

ARCHITECTURAL FORUM THE MAGAZINE OF BUILDING JULY 1963

FORUM





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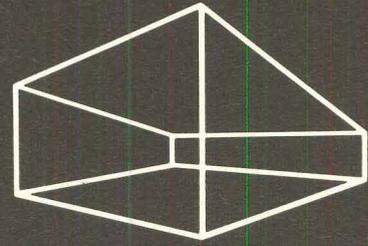
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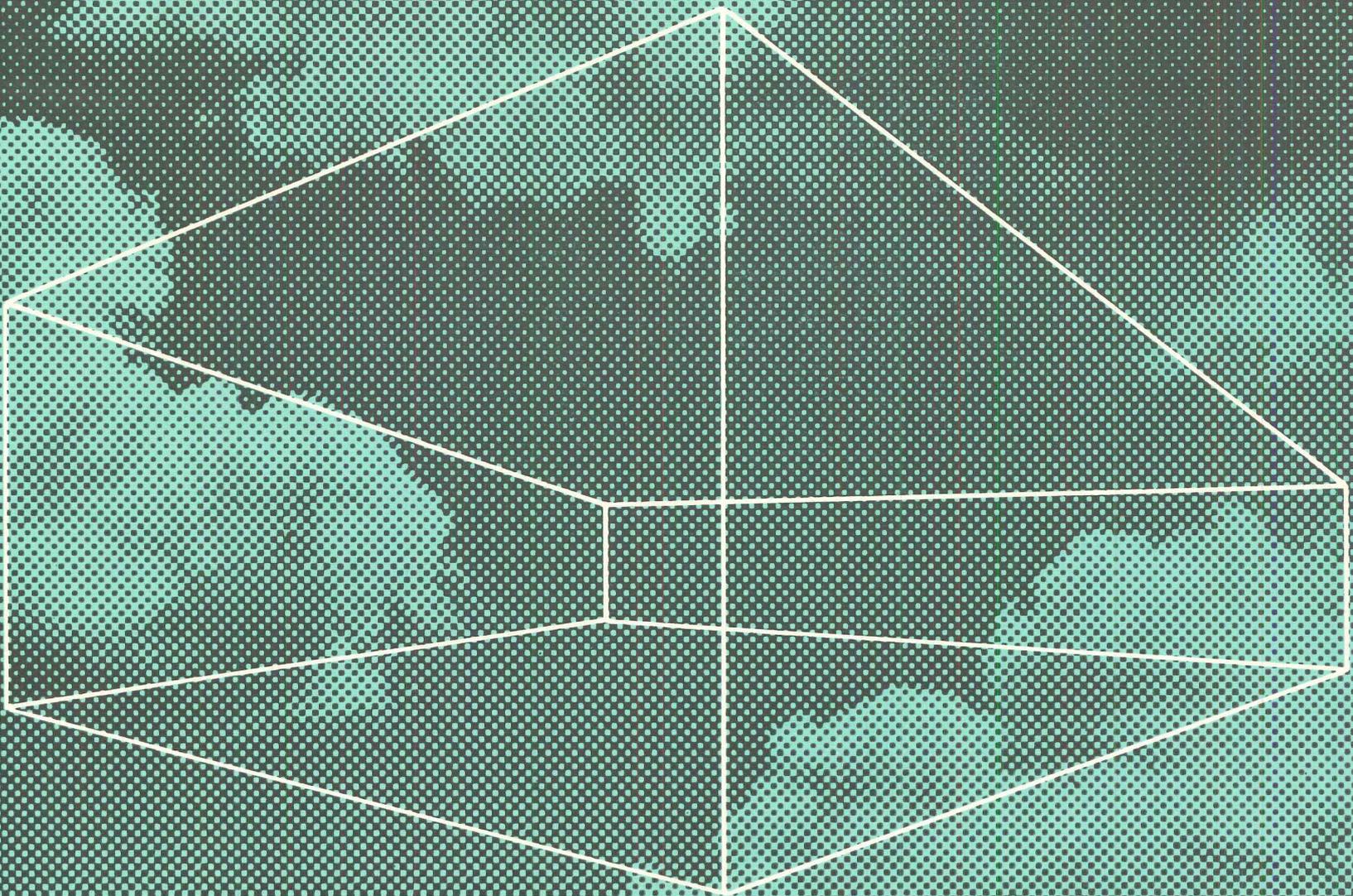
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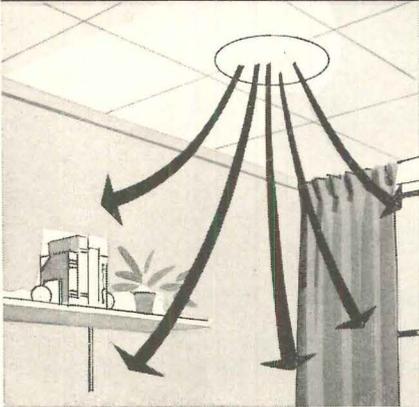
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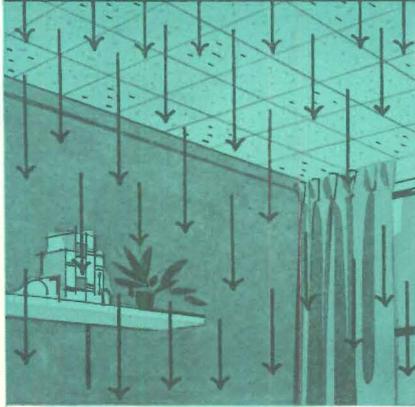
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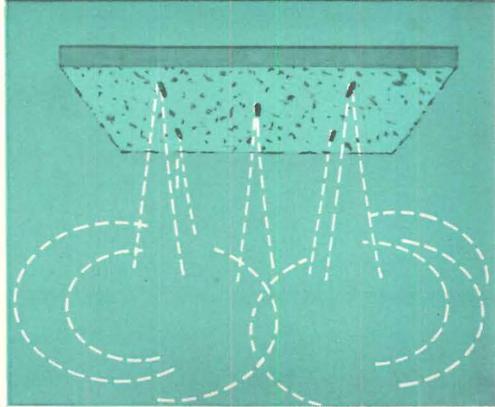
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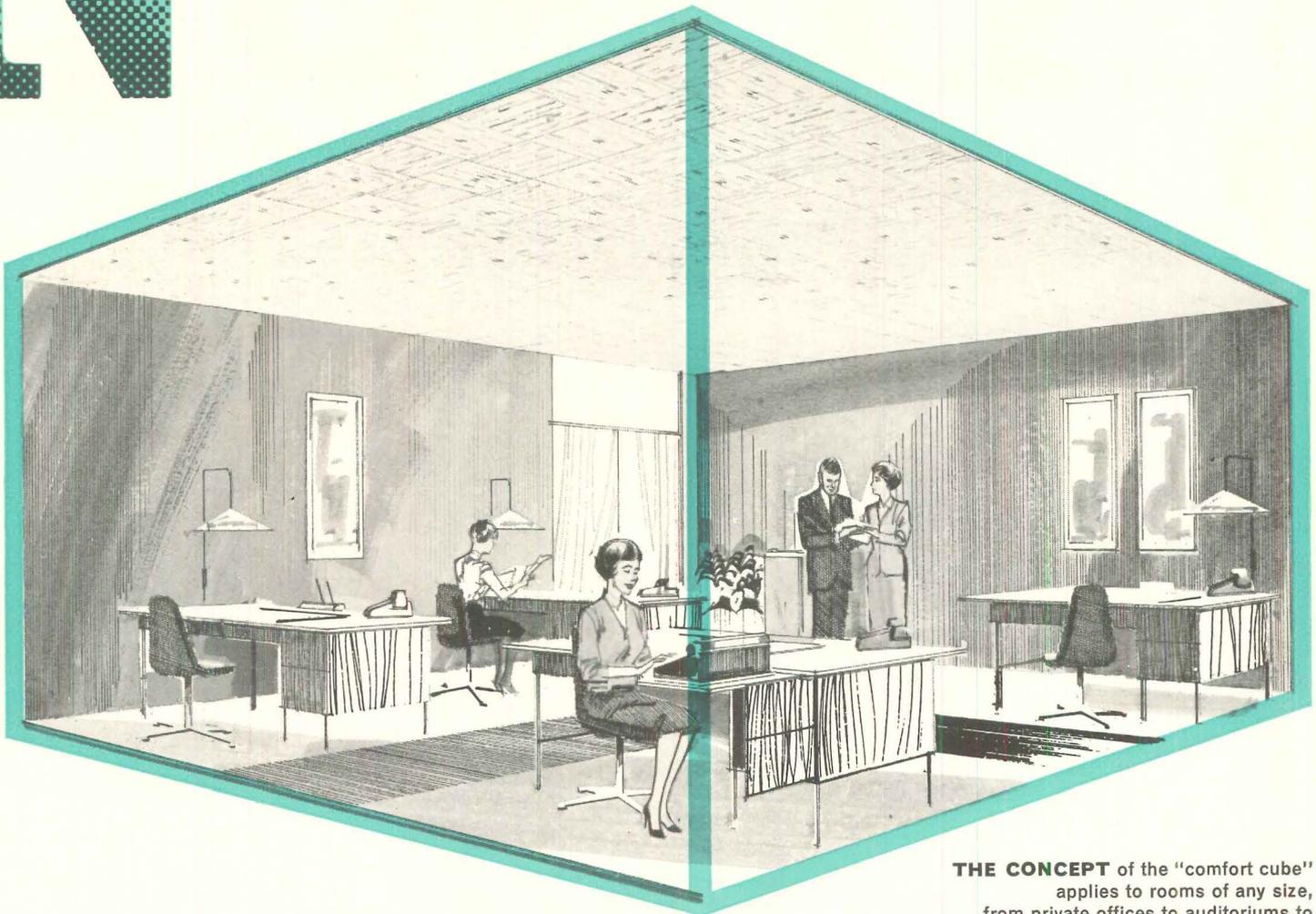
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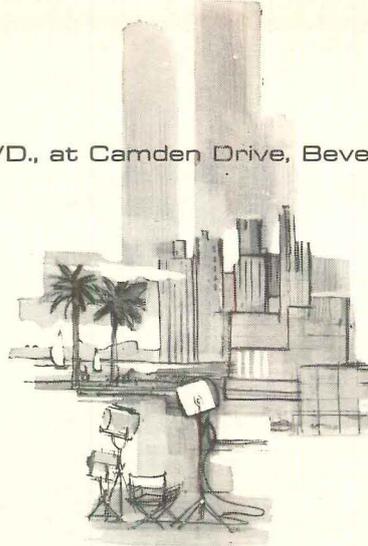


N*



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The "Seagram tax" . . . pop art . . . St. Sophia

WHY TAX QUALITY?

Forum: The decision to establish a new tax category for prestige buildings such as Seagram's (May, '63) in one stroke wipes out 100 years of effort for city betterment. It nullifies the efforts of architects, planners, and planning commissions everywhere, which have been directed toward the step-by-step, dollar-by-dollar, day-by-day improvement of a building here, a street there, or perhaps a whole district through redevelopment. This slow process of planning, of beautifying, of providing light and air and open space—which is gradually gaining strength in the minds of those agencies, which have the power to effect changes—will be brought to a grinding halt.

How can one possibly justify penalizing the very buildings that transform the city and enhance it both physically and economically?

San Francisco has recently been considering a far wiser approach to its cityscape: to give building owners a tax *reduction* should their buildings provide the city with open space, lower density, or a building of outstanding beauty that benefits the city.

It is the hope of everyone who is concerned for the future of urban environment that the Tax Commission will reverse its decision and assess on the basis of market value alone.

San Francisco

NEILL SMITH
Architect

Forum: Congratulations on the excellent editorial regarding excessive taxation on the Seagram Building as a "prestige" structure.

Does the Chief Justice of New York's Supreme Court pay more state income taxes than a Justice of the Peace, because of his greater prestige?

This would appear to be a flagrant example of government greed in an age of avaricious governments. It is also a further manifestation of the current governmental trend toward penalizing successful private enterprise.

FRANK C. MOFFETT
Mountlake Terrace, Wash. Architect

Forum: As President of the Instituto Mexicano de Valuacion, A.C. (Mexican Institute of Appraisers), I feel your magazine does not offer an impartial opinion. The City of New York is not responsible for the mistake of an unbalanced Seagram's investment. Architects are responsible for the creation of value through a sound economical study of the investment (highest and best use); they should create monuments that are sound investments for their clients.

On the other hand, Seagram has all the right to prove that value is a result of the capitalizing of net rental income.

No nation, city, or county can sacrifice real estate taxes on account of the private construction of rental buildings with the purpose of creating their own prestige. The

only way to establish the market value and prove that this tax assessment is wrong is to sell the building and lease it back.

MARIANO ALGOCER
Mexico City Banco Nacional de Mexico

Forum: Since the New York courts have now defined good architecture as "conspicuous waste," a significant gap has been filled in our American syndrome of the culturally insane. (Is there a way that this aberration can be taken to the Supreme Court?)

If "the power to tax is the power to destroy," the courts' decision should be not only nullified but exactly reversed. The U.S. needs a tax on ugliness, not on quality.

HARRY COMPTON
Lawrence, Kansas School of Engineering & Architecture University of Kansas

Forum: I read with horror your May news section and editorial. If revenue must be obtained by taxing an intangible such as beauty or quality, why not tax some of Seagram's neighbors for their *lack* of quality, elegance, etc.? This would be equally ridiculous, but the city and state would get their precious revenue, and in so doing might promote buildings which would contribute toward making New York City's appearance equal to its prestige.

MRS. JOHN T. O'HARA
Baltimore

CHANGING ARCHITECTURE

Forum: I am bewildered by "Ulrich Franzen: Architecture in Transition" (May, '63). I wonder if this new main stream in architectural thinking is really only a product of man's own restlessness, here seeking change rather than development.

The work of the great Sullivans and Van der Rohes of history was generated by the implications and developments of their periods. Have we really the right to deny this association with social and technical progress? In fact, isn't architecture actually lagging behind social and technical progress?

DARIO RITCHER SANTI
Washington, D.C. Student Catholic University of America

WATTS TOWERS

Forum: I was gratified to read that "civilization wins a round" (*Editorial*, April '63). The Watts towers are surely the greatest monument ever built in America—and "They" wanted to tear them down! But they didn't and so Los Angeles, which is where one would expect, has the best "pop art" yet.

THOMAS G. KILLIAN
New York City

LICENSE UPHELD

Forum: In "People in the News" (Nov. '62) you reported that the Court of Common Pleas had reversed a decision of the State Board of Examiners to revoke my license [on grounds that Mr. Burchard had

fraudulently allowed a corporation to practice architecture under the guise of a complementary architectural partnership—ED.].

The Board has since appealed this decision, but the Court of Appeals granted our motion to dismiss the appeal. The Board has made no attempt to appeal further, and the time limit has now expired. The case is therefore finally concluded in my favor.

Let me thank you for your unbiased and fair reporting of this awkward situation.

CHARLES BURCHARD, Partner
Cincinnati A. M. Kinney Associates

EVALUATION OF ART

Forum: The conjunction of your Bankers Trust and Alexander Liberman picture stories in the April issue emphasizes one area in which you certainly have shied away from publishing criticism. "Prodigious and eye-catching effects" can hardly be considered a serious comment on the Henry Dreyfuss selection of art for the bankers, while your rave review of Liberman's aluminum sculptures appears to be based on a predilection for machine art without examining the function of art in architecture or evaluating his work in the commissioned situation.

If contemporary architecture is ever to get away from the self-conscious functionalism of most designers, it will be through the use of warm, humanistic art to offset the refrigerator sanitation of its public areas. Perhaps the completion of the Pan Am building will provide an opportunity for a serious evaluation of architectural art.

PETER COHEN
New York City Muralist

LANDMARK HOTEL

Forum: The tall toadstool in Las Vegas (*Building in the News*, April '63) ought to help set architecture back a few years.

RICHARD A. OSKI
West Springfield, Mass.

YAMASAKI'S SKYSCRAPER

Forum: Congratulations on your article about Yamasaki's first skyscraper (May '63). Very well done.

NATHAN DUNLOP FAIRBAIN
Los Angeles Architect-Sculptor

ST. SOPHIA

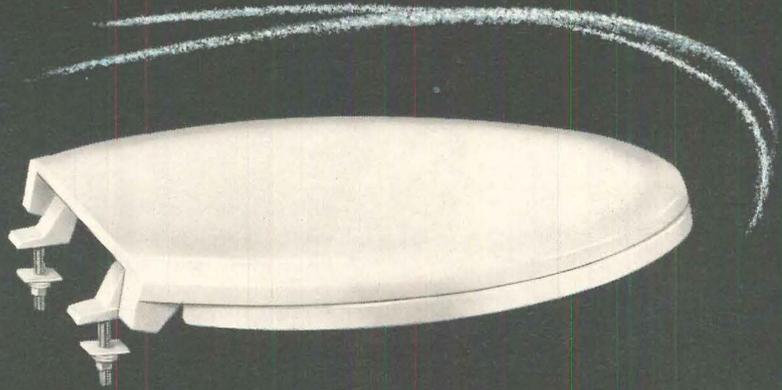
Forum: Your May issue is well worth writing about. The article on Hagia Sophia was excellently presented, and worthy of a major publication. There are countless buildings of the past that are worth study by today's architects.

RENE CARDINAUX
San Francisco Architect

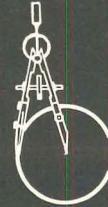
Forum: Thanks for the fine article on St. Sophia (May '63). This beautiful building that has stood for 1,400 years makes our little efforts seem small indeed. What is the life of a skyscraper . . . 50 years? All our

continued on page 45

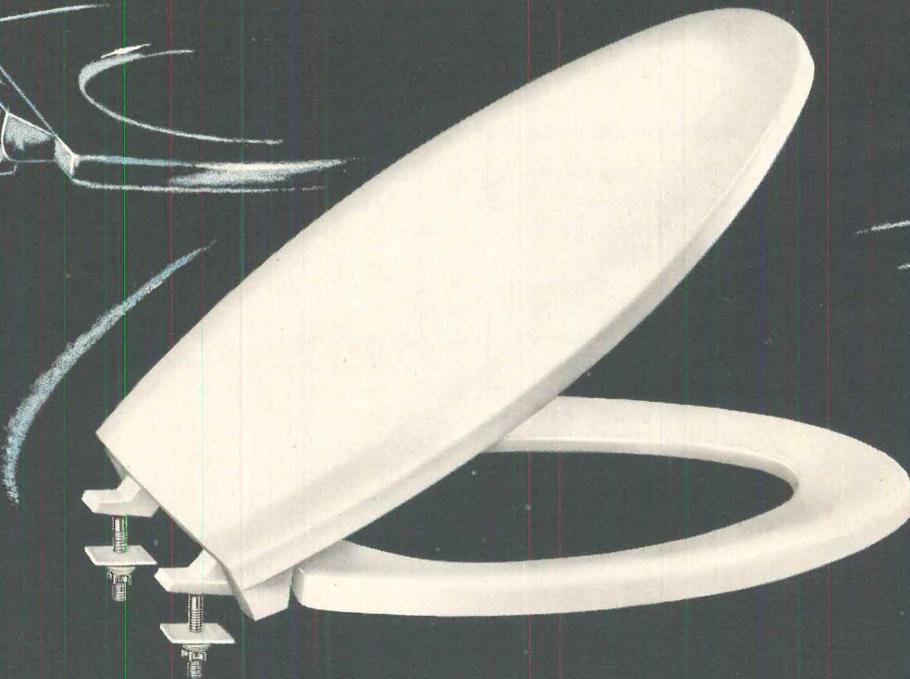
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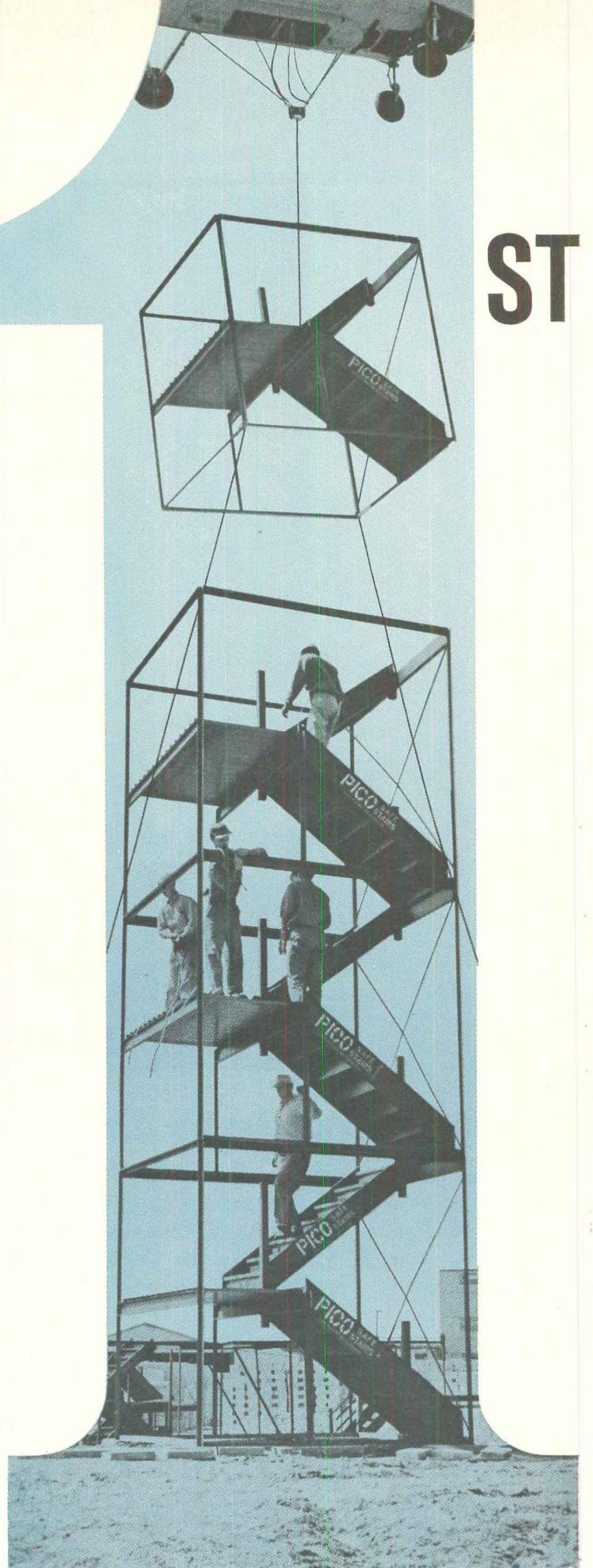
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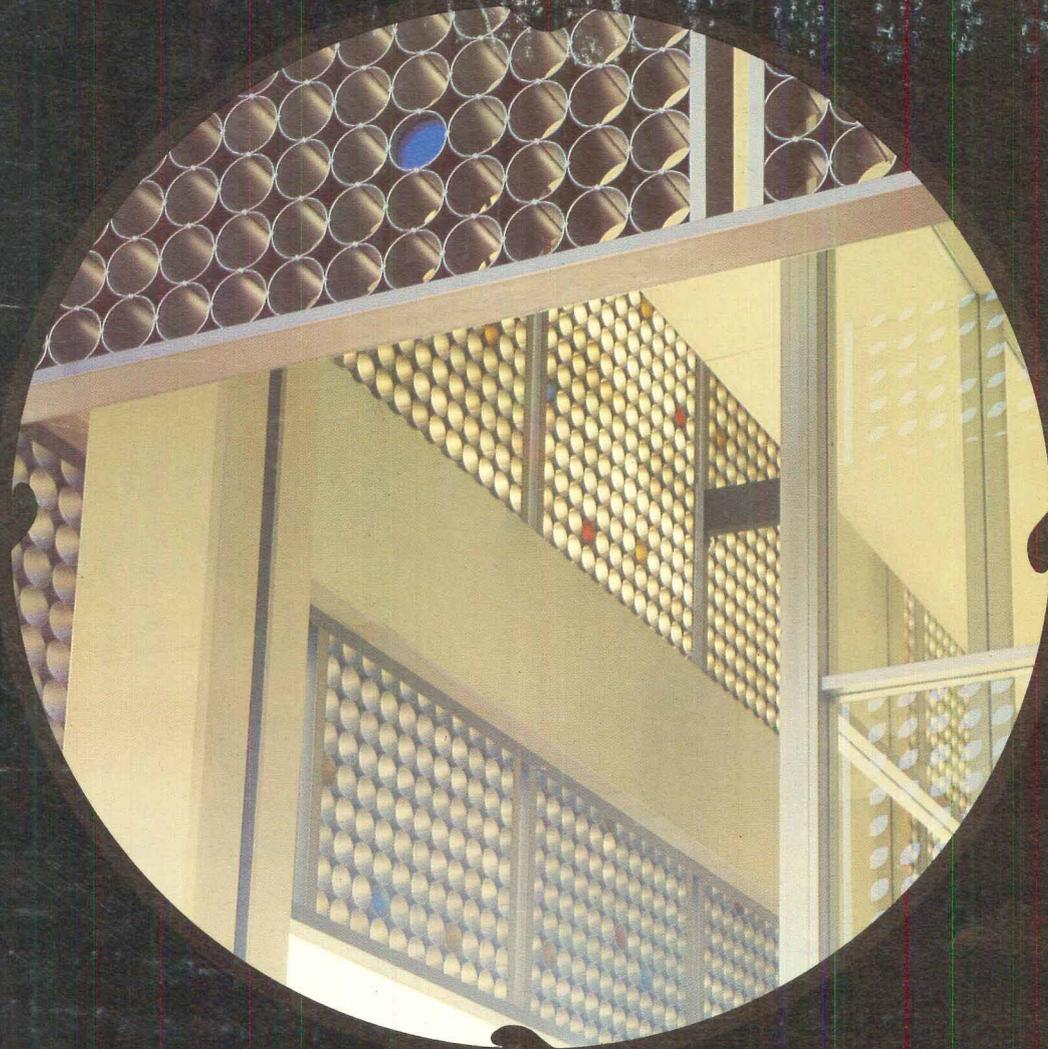
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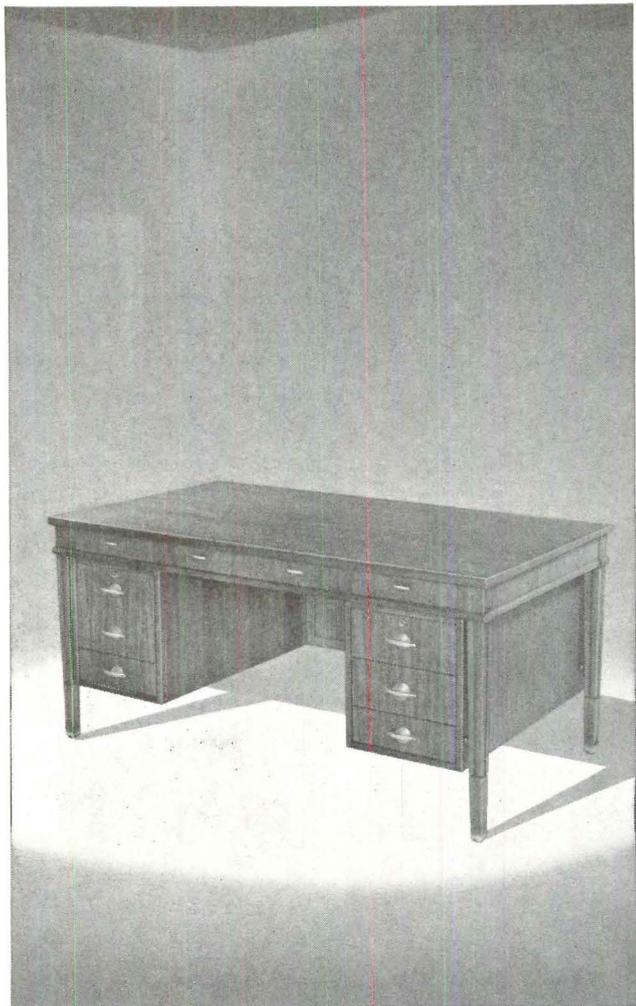
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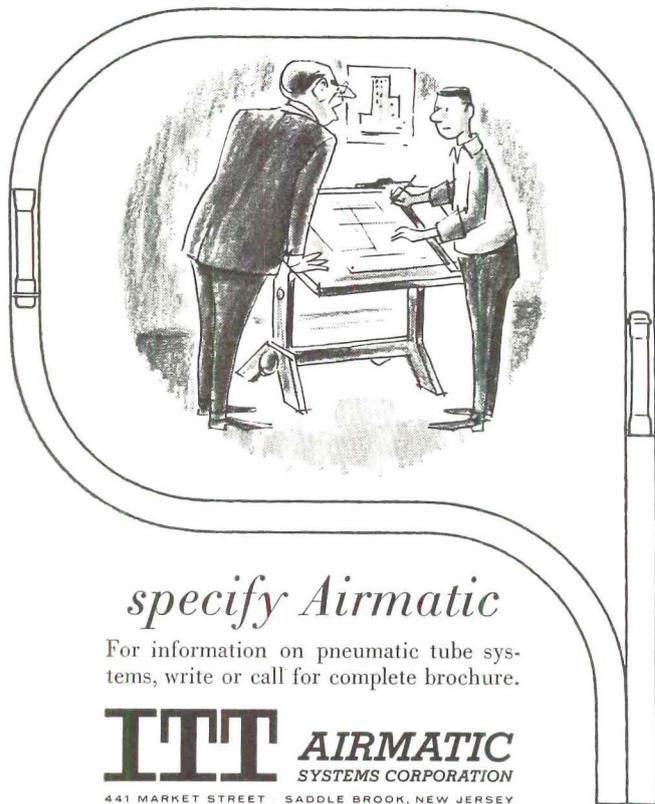
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RANDOM HOUSE



continued from page 37

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T. LOFTIN JOHNSON
Mount Kisco, N. Y. Architect

ERRATA

Forum: In the article about Detroit in the May issue ("The Office Building Boom"), the building pictured is the almost completed new Detroit Bank & Trust Building, *not* the First Federal Savings & Loan Building, for which construction has just recently started. A correction will be very much appreciated by all parties concerned with both of these fine structures.

Congratulations on your fine article about the new Michigan Consolidated Gas Building, another fine new structure in Detroit.

KENNETH DRAKE ASSOCIATES
Detroit Public Relations Counsel

■ Forum apologizes for an unfortunate case of mistaken identity. For the real First Federal Savings & Loan Building, see Projects, page 57. Architects of the Detroit Bank & Trust Building in the May issue are Harley, Ellington, Cowin & Stilton, Inc.—ED.

Forum: Thank you for the fine presentation of the Holy Family Ukrainian Catholic Church in Winnipeg (*Abroad*, May '63). Though I was responsible for the design, the architectural firm of Zunic & Sobkowich was in charge of working drawings through supervision, and credit is also due them.

RADOSLAV ZUK
Winnipeg Architect

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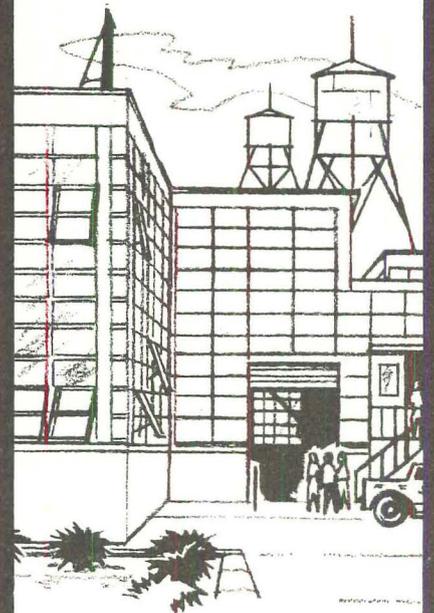
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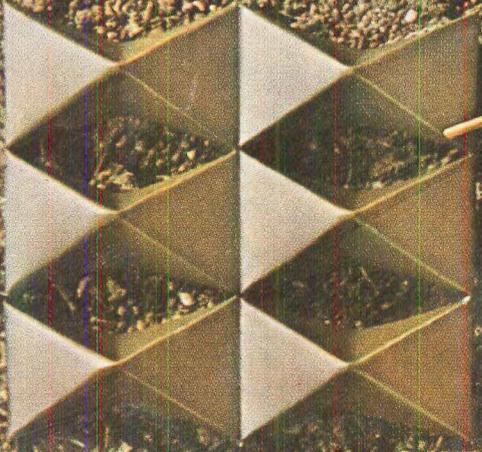
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PUBLISHER'S NOTE

In May, readers of FORUM were given an opportunity to comment on the editorial content of the magazine by mailing to the editors a prepaid postcard which was bound into the advertising pages. This opportunity was quickly seized by about 500 subscribers (261 cards were received within seven days after distribution of the issue). By checking various subjects, they indicated what they would like to see more or less of in FORUM.

The results were more interesting than helpful, for in general they indicated that most readers want to see more of everything! Each of the 13 subjects listed on the card received many more votes for than against. On the other hand, every subject also received some negative votes, and they were spread fairly evenly among all 13 subjects.

Some significance may be attached to the fact that two subjects did receive a great preponderance of affirmative votes: "the art of architecture" (69 per cent for vs. 5 per cent against) and, close behind, the closely allied subject of "architectural criticism" (62 per cent vs. 7 per cent). Interestingly, both of these subjects are covered regularly in FORUM's editorial content.

Among the write-in requests, the most frequent were for scholarly presentations of historical buildings like St. Sophia (FORUM, '63) and for "more student work" (obviously, from students). Most surprising was the write-in vote of a draftsman for "more of these reader comment cards."

Although, broadly interpreted, the returns constitute a landslide vote of confidence, the editors promise no complacency. Indeed, analysis of the individual returns may help them make the magazine even more interesting to even more readers.

Another measure of reader interest in FORUM is the survey conducted among subscribers every other month by Readex, Inc. For the April issue it showed that the article on the architectural work of the Saarinen office was the most interesting in the magazine. Runners-up were the list of the 100 biggest architects, and the discussion of ways to avoid high maintenance costs in apartment construction. The reader interest scores for these three very different kinds of articles—by classification of subscriber—are tabulated below.

At the other end of the scale, no article in the April issue interested less than 40 per cent of the audience—i.e., about 25,000 of FORUM's more than 62,000 subscribers.

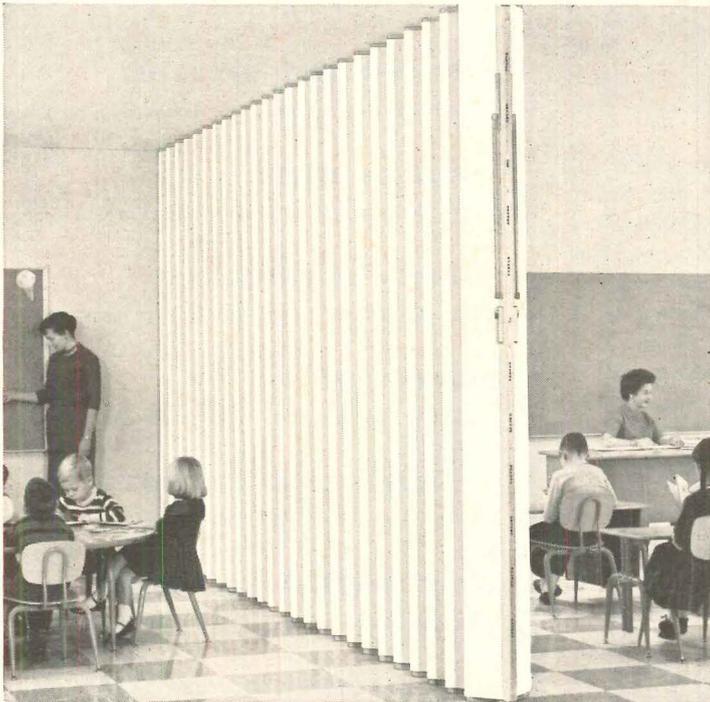
Despite the validity of such figures, FORUM is not edited on the basis of survey results—and never will be. Instead, the editors will continue to present what they feel *should* interest the building industry. The reader interest survey is merely a useful check-up on past performance. Moreover, the editors are less impressed by anonymous statistics than by signed letters, like those regularly presented in the "Letters" column (page 39). This page is yours—

J. C. H., JR.

Article	Architects	Contractors	Clients	Total
Saarinen office	85%	86%	60%	71%
Apartment maintenance	64	71	58	61
Biggest architects	74	57	63	67

PORTICO TO THE JET AGE	72
<i>Washington's Dulles Airport opens for business</i>	
HOW TO PICK AN ARCHITECT	84
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WHITE ON WHITE	96
<i>New Texas shopping center is a village of cool cubes</i>	
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<i>How the Athens Hilton violates its city—by Vincent Scully</i>	
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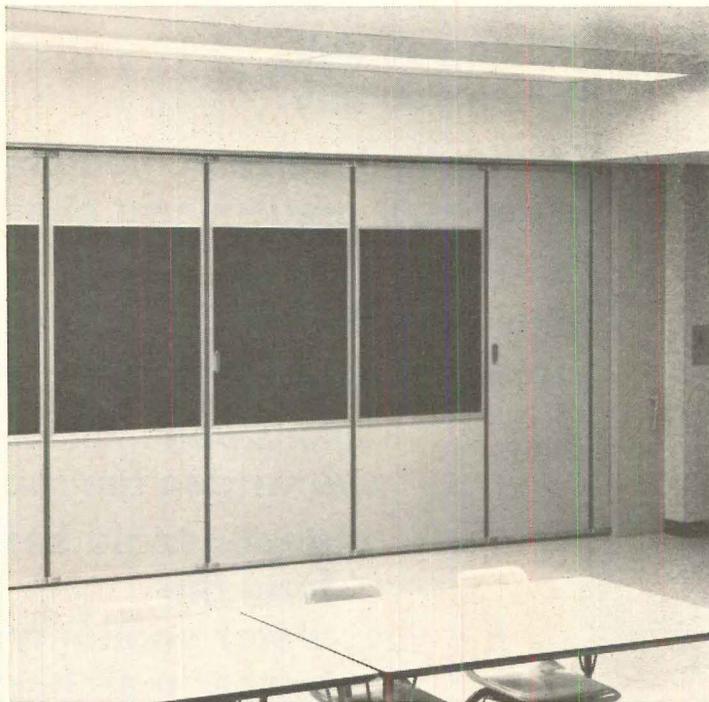
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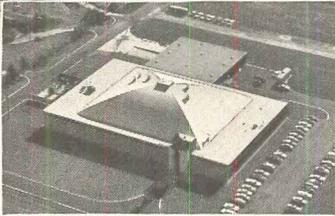
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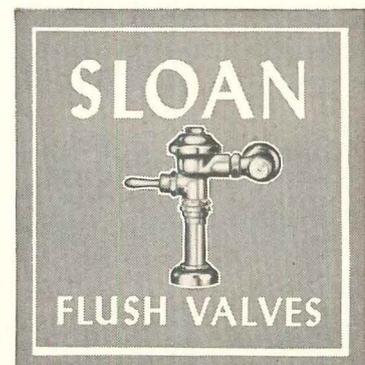
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Building trades singled out by the NAACP (below)
Zeckendorf's empire teeters (page 7)
Philip Johnson's newest museum opens (page 8)
Unions devise anti-slump measures (page 11)

NEGROES ATTACK BIAS IN BUILDING TRADES

The midsummer 1963 drive for racial equality found the nation's biggest industry caught squarely in the middle—between the biggest building boom on record and the relentless determination of Negroes to end long-standing job discrimination in the building trades. In New York and Philadelphia this meant work stoppages, and, in scattered instances, picket-line violence. In other cities, North and South, it meant re-examination of long-held positions of excluding nonwhites from skilled construction jobs. And in Washington, it meant new moves to outlaw bias in federally aided construction.

Unemployment problems spur the NAACP's efforts

NAACP Labor Secretary Herbert Hill made it clear that the building trades would be a primary target of this summer's push for equal job opportunities. "The arena of combat," he said, "has moved from the courtroom to direct, mass action." His proposed action: to picket all building projects involving federal funds.

Hill, like other Negro leaders, is aware that in no other industry are so many opportunities being walled off because of race as in construction. Furthermore, it is one of the few remaining industries which call for a large force of skilled or semiskilled labor, and, with automation steadily cut-

ting into job potential in other fields, building becomes relatively more important to Negroes. (In the U.S., 12.7 per cent of the Negro labor force is unemployed, compared with only 5.9 per cent of the white labor force. In most cities, the problem is even more acute: e.g., of Chicago's 900,000 Negroes, 18 per cent are without work.) Yet, as the Reverend Maurice A. Dawkins, a NAACP leader in Los Angeles, said: "We have found that in many instances unions are worse than management in discrimination against the Negro." Hill agrees, and singles out among the "worst offenders" the Sheet Metal Workers, the

Electrical Workers, and the Lathers union.

Philadelphia was perhaps the most compelling case in point last month as pickets arrayed themselves at the site of the Municipal Services Building in Penn Center across from City Hall, and later at a public school site, demanding more job opportunity for Negroes (see photo). Violence flared at both sites when policemen tried to quell the near-riots, and work was halted.

More revealing than the violence in Philadelphia was the ensuing testimony before the city's Commission on Human Relations. Uncovered were such statistics as this one: in three highly skilled building trade locals with a combined membership of 4,700, there is one Negro member.

Other cities reported only slightly more encouraging figures: New York has 2 per cent Negro enrollment in the skilled building trades—and that is concentrated in the "trowel trades." A Chicago hearing showed there were only 200 Negro members in skilled trades unions whose enrollment totals 7,000.

Behind these figures lay one ma-

ior fact: Negroes everywhere have a hard time gaining equal entrance to apprenticeship programs and recognized trade schools. St. Louis, selected as a test city by the NAACP in 1962, has a fine trades school, yet it has only seven Negro students out of a total enrollment of 797. In Chicago, graduates of the all-Negro Dunbar Trades School find it extremely difficult to enter some unions even after acquiring skills, while Washburne Trade School graduates, only a handful of whom are colored, have little trouble.

Legacies. Some unions have a strong father-to-son tradition which presents an obstacle to equitable treatment. One example is Philadelphia's Sheet Metal Workers International, Local 19. Explains local boss Joseph F. Burke: "People in banks and department stores, doctors, lawyers—they all try to get their sons into the same work they're in. Do we have to go out and look for Negroes and bring them in by the hand when we have more than enough applicants as it is? And when we have a very serious unemployment problem in our own union?"

Burke's feelings are echoed elsewhere, for building-trades unions have traditionally had to maintain an oversupply of members to meet boom requirements. Consequently, there is unemployment within the unions themselves at all but boom periods. Besides, say, union leaders, the unions do not really discriminate. Negroes do not apply for admission, although they certainly could. These leaders admit, however, that the Negroes—and other applicants—might have to wait for up to four years before they can be enrolled because of the waiting list.

To unemployed Negroes, the answer to the problem seems clear,

continued on page 7



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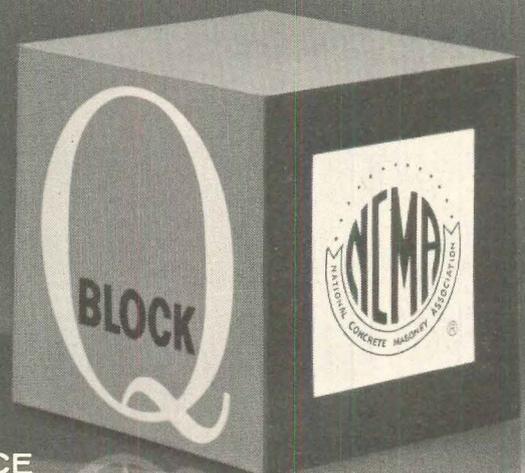
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continued from page 5

even if it may look like "reverse discrimination." Said a civil rights leader in Los Angeles last month: "The unions have been discriminating against Negroes for so long now that it's time to give them a break. They should get preferential treatment from the unions.

Contractors, who tend to go along with local union policy, are not sure that a flood of Negroes would help the construction industry: it would impair the quality of their work some say, and few want to take the risk of counting on unexperienced workers in skilled jobs.

New steps. Though the problem is complex, some important steps have been taken over the past few weeks. During the Philadelphia hearings, University of Pennsylvania Industry Professor Herbert R. Northrup suggested that the city should "go out and find some qualified Negro workers who are willing to serve apprenticeship . . . and then lay down the law to the unions." Philadelphia's Human Relations Commission came out with a proposal to set up its own referral system and to encourage

contractors to seek workers outside all-white locals.

In St. Louis, the Negro American Labor Council announced plans for a coordinated drive against school dropouts, a crash program of job training, and an attempt to open new lines of communication between business, labor, and the Negro community.

Perhaps the most far-reaching step of all was taken last month by the federal government, when the President announced he would enforce previous edicts that apprenticeship programs be open to all workers on a completely non-discriminatory basis. Through a forthcoming Executive Order, Mr. Kennedy also proposed to make sure that no job discrimination exists on any federal or federally aided building project—including urban renewal. By the middle of last month, Secretary of Labor W. Willard Wirtz's inspectors were checking such projects for fair hiring practices. Would Negro leaders consider these moves adequate, or press for new demonstrations? Said NAACP's Hill: "We're going to wait and see."

ZECKENDORF WHEELS, DEALS—AND SURVIVES

Real Estate Dealer William Zeckendorf, Sr. is at his best when his deals are at their most complex. Last month, scrambling for the very survival of his Webb & Knapp Corp. realty empire, Zeckendorf was feverishly embroiled in the most intricate deals of his career.

His fiscal difficulties would have long ago overwhelmed a lesser mogul: last year's net loss of \$19.6 million left W & K with \$67.7 million of high-cost, short-term debt plus over \$10 million of back bills. Zeckendorf's British partners, who had bailed him out of less serious difficulties just two years earlier, resigned last winter from W & K's board in despair of ever restraining Big Bill's wheeler-dealer proclivities. But despite all this, and even though realty values were sliding, the stock market was declining, and some realty syndicates were in serious trouble, Zeckendorf kept buying properties, hoping for profitable resale later on.

Last month, Zeckendorf was reselling, all right, but hardly in the way he had expected to a year or so ago. To meet his most pressing debts, Zeckendorf sold W & K's interest in four major properties which were valued at \$75 million. Zeckendorf got only a small fraction of this, of course—and no one would say how small—but it was enough, said a W & K spokesman, for the company "to pay off its most immediate obligations."

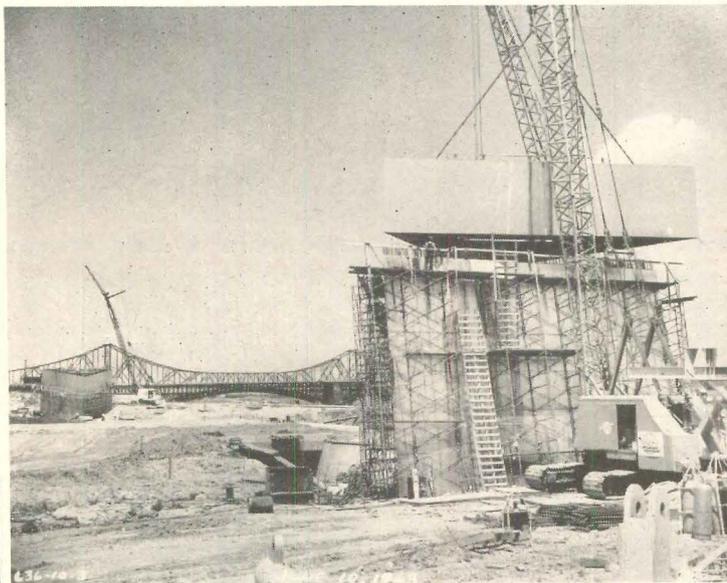
Properties involved included the giant Roosevelt Field Shopping Center in which W&K held a 75 per cent interest; several large Manhattan apartment and office



H. GROSSMAN—TIME

buildings; and the 12-story Terminal Commerce Building in Philadelphia. In earlier sales, Zeckendorf sold a 65-acre golf course and his interest in Zeckendorf Property Corp. to Alcoa, with an option to repurchase.

Zeckendorf has been quoted as saying that "the odds are about 50-50 whether we'll make it, and we'll know by midsummer." Meanwhile, speculators were placing their bets in Wall Street, where the day after the latest property sale, W & K preferred stock rose \$11 per share (to \$58) and the common went up some 6 cents a share, to close at about 65 cents. The smart money seems to be still holding off—perhaps awaiting the next sale of properties at an auction scheduled this month—but it was obvious that none of it is yet being bet against Zeckendorf.



ARTZAGA PHOTOS

"CREEPER" CRANES ALMOST SET TO CRAWL UP THE GATEWAY ARCH

When completed, hopefully in time for St. Louis' bicentennial celebration next year, the late Eero Saarinen's Gateway Arch will be an inspirational symbol of the opening of America's West. The stainless-steel, 630-foot-high structure constitutes one of the trickiest building projects in the nation. Last month, despite a 26-day delay due

to a hoisting engineers' strike, the arch's legs were well under way. The picture shows the fourth 50-ton triangular section being swung into place. By the end of July, the fifth section will be fitted, the concrete pours completed, and the "creeper" derricks poised, ready to lift themselves 24 feet at a time, carrying more steel units up the arch.

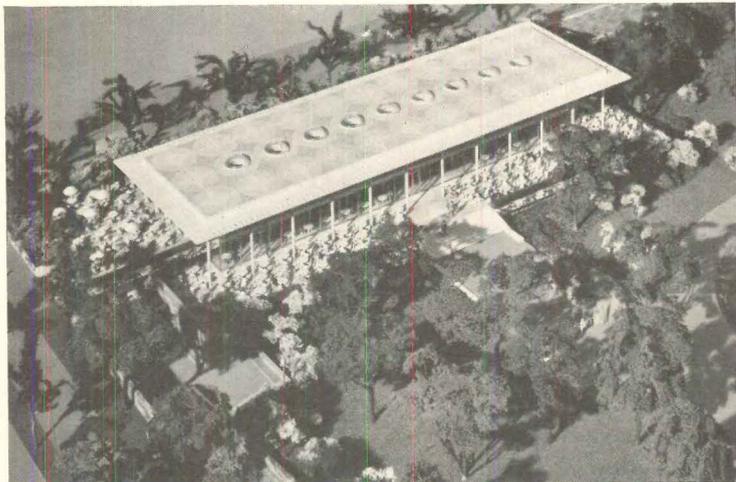
PARK CAFE DISPUTE REACHES N.Y. COURT

"The whole history of Manhattan's Central Park," wrote Architectural Historian Henry Hope Reed, "has been the battle to keep things out of it." Last month, the battle was continuing in New York's Supreme Court. At issue: whether a commercial restaurant on the edge of the park constitutes a proper use of municipal parkland.

The case began in 1960 when A&P heir Huntington Hartford

offered \$862,500 to the city for a European-style, sidewalk café. Park Commissioner Robert Moses happily accepted the gift and selected a site for the Hartford Pavilion on the "neglected" southeastern corner of Central Park. Architect Edward Durell Stone designed a painstakingly elegant café, which, if built, will have to force a change in the city's outmoded sidewalk café regulations to fulfill its promise.

continued on page 8



Model of Stone's pavilion on the edge of the park

Public reaction to the design and the proposal ranged from exhilaration to excoriation. All criticism was airily dismissed by Moses as "ridiculous"—until it was fortified with a taxpayers' suit undertaken by Tiffany Chairman Walter Hoving, Park Association President Andrew Y. Rogers, and two neighboring hotels. Their aim: to "prevent the city of New York from wasting its funds and parkland by constructing . . . a sidewalk bar and restaurant which would not serve even an incidental park purpose." The city replied that it was doing nothing illegal in accepting a gift, and that these taxpayers were simply in disagreement with the Parks Commission.

The courts, however, held that the case raised a proper legal issue. But the city continued to doubt whether the taxpayers could go to court, and this point of law was debated for almost two years without the case itself being heard. Meanwhile, Moses' successor as Parks Commissioner, Newbold Morris, also came out in favor of the pavilion. The building itself

was redesigned to become more compact—and its budget was doubled to \$1.7 million to cover foreseen construction problems. Although no official estimate has been released, one observer valued the half-acre site at \$10 million, based on neighboring land values.

Last April the city asked the courts to hear the case as soon as possible. The taxpayers, in turn, requested that the trial be held in the fall so that they might have time to study detailed plans and question city officials. These requests were turned down and on June 13, the trial began.

The taxpayers solicited testimony from such noted urban designers as Architects Philip Johnson and Georgio Cavaglieri, Landscape Architects Hideo Sasaki, and Robert Zion. The experts raised these points: the Hartford Pavilion on its proposed site would 1) not serve the park but the street; 2) impair the park's beauty by shutting off one of its prime corners; 3) increase traffic congestion; 4) open the park to further commercial development. A verdict is likely to come this month.

THE GREAT CIVIC ARCHITECTURE DEBATE

In quantity of building, New York City clearly leads the nation, and the world. Its quality, however, is another story, one which blew into a full-fledged tiff last month between the city's architects and the City Club, a citizens' group which promotes good government.

The Club started the brouhaha when it announced that it could

not in good conscience give its brand-new Albert S. Bard Awards to any public buildings erected in the past five years, as it had intended. Furthermore, said the Club, there hadn't been a decent publicly sponsored building erected in the city since City Hall was built in 1803.

Most of New York's press

quickly agreed. But, after an embarrassed silence, the local AIA chapter came to the defense. AIA Executive Committee Member Simon Breines said that the City Club's self-styled "fruitless search for excellence" was actually nothing more than a "superficial, lazy, and slipshod review of a small fraction of the buildings eligible to compete." He pointed out that only 24 out of a possible 300 public buildings had been submitted for award by their architects, and several outstanding projects were obviously missing. Breines also cited steady progress in getting the city agencies to secure good architects and good

ideas for its many new jobs.

These comments did not calm the situation. A group of 42 New York AIA members formed an "Ad Hoc Committee for Better Architecture" which agreed with the City Club. Breines' views, the Committee stated flatly, were shared only by the Chapter's "Executive Committee and a segment of the membership committed to the status quo." As for the civic architecture, "the political system and bureaucratic procedures involved in [such] commissions have bred even in the good architects weariness and listlessness resulting in what might be called architecture by default."



LAVISH NEW NEBRASKA ART GALLERY OPENS TO RAVE REVIEWS

Architect Philip Johnson has designed several notable museums. But the \$3 million Sheldon Memorial Art Gallery at the University of Nebraska, he said at opening ceremonies a few weeks ago, is his best.

A rhythmical succession of arches on tapered columns mark the exterior. Natural light enters the windowless building only through six two-story, recessed vestibules, the glass walls of which flank the vast sculpture hall (see photos above and right).

This great hall, sheathed in travertine, is dominated by the bridge stairway which connects the two second-floor galleries. On the ground floor, there is a steeply pitched, 300-seat amphitheater, a board room, and a print room. All interior lighting is by Richard Kelly.

After seeing the museum, Archi-

tectural Critic Sybil Moholy-Nagy said: "It is a place where you could bring students and show them what architecture and art can do for each other." Commented Johnson: "It was the most generous, the most free of all the commissions I have ever had."



PHOTOS: KAZ TADA



FRED CLOU

MASS TURNPIKE PASSES THROUGH TWO OLD BOSTON LANDMARKS

Bostonians sorrowed recently when the wrecker's ball began to burst apart some of the city's architectural prizes. Trinity Court (above), designed in 1896 by Architects Ball & Dabney in Jacobean style and patterned after England's Hampton Court, has been leveled to make way for the \$180 million extension to the Massachusetts Turnpike Authority Toll Road. A genteel, luxurious apartment building with an interior garden, it housed many of Boston's prominent artists over the

years. They—and such preservationists as local university planners, Mayor John F. Collins' own Historic Buildings Committee, and the Greater Boston Chamber of Commerce—protested against the road in vain. Another landmark, St. Bartolph's Studio, Boston's best example of Queen Anne architecture, has been demolished, but the new 52-story Prudential Building, though in the path of the pike, will be preserved. The Toll Road will go under, not through it.

U.S. DOME TWISTS AGAIN FOR MR. STEWART

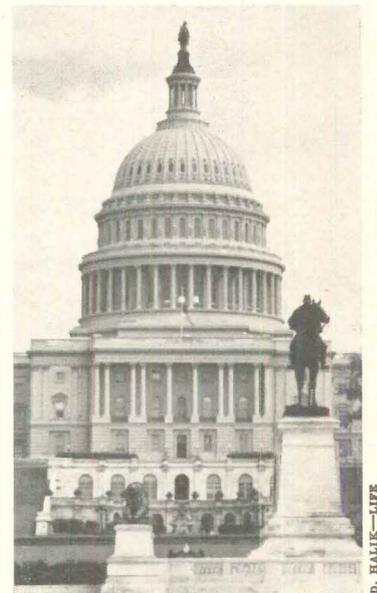
Three years ago, a \$24 million rebuilding job on the east front of the U.S. Capitol was instigated and pushed to completion by Capitol Architect J. George Stewart over the collective protests of almost every architect in the nation. His main argument: the cast-iron dome (photograph, right) twists with climatic changes—which might lead to a structural failing and partial collapse of the whole building.

Last month, Stewart stood before Congress again. This time he called attention to the west front; it is crumbling, he warned, and must be reconstructed as well as extended—at a cost of \$20 million. The proposed extension would provide 4½ acres of new Capitol floor space. If the repair job is not done, Stewart noted ominously, a tremor or the dome's gyrations could cause the weakened west front to fall. (Stewart neglected to state that \$1.4 million had been spent on dome repairs as part of the east-front renovation.)

Senator Paul Douglas (D, Ill.) was quick to excoriate both the project and the architect. Pointing out that Stewart's qualifications seem to be based on his short experience as a landscape

architect, Douglas intoned of all Stewart's plans: "For how long, O Capitol Architect, wilt thou abuse our patience?"

A House subcommittee agreed—last month it simply denied appropriations for the work. Stewart is expected to press the issue further, probably continuing to base his argument on the peculiar notion that an additional \$20 million is drastically needed to repair the damage done by the previous \$24 million expenditure of taxpayers' money.



D. HALIK—LIFE

BRIEFS IN THE NEWS

World's Fair. Problems continue to crop up at New York's Flushing Meadows. Among them is a threat by the Urban League to picket three World's Fair construction sites because of job discrimination in the building trades. Also announced were some switches in the international section: Brazil has dropped out of the Fair; the nongovernment French exhibit was canceled for not fulfilling its contract; and Spain has signed up for the large plot once intended for Russia.

New Capital views. In a move sure to liberalize the Federal Commission on Fine Arts, President Kennedy replaced five members, whose terms had expired, with Dean Burnham Kelly of Cornell's

College of Architecture, Sculptor Theodore Roszack, Architect John Carl Warnecke, Artist William Walton, and Critic Aline Saarinen.

Grants. The Kaufmann International Design Awards will henceforth be nonmonetary and given biennially. However, new biennial research grants for work in progress in any field of design will carry \$5-\$10,000 stipends.

S.F. zoning. The most important thing about the recent zoning case in San Francisco was not its outcome, but the amount of attention it received. The Metropolitan Life Insurance Co. asked the city for, and obtained, commercial rezoning for its Stockton Street headquarters property (now oddly zoned for high-rise apartments). Under the new classification, Metropolitan can increase

the size of its present building five times (to 25 stories) without providing any off-street parking.

Critics took the opportunity to decry the city's zoning regulations, which are based on a 20:1 floor-area ratio (a 20-story building can cover its entire site; a 30-story building, two-thirds of its site; etc.). New York's new zoning laws permit only a 15:1 ratio. Some San Franciscans think it is high time to follow New York's lead and rezone their city to get more light and ground space and less huge, full-coverage buildings.

Fine Arts Council. As anticipated (*News*, May '63), the President has announced that he will create an Advisory Committee on the Arts. It will consist of the heads of 13 federal departments and agencies concerned

with the arts, and 30 private citizens whose names will be announced in the near future.

U.S.A. overseas. The State Department's foreign building program received the approval of the House of Representatives a few weeks ago. Some \$26.3 million was authorized for the purchase, construction, and alteration of buildings over the next two fiscal years, plus, \$23.5 million for operation, maintenance, repair, and furnishings. The bill provides for a new Embassy in Paris, also requires that new buildings be "representative of the best in American architecture." But when the Senate got the bill last month, it tacked on an unrelated rider concerning Philippine war damages. Outlook: very uncertain.

continued on page 11



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continued from page 9

N.Y. UNIONS FIGHT DECLINE IN BUILDING

With most spring building labor contracts being renegotiated without incident across the nation, attention last month focused sharply on the new negotiations in New York City. Some 21 unions are involved—including Teamsters' Local 282, whose trucks bring construction materials to building sites. Everybody, especially the unions, recognizes that the city's tremendous building boom may wane considerably after the World's Fair is completed next year. Consequently, the unions have been following several new courses of action.

Most unusual of them is a bold plan announced by the Building and Construction Trades Council to sponsor its own multimillion-dollar construction program. Goal would be 25,000 housing units per year added to the city's supply — thus promoting full employment for some 140,000 union members, and also for 200,000 workers in allied industries. The city would help by providing Title I sites.

Both Mayor Wagner and Earl H. Fullilove, chairman of the Board of Governors of the Building Trades Employers Association, have reportedly endorsed the proposal.

In another move, the AFL-CIO Building and Construction Trades Council has asked that another year's grace period be allowed builders before the new zoning regulations, drawn up by the City Planning Commission in 1961, go into effect. One immediate cause of the city's construction boom has undoubtedly been the desire of builders to fill their sites under the old zoning laws. The unions believe that an extension may continue the boom for another year, though city esthetics would suffer.

The building unions are also negotiating for an average 23 per cent (or 95 cents to \$1.10) increase in wages and benefits over the next three years—feeling that the high pay will tide members over periods of unemployment.

The city's economy is also deeply involved in the outcome of

the negotiations. Not only does the local construction industry sport an annual payroll of some \$500 million, but allied industries add another \$400 million in wages. If the money is spent in New York, the city reaps a 4 per cent sales tax.

The 25-hour week. City unions are asking for a shorter work week. Their requests, like other 1963 efforts across the nation to obtain shorter hours, are not expected to be pressed hard. Labor and management leaders were especially interested in what Labor Expert Theodore W. Kheel had to say at a recent conference on automation and unemployment. His subject: a re-examination of the 25-hour work week which Local 3 of the International Brotherhood of Electrical Workers got last year (FORUM, Mar. '63).

Contrary to most predictions at that time, the 25-hour week did not boost overtime pay except during the summer vacation months. It did, however, create between 800 and 1,000 new jobs—despite a decline in the volume of construction over the past ten months. (F. W. Dodge Corp. has reported that new construction contracts in New York fell 34 per cent this April compared to a year ago.)

Kheel attributed the success of the 25-hour week to Local 3's willingness to reduce labor costs, eliminate extra hours of overtime, admit 1,000 new apprentices (of all races), and to stagger members' work days to conform to that of the other building trades.

In summation, Kheel said: "The reduced work week . . . has been able, thus far, to meet the decline in construction work . . . without causing any unemployment."

At the same conference, Secretary of Labor W. Willard Wirtz was asked what he thought about the 25-hour work week. Said he: "Given the present situation in the economy, a reduction in the work week would mean an increase in the price of the product, which might result in pricing many jobs out of the market."

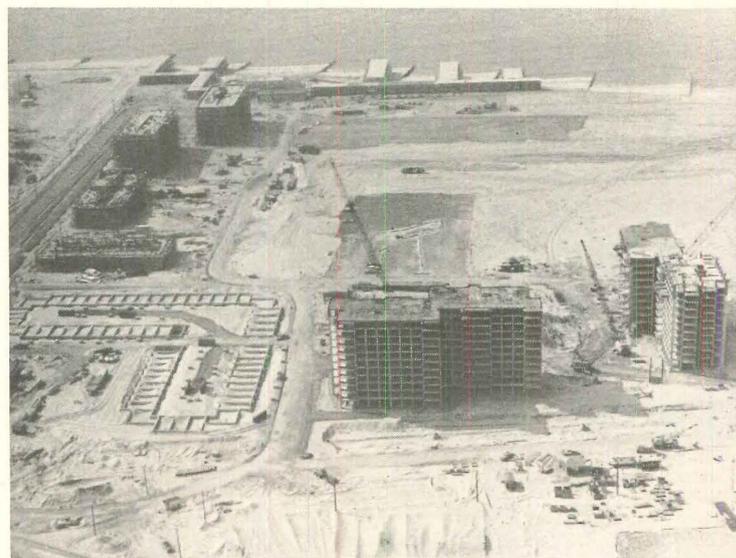


MOSCOW OPINION OF LE CORBUSIER SWINGS BACK 35 YEARS

This huge building is Centrosoyus, headquarters of the Soviet Co-operative Unions in Moscow. Though designed in 1928, it is still probably the best piece of modern architecture in that city. Nonetheless, not long after it was completed both the building and its

designer, Le Corbusier, were much criticized as the official style shifted to neoclassical monuments.

But now, a reappraisal in a recent issue of U.S.S.R. *Architectura* again lauds Corbu and Centrosoyus—giving fresh evidence of the thaw in Soviet design.



JERRY FRANK—ALPHA PHOTOS

A MAYOR LEARNS THE PROBLEMS OF GETTING A NEW CITY PARK

Civic groups have long been urging the city of New York to acquire Long Island's Breezy Point for a vast new recreational park. Last month, Mayor Robert F. Wagner did just that—only to run into costly problems.

Immediate concern is 216 of 382 acres belonging to the Atlantic Improvement Corp., which is busily developing them into luxury housing shown above. (Other owners include the city, the U.S. Army, and

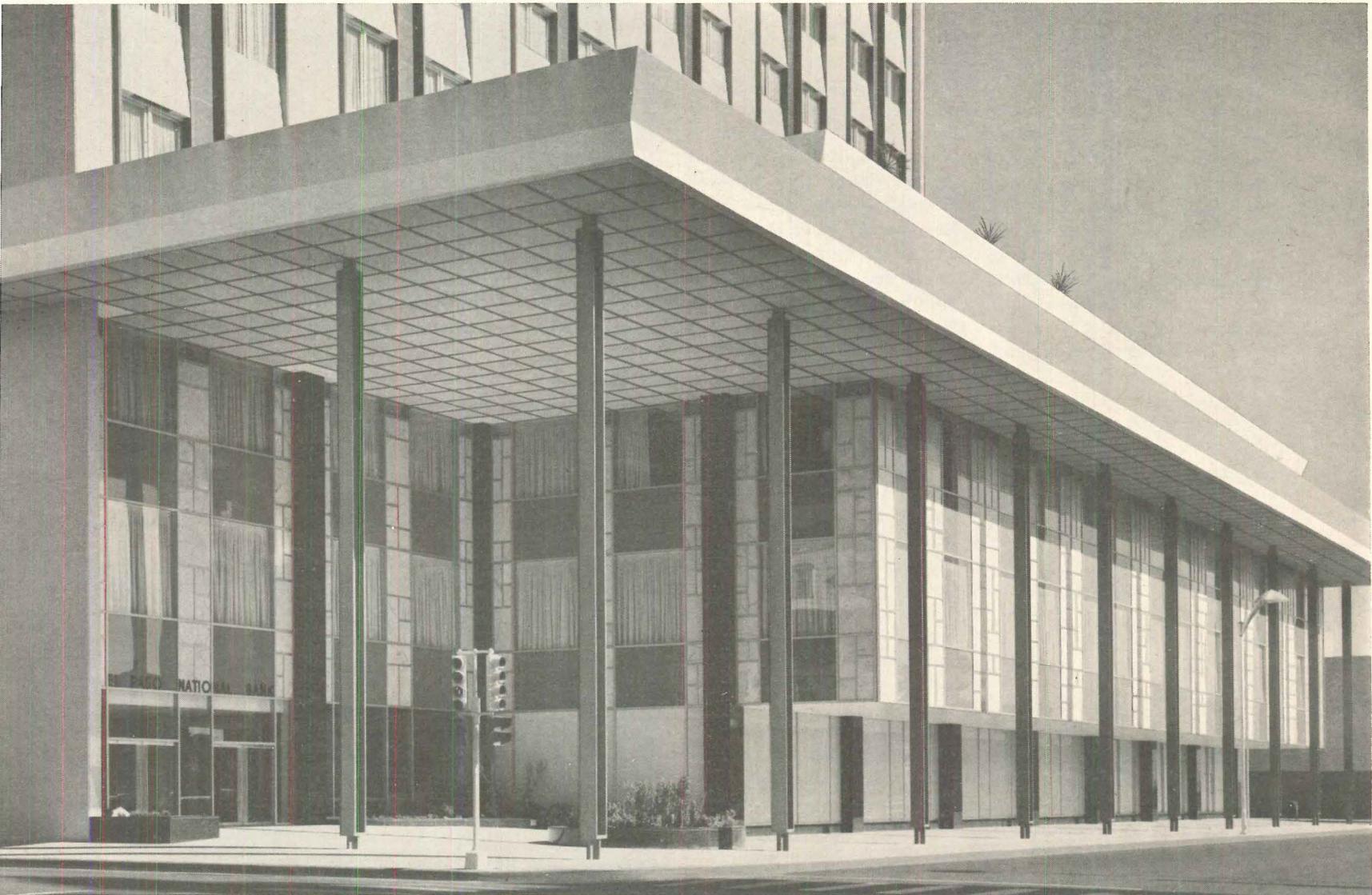
a cooperative of 2,750 cottage owners.) Wagner plans to purchase Atlantic's land for an undecided figure—estimated anywhere between \$30 and \$200 million.

Meanwhile, the developers say their contracts force them to continue construction at a cost of up to \$50,000 a day. And civic groups tirelessly point out—perhaps with a moral for other cities in mind—that the land cost only \$5.5 million in 1961.

continued on page 13



Panels bonded with Armstrong adhesives add space and grace to this El Paso bank



El Paso National Bank, El Paso, Texas. Architects: George L. Dahl, Dallas, Texas, Carroll & Daeuble & Assoc., El Paso, Texas. Panels: Texlite, Dallas, Texas. General Contractor: R. E. McKee, El Paso, Texas.

This new building is a beautiful example of the design freedom that panels can provide. George L. Dahl, Architects and Engineers, took advantage of the versatility of panels and specified several different types for this building, including decorative spandrel panels, faced with aluminum, that are used to conceal the exterior lighting on the facade.

For various other spandrel and vertical wall panels, where the ease of fabrication afforded by aluminum was not needed, porcelain enameled steel was used as a facing. These panels provide the building with a smooth, attractive appearance

while they save interior space and give excellent insulating properties.

For permanence and trouble-free performance, the skin and core materials of all of the panels used on this El Paso bank were bonded together with Armstrong contact adhesive . . . known for its ability to resist the effects of weather, time, and temperature. Look into the growing role in modern architecture of panels bonded with Armstrong contact adhesives. Write Armstrong Cork Company, 8007 Drake St., Lancaster, Pennsylvania.

Armstrong ADHESIVES

People in the News

QUOTE . . . UNQUOTE

"I venture to predict that long after the public has wearied of Wright's inverted oatmeal dish and silo with their awkward cantilevering, their jaundiced skin, and the ingenious spiral ramp leading down past the abstractions which mirror the tortured maladjustments of our time, the Metropolitan Museum will still wear well."—*Robert Moses, speaking of the Guggenheim Museum.*

"Our solutions will be typical of American democracy—local solutions, locally achieved."—*URA Commissioner William L. Slayton.*

"He couldn't design a cathedral without it looking like the First Supernatural Bank!"—*Eugene O'Neill, in The Great God Brown.*

"All of us . . . have been disturbingly aware, for two decades now, of the enormously disparate pace at which facilities for the advancement of the physical sciences and those for the advancement of the humanities have grown." — *CBS President Frank Stanton.*

"Ours is a wealthy nation, but we have not yet achieved our goal of a satisfactory living environment for every American."—*Commissioner Sidney H. Woolner, Community Facilities Administration.*

"No common architectural style appears to be emerging for this country . . . [the present competition] is a sad reflection on the standard of architecture and planning achieved throughout the country over the past three years."—*British Civic Trust, reporting on competition for "Best British Architecture of 1962."*

"Architects build this type of building for other architects to discuss and admire, certainly not for the utilitarian use needed in a police headquarters."—*Former Public Property Commissioner Philip Klein, of Philadelphia, speaking of the city's new police building (FORUM, Feb. '63).*

DAVID MC CUEN—TIME



DILWORTH RIDES AGAIN

RICHARDSON DILWORTH, former Democrat mayor of Philadelphia and an ardent backer of high-speed rail transport, recently was named by the U.S. Department of Commerce to head a one-year study of transportation needs in the "megalopolitan" corridor from Boston to Washington, D.C. The study stems partly from a proposal by Senator Claiborne Pell (D, R.I.) for fast commuter rail service down the eight-state corridor, partly from the Administration's plan to look into developing new transit techniques along with existing ones (FORUM, Jan. '63).

HECKSCHER RESIGNS

After 15 months as the First Special Consultant to the White House on the Arts, AUGUST HECKSCHER stepped out last month to return to a heavy work load at the Twentieth Century Fund and other projects.

Accompanying his letter to the President, Heckscher wrote an 80-page report on the role of the federal government in the arts. It was sweepingly critical—but also contained suggestions for improving the situation. Among them: the government should acquire more great works of art, set up a committee to supervise the design of federal buildings, and establish good design criteria for public housing and other federally supported projects.

RAAB RESIGNS

Last month, after 40 years service to California, Bridge Engineer NORMAN C. RAAB, 69, resigned quietly and expectedly.

Chief of the state's Division of San Francisco Bay Toll Crossings for 21 years, he designed the San Francisco-Oakland Bay Bridge and the famed Rainbow Bridge at Bixby Creek near Monterey.

More recently, however, Raab's work had come under heavy fire. The Richmond-San Rafael Bridge was termed "an esthetic monster." Motorists were roiled by the "hump" he placed on the Bay Bridge to allow traffic to keep moving while other construction took place. Finally, Raab proposed the San Mateo span which FORUM Consultant Allan Temko attacked as an example of "brutal mediocrity"—and the bridge was never built. While praising Raab as "one of the nation's great bridge engineers," State Director of Public Works JOHN ERRECA admitted that Raab had developed "a public relations problem."



HOPPENFELD JOINS ROUSE

A few months after WILLIAM E. FINLEY resigned from his post as director of the National Capital Planning Commission, the NCPC's Chief of Urban Design also stepped down. Architect-Planner MORTON HOPPENFELD, who had been responsible for all the design aspects of Washington's "Year 2000 Plan," went to join the faculty of Howard University, while Finley became ensconced in JAMES W. ROUSE's Community Research Development, Inc.

A few weeks ago, Hoppenfeld—after a planning stint for the University of California at Berkeley—rejoined his old boss. He will work on the programming, planning, and designing of future

community projects.

Meanwhile, back at the NCPC, Seattle Architect PAUL A. THIRY was appointed to a six-year term as one of five presidential appointees on the Commission. He succeeds Architect ALEXANDER C. ROBINSON, whose term had expired.

McCARTHY IN NEW YORK

The man most responsible for Bell Telephone Company's huge building program, ROLLIN H. McCARTHY, has been granted special leave to coordinate all phases of construction of the Ford Foundation's new headquarters building in New York City. Although details of the new project have not been released, the Foundation has been talking with some of the nation's leading architects.

FELLOWSHIPS AND AWARDS

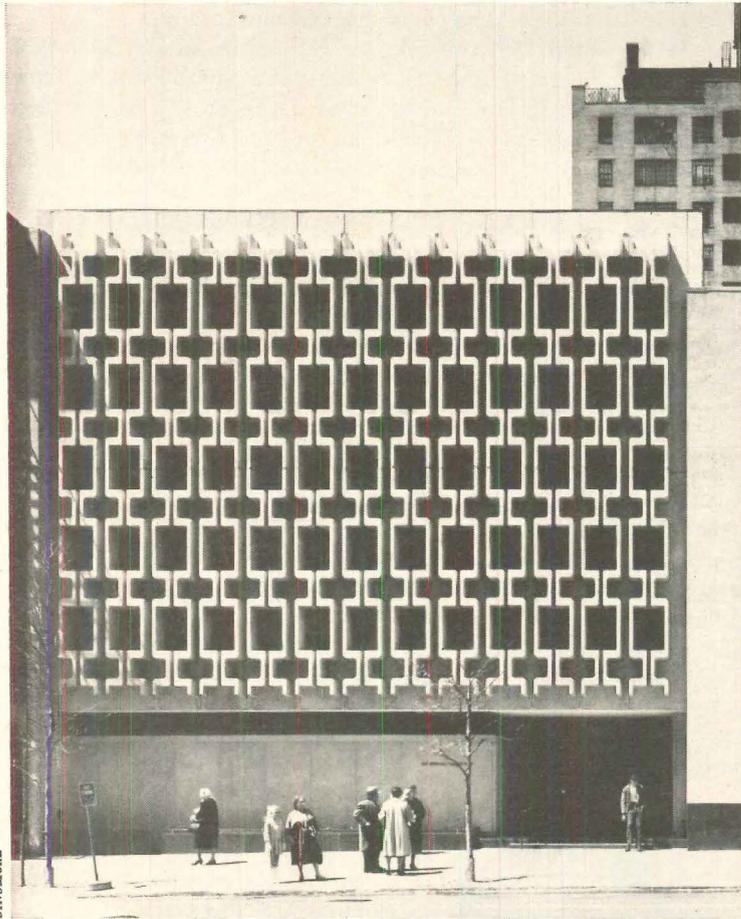
Some Graham Fellowships, given by the Graham Foundation for Advanced Studies in the Fine Arts, went recently to Architectural Writer JOHN M. JACOBUS, and Architects ROBERTSON WARD JR., JOHN FOLLIS, PIOTR KOWALSKI, KENNETH ISAACS, and CONRAD ROLAND LEHMANN. Their projects range from a study of sculptural space to one on building techniques.

Winners of this year's \$1,000 Koppers Design Awards, given annually for specific projects in schoolwide competitions, are: FREDERICK H. HORLACHER of Syracuse University; THOMAS H. MURPHEY of Carnegie Institute of Technology; FREDERICK A. ROSEN and DENNIS S. MALONE of Cincinnati University; KENNETH CARBAJAL of Houston University; MYRON J. WIMMER of Illinois University; S. LEE DAVIS of Michigan University; and ROBERT ZIMMERMAN of Yale.

OBITUARY

Florida Architect and Journalist CHARLES MAGRUDER, 56, died last month in his adopted home town of New York City. From 1938 to 1961, he had worked on *Progressive Architecture Magazine*, and was managing editor for 21 of those years.

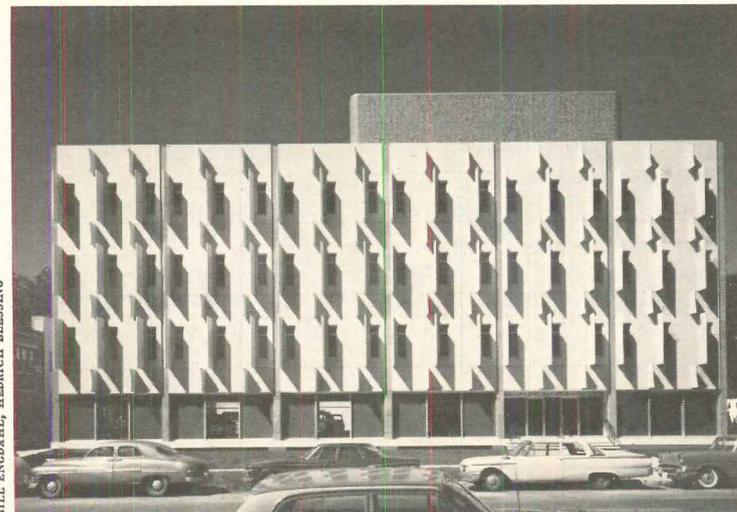
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DINSMORE

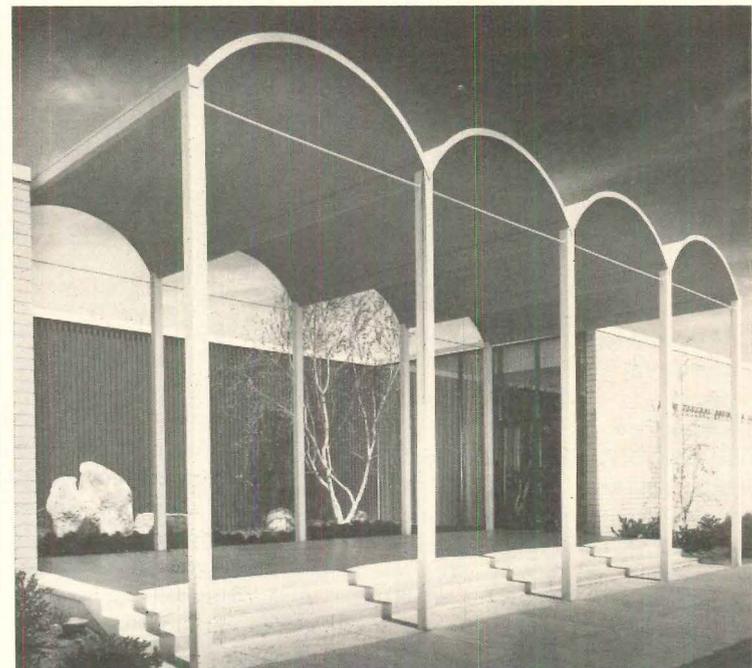
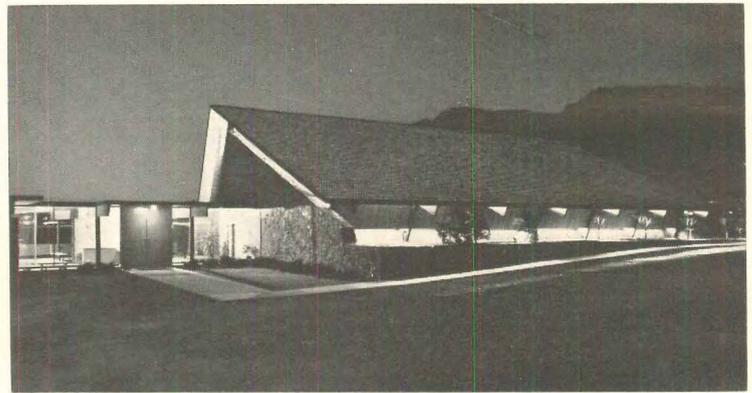
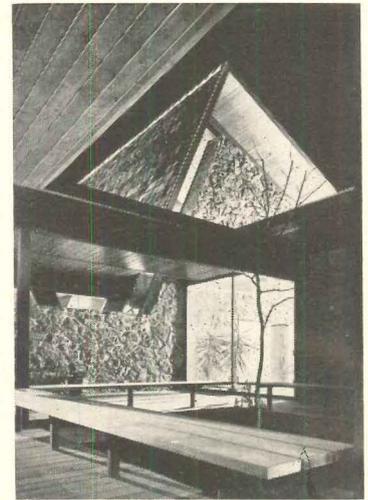
SUNSHADES: IN NEW YORK . . . This strongly patterned screen of precast concrete forms the east wall of Manhattan's new Carl Ostreicher Community House. The screen not only blocks direct sun but also limits views of a tawdry neighborhood. Costing \$11 per square foot, the screen is 2 feet deep, came in 2-story sections 18 feet high and 4 feet wide. Architects for the building were Horace Ginsbern & Associates. Contractor: Diesel Constr. Co. Cost: \$500,000.

. . . AND IN NEBRASKA (below). The Nebraska State Education Association in Lincoln faces no dismal view, but Bertram Goodhue's famed State Capitol to the east. Projecting fins cast into the walls to the south of each window encourage this view while shielding sun (for decoration, the spandrel panels carry smaller fins). Cost of the wall: under \$4 per square foot. Architects & Engineers: Davis & Wilson. Contractor: George Cook Constr. Co. Total cost: \$650,000.



BILL ENDAHL, HEDRICH BLESSING

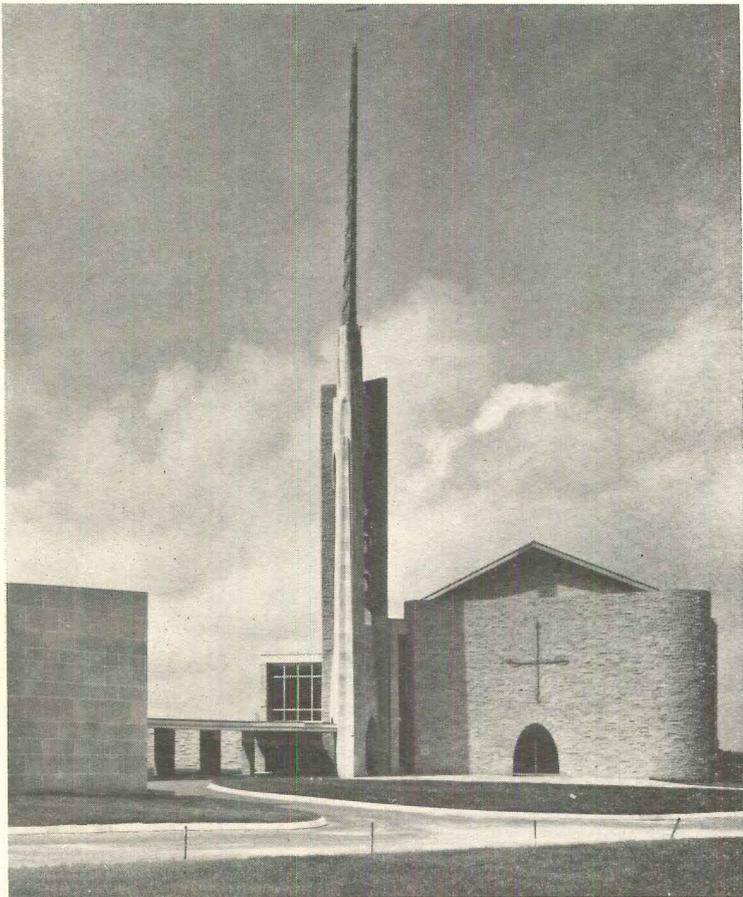
COLORADO CHURCH. Lacking the tremendous scale of the Air Force Academy Chapel, also in Colorado Springs, the Broadmoor Community Church wisely refrains from competing with its rugged mountain backdrop. Instead, the sanctuary and adjoining fellowship hall are set into the sloping site and emphasize natural materials: moss rock and a variety of woods (seen at right in the courtyard between wings). The church, which recently won an award from the National Conference on Church Architecture, was designed by Architects Lusk & Wallace. General contractor: Lembke Construction Company. Cost: \$237,700.



GEORGE LYONS

CALIFORNIA BRANCH BANK. In the suburban Chula Vista branch of San Diego's First Federal Savings & Loan Association, the competitive spirit of modern banking does not stop with the brilliant vermilion soffits of the vaulted plywood entrance canopy. It con-

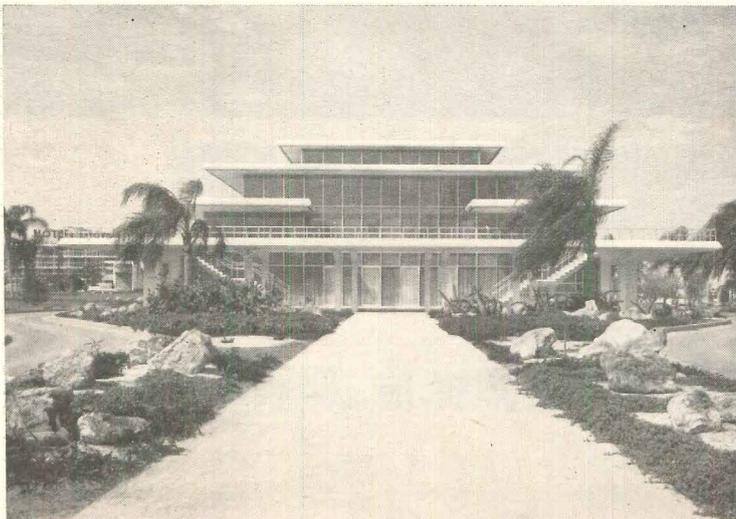
tinues, past an invitingly landscaped courtyard, to the interior, where a large room is devoted to the use of community organizations. Architects & Engineers: Frank L. Hope & Associates. General contractor: W. B. Melhorn. Cost: \$110,000.



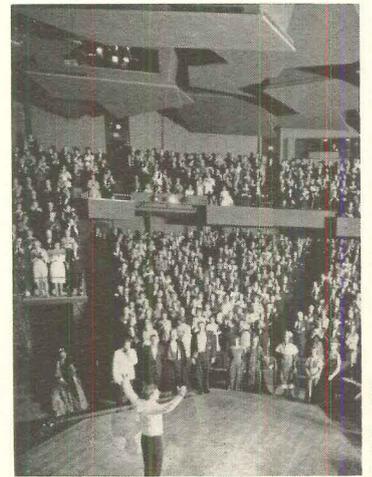
ALEXANDER GEORGES

CAROLINA CHURCH (above). In the First Presbyterian Church in Gastonia, N. C., a slim, soaring bell tower rises alongside a massive sanctuary of quarried stone. The lower portion of the tower is of sculptured limestone; above it rises a thin shaft of lead-coated copper which terminates in a tiny cross. To the left is a small chapel; in the background, an administration and education wing. Architects: Harold E. Wagoner & Associates. General contractor: Robert H. Pinnix. Cost: approximately \$1.2 million.

FLORIDA AUDITORIUM (below). Because it will be used heavily during the day, Bradenton's new Municipal Auditorium, unlike most, is opened to the outdoors with walls of glass. A faint pagoda effect results from overhanging floor slabs which shade the glass in a series of setbacks. The slab edges are sheathed in aluminum. The first two levels are devoted to seating and an arena-type stage, with lighting and air conditioning above. Architect: Reginald Knight. Contractor: Larsen Brothers. Cost: \$365,000.



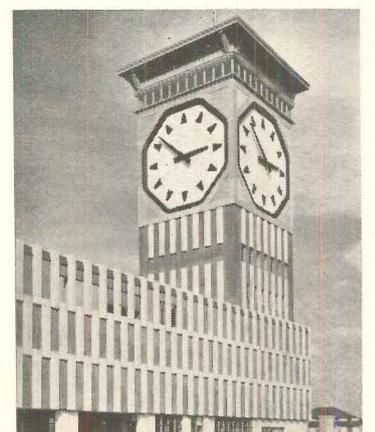
MINNESOTA THEATER. Recently opened, the Tyrone Guthrie Theater in Minneapolis is an imaginative and highly theatrical building. The hall is jaggedly asymmetrical (right), providing 200-degree seating around an open stage. Overhead float gray acoustical ceiling panels of reinforced plaster. The building is most dramatic at night and from the outside (below): the between-act audiences become players on a stage, seen through great sheets of glass, recessed 6 feet inside a concrete frame. Architect: Ralph Rapson. Contractor: Watson & Halverson. Cost: \$1.9 million.



Y. JOEL—LIFE



WISCONSIN CLOCK. Topping the new \$18 million office and laboratory building for the Allen-Bradley Co. in Milwaukee is an arresting and oddly old-fashioned tower, boasting what is described as "the largest four-sided clock in the world." The octagonal clock faces, which are 40 feet in diameter and can be seen for a distance of 25 miles when they are lighted at night, were fabricated and erected by a company called Super Sky Products. Architect: Fitzhugh Scott. General contractor: Selzer-Ornst. END





Eames Tandem Seating



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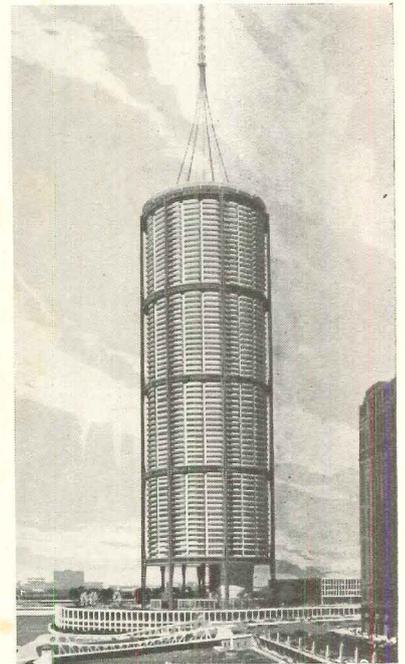
**for places where people gather
to relax,
to wait, to rest,
to view....**

Herman Miller, Inc., Zeeland, Michigan 

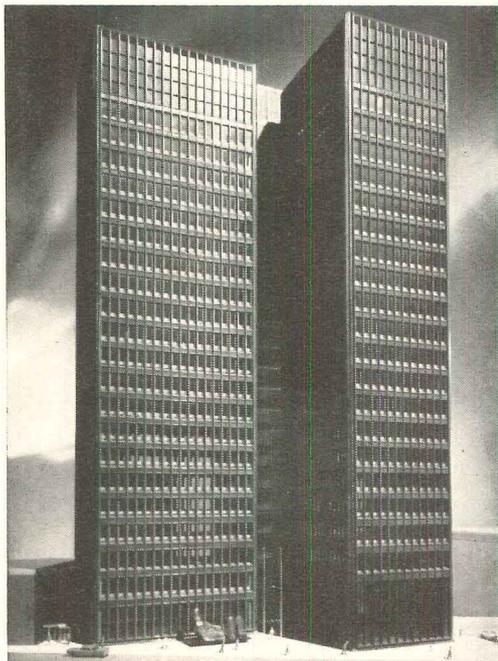
Tallest tower in Chicago (below)
 New heart for Sacramento (page 59)



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1. HARVARD HOUSING. Married graduate students at Harvard, who have traditionally shifted for themselves in the Cambridge housing market, will soon get some apartments designed for them and built by the university. Some families will have views of the Charles River from the 22-story towers; all will have the use of a playground, nursery school, and laundry in the \$8 million project. Wall panels of precast concrete will create an egg-crate pattern on the tower exteriors. Architects: Sert, Jackson & Gourley.

2. CHICAGO PEAK. Topping Marina City, and the Prudential tower (counting television masts), the Wolf Point project will be not only the tallest building in Chicago at 1,353 feet, but also the loftiest apartment house in the world. The 1,300 apartments will be divided into four stacks of 16 floors, each stack carried on a steel ring of the projecting structure. A four-story, 320-room hotel (right), dwarfed by the tower, is also part of the project, expected to cost in the neighborhood of \$45 million. Sponsors are Robert H.

McCormick Jr., Ross J. Beatty Jr., Charles Genter (of Pace Associates, the architects), Lester Mehlman, and Jack C. Hand.

3. DETROIT OFFICES. An odd-shaped site in the middle of Detroit's financial community shaped the outline of the First Federal Savings & Loan Building. Smith, Hinchman & Grylls Associates determined that their client should build at right angles to Woodward Ave. (right), rather than follow Michigan Ave.'s oblique line (foreground). Their design is three granite-faced towers, one

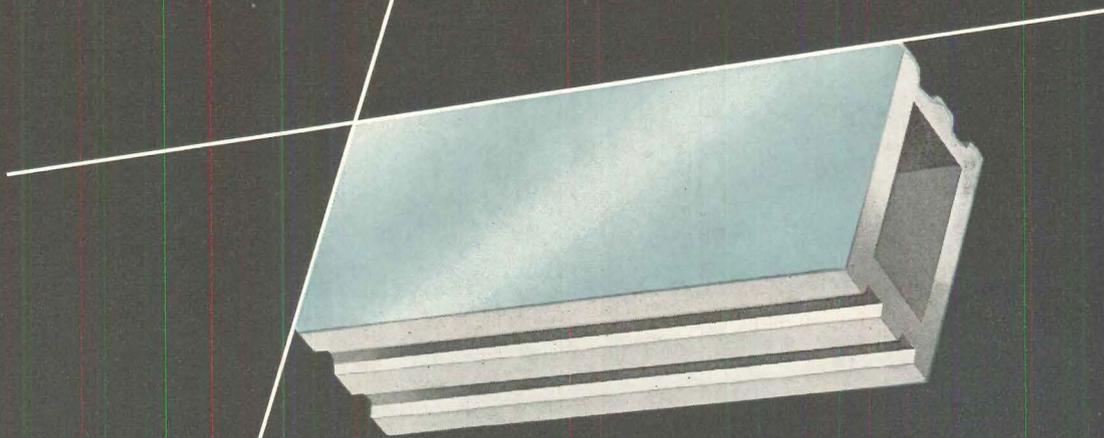
of them containing elevators and stairs; the others, unobstructed floors of rental offices.

4. SAN DIEGO PARKING. Construction is underway on this combination exhibit hall and parking garage, to be owned by the City of San Diego. A precast concrete screen will shield the square parking tower of ten floors; beneath it will be an open terrace for art exhibits and garden shows, atop a block-square exhibit hall. The latter is linked to a large convention hall (right). Architects and engineers: Tucker, Sadler & Bennett.

continued on page 59

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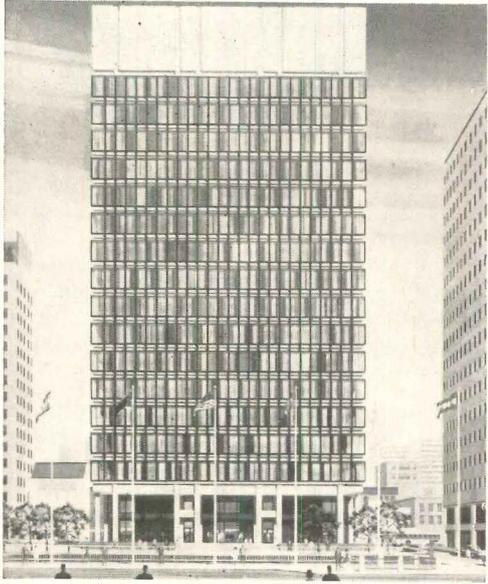
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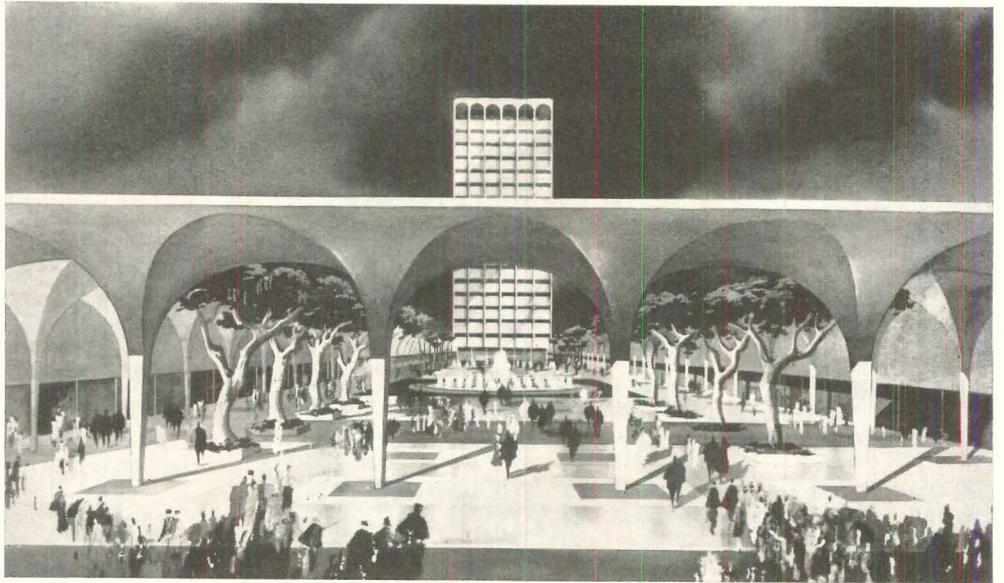
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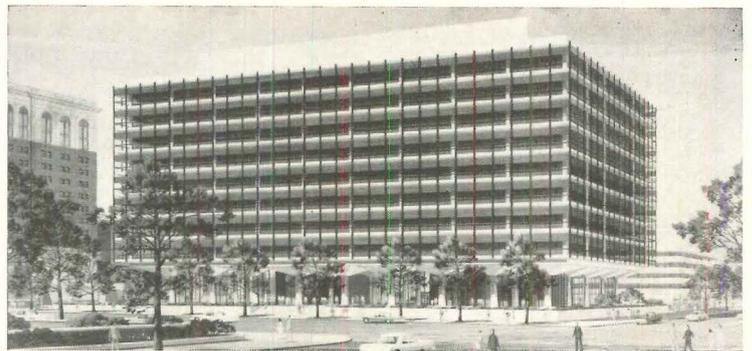
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5. IBM IN PHILADELPHIA. In the new IBM Building in Philadelphia's Penn Center, projecting glass walls will face a skating rink on the north (above); the south wall will be dominated by an offset service core of slip-formed concrete faced in limestone. IBM will occupy about half the office space, lease the rest. Architect: Vincent G. Kling.

6. SACRAMENTO RENEWAL. Over the next four to six years, six blocks of downtown Sacramento will be transformed by Reynolds Metals Co., selected by the Sacra-

mento Redevelopment Agency as the developer. Reynolds' architect, Edward Durell Stone, and Artist Millard Sheets plan a central mall bordered by covered walkways, stores, and other commercial tenants. The tallest structure will be an office building (background). Estimated cost of the project: \$35 million.

7. BUFFALO SUPERSQUARE. Civic and business leaders in Buffalo propose a new downtown "Supersquare," barring through traffic from the 17-acre site, and banishing cars to subterranean garages.

Charles Luckman Associates' design calls for five high-rise structures: a hotel in the center and four office buildings, adding up to 2 million square feet of space.

8. INDEPENDENCE MALL OFFICES. Starting next year, Rohm & Haas executives will contemplate the passing scene through one of their major products: Plexiglas, used for exterior shades in the company's new headquarters on the west side of Independence Mall in Philadelphia. The building will be back-to-back with the Atwater Kent Museum, whose gardens will

be visible from the mall through tall lobby windows. Architects and engineers: George M. Ewing Co. Consulting architect: Pietro Belluschi. Cost: \$10 million.

9. COLLEGE OFFICES. The University of California's Davis branch will soon start work on this administration building designed by Hatch, White & Steinau. Their plan is to mount a floor of general offices on a slightly raised base, easily accessible from the campus, while the specialized departments will be slightly more remote in the section above.

continued on page 61

Air-Cooled
REFRIGERATION
SEMI-RECESSED
RANGE OF COLORS
LIGHT-WEIGHT
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"WALLBROOK"

DRINKING WATER FOUNTAIN by TEMPRITE

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Air-cooled refrigeration system conserves water for the ultimate in operating economy. Plumbing connections enclosed within fountain. Deeply recessed fountain assures ample head room for drinking convenience. Easy to keep clean with mild detergent.

Sturdy metal mounting frame furnished to provide rigid attachment to building.

See "Wallbrook" and other Temprite water cooler specifications in Sweets Architectural and Industrial files . . . or write for catalog.

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Model WB-6 . . . 6.1 gph
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Ample refrigerating capacity to serve an adjacent fountain.

Centrifugal Wall Ventilator

7" TO 24"
WHEEL
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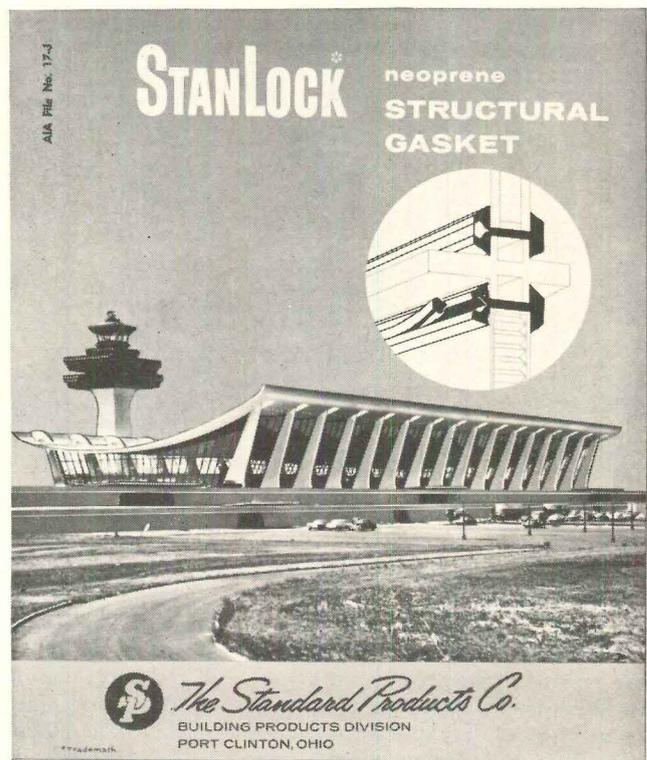
Patent No. 2805615

LOREN COOK CO.

The shipping weight of the Loren Cook Type TW centrifugal wall ventilator is a mere 12 lbs. in the 1/35 hp. range, and only 200 lbs. in the 1 hp. rating. It is the first and only wall ventilator designed to drain rainwater away from the building, eliminating streaking of walls.

The Type TW also features an exclusive 100% weatherproof design. Construction is all-aluminum, including centrifugal wheel and hardware. Conduit is provided directly to the motor compartment for simplified wiring. Round intake grilles and automatic dampers are available as optional equipment. Housing is heavy gauge spun aluminum. Special motors include explosion-proof, fungus-proof, tropical insulated. Capacities from 238 to 5091 cfm. free air. Write for 32-page catalog. Loren Cook Co., Berea, Ohio. (Sweets Architectural File, Section 20C)

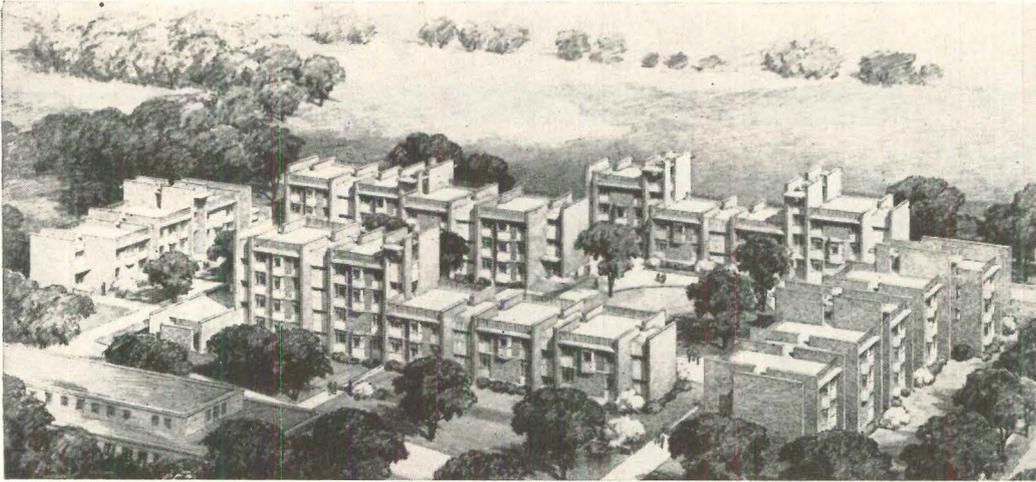
AD NO. TW



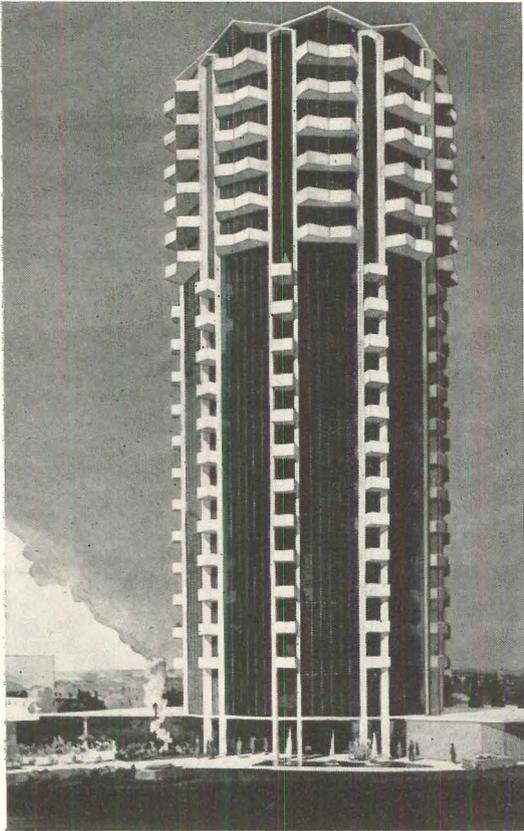
New booklet for the Architect

This is a 20-page engineering report on the most effective structural gasket ever developed for curtainwall construction. For your copy, simply send letter or post card to The Standard Products Company at the address shown above.

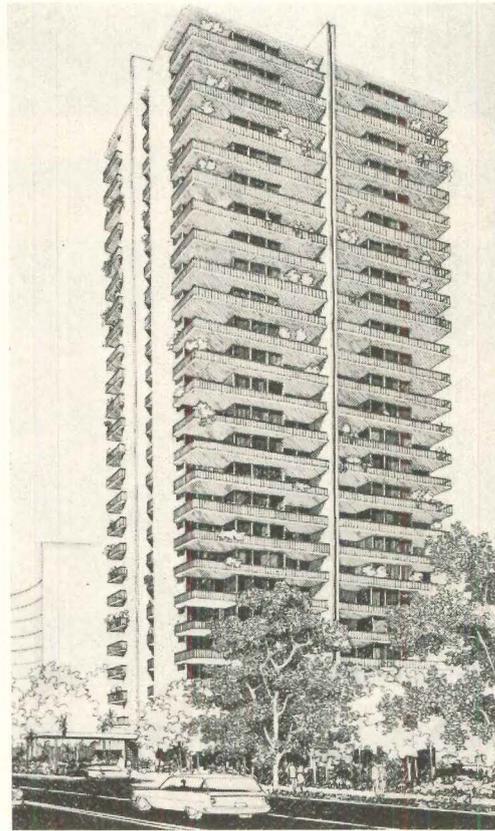
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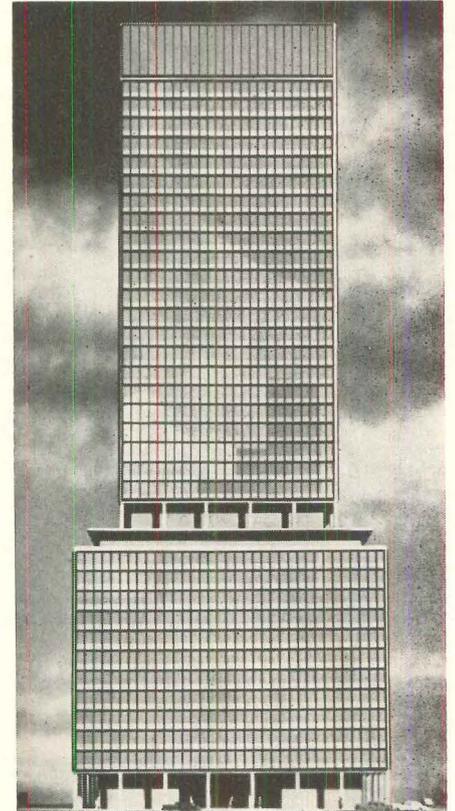
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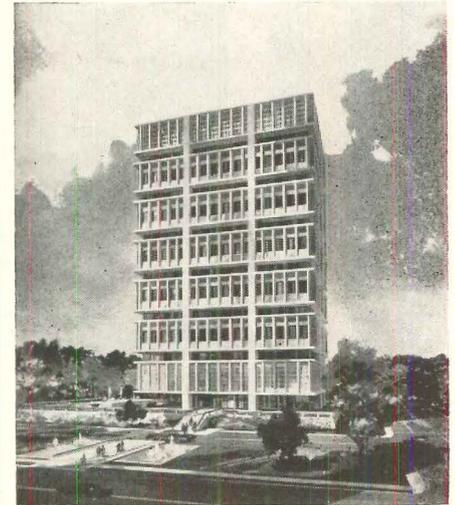
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10. PRINCETON DORMITORY. A new dormitory quadrangle at Princeton University, designed by Hugh Stubbins Associates, will house most of its 361 undergraduate tenants in single rooms. The irregular skyline suggests the sometimes fanciful outlines of some of the older neo-Gothic college buildings. One-story elements in the plan will be faculty houses.

11. OKLAHOMA LANDMARK. Banks and insurance companies seem to be competing to see which can build the most arresting new quarters. The ten-sided tower

above, the home office of the United Founders Life Insurance Co., is to be built on a hillside overlooking Oklahoma City, a location the company hopes will make it "a landmark easily seen for miles". Architects: Hudgins, Thompson, Ball & Associates, Inc.

12. PHOENIX APARTMENTS. The last word in luxury living will be supplied by Century House in Phoenix, a \$7.5 million joint venture by Royal Properties, Inc., and National General Corp. The 25 residential floors in Century House will be divided into four

apartments each, varying in size from one to three bedrooms; each will have a private, 700-square-foot terrace. Architect: Victor Gruen Associates.

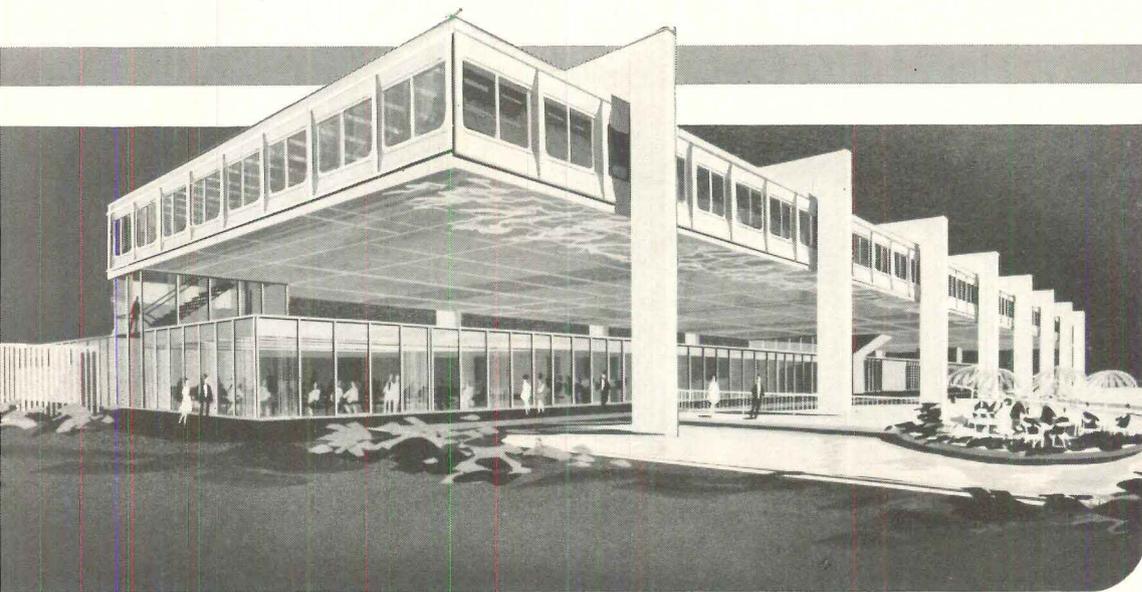
13. MANHATTAN TOWER. A single setback, a mechanical floor, separates the broad 12-story base from the slimmer tower floors in this speculative office building in New York City, built under the new zoning law. U.S. Plywood Corp. has taken five floors and a showroom on the ground floor, enough to name the building, first called 777 Third Ave. Architect William

Lescaze designed the building for the William Kaufman organization and Weiler & Swig.

14. DURHAM HEADQUARTERS. Seven Vierdendeel trusses of reinforced concrete will span alternate floors of the North Carolina Mutual Life Insurance Co. offices in Durham. The big trusses will be poured complete with window panels set between vertical members. Screens fill the bottom and top trusses, filtering sunlight into the lobby and masking the mechanical penthouse. Architects: Welton Becket & Associates. END

AMELCO WINDOWS

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Muzak at Southland Life

The striking 42-floor Southland Life Tower, rising over 500 feet, dominates the Dallas, Texas skyline. A leader in the phenomenal growth of the Southwest, Southland Life relies on Music by Muzak to help create an atmosphere that is pleasant and stimulating for public and employees alike.

Programmed scientifically, Muzak masks noise, replaces cold silence, enhances smart architecture. In work areas, Muzak provides the correct type of musical stimulus hour-by-hour—boosts worker efficiency by combatting tension, monotony, boredom, fatigue.

Muzak sound systems may serve for civil defense warnings, paging, signalling, music distribution. Specify Muzak in the early planning stages. AIA File 31-I-7, Sweet's Catalog 33 a/Mu.

"An integral part of our planning and environment, Muzak pleases visitors and guests and aids employee efficiency at Southland Life,"—Mr. Dan C. Williams, President, Southland Life Insurance Co., Southland Center, Dallas, Texas.



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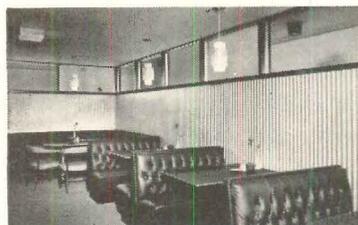
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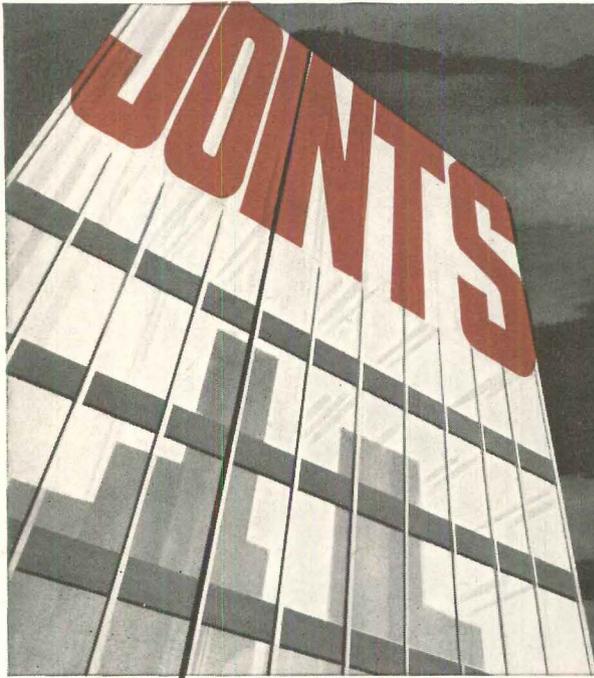
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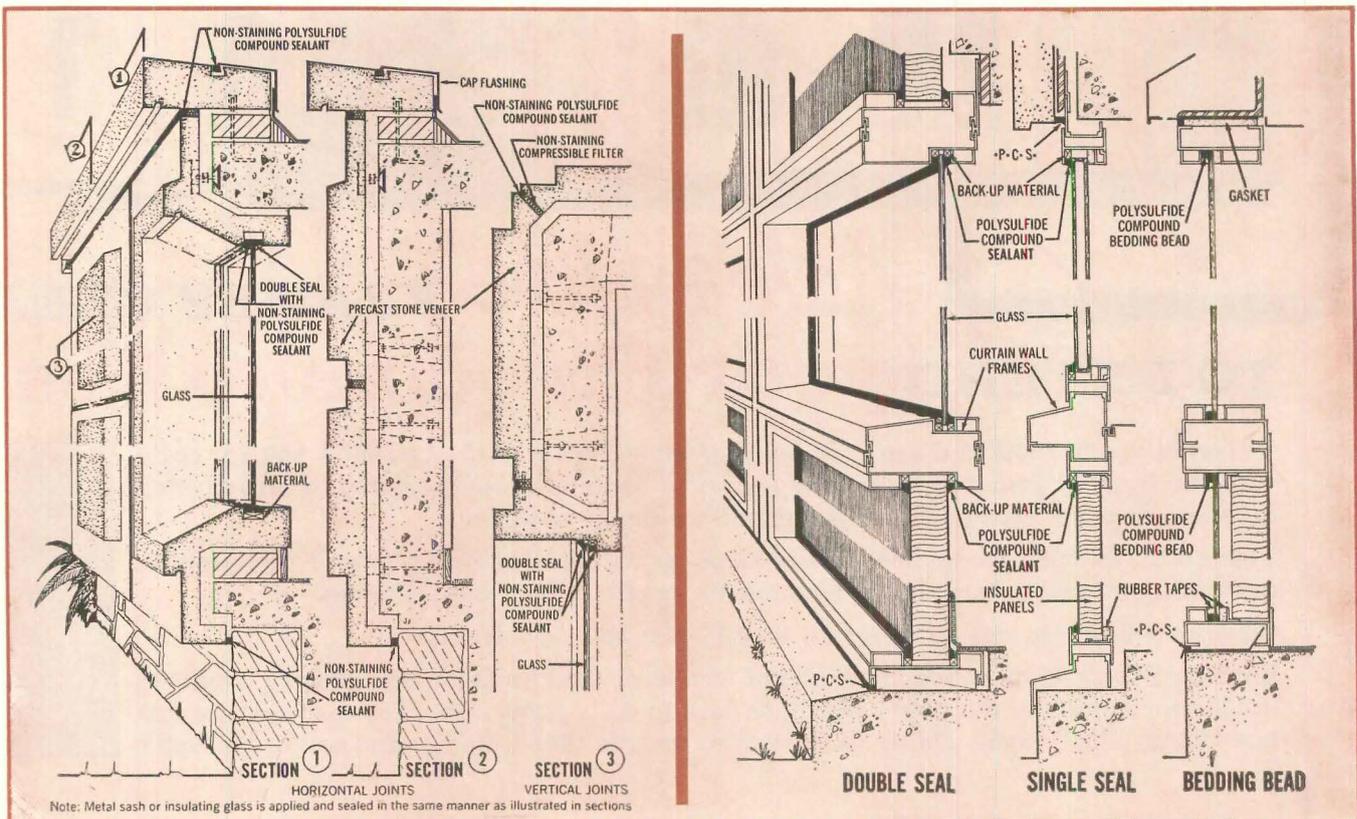
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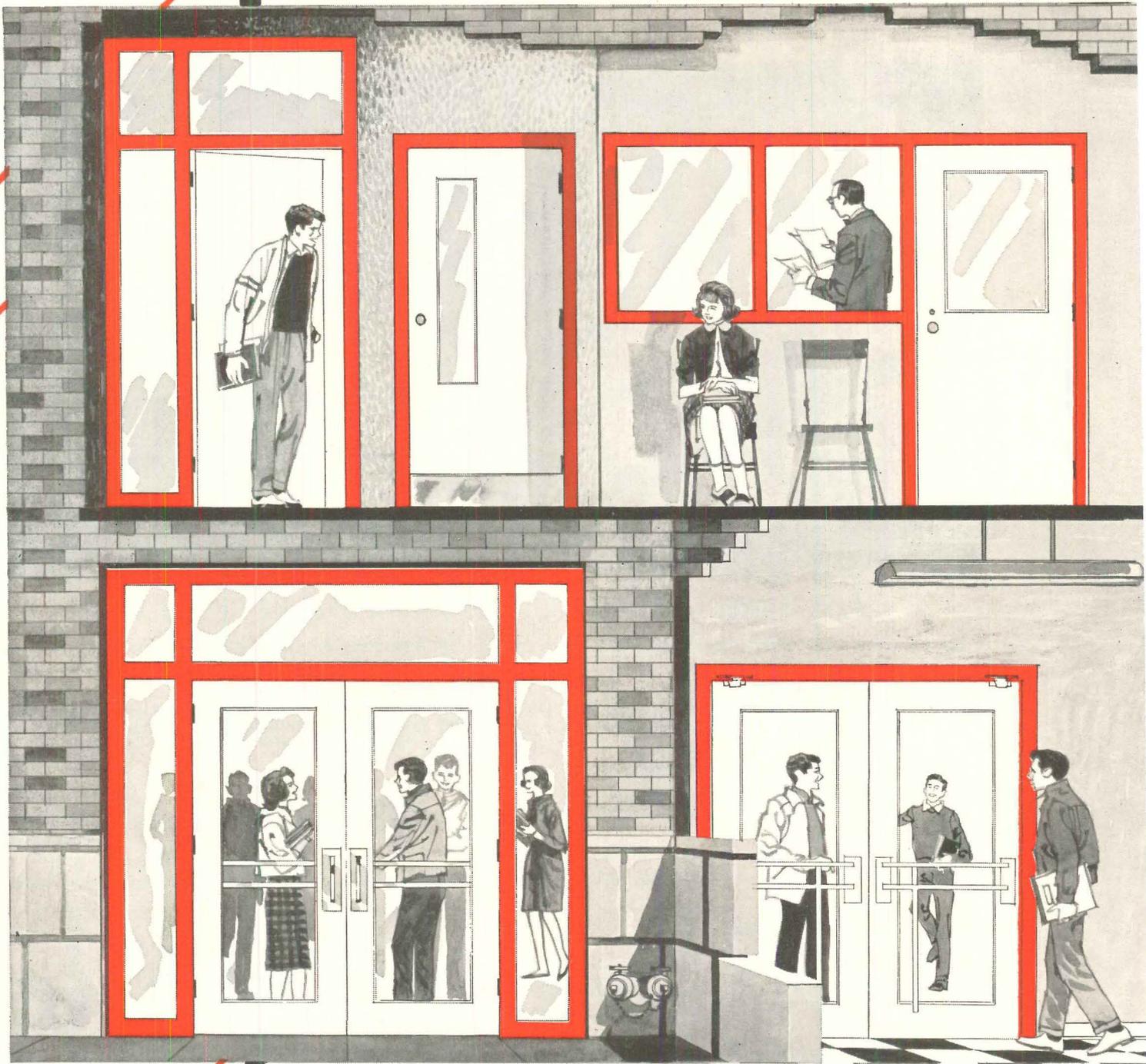
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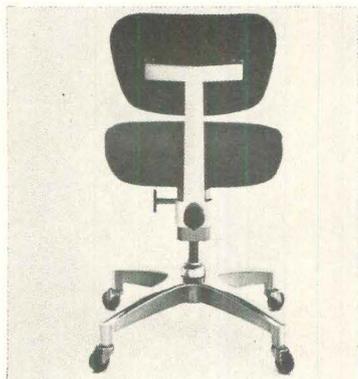
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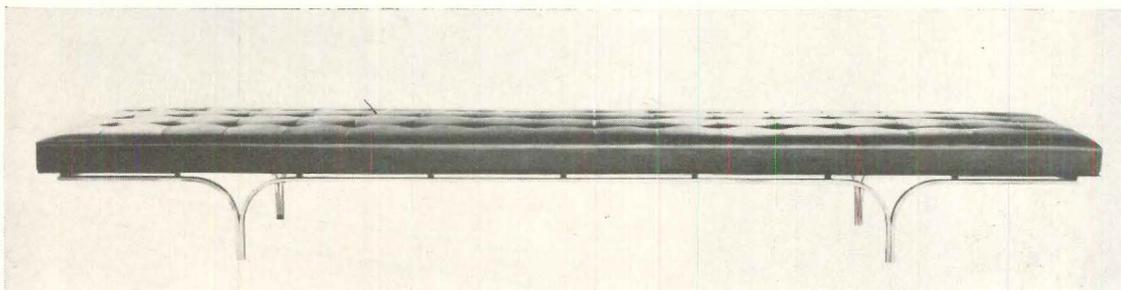
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1. INDEPENDENT TRIO. This reception-room group, which appears to be joined, is really three separate pieces: a side chair between twin armchairs. Norman Cherner designed these pieces, padded with foam rubber and upholstered in vinyl, for Robert Benjamin Inc. The exposed frames are oiled or lacquered walnut. Cost: side chair, \$121; armchair, \$158, fabric not included.

2. METAL TRIANGLE. Another Norman Cherner design, for Nessen Studio, is a desk lamp topped by a triangular shade shielding

two 60-watt incandescent bulbs. The base and fittings are solid brass in chrome and brass finishes. Height: 18 inches; shade length, 19½ inches. Cost: \$58.50.

3. SECRETARIAL SWIVEL. This secretarial chair from JG Furniture Co., Inc. swivels on an aluminum base. Upholstered in black, green, or brown vinyl, it costs \$86; in the customer's own fabric, the cost is \$96.

4. ITALIAN MUSHROOM. Altamira imports this round desk lamp by Arredoluce in two finishes, brushed nickel or polished brass.

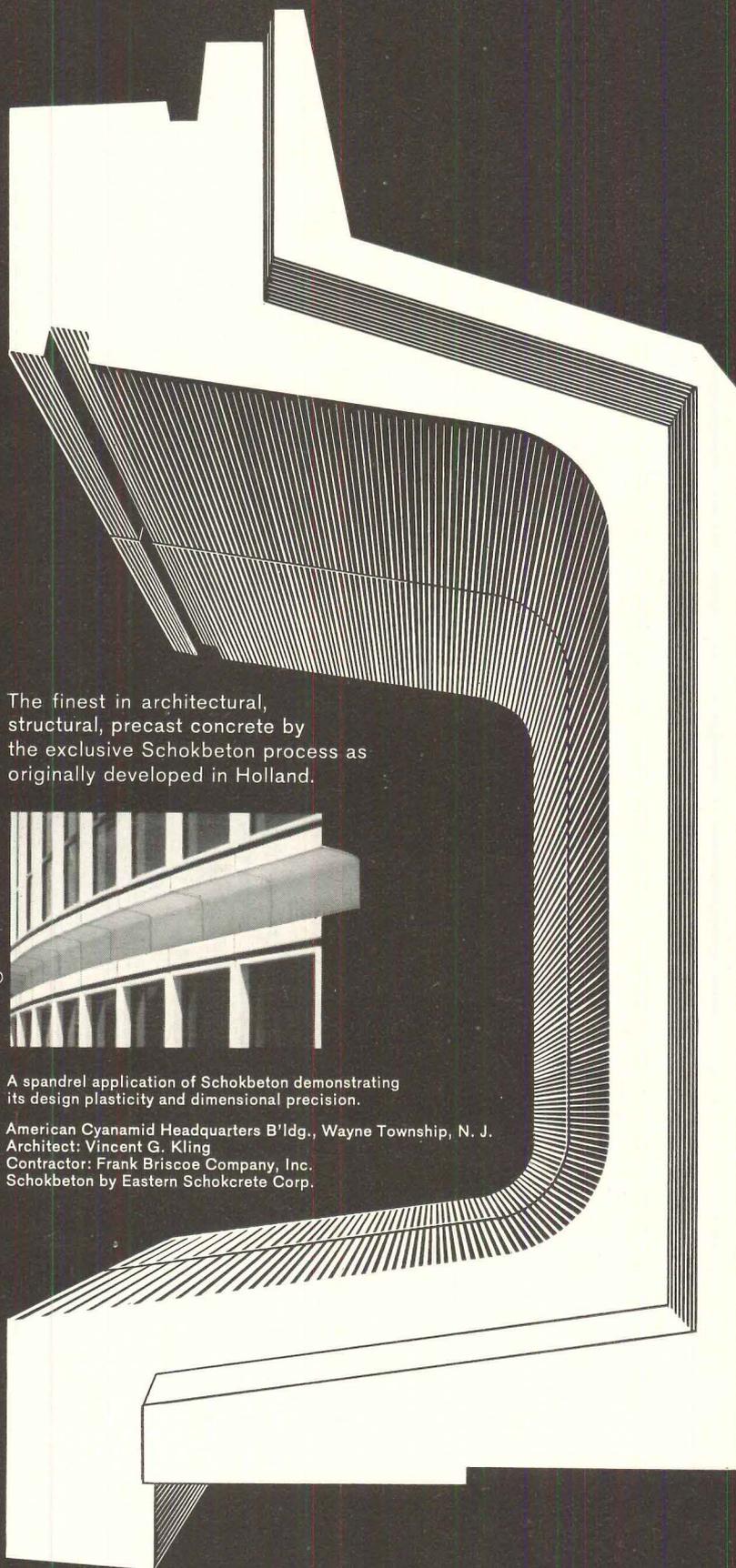
The metal shade, 13 inches in diameter, comes in black, red, blue, or yellow enamel; the under shade is frosted glass. Cost: \$120.

5. LEATHER BENCH. The elegant leather and stainless-steel benches in Lincoln Center's Philharmonic Hall were designed and made by Laverne. Similar benches, in sizes from 6 to 11 feet long, cost from \$1,000 to \$1,750, including the calfskin covering in tan or black.

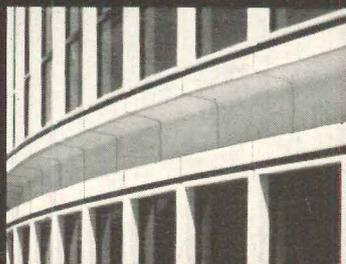
6. ENGLISH ENSEMBLE. Despite its name, a Manhattan shop called Scandinavian Design imports this matching chair and sofa from

England. Both pieces are framed in steel and exposed teak or ash. The small tables have ash or teak tops and square steel-tubing legs. All three pieces were designed by Ernest Race of Race Contracts Ltd. Cost: sofa, \$427; chair, \$196; table, \$58. Prices include British woolen upholstery on chair and sofa.

7. WALNUT DESK. A prestigious secretarial desk from Jens Risom's new Group Nine-E combines a single pedestal with a long side unit (left), which provides additional drawers. Cost: \$1,028. END



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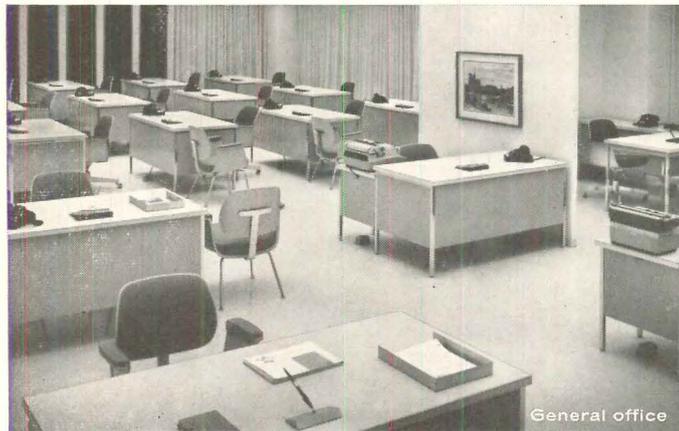
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Is anybody covering this beat? Once in a while a relatively small magazine like FORUM can scoop the entire daily press of New York on stories such as the one about the outrageous tax penalties imposed on the Seagram Building and on other prestige structures (see May '63, *Editorial* and *News*). The reason, unhappily, is simply this: with very few exceptions, U.S. newspapers are doing a terrible job in their coverage of architecture and building. (Another reason is that we have a very alert news department, and some very excellent tipsters.)

Only *after* FORUM's editorial and news story had been sent to New York papers did these papers begin to wake up: on May 18, the *Herald Tribune* ran an editorial condemning this tax on architectural quality; on May 17 the *Times* ran a news story that was little more than a rewrite of *our* news story (plus one item that had "broken" a full week earlier!) and on May 25 the *Times's* architectural critic ran a story very similar to our *editorial*.

Well, imitation being the sincerest form of flattery, all this was very delightful; moreover, it now seems as if the protests stirred up by FORUM may enable Seagram's to obtain another hearing before the N.Y. State Supreme Court.

But where were these reporters and critics when the story broke? The things that are being done every day by administrators, politicians, pressure groups, judges, developers, building labor, and others to shape our cities do not make for very sexy copy; they are, however, rather more permanent in their effect than the latest raid on this love nest or the latest engagement in that gang war. If the newspapers of the U.S. limit their reporting of the shape of our cities to rewrites of press releases (and of stories supplied by monthly magazines) they will be too late to make a dent on the American townscape.

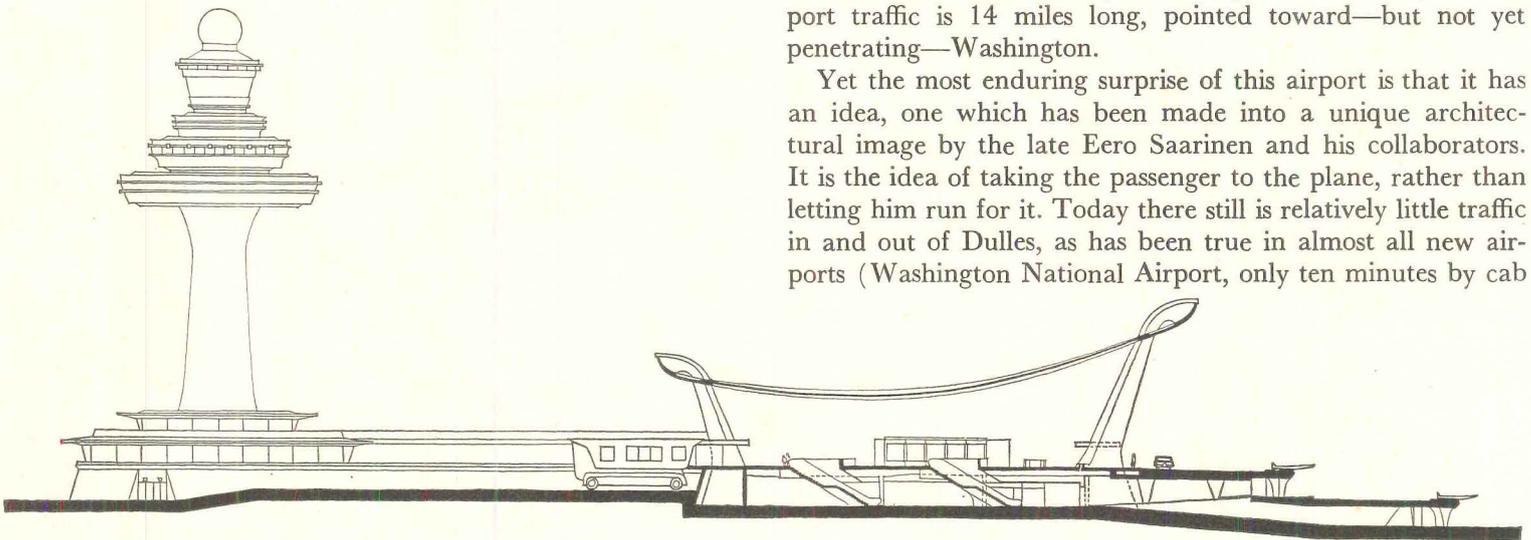
There are, of course, some exceptional newspaper reporters covering this beat—people like George McCue of the *St. Louis Post-Dispatch* and Grady Clay of the *Louisville Courier-Journal* are among the best—but these reporters operate on a shoestring, trying to cover what is, in effect, the biggest single story in their respective home towns. As Chicago's Mayor Richard Daley put it at Columbia University last October: "There is probably no type of reporting which demands as much from the newsman as the urban-renewal beat." He might have included *all* facets of urban design.

Instead of assigning competent reporters—or, for that matter, *any* reporters—to the urban-design beat, most newspapers seem content simply to report what has happened in the way of building (often awful) or what is about to happen (often worse). Few of them try to dig for the stories behind the latest decision to tear down this building or deface that neighborhood; few of them bother to discuss projects while they are still in the project stage; few of them seem to understand what is at stake—including what might be at stake for big city newspapers if the exodus from the big cities were to continue at the current pace.

Last month, there was a hearing before the Appellate Division of the N.Y. State Supreme Court, involving a taxpayers' suit in connection with the proposed construction of a commercial restaurant in Central Park (see *News*, page 7). The *only* reporter present in the courtroom was FORUM's man on the urban-design beat. The newspapers—the people's conscience—were, as usual, asleep. Our man is getting to feel pretty lonely out there. . .

Even in this age of orbital astonishments it might be difficult to believe in Dulles International Airport if it were not, quite simply, physically there. It is earthly indeed, covering 15 square miles, roughly a quarter of the geographic area of Washington, 27 miles away, which it serves. (Superimposed on the District of Columbia it would fit over just about the entire Northwest area). Dulles also contains a cultivated forest of several millions of trees and saplings, planted to insulate the still empty acreage around it from some of the screeching roar of the newest silver skybirds. Its private driveway for airport traffic is 14 miles long, pointed toward—but not yet penetrating—Washington.

Yet the most enduring surprise of this airport is that it has an idea, one which has been made into a unique architectural image by the late Eero Saarinen and his collaborators. It is the idea of taking the passenger to the plane, rather than letting him run for it. Today there still is relatively little traffic in and out of Dulles, as has been true in almost all new airports (Washington National Airport, only ten minutes by cab



PORTICO TO THE JET AGE

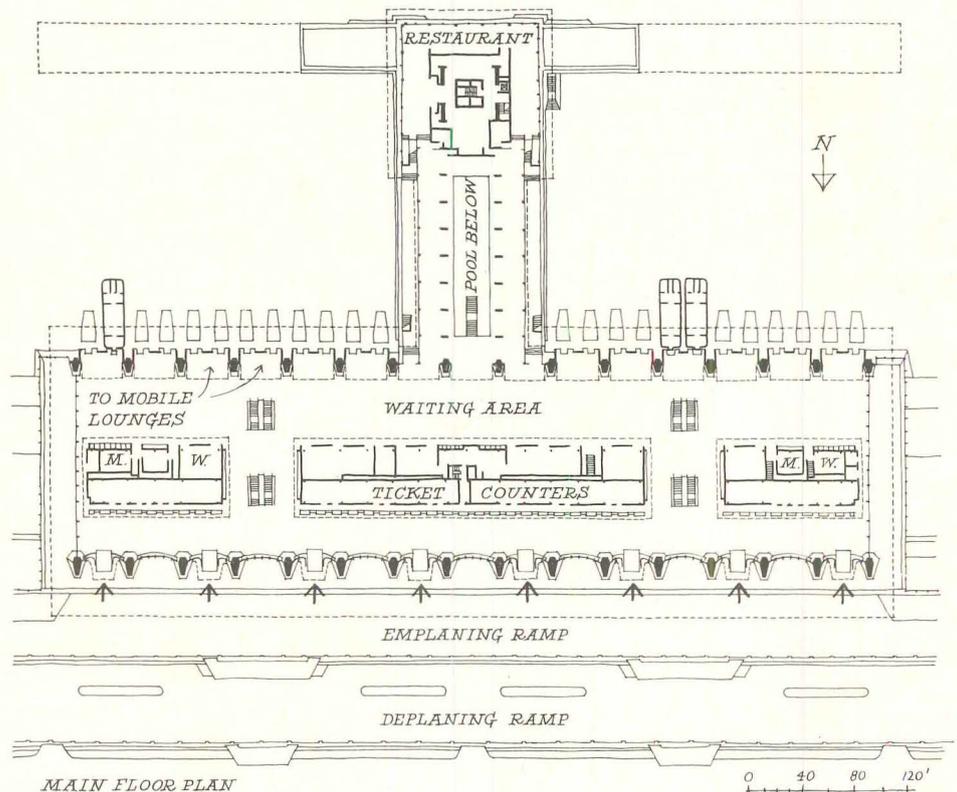
across the Potomac from the Mayflower Hotel, is naturally still the favored terminal for short flights, even those from Chicago). But when the traffic does eventually come roaring in, Dulles will expand to take care of it without growing a tangle of long arms which would obscure the terminal itself. Instead, as is well known to the building world by now (FORUM, Apr. '62, Sept. '62, Sept. '61, July '60), Dulles terminal will simply be extended lengthwise to provide additional docks for the famous mobile lounges which ferry passengers to and from the aircraft parked in the outfield.

Thus the enormous scale of plane circulation in an American airport has finally been disentangled from the unchanging human scale of pedestrian circulation (which at Dulles is solved neatly by stratification, as hinted in the section above: the emplaning passengers stay upstairs; deplaning passengers nip downstairs, pick up their luggage, and leave on that level).

So the image you see here, photographed for FORUM by Evelyn Hofer, is both the present and eventual image of Dulles terminal, which, happily, will never grow into an octopus. The gaunt, enormous concrete frame, with the roof slung hammock-like between its two rows of piers, is in the public consciousness to stay. This frame and roof were made famous by photography long before the building was finished; the difference now, as shown on these 12 pages, is that it has put on its black rimmed glasses, the wall, in order to get to work.



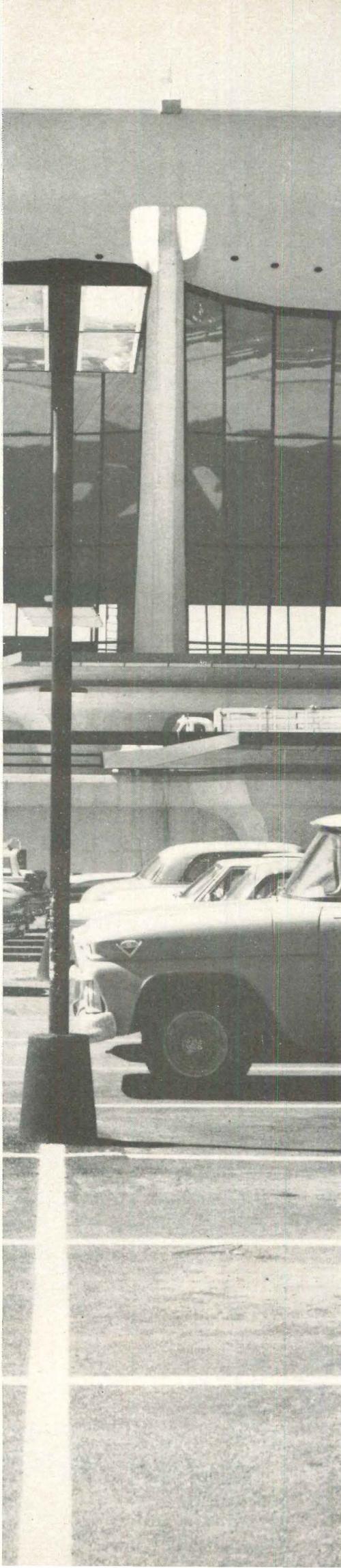




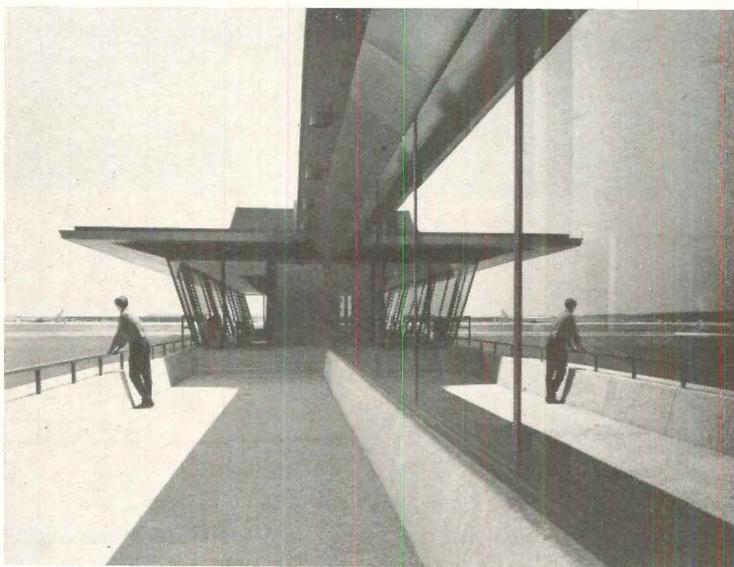
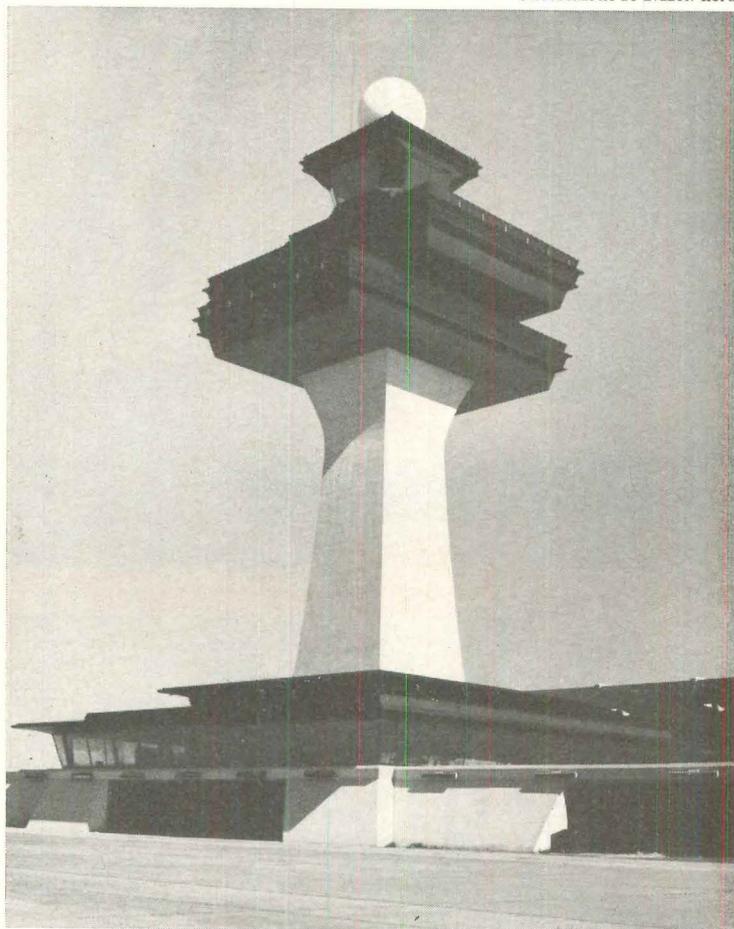
MAIN FLOOR PLAN

Gigantic reinforced concrete piers, leaning out against the load of a vast suspended roof, frame sections of glass—a terrible challenge to window-washers. Not only are the aluminum frames of this wall belled out in plan, but the flat glass panels also tilt off the vertical. The tension wires in the roof are encased safely, stiffly in curved concrete beams which were poured without scaffolding in suspended form-work. But then an enormous traveling scaffolding was built so that the finished ceiling could be installed. The main terminal building is a single immense room, with ticket counters (right in photograph above) built within it.



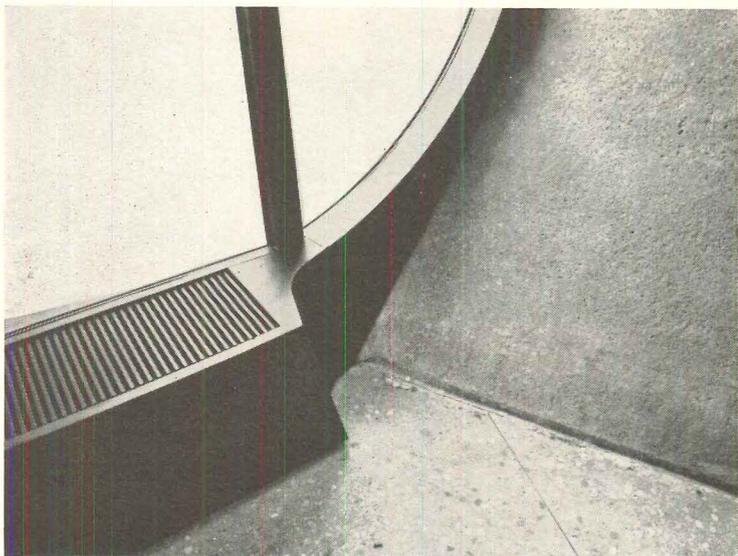
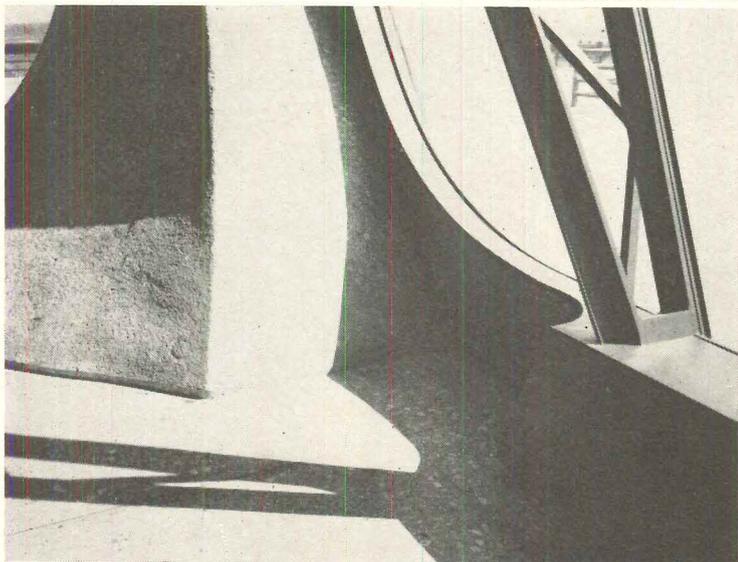


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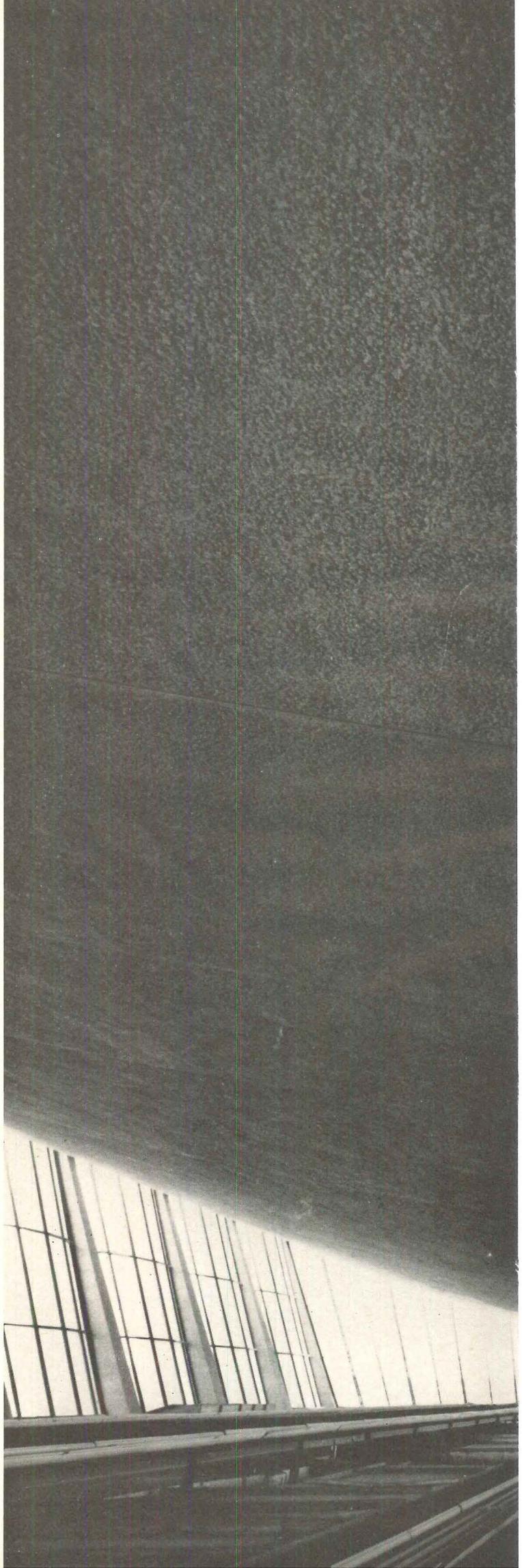


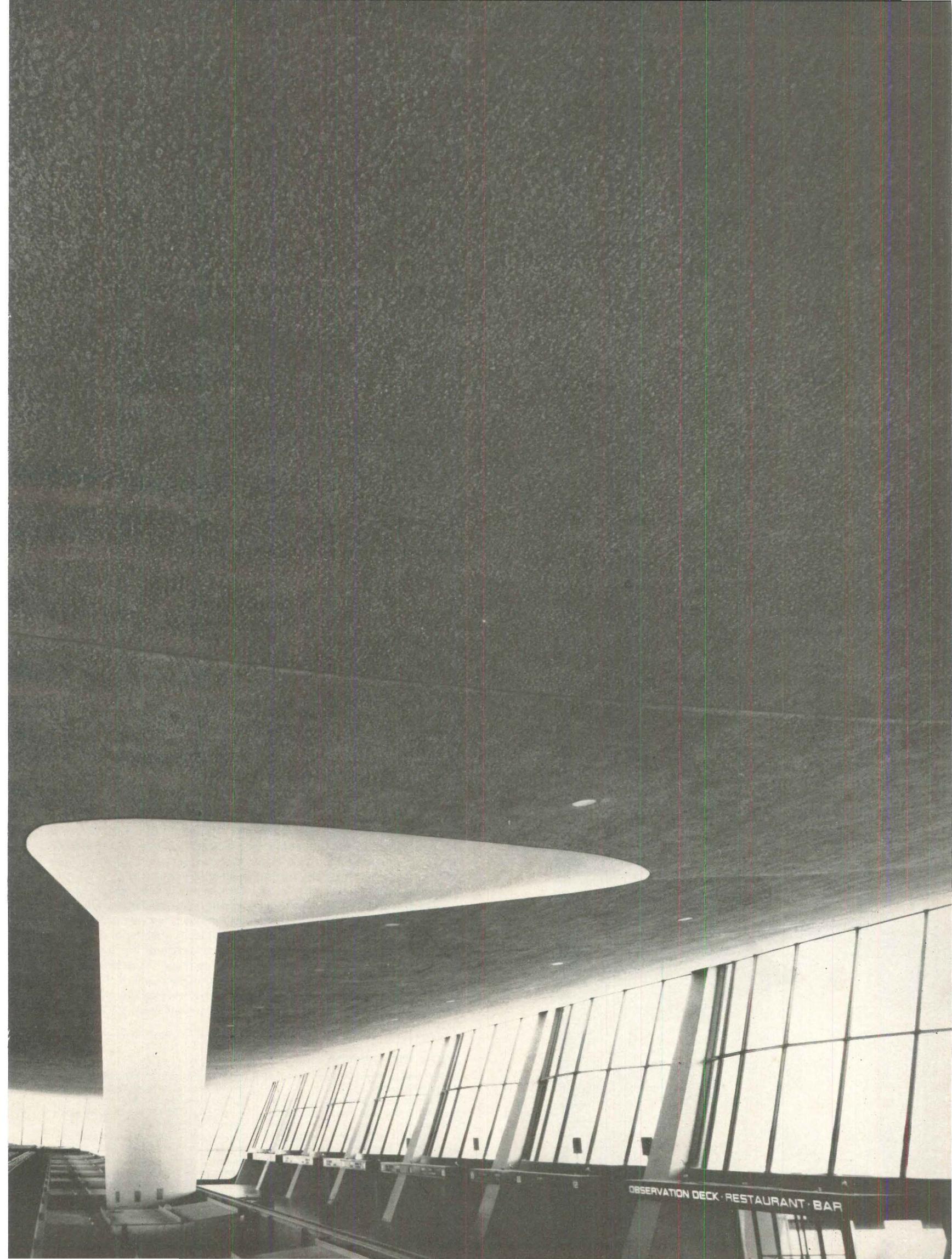
Control tower is equivalent in height to a 14-story building, and connected to the main terminal by a projection which also houses a restaurant. Beside the glass wall of the restaurant is an observation platform. Facing page: view from the approach side to the terminal.

PHOTOGRAPHS BY EVELYN HOFER

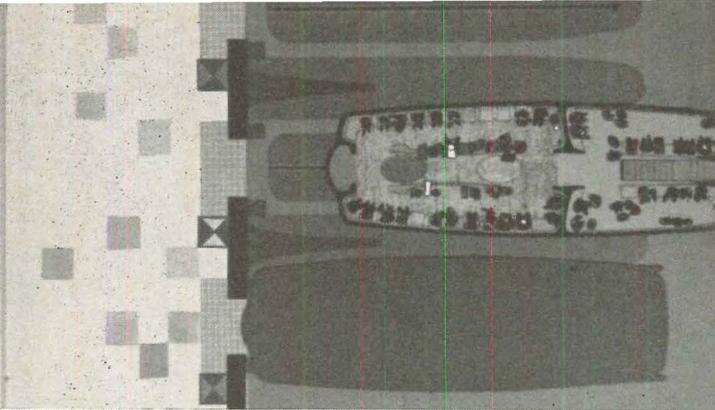


The large curve of the hanging roof in the immense room (right) of Dulles Terminal, spanning close to 170 feet, is matched in the many small curves of the detailing of the window segments (above). In the center of the enclosed terminal space stands the huge sculptured drain pipe which can convey 12,500 gallons of roof water per minute down through the several levels of the building into a pipeline which in turn drains into a lake cut into the clay nearby.

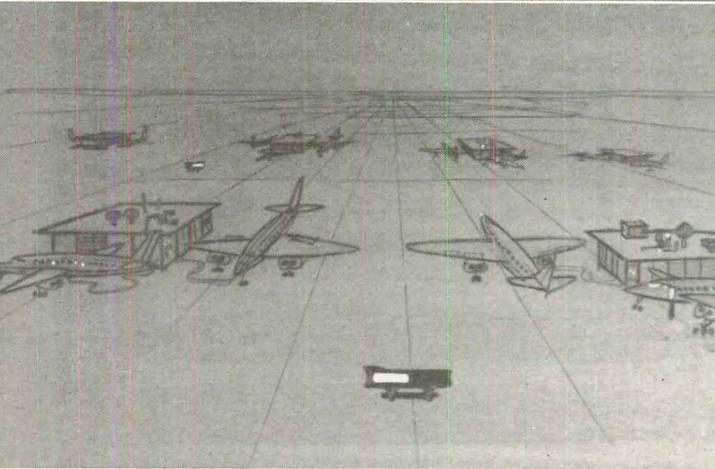




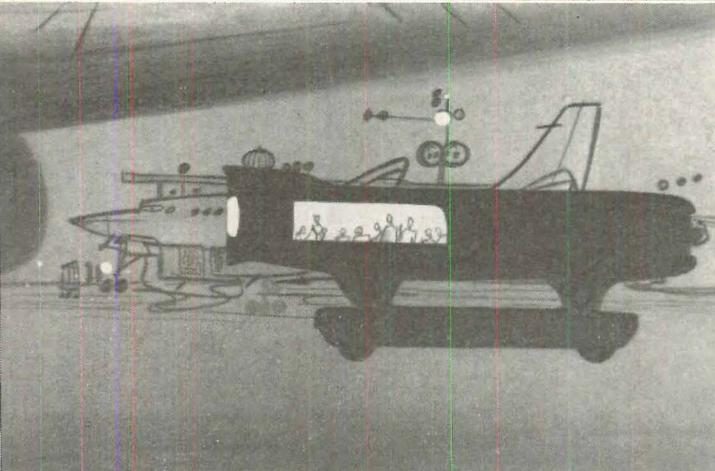
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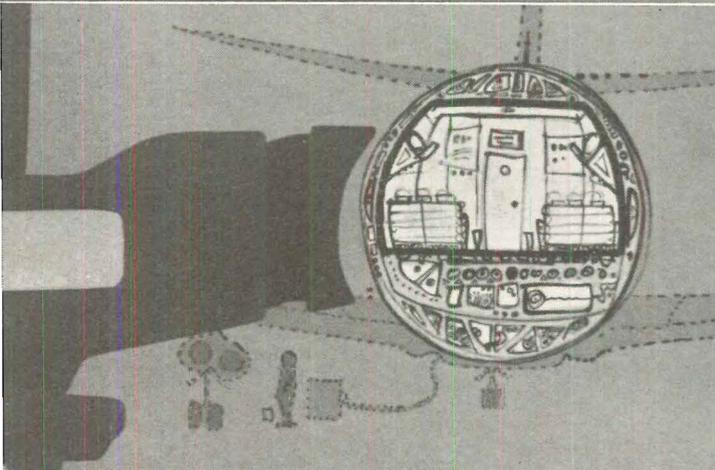
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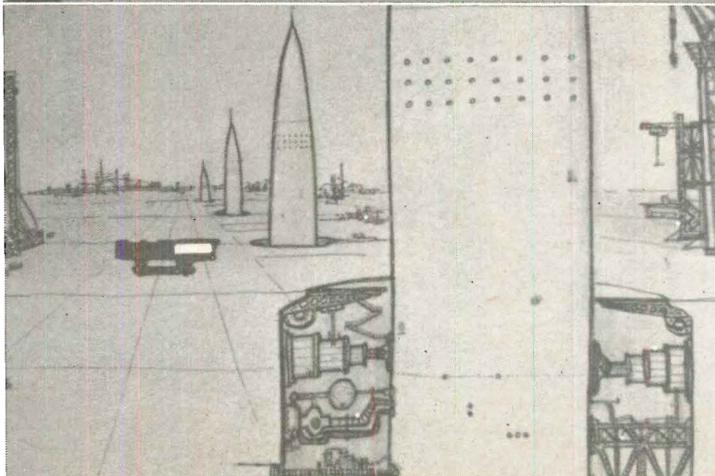
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PHOTOGRAPHS BY EVELYN HOFER



The mobile lounge is similar in idea to the buses used at some European airfields to carry passengers out to enter their aircraft, parked near the runway. But in the design of Dulles, Architect Saarinen was eager to make the "mobile lounges" a good deal more convenient than buses, and a great deal more architectural. Drawings, at left, are from a short film by Charles Eames which Saarinen used to sell the concept of this airport design before designing it. They show (1) a mobile lounge, in plan view, about to depart for the waiting aircraft from its dock at the terminal; (2 and 3) the lounge en route, and the waiting planes being serviced in the immense "gas stations" away from the terminal building; (4) the lounge fastening its "mouth" to the side of the plane in preparation for transfer of passengers, and (5) the lounge at work in some future era, when airplanes will presumably have been replaced by passenger rockets. In the end the actual design of the lounge was prepared by another design contractor, and it did not come out to be quite so personable a beast as Saarinen had wanted. Nor is it quite so tidy in operation as the original concept. Instead of a hooded "mouth" for connecting to the planes, each lounge of the Dulles fleet has a rather complicated looking (and operating) adjustable ramp. There is a motor and a steering mechanism in each end of the mobile lounge; the driver simply shifts seats when he reverses direction to go back to the airport terminal from loading or unloading the plane.

FACTS AND FIGURES

Dulles International Airport Terminal Building, Virginia.
 Architects: Eero Saarinen & Associates. Structural engineers (and design contractor for entire project): Ammann & Whitney. Mechanical engineers: Burns & McDonnell Engineering Co. Airport consultant: Charles Landrum. Landscape architect: Dan Kiley. Lighting consultant: Richard Kelly. Contractors: Corbetta Construction Co., struc-

tural; Humphreys & Harding, finishes. Owner: Federal Aviation Agency, U.S.A. Cost: approximately \$16 million. Enclosed area: 362,422 sq. ft. Sq. ft. cost: approximately \$44.15. Construction: frame is reinforced concrete, bush hammered, with roof of precast concrete panels suspended on tension wires; wall is glass in aluminum framing. Source of financing: U.S. Congressional appropriation.



What it takes to be a client:

1. HOW TO PICK AN ARCHITECT

BY DONALD CANTY

There is no easy way to pick an architect. True, there are some general rules that can be stated, pitfalls that can be warned against, pointers that can be offered about what to look for in an architect and his work—and all of these things are done below.

But there is no magic formula for selection. "Listen," said a man in charge of building some \$10 million in retail stores a year when asked how he does it, "if you come up with a good system, let *me* know."

In reality, systems and procedures are less important in this perilous quest than is the disposition of the client. To the quest he must bring good intentions, an open mind, a hardy sales resistance, and a willingness to take the time and trouble to learn something of what architects and architecture are all about.

To some clients, used to making clear-cut decisions about clear-cut problems, all of this seems impossibly hazy and imprecise. They seek an easy way out, turning to acquaintances, to brothers-in-law, to big, briskly businesslike architectural firms, or to the even bigger organizations which offer a neat package of construction services. Sometimes they get fairly good buildings, but they do not often get architecture.

Hence the stress on good intentions. All things being equal, the client gets about as good a building as he wants. To achieve architecture—a building which is soundly put together, which works well, and which is an ornament to its surroundings and a source of deep satisfaction to its occupants—the client must have a strong drive to do so. His motivation may be simple pride, public relations, a feeling of responsibility to the community and the building's neighbors, a desire to induce receptivity, contentment, or even inspiration in the building's ultimate users. Whatever the reason, he must actively *want* the building to be something far more than mere shelter.

And then he must pick the right architect. Otherwise, the best of intentions are wasted. Many a client who starts out with a desire to be a party to greatness winds up a patron of mediocrity—all through making the wrong choice. Selecting an architect is by no means the only decision the client has to make during the building process (as will be seen in future articles in this new FORUM series), but it is far and away the most crucial.

The formal competition: it may be worth the trouble

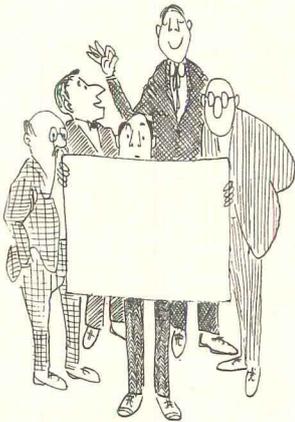
There does exist one cut-and-dried method of making the choice, which perhaps should be dealt with first. It is the formal architectural competition, held under rules established by the American Institute of Architects, in which the client hires a professional advisor, sets up a jury, and invites architects to submit designs based on a common program.

Architectural competitions are popular sport in Europe, but they have never really caught on in the U.S. Indeed,



it is not difficult to make a case against them: They can be expensive to stage (the AIA code requires compensation to the professional advisor, the jury, and the finalists). They sometimes tend to drive out the busier, better-known firms who simply don't have time to take a flyer. They can deprive the client of the chance to closely investigate the extra-design abilities of the firm that gets the jury's nod.

And yet the formal competition is the nearest thing to a



sure-fire system to attain superior architecture—a system that lets the client see the product before a designer is selected, and provides a panel of experts to guide the choice. It is especially well-suited to public projects: it is, after all, a particularly democratic way to pick architects, and it also takes some of the political pressure off the public client. Most important, it often leads to a freshness and excitement not often found in public buildings. There is reason to question, for example, whether Boston would have the prospect of such a vigorous new city hall had the architects been selected and retained directly by the city government.

The first list: where to go from the yellow pages

For the majority of clients, who don't feel a full-scale competition to be feasible, the search for an architect begins with a list of names. If they are habitual clients or long-time architecture buffs, they probably start with some names in mind. If not, however, they are likely to be seen staring at the yellow pages of the telephone book and wondering where to turn.

Some turn to the local chapter of the AIA, but more often than not come away disappointed. The AIA is a membership organization, and in prudence cannot be expected to make qualitative distinctions among those who pay it dues. Many architects, moreover, stoutly resist classification as specialists, and in some localities the AIA office is forbidden even to suggest architects who have done a great many buildings of one type or another.

The best advice that can be offered the bewildered client at this point is to enter into a crash program of self-education,

and shamelessly to pick the brains of all accessible experts. Architectural buff or no, if he has the firm intention to achieve a good building, he probably has some standard of what a good building is. The goals of the education program are further to develop these standards and to find some architects who seem to offer promise of meeting them.

One starting point is in the pages of the architectural magazines, which convey a feeling of what is currently being built and may even contain work by architects in the client's own locale. The AIA chapter may conduct an awards program or have available a guidebook, both of which give some indication (though far from an infallible one) of the practitioners whom the architectural community considers its leaders. But the most instructive procedure of all is for the client to visit new buildings, to get their "feel," and then to find out who designed those to which he responds most positively.

As for the expert counsel, it should be sought on both sides of the fence—among clients as well as architects. Acquaintances or colleagues who have gone through the process of selection recently are rich sources. It is harder on the architects' side: who could summon the nerve to ask Macy's to recommend a good department store? Good prospects here are architect friends who are employees of large offices, architectural journalists, and architectural educators. Journalists and educators are often chary about recommendations, however.

The matters of chauvinism, size, and specialization

The making of the first list of potential candidates involves more than knowledge. It also involves some tough decisions about matters on which even the most expert disagree. Among them, in fact, are perhaps the three most hotly debated questions about the selection of architects.

The first is whether the client should consider only local firms. If he is a staunch member of the Shop at Home committee of the chamber of commerce, the question may well answer itself. National concerns who want to become "part of the community" also may find it prudent to use only home-grown talent. Local public agencies, notably school boards, often are subject to some rather unsubtle pressures from the architectural fraternity not to look too far afield. And even beyond such considerations, there are good reasons to have the architect close at hand during the design and construction process.

Unhappily, however, some communities are not rich in the kind of talent required to produce superior work. The client who wants a building of genuine quality may be forced to look elsewhere. After all, the desire to give the community such a building is local pride of an admirable sort. The hometown architects should understand; they are professionals, not juvenile gang leaders carving an area into unimpregnable turfs. As for the convenience of having the architect nearby, it can often be attained through an association between the out-of-town architect and a local firm.

The second knotty question involves the project's size. If it is a large and complex job, should only big firms be considered? The big firm, of course, will answer yes. It will claim, with a good deal of justification, to offer a wider range of services than a small office. The big firm will also point out that it takes both manpower and experience to manage the myriad details involved in a sizable project.

These are compelling arguments—if the client is satisfied that the big firm will also deliver quality. Some do, but here another harsh fact must be faced: there are enormous architectural offices, turning out enormous quantities of work, which have yet to do a good building. What may be a large job to the client, moreover, may be run-of-the-mill to the big firm, and may wind up in the hands of a 22-year-old designer in one corner of its huge drafting room.

There are two alternatives. One is to engage a medium-sized firm with a hard core of superior personnel which is willing to expand its production staff for the job. The client must balance the risks involved against the likelihood that the firm will throw all of its talents unstintingly into his building. The other is, again, an association, this time of a small design office with a big firm to handle production and perhaps supervision.

A word about such associations: They are a little like shotgun weddings, particularly if the two firms have both been contenders for the commission. There should be a precise



understanding about who is in charge of what; otherwise, design ideas can be lost in endless bickering and compromise. Also, even though the two firms split the fee, the client should understand that he will be putting out a little more in expenses. Whether the association is worth it is his decision.

The third and final point of controversy is whether the client should seek only those architects who have solid experience in the type of building at hand. Phalanxes of specialists have grown up around those types which are especially complicated in program or function, such as schools, hospitals,

laboratories, and factories. Often these specialists know the client's problems better than he does. They can make his life a great deal easier.

But sometimes, the specialist becomes so steeped in the client's problems that the process of design becomes automatic—and the building looks it. His expertise is not to be dismissed lightly, but it should not be over-weighted. Often a fresh solution comes from the application of a fresh talent—even a young talent. A good many outstanding buildings have resulted from the encounter between an imaginative architect and a new problem complex enough to be challenging.

The interview: the selection process gets personal

The client now has his preliminary list. It is not too long, and nicely assorted among architects far and near, big and small, experienced and untrammled. The next step is an entertaining one. He should contact each of the candidates, explain the nature of his project, and invite them to submit information on their offices and their past work. The next few days' mail will bring him an amazing variety of missives, ranging from chaste professional communications to thick, multi-color brochures. Careful study, culling fact from fancy, should enable him to further trim the list to those he wants to interview.

"In the end," said a recent FORUM editorial, "a client has to trust two people: himself, and his architect." The interview is generally the first face-to-face encounter between the two. One of its principal functions is to give an indication whether their coming together produces that special chemistry required for joint participation in creative effort. The reaction is indefinable—it is more than a matter of mere compatibility—but it must be real if something of worth is to result from the association.

An important corollary of the statement quoted above is that architecture is, in the final analysis, a personal matter, whose creation is best not left to committees. Until now, we have used the word client in the singular. Something in the nature of modern institutions, however, seems to require the setting up of committees for tasks like choosing architects. It is probably unavoidable, and it can turn out all right if one condition is met: that a single, strong individual on the committee be given prime responsibility for the screening process and the eventual choice. Otherwise there will be a cacaphony of voices and ideas that will produce only contradictions, confusion, and, in the end, mediocrity. (There may also be some special pleading if representatives of the building industry sit on the selection committee or board. At the very least, they should be required to disqualify themselves from any future connection with the project.)

No two architect-client interviews are quite alike. Some clients like to visit the architect in his natural habitat; some feel safer meeting the architect on their own home grounds.

Some architects appear wreathed in smiles and flanked by vice presidents in charge of client development (salesmen); some come alone and sit quietly, willing to let their work speak for them. In the normal course of the interview, the client



further explains his project, and asks the architect about his office and his experience. The architect attempts to relate his capabilities to what seem to be the client's needs. Somewhere along the line, each forms the important first impression of what the other would be like to work with.

There are, of course, a few general types the client should be warned away from: the architect who shows more interest in the smoothness of his pitch than in the specifics of the job at hand; the architect who claims to have developed startling, cost-cutting innovations; the architect who comes to the interview already bearing a sketch of what the building might look like, and, most sinister of all, the architect who hints that he might be able to shave the fee a bit. The AIA chapters put out schedules of recommended fees which have met the test of fairness to both sides. The architect can suggest that the fees be higher than the schedule if extra services are required, but beware if he offers to make them lower.

The client will not work solely with the architect himself, and so should get to know the others in the office who will be importantly involved in the project (a step which can be accomplished either in the initial interview or as a follow-up). Included here are the structural, mechanical, electrical, and acoustical engineers, whether they are on the architect's staff or are to be engaged by him as consultants.

The client is now almost ready to make the choice—but not quite. The final proof of an architect is in his buildings. The client's final step, then, is a careful investigation of each surviving candidate's past work.

The tour: what to look for in the architect's work

The operative word is investigation. This does not mean turning again to the magazines, nor driving by the architect's buildings, nor even walking through them with him and saying periodically, "Isn't that nice!" (if it really isn't very nice, the client's best line is, "Say, this *is* a building). It means

finding out how expeditiously the buildings were built, how much they cost, how well they work, and, once again, how they feel as human environment. Advice on procedure would go something like this:

First of all, give the architect a fair shake—let *him* suggest which of his buildings you should look into. Then steel yourself not to look for the shadow of your building in them. Your building, influenced by your own needs and nature, may turn out to be quite different, even in the hands of this architect.

Next, ask for an advance look at the program for the building you are studying (or a verbal summary if the program does not exist on paper). This way you will have an idea of what the architect was expected to deliver.

Approaching the building, look to see how well it fits into its immediate surroundings, particularly if it is in a key location or a neighborhood whose character demands particular respect. Case the exterior, weighing your reaction to the use of materials, the general scale, the proportion of one part to another.

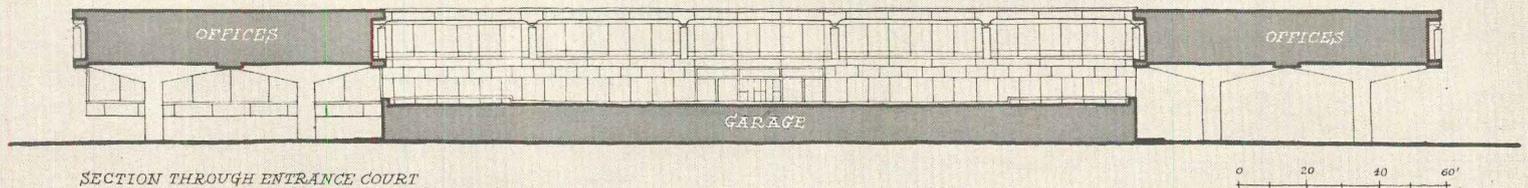
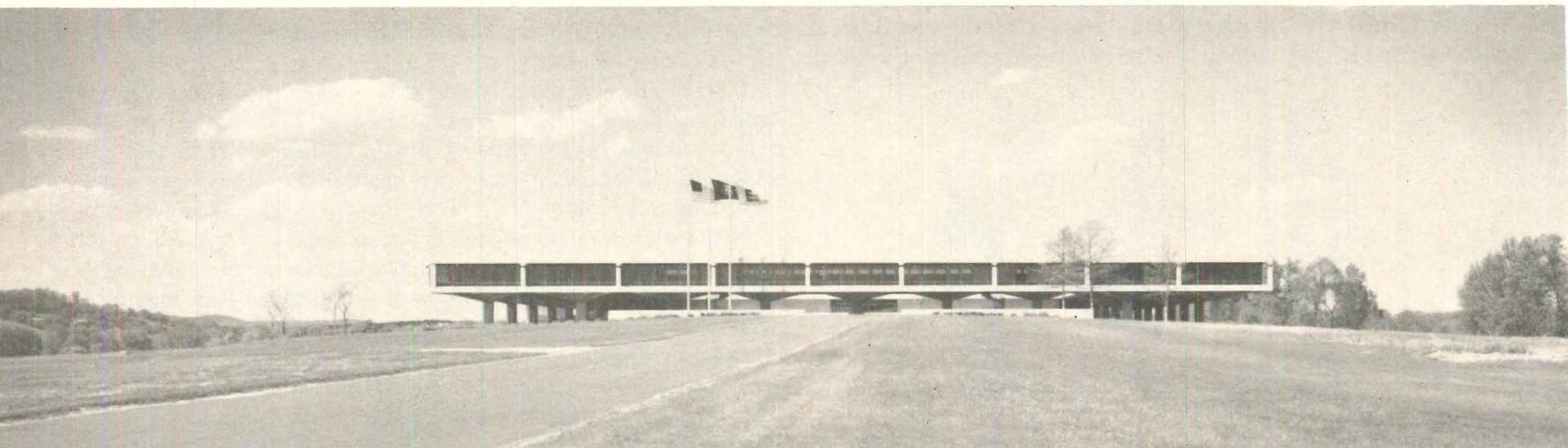
Once inside, do the same, and also take note of the handling of light, both natural and artificial. (But don't blame the architect for the furnishings without checking who chose them.) Think back to the program, and try to form some impression of how well the building fulfills its function. During the tour, don't hesitate to ask the architect about any aspect of the building you find questionable.

Later, arrange to see the building's owner. Tactfully probe further into the building's function; try to determine how the job went; get as much information as you can about costs. If the owner is reluctant to give you specific figures, at least find out how close the final cost was to the architect's estimate. But do not necessarily take all the owner says at face value. If the building came in high, it could have been because he insisted on changes, or simply because building costs in general rose between estimating and bidding.

Finally, if possible, talk to the contractor. Try to find out from him how complete the plans and specifications were, whether they came in on time, and generally how the architect performed as construction administrator. But, again, beware. There is a continual cold war of sorts between contractors and architects, so carry an ample supply of salt.

Such a procedure may seem tedious, but nobody said it wouldn't be. The more time and thought the client puts in, the less likely he is to make a mistake in his choice of an architect, the results of which can only be a building that neither looks, feels, nor works well. And that is a terribly prominent, terribly permanent kind of mistake to make.

With this article, FORUM begins the series "What it takes to be a client." In coming months, other installments will deal with the architect's services, the building program, fees and contracts, the process of design, and construction supervision.



EMHART: A BOLD, PRAGMATIC STRUCTURE OF CONCRETE AND STEEL

The wafer-thin office slab, shown above floating low over a handsome Connecticut hilltop, is the new administrative and research headquarters for the Emhart Manufacturing Co., makers of highly engineered process equipment. Designed by Architects Skidmore, Owings & Merrill, this deft, horizontal stroke is an unusual and significant building by any number of standards.

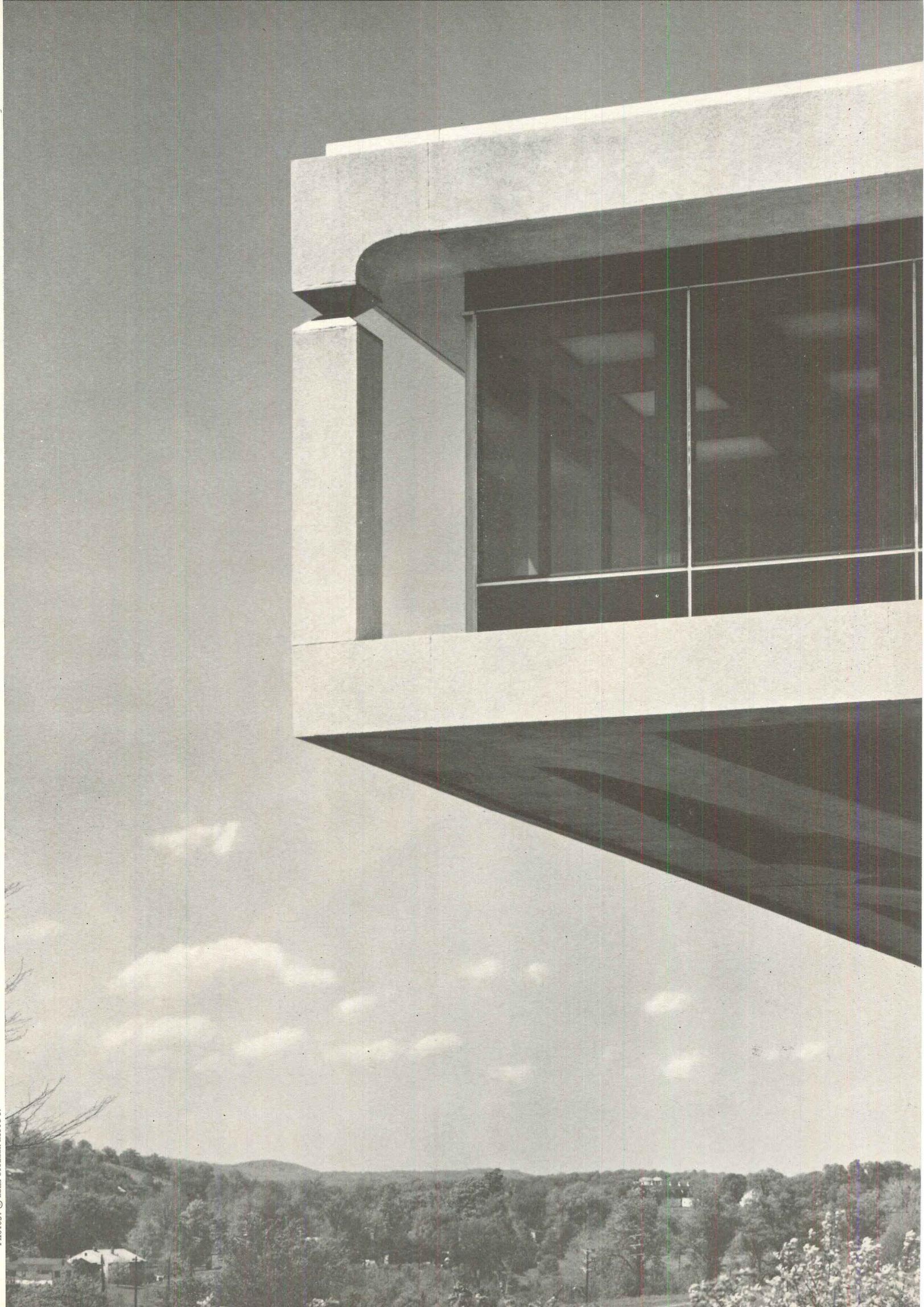
It is, to begin with, a fine adornment to a quietly spectacular 100-acre site which might well have been ruined had the architects not raised their delicate slab gently off the ground, permitting it to ride gracefully across the spine of a long, commanding ridge.

It solves the vexing problem of what to do with employee cars in a rural setting: with the building raised above the

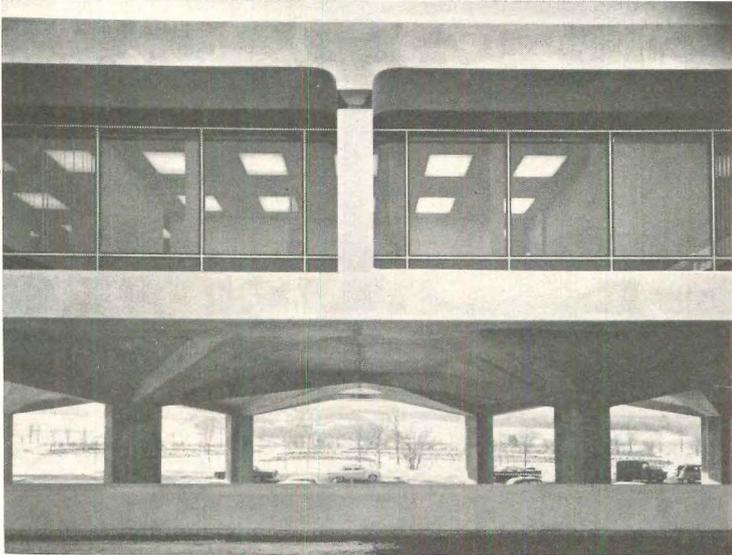
ground, cars can be parked underneath it, minimizing walking and providing shelter so nobody gets wet. Unsightly parking fields are thereby eliminated so that panoramic views from inside the building, already greatly enhanced due to the elevation, are not interrupted by the usual sea of automobiles.

It is the first big building of exposed, poured-in-place concrete to be completed by SOM, and its bold structure is supported on a forest of great, muscular "trees" which lift the office slab into the air.

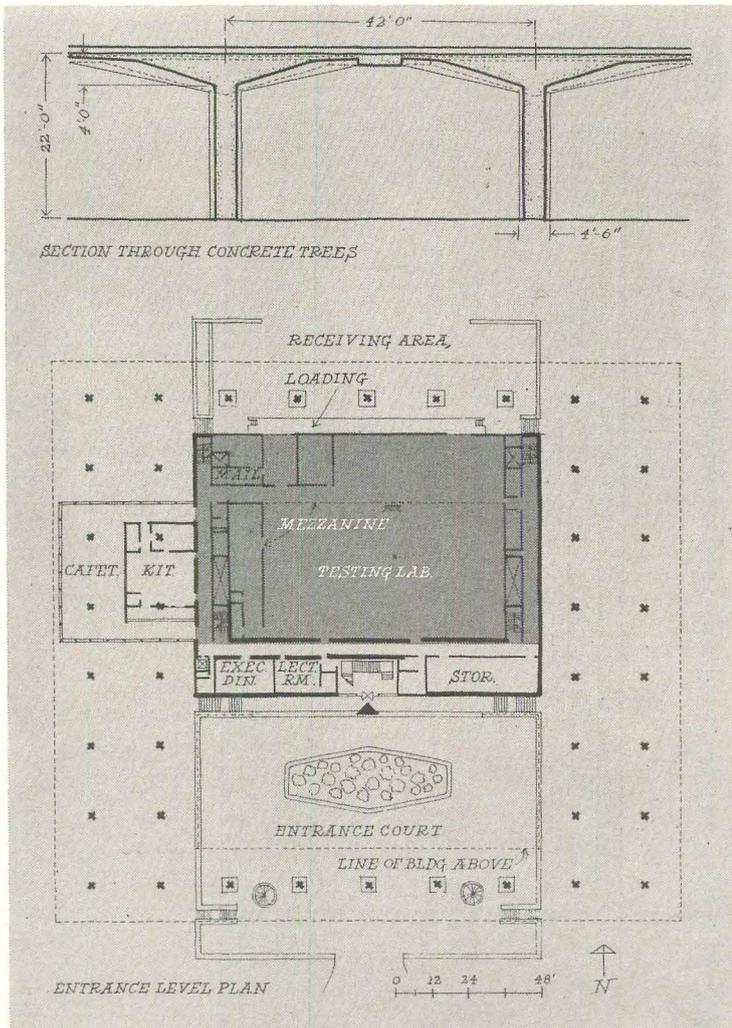
It stands in striking contrast to an earlier SOM trend setter, the Connecticut General Life Insurance Co. (FORUM, Sept. '57), a masterpiece of steel and glass which is located directly across the highway and which is clearly visible at a distance of about a half mile.







Emhart's "trees" form arches, framing ever shifting views. The testing laboratory (plan below) is a steel-framed "building-within-a-building."



The structure: complex, original — and powerful

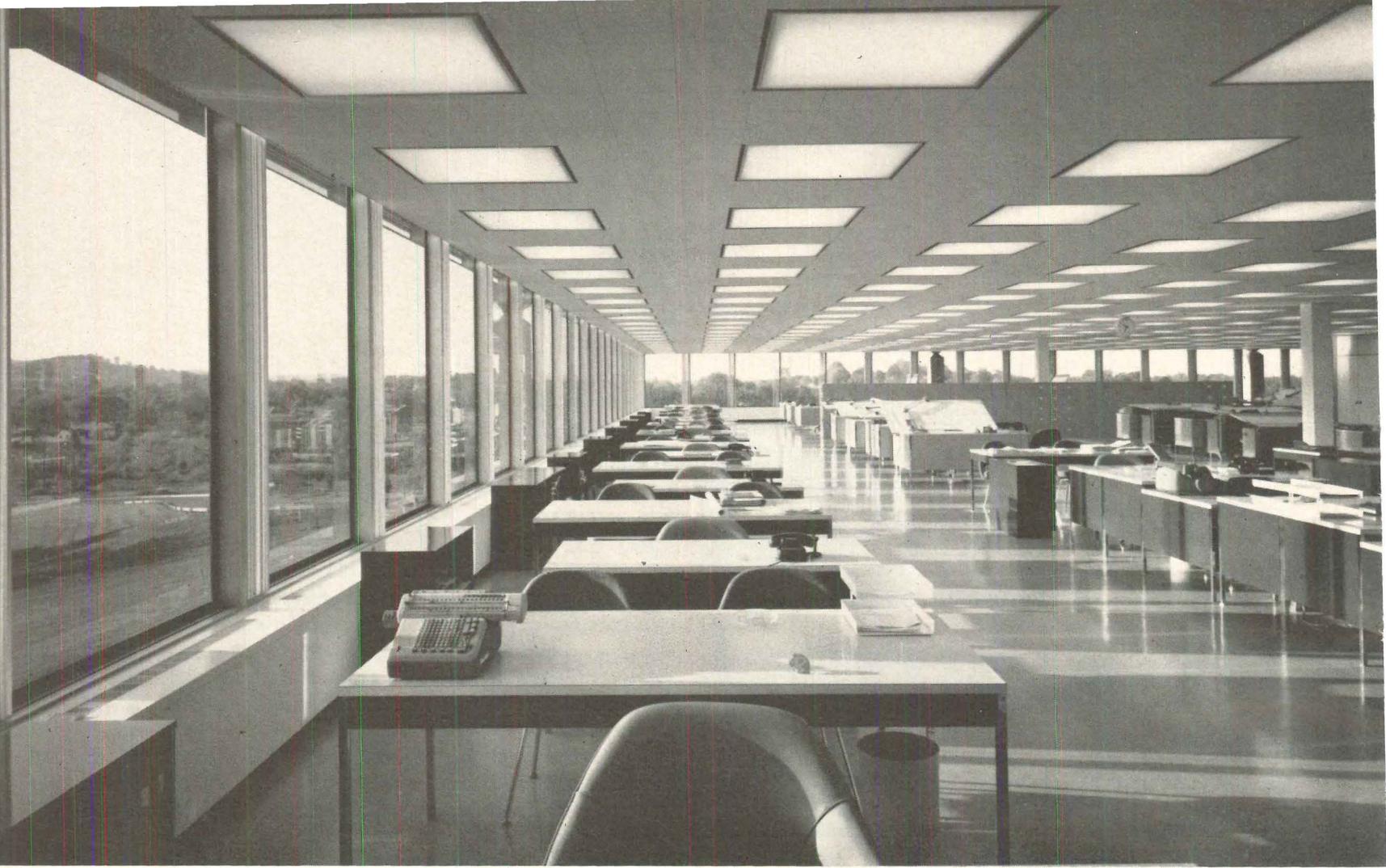
The Emhart headquarters is, in effect, two separate buildings in one, each with an independent structural system. All office space is contained in the main part, and its structure is readily apparent (photo opposite): robust, big-scaled concrete "trees" rise to form floor sections 42 feet square; from this second-floor level, intermediate columns at the corners of the squares support the roof. Hidden from view, however, is a two-story testing laboratory dropped right down into the middle of the building (see plan, below left). To prevent transmission of noise and vibration to the surrounding office areas, the laboratory was given a completely independent frame of exposed steel painted black.

The desire to provide sheltered, unobtrusive parking under the building influenced the choice of concrete "trees," which interpose a fireproof structure between cars and offices, and also the distance between "trees." Theoretically, the "trees" could have been farther apart. But 42 feet, a multiple of the building's 6-foot module, worked almost ideally for parking as well as for offices. Furthermore, it left the spans short enough to minimize deflection, an important consideration since the great length of the building (336 by 378 feet) would be sure to magnify the slightest deviation from a straight line.

Two pours were necessary to produce each of the heavily reinforced "trees": the first for the column section, the second for the four radiating branches and the floor slab above them. Since the architects desired a more refined finish than the unevenly colored raw concrete allows, the surfaces will shortly receive a coat of sprayed-on white paint. To insure an absolutely smooth finish, molded plywood forms with mitered shop-joints were used. (Due to the sloping nature of the site the forms could be used only twice, but they were thoroughly cleaned—including vacuuming—each time.)

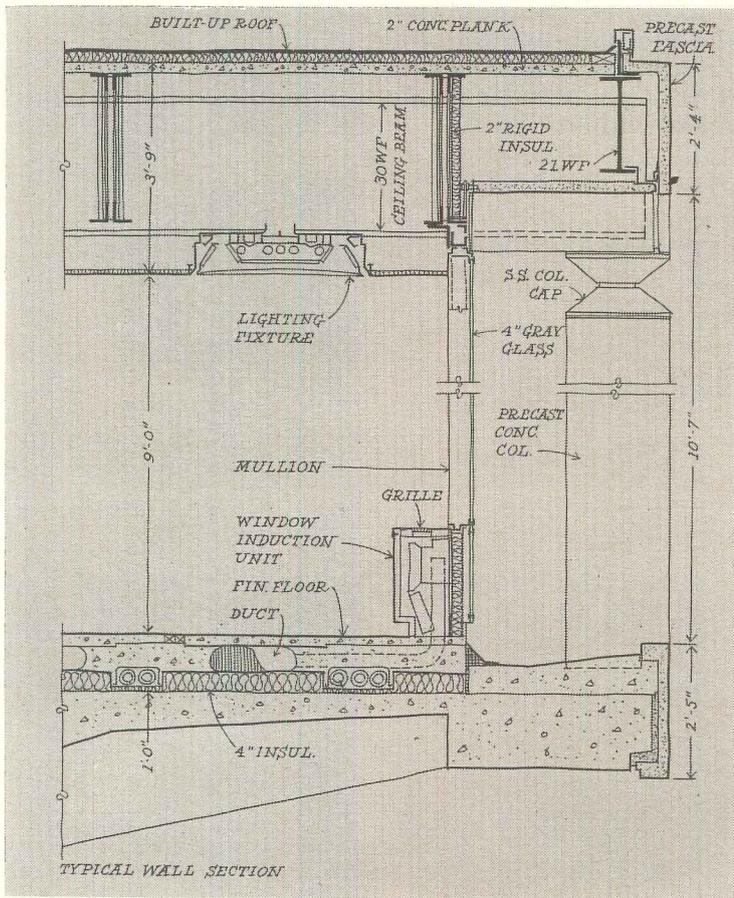
At the second-floor level the strutlike columns around the perimeter are of precast concrete, and the interior columns are of fireproofed steel. Together they support a light, steel-framed roof, all that was necessary to handle snow loads. Raised as it is above the ground with a vast area of exposed soffits, the building has one additional surface for heat loss. The architects overcame this by sandwiching a 4-inch layer of styrene foam between the concrete floor structure and the finished floor slab.

The roof fascia, like the perimeter columns and slab edges, is covered with precast concrete sections, 2 inches thick. The sections were acid-etched to expose the aggregate, which is a light gray granite. To emphasize the lightness of the roof, and possibly as a poetic way of expressing the movement which can occur between perimeter columns and roof beams, the designers interposed short sections of pipe column, covered with hinge-shaped sheets of stainless steel (section, page 93).

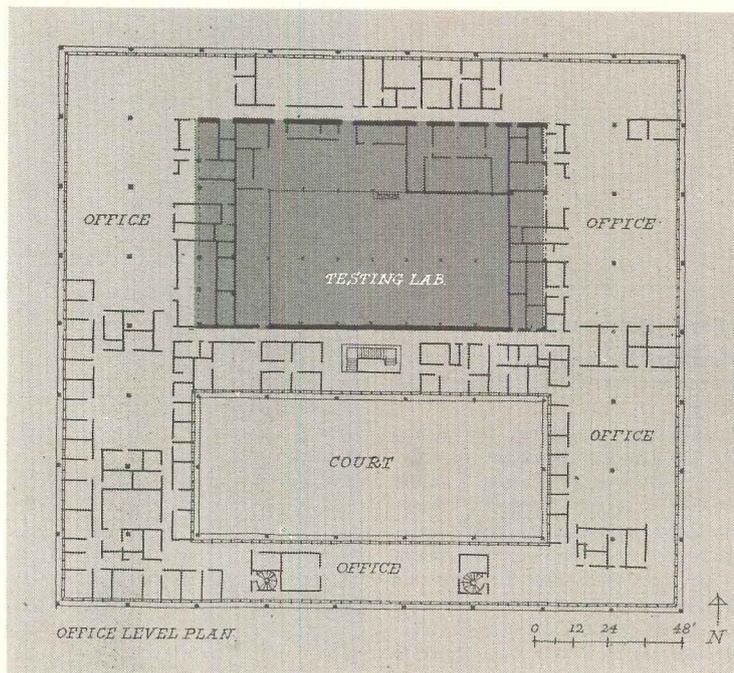


With the building lifted off the ground, Emhart's large open areas have spectacular views. Below: main reception area off the entrance court.





Glass is set back 3 feet for shading and easy washing (above). Spaces are open, with executive offices grouped in the southwest corner (below).



PHOTOS OFF. : © EZRA STOLLER ASSOC'S.

The interiors: open, austere — and full of views

Sixten Wollmar, president of Emhart, and also a member of the board of directors of Connecticut General, watched with interest that company's successful move to Bloomfield six years ago, and decided to follow suit when Emhart became dissatisfied with its old location in a declining and crowded residential-industrial area on the outskirts of Hartford. Bloomfield beckoned with lower taxes and land costs and, without hesitation, Skidmore, Owings & Merrill were engaged.

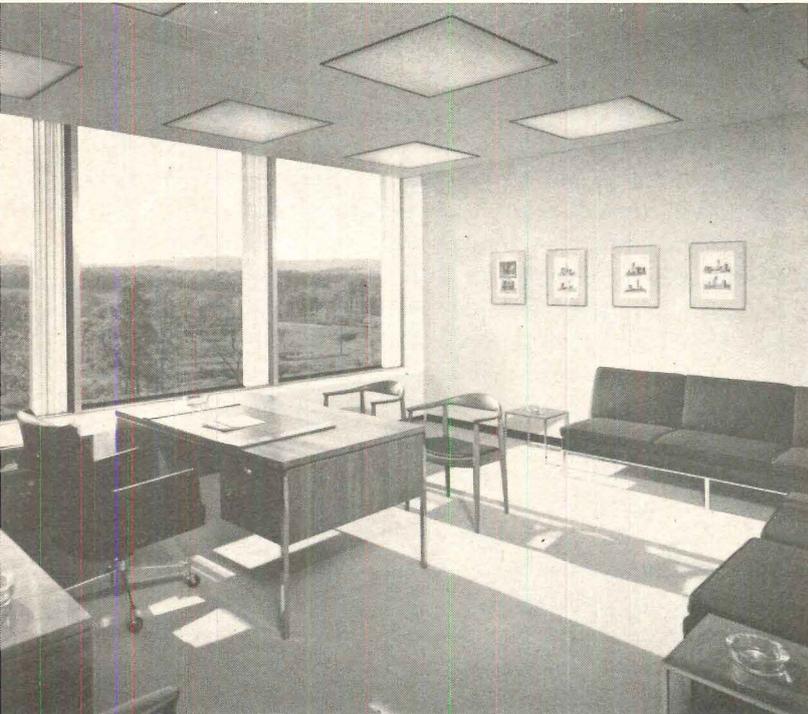
Emhart's requirements, apart from the special testing laboratory, were for a small number of executive offices and large, open engineering areas. The company's staff consists mostly of professional men and only 10 per cent of the building had to be given over to employee facilities, like the glass-boxed cafeteria under the main slab.

Unlike Connecticut General, Emhart had little need for flexible partitions: regardless of how much the company grows, the management requirements will remain fairly static (in any case, the building was designed with 30 per cent more open area than is presently needed). All interior partitions, therefore, are of solid masonry, many of them painted in bright primary colors to serve as accent walls for the great open office areas.

The offices are enclosed by walls of gray glass, set back 3 feet from the edge of the slab for shading and easy washing (see section). The dominant impression from inside the building is of sweeping views over the countryside and of clean, almost spartan interiors. The characteristic SOM thoroughness is evident in the ceiling lights: to get a 3-foot-square unit with air outlets for the air-conditioning system, SOM designed a fixture and then ran a competition on performance as well as price among four preselected companies.

Emhart was in a hurry to build: from groundbreaking to occupancy took just 16 months. No doubt partly because of the speed of construction the general contractor was able to bring the building in about 15 per cent under budget. Although no figures are available, the cost of the structure alone probably ran about \$25 per square foot complete—a remarkably modest price for such a distinguished building.

Whenever a period of years separates two buildings designed by the same firm of architects, comparisons are almost always instructive; this is particularly the case with Emhart and Connecticut General. The latter has one of the most perfectly detailed curtain walls of all time stretched over a "pure" structural frame; it is a high watermark in the development of steel-and-glass construction. Emhart is a much more pragmatic building, with a complex and very sculptural structure. SOM's interest in concrete, as a matter of fact, dates from the completion of Connecticut General. In Emhart, it has received one of its finest expressions.

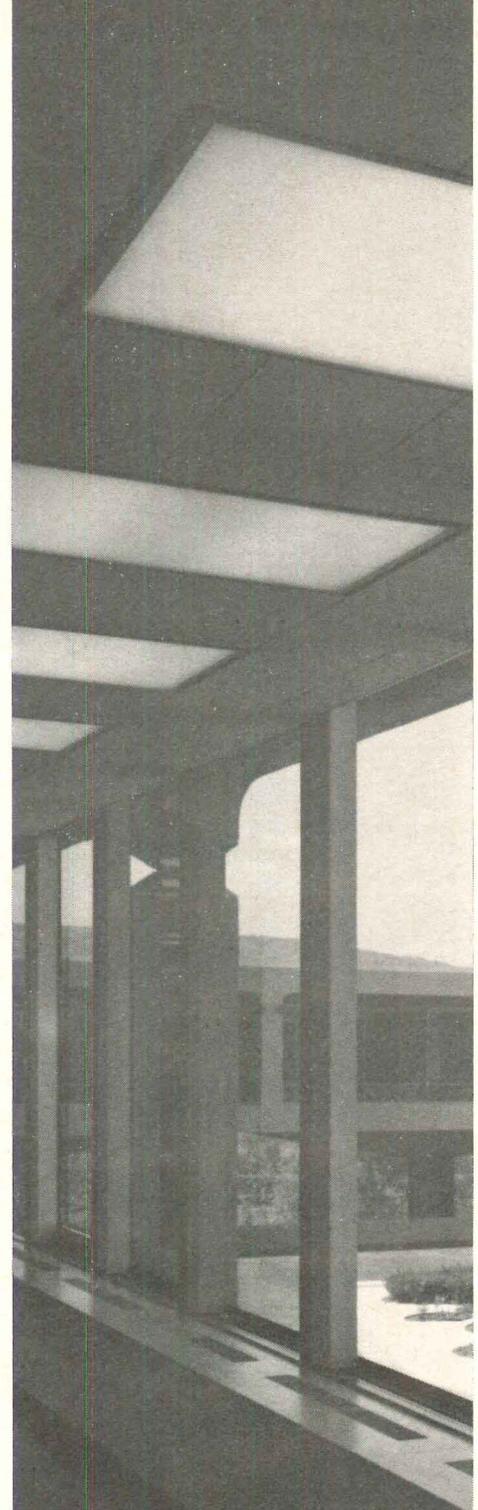


Executive vice-president's office has 18 feet of gray-tinted window wall, and very simple furnishings. Below: the grottolike employee cafeteria.



PHOTOS: © EZRA STOLLER ASSOC.'S.

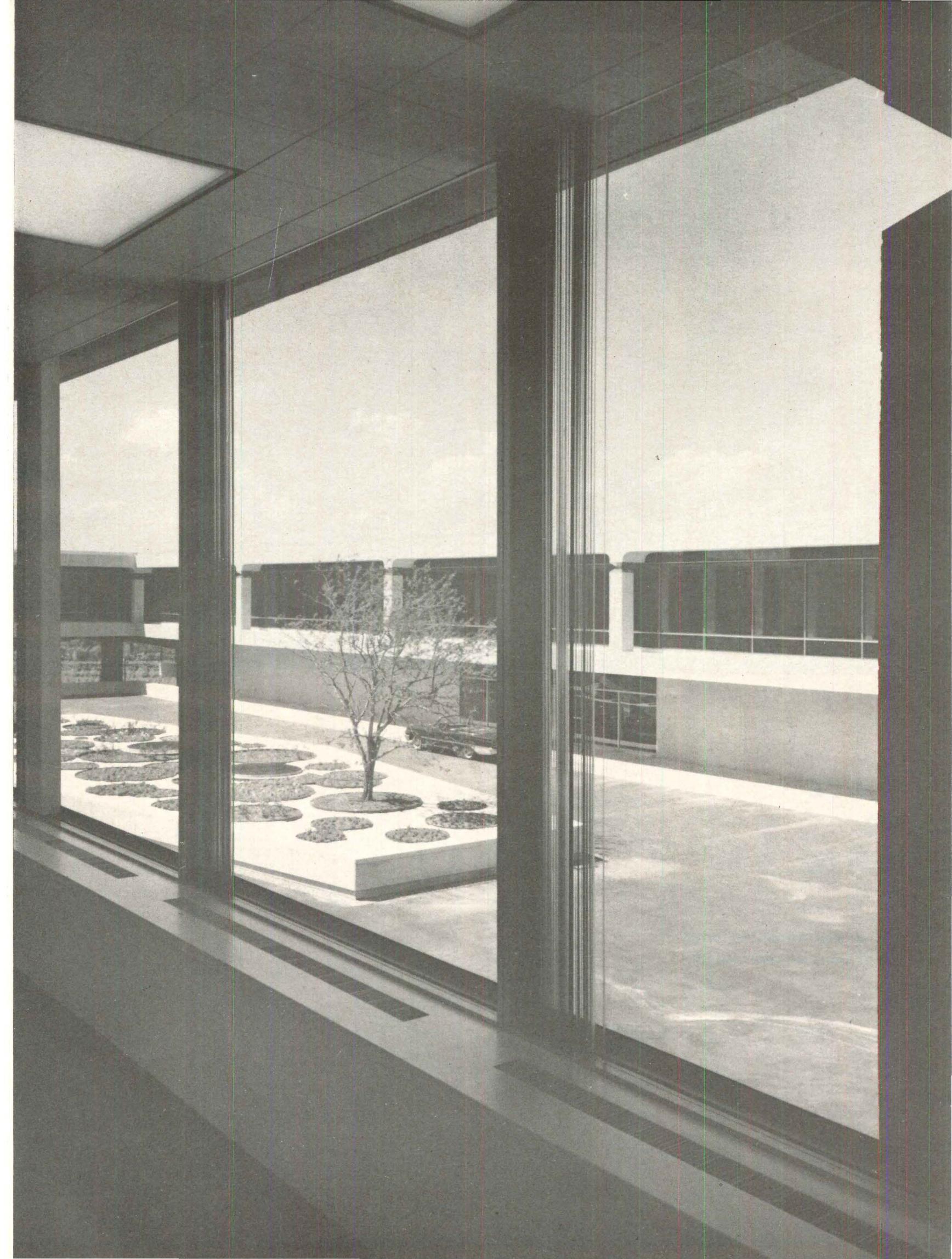
Landscaped entrance court (right) is an intermediate level between the parking level and the second floor offices. It also forms the roof for an enclosed garage beneath.



FACTS AND FIGURES

Headquarters building for Emhart Manufacturing Co., Bloomfield, Conn.

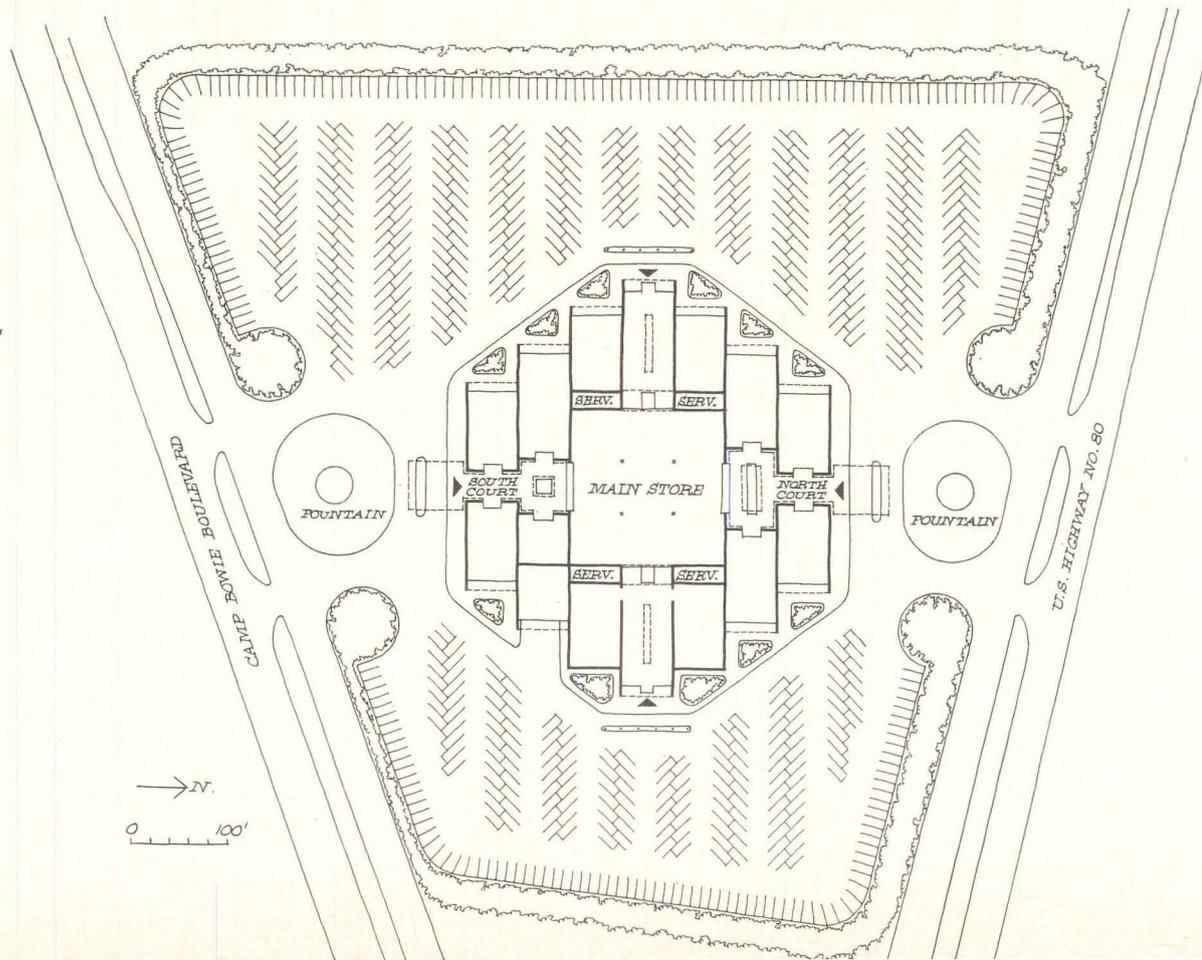
Architects: Skidmore, Owings & Merrill (Gordon Bunshaft, partner-in-charge; Allan Labie, project manager; Natalie deBlois, design assistant; Herbert D. Warrington, job captain). Engineers: Paul Weidlinger and Weiskopf & Pickworth (structural), Syska & Hennessy, Inc. (mechanical). General contractor: George A. Fuller Co. Concrete subcontractor: Rizzi Associates.





**WHITE
ON
WHITE:**

**New Texas shopping center
is a village of cool cubes**





© EZRA STOLLER ASSOCIATES

When a Dallas merchant opens a store in Fort Worth—and the Amon Carter family welcomes him with open arms—that is unquestionably news.

And when the Dallas merchant is Stanley Marcus, president of Neiman-Marcus, the store is apt to be not only news—but also first-rate design.

The new N-M store and shopping center in Fort Worth's well-to-do suburban Ridglea area is all this and several other things as well: it is an intriguing new pattern for *small* shopping-center planning (total floor area, including expansion space: 140,000 square feet); it is a successful example of overall design control, down to such all-important (and often neglected) details as the lettering of store signs; it is a fine case study in foresight—a main store with 100 per cent future expansion already built in; and it is, finally, impressive evidence of the potential effective-

ness of design leadership in the upgrading of commercial neighborhoods.

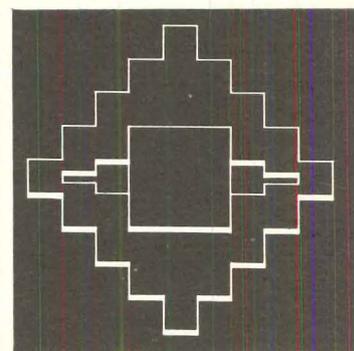
Modern Fort Worth is a far cry from a Western frontier town: it boasts a gleaming skyscraper bank (the First National City) by Architects Skidmore, Owings & Merrill; an even more gleaming museum by Architect Philip Johnson; a plaza by Sculptor Isamu Noguchi; more sculpture by Henry Moore for Johnson's Amon Carter Museum; and, now, the gleamingest structure of all, this white shopping center by New York Architect Edward L. Barnes.

Barnes's checkerboard plan is no arbitrary composition; rather it is an eminently reasonable pattern for any shopping center planned around one major store. Since that major store should serve as the principal magnet to attract shoppers, it should most reasonably be placed at the center of the building complex, and be surrounded on all sides by smaller

stores which shoppers must pass to reach the central area.

The result of this reasoning, in this case, is a pattern of natural symmetry: a 150-foot-square, central store, given special importance (and space for future expansion) by its two-story height; and a cluster of smaller tenant-stores, arranged in a staggered plan of 14 peripheral shopping units that give each tenant his own distinct front, either toward the walks around the center, or toward the interior courts that provide access to the main store—or to both.

The staggered arrangement is an ingenious solution; not only does each small store have its own, built-in identity, but the resulting hexagonal plan of the building is both more attractive to walk around than a square or a rectangle, and easier to fit onto the triangular 12-acre site. Moreover, the site drops off sharply (about 10 feet from northwest to

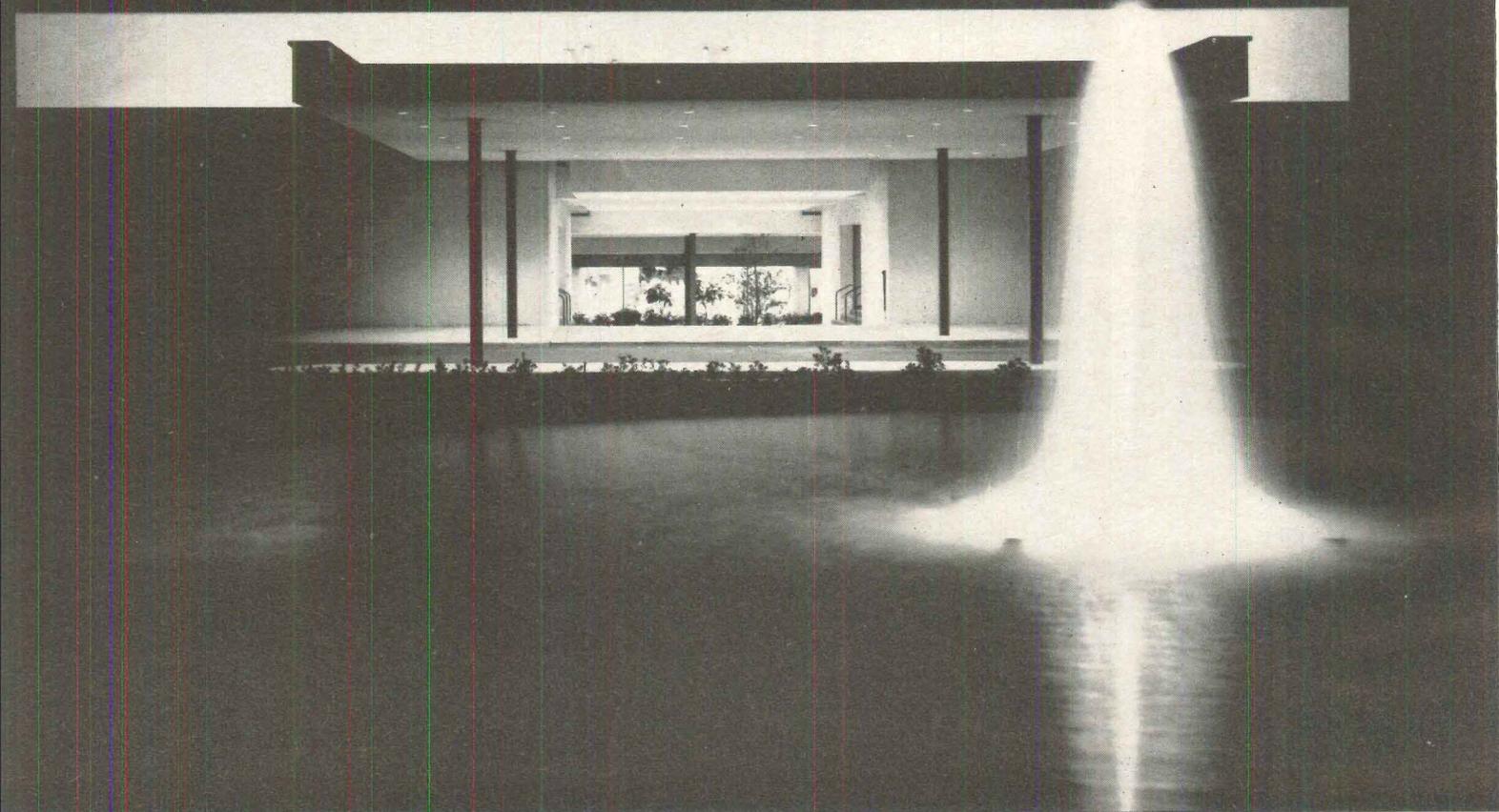


Graphic symbol is simplified plan

southeast), and the staggered perimeter of the building steps down as it steps back, without seeming to slide downhill as would a rectangular block.

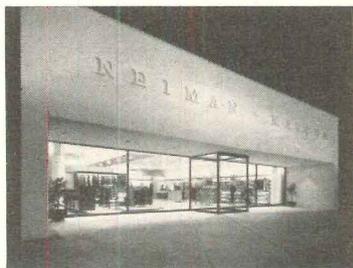
Barnes's orderly cluster plan has provided his client with an unexpected dividend: an effective graphic symbol (above) that is used by Neiman-Marcus as a restrained trade-mark for the new store.

There is more to this orderly



Porte-cochères, fountains, and courts mark two of the four entrances to the shopping center. Most night-lighting of exterior surfaces is from below.

pattern than merchandising or identification. Both client and architect were very conscious of the clutter that tends to overwhelm unplanned shopping centers. By imposing a strong and clear-cut design pattern from the start, they expect to preserve what Marcus considers one of his most important commercial assets: restraint and good taste. However hard a tenant may try, it will be virtually impossible for him to destroy the integrity of this building: all lettering of storefront signs has been predetermined. N-M's lettering, in script or in Clarendon type, grows out of the white stucco veneer of the exterior walls; signs for rental units will be in Grotesk Medium type, mounted on pins set into the wall surfaces; all lettering will be white—in the case of tenant signs, the letters will be porcelain enamel on aluminum. Furthermore, the strict design specifications for tenants prohibit the use of lighted signs within 5



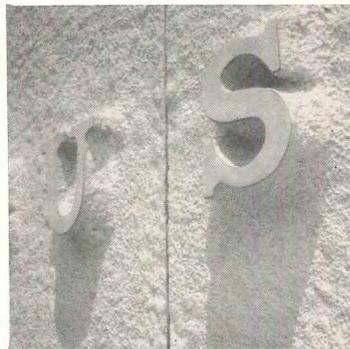
Entrance to store through arcade

feet inside the glass line of their stores. And to make absolutely certain that restraint and good taste will be preserved, all signs for tenant stores must be approved by N-M!

While the exterior surfaces of the shopping center are thus kept, in perpetuity, virginal and white, things are not quite so pure inside. Here the architect has provided large, open spaces, almost completely unobstructed by columns, and lit from above through skylights, or through glass walls fronting on the two entrance

courts. (The other two entrances to the central store are through skylit shopping arcades.) The interiors, by Eleanor Le Maire Associates, are flexible islands of special selling areas that can be rearranged at will—an important consideration for the day when the store expands into its second story. Miss Le Maire is particularly proud of her color scheme (“a lovely young palette that never got darker than blue-green or red-orange”); her gold-anodized acous-

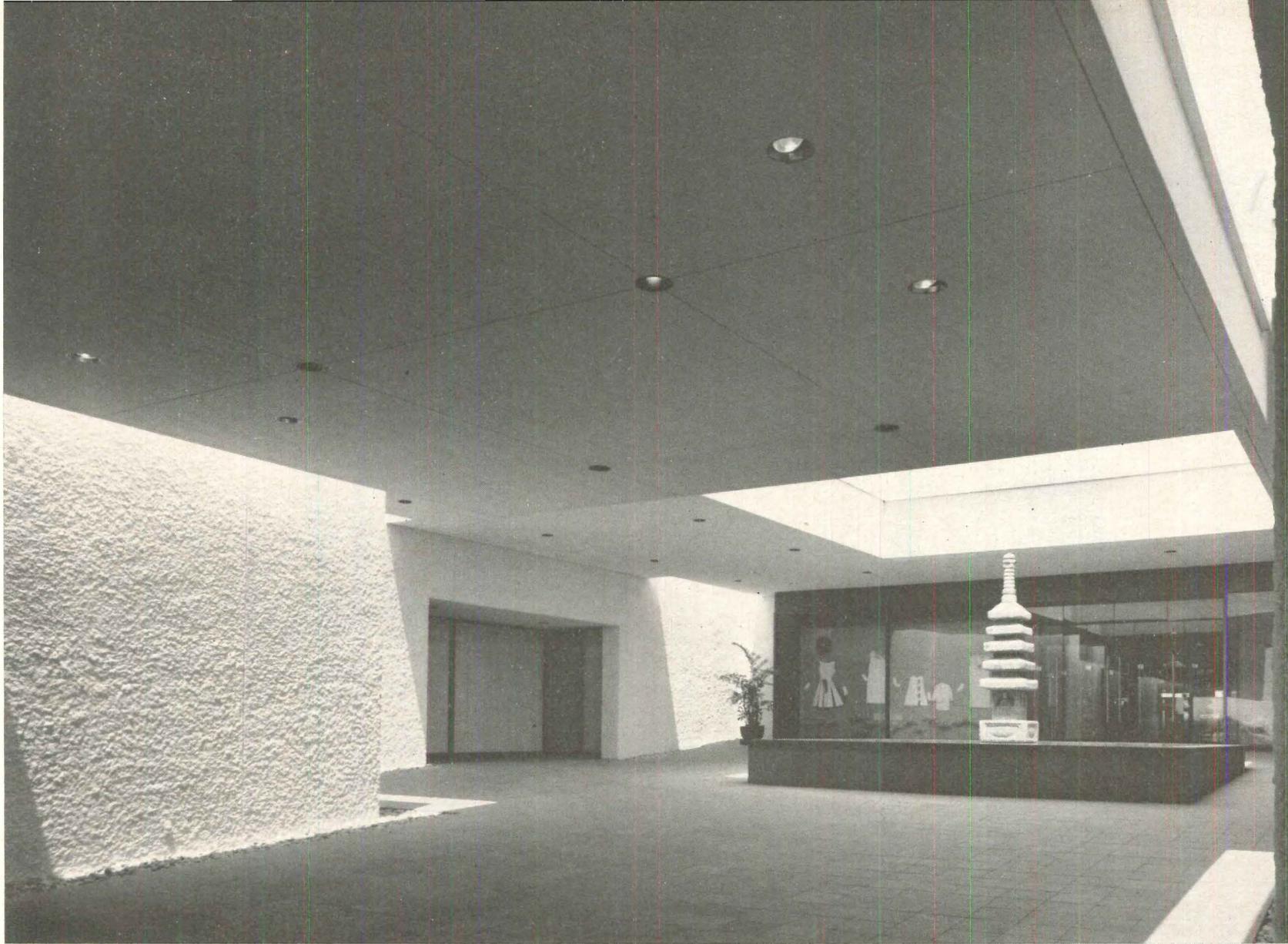
All N-M stores use Clarendon type



tical ceiling over the main store area (which made her “budget shudder a bit, but was too convincing to be denied”); and her lighting (incandescent, except for fluorescents in the display cases themselves). In addition to the main store, N-M operates some of the tenant units; other small-store operations include something called *Le Beau Chien* (Texan for “poodle salon”).

Under the main-floor level are numerous employee and storage facilities, gift-wrapping departments, and other working areas. In the main store, with its 19-foot ceiling height, there are provisions for future escalators and one additional elevator to reach the second-floor expansion area (at present an unfinished shell). Air-conditioning equipment is housed in mezzanines above the tall, central store.

Marcus is delighted with his new store, and delighted also with the reception he has received in



Entrance court is brilliantly skylit. Exterior walls of the shopping center are finished with bold-textured stucco reminiscent of Pueblo architecture.

rival Fort Worth. The center has been open for a mere three months, but sales are ahead of early forecasts, and Marcus says that "within three years, we will be forced to take advantage of the expansion area."

Most gratifying, to him, is the effect of the handsome building on its surroundings. Set in a small oasis landscaped by Dan Kiley, the new center was separated from suburban Ridglea by a strip of miscellaneous storefronts with

Jewelry is lit in display cases



PHOTOS: © EZRA STOLLER ASSOC'S



Glass doors lead to beauty salon

the usual proportion of garishness. One of these existing stores, a big grocery in a key location next to the N-M center, decided to reface its building after N-M opened—to keep up with Marcus. Other stores may follow suit.

Last month, Architect Ed Barnes said, cautiously, that it would take time to prove the value of the restraint exercised by him and his client, and imposed upon would-be tenants. Judging by the first impact of the center on its neighborhood, Barnes and his client may not have to wait as long as they thought.

FACTS AND FIGURES

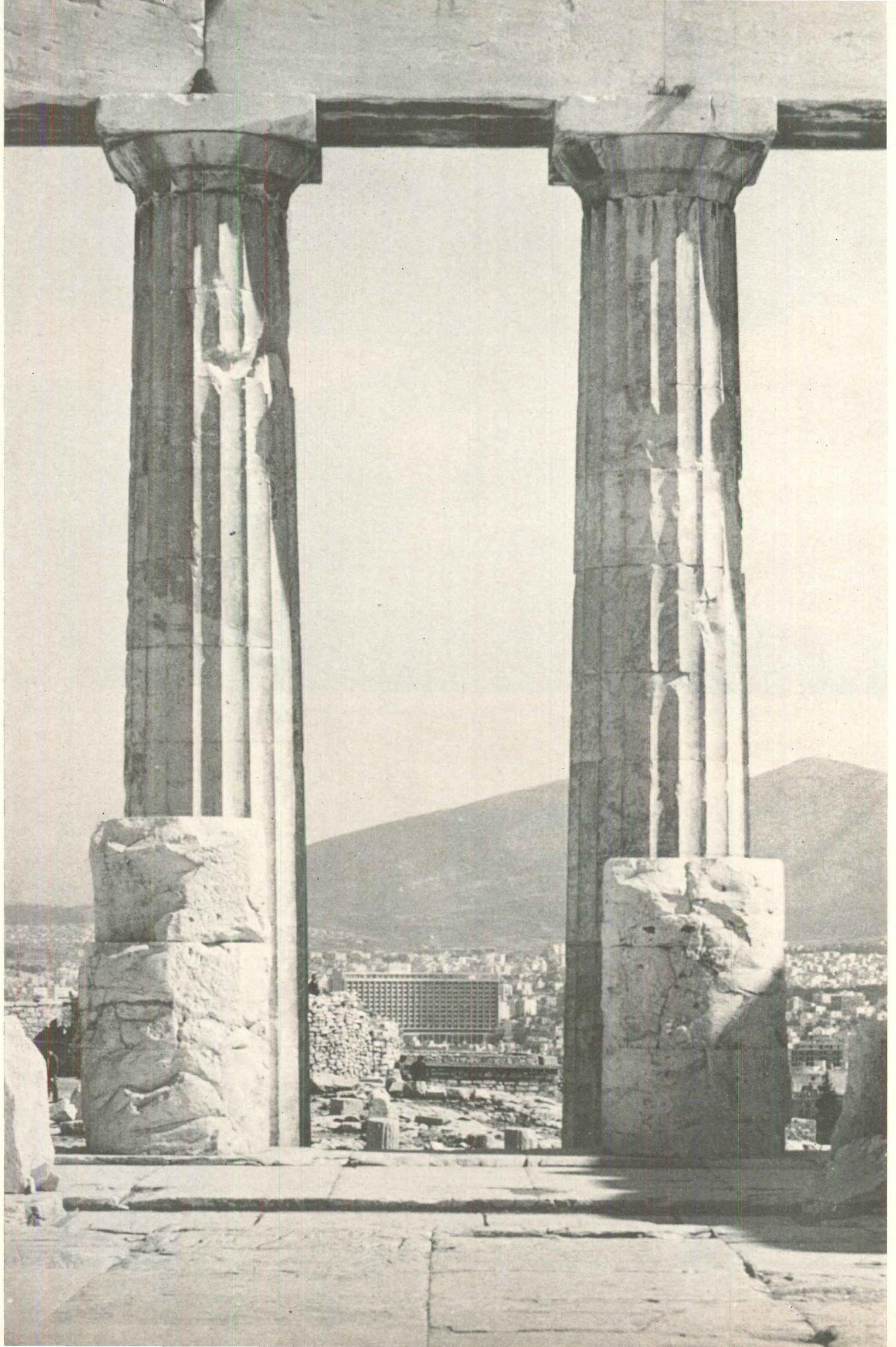
Neiman - Marcus Square, Fort Worth, Tex.

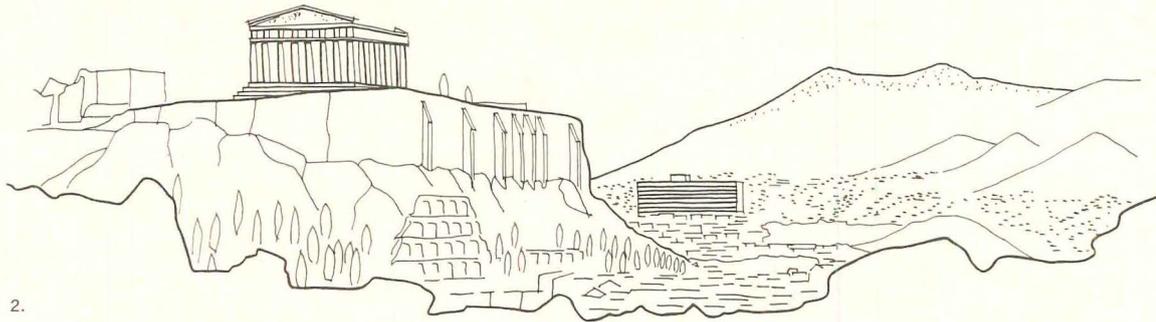
Architect: Edward L. Barnes; Stanley Maurer, job captain. Associate architect: Preston M. Geren. Engineers: Severud-Elstad-Krueger (structural); Consentini Associates (mechanical and electrical). Landscape architect: Dan Kiley. Interior designer: Eleanor Le Maire Associates. General contractors: Thos. S. Byrne.

Building area: 140,000 square feet. Construction cost: \$2.3 million. Square-foot cost: \$16.50 average (this includes unfinished expansion space). Total cost of project, including site, landscaping, interiors, mechanical conveyors: \$4 million.

Stairs to the lower floor facilities







THE ATHENS HILTON: A STUDY IN VANDALISM

BY VINCENT SCULLY

"Yes, here is good taste, daring prodigality and imagination. There is no place for discussion, criticism, or humor. Here, the quality of the most perfect American product, the shining Cadillac, has been coupled with the added luxury of the European taste and the Greek marble."—"E," writing in *Kathimerini*, one of the leading newspapers of Athens.

Greece seems to be showing us again the way things are.

Once, she demonstrated what Camus called a "pact of friendship" between men and the earth. That was long ago. Now she represents for our instruction, as in one of her ancient tragedies gone bad, the opposite: the destruction of the earth by men.

She is doing so in the grip of industrialization, population explosion, and tourism, and, through the usual lack of proper planning and landscape use, is fouling her nest in most of the time-honored contemporary ways. It is peculiarly bitter and instructive to watch, in a landscape once regarded as holy.

This is the story of a single but rather pointed aspect of the whole problem: the solid blow just received by the Acropolis.

Viewed from the hill of the Philopappos monument, the Parthenon and its sacred mountain, Hymettos, have always acted together as one architecture, creating a fundamental balance between man-made and natural forms. Together they have stated the facts of human life upon the earth and of the city on the land. They have managed to sustain that demonstration of ultimate reality throughout all the spec-

tacular vicissitudes of approximately twenty-five hundred years, continuing to do so despite the bombing of one and deforestation of the other. Around that balance of opposites, the best of western thought has in one way or another tended to revolve. In the normal course of functions and events, nothing was ever built in the plain between the two that was big enough to come between them—or so to distract the eye as to break into the calm splendor of their relationship.

Something doing just that has been built now, however.

It is a new Hilton Hotel, the *Athens Hilton*, named for its victim—who, as shown by the quotation above, gladly embraces the knife. This *Hilton* must surely be the best yet of its numerous clan, since it makes those that did similar though vastly less critical jobs on Istanbul and Cairo seem comparatively innocuous. The Athens building is both overscaled and arrogantly sited for its clients' bleary view (the architecture of the *voyeur* come into its own at last); it is at once too big, in too important a place, and indefensibly sited in that place (2). It is also designed in general with fashionable vulgarity and as by an untalented student—bent, entered on edge, superficially detailed, gauzy-columned and plastered with junk, spot-lighted at night white and blue.

But all that twitchy stuff, except possibly the last bit, is of little moment in itself. The decisions regarding size and siting are those most relevant here, because it is they which are at once fundamentally destructive to the city

and the place, and which might most easily have been controlled.

Therefore it does not matter if the *Athens Hilton* can house X number of expense-accounters in luxury beyond their most secret dreams, or if its interior appointments are of unequalled opulence. Either of these things may or may not be true, but it does not seem important to find out. Similarly, it hardly matters—except for the awful things it does to the street, and to the mountain behind it, and to the apartment houses around it (whose taxes have been raised because their value is considered by the authorities to have been enhanced)—if the architects chose to erect another of those charmingly oriental, Hilton-trade-mark-wavy slab-lunchroom-kiosks off the building's northeast side (3). It is called the *Byzantine Cafe*—vaults, get it?—and it is lighted by metal fixtures imitating those of Byzantine churches. Oh, Michael, General of the Armies!

Nor is it very important (though surely highly symbolical) that the giant *graffiti* on the building's northern flank (4) call to mind the last palsied scratchings of a dying civilization. In them, appropriately enough, all the most ancient facts and symbols lose body and force. Athena, olive,



4. ship, chariot, owl, the awesome tripod and the flutes are all there, but they now resemble the perforations of an IBM card at colossal size. There is, admittedly, a certain thrill of horror in this; one senses how really dead *le neant* can be.

But in the end that is not very important either. What counts is that the architect in charge of the Town Planning Directorate, Mr. P. Vassiliadis*—who also happened to be one of the associated architects who designed the building—managed, under existing laws relative to buildings of public utility and tourism, to procure a waiver from the Ministry of Public Works, permitting the violation of one critical provision of the Athenian building code: the provision relative to height. Hence the building has twelve stories plus

* At the time, the architects were publicly listed as follows: P. Vassiliadis, Em. Vourekas, S. Staikos; Consultant Architect: A. Giorgiadis; Civil Engineer: G. Nahmikian. (CF. *Architektoniki*, #15-16, 1959). Now, however, Mr. Vassiliadis' name is normally omitted from the list. S. Andreadis and Y. Moralis are credited with various contributions.

ground floor, as against the maximum of seven specified for its district; and, at fifty meters plus a penthouse of four, the hotel is well over twice the legal maximum of twenty-four meters in actual height.

The Hilton was the first building in Athens to be so exempted and has since been followed by the Telephone Building, which sticks up like a monstrous sore thumb on the other side of town. To make matters worse—according to a principle of zoning often invoked, but usually evil in effect—a higher building is expected to compensate for the extra height by leaving some of the cubage of its site empty. The *Athens Hilton* thus became a free object in space, released from the continuity of masses characteristic of street architecture. By this it was permitted, indeed encouraged, to turn ninety degrees away from the street in order to present its vast, long side to the Acropolis.

In fact, if one takes a position in the Parthenon where Pheidias' ivory and gold statue of Athena once stood, it will be seen that the temple, once orientated directly toward its appropriate sunrise over the mountain, is now oriented toward the sun and the Hilton—whose egg-crate facade leans up on axis between the two central columns (1 and 6). In a photograph this façade appears less obtrusive than it actually is. The effect may most accurately be described as obscene, though the east wall of the Acropolis, one hopes, can be raised somewhat to blot it out.

It should be noted, from the Acropolis as from Philopappos, that a broken roof line would have done something toward reducing the offensiveness of the hotel's profile; a geometry less insistently rectangular and so, in its mindless way, less like that of the Parthenon itself, would also have been desirable. As a kind of pur-

posely shapeless excrescence, the *Athens Hilton* might have slipped in between temple and mountain without making a joke out of either. Now it casts some doubt upon the validity of the latter's scale and the former's shape. It deprecates that is, the significance of what nature is and of what men do. And what else is there?

Moreover, if the thing had not been allowed to turn ninety degrees away from its street, only the narrow end of its slab would have been presented to the Parthenon and its whole bulk would have been vastly diminished as seen from the west—probably to the point where, even if lofty, it would not seriously have damaged the Parthenon-Hymettos relationship.

But the tourists had to have their view. This, one supposes, may have found a place among whatever arguments were used to persuade the responsible Minister to let the building climb so high in the first place.

The designers did suffer one setback. The devastated triangle of land to the west was to be used as a parking lot, but the clients felt they could not afford it. The plot will instead be occupied by some sort of art center—which seems fairly ironical insofar as that particular horse has already been stolen. To the north, however, the building has a more appropriate setting: a hugely enlarged intersection which puts the building in its correct shopping

center or used car lot environment (5). This is really the way to tear a city apart at its heart—flood it in an asphalt sea.

The lucky tourists in the best rooms, each furnished with a balcony, of course will be facing west, in order to look down Athena's throat. Not seeing the Hilton, they will be among a favored Athenian few. On the other hand, it gets quite jolly and warm in Athens in the summer, when presumably most of the types in question will be in temporary residence. Thus the air-conditioning will be working hard for their westward-facing cubicles of joy. One hopes it will be adequate to the task and not break down or blow up or anything; if the mechanical system does hold up—and one is sure it will—it will probably be putting out even more of the smoke which adds each day perhaps rather more than its share to the smog that now hangs over Athens.

The smoke vent (no stack of course in this radio-cabinet design) is in the center of the east side of the building. The prevailing breeze is from that direction. The whole mass, as mentioned above, is bent so as to cup the western view (or for some even less cogent reason). A bit of vacuum sometimes seems to result, drawing the smoke down over the open roof deck, often blanketing it. Some of the vortices occasionally whirl much lower down the façade as well. Attica so strikes back a little, outraged and not entirely incapable of retaliation. "With the moonlight," says "E" again of the roof-top belvedere, "a little music, the evening breeze, a glass of wine, and the terrace of the *Athens Hilton*, you have the best romantic materials in the world." And a little smoke.

All things considered, it is entirely possible that the happy tourist may begin to wonder who is kidding whom and why he left

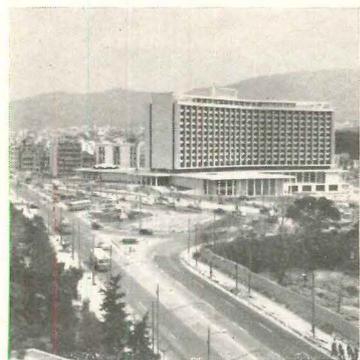
Ohio. It is especially possible insofar as the *Hilton* takes a major step toward making Athens just like anywhere else. It is a perfect example of that anonymous mass scale which is now depreciating the particular scale of specific places everywhere. This is the architecture of Noman, Nowhere, which can get as big as it can get away with for two obvious reasons: first, because it serves not primarily the local population but an international clientele (and in this case, very much a fly-by-night one at that); and, second, because its financial resources are not limited by those of the area but are also international.

Such buildings tend, by their very natures, to be arbitrary impositions on places, not integral growths out of them; they must therefore be strictly controlled by competent local authority. In this case the building in question was inadequately controlled; and so it seriously injures its site, which happens to be Athens, whose Acropolis it rivals in size—look at it from the sea or from Hymettos—and whose Temple of the Maiden, in loose-lipped parody, it cuts off in part from the mountain which was also hers.

There are many things more interesting to talk about than the *Athens Hilton*, and many pressing urban problems which would be infinitely more difficult to solve. (How much one would like to see them solved in Greece before they destroy her.) Yet the *Hilton* is not entirely lacking in importance, being so conspicuous an example of what can happen when men build on the earth without intelligence, reverence, or love.

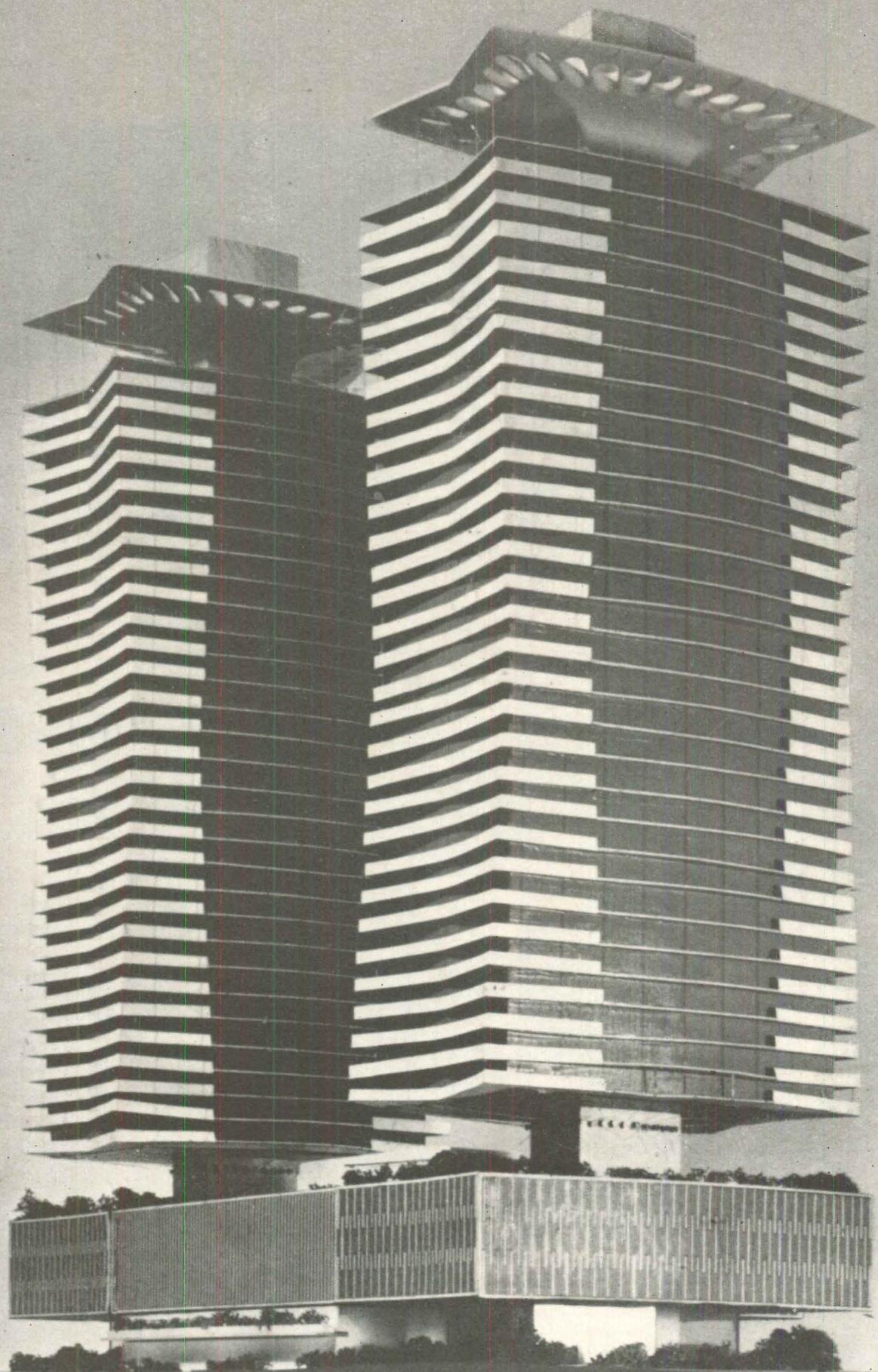
Professor Scully, of Yale University, is the author of a number of books; most recently: *Frank Lloyd Wright*, 1960; *Modern Architecture*, 1961; *Louis I. Kahn*, 1962; and of a major work on Greek sanctuaries, published by the Yale Press in 1962, and entitled, *The Earth, the Temple, and the Gods: Greek Sacred Architecture*.

5. PHOTOS: K. THEOCHARIS-N. TSIKOURIAS



6.





COMING: HANGING SKYSCRAPERS

The cable-supported towers shown on these pages differ from the sketchy concepts for suspended structures that have appeared at regular intervals over the past two decades. These designs are far more likely to be turned into actual structures because they are based on a carefully worked-out combination of established construction procedures that promise real cost savings.

The idea of hanging the floors of a multistory structure has long been an attractive one because supports in tension can use as little as one-sixth as much steel as a conventional frame. But until now, the high cost of the special fittings and techniques required to put up a cable-supported building has far outweighed the savings in structural steel.

Towers for Texas

The two projects shown, both engineered by Paul I. Rongved of Strobel & Rongved, use virtually the same suspension system, with the exception of a few details. The twin, 30-story apartment towers (model photo, left; plan, top right) are a copyrighted design from the office of Raymond Loewy/William Snaith, Inc. (The hourglass shape of the building is not a result of the suspension system; it is achieved simply by varying the dimensions of the cantilevered balconies.) The client, Fox & Jacobs Construction Co. of Dallas, is hoping to begin construction on the two 300-unit towers and their 470-car garage base early next year.

The model and drawings at right are based on patent applications made last year by Designer Clive Entwistle, who has been thinking about cable-supported towers ever since he worked on a suspended-office-building project with Argentinean Architect Amancio Williams in Buenos Aires in 1949.

Basic to both schemes is the use of a slip-formed central service core to resist wind loads and to transfer the building loads from the cable supports at the top of the structure down to the

foundations. At the same time the core is being formed, all the floor slabs are cast at ground level (as in the lift-slab system, separated only by a sprayed layer of a special parting compound).

The unique feature of both the Snaith and Entwistle schemes is the use of two separate sets of cables. One, a temporary set to hoist the slabs into place, consists of thin cables (5/8 inch) since they carry only a single floor at a time. The other, permanent set, to which the floor slabs are clamped when they reach their final position, is made up of much heavier bridge strands (about 3 inches in diameter for the 30-story towers).

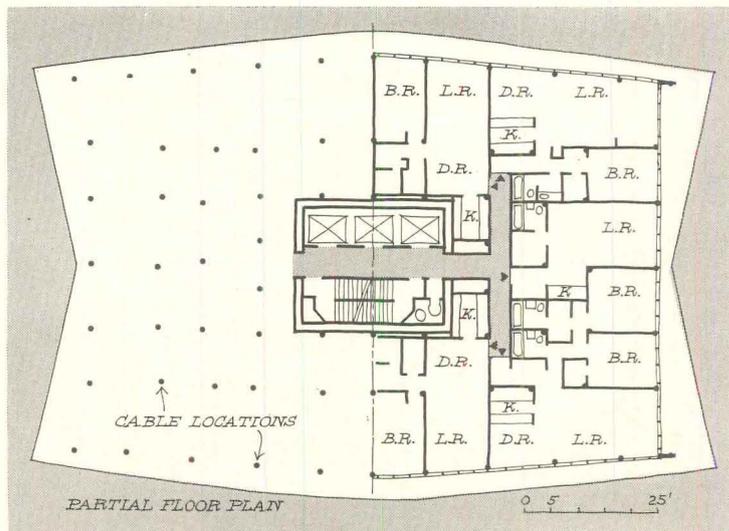
The first element to be hoisted to the top of the core tower is the spreader structure, which guides the permanent cables to their proper position (section, right). As the plan above indicates, the spacing need not be regular and the cables can be located to run within partitions.

Two additional refinements are expected to bring substantial cost savings. Partitions and as much mechanical equipment as possible will be installed on the floor slabs before they leave the ground, cutting the time and cost of transporting men and materials to higher floors. And, with all the floor slabs stacked conveniently at ground level, they can be prestressed at a cost much lower than that for bar reinforcement.

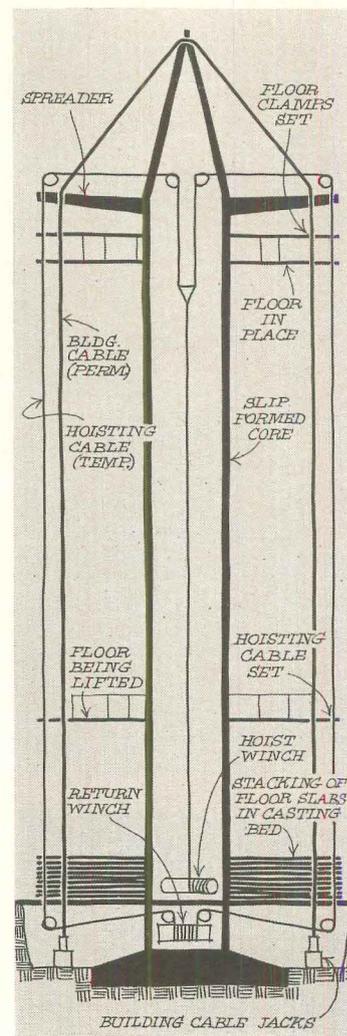
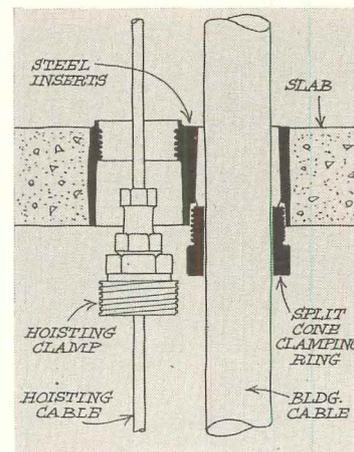
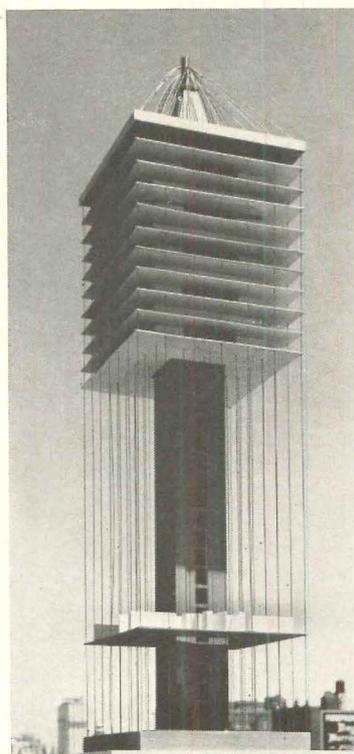
Floors may move

Because of the expected differential movement, the floors and the core must be left free to move independently of each other. The slabs, only 4 1/2 inches thick, will transfer horizontal loads to the core through roller guides set into their inner edges.

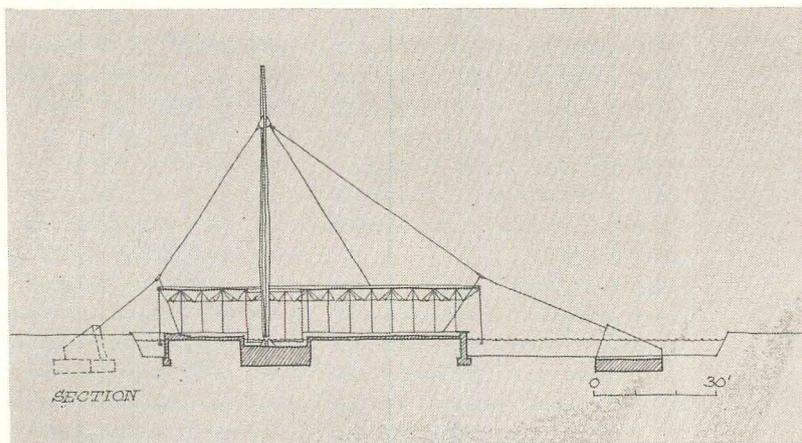
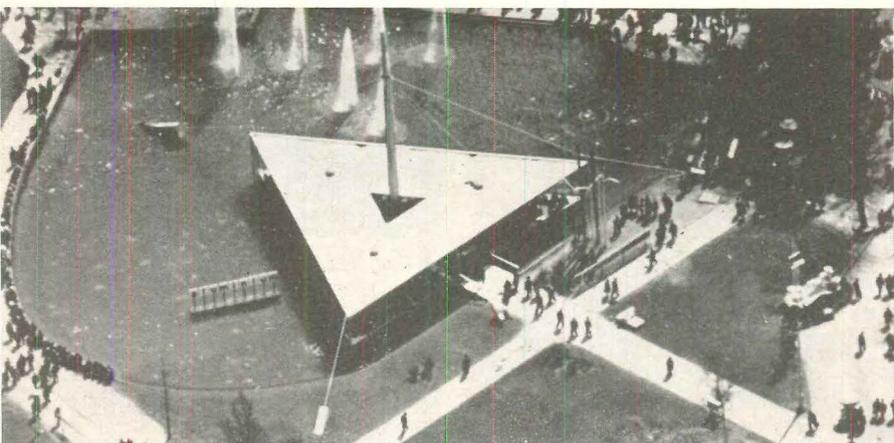
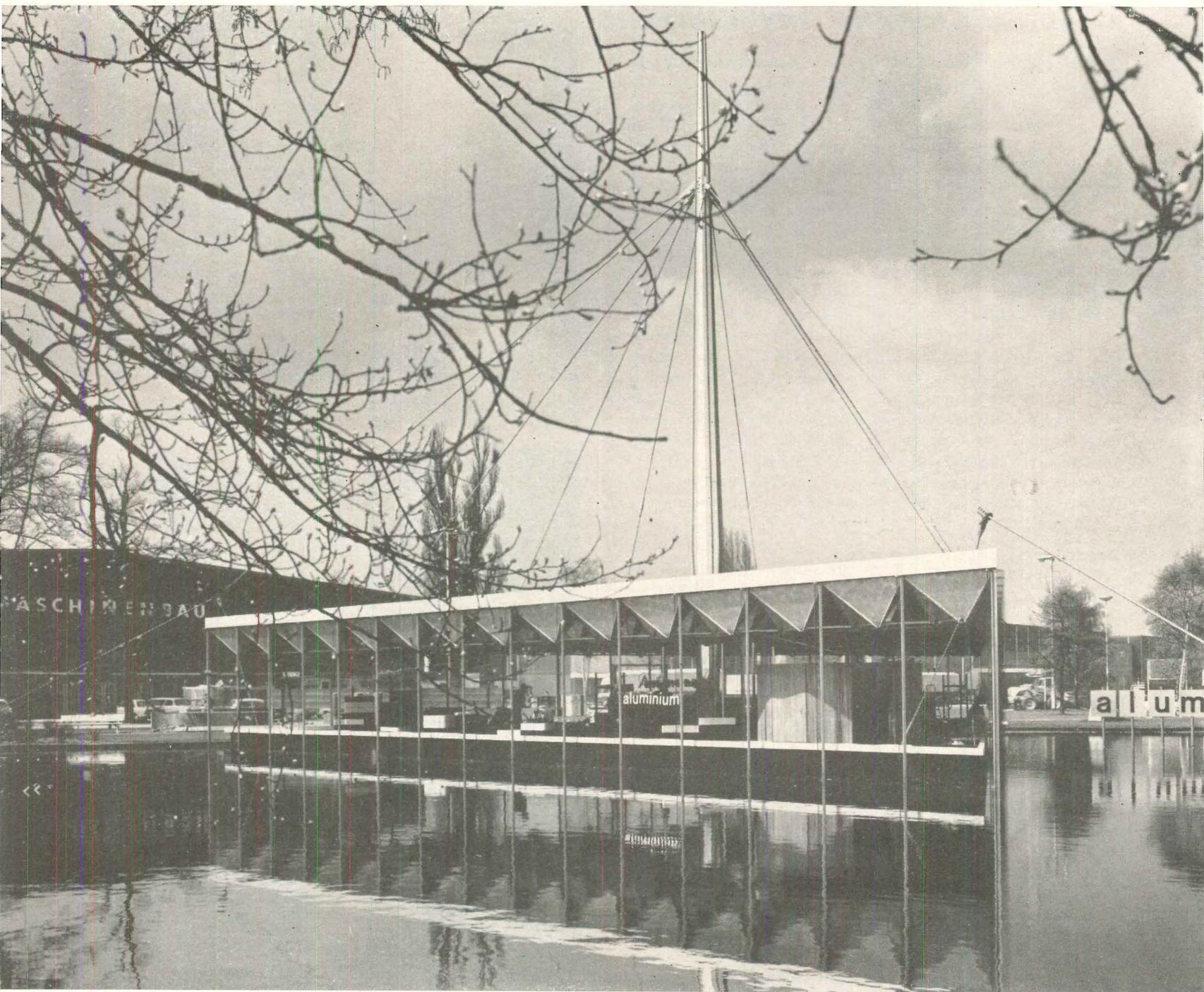
Based on his own experience with the techniques that have been combined in these new systems, Engineer Rongved conservatively estimates that suspended towers can be built for as much as 80 cents per square foot less than a conventionally framed building of concrete construction.



Plan of Loewy/Snaith design (above) shows heavy-walled core which stabilizes floors. Below, working model and details of Entwistle scheme.



A motorized model (photo above) made by Entwistle shows how floor slab is raised complete with partitions. Section (above) indicates use of separate cable systems for lifting and hanging floors. Detail (left) is for cable clamps.





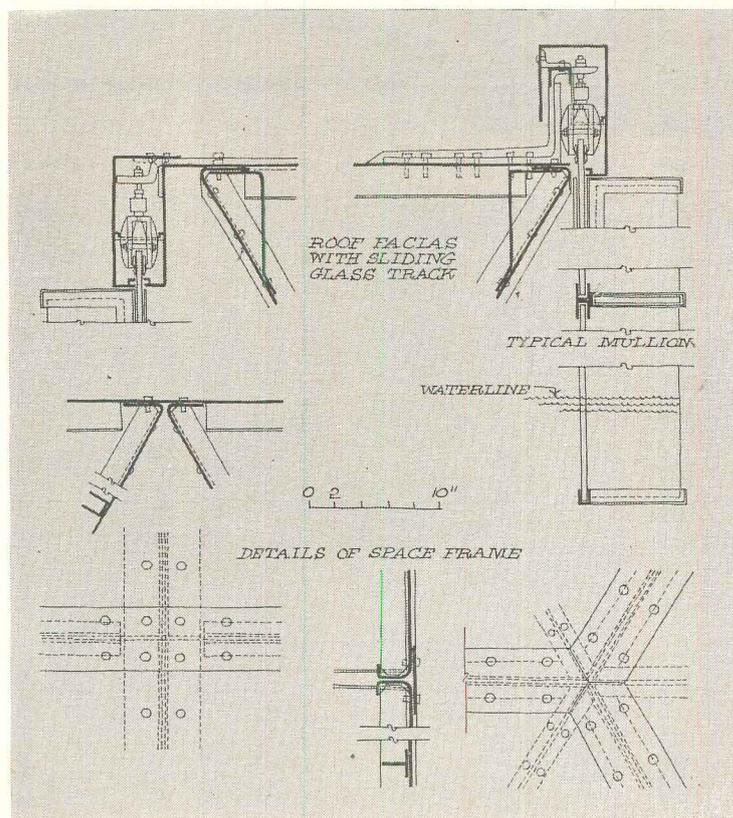
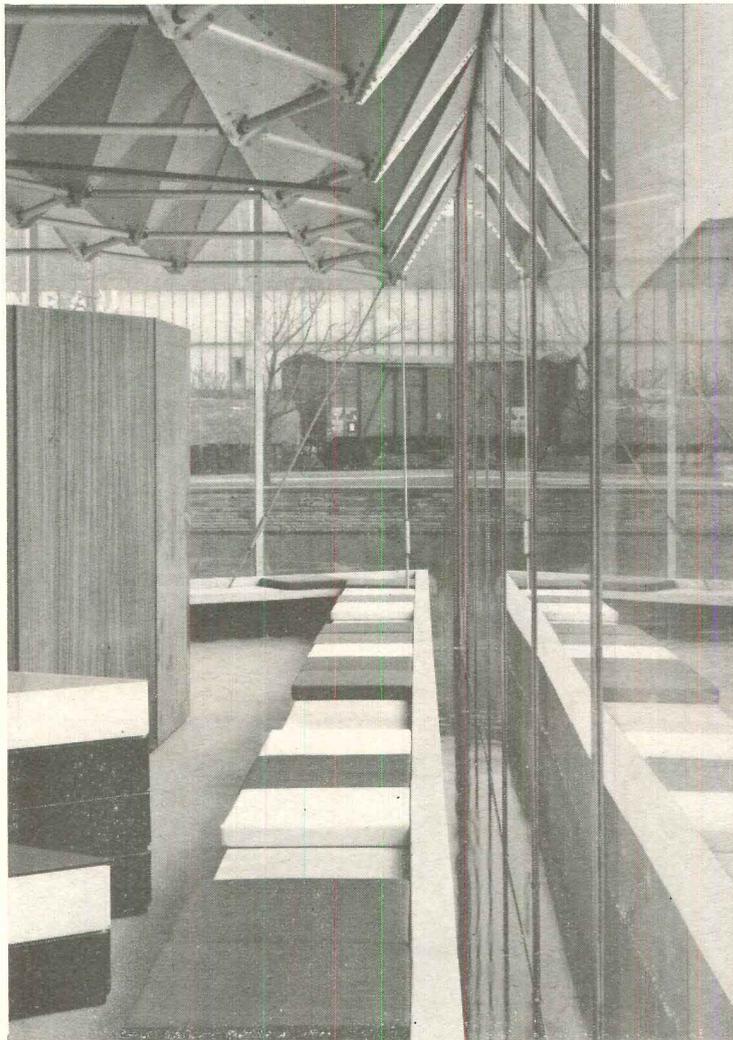
A SHOWCASE FOR ALUMINUM

This tiny, mast-hung pavilion, which won the big \$25,000 Reynolds aluminum award, is not so much a breakthrough in suspension techniques as it is a compendium of avant-garde detailing. Built as a showcase for the German aluminum industry at Hanover's permanent fairground, the 3,200 - square - foot structure was ingeniously designed by Architect Hans Maurer to serve both technology, and the client's interest. Its suspended roof and space frame constitute a weight-saving structural system, yet somehow the pavilion still consumes 22 tons of aluminum.

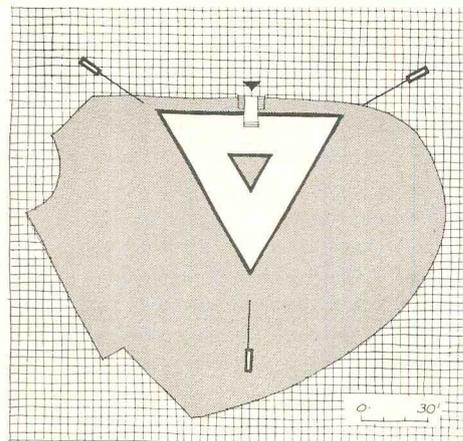
The most extraordinary of the building's details is the use of water as a gasket between the rather flexible structure of the roof and wall and the stable concrete island that serves as a floor. The glass sheets of the side walls, almost 6 feet wide and more than 12 feet high, are fastened only to the space-frame roof at their tops, with the special clamps seen in the detail at right. They are held together with delicate aluminum extrusions which also grip a vertical stiffener of tempered glass. The lower edge of the glass wall plunges below the surface of the surrounding pool and is free to move without breaking the seal.

The triangular space-frame roof, 88½ feet on a side, has only three main cable supports at its corners (the cables are steel, not aluminum). The two intermediate cable supports on each edge prevent what German engineers call the "washline effect."

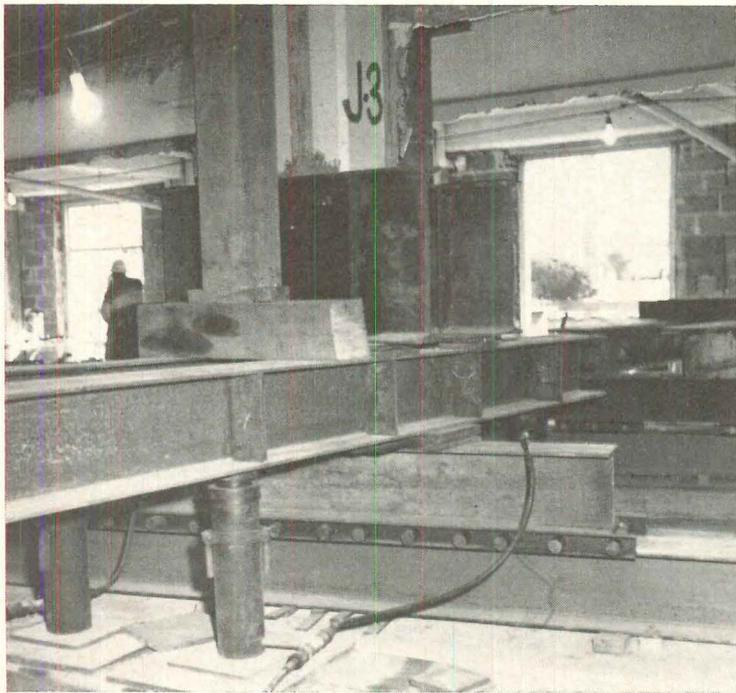
Most of the aluminum in the structure—17 tons of it—was used in the construction of the space frame. It was built with 216 prefabricated triangular pyramids of aluminum plate about 1/8 inch thick (3.5 mm) that were assembled on the site and fastened together with a top deck of aluminum that acts as a compression membrane. The downward-projecting points are connected with adjustable, screw-in pipes of aluminum 1¾ inches in diameter, which take all the tension forces.



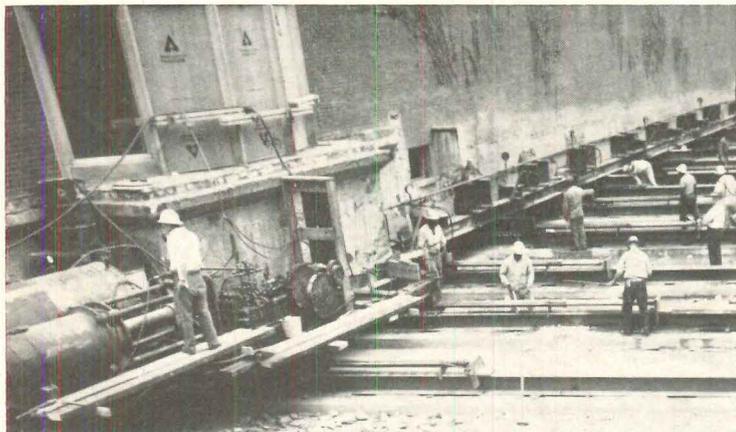
PHOTOS: HANS WAGNER



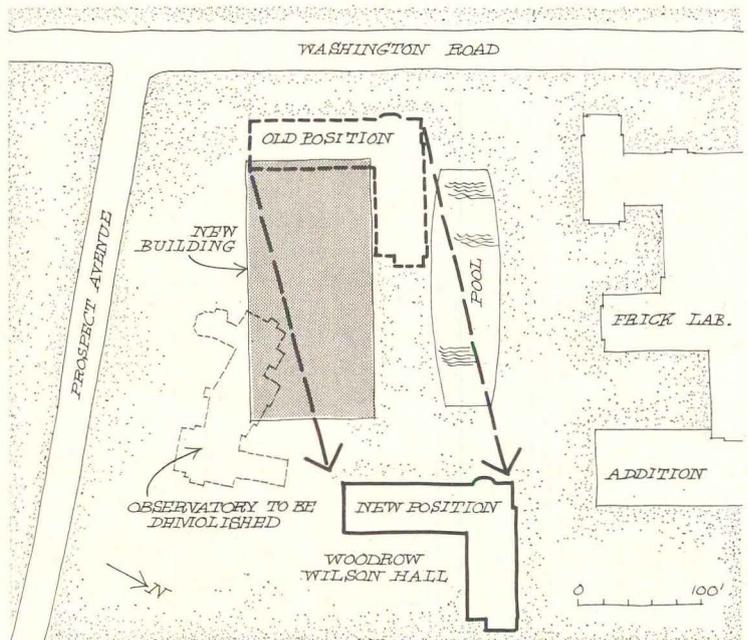
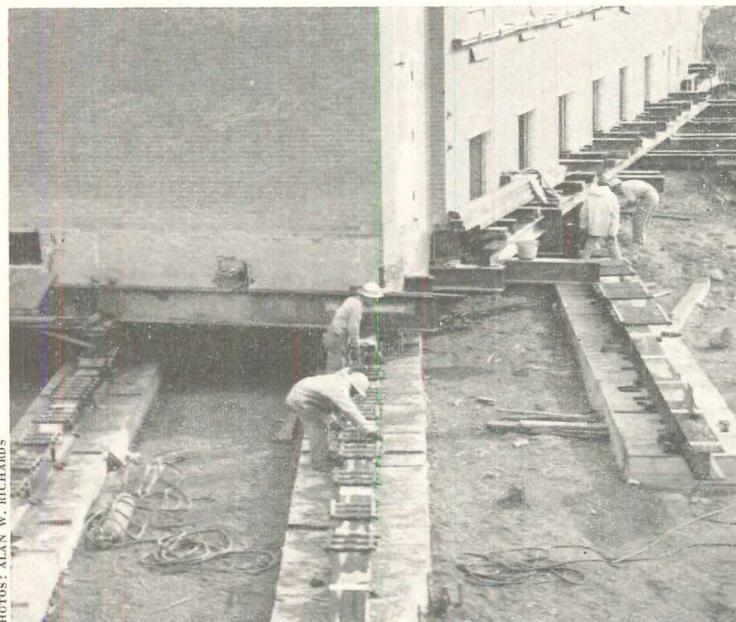
MOVING 3,500 TONS OF BUILDING



The five layers of steel required to shift structure are seen above



Hydraulic jacks (above) moved building along on rollers shown below



On a single dark and rainy day last May, Woodrow Wilson Hall, a ten-year-old, reinforced concrete structure that most campus planners would consider an immovable object, was rolled across 296 feet of Princeton University's sylvan campus to a new foundation. A key corner site was thus freed for Architect Minoru Yamasaki's monumental headquarters for the expanding Woodrow Wilson School of Public and International Affairs (*Projects*, Aug. '62).

Although the site plan above shows the new building barely touching the abandoned foundation, the move was not an extravagance. Studies made by Yamasaki's office indicated that the additional structure and sitework needed to squeeze a new building onto the site as it would have cost more than the \$250,000 move.

The techniques that made it possible to move a 3,500-ton, brick-sheathed building at the average rate of 25 feet an hour without opening a crack were perfected by Spencer White & Prentis, Inc., a firm of foundation engineers and contractors, in a half-dozen earlier moves of heavy buildings and equipment.

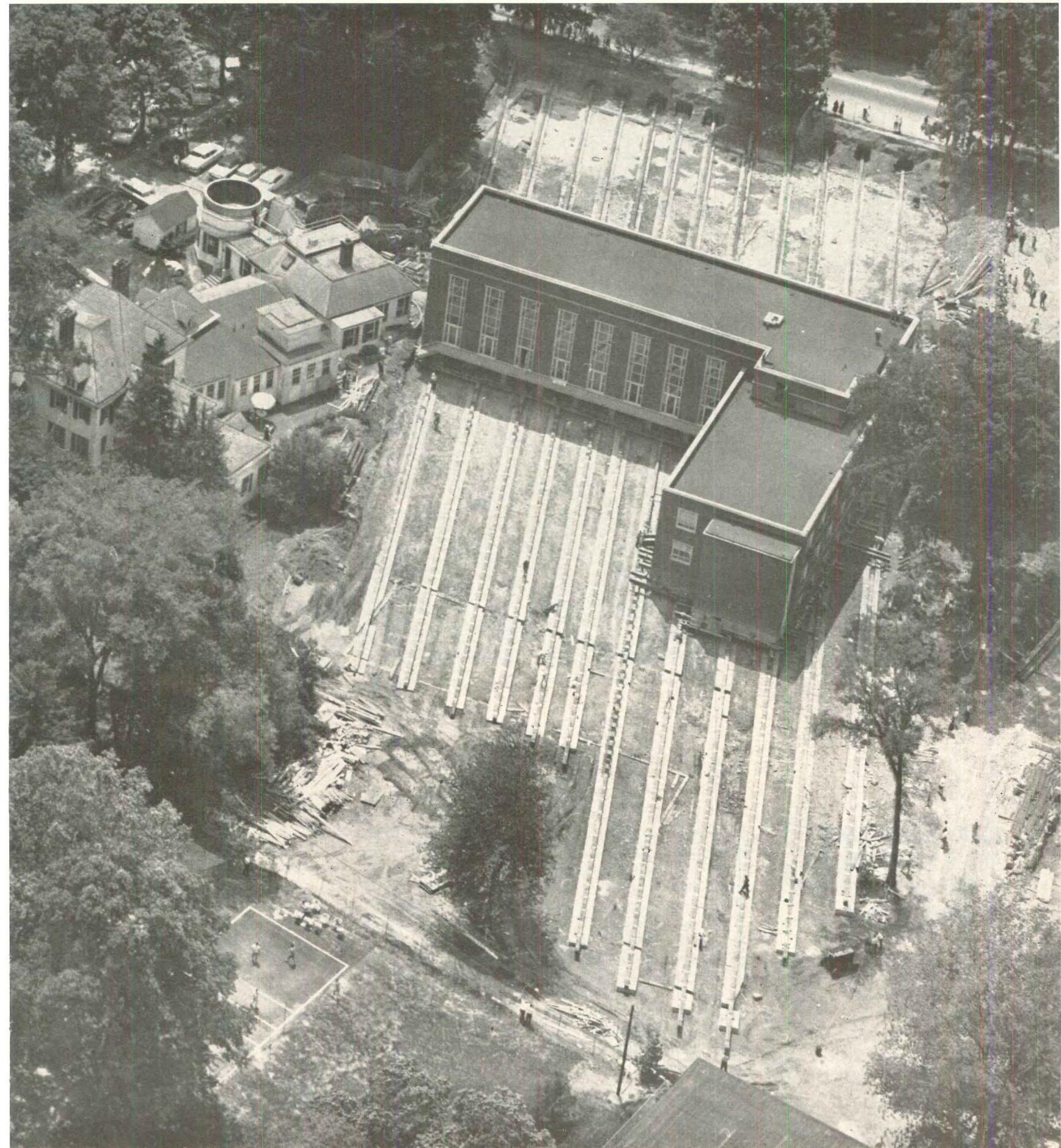
To prepare for the move, each column was firmly clamped between a pair of steel I sections with through bolts (top photo,

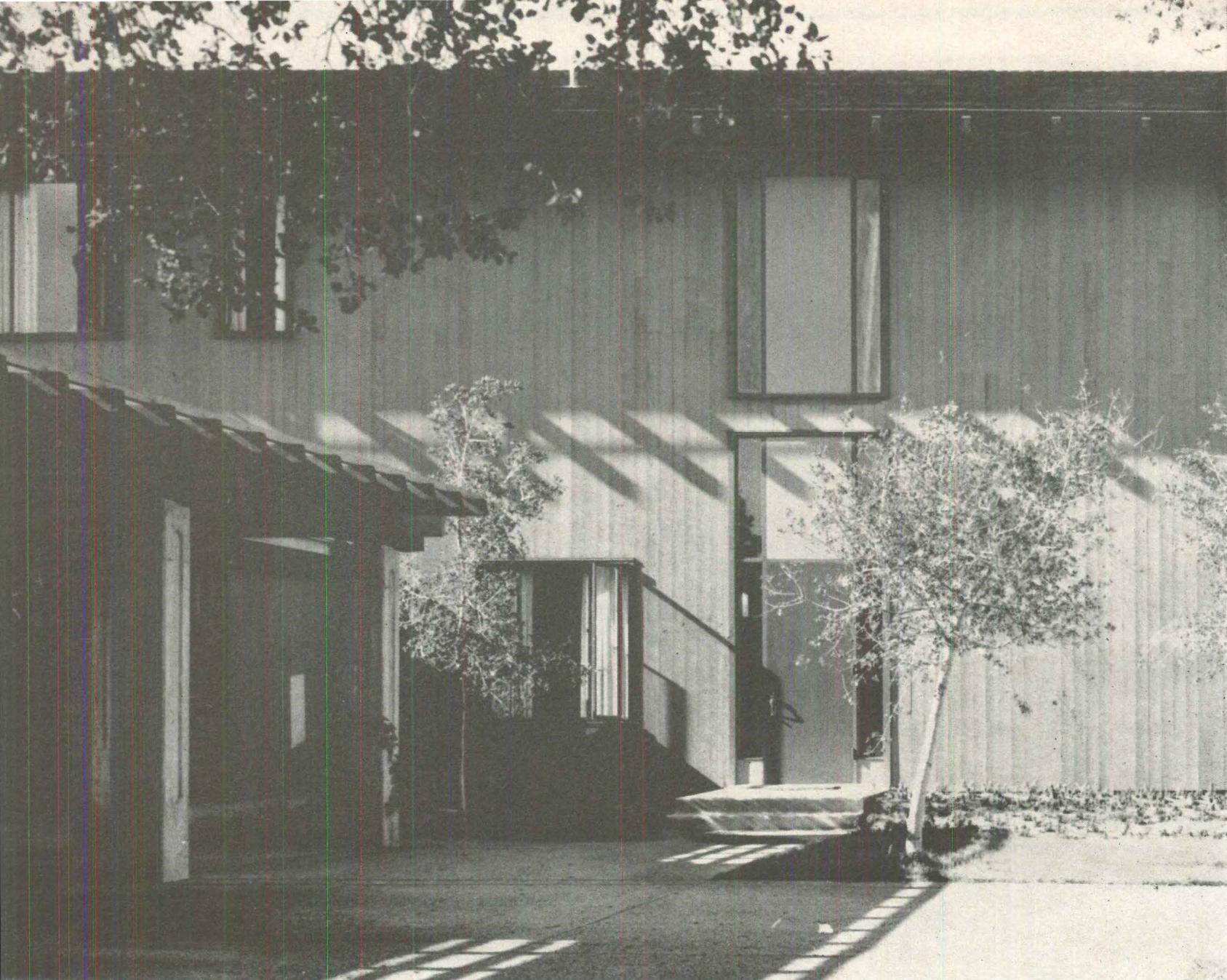
left). Each row of these column clamps was picked up on a continuous beam which in turn rested on short lengths of runner beam. The runners were supported by the 2-inch round steel rods on which the structure finally rolled to its new location. Channel sections fastened to the end of the rollers held them in alignment.

The rollers moved on 12 I-beam tracks, set across the entire site on continuous concrete footings 4½ feet in width. The top flanges of the track beams were ground level for a smooth ride.

With the track bed prepared, the columns were cut through and the weight of the building transferred to the rollers. The 70-ton push needed to move the building was provided by 10 hydraulic jacks that rode along the rails behind the building (middle photo). Once the structure was in motion, the workmen had little to do but move the rollers passed over by the building out in front of the runners again.

Twelve hours after it started its journey, the building was positioned precisely over the new foundation that had been prepared for it. Finally, the columns were spliced to the new footings and mechanical services hooked up. Woodrow Wilson Hall will be ready to open again in September.





Above, House No. 1 and faculty advisor's residence: Stanford's new fraternities are quiet compositions of redwood walls and Bay Region-style

FRATERNITIES AT STANFORD: SIMPLE SHAPES CLIMB A HILL

In their design, the rustic, plain-faced buildings on these pages reflect the fact that the Stanford University campus is still fondly called "The Farm." In their function, they represent a pace-setting solution to a problem plaguing universities across the nation: the accommodation of fraternities.

The solution, in brief, involves the university building new houses for the fraternities, in clusters of four, and picking up half the bill. The first such cluster, designed by the office of Alumnus John Carl Warnecke, is shown here, a second is under construction nearby, and a third is in the planning stage.

Their principal architectural challenge, according to Warnecke, is how to make each cluster a unified composition and still give each house a distinct identity beyond the Greek initials on its wall. In the first group, there is consistency of materials (redwood exteriors throughout), of basic plan (dormitories in one wing, social and dining rooms in another), and of form (big, simple shapes for the dormitories, colonnades around the social-dining wings). But there are variations in color, in building height, in detail—notably the seemingly random placement of balconies and bay windows—

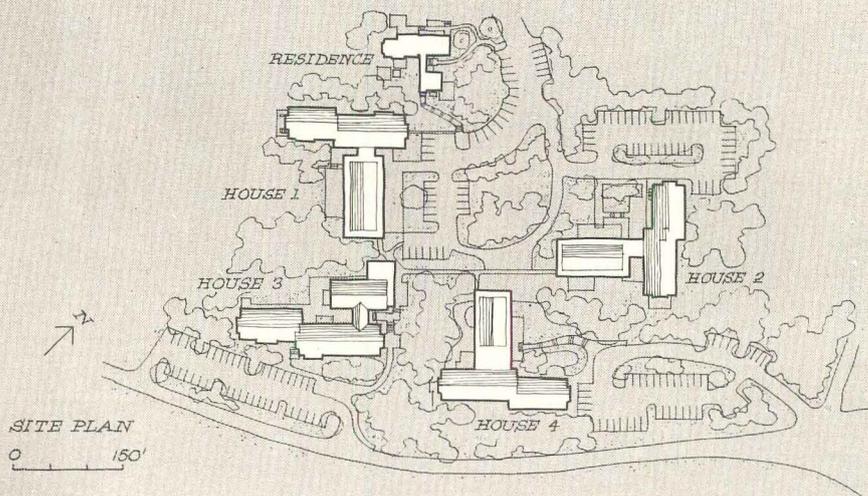
and, most importantly, in siting. The buildings climb gradually up the hill, creating a changing, irregular silhouette almost as natural to the site as the outline of the giant oaks.

Stanford launched the present program after a physical survey of the stately houses of fraternity row. The university was appalled to find that, of the 24 buildings, only one had adequate plumbing, only three satisfactory wiring, and 18 needed major structural and mechanical repairs—at an estimated cost of \$132,000 each. Since gifts to fraternities are not tax deductible and loans hard to get,



arcades supported by slotted precast concrete columns. Their informal arrangement (site plan below) creates a series of varied open spaces.

PHOTOS: DANDELET





The pastoral bulk of House No. 1's south façade looms over the hillside. Its plan is shown below. Sturdy bridge at right links House No. 2's wings.

the brothers were in trouble.

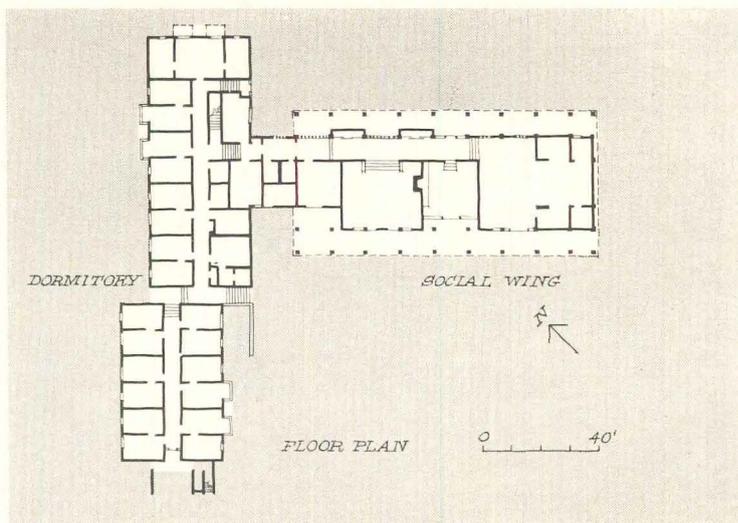
But Stanford President J. E. Wallace Sterling is a staunch believer in the fraternity system, and the university came to the rescue. The partnership arrangement was worked out jointly by fraternity leaders, the administration, and the trustees. The fraternities' half of the new buildings' cost will come largely from an intensive campaign for gifts (now deductible, since the houses are university owned).

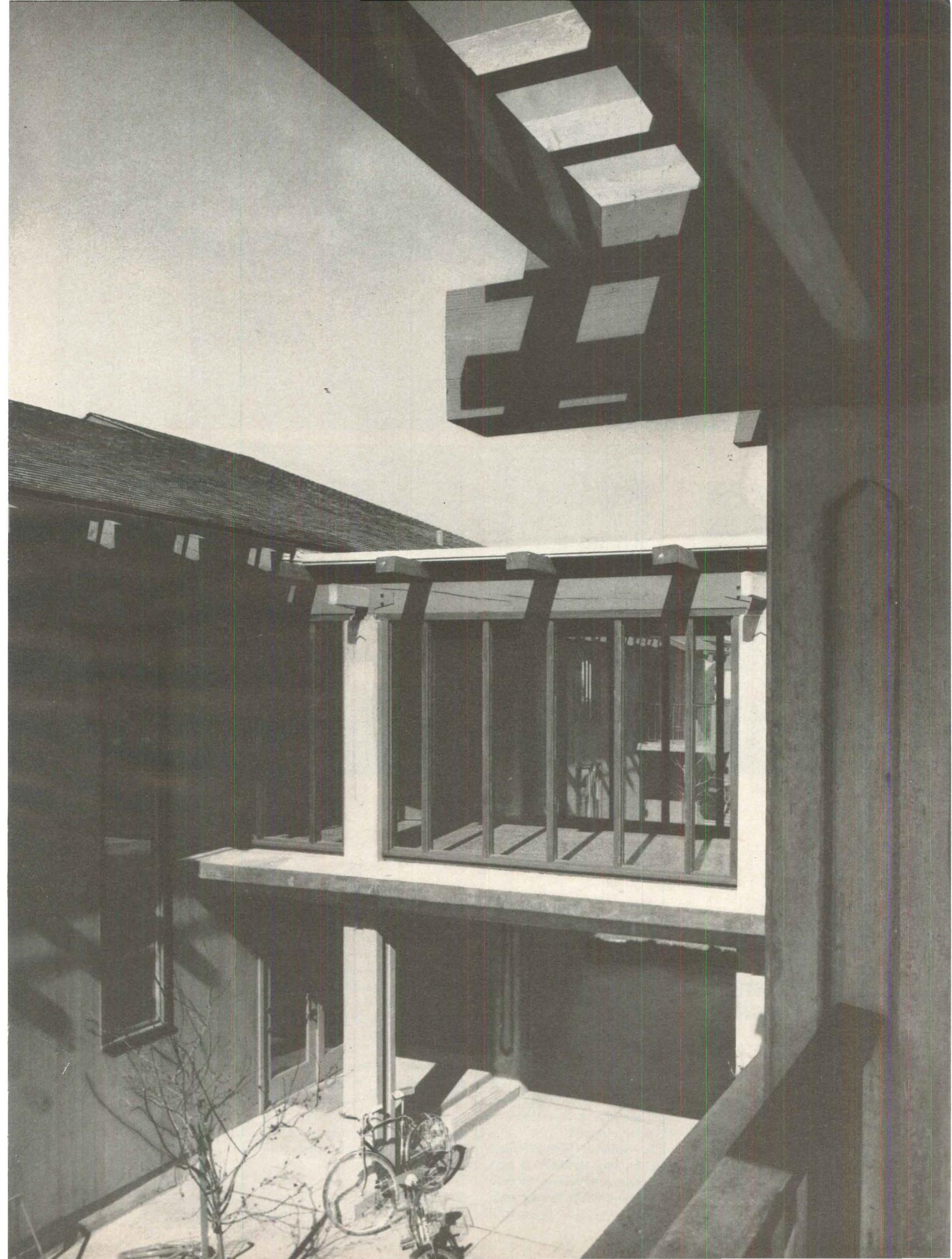
Sites average six acres per cluster of four (plus a faculty advisor's residence) and costs are estimated at \$300,000 per house.

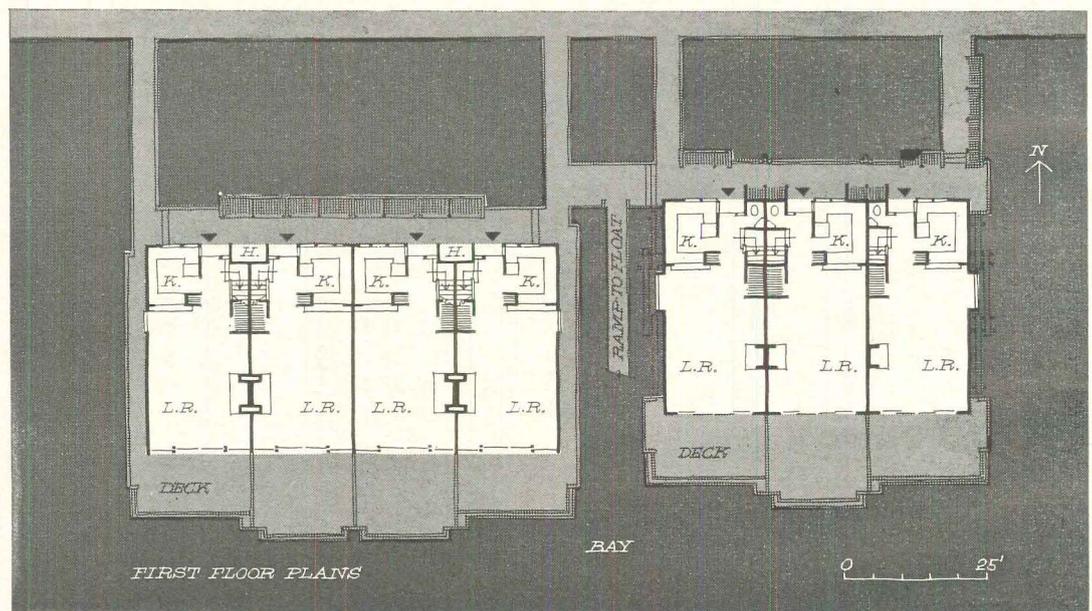
Each house will accommodate 50 students in bedroom-study suites whose plans make varied use of a standard room-wide module.

FACTS AND FIGURES

Undergraduate housing, Stanford University, Palo Alto, Calif.
 Architects: John Carl Warnecke & Associates. Engineers: Stefan Medwadowski (structural), Alexander Boome (mechanical and electrical). Landscape architects: Lawrence Halprin & Associates. General contractor: Utah Construction Co.
 Building area: 64,000 square feet. Construction cost: \$1.3 million, including site development. Average unit cost (faculty residence excluded): \$16 per square foot.







PHOTOS: BRUCE HARLOW

APARTMENTS IN BELVEDERE: BOLD FORMS SIT AT ANCHOR

The Cove Apartments sit out over San Francisco Bay at Belvedere, a small community some 15 miles from the city as the yacht sails. They are supported on 80-foot piles, wood up to the mud line and steel and concrete above. Their superstructures are, as Architect Charles Warren Callister intended, "solid and bold"; they look, in fact, as if a sure hand had carved them from the soft, gray redwood.

The battered, hood-like roofs keep the two buildings in scale with their neighbors—a flavorful collection of houses, shops, studios, and saloons—but there are a full

two stories to each (see plans). Downstairs, the living areas open onto wide decks above the water. Upstairs, the south-facing bedrooms look out on the bay, the bridges, and San Francisco itself, skillfully framed in the arched dormers.

Actually, according to Belvedere's rather absent-minded zoning laws, 90 high-rise units and parking for 180 cars could be standing on the Cove's partly submerged site. But the developer just couldn't do that to the town. To this admirable restraint, Callister added his characteristic brand of architectural responsibil-

ity: respect for the region's heritage of warm, naturalistic design, and a zealous attention to detail.

FACTS AND FIGURES

Cove Apartments, Units 1 and 2, Beach Road, Belvedere, Calif. Owner: Belvedere Land Co. Architect: Charles Warren Callister. Project associates: Henry Herold, Unit 1; Donald J. Batchelder, Unit 2. Structural engineer: Etienne D. Rolin. General contractors: Sharp & Robinson.

Building area: Unit 1, 5,184 square feet plus 1,980 in decks and storage; Unit 2, 4,300 square feet plus 1,550 in decks and storage. Construction cost: Unit 1, \$101,553; Unit 2, \$83,420.



Public housing is being drastically overhauled in answer to growing criticism. Next year, Congress will decide its fate.

BY DAVID B. CARLSON

THE NEW LOOK IN PUBLIC HOUSING— TOO LITTLE AND TOO LATE?

Six years ago, FORUM provided a blue-ribbon panel of experts with an opportunity to explore solutions to what it called "The dreary deadlock of public housing." Today, the dreary deadlock has become an out and out crisis — public housing must change or die.

The present Administration realizes this, and the program is being overhauled. In fact, the changes that are now being affected are the most radical in its 25-year history. Many of the very notions that were argued in FORUM a short half dozen years ago—more use of the existing inventory of housing, direct rental subsidies to families, subsidies to private builders to build public housing, and eventual tenant ownership—are all being tried, at least experimentally, under the current program. At the same time, new design concepts are being encouraged and the Public Housing Administration is actively seeking the finest architects in the nation to design public housing. But despite the many modifications underway, the question remains—is it too little, and is it too late?

Within the next six months, the federal public housing program will have exhausted its authorization for new construction. The last of the 100,000 units authorized under the act of 1949 are now being allocated, on a priority basis, to cities which have special needs, usually for relocation. About 620,000 will then have been built since 1937. Next year, the Administration is expected to ask for at least 500,000 more units, probably to be spread over a ten-year period.

Congress is sure to give such a request closer scrutiny than the program has ever had before. It is fully aware that many localities (some as large as Los Angeles) have stopped their public housing programs altogether. Others,

like St. Louis, are in deep trouble (see page 119). And it cannot help but be impressed by criticism not only from public housing's traditional foes—real estate boards and apartment builders—but also from many of the staunchest advocates of federal aid for low-income housing, most of whom feel the present program is largely a failure. Most of all, Congress will be impressed by the opposition to public housing from the very low-income families it is designed to serve. Many of these families, even though seemingly desperate for good housing, stoutly refuse to be moved into "a project." Only four years ago, over one-third of all low-income families displaced by government action accepted the opportunity to move into public housing. Today, less than 15 per cent choose public housing, and the experts see the percentage continuing to decline.

Catherine Bauer has noted that "the public housing program has never called forth the kind of pervasive and persuasive popular support that oils the wheels of change in democratic countries." It could be too late to hope that such support might still be forthcoming, even given the current overhauling of the program. But the need is still very much there (see box, opposite page) and the nation still is endowed with the capacity to foot the bill. Whether it will remain to be seen.

Recent changes are to make the program more flexible

With the full realization that "change or die" is no idle threat, the Kennedy Administration has been working hard to change public housing. The changes are pointed toward making the program a more flexible instrument for the provision of low-income housing, while at the same time making public housing more acceptable to localities. Some of

the changes are quite frankly pointed toward winning over long-time foes, such as the effort to enlist private homebuilders into the construction of public housing. Others, such as the recently announced concerted social services effort with the Department of Health, Education and Welfare, are directed at solving some of the knotty problems of poverty in the urban environment. All told, the innovations are making public housing a very different sort of program than it has been—and bringing it closer to what it must be if it is ever to succeed.

Public housing must make use of existing dwellings

Undoubtedly, one of the keystones of next year's housing act will be an expanded program of rehabilitation for public housing. Such a program has been tried in several cities, notably New York and Philadelphia, both of which opened rehabilitated units last year. The Philadelphia experiment was aimed at getting large dwellings for 5-person or more families. About one-third of all families displaced by code enforcement alone were found to need four or more bedrooms, and the housing authority had between

300 and 400 families waiting for vacancies in the 749 units of existing public housing with four or more bedrooms. The used-house program offers a solution to this problem—and, as it turned out, at costs considerably lower than new construction.

The housing authority bought 40 houses in the Haddington area at an average price of \$5,960 apiece. (Prices ranged from \$3,500 to \$8,000 each). Renovations cost as little as \$1,027 (on a \$6,300 house) to as much as \$5,292 (on a house bought for \$5,400). Only in six instances did costs exceed the \$10,000 per unit ceiling that had been set, and overall, total costs averaged out to \$8,864. This is less than half the average cost of new public housing construction in Philadelphia, which now runs to over \$18,000 per unit.

Since the first Haddington houses were finished, the authority has filed for higher cost limits—up to \$13,500 for three-story houses, and \$11,750 for two-story units. The authority now plans to buy and renovate 500 houses in the Midtown area at an average cost of about \$14,000, if it gets necessary approvals from federal and city governments.

In New York, 40 units of low-

income housing were carved out of four old brownstones on the West Side. The New York Authority had already rehabilitated over 300 units in areas outside renewal neighborhoods, but these were the first done in a renewal area. The authority spent from \$14,000 to \$20,000 per unit (compared to an average cost of a little under \$20,000 for a new public housing unit) to convert the brownstones.

Rehabilitation alone cannot answer current housing needs

Rehabilitation has great potential for use as low-income housing. It has been estimated that at least 7 million substandard units could be rehabilitated for public housing use; and, not surprisingly, this is just about how many urban families are eligible for subsidized housing. PHA Commissioner Marie McGuire is a strong backer of rehabilitation, even given the many economic uncertainties involved in such a program. She says: "In each case, we must determine that acquisition and rehabilitation costs will be lower than those of new construction," and so far at least, this seems to be possible.

There is still the question, however, of whether or not rehabili-

tation, at the relatively low economic level public housing demands, can do much to alter the character of a decaying neighborhood. Catherine Bauer has put it this way: "If there were no vast backlog of outright slums, little or no urban growth, and no racial discrimination, then a strong program of enforcement and rehabilitation might actually do the job of housing low-income families." This is not the only reservation the experts have about rehabilitation. They also point out that it adds nothing to the existing stock of housing, and the deficit of sound housing for low-income families is already so severe that only a great deal more new building can really make a dent in it.

In another effort to explore rehabilitation of existing homes for public housing, the housing authority of Washington, D.C., working under a demonstration grant of \$194,470 from the Housing & Home Finance Agency, is leasing private homes for sublease to low-income families. HHFA Administrator Robert C. Weaver says, "This demonstration is designed to test a method for rapidly housing and rehousing large low-income families in private, subsidized housing and

THE NEED FOR HOUSING

Only the lunatic fringe can argue that there is enough decent housing in the U.S. to go around. Over 19 per cent of our housing inventory—almost 11 million units—is judged substandard or lacks plumbing according to the 1960 Census. Most of this is in the big cities and occupied by families of low income. The present total housing production is at least half a million units too small for our total needs, according to conservative estimates. More new construction, even of higher-priced homes (the

average price for new FHA-insured housing is nearly \$15,000), is necessary to filter older housing down at a much faster pace and generate the faster demolition of obsolescent units.

The problems of deficient housing supply really pile up in the city, where most of the least privileged families live. Here are some 8 million families with incomes under \$5,000 (for a five-person or more household). Most of these 8 million families are probably eligible for subsidized housing of some sort. But there are only about 600,000

units of federally subsidized housing available—and these are almost all occupied. The problem is particularly acute for nonwhite families—about half the nonwhite renters and 40 per cent of nonwhite home owners live in substandard housing, whereas only 20 per cent of white renters and 10 per cent of white home owners occupy substandard housing.

What makes the need more acute is the relocation load that looms on the horizon. About 150,000 families have been displaced by urban renewal alone

since 1949, and experts guess that highways and other programs have displaced at least 300,000 more than this in cities alone. (This year, Philadelphia estimates that all government programs will displace at least 3,250 families in the city.) James Banks, head of Urban Renewal Administration's relocation division, estimates the peak relocation load hasn't even been reached yet. By 1966, and for at least the following five years, demands for relocation housing will far exceed anything in the past, Banks believes.

within a non-institutional environment. At the same time, such a program will restore large houses to their original use, thus facilitating enforcement of occupancy standards. . . ."

High costs perpetuate the construction of huge projects

Another long-discussed notion is being tried experimentally in New Haven, Conn. This involves the direct payment of a rent subsidy to low-income families who then are housed in existing units in the private market. The tenant pays about 22 per cent of his income as rent, and the housing authority pays the difference between that and the total rent directly to the head of the family. Yale University social scientists will analyse the results of this program over a three-year period, weighing the experimental method against conventional public housing for large, low-income families.

One of the primary reasons for

using the existing inventory of housing rather than relying solely on new construction is to get away from "projectitis"—the continual building of massive, high-rise apartment complexes. But the experiments involving low-income use of existing houses should never delude anyone into believing that projects are out for good. PHA Commissioner McGuire says, with some sadness, "The day of the massive project is not finished—high costs keep it in existence."

But PHA also recognizes that even though it might have to keep building projects, it can at least demand a higher level of architecture and planning. (And it might even do something to trim current costs, which average over \$9,000 per unit for buildings and over \$5,000 per unit for land throughout the U.S.—and higher in most cities. (Pratt Institute is currently working under an HHFA demonstration grant to de-

velop lower cost construction methods for high-rise apartments.) Assistant PHA Commissioner for Development Thomas B. Thompson is spearheading a federal effort to inspire better design in public housing. Thompson is uniquely qualified for the job, as he helped create San Antonio's much admired Victoria Plaza, a 185-unit high-rise apartment building for the elderly. Working closely with Thompson in the program to get better design is veteran housing architect Albert Mayer, who has been making a tour of PHA regional cities with a special message on public housing design.

Mayer's approach is modest, and directed as much to cost-conscious local authority heads as to architects. He speaks toward the better use of open space and community areas, night lighting, and the more aesthetic treatment of parking space. Mayer himself is somewhat skeptical of rehabili-

tation and efforts to build small units scattered throughout urban areas. ("Are existing neighborhoods so good that we should attempt to conform to them?" he asks.) At the same time, he is convinced that high-rise buildings are essential and can be better designed. Mayer advocates tall apartments "used in justified proportion with row housing and other lower elements, rather than their present use as a quick and indiscriminate universal cliché."

Mayer does not duck the sorest point in public housing architecture—the painfully low fee schedule. He says bluntly "The architects' fees—always a very minor percentage of the first cost of any building—have been kept too low to permit the kind of imaginative study that results in original and stimulating work. Most of the architects who do public housing have, for this reason among others, settled for more or less standardized plans,

PROBLEMS IN NEW YORK

In public housing, as in everything else, New York City is a special case. It has already absorbed about 15 per cent (around 70,000 units) of the total federal public housing program, and has an additional 50,000 or so units of state- and city-subsidized units for low-income families. But the city, like the federal government, is about out of authorization for new public housing—the housing authority has just requested nine more projects, totaling 4,749 units, and this will exhaust its federal authorizations. At the same time, Mayor Wagner has been rebuffed by the state government in his plans to get \$300 million of state bonds for low-income housing; as it is, New York City already has absorbed 82 per cent of all state housing aid.

The state, for its part, is studying the whole problem, with

a special commission appointed several months ago. But while the studying is going on, the political tug-of-war between the Republicans upstate and the Democrats in the city continues, with public housing very much under pressure. A few weeks ago, James Gaynor, State Commissioner of Housing and Community Renewal, told the city flatly that "we are not meeting the demands of families displaced by demolition, nor are we meeting the requirements of families still remaining in substandard units."

Gaynor figures that three quarters of the families in substandard city housing are eligible for public housing—indicating that 400,000 more units are needed to house over one million persons. At current New York City land and building costs (which have risen 20 per cent in the past five years) this would mean an \$8 billion pro-

gram. And just to keep things in perspective, Gaynor adds: "The cost of a continued . . . commitment to [public housing] is already a subject of taxpayer concern . . . this is evidenced by the increasingly narrow margins of approval given to public housing . . . or by their outright defeat."

Gaynor knows full well it is not the cost of public housing alone that has brought down the opposition of voters upon the program. Antisocial behavior in projects has scored headlines so often that New Yorkers hardly pay attention—except when they get to the polls. Mayor Wagner this year asked for expansion of the Housing Authority's police force from 650 to over 1,500 to combat what critics call "wall-to-wall muggings" in projects.

The opposition of low-income families has already become critical—while the shortage of available low-rent housing keeps

applications bulging, resistance from dislocated families to public housing is growing fast. Negro leaders have long despaired of the public housing ghetto (at densities of as high as 560 persons per acre) that has been created in East Harlem, but the city doggedly goes on retracing the mistakes of the past. (Gaynor says that one of the chief missions of the new commission is "to determine ways of breaking away from the present pattern of economic and racial segregation that is one of the distinguishing characteristics of low-rent housing. . . .")

So far, the city authority seems hopelessly trapped by high costs, the massive backlog of demand, and its own inertia. If New York City, with all its vast resources if not resourcefulness, cannot produce better results, the whole nation's public housing program will feel the impact of its failure.

and this pattern has fitted in well with the attitude of most housing agency staffs, whose preference is for the more or less repetitive design that hews closely to the house rules." PHA Commissioner McGuire said last month that "Once we can find a basis for it, some adjustment is called for in the fee schedule." Some critics feel the basis for higher fees is already there for all to see, in the form of most existing public housing projects.

Mayer is equally unhappy with what he calls "false economies" in the program. He means specifically that, in the name of economy and because of "high costs," authorities demand too tight interior spaces and make a virtue of low land coverage in high-rise projects without really utilizing open space in a sensible manner. Mayer points out that as much as 10 per cent more space can be added for an overall cost increment of only 2 per cent, and that "the total cost of development of the outdoors is a small percent of total land and development costs."

Despite the fine work of men like Mayer and Thompson, it is still too true that, as Charles Abrams once observed, "design in public housing is more the product of finance and legislation than the drawing board."

The program should provide some form of homeownership

One of the most curious public housing experiments now underway involves a group of Tulsa, Okla. homebuilders who will build 100 units under FHA's Section 221d3, and then lease the houses to low-income families. These families will also have the option to purchase the houses, with a 3 per cent down payment under an FHA-insured mortgage. In cases where the economic rent of the units is more than 20 per cent of the family's income, the authority

will pay a direct subsidy. If the family later elects to purchase the house, it must repay the subsidy to the authority. This experiment will be especially applicable in communities where normal public housing is not available—and it is a first step toward providing eventual ownership of homes for low-income families.

Home ownership is considered by many observers to be essential to the ultimate success of public housing. URA Assistant Commissioner James Banks, who has had long experience in relocation and urban renewal, says flatly that "Any program . . . we have must be an incentive program . . . we must be able to provide the incentive for homeownership even among low-income families." Banks believes that most cities can start such a program using existing housing at first, and, once the economics are established, build new housing for eventual ownership by low-income families. At the same time, however, Banks realizes that "it will still be necessary to have some institutional type housing. Many low-families need this sort of care."

The problem of providing social services to low-income families is finally getting some meaningful attention in the midst of the new programs, and in many respects this is the most significant approach of all. Several months ago, HHFA and the Department of Health, Education and Welfare announced a set of guidelines for "concerted social services" for families in public housing. The first specific trial of this approach will come in St. Louis, where the huge (12,000 unit) Pruitt-Igoe developments will be served by a vastly expanded staff of social scientists and welfare workers. There had been such a bad record of crime and vandalism in the project that low-income families balked at living there; the vacancy rate rose to 15 per cent.

Public housing: a weapon in the fight against poverty

A special Mayor's committee investigated conditions and made these observations:

► Unemployment and economic discrimination (because of race, primarily) were at the heart of most of the problems. Over half the families in the project received public assistance, and an equal number had no male head of the family. About 70 per cent of the families had incomes of under \$3,000 a year.

► An all-out attack on all the problems, economic as well as social, could yield real gains "in spite of the difficulties inherent in the physical environment of these high-rise apartments." But, the committee made clear, the solution to the economic problem must be paramount.

► The ultimate objective of the program must be to integrate low-income families more thoroughly into the community at large, in terms of jobs and social contacts. The latter will, of course, be made more difficult by the physical isolation of these families due to the size of the project itself.

The St. Louis experiment is just getting underway, but guidelines have been established for such a concerted program wherever it is needed—and it is needed just about everywhere. For the problems of public housing boil down, basically, to meeting the problem of poverty. As Author Michael Harrington has said, "We can and should build decent housing for the poor. But if at the same time we leave the job situation the same, and the people isolated from contact with society at large, then we shall have vitiated most of what we have done."

Public housing, then, should be used as a weapon in the all-out attack on poverty and discrimination. The forms public hous-

ing takes—whether rehabilitated housing or high-rise projects—are important, in most instances, but represent only part of the problem. Until local authorities fully realize this simple fact, progress will be slow indeed. And this program can not afford many more mistakes, or any less progress.

The changes that the current program is undergoing are instrumental to its survival. That public housers are engaged in experiments is in itself most encouraging; but the question is—can the program do enough, and what more must it do? The concerted services approach points one direction: All federal programs *must* be coordinated to a much higher degree than ever before, and must at the same time be integrated with state and local housing and social service efforts. Whether this is accomplished via a Department of Urban Affairs or by some other device, the problem is too big to be nibbled at piece-meal as under the present system. Slum clearance, community facilities, social services and public housing are all needed to battle poverty. None of these alone will do, and all must be fully coordinated. Most important, the total program cannot be administered as a branch of public welfare—the "welfare attitude" toward public housing is a chief source of failure.

Public housing's role, as William Wheaton has said, should be not only "the maintenance of decent, safe and sanitary dwellings, but the rehabilitation and encouragement of people." It must not enforce economic and racial segregation, but rather become a key instrument for destroying these patterns. It must, as James Banks says, provide incentives for low-income families to advance, in the American tradition. "None of these families wants to be comfortable in its low status," Banks observes. "Each wants to get out of it." END

ARCHITECT'S OFFICE FROM AN OLD STUDIO

In a smaller remodeling job every bit as trim as the Noyes offices (preceding pages), Architects Gore, Gibberd & Saunders transformed a 70-year-old sculptor's studio (below) into cleanly functional design offices in southwest London. The building is located in Battersea in an area zoned for residential use; permission to open an office there was granted with the proviso that the architects keep exterior renovation to a minimum. Aside from new windows, and edge beams painted black, the only other exterior change was moving the entrance from the left side to the right where it could be adjacent to a new stair.

Inside, the first floor is divided



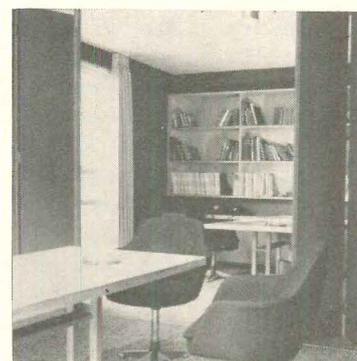
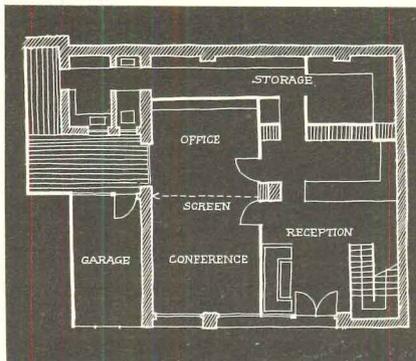
into a reception area, a conference room and office separated by folding doors, a small kitchen and a darkroom for printing and plan storage (see floor plan). At the rear and to one side is a small outdoor patio, adjacent to the office and behind the garage.

An entire second floor was installed in what had been simply one large room with a narrow mezzanine at one end. Plan storage drawers and cabinets on this level separate the wide-windowed drafting room (photo opposite) from a smaller, skylighted office for industrial design.

Total cost was \$37,800 (\$21,000 purchase price; \$16,800 remodeling cost). General contractor: C.A.S. Limited.



Below: ground floor plan; foyer showing new stair; conference-office area separated by folding doors.



PHOTOS: DOUGLAS OGLE





PHOTOS (ABOVE & BOT. RIGHT) : P. E. GUERRERO

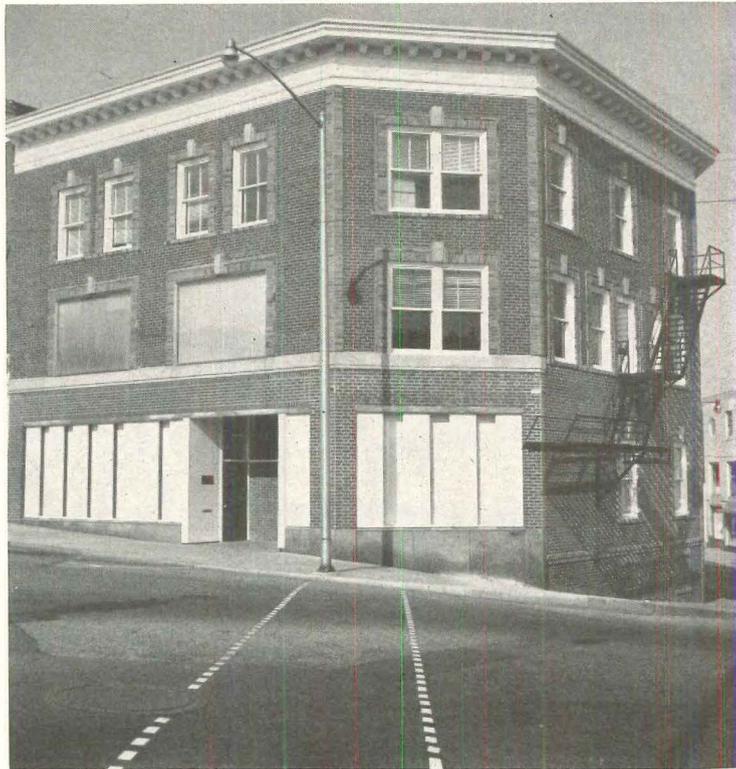
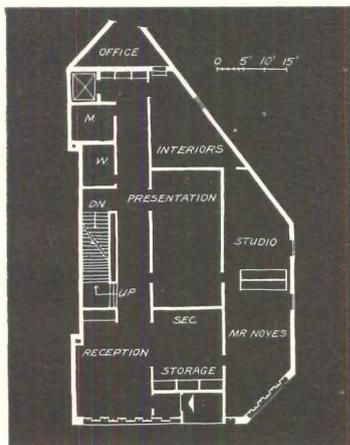
NEW DESIGN OFFICES FROM AN OLD STORE

The trim, spacious reception area shown at left was once the bustling center aisle of Silliman's hardware store, a venerable Yankee emporium serving the lawn and household needs of suburban New Canaan, Conn. When the store abandoned its building for more modern quarters and parking a block away, Architect-Designer Eliot Noyes saw the chance to pick up some unusual working space for his own rapidly growing firm, now 26 in staff.

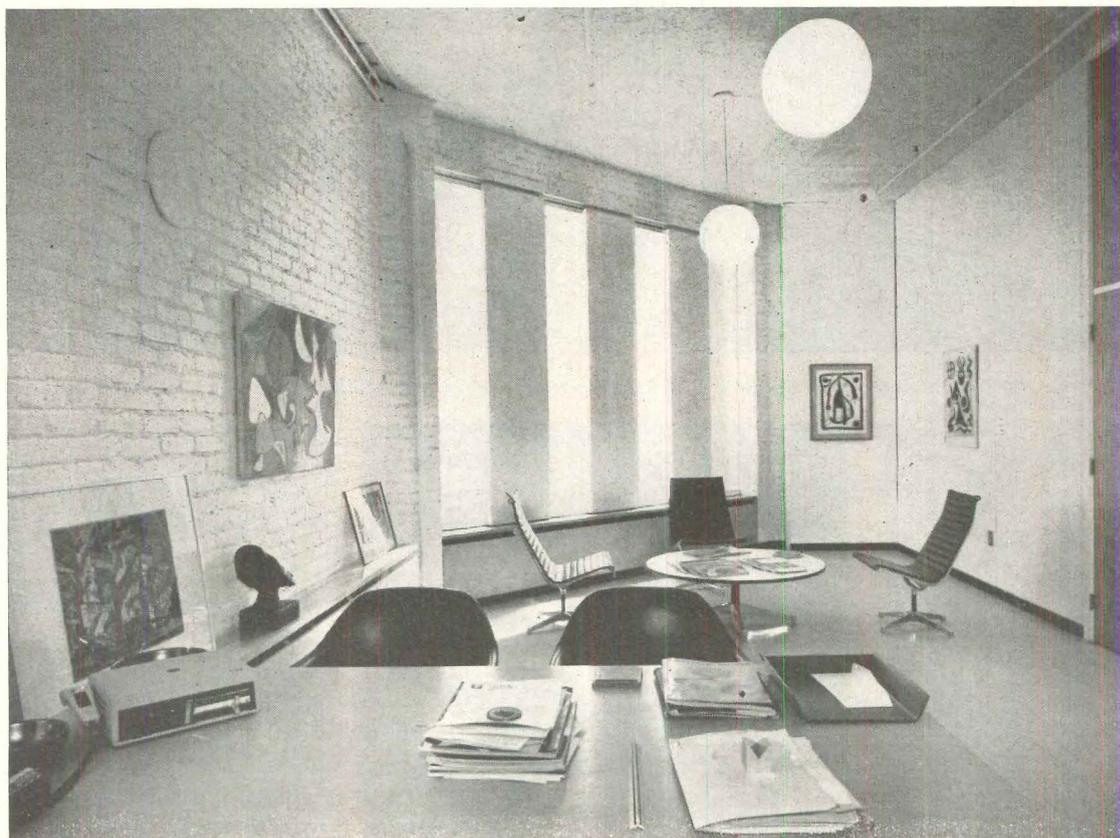
Noyes, who has a fondness for archaeology (his own early water colors of Persepolis friezes now hang in the waiting room), jokingly likens his new home to the Palazzo Pietro Massimi in Rome, another corner building of some presence and proportion. In any case, Noyes respectfully left his Main Street Massimi alone, except for new roofing, repointing and waterproofing the brick with a silicone, and a new baffle entrance flanked by staggered privacy panels which replace the old store windows (photo right). These panels are seen from inside in Noyes' own front corner office (lower photo); they are simple white-painted planks 2 feet wide, offset 6 inches and joined by frosted glass strips to give privacy, diffused light, and a lively wall pattern on both sides.

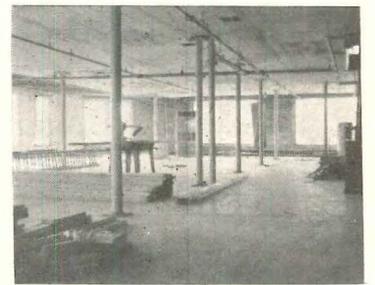
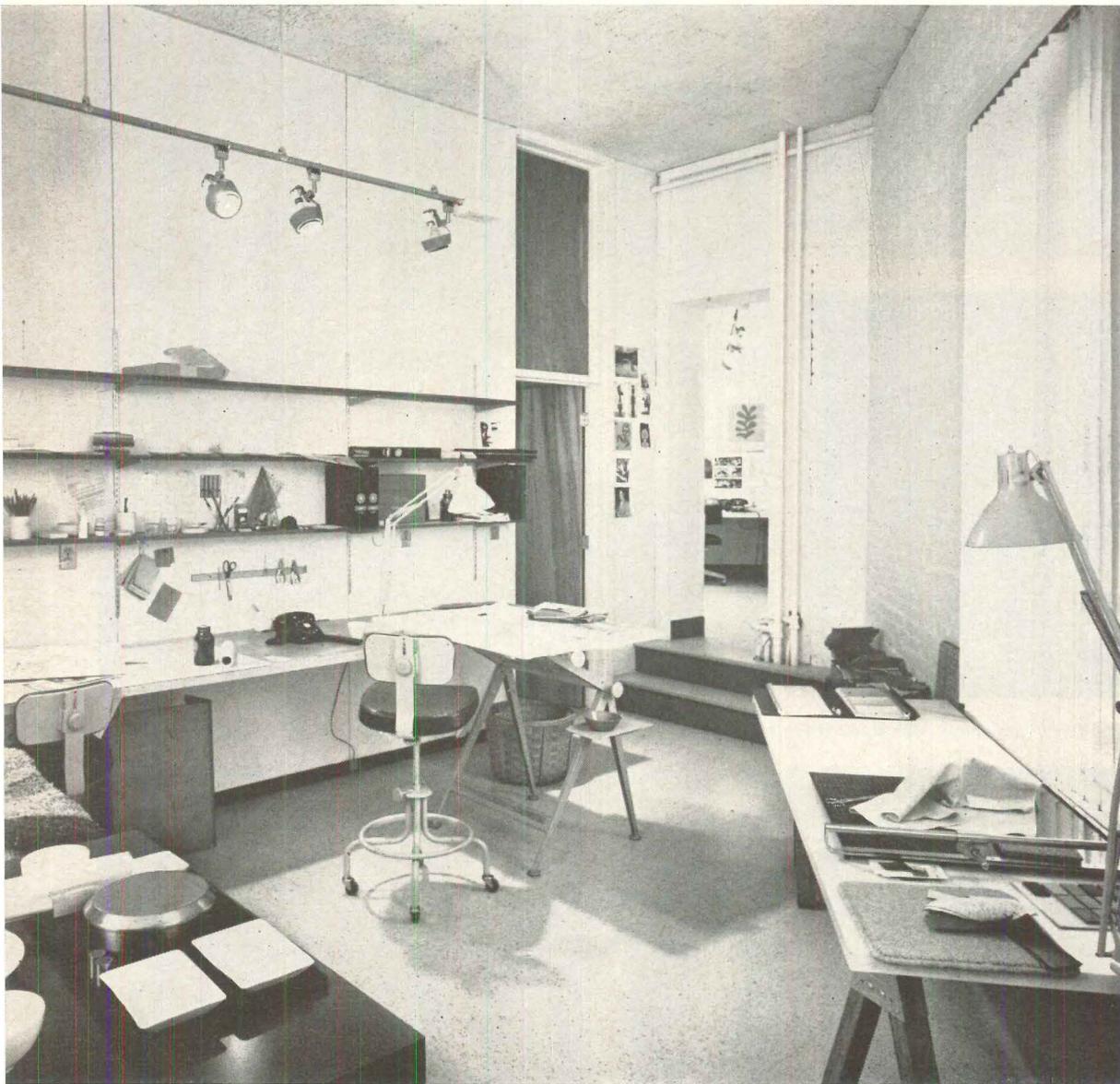
Other walls inside were stripped down to the brick for added texture; these surfaces, the wallboard partitions, and the new acoustical ceilings are all painted a spacious white. An existing sprinkler system was altered slightly and left exposed; elegant suspended globes of milky glass provide all the artificial light.

Behind Noyes' own office is his drafting space and that of his wife Molly, who specializes in interior design (overleaf). In the center of the ground floor is a presentation and conference room



Old storefront (top) was made private with new baffle walls and entrance (above). Below: Noyes corner office.





where models, drawings, slides, and movies can be shown. Below, the old bargain basement has been transformed into a model-making and machine shop, where designers experiment with everything from architectural sunshading to the rejacketing of diesel engines. On the second floor is the architectural drafting room (photo right). A similar layout on the top floor accommodates another 10 people concerned with industrial design (for such regular clients as Westinghouse, Cummins Engine, and IBM).

The remodeled store has proved not only a pleasant and efficient place to work, but its own bargain as well: for a total purchase and renovating cost of \$15.28 per square foot (see figures below), Noyes has a building it would have cost well over \$20 per square foot to locate on new land and build from scratch.

FACTS AND FIGURES

Office of Eliot Noyes & Associates, 95 Main Street, New Canaan, Conn. Architect: Eliot Noyes (Charles Baffo, job captain). Mechanical and electrical engineers: Werner, Jensen & Korst. Contractor: Varian Construction Co. Purchase price: \$100,000. Remodeling costs: \$83,382 (demolition, \$3,188; exterior waterproofing, \$5,009; carpentry, \$18,732; roofing, \$2,613; cabinet work, \$2,563; acoustical ceilings, \$4,314; flooring, \$6,499; paint and finishes, \$4,307; new entrance and baffles, \$5,853; plumbing, \$6,864; air conditioning, \$4,640; electrical, \$16,312; hardware and misc., \$2,488). Floor area: 12,000 square feet. Remodeling cost: \$6.95 per square foot. Total cost: \$15.28 per square foot.

Above: Mrs. Noyes' interior design office. Below: industrial design, presentation room, basement model shop.





PHOTOS: P. E. GUERRERO

CHANGING AND CHANGELESS

Italy the unchangeable keeps changing. There is much we can learn from the way she does it. In the ten years since G. E. ("Geeks") Kidder Smith published his splendid picture-book *Italy Builds*, Italy, already rich, has become very much more prosperous. Her richness was in the arts, her new wealth is economic: something different. She now tackles the same historically unprecedented magnitude of fat democracy that we do.

Somehow it seems certain that she will win exemplary victories, though after a series of troubles. This shows already in those wonderful town squares that were so important a part of Geeks's book. As he showed them they were beautifully and serenely austere, the best of them, while at the same time intimate, humanly inviting, and popular. But now many of those squares are hopelessly blighted. Not poverty but the new wealth is blighting them. The immense increase in automobiles is swarming all over them, using the beautiful squares as tightly packed parking lots, blurring the view of beautiful buildings—especially as cars get parked directly in front of the best front seats of sidewalk cafés which the beauty-loving tourist fights to get—making it all but impossible to discern the form of statues, fountains, and carefully maintained public gardens.

Later we can expect the other degradations that new wealth brings with it, as in America.

Self-preserving exceptions

The horrible premonition presents itself that most of these old central city squares never again will be recovered. For it is impossible to stop modern man from being modern, no matter how many architects yearn for the return of the good old days and push every sort of "historical preservation." For one thing, like other people of today, the Italian is thrilled by the freedom, luxury, and power that seems to be promised by individually controlled, wide-ranging, and swift personal transportation: today he

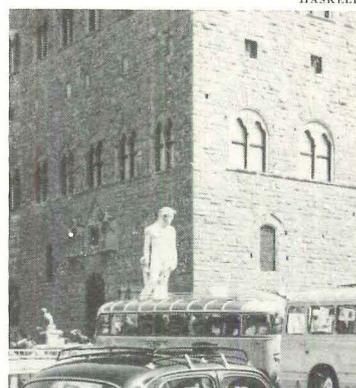


KIDDER-SMITH

loves his new car better than he loves the esthetic harmony of the old square, his ever-so-familiar architectural heritage. (Photos above, before and after.)

But hold on: there are some stunningly effective exceptions that can be deeply instructive to us. Among beautiful Italian city places still unblighted by traffic three stand out from this trip's personal observation. To be exact, the Piazza of San Marco in Venice we did not see, but everybody knows why cars don't flood in to spoil it: there simply is not the physical access. In the other cases the access would be easy but we saw these city squares spilling over, instead, with joyous, carefree human beings walking or running on their own legs; and nobody was even trying to usurp their place with Fiats, Alfa-Romeos, or Lancias. One of these happy places was the superb Piazza del Campo in Siena and the other, the beautiful Piazza del Duomo in Pisa. In each case we figured that the reason these public places stay vigorously alive, and fend off the steel-clad beetle-bug infection (as a healthy body fends off viruses) was a superlative architectural form in the public square taken as a whole, fostering and serving happy festive uses that still "come natural."

Siena's Piazza del Campo is still the amazing, all-paved natural amphitheater that Kidder Smith shows: a big, generous half-bowl with a straight base about 500 feet long and a semi-oval circumference with radii ranging from perhaps 200 to 300 feet. Its greatest feature, the dominating medieval crenelated Palazzo Pubblico with its 400-foot tower, is at



HASKELL

the bottom of this half-bowl, not anywhere on the upper rim.

Architecturally this arrangement is a piece of magic. Every day from along the upper rim and its cafés one can view countless individual pedestrian dramas across the wide pavement of the great bowl; but twice every summer the Campo is even more exciting. It becomes a race-track for the furiously contested horse race that climaxes the "Palio," the colorful city pageant which goes back into antiquity and is still medieval. Each horse represents a city section and is blessed in a church before running. On Palio days the Campo has room for 35,000 madly cheering citizens in the bowl alone, not counting as many more



crowded on the surrounding roofs and hanging out of windows.

The point is that citizens don't even want their new love, the car, to interfere with an old love that is so strong and *alive* as the tradition of the Campo and of its daily life, not to mention the tradition of the great festival of the Palio. The cars are simply sent elsewhere to park, and with-

out objection. And the tradition itself could not be so alive either without the architectural magic to create it. In Florence, too, they used to race in the Piazza of Santa Maria Novella, and the obelisks are still there that marked the turn-arounds. But the place had no great special shape, and long ago traffic invaded and annexed it (photo below).

As for Pisa, its cathedral plaza, also a superb outdoor room, is all grass: the only Italian square we have seen that was not all pavement. Thick and lush in May, this grass was supporting the gambols of half the town on a nice Saturday night, not to mention a huge candle-bearing procession after that; and of course the Pisans would not dream of having their automobiles ruin this. And again this living tradition is quietly shaped and brought to life by the magical quiet appeal of a superlative architectural arrangement.

So the future of architecture and the city in Italy will be very different, and many a lovely historical square has already begun dying a slow death; but as the years unfold we can expect some wonderful new city patterns. Most will be far outside the old city core. And yet the really valuable old will live on, not because of frantic preservation efforts or anti-ugly movements nearly so much as because people respond to what "enhances their life on earth" (to use Eero Saarinen's phrase)—enhances their *own* kind of life, which architecture ought still to be serving, as life changes.

FOOTNOTES

At the American Academy in Rome, some of the young men are doing excellent projections, more about them later. We ran into Tom Stifter doing schemes based on Italian hill towns, rendered in meticulous Miesian drawing technique, and David Jacobs, carrying shell architecture up into the clouds while distinguishing carefully between what makes sculpture (his wife's occupation) and architecture.

Douglas Haskell

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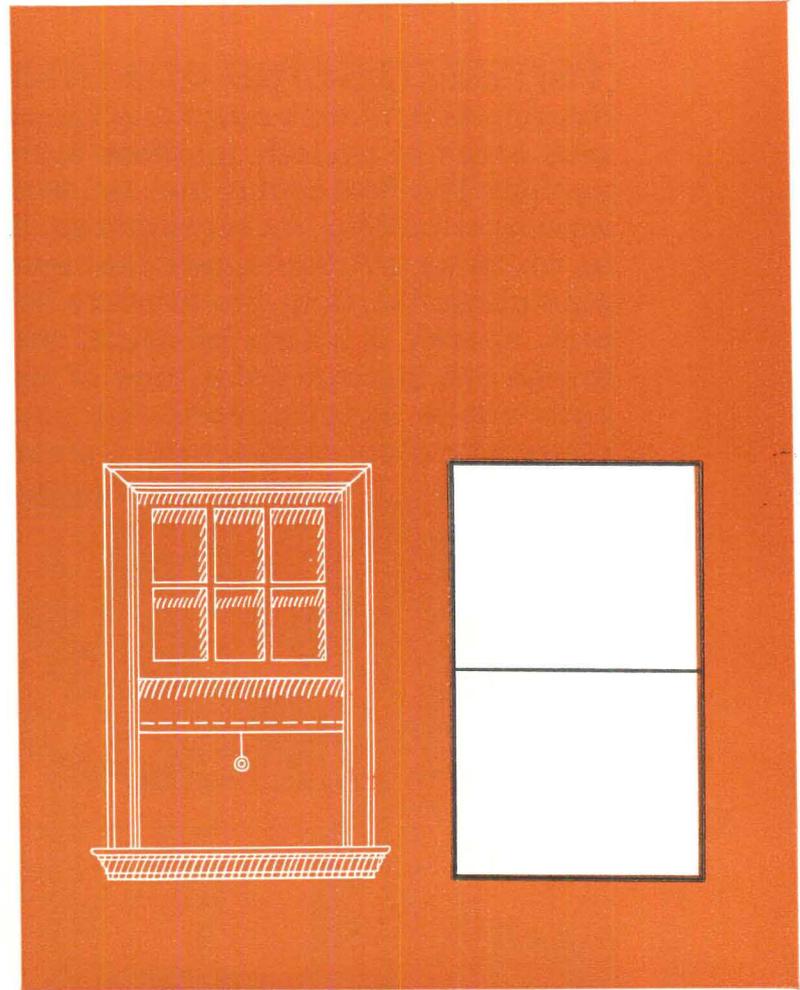


Terrazzo flooring made with ATLAS WHITE cement at S. Klein's Department Store, Commack, N.Y. Architect: A. H. Salkowitz, Jamaica, N. Y. Contractor: Jules Schneider, Inc., Hempstead, N. Y. Terrazzo Contractor: Seaboard Tile & Terrazzo Co., Farmingdale, N. Y.

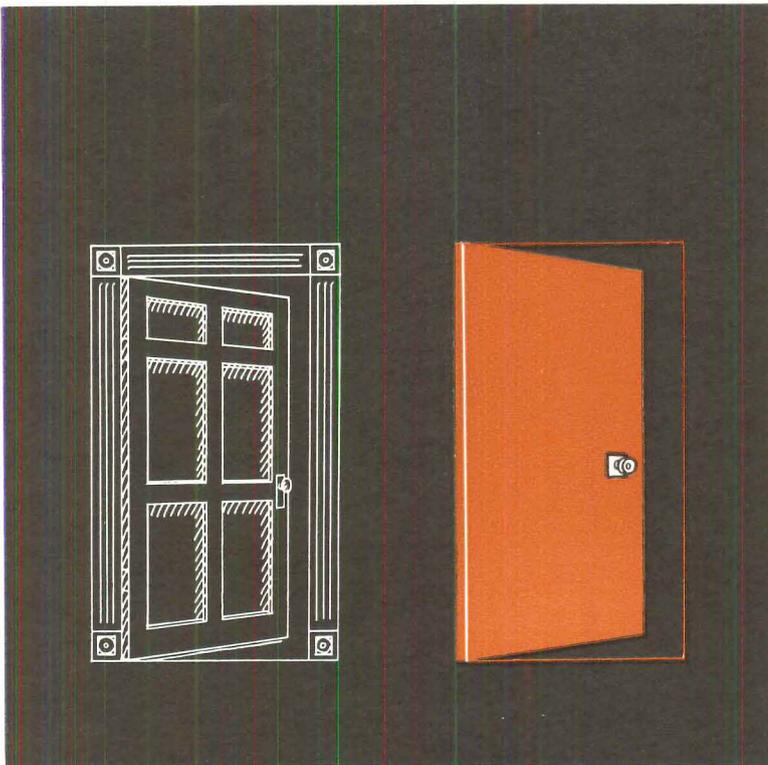
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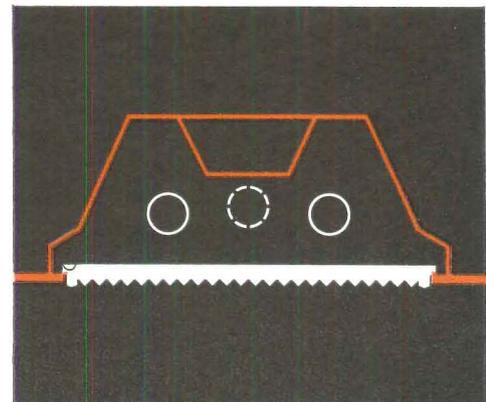
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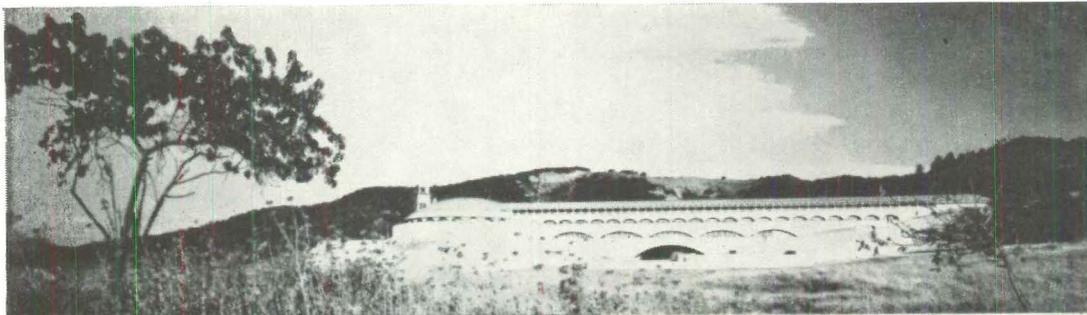
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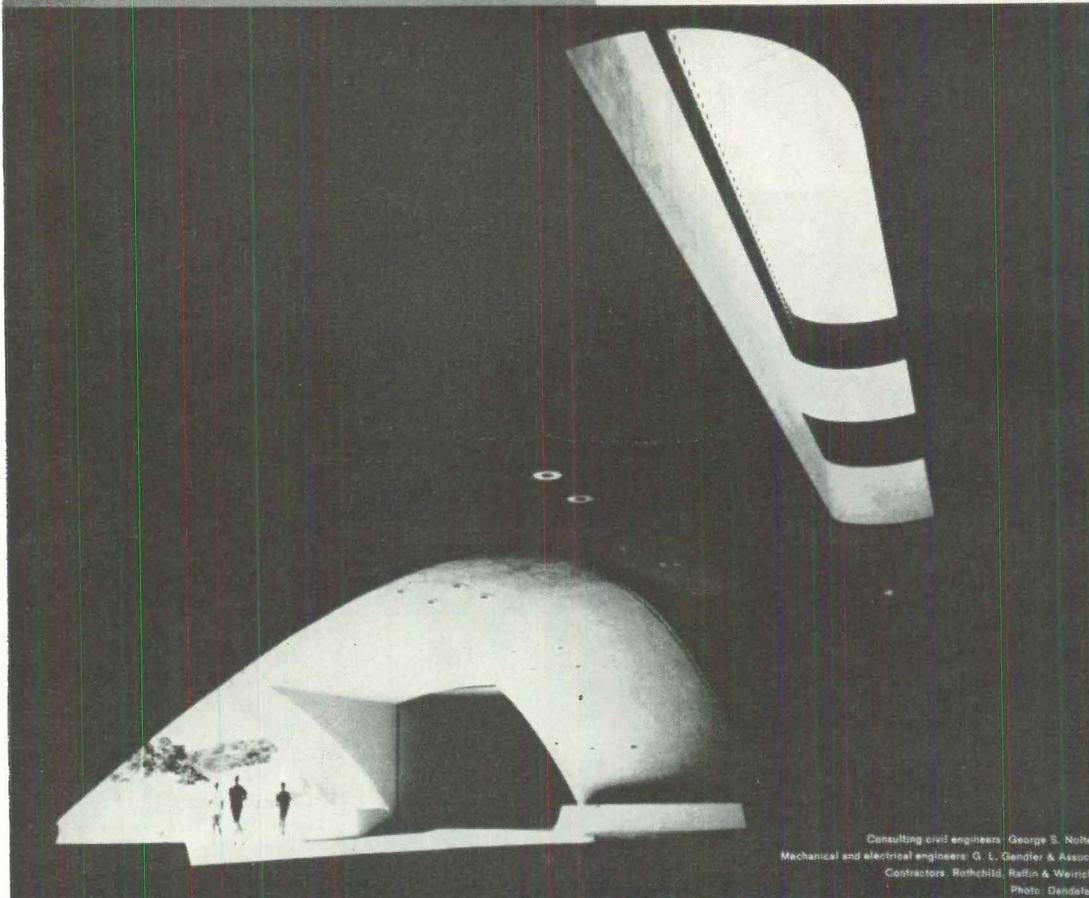
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MARIN COUNTY CENTER CALIFORNIA

One of a series of 10 posters published in 1962 by the editors of ARCHITECTURAL FORUM, the magazine of building

The Marin County administration building in the suburbs north of San Francisco is the only governmental structure designed by the late Frank Lloyd Wright. The building couples Wright's respect for nature with his mastery of dramatic architectural space, as the building grows from the landscape, emerging from one low hill and bridging across to another 700 feet away. The two long office wings meet only at the shallow dome to the north, their curved roofs joined by a continuous skylight that brings nature deep inside the building, and brings unity and drama as well.



Consulting civil engineers: George S. Noth
 Mechanical and electrical engineers: G. L. Gendler & Assoc.
 Contractors: Rothchild, Radin & Weirick
 Photo: Dandekar

GREAT ARCHITECTURE FOR THE SIXTIES

A GRAPHIC EXHIBIT FOR BETTER PUBLIC UNDERSTANDING AND APPRECIATION OF CONTEMPORARY ARCHITECTURE

Due to the popularity and demand of its first poster exhibit (now completely sold out) Architectural FORUM has produced its second annual edition of posters for public exhibition. Incorporated in the poster set are handsome black and white photographs of ten new buildings* which, in the opinion of FORUM's editors, have contributed significantly to the art of architecture in 1962.

Designed by John Martinez, a leading graphic

artist, the ten posters are particularly suitable for display in schools, colleges, libraries, museums and other public areas such as convention halls, banks and department stores. Each poster measures 18½" x 24"; but the full set is designed to hang handsomely as a unit. Cost: \$5.00 per set postpaid while the limited supply lasts. Address all inquiries to Architectural Forum, Room 19-39, Time & Life Building, Rockefeller Center, New York 20, N. Y.

*U.S. SCIENCE PAVILION BY MINORU YAMASAKI / COLUMBUS ELEMENTARY SCHOOL BY JOHN CARL WARNECKE / NECKERMAN WAREHOUSE BY EGON EIERMANN / FOOTHILL JUNIOR COLLEGE BY ERNEST J. KUMP AND MASTEN & HURD / PLACE VILLE MARIE BY I. M. PEI / ASSEMBLY BUILDING BY LE CORBUSIER / MARIN COUNTY CENTER BY FRANK LLOYD WRIGHT / NEW HAVEN GARAGE BY PAUL RUDOLPH / DULLES INTERNATIONAL AIRPORT BY EERO SAARINEN / BACARDI BUILDING BY MIES VAN DER ROHE

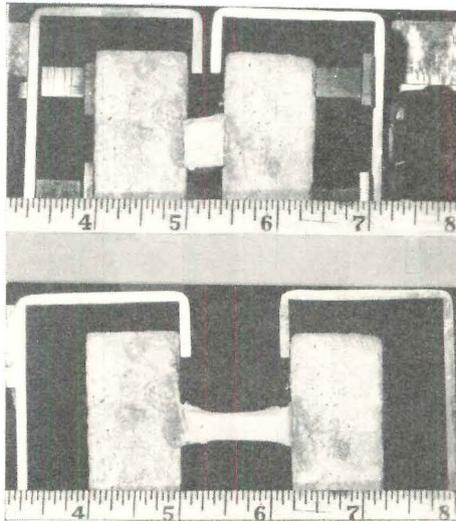
Sealing 1,000 holes (below)
 Radiant glass heater (page 150)



SILICONE SEALANT

The man behind the gun is calking one of 1,000 holes in the domed roof covering General Electric's exhibit at the 1964-65 New York World's Fair, an application dramatizing the company's new product, *GE Silicone Construction Sealant*. While the unusual structure of the pavilion—a curvilinear lamella dome supported by steel tubing which pierces the roof covering—is the first of its type in the United States and therefore a particularly interesting application, GE has also been testing the sealant less dramatically on curtain walls, precast concrete panels, stone and brick pointing, glazing, and expansion joints, and has found its aging characteristics so satisfactory that the company predicts it will outlast organic rubbers (i.e., polysulfides, butyls, etc.) by a margin of two to one.

Graceful aging is not the only advantage



GE sees in its new formula: the sealant requires no mixing, and remains pliable over wide temperatures, from -20 to 160 degrees F., expanding and contracting with the movement of the materials it joins (second photo). This pliability also means that it can be applied at any season of the year. A catalyst in the sealant prevents the cure from taking place until after it has been applied. Within an hour, under average conditions, the surface should feel dry and tack-free.

GE sells its sealant packed in cartridges or in 5-gallon bulk containers. Standard colors available are translucent, white, black, neutral (nearest the color of concrete and mortar), and aluminum; special colors may be specified. Cost: \$26 per gallon.

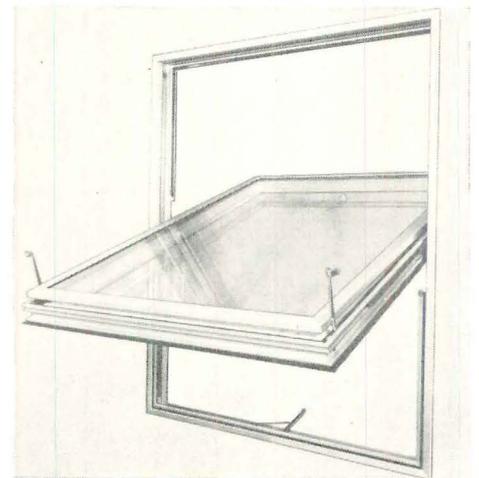
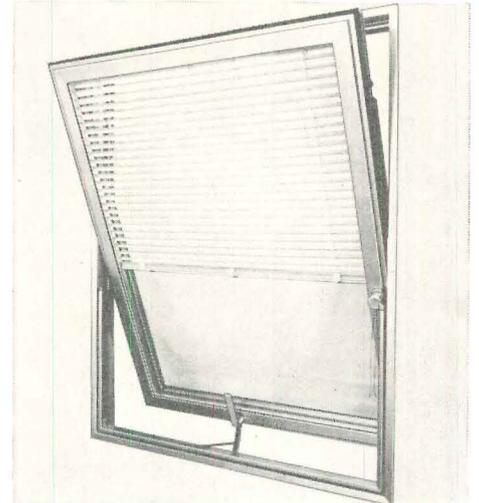
Manufacturer: Silicone Products Dept., General Electric Co., Waterford, N.Y.

PIVOTING WINDOW

An American adaptation of a double window long popular in Europe pivots horizontally for cleaning, filters sunlight through removable blinds, locks part-way open for ventilation, and separates for cleaning inside surfaces. The new window also has square corners and an absence of frippery: the only protrusions are a removable lever handle at the bottom and a knob at the right to operate the blinds.

The window frame is aluminum, the glass set 2 inches apart for heat and sound control. Gaskets are molded neoprene. The manufacturer says that windows of almost any size can be fabricated from the basic design.

Manufacturer: Western Sky Industries, 21300 Cloud Way, Hayward, Calif.



FILING IN MINIATURE

New desk-top equipment from IBM reduces engineering drawings to small fractions of their original size for filing and blows them up larger-than-life for viewing. In IBM's *Micro-Processing System*, a central file stores all filmed documents on aperture cards, the film mounted flush with the card. The

continued on page 146

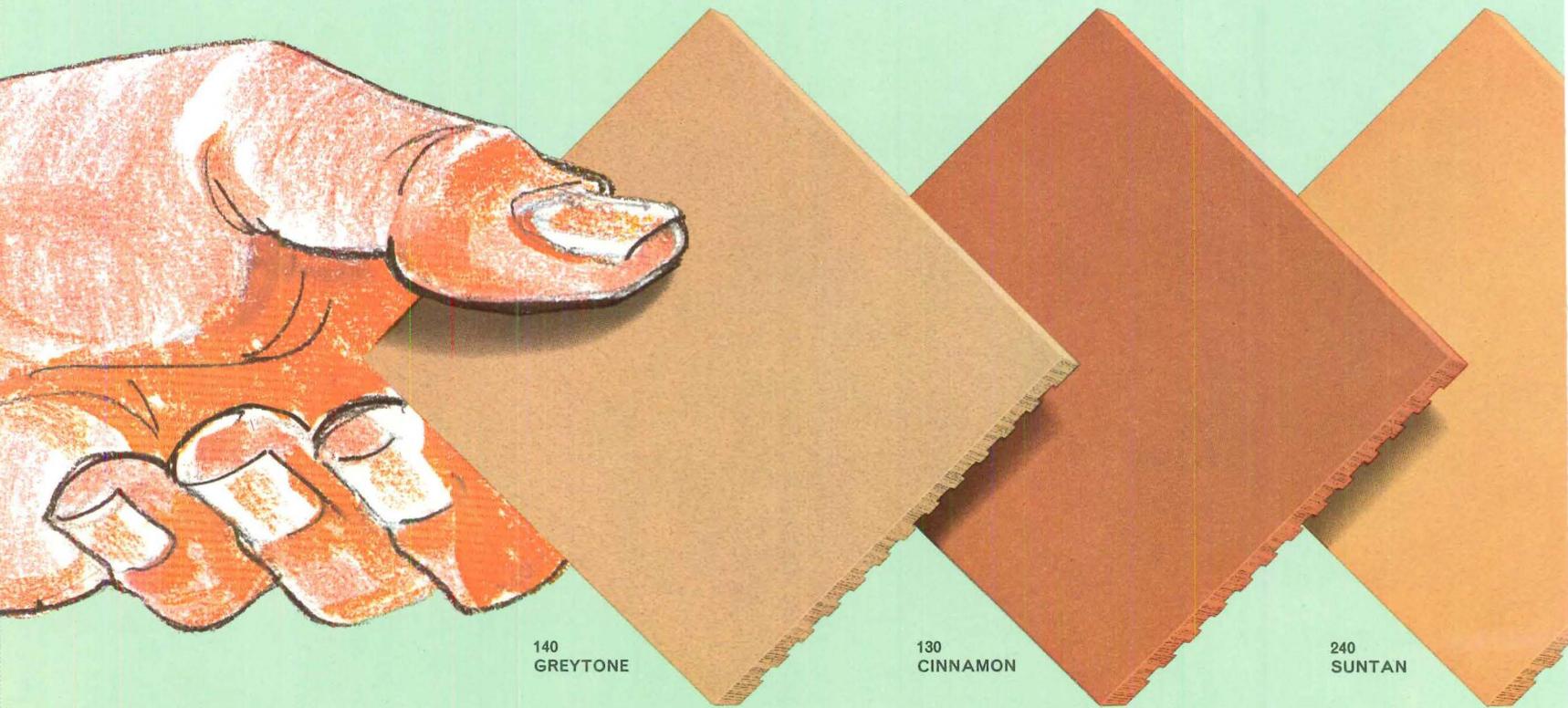


COMBINATION CRANE

A new hybrid born of the truck and tower crane is seen here placing 11,000-pound steel girders on a garage-heliport in Oakland, Calif. This is the first use of Harnischfeger's new crane, which combines a 12-story mast and a 100-foot boom mounted on a truck. It converts from truck to tower crane and back again easily enough so that it can be used profitably as both on the same job. Unlike the European tower cranes which are fixed in position, the new truck-tower crane is maneuverable, yet it retains the tower crane's ability to place loads accurately. On jobs usually considered too small for tower cranes, the combination enables the contractor to use a tower crane economically. The long boom can be raised from its horizontal position and worked in shortened space, inside a 25-foot radius.

The first crane, the only one in existence, was sold for \$170,000. Others are in production.

Manufacturer: Harnischfeger Corp., 4400 W. National Ave., Milwaukee 46.



140
GREY TONE

130
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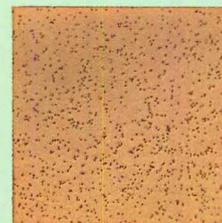
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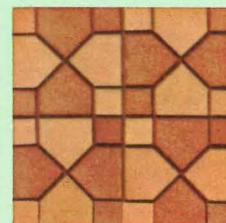
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Golf Club Tile takes the wear in a prominent shopping plaza.

Vitreous Navajo Quarry Tile cuts work in a school kitchen.

The gay "plaid" effect of a Cherokee Pattern enlivens this lanai.



160
ORIENTAL*

150
EGYPTIAN

110
NAVAJO*

250
BLUEGRASS
GREEN

170
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120
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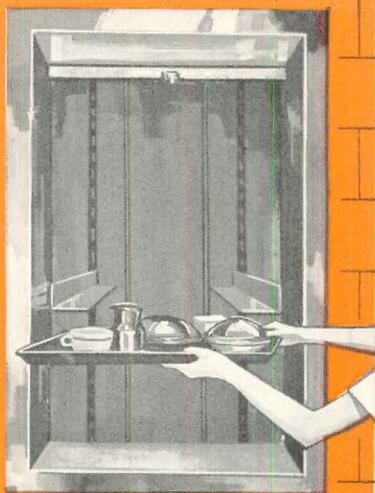
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Colors differ West
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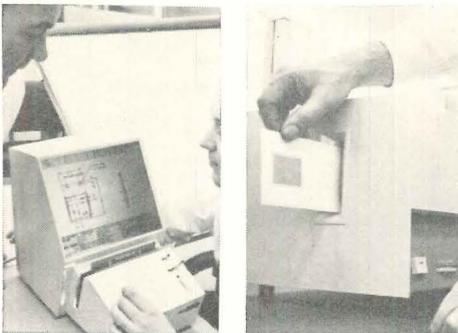
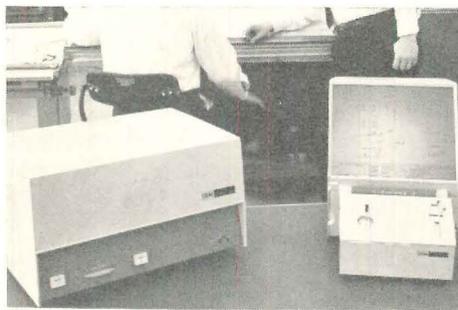
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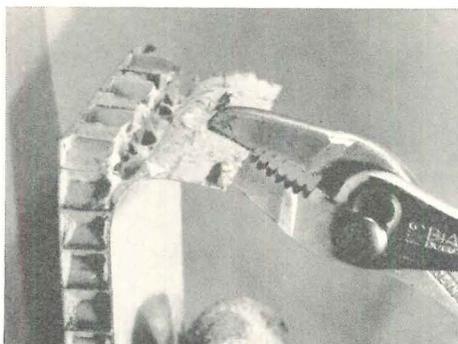
**LAMSON
CORPORATION**



master card inserted in the Micro-Copier (top left) produces a copy (bottom right) which can be magnified up to 15 times on the Micro-Viewer (top right and bottom left). Parts of drawings may be traced on a plastic overlay across the viewer screen.

Costs: \$825 for the Micro-Copier; \$175 for the Micro-Viewer. Another Micro-Copier, available early in 1964, will also copy rolls of microfilm.

Manufacturer: Data Processing Div., International Business Machines Corp., 112 East Post Rd., White Plains, N.Y.



STRONG ADHESIVE

The gummy substance bonding the honeycomb panel above is the first in a new group of adhesives made by Pittsburgh Plate Glass. *Bondmaster G442* is a one-part neoprene compound which provides a high-strength, permanent bond, whether applied at room temperature or by hot contact methods. The advantage of the new formula over previous contact adhesives is that it has higher "hot holding ability," i.e., the completed bond will not delaminate under heat, and has a longer "bonding range," i.e., a good bond is possible from 5 minutes to two hours after application. G442 has been field tested by

continued on page 150

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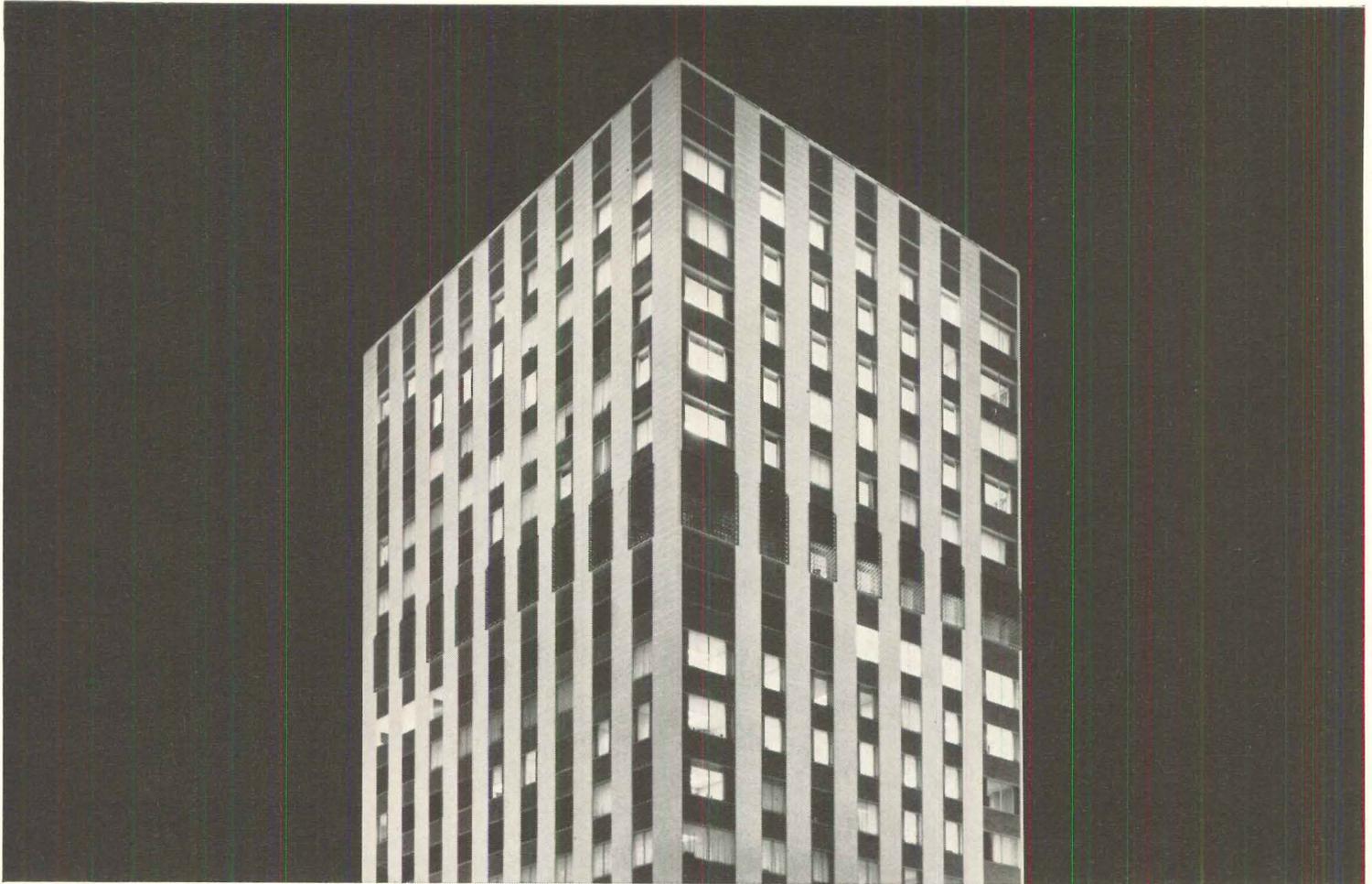
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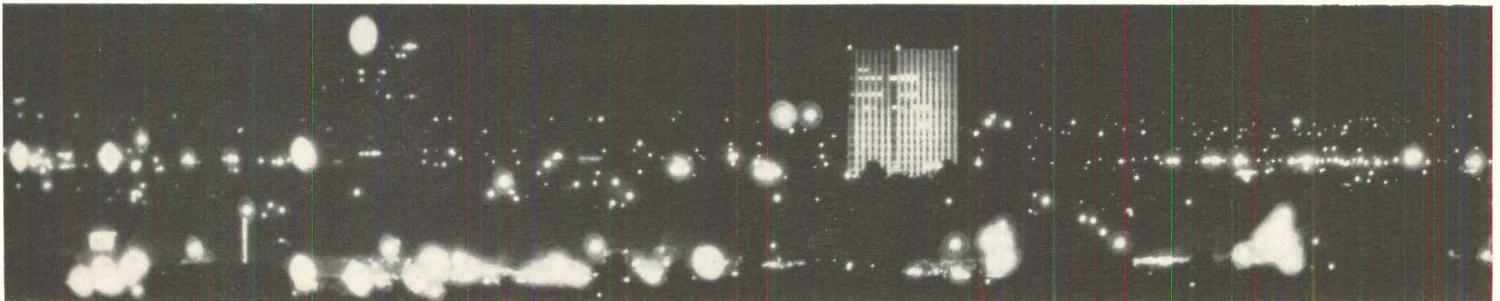
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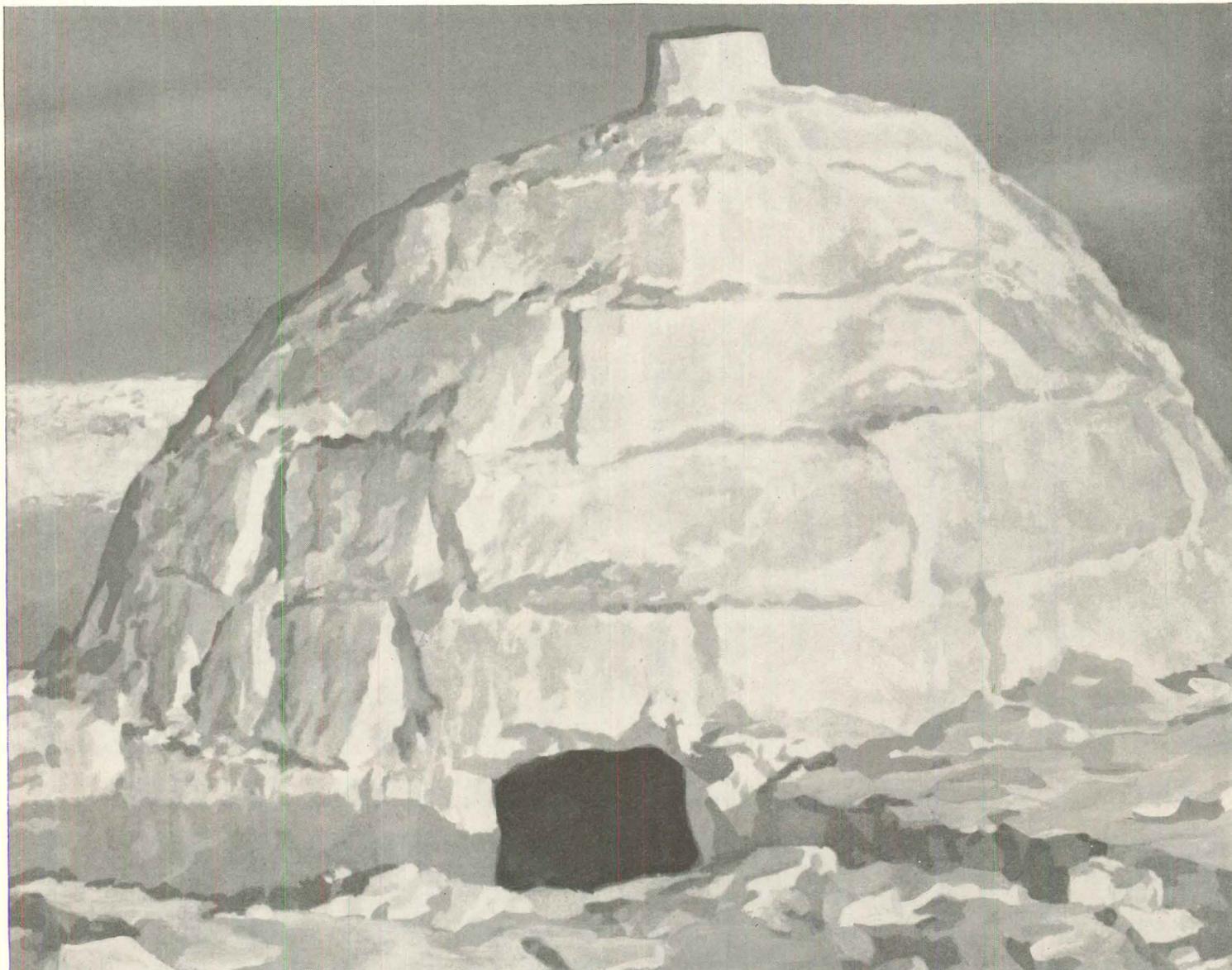
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It can be a long winter for the man who doesn't specify a steel frame for his building. The following quotes from a leading architectural magazine suggest little sunshine ahead for him.

★ "At the tender age of 15—often less—every building in the country is a candidate for remodeling; but not all are worth the cost."

★ "Since World War II, mechanical obsolescence has been stepped up greatly by the perfection of air-conditioning, automatic elevators, high-intensity lighting, wide-span structures, sound control, underfloor wiring, and a host of other mechanical details. As a consequence, buildings . . . became obsolete in many ways almost overnight."

★ "The money spent on (rebuilding) totals 40% of the sum spent on new buildings. And the portion will doubtless be increased in years to come."

★ "Anticipate remodeling in the initial design."

★ "Obsolescence of the physical variety is related to design and structure. If a building's floors are not capable of carrying today's heftier office machines, if its space cannot be readily subdivided to house the larger number of employees per square foot that new buildings accommodate, if the structure is such that new wiring and air-conditioning ducts cannot be inconspicuously fished through the floors or ceilings or walls—if its physical obsolescence has gone this far, it is probably not worth the cost of modernization."

In 1963, about \$8.2 billion will be spent making old buildings modern and competitive. This will involve thousands of structures, most of which would have had to come down—or go down in income and occupancy—if they hadn't gone up in steel.

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Say steel now. Sometimes it costs a little more. It often costs less. In either case, you will have a permanently adaptable, useful building that will go up faster—in any season.

Before you build, remember two things: a frozen asset is a bad investment, and steel-framed construction doesn't freeze you—it frees you to accommodate tomorrow's technological advances.

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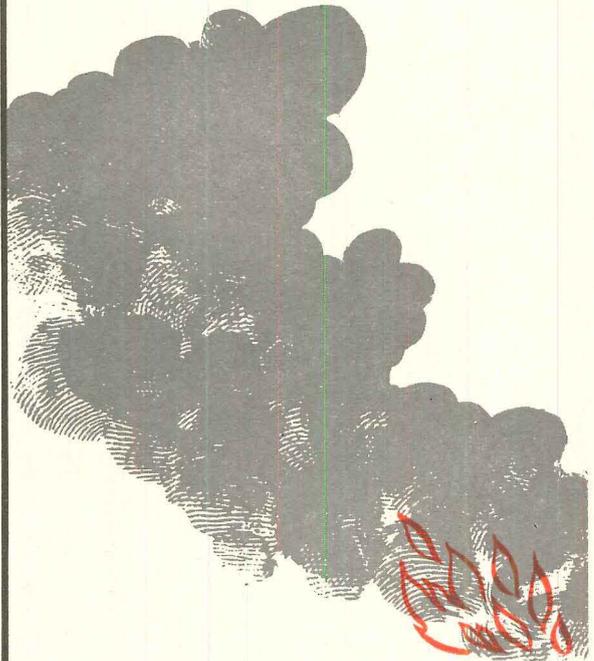


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SMOKE!

release doors
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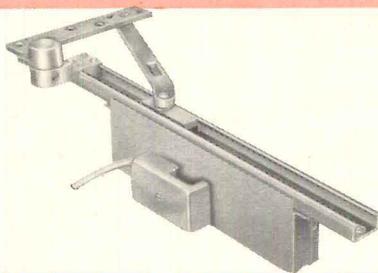
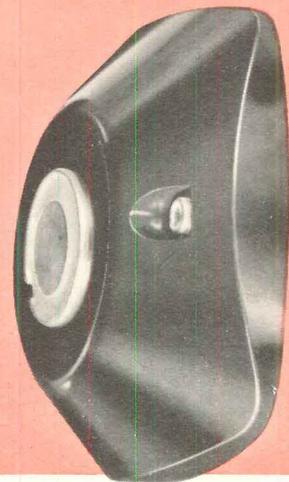
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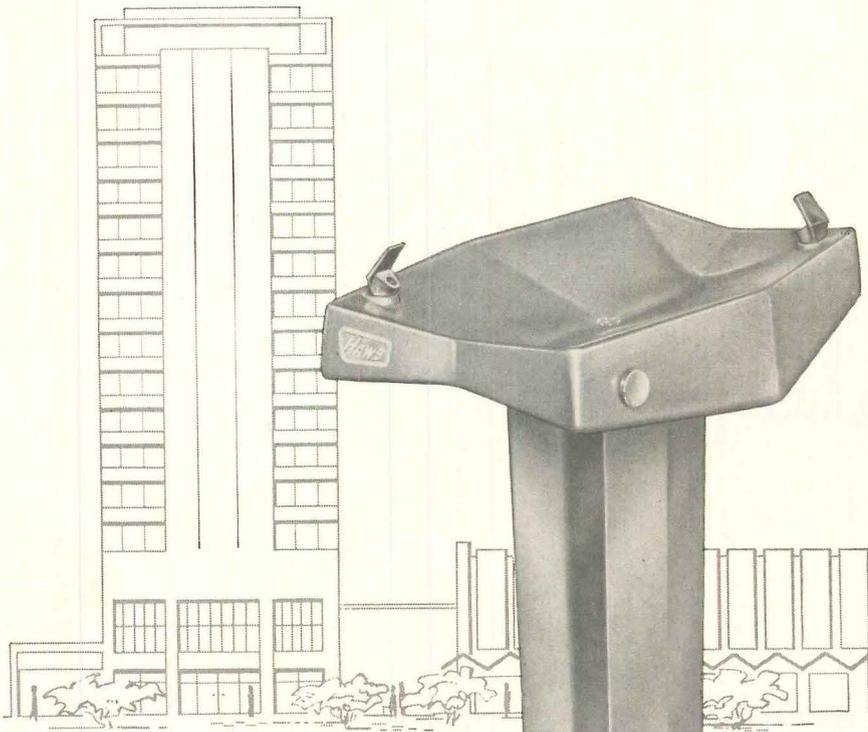
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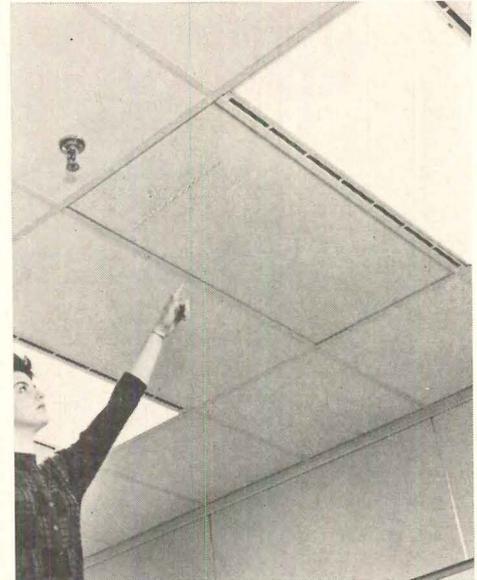
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several manufacturers of curtain-wall panels, partitions, and desks.

The new adhesive is a liquid, and can be applied by spray or brush. Cost: under \$2 a gallon in quantity.

Manufacturer: Adhesive Products Div., Pittsburgh Plate Glass Co., 225 Belleville Ave., Bloomfield, N.J.



RADIANT HEATERS

The girl's hand in the photograph above points to Corning's *Commercial Radiant Ceiling Heater*, scarcely distinguishable in appearance from the acoustical tile in the rest of the ceiling. The new heater is designed to be dropped into a suspended grid or mounted directly on a flat surface. Offices, stores, hospitals, schools, motels, and industrial plants may use the panels as a sole heat source or to supplement other heating systems.

The heater is made of borosilicate glass, strengthened and insulated with glass fibers. A thin metallic oxide film fired onto the glass conducts electricity and emits long-wave infrared radiation. One panel heats a 50-square-foot area.

Industrial radiant panels are made in one size, 2 by 4 feet, wired for 120, 208, and 240-volt systems. The standard color is neutral, to match acoustical tile, but heaters may be custom-ordered in other colors or painted on the job with latex-base paint.

Manufacturer: Corning Glass Works, Corning, N.Y.

OILED PLASTIC

Wood-grained melamine, one of the more familiar plastics on the market, now comes ready for an oil rubdown to make it look and feel more like real wood. Westinghouse Micarta *Oil-Rub* wood grains have a special porous finish which absorbs oil rubbed into

continued on page 151

it. Two types of oil are recommended: mineral oil with a solvent wash or machine-shop cutting oil. Westinghouse expects Oil-Rub to be a particularly popular finish for contract furniture, office partitions, and elevator cabs.

The new surface will be sold at a slight premium over regular wood-grain Micarta.

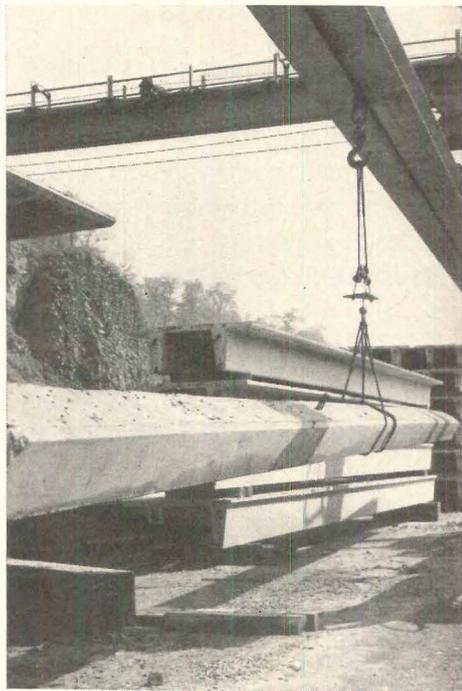
Manufacturer: Decorative Micarta Div., Westinghouse Electric Corp., Hampton, S.C.

TAPE-LAYING PEN

A reel of narrow tape mounted on a plastic dispenser the size of a pen speeds the preparation of charts, floor plans, and graphs. The reel unwinds as the *GP Pen* moves over paper, depositing adhesive-backed Mylar tape in its wake. Tapes for the pen are made in several colors and printed designs to make them stand out clearly on a chart. The pen applies the tape and also cuts it off wherever desired.

The plastic pen costs \$1; tapes made to fit it, in widths of 1/64, 1/32, 1/16, and 1/8 inch, cost 35 to 70 cents per roll.

Manufacturer: Labelon Corp., Canandaigua, N.Y.



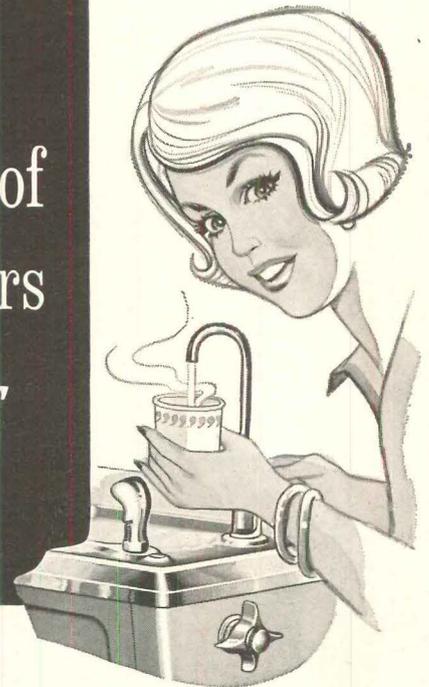
TOUGH FASTENERS

Upgrading steel fasteners to make them stronger, harder, and more resistant to corrosion, Ramset introduces this month a new line of *Tru-Set Fasteners* which will be sold at the same price as the previous line. The 20 per cent increase in strength stems from two factors: a new alloy (Ramset calls it Ramaloy) and austempering, a prolonged heat treatment in a molten salt bath.

The complicated rig in the photograph demonstrates the capabilities of a single

continued on page 153

Now...
a complete line of
Refreshment Bars
TAYLOR-MADE
for you



In a jiffy you get up to sixty cups of hot beverages every hour . . . instant hot water for coffee, tea, chocolate, soups, etc. And in addition, all the cold refreshing water you need for office use.

Halsey Taylor makes three models, every refreshment bar being factory-installed . . . and in thirteen different capacities. It's a *complete* line, featuring traditional Halsey Taylor quality and service.

The Halsey W. Taylor Co., Warren, Ohio

ON THE WALL

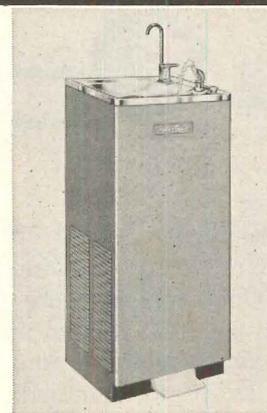


THE PATENTED WALL-MOUNT

A Halsey Taylor *first*, on the wall, off the floor, no exposed fittings.

Capacities—6, 11 and 16 gallons

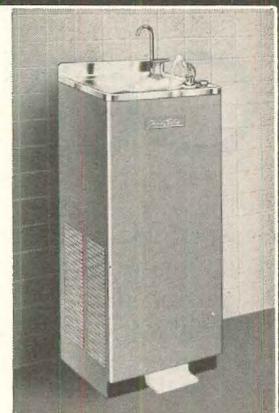
—ON THE FLOOR—



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As in all Halsey Taylor models stream height is held constant with integral automatic regulator.

Capacities, 6, 11, 14, 16 and 21 gallons



THE WALL-TITE

Sets tight against the wall. Fittings concealed in cabinet. Takes less space.

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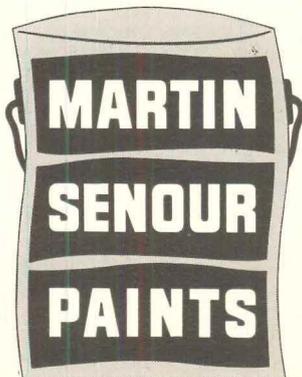
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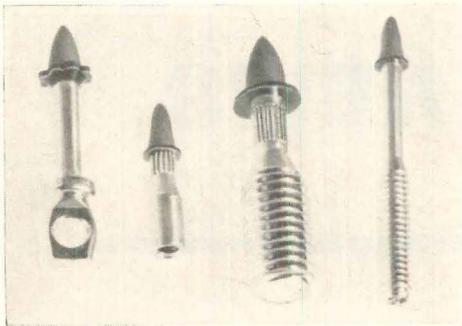
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Tru-Set fastener. Dangling underneath: 10,000 pounds of prestressed concrete.

All fasteners in the new series will be gold colored with a special chromate protective finish. Prices begin at \$10.50 for a box of 100 fasteners.

Manufacturer: Ramset, Winchester-Western Div., Olin Mathieson Chemical Corp., 275 Winchester Ave., New Haven 4, Conn.

STEEL COATING

Double protection for steel comes from a new primer, *Carboline Corroless*, developed in Germany several years ago and now manufactured in St. Louis for the American market. Applied over a wire-brushed steel surface, Corroless prevents the formation of any more rust while it gradually converts the rust already there into magnetite, a stable black oxide. The conversion process takes about a year to complete. Corroless may be topcoated with vinyls, recommended in corrosive atmospheres, or with acrylics, epoxies, silicones, and alkyds in less severe areas.

Corroless is applied by either brush or spray to a thickness of 2 mils. In 5-gallon containers, it costs about \$11 per gallon, or 3.4 cents per square foot.

Manufacturer: Carboline Co., 32 Hanley Industrial Court, St. Louis 17.

PREVIEWS

Nearly a year after Pittsburgh Plate announced plans to produce flat glass by the English float process (*Products*, Oct. '62), Libbey-Owens-Ford has said it too would manufacture flat glass under license from Pilkington Brothers Ltd. At last report, L-O-F had not decided whether to build a new plant or convert an existing one to the new process.

Foamed nickel and copper, products the General Electric Co. has been working on for several years, are now commercially available. *Foametal's* interconnected pores, uniform density, and high surface-to-volume ratio are characteristics that show promise in vibration and sound damping compounds, sandwich panels, and thermal insulation. END

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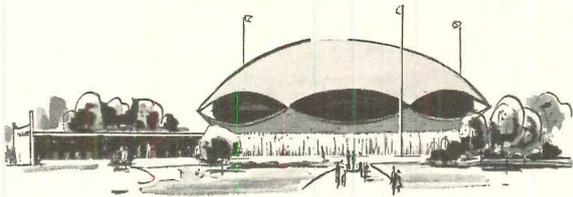


Steel for Strength

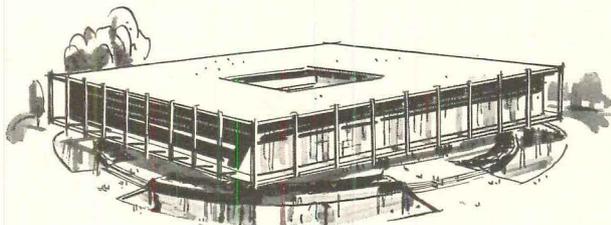
STRUCTURAL DESIGN NEWS

WORLD'S FAIR REPORT FROM BETHLEHEM STEEL

NO. 2

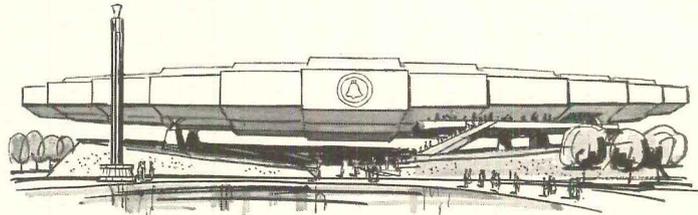


THE FAMILIAR RED UMBRELLA, The Travelers Insurance Companies' symbol of protection, provides the architectural theme . . . and imaginative steel design provides the structural solution. Eight main, and sixteen secondary, welded-plate ribs form an open cup, 132 ft in diameter, which is post-tensioned with a "belt" of four cables of galvanized steel strand. The ribs are then tied together at the apex by steel bridge strand radiating from a central tension ring. This design required only about one-fourth the weight of steel estimated for a more conventional solution.

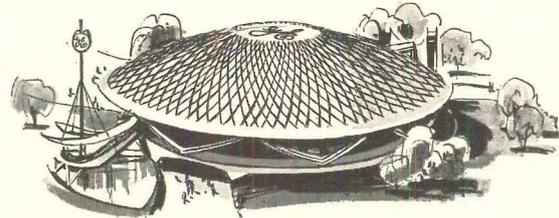


THE "HOVERING" HOLLOW SQUARE of the United States Pavilion encloses two floors of 70-ft-wide corridors surrounding a 174-ft-square open court . . . 150,000 square ft of exhibit space poised some 20 ft above a paved plaza on just four piers! Keys to the structure are eight steel trusses, each 57 ft high and 310 ft long. Four inner trusses, which rest on and are cantilevered some 75 ft beyond the piers, extend out to support the other four, which extend along the exterior curtain walls of the pavilion.

(Names of the architectural and engineering firms responsible for the projects named above will gladly be furnished on request.)



A STEEL-FRAMED "FLYING WING" houses the Bell System exhibit. It is 400 ft long, 200 ft wide at its longitudinal midpoint, cantilevering from just four pylons. World's Fair visitors will be swept aloft by moving stairs, then will circumnavigate the vast exhibit area aboard an articulated chair ride. The "wing" is framed in steel trusses and rigid U-frames.

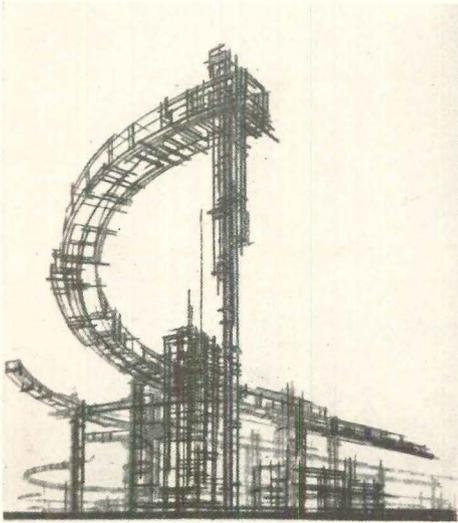


A LAMELLA DOME OF STEEL PIPE, anchored to a circumferential ring girder and tying into a compression ring at the apex, crowns the General Electric Company Pavilion at the New York World's Fair. The ring girder, in turn, is supported by sloping steel pipe columns. Clearly visible from outside is a slowly rotating carousel enclosing theaters where visitors will view the company's exhibit. At night, the entire structure will be a scene of color and light and motion.

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THE ARCHITECTURE OF FANTASY—Utopian Building and Planning in Modern Times. By Ulrich Conrads and Hans G. Sperlich. Translated, edited, and expanded by Christiane and George R. Collins. Published by Frederick A. Praeger, 64 University Place, New York 3, N.Y. 187 pp. 9" x 11¼". Illus. \$16.

Ever since Piranesi and before, architects and mere mortals have built castles in their dreams. But while many of those dreams have stayed in never-never land, others have had startling repercussions on the architecture of today.

The authors of this book, art historians all (Conrads is also editor of Germany's *Bauwelt* magazine), feel we have had enough books tracing the main lines of modern architecture, with its "exquisite overrefining of already perfected form," and that we are now ready to learn from some of the "freaks" that just don't fit in.

So, after analyzing fantasy in various forms, they take us on a sideshow picture-tour of built and unbuilt visions of the past 50-odd years, with occasional ventures farther back to prove a point. Examples are grouped by general theme: junk-collector's castles like the "Palais Idéal" of the French postman Cheval and tile-setter Sam Rodilla's Watts Towers in Los Angeles; the "less naïve" sculptural buildings of Gaudi and Mendelsohn; "fantastic frameworks" from Paxton's Crystal Palace to Wachsmann's huge wirework hangars; buildings based on caves, labyrinths, spirals, and pure aspiration to the sky (sketch above: "Design" by Iakov Chernikov, c. 1930); a few schemes for supercities, such as Frei Otto's plot to greenhouse-over whole mountain valleys with spiderweb cable nets. The latter section of the book is given over to text explaining who the many dreamers and builders are, and letting some of them tell passionately (in excerpts from old letters and speeches) just what was in their heads when they did it all.

Such a selection of architectural eureka is almost bound to wind up in confusion

and omission, but the subject matter is fascinating to say the least, and more of it doubtless will come true—o.r.

FEDERAL AIDS TO LOCAL GOVERNMENTS. Published by the American Municipal Association, 1612 K Street, N.W., Washington 6, D.C. 52 pp. 8½" x 11". \$3.

For a locality to obtain an airport grant from the federal government, it must include the project in the Federal Aviation Agency's current National Airport Plan. The Public Health Service administers a variety of grants to help a community combat air pollution, while HHFA assists local public bodies (with grants of up to 20 per cent of cost) to acquire permanent open-space land. PHA and FHA have programs to help house the elderly. URA administers "701" planning funds, and urban renewal grants amounting, as of a year ago, to some \$33 million for planning, and \$2.5 billion for urban renewal.

These facts, and many more, are available in the American Municipal Association's handy new guide to federal programs with a significant impact on state and local governments. It provides all initial information: where to ask, how much is available, who is eligible, what has been done.

THIS BEFORE ARCHITECTURE. By Edward S. Frey. Published by The Religious Publishing Company, 122 Old York Road, Jenkintown, Pa. 127 pp. 7¼" x 10". \$3.50.

Any architect who is commissioned to design a church will find this collection of addresses by the Rev. Dr. Edward S. Frey invaluable preparation—both for himself and his clients.

Dr. Frey's message is directed mainly to church building committees: "The primary task in church and church-related buildings is to see to it what we believe gets said in what we build. Failures . . . stand the best chance of being avoided by conducting thoughtful program studies with the results carefully written out and communicated to the architect at the time he is commissioned."

Architects will be grateful to Dr. Frey not only for detailing the elements of a sound church building program in terms the layman can understand, but also for defining the proper division of responsibility between architect and client: "The building committee must know where its competence ends and, after it has written its program, carry on with the architect in the role not of critic but of interpreter of program intentions. The architect's business is to put the program into three dimensions."

Dr. Frey attempts to maintain a neutral position on the question of style, but clearly implies that a really searching examination of a congregation's needs will lead to fresh building solutions. He also finds that church architecture in Europe today has an edge

over the American product: "I was driven to the conclusion that these buildings are what they are principally because they are *not* planned and designed by building committees of the American mold but by knowledgeable clerics and creative architects chosen for the most part by competition."

However, Dr. Frey does not necessarily recommend this approach for the U.S. He concludes, "I am for the committee system, but, if it is to work, the building committee must know its business."

Dr. Frey is Executive Director, Commission on Church Architecture of the Lutheran Church in America—B.P.P.

MAKING THE BUILDING SERVE THE LITURGY. Edited by Gilbert Cope. Distributed by The Canterbury Press, Court Place, Westminster, Md. 71 pp. 7¼" x 10". \$3.75.

This collection of papers and reports—from a 1961 conference of 100 clergymen, architects, liturgists, artists, and craftsmen held in Shrewsbury, Great Britain—should help architects gain a better understanding of the functions which must be provided for in Christian worship. In addition to discussions of liturgical requirements, this slim volume also includes a variety of church floor plans with critical analyses—B.P.P.

EXPOSED CONCRETE FINISHES. By J. Gilchrist Wilson. Published by C. R. Books Ltd., London (available in U. S. from John Wiley & Sons Inc., 440 Park Avenue South, New York 16, N. Y.). 144 pp. 7½" x 10". Illus. \$7.50.

Mr. Wilson, senior advisory architect to the British Cement and Concrete Association, has put together a compact, comprehensive, and highly useful guide to the attainment of acceptable concrete surfaces. This volume is entirely concerned with the cast-in-place variety (a second will cover precast concrete), and treats appearance factors, the mix, formwork, exposed aggregate, and applied finishes. In the process, it proves that books of technical value need be neither dull nor forbidding: Mr. Wilson writes as one interested human to another, and the publishers have put his words on fine stock in handsome type.

SCULPTURE WITH A TORCH. By John Rood. Published by the University of Minnesota Press, Minneapolis 14, Minn. 108 pp. Illus. 8" x 11". \$5.75.

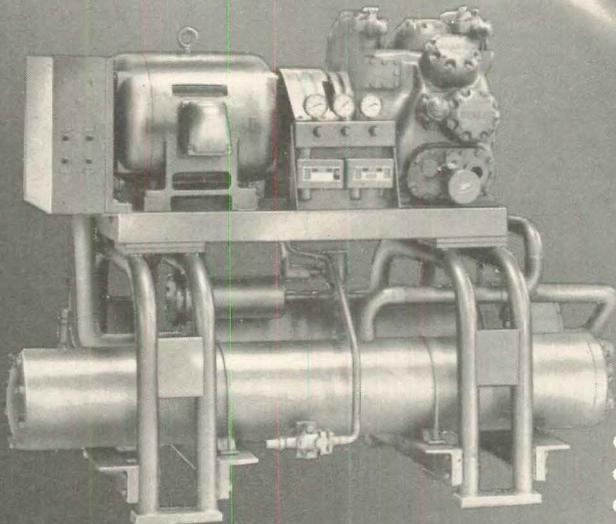
"In welding, the art of sculpture . . . has greater possibilities than perhaps any of the time-honored media in contemporary architecture. . . . It is less expensive to produce, marries itself with greater felicity to the architecture of our time. . . ."

John Rood, sculptor and professor of art at the University of Minnesota, is a vigorous proponent of the shaggy metal sculpture that was first conceived by artists who

continued on page 157

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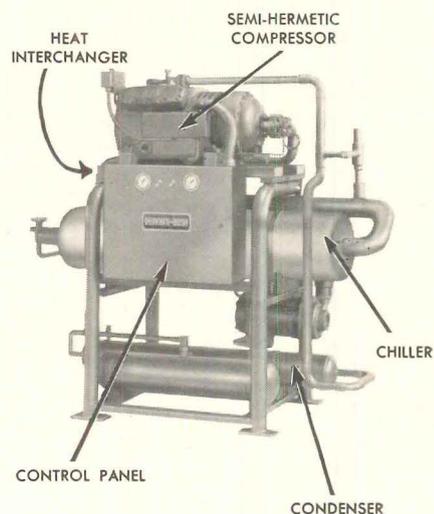
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continued from page 155

learned welding in the defense plants of World War II. Rood's new book is the first ever published for artists and students of sculptural welding. With clarity and authority he describes the tools and techniques of welding, metal finishing, and creating welded "sketches" submitted for architectural commissions. He draws a definitive line between the aims of commercial welding and sculptural welding. And he illustrates his text generously with photographed scul-

ture by such firebrands as Ibram Lassaw, Seymour Lipton, Richard Stankiewics, David Smith, Herbert Ferber, and John Rood himself—DAVID BURT

OUTDOOR RECREATION RESOURCES REVIEW COMMISSION STUDIES. Available from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. 7 3/4" x 10 1/4". 50¢ to \$2. (Virtually all 27 ORRRC reports have now been published.)

The year 1976 will be a good one for

Americans. But not so good as 2000 A.D. More people will have more money and more leisure, states the Outdoor Recreation Resources Review Commission's study #23, yet these people will produce more. Among the heady statistics:

	1957	1976	2000
Population (millions)	107.3	240	350
Employment (millions)	65	90	135
Personal income (billions)	\$360	\$803	\$1,578
GNP (billions)	\$455	\$1,018	\$2,007
Workweek (hours)	38	35	30
Paid vacation (weeks)	2	2.8	3.9

Since cities will absorb the greatest part of the population growth, the pressure of people on recreation spots in urban areas will be greatest. ORRRC study #21 examines the problem for the Atlanta, St. Louis, Chicago, New York-to-Philadelphia, and Los Angeles metropolitan areas. Outlook: immediate action and long-range planning are necessary in each area if city-dwellers are to enjoy their leisure time outdoors. Acquisition of new public recreation land is urged, along with development of existing locations.

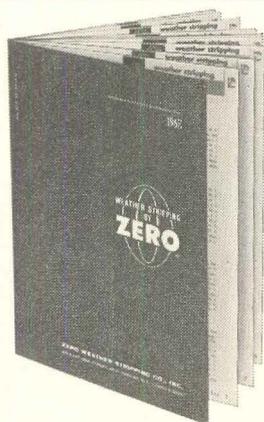
In this respect, Japan and the densely populated nations of Europe offer some solutions to the problem. Study #18 reviews action taken in six countries to provide outdoor recreation by strict control over land use and integration of the outdoors with city life in parks, gardens, playing fields, etc.

Being a painstaking group, the ORRRC also probes alternatives. For example, will Americans continue to *want* to get outdoors? Twelve leading experts in the behavioral science ponder various aspects of this question in study #23. Perhaps the most readable of the ORRRC reports, it probes the multifarious motivations that determine Americans' activities outdoors (which include "weekend wenching, drag-racing, rock-fighting, and beer-busting"). Whether in Anthropologist Margaret Mead's aphoristic prose, Political Scientist Morton Grodzins' iconoclastic logic, or Educationalist Jay B. Nash's diagrammatic models, one comforting thought stands out: people will probably not change much over the next four decades; they will still want to get outdoors for their own complex reasons—many of which are amusing ones.

Other recent ORRRC studies include reports on fishing, outdoor recreation literature, public expenditures, and public areas, as well as a national survey of what people like to do with the one-fifth of their leisure time which is spent outdoors. The answer, couched amidst 381 pages of insectival questions and conclusions: driving and walking.—P.H.

ERRATUM: The price of Leo L. Beranek's Music, Acoustics & Architecture (Books, Feb. '63), is \$17.50, not \$15 as reported. It is published by John Wiley & Sons, Inc. 605 Third Ave., New York 17, N.Y. END

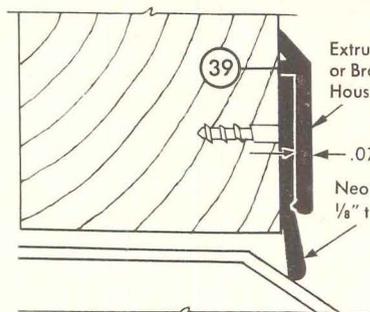
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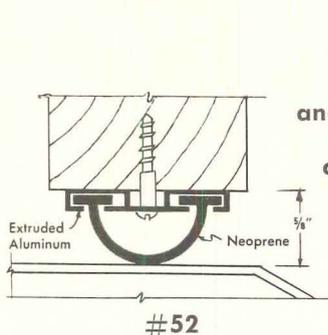
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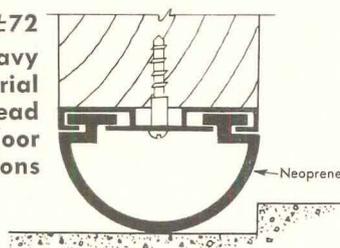


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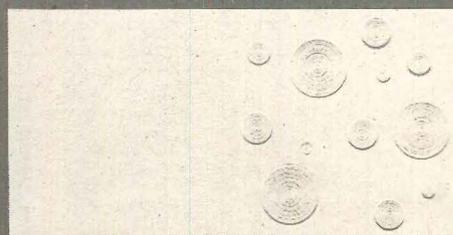
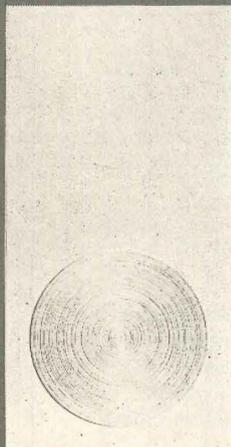
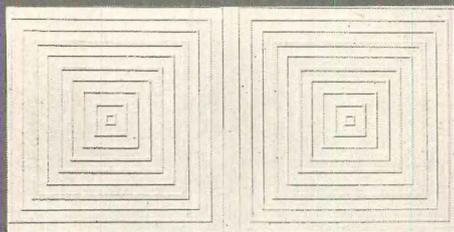
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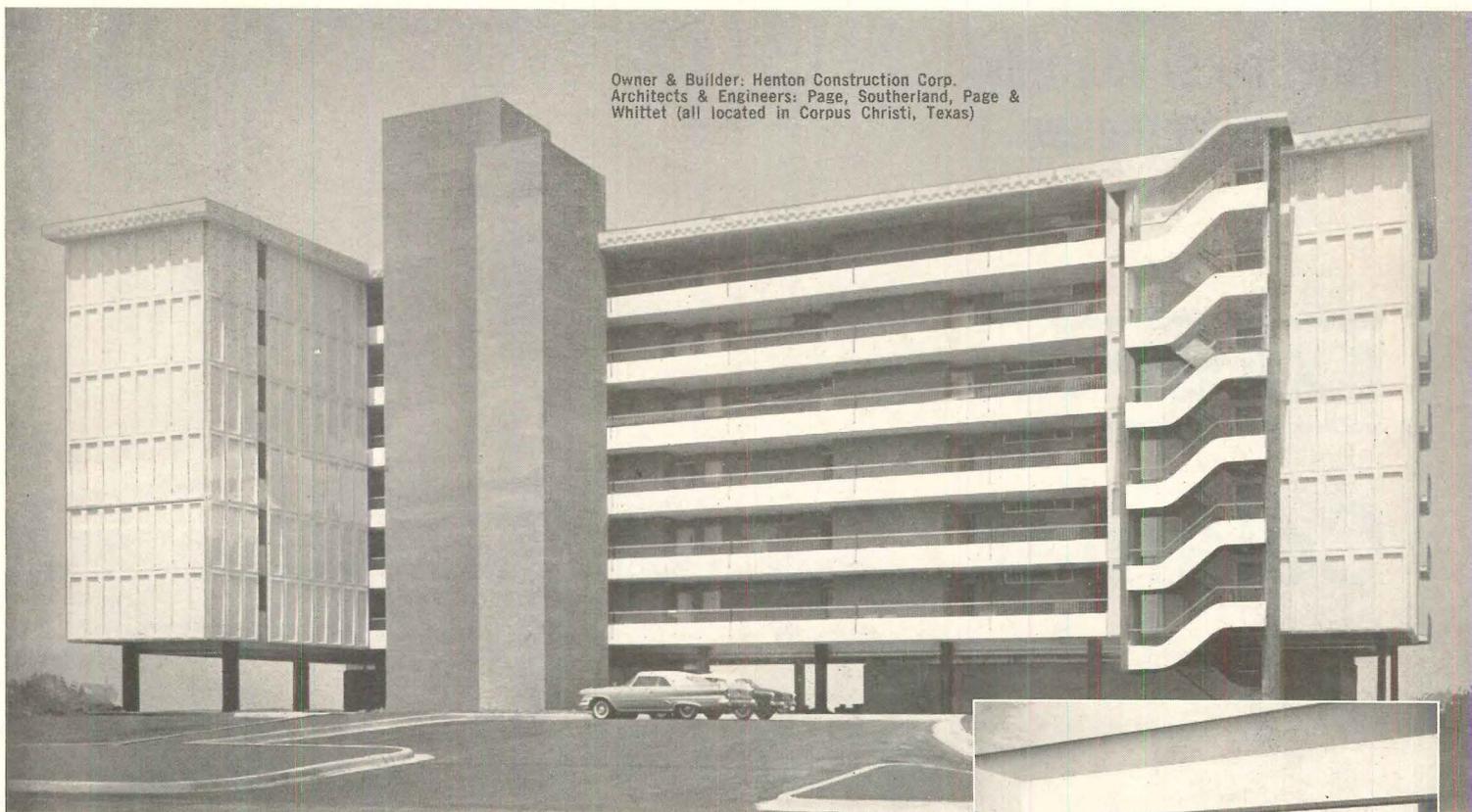
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Columns for this seven-story structure were placed only in the outside walls to gain complete flexibility in arranging partitions. The post-tensioned cast-in-place 10" lightweight concrete flat slab has no deflection in the 34' x 19' bays. The underside of the slab was plastered to become the finished ceiling. Nine foot cantilevers form open corridors on one side of the building. Prescon tendons were used for the 34' spans, mild reinforcing steel in the 19' direction.

The underground parking garage covering practically the entire site also serves as a fallout shelter. Wide

flat beams are post-tensioned to carry the 8" concrete slab, 24" of dirt and blacktop. Protection rating of the shelter is 100.

Whenever column-free interiors, or long spans are desirable, the Prescon System of post-tensioning offers advantages both from the design and cost standpoints. The Prescon representative can furnish you examples of numerous structures using this method of construction.

*The Prescon System consists of the following components: (1) high tensile-strength carbon steel wires with cold-formed button-heads for positive end anchorage encased in (2) slippage sheathing, and (3) threaded-thru end anchorages (steel spread plate at fixed end and stressing washer and bearing plate at the stressing end) plus shims for maintaining tension.



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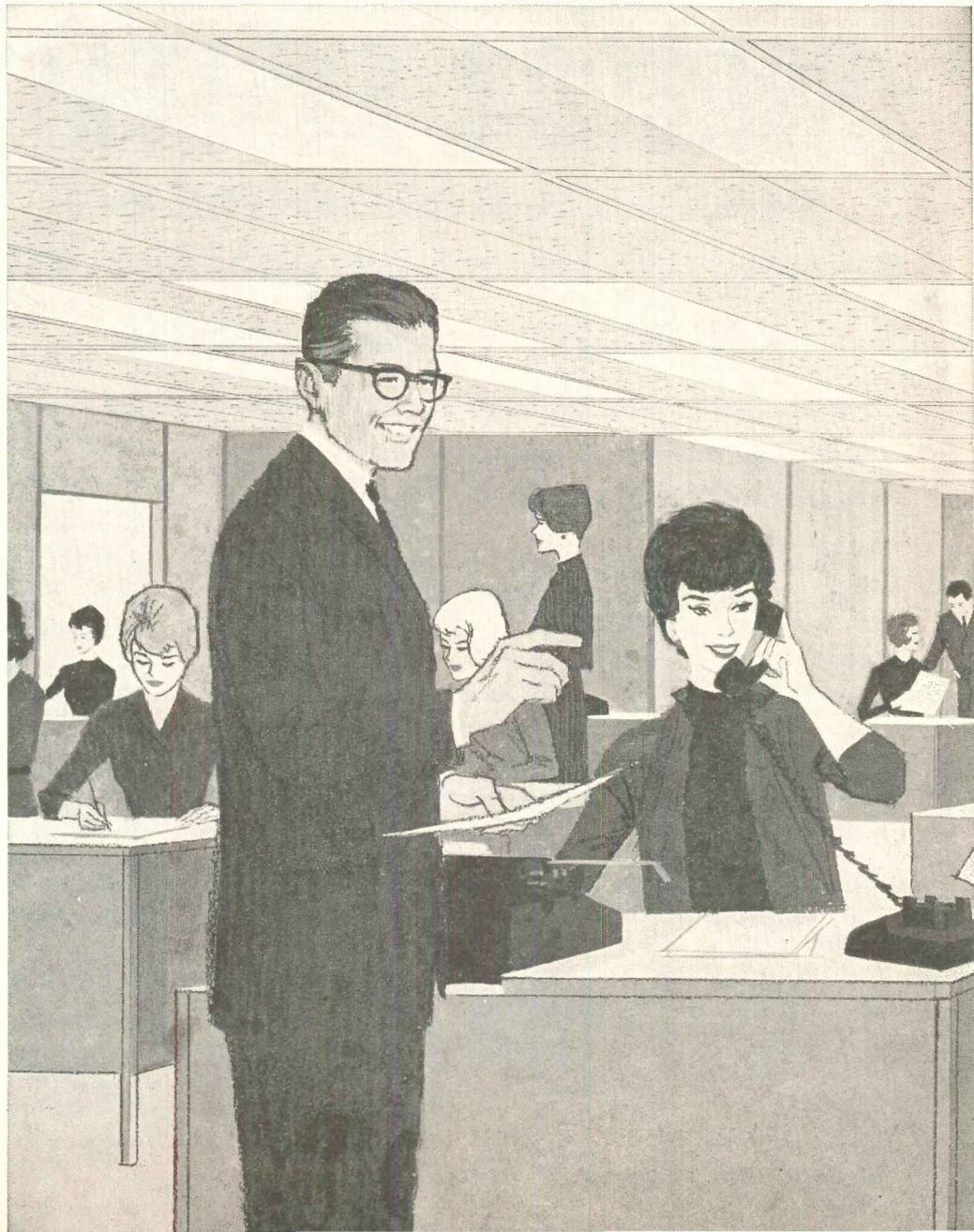
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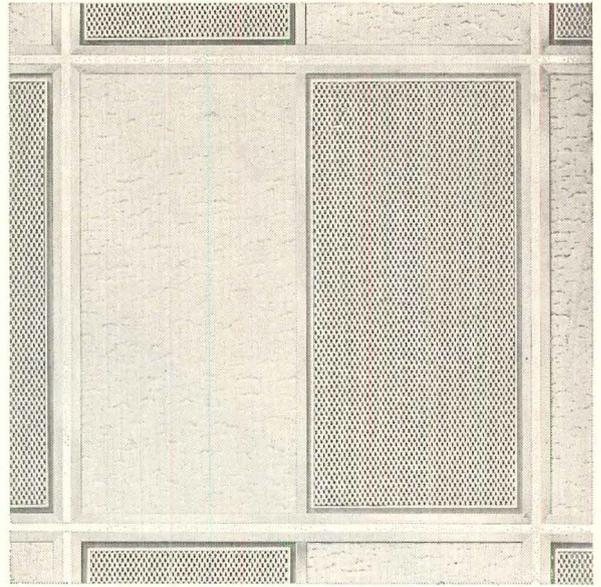
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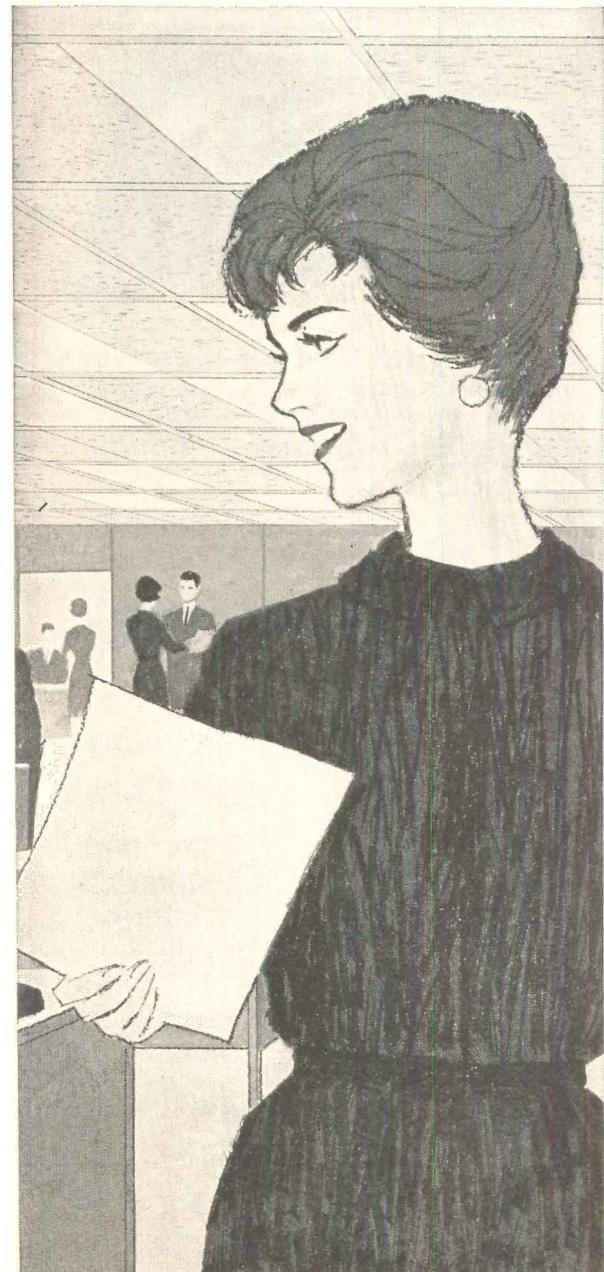
Now you can control lighting, ventilation, acoustics and space division—all in one integrated, space-saving system. You retain complete freedom of design, too. The Westinghouse Colamar system lets you select the module (from 4'2" x 4'2" to 6'0" x 6'0"), the color, the acoustic factor, the ventilation and the lighting requirements. Give us the specifications and Westinghouse will deliver the complete Colamar ceiling package, exactly as you designed it.

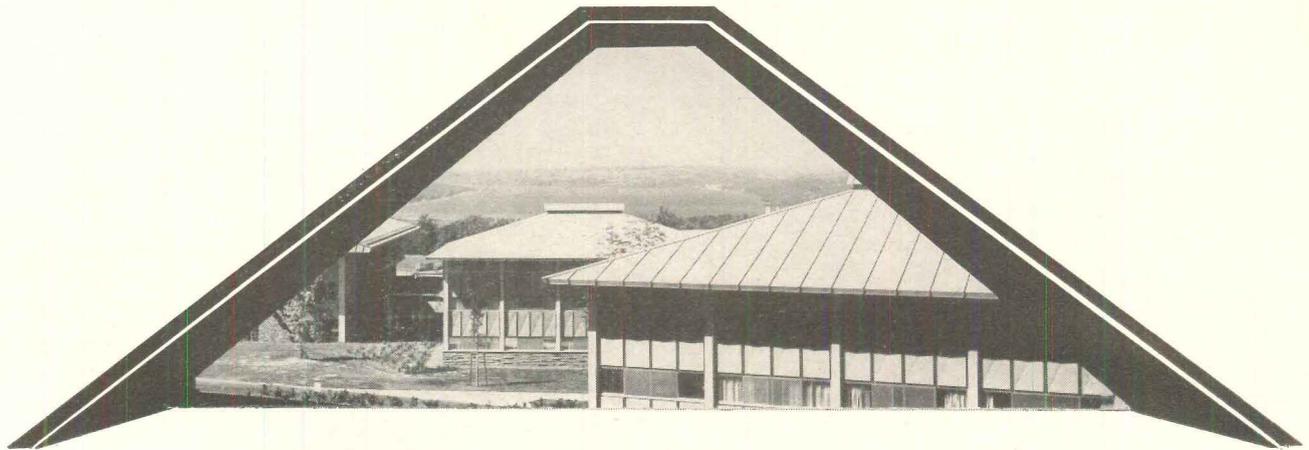
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Besides this unique flexibility of design, Colamar has an infrared shield that effectively controls heat radiation into occupied spaces. And room air is exhausted through the ceiling fixture, carrying off lamp and ballast heat and allowing the lamps to operate cooler. This results in light output 10 to 15 per cent greater than in ordinary lighting systems.

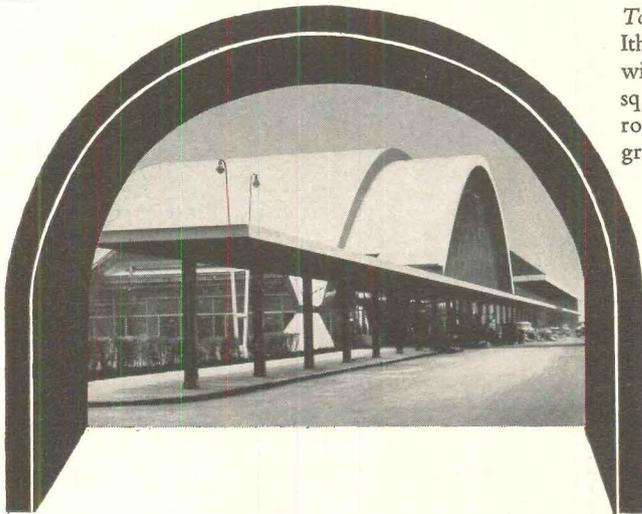
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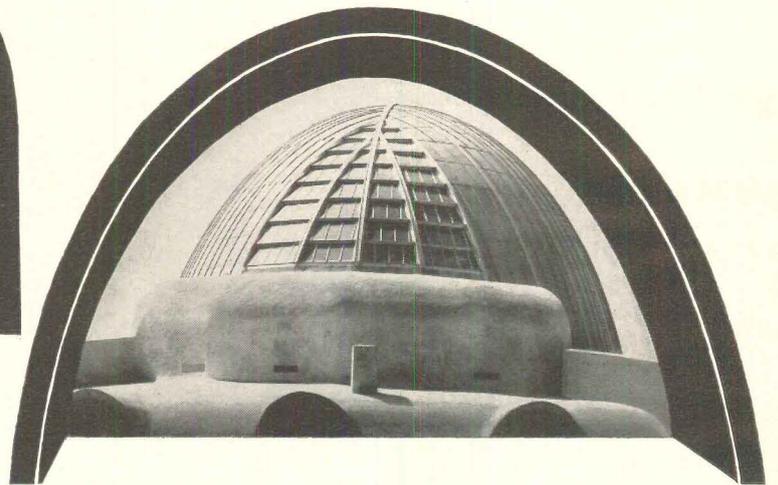




Top of the campus—Ten new dormitories at Ithaca College, Ithaca, New York, have Overly Batten "B" aluminum roofs with colorful Alunalure® finishes covering an area of 100,000 sq. ft. Successful weather resistance explains why Overly roofing has been selected twice for Ithaca's building programs. Architects: Tallman and Tallman, Ithaca, New York.

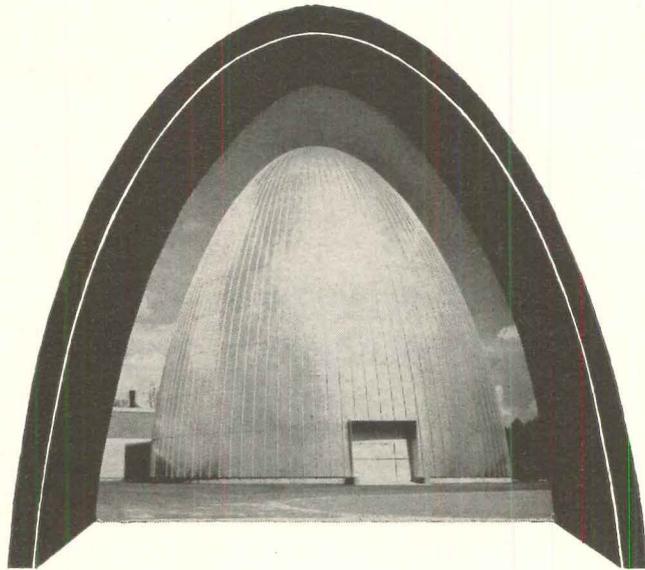


Jet-age cover—This ageless Overly parabolic roof covers an area of 26,000 sq. ft. at Idlewild Airport's International Arrivals Building. Crafted in enduring stainless steel, it will still be in service when tomorrow's planes are obsolete. Architects: Skidmore, Owings and Merrill, New York, N. Y.



Inside, outside, all the way through—Batten "B" Roofing System, skylights, arch beam covers, baptistry, cornices, passageways, and interior ceilings all by Overly—our responsibilities on this church assumed a wide scope over a span of three years from drawing board to completion. Architect: Aldo A. Minotti, Waltham, Mass.

COVER YOUR BUILDING PERMANENTLY -



Form and Function—Overly Batten “B” Roof System at Industrial Reactor Laboratories, Plainsboro, New Jersey. 87' in diameter, 87' high, protected with 14,500 sq. ft. of mill finish aluminum roofing. Architects: Skidmore, Owings and Merrill, New York, N. Y.

This is an Overly Batten Roof housing an atomic reactor. Others guard churches, auditoriums, schools and industrial facilities. Found everywhere, over 2,000,000 sq. ft. of Overly Roofing have been fabricated and installed on buildings from Alaska to the Caribbean. Overly Batten Roofs have been proven in use for over 30 years. We warrant them unconditionally for 15 years.

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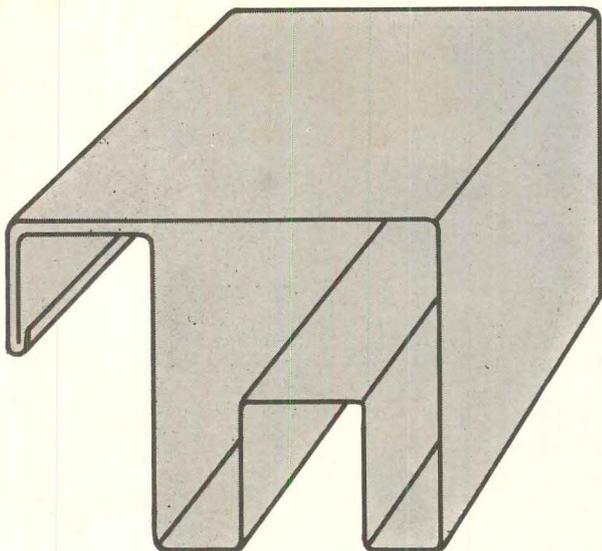
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One "okay" in the building construction industry does not make a blooming sale. Nor, for that matter, do two. It takes all three—architect/engineer, contractor/sub-contractor, client/owner—to agree before those dotted lines can blossom with the initials that mean business for the producers of building products and equipment. One place you'll find all three gathering regularly is in the pages of Architectural FORUM—the one magazine that covers the basic business interests of all three: the art of architecture, the technology of construction and the economics of building. And FORUM covers all three so well* that it is generally recognized as the leading

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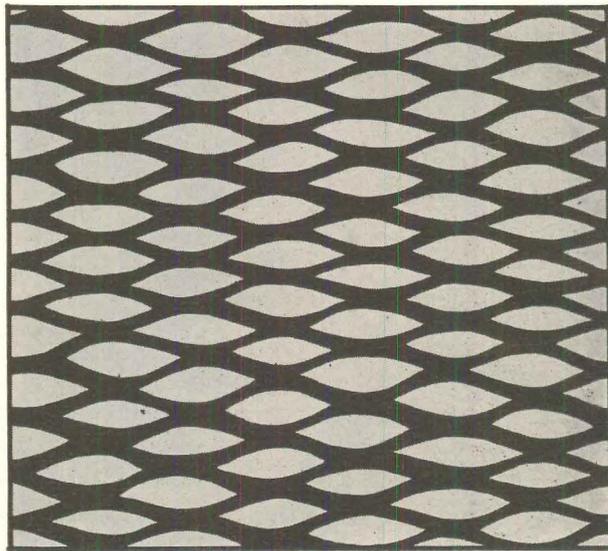
*ITEM: FORUM has just won its seventh Jesse H. Neal award, Oscar of the business press, for editorial excellence. FORUM is still the only magazine in its field to win one. ITEM: In eleven of the fifteen years in which the American Institute of Architects has presented awards for outstanding buildings, FORUM has published more award winners than any other magazine—many of the buildings appearing first or exclusively in FORUM. ITEM: Editorial leadership like this has earned FORUM a circulation of more than 62,000, largest in the architectural/building field by far.

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