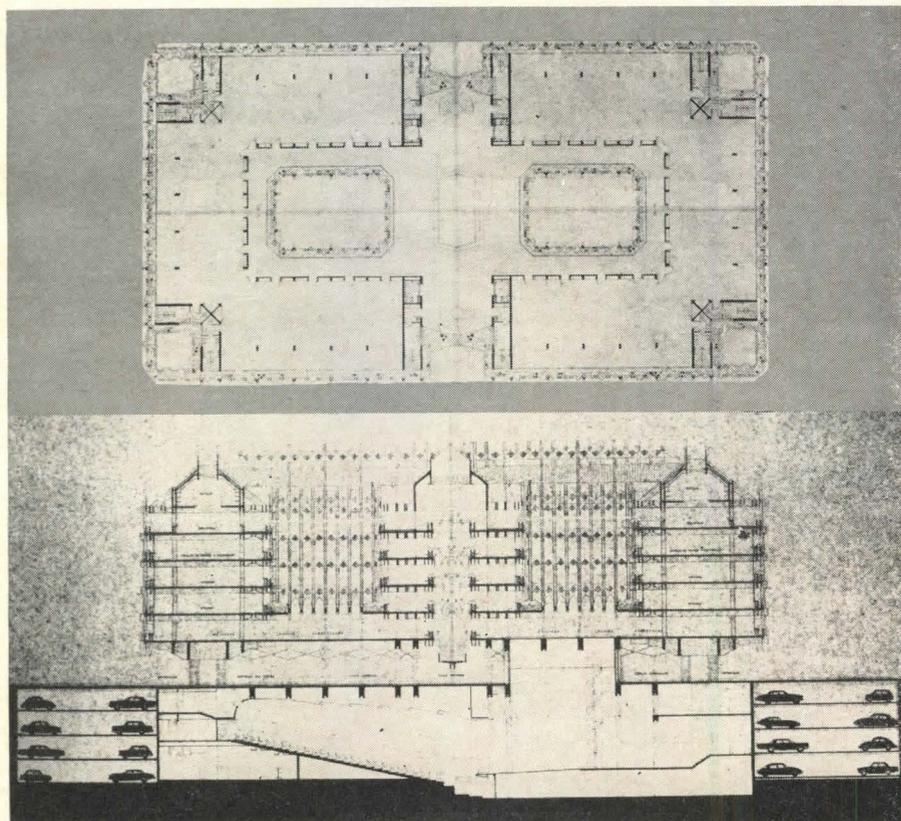
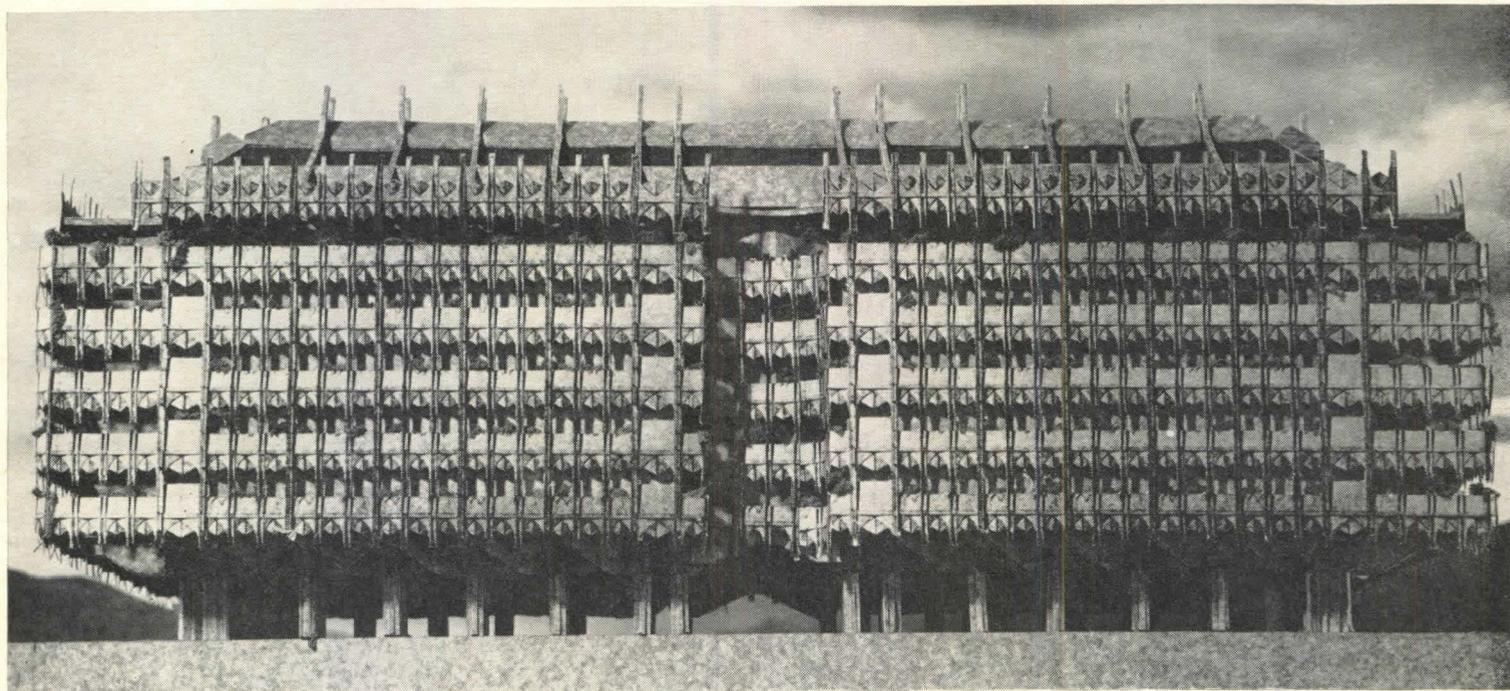
and conferences, is shown with a stagehouse (see section), but the architects suggest saving both volume and money by eliminating it.

The above-ground structure will be supported on pairs of concrete piers, deeply recessed so that the plaza outside will appear to pass right through. Enclosed spaces behind the piers will be shared by the theater lobby and commercial tenants. On the next floor shops and offices will be laid out freely

around two interior courts. On the three floors above (see plan), office space will be accessible from balconies around the courts.

The exterior has been called Neo Gothic and Gaudian, but the architects explain it as a logical use of small-scaled precast elements. Even the gables at the top (photo, bottom right) will provide structural bracing, but the purpose of the finials that will rise from them is not explained.

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No. 101



No. 102

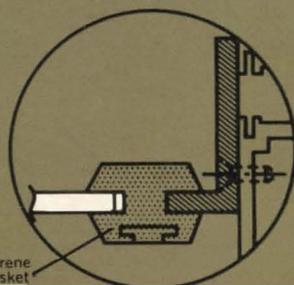
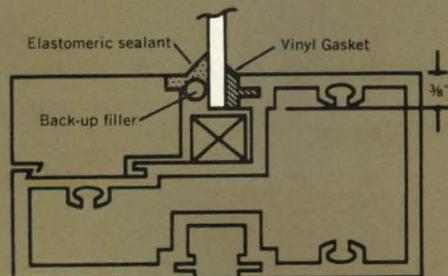
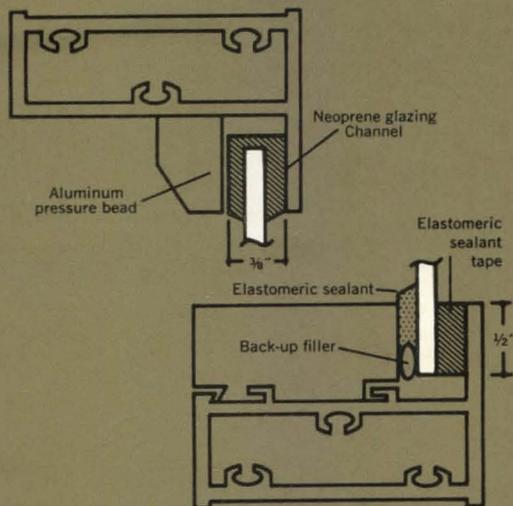


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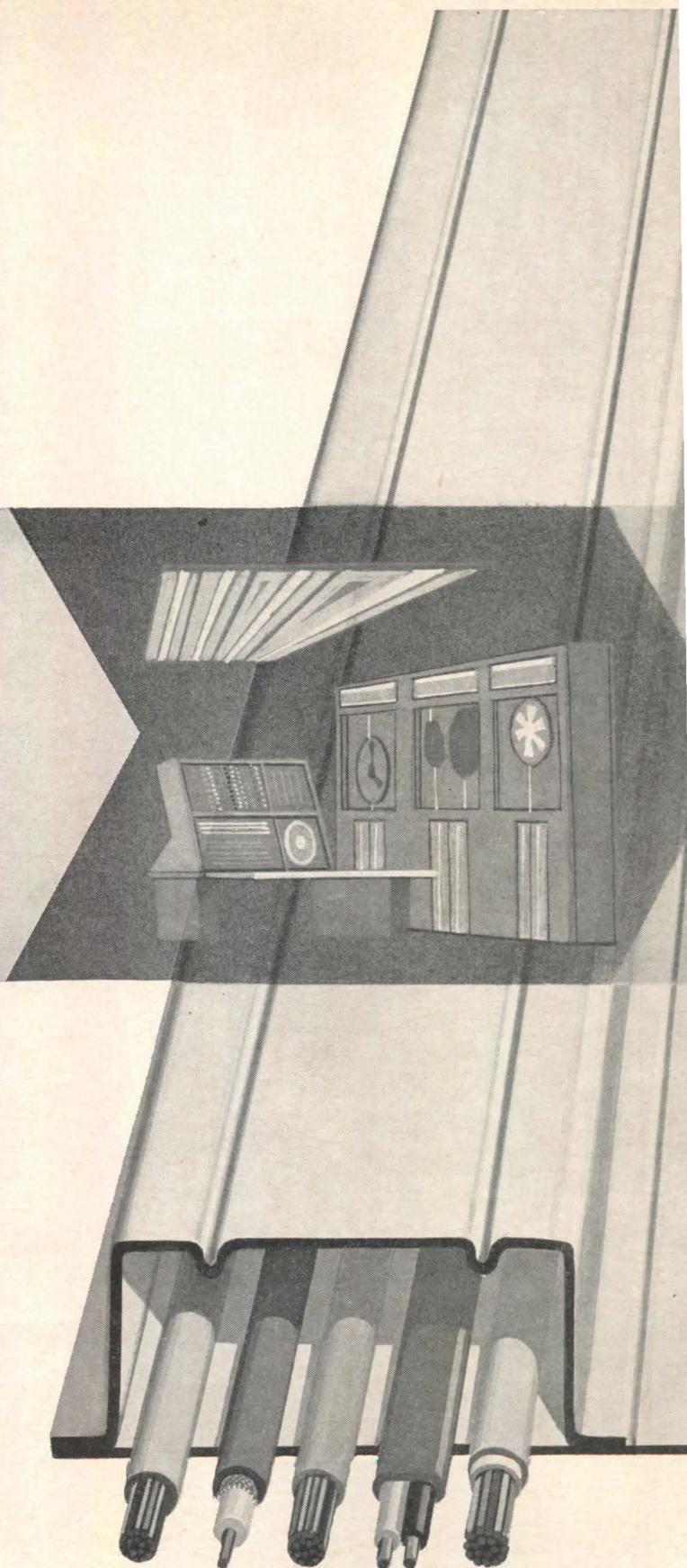
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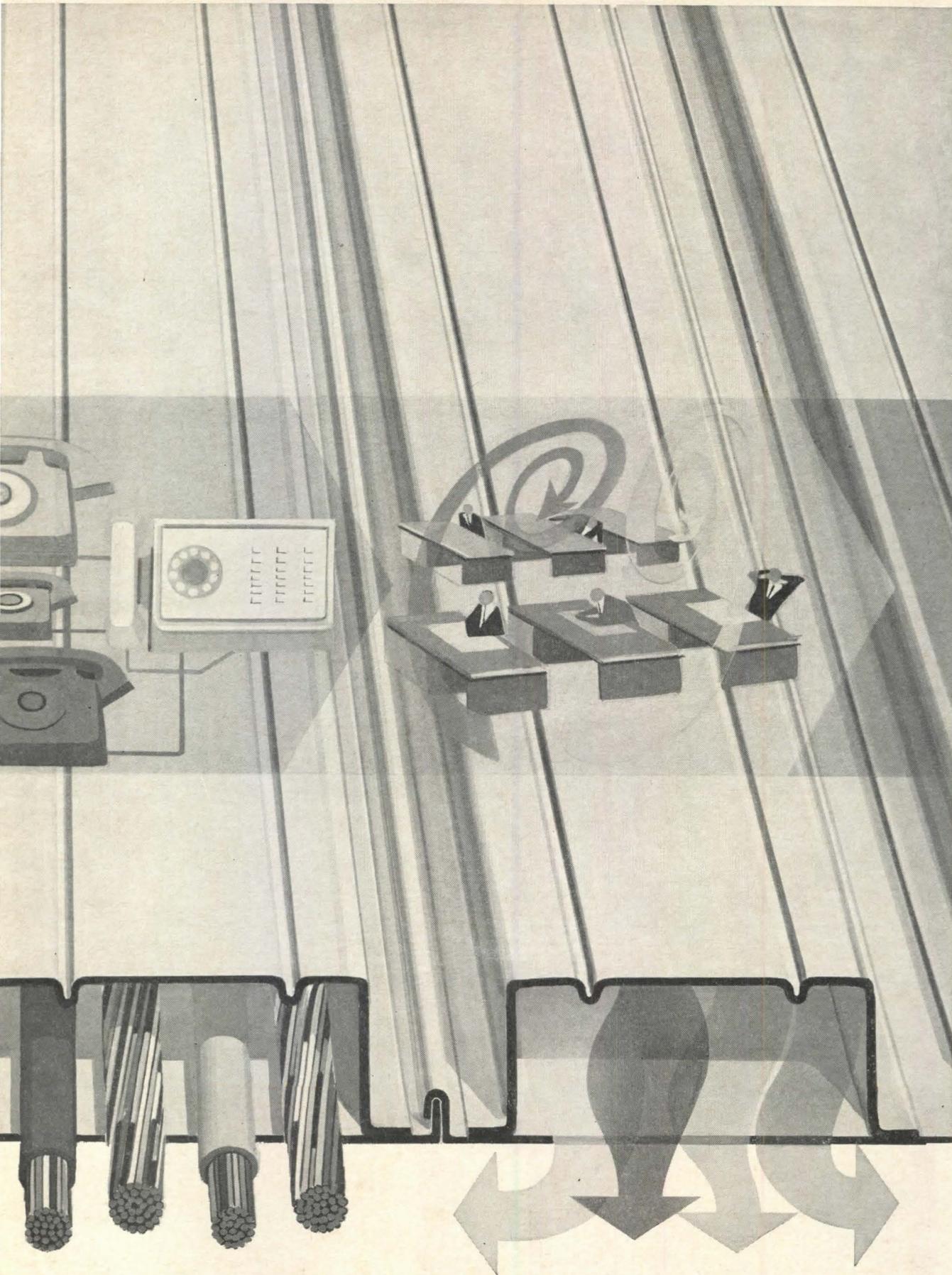
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PREVIEW

Architect Paffard Keatinge Clay has drawn up an expansion scheme for the San Francisco Art Institute that makes no concessions to the Mediterranean style of the school's existing plant. Yet the addition promises to complement the older buildings from almost any angle of view.

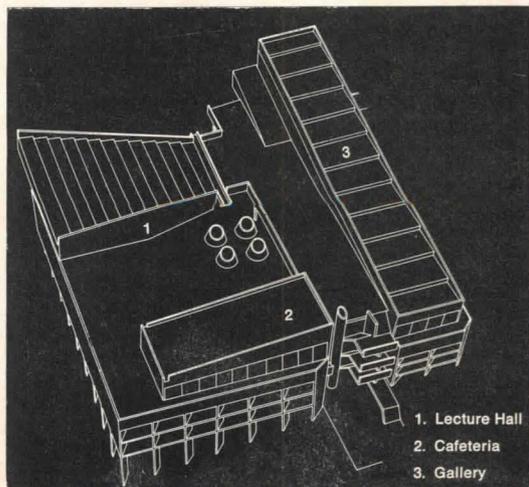
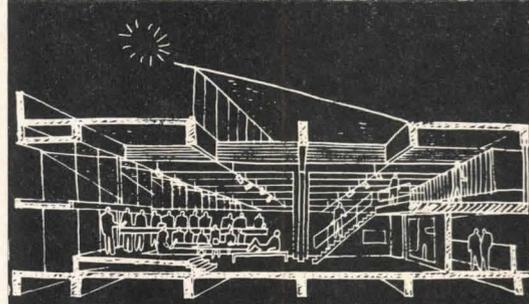
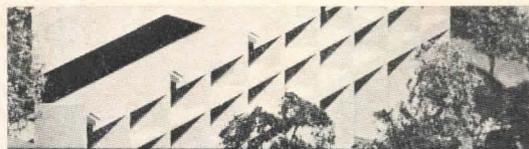
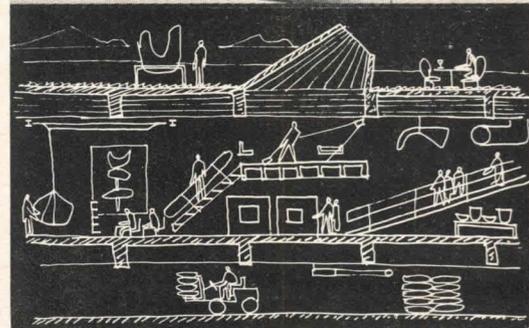
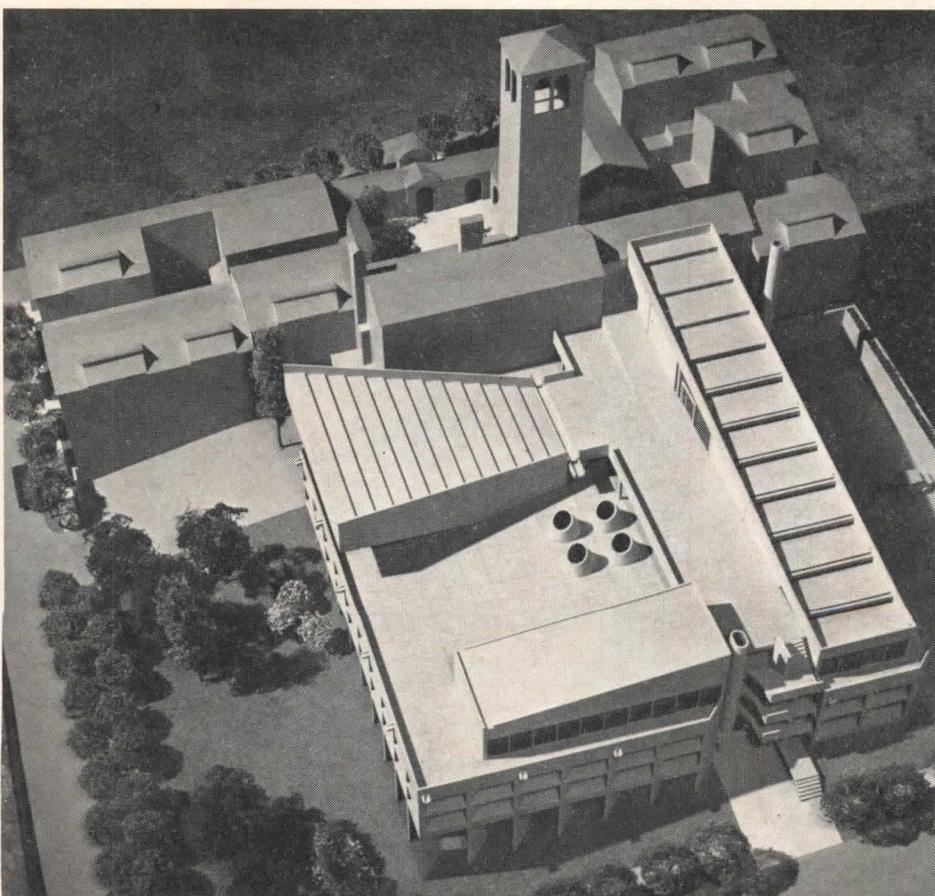
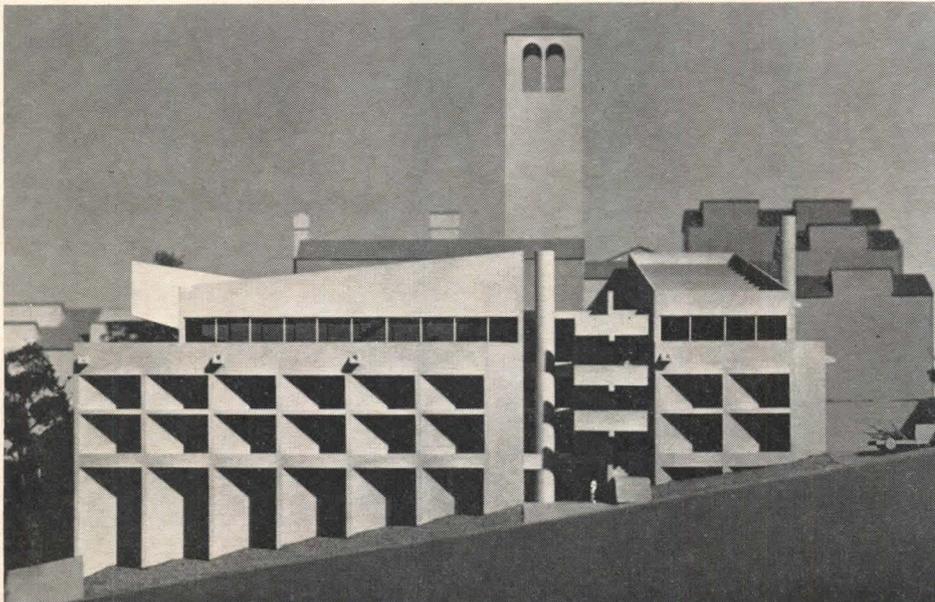
The organization of the addition is clear-cut. Studios for all kinds of art media will be located in a vast square block, 20 ft. high in-

side, which can be divided into rooms at any point or split into two stories in any area. On its roof will be three major auxiliary blocks (sketch, bottom right) around an open deck.

The forms and details—even the architect's sketches—show an obvious respect for LeCorbusier, but the familiar devices have been rationally used. The baffles on the studio windows will keep out morning and afternoon sun. Coni-

cal light scoops (top right) will bring light into the core of the studio block. The space between this block and the ground will be useful for delivering materials and removing trash (and the extension of the window baffles to the ground will screen these operations from view). The cantilevered end of the lecture hall will shade a clerestory for the studios beneath (middle right); its roof will double as an outdoor auditorium.

ARTFUL ADDITION



1. Lecture Hall
2. Cafeteria
3. Gallery

This school's steelwork is "painting" itself



Dos Pueblos High School photographed 10 months after erection. Architect: Cooke, Frost, Greer & Schmandt, Santa Barbara, California. Structural Engineer: Stanley H. Mendes, Santa Barbara, California. General Contractor: James I. Barnes Construction Company, Santa Monica, California. Structural Steel Fabrication & Erection: Griffin Fabricators, Inc., subsidiary of Griffin Steel and Supply Co., Inc., Bakersfield, California.

The exterior columns in Dos Pueblos High School, Santa Barbara, California, a 17-building complex, are made of the steel that "paints" itself—USS COR-TEN Steel. As it weathers, USS COR-TEN Steel develops a tight, dense oxide coating that seals out corrosion. If the oxide is scratched, it heals itself.

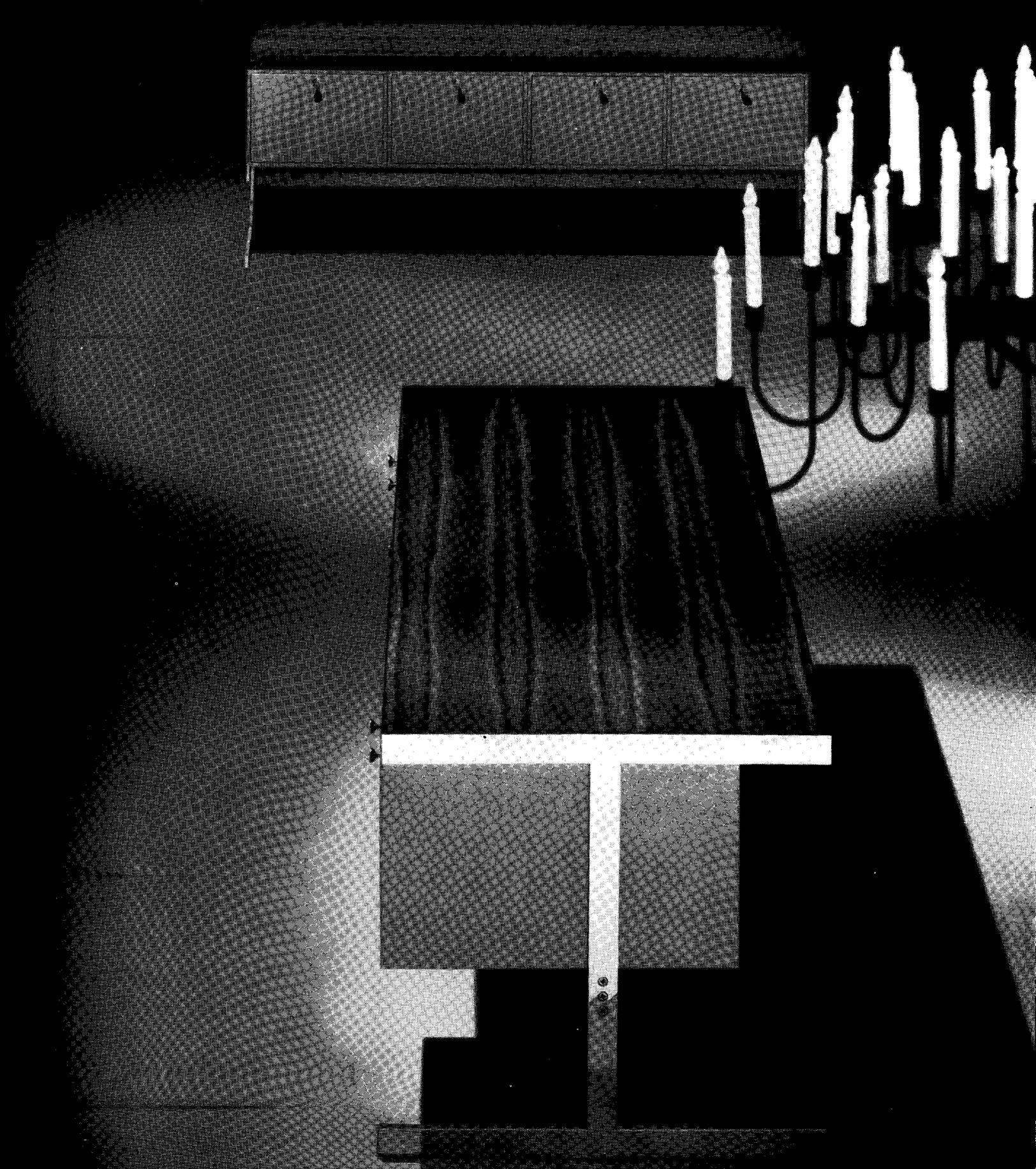
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"Positive. Olympic Solid Color Stain. Hides like expensive paint. But it costs a lot less. Easier to apply, too. Even over old paint. And it doesn't make a thick film over the wood; you can still see the natural beauty of the texture. Oh, and it's guaranteed. Won't crack, peel, flake or blister."

"That's a promise?"

"In 30 beautiful, living colors."

Olympic Solid Color Stain



'tis beautiful

"This is Olympic Semi-Transparent Stain."

"Beautiful!"

"Exactly. See how it adds color and depth without hiding the natural richness of the wood?"

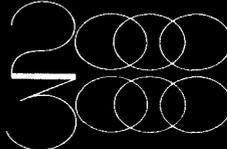
"Really shows off the grain and texture, doesn't it?"

"Right. And in 36 tones. That's why architects like it. And builders. 'Fact, anybody who likes wood likes Olympic."

"I like wood."

"I *knew* you were my kind of people."

Olympic Semi-Transparent Stain

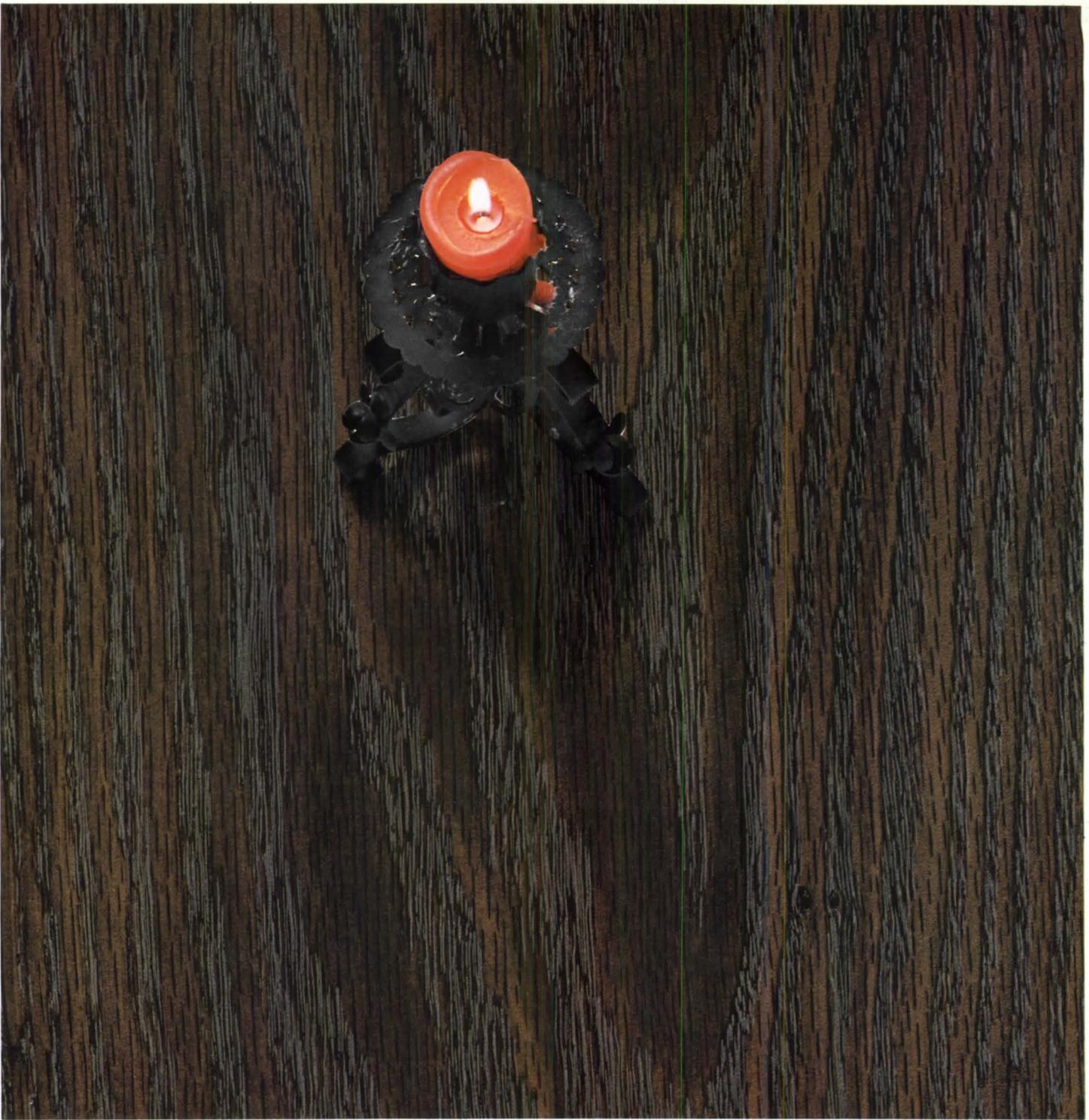
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All-Steel





Sculptured Spanish Oak, 344

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NEW! The only lavatory made especially for wheelchair patients

Why a wheelchair lavatory? We at American-Standard have thought that almost any person able to use a wheelchair should also be able to wash himself in comfort. In fact, he would prefer to do so—and it also frees an attendant. That called for a new kind of lavatory. After consulting with medical and hospital authorities, American-Standard developed the new, exclusive Wheelchair Lavatory.

The chair with seated patient rolls right under this lavatory because the trap is set away back, where knees can't strike. Even though it's a big 20" x 27", the patient can reach the faucets easily—the back ledge is punched for 12" centers to accommodate wrist-handle faucets or 4" centers to take a Push-Pull* single-control faucet. Any water splashed on the front or side ledges drains into the concave bowl. Like many American-Standard hospital fixtures, the new Wheelchair Lavatory is cast as a single piece of easily sanitized vitreous china.



American-Standard products are designed for people. That includes not only the young and fit, but also the elderly and sick. We will do anything to make life better for them and the people who care for them. That's why we designed the Wheelchair Lavatory, the only Perineal† Bath that bathes a seated patient in clean, running water, and a new wheelchair-height Cadet* toilet.

More of these specialized products for hospitals and nursing homes are on the way. Our catalog of hospital fixtures will continue to grow as we continue to identify and answer the problems of people. For more information see your American-Standard representative. Or write American-Standard, 40 West 40th Street, New York, N.Y. 10018.

No square corners here.

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Mosaic really knows how to take the edge off things.

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too: on buildings, plazas, structures of many kinds. It's rich in urban renewal possibilities.

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Mosaic Tile. *Today's* tile.

For samples, colors and prices, contact any Mosaic Regional Manager,

Branch Manager or Tile Contractor. Look under "Tile-Ceramic-Contractors" in your Yellow Pages.

Mosaic Tiles shown in photo are: *Walls* — 622 Light Golden Olive, Velvetex, 1" x 2". *Enclosure* — Outside, No. 9 Peacock Blue, Staccato. Inside No. 11 Opal. Both 1" x 1". *Floor* — 250 Bluegrass Green, Quarry Tile, 8" x 3 $\frac{3}{8}$ ".

MOSAIC

® "Mosaic" is the trademark of The Mosaic Tile Company
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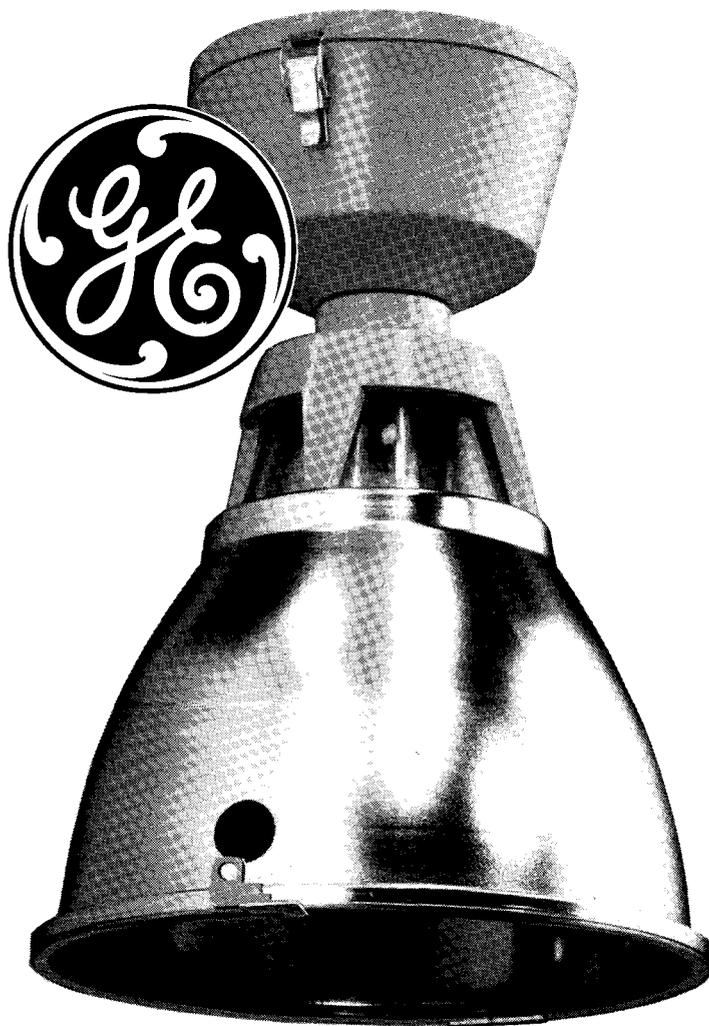
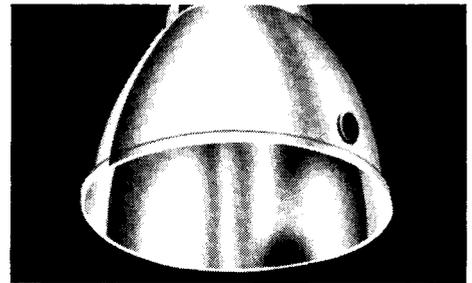
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makes the
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*New activated charcoal filter keeps dirt away from lamp, reflector and inside door glass. Even enclosed luminaires "breathe" air in and out through natural expansion and contraction of the air inside. But the filtered optical assembly in Filterglow fixtures permits the entrance of *cleaned air only*. The results: an absolute minimum of efficiency-reducing dirt build-up inside, better maintained light output, and less frequent cleaning.*

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Available in single or twin units and many beam spreads for lighting with mercury-vapor, Multi-Vapor™ or Lucalox™ lamps. There's also a complete line of open units. See your GE Sales Engineer or authorized agent for full details. Or, write for Bulletin GEA-8364 to General Electric Company, Section 460-94G, Hendersonville, N. C. 28739.

GENERAL  ELECTRIC

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Will your buildings look this good after ten years?

They can with durable stainless steel designed into interior areas subject to heavy traffic and exterior areas likely to get harsh treatment from the environment. The Morton International, Inc., building is ten years old, and just look at the recent photos of the stainless steel components.

Entrances, phone booths, elevator doors, wall panels—all in heavy traffic areas and the stainless looks like new. A few other stainless touches such as lobby furniture and planters add lustrous accents. When you consider that other materials may have to be replaced early and often, stainless steel probably costs less, too.

Stainless steel offers another big benefit to the architect and building owner. It is just as appropos outside the building as inside. In heavily industrialized and urbanized areas, its excellent resistance to atmospheric corrosion preserves the inherent beauty of stainless canopies, columns, windows, and other components. Rain keeps most dirt from accumulating, and a periodic washing will remove any that does. Morton International, Inc., does the job annually.

In that building you're designing now, consider durably attractive stainless steel for exterior components that meet the public's eye, for richly lustrous accents anywhere inside or outside the building. The neutral tone of stainless steel is compatible with other materials. An experienced architectural stainless fabricator can provide invaluable assistance in designing for economical, efficient fabrication with this material. For the names of such firms, write Armco Steel Corporation, Dept. E-2687, P. O. Box 600, Middletown, Ohio 45042.

All photos were taken this summer at the ten-year-old Morton International, Inc., building in Chicago, headquarters for the firm's seven divisions including Morton Salt Company and Simoniz Company. Stainless Steel components shown include canopy trim and supports, entrance, mullions, windows, elevator entrances, phone booths, lobby furniture, planters, wall-hung ash trays, and front wall in lobby. Photos have not been retouched.

Architect: Graham, Anderson, Probst & White, Chicago



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ARMCO STEEL



stop rubbing concrete!

SAVE TIME, LABOR AND MONEY—CREATE A WATERPROOF, POSITIVELY BONDED SURFACE WITH
THOROSEAL PLASTER MIX AND ACRYL 60



BEFORE 1. Concrete wall showing imperfections, varying gradations of color, honeycombing and protruding tie rods.



2. Workman removes loose concrete and cuts back tie rods too close to surface. Area will be thoroughly cleaned with water or forced air before patching.



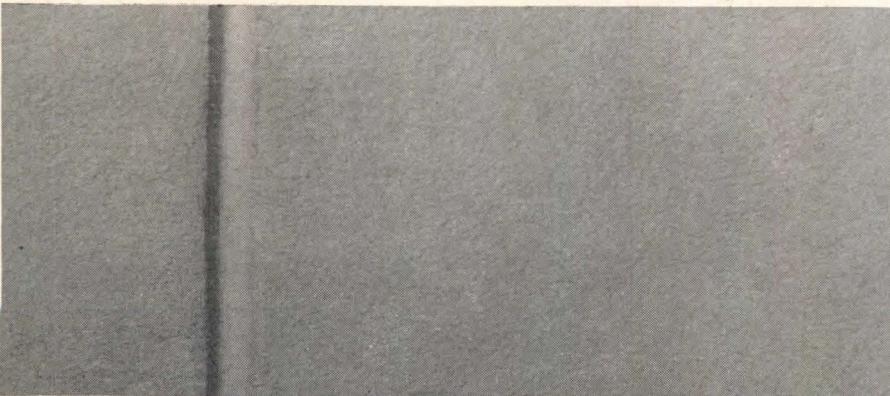
3. THORITE quicksetting, nonshrink, nonstaining patching mortar, is being forced into holes. Before doing this, workmen applied a "slush coat" of THORITE.



4. Trowel application of THOROSEAL PLASTER MIX-PLUS-ACRYL 60* (one part to three parts water) is being applied to concrete surface filling all voids.



5. After THOROSEAL PLASTER MIX has set, so it will not roll or lift, workman follows with a sponge float and the surface is uniformly floated.



AFTER 6. Finished surface is beautiful, uniformly textured, evenly colored and boasts complete waterproof protection that lasts as long as the wall stands! And—no rubbing!



Find out more about how you can save time and money by eliminating concrete rubbing costs. Write for Cir- #95 today.

*For a strong, positive bond, use job-tested ACRYL 60 whenever you use THOROSEAL PLASTER MIX.

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