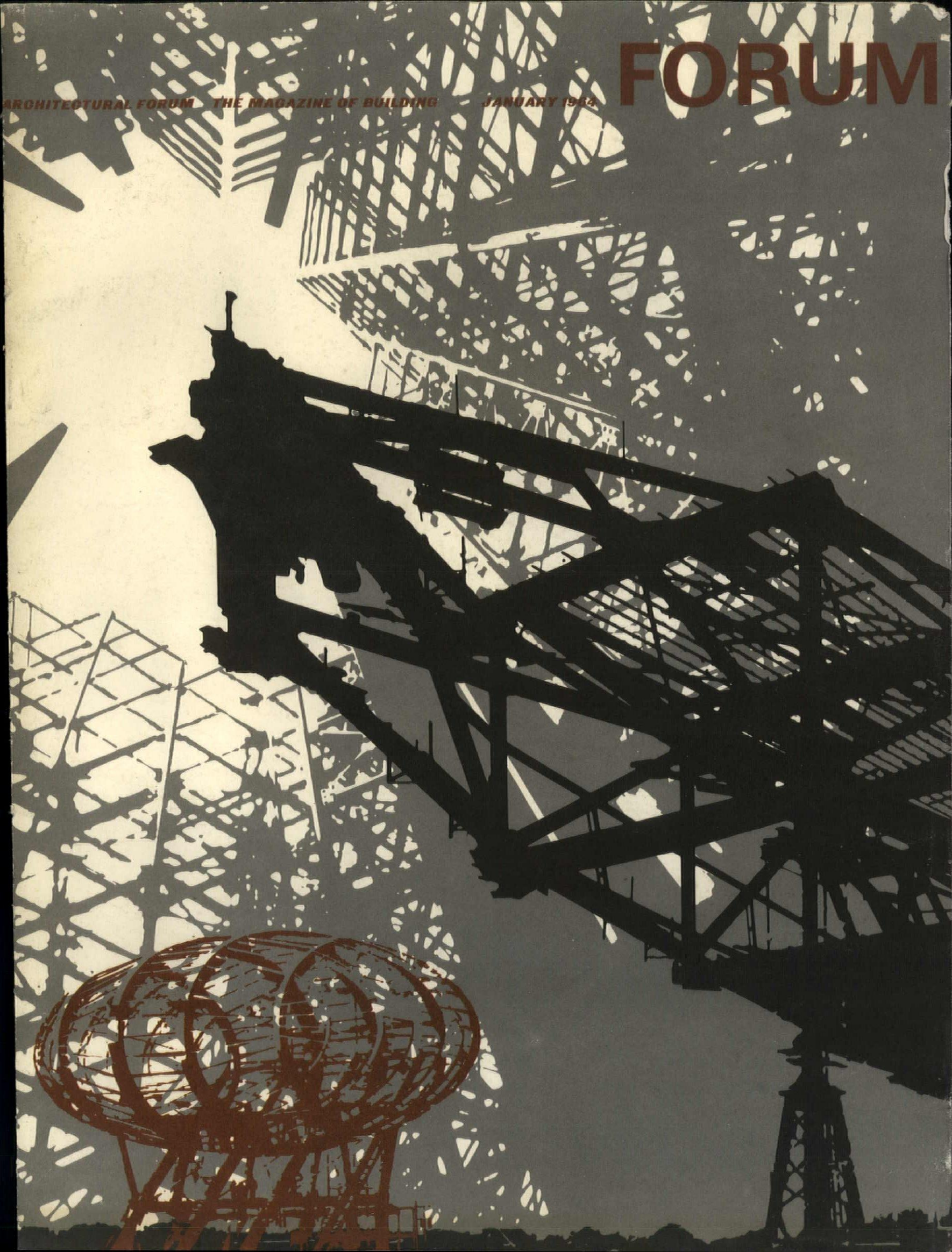


ARCHITECTURAL FORUM THE MAGAZINE OF BUILDING JANUARY 1964

FORUM



what's so great
about this floor?

feel it . . . it's textured!

that's good?

more than good. . . it's vinyl
asbestos tile with fine chips
of marble encased in textured
translucent vinyl!

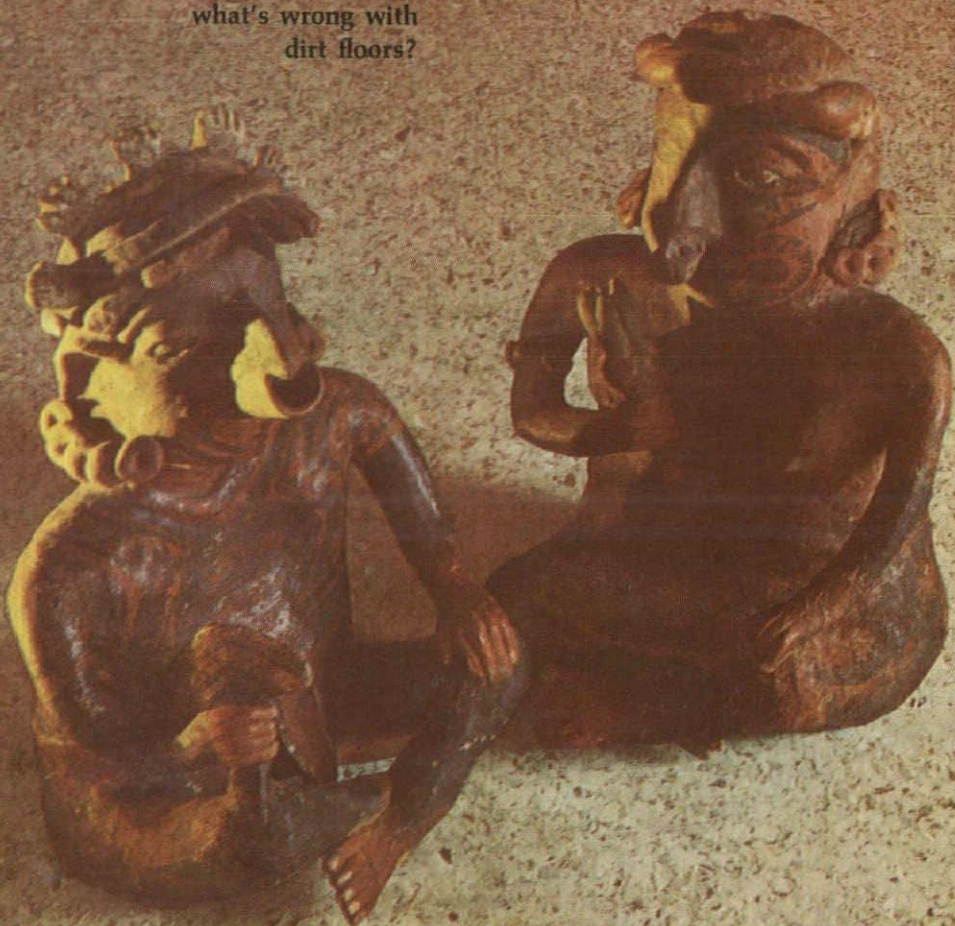
hmm . . . I guess texture
helps conceal dents
and scratch marks.

yes . . . and it's durable, too—
just like all Vina-Lux floors.

what's it called?

Vina-Lux Pebbled Onyx. The
man said you can put it down
on any kind of floor . . .
except dirt.

what's wrong with
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PUBLISHER'S NOTE

In this age of increasing mobility, keeping track of the changing whereabouts of a magazine's subscribers is no mean task for its circulation department. But it will be easier for FORUM this year than it has been. Circulation Director Henry Luce III has decided to shift his subscription processing operation from the mechanical stencil equipment which has been in use for more than a decade to TIME Inc.'s new computerized magnetic tape operation in Chicago—the same equipment which electronically solves the multimillion circulation problems of TIME and LIFE. For subscribers, this move, scheduled for early spring, will mean faster handling of changes of address as well as quicker processing of new subscriptions and renewals. The electronic computers, which will store up the names and addresses of subscribers for printing on gummed labels, operate at a speed of 62,500 figures (and letters) per minute, which just happens to be the number of figures (architects, contractors, clients, etc.) who subscribe to FORUM.

Two other significant events in FORUM's history took place last month:

The editors received their 29th



award for editorial excellence from *Industrial Marketing*, the magazine which is to the indus-

trial advertising business what FORUM is to the building business. Each year for the past quarter of a century, a jury of independent experts in business paper journalism, sponsored by *Industrial Marketing*, has reviewed the accomplishments of business publications of all kinds and made awards to those of outstanding editorial excellence. FORUM's most recent award was for the "best single issue" of all magazines in its class. The issue was the one-subject January 1963 number devoted to the planning and architecture of everyone's city: Washington, D.C.

While the editors were taking deserved bows, one of their associates on FORUM's advertising staff was bowing out. Advertising Manager Jack Beard retired last



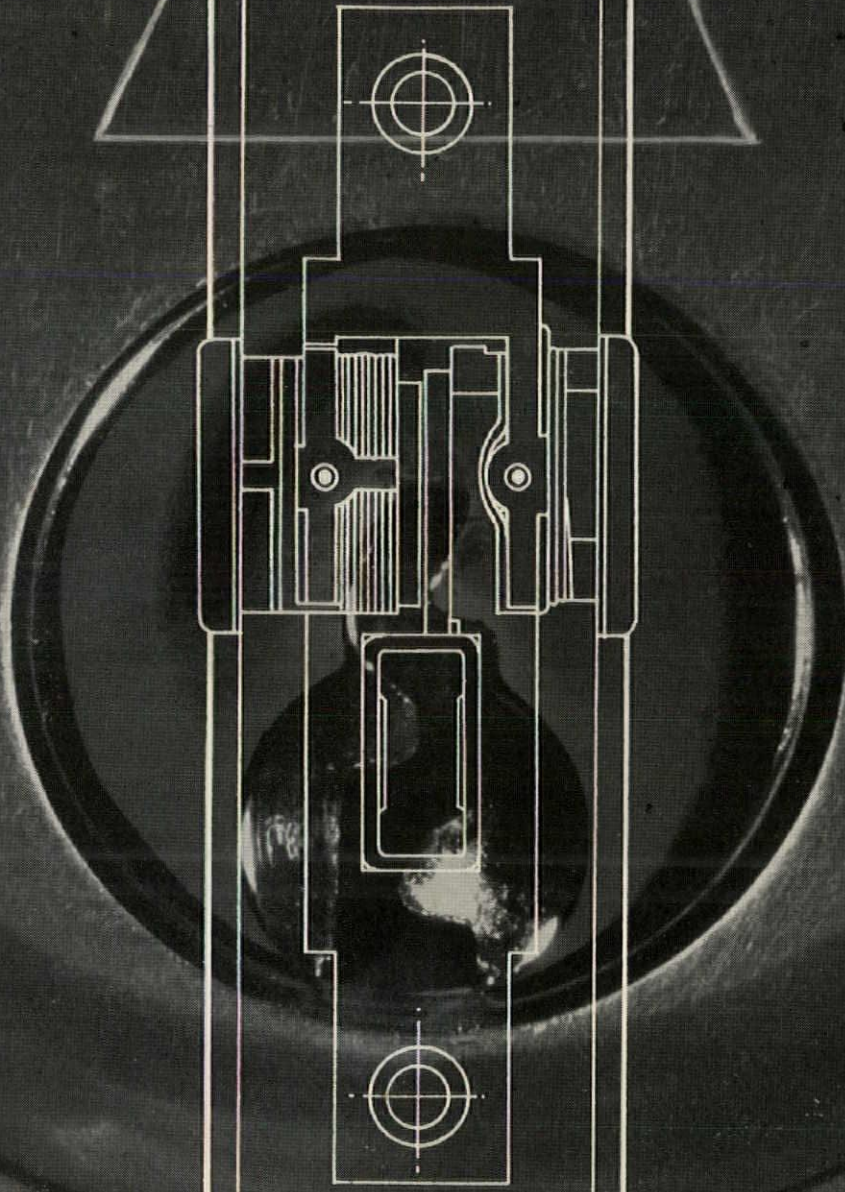
DEANE'S STUDIO

month after 23 years' service to the magazine. Unknown to readers but very well known to the building product manufacturers who serve those readers, Beard was the kind of personable, helpful salesman buyers like to buy from. The announcement of his decision to devote all of his time to fishing has been received with regret by his associates on the FORUM staff and by his many friends in the industry. It will also be regretted by the fish.—J.C.H.J.R.

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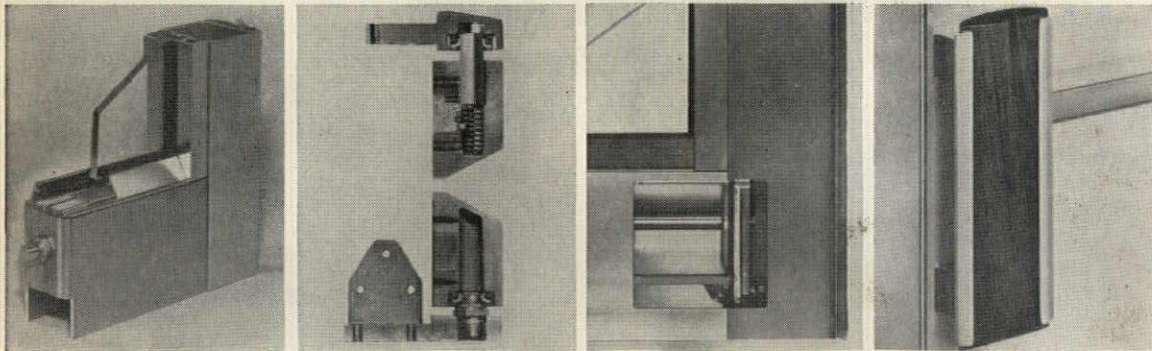
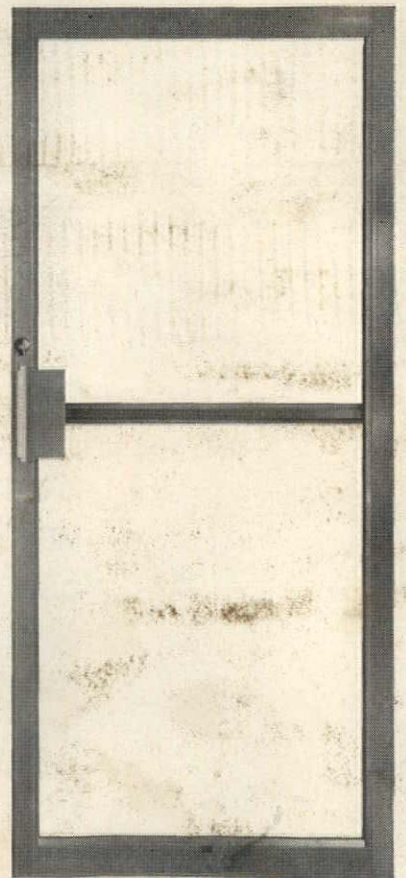
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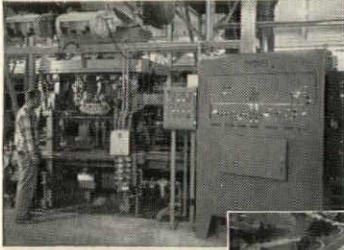
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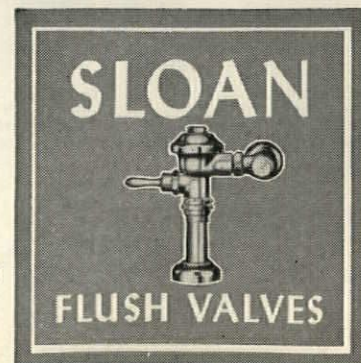
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JOHNSON INHERITS CULTURAL LEADERSHIP

WASHINGTON, D. C.—As the first shock of John F. Kennedy's assassination wears off, people in and out of government have begun to wonder about substantive changes (if any) in the policies of the Executive Branch. This concern also involves such nonpolitical areas as the new President's attitudes toward architecture and the arts, for Mr. Kennedy's interest in these areas was almost unprecedented in U.S. history.

Last month, as President Johnson began feeling more comfortable in his new role, it became clear that he would follow through with several actions affecting the arts that had been initiated by his predecessor.

Among the projects which Johnson seconded were:

► The rescue and rehabilitation of Lafayette Square, which would proceed as planned by President and Mrs. Kennedy and John Carl Warnecke (the architect who will design JFK's tomb and probably his library at Harvard).

► The construction, on the Potomac, of the National Cultural Center (designed by Edward Durrell Stone and officially to be known as the John F. Kennedy Center for the Performing Arts), which has been accelerated by

Congress and growing donations.

► The proposal for the rehabilitation of Pennsylvania Avenue (details below).

► The continuing Presidential interest in the District of Columbia. Said Johnson last month: "A great nation deserves—indeed, requires—a beautiful and inspiring National Capital. We shall do everything we can. . . ."

► The award to Architect Mies van der Rohe, among others, of a Presidential Medal of Freedom (photo below).

Behind the scenes, Johnson let it be known that he had every intention of approving, without significant change, the Kennedy selections to the some 40-man Advisory Council on the Arts. However, there was no word as to whether or when a successor to August Heckscher, the first White House Consultant on the Arts, would be appointed (Lawyer Richard Goodwin had been slated for the post). One White House observer felt that LBJ was likely to rely only on the Council.

As for Pennsylvania Avenue, Presidential Adviser Charles A. Horsky briefed Johnson last month on this still-unreleased project, describing it as "urgent." (Kennedy had scheduled a meeting with his Special Committee

on the Avenue for the day after his return from Dallas.) Understandably, President Johnson put the project aside for the moment, while expressing interest in Washington's "grand axis."

On a somewhat related measure, the House of Representatives last month squelched the District of Columbia's rapid transit and subway bill by a vote of 278-76. Both Presidents Kennedy and Johnson had endorsed the 23-mile-long, \$400 million proposal. Some Washington sources feel that the bill's defeat indicates how Congress might now receive similar programs.

In any case, the Kennedy heritage includes a design-conscious cabinet as Chairman of the Fine Arts Commission William Walton (and his colleagues), Architect Paul Thiry of the National Capital Planning Commission, and Karel Yasko of the G. S. A.

Where Johnson stands on more far-reaching policies concerning building still awaits test. He has come out in the past for all of the Administration's housing bills, including public housing. He has also championed the cause of cities in speeches to Texas municipalities. Whether he will press for such controversial measures as a mass transit bill or a cabinet-urban affairs post is conjectural.

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ULI OPTIMISTIC ON SHOPPING CENTERS

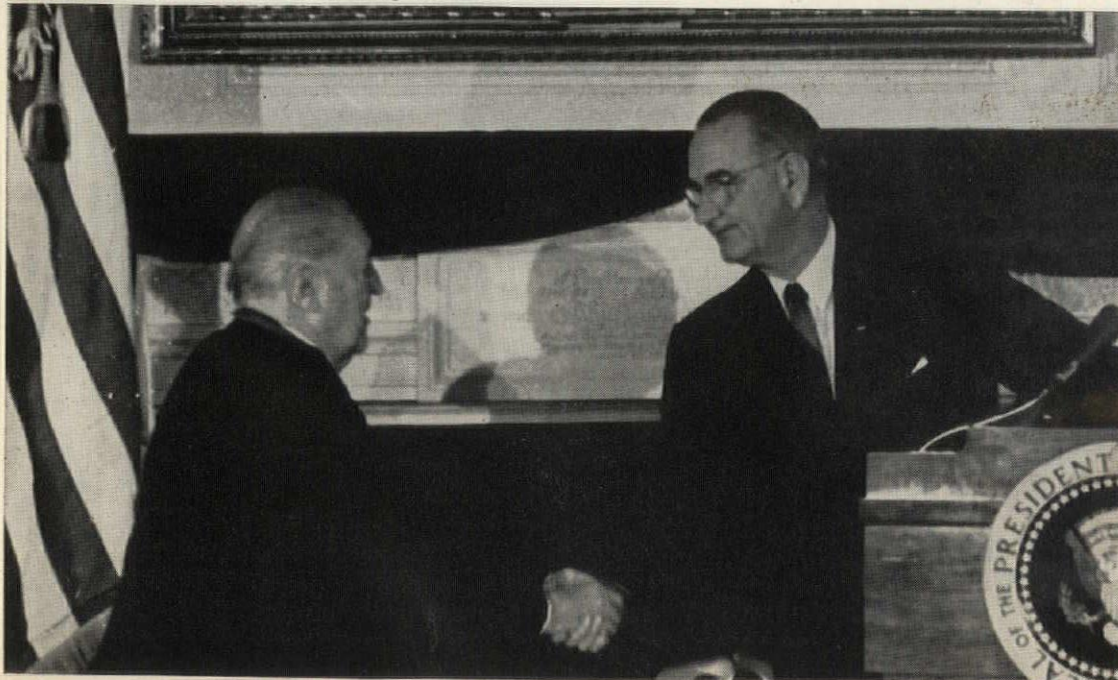
WASHINGTON, D. C.—Small shopping centers seem to be doing fine, and the larger ones have hardly lost any ground since 1960, when they were booming. That is the upshot of the latest study by the Urban Land Institute (ULI), a study which indicates that the predictions of a possible collapse in shopping center construction may be premature after all.

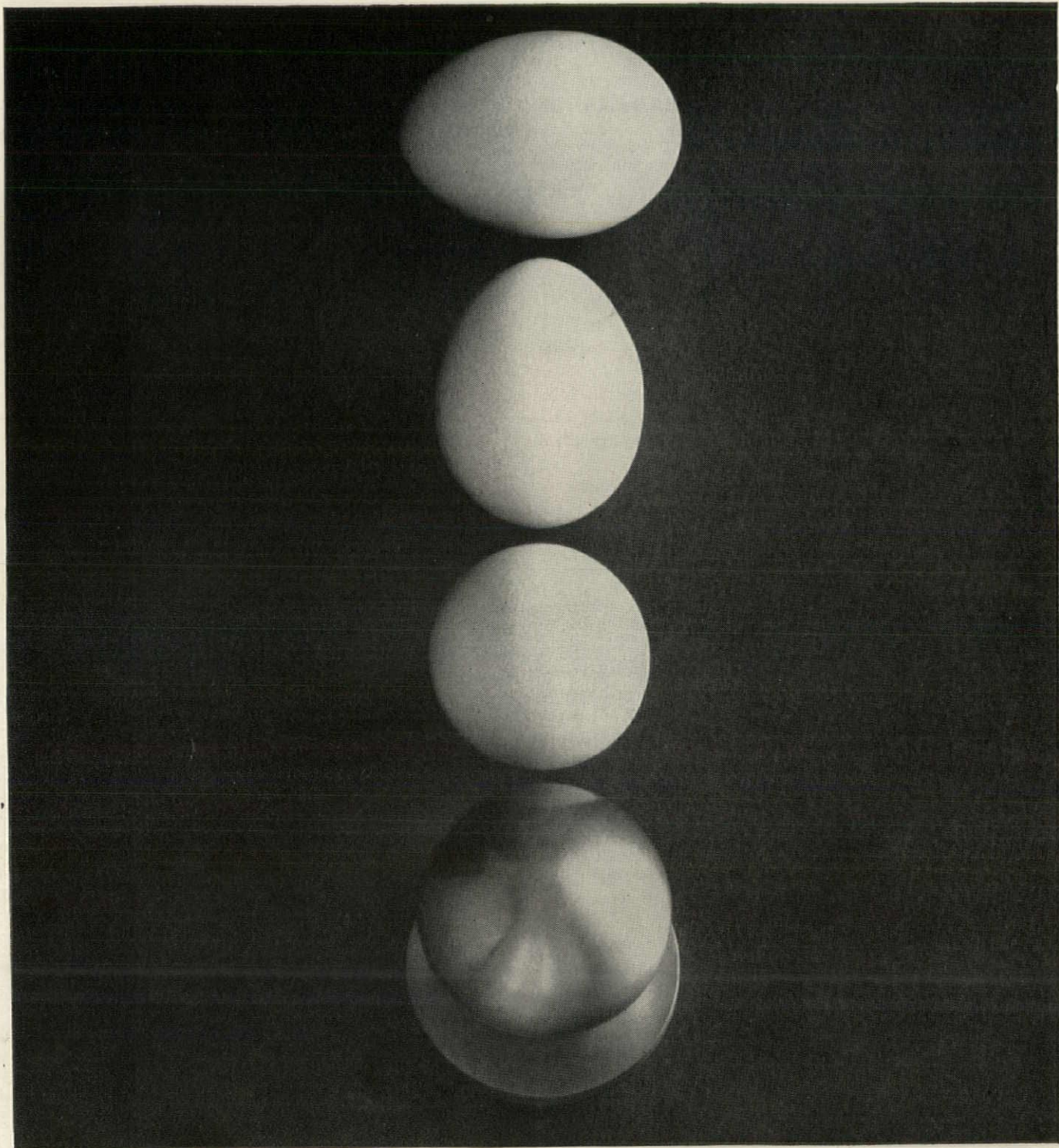
ULI, an independent research organization, surveyed 143 centers that fall into three categories: 1) the neighborhood center, which covers up to 10 acres and sells everyday living needs like food and drugs; 2) the community center, which may cover 30 acres, and provides the same goods plus clothes, furniture, plus a few services like banking and recreation; and 3) those mammoth regional centers, which are, in effect, comparable to the central business districts in the heart of towns and cities.

Measured in terms of sales per square foot of gross leasable area (or G.L.A.—the income-producing area in any shopping center), only the neighborhood centers show an increase in sales—\$1 per sq. ft. more than 1960 when ULI conducted a similar survey—and when the smaller centers were having the most trouble. (Their sales rose from \$59 to \$60 per sq. ft. of G.L.A.). Sales went down in community centers by \$1 (to \$49 per sq. ft.), and in regional centers by \$2 (to \$50 per sq. ft.).

continued on page 7

Architect Mies van der Rohe receiving Freedom Medal





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Other statistics (again based on square feet of G.L.A.) indicate that smaller centers are thriving while the larger ones are leveling off. For example, gross receipts for both neighborhood and community centers are above their 1960 levels, but regional centers report the same figure as three years ago. The big shopping centers also have to pay higher maintenance expenses and real estate taxes (the largest single item in operating expenses) per square foot of G.L.A. than the smaller centers.

The ULI study, entitled "The Dollars and Cents of Shopping Centers," covers a wide variety of topics. For instance, tenants boasting the greatest sales volume per square foot of G.L.A. are supermarkets, department stores, junior department stores, variety stores, and drug stores—in that order. Of interest to designers: the mall-pattern is popular among the larger centers, but the usually unattractive strip and L-shaped layouts still are the most common.

FHA MAKES FIRST AWARDS FOR GOOD DESIGN

WASHINGTON, D. C.—In recognition of "superior design," 14 important new First Honor Awards and 14 Awards of Merit will be announced here this month. Eight of the First Honor Awards go to apartment buildings, three to nursing homes, and three to single-family homes. The donor is the Federal Housing Administration, which in the past has been accused of indifference toward quality in design.

To help correct such notions, FHA opened its first nationwide design contest for FHA-insured residential buildings completed since 1958. A 16-man special advisory committee of leading architects and housing experts chose the winners. Among the buildings selected for awards: *The Premier*, a New York City apartment house by Mayer, Whittlesey &



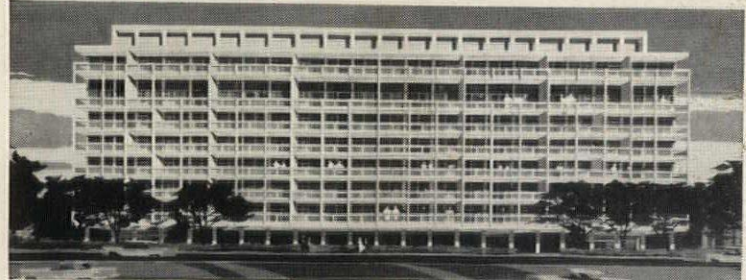
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Glass (FORUM, Dec. '60); *Horizon House*, apartments in Fort Lee, N.J. by Kelly & Gruzen (Apr. '63); *Pilgrim Manor Home* for senior citizens, Grand Rapids, Mich. by Wold & Bowers; *Presbyterian Manor*, housing for the elderly in Boulder, Colo. by Hobart D. Wagener 1. *Town Center Plaza*, apartments in Washington, D.C. by I.M. Pei (Aug. '61); *The Capitol Park*, section 2, Washington, D.C. apartments by Chloethiel Woodard

Smith & Assoc.; *El Monte*, apartments in San Juan, Puerto Rico by Edward Larrabee Barnes (Apr. '63); *800 South Fourth Street, Inc.*, Louisville, Ky. apartments by Loewenberg & Loewenberg and W.S. Arrasmith Associates 2; *Nelson Towers*, a Jackson, Mich. apartment house by King & Lewis 3; *Riverview Apartments*, in Cambridge, Mass. by Harris and Freeman, Inc. 4; and *Orange-wood*, elderly housing in Phoenix, Ariz. by Allan & Olsson.

RAILROADS ASK END OF COMMUTER RUNS

BOSTON — Last month, two commuter railroads serving this city petitioned the Commonwealth of Massachusetts' Department of Public Utilities to discontinue their passenger runs. The requests brought planners up against an urgent statistic: the 17,000 commuters riding the rails every day to downtown Boston eliminate 12,000 cars, and the parking and traffic jams that go with them—not to mention the expense of building new roads.

What makes the situation even more pressing is that both railroads were participants in a well-conceived, year-long transportation experiment to see if people would use trains. Conducted by the Mass Transportation Commission under Dr. Joseph F. Maloney (photo below), it was started last January and financed by a \$3.6 million grant from the HHFA and \$1.8 million in funds from the Commonwealth. The experiment unabashedly subsidized commuter service, stepped up the number of runs each day, and lowered fares. At both ends of the journey, other transportation facilities, like bus and subway lines and parking, were coordinated to ensure commuters of easy, efficient connections. Result: between October 1962 and October 1963, volume on the

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Director Maloney

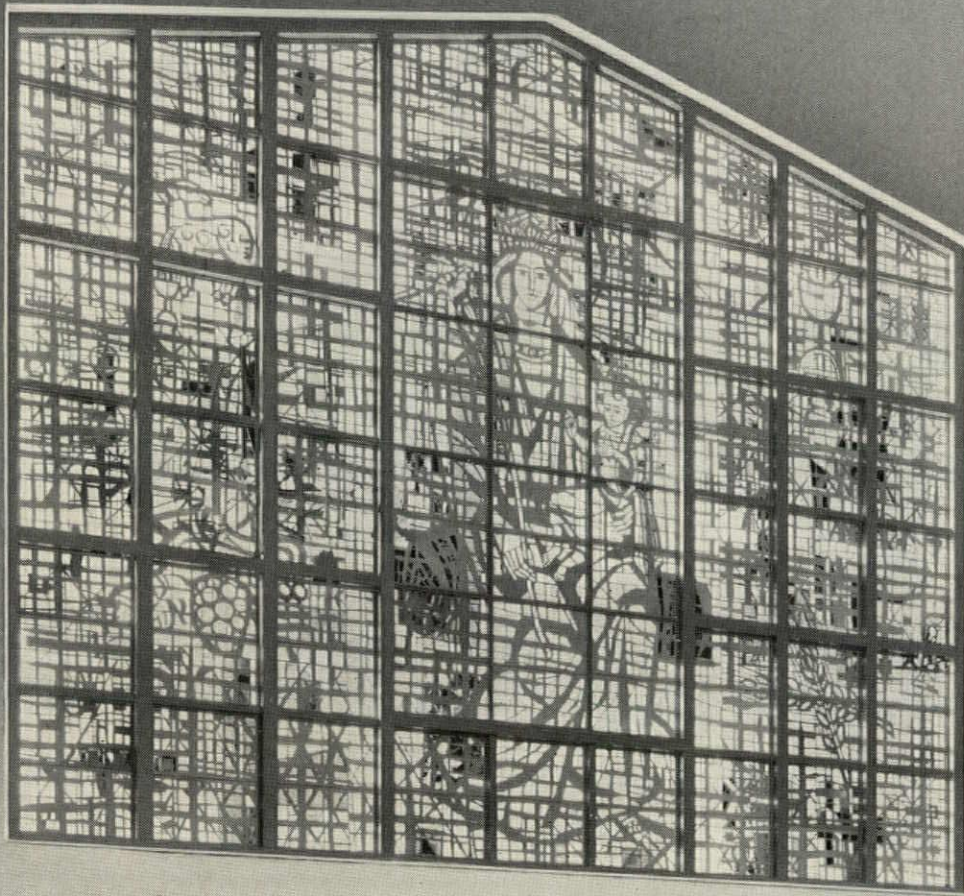
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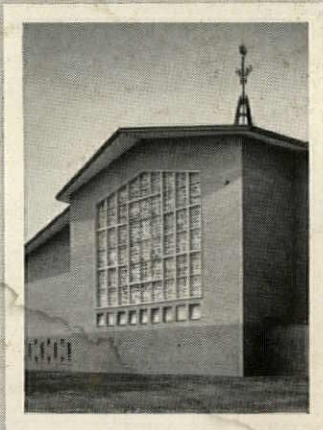
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Brother Cajetan J. B. Baumann, O. F. M., Architect
Balling Brothers, General Contractors



The design, rich coloring and expanse of this window greatly enhances the inspirational qualities of this beautiful chapel. It is one of two identical units furnished by Hope's and installed at each end of the chapel.

Each window is thirty-four feet wide and over twenty-nine feet high at its apex. Perimeter frames are nineteen inches deep from front to back. Intermediate vertical and horizontal members vary in depth from eight to thirteen inches. All frame members were fabricated from heavy 11-gauge steel, accurately formed to desired profiles.

These Hope's windows were designed for

double glazing. Exterior glass panes protect the decorative inch-thick chunk glass panels. Completely concealed within the pressed steel window framing are vertical and horizontal stiffening members of structural steel necessary to support wind load and the heavy chunk glass.

The beauty and practicality of this installation demonstrates the value of early collaboration between the architectural designers and Hope's engineers. We welcome the challenge to utilize the full skills of our engineers, factory craftsmen and erection crews.

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Boston & Maine rose a whopping 37 per cent—thus completely reversing an annual 8 per cent decline in commuter traffic.

Apparently neither this statistic nor the big subsidy was enough. In its abandonment petition, the B&M stated that during the first nine months of 1963, its revenue from commuter runs had increased by a mere 4 per cent, and that it had lost \$1.8 million on its service (despite a healthy nine-month subsidy of \$1.4 million). At the same time, the New Haven, which received a subsidy of \$900,000, said that it was losing about \$1.5 million on its intrastate runs to Boston.

The Mass Transportation Commission was not surprised by these requests. In a report released last month, the Commission noted that the B&M would have to ask for "immediate discontinuance" of its service unless "some form of relief from the net cash drain is quickly obtained."

Does this mean that the experiment has failed? Not at all, said Executive Director Maloney; it means that Boston (and many other cities) should reassess its transportation network. People, the experiment has proved, will leave their cars at home if the commuter service is good.

To help get such service, the Commission offers some tentative recommendations, including: 1) purchase, for no more than five years, of the present improved rail service (\$2.2 million annual subsidy to the B&M, some \$300,000 to the New Haven); 2) establishment of a new state transportation agency that would run redefined regional transit systems in Boston and other Massachusetts cities; and 3) a complete reorganization of public and private transportation systems in the Greater Boston area to provide integrated commuter service (one suggestion: extend the subway along the railroads' right-of-way to the suburbs where it would connect with bus lines).

Late last year, the Commission also applied to the HHFA for a ten-week extension of the experiment (to next March). As the issues get sharpened in this period,

other cities tangled in commuter problems can look to Boston for advice, for nowhere else has the elasticity of commuter demand been studied in such depth and clarity. Whether Boston can take its own medicine in the interests of its future growth and economy, of course, remains moot.

UDALL ACTS TO BUY "SCENIC RIGHTS"

McLEAN, VA.—For over a year, embattled residents of this suburb of Washington, D.C. have tried various ways to block a high-rise development of three 17-story apartment towers on the banks of the Potomac. Ignoring local opposition, the would-be developers (Magazine Brothers) proceeded to dig (photo below).

Last month, it looked as if they might have to shovel the dirt back into the excavations. Reason: Secretary of the Interior Stewart L. Udall, who just happens to be a McLeanite as well as an ardent conservationist, announced that his department was going to buy the Palisades' "scenic rights" for some \$500,000 (i.e., the right to preserve the landscape without actually buying the land).

The use of a scenic easement, which has precedents at Mt. Vernon, Va., Gettysburg, Pa., and along national parkways, effectively blocks any multifamily building in the area (but permits houses less than 40 feet high). The move would even forbid the removal of any large trees.

Magazine Brothers immediately countered with the suggestion that the federal government should buy the 46-acre tract outright for about \$4 million, but insisted that the scenic easement alone could not be had for less than \$2 or \$3 million—not without a long court fight, in any case. Interior's answer: the National Parks Service has no intention of buying the land; furthermore, the "scenic rights" case would certainly stand up in court. Meanwhile, as the antagonists glare at each other publicly, a compromise solution is being quietly worked out: the government and the developers are trying to determine a mutually satisfactory dollar figure for the "scenic rights." Whether the case ends up in court or not, however, the Potomac Palisades seem to have been saved for the present. One reason: many neighboring property owners have already donated their "scenic rights" to the federal government.

PLANNERS STUDY LUXURY APARTMENTS

PHILADELPHIA—Two University of Pennsylvania planners, Chester Rapkin and John Pope, recently looked at this city's luxury apartment situation and wondered how the market could absorb the almost 6,000 units completed in the downtown area since 1960—plus the 1,560 expected by 1965. Their answer: it probably couldn't.

Warnings of the coming glut were flashed in (unofficial) statistics: right now, only 3.3 per cent of the downtown apartments available are vacant, but this represents an ominous rise from the 1.2 per cent figure of 1958.

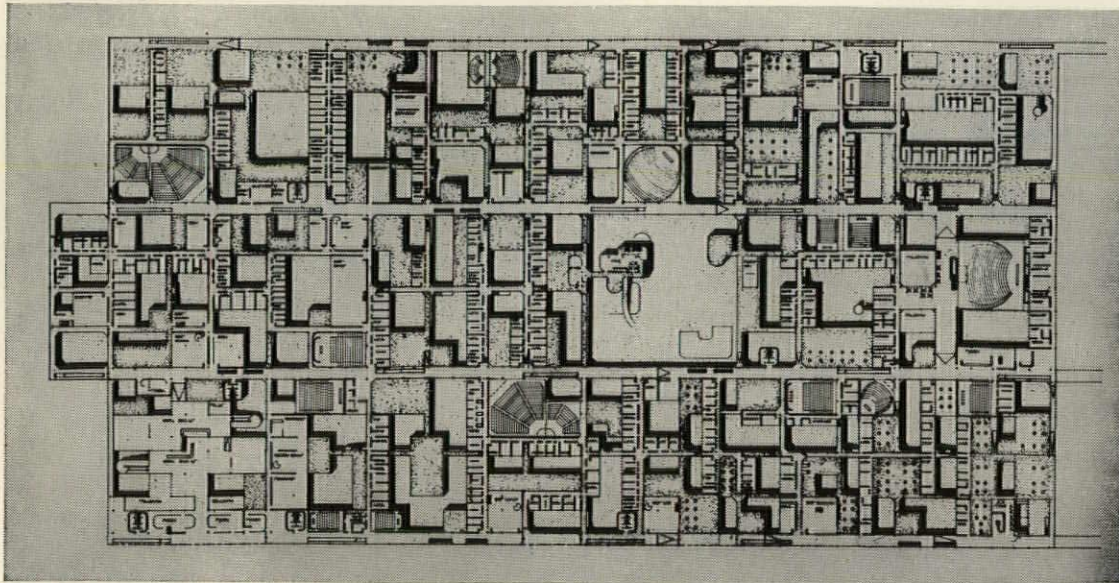
Over the past 13 years, an average 230 new luxury units have been rented each year. To fill the number of apartments expected by 1965, this rate must grow by 50 per cent. Such an increase, say Rapkin and Pope, is most unlikely, even if helped by three simultaneous forces: 1) redevelopment of the whole downtown area; 2) construction of more "efficiency" apartments (which now have a negligible 0.4 per cent vacancy rate); 3) "a massive change in preferences" among suburbanites toward moving back to the city.

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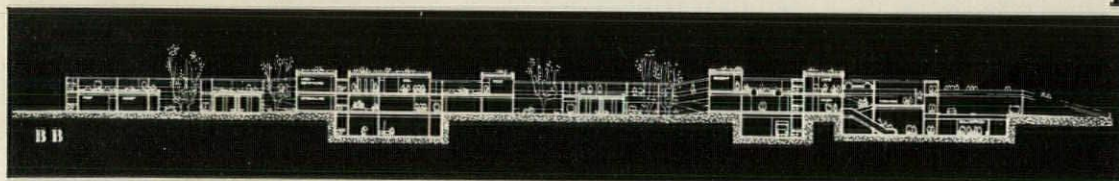
Magazine Brothers' excavation at Potomac Palisades



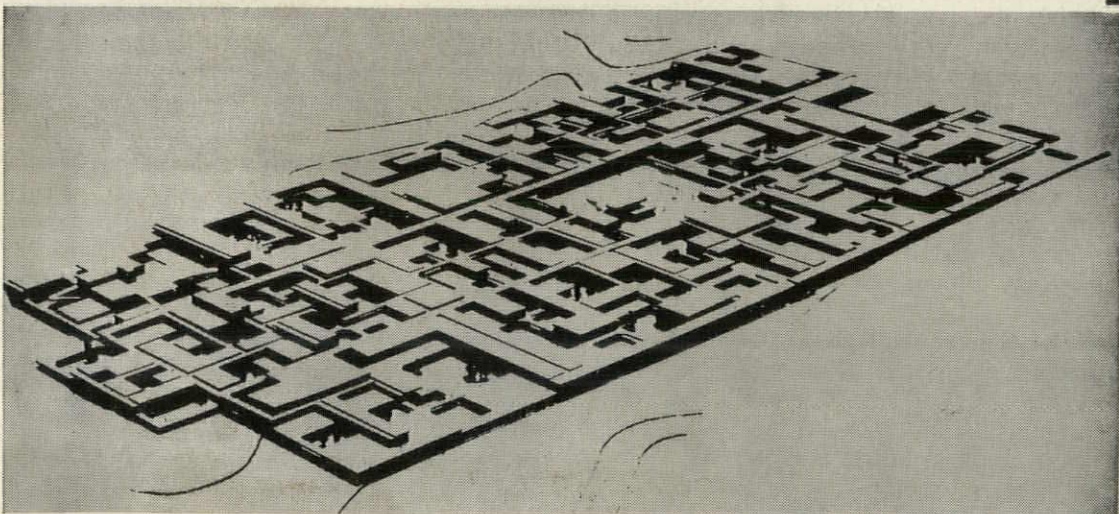
FRED WARD—LIFE



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PARIS ARCHITECTS WIN COMPETITION WITH RADICAL PLAN

WEST BERLIN—The cellular structure shown above has just been awarded First Prize in an international competition for an addition to this city's Free University. The structure is a new urban design concept developed by Paris Architects Candilis, Josic & Woods. The jury (which included Architects Bakema of Rotterdam, Jacobsen of Copenhagen, and Düttmann of Berlin) met in the former German capital last month and awarded the

30,000 DM First Prize to the radical scheme proposed by the Paris firm.

The C.J.W. project is based on a concept developed earlier by these architects for a three-dimensional urban service grid, consisting of pedestrian walks, automobile highways, and utility lines, all laid out on separate levels. (In the Free University scheme, the automobile level has been eliminated.) The grid serves as a framework into which any kind of structure—in this case seminar buildings, assembly halls, classrooms, labs, or student housing—can, in effect, be “plugged in” at

will, with open courts between structures (see plan 1, partial section 2). The Berlin grid consists of four parallel “arteries,” 200 feet (or 1 minute's walk) apart; numerous secondary roads at right angles to the “arteries” complete the grid. The entire area covered by the C.J.W. scheme measures about 600 feet by 1,200 feet, or about 18 acres 3. In a sense, the grid concept is an elaboration of the typical, American gridiron plan; but the C.J.W. grid, being a multi-level affair that separates people, cars, and services, has been turned into a forceful architectural framework

that gives a sense of order to the city, and yet permits great variety of form and function in the “plugged-in” buildings within the framework.

Candilis and Woods are products of Le Corbusier's office (see *Editor's Note*, Dec. '63), and Shadrach Woods is an American architect who is just returning to his home in Paris from a brief stint as a visiting lecturer at Washington University in St. Louis. The Free University competition was open to all German architects, plus 10 or 15 invited firms from outside Germany. C.J.W. was one of those firms. This is the second major competition won by them recently: the first was the competition for the new French city of Le Mirail, near Toulouse, shown in detailed project form in *FORUM's* June '63 issue.

CONGRESS ACTS ON FEW BUILDING BILLS

WASHINGTON, D. C.—The Senate passed the \$1.2 billion college aid bill last month and the building industry had cause to cheer. The measure, which had received House approval on November 6, will help build classrooms, libraries, and laboratories (but not dormitories) in the nation's 2,100 private, public, and church-run colleges over the next three years.

Specifically, the bill provides: \$180 million in grants each year to four-year colleges for libraries and buildings devoted to instruction or research in natural and physical sciences, mathematics, and modern foreign languages; \$120 million each year in loans for construction of all types of classrooms at private junior colleges, four-year colleges, and technical institutes; \$50 million each year in grants to public community junior colleges; and a total of \$145 million in grants to graduate schools, and graduate centers. Unhappily, the passage of this bill has proved to be the exception in the record of this Congress concerning building programs. So far only these building

continued on page 18

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measures have been signed into law:

Housing for the elderly, which adds \$50 million to existing \$225 million authorization for Section 202 direct loans (HHFA).

Moderate-income housing, which extends FHA's 221(d)2 sales housing program; and the 221(d)4 rental housing program for two years.

Military housing, which lets the Defense Department build 10,200 on-base units, but cripples FHA Section 810 program by requiring each project to be approved as a line item in the military construction bills each year, and making it difficult for FHA to clear a proposal with the Defense Department (see also below).

FHA-insured military housing, which lets FHA insure sales housing (Section 809) for essential civilian employees of the Defense Department, NASA, or AEC. It also provides rental housing (Section 810) for these employees and military families.

Medical college construction, which provides \$236 million over three years to build medical and dental schools, renovate old ones.

Aid to the mentally retarded, which provides \$329 million over four years, mostly to build research and treatment facilities.

Military construction, which provides \$1.6 billion for U.S. and overseas, and reduces the family housing program by 2,000 units to 7,500 units.

Some bills which were stalled during the past session include:

Tax reform, which among other things, would limit full use of accelerated depreciation deduction in real estate sales to buildings held for at least ten years. It also allows the elderly to avoid capital gains taxes on their own homes. This bill passed the House, and committee hearings have been completed in the Senate. It is expected to clear the Senate early this year, and would be applied retroactively to 1963 taxes.

Civil rights, which ratifies the executive order banning discrimination in all federal programs, including housing and employment practices. The bill will probably pass in some form after

a Senate filibuster this year.

Accelerated public works was reported out of the House Public Works Committee, but got no further. It extends the program one year beyond the present expiration date of June 30, 1964, provides an additional \$900 million for federal grants to depressed areas. Its outlook is not bright.

In review, the record is not inspiring. One key factor has been the reluctance of housing subcommittee leaders, Senator John Sparkman and Representative Albert Rains (both Democrats from Ala.), to allow controversial issues like integrated housing—or any measure which smacks of civil rights—onto the floor.

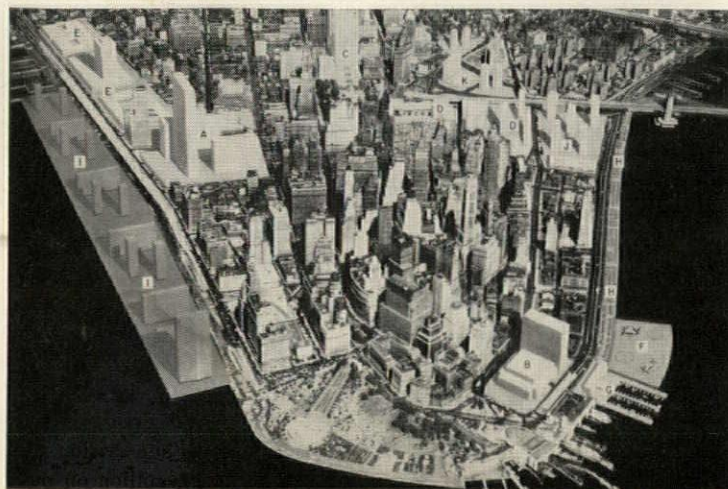
PROMOTING BOOM IN LOWER MANHATTAN

NEW YORK—A few weeks ago, the Downtown-Lower Manhattan Association, a private — and potent — business group headed by David Rockefeller, President of the Chase Manhattan Bank, released its second report. Its subject: the future of the tip of Manhattan Island (photo below), probably the most valuable 564 acres of real estate in the world.

The association, together with its team of associated consultants under Skidmore, Owings & Merrill, found the area had prospered since its last report in 1958: 15

office towers have been built or modernized, for one example, with another five under construction and three in advance planning stages; lower Manhattan pays some \$61 million in municipal real estate taxes each year, for another, an increase of \$18.5 million over 1958. But there is more to be done, says the association. It endorses a number of new projects, including three controversial ones: the World Trade Center (A), which finally seems to be out of a legal morass; the new headquarters of the New York Stock Exchange (B), which is on the brink of entering one (*News*, Nov. '63); and the Civic Center (C), which is now drawing belated critical attention. Around Brooklyn Bridge, the association recommends that three residential projects (D,J,K) be built, of which one (D) is already in the works. These, along with another housing project (I) on the Hudson, would help bring around-the-block life to the area which draws about 426,000 people to it daily, but where only some 4,000 really live. More industry is suggested for the Washington Street Fruit Market area (E) after the market leaves for the Bronx. Other projects: an enlarged heliport (F); a marina and boater (G); and a land-fill recreational esplanade along the East River.

No mention has been made of who pays for what, but judging from past successes, the Downtown Association knows its way around big business, City Hall, and federal agencies; its recommendations are taken seriously.



EDUCATORS PLUG FOR TECHNOLOGY

CLEVELAND — The General Electric Lighting Institute last month sponsored a conference here in which 15 architectural educators met to take a new look at a neglected field: environmental technology. Elliot L. Whitaker, director of Ohio State University's Department of Architecture, put the problem this way: "A student spends 4 or 5 per cent of his time on environmental control (lighting, heating, air conditioning, and acoustics), but will probably spend half of his professional time on it."

The two-day conference was in part inspired by FORUM's Roundtable on "tomorrow's office environment," which appears on pp. 110-117. It drew educators like Burnham Kelly, of Cornell and Henry Wright of Columbia, who moderated the discussion, along with others from Harvard, Florida, Michigan, and Oklahoma. Behind it all was a desire to train tomorrow's architects to see environmental control as integral with building design.

All the participants agreed that a sympathetic knowledge of this type of engineering is vital to design, but felt that today's curricula stress design at the expense of technology. According to the conferees, a new breed of architect must evolve, with graduate training in some special technological field, as doctors are now trained in specialties.

To aid in the creation of the specialist, the educators suggested that students be given design problems emphasizing such areas as lighting or acoustics. Also, an awareness of good and bad examples of environment should be cultivated through slides, laboratory work, and field trips. Most important: the teachers themselves should be brought up to date in seminars about recent developments, and the schools should drop "nuts and bolts" courses, which are soon obsolete, and concentrate on scientific principles. At the end of the conference, a subcommittee was appointed to continue the study.

QUOTE . . . UNQUOTE

"Architectural quality is of course esthetic quality, but it is not esthetic quality alone. The work of architecture is the product of function and art. If it fails in either, it fails in quality."—*Architectural historian Nikolaus Pevsner.*

"Yes, God is a verb, the most active, connoting the vast harmonic recording of the universe from unleashed chaos of energy."—*R. Buckminster Fuller.*

"In an urban, industrial society, we cannot return to absolute purity."—*U.S. Surgeon General Luther A. Terry.*

"There are many buildings here in Washington, D.C., that are simply a literal transcription of the maximum coverage allowed by law, their fat, graceless forms tightly clad in store-bought suits—more likely than not a dark grey pinstripe or a howling check."—*Washington Architect Francis Lethbridge.*

"I've even heard indoor plumbing for a school referred to as a 'frill!'"—*GSA Architect Yasko.*

"The paramount fact at the federal level about so-called 'urban legislation' is that it usually faces impossible odds in our Congress. Most legislators . . . are not even willing to understand the problems we have in our cities and suburbs in 1963."—*Senator Harrison A. Williams (D., N.J.).*

"Ugliness triumphs over beauty, stale and tasteless foods over the fresh, the suburban slum over the greenery and the super expressway over the need to get people where they want to go. We are characteristically offered fewer choices under a wider variety of labels."—*Columbia University Professor William Goode.*

"Without the great buildings, the architect is a pretty small man."—*Critic Ada Louise Huxtable.*

"America has produced what may be, with a few notable exceptions, the most spiritless cities in history."—*Dean of Architecture Joseph R. Passonneau, Washington University.*

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AITKEN QUILTS D.C. HIGHWAYS

"At best," said the able director of the District of Columbia Highway Department, HAROLD L. AITKEN, recently, "this job isn't an easy one in terms of winning friends and accomplishing objectives." He was right, for there seem to be problems everywhere in getting new D.C. highways built—with parks authorities who want some of the same land, for example, and with the families new roads displace, and perhaps above all with the administrator of the National Capital Transportation Agency, C. DARWIN STOLZENBACH, who somehow seems to feel that his subway scheme precludes Aitken's cherished "Inner Loop" highway around Washington (FORUM, Jan. '63).

Aitken, 55, left all these troubles behind last month when he retired to private practice after 30 years of District and federal service. "It seems an opportune time to step down," he said, and he was right again.

Just two weeks before he retired, the House of Representatives overwhelmed the D.C. subway and rapid transit scheme by a vote of 278-76. In doing so, the House indirectly censured Stolzenbach for his presentation of the project, and several observers expect him also to resign from NCTA soon.

Though the subway plan is still far from dead, its defeat gives the Highway Department one less problem for the time being. Aitken denies that the rapid transit controversy had much to do with his resignation. "It's a combination of things," he said tiredly.

ABE SHERMAN'S KIOSK

For 44 years—or long enough to make him an institution in his own right—newsstand owner ABE SHERMAN has stood at the base of Baltimore's 1814 Battle Monument in the City Center hawking papers and giving advice. This old order was threatened last fall when the city ordered his stand moved to make way for a landscaping project. But the Baltimore Chapter of the AIA, especially concerned with civic design these days, came to the rescue last month, and held a competition for a new kiosk for Sherman. It will stand in front of the courthouse on Monument Square and will be designed to harmonize with its rejuvenated surroundings.

The \$50 winner will be announced later this month when Sherman, three local architects, and a City Public Works official judge the entries. While the Chapter hopes that the kiosk will be a minor landmark in its own right, all Baltimoreans agree that one landmark is Sherman. Just keeping him around his old locale, they feel, is worth a competition.



PRITCHETT GETS KY. AWARD

Appropriately enough, the man who over the past four years directed the Kentucky state building program at a record pace has received the Kentucky Society of Architects' annual award. An engineer in private life, he is Finance Commissioner DAVID H. PRITCHETT, who was cited for "outstanding contributions toward creating an atmosphere within the agencies of the Commonwealth of Kentucky in which good architectural design is possible." Under his supervision, the state spent \$122.5 million on pub-

lic buildings, including \$52.6 million on the university of Kentucky and five state colleges.

PARIS HEADS CANADA PCA

That large engineering, research, and promotion organization, the Portland Cement Association, recently announced that it was expanding its field services to Canada. In charge of the new operation is GEORGE H. PARIS, formerly chief of promotion, planning, and engineering services for PCA. From his new headquarters in Ottawa, Paris will supervise activities of other new district offices in Toronto, Montreal, Edmonton, and Halifax as well as in the already established branch in Vancouver.

REYNOLDS AWARDS JURIES

The AIA has recently released the names of jurors for the 1964 annual Reynolds awards: serving on the panel of the eighth \$25,000 R.S. Reynolds Memorial Award "for distinguished design achievement with significant use of aluminum" are Architects MARIO CIAMPI, ROBERT M. LITTLE, GEORGE F. PIERCE, DAHLEN RITCHEY, and HANS MAURER. The jury for the fourth annual Reynolds Aluminum Prize for Architectural Students consists of Architects JOSEPH D. MURPHY, SAM T. HURST, and W. G. LYLES. Both awards will be presented at the AIA Convention in St. Louis, Mo. next June.

BRIEFLY NOTED

Among recent organizational appointments were: ROBERT C. PALMER, to be president of The American Institute of Steel Construction; GEORGE O. RADFORD, president, Radco Products, Inc. to be president of the Architectural Aluminum Manufacturers Association.

West Coast Architect CHARLES WARREN CALLISTER last month became the University of Colorado School of Architecture's first "Architect in Residence" for a period of one month. This is part of a newly created program to bring students in contact with "important contributors to American architecture today."

continued on page 14



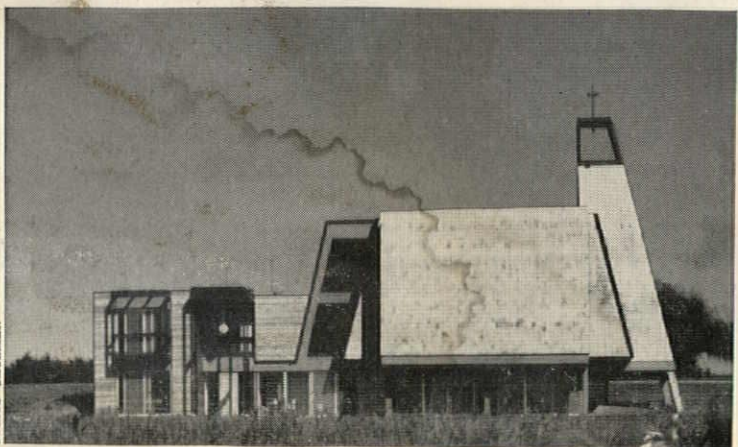
PORT OF N.Y. AUTHORITY

NEW YORK AIRPORT. The 12-story traffic control tower shown above is the first structure to be finished in the vast \$115 million redevelopment of New York's La Guardia Airport. Round glass "port holes" dot the flaring,

rubbed concrete exterior which is surmounted by a 12-sided glass and aluminum cab. Architects: Harrison & Abramovitz. Structural engineer: Amman & Whitney. General contractor: Turner Construction Co.

CHURCH IN IOWA (below). This boldly shaped two-level structure is a combination classroom-social hall for the First Methodist Church of Coralville, Iowa. Until an adjoining sanctuary is built, it will also be used temporarily for services. The building is

framed simply in timber, with cedar shingles and siding used extensively inside and out. Construction cost: \$82,000 (approximately \$12.45 per square foot). Architects: Crites & McConnell. General contractor: Paulson Construction Co.



JULIUS BRIDGMAN



NATIONAL GEOGRAPHIC SOCIETY

OFFICES: D.C. & MD. Two almost completely opposite ways of enclosing office space are demonstrated in two new structures by Architect Edward Durell Stone. In the design for the 10-story National Geographic Society building in Washington, D.C. (above), the solution is conventional: the exterior walls are all glass except for narrow vertical fins of white marble. These fins were intended to lend a solidity in harmony with monumental Washington; but they also help

shade the dark gray solar glass from the sun. In Hyattsville, Md., a speculative structure called the Federal Center building (below), first element in a large suburban development, almost exactly reverses the proportion of glass to spandrel, producing sizable savings in heating and air conditioning because of the drastic reduction in the amount of glass. General contractors: Charles H. Tompkins (National Geographic); Whiting-Turner (Federal Center).



WARREN BALLARD



OFFICE IN ILLINOIS (above). When it is completed early this year, the seven-story office building for Deere & Co. in Moline, Ill. will be the fourth major project of Eero Saarinen's to be finished after his death. The building is framed in exposed, rust-

resistant steel; floor-to-ceiling glass window walls are protected by horizontal sun shades, also of steel. Engineers: Amman & Whitney (structural), Burns & McDonnell (mechanical). General contractor: Huber, Hunt & Nichols, Inc.

CHURCH IN CANADA (below). To save time and money, the St. Richard Church in Montreal was built entirely of precast, prestressed concrete tee sections. Because they were precast, the sections, which form the building's walls, floors, and roof, were able to be erected rapidly during the

winter. The cross-shaped church, winning entry in the 1963 Prestressed Concrete Institute Awards Program, cost only \$11.50 per square foot. Architect: Maurice Robillard. Consulting structural engineer: Jean Duchesneau. General contractor: A.M. Bail, Ltd. Construction cost: \$230,000.

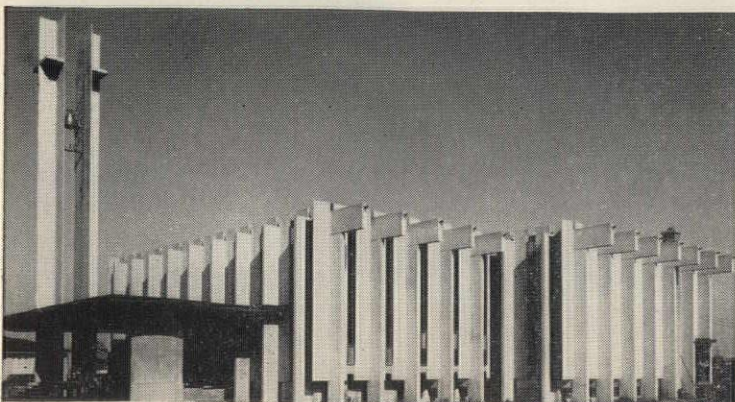
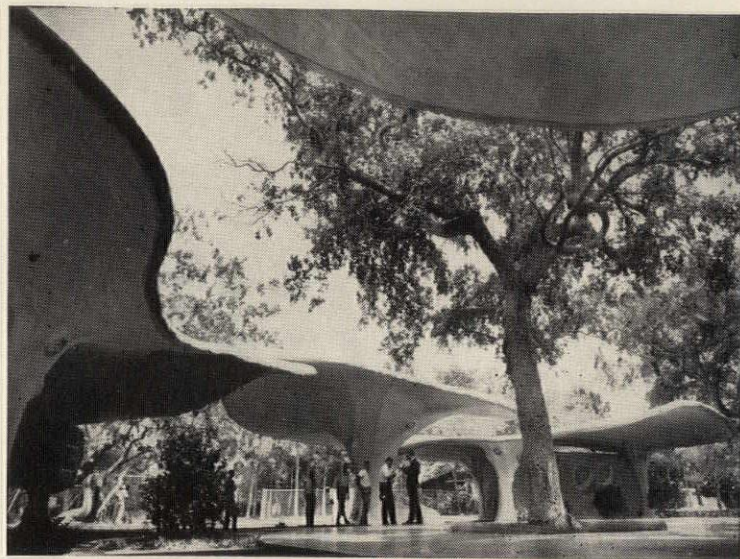
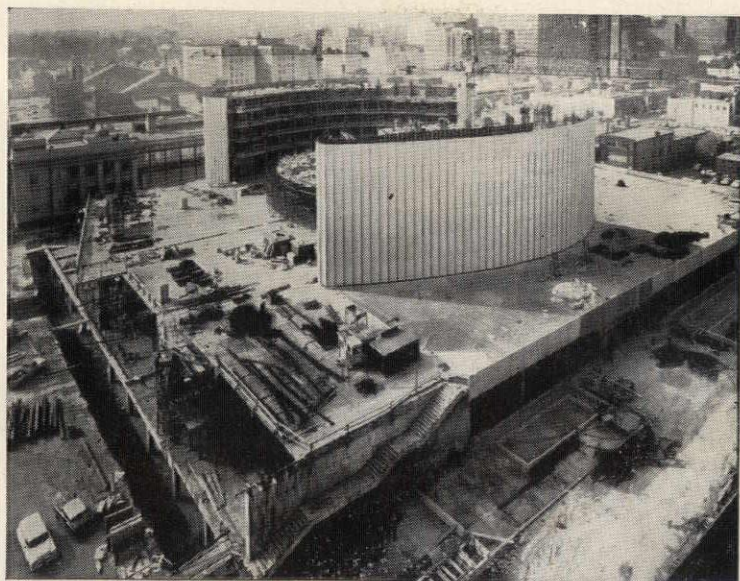


PHOTO: MACNI



FLORIDA PARK (above). The fanciful new shelters in Miami's Elizabeth Virrick Park are like great sculptural toadstools, harmonizing with the surrounding trees. They are made of concrete,

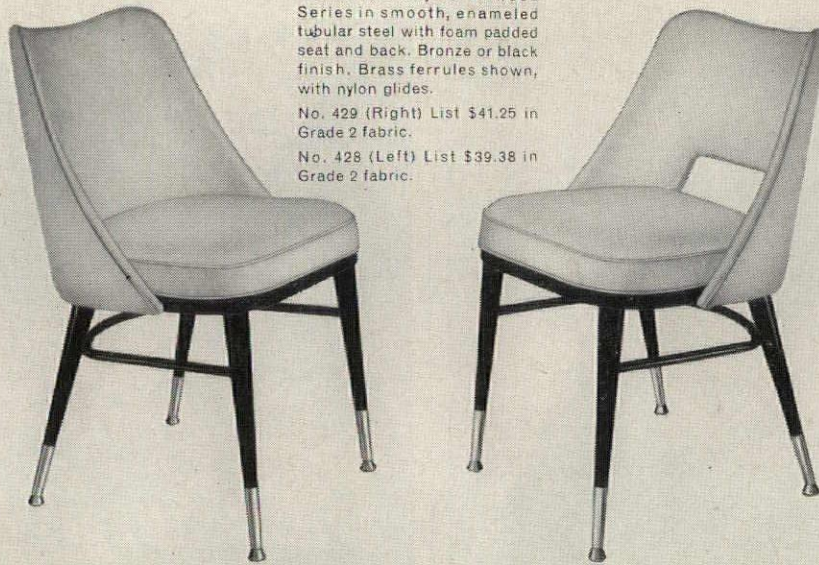
sprayed onto a metal framework of steel reinforcing mats. Architect: Kenneth Treister. Structural engineer: Bliss Associates, Inc. Contractor: Binkley Construction Co. Cost: \$45,000 for five shelters.



TORONTO CITY HALL (above, right). Still almost two years from completion, the new City Hall in downtown Toronto is beginning to take shape. The \$24.5 million complex consists of two boomerang-shaped office towers, 21 and 28 stories high, which are wrapped around a domed Council Chamber in the center. All three elements are lifted up on a two-story podium overlooking a new Civic Square. Viljo Revell and John B. Parkin Associates, Associated Architects and Engineers. General contractor: Anglin-Norcross (Ontario) Ltd. END



PHOTOS: PANDA



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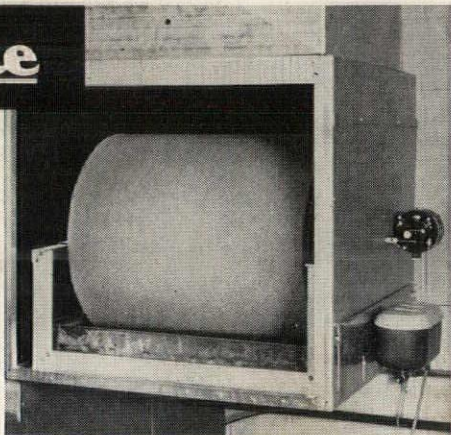
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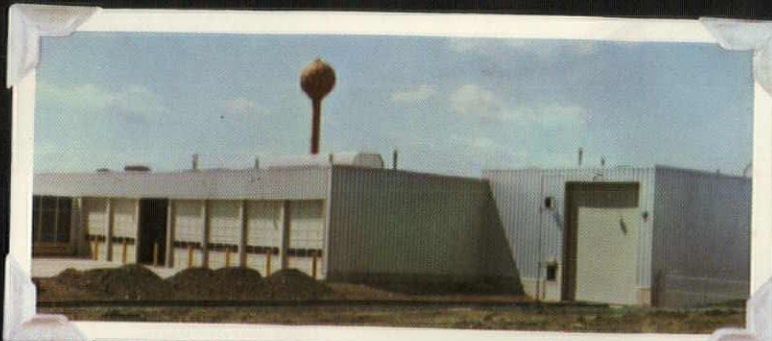


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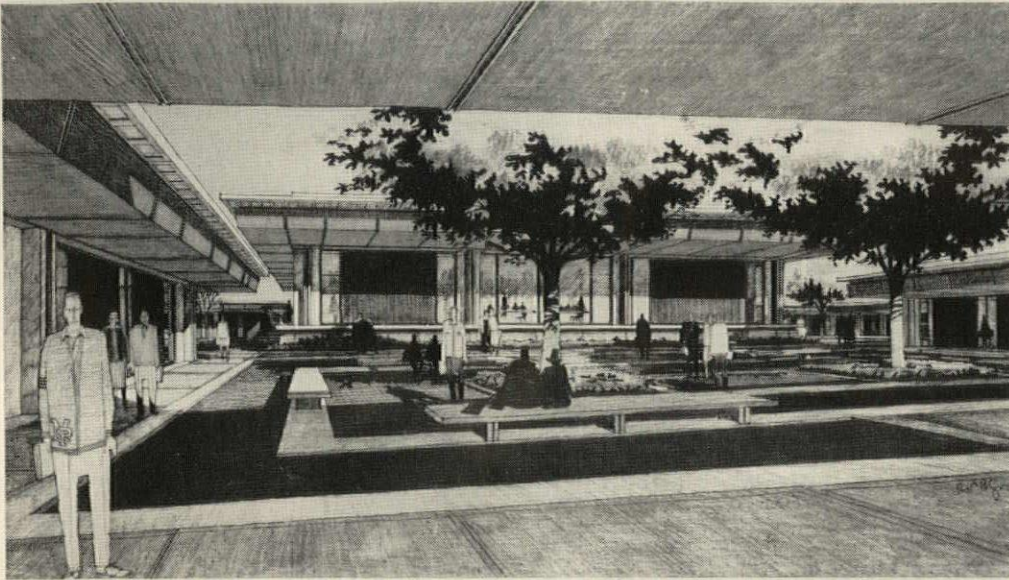
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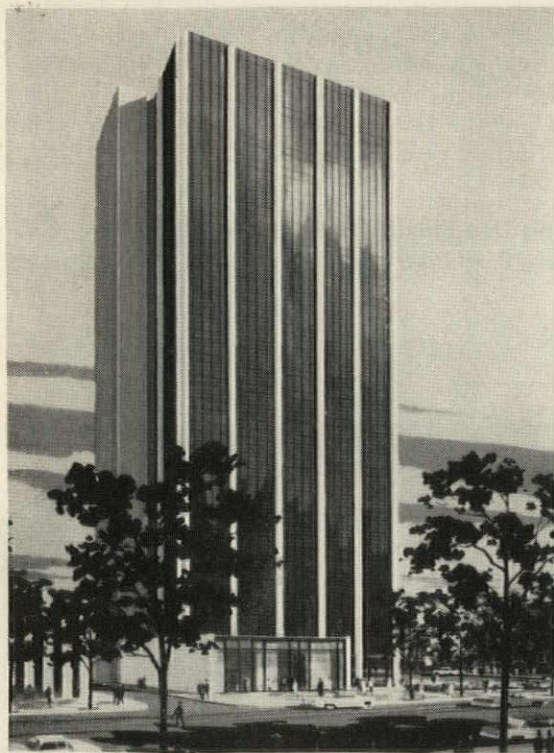
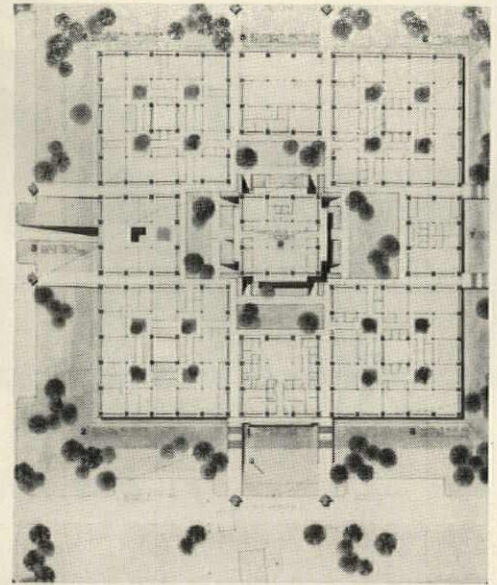
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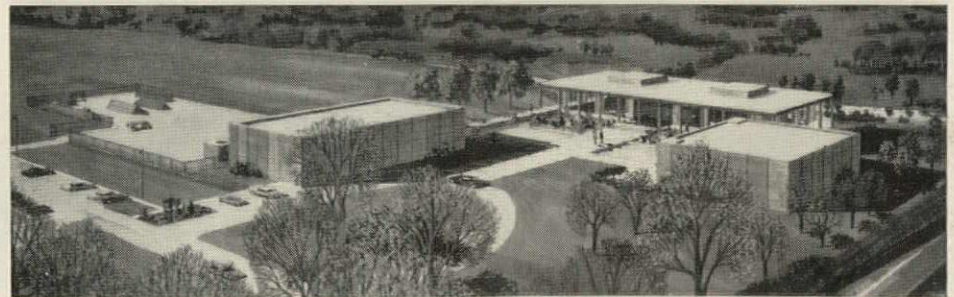
5



6



7



8

5. CALIFORNIA SCHOOL. Mount Pleasant High School in San José will have an abundance of courtyards, both inside academic "building blocks" and between the units. Rendering shows one of the four large courts looking toward the library. Plan shows how the "blocks" are used with the four corner units containing classrooms, lecture halls, seminar rooms, and teachers' offices. These corner units will serve classes in social studies, sciences, languages, and mathematics. Four smaller units on the sides are adapted for ad-

ministration, art, student activities, and music. The library (large center block) has an amphitheater below. Architects: Kump Associates.

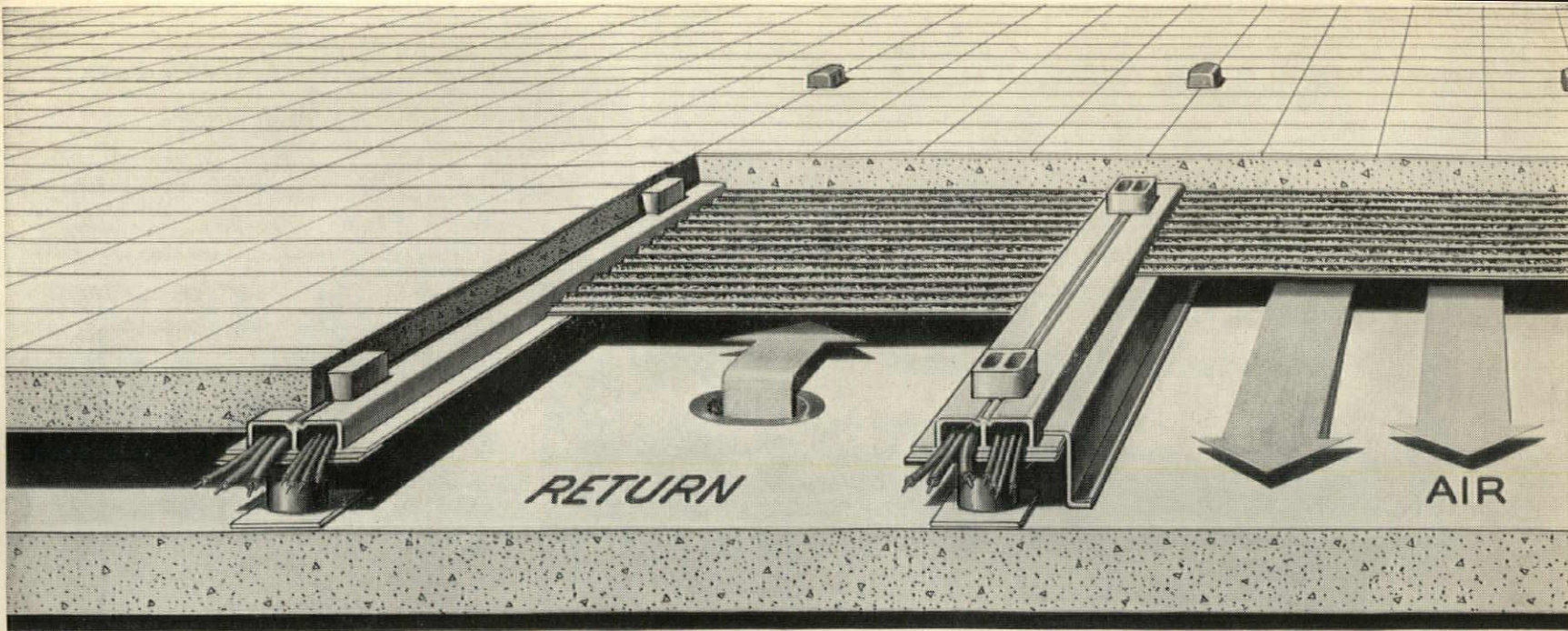
6. OHIO OFFICE BUILDING. This sleek skyscraper for Columbus, diagonally across from the state capitol, was designed by Harrison & Abramovitz. Columns will be covered with stainless steel, and the curtain walls will be of solar plate glass. Part of the site will be used for a plaza, complete with fountains. At the top of the 25-story tower there will be a luxury

restaurant affording a view of the city.

7. NEBRASKA LIBRARY. Part of the University of Nebraska's booming building program is this white precast concrete library for the agricultural campus. A saw-toothed sun-shield will protect the second floor which will have glass walls. Because the long-span roof is supported, solely on the exterior columns, the second floor of this library is column-free. Clark and Enersen are architects for the 140-foot-square building which will hold 250,000 books.

8. IDAHO GAS COMPANY. The central service facility of the Intermountain Gas Co. in Boise will include a two-story office building containing an open bullpen space on the first floor for executive offices. Two central cores will house conference rooms and utilities. A "hospitality house" will have a theater-in-the-square arrangement, which will be used for community functions as well as for company business. The service building will hold meter shops and service offices. Architect: Kenneth Brooks.

continued on page 34



A-E Floor puts mechanical and electrical services

Granco A-E (Air-Electric) Floor combines air and electrical distribution in one compact in-floor system —coordinates the design objectives of the architect with the needs of the electrical, mechanical, and structural engineer.

Architectural Design Flexibility. A-E Floor is an architectural tool for the functional and esthetic design of space. The illustrations below are but a few examples of how this versatile floor system can help satisfy the many interrelated factors of building design, location, and usage.

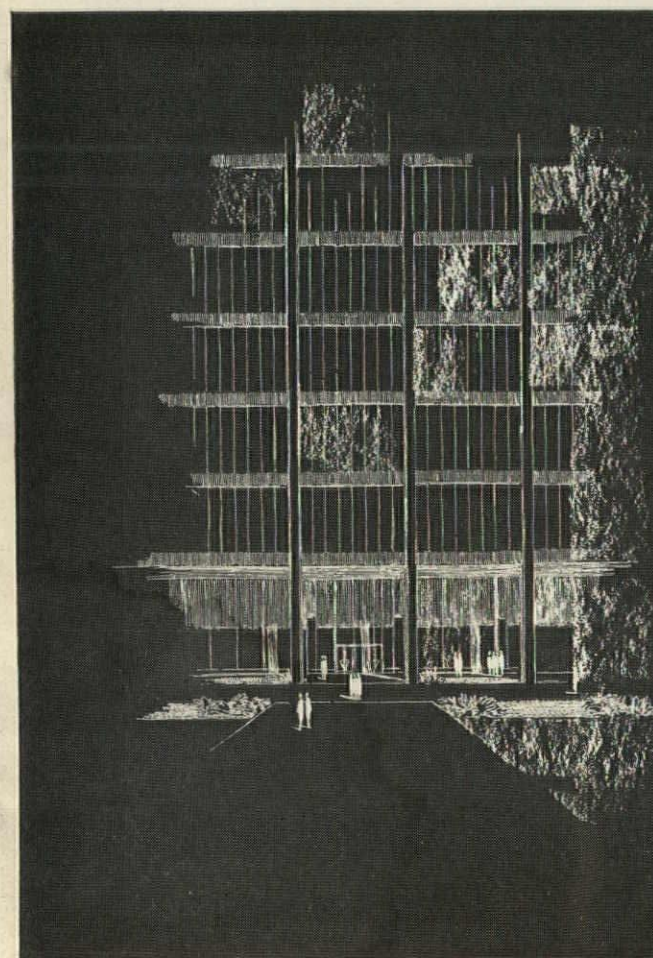
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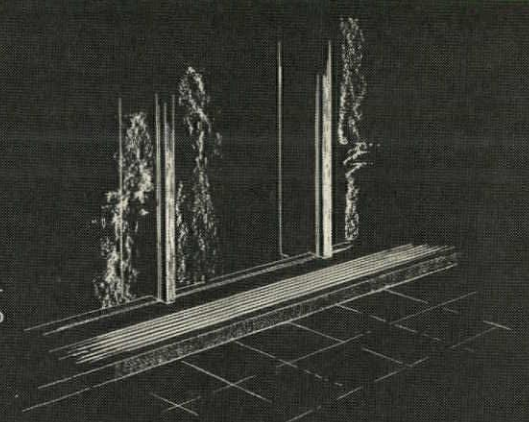


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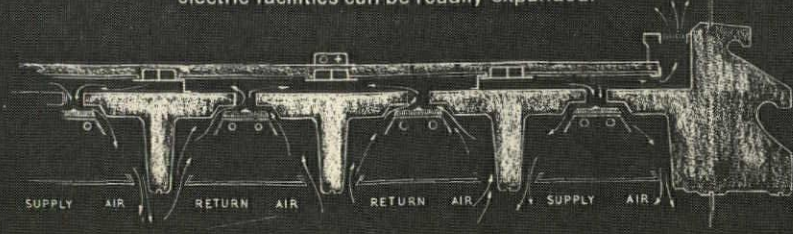


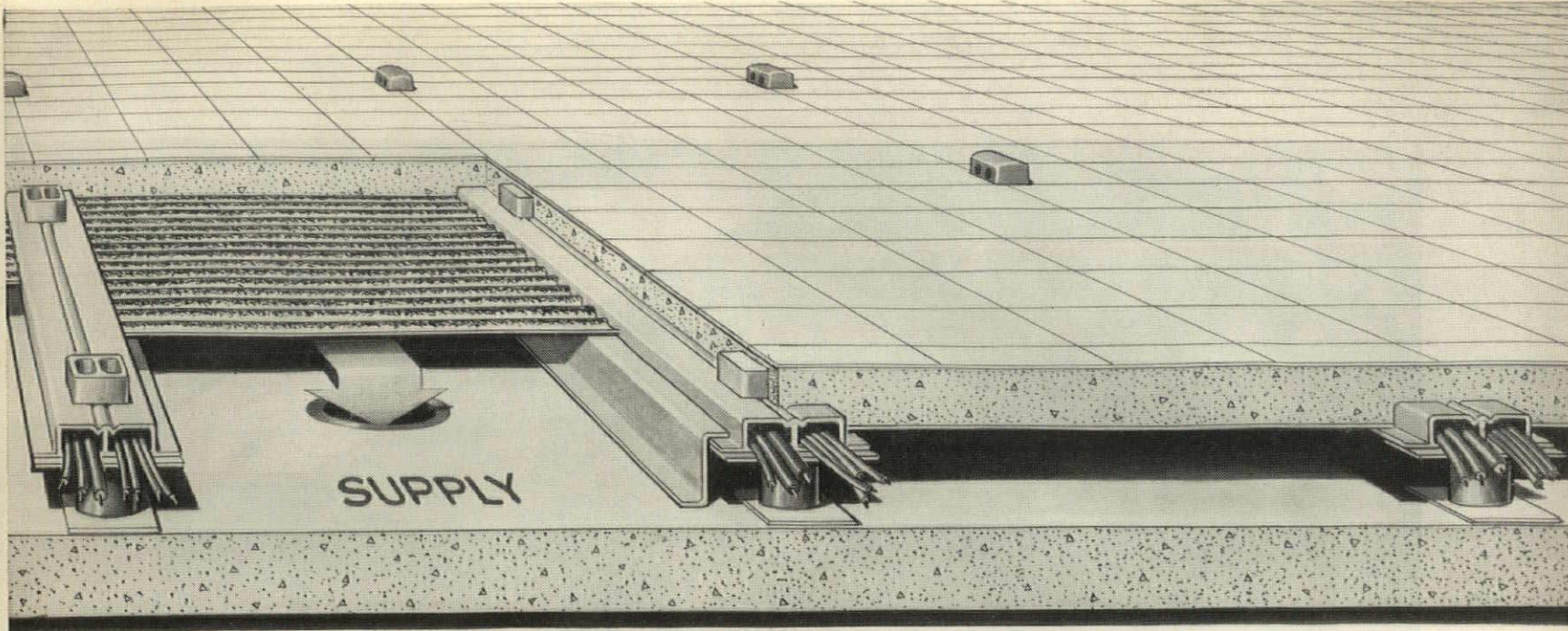
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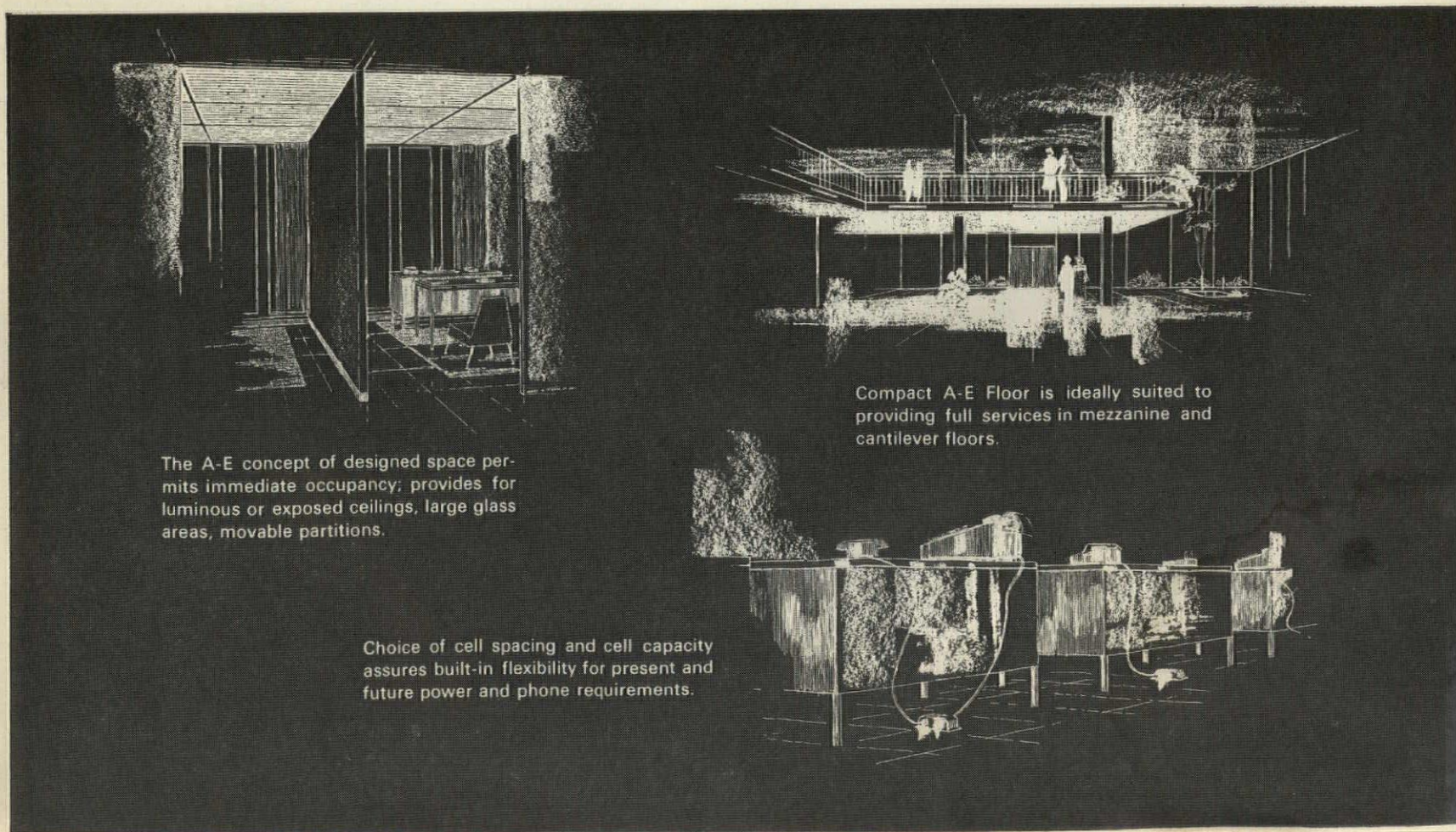
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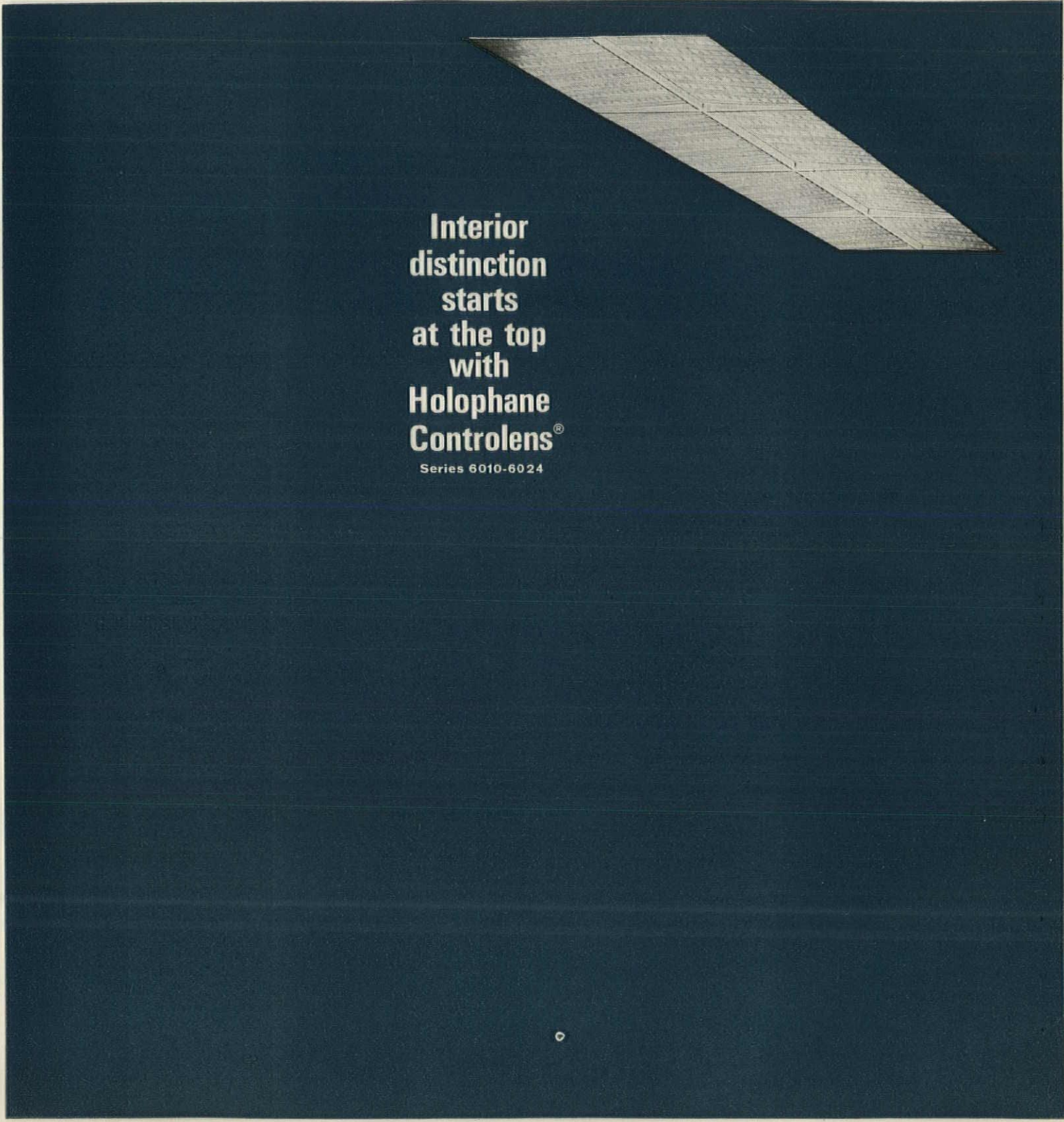
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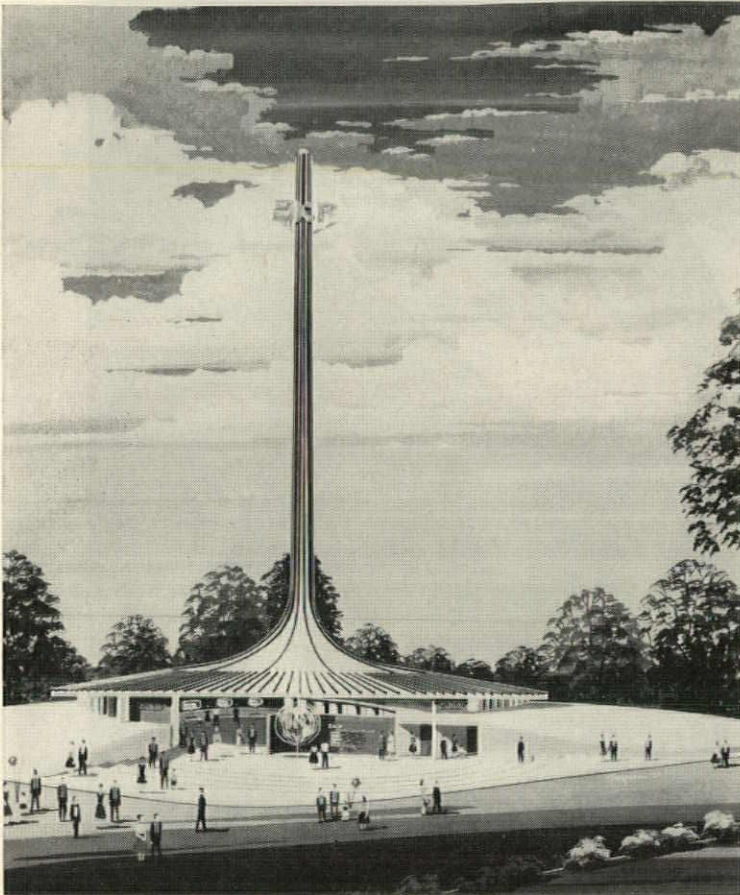


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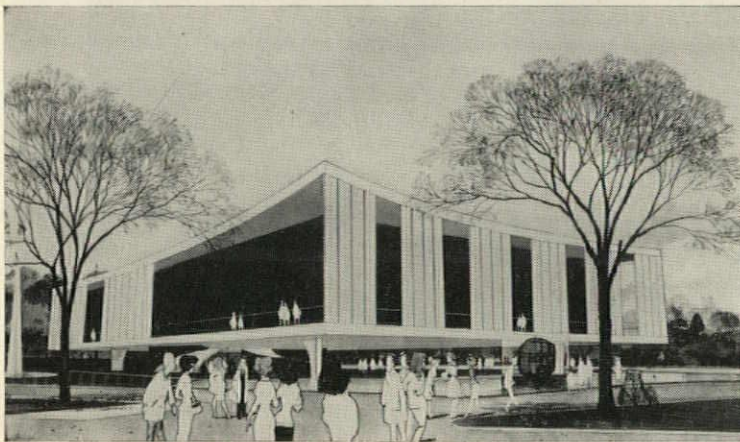
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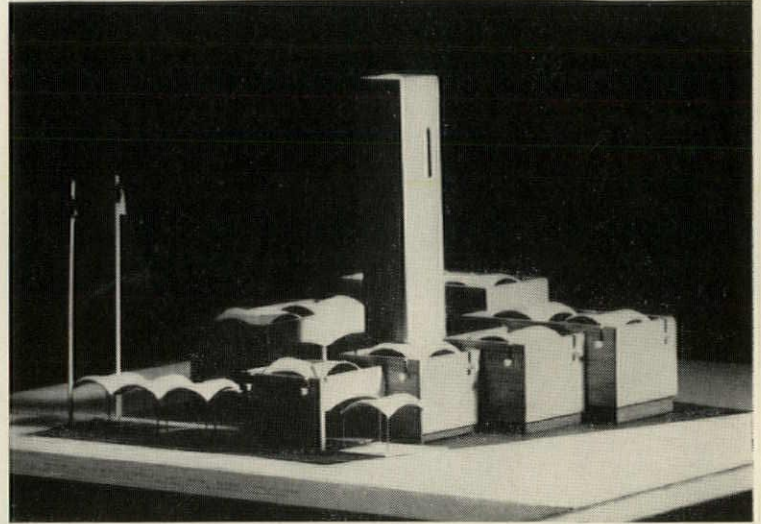
10

9. SKF TOWER. An inverted golf tee is formed by this parasol roof and tower designed by Francis Pisani Associates for the SKF ball-bearings manufacturers. Interiors are to be below grade to allow enough space and still meet Fair's landscaping requirements. To convey a sense of motion (the chief characteristic of SKF's products), the film theater is to be egg-shaped and the exhibits will be placed on gently curving walls.

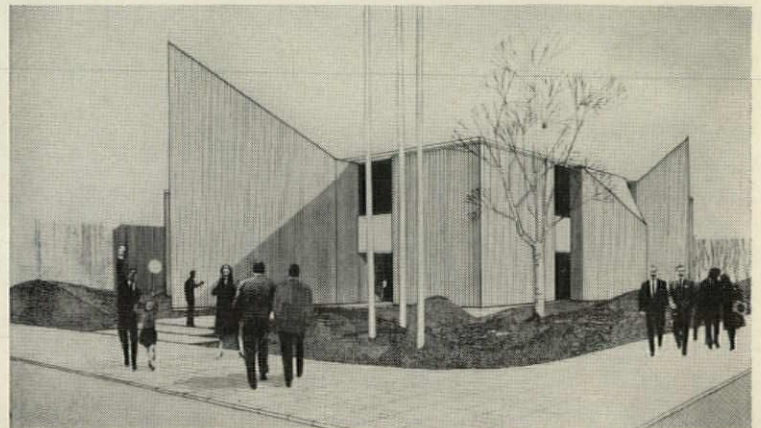
10. MEXICAN CURVES. Located next door to the Unisphere, the Mexican pavilion will have con-

cave walls of aluminum. The three-story building will be on a platform supported by four steel and concrete columns. Architects Pedro Ramirez Vazques and Rafael Mijares have also designed a separate restaurant building.

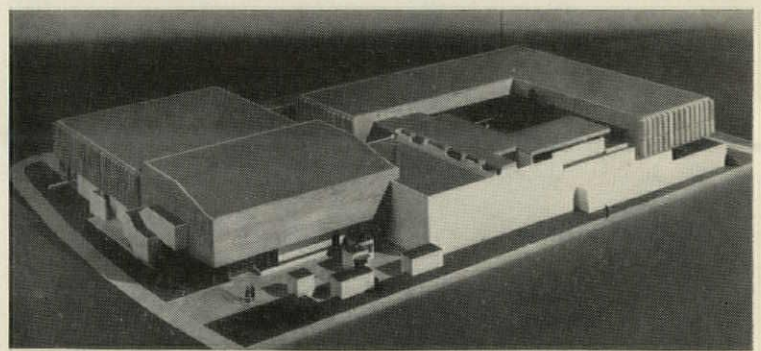
11. LEBANESE LORE. Descendants of the Phoenicians have planned exhibits that will show how their culture has influenced the world. The vaulted roofs of their pavilion are to cover nine rooms arranged around an elevated courtyard. The tower is 70 feet tall and only 11½ feet square, with a mobile



11



12



13

hanging from a false ceiling inside the shaft. Multicolored stone from Lebanon will be used as facing. Architects: Assem A. Salaam and Pierre El Khoury, of Lebanon, in association with Justin Henshell and Edwin A. Weed, of New York.

12. VENEZUELA THIN SHELLS. Four inverted umbrellas of thin shell concrete, each made up of hyperbolic paraboloids, form the basic structure for the Venezuelan pavilion. Shapes of walls will reflect the sloping ceiling within. Architects are two architectural

professors, Edmundo Diquez and Oscar Gonzalez, who won a nation-wide competition for the design of the pavilion.

13. SPANISH BEHEMOTH. On the huge site originally leased by Russia, the Spanish pavilion will include an 850-seat theater for music and films, two art galleries, three restaurants, and a wine cave. Commercial exhibits will be in the L-shaped area. After the Fair the entire structure will be moved to Spain. Architects: Javier Carvajal, of Spain, and Kelly & Gruzen, of New York. END



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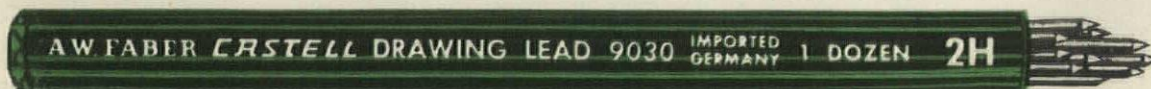
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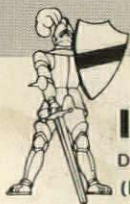
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Some of the architects with whom TelePro has worked: Skidmore, Owings & Merrill; Charles Luckman Associates; Voorhees, Walker, Smith, Smith, and Haines; Minoru Yamasaki and Associates; Edward D. Stone; Eero Saarinen. TelePro has also provided design consultants for grants issued by the Educational Facility Laboratory of the Ford Foundation.

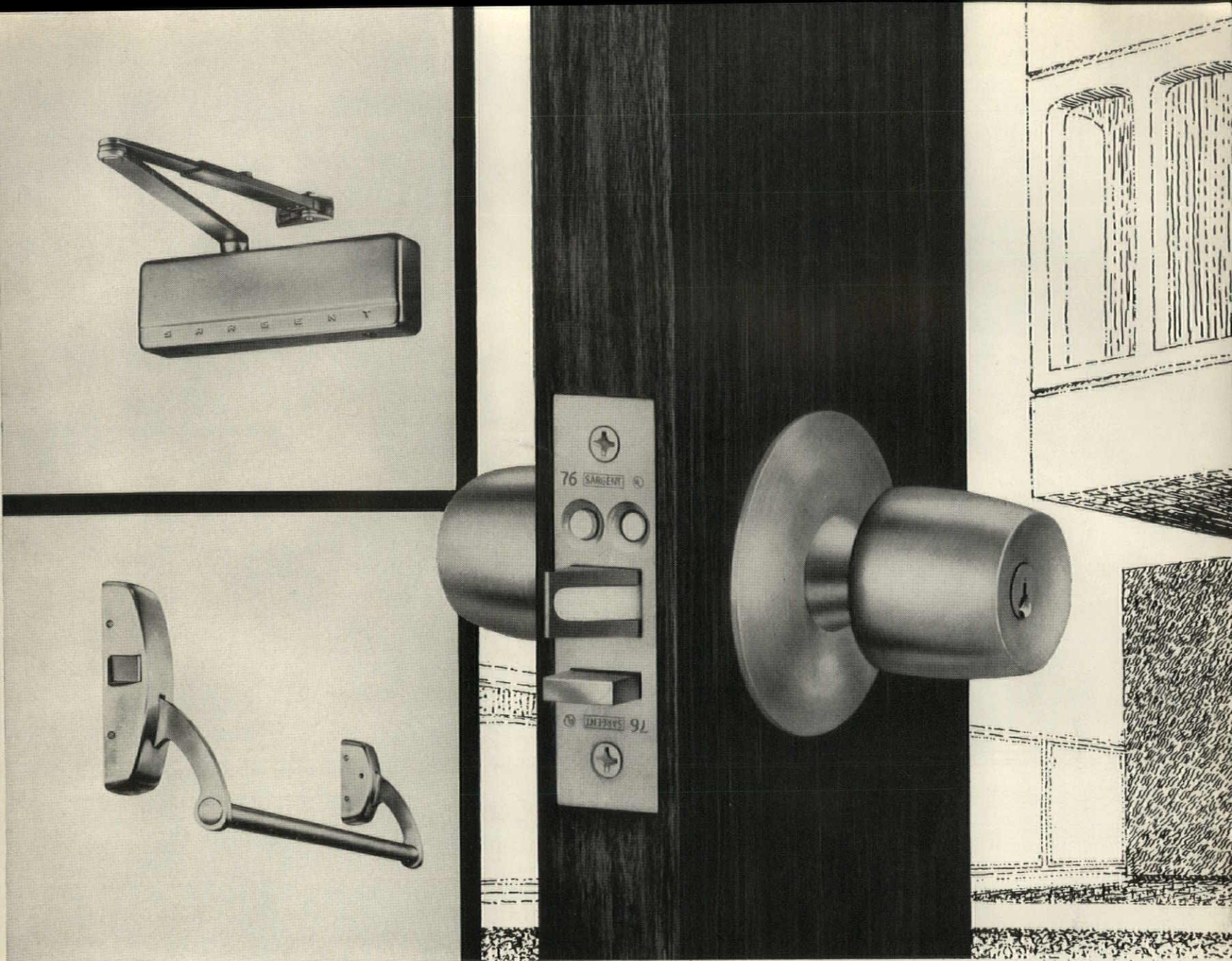
A few of the many audio-visual Group Communications Centers TelePro has created and produced: AUDITORIUMS: North American Aviation, Inc.; Fort Bliss, Texas; University of Pennsylvania Museum; BRIEFING & CONFERENCE ROOMS: Consolidated Edison; Douglas Aircraft & Co., Inc.; National & Aeronautics Space Administration, Cape Canaveral, Florida, Huntsville, Alabama, Houston, Texas. MEETING ROOMS: A.T.&T., Chicago; Headquarters, Defense Supply Agency, Cameron Station, Va. CLASSROOMS: Princeton University; University of Texas. BOARD ROOMS: American Airlines; Kansas Power & Light Co.

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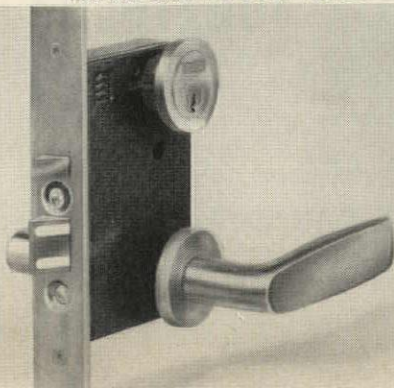
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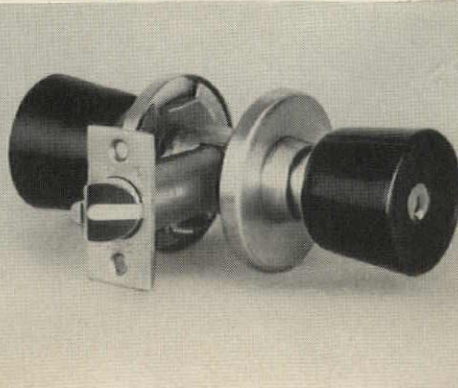
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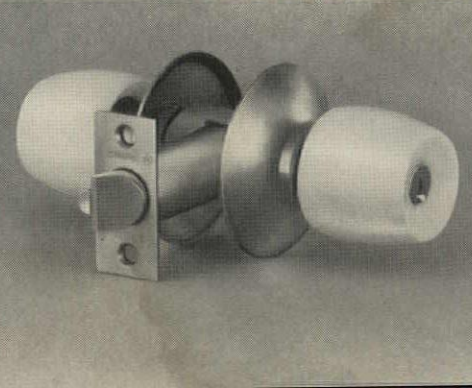
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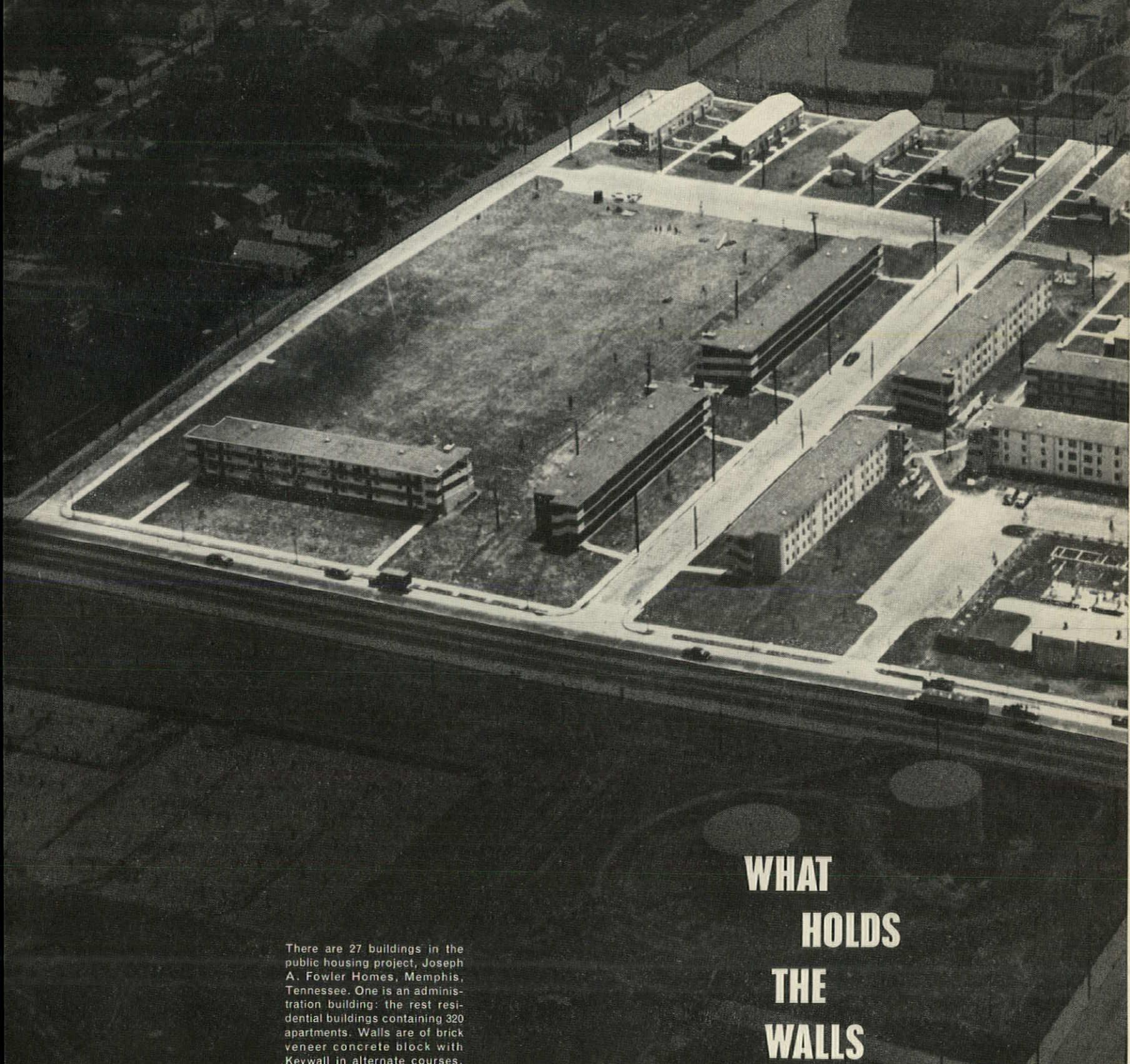


MagnaLock with Delrin® knob



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There are 27 buildings in the public housing project, Joseph A. Fowler Homes, Memphis, Tennessee. One is an administration building; the rest residential buildings containing 320 apartments. Walls are of brick veneer concrete block with Keywall in alternate courses, used to control thermal movement and to serve as a brick tie. Interior walls are of rock lath plaster utilizing Keycorner and Keystrip as reinforcement.

ARCHITECT:
Charles S. Peete & Associates, Memphis

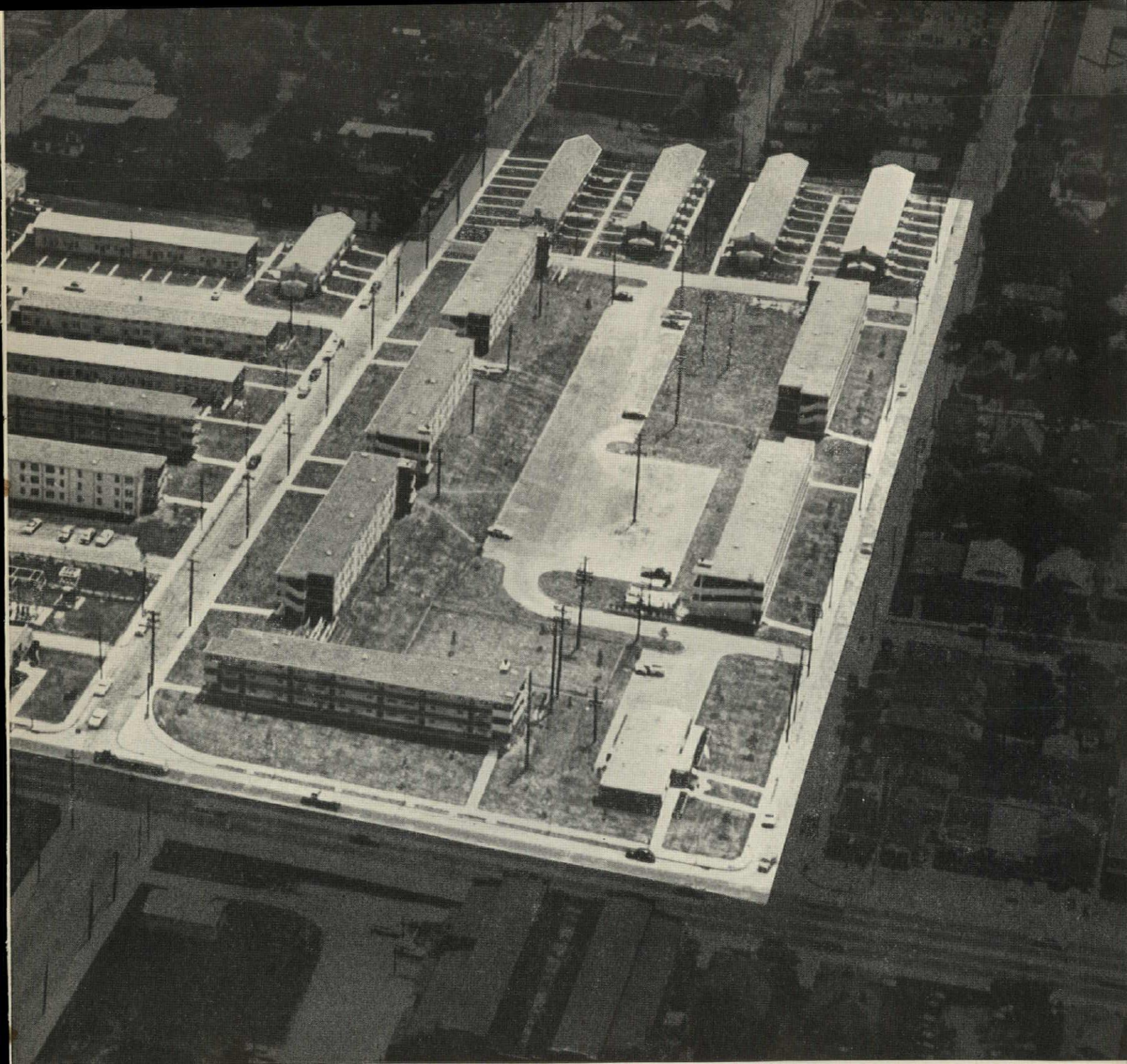
GENERAL CONTRACTOR:
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of Atlanta, Georgia

MASONRY CONTRACTOR:
Memphis Masonry Company, Memphis

PLASTERING CONTRACTOR:
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WALLS
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HOMES
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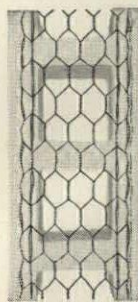
(what else?)

It's a coincidence you should ask about the advantages of Keywall. You can see from the tight pattern that it gives you more mortar locks with block (and/or brick).

Which in turn controls shrinkage and thermal movement better, resulting in greater crack resistance.

And because Keywall comes in rolls, masons lay Keywall in place more easily and quickly.

You might think that you would have to pay more for a masonry reinforcement with such advantages. Not so.

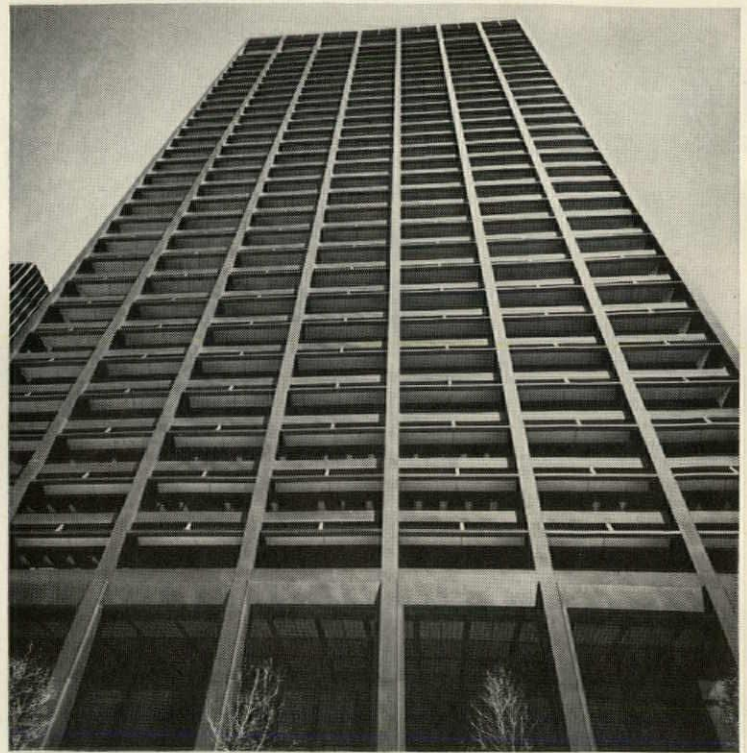


MORE LOCKS TO THE BLOCK with Keywall . . . because of the tight-woven pattern, it is impossible for any one strand of Keywall to be subject to the strain of more than two square inches of a block's thermal movement or shrinkage. By dividing the strain into such small segments, Keywall provides greater crack resistance.

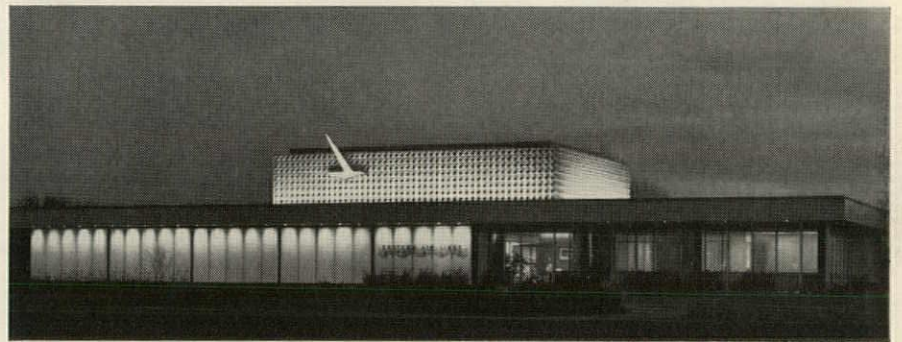
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International Building: San Francisco, California. Architect-Engineer: Anshen and Allen. General Contractor: Dinwiddie Construction Company. Windows: Kawneer Sealair Windows.



Tennessee Building: Houston, Texas. Architect-Engineer: Skidmore, Owings and Merrill, San Francisco. General Contractor: W. S. Bellows Construction Corporation, Houston. Curtain Wall System: Custom cladding with integrated aluminum sunshade and entire exterior in anodic hard-color aluminum.

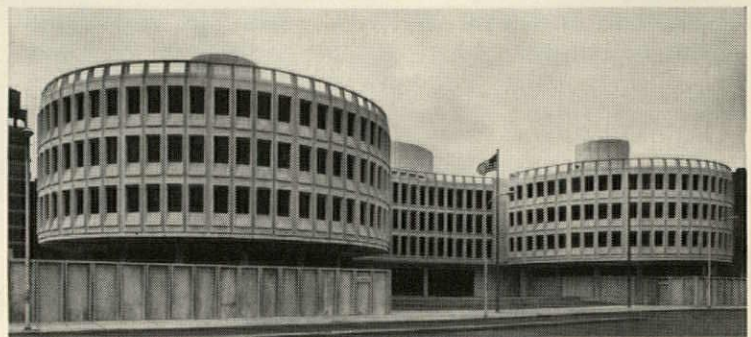


Eastern Airlines Building: Charlotte, North Carolina. Architect: J. N. Pease and Company, Inc. Curtain Wall System: Standard Kawneer Zipperwall Curtainwall System combining aluminum and neoprene gasket design. Dealer: Pritchard Glass and Paint Company.

Park Central Shopping Center: Phoenix, Arizona. Architect: Welton Becket and Associates, Los Angeles, California. Store Front: Kawneer Narrow Stile 190 entrance package. Dealer: Southwestern Glass and Millwork Co.



Police Academy Building: Philadelphia, Pennsylvania. Architect-Engineer: Geddes, Brecher, Qualls and Cunningham. General Contractor: Sovereign Construction Company Ltd. Custom Curtain-Wall: Schokbeton pre-cast.



James White Memorial Civic Auditorium and Coliseum, Knoxville, Tennessee. Architect: Painter, Weeks, McCarty-Morton & Sweetser. Curtain Wall System: Kawneer 3000 Series plus 80 Kawneer Doors. Kawneer Dealer: Standard Glass and Supply Company.

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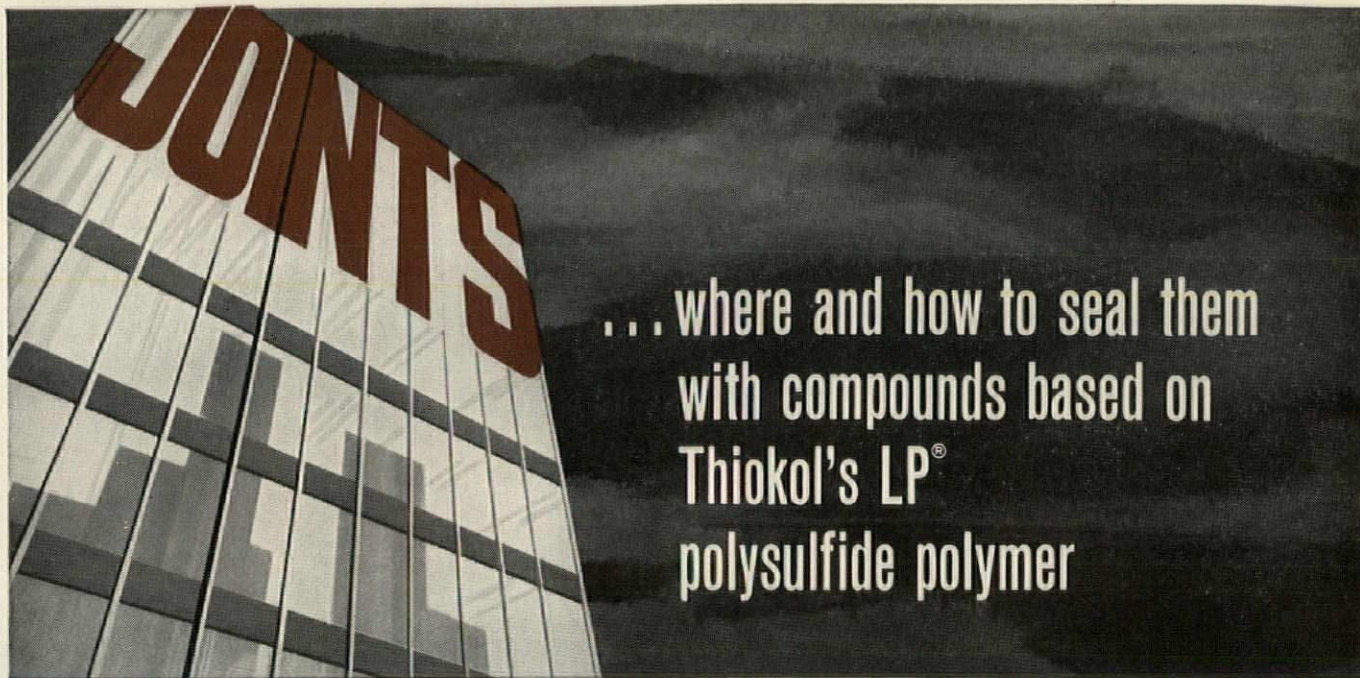


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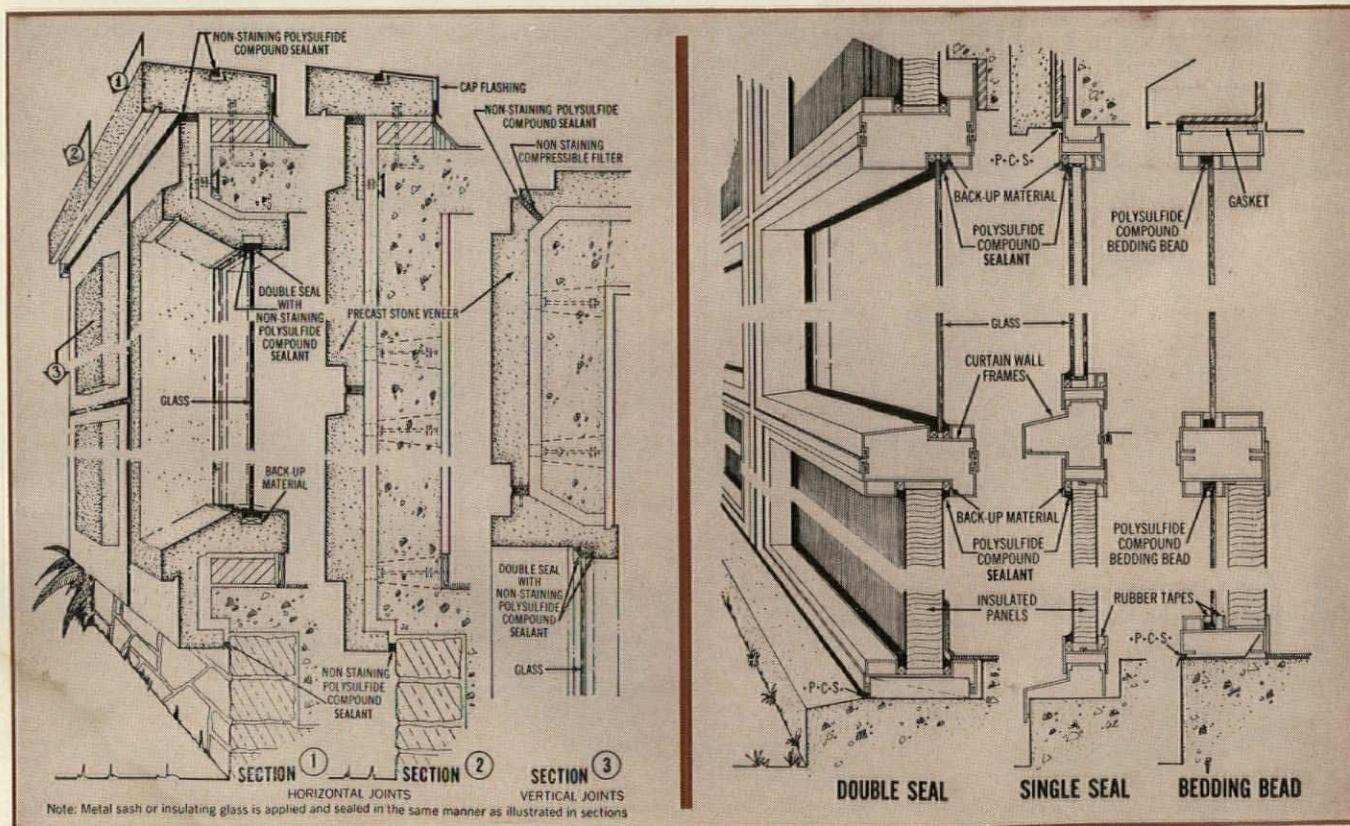
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STOCK SCHOOL PLANS

Forum: Congratulations on your strong editorial regarding stock school plans ("Rocky Beats a Dead Horse," Nov. '63). You are doing a great service to education as well as to architecture.

Birmingham, Mich.

LINN SMITH
Architect

Forum: I was upset to read your negative editorial on stock school plans. In our business of manufacturing prefabricated buildings, the only hope for survival lies in standardization and repetition.

In the last ten years I have devoted much of my nonbusiness time to various school building committees. Despite the fact that schools repeatedly call for the same kind of spaces and similar facilities, new buildings end up full of similar kinds of defects—in most cases due to the "custom" approach.

How can we hope to improve buildings as we build new ones, unless we repeat and refine much of what we have done before? It is conceivable that a well-done stock plan system could provide the basis for such repetition and refinement without the objectionable type of repetition that we all fear.

Concord, Mass.

JOHN R. BEMIS
President
Acorn Structures Inc.

■ It is conceivable, and FORUM would welcome an intelligent approach to prefabrication in school architecture. The Albany approach is not it—ED.

Forum: The real problem with the New York stock school plans is the inherent phenomenon of collectivization. Rockefeller proposes that the omnipotent state determine the proper way to build a school.

Los Angeles

GILBERT DURAND
President
Durand Door Supply, Inc.

PAN AM BUILDING

Forum: Congratulations on "The Lost New York" (Nov. '63). It is unfortunate that apparently little can be done about what is happening to many central business districts.

Grand Rapids

KENNETH C. WELCH
Architect

Forum: You mentioned Whitney Warren as "the" architect for Grand Central Terminal. The firm of Reed & Stem of St. Paul, who won a competition for their design, should get joint credit. William K. Vanderbilt, Chairman of the New York Central Corporation, forced Reed & Stem into a partnership with Warren & Wetmore, with Charles Reed as head of the joint firm, the Associated Architects.

In 1911 Reed died. Warren & Wetmore severed connections with the Associated Architects. When Grand Central was opened in 1913, it was presented as Warren's work.

On behalf of Reed's estate, Allen Stem sued Warren & Wetmore. In 1922 Warren & Wetmore were ordered to pay almost

\$400,000 to Stem and to Reed's estate.

Warren unquestionably contributed to the excellence of the design, especially the exterior, with its low, monumental effect. The station plan, however, with its ramps and approaches, is the work of the seldom-mentioned Reed & Stem.

Dallas

ARDERY V. DEFONDS
Architect

TRANSPORTATION AND THE CITY

Forum: "Transportation and the City" (Oct. '63) is exciting, absorbing and heartening. I would like to reproduce part of it in *Design* magazine.

London

DENNIS CHEETHAM
News Editor

Forum: It does no service to ignore the fact that many leading highway engineers are very much a part and partner of the "urban design profession." In arriving at urban freeway planning decisions, some highway engineers may well be out of their depths. But many will be able to help in fighting for the preservation of natural beauty and historical landmarks, and in urging local governments and architects to develop comprehensive plans.

Jamaica, N.Y.

HERMAN A. SINGER
Engineer

Forum: We commend your excellent presentation, "Transportation and the City." It stated, however, that rapid transit riding had declined 25 per cent in the last decade, and implied that commuter rail travel had "dropped more than 80 per cent." Statistics of the American Transit Association show that urban rapid transit systems had a decline of only 19.4 per cent in passengers—in the 1950-62 period. Furthermore, statistics of the Association of American Railroads show that riding on commuter railroads declined only 30 per cent—not 80 per cent.

Chicago

WALTER J. MCCARTER
President

Institute for Rapid Transit

■ FORUM erred in citing figures for a decade; they are actually for 1940-1960. However, individual city experiences are, as the story indicated, more meaningful than overall figures published by advocates of one mode or the other—ED.

Forum: "Transportation and the City" is a great contribution. We must have freeways in our central cities and we must have good urban design. You have pointed the way to solving the dilemma of the car versus esthetics.

We would like to circulate copies to people working on our downtown development program.

Seattle

PAUL W. SEIBERT
Executive Vice President
Central Association of Seattle

Forum: After five hard-working years, the City of Seattle Planning Commission, in collaboration with the Central Association of Seattle, has developed a comprehensive plan for the central business district.

FORUM's October issue was the first and only announcement of Paul Thiry's carefully guarded solution, previously unknown to the Planning Commission, the Central Association, and the planning professions.

As a member of the Planning Commission, I would greatly appreciate knowing why you published an "unknown" remedy without any reference to the "known" one, critical or otherwise.

Seattle

STEPHEN RICHARDSON
Architect

■ Mr. Thiry's plan was presented as one of several concepts, real and ideal, for the separation of people and vehicles in the city core. FORUM plans an article on Seattle in an early issue, including the plan to which Mr. Richardson refers—ED.

LE CORBUSIER AT HARVARD

Forum: Le Corbusier's Carpenter Center for the Visual Arts at Harvard (Oct. '63) is an important revision of the idea of the place of the visual arts, as other than an historical discipline in the life of a university.

Because the Center is not readily understandable to the casual observer, not to mention those who must depend on the second-hand experience provided by photographs and plans, careful critical comment is a necessity. FORUM's comments were an extreme disappointment; we were treated to the frivolous talk of rather average people [with] untrained minds. It is to be hoped that in the future FORUM will take its role in architectural criticism more seriously.

Princeton University

PETER D. EISENMAN
Assistant Professor of Architecture
MICHAEL GRAVES
Assistant Professor of Architecture
WILLIAM F. SHELLMAN
Associate Professor of Architecture

■ FORUM felt that the case for the Visual Arts Center should be presented as forcefully as the case against it; hence, the "debate." The article was the distillation not of "untrained minds" but of the thoughts of four intelligent architects, two professors of architecture, and one critic.

To some, simplicity of style may be evidence of frivolity (and complexity of style evidence of scholarship). We disagree. FORUM is read by a lot of very bright people who cannot spare the time to unravel doubletalk, so we will continue to present sophisticated ideas in simple terms understandable to laymen as well as scholars—ED.

FANTASTIC BRIDGES

Forum: I consider myself about as progressive as an engineer can be, but the bridges of Paolo Soleri (Oct. '63) cannot pass without comment. The comparison to Maillart's bridges is inappropriate as Maillart achieved his elegance by winning the battle over unnecessary dead weight. Soleri's ponderous bridges would collapse under their own massive weight.

Soleri has my support in trying to shake bridges out of the rut of mundane design,

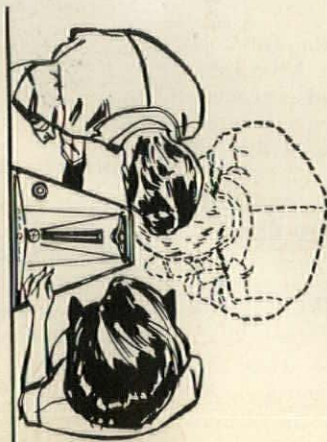
continued on page 49



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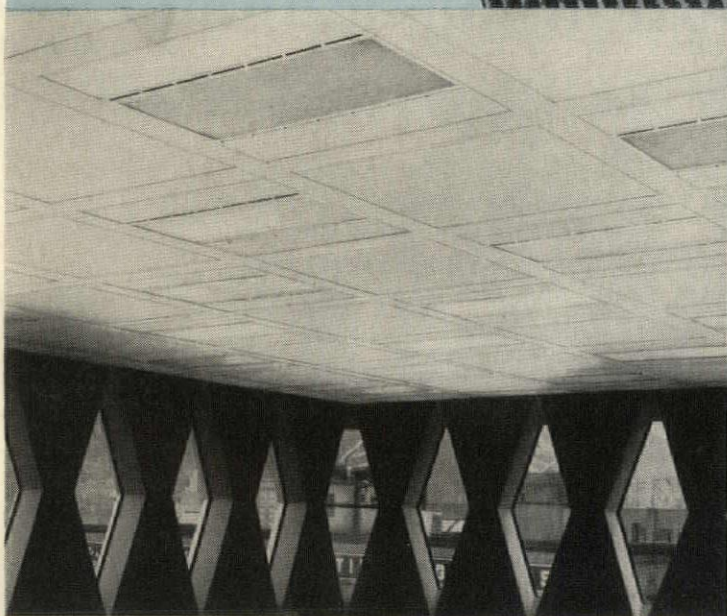
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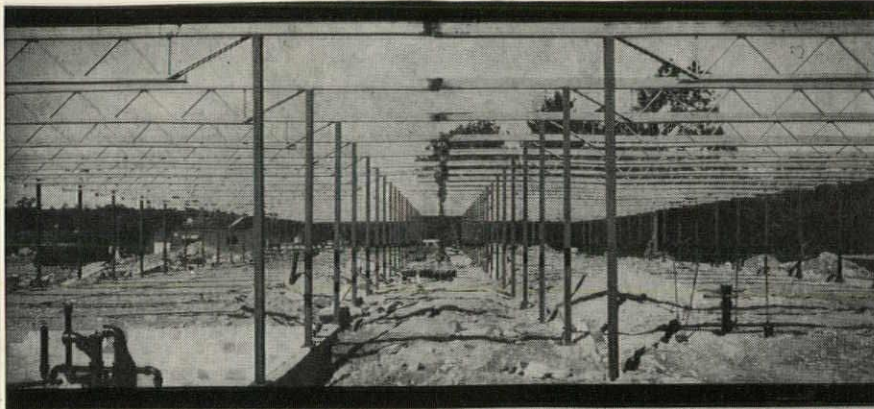


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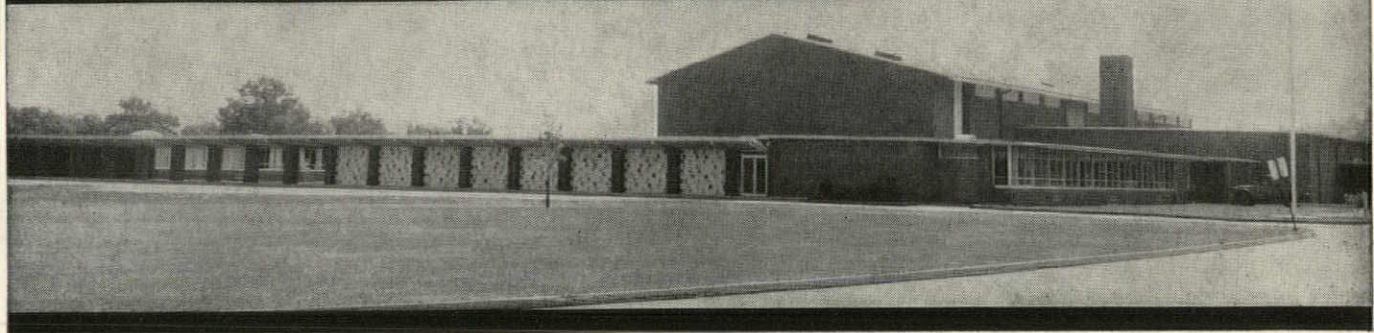
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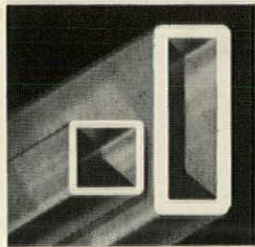
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Van Huffel Monoweld Structural Tubing used in construction of Oakmont Regional High School, Westminster, Mass. Architect: James G. Britton, Greenfield, Mass. General Contractor: Granger Contracting Co., Worcester, Mass. Fabricator: Geo. H. Dean, Inc., Warwick, R. I.



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but it cannot be done by disregarding physical laws. His brutal engineering approach is like trying to reach the moon by blasting off from the left tower of the Chartres Cathedral, just because it looks pretty.

In contrast, Soleri's earlier bridge design of about a decade ago, with its graceful folds over and around the supports, is admirable for both engineering conception and sculptural quality.

University of Virginia **WILLIAM ZUK**
Professor of Civil Engineering

CALIFORNIA'S HOUSING

Forum: You are to be commended both for focusing attention on the need for new approaches in the housing field, and in your choice of Mr. Charles Abrams, and the author of your article, "California: Going, Going . . ." (Sept. '63).

As one of the chief consultants to the Advisory Commission on Housing Problems, which I appointed in 1962, and drafter of the final report, Mr. Abrams did an outstanding job.

The Commission completed what is undoubtedly the most exhaustive profile of California housing ever drawn. It found that conditions have improved over the past decade and that the quality of housing is unequalled in the nation. It is a tribute to both the public and private sectors in the state that the "greatest migration in the history of the world" is being accommodated with a minimum of social and economic upheaval.

The problems Mr. Abrams outlines are being faced up to. I hope that the lessons we are learning will help other areas of the nation in coming to grips with these problems.

EDMUND G. BROWN, Governor
Sacramento State of California

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With Kinnear's power operator you can have any number of convenient locations. Prompt closing Kinnear doors cut loss of heated air in winter and cooled air in the summer. When closed, their interlocking all-metal slat curtain provides extra protection against vandals, intruders, wind, weather and fire.

Extra heavy galvanizing and Kinnear's special paint bond add many extra years of care-free service life, and lowers maintenance costs. Every Kinnear door is REGISTERED to insure availability of genuine Kinnear service and door replacement parts for the life of the building. Write for all the facts on the door that is never obsolete!

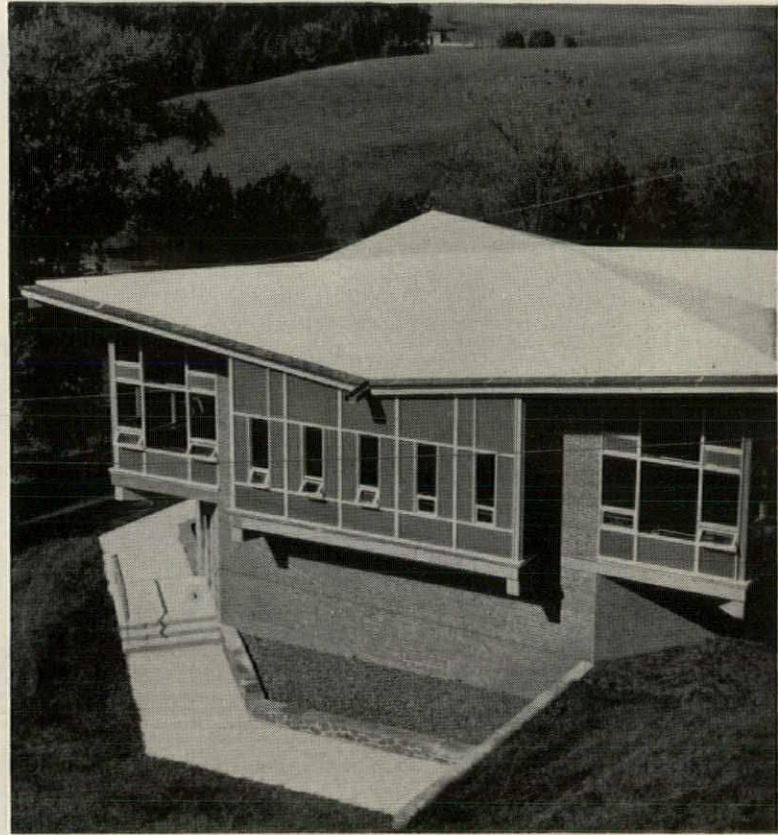
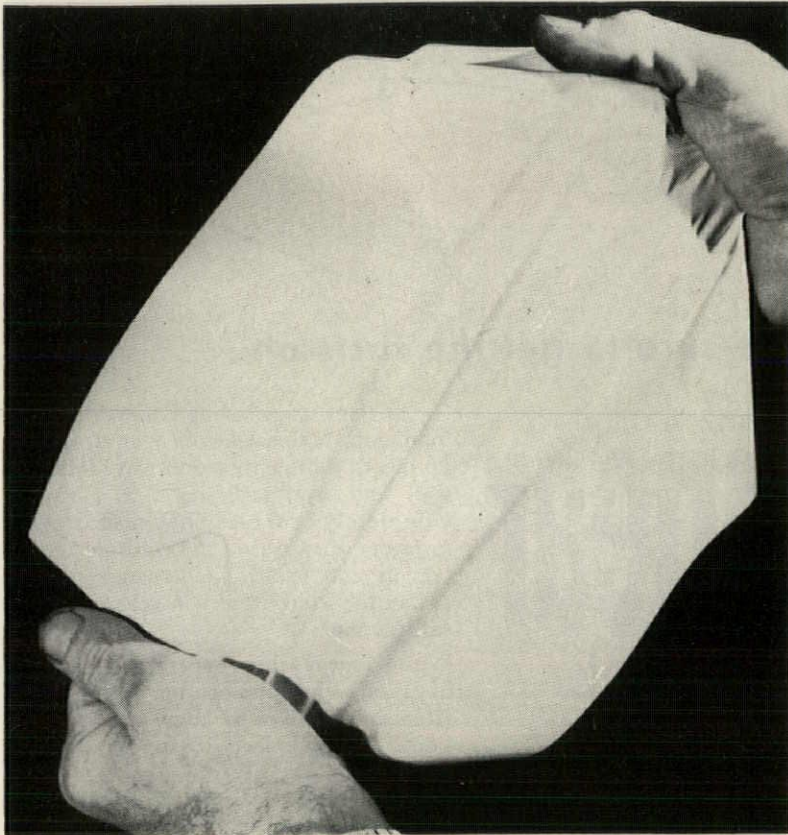
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Unlike a liquid or a spray, TEDLAR® PVF film is a tough, new exterior finish of plastic film. Extensive testing by Du Pont shows it resists chipping, cracking, blistering, peeling, fading and chalking to a remarkable degree.

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A surface of TEDLAR gives long-term protection without refinishing. How long is long-term? We frankly don't know because we haven't been able to wear it out yet. But, properly bonded to a stable material, we predict TEDLAR will last up to 25 years . . . perhaps even longer.

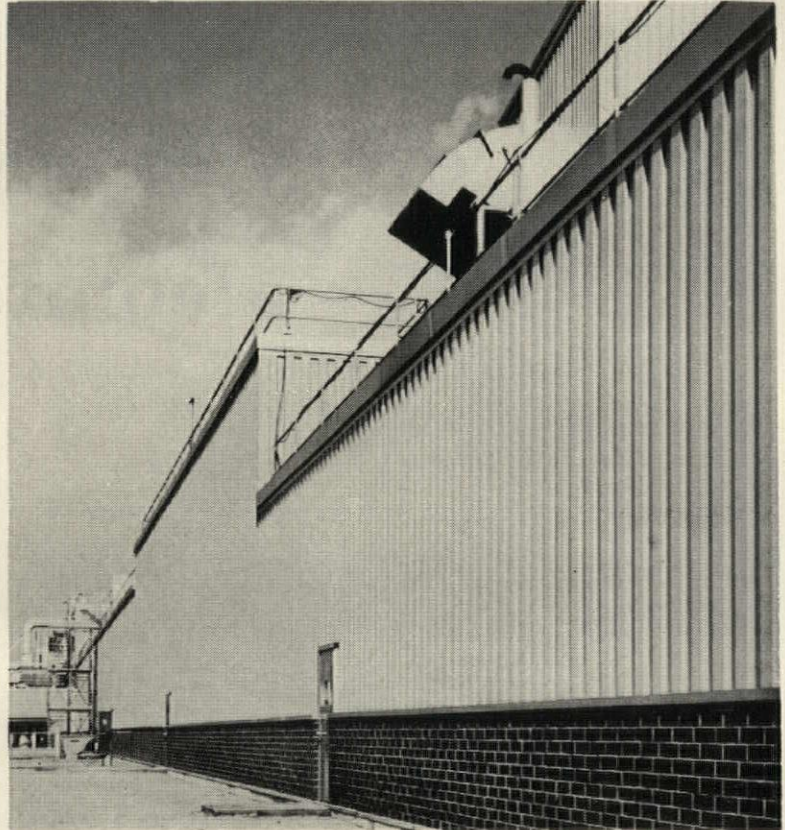
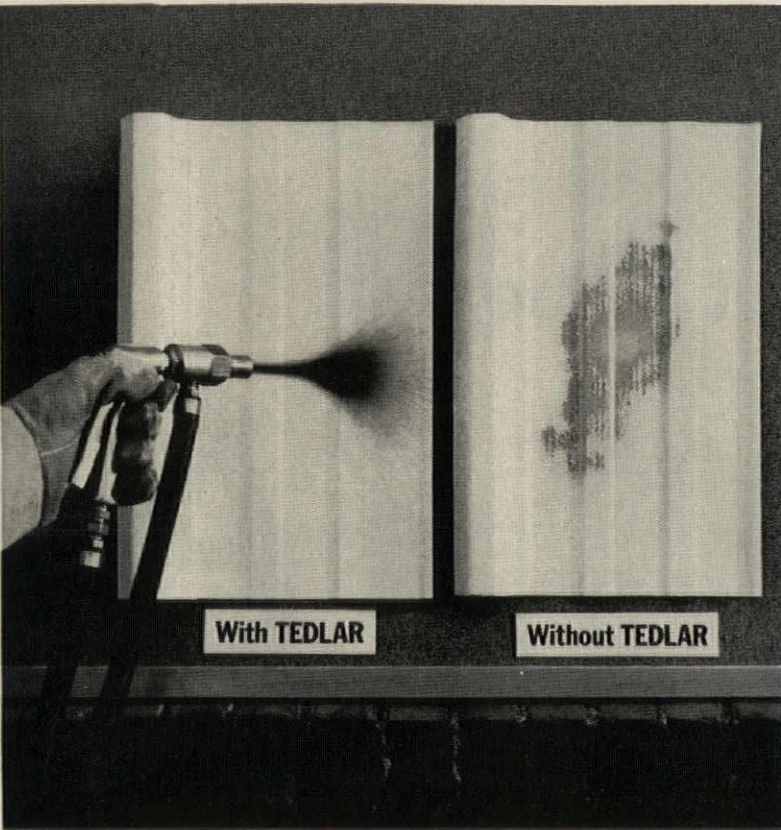
Surface any shape roof

This school library has a built-up roof containing only two plies: a base sheet plus a roofing membrane (Ruberoid's T/NA-200) surfaced with TEDLAR. Applied with conventional techniques, roofing surfaced with TEDLAR will cover any shape from folded plate to compound curves.

Because TEDLAR retains its original high reflectivity, air-conditioning loads are reduced.

Whether the climate is drenched with humidity or baked dry, TEDLAR lives a long and beautiful life.

siding looking new for up to 25 years.



Sandblasting tests prove durability

The siding on the left, surfaced with TEDLAR, was subjected to a punishing sandblasting test—and came through unharmed. The same test ripped apart the conventional finish on the other siding. This durability of TEDLAR makes it virtually impervious to heat, cold and ultraviolet light. Weather, good or bad, doesn't affect it.

No ordinary hazard—like rust, tars, acids, alkalis—will harm TEDLAR, either. This finish, available in a range of colors, is perfectly smooth, with no pinholes to let in moisture. Atmospheric corrosion can't harm it. And howling sandstorms may leave a layer of dust, but that's all.

Stays new-looking without refinishing

These building panels surfaced with TEDLAR will retain their original appearance for up to 25 years or more. Over the long run, TEDLAR, with its unusual durability, is probably the most economical finish available for exteriors.

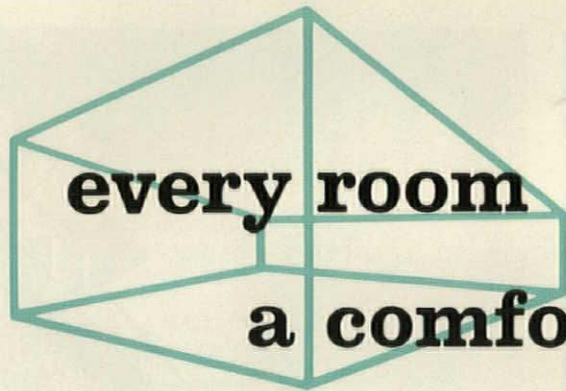
Already many building products are surfaced with TEDLAR. Architectural panels such as those above are available from Butler Manufacturing Co. and Elwin G. Smith Co. Other products include roofing, insulation jacketing, trims and accessories. TEDLAR can be bonded to aluminum and other metals, plywood, asbestos-cement, wood and reinforced plastics.

For a list of these products or any other information about TEDLAR, write the Du Pont Co., Film Dept., Building Materials Sales Division, Box 564B, Wilmington, Delaware 19898.

*Du Pont registered trademark

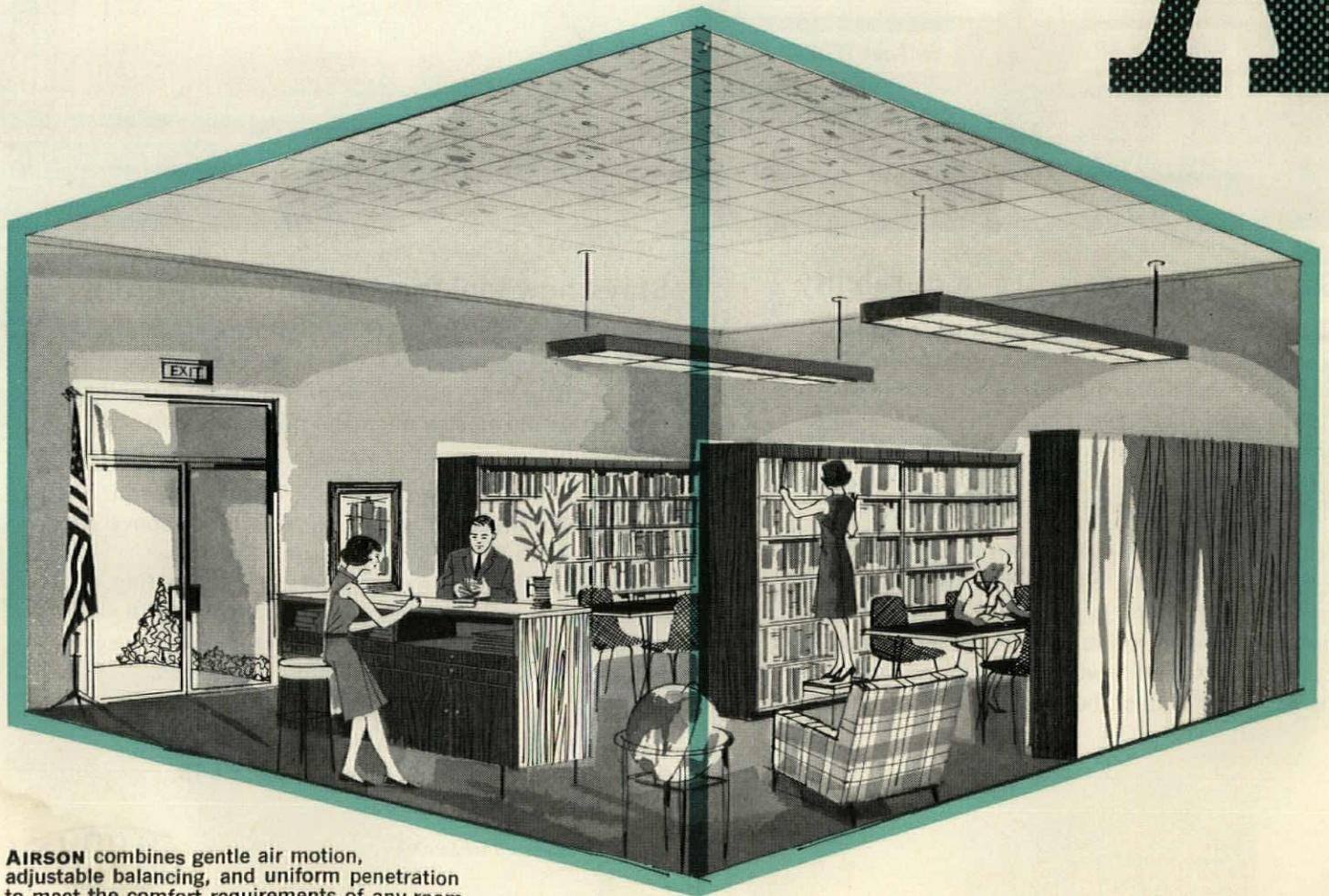
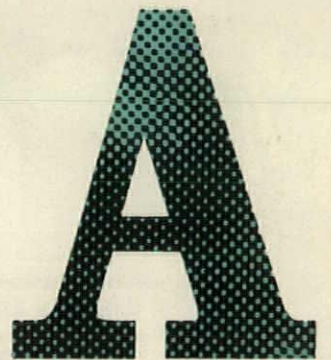


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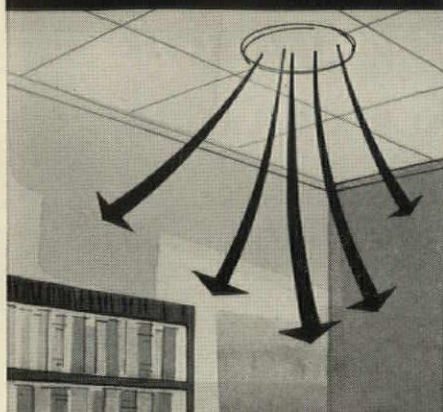
every room

a comfort cube...

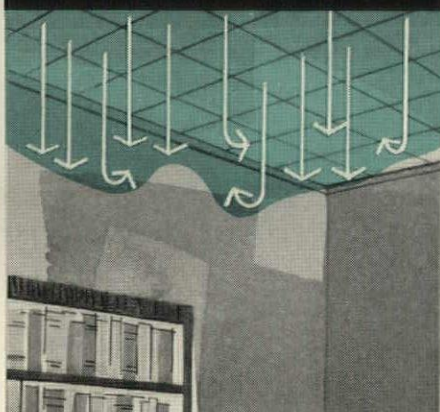


AIRSON combines gentle air motion, adjustable balancing, and uniform penetration to meet the comfort requirements of any room —at any level.

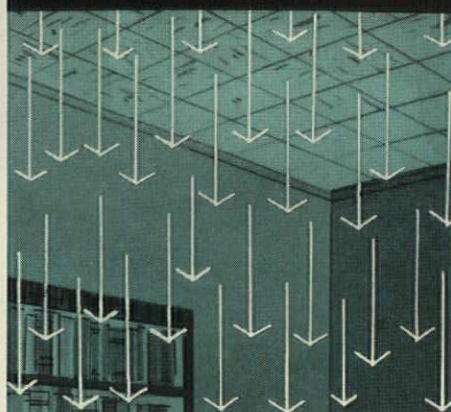
NO DRAFTY FLOORS which can cause hot spots, cold spots, and stale air pockets.



NO SHALLOW DUMPING of air into a room, resulting in ventilation without penetration.



AIRSON-AIR WHERE YOU WANT IT: wall to wall and ceiling to breathing level.



AIRSON*

AIR DISTRIBUTION SYSTEM

controls air penetration

For true room comfort, heated or cooled air has to get down to the people—and that takes effective air *penetration*. The ceiling system that assures best air penetration—produces best air motion†—is the AIRSON Air Distribution System.

AIRSON is a suspended ceiling of ACOUSTONE* Mineral Acoustical Tile, through which heated or cooled air moves under pressure from the plenum into the room below. Each tile, with its scientifically shaped openings, gently pressures air down—all across the room—at exactly the right velocity to penetrate down to living level, down to where the people are.

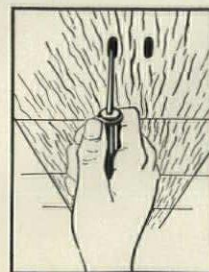
And this penetration is room-wide, uniform, under complete control. No drafts to cause hot spots or cold spots. No stratified air. The room becomes a

solid "comfort cube" from wall to wall and from ceiling to floor—from season to season.

Balancing an added advantage

To custom-fit AIRSON to each installation, adjustable "dampers" on the back of each tile permit the balancing of air motion both during and after installation. Thus, AIRSON meets not only individual needs, but also changing requirements.

To check the facts on AIRSON, see your U.S.G. Architect Service Representative; or write Dept. AF-41, 101 South Wacker Drive, Chicago 6, Illinois.



†Room comfort requires control of three elements: temperature, humidity, and air motion.—ASHRAE GUIDE

*T.M. Reg. U.S. Pat. Off.

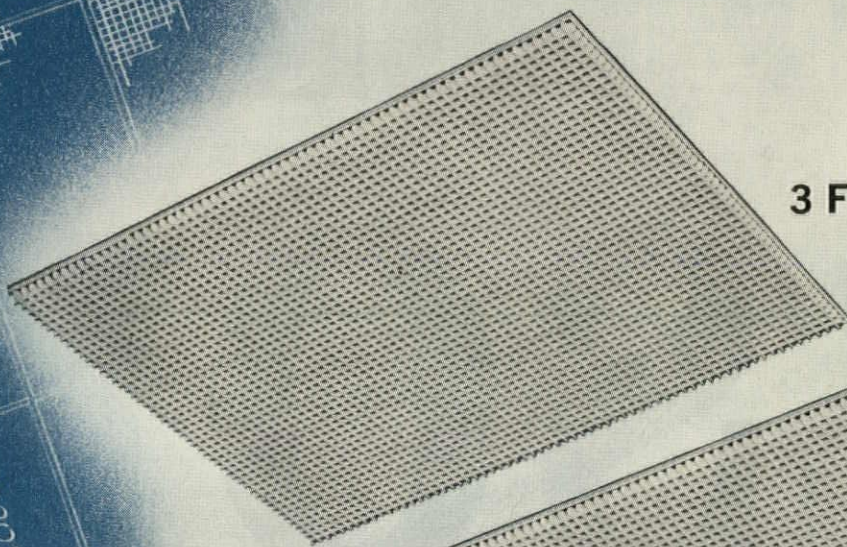
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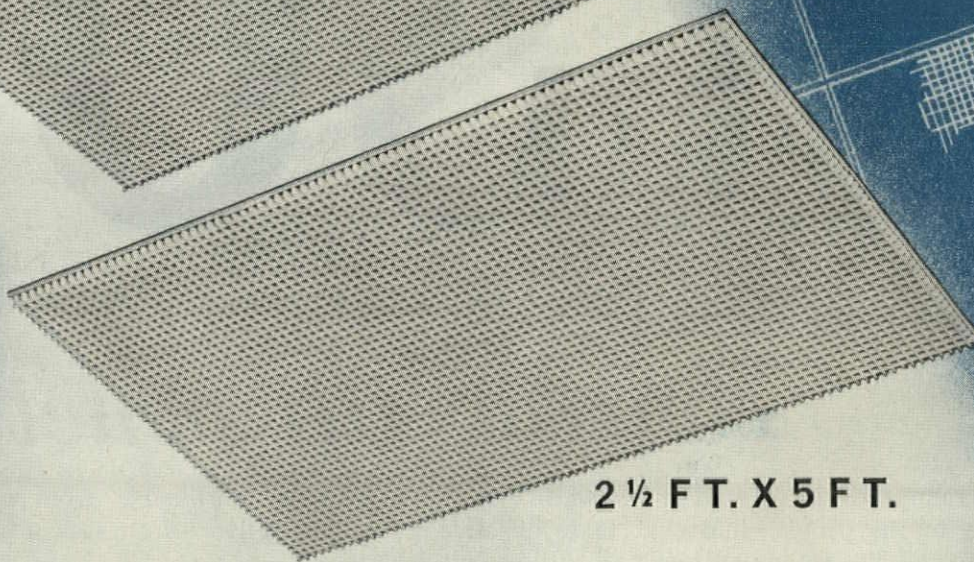
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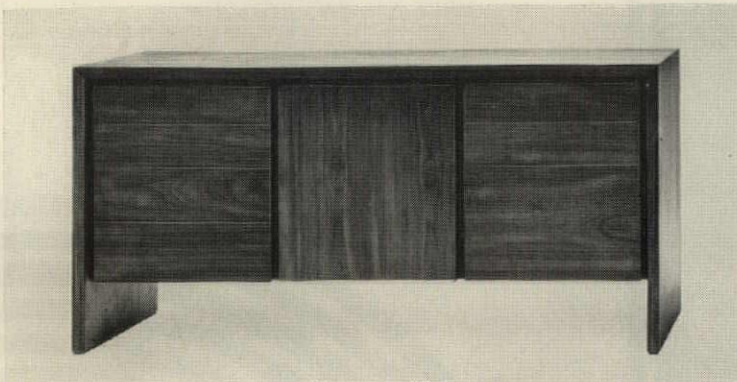
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1



2



3



4



5



6



7

1. MODULAR CREDENZA. Three sections (out of a possible eight) are used together to form a 5-foot-long office cabinet. Lehigh Furniture Corp., New York, manufactures the units in oiled walnut, rosewood and teak. The units shown list for \$576 in oiled walnut, with costs slightly higher for other woods.

2, 3. SIDE CHAIRS. Nanna Ditzel is the designer of these two chairs imported from Denmark by George Tanier Inc. of New York. The stack chair (2) has chromium-plated legs and costs \$70 list

in black-varnished beech. The armchair (3) has a cane seat and is available in teak for \$107 or in oak for \$100, both list prices.

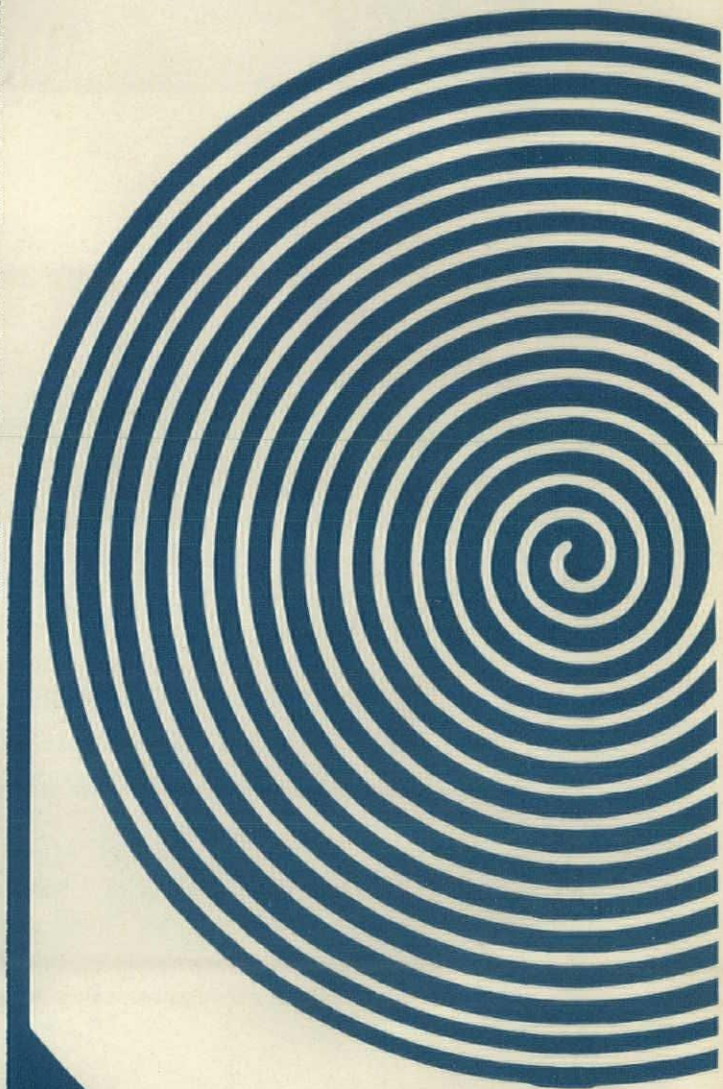
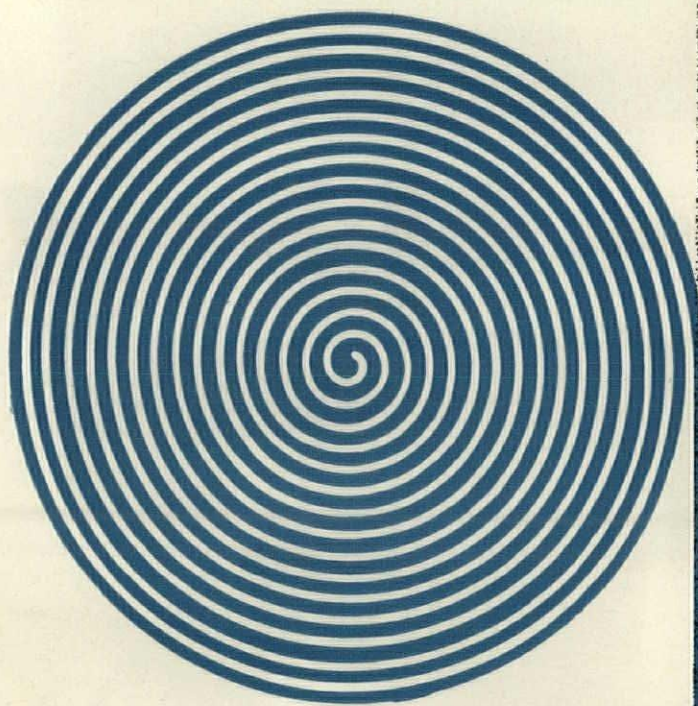
4. LOUNGE SEATING. A luxurious, 80-inch-long sofa boasting sloping back cushions is offered by Robert Benjamin Inc., New York. A Norman Cherner design, it lists for \$564 with customer's material, with additional charge for vinyl or leather. The coffee table is boat-shaped, with a wood base. It is available with walnut, plastic or travertine top, with list costs starting at \$146.

5. GLASS FIBER PLANTER. William Paul Taylor and Architectural Fiberglass, Los Angeles, have collaborated to make glass-fiber-reinforced plastic ideal for planting (and perching). The planter can be used indoors or out, weighs 55 pounds, and costs \$165 net. Eleven colors plus textured finishes are available.

6. AUDITORIUM SEATING. Self-rising seats are a feature of the auditorium seating designed by Esko Pajames and imported from Finland by International Contract Furnishings Inc., New York. The

chair has foam upholstery, with an enameled or chrome-plated frame. Approximate net cost in muslin is \$60 per unit.

7. PEDESTAL SET. Chrome pedestals hold up the chair and table made by the I. V. Chair Co. of Brooklyn. The chair is 32 inches high; the shell is padded with urethane foam and covered with vinyl or fabric. List cost: \$76 in vinyl; \$84 in fabric. The table is available in dining and cocktail heights, with round or square plastic laminate tops. List cost for both heights: \$111. END



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This unique new Hauserman product, Double-Wall, is the first metal movable wall system that can be purchased at only a fraction more than the least expensive space divider. ■ The key to Double-Wall's exceptional low cost is in production standardization and the elimination of costly engineering. Standard components are shipped to the job where they are easily adapted by Hauserman-trained installation experts to meet any building requirement. On-site fitting and finishing allows last minute layout and color changes, permits earlier occupancy for earlier return on investment. ■ No compromise has been made in Double-Wall's appearance or performance. It provides sound control (43 db STC), movability, ease of wiring, and utility access. Its components are 100% re-usable. And it offers trim, handsome appearance, simply maintained, only possible with a metal wall surface. ■ Double-Wall integrates fully with all other Hauserman movable wall systems. Installation and subsequent service of your total interior are guaranteed under our Hausermanaged single-contract responsibility. Never before has a company offered such a flexible, economically practical concept for interior space division. And new Hauserman Co-ordinator Double-Wall is included in the exclusive Hauserman Lease-Wall plan.



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Purpose of the PCI Annual Awards program is to recognize creative design using prestressed concrete.

Any type of structure may be entered no matter what its size or cost. Entries will be judged on their contribution to the advancement of prestressed concrete. Originality demonstrated in architectural and/or engineering design involving applications or techniques of assembly, arrangement or use will form the basis of judgement. Any prestressed concrete project completed within the last three years, or substantially completed by March 31, 1964 is qualified for entry. Award Jurors will be nationally recognized architects and engineers.

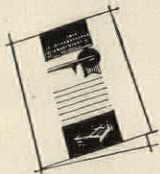
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First Award winner will be presented with a plaque testifying to the value of his contribution. An all expense paid trip for two will be provided so the winner may attend the PCI Convention in Washington, D.C., September 20 to 25 during which award ceremonies will be held. Other distinguished entries will be recognized with *Award of Merit* plaques.

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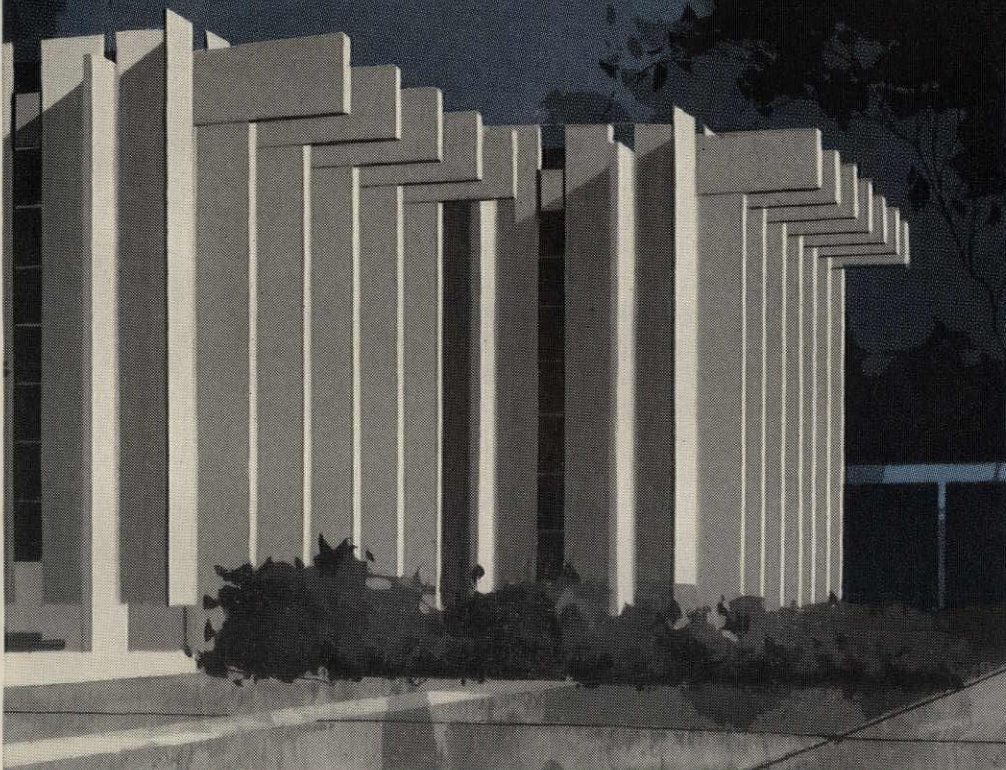
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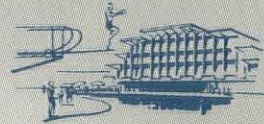
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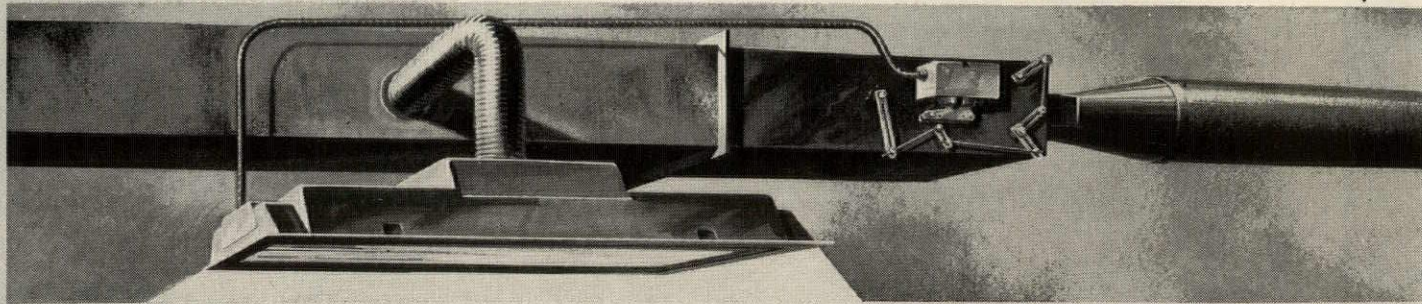
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Now you can make light-generated heat work for you to reduce space cooling loads, increase lighting efficiency, and simplify system design and installation.

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Where can it be applied? In practically any new building or remodeling job where zones require year around cooling.

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The Heat-of-Light system eliminates hot air ducts, reheat coils and piping. It requires less insulation. System design and installation are simplified.

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Complete information on the feasibility of this new system for your applications is available from the Barber-Colman field office nearest you.



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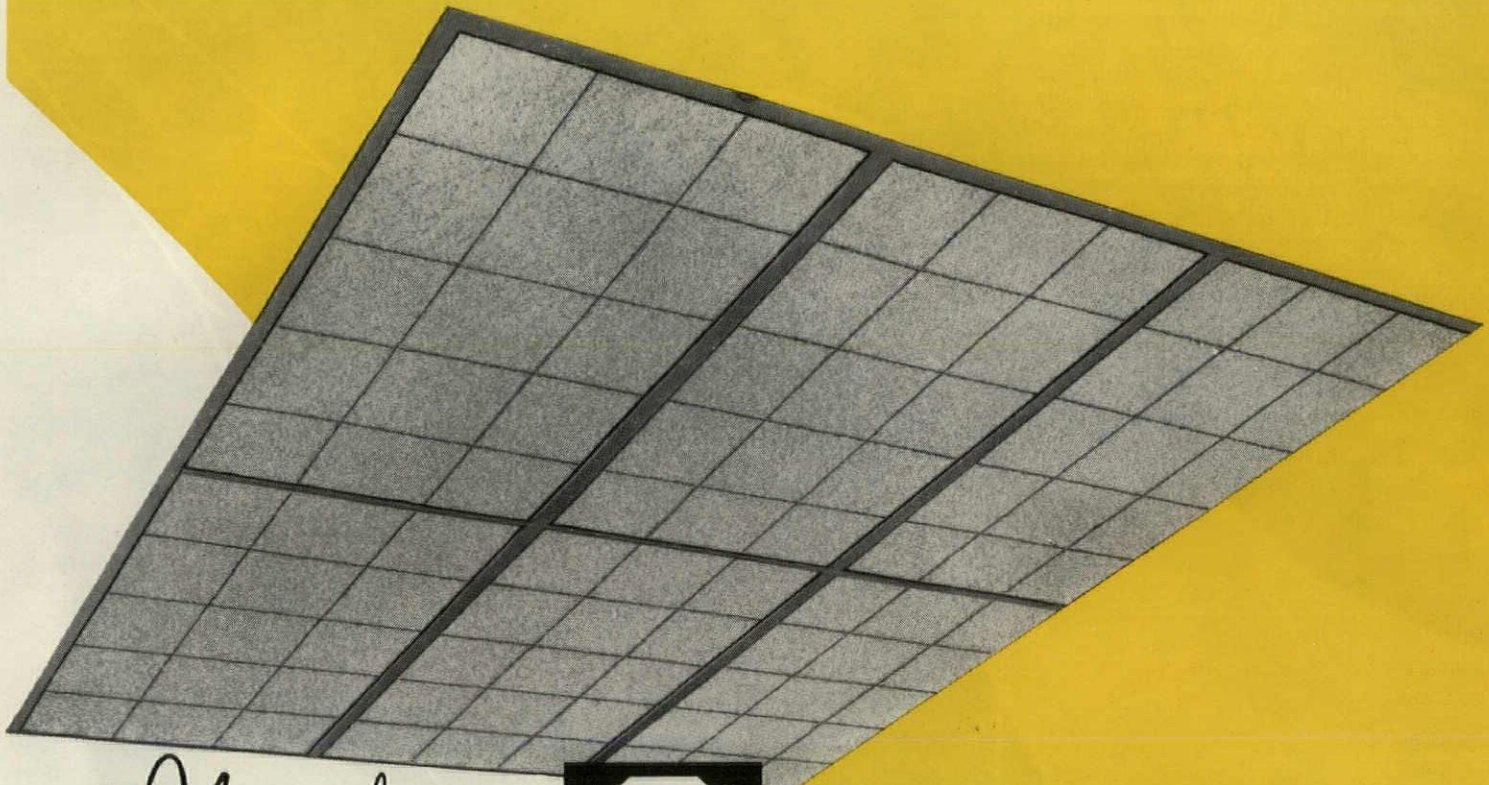
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Education and architecture. Half a dozen major U.S. schools of architecture are currently searching for new deans or chairmen. Among them are M.I.T., Columbia, and Michigan. In addition, there are important schools which may be looking for a new head within the next year or two.

Because the education of future architects is a matter of paramount importance to the U.S. as a whole, it seems appropriate to examine how our top schools go about this selection process.

Generally speaking, there are two approaches: Approach No. 1 is to find an architectural "star," a practicing architect old enough to have gained an impressive reputation, but not so old that he might have to retire in less than a dozen years. (If he also happens to be an alumnus, so much the better.)

Approach No. 2 is to find an architect (not necessarily a star) whose principal interest is in education, and who has demonstrated a special aptitude in that field, perhaps at a smaller school.

The ideal candidate, of course, is a star with a passion for education—e.g., a Walter Gropius. Such men, needless to say, are extremely rare.

The star system has certain advantages: for example, stars may tend to attract better students and more donors willing to contribute more money to various school projects. They may also help to attract a better faculty and they are likely to give their school a definite imprint or direction—i.e., their own.

But there are also some serious drawbacks to the star system: most star architects today are very busy in their own practices; the only way a university can snare a busy one is to promise him that he can practice architecture on the side, and that he will be given commissions to build on the campus.

What this means, of course, is that the star becomes a part-time or even an absentee head of his school. And unless he has a first-rate deputy to run things for him, architectural education suffers.

No one is to blame for this: often the star genuinely wants to devote some of his time to education (and may have made considerable sacrifices to accept even a part-time deanship). But he is above all an architect, and probably a very good one. He cannot be expected to sacrifice his career.

Nor can the school be blamed entirely: all higher education depends upon some sort of subsidy, and in a star-oriented society, the school with the flashiest faculty attracts the biggest subsidies and often the best students.

The trouble is, unhappily, that education suffers and suffers badly. For education has nothing to do with star systems or competitions for endowments; education is a serious business. It requires teachers dedicated to (and skilled at) teaching, and programs designed to turn students into professionals capable of dealing with tomorrow's problems—which will differ very radically from those faced by artist-architects skilled at producing exquisite but isolated monuments.

It would be better for all concerned—for students, for faculties, for the country as a whole—if heads of architectural schools were picked not for their glamor, but for their teaching ability and teaching enthusiasm; and if programs were written not in terms of one great man's "style," but in terms of the vast problems—social, technological, economic, as well as esthetic—that are likely to confront the profession in the decades to come.



MOSES BUILDS A FAIR

A preview of New York's extravaganza, including the flavorful words of its creator, an isometric map of its site, and 14 spectacular structures

The New York World's Fair of 1964-65, scheduled to open April 22, will occupy 646 acres, attract 70 million visitors, and will be, according to the management, "the first billion-dollar fair in history." It is being sponsored by a nonprofit corporation headed by Robert Moses, who, in one capacity or another, has built a large share of New York City's major public works of the last four decades.

(Asked recently how the Fair would differ from others, Mr. Moses unhesitatingly replied, "This one will be bigger.")

Theme of the Fair will be "Peace Through Understanding." Its symbol is the Unisphere, a 120-foot diameter spherical frame donated by the United States Steel Corporation.

"As obvious and inescapable a theme as ours should be exempt from controversy, but nothing is, in this vale of argument," said Mr. Moses. "The Unisphere . . . was roundly denounced as insulting to the national and international intelligence, uninspired, dated, trite, corny, ridiculous, and in fact lousy. Aspirational abstract symbols offered as substitutes were caviar to the general . . . and, of course, without any accompanying evidence of financial support.")

The Fair is being built in Flushing Meadow Park, Borough of Queens, which was also the site of the World's Fair of 1939-40. A Design Committee was dissolved in late 1960 after the Fair management decided to reuse the 1939 site plan, and to impose no architectural control.

"We have no master plan except in the sense of a framework fashioned by highways, waters, topography, and the inheritances of the 1939-40 Fair," said Mr. Moses. "We have standards governing construction by exhibitors, but we do not tell them what they can build . . . Greek and Barbarian, traditionalist and modernist, conservative and iconoclast, right wing and left, they all look alike to us.")

Major exhibitors will include the transportation, insurance, entertainment, and utility industries; 24 states; and 28 foreign governments, none from the Communist bloc. Thirty nations boycotted the fair after it was refused the sanction of the Bureau of International Exhibitions.

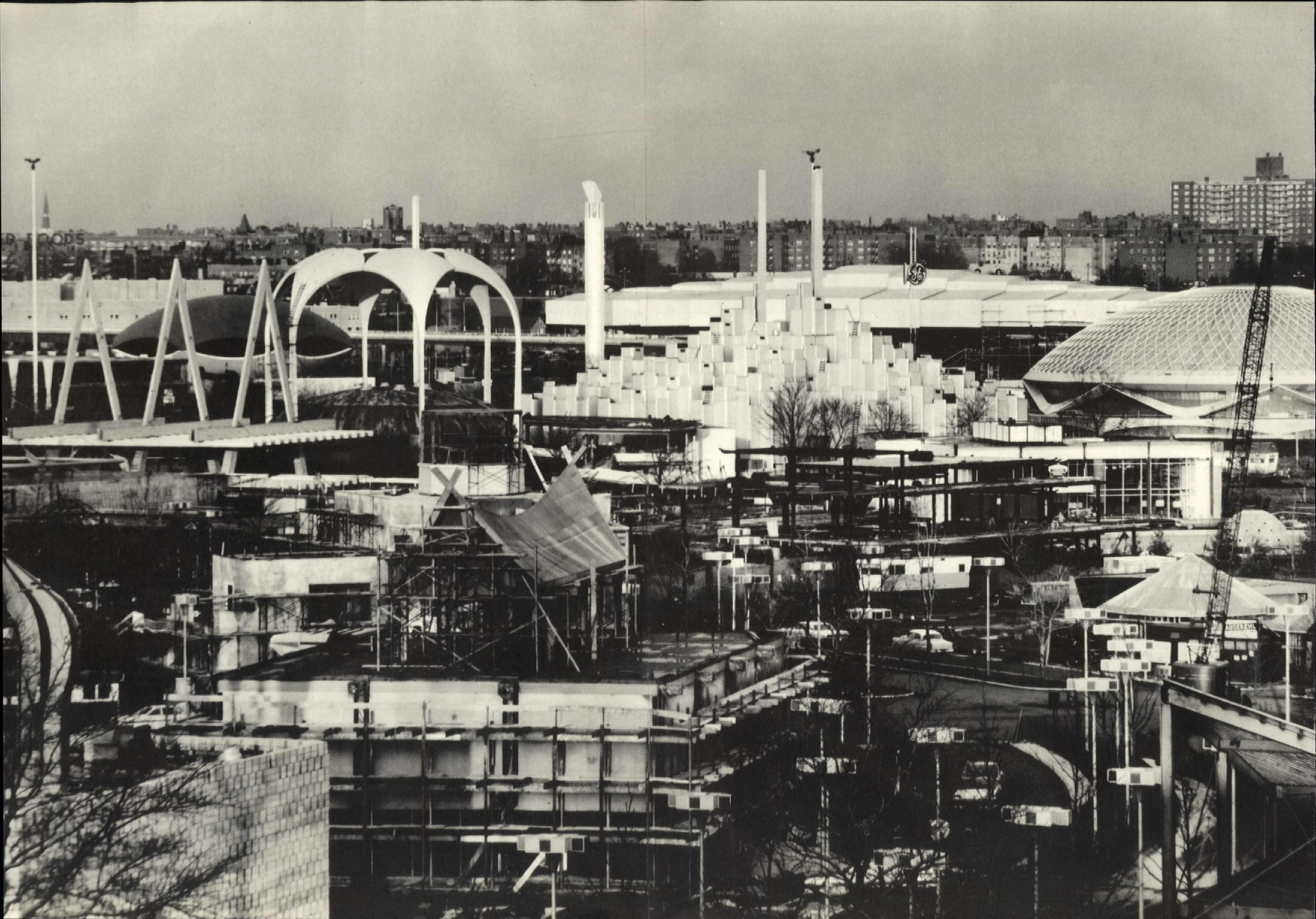
"There are some unfortunate absentees in the exhibit areas, but there is little room left for them in any event, and we must not ignore the demands for landscaping and greenery," said Mr. Moses. As for the BIE, it consists of "three people living obscurely in a dumpy apartment in Paris. The Fair will get along without them.")

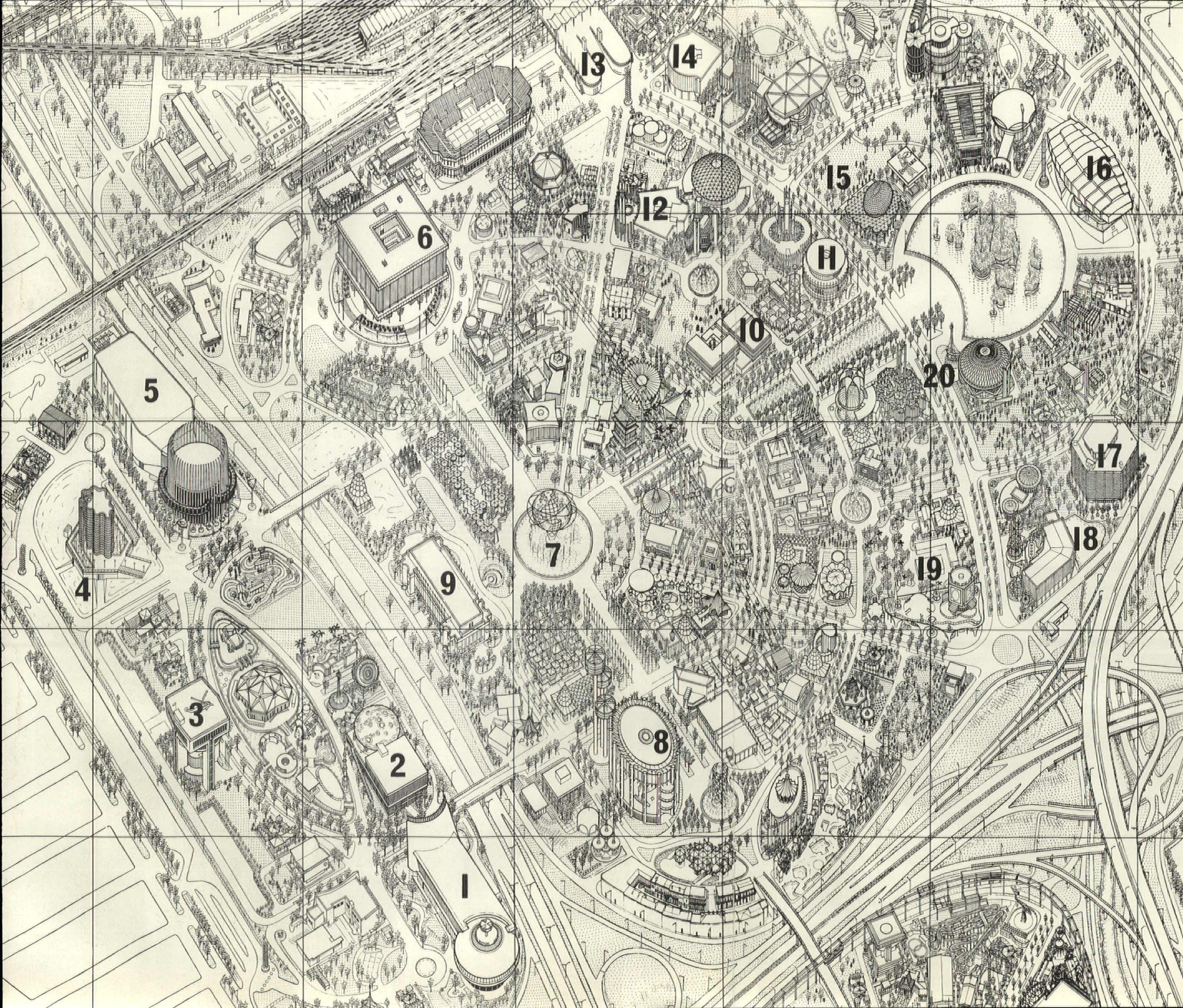
Exhibitors are spending an estimated \$640 million on construction, and the Fair itself, \$58 million. Mayor Robert Wagner has predicted that the Fair will bring \$6 billion worth of business to New York.

"This is not a philanthropic enterprise," said Mr. Moses.)

Building costs at the Fair are ranging between \$30 and \$75 per square foot, including cost of eventual demolition. As of December 1, there were 141 buildings under construction and 15 more about to start. A total of 7,090 workmen were engaged in the race to finish the Fair on time.

"We have reached the stage at which the passerby, sidewalk superintendents, and assorted pundits hear much noise and see what they interpret as signs of confusion and discord," said Mr. Moses. "On the other hand, the conductors detect harmony in the cacophonous roar of construction. The musicians are beginning to play together.")





The Fair's leftover site plan is replete with Beaux Arts axes and radial promenades. It divides the site into five sectors (one, the Lake Amusement Area, is off the bottom of the map).

At lower left, separated from the rest by the Grand Central Parkway, is the Transportation Area. Just above General Motors' huge tail fin (1) is the multiexhibit Transportation and Travel Pavilion (2); to the left is the boat-shaped Chrysler plot; then the Heliport (3), the Hall of Science (4), and Ford Motor Co. (5).

Across the parkway is the Federal and State Area, whose boundary is the axis formed by the U.S. pavilion (6), the Unisphere (7), and the Astral Fountain. The towering oval, off-axis to the left of the fountain, is the New York State pavilion (8). Just above it is the cellular New Jersey pavilion, then the New York City building (9), the only one left from 1939.

In a large arc to the right of the Unisphere is the International Area, composed mainly of smaller structures. The largest, the Spanish pavilion (10), defines this sector's limits.

Finally, there is the big Industrial Area. The block just above Spain is occupied by DuPont's drum (11), Seven-Up's huts, and Coca-Cola's ring. The group to the left of this contains the Protestant Center (12), the three pylons of National Cash Register, RCA's cluster of discs, and the Fair's own geodesic assembly dome.

To the right of the main entrance (13) lie the World of Food (14), the triple towers of the Mormon Church, and the twin parasols of the Festival of Gas. Below, circling the Pool of Industry, are IBM (15), Equitable Life, the Hall of Education, Travelers Insurance, and Bell Telephone (16).

Directly below are the Better Living Building (17) and Pepsi-Cola (18), next to the circles of Schaefer Beer. Across the street is Eastman Kodak (19). Above this, Johnson Wax's suspended disc and the prismatic Tower of Light (20) face General Electric's latticework dome.

The isometric drawing shown here is adapted from the official souvenir map of the Fair, created by Hermann Bollmann of Pictorial Maps for Time Inc. © 1964 Time Inc. All rights reserved. The full map, in color, will be on sale at the fairgrounds this spring.

Unisphere ® presented by U.S. Steel.

THE STRUCTURES BEHIND THE SHAPES

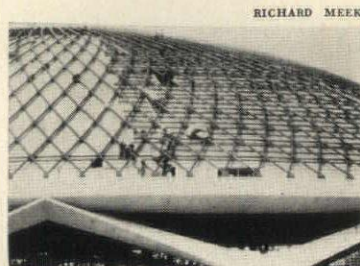
This is the way the Fair looked just before winter's first snow-fall: a startling array of startling shapes amid the clutter of construction.

Behind the shapes are some surprises. A good many have all the plasticity of the age of concrete, yet most are executed in steel (250,000 tons of it) and plaster. One reason is that the Fair, one of the largest single building projects in U. S. history, is being built to be destroyed. Ease of demolition had to be a key factor in structural design.

The shapes, moreover, are not quite as daring inside as their exteriors imply. All but a few are put together in ways that are both conventional and conservative, a setback to the recurrent hope that World's Fairs can be laboratories of building progress.

Fourteen of the exceptions are shown on these and following pages. Some introduce promising new ideas, and some simply show how far today's technology can be pushed in search of spectacle.

The view northeast from atop the New York State pavilion. Left to right: Austria's A-frames, the arched petals of Johnson's Wax, the Tower of Light in front of Bell's huge white "wing," and the General Electric dome. Telephoto for FORUM by Robert Galbraith.



RICHARD MEEK



ROY STEVENS

General Electric, with justifiable pride, has turned its 200 foot dome inside out, putting the light and flexible lamella structure on display (photos above).

Two superimposed layers of steel tubing, formed into identical plane curves 90 feet long, act as the dome's meridians. The upper layer of meridians goes in one direction, the lower in another, and they meet at the top in a circular lantern.

Hung from the meridians are horizontal steel hoops holding steel roof decking (covered with insulation, then plywood, then a continuous silicone rubber membrane). The meridians are attached to the ring girder at the dome's base with a loose "shoe," offsetting incompatible deflections caused by the dome's being under compression and the girder itself under tension.

Supporting the girder at eight points is a series of diagonal pipe columns, 16 inches in diameter, concealed in a thick and sinuous plywood wrapper.

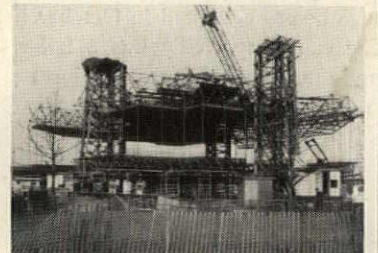
Unit price of the dome was approximately \$1,000 per ton in place. But its extreme lightness—six pounds per square foot—kept the cost of the structure to \$3 per square foot.

The lamella dome concept on which the design is based was developed by Dr. Ferdinand Lederer of Czechoslovakia. Architects: Welton Becket & Associates. Structural engineer: Richard Bradshaw. General contractor: Turner Construction Co.

The National Cash Register pavilion (below) audaciously demonstrates how space frames can encourage flexibility of form and minimize points of support.

The superstructure shoots out irregularly from between three huge pylons which are the only vertical structural elements of any importance. Exposed at the roof and second floor are space grids combining tetrahedrons and octahedrons on equilateral triangular bases, which look as interestingly complex as they sound.

The grid is made of standard steel pipes, 8 feet long on the roof and 4 feet on the second floor, butt-welded to a hollow sphere where they join. An archi-



GEORGE CSERNA

tectural objective was to keep the second-floor grid to a 4-foot depth, so instead of being supported by the pylons it is hung from the roof frame on 63 pieces of solid 2-inch steel.

Computer analysis, extensively used in this design, has indicated that the space frames will have a built-in reserve of strength to resist local overloading.

Architects and engineers: Deeter & Ritchey. General contractor: George A. Fuller Co.

GEORGE CSERNA



At ground level, the New Jersey pavilion is a series of 21 concrete pedestals popping mushroom-like from a reflecting pool. Overhead will be a forest of tubular steel booms 85 feet high, rising in clusters of three from pin-connected universal joints.

A network of cables will connect the tops of the booms and suspend a pyramidal space frame, also of tubular steel, over each pedestal. Vinyl-coated nylon fabric will then be stretched within the roof frames, and the festive, irregular cluster of exhibit huts will be complete.

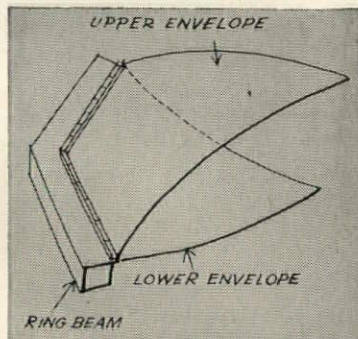
The New Jersey pavilion was the site of the Fair's only construction fatality when nine of the huge booms collapsed in October. The cause reportedly was a failure in materials and/or procedures in the temporary guying system.

Architect: Philip Sheridan Collins. Structural engineer: Norman J. Sollenberger. General contractor: Harold A. Brandt, Inc.

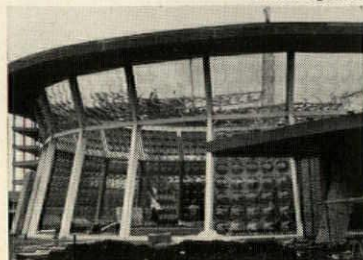
The main elements of the F. & M. Schaefer Brewing Co. pavilion will be two circular structures roofed by inflated plastic envelopes. The envelopes, largest of which will be a record 90 feet in diameter, will be attached by bolts to a compression ring held by the boom-rang-shaped perimeter columns.

A centrifugal blower, operating continuously, will maintain a water gauge pressure of 1½ inches—enough to stabilize the envelopes in hurricane winds and support 14 to 16 inches of snow, according to Birdair Structures, Inc., manufacturer of the roofs. Walls are bubbly plastic panels.

Architects: Eggers & Higgins. Structural engineers: Seelye, Stevenson, Value & Knecht. General contractor: George A. Fuller Co.



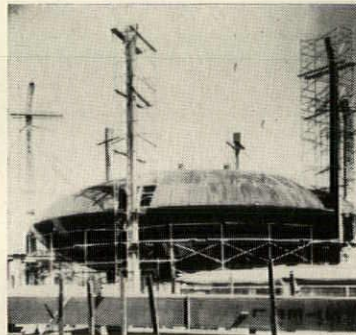
GEORGE CSERNA



S. C. Johnson & Son's clamlike theater is held by six welded steel-plate columns (below), which will continue to a height of 90 feet, flaring into wide petals as they meet overhead.

The shells of a clam are 90-foot diameter domes, the lower one inverted, formed by curved steel ribs joined at an equatorial ring girder. Gusset plates fasten the ribs and girder to the columns, suspending the theater 10 feet above ground.

Architect: Lippincott & Margulies, Inc. Structural engineers: Severud-Elstad-Krueger. General contractor: Turner Construction Co. Steel fabrication and erection: Dreier Steel Co.



RICHARD MEEK

ROBERT CALBRAITH; OFF.: GEORGE CSERNA



International Business Machines' 427,000-cubic-foot egg (above and right) will contain the wizardry of Designer Charles Eames. Visitors will assemble on a 12-tiered "people wall" at ground level, and be hydraulically lifted en masse into the theater. There they will be told the story of information-handling by means of multiple projection screens and a barrage of special lighting and sound effects. Below, in pentagonal theaters and beneath a forest of plastic-canopied steel "trees," graphics, computers, puppets, and other devices will be used to supplement the tale.

The structure of the big ellipsoid also will be part of the show. Its framing consists of four vertical steel rings set 21 feet apart, two of them complete ellipses and two notched to make room for the people wall and its 3-foot-wide flange tracks (a deep plate girder spans the front of this opening). The ends of the egg are elliptical girders framed into the rings, and the shape is completed by steel purlins.

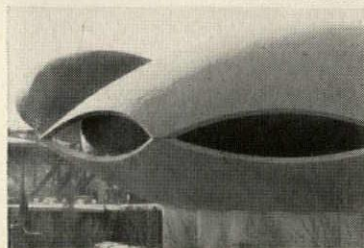
All of this framework will be exposed inside, and covered outside with expanded metal lath, a 2-inch layer of sprayed concrete, and concentric bands of plastic letters 2½ feet high spelling out the IBM monogram.

Designers: Charles Eames; Eero Saarinen & Associates. Structural engineer: Paul Weidlinger. General contractor: Gilbane Building Co. Steel fabrication and erection: Ingalls Iron Works.





ROBERT CALBRAITH



The Travelers Insurance Companies are hiding a good deal of ingenuity beneath their red umbrella. Actually, the principal structure is an oblate spheroid nearly as ovoid as the IBM pavilion; light outriggers were tacked on to make the umbrella's points.

Principal members are 24 boomerang-shaped, welded-plate ribs. They rise outward from the building's masonry base, then curve in, stopping short of a tension hub of steel plates at the apex.

Steel cables transmit the outward thrust of the ribs to the hub, and the ribs themselves resist the inward pull of the cables—replacing the heavy compression ring that would normally do this work. Another set of cables is wrapped horizontally around the ribs at their point of farthest outward extension, counteracting their native tendency to fold up. The net result was the use of only 9 pounds of steel per square foot, perhaps the Fair's most significant feat of engineering.

Architects: Kahn & Jacobs. Structural engineers: Lev Zetlin & Associates. Contractor: George A. Fuller Co. Steel fabrication and erection: Bethlehem Steel Co.

The Port of New York Authority's heliport was the first Fair building put to use: the roof-top flight deck, the top-floor restaurant, and the oval bar below all opened in October. The building is a somehow impressive blend of Constructivism and symbolism (the big T's are meant to stand for Transportation), but the structure is not what the form implies.

The four heavy columns support, not the squarish lid, but a huge elliptical ring girder (12½ feet high, 5 feet wide, 150 feet on its major axis) on which the restaurant and heliport rest. The only expression of the ellipse is an oval ring of windows.

Designers: Port Authority Engineering Department. General contractor for superstructure: W. J. Barney, Inc. Steel fabricator: American Bridge Division, United States Steel Corp.



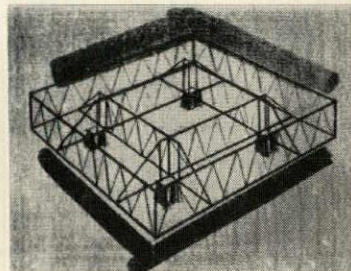
PORT OF NEW YORK AUTHORITY



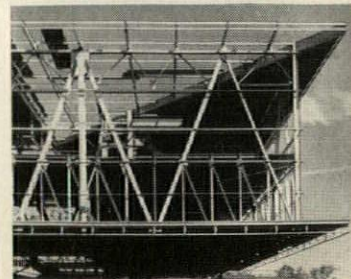
The United States pavilion is a giant hollow square of steel, floating on four piers above a concrete mound of cascading steps in the center court. Its primary structural members are four criss-crossed pairs of parallel trusses, each 310 feet long and 57 feet deep (diagram below).

The inner trusses span 170 feet between the four piers and continue 68 feet to the perimeter as awesome, if theatrical, cantilevers. The outer trusses, however, are actually supported by eight diagonal steel hangers 81 feet long—each of which is designed to carry more than 3.5 million pounds.

Architects: Charles Luckman Associates. Structural engineers: Severud - Elstad - Krueger Associates. Contractor: Del E. Webb Corporation. Steel fabrication and erection: Bethlehem Steel Co.



GEORGE CSERNA; OPP.: DAN MCCOY—LIFE



PARKWAY



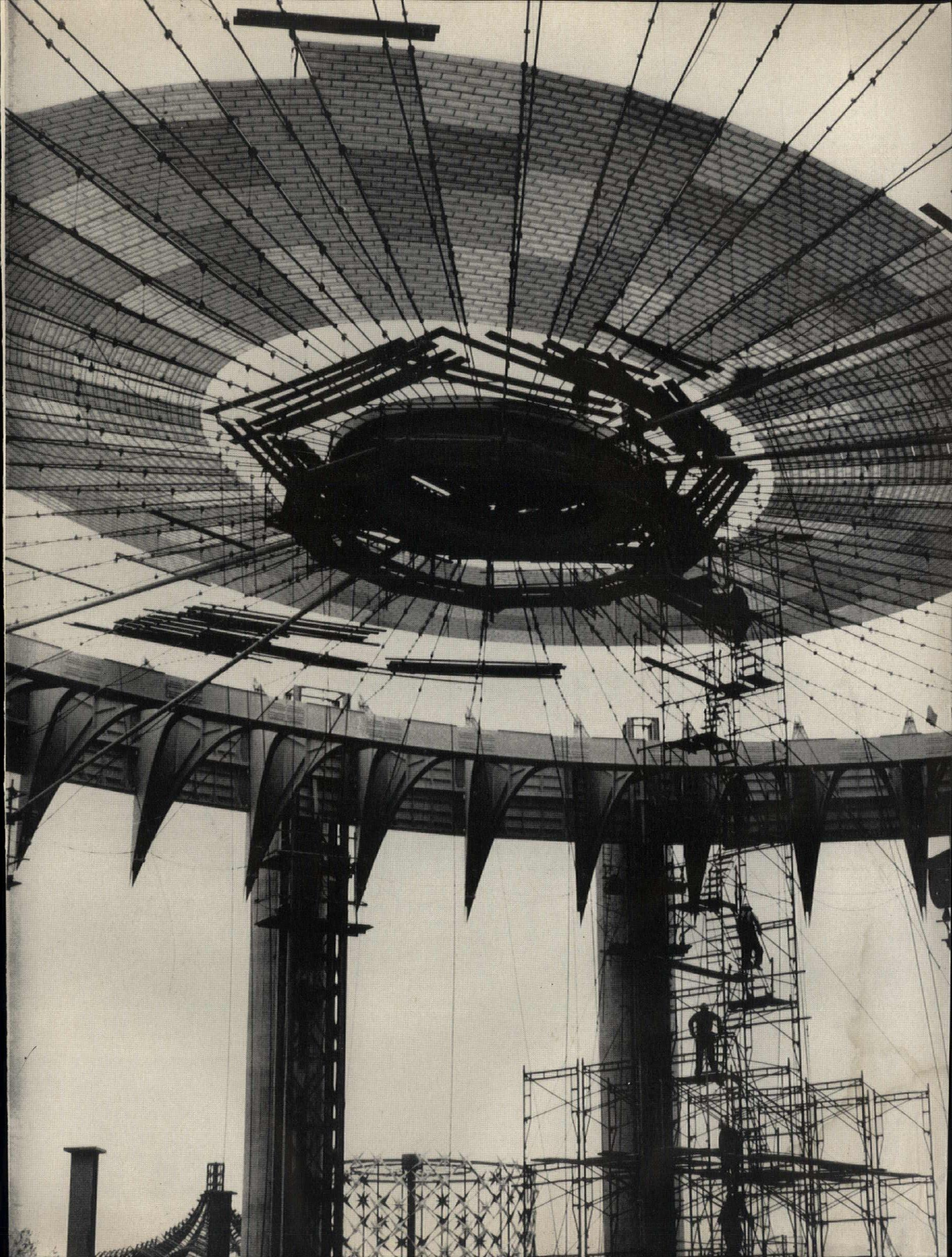
The structure of the New York State pavilion (above and right) is shaped into a sturdy, almost sculptural piece of architecture. Its elements are 16 slip-formed concrete tubes, each 98 feet high and 12 feet in diameter, supporting an elliptical cable-suspension roof with a major axis of 320 feet.

There are two separate sets of 48 cables, braced apart from each other to eliminate fluttering in the wind. They stretch from a steel plate compression ring to a steel tension ring in the center, and are covered by 1,500 multi-colored translucent plastic panels.

The compression ring, noble in proportion and design, is held by needle beams cantilevered from the insides of the columns. It was assembled at ground level; the cables were stressed; and the entire structure was then lifted into place by hydraulic jacks.

Adjacent to the pavilion are a small theater and a cluster of three observation towers, tallest of which will be the Fair's high point at 226 feet. Each of the towers, also built by the slip-form method, will have a platform 64 feet in diameter suspended by cables from cantilevered girders.

Architect: Philip Johnson. Structural engineer: Lev Zetlin. General contractor: Thompson-Starrett Construction Co.



TRUMAN MOORE—LIFE

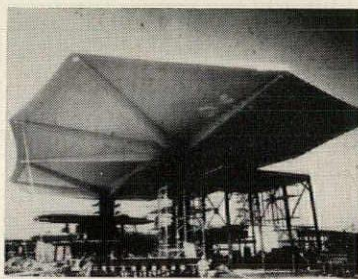


The Bell Telephone System will put on a breathtaking display of that tried-and-true feat of structural acrobatics, the cantilever. The Bell pavilion is a massive thing, nearly 400 feet long and 200 feet wide at its center, yet it perches 25 feet above the ground on only four "fingers."

The first cantilever is performed by the pavilion's tapered spine, which consists of two longitudinal trusses joined by rigid transverse frames: it spans 180 feet between the piers, then sweeps out another 108 feet on each end. The second cantilever goes on simultaneously in the other direction: U-shaped bents jut out from the spine, 64 feet in front and 35 feet in back.

The great hull thus formed is sheathed in glass-fiber-reinforced plastic panels measuring 12 by 40 feet, the largest ever used in building. This lightweight skin is under no stress, a fact which—with the heaviness of the steel ribs—makes the pavilion's structure far different from the "wing" to which it has been compared.

Architects: Harrison & Abramovitz. Structural engineer: Paul Weidlinger. General contractor: George A. Fuller Co. Steel fabrication and erection: Bethlehem Steel Co.



RICHARD MEEK

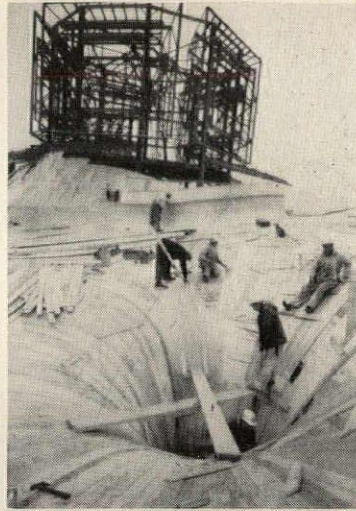


The principal portion of the Festival of Gas pavilion is without walls, its only shelter being a high double parasol of white gypsum decking on steel frames, supported by two 55-foot columns and covering 30,000 square feet.

Tucked under one corner is a restaurant and club building, which will seem to be without walls: plate glass will be hung in 8½ by 10-foot lights from metal clamps concealed along the edges of the roof. The glass will be held rigid by vertical fins, also of glass and also suspended.

Designers: Walter Dorwin Teague Associates. Structural engineers: Purdy & Henderson Associates. General contractor: W. J. Barney Corp.

ARA IGNATIUS



Eastman Kodak is building the Fair's only thin-shell concrete structure, a wildly undulating carpet called a "moon landscape" on which visitors can take photos of each other and the Fair. The carpet looks as though it had been shot from an aerosol can, but in reality it was put through a highly complex process of structural design.

The problem was that no two segments behaved quite the same way, nor did the shell follow any regular geometric shape. Structural Engineer Lev Zetlin therefore applied elastic theory, yield-line theory, beam and arch analysis, extensive model analysis, and more than a pinch of intuition in working out a solution.

Varying from 6 to 14 inches in thickness, the shell is divided into four sections by shrinkage strips. The biggest bump, over a theater, is actually a laminated timber framework covered with wood and stucco. A 90-foot steel tower, bearing backlighted color transparencies, rises through a hole at the carpet's opposite end.

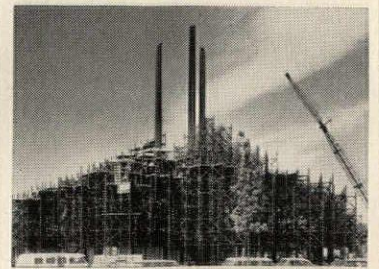
Architects: Kahn & Jacobs. General contractor: George A. Fuller Co.

The Electric Power and Light Pavilion is a maze of triangular pylons, made up of 4-inch steel pipe columns connected by 3-by-3-inch angles and cross-braced with thin flat bars (photo below).

The repetitive steel elements (30,000 pieces in all) are bolted (with 200,000 bolts) for ease of dismantling as well as erection. They form a cellular space frame that consistently observes a triangular 5-foot module, both vertically and horizontally.

The aluminum cladding (right) will be bathed by changing colored lights; up through the hollow center, past three triangular 120-foot steel pylons, will shoot a 12 billion candlepower beam.

Architect and engineer: Synergetics, Inc. General contractors: Slattery Contracting Co., James King & Son, Inc. END



ABOVE & OPP.: GEORGE CSERNA





In all the recent hullabaloo over the destruction of New York's neo-classic Penn Station, two names were notably absent from the discussions: the names of Morris and Julius Lipsett.

This was strange, for though neither Morris nor Julius Lipsett bear any responsibility for the demise of Penn Station, they do have a very direct hand in it: after all, the Lipsetts are the actual wreckers of the building, the men currently engaged in pulling it down and salvaging some of the pieces.

To Morris and Julius Lipsett, Penn Station is just another job—and not a very big one at that. As the world's biggest wreckers, the Lipsetts can point with pride to much vaster achievements in the art of demolition: they have wrecked the old Hotel Marguery on Park Avenue, and the Third Avenue "El"; they have dismembered the charred remains of the once-great liner *Normandie*; and they have junked the aircraft carrier *Enterprise* and the battleships *New Mexico* and *Wyoming*. (Indeed, in their efficient, businesslike way, the Lipsetts have done almost as much damage to the U.S. Navy as the Japanese did to it at Pearl Harbor).

Once independent operators, the Lipsetts now are part of the Luria Division of Ogden Corp., the nation's leading supplier of scrap steel (some \$200 million worth sold last year). The Penn Station job will yield only about 15,000 tons of scrap, compared to over 60,000 tons from a steel mill they are now dismantling in Donora, Pa. To be sure, Penn Station will take them 30 months, and will involve several special problems, not least of which is keeping the trains running while the huge (18-acre) station is pulled down. Cranes will take down heavy granite sections from the

inside, and temporary staging will have to be erected to accommodate hundreds of workers. But all in all, says Lipsett, "it's a fairly routine job."

Morris Lipsett (right in photo below) has done very well wrecking structures for more than 30 years. He started as a junk dealer in Jamestown, N.Y., with \$20 and a tired Hupmobile roadster, which became the nucleus of "Lipsett's Auto Wreckers—Home of a Thousand Parts."

An unprofitable start

After a few years, about all Morris had to show for his efforts was a good set of muscles from busting up cars. Nevertheless, his brother Julius (left), who ran a circulation route for a Rochester newspaper, asked about joining up. Morris replied: "This business is heading for the rocks; steel scrap is down to \$4 a ton and you can't sell it at that price. Come ahead, if you want to take the chance." Who could resist such an offer in 1930?

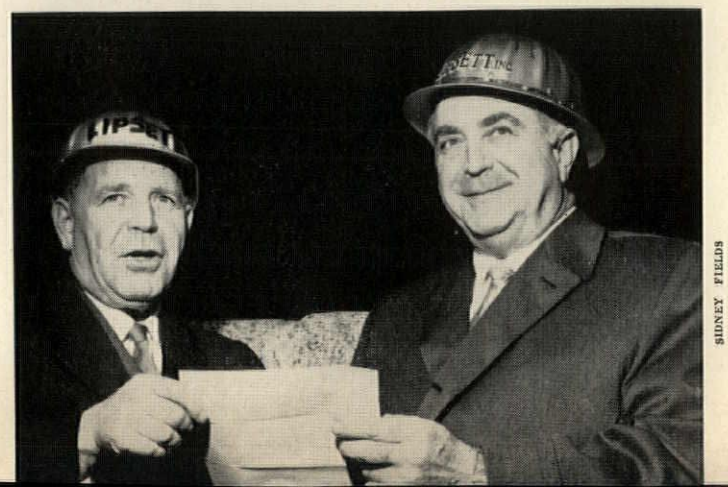
The brothers soon got into their first building demolition venture, an old hotel in Bemis Point, N.Y. They first auctioned off its furnishings for \$3,000 but this profit immediately disappeared in the unsuccessful attempt to wreck the building and sell its parts for salvage. Morris was not dismayed. In fact, such was his faith in the future of wrecking buildings he announced to his wife that, from that time forward, he would no longer eviscerate automobiles. Mrs. Lipsett reminded her husband of the substantial loss they had just taken on the resort hotel. Replied Morris philosophically, "You should always look for money where you lost it."

To emphasize his determination, Morris had the sign on his junkyard changed from "auto wreckers" to "industrial dismantling."



TRUMAN MOORE—LIFE

THE LIPSETT BROTHERS: BIGGEST WRECKERS IN THE BUILDING WORLD



SIDNEY FIELDS

The first big chance came in 1937, when the brothers took apart an oil refinery in Charleston, S.C. They had to borrow \$10,000 to do the job, which involved over 10,000 tons of scrap, far more than they had ever worked with before. This success led to other refinery work, and finally, in 1940, they moved their headquarters to New York City.

Slicing up the elevated

Soon after, the Lipsetts offered the city \$40,000 to demolish the Second Avenue Elevated. They did the job in seven weeks, recovered 24,000 tons of scrap, and made a \$25,000 profit. They then turned a profit on the demolition of Brooklyn's Fulton St. "El."

But it was the wartime demand for scrap that put the Lipsetts into the chips. And a month after V-J day, they won a \$1.5 million contract to clear a Lower East Side site for the Metropolitan Life Insurance Co. The brothers demolished 20 blocks of buildings in seven months, then cleared nine adjacent blocks, too. On this land, Metropolitan built its two massive housing projects, Stuyvesant Town and Peter Cooper Village.

The Lipsetts' biggest New York opportunity came in 1955, when they bid to dismantle New York's last major elevated transit line, the Third Avenue "El." The city had expected to have to pay someone to wreck the decrepit structure, which stretched from 129th Street in Harlem to the Bowery. When the bidding opened, one wrecker asked \$1.7 million but the Lipsetts offered to pay the city \$331,000. Not surprisingly, they got the job. They sliced off the heavy railbed in horizontal sections, then pulled the pillars "just like teeth." The job yielded 40,000 tons of scrap, which then was selling for almost \$40 a ton, this would indicate that the Lip-

setts grossed over \$1.5 million on steel alone, not counting salvageable items such as the potbellied station stoves and stained glass windows, for which there was a great demand among collectors.

In the postwar years, the Lipsetts have concentrated on buildings, although a great deal of their work is still in industrial and refinery wrecking. (The scrap yield in these jobs is much higher than on office buildings or apartment houses, and there is more salvageable equipment.) They have done much of the demolition on Park Avenue, clearing the way for such buildings as the Union Carbide and Seagram's.

Most of the Lipsetts' building demolition has been concentrated in New York; on Park Avenue alone, the firm has torn down 75 structures in the past seven years. These have been replaced by office buildings, over 150 of which have been built in Manhattan since 1947—all on sites which first had to be cleared. The Lipsetts have also prepared many locations for new apartment buildings, which have gone up not only to meet a rising demand, but also to satisfy landlords who want to escape rent controls and create more small units on a given piece of land.

In the U.S. as a whole, Morris Lipsett estimates that the wrecking business takes in some \$100 million a year in salvage value, not including equipment.

The secret to successful demolition, Morris Lipsett maintains, "is rhythm . . . our boys have got rhythm." This "rhythm" means getting men and equipment on the job and demolition completed in the shortest possible time. There are bound to be unforeseen circumstances (such as during the demolishing of a venerable Park Avenue mansion, when concrete floors were found to be 18 inches

thick, instead of the customary 3 inches or so, and where cherry-wood walls were backed up with 16 inches of brick); but Lipsett tries to minimize these by thoroughly analyzing each structure before it is dismantled. His estimators carefully check the original architectural drawings, and then look at the building itself from roof to basement, before making a bid. Most important, of course, is how much steel is in the building, not only structural shapes, but also in ceiling lath, window casements, elevators, and railings. Other salvageable materials, such as marble, expensive woods, and other metals (copper, lead) are also carefully inventoried before work starts. What makes the estimating particularly tricky is that the market for various salvage materials fluctuates, and will undoubtedly change during the period of demolition. Recently the price of scrap steel has been declining (at \$26 per ton, it is only about half what it was several years ago) and has left many wreckers with losses where they had anticipated gains. Last year, Luria Division, Lipsett's parent, lost money for the first time in its 76-year history as a result of declining prices.

The art of demolition

Before demolition can start, the City Health Department requires that the structure be free of all rats, the Building Department demands that all utility lines be disconnected—all in all, the wrecker must often get as many as 14 permits allowing him to do everything from covering city sidewalks to blocking part of the street with trucks and equipment. He must also carry a heavy load of insurance—in New York City, premiums often run over 25 per cent of the total payroll.

Buildings come down just the

opposite of the way they go up—from top to bottom and from inside out. All the glass is taken out first (for safety's sake), and then plumbing, heating, and wiring are removed. (These materials can generally be resold.) Next, ceilings, doors, moldings, and trim are taken off; then special wrecking crews start demolishing the walls with air hammers and crowbars, sending the rubble down chutes into waiting dump trucks. On large buildings, the wreckers work from exterior scaffolding stretching the full height of the structure. The Lipsetts have found this to be safer than working from the inside, where walls and even floors have in the past collapsed, injuring workmen.

The final step is the dismantling of the steel frame. This is done by skilled ironworkers, whose technique is quite different from that of their counterparts in building construction. Beams are sometimes cut off around the heavy column connections, which are then taken out in a single section. A sidelight of this phase of demolition: the union contract specifies that each ironworker must get two quarts of milk each day—they believe it is beneficial in offsetting possible ill effects from breathing the toxic gases from acetylene torches.

Since the price of scrap steel has dropped, the Lipsetts have been diversifying, and now even do considerable new construction, largely of industrial plants, bridges, and transmission lines. But their parent, Ogden Corp., is developing new techniques for making higher grade scrap, indicating that it fully intends to stay in the demolition business. Morris Lipsett himself looks confidently to the future: "These new curtain wall buildings will be much easier to wreck than the old ones." END



SWISS SCHOOL IS A LESSON IN CONCRETE

The massive new School for Economic and Social Studies in the Swiss provincial capital of St. Gallen is being discussed all over Europe as one of the most interesting groups of buildings put up on the Continent in several years.

The most obvious quality possessed by this school is the "blockiness" of its exposed, pre-cast, and cast-in-place concrete forms. By now, exposed concrete is, of course, commonplace; but in the new St. Gallen school the rude, almost "proletarian," material seems to have been given its finishing touch of respectability. This group of buildings is very classical in feeling, in detail, in the placing of various structures on imposing terraces—which, in turn, are reached by monumental flights of stairs (top, right). Except for its informal composition, the school looks very much like a luxurious, classical villa.

"Proletarian elegance"

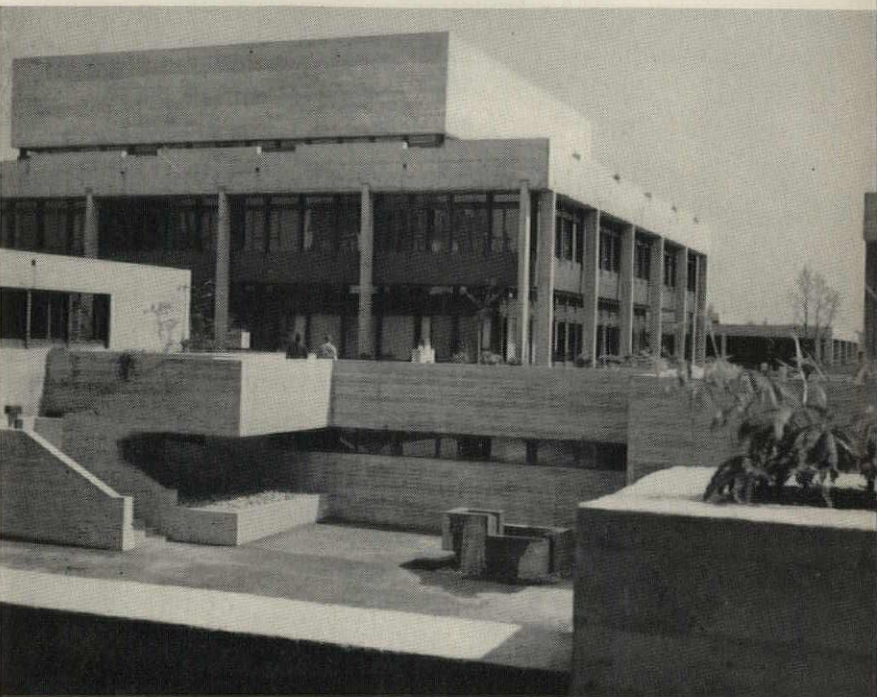
But there is one all-important difference: in place of ornate stucco or tile or marble, we have raw concrete handled with such finesse that there is nothing at all incongruous about finding it in so stately a setting. Here, "brutalism" in concrete has finally been tamed and made elegant.

Located on a hilly site 15 minutes from the center of town, the school has a campus plan dominated by an impressive, four-story building containing a two-story library, a floor of classrooms, four lecture rooms seating almost 200 students each, administrative offices, and a department of technology. Other buildings completed to date include an auditorium seating about 500 (the seating area is surrounded on three sides by a raised podium), a gymnasium, and several secondary structures containing classrooms and student quarters. The 9-acre site is virtually surrounded by existing streets; these and the parking areas provided by the architects are considerably below the level of the campus, so that all cars are kept out of sight.

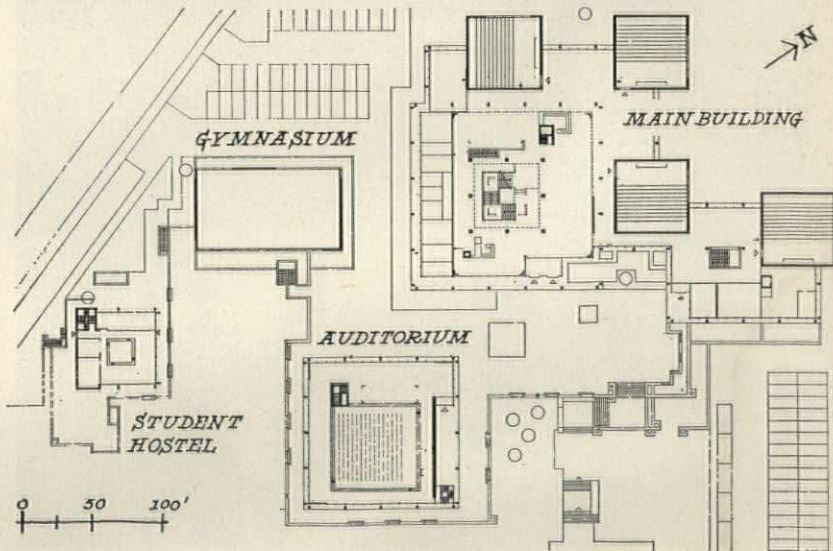
The fluid composition of the buildings on their platforms is an accurate reflection of the flexibility of spaces inside each major building: within the standardized framework of concrete (and within the similarly standardized grid of steel-and-glass curtain walls recessed behind the concrete fa-



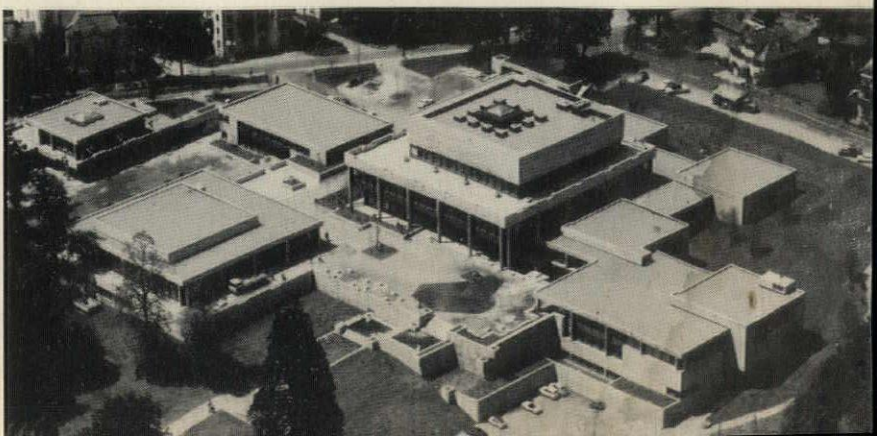
Broad steps lead up to hilltop campus located 50 feet above access road



Sunken court is located between main building (top) and student hostel

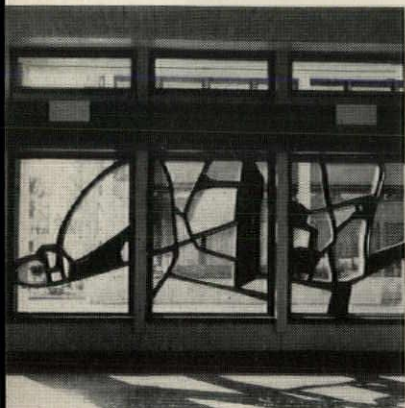


Bird's-eye view from east reveals informal but tight plan of campus





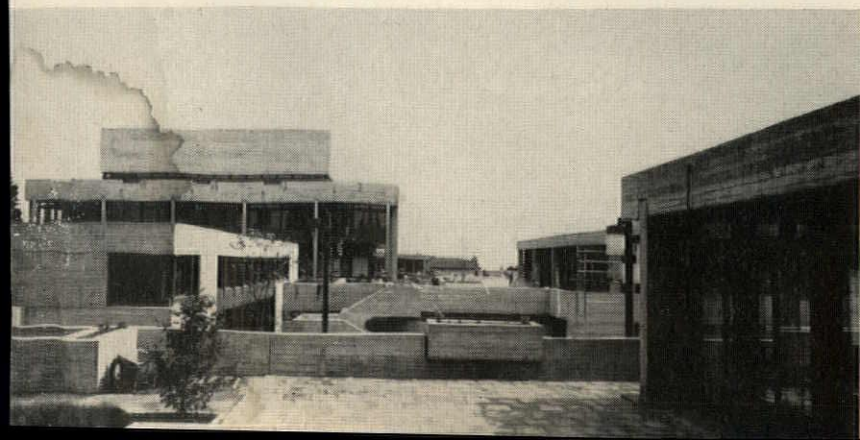
Parapets around platforms and stairs will carry planting and sculpture



Iron-and-glass screen by Coghuf in assembly hall; right: library space



Above: lobby of main building; below: campus seen from student hostel



gades) there are several multi-use areas. All lecture and assembly halls are designed for various uses, made possible by changes in seating and podium arrangement.

Architecture and art

To make sure that flexible partition systems and other temporary devices would not wholly dominate the interior spaces, the architects provided several strong, permanent features that cannot be masked by alterations as the buildings are adjusted to changing needs. The most impressive of these features is the great concrete stair (opposite), which is seemingly suspended in a four-story, skylighted well at the center of the main building. In designing the stair, the engineer built an exact scale model of plastics and subjected it to appropriate stresses. Deflections in the actual stair were precisely predicted by this method.

None of these details is quite as impressive as the truly lavish use of the fine arts—paintings, tapestries, mosaics, stained glass (left), and sculpture of every description. Eighteen different artists are represented by their works; among them are Arp, Braque, Calder, Francis, Giacometti, Miró, Stahly, and Tapiés. The program for commissioning or acquiring these works of art is part of a Swiss government-sponsored effort to embellish public educational institutions. Under this program, some \$140,000 was made available for art in this school alone!

The architects responsible for the St. Gallen School are Förderer, Otto & Zwimpfer. All are in their thirties. They won the commission to design this school in an open competition which attracted 117 different entries.

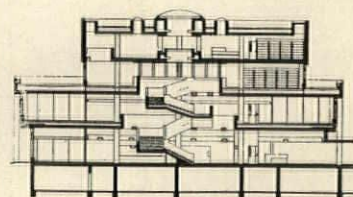
So this group of buildings holds two additional lessons for the U.S. that may be more significant than how to build well with exposed concrete: a lesson about public recognition of art as an integral part of a building; and a lesson about the value of open competitions in a free society.

FACTS AND FIGURES

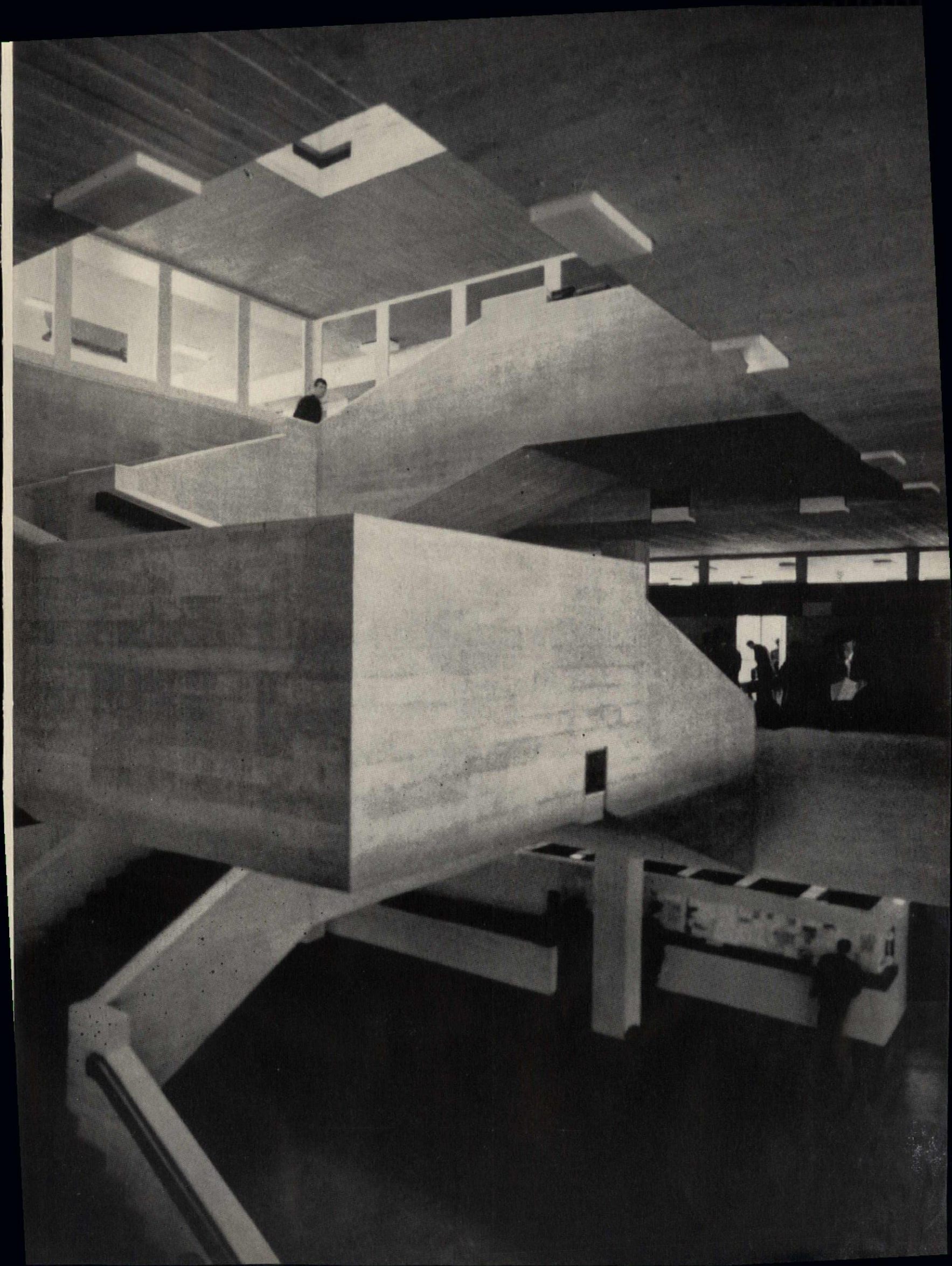
Hochschule für Wirtschafts- und Sozialwissenschaften, St. Gallen, Switzerland.

Architects: Förderer + Otto + Zwimpfer. Associate Architect: Gustav auf der Mauer. Engineer: A. Zähler. General Contractor: Fritz Emmenegger.

Construction cost: About \$3 million, contributed by government and private industry.



Section through main building



HIGH MOUNTAIN MONASTERY FOR RESEARCH

Architect I. M. Pei today has a much different view of scientists' requirements for laboratory space than he did before being tapped two years ago to design the National Center for Atmospheric Research. The project is expected to go under construction this spring in the clear air of Boulder, Colorado, and it began with some very clear, if unconventional, understandings.

NCAR's scientists dislike the sense of stern efficiency which has produced so many bleak, if beautiful, new laboratories across the land. This was explicit in the first list of requirements Pei received from Dr. Walter Orr Roberts, the Center's salty young director. On the site, 500 acres of sere mesa land standing before the Flat Iron Range of the Rocky Mountains, Roberts said firmly they did not want materials associated with slick big-city buildings, or proportions that suggested monuments, or forms reminiscent of industrial structures.

Instead, in a program which might have lead to a hill village of scattered scientific quarters—but didn't—Roberts requested architecture which would be dignified and contemplative, yet exciting; efficient yet personal; ascetic yet hospitable.

For working space his implication was even a little bohemian: "The scientist must feel free to tack things on the wall, or anchor things to the floor, or tear out part of a wall . . . or create a clutter. A scientist's work is always changing, and work space that cannot be adapted to his changing needs is a Procrustean arrangement that can inhibit his work. Thus an air of incompleteness, of non-finality, is essential Yet this concept must be fitted into a building design that is appropriately symbolic of a national research center. Whether or not these ideas are paradoxical, they are the ideas which the architect must synthesize and reduce to space, form, and materials."

Other elements of the paradox—which Pei has resolved into what may be his best design yet:

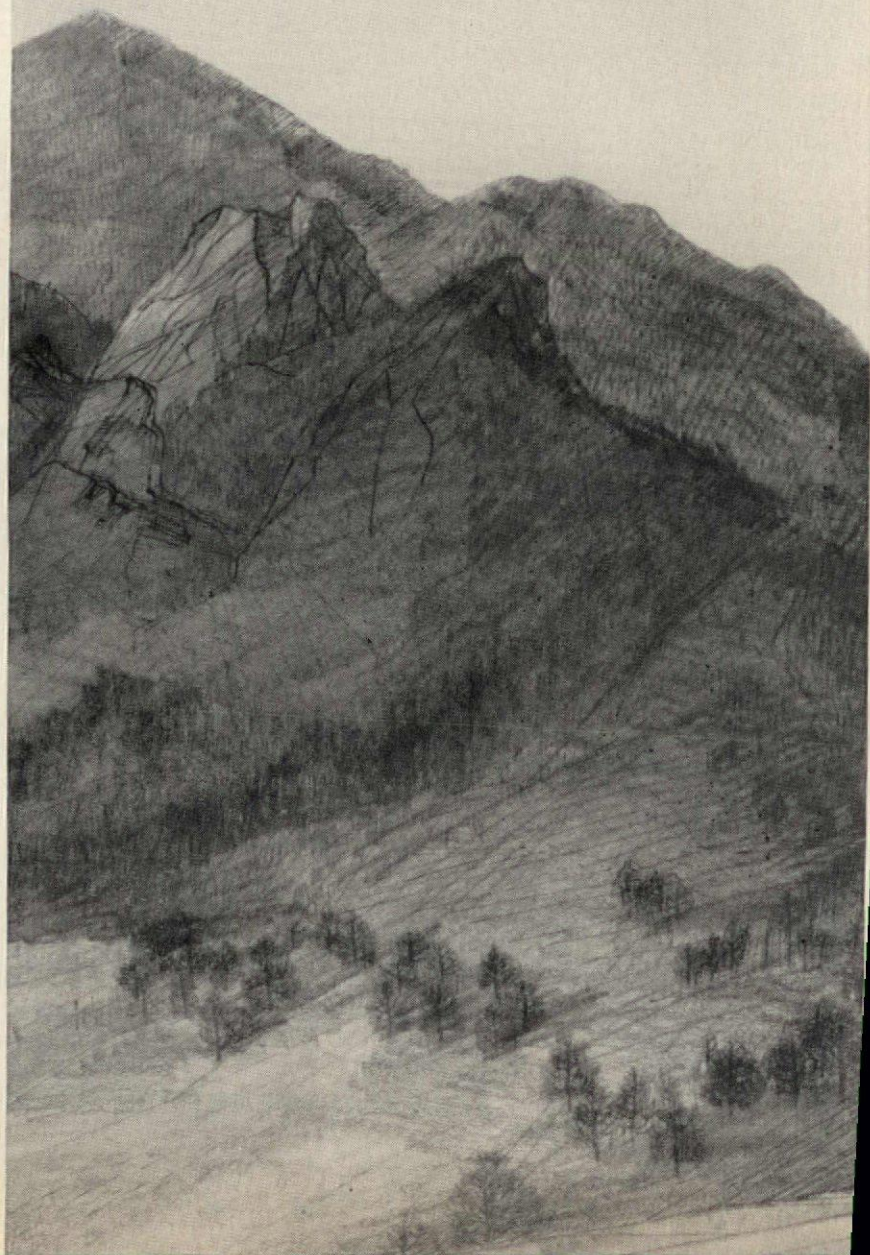
▶ This is a sizable research facility, which will eventually accommo-

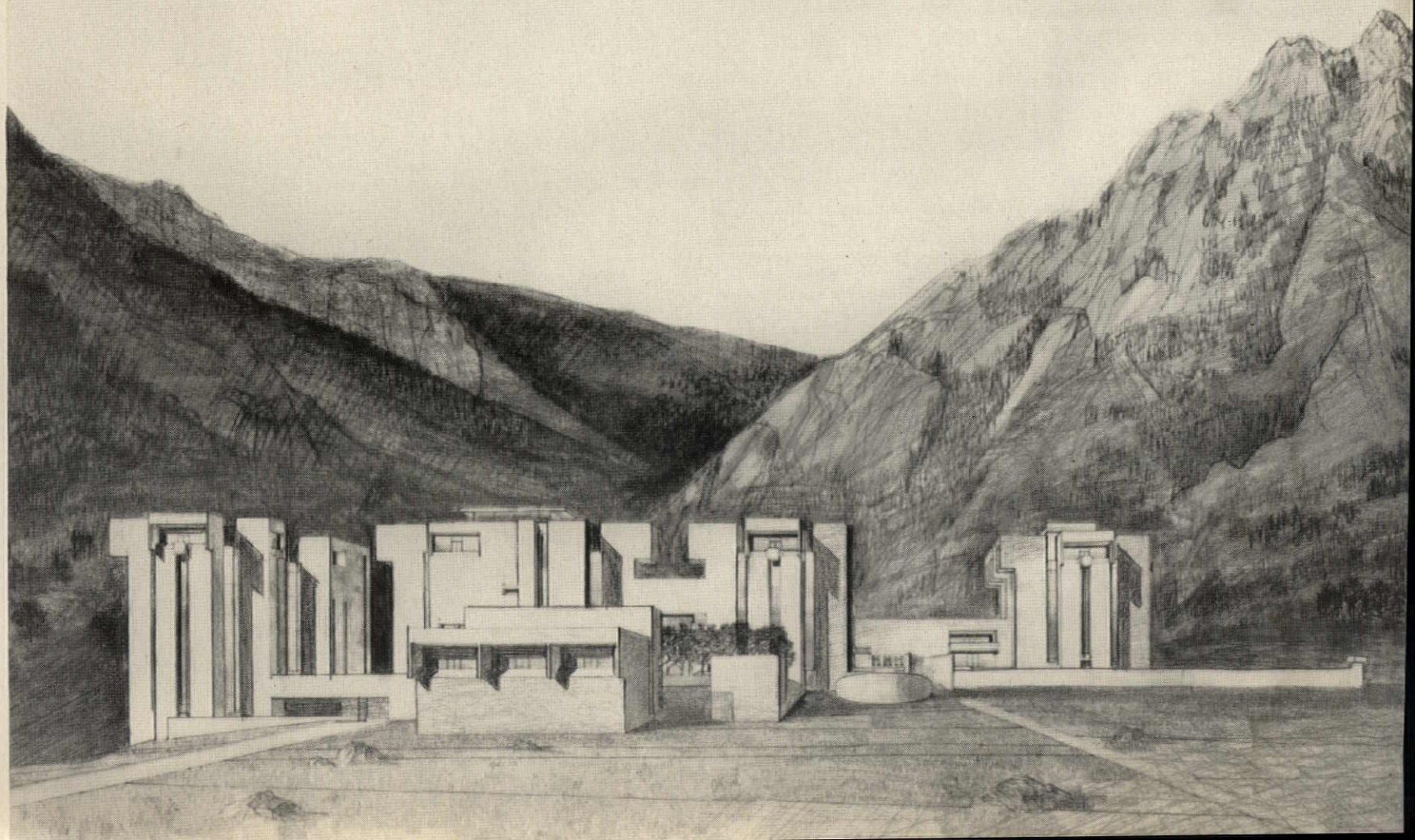
date 500 scientists and support personnel in about 250,000 square feet. But it is also a design which groups the scientists into very small neighborhoods, or working teams, deliberately assuring great privacy. The towers of offices and labs lack long hallways; the top thinkers are offered the seclusion of monastic offices on top, reached only by castle-keep spiral staircases. Also, the floor plans are highly efficient and direct for staff members, but purposely made a little difficult for a stranger to invade with confidence. Roberts once said to a newspaperman, "The best office for me would be the hardest one for people to find." And perhaps he said it to Pei, too.

▶ The building design is unique, and personal enough to satisfy these personable scientific investigators (and it does not violate the beautiful site, whose ecology they value). Yet, although it will retain immense identity even from miles away, the building group is also to be completed on a fairly frugal budget for up-to-the-minute, mechanically complete laboratory space: \$24 per square foot.

▶ Structurally, the buildings will be simple, unfinished concrete poured in board forms on a 23-foot module of columns and

Rising from a small plateau before the Rocky Mountains, the atmospheric research center comprises laboratories and offices in its high, hooded turrets, and lower shapes which will house such common services as a large computer.





bearing walls. Within this module, however, is another, more complex sub-grid which can be varied almost endlessly in casting cantilevers, or subdividing interior space. Says Pei: "The tyranny of the grid must be overcome—but the discipline must still be there."

Apart from the scientists' decidedly humanistic requirements for their building, the largest architectural problem was the proximity of the Rocky Mountains. The mountains, says Pei, "gave us scale trouble from the beginning. We found we had to return to elemental forms; the Rockies humbled us. Up to then I had always built in a city environment, but the idea of a building's revealing its scale by how many windows it has—that had to go."

Shape, not shimmer

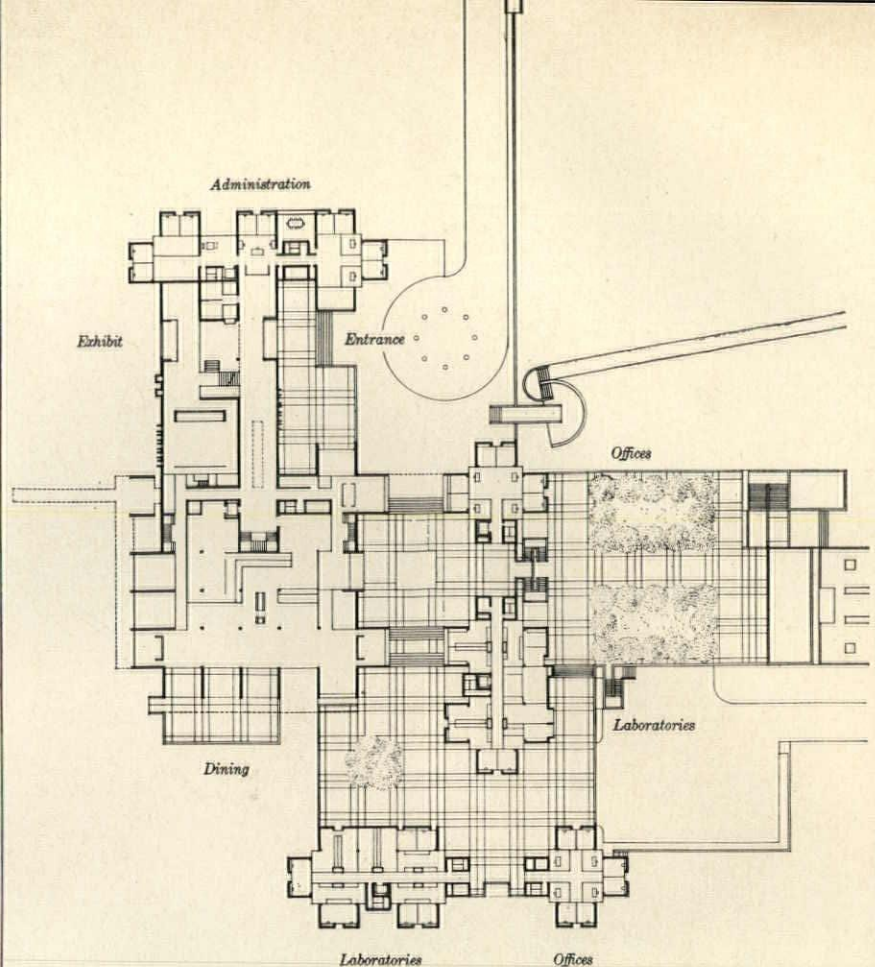
Other reasons that windows went were the strenuous Colorado light, the swift daily temperature changes, and the fact that the scientists wanted a lot of wall space in their offices and labs. It followed, Pei explains, that the architecture would rely on shaping rather than finishing—i.e., on the plastic possibilities of concrete rather than on the reflective quality of glass walls.

"The surviving caves of cliff-dwelling Indians helped us. They had no scale of themselves, but they did work with the mountains. We found that despite our old puritanical consciences for detail, we couldn't be picky and perfect. Our earlier solutions were much more articulated than the final one; but we would put them against the mountains and they would collapse visually. The site suggests a place to worship the gods . . . and the scientists wanted complete freedom from architecture."

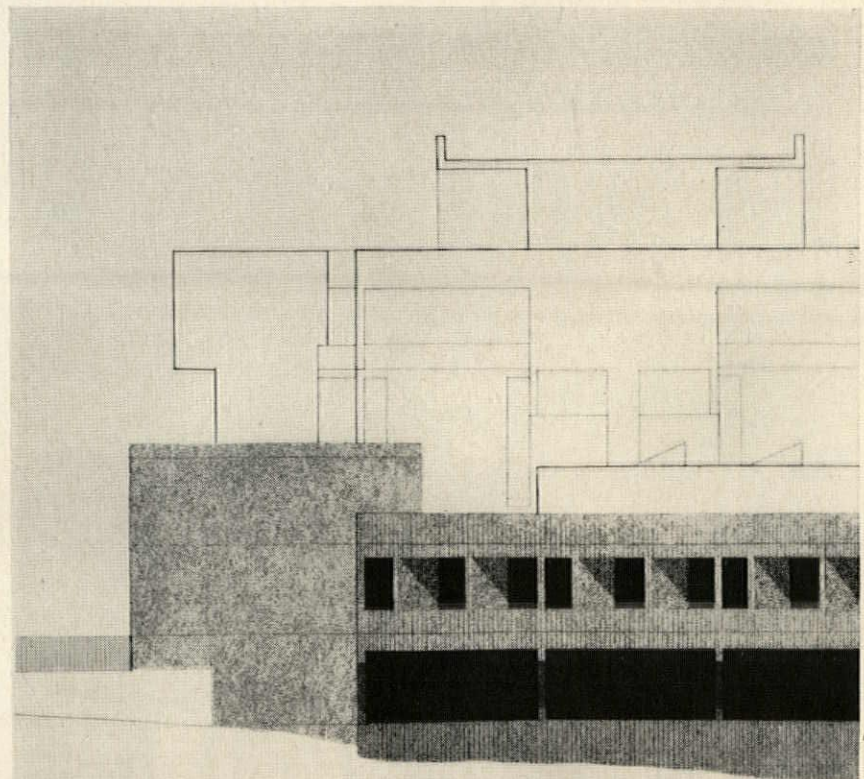
This dual requirement was itself predicted by the nature of the research which will go on at the center; it is both minute and majestic, immediate and far off. The small fact that raindrops falling on the sea are generally larger than those which fall on land bears on the work. But so does the influence of distant meteorite showers in space.

NCAR will undertake not only basic research but investigations into the possibility of man's controlling weather. Director Roberts frequently reminds the world: "While we live *on* the earth, we live *in* the air." In fact, this was the statement he put down at the top of his architectural list.

Floor plan shows how towers of laboratories and offices adjoin the common-use facilities. On site (right, facing page) the buildings are grouped at the mountain end of the mesa, whose platform thus screens the near view downhill. Use of local aggregate in the walls (north elevation below) will make them a dark reddish-brown, a good match for the mountains.



First Floor Plan



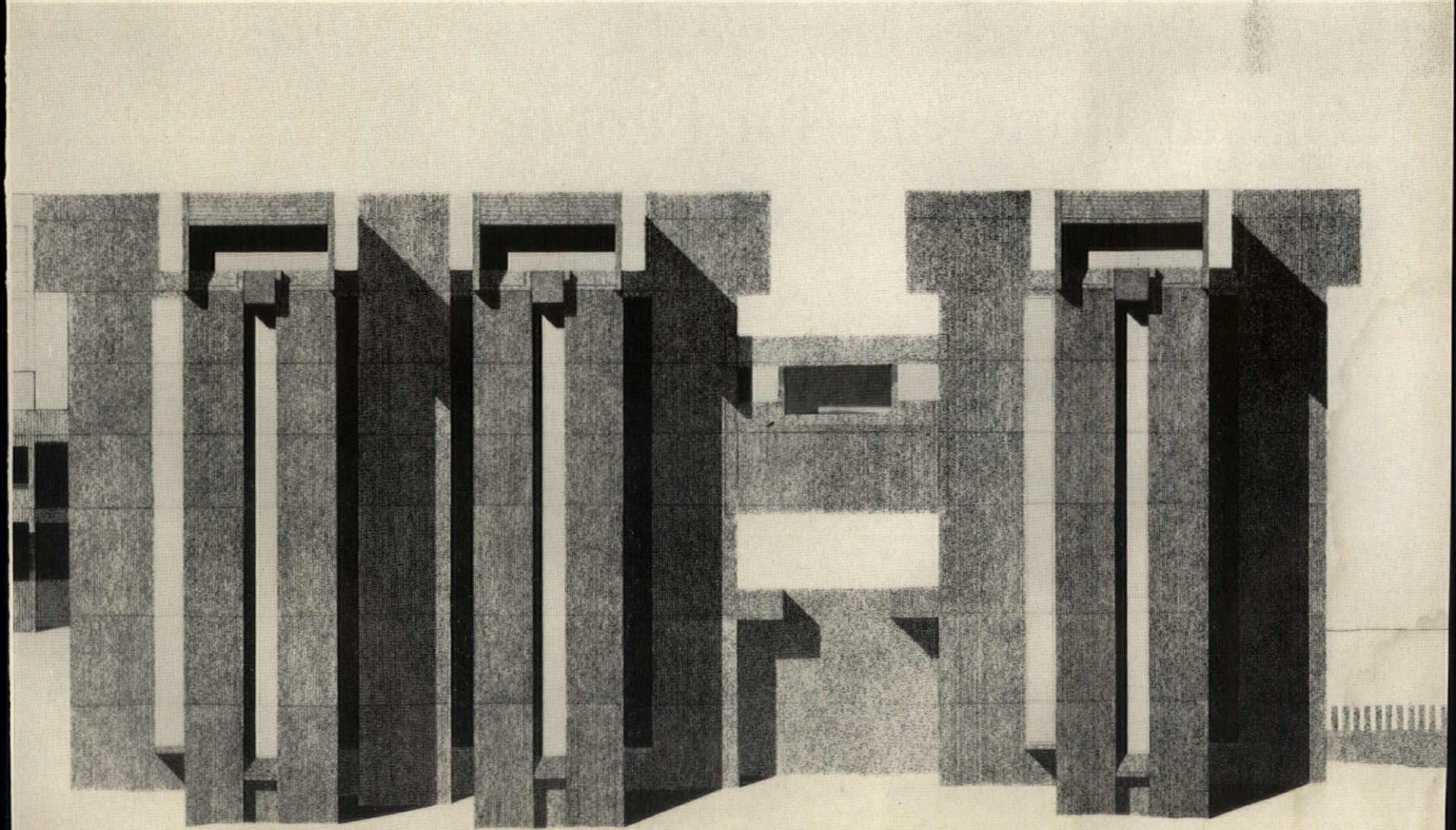
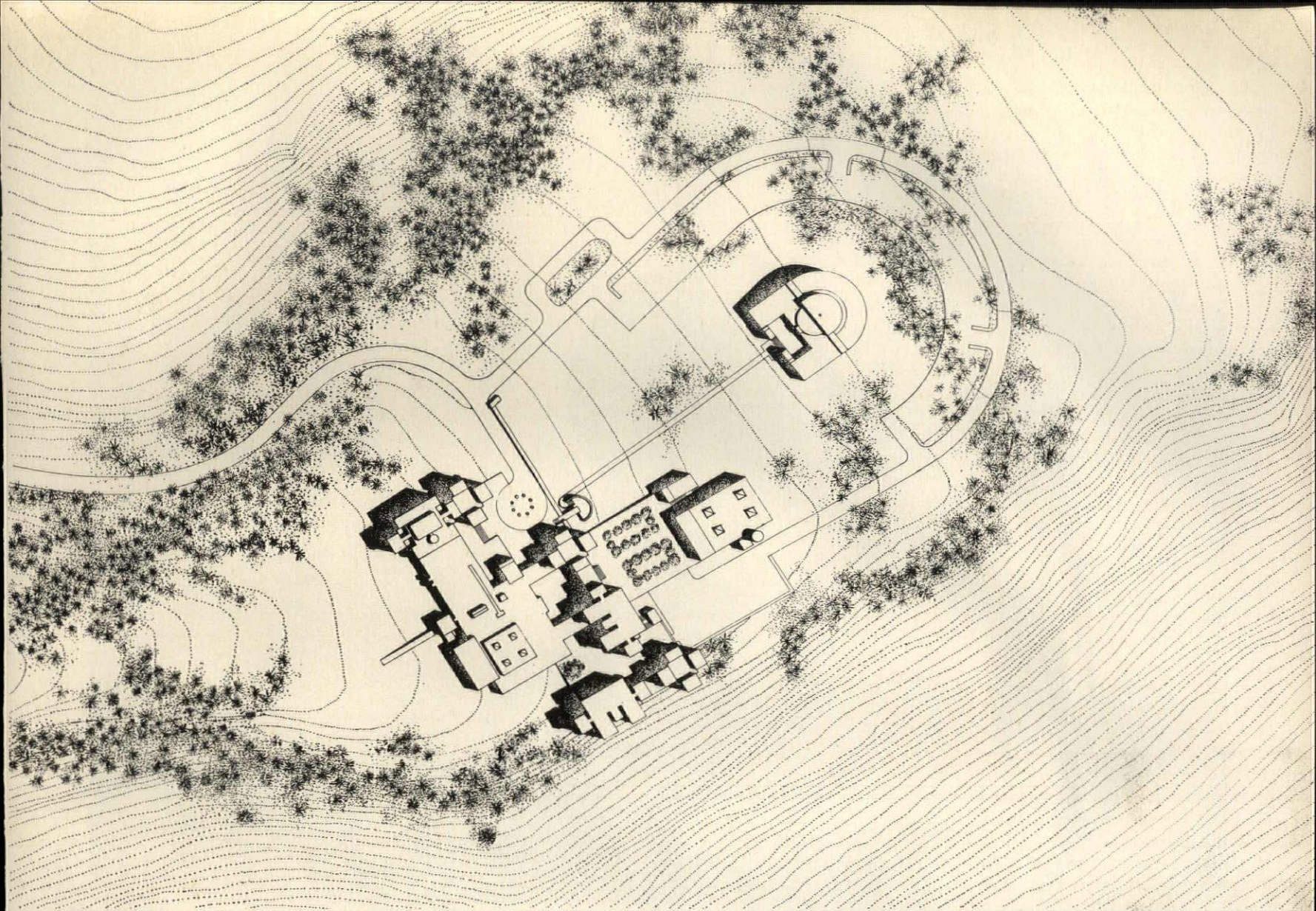
FACTS AND FIGURES

National Center for Atmospheric Research, Boulder, Colo. Client: The University Corporation for Atmospheric Research, a non-profit corporation made up of 14 U.S. universities (seven of which have architectural schools whose deans assisted NCAR in selection of the architect).

Architects: I. M. Pei & Associates. Landscape architect: Dan Kiley. Engineers: Weiskopf & Pickworth (structural); Jaros, Baum & Bolles (mechanical).

Site: 500 acres on Table Mountain south of Boulder, purchased (for \$250,000) and presented to the National Science Foundation by the State of Colorado. Buildings to be constructed with federal funds provided by the National Science Foundation, except for a conference center, which may be privately financed.

Structure: reinforced concrete using local aggregate. END





JERRY THORNTON

Yale student tutors New Haven School children

Urban Renewal—for People

The Ford Foundation is helping cities to solve the growing social and economic problems of the "gray areas." BY DAVID B. CARLSON

Despite the billions of dollars that have been spent on urban renewal, the American city, in human terms, is still a mess. For all the Lincoln Centers, Golden Triangles, and Golden Gateways, the evidence of this seems more shocking now than it was when urban renewal started in 1949. Rates of social disorder are higher. There is more illiteracy and dependency on public funds. And there is at least as much poverty.

Does this mean that urban renewal is a failure? No, it means that urban renewal, as we have known it to date, is not enough. Both partners in redevelopment, government and private enterprise, have come to realize this, but somehow they have not been able to work out the answers. Now, however, a third force has emerged, with money, talent, and

the willingness to take the inherent risks. This new third force is philanthropy—particularly that biggest of all philanthropies, the Ford Foundation.

The Foundation is putting its reputation and its cash on the line in areas which most politicians and social agencies shun. So far the record has been better than good; if early indications prove out, the new approaches could well provide the most fruitful solutions to the city mess that we have yet found.

Paul Ylvisaker, director of the Public Affairs Program, likens the Foundation's approach to jujitsu: "exerting smaller forces at points of maximum leverage to capture larger forces otherwise working against us." The most critical pressure point of all, the Foundation decided, was schools. Thus

its initial explorations into the problems of residents of urban "gray areas" have been directed at devising better school programs, concentrating, as Ylvisaker says, "more on school outlook and methods than on buildings."

An approach to schools

Educational experiments have been started in 41 slum schools in such cities as Buffalo, Cleveland, Chicago, Detroit, Milwaukee, Philadelphia, Pittsburgh, San Francisco, and Washington. The approach has been almost startlingly simple. In Detroit, the first grade reader was revamped to picture Negro children in urban surroundings, rather than the conventional white children romping through their white suburbs. Basic skills have been encouraged: reading and speech programs have taken first priority. Special attention has been given to the varying needs of the potential school drop-out, even to tailoring individual programs for each student, and backing them up with intensive counseling.

The success of the school experiments, into which the Foundation has already put over \$6 million, has led directly to broader grants attacking all the difficulties plaguing gray-area residents, using the schools as focal points. But one thing the school experiments demonstrated was that the broad approach needed could not be engineered through the schools alone. As Ylvisaker says, "One of the principal blocks to an effective urban program in this country is that the school system and City Hall have kept, and been kept, so splendidly aloof from each other." This aloofness has already proved an obstacle in such renewal-minded cities as Boston, and there have been a few rough spots even in New Haven, where the school board is directly answerable to Mayor Richard Lee.

Before it tried to frame a program, the Foundation sent staff

members to 25 cities to talk to community leaders and learn their problems firsthand. As a result of these discussions, the Foundation became convinced of three things: first, political leaders, citizens, and private social agencies were all concerned about the growing social difficulties; second, nobody had devised suitable solutions, and "most thinking was vague and uncertain"; third, given the magnitude of the problem, a few scattered demonstration projects simply would not have enough impact, either on the city involved or the national conscience.

As a result of its interviews, the Foundation devised three general criteria for a "gray-areas" grant. These require an applicant to attempt to:

- 1) Mesh the policies and operations of separate public and private jurisdictions—this means the strong backing of city hall;
- 2) Work with disadvantaged groups, particularly Negroes;
- 3) Look beyond old and fixed ways of doing things, and invent and evaluate new approaches in education, housing, employment, legal services and welfare.

As Ylvisaker says, "The objective was an integrating idea and common strategy, not a concentration of power that would freeze creative energy wherever it might be found in a community agency or individual." There has been emphasis on experimentation and flexibility—no two cities are doing it quite the same way.

The Oakland experiment

The first city willing to develop a program which met the Foundation's criteria was Oakland, Calif. which received \$2 million two years ago to further an experiment in administrative "togetherness." The top personnel from the schools, the city (city manager, police chief, recreation head), the county (health, welfare, and probation heads), and the state (youth authority) all

work together to devise integrated programs germane to the whole city's needs. The grant pays administrative costs, puts a major chunk of funds into new school programs, and establishes a reserve of \$750,000 to test new experiments, the cost of which must be matched by local funds.

Following the Oakland grant, other applicants came in: New Haven got \$2.5 million; Boston, \$1.9 million; Philadelphia, \$1.7 million. North Carolina, just three months ago, received \$7 million for statewide programs. Washington, D. C. has a small (\$15,000) grant with which it is developing its program.

In each city the focus is squarely on those who are residents of the central city not so much by choice as by necessity. Says Ylvisaker: "There is more point in investing in their potential than in concentrating available resources on courting back those who have made it in and to suburbia." This means, for most big cities, taking direct action on the ugly snarl of problems associated with the underprivileged—principally Negroes.

Ylvisaker is quick to point out, however, that the Foundation's programs are not intended to quiet social protest—just in case any mayor should get the idea he might placate the pickets and sit-ins with a bundle of Ford funds. "Before we're through," Ylvisaker predicts, "we expect to have stubbed our quota of toes and run into brickbats from opposing sides. Still it is our belief that a middle ground of constructive action must be maintained and continually widened if the causes of protest are to be removed, and if protest itself is to become more than a social irritant and an invitation to violence."

The Foundation's program, therefore, aims straight at the heart of the great Negro protest: schools and jobs. In every grant it has made, these are the two critical concerns. Moreover, it has

concentrated on the employment of young people, generally 16 to 22, as the key to broadening job opportunities. As Dr. James Bryant Conant found when visiting several of the largest cities for his book *Slums and Suburbs*, "the employment of youth is literally nobody's affair." This fact, along with indifference to the complex educational needs of Negro slum dwellers, caused Conant to warn that "we are allowing social dynamite to accumulate in our cities."

New Haven broadens out

No single grant of the Foundation better illustrates the need and the potential for such programs than that given to the city of New Haven. Its history is revealing. In 1954, Mayor Richard Lee asked the Foundation for money to coordinate the physical education programs of the school and recreation boards. The request did not seem broad-gauge enough at the time and was turned down. At the same time, Lee was starting the vast urban renewal effort which has spent more money (\$88 per New Haven resident), and probably redeveloped more of the city, than any other metropolis of any size.

New Haven's first big project, Oak Street, involved considerable relocation of low-income families, and uncovered the typical nest of social disorders. When the city turned to the local Community Council for help, the response was somewhat disheartening. As the executive director of the Council, Paul F. Nagle, says in retrospect: "The Council got C for effort and D for performance. It declined to testify on behalf of redevelopment on the grounds that this was a political issue. City Hall could hardly have regarded us as a tower of strength in advancing its objectives for municipal progress."

Lee's renewal program progressed despite this lack of cooperation, but with it came the recognition, as New Haven's Mitch-

ell Sviridoff says, "that the problems of the city could not be solved through a redevelopment or an industrial and business expansion program alone; somehow the city had to come to grips with those social-human problems which grow out of conditions of poverty in the inner city and which in themselves feed that very process of decay which redevelopment attempts to reverse."

Gray-area problems

The problem is most acute in the so-called gray areas, and in New Haven, the gray area consists of six inner city neighborhoods with 83 per cent of the city's 23,000 Negroes (of a total population of 152,000). In these neighborhoods, one out of every three families (one out of every two Negro families) has an annual income of less than \$4,000. Unemployment in these neighborhoods is twice as high (at 10 per cent) as for the whole city. Moreover, 85 per cent of all New Haven families receiving state aid to dependent children live in these six neighborhoods.

Sviridoff understands the gray area problem as well as anyone, for he now heads Community Progress, Inc., the new force in New Haven's redevelopment. CPI administers the city's Ford grant, and is the amalgamating agent between city hall, the Community Council, and other private social agencies. As a labor expert, and former head of the New Haven School Board, Sviridoff is singularly qualified to administer a program which concentrates on better education, more jobs, and coordinated, neighborhood services.

The critical individual in New Haven, as elsewhere, is the school dropout. CPI is giving him a broad variety of preferential treatment, calculated either to get him back in school, if only on a part-time basis, or at least into a training program. And tomorrow's dropouts are hopefully reduced

by devices such as New Haven's pre-kindergarten teaching program, which operates in six centers, with 180 children.

Intensified reading and special literacy programs are directed at helping children from homes in which there is not even a single book. In some of these cases, parents are called in periodically, the idea being to involve them in both the teaching and the learning process. So far, particularly in the special parent classes associated with pre-kindergarten programs, this has been extremely successful.

New Haven has started a number of other educational programs, including:

► Intensified reading, employing specialists who work both with teachers on better teaching methods, and with students.

► A "Higher Horizons" program, which ranges fairly wide, with special courses (given last summer on a voluntary basis) in everything from remedial reading to continental cookery. In regular school work, this program makes use of dramatics and music, and brings in lecturers and story-tellers from business and the arts. As part of this program, Yale's Russian Chorus recently performed at the Conte school, the city's first new community school (FORUM, Nov. '63).

► A pilot program for junior high school students, which will allow them a broad choice of elective subjects, geared to their interests, rather than shackling them to the customary classic or commercial curricula which are tailored to the requirements of middle-class, college-bound students.

► Special attention to the needs of "nonconforming" students, at the ninth grade level. The stress here is on "social learning"—even for 14- and 15-year olds, learning to learn in a classroom environment is still of first importance.

CPI administers the funds for these special education programs, but the planning and direction is

done by the Board of Education, which in New Haven is answerable to the Mayor more directly than in most U.S. cities. The result has been a strong link between renewal and schools, particularly in the formulation of the "community school" idea, which Consultant Cyril G. Sargent proposed for New Haven's six "inner-city" neighborhoods.

The community school serves as the center for most neighborhood services, particularly for health, recreation, and welfare. Each is staffed with a neighborhood service worker (from CPI), a recreation supervisor, and a special assistant principal for the school itself. These persons have the responsibility for coordination of all programs on the neighborhood level.

CPI's most singular achievement to date, has been in jobs. The agency has opened special employment centers in three inner-city neighborhoods, with the aid of a \$300,000 grant from the federal Office of Manpower, Automation and Training (OMAT). These centers are providing intensive individual service for 400 unemployed youths. Each is interviewed, tested, counseled, referred for training to special centers, and eventually placed in a job. Since

this program started some 15 months ago, over 200 persons have been trained and placed, about half of them high school dropouts and half Negroes.

CPI's program, in fact, is already so well established that many local employers take its recommendations almost without question. Yale University, the city's largest employer, has put 15 of CPI's "graduates" to work and is also participating in the CPI program by providing student tutors for school children. Finally, the critical interrelationship of physical renewal and social planning is shown clearly in one of CPI's most striking achievements: Macy's, which is building a new store in the Church Street urban renewal area, has agreed to hire 800 to 1,000 persons through CPI.

Boston's social renewal

A prime mover in the creation of Community Progress, Inc., and in securing the Ford grant for New Haven, was Edward Logue, then Mayor Lee's Development Administrator. Since he became Development Administrator in Boston in 1960, Logue has put the solution of social problems at the top of his list in that city as well.

As in New Haven, it was the



Special skills are emphasized in New Haven's vocational classes

JERRY THORNTON

urban renewal program which uncovered the need for a comprehensive attack on social problems in Boston. The thought was, early in the game, that attention should be directed primarily to actual renewal areas, and that the new approach might be a means of smoothing the path for physical renewal. However, studies indicated that the social problems were not at all confined to renewal areas, and at the same time the Foundation made it clear that the attack on those problems would have to be on a community-wide basis.

After considerable discussion about how to implement this effort, a new organization, Action for Boston Community Development (ABCD), was formed, with Joseph Slavet, former head of the city's Municipal Research Bureau, as its executive director. Unlike New Haven's CPI, ABCD is not an "action" agency. Its primary job is to plan programs for the existing agencies to carry out, and to evaluate them. Reflecting Slavet's background, ABCD is heavily oriented toward research.

Action by persuasion

Thus ABCD does not impose a new layer of semigovernment into the urban picture, but rather hopes to coordinate and direct the activities of existing layers. This involves considerable persuasion in an area where ingrown jealousies are common. Logue feels that Boston's social service agencies have been more flexible than New Haven's, even if the governmental apparatus is tougher to deal with. (The School Committee in Boston, for example, is rigidly autonomous, and has moved slowly on coordination of school programs with manpower training and other programs.) Another complicating factor for ABCD is that, despite pulling back from direct involvement in neighborhoods, it is still identified with urban renewal. And there has been a great deal more opposition

to urban renewal in Boston than there has been in New Haven.

With the aid of a federal OMAT grant, ABCD is now concentrating on a "youth opportunities" program, which is being carried out by two settlement houses to serve 1,600 boys and girls. The object is to make them more employable, or as Ylvisaker puts it, "To show these young people that they can hope to become something more than a policy-slip runner."

North Carolina vs. poverty

As the New Haven and Boston experiences indicate, local situations — and personalities — are strong factors in shaping the programs. The Foundation's latest and largest grant, to the state of North Carolina, reflects the determination of Governor Terry Sanford to combat the obsolescence of school programs, and to throw the weight of the state's resources into the battle against social disorganization and poverty. Foundation officials had originally been thinking of making a grant to a southern city, but Sanford's proposals won them over to their first state-wide grant. It will be matched eventually by state funds and by money from local foundations. Over the first five years, at least \$3 million will come from the latter sources.

Unlike the others, the North Carolina grant will also go to aid families in rural areas, but otherwise the program is similar to those in the northern cities. Special emphasis will be given to improving educational opportunities, with stress on better teaching of the basic skills in reading, writing, and arithmetic, principally in the lower grades. Also, some ten areas—including cities and rural counties—will be invited to design experimental projects which would encourage joint efforts by public and private agencies to improve the social, health, and environmental conditions in economically retarded areas. A state-

wide, nonprofit corporation administers the grant, but, like similar corporations in Boston and Philadelphia, it works through existing private and public agencies, conceives programs, and carries out research.

The Foundation is also backing significant experiments in neighborhood extension programs. One such is in Pittsburgh, where local foundations and three universities are participating in a program designed to strengthen three neighborhoods by:

- 1) Upgrading the neighborhoods' physical condition;
- 2) Reducing crime and juvenile delinquency;
- 3) Raising the educational level of children, and the level of adults' skills;
- 4) Broadening employment opportunities.

The key to achieving these objectives is the level of citizen participation that can be attained in the neighborhood itself. Each neighborhood has a special worker, whose job it is to keep such participation at a high degree of effectiveness and—working with the staff of ACTION-Housing, Inc., which administers the grant—to help coordinate community resources (schools, police, recreation, social services) with neighborhood planning.

Coordinating the attack

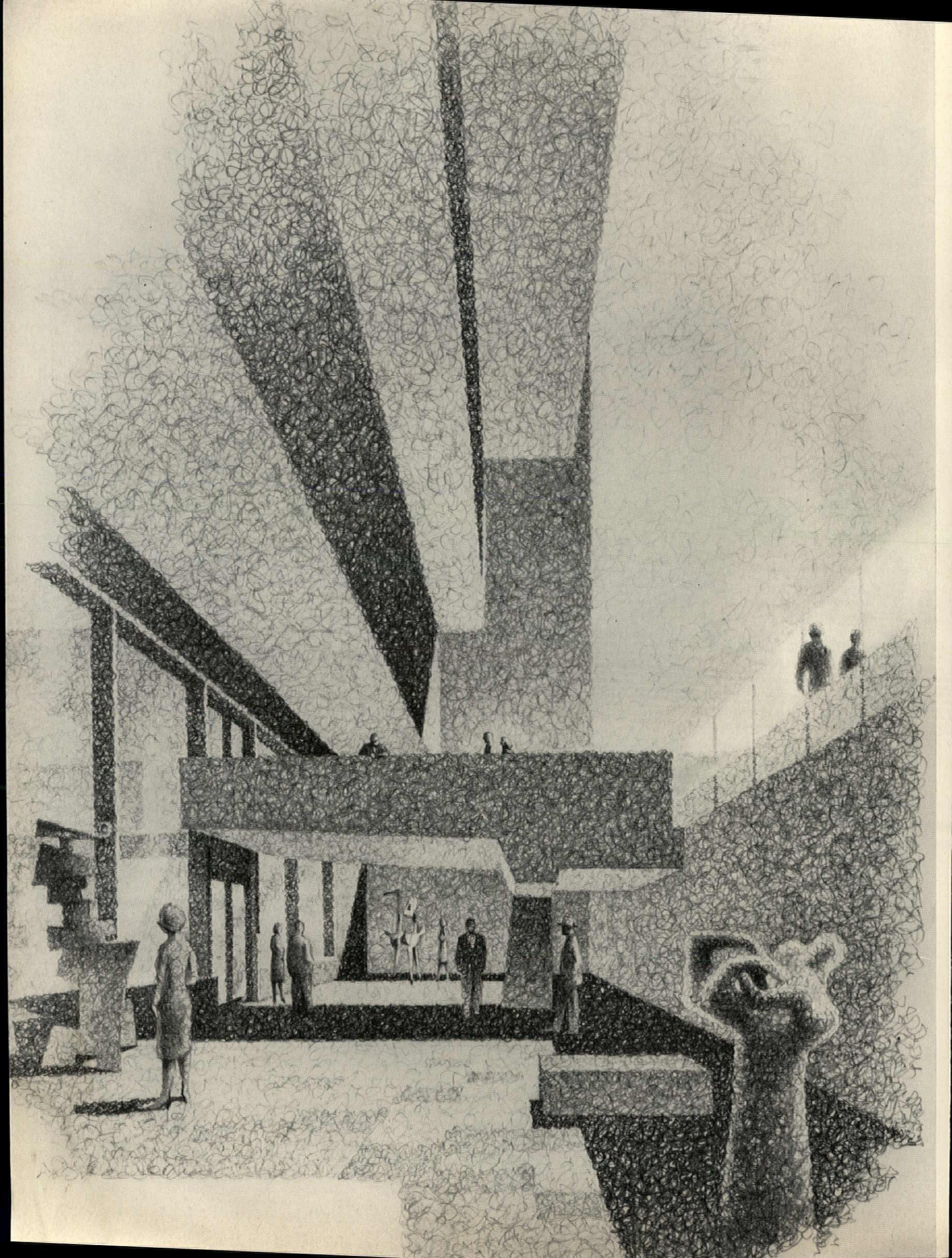
Mobilization of the vast but underused resources that exist in most cities is the aim of the whole Ford Foundation program. In Kansas City and Cleveland, Ford has joined with other foundations in sponsoring local programs for community renewal. In New York, it is helping the smaller Vera Foundation in an experiment to make the administration of prison bail more humane as well as more economic.

"Foundations" says Ylvisaker, "have the peculiar assignment in society to tackle the problems which aren't yet solved." So far, in its efforts to force a coordi-

nated attack on urban problems in the gray areas, the Ford Foundation has proved to be a considerable force for progress. It has also been an irritant—existing social agencies have accused it of usurping their franchises, and physical planners have accused it of meddling in people's lives without really being sure of what it is doing. Perhaps the most widely heard criticism has been that the techniques of "social planning" are still pretty crude. And, as one physical planner says, "Renewal, transportation planning, and the improvement of physical plant cannot wait around until the social planners figure out a way to rid the city of alcoholics and problem families."

There need not be any wait. The whole point of Ford's Gray-Areas Program is that physical and social planners can, and must, get together on objectives. As Ylvisaker says, "Until educational planning is related to physical planning, physical planning tied to social planning, and social planning translated into actions that make a discernible difference in the lives of gray-area residents, no community can rightly say it is making the most of its resources or doing its civilizing best."

More "civilizing" is precisely what is needed in American cities, and the degree of civilizing that the Ford-inspired programs generate will be the ultimate measure of their success. Ylvisaker believes that "the most powerful agent for renewing our cities is the awakening of self respect." Most particularly for the millions of Negroes who are forced into the ghettos of the gray areas, such an awakening is a necessity—as the Ford programs are proving. These programs are creating the interest, and the local investment, that can help make urban renewal mean what it was once supposed to mean when the program started: "a decent home and suitable living environment for every American family." END



UPSIDE-DOWN MUSEUM IN MANHATTAN

"Today's structure in its most expressive form," Architect Marcel Breuer has said, "is hollow below and substantial on top—just the reverse of the pyramid. It represents a new epoch in the history of man, the realization of one of his oldest ambitions: the defeat of gravity."

In designing the new Whitney Museum of American Art for a corner site on Manhattan's Madison Avenue, Marcel Breuer and his associate, Hamilton Smith, defeated not only gravity but several other enemies of modern urban design as well: uniformity, excessive crowding, poor light, and lack of identity. And, in so doing, they solved a number of problems common not only to urban museums, but to other urban structures as well.

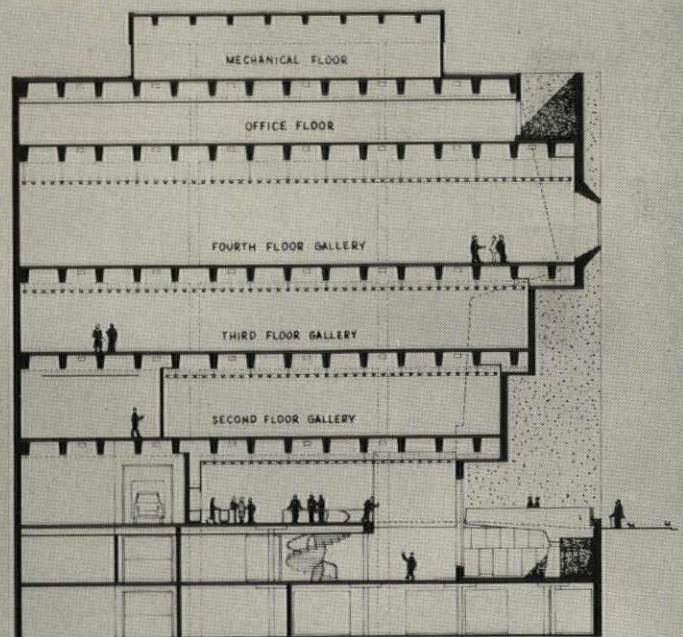
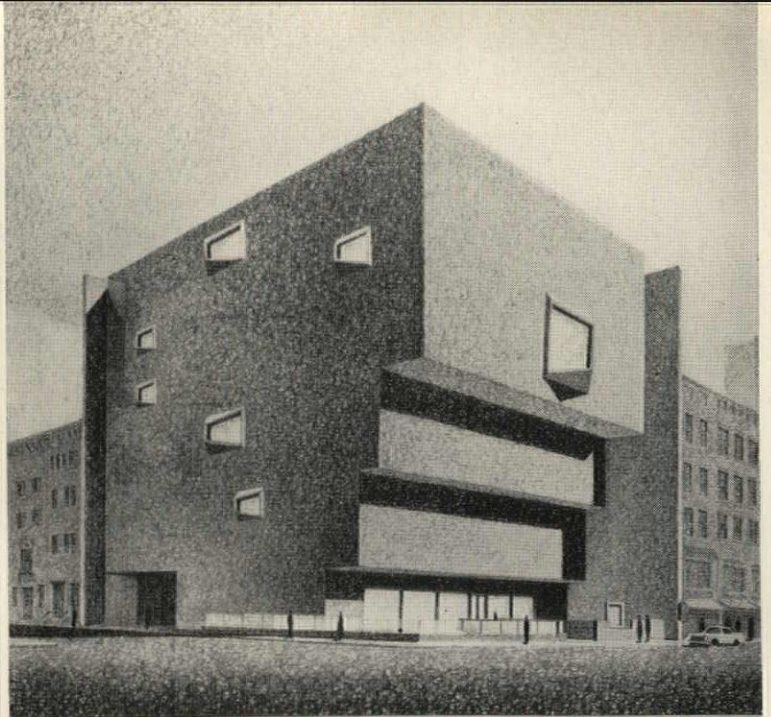
Space below, volume above

The upside-down form of the new Whitney is no arbitrary affair; it is a perfectly rational solution to a program that called for relatively little floor space at sidewalk level, with substantially bigger gallery floors higher up. It is also a fine way of creating an outdoor exhibition area for sculpture (see drawing opposite), and a fine way of both separating the museum from the hustle and bustle of the street and attracting curious pedestrians to enter the glassy galleries and lobbies beyond the entrance bridge. Unlike Wright's Guggenheim Museum, the Whitney will open its galleries to the visitor—but only where the visitor can really look into them. It will also create a sense of spaciousness at sidewalk level not common on many streets.

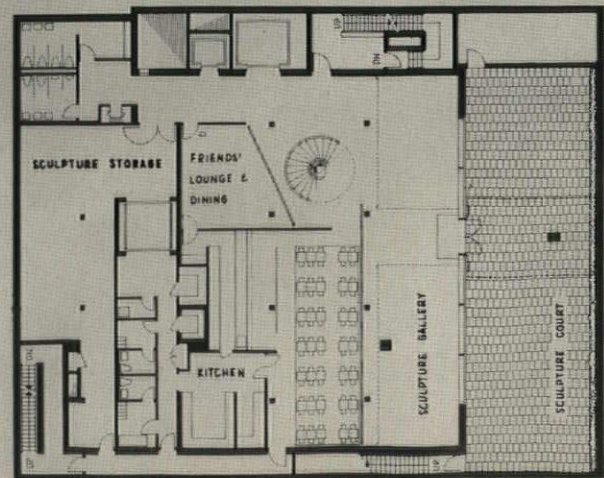
Upstairs are the principal galleries (on the second, third and fourth floors) and the administrative offices (on the fifth floor). These areas need nearly all the available space, and so the building is cantilevered out as it goes up to form an inverted ziggurat.

The galleries on various floors add up to a net area of almost 30,000 square feet. Half of this area will be used primarily to display the Whitney's collection; the other half will be used for loan exhibitions. However, these space allocations may change in re-

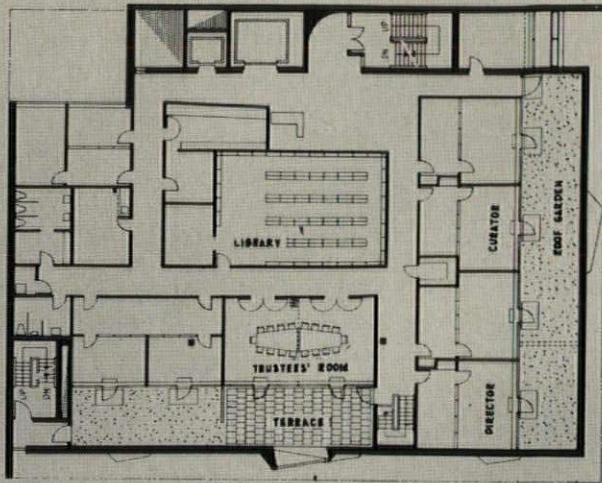
Section through museum (right) shows a sunken, outdoor sculpture court off Madison Avenue, and a two-story, indoor sculpture gallery next to it. Plan at this level indicates the location of the entrance bridge, seen in drawing on facing page. The lower floor also contains a public cafeteria, separated from the sculpture gallery by a pierced screen-wall. Spiral stair of wedge-shaped granite slabs leads to lobby in mezzanine above.



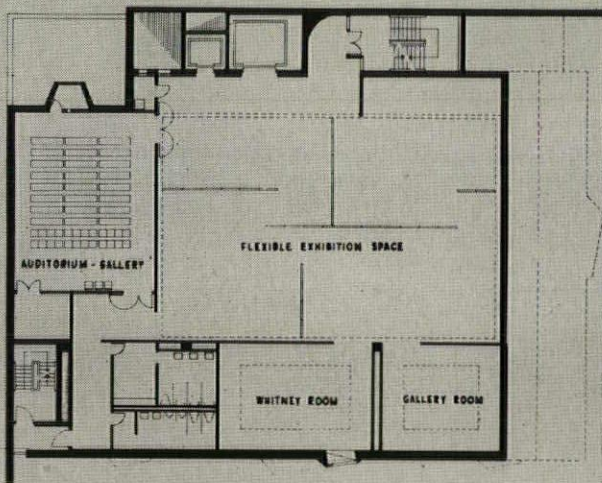
LONGITUDINAL SECTION



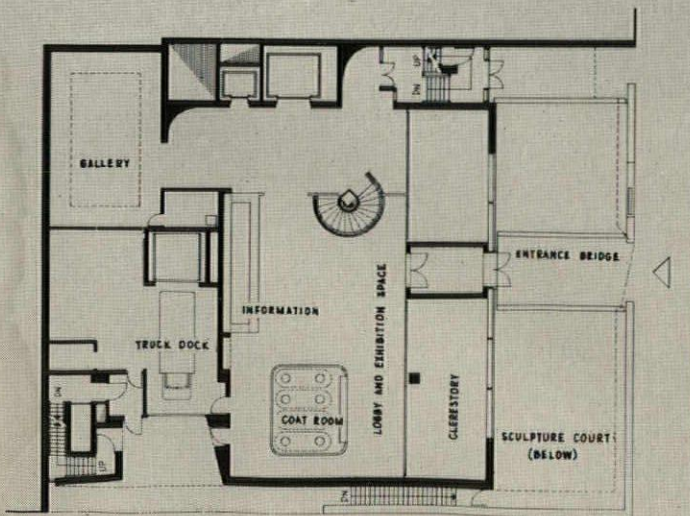
FIRST LOWER LEVEL



OFFICE FLOOR PLAN



SECOND FLOOR GALLERY



GROUND FLOOR PLAN

Plans of fifth-floor offices (top), typical second-floor galleries, and street-floor entrances (bottom) reflect varying requirements on different levels. These variations suggested the inverted ziggurat shape of the building. The Museum has three gallery floors (in addition to the sculpture gallery); clear ceiling heights range from 12 feet 9 inches on second and third floors to 17 feet 6 inches on the fourth.

sponse to special requirements, so the galleries were designed for greatest possible flexibility.

Above the street floor level, the exterior walls were kept almost completely blank to provide plenty of hanging area for the paintings inside; and the galleries behind the blank, granite-faced walls are artificially lighted, using a specially designed grid that helps support moveable partitions (see opposite page).

Artificial light preferred

The architects realized that it would be virtually impossible to get top-lighting in a multistory museum; and they also felt that natural light, reflected from surrounding buildings, would create serious problems in terms of color and intensity.

For this reason, the only openings in the blank exterior walls are projecting "bay windows" carefully angled to keep out direct sunlight. These "bay windows" serve occasional offices and some of the smaller galleries; they also help light the fifth-floor penthouse terraces which, in turn, serve the offices on that level.

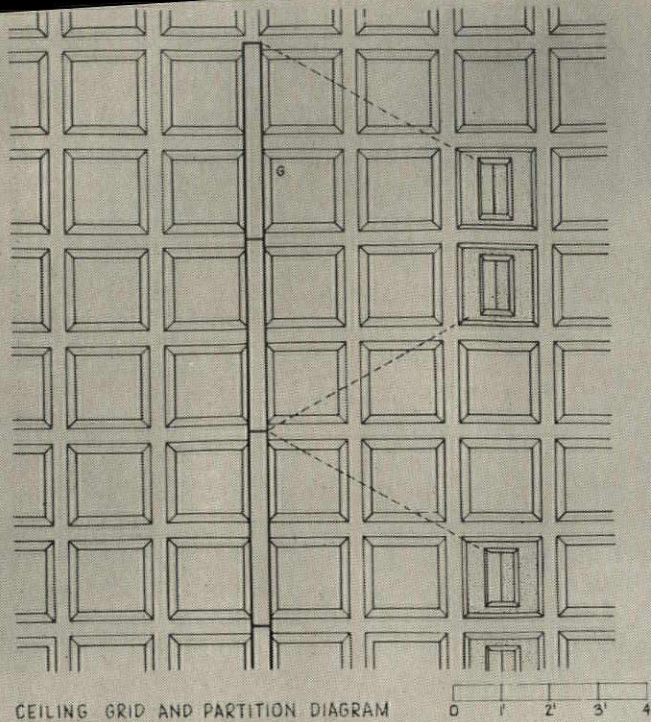
All of these rational considerations produced a building that will be unusual by any standards, and this pleases the architects no end. "A museum in Manhattan should *not* look like a business or office building," Breuer said in discussing these plans. "Nor should it look like a place of light entertainment. Its form and its material should have identity . . . It should be an independent and self-relying unit." The new Whitney will be all these things and more.

FACTS AND FIGURES

Whitney Museum of American Art, 75th Street & Madison Avenue, New York City.

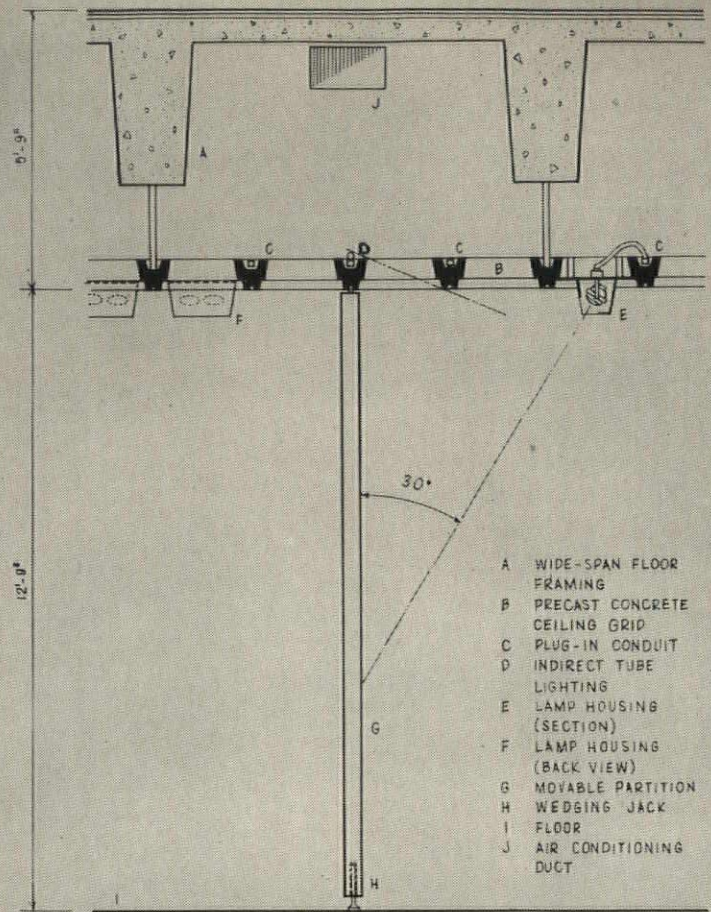
Architects: Marcel Breuer & Hamilton Smith. Consulting architect: Michael Irving. Engineers: Paul Weidlinger (structural), Werner, Jensen & Korst (mechanical). Lighting consultant: Stanley McCandless.

Structure: Reinforced concrete; north and south walls are load-bearing, and profiled into successive cantilevered steps as they approach Madison Ave. East and west walls are reinforced concrete also, with west wall (facing avenue) designed as series of deep trusses spanning 81 feet between cantilevered steps. Site: 104 feet by 125 feet. Total enclosed space: 76,830 square feet. Construction to start by mid-1964. Estimated cost: \$3.4 million. END.



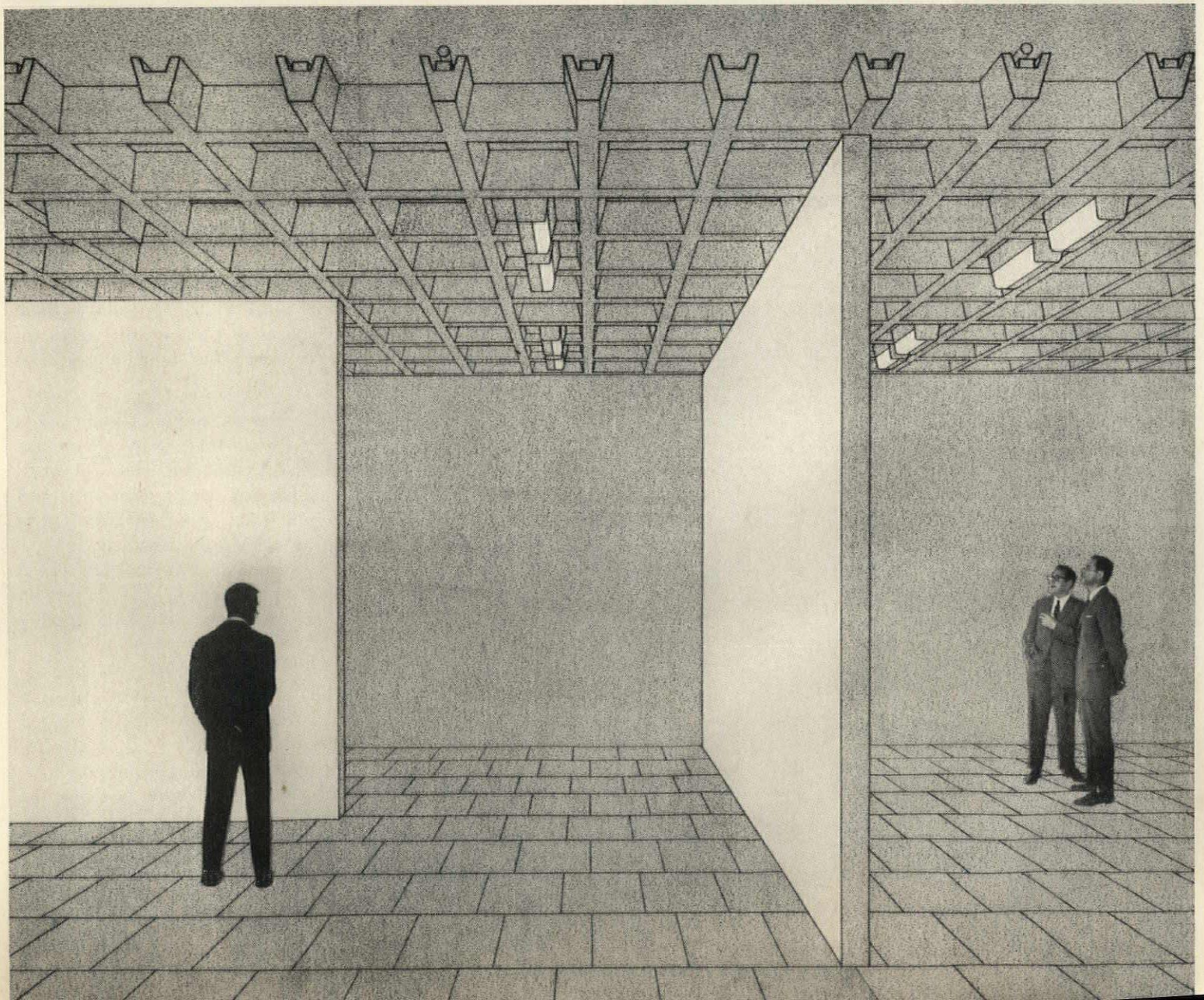
CEILING GRID AND PARTITION DIAGRAM

Suspended grid of precast concrete was designed to permit utmost flexibility in installing lighting fixtures, and similar flexibility in the arrangement of movable partitions. The weight of the grid will help stabilize the partitions.



- A WIDE-SPAN FLOOR FRAMING
- B PRECAST CONCRETE CEILING GRID
- C PLUG-IN CONDUIT
- D INDIRECT TUBE LIGHTING
- E LAMP HOUSING (SECTION)
- F LAMP HOUSING (BACK VIEW)
- G MOVABLE PARTITION
- H WEDGING JACK
- I FLOOR
- J AIR CONDITIONING DUCT

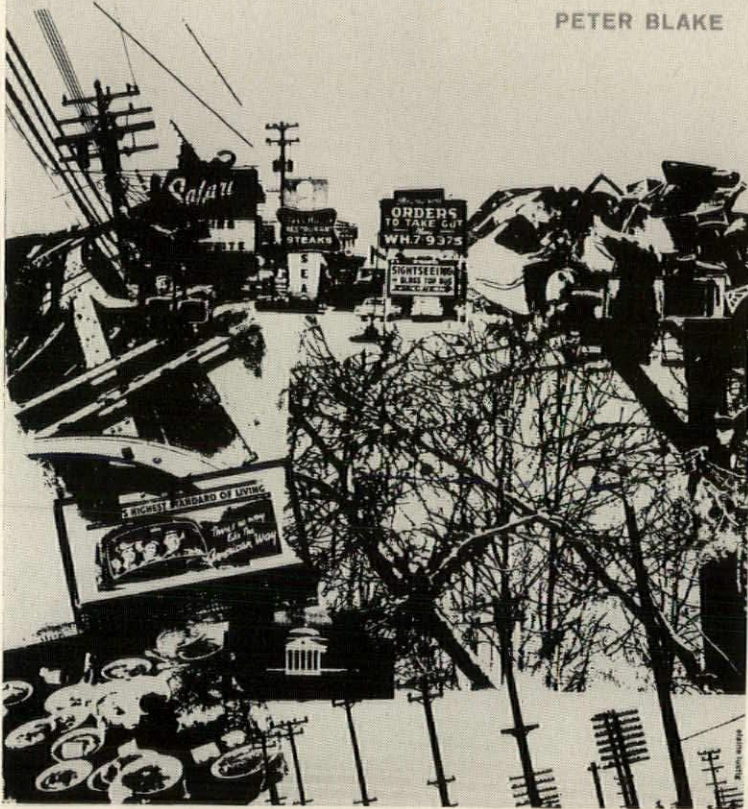
SECTION



God's Own Junkyard

The planned deterioration of America's landscape

PETER BLAKE



"This book is not written in anger. It is written in fury . . . It is a deliberate attack upon all those who have already befouled a large portion of this country for private gain, and are engaged in befouling the rest

"No people has inherited a more naturally beautiful land than we: within an area representing a mere 6 per cent of the land surface of the globe we can point to mountain ranges as spectacular as those of the Dolomites and to jungles as colorful as those of the Amazon valley; to lake-studded forests as lovely as those of Finland and to rolling hills as gentle as those around Salzburg; to cliffs that rival those of the French Riviera and to sandy beaches that are unexcelled even by the shores of Jutland; in short, to about as varied and thrilling a geography as has ever been presented to man.

"The only trouble is that we are about to turn this beautiful inheritance into the biggest slum on the face of the earth

"This is, therefore, a muckraking book, not because muckraking is a particularly enjoyable activity, but because there seems to be so much muck around that needs to be raked so that this country may be made fit again to live in."

The above passages are from a new book, *God's Own Junkyard**, written by FORUM's Managing Editor, Peter Blake and published this month as an original paperback (together with a smaller hard-cover edition). The book was generously subsidized by the Graham Foundation for Advanced Studies in the Fine Arts, and this subsidy helped make possible a relatively inexpensive, though heavily illustrated soft-cover book, to help in the nationwide battle against galloping vandalism in cities, suburbs, and countryside. The book was designed by Elaine Lustig.

On these four pages are typical illustrations and passages from the text. The book starts with a 20-page essay, which is followed by more than 100 pages of photographs and captions like the ones reproduced here. The book closes with these paragraphs:

"Today, whenever architects, artists, writers, and critics gather to deplore, view with alarm, and write manifestos about the planned deterioration of America, there is much talk about hucksters and vulgarians and politicians and special interests. It is pretty good talk, and it is largely true talk—as far as it goes. But it misses one essential point: the point that the 'intellectual elite' in America has failed miserably to accept its basic responsibilities, and to set an example . . . of self-imposed restraint, an example of quality rather than novelty. . . .

"For the truth is that the mess that is man-made America is merely a caricature of the mess that is art in America—and a very mild caricature at that. The inscription on Sir Christopher Wren's tomb in St. Paul's Cathedral contains the famous words: 'If thou seek his monument, look about thee.' God forbid that this should ever become *our* epitaph. . . ."

* GOD'S OWN JUNKYARD. The planned deterioration of America's landscape. By Peter Blake. Published by Holt, Rinehart and Winston, Inc., 383 Madison Ave., New York 17, N.Y. 144 pp. 8½" by 10½". Illus. Paperback: \$2.95; hard cover: \$4.50.



GEORGE CHERIN



WALLACE STEWART

Townscape

"The two American scenes shown above document the decline, fall, and subsequent disintegration of urban civilization in the United States . . . at the top, Thomas Jefferson's campus for the University of Virginia, circa 1820; below it, Canal Street in New Orleans, in the 1960's.

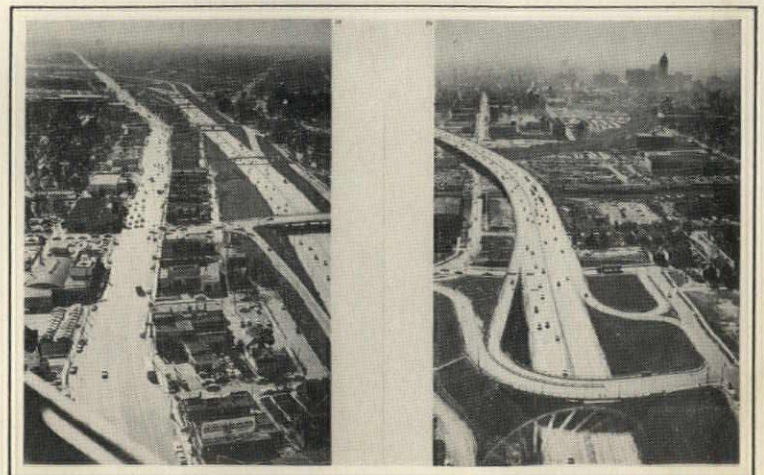
"Jefferson's serene, urban space has been called 'almost an ideal city.' Canal Street, one fervently

hopes, has not been called anything in particular in recent times. . . . What manner of people is being reared in these infernal wastelands?

"One answer is: people who no longer see. Recently, the Honorable Mario Cariello, President of the Borough of Queens (N.Y.) . . . delivered himself of the considered opinion that his Borough 'truly represents the full flowering

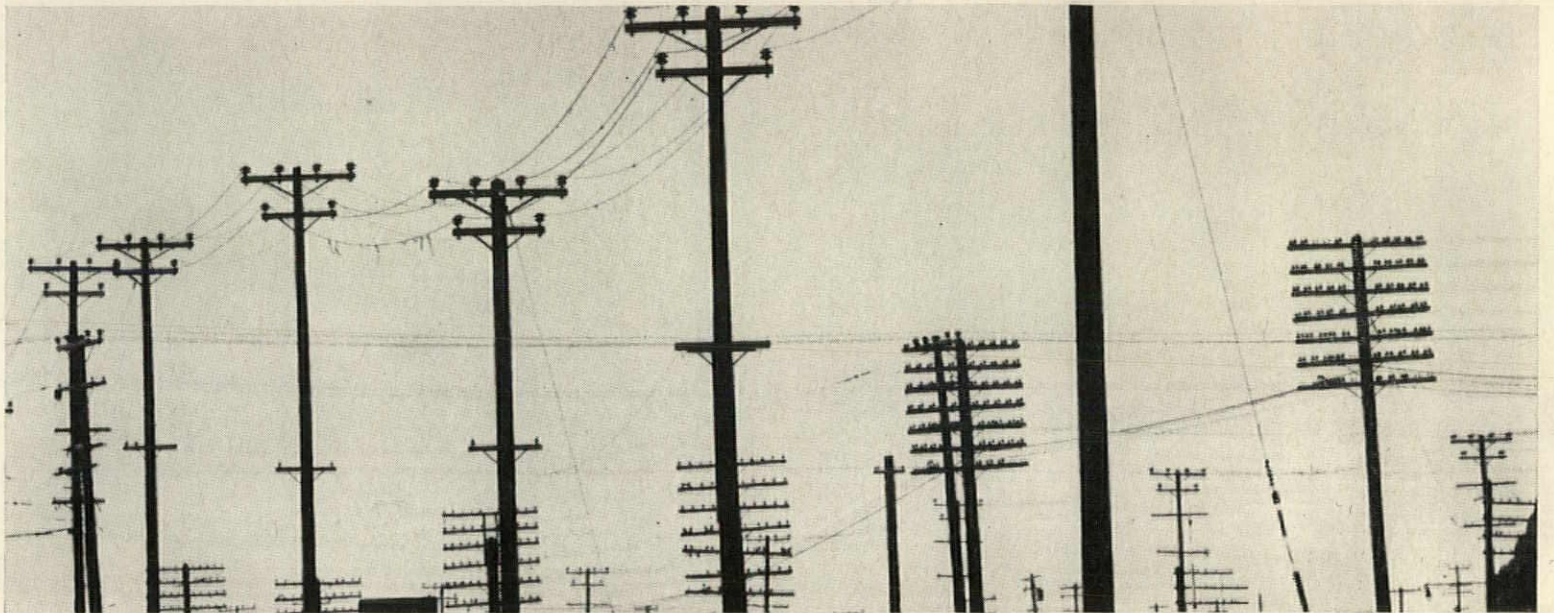
of advanced, urban living.' Oh Mario, . . . there was once another son of Italy, a man called Leon Battista Alberti, who asked, 'How are we moved by a huge, shapeless, ill-contrived pile of stones?' Alas, he lived and died before there was a fully flowering Borough of Queens; and so you may never know his answer."

(Below: representative pages from the section on Townscape.)





STANDARD OIL CO. (N.J.)



Skyscape

"Most of us accept the cluttering up of the sky with wiring . . . and just about anything else that vulgarity or expediency can produce. We do so for the one reason that compels us to do so many things: it's cheaper—and what's the difference, anyway?"

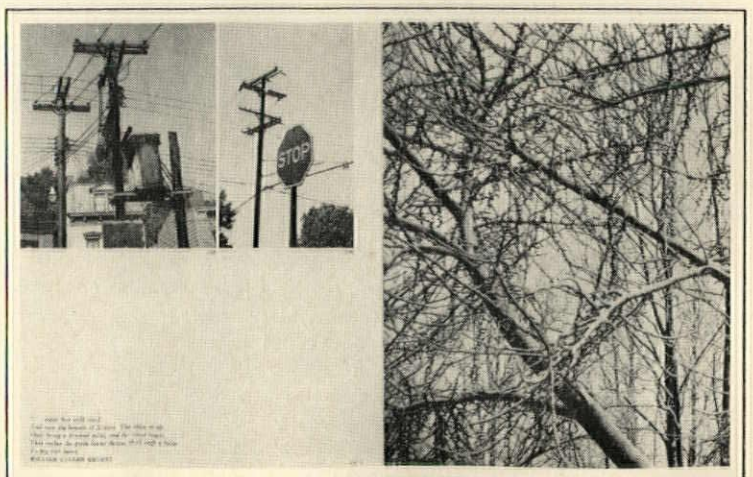
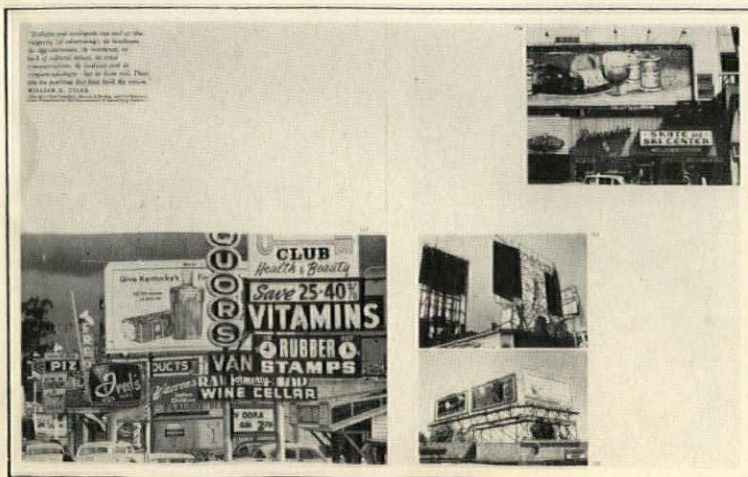
"So the American skyline . . . boasts more lightpoles than trees; more tangled cables than branches, leaves or birds; more

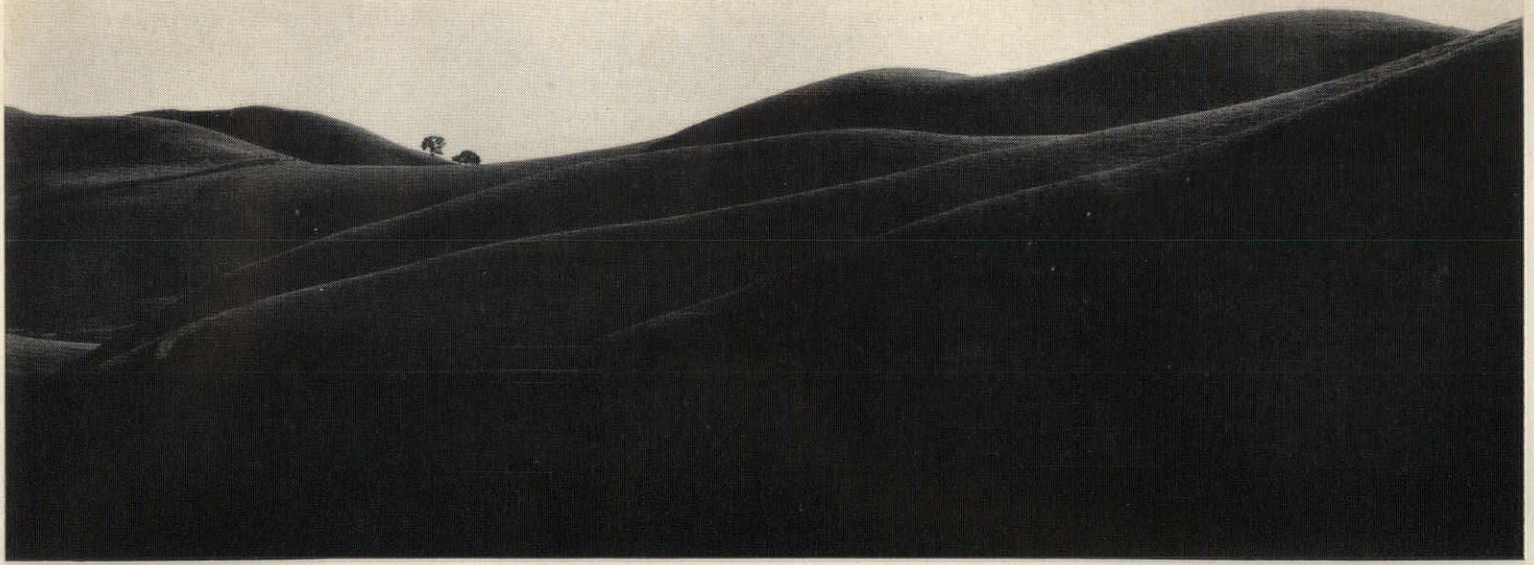
smog and soot than sun or stars. Where men once decorated their rooftops with gilded finials, we decorate ours with tar-papered watertanks, pipes, smokestacks, vents, aerials, and illuminated billboards. Like children, we insist upon labeling most of our buildings, putting the name of the owner or tenant up on top in giant letters . . . And yet we smile when we see churches bear-

ing signs that promise 'JESUS SAVES' and similar good tidings.

"It has been said that mankind has always exerted itself most creatively where its buildings reached toward the heavens . . . If our civilization, too, is to be known by the shapes of its upper extremities, then we will need all the saving that's available."

(Below: representative pages from the section on Skyscape.)





Landscape

"There are several ways of looking at our land: there is the choked-up way ('America the Beautiful'); there is the socio-political way . . . ; and then there is the point of view graphically stated above.

"It is a point of view that enjoys the sanction of all right-thinking people . . . after all, doesn't an owner have the right to do with his land as he pleases

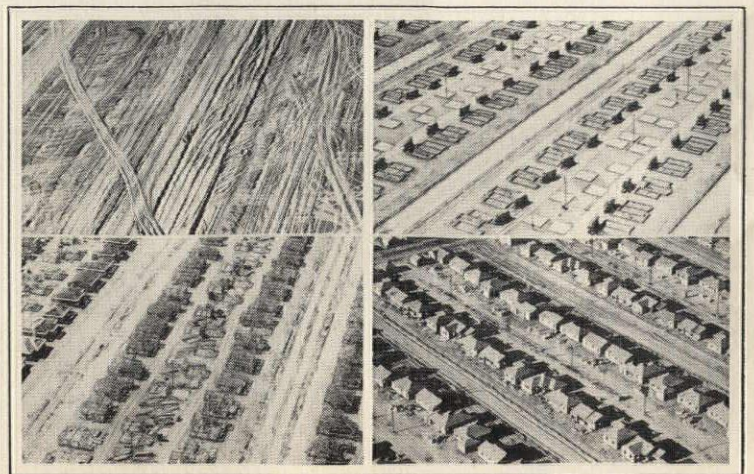
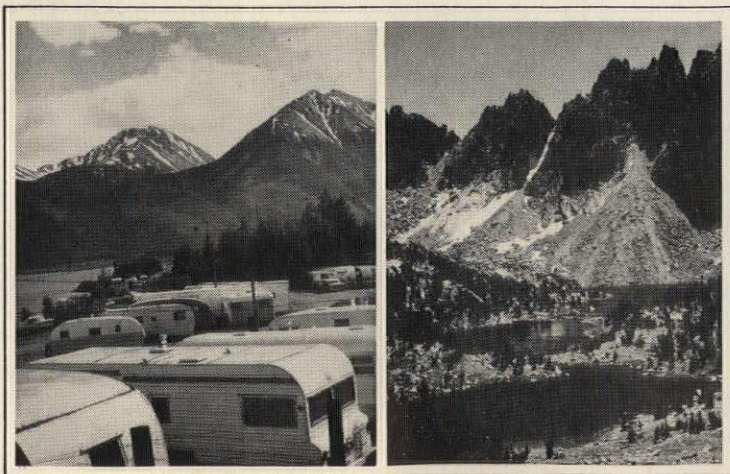
(more or less)? If he wants to cut down all the trees, plant billboards and telephone poles, bulldoze the hills into oblivion, turn the place into a village dump . . . well, isn't this a free country . . . ?

"One answer was given by Tom Paine: 'Men did not make the earth,' he said, implying that we held it in trust. . . . 'The land is Mine,' God had said to Moses. . . . 'Ye are strangers and sojourners

with Me. . . .'

"[But] the brutal destruction of our landscape is much more than a blow against beauty. Every artist, scientist, and philosopher . . . has pointed to the laws of nature as his greatest source of inspiration. . . . In destroying our landscape, we are destroying the future of civilization in America."

(Below: representative pages from the section on Landscape.)







MINIATURE ROCKEFELLER PLAZA IN A MIDWEST CITY

In 1805 a wide place in the road through the town of Canton, Ohio, where the stage coaches stopped, was designated "Public Square." In time the town hall and county courthouse were built there; it became, in ensuing years, a kind of community front porch. Its proudest moment probably came in 1907 when President Theodore Roosevelt arrived to dedicate a memorial to the assassinated President McKinley, who once practiced law there.

But in the years that followed, Canton's square began to run down, and by the late 1950's the cycle was nearly complete—it was just a wide place in the road again (pictured below), a transfer point for buses. Canton, a sturdy American industrial town of middle size (population: 110,000), expanding into the countryside, had decayed at its core.

But then, in 1956, came a new beginning. A planning student from Canton named Cyril B. Paumier, Jr., with the help of a classmate, William J. Johnson, presented a project for Canton renewal at the Harvard Graduate School of Design. After gradua-

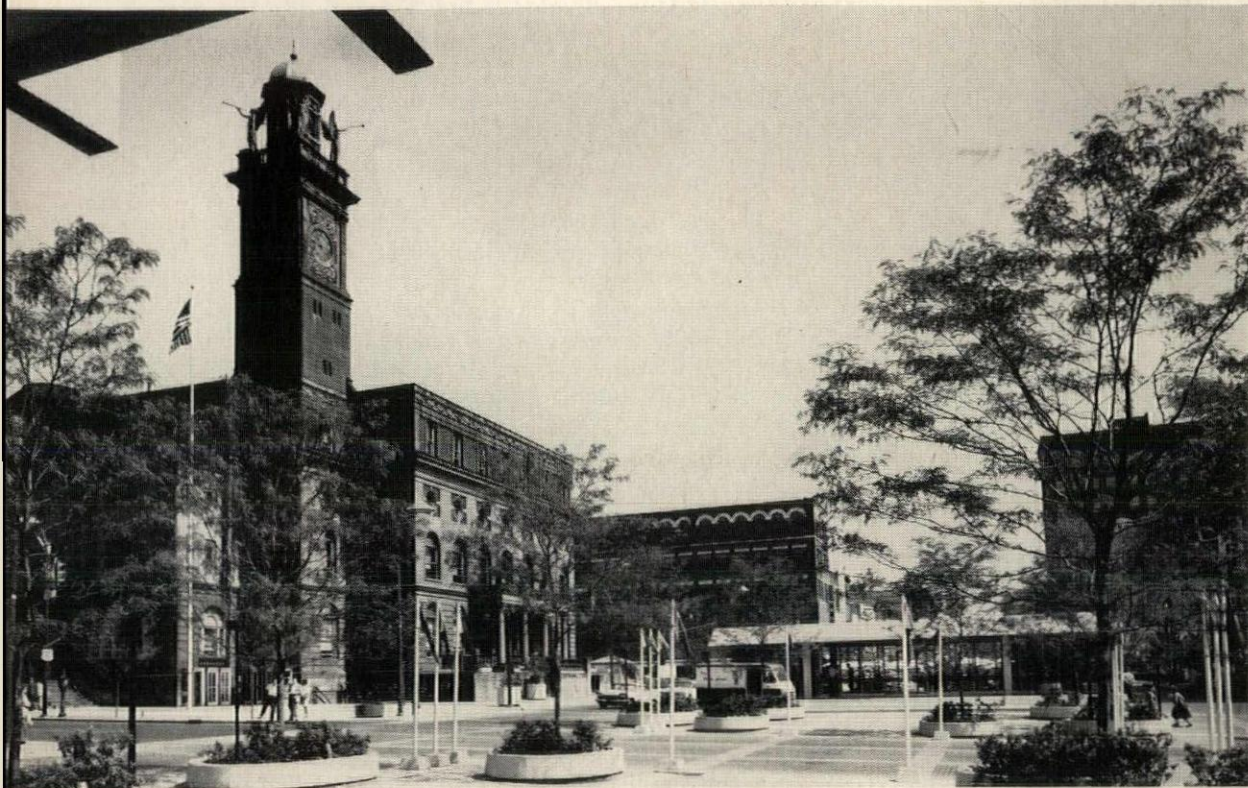
tion in 1957, they showed their ideas to a group of 25 local businessmen.

Now, some six years later, Canton's Public Square, wearing the new name of "Central Plaza," has been rededicated as a very different kind of front porch for the old town. It is a small-city edition of Manhattan's Rockefeller Center promenade, complete with restaurant, exhibition building, and, in winter, an ice skating rink. Among its designers are two rising planning firms: Cy Paumier & Associates of Canton and Johnson, Johnson & Roy of Ann Arbor, Mich. (Paumier's participation began as executive of a Canton citizens' redevelopment group.) The two buildings included in the 160 foot by 500 foot area were both designed by an architectural firm of the same new generation: Tarapata-MacMahon Associates of Bloomfield Hills, Mich.

Central Plaza is not a closed square, but, in effect, a large pedestrian island. Paumier says it would have been "impractical" to close the whole space to traffic; instead, cars are slowed down by



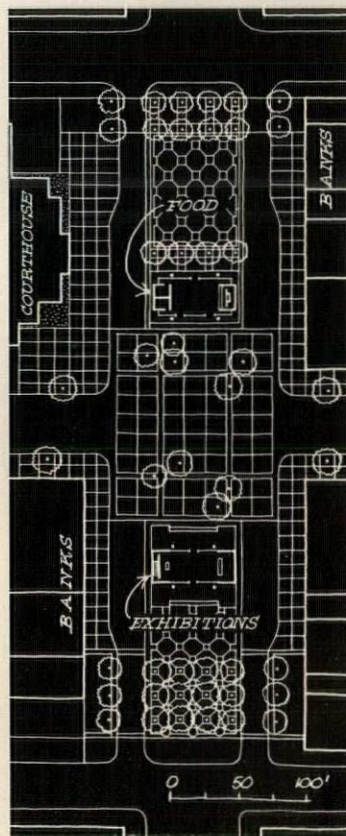
New plaza, left, and the asphalt meadow that preceded it, above



Old county courthouse (above), built a century ago, towers over the grid roof of the exhibition hall (below)



Outdoor lighting is incandescent, from globe luminaires set on standards. (See cafe area on facing page.)



new stoplights, with arrangements made to divert them completely when a large rally or show takes over the plaza.

Most of the surfaces underfoot were left hard, with less than 5 per cent given to planting areas—but these areas include banks of fast-growing plane trees, and the paved areas are a decorative departure from the usual sidewalk; some are patterned in brick.

The exhibition center (see photo left) functions both indoors and outdoors, featuring shows ranging from local industrial products to local water-colorists' works. There are three sizable fountains, ten outdoor loudspeakers (speaking mostly music), and the potency of the old street lighting was multiplied three times. Say the architects: "The materials were chosen to avoid a carnival-like feeling of impermanence, and to permit the small-scaled and airy buildings to hold their own against their overpowering old neighbors."

The construction of Central Plaza was financed chiefly by a \$400,000 grant from the local Timken Foundation (the Timken Roller Bearing Co. is one of Canton's major industries). The fact that "there is no money from Washington in it" is a point of satisfaction to the local businessmen whose energy made the rehabilitation happen.

FACTS AND FIGURES

Central Plaza Development, Canton, Ohio. Owner: City of Canton. Executive Director of Central Canton Development Association: C. B. Paumier, Jr.

Landscape architects and site planners: Johnson, Johnson & Roy, Inc. Architects-Engineers: Tarapata-MacMahon Associates, Inc. Associate Architects: Lawrence, Dykes, Goodenberger & Associates. Planning Survey: Ebasco Services. Costs: \$193,135 (buildings), \$24,000 (planting and landscaping), \$34,400 (ice rink equipment and piping), \$150,142 (plaza development: paving, lighting, benches, planters, utilities). Total: \$401,611. END





THE CHRYSLER CORP.

ROYALL, KOEGEL & ROGERS

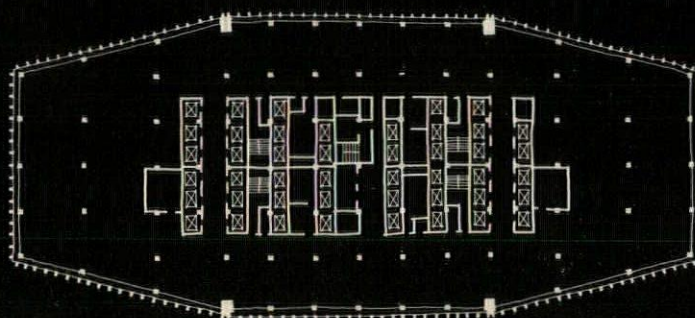
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**SIX OFFICES
FROM
NEW YORK'S
PAN AM
BUILDING**



The world's biggest commercial office building (2.4 million square feet) presents special design problems to its interior planners. Among them: a lozenge-shaped floor plan (each tower floor has 32-36,000 rentable square feet); irregular column spacing; obtuse interior angles. On the following pages are six different offices showing six different, imaginative solutions for Pan Am's interiors.

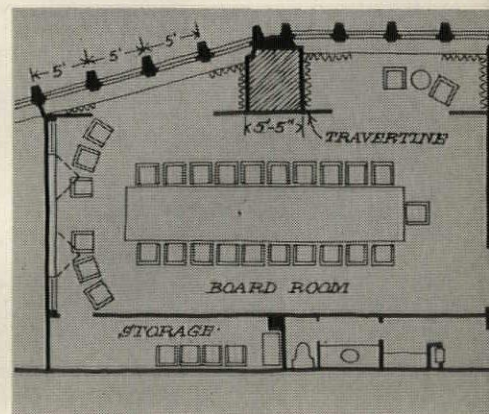
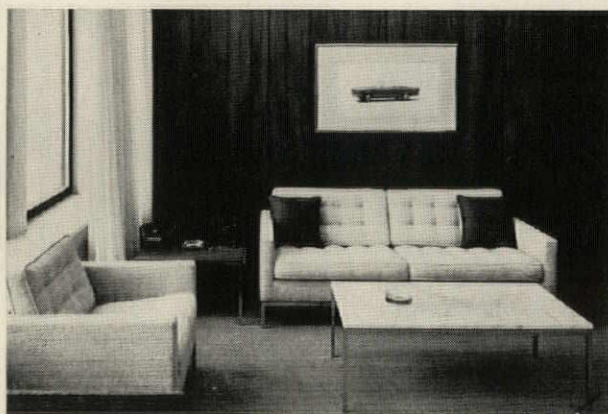
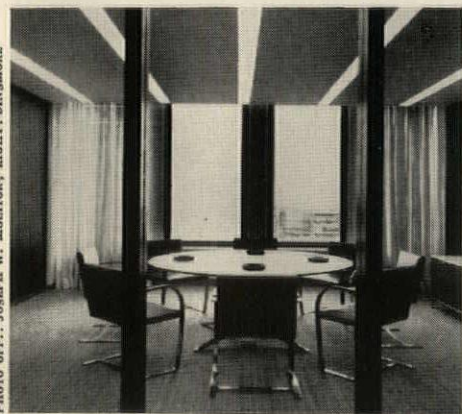


PHOTO OPP.: JOSEPH W. MOLLTON; RIGHT: DINGSBRO

ON THE 54TH FLOOR:
An auto manufacturer

One of the Pan Am building's greatest virtues is that its tower plan provides lots of perimeter for window offices (780 running feet per tower floor). This virtue is as valuable to small-space tenants, like the Chrysler Corp., as to the many companies occupying a full floor or more.

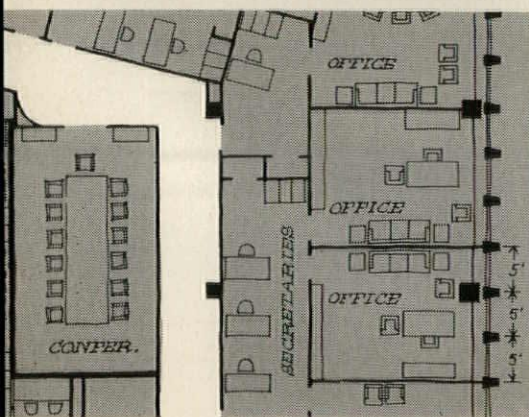
Chrysler's needs were minimal: toehold quarters for the company officers, a small conference room, a larger board room (top photo

and plan), and space for a handful of secretaries and public relations people. A suite of rooms along the north wall accommodates these needs handsomely.

In planning the board room, the designers faced a major obstacle: four of the building's columns are gigantic, and one of these was located almost dead-center in the outside wall of the room. A travertine wall was used to hide the column, and to form

pleasant alcoves on either side. The unusual ceiling is teak paneled with recessed troffers set into it in a staggered pattern. The smaller conference room (above, lower left) is separated from the reception area by full-height clear glass panels which extend the view out, but which can be draped when the room is in use.

Architects: Carson, Lundin & Shaw. General contractor: Diesel Construction Co., Inc.



ON THE 52ND FLOOR:
A law firm

Almost as a matter of course, law offices such as this one for Royall, Koegel & Rogers are traditional. While there may be something anachronistic about recreating the Georgian in a contemporary skyscraper, there is nothing old-fashioned about the way these offices have been planned.

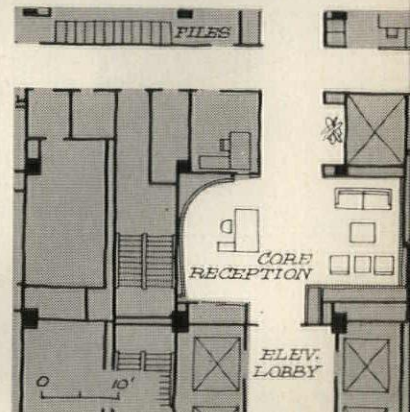
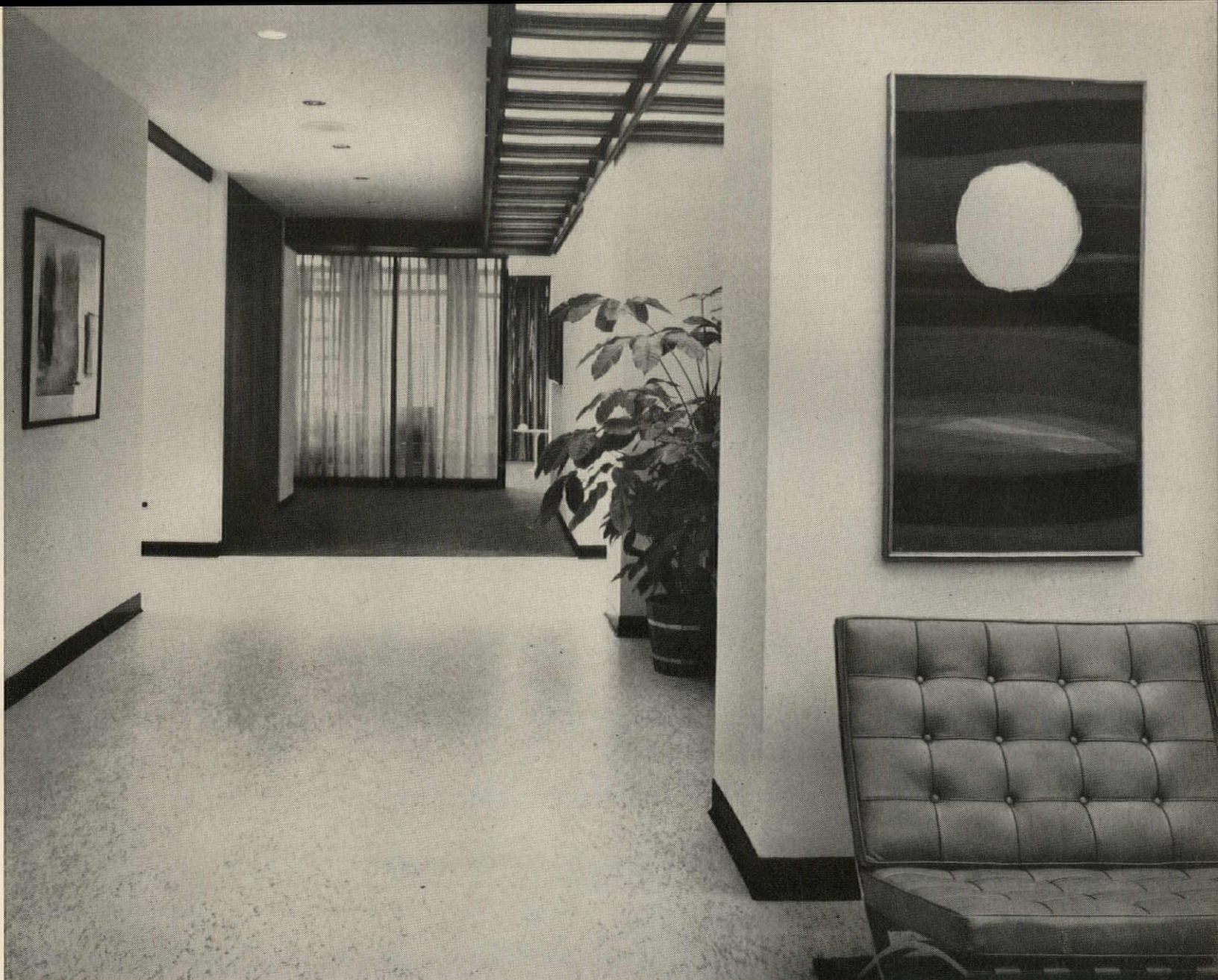
The entire perimeter is taken up by private offices, with secretarial spaces forming a baffle between those offices and the cor-

ridor (plan, above). The legal library and other secondary facilities are located in the interior. In every case, partitions are set perpendicular to the exterior wall so that almost all offices are rectangular.

The corners are reserved for particularly important offices but, otherwise, have received no special treatment (in contrast, see pages 108-9). A single corridor system closely duplicates the long,

octagonal shape of the building. For full-floor tenants, the corridors can seem excessively long. Angling them to follow the building's shape helps but here, in addition, the corridors have been made extra wide and they are punctuated by deep reveals around the doors and historical prints along the walls.

Designers: JFN Associates, Inc. General contractor: Diesel Construction Co., Inc.



**ON THE 42ND FLOOR:
An import-export company**

The lozenge shape of Pan Am's tower floors seems to work well for tenants who need large open areas—possibly even better than it does for companies requiring a multitude of private offices.

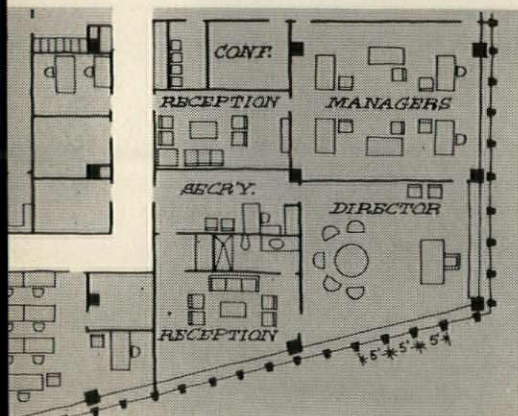
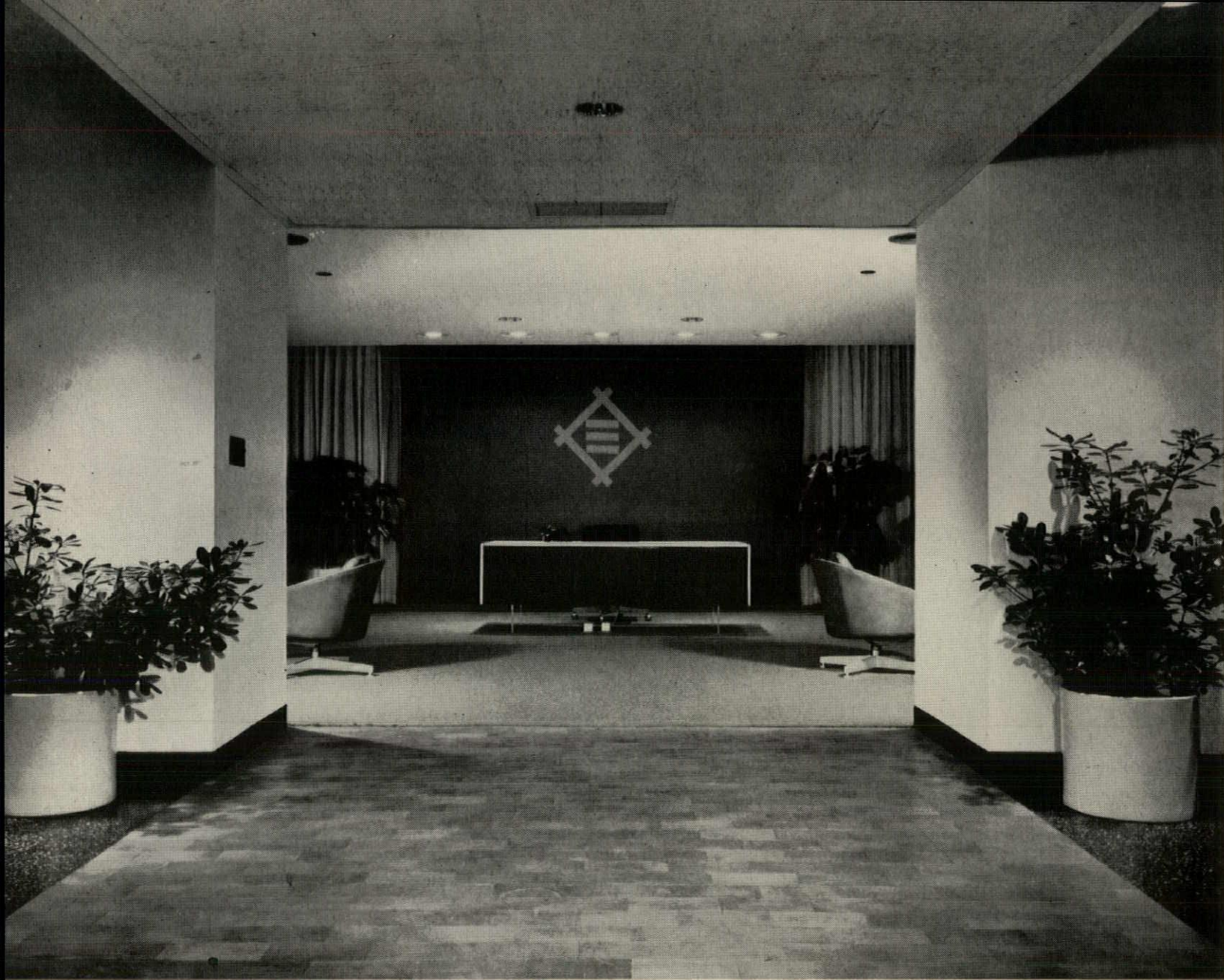
By using the odd-shaped ends of the building for uninterrupted pool space, Marubeni-Iida America, Inc., a Japanese trading company, successfully sidesteps the question of what to do with the obtuse interior angles. With the

two ends of the floor left open, the small number of private offices that were required are readily accommodated within the regular rectangular center section of the plan, where they are close to the elevators and to a reception area buried in the core (photo, above center, and plan, above right). Termination of one set of elevators on the floor below makes this core plan possible.

In contrast to the traditional

law offices (opposite), which were designed by the same firm, Marubeni-Iida's space is wholly contemporary. But the offices do gain a Japanese flavor from the use of wood in walls, ceilings and floors, and from partitions which have been detailed with a simplicity reminiscent of the shoji screens used in Japanese houses.

Designers: JFN Associates, Inc. General contractor: Diesel Construction Co., Inc.



PHOTOS: MARC NEUHOF

ON THE 38TH FLOOR:
A trading company

Just four floors down from Marubeni-Iida (previous page) is another Japanese trading company, Mitsui & Co., Ltd., and it treats its office layout problems in a somewhat similar way. Most of the floor is devoted to open office areas, not just at the ends but in the center section as well. The only two private offices are located in one corner.

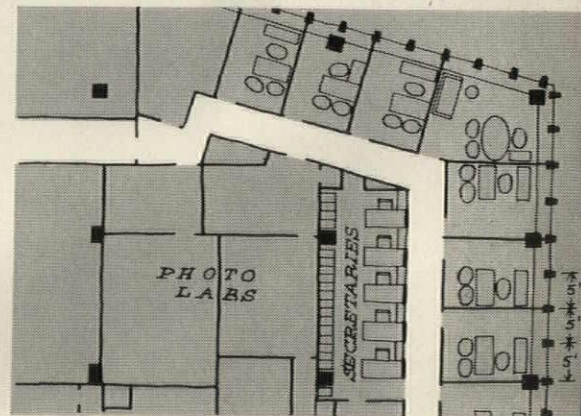
Like Marubeni-Iida, Mitsui uses open areas to avoid the problem

of how to run partitions away from exterior walls which are splaying in. But the splay itself creates inefficient desk layout and some waste of space.

The large core of the Pan Am Building may be a blessing in disguise in that it leaves tenants with naturally lighted perimeter space. But it also inhibits cross-circulation and results in elevator lobbies which are unusually long (about 60 feet). To dramatize

this length, the designer deliberately employed a lowered ceiling in the entry, extending it out over a handsome leather tile floor (top photo). A custom-designed reception desk stands in the background, in front of a bright red fabric panel which bears the company's symbol, an abstract but decidedly oriental design.

Architects: Freidin-Studley Associates. General contractor: Diesel Construction Co., Inc.



PHOTOS: BERNARD LIEBMAN

ON THE 29TH FLOOR:
A movie sales office

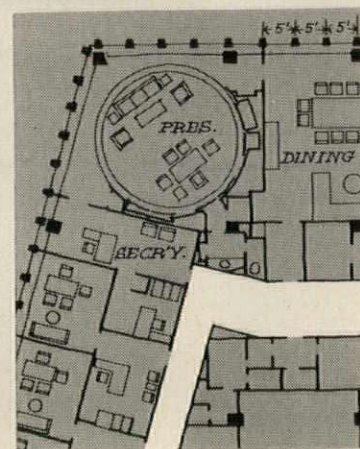
Where Chrysler fulfilled its needs in a slim sliver of space along the north wall of the 54th floor, (page 103), Eastman Kodak's regional motion picture sales division is wrapped around the building's eastern end. The utilization of space is no less successful: private offices line the perimeter, leaving the interior space available for a conference room, a small secretarial area (plan, above, and top photo) and the com-

pany's photographic laboratories. Because partitions run perpendicular to the outside walls, the main corridor parallels those walls. Towards one corner, the secretaries look out on the corridor and to offices beyond through a series of openings in the white plaster partitions (photo, above left). The director sits in an L-shaped corner office behind an oval desk of marble (photo, above center). The unusual shape of the

room provides him with an intimate seating group, hidden from view from the corridor. Like the company's product, the Kodak interiors are determinedly polychromatic. Vivid greens, blues, yellows, oranges and purples mark the walls as well as all the upholstery. Designers: The Space Design Group (Marvin B. Affrime, Director). General Contractor: Diesel Construction Co., Inc.



PHOTOS: BERNAID LIEBMAN



ON THE 19TH FLOOR:
An advertising agency

The Pan Am building's most flamboyant spaces, to date, are occupied by an advertising agency, Kenyon & Eckhardt, Inc., which has four full floors. From the striped reception room doors of tempered green glass (opposite) to the circular layout of the president's office (above), these spaces are designed to impress even the most unimpressible client.

All of the corners of the K & E floors are devoted to pentagonal

conference rooms and high-level offices. This special corner treatment achieves its grandest moments at the western end of the 19th floor where a private dining room separates the president's office in one corner, from a large conference room in the other. The pentagonal shape of the president's office is modified by a curving back wall of wood, which slides along metal tracks to screen bar, bathroom, tackboards, and

audio-visual equipment.

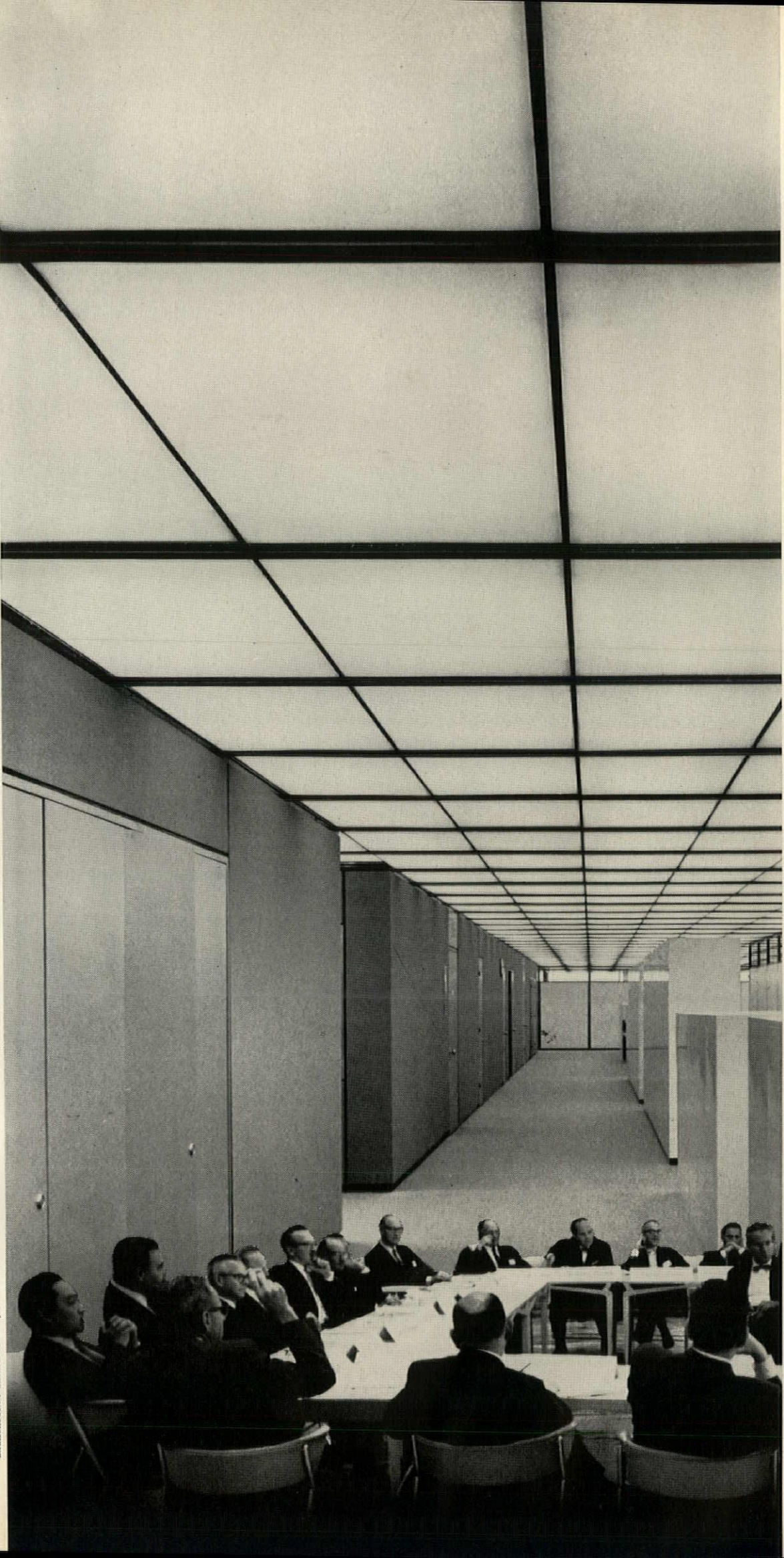
Aside from the corners and reception areas (and other special facilities such as a small theater), the K & E space is quite straightforward. Between the center core and a band of modest-sized perimeter offices is a double corridor system with secretaries located in the open areas in-between.

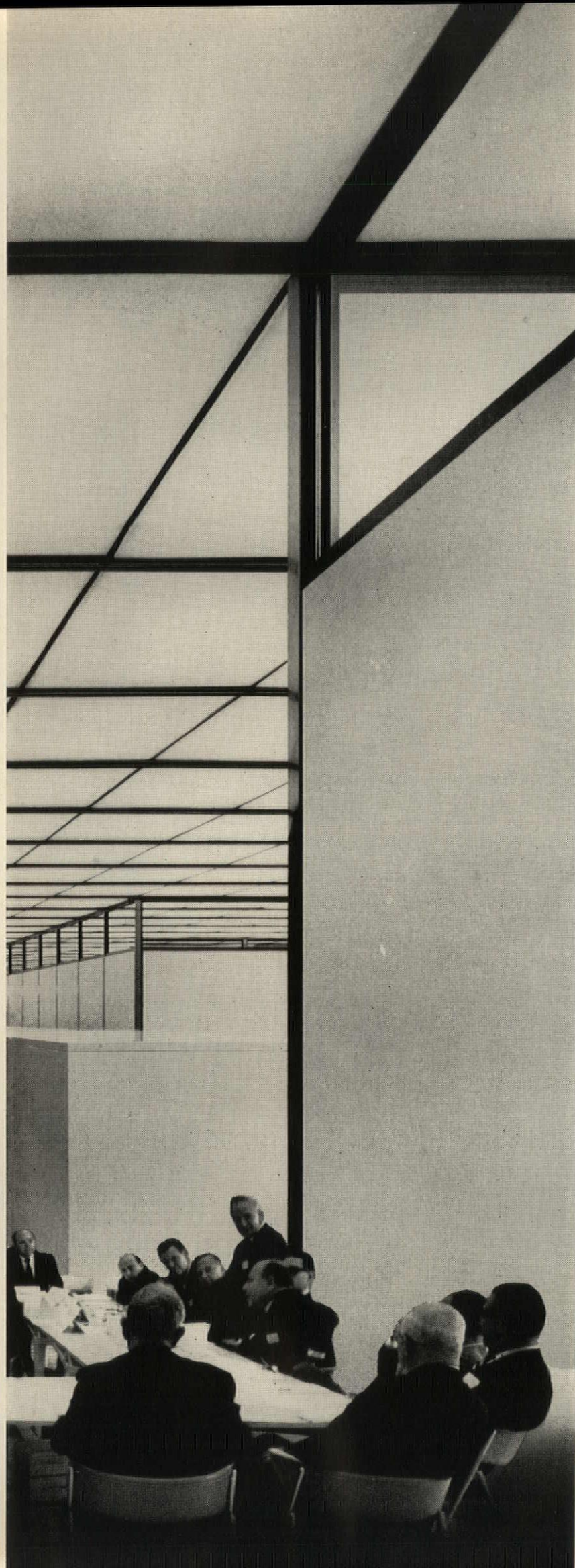
Designers: The Space Design Group. General contractor: Diesel Construction Co., Inc.



**FORUM ROUNDTABLE
TAKES A LOOK AT
TOMORROW'S OFFICE**

BACKGROUND: GEORGE CERINA; FOREGROUND: WALTER DAMAN





Are we planning offices for the future by following standards of the past?

Are we building an office environment for a kind of business organization that is on its way out?

Have we become prisoners of our own preconceptions about office planning—preconceptions about modular design, flexibility, lighting, standardization, and about all other aspects of environmental control?

In short—has the time come to take another look at what offices are (or should be)? Has the time come to take a critical look at today's office environment—so that we can approach the problems of tomorrow's offices with an open mind and an unfettered imagination?

To find the answers to these and other related questions, the Editors of FORUM late last year invited 26 experts from all over the U.S. to meet in Manhattan for a two-day Roundtable. For the gist of what they discussed—and of where they agreed or disagreed—see the next six pages. The FORUM Roundtable included five architects, five consulting engineers, two contractors, two office planning consultants, two lighting consultants, two acoustical consultants, two building owners, and six experts from universities and research institutions (for detailed list, see below). Thirty-five representatives from ten fields of the building industry attended the conference as observers, but did not participate. The moderator was Joseph C. Hazen, Jr., now FORUM's Associate Publisher and formerly FORUM's Managing Editor.

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Eero Saarinen & Associates

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ALFRED L. JAROS, JR.
Jaros, Baum & Bolles

GERSHON MECKLER
Meckler-Hoertz & Associates

FROM THE UNIVERSITIES:

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Ohio State University

BURNHAM KELLY, Dean of Architecture
Cornell University

HENRY WRIGHT, Professor of Architecture
Columbia University

QUESTION NO. 1:
Have we over-standardized our office environment? If the nature of our office work is changing, should not our office space change also?

CARR: The need for flexibility in business today is such that you have got to set certain standards and hold to them. You can't design each room around an individual. Still, you can go too far when you standardize. I know of one building where nobody could have anything in his office other than what was established by a committee.

DINKELOO: We seem to have got away from the human being, the humanistic point of view. We get ourselves tied up with "practical" questions instead—such as, what size module is best for this corporation or that.

HAZEN: Edward T. Hall, a noted anthropologist and psychologist, once said that "if there ever was a device designed to communicate that man is merely a cog in a machine, a replaceable one at that, it is the rapidly increasing use of the standardized space layout." Do you agree?



BECKER (above): Well, in the final analysis, there is only one reason for an office building—and that is to house people properly. To do that, a designer has to talk to secretaries and to everyone else who has a need so he can understand all these people and satisfy their requirements collectively.

ROTH: The trouble is that nobody ever talks to the typists and clerks, the white collar workers in the large office spaces. Nobody ever hears from them about how they would like their office to be designed.

WRIGHT: Take the preconception that every office has to have a desk. I remember a trick that George Nelson tried years ago: he furnished his office without a desk. That came as a great shock to everybody. But he was smart enough to analyze his own needs. He put a counter along one side

of the room, where he kept his many piles of papers—that was a stand-up counter. Then he set up a coffee table, couch and chair situation, which was wonderful for conversation.

J. NEWMAN: Office environment is a big area. Our management asked an executive of a large insurance company what he wanted in the way of tomorrow's environment. He said: "The building I am in must be located downtown, near public transportation, near theaters, near movies, near moderate-price shopping. Otherwise I can't get office help. The environment just within three or four square blocks of an office building is just as important to me as the environment inside."

ROTH: That's right. The office environment itself is far ahead, technologically, of the city environment in which the building is located. We have yet to solve the problems of transportation, of when the worker arrives and leaves his office, what happens to him during the hours when he is not in his office, during coffee breaks and luncheons.

KELLY: And we pay much too little attention to those aspects on which we don't have precise measurements, the intangibles. If we disregarded cost, we could provide the ideal physical environment. But the average person would then say—"so what?" If we reduced this ideal environment by 2 or 3 percentage points and put the money into attractive, stimulating, interesting things instead, then I think the "people" would be with us all the way.

HAZEN: Might not the office of tomorrow be two kinds of offices, one for the creative people, and one for people who do the more routine work?

KELLY: Much of the routine operation of any office is being mechanized and handled by computers. This means that most of the people in offices will be doing more original and creative thinking, and less routine work. Designers should give office personnel the chance either to get together in groups and talk, or to get off by themselves and think.

DINKELOO: I agree. No person

in an office sits down at a desk for four hours straight. We are talking about an eight-hour period. Every man gets up and walks around. I think you create the important qualities with your total environment, not in individual rooms.



PHOTOS: WALTER DABIAN

KELLY (above): You can separate different activities. You don't have to standardize the space to serve the president or the secretary or the draftsman or the machine. They will probably be in different places, all of them.

GORDON: As a matter of fact, one insurance company is seriously thinking of moving all of its machine operations out of its New York City building to an outlying suburb, building a large plant to house machines.

LUSS: In Washington they are centralizing the automatic data processing equipment to service a number of different agencies. This will reduce the amount of clerical work. We are going to see ourselves going more and more towards an office that is only designed for creative administrative management.

HAZEN: In the corridors in our building, you will find people meeting and talking to one another all the time. If the corridor is four foot six, it becomes a really impossible space for interchange of opinions and views, and yet it is perhaps the most important activity that we engage in. In short, might there not be a better planning module? What should dictate the module?

TURNER: There are really two different problems in planning modular office space. One is to find a module for a particular client, the other is to find a module for wide open, future multiple occupancy.

HENNESSY: We must have some

SUMMARY NO. 1:
Yes, we have over-standardized such things as office space layout. It may be more important to introduce variety inside (as well as outside), than to spend all the money on maximum flexibility. Some of our offices seem to be planned for an abstract module, rather than for the people who will work in those offices—especially since office workers will be engaged much more in creative work, much less in routine operations.

standard for space and lighting to start out with, and then we must be able to change to meet the specific requirements of each tenancy.

DINKELOO: All right. But, psychologically, or scientifically, is there a minimum module below which we should not go? Does nobody care what the average office worker is happy with?

CARR: Nine feet.

DINKELOO: You can't go much below nine feet.

LUSS: We are faced constantly with clients who very easily could get by with an eight by eight

foot office as a minimum. You keep coming up against the cost of building an office environment today. Most clients are trying to squeeze in as much as they can to offset the growing cost of rent.

CARR: Still, the criterion is what a man does in the space, not his status or any fixed dimension.

WRIGHT: There is no reason why a partition system cannot embody elements of more than one width. I have always wondered why people don't go in for half modules; if you had a mixture of two-foot-six and five-foot modules you might be able to get some

small spaces where you need them, and you might be able to get a great deal more variety in interior office plan, as well as in the façade treatment of buildings.

BECKER: What we really must do is look more deeply into the technique of programing. I think we can find ways to predict more accurately what a building should be like. If we intensely study in advance what people need, a great deal of money could be saved. The architect and the engineer could solve the problem without building in a tremendous amount of flexibility.

QUESTION NO. 2:
Does a sealed—or even a windowless — office building make the most sense?

WRIGHT: We shouldn't build any more buildings that are completely sealed up. We should design some spaces in them that can be opened to the out-of-doors.



CARR (above): I think the window is more of a prestige factor than anything else. We have people who have a window facing the brick wall of the next building, ten feet away. But they do have a window. This is more important to them than being across the hall in a nicely designed, nicely lighted, nicely air conditioned, ventilated inside office.

DUBIN: The elimination of windows would give a great deal more flexibility. I think windows are a limiting factor. Window modules often influence space planning and office modules. Status may take another form if it is guided by the designers and the owners.

LAM: Status isn't a matter of whether you have windows or not. The main thing is orientation.

Everything you see has to make sense. The problem with moving away from the window is that the window view gives you this orientation.

HAZEN: Some people just resent not being able to see whether it is raining or shining. Can any value be attached to the fact that in windowed space the lighting level changes? I sit with my back to the window, but the light in the room keeps changing. Does that benefit me?

KELLY: British scientists who study attention span, particularly in school children, claim it is absolutely essential to have this kind of variation. Nobody can keep his mind on a fixed task for a very long time.

HAZEN: John Dinkeloo can probably tell us something about the IBM building and the Bell Laboratory building—neither one of which has exterior offices.

DINKELOO: What we did was to take away the exterior window completely. We put the corridors around the exterior wall and made those walls completely of glass. A man can look about when he has a break, when he goes to the men's room or goes to somebody's office. Naturally, when you propose something like this, there is a great fear and trembling. But in both of these buildings, people have accepted the idea and like it. We are adding to one.

HAZEN: Let's ask the client, Howard Phillips.

PHILLIPS: We are told that the people are completely satisfied.

WRIGHT: I thoroughly endorse the exterior corridor solution. Just because we use interior space, we don't have to lose that connection with the outdoors. Connection with the outdoors is basic. A man who occupies an office all by himself for many hours a day, is particularly deserving of some chance to see the outside, simply because nothing is going to happen in his office and so he is going to be bored unless he sees the outside now and then.

LAM: However, I don't think it would make any sense to vary the light on a rheostat. This isn't relevant and relevancy is the big point. With daylight, you know why the light is changing.

KELLY: Perhaps you can supply the needed change in the environment by moving in and out of spaces, by having attractive secretaries moving back and forth. This kind of variation has an elongating effect on the attention span of a man who is trying to think. It is as simple as that.

DINKELOO: In short, people don't really care whether they have a window or not. It is what happens during the total experience of a nine-hour day that counts, not a minute-to-minute proposition.

SUMMARY NO. 2:
While many individual offices may not need windows, we must somehow provide a sense of orientation for people during their time at work. We should also try to provide variations in climate — either by mechanical or by natural means.

QUESTION NO. 3:
Are we completely satisfied with the level of comfort in most of today's air-conditioned offices?

GATES: We have places where there is a good job of air conditioning, but a large percentage of our air conditioning, so called, is not engineered at all. It is just thrown in.

DINKELOO: As an architect, one of my biggest complaints is the air-conditioning system. I think in the over-all creation of man's environment, we are all at a very crude stage right now. And I think that air conditioning is one of the crudest parts of man's environment at the present time.

GORDON: The big problem is the relationship between economics and desires.

JAROS: Yes, it is an economic problem. For example, you don't have to have a drafty condition. All you need is more outlets, smaller outlets, more carefully selected outlets.

WRIGHT: But, there is no magical combination of conditions which will make everybody happy enough to sit still in a chair for an hour and a half. You become vastly more critical of environmental conditions when you are sitting still than if you happen to be free to move around.

GORDON: People feel most comfortable when they don't recognize that there is an air-conditioning system working.

HAZEN: Perhaps we ought to talk more about the effect of temperature and humidity on the human being.



HARDY (above): This is a subject on which it is fairly difficult to get complete agreement. One can obtain "comfort votes" from experimental subjects as to which combination of air temperature, humidity, and air motion will make, let's say, 80 per cent or 85 per cent of all people voting comfortable. There will be, of course, a remainder who will still report

discomfort. The reasons why people are uncomfortable in given environments probably have a physiological basis, and at the present time we don't know the physiological basis of human discomfort. Before we can move very much farther in the practical field of providing thermal comfort for man, we are going to have to go into the background of why man really feels the way he does.

JAROS: I think that it is possible to get good results without waiting for more research. Mechanical programing can be made so adjustable that you can tailor make the environment to what the people in that building find comfortable, whether or not you know what they find comfortable. There is no such thing as the temperature that will suit everybody. I don't think there ever will be. So there is a great need for individual control. Give everybody in a private office a thermostat. If his needs vary, he can reset the thermostat.

WRIGHT: If you put a man in an office with a thermostat, maybe getting up and going to the thermostat and then sitting down again will be the thing that keeps him comfortable, rather than the temperature at which he sets it.

HARDY: When human energies are absorbed in fighting environmental stresses, productivity must decrease, particularly the kind of productivity we will perhaps need most in the year 2,000. As an example of our inability to advance, let's take radiant heating: there are no standards for comfort for radiant heating of the environment, although this means of heating is widely used. However, we move ahead with practical solutions and "ride the bicycle at the same time we are building it."

KELLY: I take it there is a wide variation in the degree of tolerance people possess so far as climate is concerned?

HARDY: There is no question about that, but, usually, tolerance is not the problem. Thermal comfort may not always be good for you. There were some experiments done a number of years ago in Krog's laboratory in Copenhagen.

In these experiments they had a warm panel on one side of the seated subject and a cold panel on the other. Individuals were required to work in this thermally neutral environment for an eight hour day. All subjects reported the environment to be comfortable. At the end of several days' experimentation there began to be complaints from the subjects about muscle aches. Some subjects became ill enough to require hospital treatment.

WRIGHT: We ought to get over the assumption that conditions can be produced within spaces that will be universally satisfying indefinitely. Let's take cognizance of the fact that most people like to open windows and think about *why* they like to.

HARDY: I don't know that varying the temperature and humidity is going to produce a more comfortable situation than that provided by the static environment. We know that moving from one thermal environment to another has a pleasurable quality to it; but whether or not this is what you want at your desk, I really cannot say.

JAROS: If it were possible to start off a little warmer, and cool down during the first hour of occupancy, and warm up a little during the last hour of occupancy, and to design large spaces with a warmer and cooler end and seat people accordingly, these things would contribute a great deal to the practical comfort.

DUBIN: Of course, we can have microclimate indoors for different tasks, but it is a question of dollars and cents. These things are not beyond technology at all.

MECKLER: Systems that remove heat by radiation and by convection, in relationship to the amount of heat that is generated by radiation and convection, can provide the optimum thermal environment.

HARDY: Still, a carefully programmed *change* in temperature may possibly be both stimulating and comfortable. But we really don't know what cycle of time would be comfortable. Experiments have not been made.

SUMMARY NO. 3:
No, our best air-conditioning systems satisfy only 80 or 90 per cent of the people. We don't know enough about how people respond to indoor climate. They may feel best if the climate varies within the building.

**QUESTION NO. 4:
Does our uniform high-intensity lighting really raise productivity in offices?**

LEONARD: At the moment there is great confusion among the architects and public as to what is good lighting.

LAM: It is in a pretty bad state right now.

DINKELOO: Yes. I have a feeling that I have never seen an office that was lit properly.

BLACKWELL: If you have something difficult to do—and many typists and bookkeepers do—you need a lot of light.



WAITE (above): Within economic limitations, higher foot candle levels, up to some value not yet established, do increase the speed and accuracy of vision.

LAM: But in terms of doing our work, the law of diminishing returns applies. The first ten foot candles supply 87 per cent of your ability to see, the next ten supply 3 per cent, the 5th ten supply you ½ per cent. The gain you get by having better typewriter ribbons and better pencils is a lot more important.



JAROS (above): Every needless kilowatt released in the occupied space by lighting is going to add somewhere between \$250 and \$400 to the cost of air conditioning, in addition to adding to the operating cost.

LAM: However, I don't feel that there ever is a time when the lighting level is too high. I am very comfortable with 1,000 foot candles in the shade of a tree. When you say it is too high, what

you really mean is that you are more conscious of the undesirable light than the fact that you have too much.

WAITE: The Illuminating Engineering Society has a Quality and Quantity Committee, which has been doing very fundamental research on these two factors. Quality is of superior importance to quantity. Quality is a matter of glare or contrast: reflected glare from the task itself and glare directly from the fixture. To some extent, you can judge the quality of a lighting installation by how conspicuous it is.

LAM: Your eye really sees like a camera by a balance of light, not by quantity. Specifying quantity of light rather than quality is the thing leading us up the wrong alley. Greater emphasis has been on the quantity because it is easier to measure. There is a difference between noise and music, which is not measurable by quantity, but by order and disorder. This is true for lighting as well.

KELLY: I never realized what advantages Abe Lincoln had back in the old days until I had to read one summer with one foot candle. It is a restful way to read. Couldn't we somehow stimulate a serious effort to reduce the quantity of light?

BLACKWELL: Architects have in some ways goofed tremendously with their glass window walls. In one large research center with glass walls, the windows are always covered with drapes. The reason is that the brightness through the windows and the brightness inside are just too difficult to tolerate.

HAZEN: Do any of you pay attention to daylighting in the buildings you design today?

DINKELOO: No.

WRIGHT: The tendency to put a great deal of glass in buildings, which we initially projected as a means for saving electric light, has sold more electric lights than anything else.

LUSS: There was a time—not very long ago—when the luminous ceiling seemed to be the ultimate in lighting, almost a fad. It is a very dull and uninteresting way of lighting.

WRIGHT: The big thing I have against the luminous ceiling is that the light it produces is utterly directionless. A combination of indirect and columnated light has a certain liveliness. And another important point has been brought out: the desirability of variation in light sources.



LAM (above): When we stepped into this building this morning, we were undergoing a light level change of 8,000 foot candles to 5. In a corridor system, you are moving around. I see a chance for great contrasts in light levels, in dramatic focus. Let's have variety of light within the room so that when I am at my desk I have one kind of light and when I sit in the chair, I have another kind.

BLACKWELL: Well, we want lighting to be uniform to reduce undesirable transient effects. Fortunately, this does not mean that we must have bland environments, because visual interest can be created by color and textural differences without altering brightness uniformity.

KELLY: Lighting ought to provide what you might call sparkle. You don't like to have a glare coming at you, but you do like to have sparkle — things that have tiny little bulbs like a Christmas tree.

WRIGHT: The lighting industry has enabled us to see a lot better in the last 25 years, but by and large people don't like the overall result. They really like space the way it looked 25 years ago. We should speak more about the way lighting makes things look. Let's think first how people look in a room, and, secondly, how other objects look, and only then how the buildnig looks.

BLACKWELL: We want to produce environments that lead to good performance, in the best sense—including creativity.

PHOTOS: WALTER DARAN

**SUMMARY NO. 4:
Yes, it does when you have a difficult seeing job to do. But we must have more varied, quality-oriented lighting design to stimulate the kind of creative work we will be doing in tomorrow's offices.**

QUESTION NO. 5:
 Would our offices be ideal if we could make them absolutely quiet?



R. NEWMAN (above): The acoustical environment in which we are comfortable is a terribly complex thing to describe. We cannot just say how much; we have got to talk about quality. Privacy is what most of us are after—not necessarily secrecy, but just freedom from distraction so we can go on with our tasks. We cannot have weaker and weaker and lighter and lighter partitions in modern buildings, (and none of us think we are going back to 8-

inch brick) unless at the same time we engineer in a background noise in an unobtrusive way. The people who supply components that go into buildings often have good laboratory data on how the stuff works acoustically. The big problem is how to put these together in the building, what do these things do when we put them in combination. So I cannot over-emphasize the importance of getting the designers to understand the need for attention to detail, to every leak, every single gasket, every joint.

KODARAS: Let me amplify on this: You may only have a 1/16 inch crack up there between the partition and the ceiling, but, by golly, this 1/16 of an inch crack is 10 feet long, and that makes it an awfully large hole.

R. NEWMAN: In the office situation, given careful control of

installation, a careful selection of components, one can predict in advance a reasonably satisfactory acoustic environment that will satisfy 90 per cent of the people. There is always that 10 per cent that we cannot hit.

KODARAS: Variation in room environment acoustically is also desirable. Sometimes you would like to have a background of music. Occasionally you would like to have the rustle of trees. Occasionally you would like to have deep silence so that you follow a very serious thought to a conclusion.

R. NEWMAN: Acoustics and lighting and thermal environment are all tied up together. One is impressed with the fact that the criteria, the reactions of people to all these things, are very, very similar for all the aspects of the office environment.

SUMMARY NO. 5:
 No, with lighter construction, it is better to add background noise. In any case, it is essential to pay close attention to detailing of partitions.

QUESTION NO. 6:
 Will integrated mechanical, electrical, and acoustic components make tomorrow's office a better place to work?

DUBIN: We are doing a lot today that we didn't do before to integrate systems. For instance, the use of the air floor. Using a concrete member as an air duct may not be as efficient as a metal unit designed solely as a duct. But it may be more important to save space by using a cored member as a duct.

HAZEN: Would it be ideal to buy a truly integrated mechanical, electrical, and acoustic system from one manufacturer? I assume it would do the architects out of some business.

ALLEN: I don't think we would worry particularly.

JAROS: I am concerned because in trying to integrate such different components as duct work, piping, wires, and so forth, you can make a mess of all of them. Each one needs to be engineered and manufactured to do its own job efficiently.

DUBIN: I believe in integration of services and structures, but I think that each of the specialists must start with a highly biased idea. Then the divergent viewpoints must come together for the

common good.

HENNESSY: Engineers ought to learn just a wee bit about architecture.

J. NEWMAN: Rather than seeing integrated systems, I would like to see integrated responsibilities. The components might come from different manufacturers, but if a single contractor would assume full responsibility—I believe this would solve a lot of problems.

ROSENBURGH: One of the greatest problems that a general contractor has today is to coordinate the work which has been designed by separate groups.

JAROS: To have the architect and the engineer do this synthesis with the thoroughness that we all agree is desirable, you have got to give them more time and perhaps a little more fee.

GATES: Another problem with integration is that the contractor doesn't have any experience with this new approach. It is going to cost him more money, even though it is conceived on the basis of saving money. The next job is to get together and start taking command of this situation instead

of letting it go by default.

LAM: The office building of the future can be had today. The knowledge and principle are here, the available equipment is here. The only missing ingredient is synthesis of design.

HARDY: One of the ways that one can produce a high degree of integration from a large number of details is through use of high-speed computer techniques and system analysis. I would assume that is routine operation in the construction of an enormous building like this one.

HAZEN: No, I don't think it is.

DINKELOO: Integration of equipment is going to happen and should happen. But more systematization means components on a bigger scale, which means we have fewer elements to play with, both from an engineering and architectural point of view. Psychologically the effect will not be adverse although life will be a lot less interesting. Anyway, if we come up with a good system, it will be a lot better than the tremendous mediocrity that we see around us today.

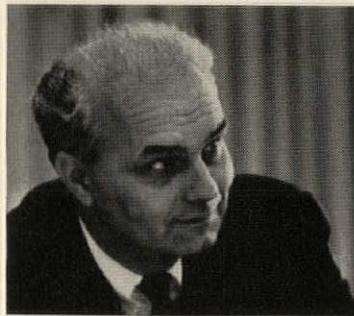
SUMMARY NO. 6:
 Integration of all these components may have some disadvantages but it is likely to improve our office environment—if only because it will force the architects and the engineers to work together more closely.

QUESTION NO. 7:
Do we really know enough today to enable us to create a better office environment for tomorrow?

KELLY: The building field is in the situation that medicine was in 1911. Everybody has a little piece of skill and a lot of art, and nobody's art relates to the whole building.

DINKELOO: The design of environment is very, very crude at the present time. We are in sad shape. If we had a big enough research program with enough money behind this, the human environment could be improved tremendously.

KELLY: What I would like to find is a mechanism for clinical research, for putting packages together from different points of view.



DINKELOO (above): I think the research done by the manufacturers to date is ridiculous because they are all plinking at their plunk and they don't care one iota about the other guy.

BLACKWELL: You ought to start with somebody who is looking at the problem as a whole.

GORDON: Research that is product-oriented will continue to be done by manufacturers. However, there is a big area for non-product research that should be done through some cooperative method.

HARDY: We should definitely try to make this a multiple disciplinary approach.

CONTINI: The architect will have to reorient his thinking so that he will be able to work more closely with the many disciplines that can contribute to building.

LEONARD: There is a rising group of architects who are most receptive to any ingenuity and creativity that the engineer might be able to contribute.

DUBIN: In the architectural schools there must be a great deal more education to help develop an engineering intuition. The en-

gineering schools are failing to develop people for building. I think the architectural schools must pick up the ball.



MECKLER (above): One of the key problems is that we have architects who are just designing structures. The environmental systems, lighting, heating, air conditioning, and acoustics are thought of only as accessories. There is a relationship between the structure and the architect that the architects understand. Architects must now understand another relationship. That is the relationship of energy to structure. The architect does not yet have a clear concept of how energy relationships affect his building design.

HAZEN: Someone brought up a suggestion that intrigued me: Mockups of office buildings are torn down after they are used. Might it make sense to pool the mockups somehow or other under university facilities? A university might set itself up to be in the mockup business. These mockups would make wonderful laboratories for all kinds of research.

KELLY: Something very similar is being done in Holland. They publish their investigations freely for the whole profession, which, as you know, is not normal with the mockups that we build around here. I am sure the universities would be delighted if they could make the mockup analysis, continue to work on them, and have the free right to publish the whole thing for the profession.

WRIGHT: The research I favor is a study of the performance of buildings after they are built, whether they are built as mockups or actual buildings. I prefer the latter because there are all sorts of accidental circumstances concerned with the reality of a

building that don't show up in the laboratory.

ROSENBURGH: We all must realize that buildings are not built in laboratories, and that the design has to be compatible with the skills that are available in the field.

PHILLIPS: Our technological achievements are far ahead of our social achievements. Possibly, we need to put more emphasis on the business environment or human environment rather than on the detailed physical needs for equipment.

CONTINI: Whenever anybody discusses physical things such as: how do you control light? or how do you control the temperature? or how do you control ventilation?—I always go back to the fact that we don't yet have good techniques for doing research with people. Burnham Kelly suggests the clinical approach, and I agree with him.

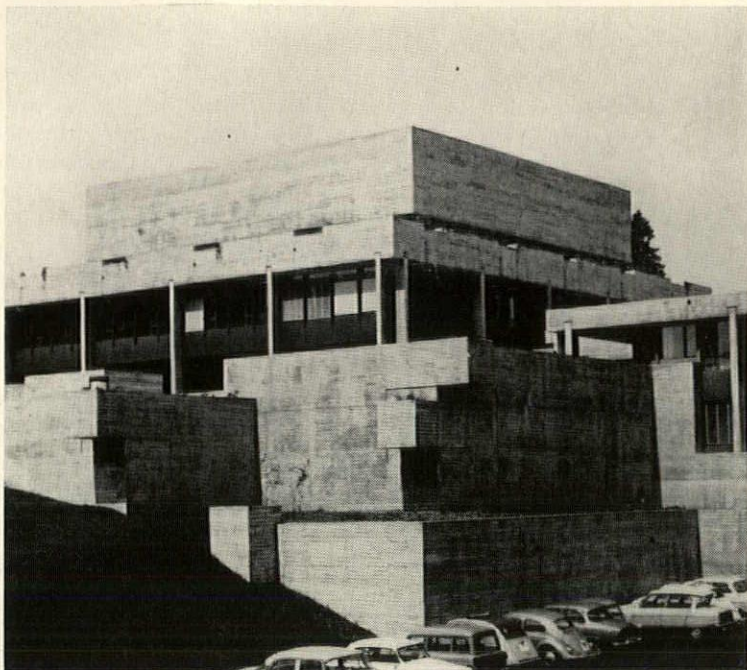


DUBIN (above): If the Government were to engage in basic research it would be a valuable thing—and this is not an infringement of the private enterprise system at all, but a furtherance of it.

BLACKWELL: It would take a group that was not trying to sell anything, a group of architects to guide this work because the problem is really theirs. They will be able to say when we have done enough research on the heads down task for example, and make us turn our attention to the whole creative environment. I will tell you that very little research has been done on the total environment. However, there is a way to do it. You have to start with a group that makes a real effort to put all the elements of the environment together. Only then will we find out where the gaps are in our knowledge. END

PHOTOS: WALTER DABAN

SUMMARY NO. 7:
No, much research must be done before we can be sure, exactly, how people react to their environment. Such research must focus on how people respond to the total environment—light, air, sound—not just to one segment of the environment.



RODLIF PEBBON

MUSCLES, MIRRORS, AND WIRE

Happy New Year! And what kind of buildings are *you* going to design or build this year?

This is a question about style and fashions—not whether the intention is to build a school or an office or an apartment house.

One safe prediction is that the new building will be full of muscles. Just look at recent FORUMS and see them bulge—for example the Swiss school in this issue (1), churches and even dormitories in the December issue. All in rough concrete they are, and in complicated rhythms, ever more “active” looking, more jazzy if not more musical—i.e., with forms repeated or played against one another in variation, and always looking full of “power.”

There were deep philosophical explanations for all this in FORUM some years ago, but the only point in these notes is that this is the

way architects are running. Not always is it clear whether they are running away or toward. For example, is all this show of “primitive strength” a command for attention in an age in which architecture is losing its real command in our society?

Then again, if architects are running away, perhaps they are only running away from the previous “mirrors” style that filled whole streets with the shaky, wavy reflections of the glass-box age, compartmented inside like packing boxes.

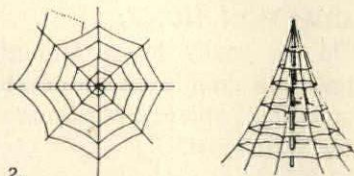
Some years before that, architects would seem to have resolved on New Year’s day to build with thin walls and flat roofs and lots of primary color, and open spaces inside, and detractors like Frank Lloyd Wright spoke contemptuously of “cardboard architecture” all tied up with doctrines of func-



tionalism. What architects were running away from *then*, if they were running away, was heavy classical and traditional architecture full of stock columns or gables or other tiresome “decorative details.”

As an editor gets older and begins to realize that he is entering a fifth decade of watching architecture, he prefers to make his predictions more as a game, less as a deep philosophical set of rationalizations. So the prediction now is that although for 1964 muscles will flex and unflex themselves architecturally in heavy concrete, the nearer we get to 1965 the less attention the heavy wrestlers of architecture and building will receive and the more attention will go to younger guys dancing lightly on the tightropes—doing building acrobatics using wire (2).

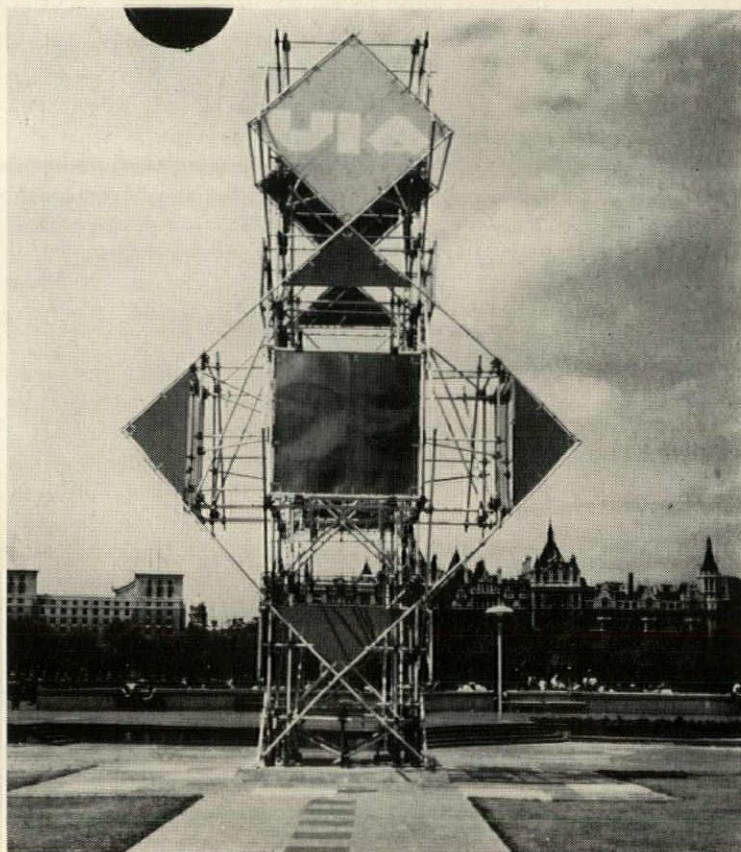
The best known instance is the beautiful transition in which Eero Saarinen used suspension cables along with heavy concrete to create new swinging roofs for Dulles Airport. But there will be further changes. Perhaps some of the new influences will even be permitted to come from the common people.



Now and then eyes of architects and editors have been startled by an accidental view. An ordinary highway crossing choked with “vulgar” signs and wires (3) would suddenly show forth all glittery and spangly in new unpremeditated patterns across the sky-space, something artists find useful. And some architect might pick this up in a Kodachrome and run with it in a new “movement,” and soon his companions might be running after him. In handling space it would be as free as the atom age (4).

Not that architecture is not deep, deep, deep in its sources, and the effectiveness of “simple” useful buildings can be the most mysterious. Might these sometimes gain vividness and joy from their authors’ games and visits to the circus?

Douglas Haskell





HEROES

Hurrahs and handshakes seem to go only to the stylists in the high-style arena of today's office furniture business. So it was with the stylists who created the brisk design clarity that became Corry Jamestown's award-winning DORIC line. Now we nominate a new set of heroes, the Corry Jamestown engineers who took DORIC and conjured up the practical refinements exposed on the next three pages.

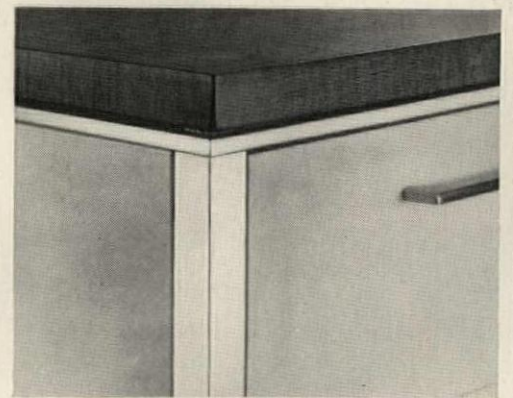
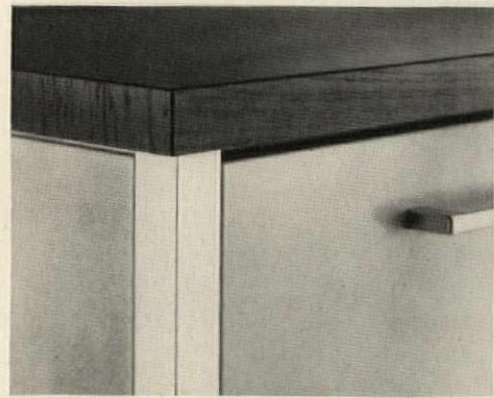
INTRODUCING DORIC II...



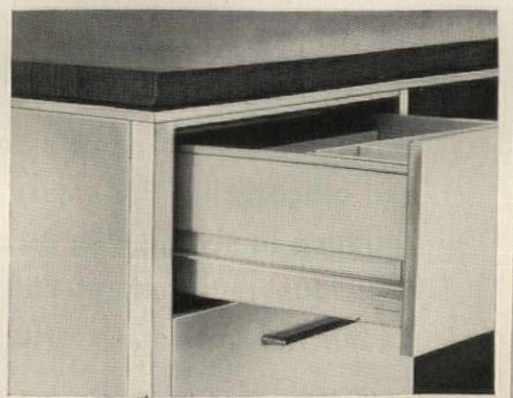
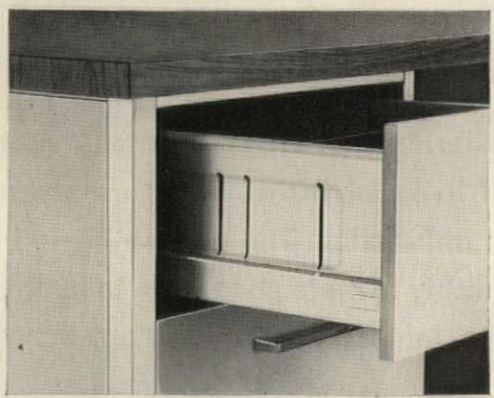
Only the expert eye can spot the refinements DORIC II brings to the DORIC styling concept. Spare sweep of line and plane—the total look—remains the same. Yet, never tampering with the graceful styling, those heroes in the Corry Jamestown engineering ranks changed a part here and there, applied a little engineering magic and gave us DORIC II. They added to function, subtracted from cost to make the beauty of DORIC practical for every corner of any office plan. We'd like to give them a medal. Take a close look at DORIC II. See if you don't agree.



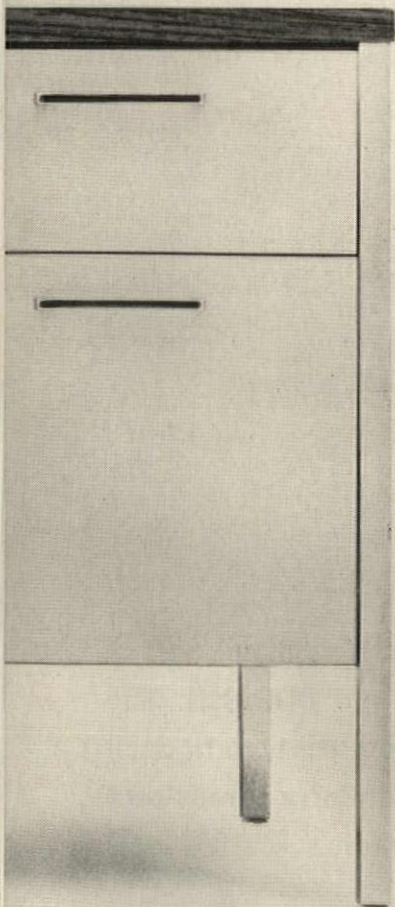
SHH! . . . THERE'S LESS TRIM ON DORIC II. NOT ENOUGH LESS TO SUBDUCE THE BEAUTY, YOU CAN SEE IT STILL RETAINS THE DORIC APPEAL.



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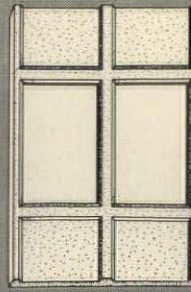
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A blend of tan and gold quartz frames the recessed windows on the new Hotel America in Houston, Texas. Mo-Sai mullion and spandrel panels cast in one unit are bolted and welded directly to the reinforced concrete frame. The Mo-Sai surface is repeated on the interior side of the panel, furnishing a warm-textured complement to guest rooms. Styrofoam, cast sandwich style in the Mo-Sai, provides insulation for the 5¼-inch-thick units with nine-inch ribs.

500 Jefferson Building, on the left, has a similar Mo-Sai windowall in white quartz. The Mo-Sai units were preglazed, with tinted glass being held directly into the Mo-Sai with special neoprene gaskets.

Hotel America and 500 Jefferson Building are the first two buildings of a five-block Cullen Center complex in downtown Houston.

Architects:
 Welton Becket & Associates
 General Contractors:
 Linbeck Construction Co. / Hotel America
 W. S. Bellows Construction Corp.
 / 500 Jefferson Bldg.



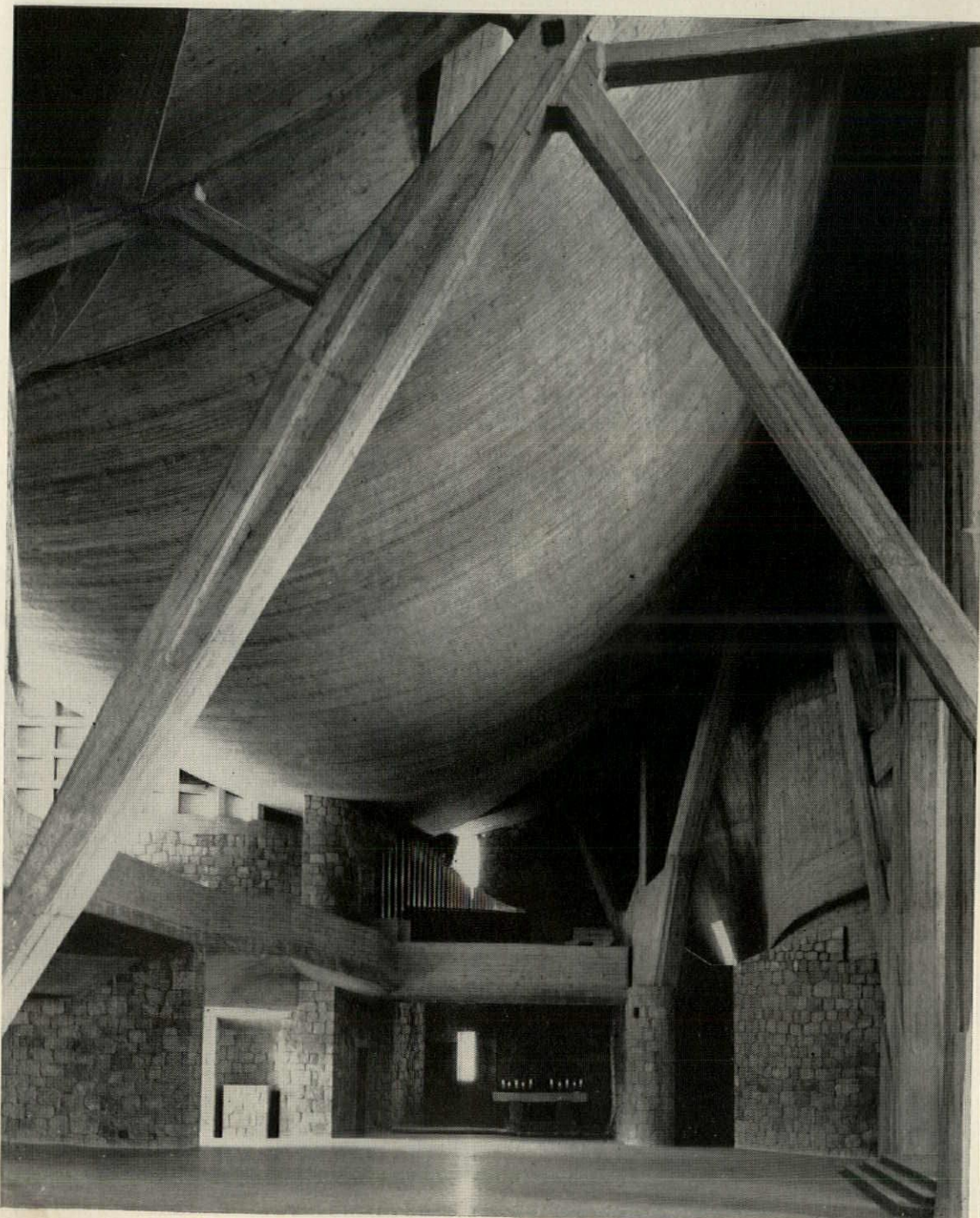
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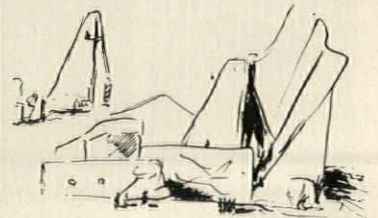


ITALIAN CHURCH. A piece of sculpture wherein one may worship is perhaps the best description of the Church of St. John the Baptist designed by the Florentine architect Giovanni Michelucci for a site near Florence along Italy's most modern expressway, the Autostrada del Sole. The exterior view of the church shows the south and east sides of the church, with the high sloping roof topped by a cross. The round baptistry is at the extreme left, with a separate hall leading to it.

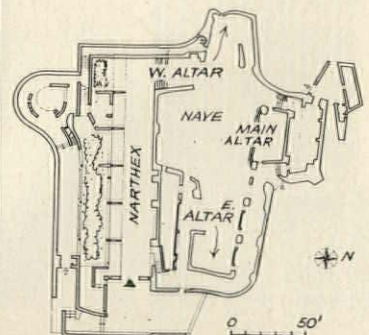
The interior view shows the west altar with the choir loft and organ above it. To the left is the balcony for the upper chapel. The main altar is to the right of the west altar, three steps up.

The church is constructed of concrete and stone, with the roof formed by steel cables suspended from branching columns. The roof finish is copper. Plan (below) shows the two garden cloisters and the east altar.

Michelucci has designed many buildings in Florence, all smooth and restrained. In going out beyond the city, he was freed of restrictions, and the church is an emotional explosion into plasticity. In planning the church, Michelucci used models as well

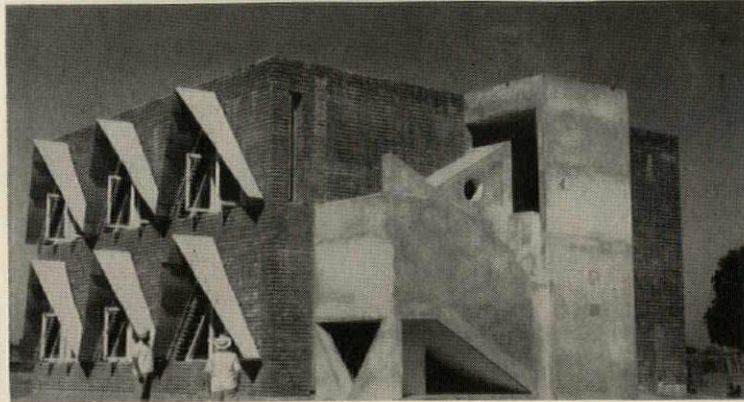


as drawings (above). Some of the models were made of clay, while two were cast in bronze. During the construction of the building, the architect tried to give the workmen a sense of the structure. He left them free to build the stone walls as they would, without the guidance of drawings.



INDIAN OFFICE. Architect Jeet Malhotra has used corbeled "arches" to form the windows and doors for a two-story office building in Ludhjiana, about six miles from the Punjab capital of Chandigarh. The triangular openings are a centuries-old technique in

India (FORUM, June '63). The openings are built without shuttering. Window panels are cut so there is no wastage of glass. Structural materials are local red brick and concrete. The adjustable sunshades are made of 1/4-inch-thick asbestos.



INDIA STUDIO

MANCHESTER OFFICES. Architectural historian Henry-Russell Hitchcock has called the Co-operative Insurance Society building the "finest skyscraper in England to date." The 25-story skyscraper perches on a 5-story podium, with a reinforced concrete service tower 396 feet tall placed alongside. The exterior has anodized aluminum mullions and infill panels faced with black enameled steel. Shorter building in the fore-

ground is the 14-story Co-operative Wholesale Society headquarters, which echoes the larger building. Between the two is the CWS concert hall built of reinforced concrete with a curtain wall of opaque glass panels framed with black anodized aluminum. Architects for the complex: G. S. Hay, national architect of CWS Ltd., in association with Sir John Burnet, Tait & Partners.



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SIDNEY W. NEWBERRY



LONDON TOWERS. Londoners (and others fond of the city) aren't too happy about the current crop of skyscrapers, some already built, others under construction. One reason for concern, of course, is that the new towers overshadow historic buildings such as the Houses of Parliament. Various governmental agencies must approve both design and height, but those who worry about esthetics and those who worry about economics often clash—and money usually wins out.

The London Hilton (1) fronts on Park Lane and overlooks Hyde Park. Its massive base has little visual relationship to its Y-shaped tower whose three wings (with 512 guest rooms) extend 70 feet from the center of the Y. Total height of the 28-story building is 328 feet. Architects: Lewis Solomon, Kaye & Partners. Consulting architect: William B. Tabler.

The New Zealand House (2), designed by Sir Robert Matthew, Johnson-Marshall & Partners, is on the corner of Haymarket and Pall Mall. It was the first tower in central London to be approved, and provided a test case for vari-



HENK SNOEK

ous agencies. Horizontal elements of the Pall Mall façade were required to line up with existing cornice lines, thus giving the building an awkward stance. A 4-story podium covers the entire site, with a tower block rising from within the podium to a height of 225 feet. The building is the administrative and social headquarters for the New Zealand High Commissioner.

On the Thames, not far from Westminster Abbey and Parliament, is Vicker's Ltd. Millbank Tower (4). The 387-foot-high building rests on a podium (3) which also holds an 8-story Y-shaped office building (hidden by tower in bottom picture). Architects: Ronald Ward & Partners.



The Gold Bond difference in churches is Tectum



**"Acoustics are excellent
in this inverted arch."**

Walter J. Rozycki, A.I.A.
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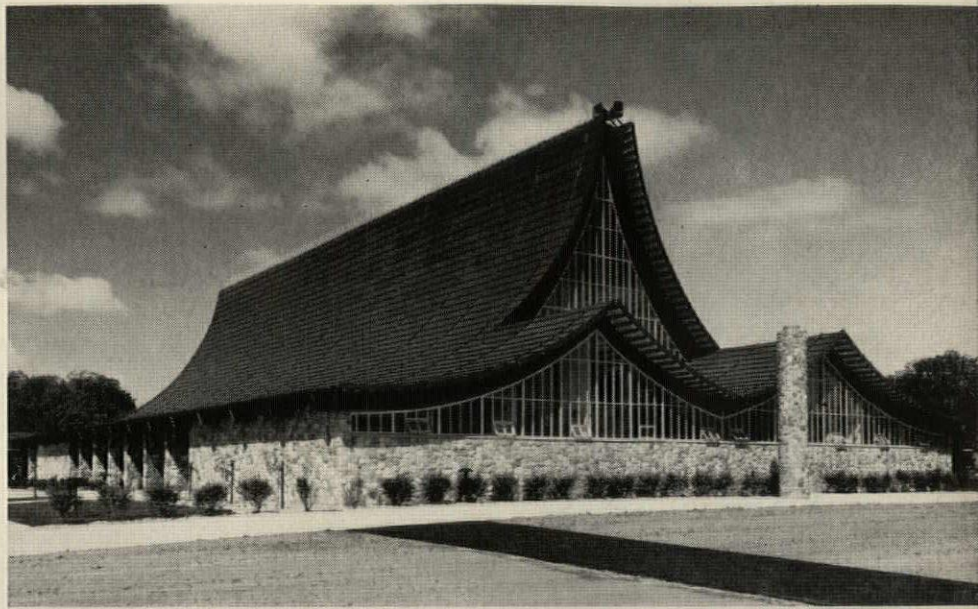


Roof deck, 24,000 sq ft. Tectum 3" thick, anchored horizontally on 3" x 4" wood sub-purlins. Laminated wood beams. Simplicity of erection reported. No scaffolding required for installation of Tectum. An excellent use of a versatile building material.

Building: Shrine Chapel of Our Lady of Orchard Lake

Architect: Walter J. Rozycki, A.I.A., Detroit, Michigan

Contractor: Matthew Lalewicz, Inc., Centerline, Michigan



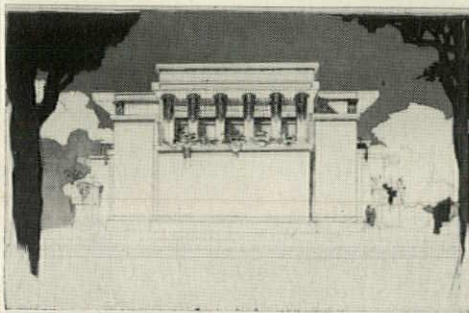
The graceful lines of this inverted arch or quadrant are subtly repeated throughout the interior of Our Lady of Orchard Lake Shrine Chapel, Orchard Lake, Michigan. The textured Tectum roof deck contributed esthetically and acoustically, and substantially reduced the time taken to cover the building. The acoustics are perfectly balanced between the hard glass surfaces, the inverted shape of the roof framing and sound-absorbing Tectum. The church is noted for its Schola Cantorum choir. Architect Walter J. Rozycki reported completely satisfactory acoustical control. • Tectum roof deck and form plank materials are in

great demand for large area enclosures posing acoustical or sound absorption problems. The attractively textured surface of Gold Bond Tectum is factory finished—saves painting. When the deck is erected the ceiling is finished. Structural sheathing, insulation and acoustical control are installed with one labor cost. For more specifics, contact your Gold Bond Tectum representative or write National Gypsum Company, Buffalo 25, New York, Dept. AF164.



BUILDINGS, PLANS AND DESIGNS BY FRANK LLOYD WRIGHT. A reproduction of the Wasmuth edition, first published in 1910, with an introduction and descriptive table of contents by the architect, and a foreword by William Wesley Peters. Published by Horizon Press, 156 Fifth Ave., New York, N.Y. 100 plates. 16" x 26". \$75.

In 1910 an American architect of some repute named Frank Lloyd Wright struck the consciousness of a European architectural culture poised between a courtly past and an industrial future. His method was the publication by the German firm, Wasmuth, of a folio of 100 exquisitely powerful drawings



from his hand. Wright himself prepared the edition during a European journey. After this lull he was to return to his turbulent American career, but the folio he left behind is credited by some historians with altering the evolution of all European architecture, and thus, of course, much in the new world as well. It is the libretto of a legend that turned into architectural reality in our time.

Horizon Press has just re-issued the entire folio, lovingly reproduced on fine paper, together with its original introduction and notes by Wright, and a new foreword by William Wesley Peters, chief architect of Taliesin Associated Architects. This item is anything but inexpensive, and there are 2,500 for sale. Yet it seems certain that this too will shortly become another collectors' item, because it, to put it quietly, is a thing of great significance and beauty.—w. mcq.

THE HOUSE BEAUTIFUL. By William C. Gannett. Published by The Prairie School Press, 117 Fir St., Park Forest, Ill. 11½" x 14". \$22.50.

This is a facsimile of the book handmade by Frank Lloyd Wright and William Herman Winslow in 1896-97. Sullivanesque designs by Wright illustrate each page. Only 90 signed copies were originally made.

CONTROL OF HIGHWAY ACCESS. By Ross D. Netherton. Published by the University of Wisconsin Press, Madison, Wis. 518 pp. 6¼" x 9½". \$10.

Case histories of legal cases involving the right of private access to public roads are discussed in detail by Dr. Netherton. He traces the history of Anglo-American law regarding the public's right to travel, and shows how distressing ribbon developments along highways may be avoided.

STRUCTURE IN ARCHITECTURE. By Mario Salvadori and Robert Heller. Published by Prentice-Hall, Inc., Englewood Cliffs, N.J. 370 pp. 6¼" x 9¼". Illus. \$13.

CONCEPTS OF STRUCTURE. By William Zuk. Published by Reinhold Publishing Corp., 430 Park Ave., New York 22, N.Y. 80 pp. 6¼" x 9¼". Illus. \$5.95.

STRUCTURAL DECISIONS. By H. Werner Rosenthal. Published by Chapman & Hall, Ltd., 37 Essex St., London W.C. 2, England. 417 pp. 7¾" x 10¼". Illus. \$10.50.

The use of structural form as a key element in architectural design has changed gradually from an avant-garde idea to a widely accepted theme. In the process, non-engineers who have tried to develop a sound intuitive grasp of structural behavior have had few books available to guide them. While there have been a good number of picture books showing the works of brilliant engineers such as Nervi, Torroja or Candela, most of these have been concerned more with specific solutions than basic principles.

Recently, however, four new books have appeared that concentrate on the qualitative rather than quantitative analysis of structures. Each of the four has its own special slant and, taken together, they make up a well-rounded little library on this subject.

The first to appear was Curt Siegel's "Structure and Form in Modern Architecture" (*Books*, Sept. '62). Siegel's point was insistently clear: the basis for good architecture is the accurate representation of structural behavior—down to the last detail of the building.

Mario Salvadori, a well-known engineer who teaches at Columbia University, has produced (in collaboration with his colleague, Prof. Walter Heller) the most cogent book of the four. The coverage of structural materials and forms is comprehensive. And this book has the added advantage of an expansive layout in which the abundant white space is used to reinforce the clarity of organization (text appears on the left hand pages only—supporting illustrations take up the right hand side). The descriptions of structural action are crystal clear. The sense of even the most complex forms is conveyed without the use of a single mathematic expression. Salvadori's tone is objective and he leaves the development of a philosophy of structural design to the reader. In his conclusion he wisely defines the limitations of intuitive design and points out the vital role of rigorous mathematic analysis after the first concepts of design are formed.

Professor Zuk is Professor of Civil Engineering at the University of Virginia. His is a slim volume, tightly packed with text and rather thin illustrations. Nevertheless, it has endearing qualities. The approach is conversational and the writing is sprinkled with philosophic observations and broad generalizations that reflect experience, keen

powers of observation, and an analytic turn of mind. The book seems to be designed to be read more as an essay than as a reference or text book. But this end is thwarted here and there as the reader runs head on into clumps of equations and engineering jargon.

"Structural Decisions" is a British book, but there are only a very few places in it where the terminology differs from that used in the U.S. Werner Rosenthal, like the authors of the other three books, teaches at an architectural school, in this case the Polytechnic in London. His book, which is larded with excellent sketches and photographs, analyzes the simpler structural problems in greater detail than the others. And, although its emphasis is on qualitative analysis, formulas for calculating structural sections are clearly set out. Because it has an excellent balance between mathematical and descriptive approach, the Rosenthal book should make an excellent college-level text —B.P.S.

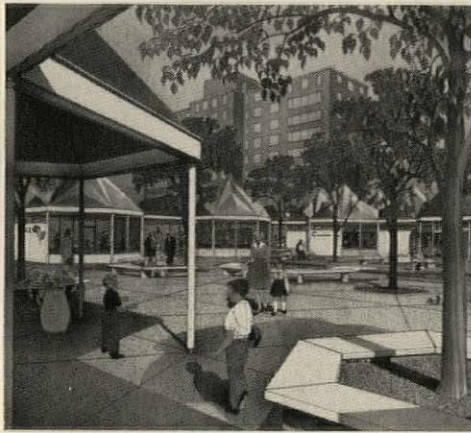
HEIME. Studenten- Berufstätigen- und Altenheime. By Max Fengler. Published by Verlagsgesellschaft Alexander Koch GmbH, Stuttgart, Germany. Available through Wittenborn & Co., 1018 Madison Ave., New York 21, N. Y. 262 pp. 9" x 11". Illus. \$22.50.

College residence halls, homes for employees and homes for the aged are described in this German book. Here, "homes for employees" refers to residences for nurses, student nurses and others working for hospitals. Hence these buildings are much like dormitories. While the title, table of contents and two articles (one on dorms, the other on housing the elderly) are in German only, the general description and the captions for each building, 61 in all, are printed in both German and English (British spelling and nomenclature). Most of the buildings shown are in Germany, Sweden, Switzerland and the Netherlands, with eight of the dormitories from the United States.

LIFE FOR DEAD SPACES. The Development of the Lavanburg Commons. An architectural proposal by Charles Goodman; text by Wolf Von Eckardt. Published by the Fred L. Lavanburg Foundation by Harcourt, Brace & World, Inc., 757 Third Ave., New York 17, N.Y. 127 pp. 8¾" x 9¾". Illus. \$12.50.

This book takes as its premise the following lamentable but obvious fact about today's large-scale urban renewal and public housing projects: "Passionately conceived to improve living conditions in concentrated areas, these spaces turn out to be dead. They stifle the human spirit."

To humanize the dead spaces enclosed by this "high-rise anonymity," to promote psychological health as well as physical hygiene, Architect Goodman, with the aid of renderings by Helmut Jacoby and text by Wolf Von Eckardt, proposes to fill the dead, open spaces with lively, small-scaled pavilions to



form large community commons. No mere abstruse proposal, the book offers specific design details for a simple, modular, industrially produced pavilion consisting of a welded steel roof on steel pipe columns.

The Lavanburg Foundation has for the past 37 years worked to improve city neighborhoods, from the pioneering Lavanburg Homes on Manhattan's lower East Side in 1927 to current research in community planning.

URBAN RENEWAL POLITICS. Slum Clearance in Newark. By Harold Kaplan. Published by Columbia University Press, 2960 Broadway, New York, N.Y. 219 pp. 9" x 6". \$6.75.

Dr. Kaplan, who is assistant professor of political science at York University in Toronto, has written a rather chilling account of urban renewal in Newark, N.J.

It is chilling because Dr. Kaplan documents what everybody has known, and talked about, but seldom put into print: i.e., that urban renewal has been, in most cases, little more than a series of *ad hoc* actions designed to clear some land and get something (anything!) built—without regard to any over-all community objectives. Success has been measured in terms of how much land is cleared; and Kaplan points out, with weary realism, that such quantitative yardsticks are much easier to apply than

continued on page 132

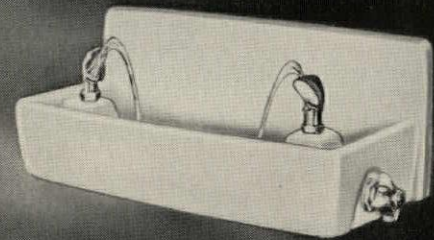
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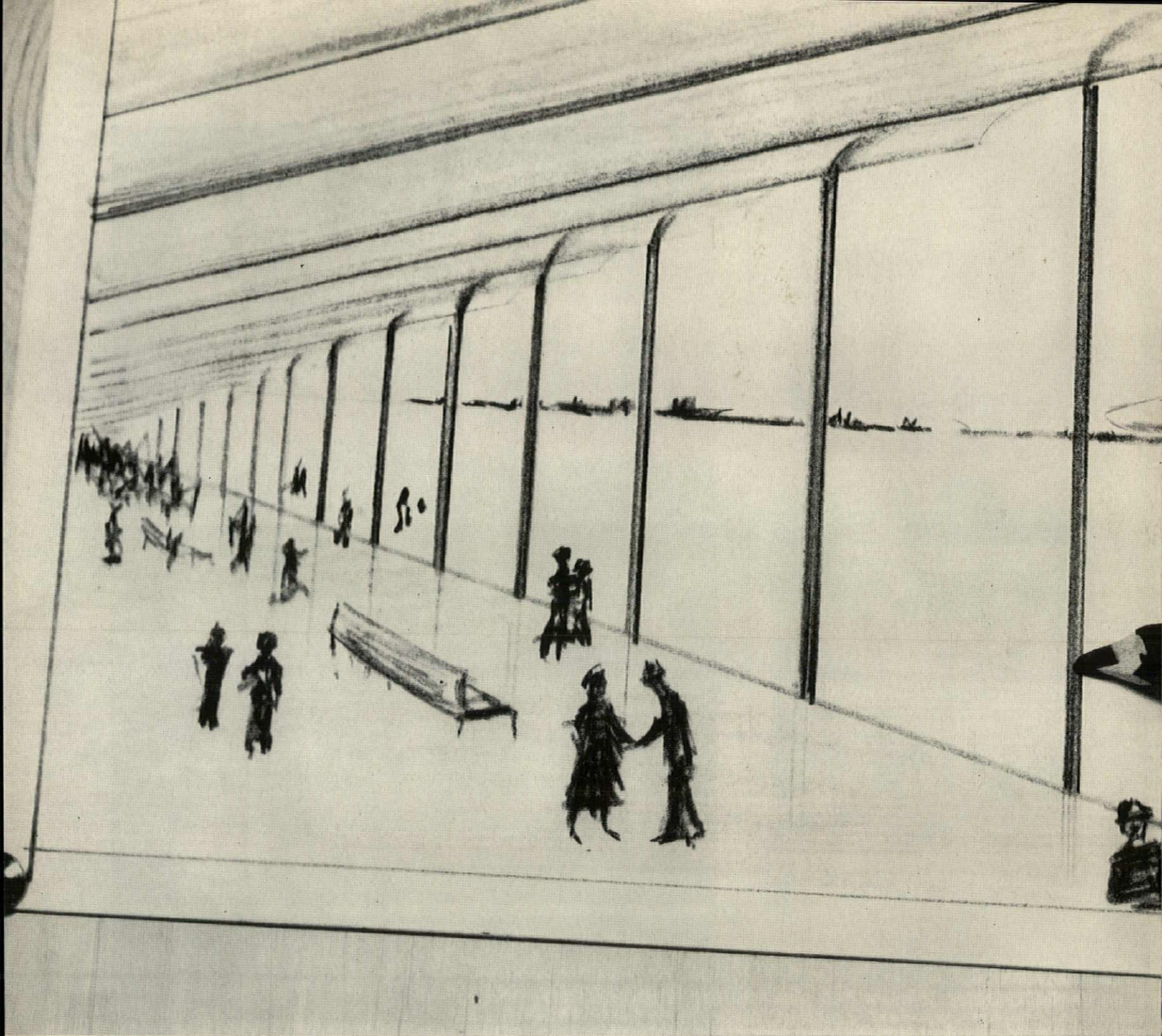
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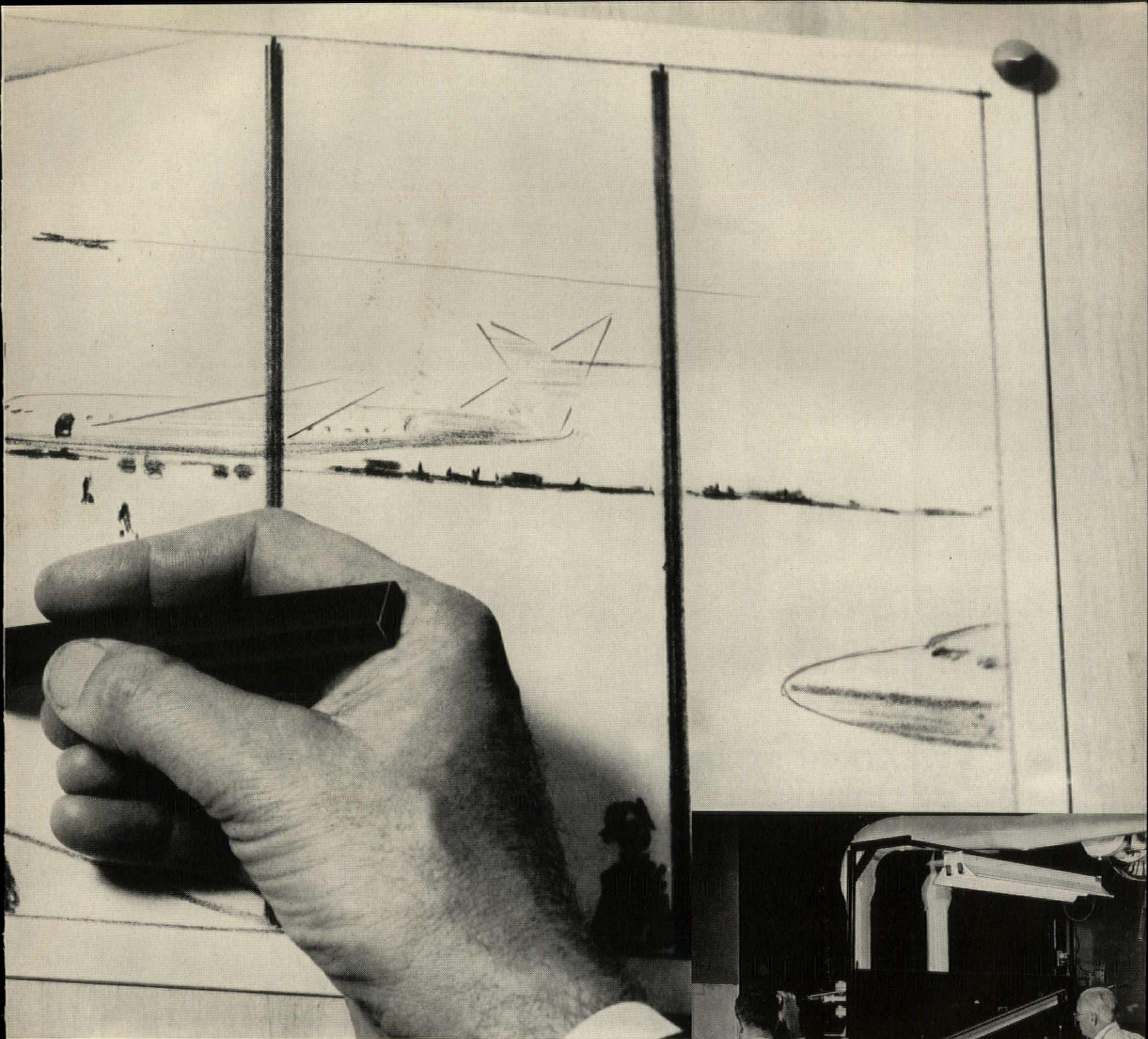
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any qualitative ones.

But the application of such quantitative standards leads to curious conclusions. Kaplan cites Cincinnati, New York, Philadelphia and Chicago as "notable examples" of renewal, and it is interesting to note that while all of these cities have cleared substantial areas, they are not fully "successful" examples by Kaplan's own measures.

Chicago's program has come to a near halt, much of its cleared land still unsold,

and Cincinnati is in the same fix, with its first big middle-income housing project a failure (in Kaplan's terms) and its industrial project moving slowly. Philadelphia has turned away from massive clearance—not because nothing more needs to be cleared, but because the able administrators of that program have realized that there are other approaches which hold much greater promise for the goals that have been carefully evolved for the total city. And in New York,

the biggest clearance program of all ended in scandal, but only after an excess of new luxury housing had been added to the city's inventory. Today, New York's emphasis on rehabilitation indicates that it hardly considers the early years of its program "successful."

Kaplan's book is extremely useful, for it exposes the shabby thinking that has made many urban renewal programs so inadequate to the community's needs. To be sure, it is difficult to achieve a consensus on those needs, particularly with a diverse population such as Newark's, but that doesn't mean that urban renewal should never be anything more than real estate speculation—which is what it has largely been in Newark and elsewhere. All the compromises with principle—and there were some principles early in the game in Newark—are carefully documented here, and make fascinating reading. But Newark's renewal chiefs cannot bear all the blame for taking the path they did; as Kaplan indicates, Title I's own internal contradictions (clear slums and then try to get private builders to erect middle-income housing) constitute a major difficulty.

Newark has a big program (nine projects, including Mies van der Rohe's massive Colonnade Park apartments) and is now concentrating on rebuilding its central area. There is also some pressure to get new housing at lower rentals. But, by and large, new housing in renewal areas is priced well beyond the means of most residents. And what of the so-called "gray areas"? They are still there, and were proliferating during the very period when these great "successes" were scored in land clearance (one hesitates to use the term "slum clearance"). There has been surprisingly little opposition to renewal, Kaplan suggests, because political leaders here carefully dispersed responsibility for the program. Here is a lesson to be learned, perhaps—although an equally important reason for little popular opposition to date is the lack of organization in poorer neighborhoods, and the fact that much of the program has been concentrated in heavily commercial areas.

This is an important book, and its lessons should be heeded. If "success" in urban renewal is measured in terms of acres made available for development at a builder's discretion, then perhaps a moratorium is in order until more meaningful standards can be established.—D.B.C.

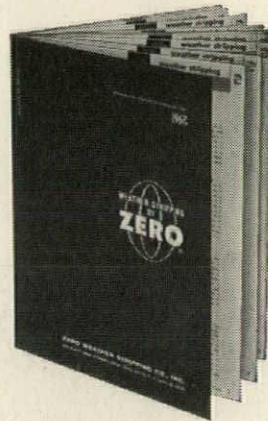
THE QUIET CRISIS. By Stewart L. Udall. Published by Holt, Rinehart, and Winston, Inc., 383 Madison Ave., New York 17, N. Y. 196 pp. 9 1/2" x 6 1/4". Illus. \$5.

As Secretary of the Interior, Stewart L. Udall has already compiled an impressive record in his efforts to preserve the nation's natural beauty and to conserve its resources. He has, for example, taken such widely varying actions as opposing a high-rise develop-

continued on page 137

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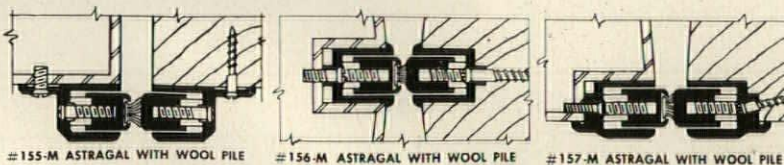
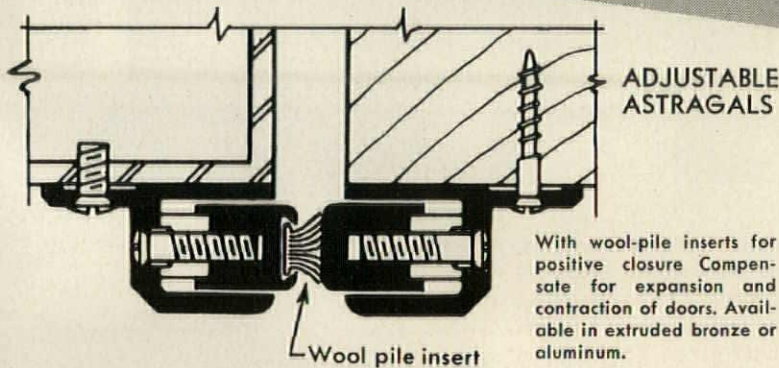
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ment on the lovely Potomac Palisades outside Washington, D. C., advocating the creation of a new National Seashore at Assateague Island, Md., and selecting sections of 12 rivers for preservation as unspoiled recreational areas.

To these accomplishments, Udall now adds a book, *The Quiet Crisis* in effect a primer on conservation. It provides a sweeping historical view of the subject—from the “land-sense” of the Indians to the mindless deforestation, slaughter of wildlife, and misuse of land and water of the nineteenth and early twentieth centuries—and a brief look at some of the men who made conservation their major interest (such as George Perkins Marsh, John Muir, Carl Schurz, and Frederick Law Olmstead).

By its very nature, it is a fast-moving book, easy and entertaining to read—though the author often relies on woolly clichés and occasionally lapses into an outdoorsy lingo that adds little to the meaning or flavor of the subject.

Because he is a man of action, familiar with the practical mechanics of getting things done, Udall's views are most heartening. Faced with the problems of proliferating blight, for instance, he suggests “Why not tax the owners of ugliness, the keepers of eyesores, the polluters of air and water instead of penalizing the proprietors of open space who are willing to keep the countryside beautiful?” Similarly, he publicizes many conservation measures that have proved successful: cluster planning, new zoning and tax laws, open-space regulations; and conservation easements.

The biggest problem today, says Udall, is convincing Americans that science and technology will not solve conservation problems. Scientific successes have “allowed us to exercise dominion over the atom and to invade outer space, but we have sadly neglected the inner space that is our home.”

Hopefully, the solution to this type of increasingly complex problem is to be found in mass education and responsible public and private leadership. It is probably with these two goals foremost in his mind that the Secretary of the Interior wrote this book.—P. H.

WORLD ARCHITECTURE. An Illustrated History. Introduction by Henry-Russell Hitchcock; text by Seton Lloyd, Andrew Boyd, Andrew Carden, Philip Rawson, David Talbot Rice, Norbert Lynton and John Jacobus Jr. Published by McGraw-Hill Book Company Inc., 330 West 42nd St., New York 36, N. Y. 348 pp. 10 1/4" x 13 1/2". Illus. \$17.95.

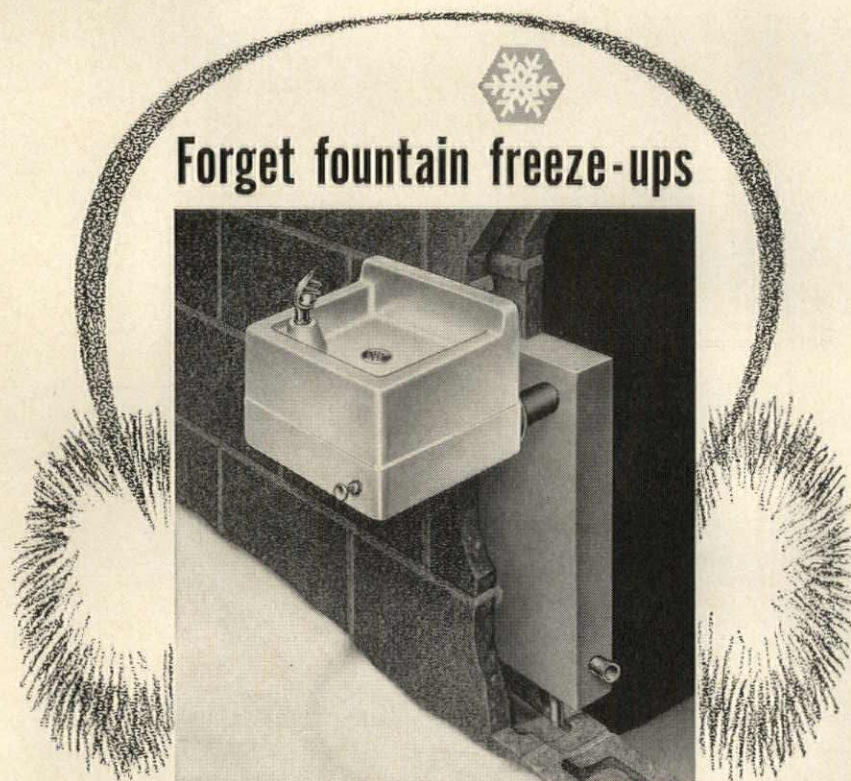
It is, of course, impossible to get a one-volume history of the world's architecture that would satisfy everyone. But this bulky book manages to cover ancient and classical, Chinese, Japanese, Indian, Islamic, medieval, Renaissance and modern architecture quite thoroughly in an interesting and readable fashion. Good printing and heavy stock make the photographs beautiful and legible, even though most of the 1000-plus illustrations

are small. Included are a helpful glossary and a detailed index.

THE ART OF ROME AND HER EMPIRE. By Heinz Kahler. Translated from the German by J. R. Foster. Published by Crown Publishers, Inc., 419 Park Ave. South, New York, N. Y. 263 pp. 7" x 9 1/4". Illus. \$6.95.

This latest book in Crown's series on “Art of the World” is something of a disappointment. Not as much of the art of the Roman

Empire is included as one would expect from the title. Most of the pictures are in color, but all too many buildings and other works of art mentioned are not illustrated. Although the text is very detailed, it unfortunately deals largely with Roman political history to the exclusion of art and architecture. The most disquieting feature of the book, however, is the long corrigenda, which includes alterations of the text and correction of typographical errors. END



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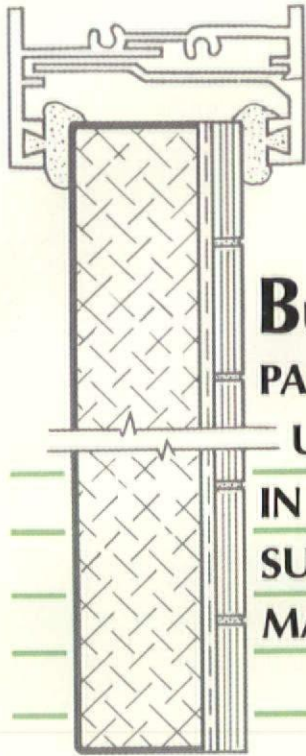


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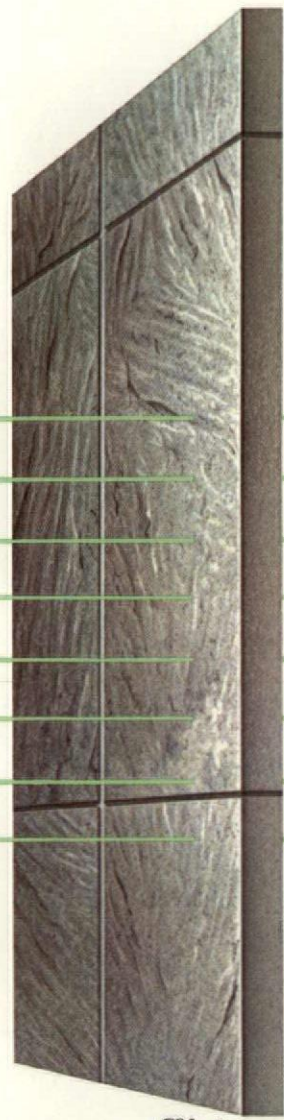




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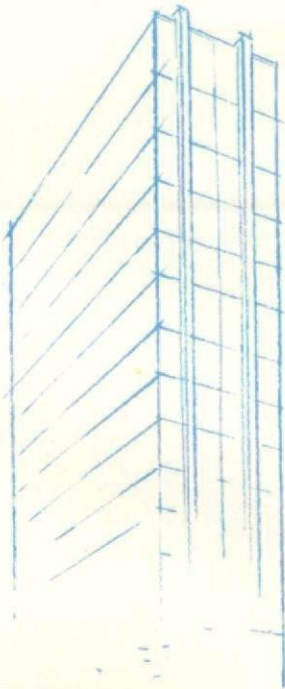
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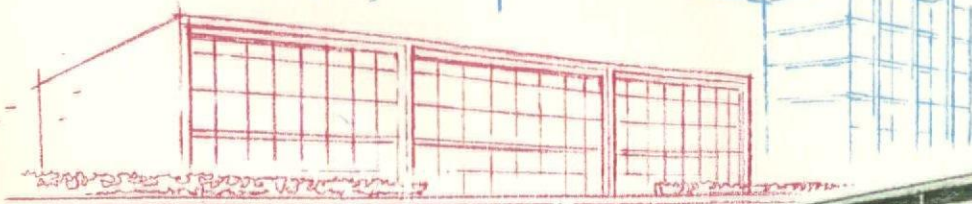
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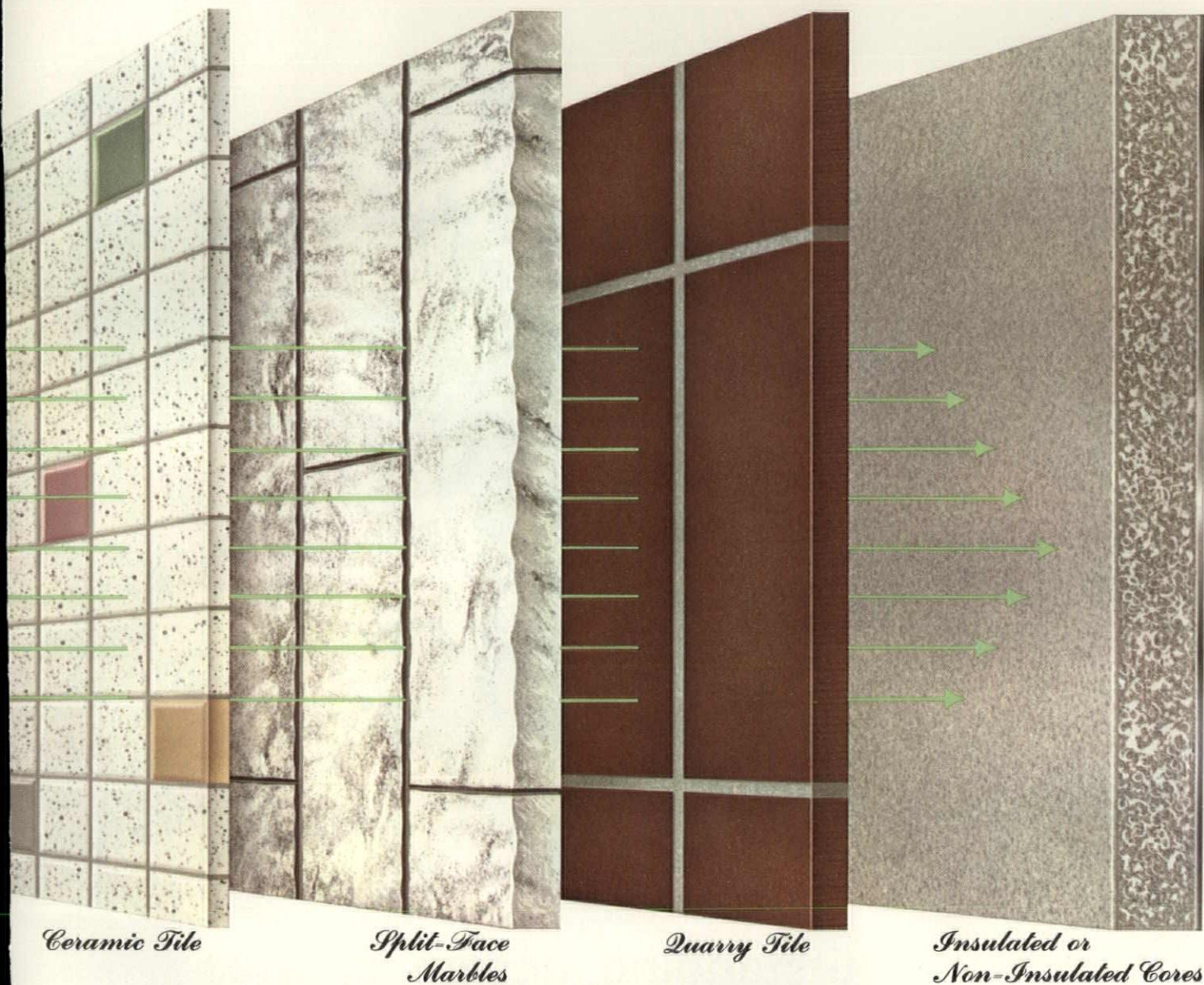
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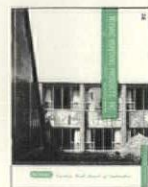
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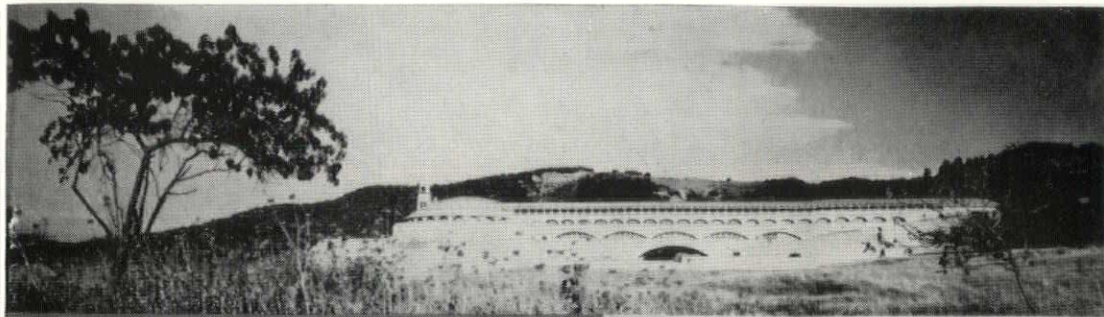


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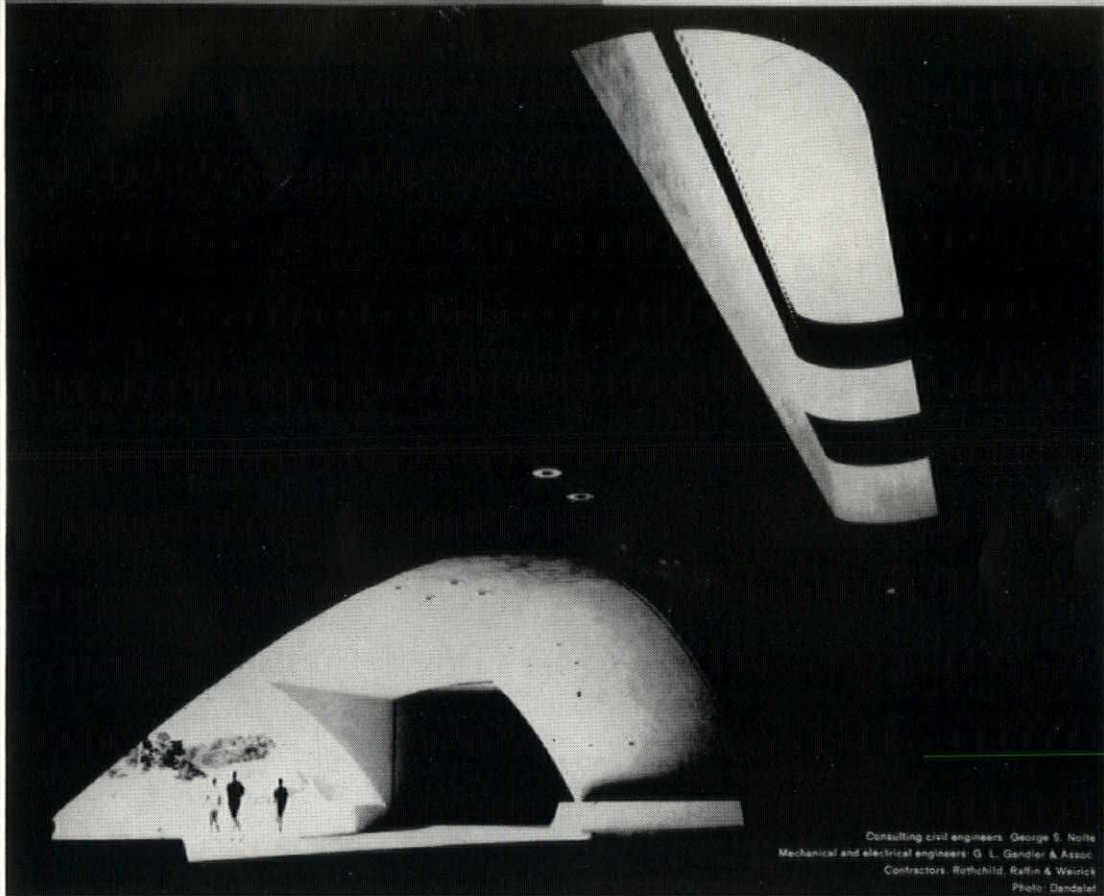
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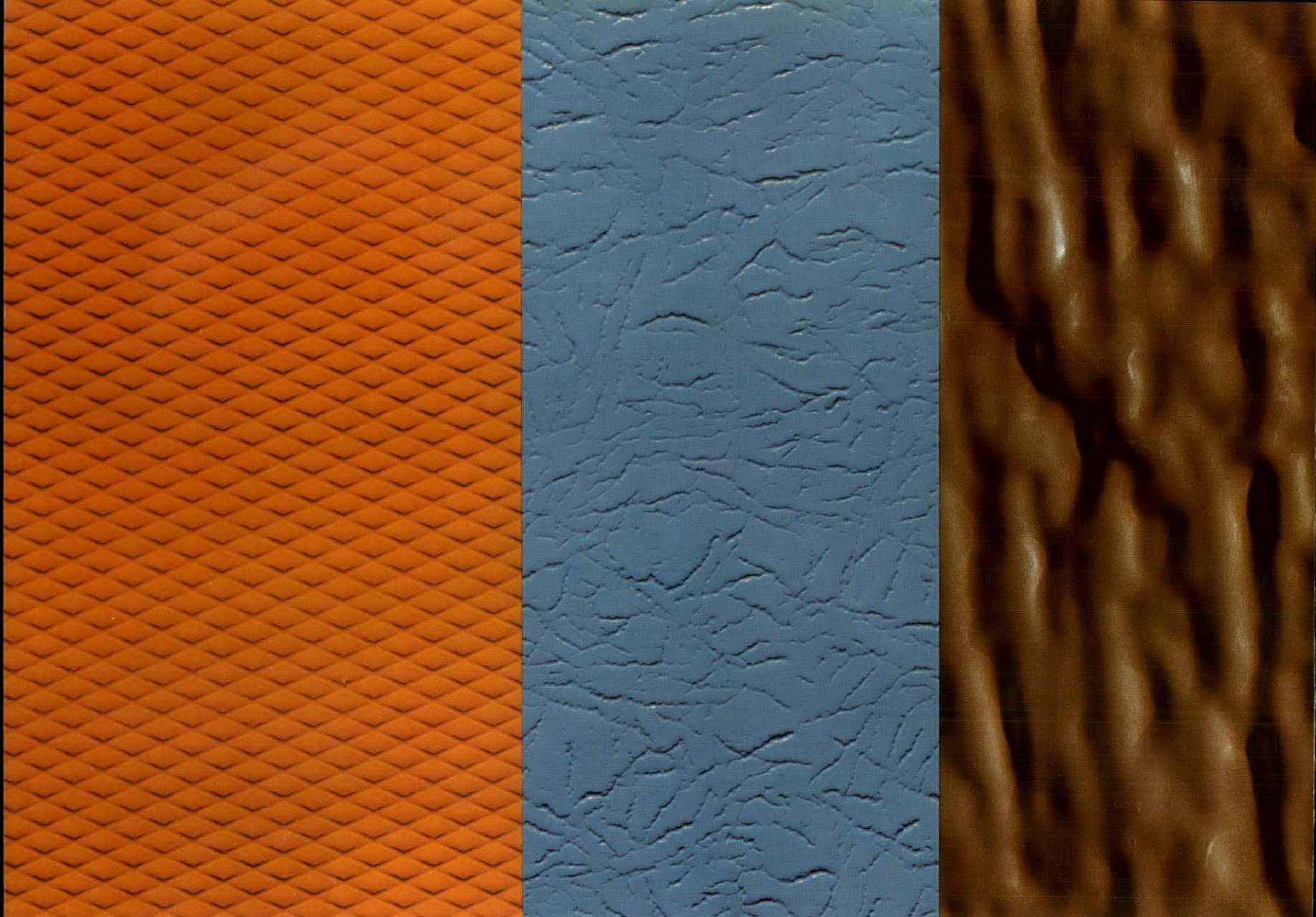
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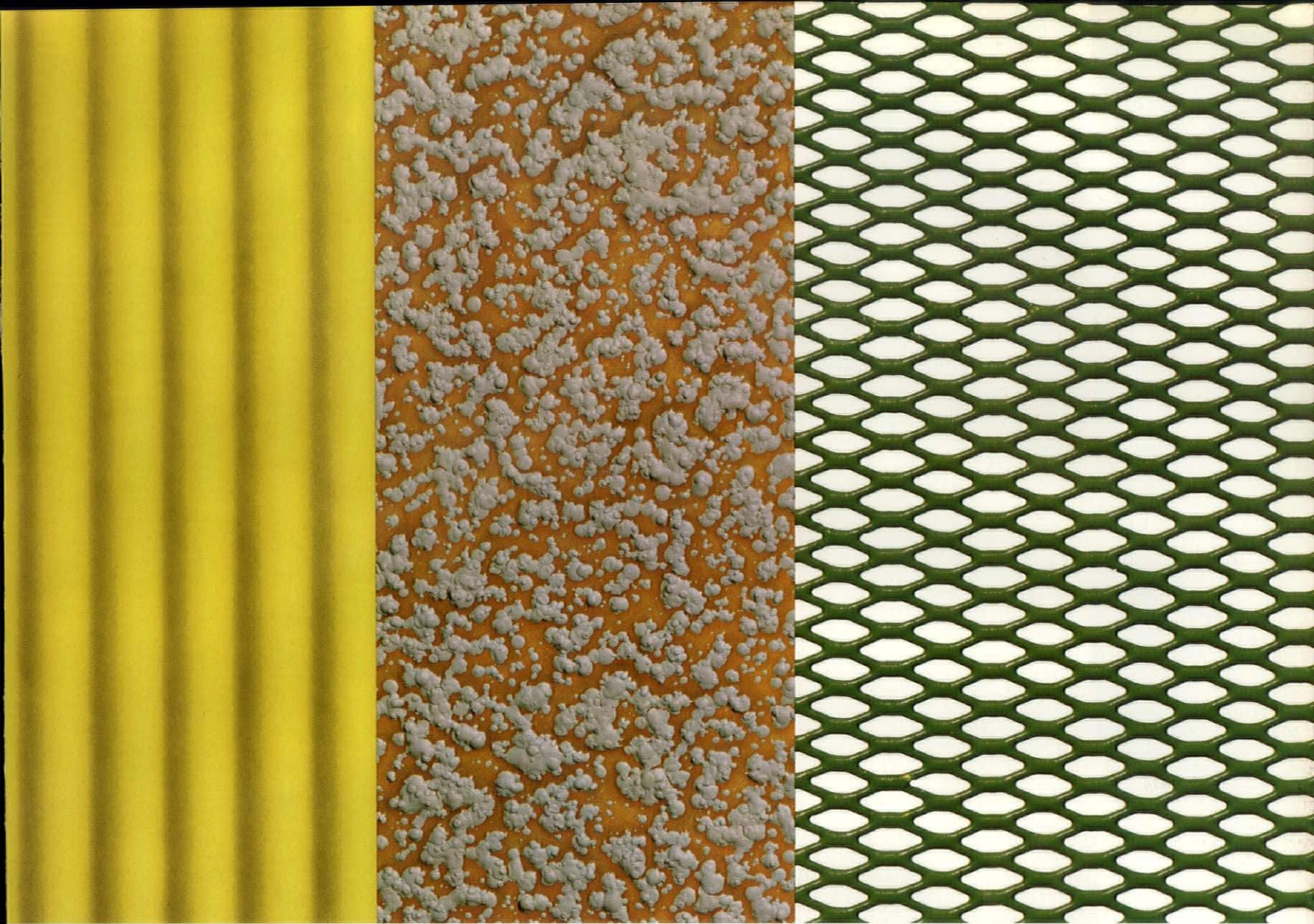
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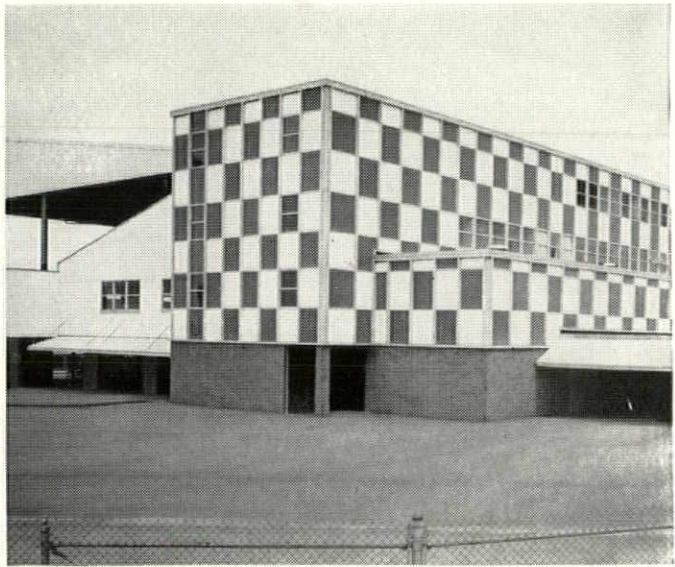
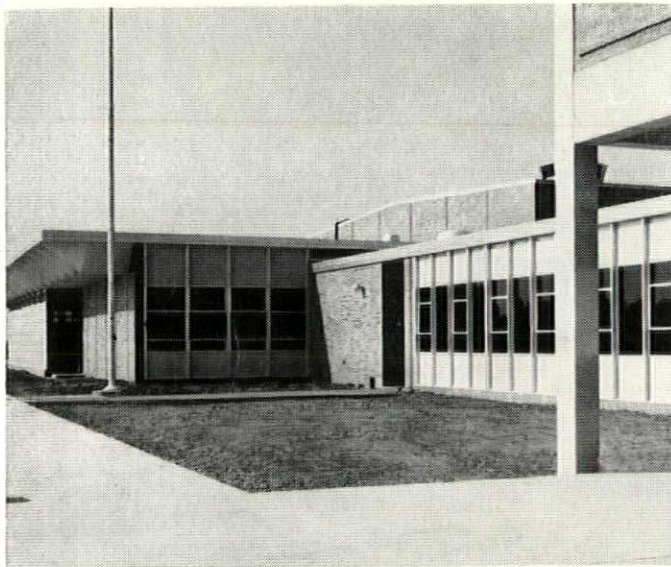
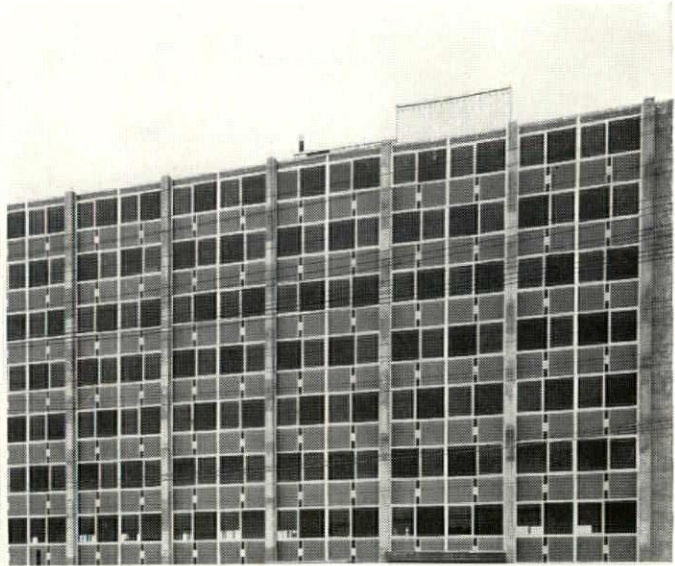
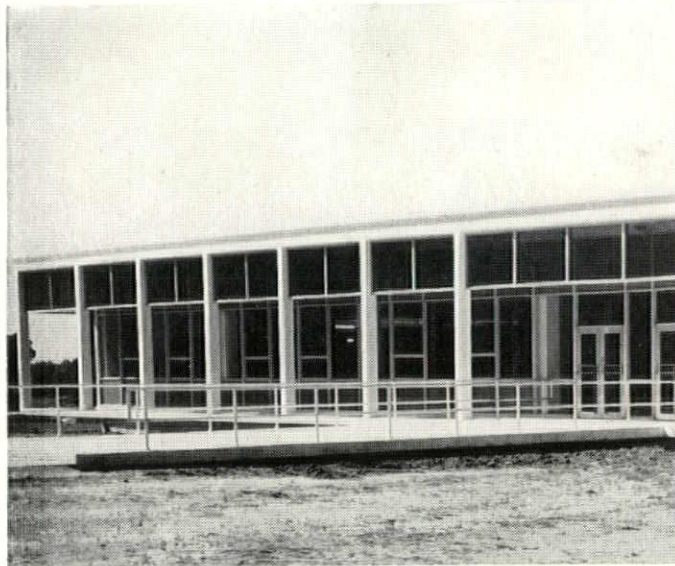
long service life you have come to expect from *architectural porcelain enamel*.

Available for all types of applications, 3-dimensional porcelain-enamel panels add but little to the cost of any building. Installation is simple, fast. Your supplier will help you work out the details.

Architects who have had experience with these new materials predict an extensive use of them in many types of construction. Some of these are shown here at the right. For further details and names of qualified producers, write Ferro Corporation, Dept. B-12, Cleveland 5, Ohio.

 **FERRO**
WORLD LEADER IN PORCELAIN ENAMELS





Why urethane foam panels for these buildings?

Varied though these buildings are, all of them utilize urethane foam core curtain wall panels made with DuPont HYLENE® organic isocyanates and blown with FREON® fluorocarbon. And for good reason . . . urethane foam's low K factor of .12 to .14 is half that of ordinary insulation materials. This gives these panels the same coefficient of heat transfer as thicker, conventional panels. Being lighter and easier to handle, urethane core panels help speed construction and reduce total building weight.

Urethane foam has superior impact resistance, will not absorb moisture, pack down or crumble. It adheres firmly to the skin of the curtain wall panel, creating a long-lasting integral unit that has high strength per unit weight.

Experience has shown that there are unlimited possibilities for urethane panel construction. In practical applications throughout the world, the result has been more usable floor space without increase in cost. Want more particulars? Just fill in and mail the coupon below.

-----Please send me Du Pont's descriptive booklet, "Rigid Urethane Foam Insulation for the Construction Industry."-----

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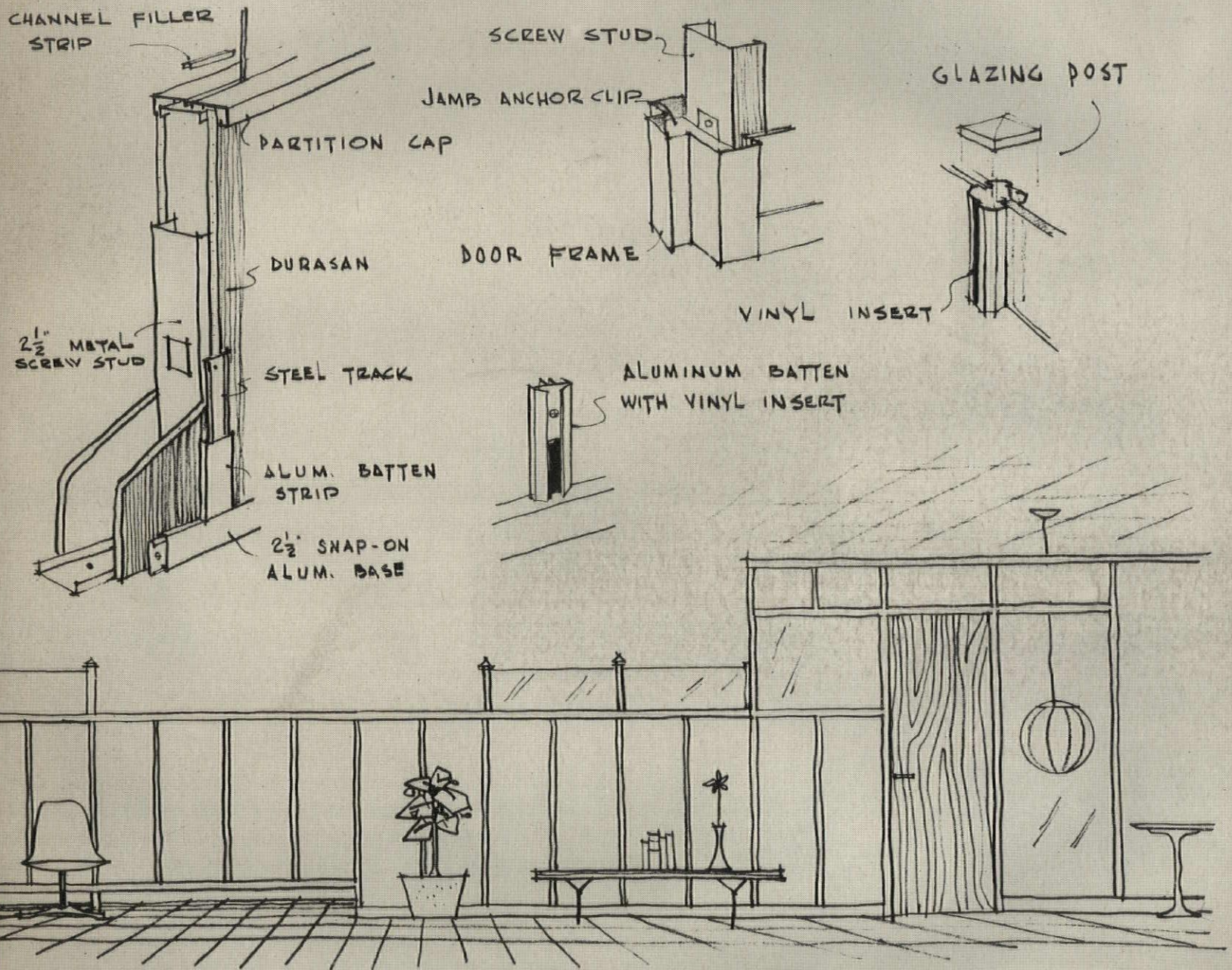
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In Canada, write Du Pont of Canada Ltd., 85 Eglinton Ave., E., Toronto 12, Ont.

Contempo-Wall Partition System offers complete flexibility in 3 basic heights

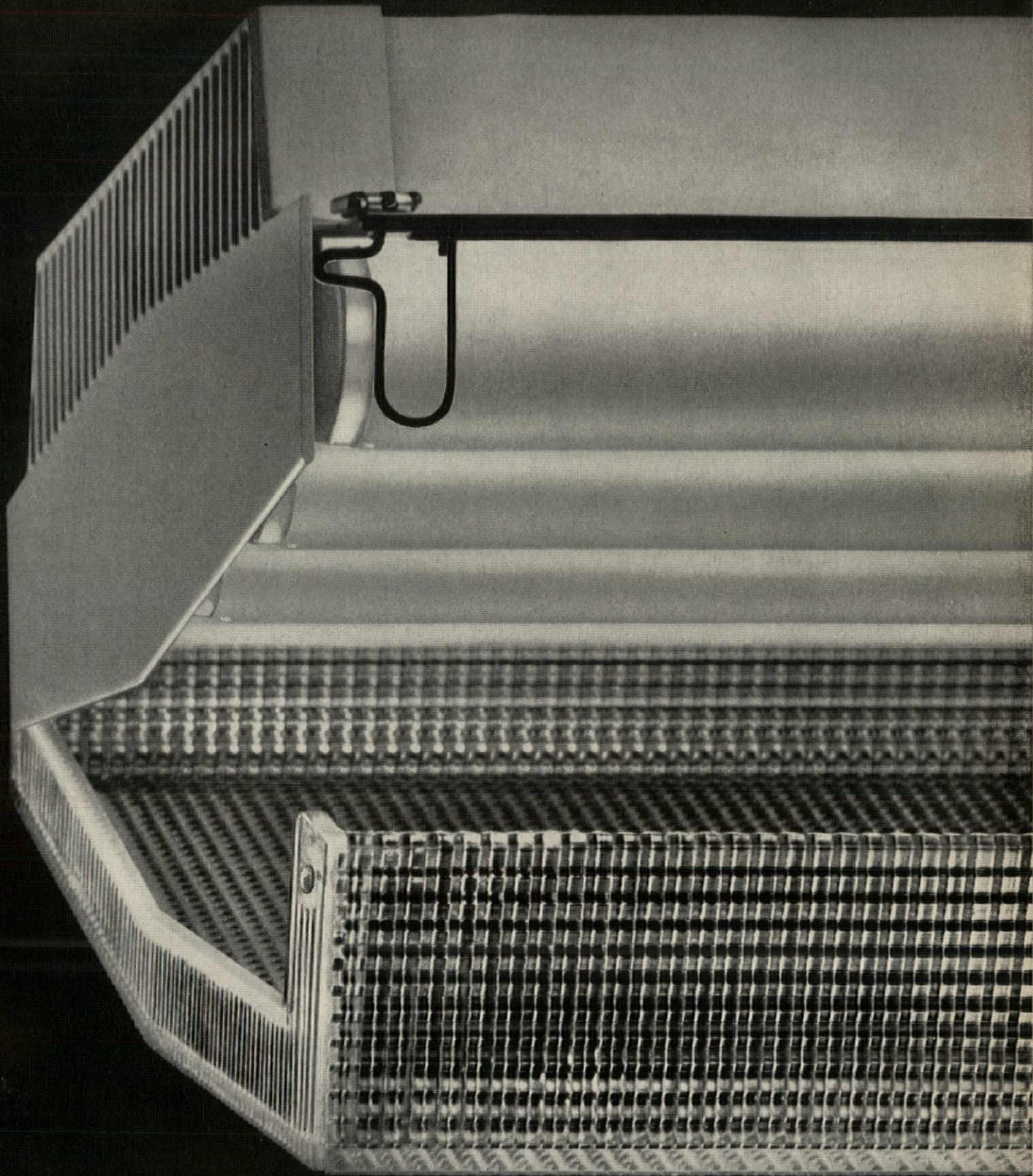


Gold Bond Durasan®—the tough, vinyl-surfaced gypsum wallboard. Available in fashionable decorator colors, or Presidential Walnut as pictured at the left above. It's a cinch to fasten panels to steel studs. Self-drilling screws quickly connect both the anodized-aluminum batten strips and wall paneling to the steel studs. Screw heads are concealed with a snap-in vinyl insert strip. Neat. Quick. Low cost. Contempo-Wall is available in three heights: cornice, floor-to-

ceiling, and bank screen or rail. Anodized-aluminum door frames match batten strips, base and other accessories. Special batten strips provide one-hour fire rating, where required. Your Gold Bond® representative has complete information and technical literature. Or write Dept. AF-14, National Gypsum Company, Buffalo 25, New York.



Gold Bond materials and methods make the difference in modern building



It's the end!

Look at the end first and you'll see why Opticon® is the last word in surface fluorescents. Each Opticon lens — sides, ends and face — is a single crystal-clear injection-molded unit. Each is comprised of thousands of individual, precisely engineered prisms. The regressed bottom prisms provide wide-angle, comfortable task light. The prisms on the side are patterned inside and out at right angles to direct



OPTICON—NOW IN ONE-LIGHT, TWO-LIGHT, THREE-LIGHT, FOUR-LIGHT WIDTHS; 4-FOOT AND 8-FOOT LENGTHS.

low-intensity peripheral lighting on the adjacent ceiling. You can also see how the entire Opticon lens swings away from either side on safety hinges for easy cleaning and swift relamping—without tools. For more information on Opticon—a quality fixture at a low budget price—write to Dept. AF-1, Lightolier, Jersey City, N.J. Look in the Yellow Pages for the name of your nearest stocking distributor.

LIGHTOLIER®

Natco buff face brick was used on the exterior walls of the Alice Shaw Junior High School in Swampscott, Massachusetts. Natco ceramic glazed Vitritile was used in much of the interior. The John M. Gray Company of Boston was the architect—General contractor was John Bowen Company, Inc., Boston.



Why Natco Vitritile was used in this junior high school

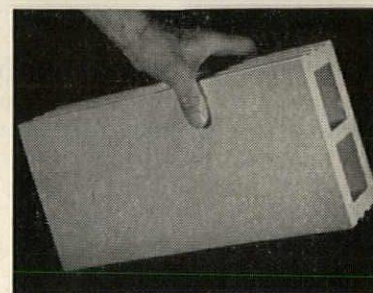
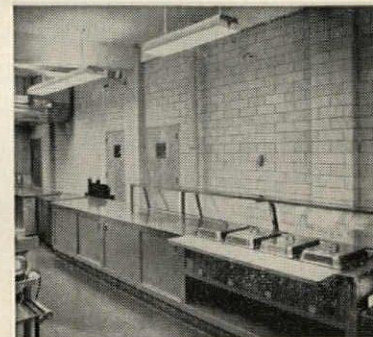
SANITATION—The ceramic glazed surface of Vitritile made it perfect for use in the high school kitchen and cafeteria. Cooking residue and food spillage cannot penetrate or collect on Vitritile's hard surface. Plain soap and water maintains the sanitation.

MOISTURE RESISTANCE—With a dozen hot showers steaming at the same time, it is imperative that the wall surfaces in the locker room and showers are able to resist moisture. Vitritile will not flake or peel regardless of the extent it is exposed to water and steam. Again, it's the Vitritile ceramic glazed surface that makes it downright impervious to moisture.

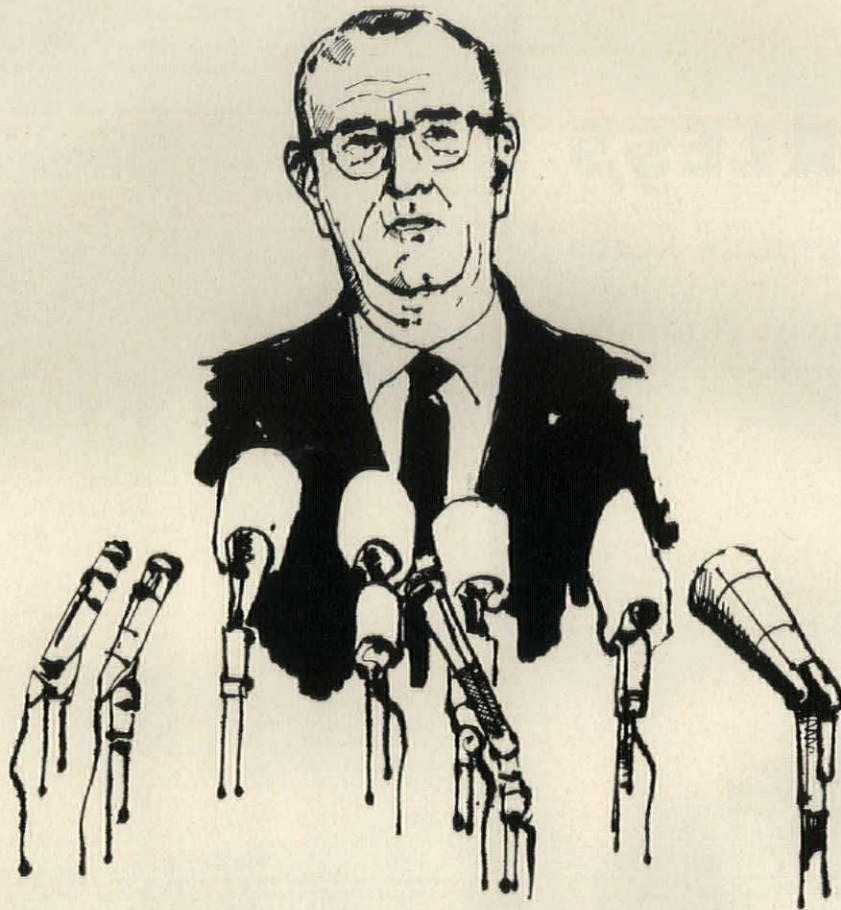
MARK PROOF—With 700 students inhabiting a school, scuff marks and scribbles are bound to appear on the walls. Natco Vitritile in the corridors, stairwells, and lavatories render these markings, at worse, temporary—a damp sponge removes them from the smooth, hard Vitritile surface.

natco corporation

GENERAL OFFICES: 327 Fifth Avenue, Pittsburgh 22, Pa. **BRANCH SALES OFFICES:** Boston • Chicago • Detroit • Houston • New York • Philadelphia • Pittsburgh • Birmingham, Ala. • Brazil, Ind. • **IN CANADA:** Natco Clay Products Ltd., Toronto, Ontario



Natco Vitritile (lower right) is completely fireproof and comes in three nominal face sizes: 8" x 16", 5½" x 12" and 5½" x 8", in 2", 4", 6", and 8" thicknesses. Kitchen (upper right) and corridor (above) show typical installations.



WE GOT YOUR MESSAGE, Mr. President...

As we mourn the tragic death of our beloved President, with whom we were privileged to work and share in his vision of the American future, his passing is a deep personal loss to every member of our organization. From the depth of our great sorrow, I pledge the continuing support and loyalty of every member of our Association to the new President of the United States of America, LYNDON BAINES JOHNSON.

We, along with every American, saw him step forward to the battery of waiting microphones on that fateful, black Friday evening at Andrews Air Force Base outside Washington and say:

"I will do my best. That is all I can do. I ask your help—and God's."

WE GOT YOUR MESSAGE, MR. PRESIDENT!

In announcing the publication of our 1964 "Calendar of Progress", which, in part, graphically presents the late President's "Vision of the American Future", we humbly dedicate it to the American people and the unfinished business of our country.



John H. Lyons

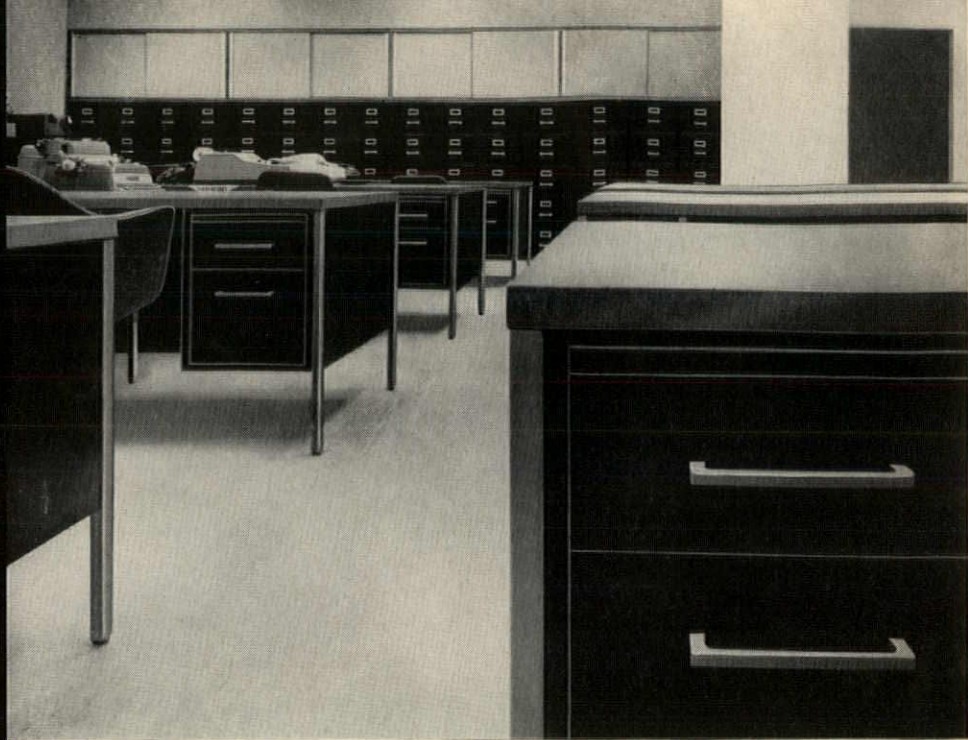
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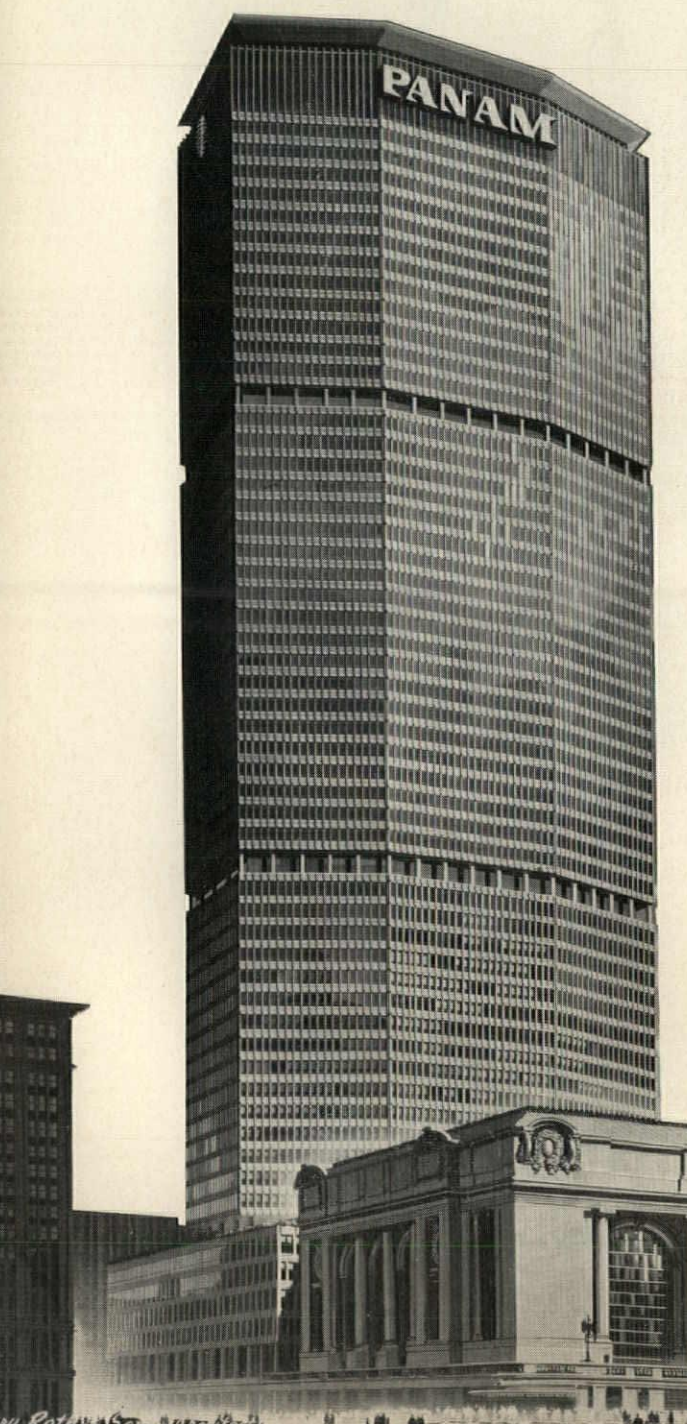
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Two floors of this Panam Building house the advertising agency, Foote, Cone & Belding in a functional setting of Peerless office furniture.

It's the Olympic line of desks, credenzas, tables, filing cabinets . . . in fact, a complete line for every contract detail. The Peerless originative talent can interpret *your* creative ideas—for *your* next contract proposal. Use the literature inquiry reply card in this issue; or write Peerless Steel Equipment Co., Philadelphia, Pa. 19111



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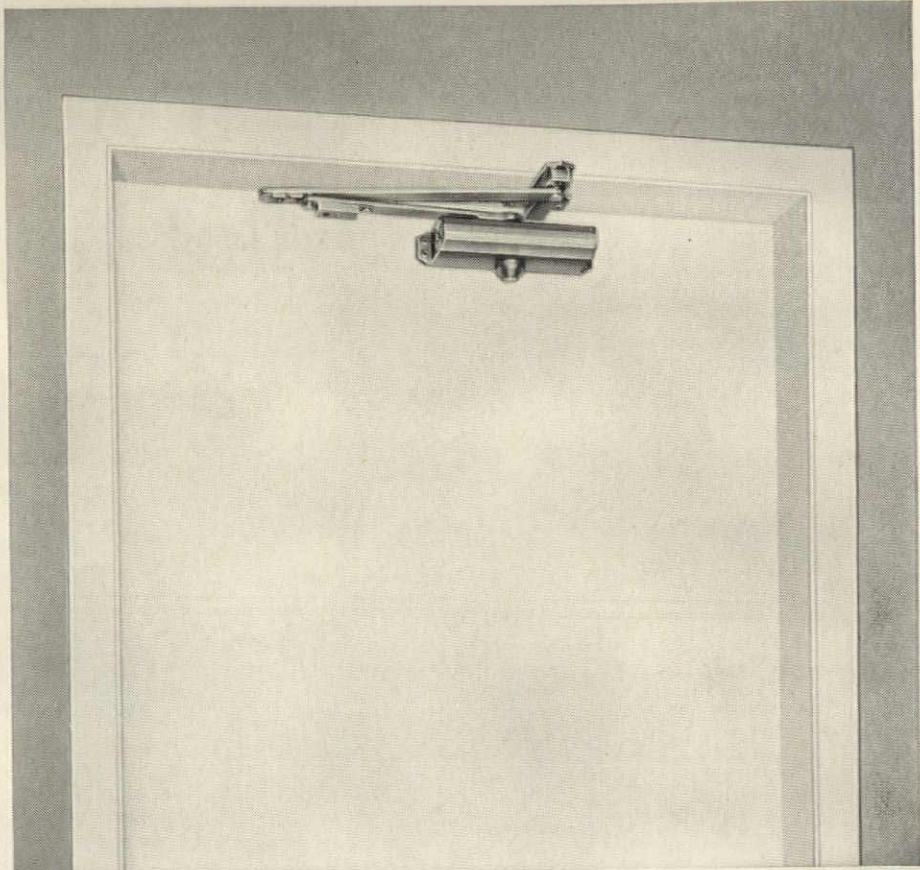
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CLEAN, UNCLUTTERED DOOR CONTROL INSTALLATIONS



NEW NORTON UNI-TROL UNITIZED DOOR CONTROL PERFORMS ALL FIVE DOOR-CONTROL FUNCTIONS

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You eliminate the cluttered look on your doors. There's only one product to install for complete door control. You can choose from two basic styles and 6 versatile models all compatible with modern architectural design. Norton Uni-Trol unitized door control is another Norton contribution to the esthetic revolution in builders hardware.

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ASK YOUR NORTON REPRESENTATIVE TO SHOW YOU A SAMPLE OF NORTON UNITIZED DOOR CONTROL, OR WRITE FOR MANUAL U.

1065

NORTON® UNITIZED DOOR CONTROL
372 Meyer Road, Bensenville, Illinois

3M announces a flat finish that stays glare-free for life



Handling doesn't burnish it... scrubbing doesn't shine it. Unique process

New 3M Velvet Coating is second only to velvet cloth in its ability to diffuse light and eliminate reflections or glare.

That's because it's the only flat finish with an *optical system* that produces a nearly perfect light-diffusing surface. What's more, this unique process keeps 3M Velvet Coating glare-free for as long as the finish lasts!

Flat, yes. Dull, never!

Although the flattest finish ever formulated, 3M Velvet Coating has a deep, rich beauty. It is soft and easy on the eyes . . . with excellent color uniformity from every viewing angle.

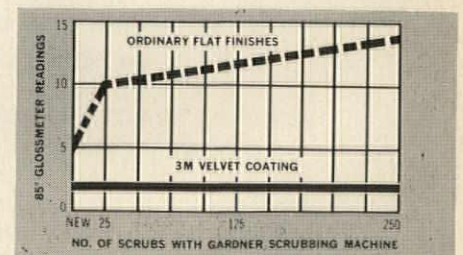
Doesn't smudge or fingerprint.

Besides being good-looking, 3M Velvet Coating is a practical flat finish. It doesn't smudge or fingerprint—as so many conventional flat paints do. Surface marks can be removed with a damp sponge or cloth. And through washing after washing, 3M Velvet Coating keeps its original glare-free appearance.



What Scrub Test proved

When put to the test on a Gardner Laboratory Scrubbing Machine, 3M



Velvet Coating was still as good as new after 250 vigorous scrubbings. (See graph above.) Ordinary flat finishes quickly developed glare spots.

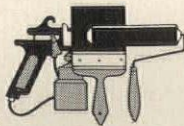
New 3M Velvet Coating comes in 12 standard colors, including metallics, and can be blended into just about any desired shade. Both air drying and baking formulas are available.



makes 3M Velvet Coating glare-proof for the life of the finish

Where can you use it?

Wherever eye-pleasing, glare-free appearance is important, 3M Velvet Coating has no equal. Use it on office and laboratory equipment, lighting fixtures, ceiling tile.



Use it for contrast with bright trim. Use it for distinctive effects in interior design and on indoor and outdoor displays. Use it to eliminate the glare from instrument panels and dashboards.

Send for Design Kit

So that you might work with new 3M Velvet Coating and evaluate its advantages yourself, we've put together a special Design Kit. You get 1 quart of white, 7 pints and 8 spray cans of assorted colors—all for the introductory, money-saving price of \$29.95.

If you just want additional information at this time, a 3M Velvet Coating color card is yours for the asking.

Be sure to see the flat finish that stays glare-free for life!

Minnesota Mining & Manufacturing Co.
Dept. RFR-14, St. Paul, Minn. 55119

Enclosed is check or purchase order for — 3M Velvet Coating Design Kit(s) @ \$29.95 each (shipping prepaid).

KIT CONTENTS: 1 qt. White; 1 pt. each Blue, Yellow, Red, Brown, Black, Metallic Brown, Metallic Silver; 1 six oz. spray can each White, Blue, Yellow, Red, Brown, Black, Metallic Brown, Metallic Silver.

Please send free 3M Velvet Coating color card.

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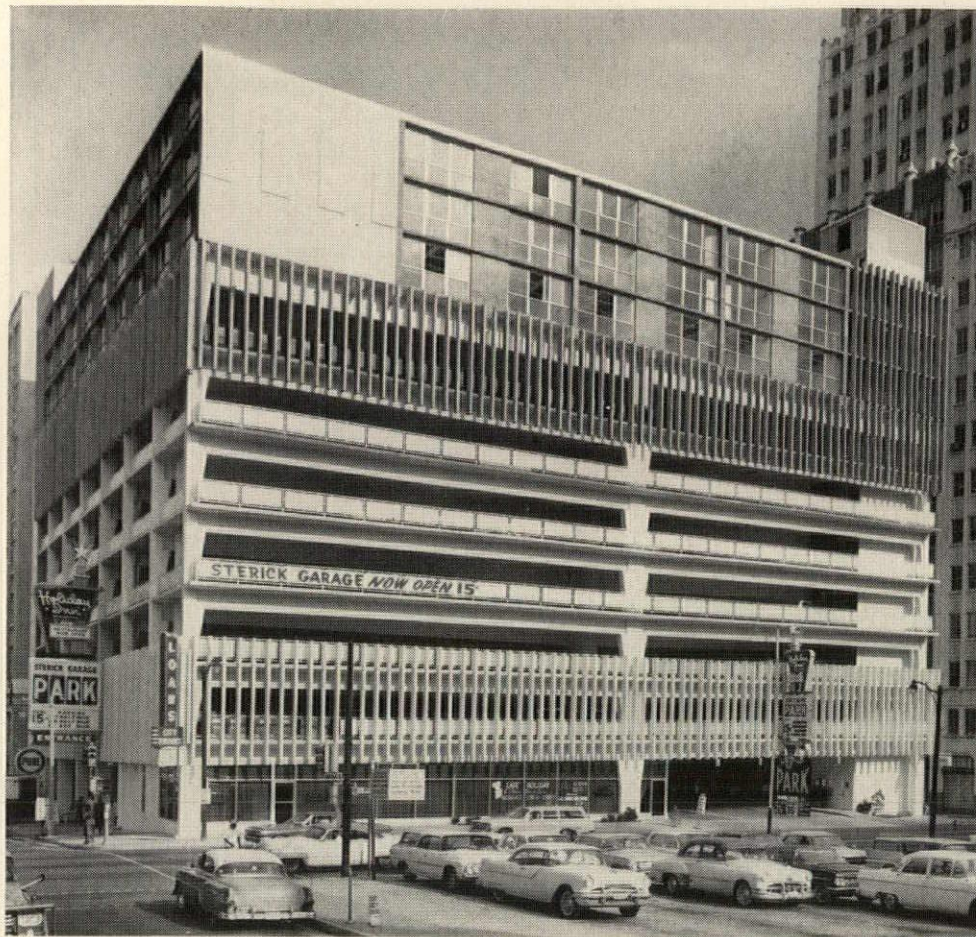
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3M BRAND Velvet Coating



◀ Sterick North Parking Garage and Holiday Inn — Memphis, Tenn.



Most of the 24 precast columns and 96 post-tensioned tee-girders are in place. The tees, 20 ft. o. c., rest in deep tapered seats in the columns. Cast-in-place slab was 5" thick, and post-tensioned in 2 directions. Total area approximately 220,000 square feet.

Architects — Furbringer and Ehrman (Memphis); Structural Engineers — T. Y. Lin & Associates (Chicago); Contractor — J. M. O'Brien & Co. (Memphis); Holiday Inn Architects — William W. Bond & Associates (Memphis).

ADD *Holiday Inn*®

ATOP 7-LEVEL PARKING GARAGE

During construction of the Sterick North 400 car parking garage, the owners decided to add a 120 unit Holiday Inn with swimming pool to occupy the 8th, 9th and 10th levels. Total area of the 10-story structure is approximately 220,000 square feet.

The post-tensioned parking garage structure is a continuous ramp type utilizing 24 columns and 96 tee-girders with a cast-in-place slab. The 71' single tees were post-tensioned using the Prescon System as was the 5" thick light weight aggregate slab which was post-tensioned in 2 directions.

A leveling slab was placed across the top level

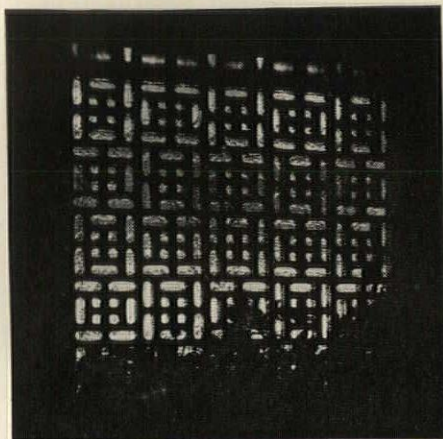
of the parking garage. This slab was strong enough to take the column loads of the Inn wherever they occurred. The leveling slab and swimming pool, which was part of the slab, were post-tensioned using Prescon tendons. This formed the 8th level.

The Prescon System of post-tensioning prestressed concrete allows the architect and engineer the utmost in design flexibility, often at the most economical cost. The Prescon System is particularly advantageous where long spans, and column-free interiors are desired. WRITE for brochures showing many examples of all sizes and types of structures that have used the Prescon System.

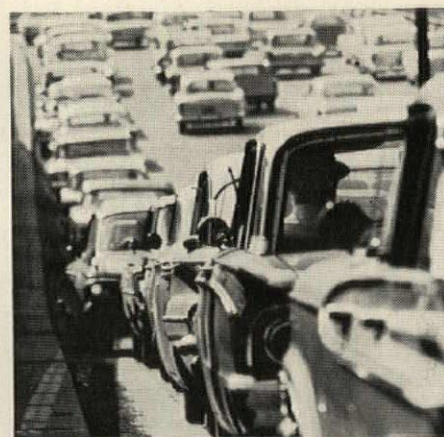
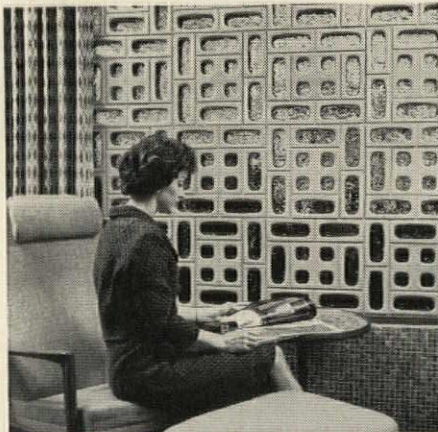


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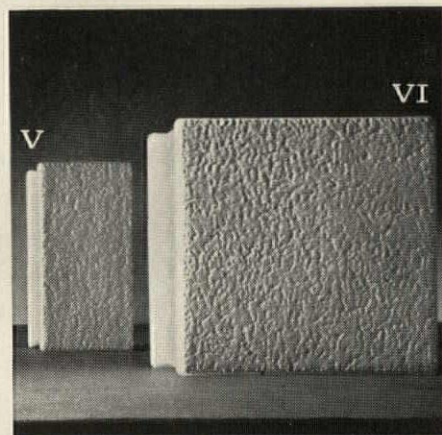
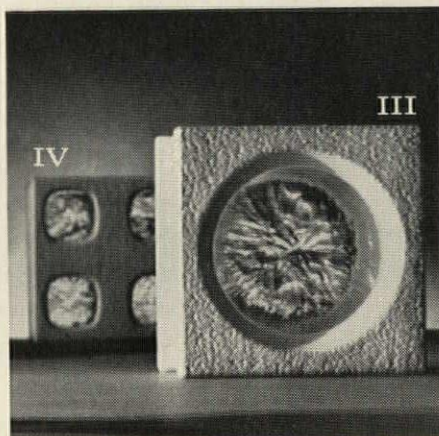
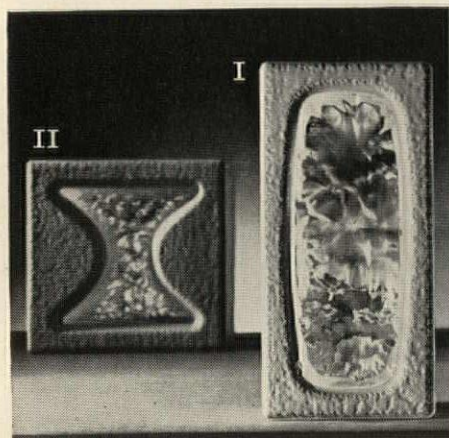


A screen wall that provides insulating value



requires no maintenance,

keeps outside noise outside



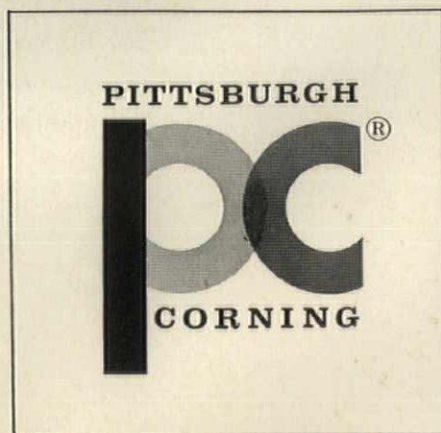
Now glass and grill are one...INTAGLIO

Now, from Pittsburgh Corning, an all glass unit that enables you to design a screen wall with no voids — that provides full insulation value of double glazing and still holds the masonry appearance of a pierced wall.

INTAGLIO Glass Wall Units. Combine glass and grill. Can't collect dirt. Can't attract youthful climbers. Are kept clean by falling rain. Provide a complete wall finished inside and out, in one simple installation.

Two new Intermix units (Designs V and VI above right) show the ceramic frit that gives an overall textured concrete effect for pattern interruption. In the four pattern blocks the center areas are a clear, antiqued glass, with the frit effecting a masonry perimeter. Designs I and V measure 4" x 8" x 4". The remaining four units are 8" x 8" x 4".

Build function into, design maintenance out of the interior and exterior wall. INTAGLIO. Write for our brochure. Pittsburgh Corning Corporation, Dept. AF-14, One Gateway Center, Pittsburgh 22, Pa.



Four proven ways to make your public telephone installations both distinctive and functional

GET FREE EXPERT HELP. Just call the Public Telephone Consultant in the area where your building is to be erected. He's helpful, thorough, and loaded with ideas to help you make a design asset out of this important public service.

PLAN AHEAD. Provide for adequate yet attractive public telephone installations while you're still in the blueprint stage. Today's flexibility in color, materials, basic size and design allows you to plan public telephone installations that will reflect the same decor you designate for walls, floors and ceilings. Early planning makes it possible for our Public Telephone Consultants to analyze the telephone requirements of a particular building, and offer practical suggestions. Remember also that preplanned installations often eliminate the costs and delays of expensive afterthoughts.

ACCENT CONVENIENCE. Little comforts are an important consideration in planning any building for public use. Tenants, visitors, employees and casual traffic all require easily accessible and conveniently located public telephones. Our Consultants can help you select the proper locations in your particular building, based on its function, floor layout, and potential traffic patterns.

SPECIFY THE RIGHT NUMBER OF INSTALLATIONS. The logical number of public telephones can be predetermined for any building. In this area our Public Telephone Consultants are helpful, too—for they can predict with remarkable accuracy the number of installations your building will require.



BELL TELEPHONE SYSTEM

SERVING YOU

NEW GLASS TESTING

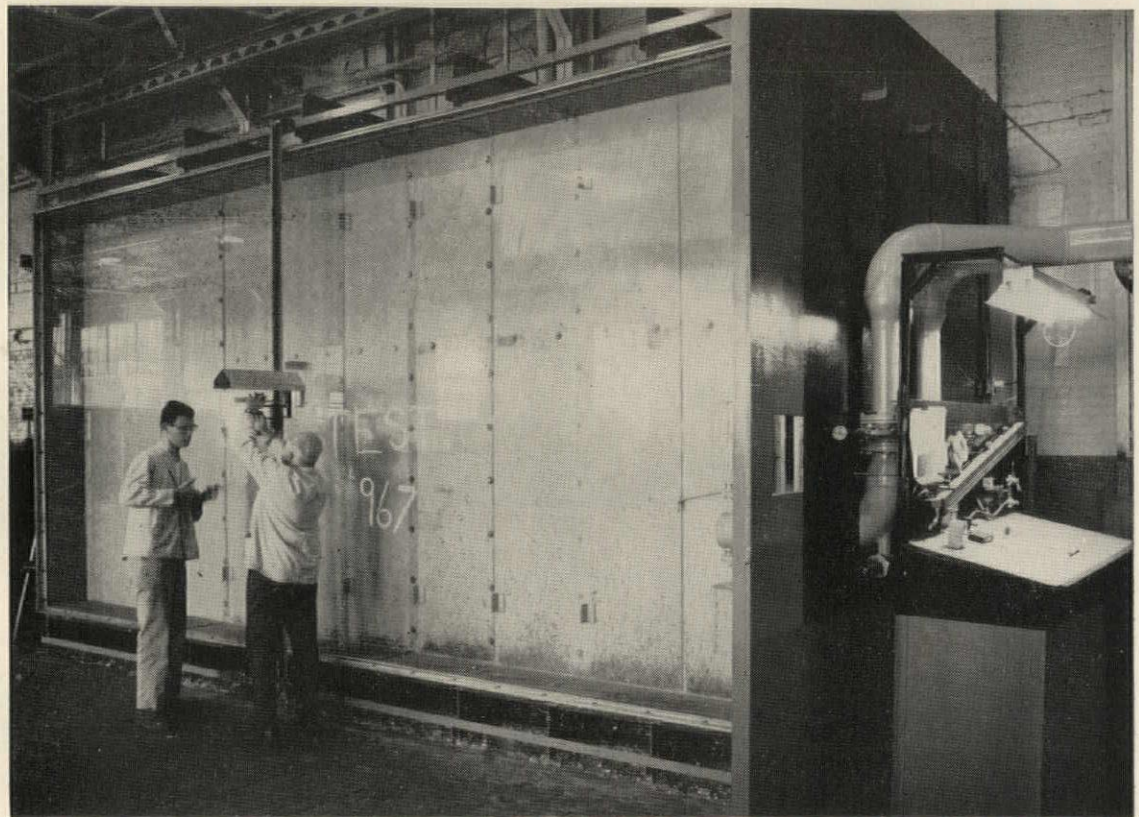
Libbey-Owens-Ford has announced a new program of testing to destruction large lights of heavy-duty plate glass. When the program is over, L-O-F will have broken some \$250,000 worth of glass in the interest of getting accurate information on its strength.

Generally, mathematical formulas are used to predict the strength of glass. However, the L-O-F tests show that, although valid for small glass areas up to 1/4 inch thick, the formulas do not hold for larger and thicker lights; glass thickness is more significant than has been supposed, and larger lights require greater thickness. These tests have been conducted on lights from 72 by 72 inches to 120 by 140 inches, and from 1/4 inch to 1/2 inch in thickness; a second series will test thicker glass.

The chart (right) shows the new recommendations. For sample requirements of a 97-square-foot glass area with 30 pounds per square foot resistance, the horizontal dotted line indicates that all thicknesses up through 3/8 inch are inadequate; therefore, glass 1/2 inch thick (which can stand a load of 34 pounds per square foot) is recommended. These figures include a safety factor of 2.5, and permit design with a breakage possibility of less than one per cent.

The tests are performed in what L-O-F believes to be a unique vacuum chamber (photo, above). The glass is set in a conventional gasketed frame, and air is evacuated inside, gradually increasing the outside air pressure on the glass. Some plates deflect up to 3 inches before failing.

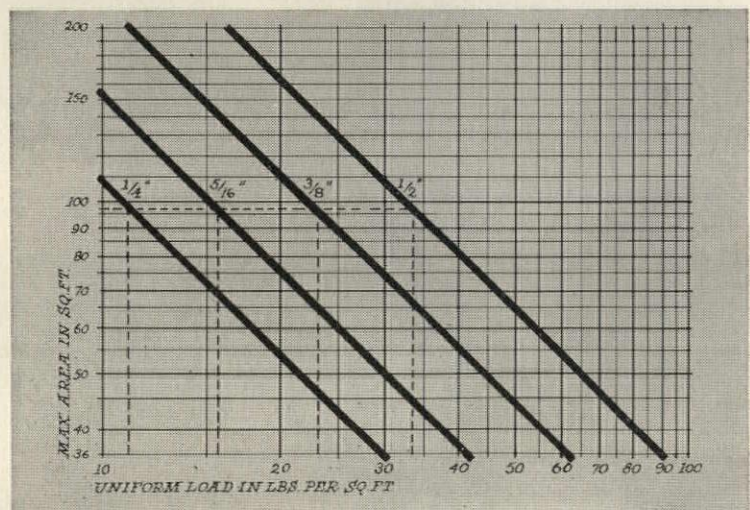
Studies by an independent or-



ganization have indicated that direct wind load is not an adequate criterion for glass design, because negative pressure on the lee side of a building may be double the pressure on the windward side. With this in mind, L-O-F presents its new data in terms of pounds per square foot rather than wind velocities in miles per hour (see chart).

It is hoped that the new information, coupled with L-O-F's recent price cuts in heavy glass (*Products*, Nov. '63), will stimulate the use of larger lights by architects.

Manufacturer: Libbey-Owens-Ford Glass Co., Toledo, Ohio.



URETHANE CAULKING

Polyurethane foamed in place has been used to seal aluminum curtain wall to concrete columns in a 33-story office building in Denver.

Instead of the more conventional methods of caulking the space between window frame, fascia extrusion, and concrete column, the contractor foams-in urethane. The plastic expands to fill the gap, adheres to both members, and the excess is scraped off immediately (photos, left), leaving a tight, insulating

seal between framing and column.

Savings are realized in avoiding several separate caulking operations, and because wider tolerances are permissible in the window frames and columns. The contractor estimates that the foam method results in a total saving of approximately 25 per cent over other methods considered.

Urethane supplier: Application Engineers, Inc., 2150 S. Bellaire, Denver, Colo. Basic chemicals: Olin-Mathieson Chemical Co., 460 Park Ave., New York, N.Y.

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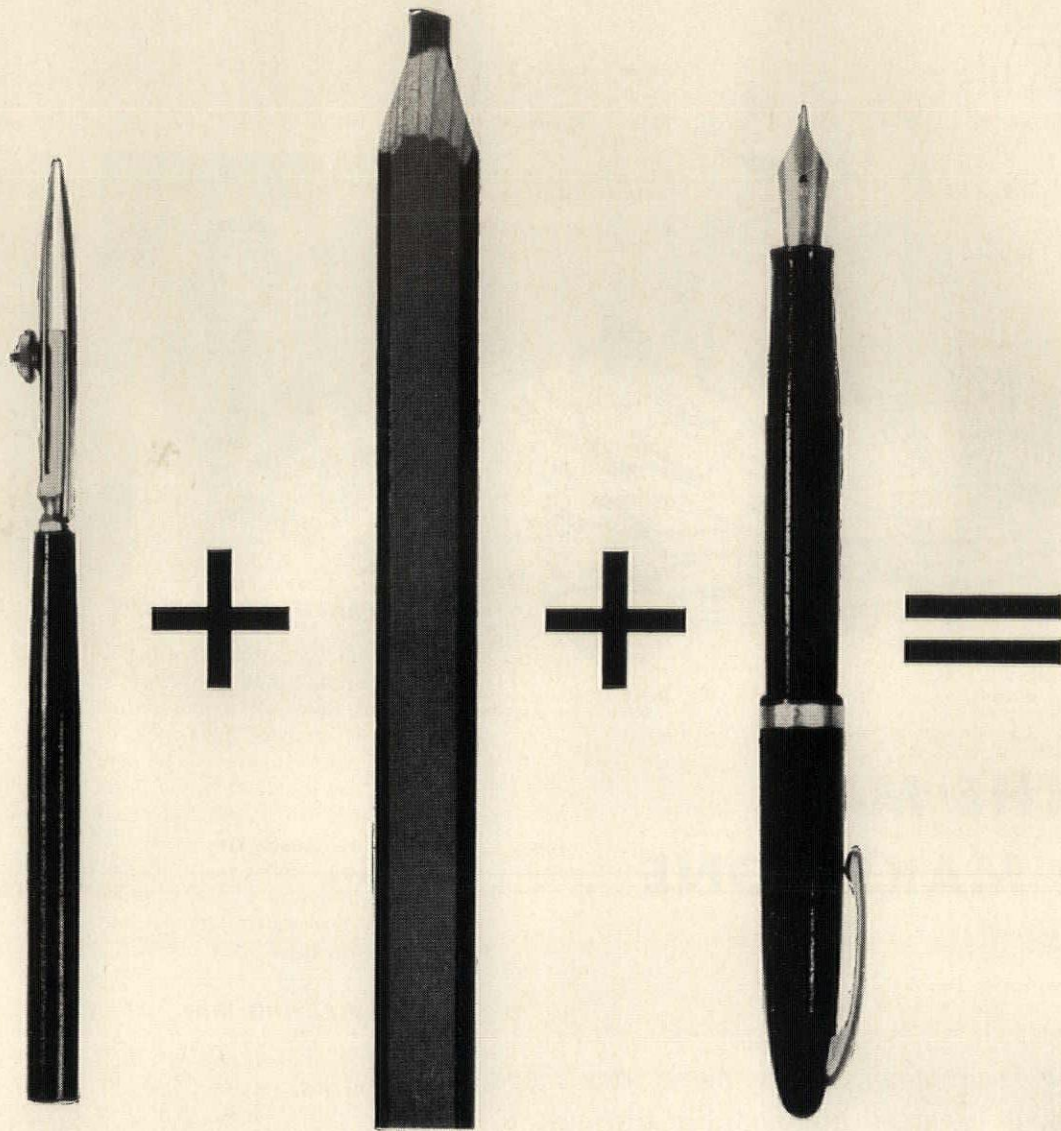
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HOW TO EXCEL IN ARITHMETIC

In the not-so-simple arithmetic of the building industry, architect/engineer minus contractor minus client equals "no-sale".

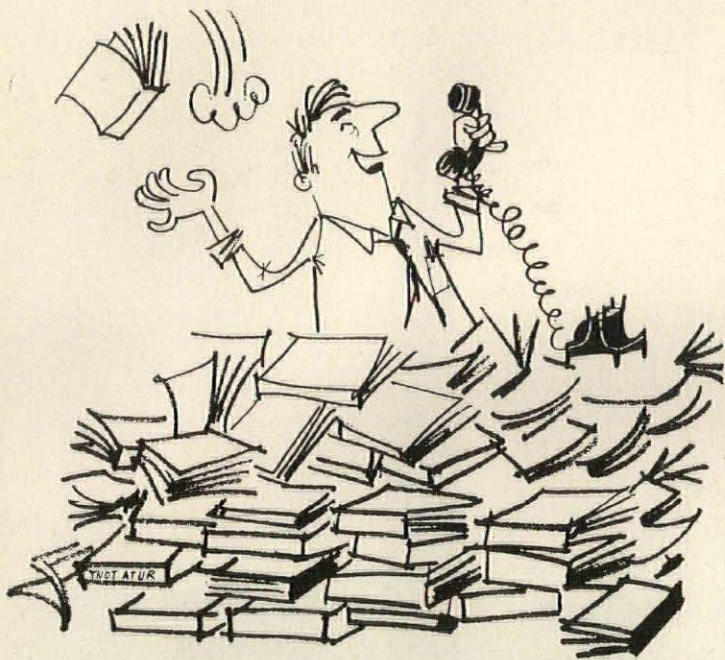
The problem is that each of the three parties approaches the common task of getting the building built from his own point of view. When all three have been reached and when, in turn, all three have reached agreement on a product, $1 + 1 + 1$ adds up to "sold".

FORUM, among all the architectural magazines, is unique in editorially recognizing these different points of view, and in reconciling the art of archi-

tecture, the technology of construction and the economics of building.* As a result of this essential difference, FORUM adds up for architects, contractors and clients. And as the one magazine read in substantial numbers by all three, it adds up for advertisers, too.

*FORUM's editors are well qualified to report on these three main areas of building. All are accomplished journalists; five have studied architectural design, several have practiced it, six are members of the American Institute of Architects. The staff is backed up by the other editorial talent and facilities of Time Inc., including its network of news-gathering bureaus in 30 cities here and abroad.

FORUM: *essentially different - for readers... and for advertisers*



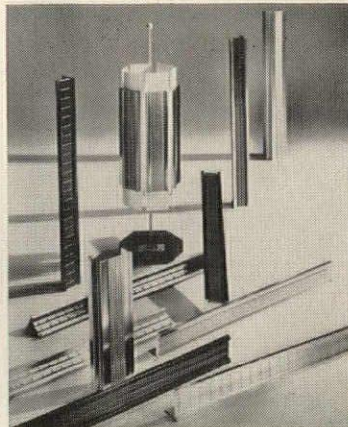
ASK THE MAN WHO MAKES ONE

As building technology grows more and more complicated, it becomes increasingly difficult to remember every detail of every building product development. But the manufacturers of the products do. And the best of them advertise in FORUM.

In FORUM's advertising pages you meet the most enterprising manufacturers with whom it pays to do business. Their up-to-the-minute technical experience and creative thinking are yours for the asking. You will find a letter or a telephone call to any one of them is much more productive than a frustrating search through mountains of year-old brochures and manuals.

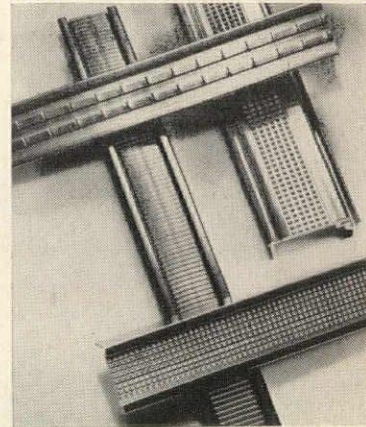
FORUM

Architectural Forum
the magazine of building
published by Time Inc.



PATTERNED EXTRUSIONS

Aluminum extrusions with patterns running across the direction of metal flow are manufactured in a new process developed by Alcoa (photos above). The new method can in one operation form designs previously available only by combining components; it also can add functional features, such as slots and grip surfaces, which have not been extruded previously at an economical cost.



At present, pattern widths from 1/8 inch to 2 1/2 inches are available in solid shapes with flat or curved surfaces. However, Alcoa will consider requests for patterned extrusions in other shapes, such as semihollow and hollow. The new extrusions cost slightly more than regular extrusions.

Manufacturer: Alcoa Patterned Extrusions, 680 Alcoa Building, Pittsburgh, Pa.

SNOW-MELTING MAT

The Step 'n' Walk De-Icer is a new portable electric mat for melting snow. Made of nylon-reinforced vinyl with heater wire embedded in it, the mat can be used with the heating side up as the snow falls, or heating side

down for accumulated ice and snow. The mat uses 120-volt AC current, is 18 inches wide and comes in two lengths: 6 feet (\$24.95) and 10 feet (\$39.95).

Manufacturer: Smith-Gates Corp., Farmington, Conn.

TOUGH NEW RESINS

Versalon is a new family of polyamide resins with exceptional ductility, impact resistance (photo right), and the ability, as adhesives, to form a very strong bond in one or two seconds.

With low softening points (between 200 and 400 degrees F.) for easy application, the Versalon resins, according to the manufacturer, can serve as a substitute for bolts and rivets. They will join almost any like or unlike materials with a bond strength of 1,000 to 2,600 pounds per square inch.

In addition to its adhesive qualities, Versalon can be used for abrasion-resistant coatings on textiles, leather, and electrical insulation. Commercial quantities of three Versalon resins are available now, but full production will not start until spring.

Manufacturer: General Mills, Inc., Chemical Division, Box 191, Kankakee, Ill.



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