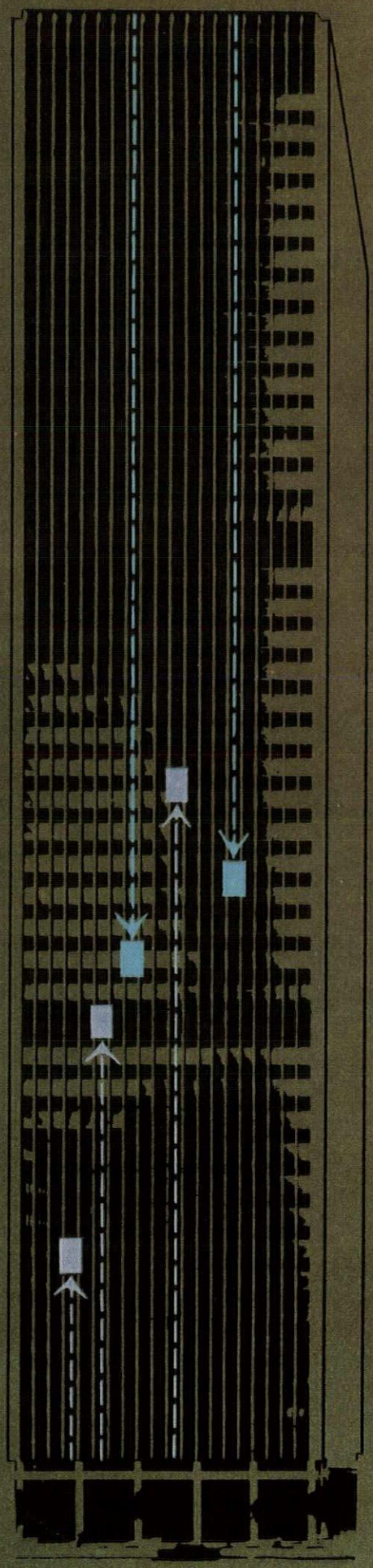

FORUM
ITECTURAL FORUM · THE MAGAZINE OF BUILDING FEBRUARY 1963



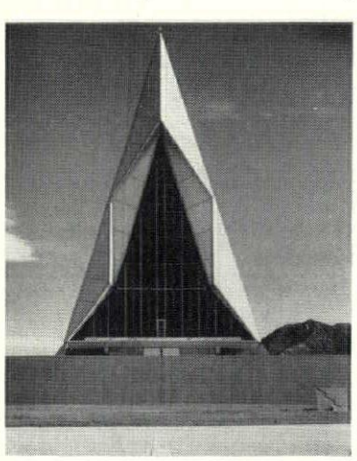
W. S. TYLER

elevator cars and entrances equip the Canadian Imperial Bank of Commerce, Montreal, tallest building in the British Commonwealth. Architect: Peter Dickinson. Supervising Architects: Ross, Fish, Duschenes & Barrett. Architects & Design Consultants to Canadian Imperial Bank of Commerce: Clifford & Lawrie. General Contractor: Perini Limited. Elevator Contractor: Turnbull Elevator of Canada Limited. The W. S. Tyler Company, Cleveland, Ohio; St. Catharines, Ontario. Offices in principal cities.

TYLER

PUBLISHER'S NOTE

For years, people interested in the building arts have complained that there is no architectural criticism—at least none on a par with literary criticism, theatrical criticism, and art criticism. They have a point—up to a point. There has been precious little architectural criticism in the daily press and general magazines. The same might be said of those magazines published for architects alone. FORUM, on the other hand,



STEWARTS

is published for architects' clients as well as for architects, and it has never shied away from publishing criticism of both architects' and clients' contributions to finished buildings—however painful some of it may have seemed to those criticized and to some of their confreres. (See "Letters," page 19, for reader reaction to FORUM's recent criticism of the Air Academy Chapel by Architects Skidmore, Owings & Merrill.)

"Criticism" of a building is not synonymous with "panning" a building (or a book, or a play, or a painting). To FORUM's editors it means first to try to state the architect's intention; next, to evaluate how well he succeeded in doing what *he* was trying to do; and, finally, to do all this while making clear the premise on which the discussion is based.

This seems to be a fair way of going about it, and it is likely to produce a "rave review" quite as often as a "thumbs-down" verdict. Moreover, it is a procedure that might help the architect involved, and other architects—and might help the clients of architects to a better appreciation of architecture.

In their criticism FORUM's editors have taken on several pretty big guns in the architectural profession—and several big client-developers too. Some of those who got the "thumbs-down" treatment happened to be among the editors' best friends; others who got "raves" were practically unknown to them.

It was to be expected that some readers would be critical of FORUM's recently expanded program of architectural criticism. However, their reaction seems a little dangerous to the building arts themselves: when there is so much talk about growing conformism, what could be more conducive to conformism than to insist that critics and architects join some sort of mutual admiration society? The editors plan to remain non-members.

Aline Saarinen, a first-rate architectural critic in her own right, demonstrated a few months ago that she understands the need for unfettered criticism when she suggested that our editors publish Reyner Banham's adverse comments about her late husband's dormitories at Yale. (This was done in the December issue.) For this suggestion, FORUM's editors think Mrs. Saarinen—to borrow a superlative from movie criticism—deserves ★ ★ ★ ★ — J.C.H., JR.

Published monthly by TIME INC. Time and Life Building, Rockefeller Center, New York 20, N.Y.
This issue is published in national and separate editions. Additional pages of separate editions numbered or allowed for as follows: Western edition: W1–W2.
Entered as second-class matter at New York, N.Y. and at additional mailing offices.
Subscription price $7.00 a year.
© 1963 TIME INC. All rights reserved.
Member, Audit Bureau of Circulations and Associated Business Publications.

U.S. UNVEILS NEW DESIGN FOR '64 FAIR

Last month, the U.S. Commission to the 1964-65 New York World's Fair released the long-awaited revised design for its Federal Pavilion. Knowing that Charles Luckman Associates had designed a 330-foot-square "doughnut" to replace an earlier scheme rejected in public controversy, architects were interested to see both the building (model photographs) and how it fit its round site (plan, right).

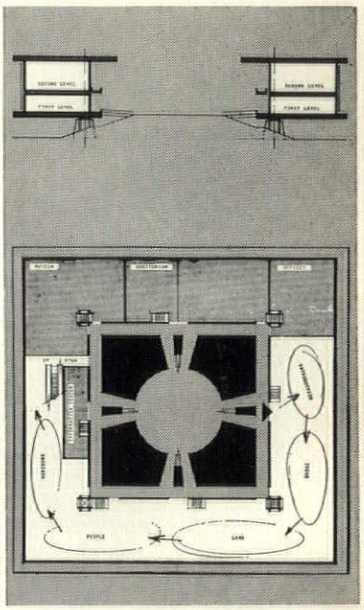
The building mass, made lighter by expanses of back-lighted, decorative glass, will appear to hover on four huge piers, with its exhibit floors cantilevered out 72 feet. Underneath, a truncated pyramid slopes up to form a large central court (see section, right).

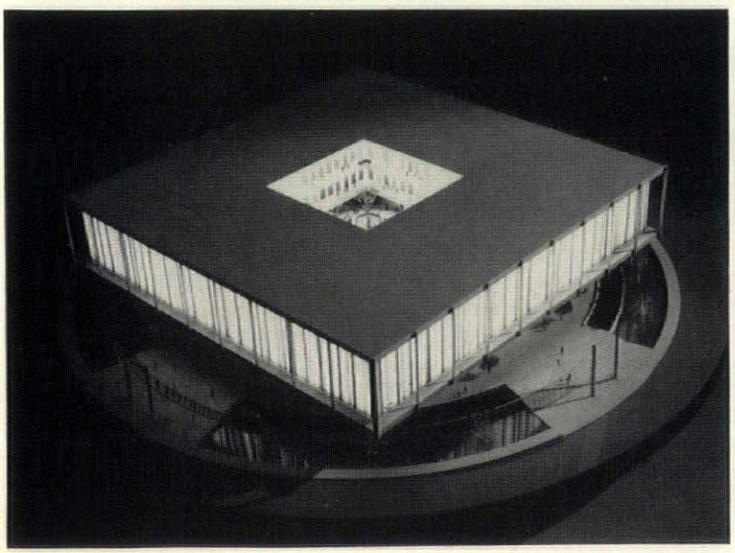
Visitors will enter under the structure on four wide bridges across a circular moat, then ascend one of four monumental flights of stairs to the open court, which will serve both as a central circulation area and a place for ceremonies, concerts, and other public functions.

Inside, there will be two exhibition floors, each containing 68,000 square feet. The lower floor (see plan, right) will house: 1) a museum for American visual arts, 2) an auditorium for meetings and dramatic presentations, 3) general offices and conference rooms, 4) an information center, and 5) an area (white on plan) for four "sub-theme" exhibits depicting America's "challenge of freedom" ("News," Jan. '63). Second-floor balconies overlook this interior courtyard.

The upper level, with a 30-foot ceiling, will contain a vast "dynamic exhibit" where the visitor is moved, perhaps on water-borne pods, through a series of audio-visual "experiences" film-projected on some 200 screens of varying shapes and sizes.

The Federal Pavilion will cost in the neighborhood of $7 million; the exhibits, another $5.5 million, making it the largest and most important of the Fair's presentations (see Editorial, page 73).





PHOTOS: J. ALEX LANGLEY

'62's BOOM: ARE APARTMENTS OVERBUILT?

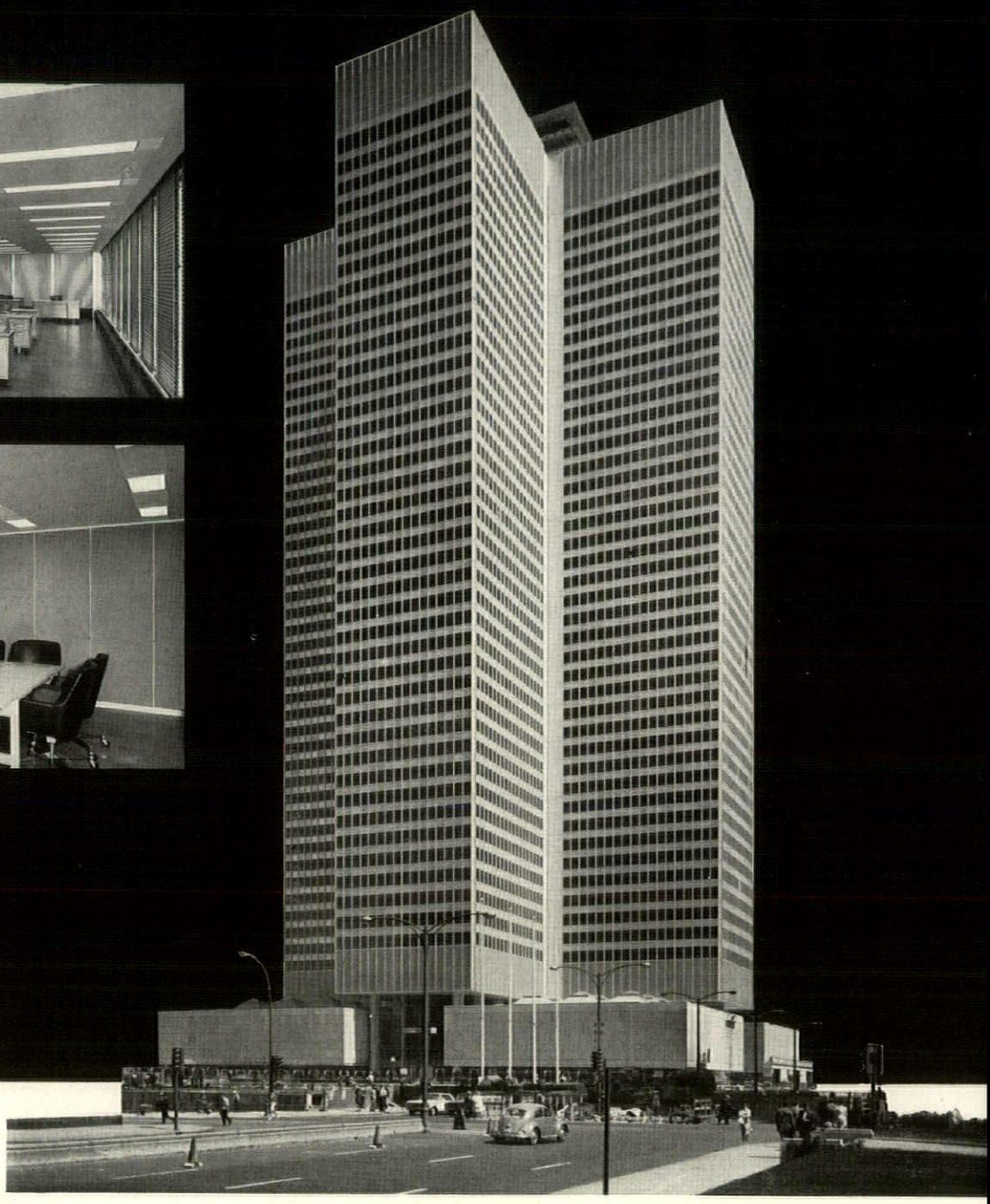
Led by a boom in apartments—up a resounding 64.3 per cent, building construction spending increased by 13 per cent in 1962 (see table, above). All other categories shared in the excellent construction year—with one exception: schools, down 1.3 per cent after two growth years. One- and two-family houses, which had slumped almost 3 per cent in 1961, picked up very slightly (0.8 per cent) in 1962. Industrial construction also showed a slim increase (0.2 per cent) after a 1961 decrease of nearly 2 per

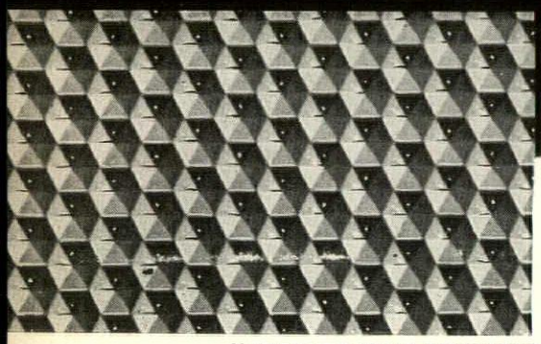
NEW CONSTRUCTION EXPENDITURES, ANNUAL TOTALS 1962 AND 1961

	(millions of dollars) 1962 Private	1962 Public	1962 Total	1961 Total	% Change in Totals
BUILDING CONSTRUCTION					
Industrial	$2,814	$397	$3,211	$3,203	0.2
Office and warehouse	2,538	....	2,538	2,350	8.0
Store, restaurant, and garage	2,426	....	2,426	2,313	4.9
Religious	994	....	994	984	1.0
Educational	614	2,983	3,597	3,643	—1.3
Hospital and institutional	925	397	1,322	1,157	14.3
Social and recreational	754	159	913	833	9.6
Public administrative and service	....	676	676	674	0.3
Apartments	4,849	555	5,404	3,290	64.3
Hotel, motel, and dormitory	1,607	135	1,742	1,590	9.6
All other building	842	1,453	2,295	2,183	5.1
TOTAL	$18,363	$6,755	$25,118	$22,220	13.0
HOUSE CONSTRUCTION	18,358	250	18,608	18,459	0.8
OTHER CONSTRUCTION	6,630	10,774	17,404	16,720	4.1
TOTAL CONSTRUCTION	$43,351	$17,779	$61,130	$57,399	6.5

SOURCE: BUREAU OF THE CENSUS AND MILES L. COLEAN ESTIMATES BASED ON CENSUS DATA.

continued on page 7





K-5 PATTERN ILLUSTRATED

PLACE VILLE MARIE, MONTREAL

ARCHITECT: I. M. PEI & ASSOCIATES, Architects and Planners, New York
ASSOCIATE ARCHITECTS: Affleck Desbarats Dimakopoulos Lebensold Michaud Sise, Montreal
ELECTRICAL ENGINEERS: Jas. Keith & Associates, Montreal
Cosentini Associates, Consultants, New York.

K-LITE® **PRISMATIC LIGHTING PANELS**

The architect and fixture manufacturer combined their talents and efforts to produce a special fixture which would create a completely unified lighting system throughout Montreal's largest office building.

For the finishing touch; the architect and fixture manufacturer tested several different lens panels before their selection. K-Lite prismatic lens panels passed all tests so satisfactorily that they were specified and used as a Building Standard for fixtures throughout the office areas. The Electrolier Corporation fixtures with K-Lite lens panels provided the full visibility, low glare lighting desired . . . and at a substantial saving!

K-S-H PLASTICS, INC. • 10212 Manchester, St. Louis 22, Mo.

K-LITE Prismatic panels are available from all major fixture manufacturers . . . or write for more information.

8648

continued from page 5

cent. Religious building almost regained its 1960 high this year after dipping in 1961.

The great increase in apartment building, of course, is the most striking single statistic: over the last three years, it has risen by an astounding $2.5 billion, leading many economists to question whether the boom has now topped out. In Denver and New York City, for example, there are evidences of overbuilding, particularly in higher-priced units. Many apartment building owners now offer such concessions as several months free rent, free babysitting, decorating services, and even free furnishings (for a higher rent) to get tenants in—and their own financing assured.

Denver's troubles stem mainly from too much speculative building on the fringes of town. Well-constructed, well-located apartment houses have had no trouble in renting. The overall vacancy rate, however, has been reported as high as 18 per cent.

In New York City, apartments in marginal locations are having trouble. Considerable overbuilding has resulted from the rush to get under the wire before the new zoning ordinance took effect. But the builders argue that even if they have vacancies for a few years, the properties will be more valuable in the future because they contain more rentable units than the newer buildings are allowed. Although New York Real Estate Board President Edmund E. Thomas has stressed a long-range view, builders describe the rental situation as "grim."

FIFTH RUBEROID COMPETITION SET IN A N.Y.C. BLIGHT AREA

In a commendable effort to improve the quality of urban renewal, and to add a fresh dimension to its fifth annual design competition, the Ruberoid Co. this year has arranged with the city of New York to focus on an actual blighted site: a 16-acre tract of mixed residential and commercial uses between 105th and 111th Streets on the Harlem river (shown above in white outline).

The upper Manhattan tract is sure to tax the ingenuity of architects and students. Not only must they consider the poor subsurface conditions, but also the somewhat dismal surroundings. Immediately adjacent: public housing (top and upper right), an industrial building across from two huge gas storage tanks (lower right), and a park (bottom). Nestled within the area and fronting on the FDR Drive is a grit chamber for the processing of sewage (left). Problem: to design an attractive, practical, middle-income (Mitchell-Lama) housing project, making use of the water front (but not building over the Drive). The winner will receive $10,000 and an inside track for the eventual project commission. Other top prizes: $5,000, $2,500.

BROWNSTEIN REPLACES HARDY AS FHA HEAD

Neal J. Hardy, FHA Commissioner for the past 22 months, resigned on January 11 to accept an offer to direct the Ford Foundation's urban development activities. President Kennedy accepted the resignation, and Hardy's recommendation for a replacement: VA Chief Benefits Director Philip N. Brownstein.

L. SCHUGAR

Neal Hardy

Trained as an economist, Hardy took office at a critical time, just as the mortgage market was beginning to go soft. He quickly surveyed the situation, issued directives to local offices to be very careful about new commitments, and tightened credit requirements in generally successful moves to stem the rising rate of foreclosures. This is considered to be his major accomplishment. Other important moves included the development of the 228 and 203k home improvement programs (which still have not gained wide acceptance), and the new FHA standards for property and construction.

Brownstein is, like Hardy, a career civil servant well known and respected in Washington. Trained as a lawyer, he has worked in the Veterans Administration for 17 years, during which he gained first-hand knowledge of the building industry and its problems. His new post must be approved by the Senate, but no opposition is expected.

Philip Brownstein

EXPERTS TACKLE CALIFORNIA'S HOUSING

California, which recently passed New York as the nation's largest state (population: 17 million), faces a major problem of growth: adequate housing. By 1980, 5 million new middle- and low-income homes will be needed, most of them in cities.

To help cope with the problem, California Governor Edmund G. "Pat" Brown just over a year ago set up an advisory Commission on Housing Problems with New York Housing Expert Charles Abrams as chief consultant. In a report made public last month, Abrams focused on ways to provide credit for the needed housing. Federal urban renewal programs that mean so much to large eastern cities are less applicable to California's problems. The challenge there, says Abrams, lies in "preventing slums before they form."

Abrams and the commission came up with a series of far-reaching proposals relating to both state and federal participation. Where he could, Abrams drew on successful housing legislation in other states (notably New York), and stressed possible applications of such federal programs as FHA, FNMA aid to the elderly, and mortgage loans at below-market interest rates. He also recommended increasing federal assistance in open-land development, and a new equity insurance plan to help prevent automatic foreclosures.

Some of his other proposals:

State action. California must develop its own housing agency, and put its planning office under the executive office of the Governor. In order to permit the acquisition of land for resale to developers willing to build new towns under a system of state controls, Sacramento should draw up a land development program.

Low-income housing. A month-

continued on page 9

RUBEROID
STEPS AHEAD WITH
NEW IMPROVED

Ruberoid Asphalt Floor Tile!

36 smart, attractive patterns in Asphalt Tile

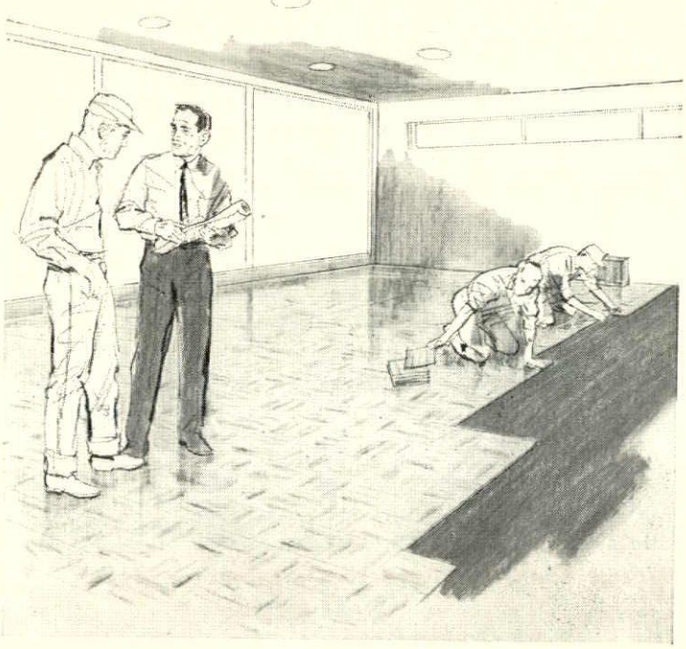
A completely and beautifully re-styled line providing fine quality in asphalt tile. All the popular patterns and colors are available, including exciting new "Wood Hues" and "Tweeds."

Ruberoid's superior quality in asphalt tile means improved performance. It will provide easier and more economical maintenance than any other asphalt tile on the market. New brighter and more attractive colors make this tile pre-eminent in the asphalt tile industry.

To see the newest, the finest in asphalt tile you must see Ruberoid, the brand that's stepping out in 1963.

13 New Patterns in Vinyl Asbestos

Lovely new colors in Ruberoid Vinyl Asbestos tile make the job of color selection far easier. New "Wood Hues," "Corks," and "Tweeds" add rich color and authentic texture. And the "Stoneglow" series gives you a different and unique group of patterns from which to choose



Better quality for the discriminating architect.

Ruberoid has just finished spending close to $3,000,000 in its floor tile plants to provide increased capacity, improved service, and the most advanced techniques of quality production. In 1963 and the years ahead...look to Ruberoid for the finest in floor tile styling and manufacture.

RUBEROID®

FLOOR TILE

The RUBEROID Co., 733 Third Avenue, New York, N. Y.

VINYL ASBESTOS, ASPHALT
VINYL-POLYMERITE, SOLID VINYL TILE

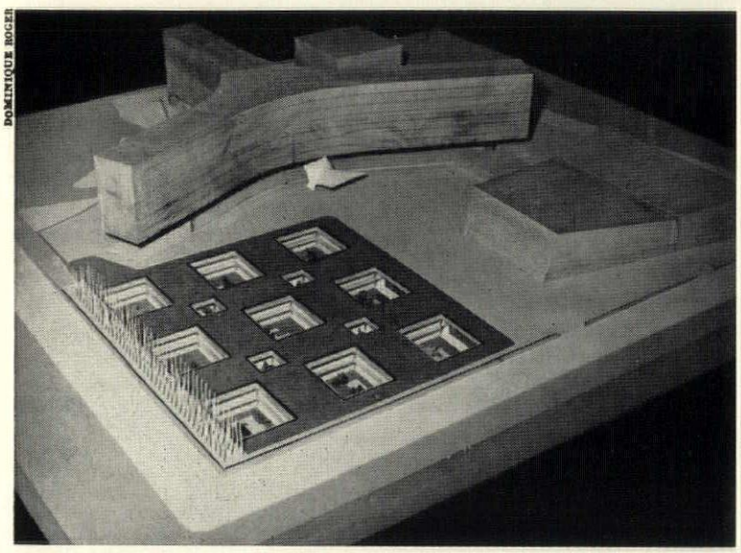
continued from page 7

ly rental subsidy should be paid directly to applicants in low-income groups. Also, the federal government should 1) offer loans at nominal interest rates to enable purchase of urban or suburban homes; and 2) revise the rigid income limitations for public housing tenants, so they can stay when they earn more money.

Finance. California should widen the lower-income market for builders by facilitating adequate financing, and set up a system of local credits for city improvements. The Cal-Vet program should be diversified to serve a broader market.

Governor Brown presented these and other proposals to the state legislature last month. What the lawmakers do with them remains to be seen, but some action must be taken soon if California is to deal adequately with its own growth.

DOMINIQUE ROGER



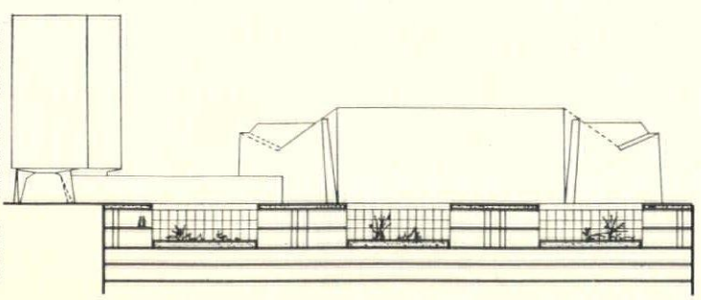
DIG UNESCO MUST—FOR A BETTER PARIS

When UNESCO's Paris headquarters was completed in 1958, its two buildings attracted almost universal praise. Designed by Architects Marcel Breuer and Bernard Zehrfuss with Engineer Pier Luigi Nervi, it respected its eighteenth-century baroque neighbors, while remaining entirely contemporary. Since then, the buildings, with their plaza and gardens, have become one of Paris' leading architectural attractions. Therefore, when UNESCO wanted to expand its facilities, a serious problem arose: any new structure, even if it could gain the approval of finicky Paris authorities, might spoil the near-perfect planning of the site.

Zehrfuss came up with a novel solution: he designed an additional 20,000 square feet of office space and conference rooms to be built under the plaza, thus preserving the view and incidentally shutting out street noises (see model photo above). To avoid the claustrophobia of working underground, nine large and four small patios will puncture the four-story building, affording sky views and fresh air to office workers on the upper two floors. The lowest story is to be devoted to parking and stores.

Last December, after prolonged negotiations with French officialdom, UNESCO's administrative commission approved the preliminary plans for the $5.6 million project. Zehrfuss will consult with Nervi and Breuer on later stages.

COURTESY "THE ARCHITECT'S JOURNAL"



BIG BOARD MOVE?

Pressed for space by heavy stock trading volume, the New York Stock Exchange indicated at the end of the year that it would move from its central position in the financial district to a tract near the tip of lower Manhattan. Previously, exchange planners had announced that the Big Board needed a trading floor of about 56,000 square feet—an increase of 33,000 square feet over its present floor area. To accomplish this, the exchange began setting aside funds in early 1962 for purchase of a suitable new building. The 5-acre tract now under consideration was designated a renewal area eligible for redevelopment in 1959.

Editorialized the New York *Times* (in its nonstruck western edition): "The move will bring in its train a dislocation of other institutions — commercial banks, investment banking houses, brokerages—all clustered around the present site. By moving to the tip of Manhattan, one side of which is bounded by water, the stock exchange would risk its long-established position at the hub of things."

An alternate move was quickly suggested by Developer William Zeckendorf, who has assembled an 115,000-square-foot site near the present exchange. He would tear down the existing buildings and erect a 45-story tower that would swell out at the base to cover the entire site at street level. In this uniquely engineered building, Zeckendorf said, the stock exchange could have a 95,000-square-foot trading floor free of columns.

Stock exchange members must approve any move, and the city must hold hearings before the contract for the urban renewal area is signed.

L.A. SPURNS SURVEY

Los Angeles booms and mushrooms, and watching with perhaps more horror than most residents is Democratic Mayor Samuel Yorty. One of the unnerving things is that real estate is depreciating in some parts of town faster than it is appreciating in others. What the city needs, Yorty decided, was more planning and urban renewal, in that order.

Renewal areas are particularly hard to spot in Los Angeles because of its sprawl. Further, the only significant renewal venture, Bunker Hill, is just coming out of a four-year legalistic snarl (two other projects are in preparation). Yorty and his renewal lieutenant, Robert Goe, have proposed a farsighted solution: a three-year, $4 million inventory of the city's economic and social resources obtained through a lot-by-lot survey. Included would be statistics on population, income, employment, health, transportation, fire and crime rates, all data processed into a total picture of the city to guide policy decisions.

The federal government indicated it would pay two-thirds of the cost of the survey under the Community Renewal Program—which pleased Yorty, but not the 15-man, ultraconservative city council. When the proposal came up for action in late December, the council tabled it unanimously.

Mayor Yorty

Its objections: the idea of federal participation, and plain animosity toward the Mayor himself. Yorty, expected to blow his top, shrugged and remarked: "At least they didn't kill it outright."

Both he and fellow Angelenos had some reason for hope: the idea was gaining such late backers as the Chamber of Commerce.

continued on page 11

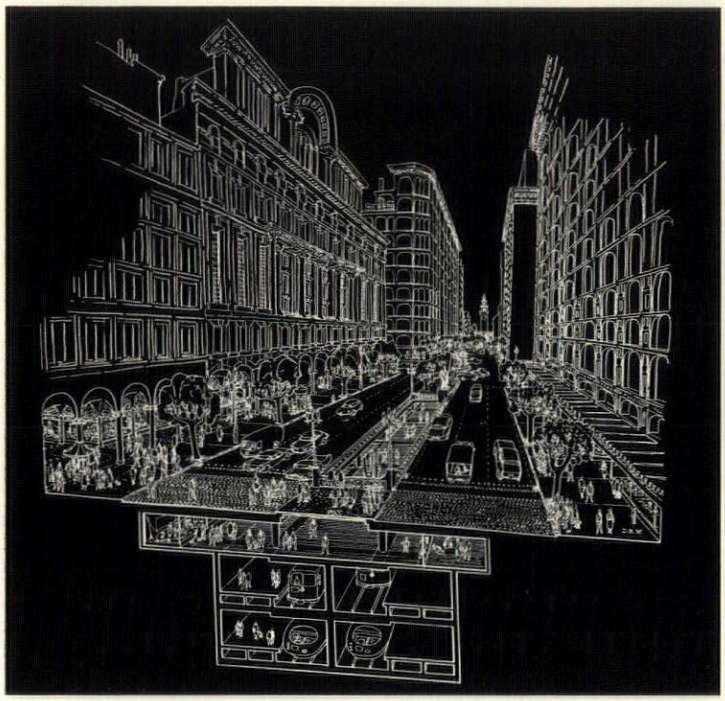
Please turn around.

Why, it's Harvey Probber!

Who but Harvey Probber would bring this kind of elegance and comfort to architectural furniture? This new and complete series of chairs, benches, cabinets, sofas, desks and tables, designed with classic simplicity for executive offices and public areas, is (we think) unique. The materials are posh: mirror-polished (#7) stainless steel, selected woods (walnut, rosewood, teakwood, ebony and the like). The chair shown takes 54 sq. ft. of black Himalayan goat skin. Upholstered. Comfortable. For photographs and specifications, write Department A

HARVEY PROBBER, INC., FALL RIVER, MASS. New York, 41 E. 57th St./Boston, 475 Commonwealth Blvd./Chicago, 638 Merchandise Mart/Dallas, 230 Decorative Center/Denver/ Milwaukee/ Nashville / Pittsburgh/ St. Louis.

continued from page 9



A NEW MAIN STREET FOR SAN FRANCISCO?

Over the years, no feature of the American city has taken more of a beating than its central one: Main Street. An accumulation of wires, neon signs, garish fronts, and traffic snarls has served to make it an all-too-familiar mess. The tragedy is that the postwar exodus to the suburbs has sapped Main Street's ability to do much about it.

San Francisco's broad but tawdry Market Street provides one striking case in point. Today the stretch between the Embarcadero and Van Ness Avenue contains about 10 per cent of the city's assessed land value, but the rate of property appreciation has lagged far behind that of other areas, while real estate taxes remain extremely high.

A new plan with a message: other cities can do it too

Recently, however, a project was started to transform Market Street into a wide, attractive, ceremonial thoroughfare. It was organized by SPUR (San Francisco Planning and Urban Renewal Association), a nonprofit citizens group which regards itself as a guardian of the city's appearance and gets its funds from private contributions. The plan, barely out of its first stages, seems to be catching on.

The main impetus behind the movement is the city's new $792 million rapid transit program, which will put several subway stations on the street by 1967. The transit system, plus a massive face-lifting job, will hopefully turn the economic tide. Market Street landowners (and municipal tax collectors) see revitalization as a possible solution to their ills —perhaps rocketing the land value total from its present $320 million to as much as $1 billion. Retailers, too, envision rapid transit and beautification of the street as forces that might bring back the shoppers who are now buying elsewhere.

As presented by City Planners Livingston & Blayney, Landscape Architects Lawrence Halprin & Associates, Architects George Rockrise & Associates, and Real Estate Consultants Larry Smith & Co., the SPUR proposals would start out with such small improvements as curtailing litter, improving street-furniture design, and modernizing store fronts. Then bigger steps would be taken: landscaped squares with trees, fountains, and sculptures; a reorganization of traffic flow, and an open pedestrian concourse at the subway level (sketch left).

If all goes well, the revitalization would take five years—all privately financed and carried out in planned stages. Among the steps: exhaustive real estate studies, block-by-block design analysis, and coordination with public agencies—including the City and Bay Area Transit Authority. The only opposition so far has come from shooting-gallery and penny-arcade owners who were criticized for the haphazard gaudiness of their establishments. Said one angrily: "If they want to find fault with these places, they're finding fault with America."

PENNSYLVANIA STATION'S LAST STAND

To the surprise of few people (but the disappointment of many), the New York City Planning Commission last month granted the Madison Square Garden Corp. a special permit to build an arena, auditorium, and trade exposition hall on the present site of McKim, Mead & White's 52-year-old Pennsylvania Station. This action brings the building closer to demolition; all that remains is the final ruling of the City Board of Estimate. The Commission made its decision following public hearings.

The Action Group for Better Architecture in New York (AGBANY) spoke out against demolition of the station, describing it as an architectural landmark which gives richness and texture to New York. "The city's only surviving sequences of great indoor space," said the Museum of Modern Art's architectural director, Arthur Drexler. "A building with a noble court of entry. . . . A good architect could make this building work," added Architectural Critic Aline Saarinen. Other preservationists urged the Planning Commission to study in detail all aspects of the complex—including the feasibility of moving it to another site.

J. ALEX LANGLEY—TIME

Business and labor leaders, on the other hand, supported the complex. Project Architect Charles Luckman argued that the present site is perfect; it is spacious and extremely well served by transportation facilities. He called in Traffic Consultants Wilbur Smith Associates to demonstrate how the business of the complex would not cause the monumental traffic snarls predicted by its opponents.

The developers also argue that the new complex would provide the city with $3.5 million annually in new tax revenues. The Pennsylvania Railroad, which holds a 25 per cent interest in the Madison Square Garden Corp., would collect $2.1 million per annum in rent, plus some $600,000 in yearly savings on maintenance and operating costs of the terminal. And the New York construction industry would gain a $120 million job.

In reaching their decision, the Planning Commission deliberately shied away from considering the merits of Penn Station—although it did note that "the protection of our cultural heritage is a matter of legitimate public interest." Instead, it concentrated on the advantages of the Luckman design. By doing so, the Commission could well have told AGBANY members not to waste their time in attending the hearings.

continued on page 13

Architect, Lane & Gamble, Dallas, Texas. Flooring contractor, Commercial Floors, Dallas, Texas.

Braniff and Exchange Park save on original cost...and upkeep, too...with 375,000 square feet of Goodyear Vinyl Floors

Braniff Airways and Exchange Park, Inc., tenants and owners respectively, saved two ways when they installed Goodyear Vinyl Floors in two Dallas buildings. They saved on initial cost; and they've saved more every day through six years of hard use, because Goodyear floors cost so little to maintain.

Daily buffing is all it takes to keep this Goodyear Vinyl sparkling. It has never been waxed.

Your clients benefit by such savings every time you specify Goodyear Vinyl Floors. They're solid vinyl compounds, to give years of trouble-free service. No paper backs or asbestos filling. Their super-tough surface doesn't require waxing. And Goodyear is the lowest-priced solid vinyl on the market.

Goodyear Vinyl is available in a range of handsome, new, multiple marbleized colors. In ⅛" gauge for commercial and heavy traffic use and in 1/16" for light traffic areas. Now recommended for on-grade as well as above-grade. For specifications, see your nearest Goodyear Floors Distributor, or write: Goodyear, Flooring Dept. B-8110, Akron 16, Ohio.

GOODYEAR

FLOORING PRODUCTS

People in the News

QUOTE . . . UNQUOTE

"When a man throws an empty cigarette package from an automobile in California he is liable to a fine of $50. When a man throws a billboard across a view he is liable to be richly rewarded. I see little difference between the damage done by these two litterbugs, the amateur and the professional."—*California Governor Pat Brown.*

"What makes [Lewis Mumford's *Roots of Contemporary American Architecture,* just republished] the more fascinating in a ghastly sort of way, is to see what has happened to American architecture in the ten years since the original edition came out; even more so, to see what is going to happen next—a glimpse of the future made possible by a recent Reinhold publication entitled *Architectural Design Preview.* You never saw such a collection of smarty-pants extravaganzas, revivalism and formal free-for-all."—*"Astragal," writing in the British "Architects' Journal."*

"In the process of building man's first suburban civilization, we are segregating our society into tens of thousands of modern ghettos, each housing only the poor, the blue-collar workers, the middle class, or the rich. We are developing what I call 'Classville, USA.'"—*Federated Department Stores President Ralph Lazarus.*

"Our Collegiate Gothic, which may be seen in its most resolutely picturesque (and expensive) phase at Yale, is more relentlessly Gothic than Chartres, whose builders didn't even know they *were* Gothic and so missed many chances for quaint effects."—*Critic Dwight Macdonald.*

"Why should you stand in awe before Italy's, England's, or Germany's monuments when at the same time you ignore the architectural remnants of your own recent history?"—*Bavarian Newspaperman Rudolph Chimelli, on a visit to the U.S.*

PHILADELPHIA KEEPS RAFSKY

"I'm not really leaving the city," said long-time (eight years) Philadelphia Renewal Expert WILLIAM L. RAFSKY in December. He is, however, resigning from his two city posts—Redevelopment Authority Director and Development Coordinator—to replace JOHN P. ROBIN as executive vice-president of the Old Philadelphia Development Corp. Thus, Rafsky remains in Philadelphia doing some of the same things for a privately-owned, nonprofit organization that he previously did for the municipality. And the city will continue to draw on his experience—Mayor James H. J. Tate has announced that Rafsky will still be his unpaid "No. 1 lieutenant."

Rafsky's workings with reform mayors in Philadelphia on housing and redevelopment problems contributed a great deal to both the success of new programs and, consequently, to the success of the reform movement itself. He began as the city's first housing coordinator under Mayor Joseph Clark in 1954, modified and expanded the job by 1956 to that of development coordinator, and, in 1958, took on the redevelopment authority post under Mayor Richardson Dilworth. By 1961, his efforts to pull the city's resources together under one head had attracted so much attention that he was considered as a candidate for commissioner of the URA. Since then, Rafsky is reported to have received, and turned down, several other municipal job offers.

In his new work he will concentrate on the revitalization of the central city. Robin, who has headed Old Philadelphia from its inception, is leaving to oversee the Ford Foundation's program of urban developments in India.

SERT PICKS PASSONNEAU

JOSEPH R. PASSONNEAU, Dean of the Washington University (St. Louis) School of Architecture, will join the Harvard School of Design next fall as Chairman of the Department of Architecture. Harvard Dean JOSE LUIS SERT announced in mid-December that Passonneau will take a major part in educational planning.

The announcement raised eyebrows in some quarters. One interpretation is that Dean Sert, who shed one of his own hats to give to Passonneau, is selecting his eventual successor. Sert meanwhile denies he plans to quit Harvard.

Nonetheless, the rumor persists that Passonneau is slated, in time, for the job. He has already proved himself an extremely capable administrator and educator at Washington University. He is also a Harvard Design School graduate (with a Master's degree in Civil Engineering from M.I.T.) who has had considerable experience as a designer (a summer auditorium for the Chicago Symphony, industrial buildings for the TVA, as well as private homes). As an educator, he was appointed acting dean at Washington in 1955, also served as chairman of the chancellor's committee on academic planning. Passonneau is also the first president of the St. Louis Landmarks Association, and a member of the city's planning commission.

FELT STEPS DOWN

One of New York City's most influential figures, JAMES FELT, resigned in December as chairman of the City Planning Commission after an unprecedented seven years of service. While not a planner, Felt's background in New York real estate helped lead to his two most notable achievements: the city's new zoning ordinance and the Manhattan West Side renewal program. He remains on the seven-man commission, but will spend more time at work on Mount Sinai Hospital affairs and other charitable jobs.

MARTHA HOLMES

Felt's resignation was apparently based on several factors, not the least of which was the increased executive power (under a new city charter) of Mayor Robert F. Wagner. In the recent past, Felt seemed to have lost the Mayor's ear. Earlier in December, for example, his cherished scheme for a cross-Manhattan expressway was halted by the Mayor and the Board of Estimate after public hearings. Also, in mid-1962, Wagner had squelched Felt's plans for urban renewal in west Greenwich Village, following loud outcries from local residents.

NEW CORBU SHOW

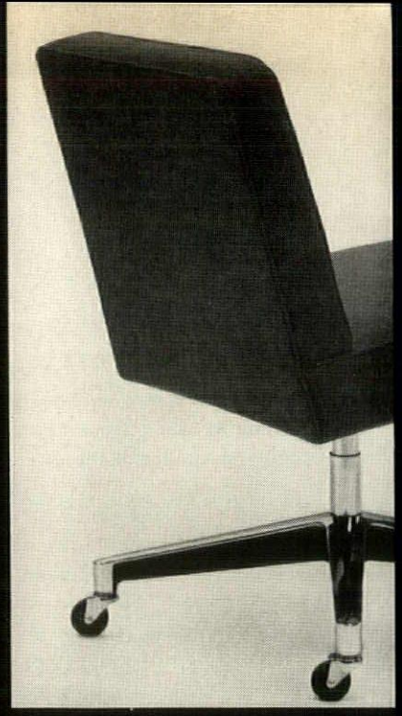
Last month two prestigious cultural institutions, the Museum of Modern Art in New York and the Graham Foundation for Advanced Studies in the Fine Arts in Chicago, collaborated to present an exhibition of the postwar work of CHARLES — EDOUARD JEANNERET (LE CORBUSIER). Consisting of some 150 enlarged color transparencies selected by the museum's architectural director, ARTHUR DREXLER the show will remain in Manhattan until April 15, then travel to The Art Institute in Chicago.

BRIEFLY NOTED

THOMAS H. CREIGHTON has resigned as Editor of *Progressive Architecture* (although remaining as Editorial Director) to join the firm of Architect JOHN CARL WARNECKE. His replacement: Managing Editor JAN ROWAN.

ACTION, Inc., the National Council for Good Cities, presented its second Andrew Heiskell Award last month to RICHARD KING MELLON for "his outstanding civic statesmanship" in the postwar renaissance of Pittsburgh.

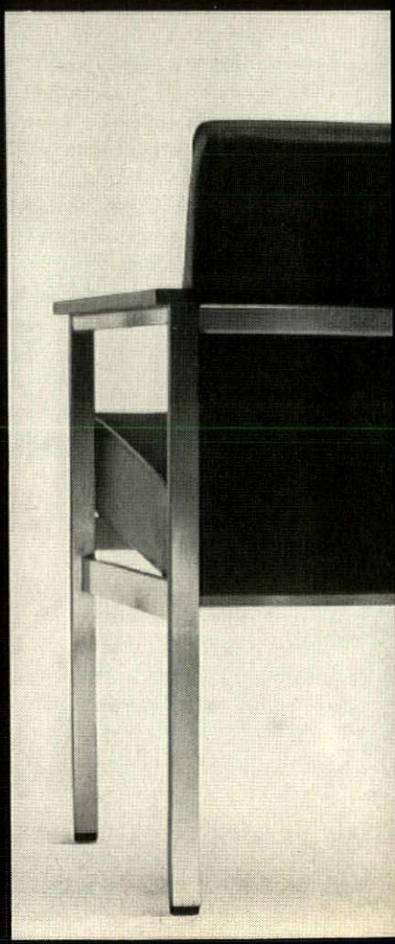
continued on page 16



DESIGNED FOR PEOPLE

The latest ideas in form and function are embodied in Art Metal's new 900 Line of office chairs. Nine models, designed by the Knoll Planning Unit, introduce many exclusive style and comfort features. Rectangular frames in varying widths produce crisp, clean lines and angles. Joint welds are invisible. Seats have wrinkle-resistant crowns and Comfort-Core cushioning. Arms may be reversed for extra wear. Available in a wide range of Knoll fabrics that let you add the right accents at the right places. write for a free catalog.

ART METAL, INC.
Dept. F2, Jamestown, New York



CENTER OF ATTRACTION...OR NOISY DISTRACTION?

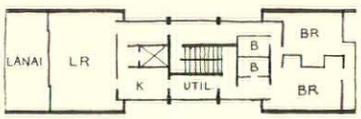
HE'll have a much better chance of being listened to with real attention if you specify or include a really modern, effective sound system in his building's conference rooms and meeting places. Here are some of the reasons why the best sound and communications systems bear the name STROMBERG-CARLSON.® ■ All of the components of your system will be custom-matched...designed right from the beginning to work together to minimize engineering and installation time ...to provide the finest total system results. You can pick from the widest line of components—or systems—because STROMBERG-CARLSON is the most complete line of communication products for business, industry and institutions. ■ Unsurpassed field and factory technical assistance...anytime...any place. ■ A STROMBERG-CARLSON system is backed by more than 65 years of unsurpassed competence in sound engineering. ■ Want more details or data sheets? Or do you have specific questions? Write: General Dynamics/Electronics-Rochester, Box F, 1400 N. Goodman St., Rochester 1, N.Y.

GD

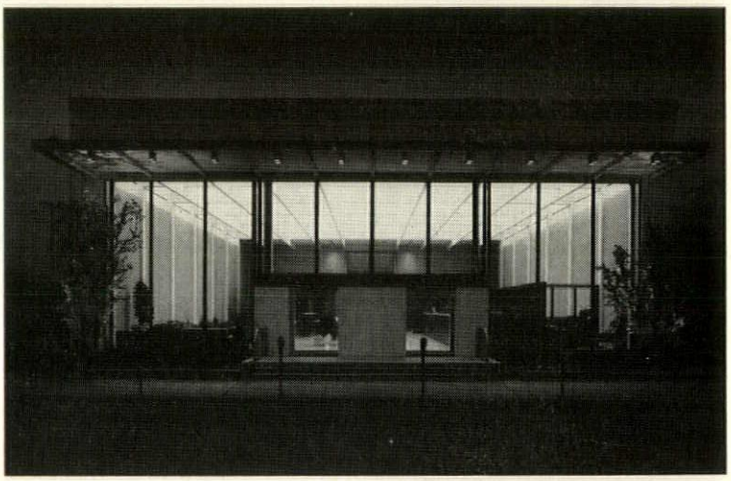
GENERAL DYNAMICS | ELECTRONICS—ROCHESTER

PHOTO-CRAFT CO.

HAWAIIAN CONDOMINIUM. The first condominium apartments in Hawaii sit at the foot of fabled Diamond Head, right at water's edge. The reinforced concrete building has 12 units, one per floor, each bought under the condominium system of tenant ownership. Sleeping and living areas are separated by an outsize service core (plan) in a modern version of the railroad flat. Architects: Wimberly & Cook (now Wimberly, Whisenand, Allison & Tong). Contractor: E. E. Black, Ltd.

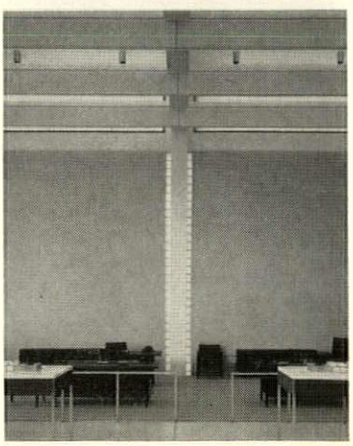


WASHINGTON NURSERY. The Parkland Day Nursery, donated by Realtor Morris Cafritz, serves a garden-apartment community in southeast Washington, D.C. On its 1-acre site, the somewhat oriental pavilion in a park raises twin ventilating gables above open, mostly glass façades. Inside the 6,000-square-foot, steel-frame structure, children delight in naturally lighted play alcoves (right). Building and grounds cost $125,000; nursery services cost parents $47 per month. Architect: Jack Cohen. General contractors: Calvin and Carter Cafritz.



CONNECTICUT OFFICE. This new headquarters for the DeMusis Brothers heating business, which stands on the fringes of New Haven's drab industrial district, manages to look appropriately strong without being pretty. Precast concrete T beams produce a low silhouette of long overhangs; the glassed-in office section is in front of a garage for trucks. Architects: Howard H. Perry and David B.V. Travers. Contractor: Chris Conway. Cost: $70,000.

TEXAS BANK. The sharp detailing of the Denton County National Bank in Dallas resulted in a space that is fittingly dignified, but so austere that it almost suggests a church. The building is open to the street, closed along the sides by large panels of brick which are separated from the marble-faced concrete columns by narrow strips of glass block (right). A ceiling grid of precast concrete beams filters light from clerestories along both sides. Architects: Harrell & Hamilton. Contractor: Lee-Emmert. Cost: $485,205.

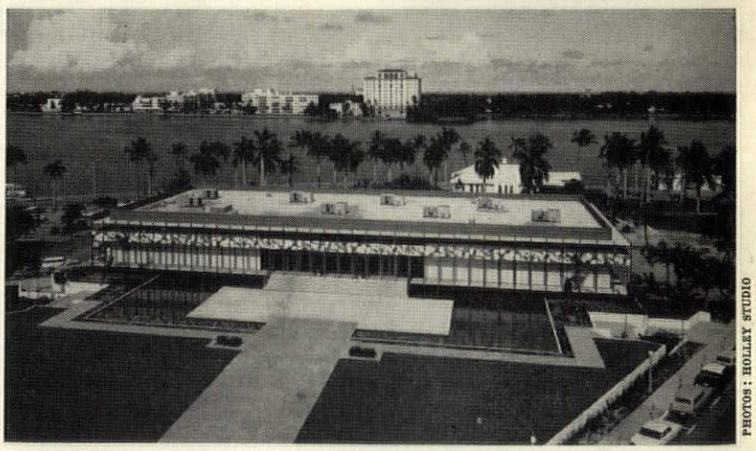


PHOTOS: NORMAN R. C. MCGRATH

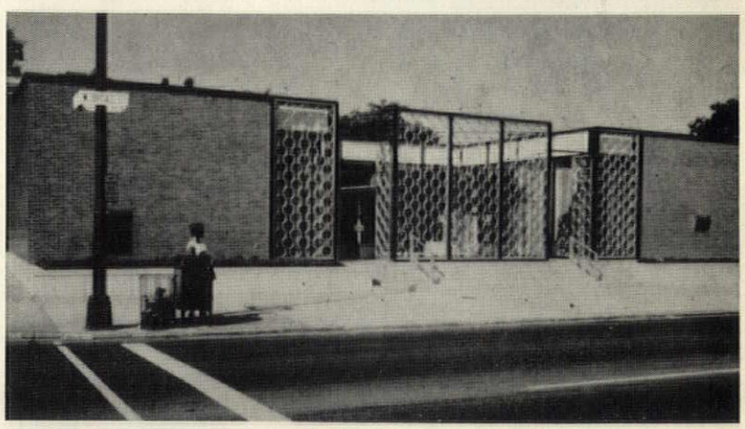
NORTH CAROLINA CHURCH. The faceted glass and concrete walls of the Church of the Holy Infant in Reidsville, N.C. (above) are intended to make the interior "open out into the world around." Precast concrete beams support the wood roof; its deep overhang tilts up to catch more light. A free-standing bell tower contains mechanical equipment. Architects: Schnedl & Schnedl. Contractor: Wade F. Phelts. Cost: $40,000.

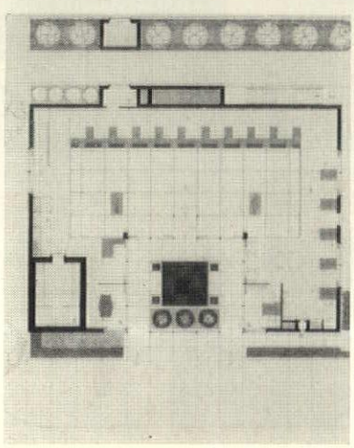
GOLDEN GATEWAY'S GATEWAY. The sidewalk superintendent has really come into his own at San Francisco's Golden Gateway project. Architecture evidently begets architecture—or almost architecture. The lacy shelter (below) is one of many observation points in a continuous enclosure which fences off the area. It was created by Industrial Designer Wayne G. Williams for the developer, Perini-San Francisco.

FLORIDA LIBRARY. The West Palm Beach Public Library is startlingly unlike most U.S. public libraries: it looks like a live building designed by a living architect. The concrete frame has a curtain wall of aluminum framing, porcelain enamel panels, and gray glass. Set behind a pool, it is ringed by a narrow gallery and a handsome mural designed by the architect, Norman N. Robson. Landscape architect: Robert L. Neal. Contractor: W. G. Lassiter, Inc. Cost: $350,045.



PHOTOS: HOLLEY STUDIO

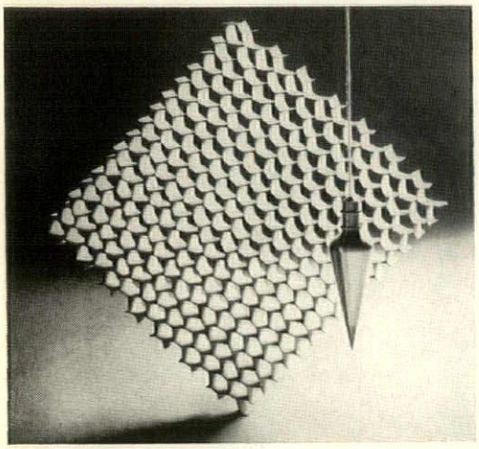




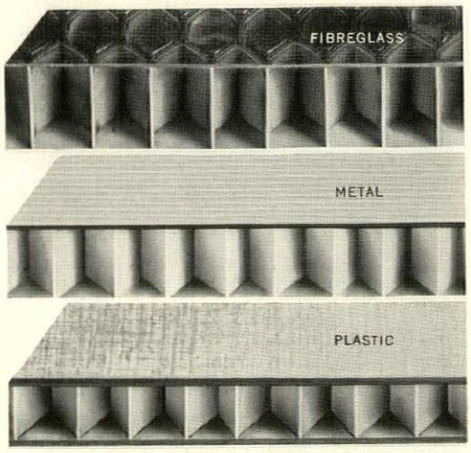
VIRGINIA BANK. This small branch of the State Planters Bank of Commerce and Trusts in Richmond is organized around a well-landscaped interior court. Fifteen-foot-high screens, made of aluminum pipe sections, separate the court from the sidewalk. Exterior walls are blue-glazed brick with black porcelainized aluminum trim. A conference room on one side and a manager's office on the other enclose the court which leads into one large banking area. Architects: Rawlings & Wilson. Contractor: Worley Brothers Co., Inc. Cost: $197,000. END

Architect's guide to Union Honeycomb cores

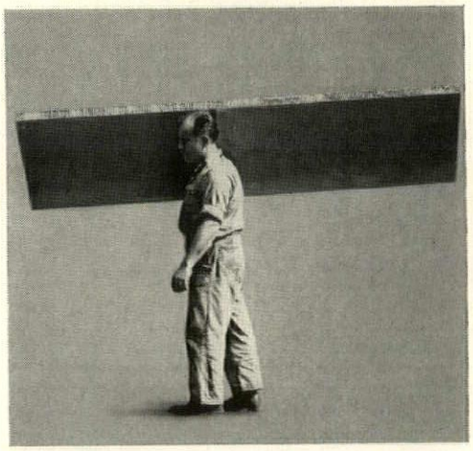
(The sandwich core material that combines economy with exceptional strength.)



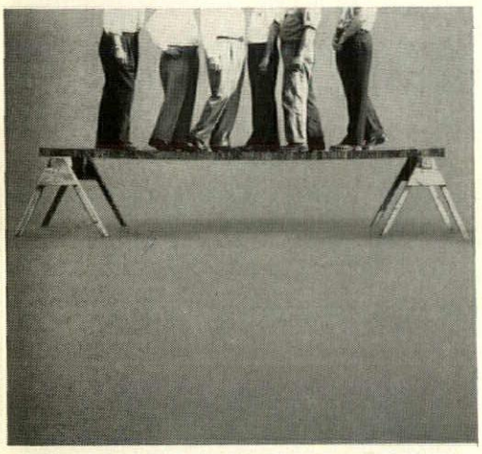
1. EXPANDED HONEYCOMB CORES offer inherent durability and flexibility and make ideal low-cost inner cores for many sandwich type structures. Cores come in various combinations of basis weight, impregnations and cell sizes.



2. USE WITH ANY FACING. Metals, wood, asbestos, plastics, fibreglass—even marble—can be faced to Union HONEYCOMB. With different core grades and thicknesses available, a wide variety of structural characteristics is possible.

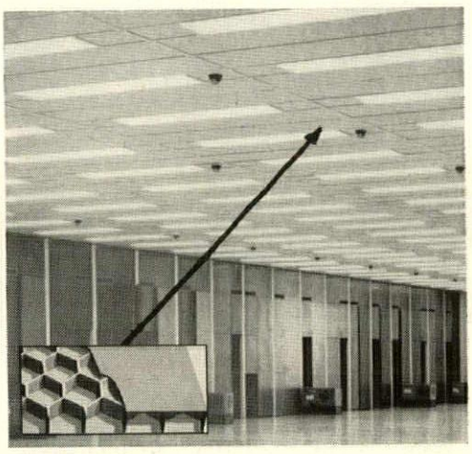


3. LIGHTWEIGHT. Union HONEYCOMB cores weigh only .095 to .187 lbs. *a board foot*—depending on the basic kraft, impregnation and cell size. Their extreme lightweight speeds fabrication, handling and assembly—cuts shipping and labor costs.

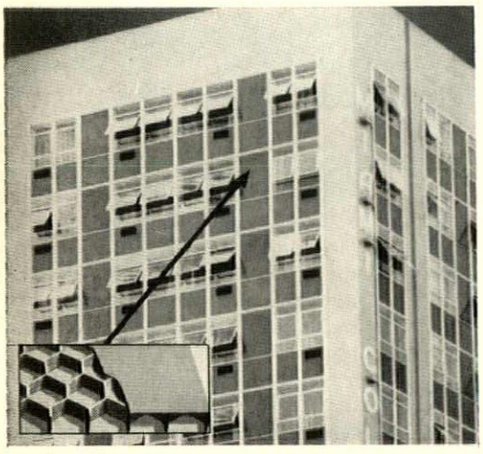


4. STRONG. On a weight-for-weight basis Union HONEYCOMB is undoubtedly the strongest sandwich core material known. Despite their lightweight the cores have corresponding crushing strengths of from 33 to 170 pounds per square inch!

5. EASY TO INSTALL. Union HONEYCOMB panel sections are easy to handle, go up fast—keep labor costs to a minimum. The exceptional flatness of the sandwich panel structures also facilitates installation, finishing and maintenance.



6. CEILINGS made of Union HONEYCOMB are becoming increasingly popular. When the cells are filled with suitable materials, they insure maximum sound absorption. And the fuel contribution of the cores in panels is exceptionally low.



7. CURTAIN WALLS are an excellent outdoor application. Even sub-zero to 200° F. temperatures will not appreciably affect Union HONEYCOMB core components. After years of exposure, panels remained stable and fully serviceable.

8. OFFICE DIVIDERS made with HONEYCOMB cores help solve space problems. The cores add rigidity, sound deadening and impact resistance to easily erected partitions, permitting privacy and extremely flexible floor planning.

Union Bag-Camp Paper Corporation, Dept. AF-163
233 Broadway, New York 7, N. Y.

Send me your free, illustrated booklet on the uses and advantages of Union HONEYCOMB cores.

I am interested in Union HONEYCOMB cores for:

Doors ☐ Walls ☐ Partitions ☐ Floors ☐

Other uses (specify) .....

Name .....

Title .....

Company .....

Address .....

City ..... Zone ..... State .....

union camp **UNION-CAMP**

HONEYCOMB CORES

Union Bag-Camp Paper Corporation, 233 Broadway, New York 7, N. Y.

CRITICISM: AIR FORCE CHAPEL

Forum: You are to be commended for your effort to publish serious criticism of important buildings by major architects. But since the Air Academy Chapel (Dec. '62) was a serious try by a serious, dedicated, and talented architect, it deserves to be discussed with comparable dedication and talent.

It is an important question whether the chapel should have been the major symbol at Colorado Springs—or indeed whether there should have been one at all. It should not be brushed off with cheap references to 'God is my co-pilot." There are only a few colleges where the library—one of Temko's suggestions—is any longer the essential and central symbol even of scholarship. Given the purposes and the methods of the Air Force Academy, to set the library up as such a symbol would have been a great big lie. To have inflated the planetarium, as Temko suggests, would have been scientifically naïve; and to have provided "a monumental center for cosmological studies" would have been both inappropriate and deceptive.

The in-bent nave certainly does raise questions, if looked at only in cross section, but these cannot be answered simply by saying: "An Anglican nave should rise in a single, supremely confident impulse." Here we have not even an Anglican nave

STEWART'S

but a place in which all Protestants congregate with a ritual drawn from the Anglican literature, much emasculated by the inevitable compromises. Here is the seat of the trouble, along with the fact that the nave ends vaguely, as medieval naves did not.

Even if Temko were an architect, it is not useful or even interesting to read his suggestions as to other ways in which the architect *might* have provided the structure of the nave. Once a critic enters this line he can suggest "better" shapes and methods for everything, from Eero Saarinen's chapel to the Campidoglio.

The important question is not whether Temko thinks a certain shade of pink glass is sickening, but *why* the glass of other churches is more satisfactory, and *why* conditions in this chapel's architecture produced a less satisfactory result. Temko would like to see the glorious Rockies through the end-wall glass, but it might be more important to know the arguments for seeing them and for not seeing them, out of which one might conclude that half seeing them was the worst possible solution.

The taste of the decorators was admittedly awful, but churches in time collect a lot of "art" from grateful donors—indeed, the corruption should probably be welcomed as part of the long, successful life of the church which transcends the purely esthetic question. The real question is whether the Air Academy Chapel, like the great churches of history, is strong enough to rise above its embellishers, present and future. Despite its obvious missteps, I think it is.

Good criticism has some of the aspects of a crusade. Without paladins, it may be better not to embark.

Cambridge, Mass. JOHN E. BURCHARD
Dean, School of Humanities and Social Science
Massachusetts Institute of Technology

Forum: A thoughtful evaluation of the structure as a house of worship, and a good criticism of the architects. They have missed the nature of creative devotion, the majesty of the scene, and the quiet dignity that is required. As for the church being a climax and a "unifying element," it is uninspired and brash—a tinlike shell of a rake that scrapes and threatens the sky. This is not the way to refresh the soul.

ALFONSO IANNELLI
Park Ridge, Ill. *Designer*

Forum: Surely this is not criticism, but an autobiographical comment on the critic. First, a library, or even a laboratory, would be a false symbol for an academy that does not approach education through research or problem-solving; a planetarium of the scale required is nonsense both educationally and technically.

Secondly, there is nothing especially Gothic, Romanesque, Renaissance, or Neo-Gothic either, about a high nave, vertical bays or buttresses; almost every longitudinally planned church is organized with respect to the central axis only. The structure is "weak-kneed" only if the critic ignores the folded plates in the interstices between tetrahedrons and the ridge members that run continuously along the frames from buttress to spire. All this strikes a chord, purposely (I would say, fittingly) apposite (*not* opposite) to the Front Range.

Regarding Temko's idea of American spiritual experience: Pantheism has been consistently rejected by the organized religions in America, and "ineffable mystery" is surely a strange experience to have had in Unity Temple, where Wright housed a service in the Enlightenment tradition.

There are many right things about Temko's piece, mostly connected with his insistence that the Chapel be judged as religious architecture, no matter whether the Air Force, Congress, or the clergy defaced the architect's idea. When he picks at the lateral section through the Protestant Chapel, he is surely on target.

But, to avoid discussing the site plan, where the Chapel fits superbly, then to dismiss it as a "feminine" building among "masculine" ones (always a debatable point —try it on the Parthenon and Erechtheum) misses an opportunity to inform us about architecture, while kidding us with words. How can we rely upon criticism which asks *both* that SOM interpret each of the three religions uncompromisingly *and* preach "the essential oneness of things"? If Temko believes that there ought to be one chapel for all men, and one religion for all men, why does he squeeze his hand around that old Neo-Gothic theory of revealing three characters through three forms?

ALBERT BUSH-BROWN
Providence, R.I. *President*
Rhode Island School of Design

Forum: Any valid criticism should first accept the premises upon which the structure has been based. But since Mr. Temko questions the fundamental theological concept of divine relevance in our "very worldly affairs," he has overstepped his bounds.

It seems very fitting that in a military academy we have not lost our senses, and have boldly announced to all materialistically-based societies that our ultimate faith rests not upon the militarism that surrounds the chapel, as evidence of the status of world affairs, but on the first and "greatest" of all commandments: "Thou shalt have no other Gods before me."

I wonder if Mr. Temko bothered to inquire of the Air Academy chaplains the theological tenets from which the structure evolved. If the architects soared off into jet-age space with no principles, this should be so stated for all to know. Otherwise, the article misses its intended purpose because it is only half analyzed.

DONALD J. BILLMAN
Chicago *Architect*

Forum: Your criticism of the chapel is well taken. Here again the architect has yielded to the influence of the lofty spire, which in medieval times was intended as a symbol of "the finger of God pointing heavenward."

The United Church in Rowayton, Conn., (same issue) certainly has eye impact, but

continued on page 20

continued from page 19

this was achieved during the 1920s by ice-cream and hamburger stands. As a matter of fact, one photograph on page 81 looks like an inverted ice-cream cone.

As for the church in Finland, early issues of FORUM high lighted Finnish church architecture of 20 years ago which signaled a milestone for houses of faith. Simple but beautifully designed buildings can best reflect the purity of faith and the symbol of hope; the garish and baroque can only result in a feeling of frustration or confusion, not peace or solemnity.

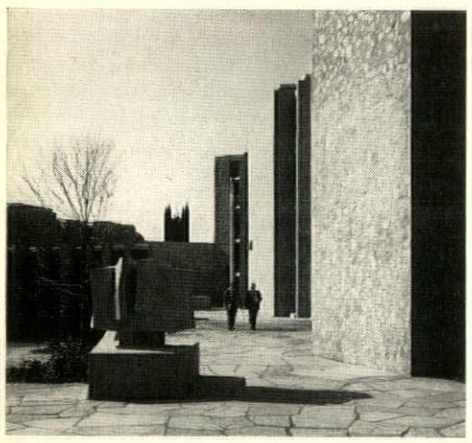
J. S. ROSS
Architectural & Design Div.
Los Angeles *Superior Shower Door Co.*

CRITICISM: YALE

Forum: The total irresponsibility of Mr. Banham's comments on the Stiles–Morse colleges at Yale (Dec. '62) makes one hope that you have published them in order to praise with faint damns.

In particular, I must differ with his comments on the "styled-up" concrete. Perhaps he, like many, is so dazzled by the plastic possibilities of concrete that he forgets its basic nature. Johnson leaves bare the metal skeleton of the house, and Mr. Banham calls it "habitable"; Saarinen exposes the aggregate, the skeleton of concrete construction, and our fickle British cousin finds it "cheap and nasty"!

JOSEPH E. BUCH
Chicago



GEORGE CSERNA

Forum: These facilities were built for $7,500,000 and accommodate 500 students. The arithmetic comes out to $15,000 per student.

I am all for education and fine architecture, but when you say "there was no money to waste" (and when is there?), joining Mr. Banham in ignoring the fact that this is a piece of luxurious architecture, you shake up at least one architect whose firm builds concrete-frame college residence halls regularly on a budget of $4,000 per student, dining facilities included.

HENRY TIDEMAN
Chicago *Architect*

CRITICISM: WASHINGTON STATE

Forum: In the October article on our Central Washington State College library, you say: "It has . . . the faults of having perhaps too many different shapes and forms for what it is, essentially, a simple structure."

The widespread seeking for an exaggerated simplicity in building design, and the sterile quality of today's building concern me. The greatest sources of inspiration an architect can draw on are the endlessly varied conditions affecting what he builds. When a designer is willing to listen to these voices and respond faithfully to their message great structures may result.

Our library has faults that your article did not mention, but the fault you mention I consider a virtue. The north and south sides differ because the use of space inside is completely different, and because sun and wind vary radically.

We could have made a glass building and strangled the solar heat with tons of cooling once it was trapped inside, but that seemed to me to be solving the problem the hard—although popular—way. It also would have meant abandoning the richness afforded by a response to real conditions.

FRED BASSETTI
Seattle *Architect*

CRITICISM: CHICAGO

Forum: We always believed that good journalism confined brickbats and bouquets to editorials and feature critiques. So we were not a little surprised to find comment on our Civic Center Garage in "Building in the News" (Nov. '62).

One of the requirements was to provide some commemoration of the Garrick Building. Why not make Sullivan's ornament live again—this time as a functioning grille for ventilation? And why not show the grille's fountainhead by placing the original terra cotta geometry in a dominating position? "Sadly imprisoned in one of these large unlovely teeth"? By whose standards?

WILLIAM M. HOROWITZ
Chicago *Architect*

■ FORUM *appreciates Mr. Horowitz's gesture, but reserves the right to comment on any building it publishes.*—ED.

CRITICISM: ALCOA

Forum: Kudos for your December article, "Alcoa's Big Experiment—Ten Years Later." By bringing pioneering building before that harsh judge—time—FORUM is giving architecture a penetrating perspective.

Regretfully, one statement is completely inaccurate. You state that the ceiling used throughout the Alcoa building "has been used in only one other major office building." Actually, the system, marketed as the Burgess-Manning/Inland Radiant-Acoustic Ceiling System, has been installed by our firm in a number of major office buildings, including the IBM World Trade Corp. in New York, the International Minerals and Chemicals Corp. in Skokie, Ill., and the Kaiser Center in Oakland, Calif.

RICHARD D. ROTHSCHILD, *Vice President*
New York City *Jacobson and Co., Inc.*

■ FORUM *regrets that information furnished the editors did not take these and other buildings into account.*—ED.

CRITICISM: NEW YORK

Forum: I have been reading in the various architectural periodicals comments about the quality of some of the New York 1964 World's Fair buildings thus far proposed.

The implication one might draw is that the Fair is somehow at fault. Yet there are many buildings which appear interesting and well conceived. These are reported in a rather restrained manner, while those whose qualities are questionable are enthusiastically denounced.

The openness of the Fair's codes—and the obvious desire on the part of client and Fair alike to achieve works of significance that succeed in proportion to their ability to dramatize and attract—leave a freer field than is found in most other types of design.

I ask that the architectural magazines, as reporters and arbiters of architectural criticism, publish more details and information about the good examples of Fair projects in an effort to stimulate and educate clients.

DANIEL CHAIT
New York City *Architect*

■ FORUM *expects to publish more progress reports on the Fair—and to continue to recognize the good along with the bad.*

ARCHITECTURAL FORUM is published monthly by TIME INC., Time & Life Building, Rockefeller Center, New York 20, N. Y.

SUBSCRIPTION SERVICE: Address all subscriptions and correspondence concerning them to: ARCHITECTURAL FORUM Subscription Dept., 540 N. Michigan Ave., Chicago 11, Ill. Subscription rates: in U.S., U.S. Possessions and Canada, one year $7; elsewhere, one year, $12. Single copies, if available, $1.

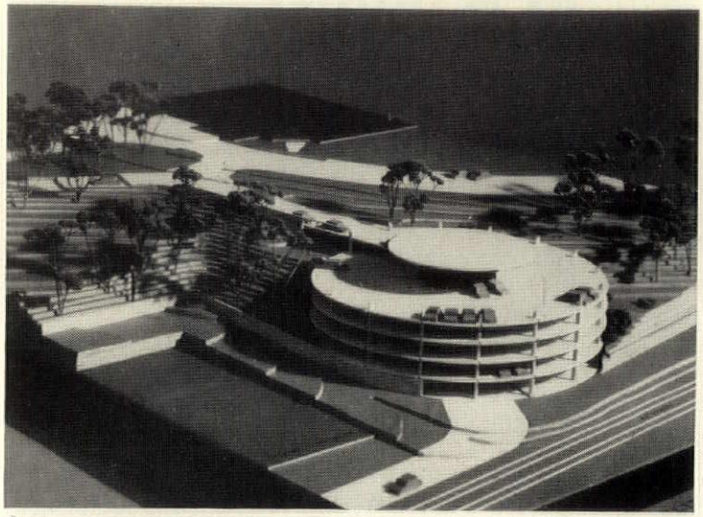
CHANGE OF ADDRESS: Four weeks are required for change of address. When ordering a change please name magazine and furnish a label from a recent wrapper. If no label is available please state as exactly as possible the address to which magazine has been sent. Changes cannot be made without old as well as new address.

EDITORIAL CORRESPONDENCE should be addressed to ARCHITECTURAL FORUM, Time & Life Building, Rockefeller Center, New York 20, N. Y. FORUM will not be responsible for unsolicited manuscripts or illustrations submitted, and it will not return such material unless accompanied by postage.

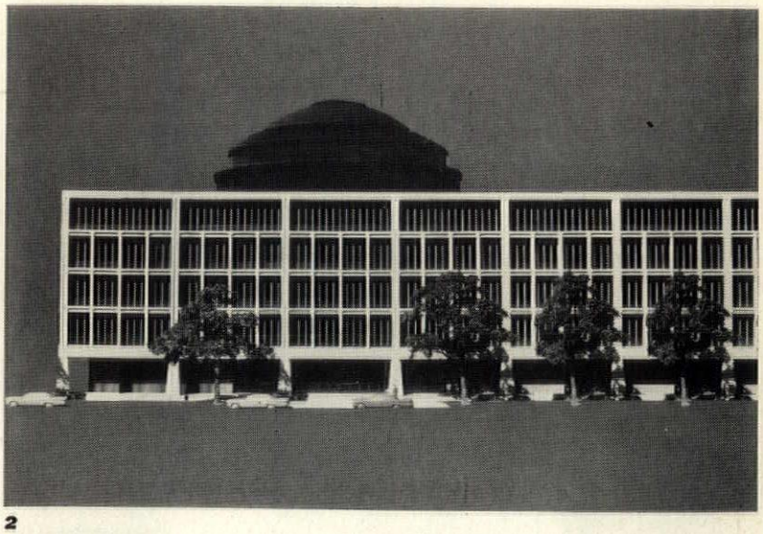
ADVERTISING CORRESPONDENCE should be addressed to the advertising director, ARCHITECTURAL FORUM, Time & Life Building, Rockefeller Center, New York 20, N. Y.

TIME INC. also publishes TIME, LIFE, FORTUNE, SPORTS ILLUSTRATED, and HOUSE & HOME and with its subsidiaries the international editions of TIME and LIFE. Chairman of the Board, Andrew Heiskell; Chairman, Executive Committee, Roy E. Larsen; Chairman, Finance Committee, Charles L. Stillman; President, James A. Linen; Executive Vice President and Treasurer, D. W. Brumbaugh; Senior Vice President, Howard Black; Vice President and Secretary, Bernard Barnes; Vice Presidents, Bernhard M. Auer, Edgar R. Baker, Clay Buckhout, R. M. Buckley, Arnold W. Carlson, Allen Grover, Jerome S. Hardy, C. D. Jackson, Arthur R. Murphy, Ralph D. Paine, Jr., P. I. Prentice, Weston C. Pullen, Jr.; Comptroller and Assistant Secretary, John F. Harvey; Assistant Comptroller and Assistant Secretary, Charles L. Gleason, Jr.; Assistant Treasurers, W. G. Davis, Evan S. Ingels, Richard B. McKeough.

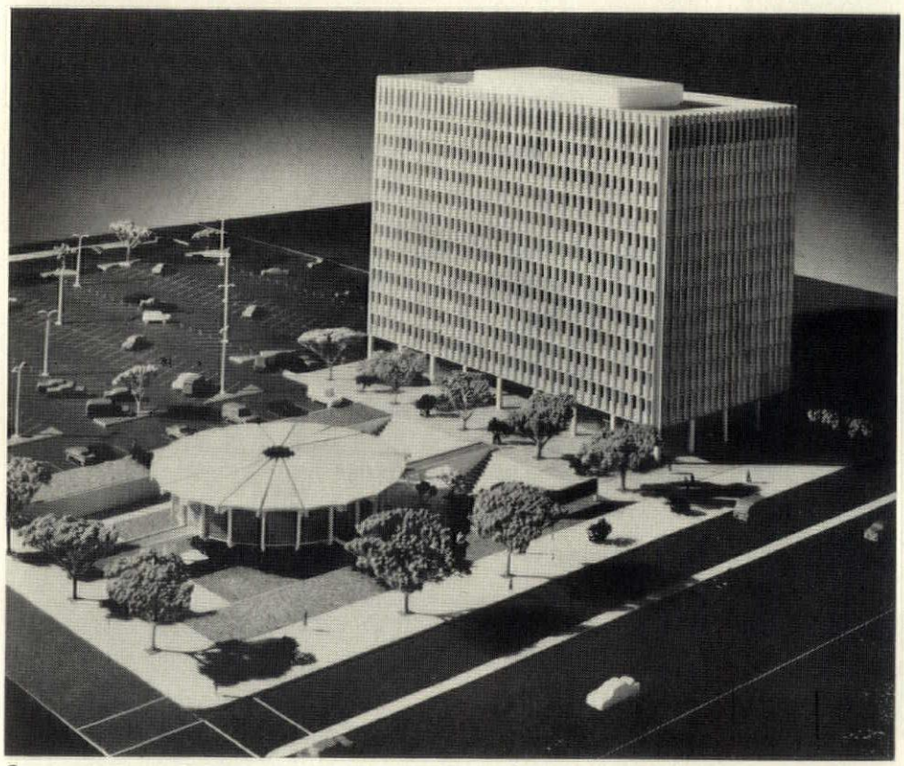
Graceful newcomer for M.I.T. (below)
Combination sandwich for Chicago (page 45)



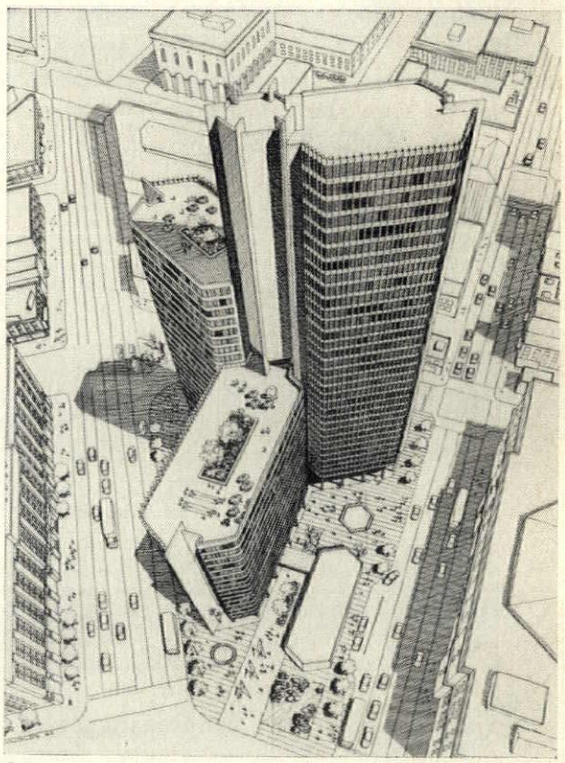
1



2



3



4

1. MISSOURI GARAGE. A continuous ramp will loop around the State of Missouri's new concrete parking garage in Jefferson City, unwinding in a terminal tunnel under the Capitol. The garage will nestle into a steep slope, exposing only the top loop to view from the Capitol side. Wm. B. Ittner Inc. of St. Louis is the architect.

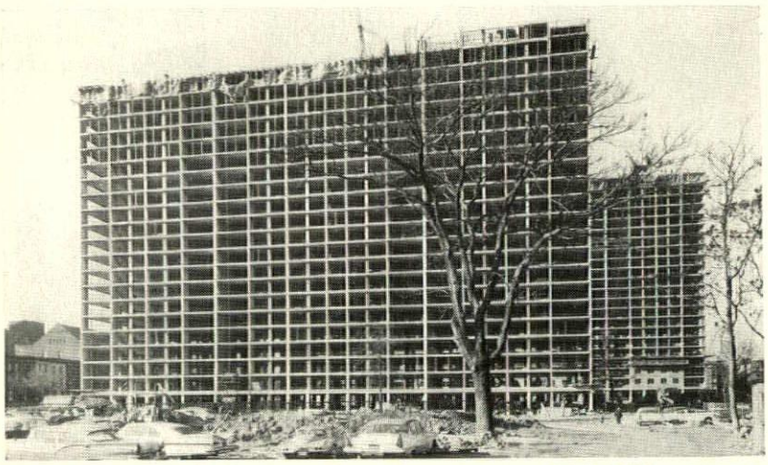
2. S.O.M. AT M.I.T. The ever-vexing problem of making new campus buildings comfortable with those from another era promises to be solved gracefully in this rear extension of the domed main building at the Massachusetts Institute of Technology in Cambridge. The new wing, to house the Center for Materials Science & Engineering, was designed by Skidmore, Owings & Merrill's Chicago office. It will be north of the original and attached to it by corridors, ramps, and stairways. While faithful to the scale of the original, the addition will be of modern materials, in a rhythmic grid of structural concrete.

3. AIRPORT CENTER. Scheduled to open next November is the first part of Del E. Webb's $50 million International Airport Center in Los Angeles—the 12-story rental office building, circular bank, and sunken plaza shown above. While its location is undeniably convenient to the new airport, Architects Welton Becket & Associates (master planners for the complex) had to reckon with the noise problem as well. For the office walls, they specified solid concrete, with only 40 per cent glass and double glazing for tenants who want it. The bank will have a sound-deadening compound applied to the roof overhang.

4. SAN FRANCISCO OFFICES. Three California firms plan to tear down the old Fox Theater in downtown San Francisco and replace it with a rental office building built a wing at a time. The three wings, of 32, 24, and 16 stories, will share an exterior service core and a plaza. The total cost will be about $25 million for 500,000 square feet of rentable space. Victor Gruen & Associates are the architects for National General Corp., Sunset International Petroleum Corp., and Cahill Construction Co.

continued on page 43

PENN STATION SOUTH, Manhattan—Ten buildings in a 5-block area, accommodating 2,820 families. Architect: HERMAN J. JESSOR; Engineers: FARKAS & BARRON; General Contractor: COMMUNITY SERVICES, INC.; Ready-mix Concrete: M. F. HICKEY CO., INC.



UNIVERSITY TERRACE, Brooklyn—Three 24-story towers containing 978 apartments. Architects: KELLY & GRUZEN; Engineers: FARKAS & BARRON; General Contractor: TISHMAN CONSTRUCTION CORPORATION; Ready-mix Concrete: RYAN READY MIXED CONCRETE CORP.

YORKSHIRE TOWERS, Manhattan—Twenty-one-story tower with 700 apartments. Architect: SLINGERLAND & BOOS; KAVY & KAVOVITT, INC.; Ready-mix Concrete: COLONIAL SAND & STONE CO., INC.

HIGH-RISE IN A HURRY

Major apartment builder specifies INCOR® for both summer and winter construction

Underhill Construction Corp., a leading concrete contractor in the New York metropolitan area, has established an enviable reputation for skillful, on-schedule construction of high-rise apartment buildings. Shown here are a few of the current Underhill projects.

To maintain efficient, streamlined schedules in both winter and summer construction, Underhill specifies concrete made with "Incor" High Early Strength Portland Cement. The early service strength of this concrete saves in finishing time, permits stripping forms sooner, and allows maximum construction speed.

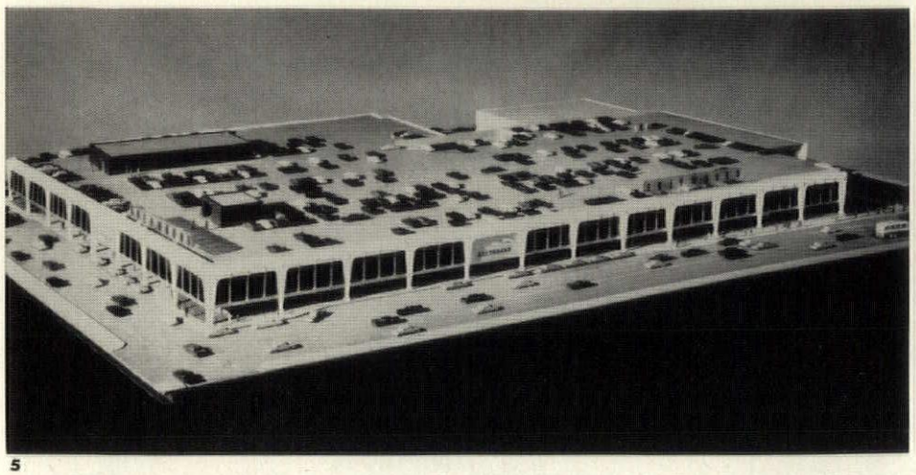
With selective use of Lone Star Portland Cement and "Incor" 24-Hour Cement, the contractor has complete flexibility in setting up concreting schedules. Job practice often suggests, for example, that "Incor" be used for the first four days of a five-day week, switching to regular Lone Star on Friday for week-end curing. Such selective concreting results in maximum efficiency and economy.

LONE STAR CEMENT CORPORATION, N. Y. 17, N. Y.

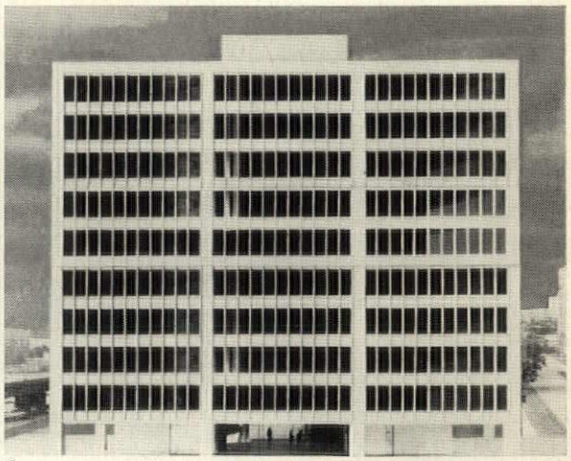
INCOR® 24-HOUR CEMENT

CAROL TOWERS, Manhattan—One of the tallest reinforced concrete apartment buildings in New York; 34 floors. Architect: PHILIP BIRNBAUM; Engineer: ROBERT ROSENWASSER; Ready-mix Concrete: COLONIAL SAND & STONE CO., INC.

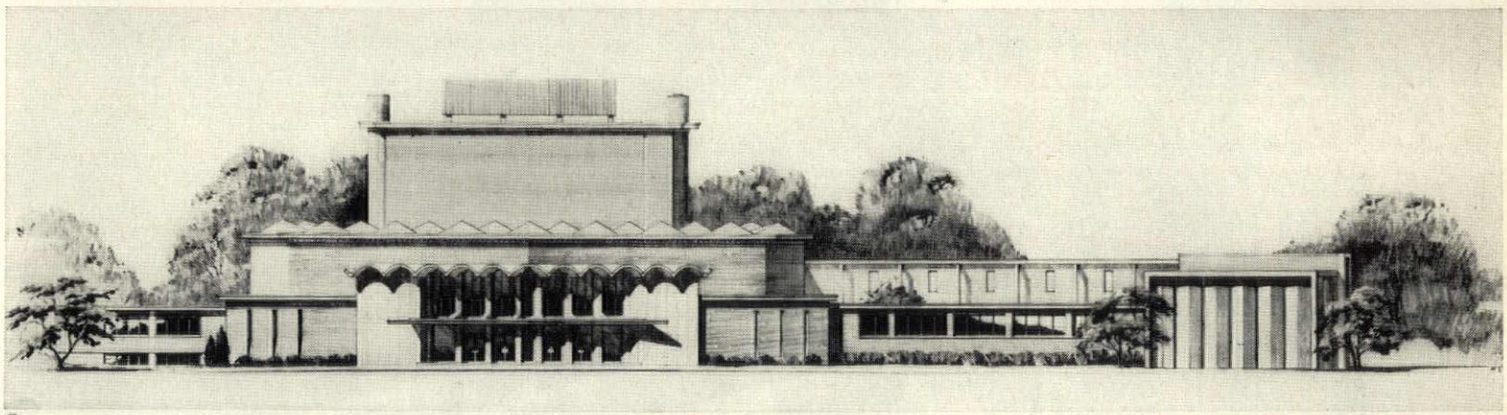
continued from page 41



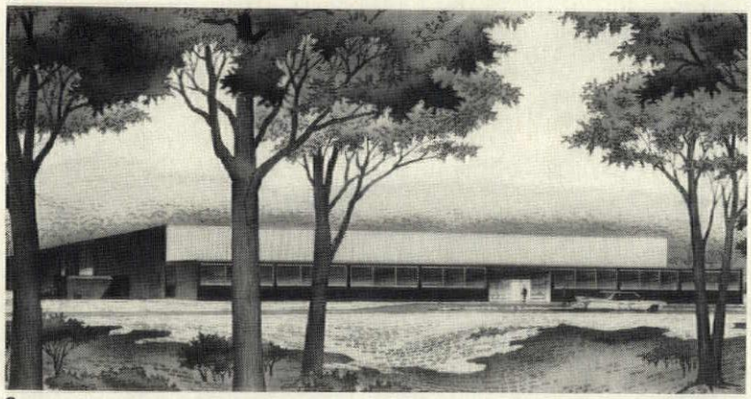
5



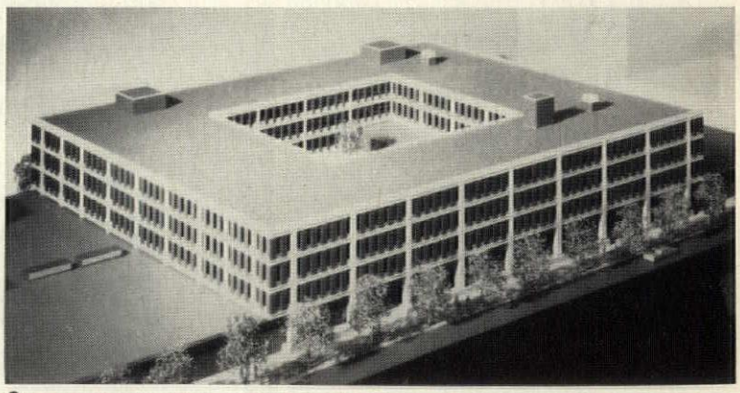
6



7



8



9

5. LOS ANGELES DEPOT. Sprawling over a block in downtown Los Angeles, the $10 million Greyhound Terminal will be a depot for Western Greyhound Lines and the Los Angeles Metropolitan Transit Authority, as well as a public garage for 625 cars. Six-foot-deep beams will frame the roof, carrying the massive weight of parked cars above; tension columns suspended from these girders will support a second-floor level for MTA buses. The glass-enclosed main floor will contain a pedestrian concourse; the Greyhounds will come in below grade. Architects: Welton Becket & Associates.

6. CHICAGO HOSPITAL ANNEX. This professional annex for Presbyterian-St. Luke's Hospital in Chicago will have 175 rental suites for the hospital's medical staff, and a 120-car garage. The new building will begin at five stories, half the height in the rendering shown here, but may grow by five more when needed. Architects: Hammond & Roesch.

7. OHIO COLLEGE THEATER. Special mechanical equipment developed by Dr. George Izenour will convert the single theater in this drama building at Ohio's Wittenberg University to proscenium, Elizabethan, and concert stages. The theater is the central element in the design, by Mansell, McGettigan & Fugate of Philadelphia; studios and a rehearsal hall are housed in the wing at right.

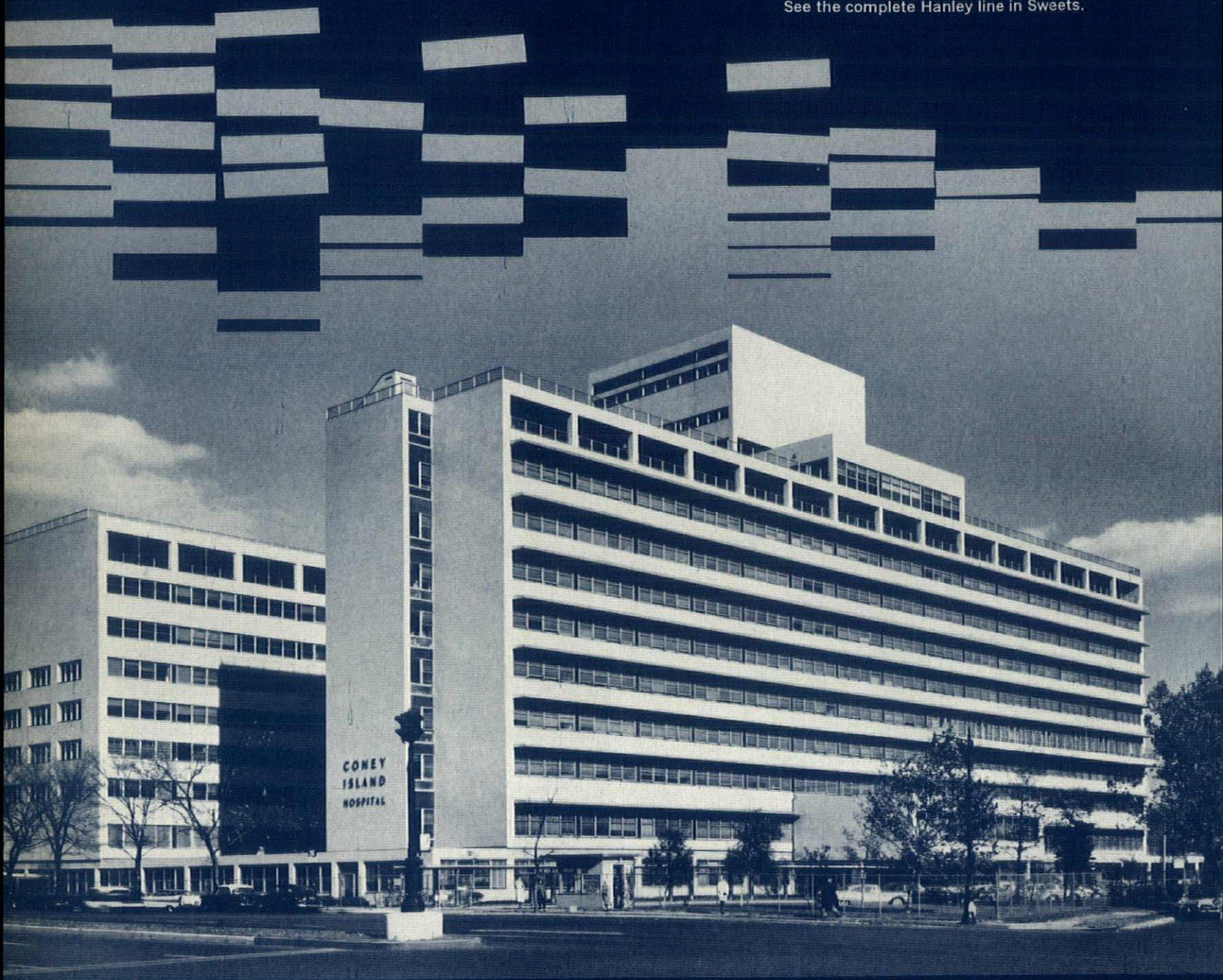
8. CONNECTICUT FACTORY. The first building to go up in the Torrington, Conn., industrial park is this factory by Marcel Breuer for the Torrington Manufacturing Co., which makes wire and strip-forming machinery. A ribbed skin of porcelainized white aluminum will be hung on a structural steel frame. Black brick and glass will enclose the offices across the front.

9. MANHATTAN SCHOOL. A new academic high school in Manhattan—the first since 1942—is the West Side High School, by Charles Luckman Associates. Built around a courtyard, a four-story concrete frame with filler panels of brick and glass will enclose 42 classrooms and ten specially equipped laboratories. Cost: $7 million. Capacity: 2,500 students.

continued on page 45

New York Hospital adds color . . . for life. This is the *new* Coney Island Hospital in Brooklyn, New York. The face is colorful and clean and will stay that way for the life of the building because the architects chose HANLEY Duramic® Glazed Brick for the exterior. If you want to add color, not costs, to your next project, take a look at HANLEY'S more than fifty shades of glazed brick and tile. Make your projects distinctive and colorful permanently because HANLEY Duramic® Glazed Brick is self-cleaning and colors do not fade. Specify uniform quality HANLEY Duramic® Glazed Brick for your next project.

See the complete Hanley line in Sweets.



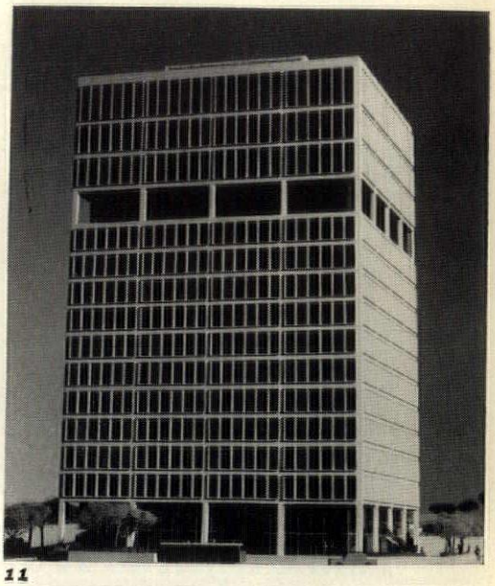
Coney Island Hospital, Brooklyn, N. Y. / Architects: Katz, Waisman, Blumenkranz, Stein & Weber / General Contractor: Gerace & Castagna, Inc. / Hanley Shade 623 Limestone Grey Fine Speck

HANLEY COMPANY

One Gateway Center, Pittsburgh 22, Pennsylvania
Sales Offices: New York • Buffalo • Pittsburgh

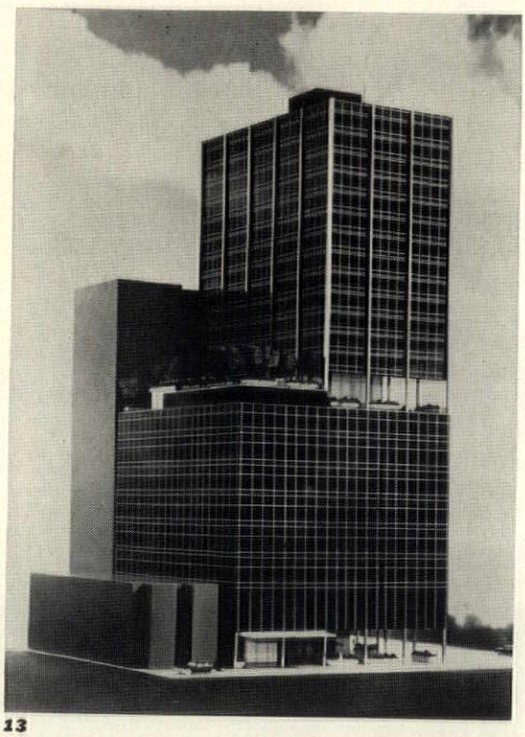
continued from page 43

10



11

12



13

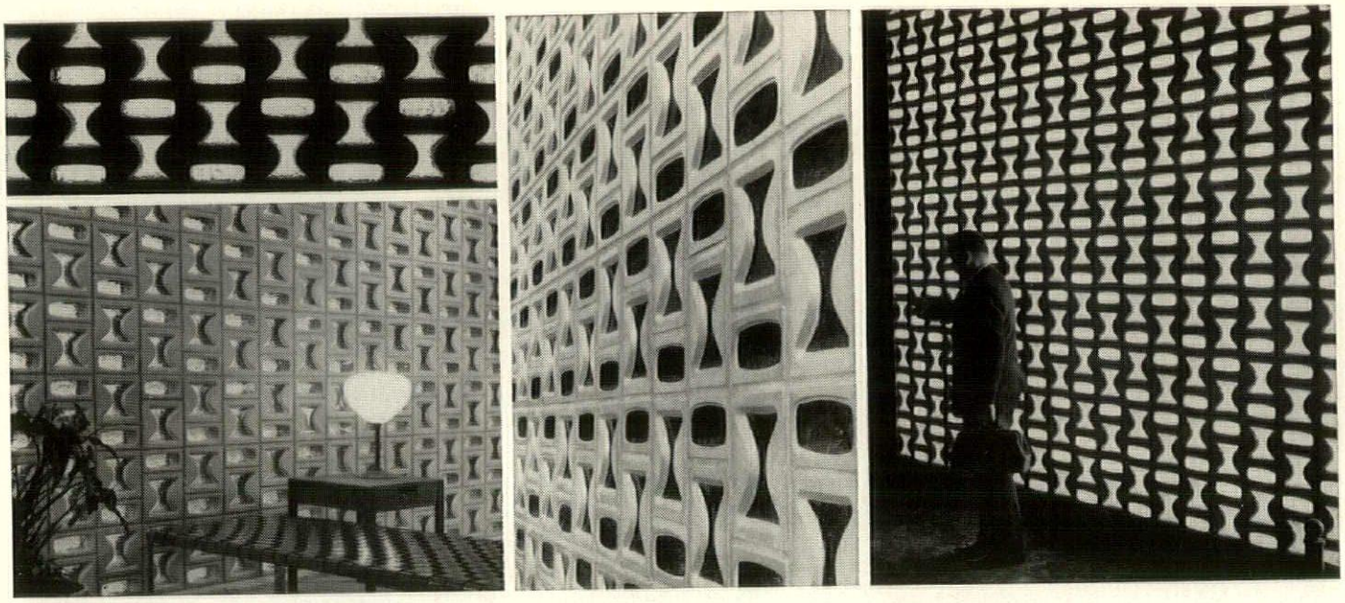
14

10. NORFOLK RENEWAL. The Norfolk, Va. Redevelopment & Housing Authority has awarded part of its water-front Atlantic City project to Samuel A. and Henry A. Berger, whose proposal won over five others. Planned by Otto E. Reichert-Facilides, the Berger proposal divides 479 apartments between a 15-story slab and a 31-story square tower. Additional apartments, all with terraces, will rim two parking garages facing a small park and marina. Cost: $25 million.

11. CLUB AND OFFICES. This square tower in St. Louis, the Pierre Laclede building, will be mostly rental office space, but the top three floors will be a men's club. Set off center so that each floor's space adapts to large and small tenants, the service core was slip-formed in 17 working days. The building structure is of steel faced with precast exposed aggregate panels. Architects: Smith & Entzeroth of Clayton, Mo.

12 & 13. CHICAGO TOWERS. These two buildings are part of a $20 million scheme for Chicago's near North Side, proposed by Construction Developers Co. and designed by Barancik, Conte & Associates. Ritchie Towers (12) will have four apartments to a floor and two penthouses on the twenty-ninth floor. L'Aiglon (13) is a combination office and apartment building of 23 stories, expected to cost $5 million. Sandwiched between stores, a restaurant, and elevator lobbies on the ground floor and five office floors above will be two parking levels for tenant cars. The apartment tower, which looks like a separate building, will stand over the offices and straddle a dining club, swimming pool, and roof garden. Apartments will range from studio to two-bedroom units, plus penthouses.

14. SAN DIEGO CENTER. A pair of crosswalks will carry office tenants and hotel guests back and forth between the two parts of the $17 million First National Center in San Diego. The new towers planned by the Del E. Webb Corp. are "Del Webb's Townehouse" (left) and a 20-story office building, to be named for the prime tenant. Architects: Flatow, Moore, Bryan & Fairburn. END

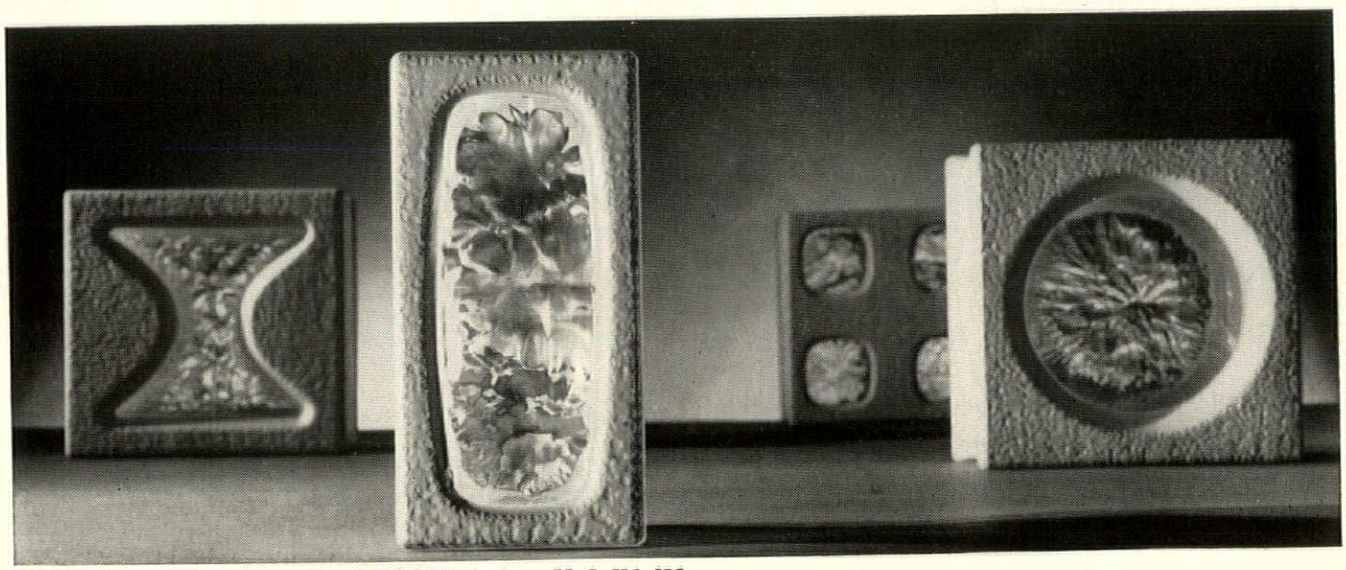


Look again! Now glass and grill are one:
INTAGLIO glass wall units

Think of the ideal wall for today's buildings. Take the grace of the grill. Add the classic benefits of glass. Blend the two in one material. *Now you've got INTAGLIO,* new all-glass wall units by Pittsburgh Corning . . . three 8 x 8 x 4″ units and one unit 4 x 8 x 4″. Each combines in a single, integral unit—on both faces—the graceful, pierced pattern of the grill; the beauty of artfully antiqued glass; the texture of masonry; and the visual, thermal, acoustical properties of double glazing. One material, one unit does it all. One trade installs it in a single operation. The wall is finished inside and out.

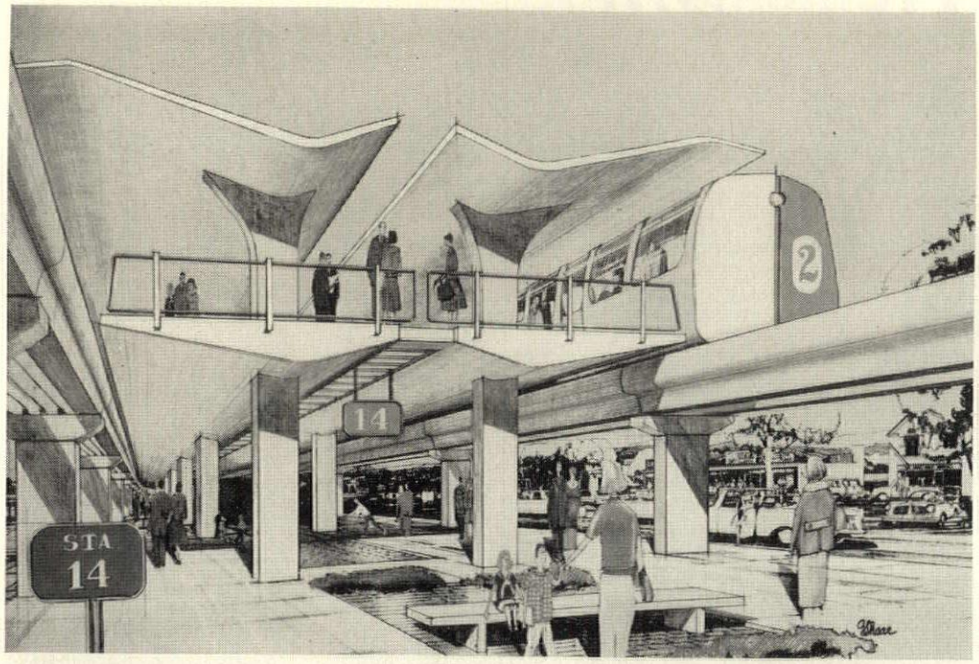
PITTSBURGH PC CORNING

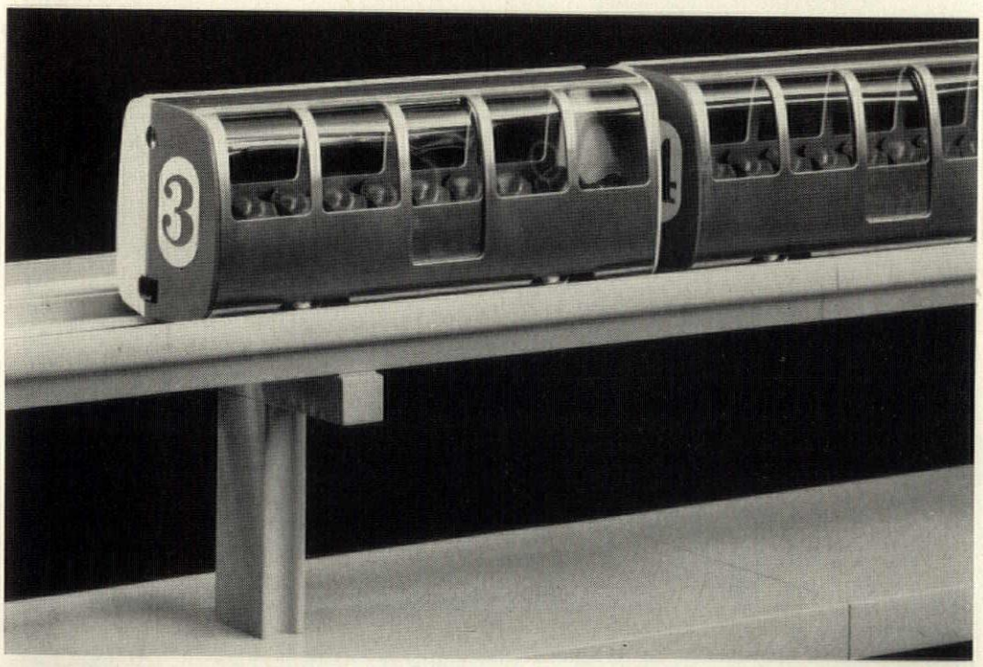
The exciting design possibilities are endless. Let us send you sketches showing just a few . . . along with complete product details. Write for our new INTAGLIO brochure. *Pittsburgh Corning Corporation, Dept. IAF-23, One Gateway Center, Pittsburgh 22, Pa. Distributed by the Pittsburgh Plate Glass Co., and independent distributors.*

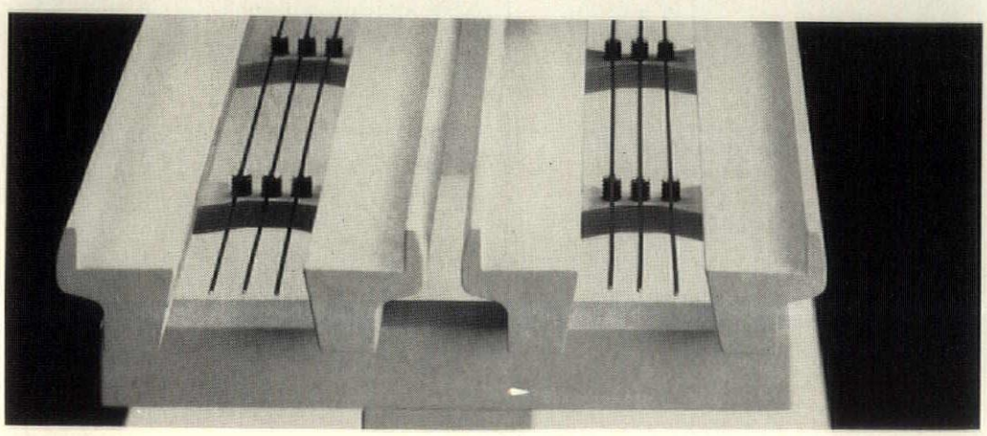


Seen above left to right are INTAGLIO designs II, I, IV, III

Commuting by computer (below)
Zippers for walls (page 48)







NEW RAPID TRANSIT SYSTEM

A big "conveyor belt" that moves commuters in and out of the city at 50 miles an hour, winter and summer, day and night, is proposed by Westinghouse for cities with populations between 500,000 and 2 million, where public transportation carries 5,000 to 16,000 riders per hour in any direction. The *Transit Expressway* is a prefabricated elevated system run by computers dispatching cars every two minutes around the clock. At peak hours, the 20-passenger cars would be linked and run as trains of up to ten coaches, tapering off to one or two when demand decreased, but maintaining a constant two-minute interval of service. The cars would be scheduled and controlled in much the same manner as Westinghouse's automatic elevators and would not require operators.

Architects and Industrial Designers Eliot Noyes & Associates designed the cars, tracks, and stations in the system. The cars are lightweight (8,575 pounds each) to reduce the cost of the supporting structure, and are designed for a smooth, quiet ride on four double-tired wheels powered by electric motors. The elevated roadbed is a building-block assembly of prefabricated concrete parts. Each lane is made up of two precast, prestressed beams, whose deep curbs hold in the wheels and baffle tire noise (bottom photo). Power cables are slung between, and concrete piers support the lanes at 44-foot intervals. Stations, one-half mile to 2 miles apart, are also of standard concrete parts, and are reached from the street by moving stairways.

Westinghouse estimates the cost of Transit Expressway at $2 to $3 million a mile for two lanes, including everything except land acquisition and any special construction (compared with $12 to $20 million a mile for subways). While the system was designed for overhead operation, it can be adapted to ground-level and underground use in cities where conditions permit. The Pittsburgh Port Authority is seriously considering a 6½-mile trial run.

Manufacturer: Industrial Systems, Westinghouse Electric Corp., 3 Gateway Center, Pittsburgh 22.

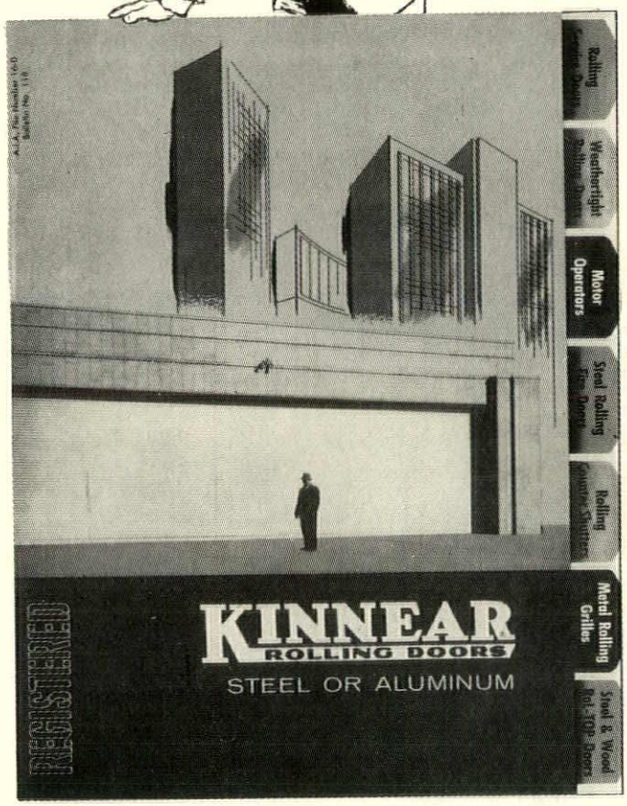
REDESIGNED PREFABS

Bethlehem Fabricators, Inc. is entering the prefab building market with a line that actually started 13 years ago: the Luria steel buildings, which Bethlehem recently bought and re-engineered in lightweight ASTM A-36 steel. There are four standard designs (next page), all of which may be altered to meet special requirements. The frames are made of hot rolled structural shapes, precision cut, punched, drilled, and trimmed at the plant. Once they are up, all four may be expanded without major work on the existing building and without interrupting production schedules inside. Bethlehem sup-

continued on page 48

continued from page 47

KINNEAR has the answer to our Door Problems...



Write for this catalog on KINNEAR Rolling Doors, Grilles, Counter Shutters, and Fire Doors

Kinnear has the door to fit every need, from small counter openings to large doorways — manual or motorized with efficient push-button control. They save time, cut costs, increase protection and add a neat clean-cut appearance to any structure.

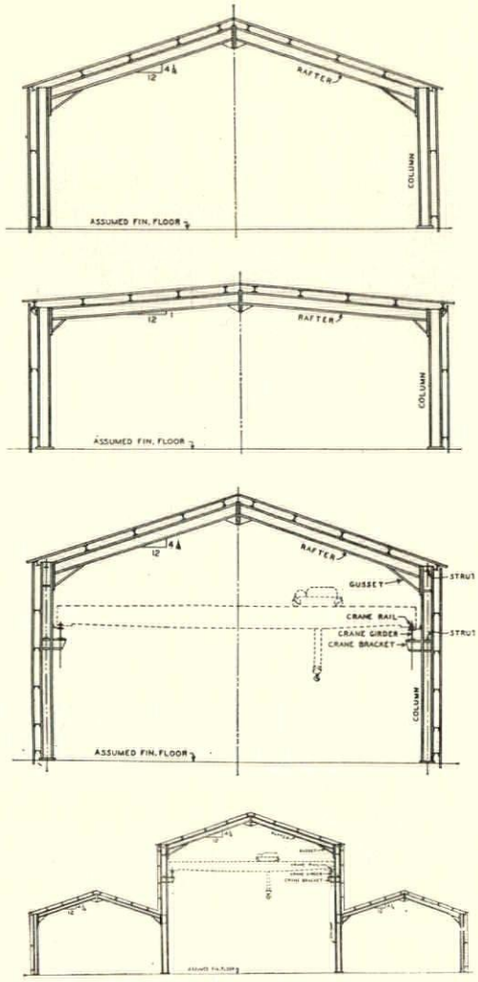
Choose from metal Rolling Doors of flat or curved interlocking slats that are extra heavily galvanized for longer service life or Sectional Rol-Top Doors, metal or wood — all give maximum protection against intruders, vandals, wind, weather and fire.

Kinnear Doors are never obsolete — every door is REGISTERED — full details and drawings are kept in fireproof vaults. All parts for all doors can always be supplied. Write for your new door guide today!

The KINNEAR Manufacturing Co.
FACTORIES
1640-60 Fields Avenue, Columbus 16, Ohio
1742 Yosemite Avenue, San Francisco, Calif.

Offices and representatives in all principal cities

KINNEAR®
ROLLING DOORS
Saving Ways in Doorways



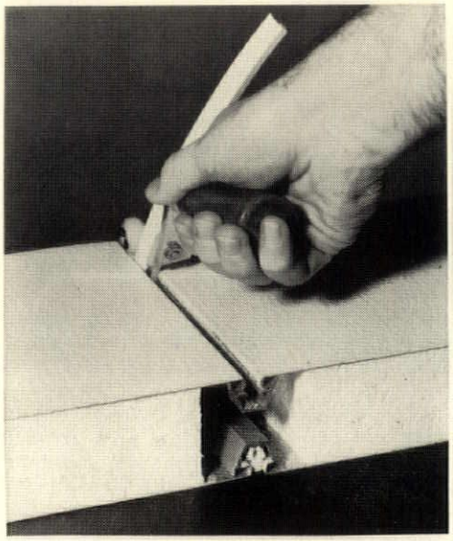
plies frames only, or complete structures enclosed by a variety of materials, with windows, doors, and other accessories included, but not wiring or plumbing.

The four standard buildings are: "High Contour," for high ceilings and unobstructed floor space, available in eave heights of 12, 16, and 20 feet and spans of 32, 40, 50, 60, 70, 80, and 100 feet; "Low Contour," whose roof slope is 1 inch to the foot, same sizes as above: "High Contour Crane," which supports a 5- or 10-ton crane, available in eave heights of 21½ to 34½ feet and spans of 40 through 80 feet; and "Multiple Section," a combination of any of the three.

Manufacturer: Bethlehem Buildings, Bethlehem Fabricators, Inc., Bethlehem, Pa.

ZIPPERED WALL

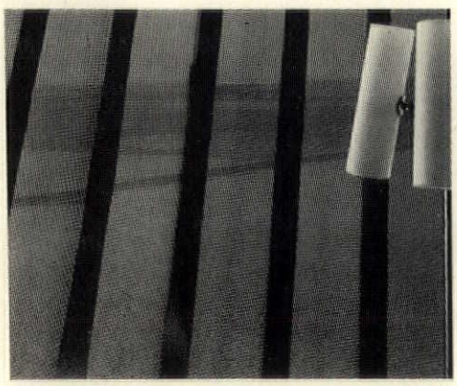
A quick technique for assembling exterior walls is Alcoa's new *Snug Seam* joint for Alply insulated panels (see photo) and corrugated roofing and siding. In either case, whether double panel or single sheet, the rolled panel edges hook into slots in an aluminum extrusion which forms the under part of the seam. Wedged into the seam on the panel face by a special tool which Alcoa



supplies, is the zipper, a neoprene strip locking panel edges and extrusion together.

Available as a joint for any size of Alply or corrugated sheet, including the maximum lengths of 18 and 30 feet, Snug Seam is limited to one- and two-story buildings now, but Alcoa is exploring ways of adapting the same principle to multistory construction. At present its chief virtue is quick assembly —and even faster disassembly: It takes two to four minutes to join 8-foot panels and less than 10 seconds to take them apart. Since all parts are re-usable, Snug-Seamed buildings could be put up as temporary structures and moved to new locations as needed.

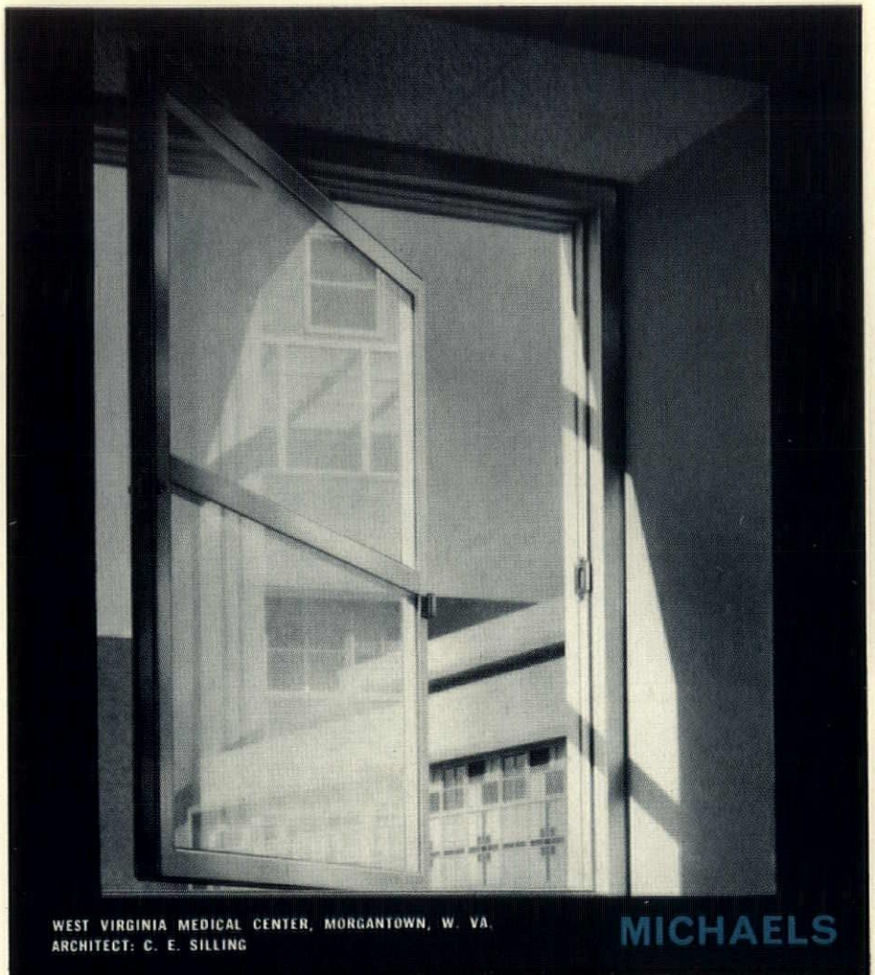
Manufacturer: Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh 19.



PERFORATED BLINDS

Du Pont's *"Tontine" Triglas* fabric for vertical blinds, the opaque glass fabric doubly coated with vinyl first used in New York's Chase Manhattan Bank, has been used again for the big, sloping windows of the TWA terminal at Idlewild. TWA's problem was to provide effective sun control without blocking the view of the runway even when the blinds were closed. By perforating Triglas with tiny holes, Du Pont's Fabrics and

continued on page 50



WEST VIRGINIA MEDICAL CENTER, MORGANTOWN, W. VA.
ARCHITECT: C. E. SILLING

MICHAELS

All vertically pivoted windows pivot, but that's where the similarity ends! Michaels VPA-1 windows do a lot more. Here are a few of their more important features: Key-operated locks, to prevent tampering by unauthorized personnel. Full 360° rotation, with positive automatic locking in the 180° inside washing position; Variable glazing accommodation, single or double, up to 1" thick; Positive weather-tightness; Strong tubular sash with added corner reinforcement; Precise tolerance control of operating components; Optional hoppers within, above, or below pivoted section. VPA-1's are suitable for all types of contemporary construction, including masonry, concrete, and metal wall buildings. Full details available on request.

Vertically Pivoted Windows

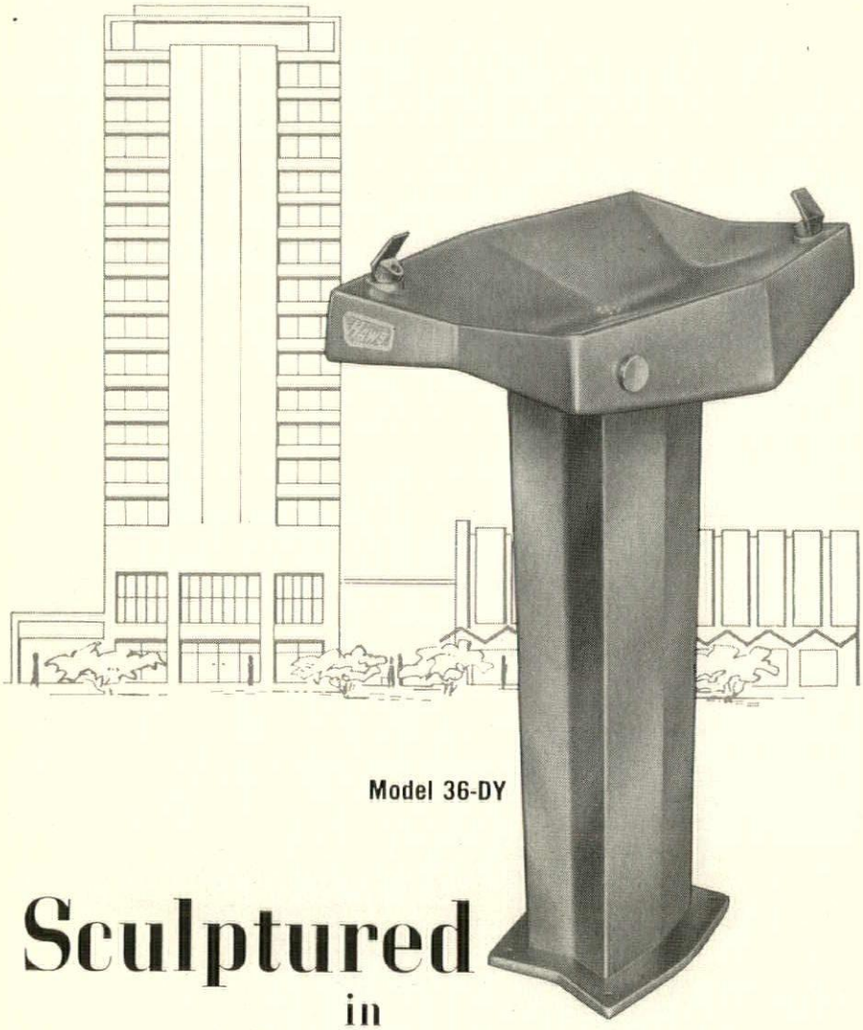
THE MICHAELS ART BRONZE CO.,
Mailing address: P. O. Box 668, Covington, Ky.
Plant & Office: Kenton Lands Road, Erlanger, Ky.

Metal Curtain Walls—Windows—Entrance Doors—Custom Store Fronts—Railings—Ecclesiastical Work—Bank Equipment—Tablets & Signs—Architectural Castings—Exhibit Cases

Key Operated Lock

M
A B C

continued from page 49



Model 36-DY

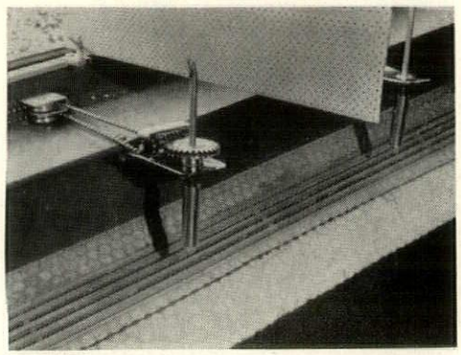
Sculptured in tenzaloy aluminum

MORE than a useful fountain, this new Haws twin bubbler unit, cast in Tenzaloy Aluminum, adds sculptured *outdoor emphasis* to architectural design. Model 36-DY echoes modern lines with bold form and imparts a quiet richness of color with its muted bronze, hard anodized finish. The surface resists scuffs, scratches and corrosion, the tough body wards off dents and nicks. Clients will appreciate Model 36-DY's vandal-proof features: Simple, push-button valves, locked-on bubblers, and under-plate to safeguard trim. For architectural beauty that lasts to the client's satisfaction, specify 36-DY.

Write today for complete specifications:

HAWS DRINKING FAUCET COMPANY
Since 1909

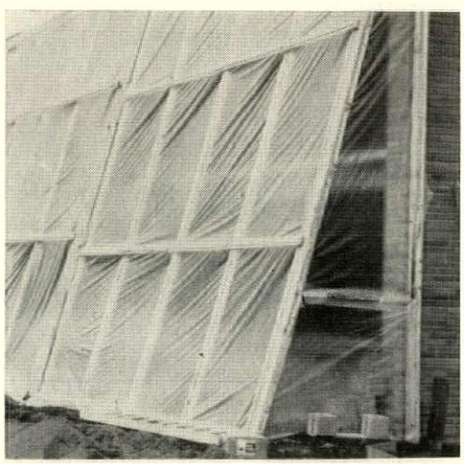
GENERAL OFFICES
1441 FOURTH STREET • BERKELEY 10, CALIFORNIA
EXPORT DEPARTMENT
19 COLUMBUS AVENUE • SAN FRANCISCO 11, CALIFORNIA, U.S.A.



Finishes Department added visibility (see photo) to the material's dimensional stability and resistance to heat, flame, and light. Perforated Triglas is now a part of the Du Pont line.

The TWA blinds were designed and detailed by Warren Platner of Eero Saarinen & Associates. The vanes are 15 inches wide, 15 inches apart, and pivot in special brackets (photo). An adjustable spring tensioning device keeps the vanes stretched tight.

Fabric Manufacturer: E. I. DuPont de Nemours & Co., Wilmington 98, Del. *Blind Manufacturer:* Vertical Louvered Blind Co., Inc., 303 Fifth Ave., New York 16. *Installation:* Verticals, Inc., 621 E. 132 St., New York 37.

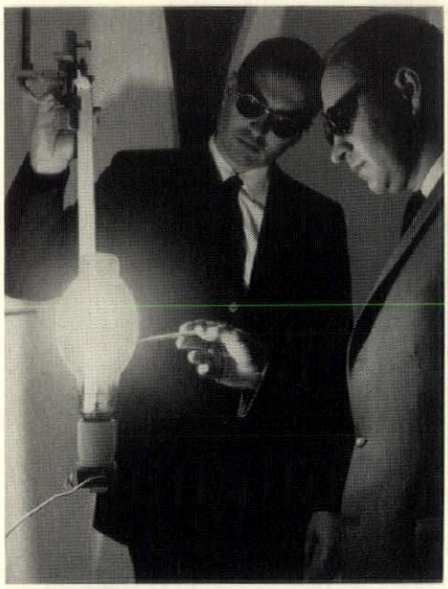


TOUGH FILM

Union Carbide's *Visqueen* polyethylene film comes in a new version that is stronger and more resistant to rips and punctures than previous films. Its newly acquired toughness prevents damage to temporary enclosures (photo), vapor barriers, and materials and equipment wrapped in film.

The new covering comes in black (opaque) and natural (transparent) in several thicknesses and widths, in rolls of 100 feet. Cost: 2 to 3 cents per square foot.

Manufacturer: Building Materials Dept., Union Carbide Corp., 270 Park Ave., New York 17.



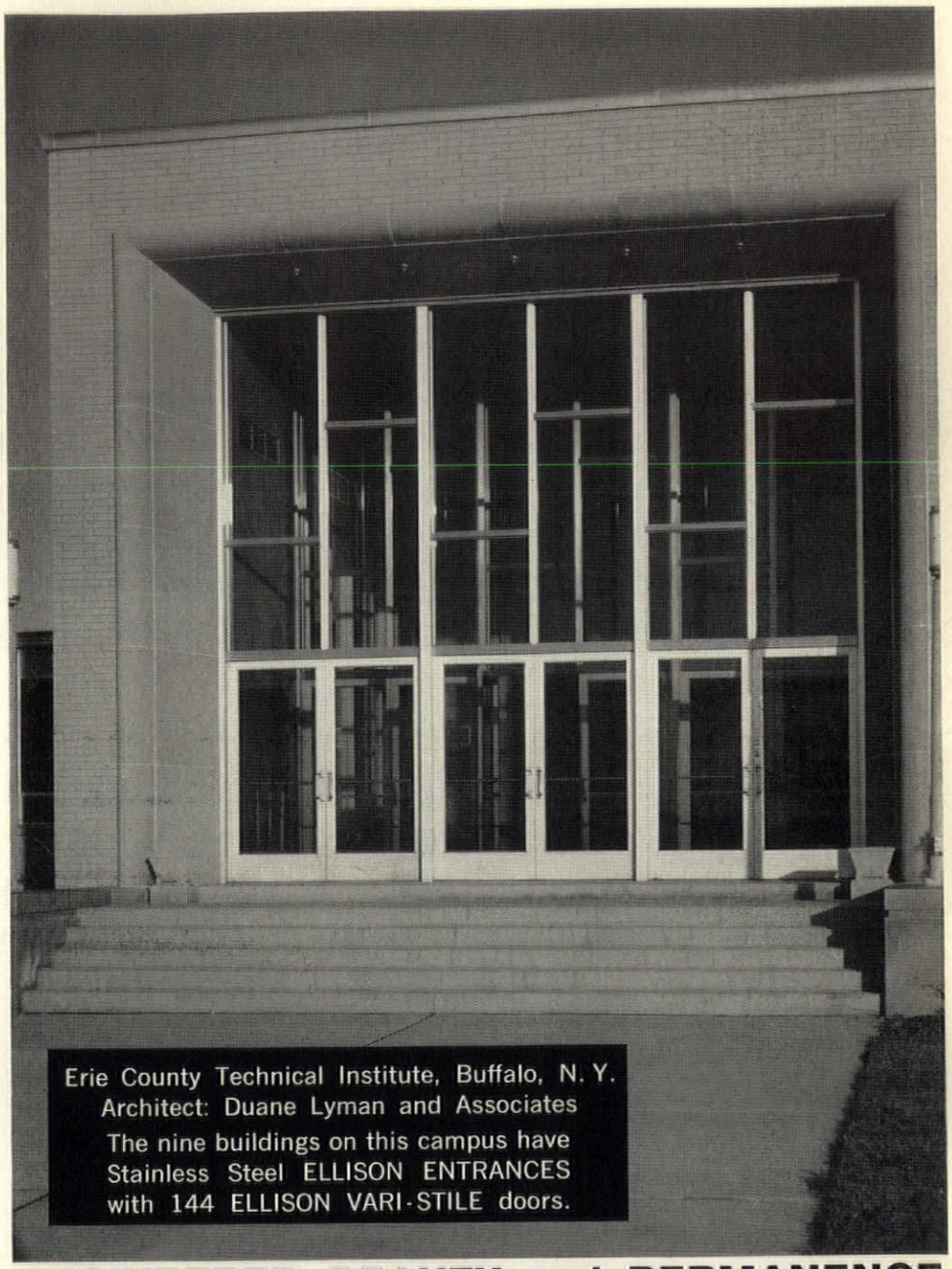
PREVIEWS

A lamp twice as efficient as the best of today's light sources—145 lumens per watt compared with 50 lumens for color-improved mercury lamps—is in laboratory development at General Electric's Nela Park. Shown peering into one of the new lamps, their eyes shielded by dark glasses, are the developers, Dr. Kurt Schmidt and William C. Louden. The lamp uses sodium metallic vapor sealed into a tube of GE's Lucalox synthetic ceramic. This is the first time, according to GE, that sodium vapor has been used at temperatures and pressures high enough to transmit white light instead of the single-wave yellow that has limited previous sodium lamps. Expected uses: outdoor applications where mercury lamps are now common.

Lightweight concrete made of bagasse (the residue of sugar cane) and cement may become an important new industry in Hawaii, filling a need for a cheap, durable building material. Gabriel P. Bourlin, the Honolulu engineer who developed the bagasse mixture, which he calls *Bagcrete,* is also experimenting with pineapple, banana, and hemp fibers, processing them to remove acid, wax, or sugar, which prevent bonding to cement.

Pittsburgh Plate Glass Co. will build a multimillion-dollar plant in Cumberland, Md., to produce float glass (FORUM, Oct. '62). The float process, which PPG will manufacture under license from Britain's Pilkington Brothers Ltd., eliminates the grinding and polishing of flat glass.

The Planet Corp. of Lansing, Mich., will design and build a pair of "elevator-trains" to go inside the triangular legs of the 630-foot-high St. Louis Gateway Arch, now under construction. Each 40-passenger train will consist of eight small capsules; one train will ascend to an observation platform as the other descends. END



ENGINEERED BEAUTY and PERMANENCE

architectural metal work in doors and contiguous framing

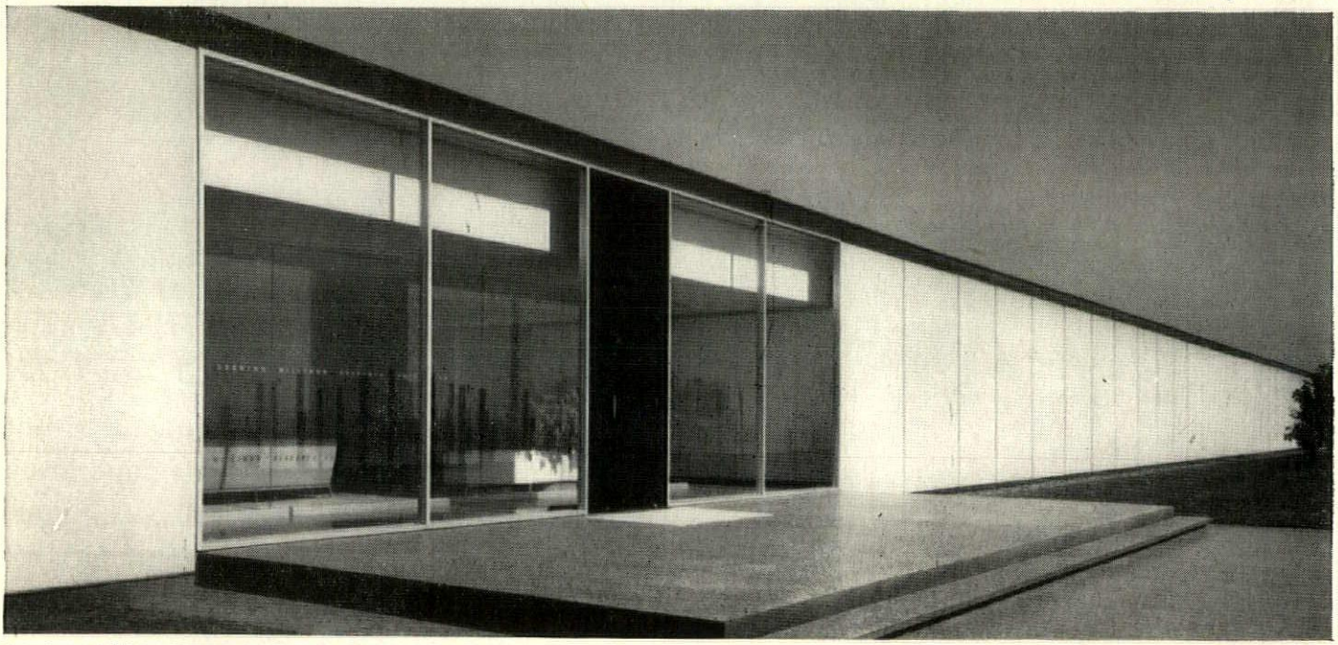
Ellison VARI-STILE doors offer the architect much latitude and flexibility in design... plus adjustable checking and operating controls invisibly contained in the bottom door rails. The doors are available in any finish in any metal and a choice of face widths. Ellison engineers welcome the opportunity to assist architects in the design of doors including sizes up to 4′ wide by 10′ high.

Ellison ENTRANCES

the BALANCED DOOR—the VARI-STILE door in Bronze, Steel, Aluminum or Stainless Steel

ELLISON BRONZE CO., Inc., Jamestown, N. Y.

SKIDMORE, OWINGS & MERRILL chose precast white concrete curtain wall construction for this textile research laboratory at Spartanburg, S. C. The panels are made with ATLAS WHITE portland cement. They were prestressed vertically for dimensional stability, and further reinforced with wire mesh. An exposed quartz aggregate gives pleasing surface interest to the continuous walls, which are relieved only by the entranceway. To obtain the desired "U" factor, panels were cast with a rigid 1½-inch sandwich layer of foam glass. Approximately 7½ by 20½ feet, and 6 inches thick, they are anchored to concrete block back-up wall. □ Today, more architects are selecting precast concrete for its strength, durability and adaptability to climatic conditions, as well as for its beauty, construction economy and easy maintenance. Any requirement of size, shape, texture, color and pattern can be attained. □ For specific information about panels, facings and cast stone units, talk with your local precast concrete manufacturer. For general information, get our brochure, "White Concrete in Architecture." Write Universal Atlas, 100 Park Avenue, New York 17, N. Y.

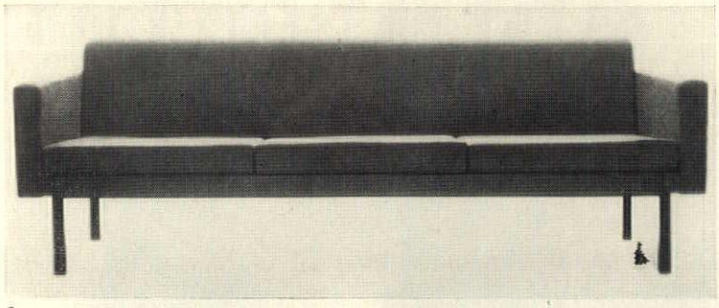


Deering Milliken Research Corporation, Spartanburg, S. C. **Architects:** Skidmore, Owings & Merrill, New York, N. Y. **Contractor:** Daniel Construction Co., Greenville, S. C. **Precast Concrete Panels:** Greenville Concrete Co. **Back-Up Concrete Block:** Spartanburg Concrete Company.

USS **Universal Atlas Cement**
Division of
United States Steel

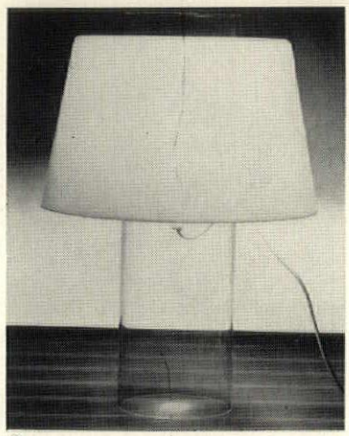
"USS" and "Atlas" are registered trademarks WF-60

Finnish imports, Larsen prints



1

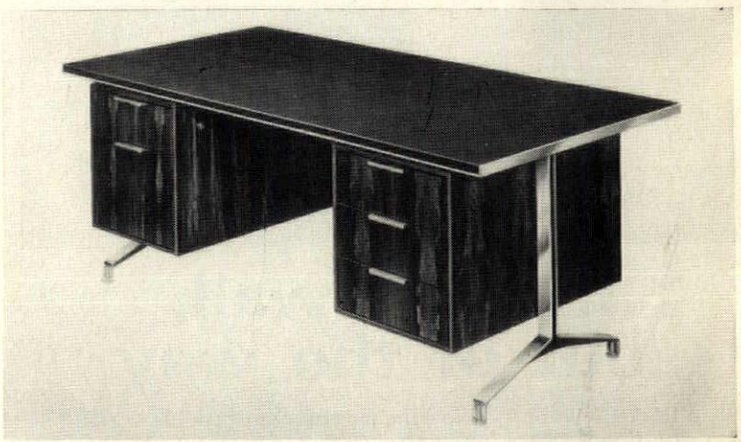
2



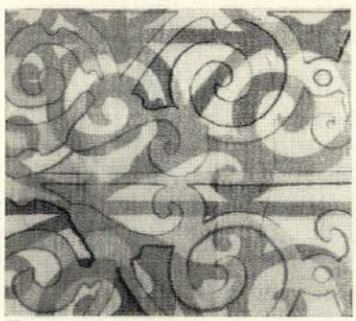
3

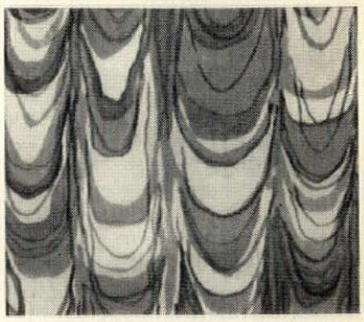
4

5



6





7

1. CLUB SOFA. Stendig, Inc. is the importer of a new contract series designed by Finnish Architect Voitto Haapalainen. This sofa, a three-seater of foam rubber on rubber webbing, is 74½ inches wide. The legs are square steel tubing. Net cost, without fabric, is $190.

2. COMPACT STORAGE. Yawman & Erbe's new microfilm cabinet stores 900 reels of 16 mm. film in sectioned drawers, is easily converted to microcard files when two partitions are taken out. Cost of file shown: $234 to $263.

3. CYLINDRICAL LAMP. This handsome lamp, suitable for offices or reception rooms, is a cylinder of clear plastic with a milky shade. Designed by Yki Nummi, the lamp is imported by International Contract Furnishings, Inc. Cost: $72.

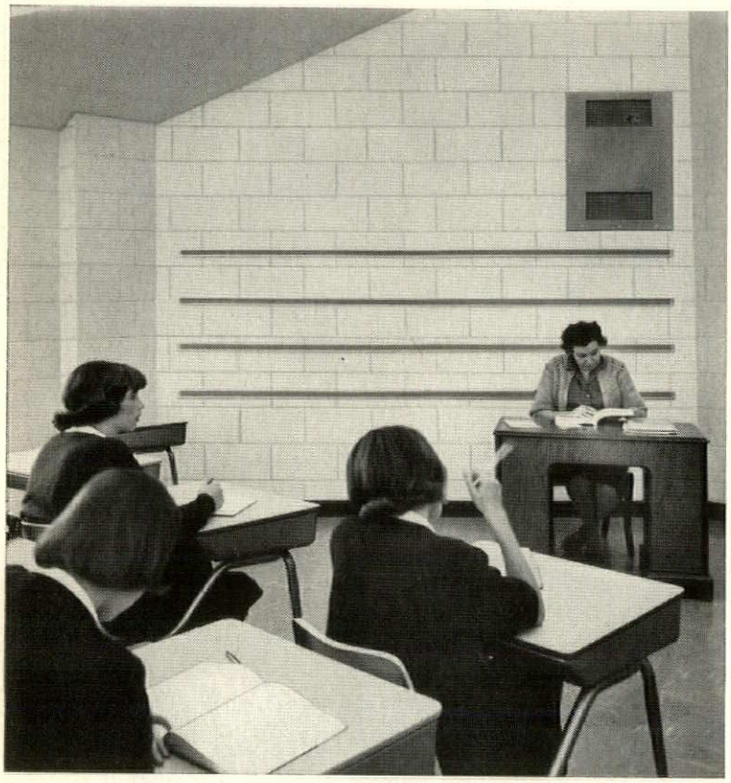
4. FINNISH CHAIRS. Six furniture manufacturers in Finland export their wares to International Contract Furnishings under the name Fennoform Oy. The "Vista" easy chair above, an Olli Mannermaa design, is upholstered in handwoven wool over a padded plastic frame. Cost: about $275.

5. OFFICE SEATING. Another Olli Mannermaa design for International Contract Furnishings is the "Testa" chair, shown in three versions: a conference chair (left and rear) with an upholstered back and seat and black or chrome steel legs, $155; an upholstered swivel chair, $200 up; and a posture chair, with adjustable back rest, from $105.

6. ROSEWOOD DESK. The Imperial Desk Co.'s new "Stellante" executive desks, designed by Raymond Loewy/William Snaith, are of rosewood or walnut with a stainless-steel band around the top and stainless legs. This model is rosewood, has a black vinyl top, and costs $784.

7. LARSEN FABRICS. Copenhagen's Tivoli Gardens inspired the name of Jack Lenor Larsen's new fabric collection. At left, "Pantomime" (for Tivoli's theater) is a smooth cotton drapery and upholstery fabric designed by Selma Brody. "Aurora" is a mohair-cotton-viscose mixture by the Larsen Design Corp. Both are 48 inches wide. Cost: $11.70 and $15.75 per yard. END

Look how Hevi-Duty® put this new ultraquiet transformer



...in the wall, out of the way

IN THE WALL — No longer must you provide costly floor space and extra closets for bulky, noisy transformers. This new flush-mounted In-Wall Transformer from Hevi-Duty fits a standard concrete block wall. The 25 kva unit, for example, measures only 21″ wide, 30″ high, 12″ deep.

QUIET — Put it anywhere — classroom, hospital corridor, church auditorium. It has a sound rating of less than 41 decibels.

COOL — Grill panel temperature rise does not exceed 35°C.

SAFE — Vision-proof, tamper-proof grill and integrally-mounted primary circuit breaker make it people-safe, power-safe.

Available in single- and three-phase ratings from 5 through 50 kva.

For further information mail the coupon below.

HEVI-DUTY® BPC® A Division of Basic Products Corporation

Hevi-Duty Electric Company
Box 563, Milwaukee 1, Wisconsin
In Canada: Sola-Basic Products, Ltd., 377 Evans Ave., Toronto 18, Ont

Dept. AF-2, Hevi-Duty Electric Co., Box 563, Milwaukee 1, Wis.
Gentlemen: Please send me Bulletin No. T-9001

Name .....
Company .....
Address .....
City .....State .....

LOREN COOK PRESENTS...

SPUN-TIER®

ALL-ALUMINUM INCLUDING BLOWER WHEEL

A NEW FAMILY OF ROOF VENTILATOR STYLES DESIGNED FOR HARMONIOUS APPEARANCE

4-TIER
Centrifugal, direct or belt drive
1,000 to 24,000 CFM

3-TIER
Centrifugal, direct drive
100 to 24,000 CFM

2-TIER
Propeller, direct or belt drive
200 to 33,000 CFM

1-TIER
Pressure relief or intake

They look alike in every size and style
SPUN-TIER* . . designed for good looks and improved performance. Top tiers supply ample air to cool separate motor chamber and reduce static at discharge. New airfoil aluminum wheel design is more efficient. Reduced overall height. Positive anti-backdraft at inlet.

WRITE FOR FREE 32-PAGE CATALOG. See Sweet's 1963 Architectural File after January.

THE LOREN COOK COMPANY
BEREA, OHIO
Member AMCA

Cook SPUN-TIER

*Patent Pending

Copyright 1962 The Loren Cook Co.

EDITOR-IN-CHIEF: Henry R. Luce
CHAIRMAN, EXEC. COMM.: Roy E. Larsen

CHAIRMAN OF THE BOARD: Andrew Heiskell
PRESIDENT: James A. Linen
EDITORIAL DIRECTOR: Hedley Donovan

EDITOR
Douglas Haskell, FAIA

MANAGING EDITOR
Peter Blake, AIA

ART DIRECTOR
Paul Grotz

ASSISTANT MANAGING EDITOR
Ogden Tanner, AIA

SENIOR EDITORS: Donald Canty,
David B. Carlson, Walter McQuade, AIA

ASSOCIATE EDITORS: Mary Elizabeth Allison,
Marshall Burchard, Philip Herrera,
Anne Peyton, Richard Saunders (Washington)

TECHNOLOGY EDITOR
Bernard P. Spring, AIA

ASSISTANT TO THE EDITOR
Mary Jane Lightbown

RESEARCH STAFF: Benita G. Jones,
Anne Le Crenier

ART ASSOCIATES: Martha Blake, Charlotte Winter
Graham Redgrave-Rust, assistant

EDITORIAL ASSISTANTS: Charles Bryan,
Henry Martin Ottmann, Ann Wilson

CONSULTANTS: Miles L. Colean, FAIA,
Jane Jacobs, Lawrence Lessing,
Richard A. Miller, AIA, Allan Temko

PUBLISHER
Ralph Delahaye Paine Jr.

ASSOCIATE PUBLISHER
Joseph C. Hazen Jr., AIA

GENERAL MANAGER
John J. Frey

BUSINESS MANAGER
Lawrence W. Mester

ADVERTISING DIRECTOR
S. C. Lawson

ADVERTISING MANAGER
John Beard

PRODUCTION MANAGER
John R. Wheeler

America's biggest stagnant industry. This month the state of the Union, and particularly the state of its economy, are very much in the foreground, what with the President, the Congress, and various lesser officials weighing our prospects and potentials.

For the nation's largest industry—construction—such appraisals should be embarrassing. Concealed behind the annual "new records for building" (see page 5), is the gloomy fact that construction is really a stagnant industry.

Building's stagnation is nothing new—it has been with us since 1957. The total volume of building, adjusted for price increases, has not grown in relation to the total output of the nation's goods and services since the recession of 1958. Prior to that, construction grew, in real terms, at an average rate of 4.7 per cent a year, well above the 3 to 3.5 per cent growth rate of real GNP. Since then the average rate has actually shown a small decline.

Whether tax cuts or various other federally inspired incentives can pull construction back to its former high growth rate remains to be seen. But the industry itself can do much to help itself. In fact, the opportunity for the industry to become more efficient comes when total demand is not too strong.

One of the key needs in building today is to continue to work toward a better allocation of construction resources. Various industry groups, including the AIA, the Building Research Institute, and the National Association of Homebuilders, have given some thought to this, but there has not been anything like broad industry-wide support for a coherent program aimed at greater efficiency—and higher productivity. A vital adjunct of such a program is to promote more technological progress, and to disperse the fruits of such advances quickly and effectively. There is, also, the everlastingly vexing problem of developing a solid body of statistics, particularly on the real cost of total building —and labor—in different parts of the nation. The federal government is now at work on a comprehensive construction cost index, but funds are inadequate.

When the whole economy regains its steam, construction will be further stimulated. But the building industry cannot stand pat, it cannot afford to be satisfied in stagnation. It has to help itself to grow, and the time to start is now.

Congratulations! We have said some harsh things on this page in the past (Sept. '62) about the original scheme for the U.S. Pavilion for the 1964-65 New York World's Fair.

Now that the original scheme has been abandoned, we want to congratulate the architects, Charles Luckman Associates, for the new—and approved—design submitted by them (below and page 5). The design is handsome, dignified, and representative of the high standards achieved by U.S. architecture.

J. ALEX LANGLEY

On a key seven-acre site in downtown Montreal, Bill Zeckendorf and his architects have created a whole new commercial center—one that is 40 per cent buildings and 60 per cent open plaza:

PLACE VILLE MARIE

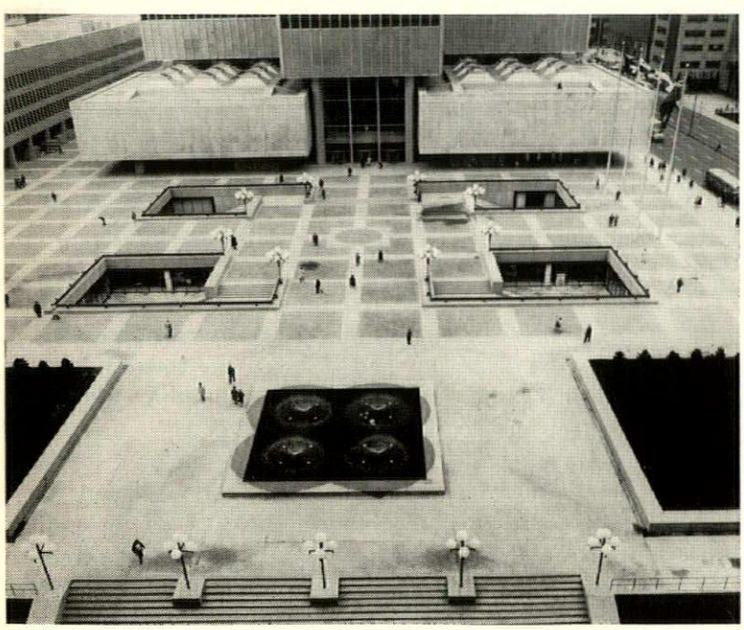
Let us first approach Place Ville Marie the way the people of Montreal approach it: the 55,000 commuters who pass through and under it every day; those who come to shop in the subsurface pedestrian streets of its promenade, or to visit one of the two theaters there, or to dine in one of the seven restaurants; those who come through the lofty spaces of the main lobbies to work in the tower offices above; those who simply come to stroll in the 4-acre plaza, among the varied urban spaces around and between the tower's massive limestone corners and the long, wall-like building along the west edge of the site.

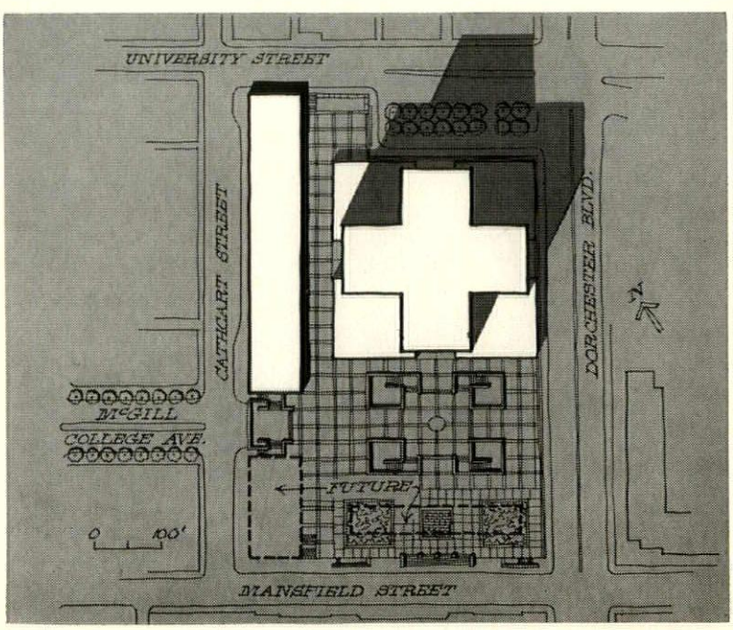
To all of these people, the 48-story tower almost disappears from view as it rises; so we shall cut the tower off, as it were, and put it aside for a moment. This great shaft, its plan a cross, is the most important part of the Montreal sky line (it has, in fact, *created* Montreal's new sky line). But it is far from the most important part of Place Ville Marie.

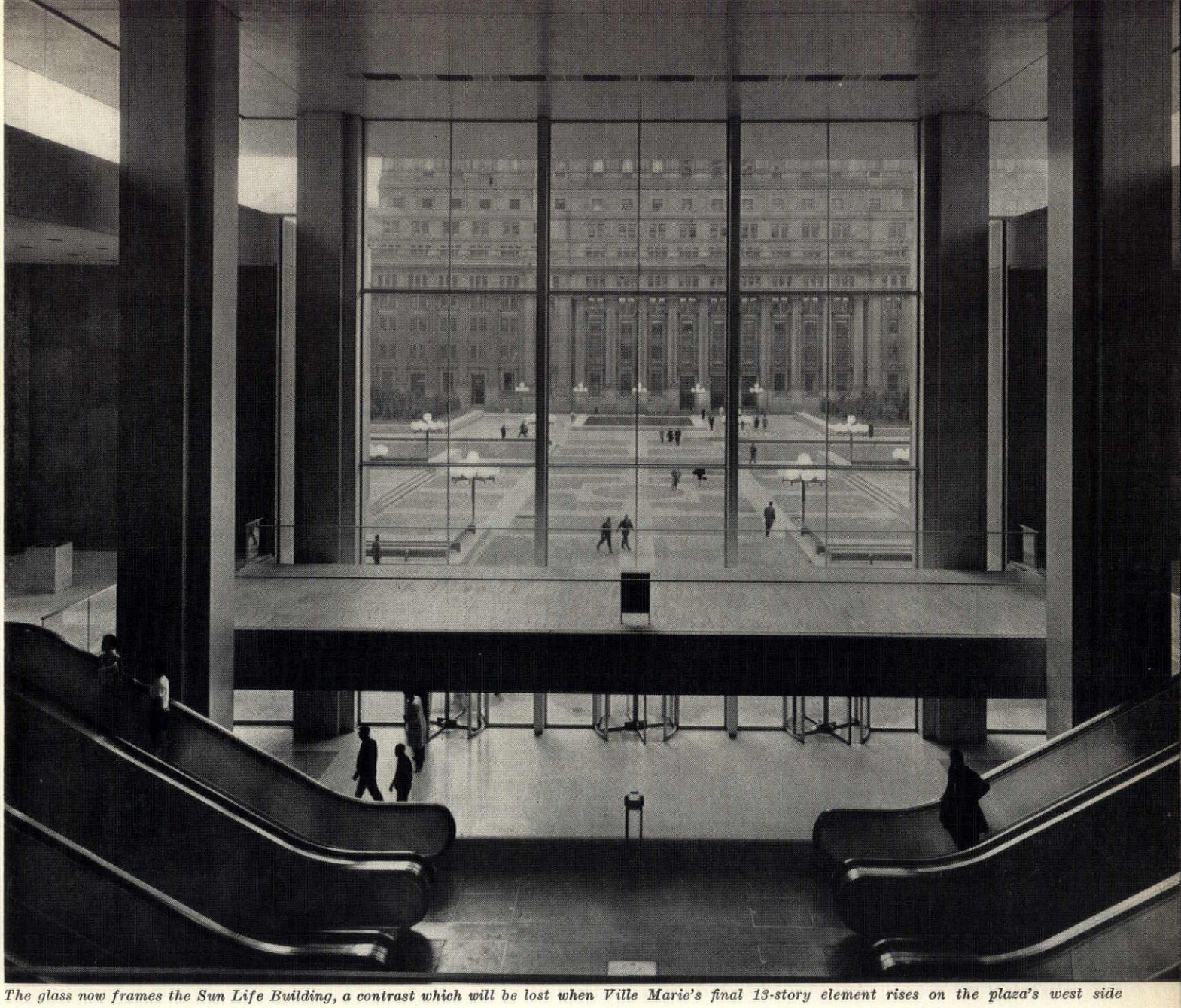
PHOTOS: GEORGE CSERNA

The tower's glazed entrance looms above the geometry of the spacious plaza.

The Imperial Oil Building is at left of tower in photo and plan below.







The glass now frames the Sun Life Building, a contrast which will be lost when Ville Marie's final 13-story element rises on the plaza's west side

The entrance was scaled to the vast plaza—and the concept scaled to the project's immense size

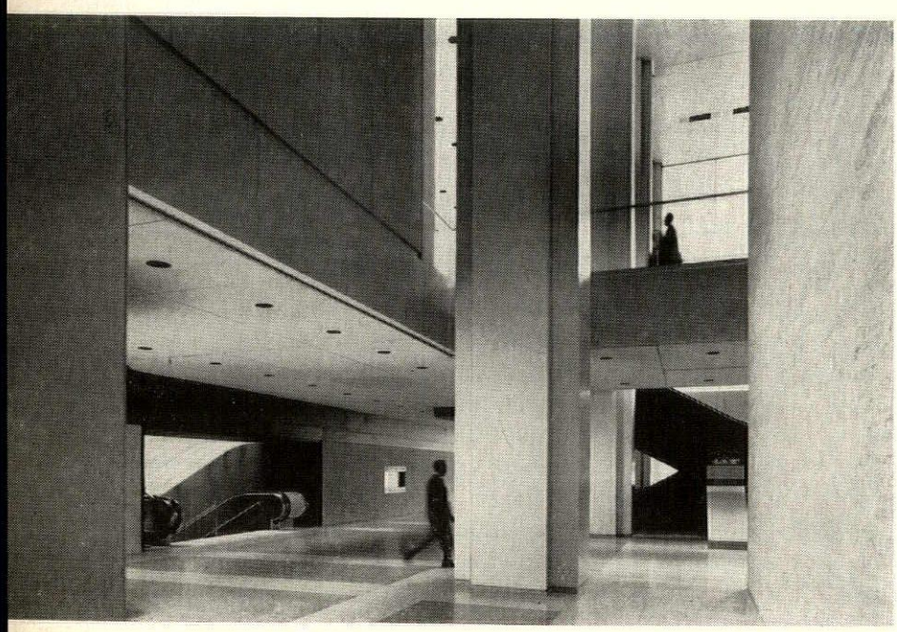
Place Ville Marie has the greatest total area—3,071,097 square feet, including facilities below grade—of any office building in the world. Its eventual total cost is estimated at more than $105 million, a near record for a single speculative project. The 1.5 million square feet of net rentable space in the tower alone equaled all of the first-class office space built in Montreal since World War II. Ville Marie, moreover, prompted a rash of new construction in its immediate area which added another 1.5 million square feet. The effect has been to solidify Montreal's position as Canada's commercial capital—and to give a badly needed display of the faith of foreign investors in Canada's future.

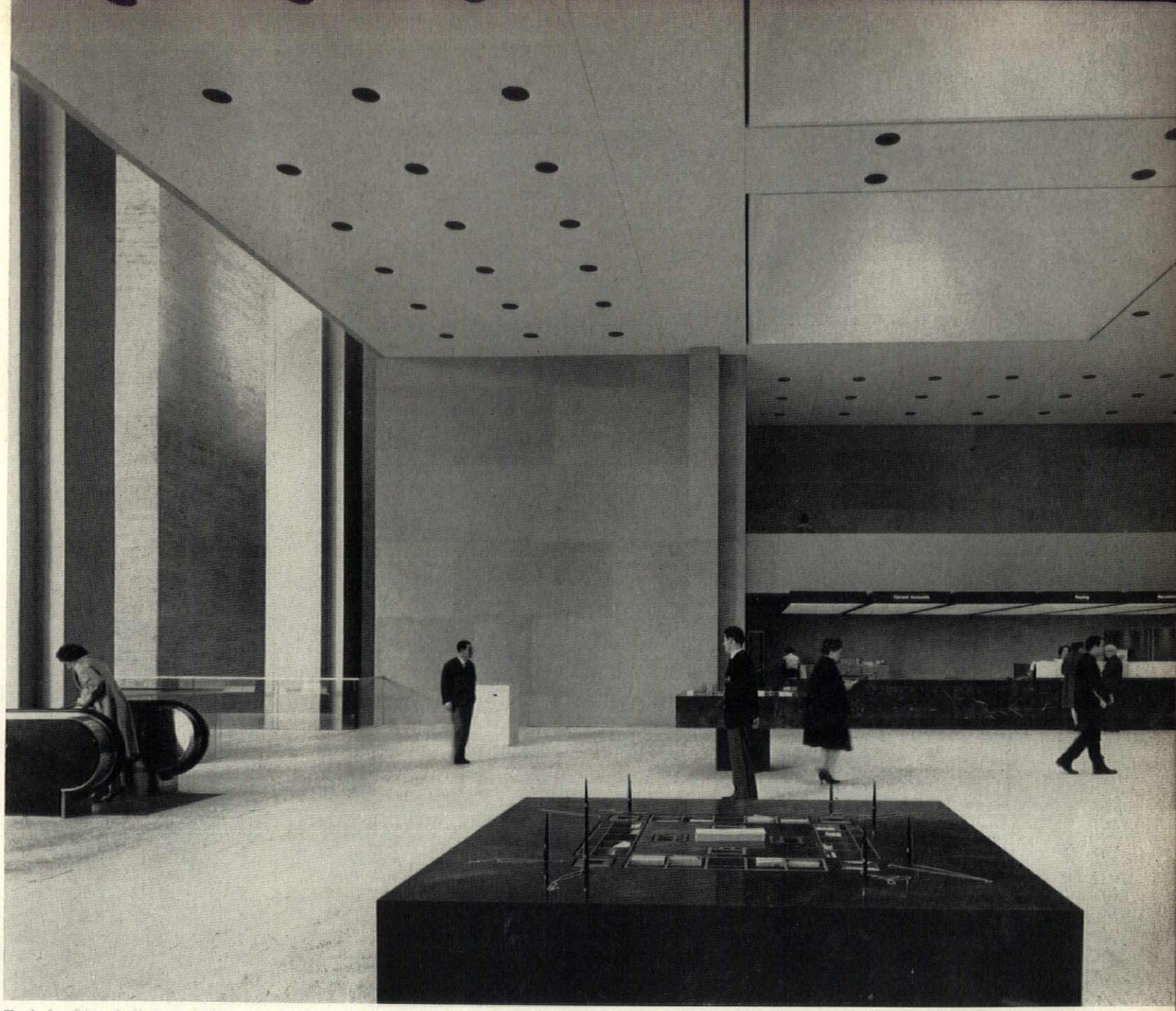
So immense is Ville Marie that it almost proved too big even for William Zeckendorf (see page 83). Yet its deepest significance is qualitative rather than quantitive. Zeckendorf gave I. M. Pei & Associates one of the most sweeping opportunities which any architectural firm has ever had to change the face of a major North American city. The Pei office, with Henry N. Cobb as partner in charge, responded by making Ville Marie a milestone in urban architecture.

It is not that the separate elements—the cruciform tower, the five-story Imperial Oil Building to the north, the plaza, the shopping promenade and parking garage below— achieve more than occasional moments of architectural excellence in themselves. The tower is unusual in shape (see page 81) but quite usual in cladding; the Imperial Oil Building was intentionally underplayed, to the point of blandness; the plaza is a somewhat cold expanse of patterned concrete.

But the whole is much more impressive than the parts. Place Ville Marie is the ideal of Radiant City realized in a commercial development, its tower freeing room for the plaza below. Building masses are so related as to shape the openness at ground level into a succession of powerful spaces, each with its own character and its own boundaries. The results are a scale that is something more than human, an impact that is awesome in its vastness.

Skylights, visible through glass strip above (and in exterior photo below), illuminate the banking halls located in the solid corner "quadrants"





Each banking hall is a hollow two-story marble square. The ceiling, spotted with downlights, is given great depth by pyramidal wells.

The drama and expansiveness continue in the tall volumes of the tower's lobbies and banking hall

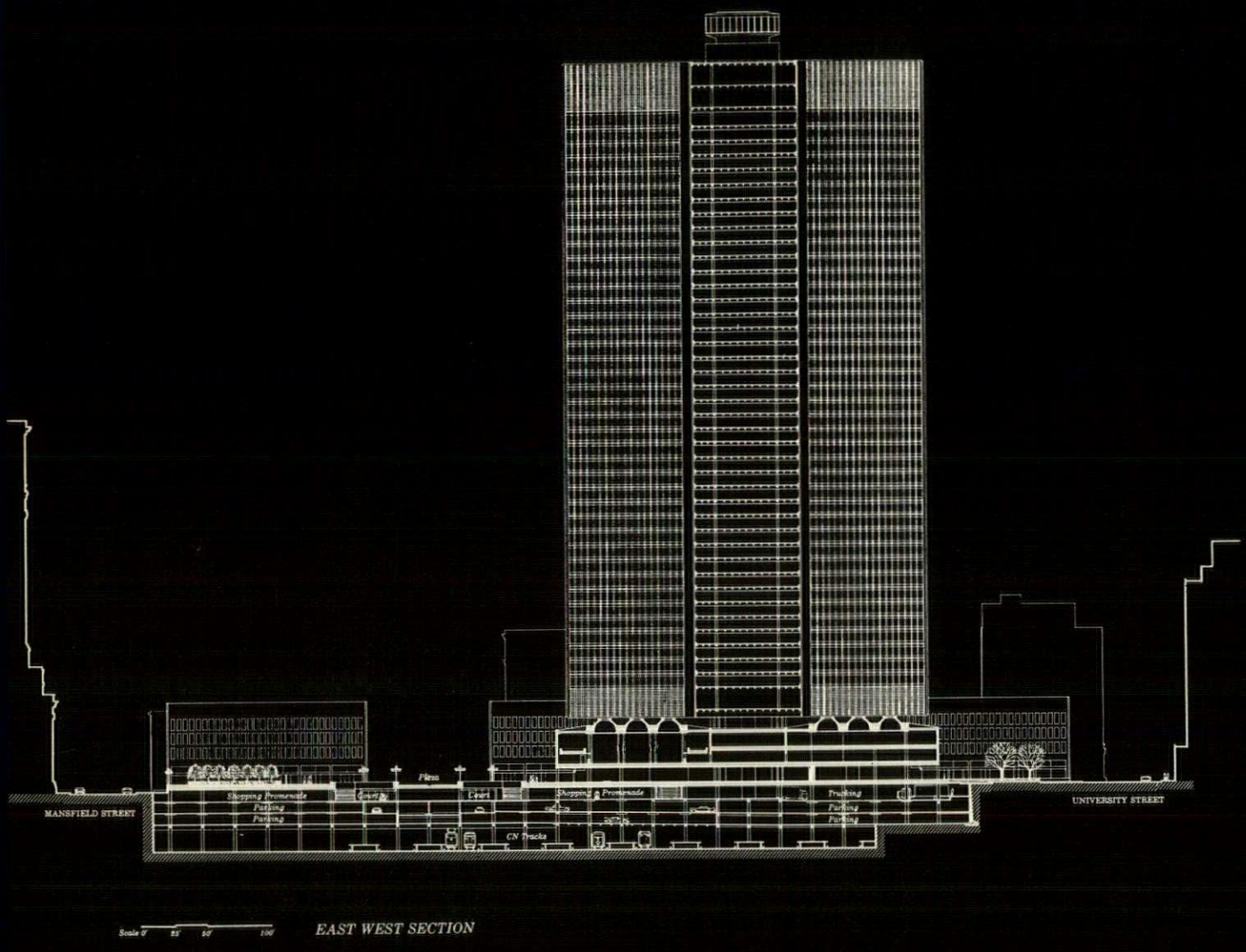
Inside the tower, the vastness is maintained. Public areas on the ground floor and mezzanine are a spectacular series of constantly changing volumes, created by an interplay of carefully separated solids and soaring voids.

The solids are the exposed columns of the tower's cantilevered wings, given cruciform covers to echo the shape of the building; the eight long rectangles of the elevator banks, and, perhaps most important, the walls of the four corner blocks, called "quadrants" by the Pei firm. The latter actually came as something of an afterthought—but a happy afterthought indeed.

Originally, the tower was designed to take its cross shape all the way down to the ground. But when the Royal Bank of Canada became the principal tenant (and the tower became the Royal Bank of Canada Building), it required space for a large main branch as well as three floors of offices above. The cruciform plan simply could not be made to yield a large banking hall, and so the quadrants were conceived. The banking hall was split between the two quadrants facing the plaza, the vault and the branch's offices were placed in the others, and all four were linked by bridges across the lobby at mezzanine level.

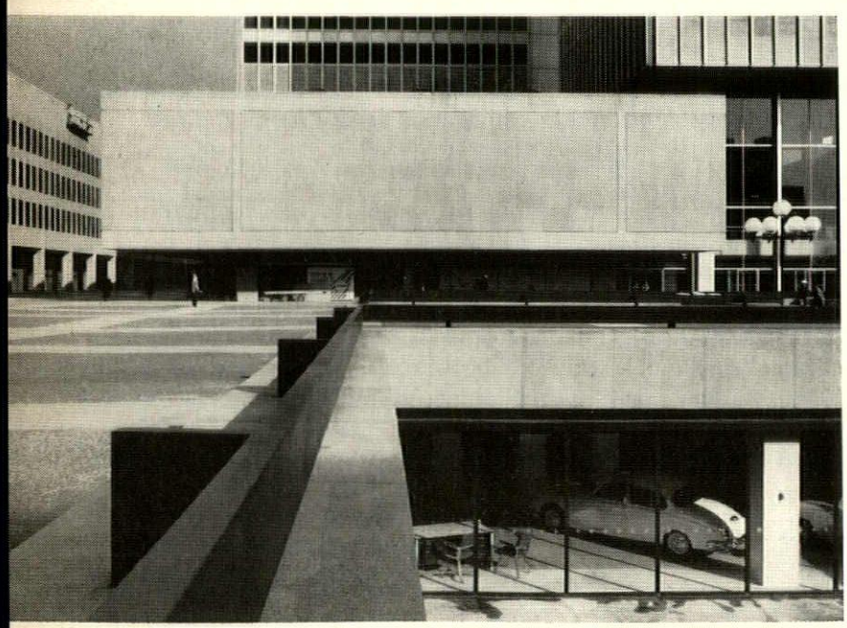
The windowless limestone masses, illuminated by pyramidal skylights popping from their roofs, play a vital role in defining and limiting the spaces in and around the plaza. They slip under the cantilevers of the tower's arms, the walls beneath enclosing three of the four lobbies. In the fourth, behind the huge glass entry wall looking out on the plaza, the banking hall is left open to the lobby on both sides, creating the building's single most impressive interior space.

In many ways the twin rooms of the banking hall typify the architectural aspects of Place Ville Marie. They are larger than life (so large that they have a feeling of emptiness even at busy hours), lavishly walled and appointed in various marbles. They are grandiose, hard, almost forbidding—and they are also quite dramatic.



EAST WEST SECTION

The vertical city of Ville Marie: the small building shown at left in the section is still to be started. Below: sunken courts light the promenade.



From Dominion Square, a block away, the shining green-gray aluminum curtain wall of the Royal Bank of Canada tower finally comes into full view

The tower is rooted in a four-story subsurface city where cars and people are carefully separated

Ville Marie is a microcosm of the vertical city. Its four subsurface levels contain nearly as much space as the tower above. Architect Cobb speaks of Ville Marie in terms of "the mixture of life"—the segregating and reordering of the core city's everyday commercial activities.

The ground floors of both office buildings were given over to uses which would bring life to the plaza by day and night —shops, banks, and restaurants. The 160,000-square-foot shopping promenade below is brightened by hollow courts carved out of the plaza and unified by a crisply designed standard storefront. Next, proceeding downward, are two levels of parking for 2,000 cars, then the tracks of the Canadian National Railways (and a stop for the subway system which Montreal now has under construction).

All of these elements—plus the neighboring CNR station and the Queen Elizabeth Hotel—are joined by an intricate web of pedestrian and vehicular circulation systems going up, down, and sideways. The elevators of the office building end at the plaza level, with escalators from there to the promenade and parking garage. Pedestrian tunnels lead from the promenade to the CNR station and the hotel, obviating the need to cross busy Dorchester Boulevard.

Autos come in at Cathcart Street to the north, which is not so busy, and from there proceed along a 150-foot-wide underground street to the garage or, again beneath Dorchester, to the CNR station and hotel. Trucks enter a separate tunnel two blocks away and load at underground docks.

Thus vehicular traffic generated by Ville Marie is kept away from the congested principal streets bounding its site—and also from the pedestrian. Almost the entire seven-acre surface, and the promenade as well, belong to him, a prodigious gift of space from Zeckendorf and his architects. There are mixed reports of how well this gift is being used: the plaza is generally busy, but the shops could use more customers. Perhaps it is just that buildings and spaces on the scale of Ville Marie take a while to get used to.

Place Ville Marie was a spectacular gamble—brought home by men, money, and sheer determination

Place Ville Marie is no single man's achievement. Important roles were played by the original client and landowner, Canadian National Railways, who kept the strategically located 7 acres inviolate for decades to make comprehensive development possible; by the developer CNR finally brought in, William Zeckendorf, a speculator with unusual concepts of what speculative building should be; by the architects and planners Zeckendorf retained, I.M. Pei and his talented crew of urbanists; and by the Royal Bank of Canada, which became the project's first major tenant at a time when it might have gone under for lack of tenants. In the end, it may have been Zeckendorf's nerve that counted most.

The big hole downtown and how it got filled

Place Ville Marie's site was one of three adjacent blocks CNR held in the heart of the city, consistently turning down offers to develop them piecemeal. In 1955, when Canada was flush with its second postwar boom, CNR President Donald Gordon concluded it was time to move. He turned to Zeckendorf.

With no guarantee that it would be approved, Zeckendorf promised to spend at least $250,000 on a master plan for the three blocks. Though it finally cost him $360,000, it was a good gamble: if CNR approved the plan they were obligated to lease the northernmost block—an open hole with the CNR tracks running through it, midway between Mount Royal and the river front—to Webb & Knapp (Canada) Ltd., an independent subsidiary to be formed expressly to carry out this job

Zeckendorf's imagination was fired by the size and placement of the site, but his business sense also must have been stimulated by downtown Montreal's overall office-space situation. The postwar spurt in office building construction had been modest, and most of it had provided relatively small floors. There was a dearth of the kind of first-class, 20,000-square-feet-to-a-floor space that Zeckendorf believes is the minimum needed by today's big corporations (Place Ville Marie floors have 38,000 square feet).

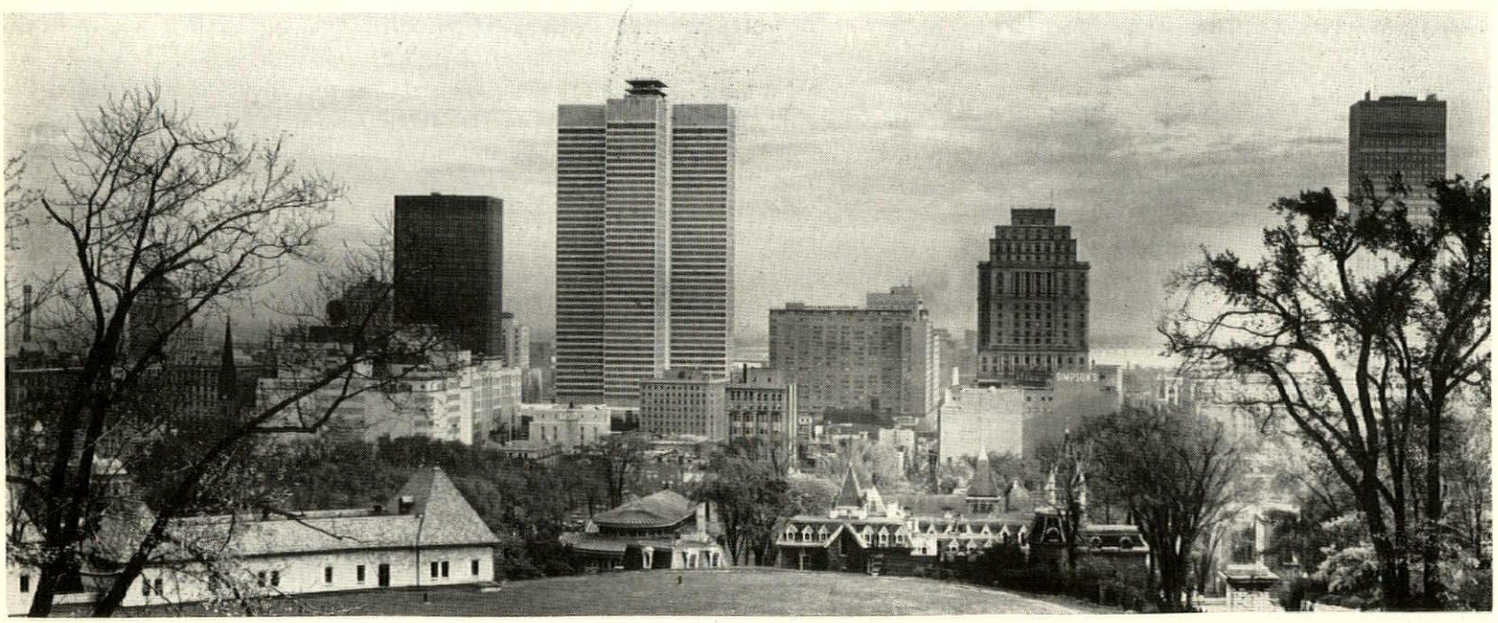
Zeckendorf's plan, developed by the Pei firm, was approved in 1957 and Webb & Knapp (Canada) signed a 99-year lease with CNR. The first big gamble had paid off. Zeckendorf immediately started a bigger one: Webb & Knapp (Canada) deposited $500,000 with CNR as security for completing Place Ville Marie within five years.

Reorganizing the city

Recognizing the major impact their project would have on Montreal, the Pei planners attempted to do two things for the city: to use Place Ville Marie as the fulcrum for organizing new traffic patterns, and to reorganize Montreal visually by establishing connections between the project and other key landmarks, principally Mount Royal.

CNR had already taken some steps in these directions. In 1945 it had reached an agreement with the city that any development of

Dorchester Boulevard's three new towers—C-I-L, Place Ville Marie and, far right, Canadian Imperial Bank—dominate view from Mt. Royal



the north block would provide a civic square, and that, in return, the streets around the site would be widened.

The Pei planners seized both ideas eagerly, particularly the widening of McGill College Avenue opening the prime vista from the plaza to the mountain (see photo, below right). They also realized, however, that the addition of Place Ville Marie's 10,000 office workers to the congested downtown could have grave consequences. A traffic study revealed that 30 per cent of all cars downtown were just passing through. To keep them moving, the Pei plan proposed a ring road system (see map, below) joined up with the city's already planned east–west expressway south of the business district. Included was a spur road connecting Ville Marie directly to the ring at the south. The scheme is presently in abeyance while Montreal concentrates on building a subway system.

To enhance the relationship between the plaza and the mountain, the plan proposed a landscaped pedestrian mall along the first block of McGill College Avenue, ending at the busy shopping cluster of Ste. Catherine Street. Unfortunately, the mall was blocked by the owner of one of the buildings fronting it. This was the only important defeat suffered by the planners of Place Ville Marie.

The quest for money

Zeckendorf had his plan and he had his lease—now he needed tenants. When none came forward, he took his third big gamble. Rather than risk losing "credibility," he pushed ahead with the project at full speed.

His courage was finally rewarded. In July, 1958, the Royal Bank of Canada signed a 99-year lease for 20 per cent of Place Ville Marie's cruciform tower. Other tenants soon began to follow the Royal Bank's lead.

Zeckendorf is lastingly grateful to the Royal Bank's late president, James Muir. "I'll do what I have to do to make Place Ville Marie possible," he quotes Muir as saying. "I cannot build your building, I cannot give you the money for it, but we will occupy an adequate amount of space to assure you of at least the faith and confidence of one Canadian element."

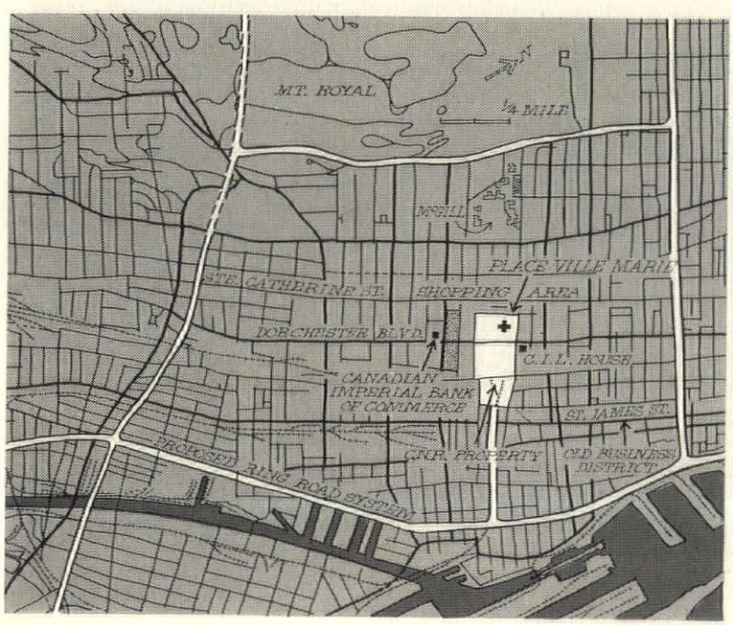
Finding money proved no easier than finding tenants. Webb & Knapp (Canada) was capitalized at $25 million through the sale of notes but part of the original commitment to CNR was that it spread some of this money over the rest of Canada. Zeckendorf searched far and wide for additional equity and long-term financing, but without success.

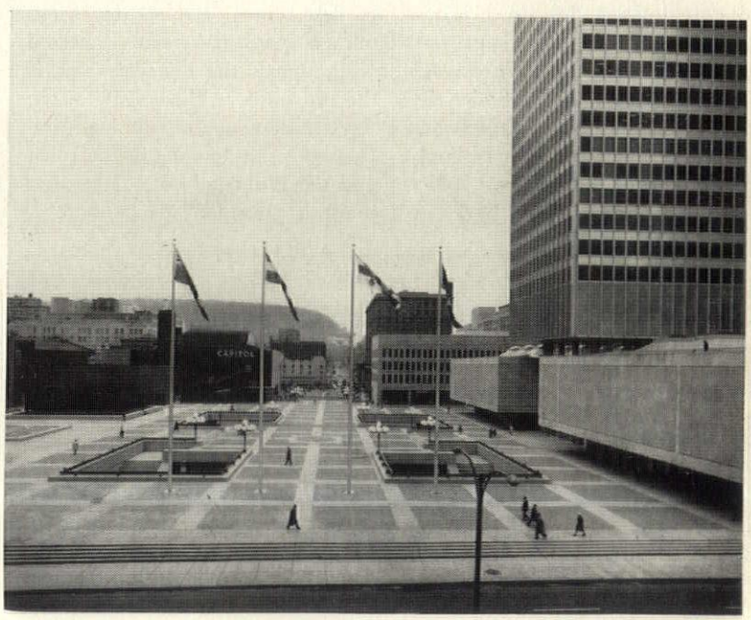
The upshot was that British interests—Second Covent Garden Property Co., Ltd., and Eagle Star Insurance Co.—were brought into partnership with Webb & Knapp (Canada) in a new company, Trizec Corporation, Ltd., to build and own Place Ville Marie. Trizec provided $30 million and was able to get the balance of the $80 million total cost in a 30-year mortgage at 6¾ per cent from Metropolitan Life Insurance Co. In the process, however, Zeckendorf took the first step toward giving the British a strong—and conservative—voice in his affairs.

The new Montreal

Place Ville Marie's impact on Montreal has been massive. It has, in one stroke, moved the center of gravity of Montreal's business district—and prompted a spurt of building nearby that has produced more office space than the

Master plan calls for ring road system (map, below) now in abeyance. Partially widened McGill College Avenue opens vista to Mt. Royal (below).





city can easily digest.

Before Place Ville Marie, Montreal's tallest building was the 26-story Sun-Life and its commercial center was St. James Street, four blocks to the south. Shortly after ground was broken for Place Ville Marie, two other projects were announced for Dorchester Boulevard: the 34-story C-I-L House and the 43-story Canadian Imperial Bank of Commerce building (both of which beat it to completion). Together, the three new skyscrapers dumped 3 million square feet of space on the market.

C-I-L House is virtually full, and Place Ville Marie and CIBC are reportedly about 80 to 85 per cent rented. "By conservative estimate we will be all leased up within six months," James Soden, new president of Webb & Knapp (Canada), says confidently of Place Ville Marie.

A glut of offices?

Is Montreal overbuilt? Comments one veteran realtor: "By my calculations, downtown is now overbuilt by about 30 per cent and we have more than enough office space until 1975." Soden disagrees: "There is definitely no short- or long-range oversupply of first- and second-rate office space," he insists—and backs up the contention with the pledge that the 400,000-square-foot Mansfield Building on the west edge of Place Ville Marie's plaza will be under construction before the end of this year.

Place Ville Marie itself is no bonanza. By all reports, it took some fierce concessions to bring rentals to their present level. All three new buildings, in fact, have had to take over old leases to get tenants and, in some cases, this has led to the purchase of whole buildings. Since the old space is hard to dispose of, the return from Place Ville Marie's top rents of $7 per square foot is often seriously reduced.

Zeckendorf acknowledges all this: "While I would say the return is adequate, it is certainly not consistent with the effort and the daring that went into the Place Ville Marie, nor with the extraordinary expense that was committed to create a building of this quality." But Zeckendorf, after all, was making a long-term investment. Says he, despite the modest return, "Of all the things our company has been connected with, this is the one we think is the crowning achievement," from the standpoint of design—and from the standpoint of "the spirit and the faith and confidence that made it possible."

FACTS AND FIGURES

Place Ville Marie, Montreal, Canada. Landowner: Canadian National Railways. Developer: Webb & Knapp (Canada) Ltd. Owner of Place Ville Marie: Trizec Corporation Ltd.

Architects and planners: I. M. Pei & Associates (Partner in charge: Henry N. Cobb, city planner: Vincent Ponte). Associate architects: Affleck, Desbarats, Dimakopoulos, Lebensold, Michaud, Sise. Engineers: Brett-Ouellette-Blauer Associates (structural), Jas. P. Keith & Associates (mechanical, electrical). Consultants: Severud-Elstad-Krueger Associates (structural), Cosentini Associates (mechanical, electrical). General contractor: The Foundation Company of Canada Ltd.

Development cost: $80 million (material and equipment: $55.4 million, labor: $24.6 million). Total area: 3,071,097 square feet. Total rentable area: 2,300,000 square feet.

There was no gambling with structural stability

While Zeckendorf was having troubles getting Place Ville Marie built at all, his architects and engineers were having some problems of their own with the structure of their cruciform tower. A cross would seem a simple, stable sort of shape for a tall building; its arms, for one thing, could help brace each other against the wind. But the designers soon found that a cross also can behave in some peculiar ways.

The most important—and one whose full impact was only revealed by computer analysis—was that the wind hitting the cantilevered tips of the arms might twist the tower like a pinwheel. To take these horizontal forces, therefore, the whole structure was stitched together with an intricate system of stiffening elements. The members were also beefed up, partly at the insistance of the steel fabricators, jointly responsible under Canadian law for the building's stability. The 60,000 tons of steel which finally went into the tower's frame was double the original estimate.

The basic structural module was established by the CNR tracks. The columns, anchored in a limestone bed found just under the tracks, had to be kept on a 25-foot 1-inch grid to avoid them. This small bay would not give the public areas the monumentality which the architects wanted in order to reflect the scale of the plaza.

In an early scheme, the 25-foot-plus bay was transferred on a monster girder above the lobby, but it was abandoned for three reasons: the girder turned out to be exorbitant in cost; the frequent columns would have cluttered the office space; and, about that time, the quadrant idea came into the picture.

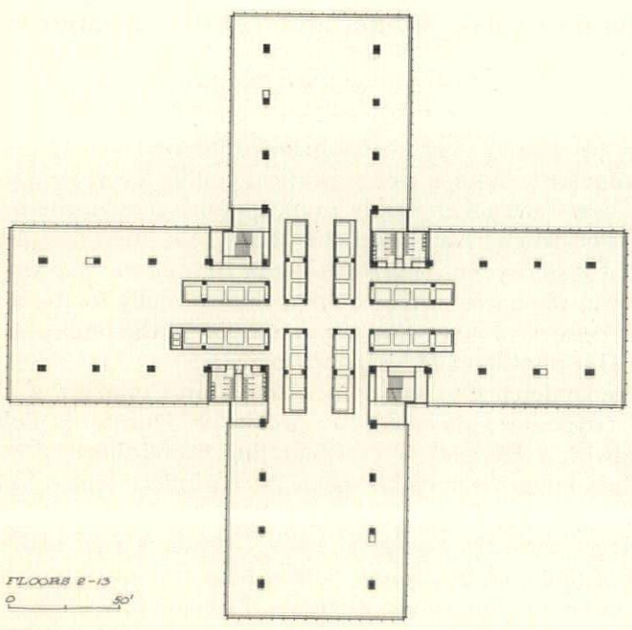
Hence the final design. Each of the 100-foot 4-inch-long spurs of the cruciform contains only six freestanding columns, supporting three transverse bents or frames 25 feet 1 inch apart. Each bent spans two tracks—and leaves a clear central area, 50 feet 2 inches wide on the office floors (see plan at right).

The outermost of these bents is, as we have seen, notoriously susceptible to lateral deformation by wind loads, particularly in the 57-foot unsupported height of the lobby columns. So hidden cantilevers were introduced to make the visible ones stand up.

Concealed behind the elevator banks of the core are vertical trusses, bedded in the rock below and cantilevered upward to resist the horizontal forces. The core is thus made extremely rigid, and from it, at each floor, a horizontal diaphragm spreads out as still another cantilever, restraining the simple bents in the wings from moving when the wind blows.

The quadrants were framed even more boldly. Each is a single, square structural bay of its own, supported on four columns 75 feet 3 inches apart. The out-facing sides are cantilevered a startling 24 feet 8 inches on a steel bulkhead wall as solid as the sides of a ship. The inner sides, tucked under the 16-foot cantilevers of the office wings but kept completely separate from them, are shorter overhangs of 19 feet 3 inches. Pedestrians strolling under the quadrants sometimes stop, look up—and quickly move backwards a step or two.

Gray-tinted glass panels, 7 feet high, enclose 14th-floor corner office of Webb & Knapp (Canada) Ltd. Recessed fluorescents are on a 5-foot module.



Cross-shaped floors follow the five-foot module

The typical office interiors in Place Ville Marie (above) are well lighted by a column-free window wall of glass and aluminum, which frames panoramic views of the city.

The decision that major corporations could best be attracted by large, naturally lighted floors led directly to the tower's cruciform shape. Had the same 38,000 square feet per floor been provided in a square plan, one-third of the area would have been more than 40 feet from the nearest window. With the cruciform, all desks, indeed all areas not taken up by the central core, are within 40 feet of natural light. The resulting floors offer three to four times the rentable area available in Montreal's other new office buildings. For the companies occupying the space this means less travel between floors, greater flexibility for expanding or contracting departments.

Place Ville Marie is unusual, though not unique, among speculative office buildings in adhering to consistent modular design throughout. Spacing of the window mullions establishes a module of 5 feet, which produces offices that are 10, 15, or 20

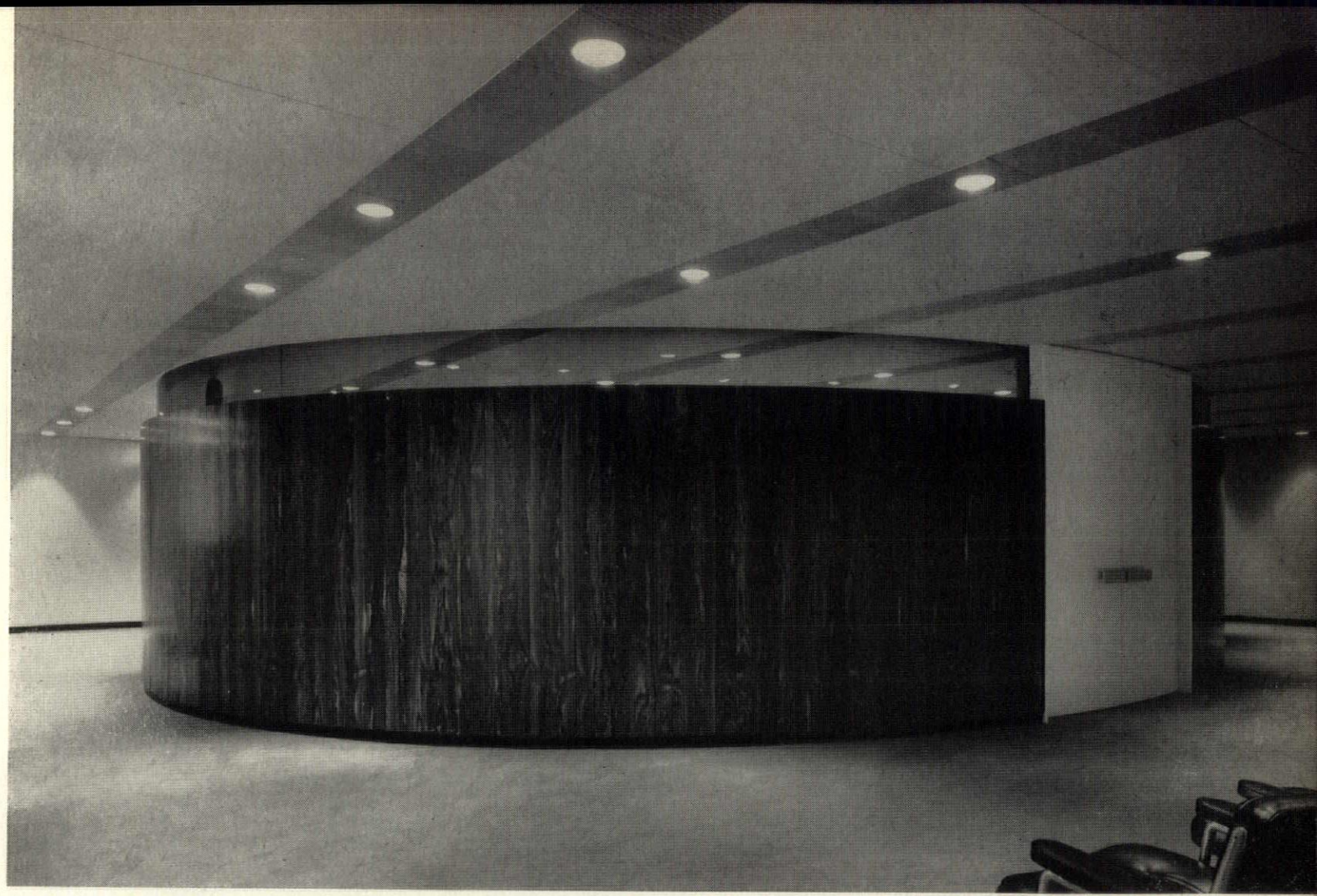
Oval conference table is 46 feet long, seats 40. A special audio system using mikes in ceiling, speakers in chairs, was scrapped because of cost.

Conference rooms depart from the tower's modular pattern in size, shape, and lighting arrangement

feet wide. Even the electrical services conform to a module: underfloor distribution is provided by a cellular metal deck; horizontal service runs, spaced at 6-foot intervals, have four cells (one for 110-volt wiring, a second for telephone lines, a third for tenant intercom systems, and a fourth as a spare). Air conditioning and lighting fixtures in the ceiling follow the 5-foot module but are fixed in only one direction, flexible in the other to permit tenants more latitude than the rigidity of an institutional building allows. Air conditioning comes from two sources: a perimeter system covering the 16-foot distance from the exterior walls to the columns, and an interior system for the rest. Gray-tinted windows are 7 feet high.

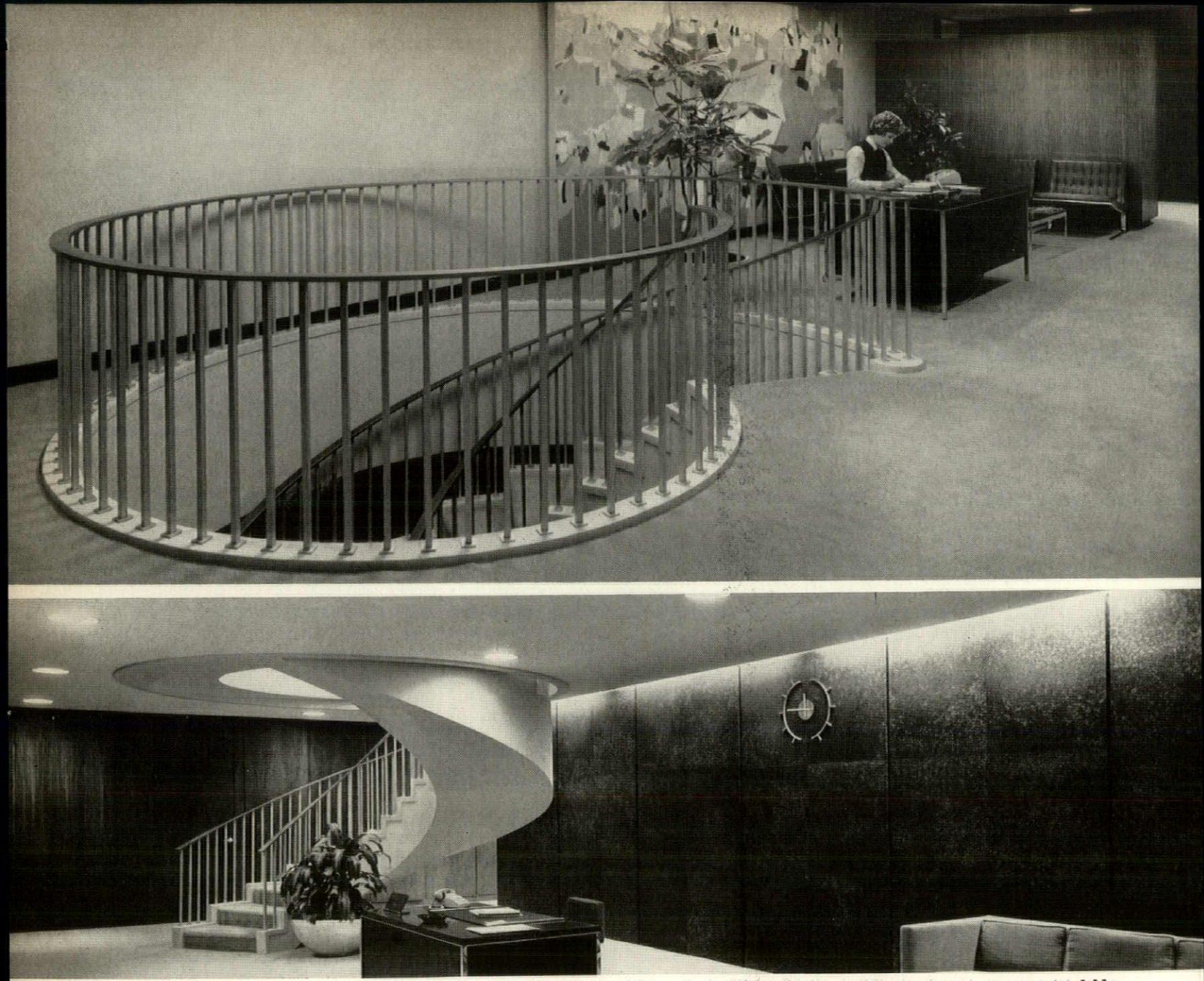
Not all of the installations in Place Ville Marie's tower adhere to the square 5-foot module. This is evident in the oval lighting pattern of the board room (above), in the freestanding conference room (opposite), and in the reception area (overleaf). The board room above, designed by I.M. Pei & Associates for the Royal Bank, looks like many another modern board room—except for its size, which is enormous: 30 feet by 60 feet. Around the 46-foot-long table are 39 chairs and, from their generous spacing, it is obvious that more could be accommodated. With a fine acoustical ceiling overhead, could men hear each other clearly from opposite ends of the table? The Pei designers at first thought not, for they designed a special audio system (microphones in the ceiling, speakers recessed in the backs of the chairs), vetoed finally by the Royal Bank because of cost—and because sound in the finished room carried better than had been anticipated.

The conference room for the Aluminum Company of Canada (opposite), designed by Architects Durnford, Bolton, Chadwick & Ellwood, is a freestanding, wood-sheathed cylinder in a larger rectangular space. A continuous band of glass, unbroken by mullions, runs around the top of the enclosure, butting against the acoustical ceiling. Inside is a circular conference table, 16 feet across, with a hole cut out of its center; this table accommodates 20 chairs. From inside, the room is



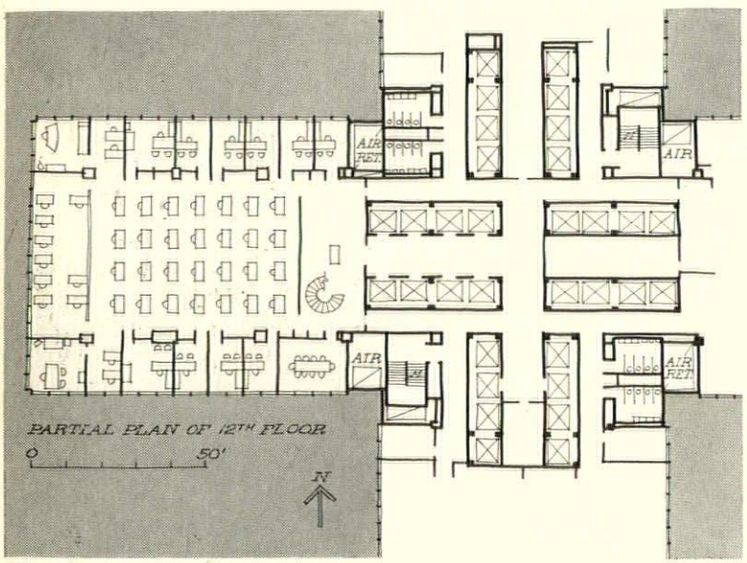
Freestanding conference room (above) has band of glass at top, butting against ceiling which carries through. Table (below) is 16 feet across.

PHOTOGRAPHS BY GEORGE CSERNA



Spiral stair, installed by tenant, links adjacent tower floors (above). At right, a final glimpse of the building's elegant, monumental lobby.

Some large tenants build their own interior stairs for quick and private circulation between floors



made to look larger because the ceiling with its strip lighting carries through into adjoining areas.

Though Place Ville Marie's big cruciform floors are intended to minimize interfloor travel for tenants, some companies have found it necessary to take space on two or more adjacent floors. Such was the case with the Montreal Trust Co., whose offices (photo, above and plan, left) were designed by Architects J. Gordon Carr & Associates. To provide their clients with easy, elegant—and private—circulation between floors, the architects installed a spiral stair of steel covered with plaster, located in the reception area just off the elevator core (see plan).

Since the trust company has many officers, the 5-foot module, which provides a minimum office 10 feet wide, did not leave enough perimeter space to accommodate them all unless the company, already occupying two-and-a-half floors, took still another. Instead, Carr's solution strings private offices along the two side walls, grouping less important officers in pool space at the end of the wing and in the interior.

ARCHITECTURE AND THE MOON AGE

BY SIBYL MOHOLY-NAGY

This article is a condensation of a lecture delivered last year by Mrs. Moholy-Nagy before the Chicago Chapter of the AIA and Yale's Department of Architecture. Mrs. Moholy-Nagy, who is a Professor of Architecture at Pratt Institute, is also, of course, one of this country's most incisive critics and the author of several important books on architecture. A rebuttal of Mrs. Moholy-Nagy's position by FORUM'S *Editor, Douglas Haskell, follows the text of her remarks.*

The ugly confusion of our environment is neither predestined nor historically conditioned. American architecture in its first 300 years developed along the same lines as its European prototypes. The tragedy of architectural decay started within our lifetime when prosperity and materialism changed a profession into a business, and imported theories gave an intellectual pedigree to Henry Ford's mechanic's wisdom that "history is bunk!" The functionalist crusade was carried to the New World by the most famous names of the European avant-garde.

Walter Gropius expounded the integration of art, science, and technology through the standardization of building types. Mies van der Rohe's aphorisms were circulated by the Museum of Modern Art ("I consider the industrialization of building methods the key problem for architects and builders"). And Le Corbusier skillfully mixed encouragement and abuse in his report on the U. S. from 1935, expressed in the very title: "When the Cathedrals were White . . . A Journey to the Land of Timid People." "This is the dramatic conflict strangling architecture," he wrote after a visit to Detroit, "which causes building to remain off the road of progress. In the Ford factory everything is collaboration, unity of views, unity of purpose, a perfect convergence of the totality of gesture and ideas. With us, in building, there is nothing but contradictions, hostilities, dispersion, divergence of views. . . . The architectural products remain outside the frame of modern times." The influence of what became incorrectly known as the Bauhaus Style reached from Park Avenue to the Last Frontier as shown by LIFE magazine, which unblushingly included in its 100 dynamic leaders of the Take-over Generation "an ex-truck driver who . . . has hammered his way to the top of the housing industry as the largest U. S. builder of inexpensive, finish-it-yourself shell homes." Hadn't Le Corbusier written: "Let industry discover that its real market is housing"?

When the influence of manufactured over designed environment had become too evident to be ignored, the last two strongholds of architecture as historical continuity surrendered. Architectural education cut its umbilical cord with the Academy and transferred its loyalties to the building industry. Collegiate schools formed a committee for the "Expansion of Schools to Serve the Building Industry." Research grants and unending competitions constrain the student to think up a maximum use of tiles, asbestos, plastics, steel, aluminum, or whatever happens to offer the fattest subsidy, providing industry with ideas the price of which is tax deductible for educational purposes. Department costs are nicely defrayed, the faculty has no longer to worry about an integrated curriculum with this educational prefab, and the student learns early that not only history but creative freedom is bunk. It was all made perfectly clear in a recently announced "change in direction of the R. S. Reynolds Memorial Award . . . broadened to emphasize top design using aluminum rather than new concepts of design and fabrication. . . . Nominations," the announcement concluded, "will be received by the AIA in Washington," making a joke of the mandatory standard provision prohibiting professional endorsement of building products. It would be no more than an acknowledgment of facts if schools made unspecified design an elective only.

The other stronghold of archi-

tecture as art, the professional representation of architects, took a new lease on life when it decided to champion the building practitioner instead of the artist.

The American Institute of Architects is engaged in an all-out effort to deliver its members from the burden of history. After various statements on "the package," teamwork, and the deplorable obsolescence of the small office, the Institute has come out with an official program of "Expanded Services of the Architect" that can best be characterized as overstating the obvious while advocating the impossible. Throughout history, the architect has acted as coordinator of every contributing factor to the realization of his commission if the client wished his expanded services. From Bramante's Vatican City via Nash's Regent Street to Bulfinch's Park Crescent Houses, land acquisition, financing, production research, and renting have been part of the architect's responsibility. But the architecture which became prototypical, and on which mankind has measured its historical perspective, testifies to the first obligation of the architect to design as an art. If he fails, he fails as a designer and a visual persuader and not as a broker, production manager, or promoter.

The probability of failure increases with overexpansion. In all fields, the greatest contributions have been made by those who accepted the boundaries of their competence as an incentive to greater depth. It is most unlikely that Haller would have revolutionized pathology if he had had to build the hospital where he worked and to finance staff and patients to keep them from going elsewhere. There is nothing more comforting than being prevented by official sanction from facing the crucial moment when a building as an environment-making factor becomes the irrevocable decision of the designer—and it is totally irrelevant at that moment of decision whether his office has two or 200 employees, or whether he was in on the preliminaries or not. It would be an unimaginable embarrassment if the next AIA convention were called to define responsibility in this expanded-services setup instead of gazing at New Horizons, Future Dimensions, Expansions of Scope.

Science vs. architecture

The unintended benefit of this postarchitectural sellout by colleges and professional organizations lies in the emphasis it puts on the survival of architecture as art. Men with vision, money, a longing for immortality; governments, corporations, congregations, and schools, keep asking for designs from individual architects whose relationship to the manufactured majority is that of a Ming vase to a beer can. Lonely monuments to architecture as historical transformation keep cropping up in thesis designs, competitions, and the architectural press which, with chilling irony, denounces its very bread and butter by supporting the Expanded Services program of the AIA. "One valid reason for the lack of creativity," ran a recent editorial, "may be this very limitation of prerogatives of the architect to an abstract (!) phrase called 'design'." (And it should be mentioned that the quotes around the word design appear in the original copy.)

This clamor for "a scientific approach to architecture" overlooks that the meaning and function of science has changed to such an extent that science today represents the antithesis of architecture. In 1799 the Royal Institution in London was founded "for diffusing the knowledge and facilitating the means of procuring the comforts and conveniences of life." This stimulated a completely new concept among such architects as Boullée, Ledoux, Soane, and Schinkel, whose design acquired an intellectual basis. One hundred and sixty years later the *Encyclopedia Britannica* defines scientific method as "making hypotheses for the purpose of primary and secondary inductions. Valuations as opposed to statements of fact are not established by scientific method." The two definitions in their diametrically opposed attitude toward humanity prove that the architect of today is rooted in scientific tradition, "procuring the comforts and conveniences of life," but that he is excluded from contemporary scientific orientation because it excludes the moral factor of value judgments. The majority of mankind has not yet come to look at its environment as an expanded Cape Canaveral.

While the identification of architecture with science is no more than a promotional red herring to hide design failure, the identification of technology and structure as the basis of contemporary building is having disastrous effects. The misuse of technology and structure as synonyms goes back to Mies van der Rohe's scriptural: "Wherever technology reaches its real fulfillment it transcends into architecture," postulating that musical composition will fulfill itself through improved methods of piano construction. It takes only a slight rearrangement of nouns to make sense out of nonsense. "Wherever structure reaches its real fulfillment it transcends into architecture," postulating that structure is architectural system-building. Without structure, design cannot realize itself because it is inseparable from space-form and cultural context.

Structure is as unique with each building as the shape of the skull in human physiognomy. It is structure that stimulates the visual participation of the inhabitant. There is no incentive to penetrate the unstructured curtain-wall façade, while the spiral form of a Guggenheim Museum arouses even in the most uninformed layman a desire to enter and judge. Structure is finite, deciding the lasting identification of a building with its site, while technological assembly remains expendable and repeatable. No matter how long it survives perchance, a building as a structured space-form entity may disappear; it can, however, never be replaced.

Only structure creates

The difference of building technology from structure is so obvious that it can be summed up in three characteristics: it is indifferent to space; it is uniform and interchangeable; and it shares the artificial obsolescence incentive with all other forms of product design. The surrender of architects to the profitable impermanence of packaging has created in the remaining designers of individual architecture an overcompensation complex one might call structural exhibitionism. Trauma or not, even Freud could not make a psychotic lovable, and the false equation between original design and original structure is highly damaging to the cause of designed environment. Man is an indefinitely adaptable creature and he will crawl into a hyperbolic paraboloid or suspend himself from a senseless cantilever to prove the contemporaneousness of architecture. What he proves is that he has surrendered architectural intellect. Structure is a cooperative and co-

ordinative force which remains raw and primordeal without the civilizing hand of the designer. It is quite possible to have great architecture with the simplest structure; it is not possible to have great architecture through structural extravagance. As structural possibilities increase, so does the responsibility of the architect to maintain the balance between that which is possible and that which is architectural. "In our eagerness to appropriate, we have neglected to adopt, to distinguish," said Horatio Greenough 120 years ago.

This, then, is where the hardy survivors of architecture as the art of environment design find themselves at the threshold of the Moon Age—caught between neurotic self-assertion and prophecies of extinction. The "better smart than art" advocates in the Octagon and in our colleges found an able spokesman in Reyner Banham, who concludes his book, *Theory and Design of the Machine Age*, with the astute observation that "architecture and what we are beginning to understand of technology are incompatible disciplines." Alas, the conclusion he draws from this insight is nothing but an appeal to the designer "to discard his whole cultural load, including professional garments by which he is recognized as an architect. If . . . he decides not to do this [this is Banham bidding for an AIA Fellowship] he may find a technological culture has decided to go on without him." This alternative between suicide and castration is viciously false. Man, being fully conscious of time, is inescapably involved in history. All his accomplishments, including his quest for the moon, are suggested by cultural images, formed over a long period of time. Architecture lives by incessant transformations of these established historical images *and not by the invention of technological means to implement these transformations.* It seems of great urgency that we ask ourselves whether what was sold to us as new cultural images by the technocratic functionalists were not secondary production detail.

The new form which a cultural image — domesticity, education, production, government—assumes in a new environment does not reveal itself through expedient, conformative, technological considerations, important as these might become as implementations. This revelation comes only to the architect who is fully conscious of the history-making mission of his art.

The freedom to live up to this commitment is given to Americans through a unique social organization, and only we ourselves can vitiate it. It is most likely that our partners in the Russian Roulette game to fire a sacrificial victim in the name of science to an uninhabitable planet will get there first. In this losing race for a zero goal it should be our pride and our consolation that Russia has no architecture. Her technological supremacy remains sterile for human environment because it does not permit an individual architectural commitment. America still does—grudgingly, ignorantly, largely by default — but the fact of its existence is our last best hope to love our abused and alienated mother, the earth. When I was very young we had to struggle through Hegel's *Philosophy of History*. From that labyrinth of abstruse abstractions shines a sentence which has acquired meaning only through faith that the tragedy of ugliness and chaos is still curable. "America," wrote old Hegel in 1825, "is the land of the future where the burden of history will reveal itself."

J. ALEX LANGLEY

BRINGING BACK THE DESIRE

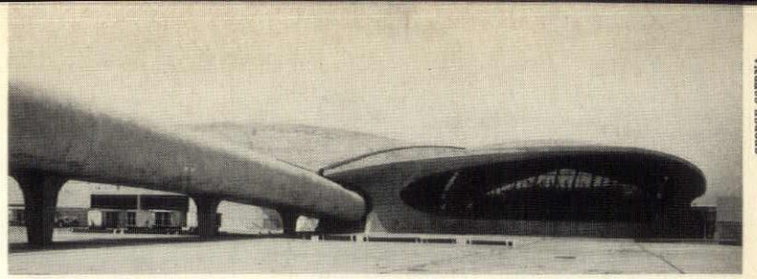
BY DOUGLAS HASKELL

Three buildings in a row on New York's notorious Park Avenue show changes in architectural demand in the immediate past, present, and future (photo above). At the left is a high-class building by high-class architects for a high-class client: it is the Union Carbide Building by Skidmore, Owings & Merrill. At the right is a cheap building done cheaply by an architect for a builder, and its design looks like what it is: a piece of yard goods stretched over a slightly simplified zoning envelope. The one in the center is most interesting. It too was built by a speculative builder, but he has rescued it from cheapness. He has taken a professional attitude toward it, and used professional talents, and put it back on the road of architecture. It is the Bankers Trust Building erected by Builder David Rose with a number of architects.

These three buildings demonstrate the effect of the traditional client, who built well for his own use, then the first effects of speculative building on architecture, and then the recovery as the new type of builder-client settles into professionalism. Architecture rises or declines with the client's interest in it.

Mrs. Moholy-Nagy, sharp on design, is vague on clients. "If only," she and her designer friends seem to say, "architecture could get away from uncouth makers and shakers in America like Henry Ford and that man who makes house shells—one a mechanic and the other a former truck driver—think of it! If only we could get back to the fat popes and princes and merchants who hired Bramante and Nash and Bulfinch! When the great architects performed full services for *them,* it was not commercialism. These

ARCHITECTURE REVIVED
Sophisticated speculative building in center excels ordinary builder standard (right), seeks institutional standard (left).



GEORGE CSERNA

ARCHITECTURE WEAKENED
Las Vegas airport (lower photo), a "second TWA" like New York's (top), manifests fast spread of forms with loss of character.

patrons could never be called 'materialistic'—they were so very cultivated."

Then again, "If only we could get architecture away from the modern building industry and its technology, and"—am I hearing right?—"back to the Academy with the historians!"

These are dreams close to being hallucinations. The sooner Mrs. Moholy-Nagy and her enthusiastic young student followers can wrench themselves away from them, the quicker architecture can be rescued.

For she does have a point, and a deep one. The issue between America and its architects is an issue, as she says, between commercialism and professionalism. For the architect today cannot do significant quantities of work save as he works for commerce. And commerce cannot get real value out of its architects and its architecture save as the attitude taken by both client and architect is a professional attitude.

The best thing that Mrs. Moholy-Nagy does is to describe an ideal relationship. She says that ideally architecture should be made to serve and express the individual client, and his individual purpose, and his individual cultural mission, on a specific piece of land in specific surroundings. This is to be accomplished, in her view, by means of expressive "construction"—the only thing seen by the eye, the eye being what architecture must appeal to. Obviously a design serving these ends has to be professional and, so to speak, custom made.

The absent escape hatch

Unfortunately, after establishing that architecture is for clients and their individual interest, the author tells possible clients of all the things they must do without. To get architecture they must stay away from modern industry, abjure technology, disown science, get away from packages entirely.

Such an assertion will make small headway, it is to be feared, except among eccentrics and fanatics. Never before in history has architecture had to step aside from building, or building step aside from the technology of its own day. If curtain walls are what is making his building a mere package like a thousand others, the client will want the curtain walls redeveloped, not abolished. So acute is the commercial-technical development of this age that even a highly convoluted "special job" in shaggy concrete like Eero Saarinen's TWA terminal at the New York Idlewild Airport already has a "poor cousin" down at Las Vegas, and if Mrs. Moholy-Nagy wants to "transform established historical images," industry will supply machine-made Parthenons by the streetful.

Where is the real villain?

No, if architecture is getting dull and the vacuousness is insufferable, I fear we must get to the puppeteer, not just to technology, which is his puppet. Who pulls the strings? Business does.

My contention is that the decline of architecture is due to new mass-production methods not in technology but in the field of business. It's a change in the nature and working of the newer clients. To building they are applying wholesale methods, as in dress goods.

Way back in the thirties when Walter Gropius and Mies van der Rohe were beginning to be allowed to create a new "technological architecture," the whole stage had a different business and government setup. Think of it: there was no real "home-building industry" at all; it consisted of Italian families producing a house or two a year, everybody working. There was no "Fanniemay" to create, first for home building and later for all kinds of other buildings, a national mortgage market. In producing commercial structures, Mr. Zeckendorf had not yet applied his genius in pyramiding the financing. Few if any who built used the complex apparatus of lease financing and leasebacks in the modern manner; the real estate syndicate was in abeyance; the place of the income tax was still minor; not yet were tax calculations dominating all building manipulations. The whole apparatus of urban renewal may have been in Guy Greer's mind but it was not yet on the statute books, let alone on the ground yet. Think of it, FHA was not even in existence! Those days were not only a different time, it was a different world in which architects were creating. The business world has changed as fast as the technical world has.

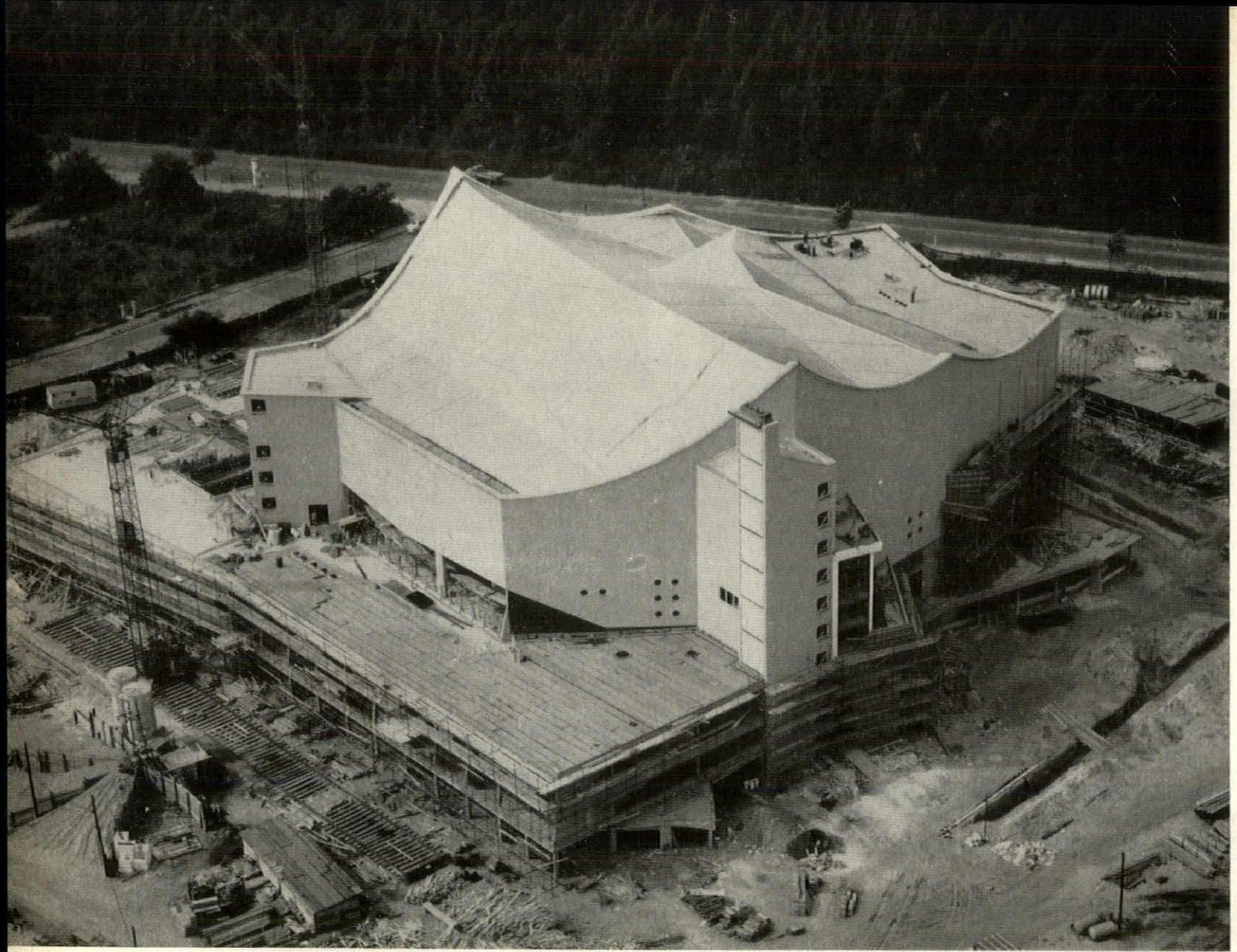
Counterattack, how?

Because of the new devious methods, mass controls, government participations, and indirect purposes, people with sharp consciences like Mrs. Moholy-Nagy's are more than ever needed, but still more essential is understanding by the architect of what has hit him. Saying contemptuous things is not going to help the architect regain the command that is slipping from him. In a new world in which commerce and government between them have made buildings so easy to promote, so easy to finance, so easy to construct, to sell, to standardize, and to control, in an amorphous mass market, the one difficult thing is to upgrade these buildings, to individualize them, to make them into architecture. Whole masses of buildings are sold out of barber shops in which architects of a certain sort now give the shoe shines.

What then should those do who still love the art that once created the cathedrals? Probably the first step is exactly that which is being urged by the hard-working Board of the American Institute of Architects. The first step is to convince everybody connected with the building business that the new architect really knows the business and can be useful in it. This means that all architects must study those realities of investment which thus far only the best and the worst architects have mastered. For architecture cannot regain its position through force, or by opposition to commerce: it depends on winning the respect and possible friendship of those who initiate buildings.

The next step is, having regained respect, to use new tactics to stir up pride and joy in architecture in the new kind of client.

The Board can win, despite the "commercial" hazard. Architecture can win. It has been demonstrated in plenty of cases. Redevelopment officers can become architecture's staunchest supporters. Promotional builders can be stirred to put quality into their buildings instead of making money out of cheap ones and then giving it to colleges for "culture." Even the FHA can be improved, perhaps by an explosion, perhaps by something easier. The secret is that most Americans want the best architecture. They want wonderful surroundings, as expressive and sane as the best architects can give. END.

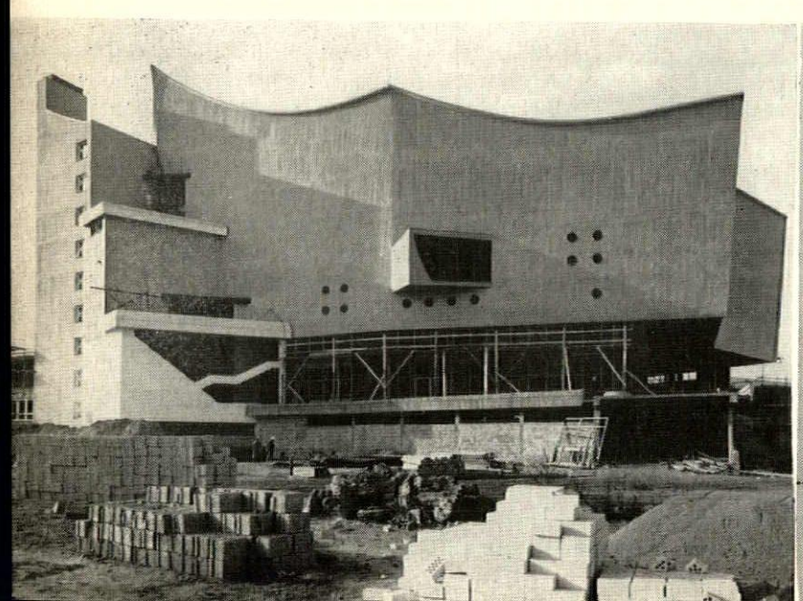


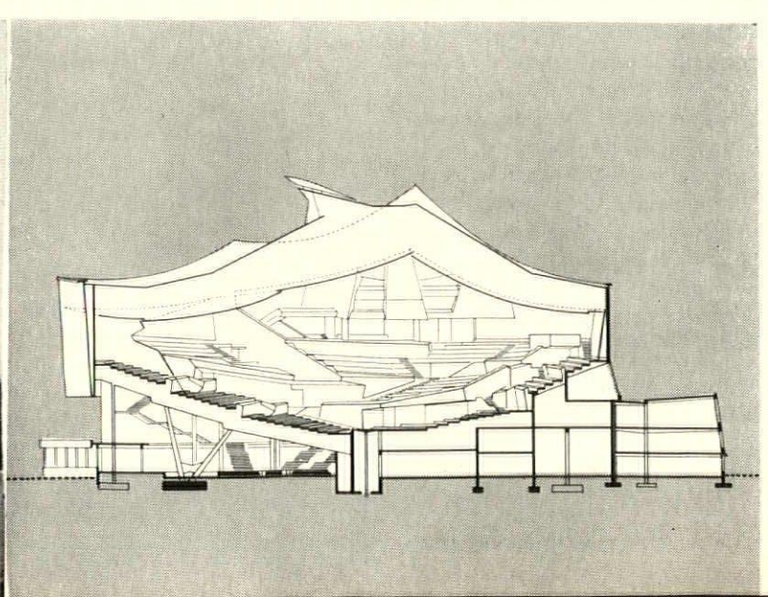
PHOTOS: REINHARD FRIEDRICH

BERLIN's Philharmonic, now nearing completion, was designed by Architect Hans Scharoun for Herbert von Karajan's famous orchestra. The auditorium will have a capacity of 2,200, and there will be the usual ancillary areas—foyers, storage spaces, practice rooms. The form of the Berlin Philharmonic is romantic and somehow reminiscent of that of a musical instrument; yet it is determined by considerations of an unorthodox plan and a shell roof. Scharoun was picked for this building through an architectural competition.

Both West Berlin (above) and Manhattan (opposite) are building or have built new concert halls.

A TALE OF



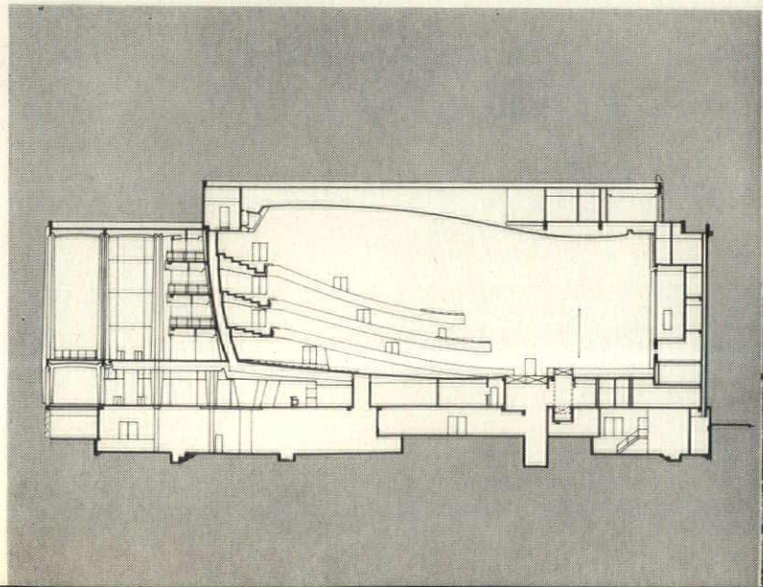


AP

The two halls are similar in capacity and function —but very different in almost every other respect.

TWO CITIES

MANHATTAN's Philharmonic at Lincoln Center opened last September. It was designed by Architect Max Abramovitz for Leonard Bernstein's New York Philharmonic. The auditorium has a capacity of about 2,600, and there are many other special-purpose rooms. The form of the building is severely classical: its plan is a 200 by 260-foot rectangle defined by 66-foot-high, travertine-finished colonnades. Behind these rows of columns are great walls of glass that reveal foyers, galleries, promenades, and a public restaurant.

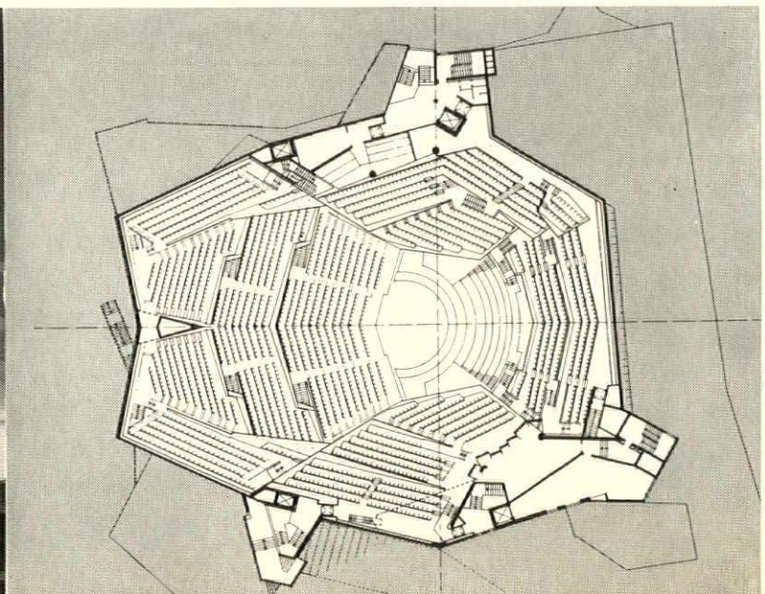


PHOTOS : REINHARD FRIEDRICH

BERLIN'S PHILHARMONIC is planned around an auditorium that is roughly hexagonal in shape. The conductor and the orchestra will be in the center of this space, and the audience will be seated all around them on steeply ascending terraces. The tentlike ceiling is hung from the roof structure, and the space between the two gives access to lighting and acoustical gear.

The form of the ceiling was determined by considerations of acoustics, carefully studied in a large scale model of the auditorium. To supplement the angles of walls, floors, and ceiling, the acoustical consultant, Professor Lothar Cremer, provided 136 pyramidal ceiling reflectors (see above and below). Initial tests in the auditorium were entirely satisfactory—but no final verdict is possible until the hall has been in use for some time and detailed adjustments have been made. To facilitate these adjustments, ten additional plastic sound reflectors will be suspended above the orchestra area. Wall surfaces in the auditorium will be of teak, except for a few areas that will have exposed concrete.

Part of the orchestra platform can be lowered to form an orchestra pit for use in performances that require some staging. No other plans exist at present for using the hall as a theater in the round.



© EZRA STOLLER

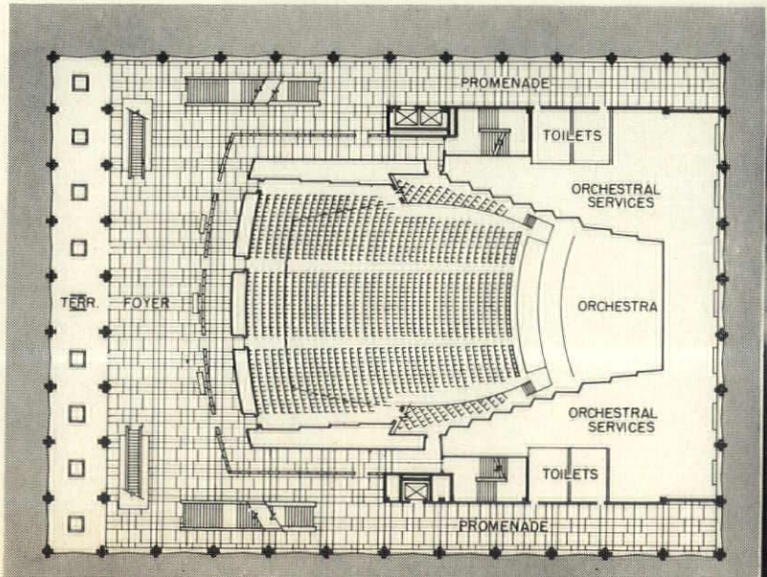
NEW YORK'S PHILHARMONIC is planned around a relatively traditional auditorium (see plan), with three layers of balconies around the orchestra, and a 40-foot-deep stage at one end. (There is no proscenium.) Although the plan is a modified wedge-shape, the sides are stepped back so opposite walls are nearly parallel.

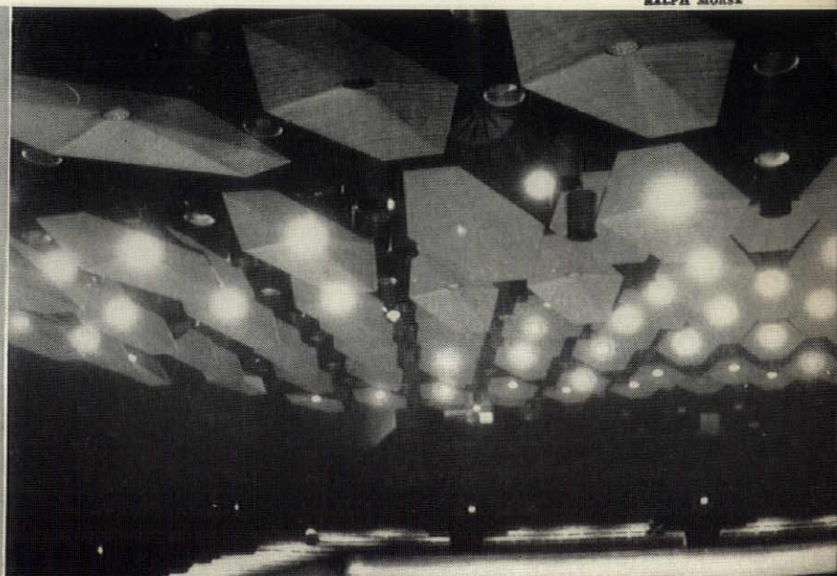
After examining (and rating) some 60 concert halls the world over, the architect and his acoustical consultant (Bolt, Beranek & Newman Inc.) decided upon a series of devices capable of subtle adjustments to achieve a desired reverberation time of between 1.8 and 2.0 seconds. Among these devices are 135 gilded, diamond-shaped sound-reflecting panels of plaster on metal lath, suspended from the ceiling; 2 feet above this layer of gilded reflectors is a second layer of 77 deep-blue reflectors that blend into the color of the actual ceiling. These panels are adjustable and the hall will be "tuned" over a period of about a year to assure its acoustic success.

Other adjustable devices include a motorized canopy over the stage and panels behind the wooden screen around the stage.

Although this is primarily a concert hall, some other uses are possible: an orchestra pit can be created, and all seats in the orchestra can be replaced by tables and chairs.

RALPH MORSE





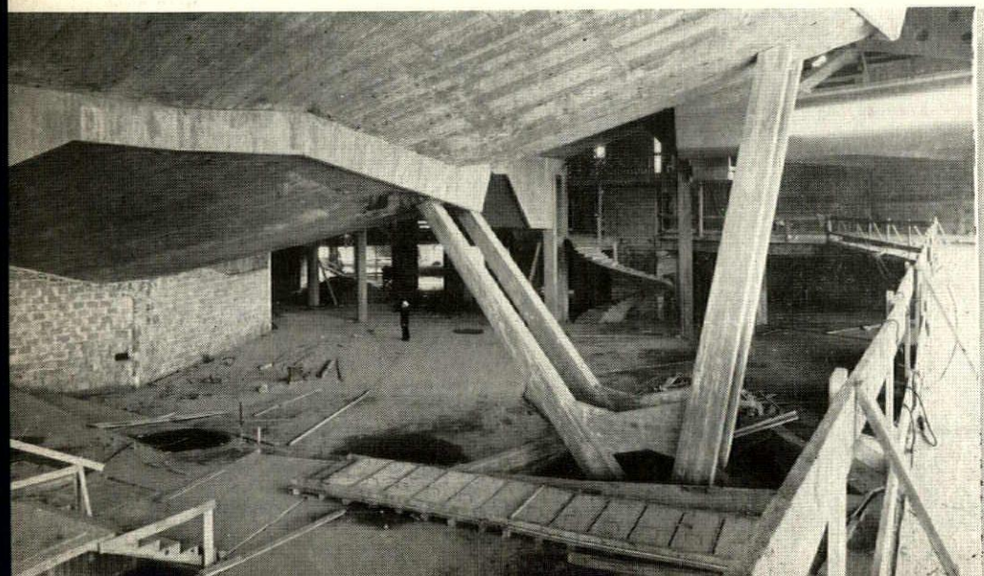
PHOTOS : REINHARD FRIEDRICH

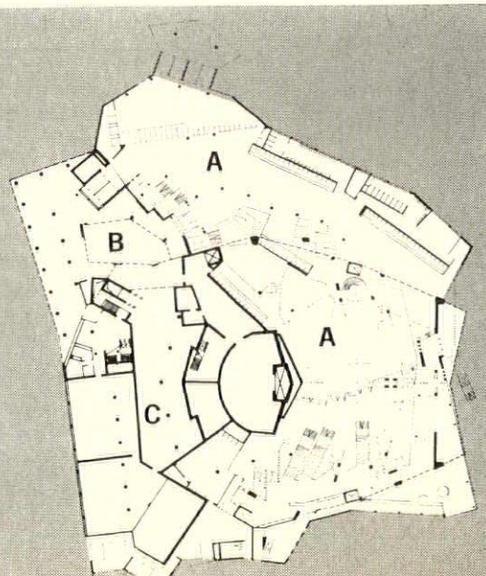
BERLIN'S PHILHARMONIC (above and below) has its main foyer at ground-floor level. It is a fantastic space, as theatrical in character as the auditorium itself. The great V-shaped struts help support the principal girder of the auditorium floor; and the various stairways lead to different levels in the amphitheater above. The Caligari-like forms and spaces of this building are anything but arbitrary: though the structural system may seem erratic, the plan is entirely functional: the areas marked A in the plan (bottom, right) are used by the general public; the areas marked B by musicians and officials; and the spaces marked C contain services.

NEW YORK'S PHILHARMONIC (opposite) has its main foyer one story above ground-floor level. The foyer itself is four stories high. One side opens onto a terrace; the other is made up of promenades that adjoin the three balcony levels in the hall. The abstract sculpture by Richard Lippold—entitled "Orpheus and Apollo"—is of highly polished Muntz metal suspended by stainless-steel wires.

The plan shown opposite is of the ground-floor entrance level. Escalators lead from this level to the main foyer.

New York's Philharmonic is the first unit of Lincoln Center to have been completed. END.





FRANK LERNER—TIME

PARKING: THE CRISIS IS DOWNTOWN

The words "parking" and "crisis" just seem to go together.

Yet the fact is that most cities do not have a parking crisis—at least not a city-wide crisis. Several of the biggest cities have serious shortages of parking space in the area where most of the people want to be at the same time—which is downtown. But even in those cities, programs are already under way to alleviate the parking pinch. Most importantly, a growing number of cities recognizes that parking is really part of the overall transportation problem—and these cities are doing a much better job of coordinating their parking efforts with parallel attempts to handle traffic itself more effectively.

How to plan for downtown parking—and how not to

The experiences of Washington, D.C., and Chicago, Illinois, in handling the problem demonstrate two extreme attitudes in coping with the parking crisis.

Washington got a public agency in 1942 to deal with its parking problem but this agency was from the very beginning a captive of the local parking lobby—a lobby with many friends on Capitol Hill. Because of this, the agency never got a chance to develop much of a program while private operators grabbed prime sites for parking garages and later sold many of these off to office builders with little regard to the overall city parking problem. Last year, Washington's public agency was crippled altogether when Congress refused it further funds.

Here, then, is an example of the sort of thing that happens when cities fail to evolve integrated plans for traffic and parking and leave the job of "solving" the parking crisis to private parking interests without much direction from planning authorities.

Because this is the way Washington went around handling its parking problem, the District today faces serious difficulties. The General Services Administration, which prepared a detailed study, insists that it must have 15,300 additional parking spaces now, or face infinitely worse shortages in the future; and GSA has recommended that the federal government take over the whole program. Whether or not this will happen depends largely on the District committees whose delusion to date has been that private parking interests can handle the problem adequately.

The story in Chicago is very different indeed: since 1946 Chicago has had an excellent blend of private and public effort to try and solve the problem. Downtown merchants paid for initial surveys of parking needs right after the end of World War II, and then local investment bankers undertook to develop a broad-gauge program with the aid of expert consultants.

Next, bonds were authorized for $50 million worth of new construction of parking facilities, and by 1956 ten multilevel garages had been completed on the fringes of the downtown area. Most of these multilevel garages were constructed by the city and then leased to private operators who could never have afforded to develop such valuable sites into parking garages without help from the local authorities.

Because this program helped stabilize downtown automobile traffic, the city has been able to slack off its garage building efforts somewhat. (An additional and important reason is that Chicago, like New York, Philadelphia, and Cleveland, has a fairly good rapid transit system so that some 85 per cent of all persons coming into the Loop use mass transit.)

One of the most interesting lessons to be learned from Chicago's experience with the parking crisis comes from the huge 2,100-car garage underneath Grant Park on the lake front a short walk from State Street. The Grant Park underground garage is operated by the Park District, and there is an additional 2,700-car surface parking lot to the north of it and another one for 300 cars

directly behind the Art Institute. But the underground garage is of key importance: first, because, while it uses city-owned land, it does not ruin that land; second, because it is located within walking distance of the center of downtown.

Because of the success of the Grant Park underground garage, the Chicago Park District has floated a bond issue for $11.3 million for an addition to this underground facility to accommodate another 1,500 cars. Finally, the Chicago Transit Authority has proposed a series of "Park 'n Ride" lots which would provide parking facilities at strategic rapid transit terminals.

Parking and rapid transit

According to most experts there is no way of solving the parking crisis without simultaneously attacking the mass transit problem. The two are intimately related: the New York, New Haven & Hartford Railroad, for example, recently trimmed its parking charges at its suburban station on Route 128 outside Boston and discovered that as a result parkers—and railroad passengers—nearly doubled within a week. The Massachusetts Transportation Commission is anxious to apply the same principle to city-owned rapid transit by cutting station-parking charges from 35 cents to 10 cents and then making up the difference out of a state–federal subsidy. The lower parking tab is aimed at increasing the utilization of these lots which, at present, are only 55 per cent utilized while downtown parking facilities are crammed with cars.

In Philadelphia, the city is already sponsoring suburban station parking and other devices to boost the use of rapid transit facilities. By doing so it has diminished the downtown parking problem even before it became critical. The city has done this by subsidizing the building of parking lots at the commuter railroad stations and also building lots in smaller commercial areas on the fringes of downtown in order to make the downtown shopping facilities more competitive with outlying suburban shopping centers.

In San Francisco the city decided to tackle the transit problem first and a $792 million transit system was recently approved by Bay Area voters (FORUM, Dec. '62). San Francisco Mayor George Christopher has refused funds for a parking study in the downtown area because no one is sure what changes will be wrought by the new transit program. The only thing anyone is sure about is that it *will* radically change the downtown parking situation.

Despite this emphasis on rapid transit, San Francisco's City Parking Authority Director Vining T. Fisher believes that the city will need at least 20,000 more off-street parking spaces by 1972. At the moment there exist all-day parking facilities on the fringes of the city near bus terminals with service to the downtown area. To date these facilities have not been successful because the daily charge of 55 cents seemed too high to most commuters and shoppers who prefer to go all the way into the downtown area and scout out a space there at $2 a day. Still, with better scheduling of rapid transit facilities into the downtown area, some of the present resistance to fringe parking may be overcome.

There may be another reason for this resistance as well: parking facilities on the far-out fringes of downtown are not always successful since they entail an additional lengthy trip; but parking facilities within walking distance of the downtown area are booming. In San Francisco, many of these have been built and are being operated by nonprofit corporations which issue their own bonds. Parking Authority Director Fisher thinks that one of these days these corporations will be able to build office towers on top of their garages and thereby provide further sources of income.

Parking and urban renewal

Like many other cities, San Francisco also looks to urban renewal to help alleviate some of its parking problems. New garages have been planned for the city in large renewal projects, and these parking facilities, which are close to the downtown area, will do double duty by serving both the inhabitants of the renewal area itself, and the people from outlying areas who are expected to use them on work days and during shopping trips downtown.

Most renewal projects require parking spaces on a one-to-one basis for new apartments, but since these spaces are not always occupied by residents of the area, they can be used also to ease the general shortage of downtown parking spaces provided the renewal project is close enough to the downtown area.

In Philadelphia, an underground garage has been planned beneath Independence Mall, and another large garage (1,200 spaces) has been planned adjacent to Penn Center, the city's large downtown commercial complex. In Boston, the huge new Prudential Center will have at least 2,700 parking spaces, and an additional 2,000-car garage is projected for the city's new downtown Government Center. Boston's garage under the Common is, of course, still one of the most successful examples of downtown underground parking.

Parking and vacant land

In most large cities the principal problem facing parking-authority planners is how to acquire the necessary land. Sometimes this problem is solved temporarily for, as older buildings are demolished, the vacant sites are often used as parking lots pending new construction. So there may actually be a temporary surplus of parking facilities in certain areas.

But as soon as a new building has gone up on the site, there is a further strain on the supply of parking facilities. And here is another curious imbalance in the availability of, and the need for, parking lots: there are often more potential parking sites than needed in the city's "gray areas" outside the downtown core. In Los Angeles, a city which defies any sort of generalization, builders in some areas have actually found it profitable to tear down existing structures and convert the sites to surface parking, because the high taxes on structures occasionally make a parking lot a more profitable venture.

One thing seems clear: Most planners have learned that the provision of downtown parking facilities has to be primarily a city responsibility. Retail merchants in downtown areas, who have the highest stake of all in the continued health of their area, are usually not sufficiently well heeled to do more than cooperate with the city, as they did in Chicago (see above). Thus it seems likely that most future downtown parking facilities will be provided by a combination of public and private enterprise with the city condemning the land and building a multilevel parking structure, and with private operators renting the facilities from the city.

But regardless of how downtown parking facilities are constructed and operated, the factor most likely to affect the downtown parking garages will be the efficiency of any rapid transit systems devised to serve downtown. Washington and San Francisco are on the thresholds of bold new programs which may drastically alter their entire traffic strategy. Chicago and Boston are considering expansion of transit facilities, and Philadelphia is continuing its efforts to streamline existing commuter services. If these attempts to store vehicles on the fringes of the city are successful, they will take much of the pressure off the authorities to provide further parking facilities in the downtown area.

Meanwhile, technological progress in the provision of multilevel garages has been startling, and much of this progress will undoubtedly help create more efficient facilities both in conjunction with rapid transit and in separate storage facilities on the fringes of downtown. Two of the most impressive new parking garages in the U.S. are shown on the following eight pages.

MECHANIZED GARAGE RUN BY COMPUTER

As downtown land and labor costs spiral upward, automated parking garages make increasingly good economic sense. Mechanization may be costly, but it can pack the greatest number of cars on a tight site, minimize operating costs, and, in many instances, pay its own way.

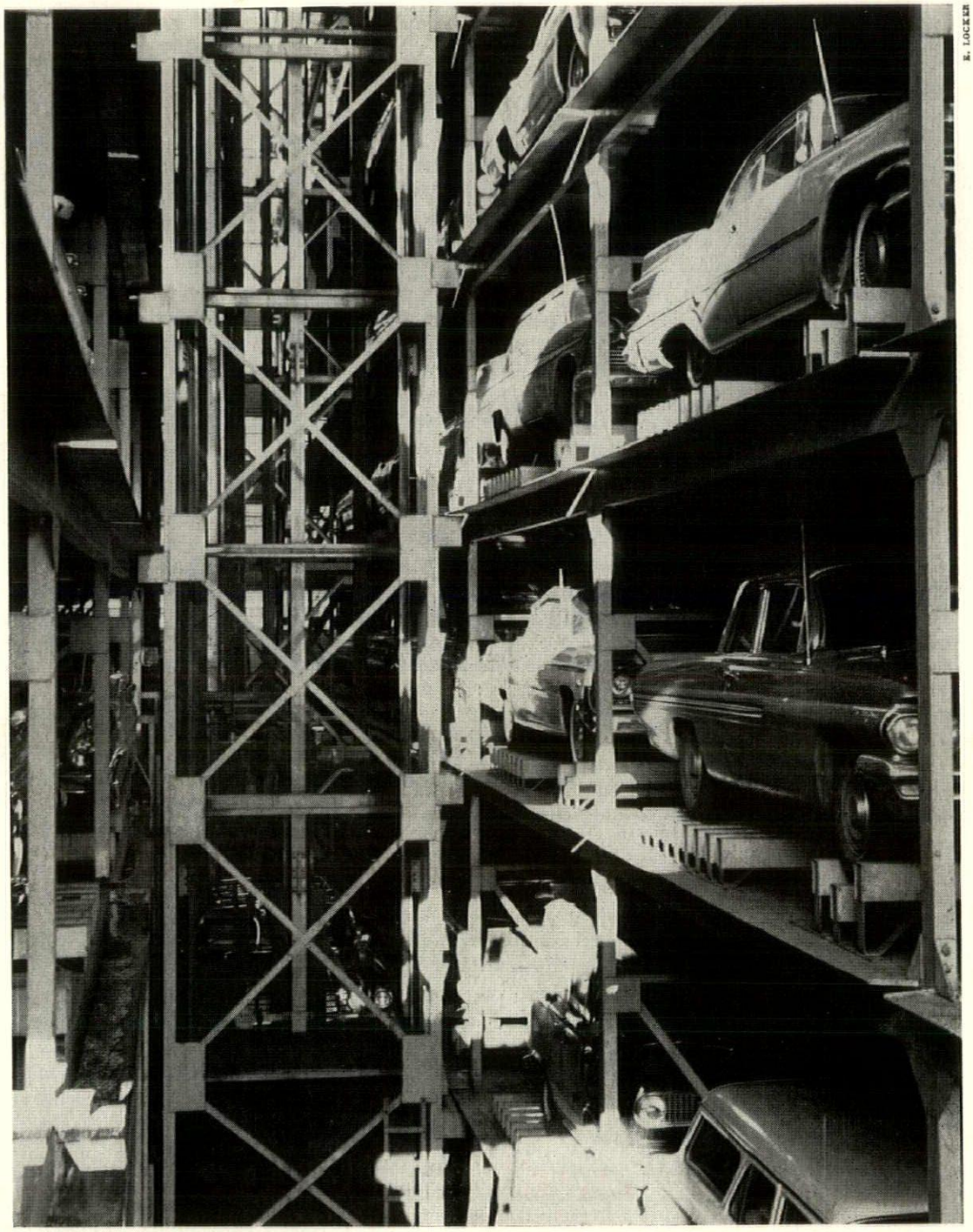
Operated by a single attendant at a computer console, the "Speed-Park" system shown on these pages is certainly the most advanced version of the automated garage in use today.

Beyond the sheer fascination of watching this computer-controlled mechanism in action, there are several features that set it apart from other mechanized parking schemes. Perhaps the most important is the financial backing of the peripatetic heir to the A&P fortune, Huntington Hartford. It takes this kind of support to keep an "ultimate" system like Speed-Park from dying while the slow cost squeeze pushes more garages toward mechanization.

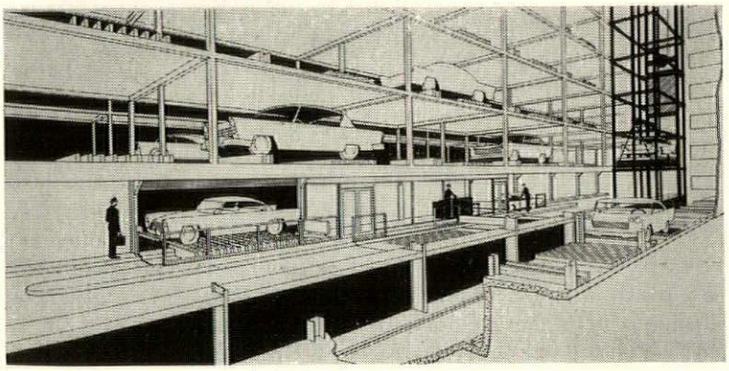
Also, the engineering of the system was no amateur job. The mechanism was developed and is maintained by the Otis Elevator Co. Otis became interested in Speed-Park about ten years ago when the basic specifications were suggested by a Rumanian-born engineer, Mihai Alimanestianu.

At the heart of the system is a steel-trussed tower as high as the garage (photo right) that travels horizontally at 180 feet per minute. Inside the tower is a 200 f.p.m. elevator with a vehicle capacity of 5,000 pounds, which carries a massive fork-lift device (weight, 27,000 pounds) that shovels cars into the parking stalls. (Even with this load, the average amount of energy used in a single parking cycle is only 0.4 kwh.)

The first full-scale working version of the system has been in operation in midtown Manhattan's theater district for just over a year (photos). Here, some 270 cars can be stacked in eight levels on a 57 by 200-foot site. With all the bugs now worked out, this garage can park or unpark 27 cars



E. LOCKER



Cars are loaded sideways onto Speed-Park's elevator tower (above and left). As the car is raised by the elevator at 200 f.p.m., the tower rolls along a track bed set in a pit below grade. Signals from a computer stop the elevator in line with the preselected parking stall. A fork-lift mechanism on the elevator can move the car to slotted platforms in stalls on either side. Platform holds front wheels in place, can accommodate any car length on slotted rear section.

in ten minutes. This means that in peak periods the rate of delivery is usually limited by the time it takes customers to get into their cars and drive away.

It still takes a special set of circumstances to justify the substantial cost of Speed-Park's complex machinery. The two elevators in the New York garage cost $600,000 to install. For average conditions, the cost per stall of the automatic equipment is near $2,000. In many areas, the stall structure could be built for a similar amount, making the total investment about $4,000 per car.

Because some less mechanized and straight-ramp parking systems can be put in place for as little as half the cost of Speed-Park, so far it can only be seriously considered where land is at a premium; where there is intensive, round-the-clock use (so that it eliminates three shifts of car jockeys rather than just one); or where the situation puts convenience well above price.

The Port of New York Authority, for example, is actively considering Speed-Park for its multilevel garage at land-starved Newark Airport. Here, conventional 24-hour attendant parking would require at least 15 men at an average yearly cost of $5,000 per man. With an automated system, the $75,000 saved annually in salaries would pay for the equipment in only eight years.

Another likely use for the system is in older hotels, to bring them back into competition with burgeoning downtown motels.

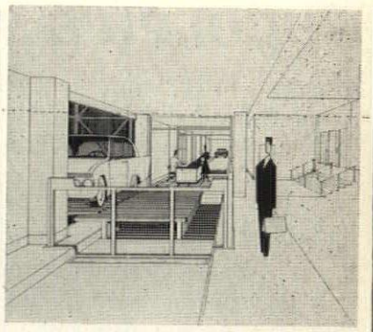
Probably the most intriguing application of the Speed-Park system, however, is that proposed for direct lobby access in office buildings or hotels. A scheme of this kind was designed by Architect William Lescaze for a large Manhattan office structure (drawings, right). The parking stalls are neatly tucked against a party wall and thus occupy a part of the building volume which has the minimum value as office space. And visitors and tenants would have the unprecedented convenience of leaving their cars just a few feet from the building's elevator lobby (sketches).

PHOTOS: PETER N. PRUYN

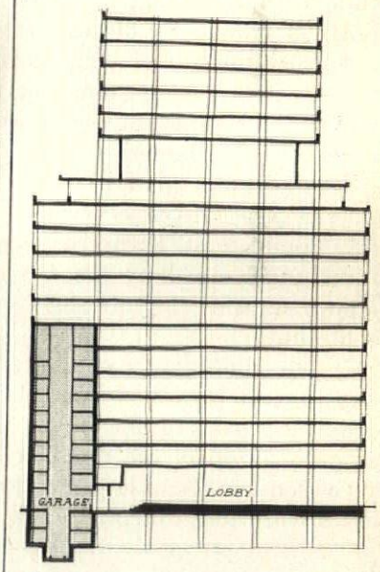
Customer picking up his car presents a special key, used as a check, to the control desk. When key is inserted, a coded message sends elevator to proper stall; computer calculates and prints charges.

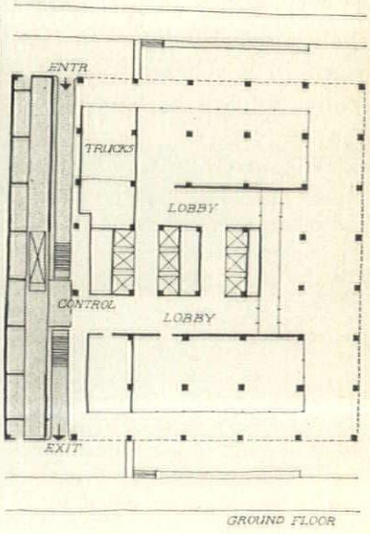
Handling machinery touches cars only at tire treads, minimizing chances of damage. Above, fork-lift moves under car through slots in platform, raises car above platform, returns it to elevator.

Elevator quickly returns the car to street level, where fork-lift places it in driveway. Electric eyes stop mechanism if car is not properly aligned. Safety barrier drops when cycle is complete, allowing access.



Lobby access to Speed-Park garage was proposed by Architect William Lescaze for large Manhattan office building (drawings above and below). Scheme could not be built because site finally acquired had a jog in the rear lot line. Subbasement ramp garage actually used fits fewer cars into much greater volume, is far less convenient.





RUDOLPH'S ROMAN ROAD

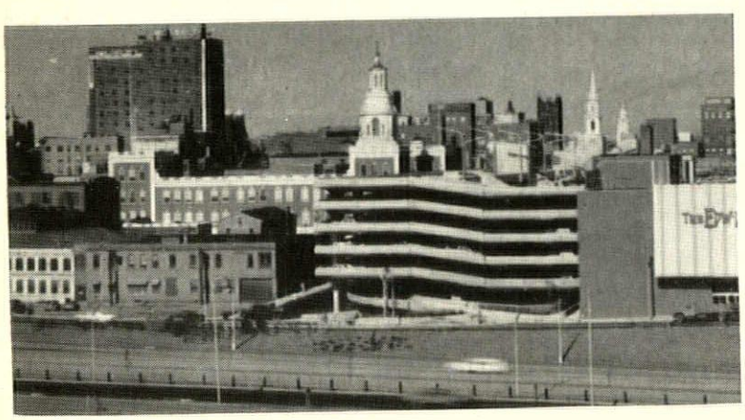
This perforated cliff of concrete may well be both the best looking and wildest car park ever built. An extraordinary architectural solution to a very ordinary problem, it is the work of Paul Rudolph, a designer with the perspicacity to recognize an opportunity for spectacular architecture when he saw it, with the talent to deliver such a design, and, not least, with the steely forcefulness to get it built his way.

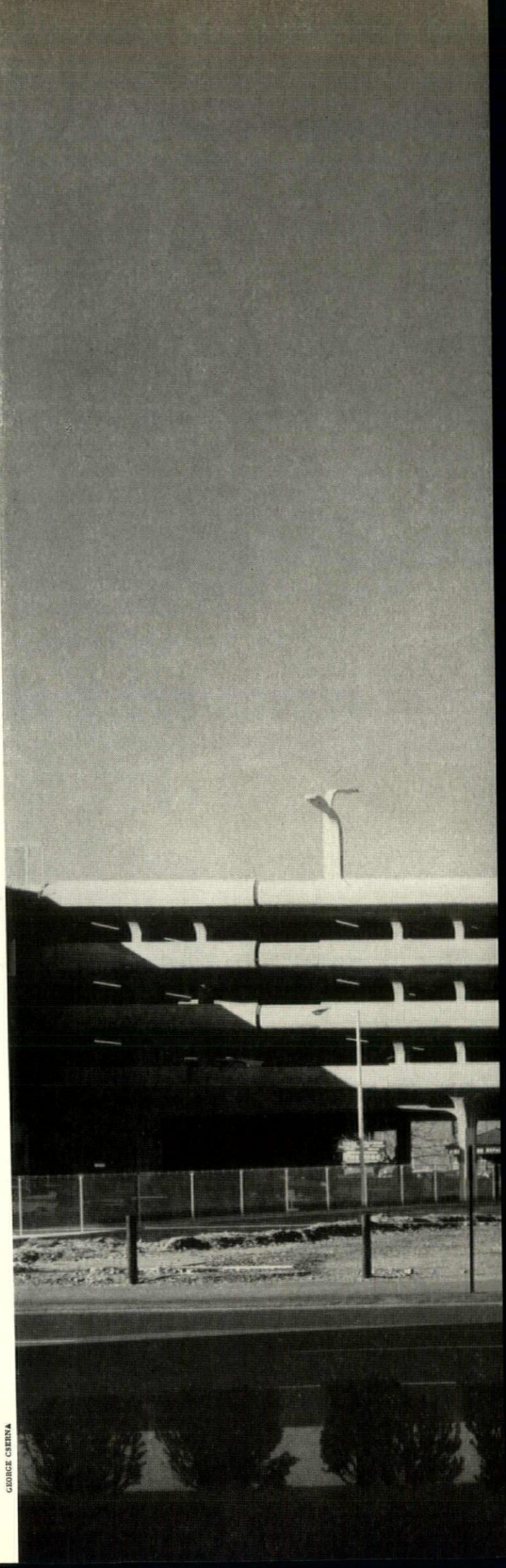
Most parking garages are so far from being architecture that they are not even embarrassed by their own gracelessness. They are merely economical loft spaces lacking exterior walls —or, sometimes, using shallow decorative screens hung between their squat columns in a kind of gesture toward conventional finish. But Rudolph's personal architectural ambition, at the present stage of his career, is almost imperial. Roman. His garage cost $5 million (almost twice the usual austerity model), is two full blocks long, and sits so strongly in the middle of New Haven that, at first glance, the other city buildings around it appear astonished. They also look comparatively weak, of course, and (until the visitor enters Fortress Yale a few blocks farther on) almost transient.

The visitor probably enters New Haven on a superhighway, then switches to a connector road sunk in mid-town New Haven. The program which produced both roads was also the germ of the garage.

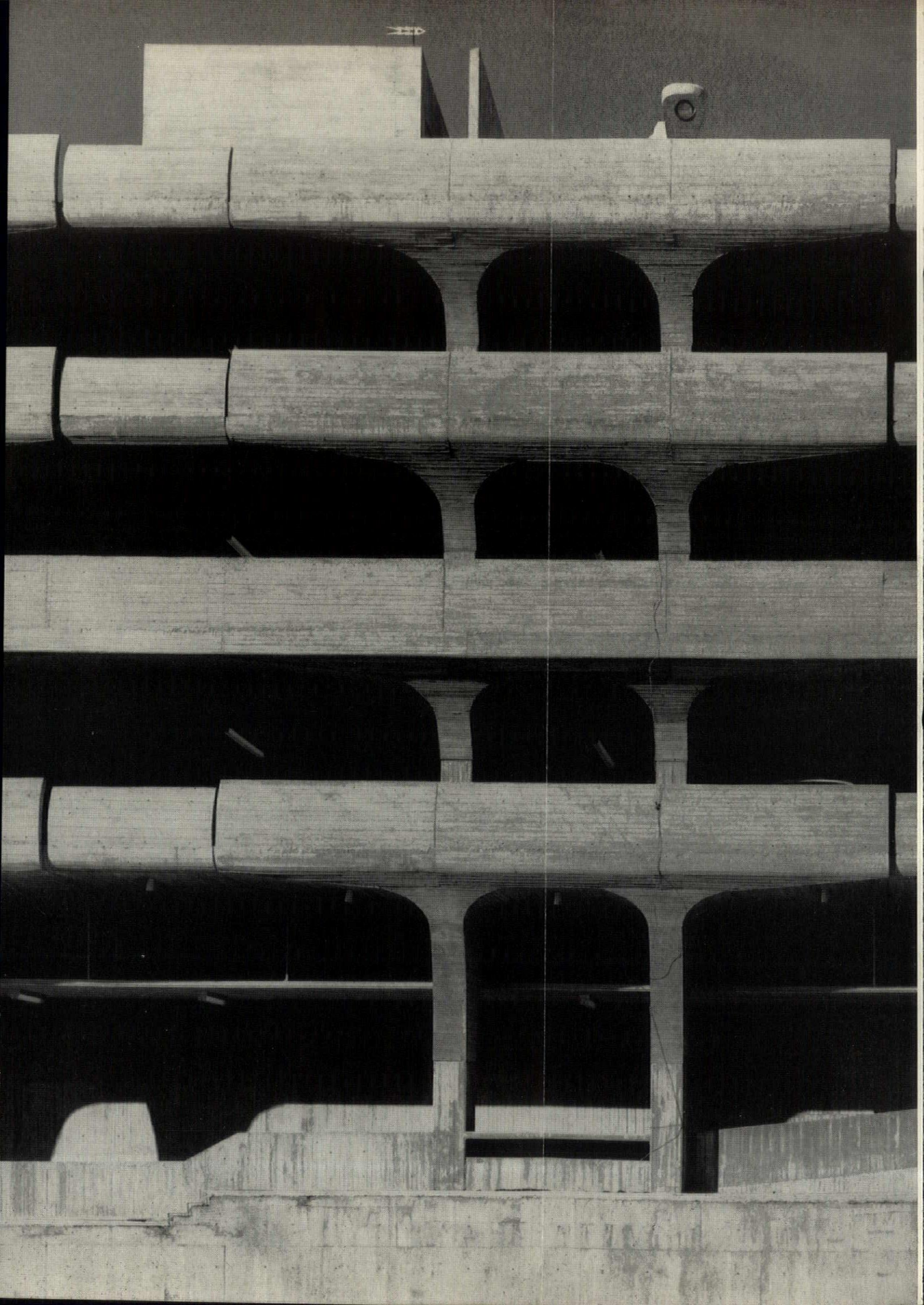
In the 1950s, more than 300 years after the founding of the port of New Haven, a new dry channel was cut through town: the Connecticut Turnpike. Despite the domolition it entailed, it was welcomed by the city. Drowning in the commercial competition of the suburbs, New Haven saw the new road as a life line.

To take advantage of it, Mayor Richard Lee went to Washington and provoked Federal Title I assistance. His aim: to redevelop parts of downtown New Haven in a way that would attract shoppers off the throughway. The Rudolph garage provided on Temple Street for some of these cars is a half block wide and, to repeat, all of two blocks long, bridging across an existing street. Owned by the city, the garage is operated by a concessionaire (first hour 25 cents; 24-hour maximum, $1.50). It has a capacity of 1,280 cars, stored on ten concrete shelves overhead and in two basements. The shelves step upward in a scheme used by many garages which ask the car owner himself to drive upstairs to park. (Half-story ramps are





GEORGE CSERNA

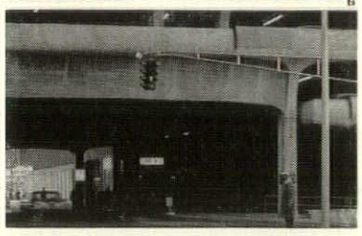


easier and safer to navigate than full-story runs.) The $4,873,000 construction cost of the garage includes a street level of shops still unfinished. Financial estimates predict a $335,000 yearly net return to the city on its investment in the building, with an amortization period of 27 years. In addition to the essential parking it provides, Mayor Lee leaves no doubt of the building's more intangible importance in New Haven's courageous redevelopment effort. "It is a symbol of revitalization," he says.

Mass and nervous system

The brute body of cast-in-place concrete has a web of electrical-resistance wires embedded to keep its ramps warm in winter, and an intricate system of electric eyes and signals to keep the attendant on the street floor aware of the loading conditions of his open-air catacomb above. In the structure are 40,000 cubic yards of concrete, 5,000 tons of reinforcing bars, and 2,300 miles of wiring (400 of conduit) and that is about all—except for 300 tons of rolled structural-steel sections.

Though the building seems as monolithic as a Roman viaduct, Rudolph ran into contemporary spanning demands which he had to solve with steel girders. These occur where the crossroad runs through the middle of the garage; there, spanning the road, is one plate girder 71 feet long and some 7 feet deep, plus several other sizable sections from the steel rolling mills. The design—or the designer—did not blink. The steel was absorbed into the plastic concrete simply, even a little scorn-



fully; further to emphasize the basic concrete nature of the design, the concrete surface bears a pattern created by the formwork —rough hewn ridges every three inches—which, close up, sometimes produce odd visual effects (see large photograph, overleaf).

The whole design is an astonishing tour de force. But it is not only among other parking garages that this building qualifies as a proud and ambitious work. Most important, and unlike almost all other buildings encountered in American cities, it could and did do without that envelope of wall, which robs a naked structural frame of its depth and mass, of its shadows, of its very reality as a shape. Herein lies its immense force: this is an enormous, unabashed piece of sculpture.

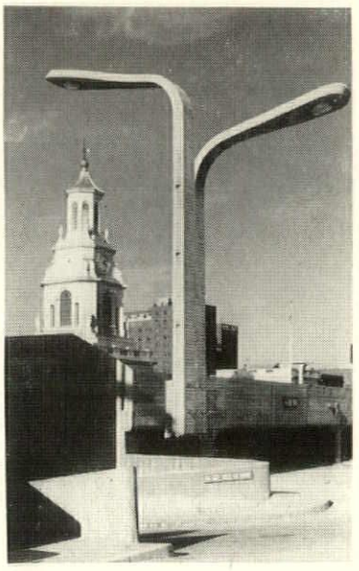
Nor were there many slips of the sculptor's hand. Possibly the building was even more dramatic,

CHARLES B. SCHULZE

if less burly, before the parapets were added to the slab edges to keep the customers' cars from rolling off. For at that time (photograph, above), the columns did appear more continuous, and rather nobler by contrast to the thin slabs.

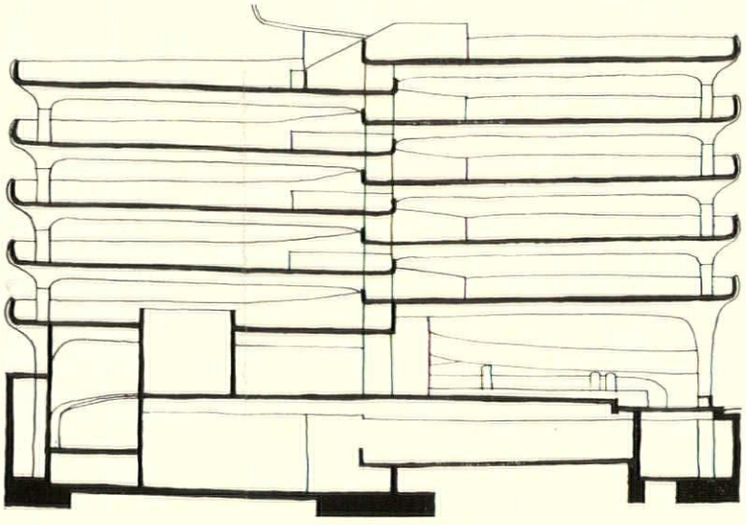
The lighting of the building at night is something of a disappointment, because one almost expects it to be accomplished as artfully as the Italians illuminate their ancient ruins—from below, stressing shape. Instead, most of the light comes from staccato lines of fluorescent fixtures on the ceilings. The roof floodlights are elevated with a typical Rudolphian gesture: tall precast concrete standards which the construction crew called cobras (above, right).

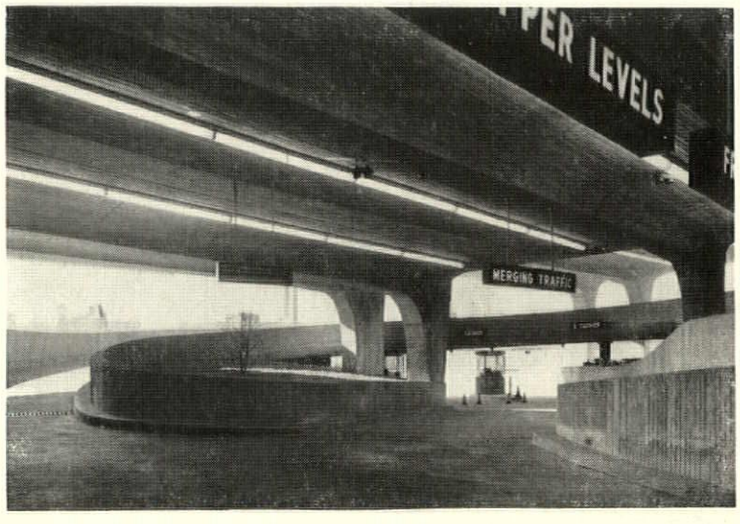
By now it has become fashionable to speak of how strong and dignified one or another new building will someday appear as a ruin. It is evident that this consideration was echoing in Rudolph's mind when he made this shape. But this is one building that won't have to wait; it already has the force and dignity of a ruin, at birth. WALTER MCQUADE



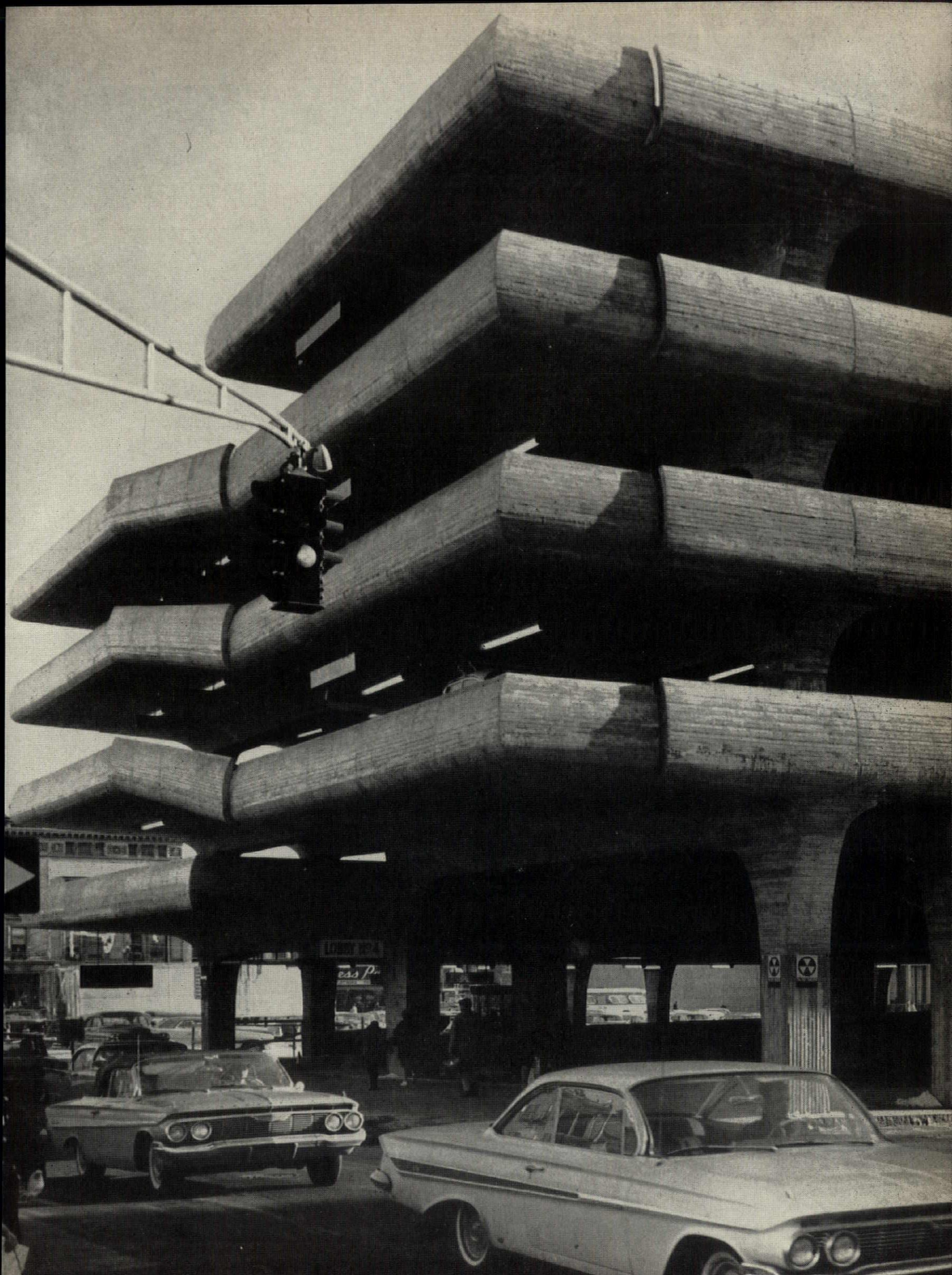
FACTS AND FIGURES

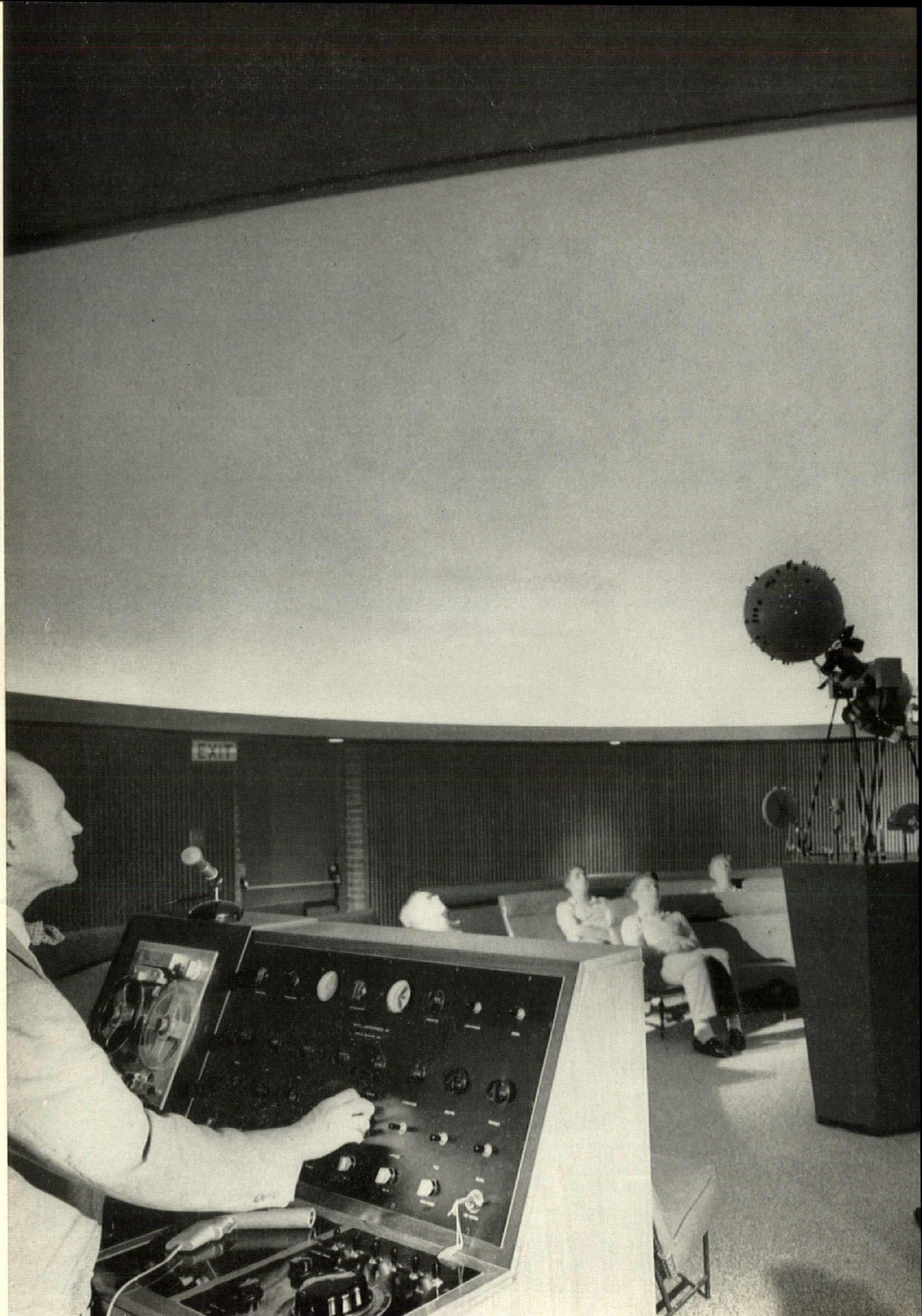
Temple Street Parking Garage, New Haven, Conn.
Architect: Paul Rudolph. Engineers: Henry Pfisterer (structural), Jerome Mueller (mechanical). Parking economics consultant: Wilbur Smith & Associates. Graphics design consultant: Alvin Eisenman. Parking consultant: E. A. Barton & Associates. General contractor: Fusco-Amatruda Co. Owner: City of New Haven, Richard C. Lee, Mayor, New Haven Parking Authority, Roy A. Michaels, Chairman.
Building area: 550,000 square feet (1,280 parking spaces). Square foot cost: $8.86. Breakdown: concrete, 40,000 cubic yards, $2,200,000; structural steel, $110,000; reinforcing steel, $1,008,900; miscellaneous iron, $75,000; tile, terrazzo, $40,000; sheet piling, $100,000; rolling grille doors, $16,000; painting, $12,000; elevators, $118,000; mechanical, $194,000; electrical, $565,000. Land and site development cost: $100,000.





PHOTOS LEFT AND ABOVE: GEORGE CSERNA
PHOTO OPP.: BRUCE CUNNINGHAM-WEHDNIGG




EXIT

SCIENCE FOR SCHOOLBOYS

The young men stargazing so intently in the picture at left are learning with the help of the most advanced scientific equipment and teaching methods to be found in any U.S. secondary school (and a good many colleges as well). They are in the planetarium of the new Science and Mathematics Quadrangle at St. Mark's School of Texas, a private day school for 570 boys just north of Dallas which is fast earning a reputation among educators as one of the country's top preparatory schools.

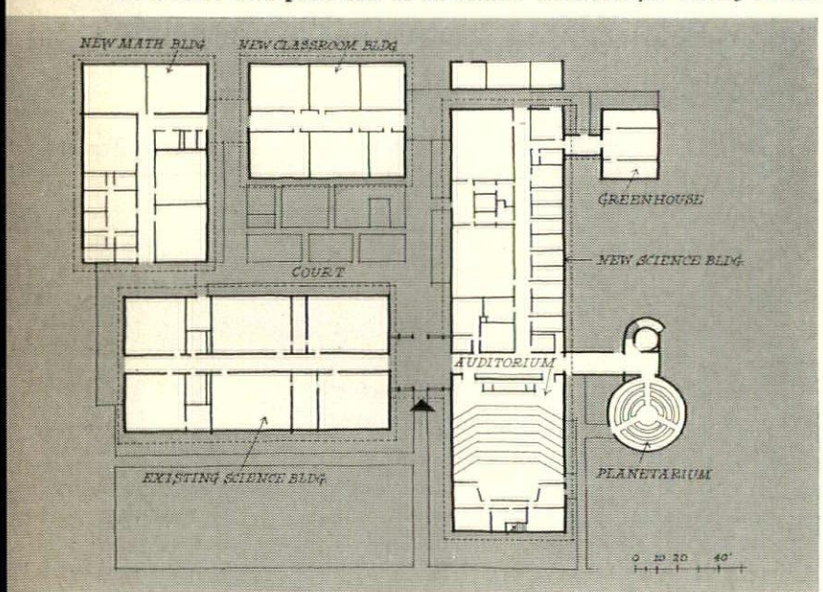
The conjunction of good planning and good equipment is most striking in the new science building, of which the planetarium is a part; besides a lecture hall and laboratories that contain everything from a complete weather station to test equipment for atomic physics, each instructor has his own private lab, connecting with his office. There is a dark room, a sterile room, an animal room, and even an amateur radio station (in addition to a closed-circuit television studio). Especially promising students are assigned to a row of individual laboratories, fitted with the latest equipment, where they can work in advanced projects of their own choosing under guidance from faculty advisers.

The planetarium itself is typical of the care that has gone into the planning of the school: 35 feet in diameter, it has carpeting and curved upholstered benches with comfortable backs and headrests for undistracted viewing. To further the necessary quiet and the illusion of being suspended in space, the wood-slat walls are backed with acoustical fiber, and noisy air-conditioning ducts have been eliminated

PHOTOS: JOHN ROGERS

PHOTOS: JOHN ROGERS

Central court with pools acts as an outdoor classroom for botany studies



by turning the curved dome into a plenum faced with perforated aluminum.

Within the pleasant courtyard of St. Mark's new quadrangle, the casual atmosphere and simple, ranchlike buildings belie the amount of study put into the scheme by school officials and Architects O'Neil Ford and Sam B. Zisman. An existing science building, which the architects remodeled, set the standard for basic building shapes, heights, and roof lines. Two new math buildings and the large new science building complete the enclosure; the planetarium and a botany greenhouse are connected by short corridors outside the square (plan below).

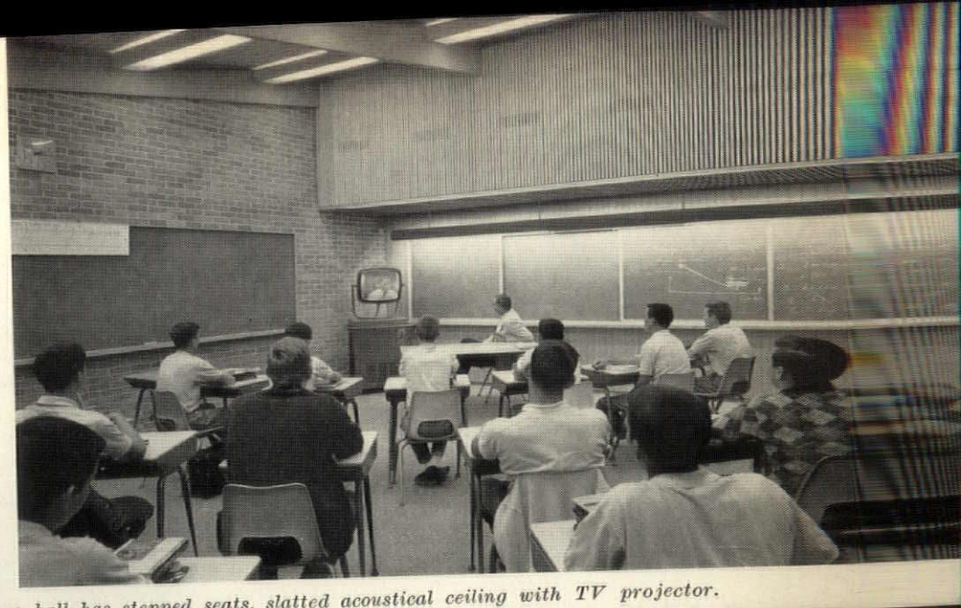
The courtyard (left) acts as an outdoor classroom for the botany department; here some of the boys can be seen studying the effects of the elements on everything from desert cacti to tropical water plants.

Well-detailed interiors (right) provide a warm atmosphere that seems to help learning as well as morale. There is virtually no item of modern equipment lacking. In the big lecture hall there are front projectors for movies and slides, rear projectors which focus on a fixed screen above the lecturer's head, and a large adjustable screen for a television projector that retracts through a trap door in the wood-slatted ceiling. The closed-circuit TV system has its studio and control room directly behind the lecture hall, and can broadcast special lectures or demonstrations to classrooms in all parts of the school (top photos). The lecture hall itself is designed to make a loudspeaker system unnecessary, and stepped seating assures clear sight lines from all parts of the room. Students sit on molded white plastic chairs which swivel on fixed standards, in front of continuous counter-desks designed by the architects with white plastic tops and fir frames.

The new $1.1 million quadrangle, given to St. Mark's by Eugene McDermott and Cecil Green, two of the founders of Texas Instruments Inc., promises a new kind of early training in a science-dominated world. Says Headmaster Thomas B. Hartmann: "We have here a facility so new and so complete that the boys—and even the faculty—have not begun to put it to the test."

FACTS AND FIGURES

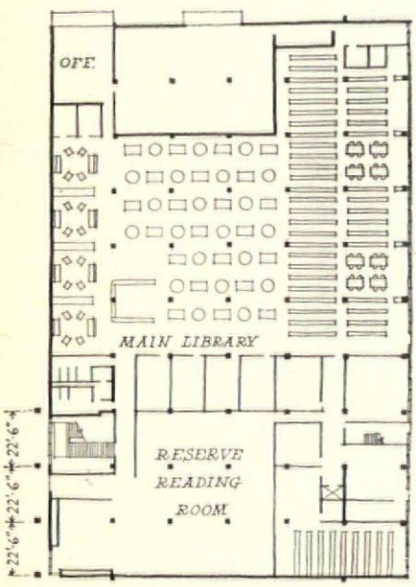
Science and Mathematics Quadrangle, St. Mark's School of Texas, Dallas, Texas.
Architects: O'Neil Ford and S. B. Zisman. Landscape Architects: Marie Berger and Houston Bliss. Mechanical and electrical engineers: Gregerson & Gaynor. Contractor: Erle P. Grossman Constr. Co.
Building area: 33,087 square feet.
Total construction cost: $1,134,391.
Financed by two large gifts from Mr. & Mrs. Eugene McDermott and Mr. & Mrs. Cecil Green.



Above, lecture is piped from TV studio to classrooms (right). Below, lecture hall has stepped seats, slatted acoustical ceiling with TV projector.

LIBRARIES

MARVIN RAND



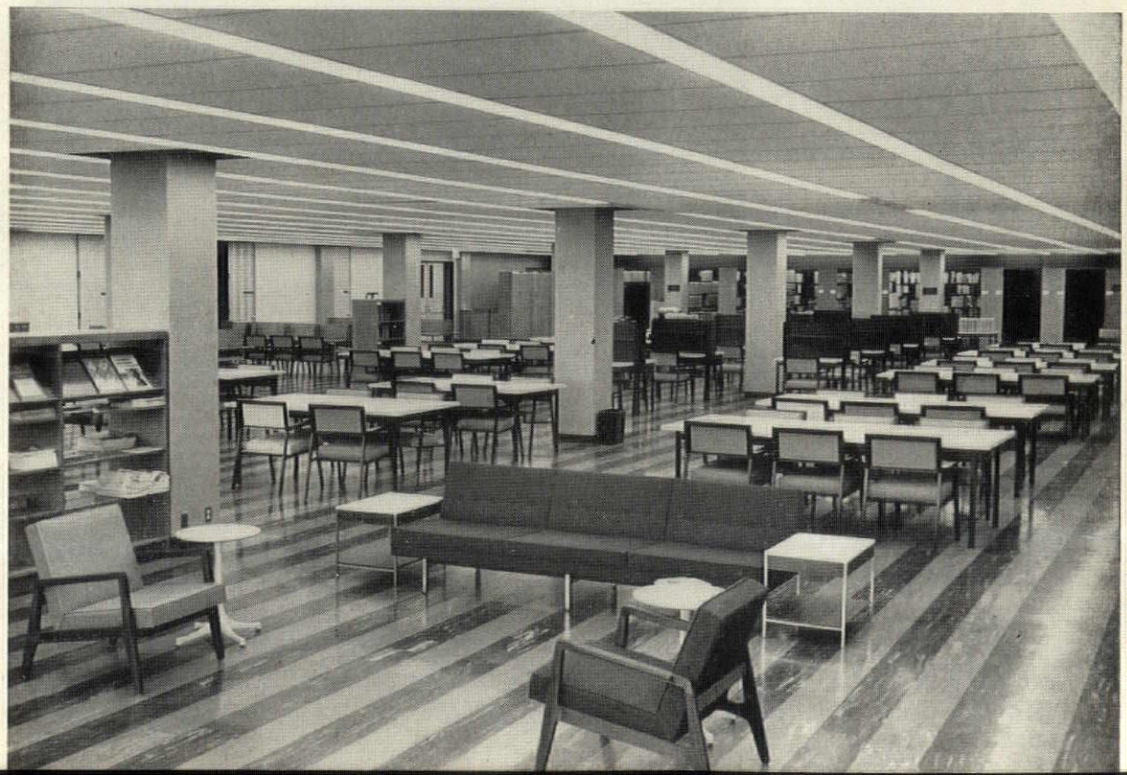
GABLES AND GARDEN FOR NEVADA CAMPUS

A tall arcade with a lively roof of prestressed, folded plates (right) links the new $2 million Noble H. Getchel library with the older campus at the University of Nevada in Reno. The form is not arbitrary: both the arcade and the long-span plates of the main roof echo the pediments and gables of the university's traditional sky line.

Collaborating with Artist Malcolm Leland, Architect Robert E. Alexander designed the roof with V-shaped aluminum finials piercing the tops of the folded plates, and created two outdoor reading courts with reflecting pools, terraces, and sculptured concrete forms (photo, left).

Although the university now has 1,400 students and 350,000 volumes, it was easy to foresee radical increases in as little as ten years time. The problem was to provide a library which could be expanded or completely rearranged as curriculums and programs changed—without straining the university's budget. Large bays (22½ feet square) and a minimum of permanent partitions allow versatility in arranging aisles and book stacks. The reinforced concrete structure will support the heavy stacks at any point. Equally important, the glass wall on the north is completely demountable so that a three-story extension of 24,000 square feet can be added.

The reserve reading room on the ground level has its own separate service desk and entrance and can be operated independently from the main library for late evening study. It can also be subdivided temporarily into six classrooms if necessary. Resident architects: Vhay Associates. General contractor: Stolte, Inc.



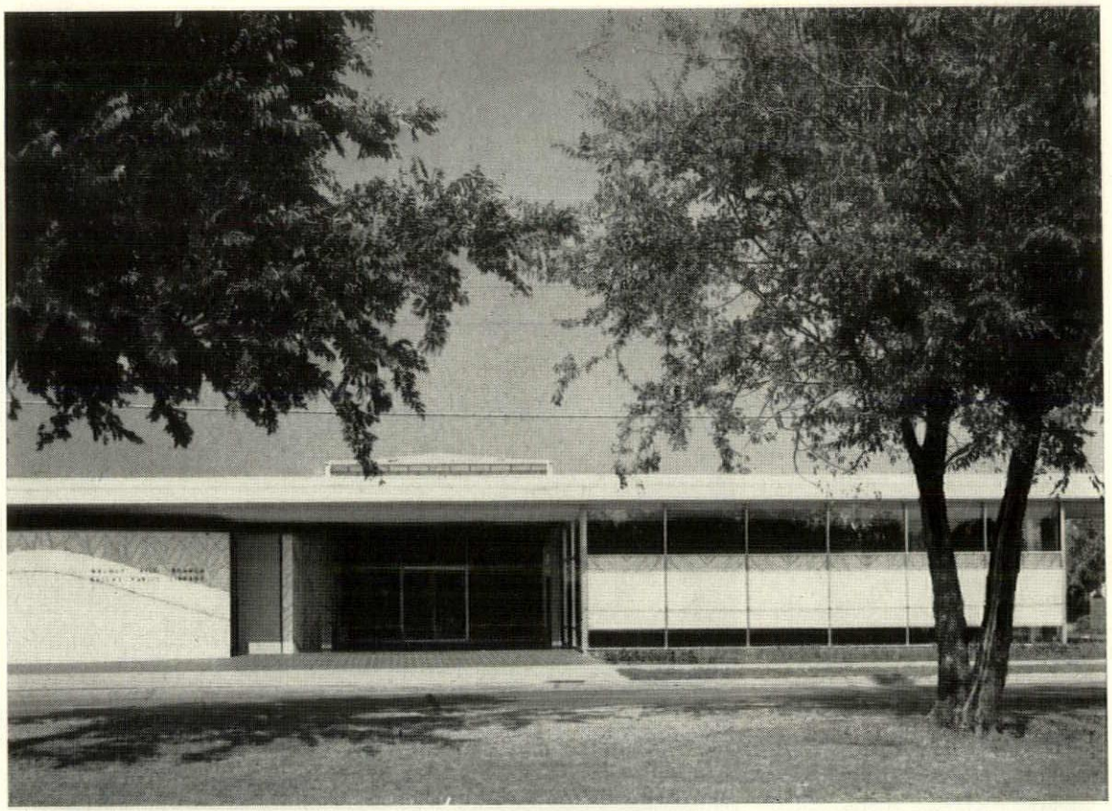
ELIO ORTIZ

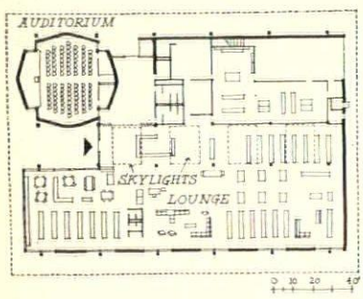
BRANCH LIBRARY FOR A DALLAS SUBURB

A few years back, a survey made in Dallas, Texas, showed that the booming city not only needed a series of branch libraries, but needed them in accessible and prominent sites where books could "advertise themselves." The new Walnut Hill Library, shown here, is one of the results: a simple and attractive building, which is also highly visible from an adjoining shopping center.

Since Walnut Hill is also located next to a suburban residential district, Architects J. Herschel Fisher and Donald E. Jarvis designed the exterior to act as a transition between shops and homes. Residential buff brick covers the library's side walls; white Georgia marble on the main façade and overhang reflects the building's public character.

On the interior, lounge areas (right, below) are carpeted for sound absorption and a warm, informal effect. The simple rectangular plan (above) has a 100-seat community auditorium in the shape of a squared circle, with separate entrances for use after closing hours. The library, air conditioned year-round, is lighted by a series of frosted skylights inset with fluorescent lamps. Construction cost: $243,726 ($15.13 per square foot). Contractor: Carlson-Skelton Co.





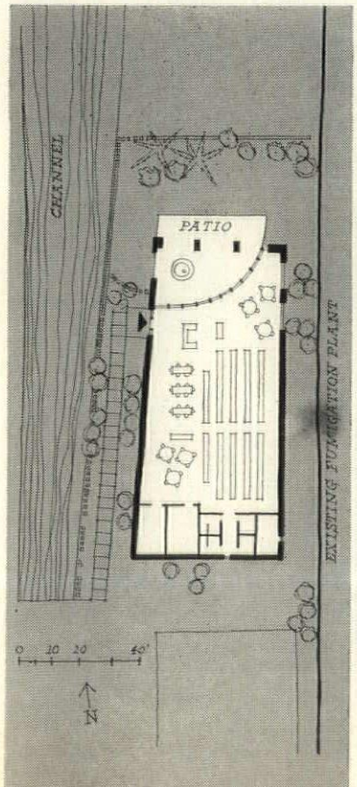
PHOTOS: N. BLEECKER GREEN

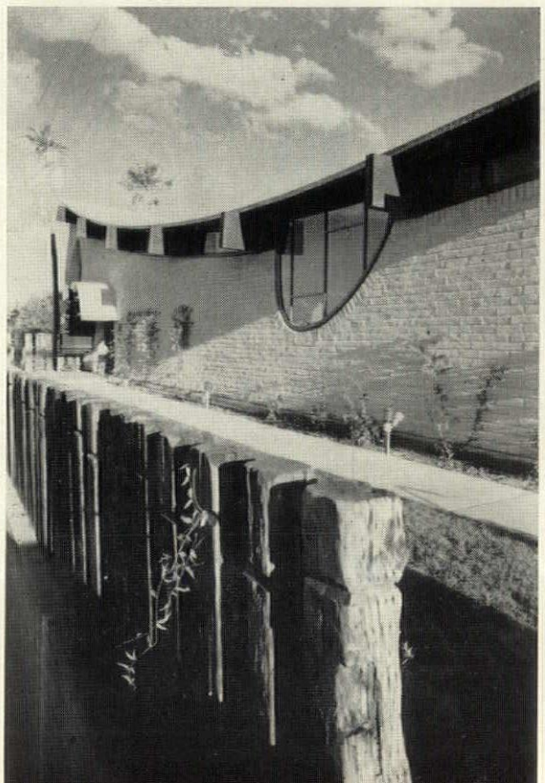
SMALLTOWN LIBRARY WITH SPANISH FLAIR

In sharp contrast with the straightforward Dallas library opposite, this public library at Nogales, Arizona, was designed by Bennie M. Gonzales with south-of-the-border flamboyance. The small (4,546 square feet) library started off with a list of obstacles: a limited budget (total cost: $67,050); a narrow site surrounded by a tangle of utility poles and wires; an open storm channel on one side and a fumigation plant on the other.

The architect was able to cut costs by using native adobe brick and Mexican floor tile. The jaunty arcades protect the glass walls and outdoor reading patio (right), reducing glare and cooling costs.

Encouraged by the success of its new library, Nogales has already dismantled the utility poles and is now planning to turn the whole area into a civic center. Contractor: Ed E. Pierson.





PHOTOS: BILL SEARS

ELEGANT SHOWROOM FOR A PARIS SQUARE

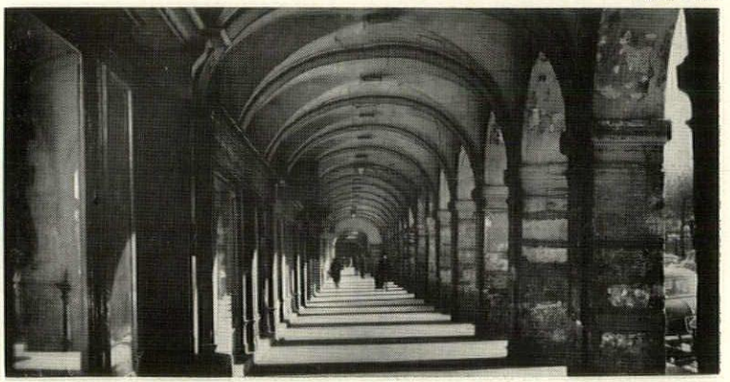
The stone pillars, arches, and vaults which frame the modern furniture showroom (opposite) are 350 years old. They are part of Paris' venerable Right Bank Place des Vosges, an elegant square of arcaded pavilions enclosing a formal park, built by Henri IV and opened in 1612. Though the King and many of his nobles lived there—it was then called Place Royale—Place des Vosges is no longer *haut monde* and many of the rose-colored buildings now have small shops on the ground floor.

None of the shops is as handsome as this dramatic remodeling by Architect Jacques Bas. Many of them, indeed, are boarded up, and those that aren't show little appreciation for the square's basic dignity. But here the architect has capitalized on his building's inherent worth, resisting the pervasive tendency in shop remodeling to cover up the old with a bland new surface. Instead of adding, he subtracted, replacing the original stone infilling between the arches with great sheets of tempered glass. The glass, held in place by almost invisible aluminum frames on the inside of the arches, dramatizes the old architecture in a respectful way, at the same time opening up arresting show windows on the arcade.

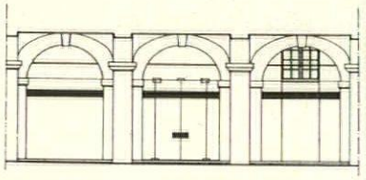
The interior is stark white to provide a neutral background for the vividly hued furniture, much of it designed by Swiss Architect Hans Bellmann. To gain additional display space in the narrow quarters the architect provided an L-shaped mezzanine (plan, right) which stops well short of the glass façade. The mezzanine is reached by wood steps cantilevered from a steel support.

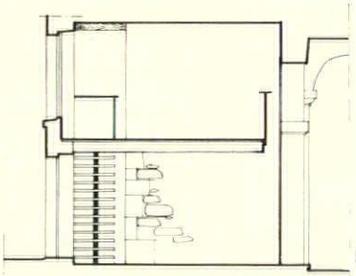
PETER BLAKE

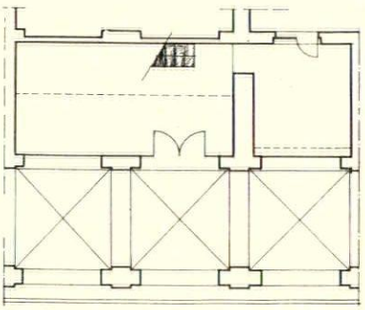
PETER BLAKE



Old arcaded building (above) was opened up with sheets of glass, white walls, strong lighting (right)







JEAN BLAUGRAUD

JEAN BIAUGRAUD

the street but creating some awkward corners inside. To eliminate these corners, the hexagons were turned into circles.

The form thus determined, the architects turned to surface and detail. The shaft, cantilevered out 12 feet from the base, was richly modeled of brilliant white concrete, punctured by deep-set, bronze-tinted windows. It was capped by a pierced parapet wall sloping back from the building's face to provide a graceful silhouette. And to relate the rounded masses to the rectangular character of downtown Philadelphia, a screen of tall concrete panels was placed around the property.

Trapezoidal module

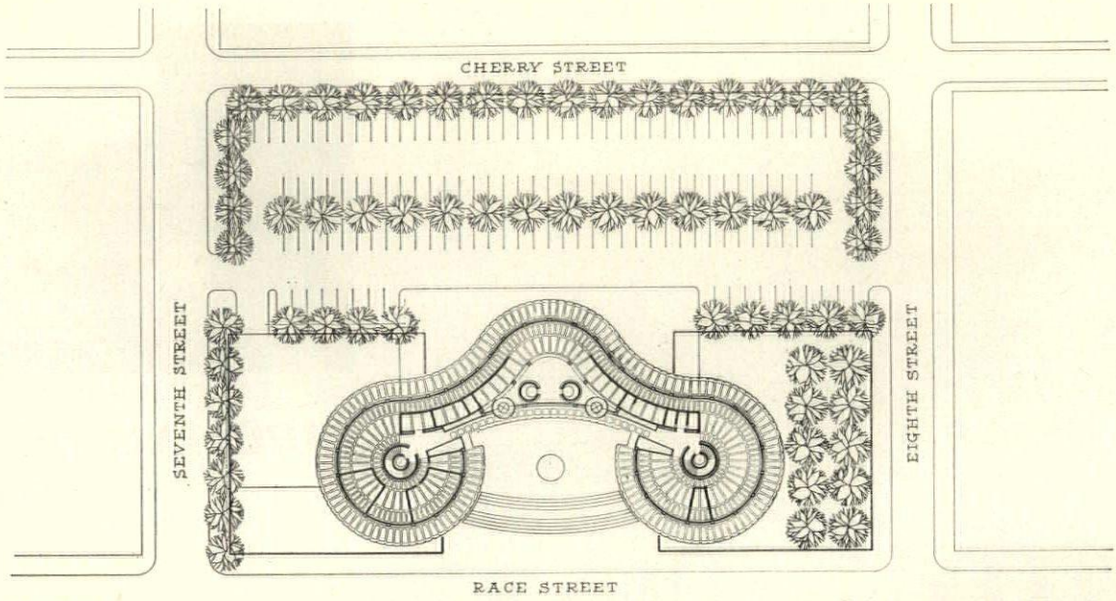
Inside, the curves seem even more gentle than on the exterior. They work well, too.

Partitions fall neatly on the joints between floor panels, which taper from a width of 10 feet to 3½ feet. In the other direction, the 32-foot clear span of the floor units can be easily split at transverse ribs on 10-foot 8-inch centers. The minimum enclosed office space thus becomes a trapezoid roughly 10 feet by 10 feet 8 inches. It gives the offices a feeling of individuality, and makes the large secretarial pools seem more intimate in scale.

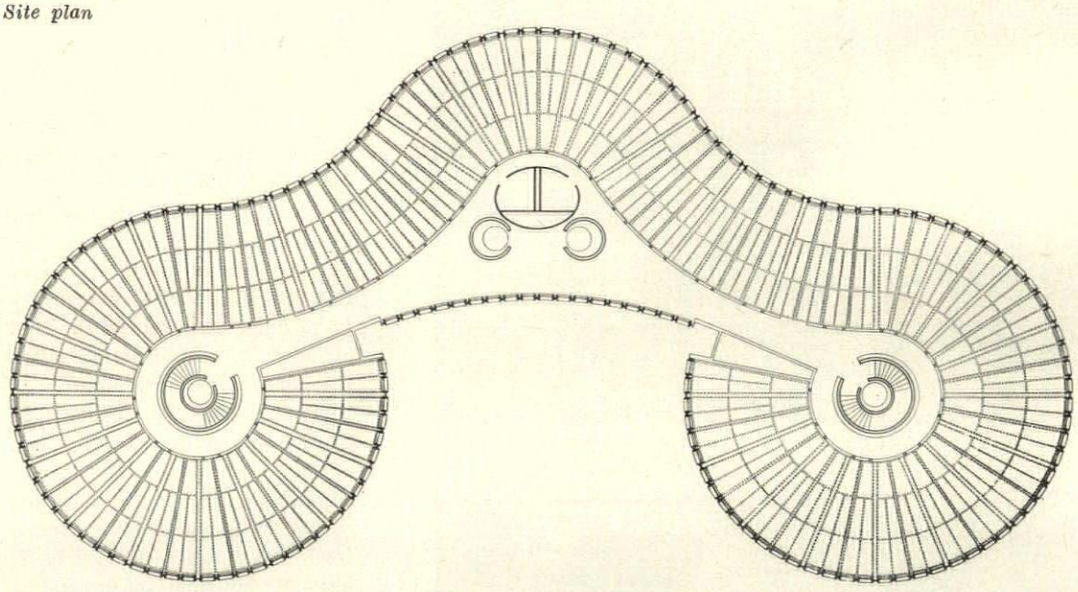
The building's circular geometry also eliminates the excessive visual length felt in the corridors of many rectangular office buildings. Around the central elevator core, the corridors swell into a daylight-flooded lobby, then diminish to a narrow neck at the control point between the public and security areas. For all of this spectacle, the usable space ratio is 78 per cent.

A structural wedge

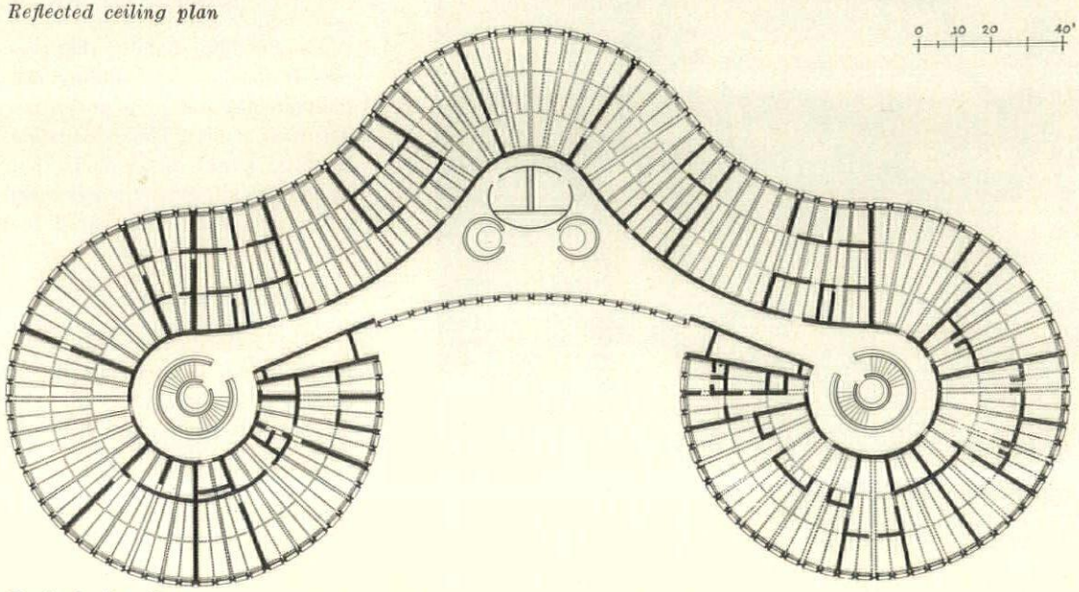
Even after its daring form was determined, the Philadelphia Police Headquarters remained conservative in structure. At first it was to be a conventional post-and-beam framing system with a curtain wall for the shaft. Then came a conference between the architects and Consulting Engineer August E. Komendant, and the joint realization that the wedge-



Site plan

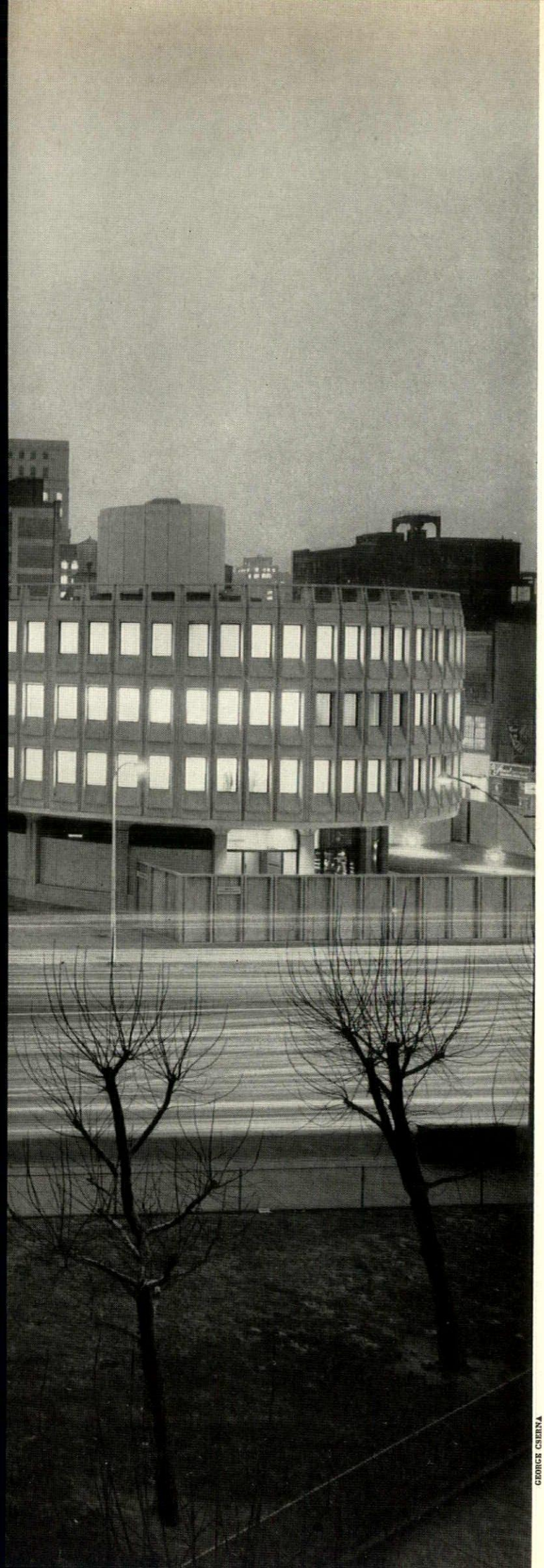


Reflected ceiling plan

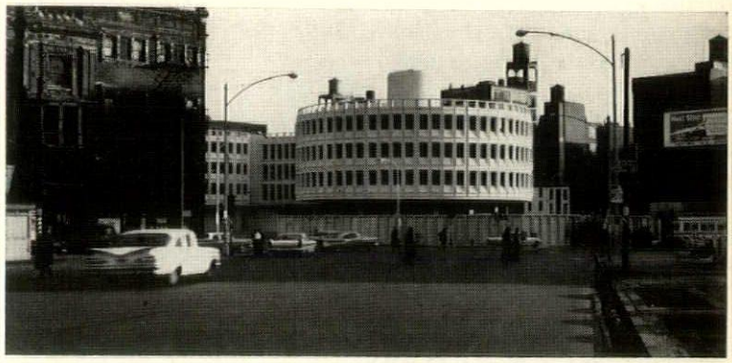


Typical office floor

PHOTO OPP.: GEORGE CSERNA



GEORGE CSERNA



LAWRENCE S. WILLIAMS, INC.

CIRCLING IN THE SQUARE

Near the Ben Franklin Bridge across the Delaware, the main route through Philadelphia joins one of the city's rare diagonal streets. Suddenly, the white, rounded end of a building comes into view dead ahead, gleaming against the tired remnants of skid row. Seen in this setting, the new Philadelphia Police Headquarters seems as improbable as a great ocean cruiser parked in mid-city.

But at closer quarters, the building turns out to be more logical than improbable. For example:

► The circles and sweeping arcs grew not from a desire on the part of the architects (Geddes, Brecher, Qualls & Cunningham) to be different, but from the kind of interior and exterior space the police department wanted.

► The winding plan creates some uniquely interesting corridors and offices.

► And the structure by which the curves are achieved takes precast concrete construction close to its ultimate potential in integrating skin, bones, and services.

The one improbability that persists is that such a building was built at all—and by a police department at that. The explanation is to be found in the fact that Philadelphia's newly enlightened police administration shared the architects' spirit of adventure.

Welcoming gesture

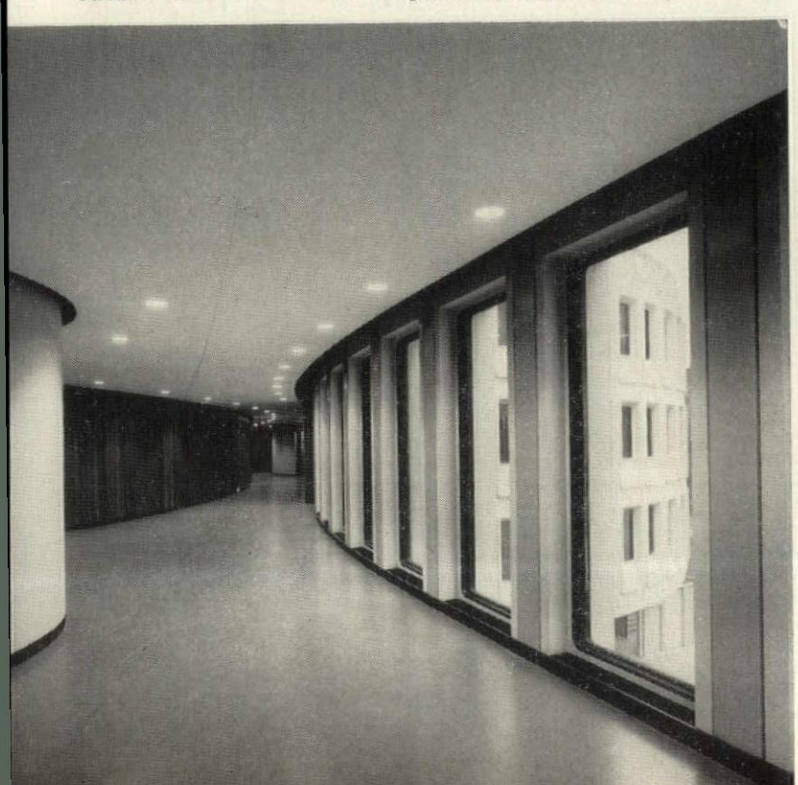
When Reform Mayor Richardson Dilworth cleaned out Philadelphia's city hall, he swiftly cut the previously close ties between police and politicos. The new top leadership of the department was drawn from the ranks by competitive examination. Headed by Commissioner Albert Brown, the new leaders were largely young men with highly progressive ideas.

Among these ideas was the conviction that headquarters should be anything but a grim, forbidding fortress, scaring the wits out of the citizenry: Headquarters was really a somewhat specialized office building; it was not a jail (although there had to be a detention center for prisoners awaiting arraignment) and it shouldn't look like one.

Thus encouraged, the architects developed a symmetrical plan which placed security areas in twin clusters joined by public areas in the center. Vertically, they followed the traditional order of base, shaft, and capital: in the base are the spaces used by large groups; the three-story shaft contains mostly offices; and the cap is a parapet around the service penthouses. The detention center is kept out of sight underground.

To make the building as inviting as possible—and relate it to historic (but neglected) Franklin Square across the street—the architects and their clients decided early in the game to set the center of the building well back, forming a generous forecourt. Originally the wings on either side were to be squarish, the court a deep rectangle. Later the composition became a collection of hexagons, opening the court more fully to

Circular elevator in entrance lobby (above) takes visitors up to the office floors. Below: light-flooded corridor, left, typical large general office, right.



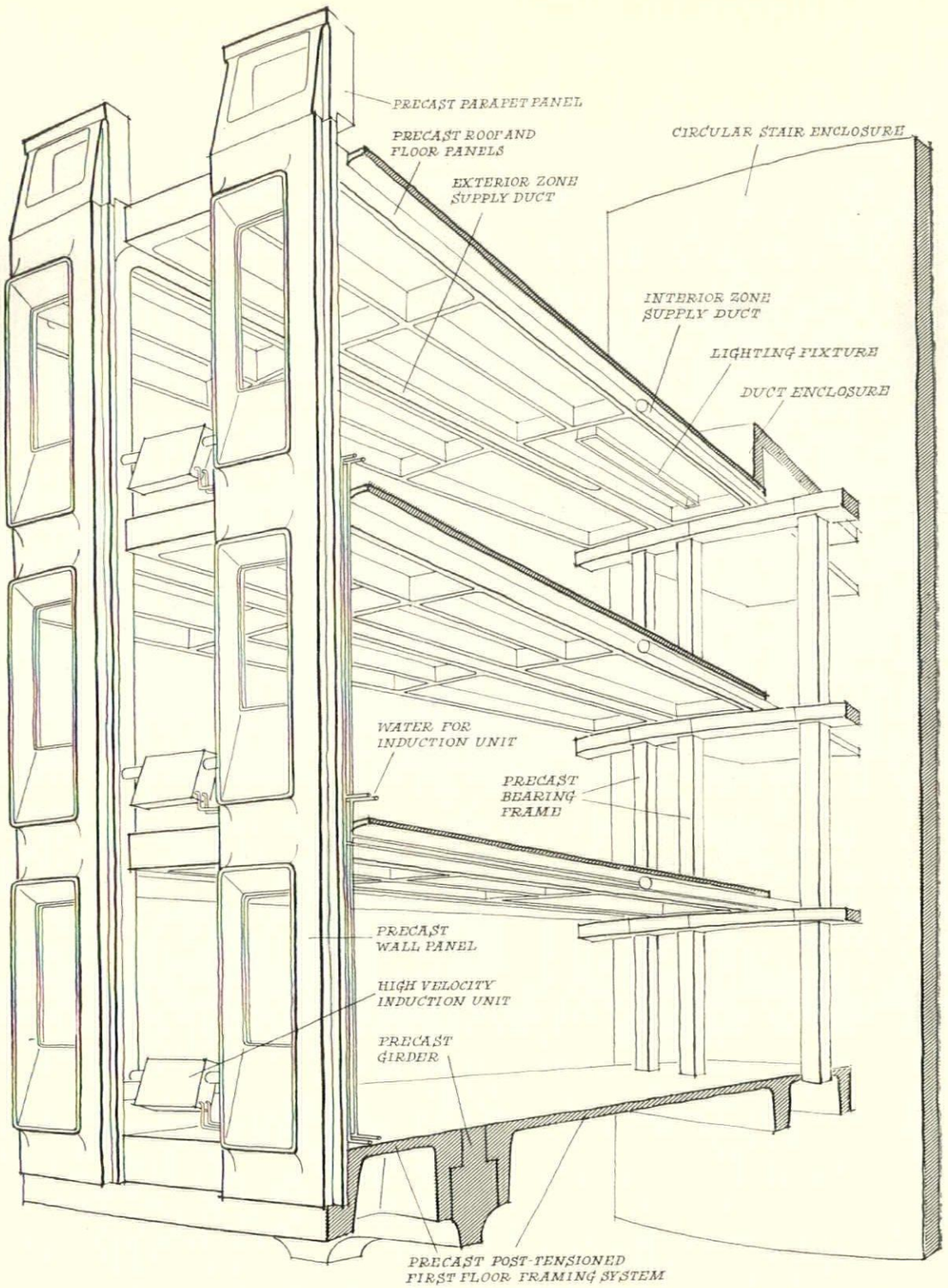
shaped spatial module could be a factory-built structural module as well. This led directly to the choice of precast concrete, with its great potential for integration of structure, enclosure, and finish, as the basic material. From that point on, moreover, the mechanical and electrical engineers were brought into all major design decisions so that services also could be fully integrated.

The results of this careful synthesis are most apparent in the three-story-high load-bearing panels that sheathe the office floors. These tall panels are 5 feet in width, with crisply detailed 1-foot 9-inch flanges which act as structural columns. Their unsupported length is cut by webs which form light-catching, sloping spandrels beneath the window frames. The outward slope of the spandrels also provides space inside the building for the air–water induction units that condition the exterior zones of the office floors. At every fourth panel, a wide vertical joint subtly articulates the wall—and makes room for high-velocity air ducts from the penthouse to the window units.

The most dramatic structural feat of all is the 12-foot cantilever supporting the office floors. This heroic function is performed by separate precast sections tied into place by high-tensile steel tendons. The tendons run through the 35-inch-deep ribs in the ceiling of the ground floor.

It was here, by sheer accident, that trouble occurred during construction. The precaster left part of the reinforcement out of some ground-floor ceiling panels. It was only about 50 cents worth of steel, but it was enough to make the panels' inner edges crumble during post-tensioning. Unfortunately, although the oversight had nothing to do with design, it prompted investigation of the entire structure, which resulted in a delay of more than seven months.

Whatever one may feel about the twisting form in relation to its rectangular setting, this is the first major building to match the fresh thinking of Philadelphia's planners with equally fresh thinking about architecture.



FACTS AND FIGURES

Police Headquarters, Franklin Square, Philadelphia, Pa.
Architects: Geddes, Brecher, Qualls & Cunningham, Roland A. Gallimore (senior staff architect). Engineers: David Bloom and Dr. August E. Komendant (structural), Cronheim and Weger (mechanical and electrical), Edward P. May (electrical associate). Acoustical consultants: Bolt, Beranek and Newman, Inc. General contractor: Sovereign Construction Co.
Cost: Land, $1,150,000; demolition, $110,500; construction, $4,328,054 for 125,880 square feet ($34.38 per square foot). Base-bid breakdown: general construction, $3,162,575; HVAC, $506,284; plumbing and drainage, $111,111; electrical, $471,-100. Square-foot cost, minus demolition and special equipment: $30.85.

GEORGE CSERNA

MORLEY BAER

NOBLESSE OBLIGE, IT WORKS

The nice view of children in a pool (below) testifies to a triumph of corporate community spirit over corporate caution in a public utility. If the children of Spokane get extra benefit from the Washington Water Power Co.'s "reservoir," this is because of some effective intervention on their behalf.

Writes Architect Kenneth Brooks: "A pool was incorporated in the design [above, published in FORUM way back in December 1958] when we realized that we would have a great deal of water to discharge from the heat-pump installation. Analysis showed we could save much money using this water to sprinkle lawns on the 23-acre site. We chose to use a landscaped pool, which became a major feature at the main entrance.

"The Washington Water Power Company management, their attorneys, and insurance advisers went through some frantic maneuvers when neighborhood children began fast 'adopting' the pool as their own. They finally decided on some very inconspicuous signs suggesting that the pool was not for swimming—but they never have run a young swimmer off the grounds. The children dearly love the pool now; they lie around the rocks like little bullfrogs. It is said

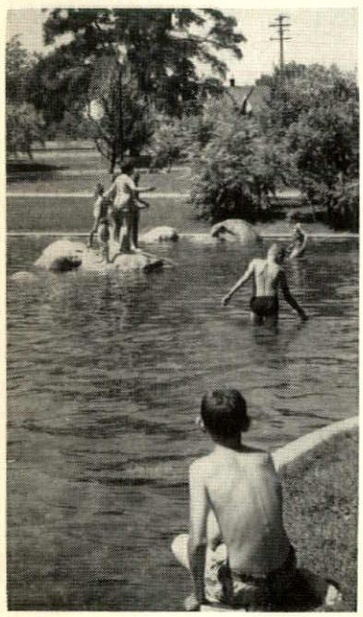


PHOTO RIGHT & RIGHT ABOVE: DONALD RAY CARTER

that a young mother came to the pool with her brood and inquired of the receptionist, 'Where are the cabanas?' "

WHO IS A BARBARIAN?

Some nice people are. To every boy, with the same surprise, there comes the discovery sooner or later that a barbarian can be a man in a dinner jacket. The boy never really believes it. Yet the barbarians who first attacked Rome swinging clubs were followed by others who came to rule, if not in dress togas at least in civilized apparel. They ruled with energy and some success. They got beyond the first definition of a barbarian (in the old *Webster's*) as a foreigner. They got beyond the second definition, which associates the man with a rude, savage state. They perhaps fit the third definition of the barbarian as "a civilized person without, or out of sympathy with, enlightenment, especially literary culture"—we might add architectural culture for good measure. They could have been pleasant company, to a point. Being a barbarian is easy, even for those who are good company; and if the particular realm of culture under discussion should shift a little, then in our specialized times every one of us, even when dressed in a dinner jacket, might betimes find a barbarian in front of him in the mirror.

The dinner-jacket barbarians—in the realm of architecture—are commonest now on college or university boards. They are cultivated men with respect to the law, or business, or political administration. Yet in respect to architecture they are "civilized persons without, or without sympathy for, enlightenment." This comes forth most often when there is an architectural school on the place. If the school or its dean seriously seeks influence on the university's future physical planning, or seeks some voice on the board, he soon learns.

"But we *hire* architects," declares the lawyer or corporate member of the board.

"Might we find better ones?" softly inquires the dean.

"But these are the best," comes the prompt and final reply, "I hired them myself to design our office building."

How about a little more sympathy for the enlightenment that a university dean might shed?

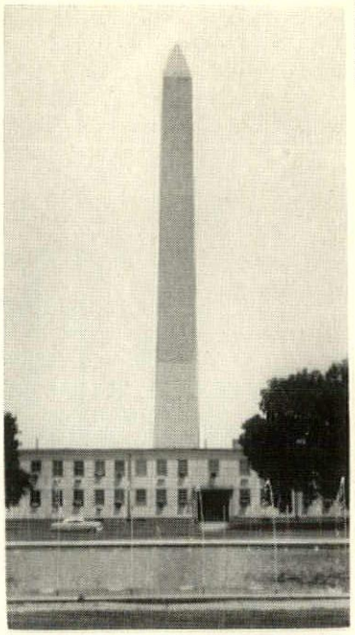
BARBARIANS IN WASHINGTON?

Speaking of barbarians polite, of barbarians energetic and economical, or of barbarians charming, there are some people in Washington who might have to accept description in such terms if the effect of their actions were to be taken into account.

Last month, and for some time before that, FORUM's columns have carried remarks about the "temporaries" in Washington, those shaggy ranks of scratched-together war offices which were tolerated for emergency use only, on the understanding that after the emergency they would be torn down.

Removing these wrecks from the nation's front lawn has been the frustrated ambition of every president of either party. It is President Kennedy's and Mrs. Kennedy's ardent ambition now.

The man who sees differently is Congressman Albert Thomas, Democrat, from Houston. He says, "There is a lot of useful service



PETER BLAKE

in those temporaries yet."

This hardly seems like the view of "a civilized person *with,* or with sympathy for, enlightenment" on that particular subject. Even in financial terms, as an enlightened treasurer could tell the learned Congressman (who is Mr. Appropriations himself in Congress), introducing backhouses in front of a first-class property not only spoils the place where they stand but destroys also the value of millions that have been invested in making a beautiful and impressive thing of the whole view; in this case it wastes the millions which Congressman Thomas has spent on the Capitol, wastes the millions spent earlier on the Lincoln Memorial, wastes the millions on the Mall, and in all the buildings along the Mall.

Let's hope Mr. Thomas will reconsider all these wastes, even though his sympathy for enlightenment may falter in relation to art.

Douglas Haskell

MUSIC, ACOUSTICS & ARCHITECTURE. By Leo L. Beranek. Published by John Wiley & Sons, Inc., 440 Park Avenue South, New York 16, N.Y. 586 pp. 7¼" x 10¾". Illus. $15.

Books on engineering design are not expected to be as exciting as a good novel, but Dr. Beranek has given us perhaps the first one that comes close. *Music, Acoustics & Architecture* is an important and absorbing book not only for people interested in music and the design of spaces for musical performance, but also for anyone concerned with the impact of technology in the arts.

Just about every concert hall built in the past fifteen years has been worked over thoroughly by acoustical engineers. With alarming consistency, these engineered halls have been popular failures. Critics and concertgoers complained of harsh, dry, or thin sound. It was becoming fashionable to infer that the application of scientific disciplines could only have a destructive effect on the creative arts. Beranek's firm, Bolt, Beranek & Newman, had been deeply involved in the design of some of the concert halls that have come under critical fire and had also been retained to consult on Architect Max Abramovitz's Philharmonic Hall in New York's Lincoln Center (above). Beranek determined to prove that the science of acoustics, properly applied, could provide the quality of sound that the musicians and experienced concertgoers wanted in a concert hall. The book is a record of how he accomplished this purpose with a combination of scientific detective work, engineering skill, and a sensitivity to the meaning of esthetic experience.

Beranek realized that his main task was to correlate the subjective reactions of informed listeners with the objective measures of sound used by the engineer. To do this, he analyzed 54 of the most important concert halls in the world. The comments of well-known musicians and critics were sifted and Beranek himself traveled around the world to listen critically to each one of them. At the same time, careful measurements were made of the halls and the behavior of sound in them. The book describes the way that the key relationships between the quality and measurable quantity of sound emerged. A new theory and method of concert-hall design is evolved between the covers of the book. Although the tuning of the New York Philharmonic Hall, which opened in September, is not yet completed, it stands as the first full-scale application of Beranek's new design approach. Whether it will be acoustically the finest of modern concert halls must await the test of time.—B.P.S.

INNOVATION IN BUILDING. Contributions at the Second CIB Congress, Cambridge, England, 1962. Edited by the International Council for Building Research, Studies, and Documentation (CIB). Published by American Elsevier Publishing Co., Inc., 52 Vanderbilt Avenue, N.Y. 17, N.Y. 232 pp. 8" x 12". Illus. $22.50.

The papers given at the second international congress of building researchers in September make up a revealing portrait of the state of building science in the Eastern and Western nations.

Speakers from the West dwell upon the social and economic changes that make more building research activity imperative today; but more questions than answers are identified. Johns-Manville Research Vice-President Clifford Rassweiler supplies a crystal-clear analysis of why the fractionized building industry has never been able to reach the level of technological innovation achieved by other large industries. Most of the speakers are obliged to report on their current research activities with a stated or implied apology for the feebleness of their efforts in face of the vast need for knowledge which has been established.

Building scientists from the Eastern nations seem to speak of their work with greater assurance. There is no evidence of a concern to find out what people really want in their buildings before launching a new technique. The gap between theoretical studies and practice seems surprisingly small by Western standards. In Poland, for example, so-called industrialized building techniques must be used under government directives. It is admitted that the resulting buildings have cost as much as 30 per cent more than similar projects using traditional methods.

The infant building science which we all must count upon to bring innovation and higher productivity to the building industry is having a rough start: in the West it moves too slowly; in the East, too fast.

IES LIGHTING HANDBOOK. Third Edition. Revised Second Printing. Published by The Illuminating Engineering Society, 345 E. 47th St., New York 17, N.Y. 6" x 9". 1130 pp. Illus. $10.

The 25 sections of this comprehensive handbook contain an orderly condensation of the fundamentals of natural and artificial lighting from the basic physics of light energy and color to almost any imaginable specific application. Recent research work on the effect of glare on lighting quality is a valuable addition in this new printing. The brief discussion of light and architecture is predictably prosaic. There is certainly a need for some imaginative research in this area.

THEORY OF MODERN STEEL STRUCTURES. Vol. 1. Third Edition. By Lionel E. Grinter. Published by the MacMillan Co., 60 Fifth Ave., New York 11, N.Y. 374 pp. 6" x 9¼". Illus. $9.25.

The third edition of Professor Grinter's popular text retains the clear and practical approach of the earlier editions. The three chapters which have been added contain fine, straightforward analyses of plastic design theory.

WORK STUDY APPLIED TO BUILDING. By Rowland Geary. Published by The Builder, Ltd., 4 Catherine Street, Aldwych, W.C. 2, England. 143 pp. 5½" x 8½". $2.59.

A large British building firm has been using time and method studies of the type that have long been employed to analyze productivity in manufacturing plants. While this short treatise describes the techniques quite thoroughly, it doesn't make a very convincing case for this rigorous and time-consuming method over the usual approach.

SYMPOSIUM ON METHODS OF TESTING BUILDING CONSTRUCTIONS: Special Technical Publication No. 312. Published by the American Society for Testing and Materials, 1916 Race Street, Philadelphia 3. 83 pp. 6" x 9¼". Illus. $3.75.

The four papers presented discuss some of the all-too-rare efforts to develop tests for building construction. Investigations of the behavior of metal and masonry curtain walls, the effect of moisture on heat transfer through insulated roof decks, and the structural action of a complete trussed roof under load are described. Beyond the value of such work in helping to establish realistic performance codes, the reports show that we have the techniques available to take new construction methods out of the realm of guesswork. The rarity of such solidly founded studies indicates that we do not yet have the resources to apply these techniques widely.

BUILDING RESEARCH 1961: The Report of the Building Research Board. Published by Her Majesty's Stationery Office, London (available from British Information Service, 45 Rockefeller Plaza, New York 20, N.Y.). 89 pp. 6" x 9½". Illus. Paperbound. $1.70.

This modest pamphlet summarizes a year's work at Britain's Building Research Station. It records the painstaking efforts of a full-time professional staff several hundred strong who have worked steadily over the years on a wide range of basic problems in planning, design, and construction. The significance of the solid body of building science being created is understated with typical British reticence. One can't help wonder why the U.S. have never been able to mount a similar, basic, building research effort. It would undoubtedly pay its own way, as the BRS has, by increasing the use of more rational building methods. END

NEW!
compact design
. . . slim styling

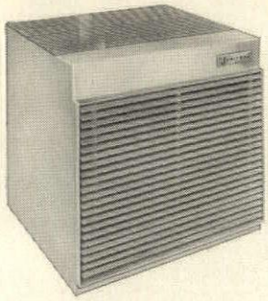
NEW!
space-saving,
side mounted
lever arms

NEW!

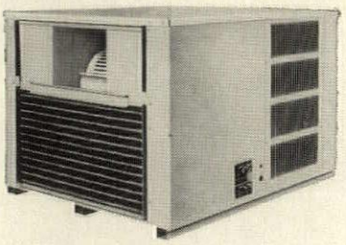
NEW!
strong, triple
core mullion

NEW!
modern,
compact outside
trims

FOR COOLING — ADD-ON OR INDEPENDENT SYSTEMS

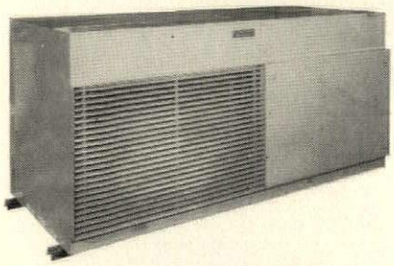


Package Cooling Units and Heat Pumps in a wide range of seven sizes, A.R.I. tested and rated. Low silhouette, insulated, weatherproof cabinet is approved for outdoor installation.

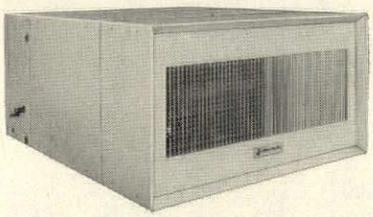


◀ **Summer Air Conditioning, Electric Powered,** air-cooled condensing units up to nominal 20 tons. A.R.I. rated capacities with unusually low operating cost. Top discharge, weatherproof. Five-year warranty.

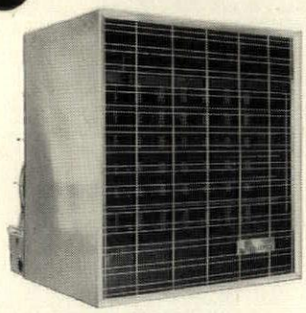
Blower Coil Units, with evaporator, blower and filter may be used in either free discharge or ducted applications. A.R.I. capacities from 21,400 to 118,000 Btu./hr. ▼



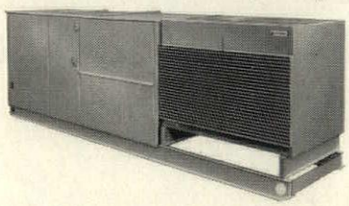
◀ **Gas Engine Condensing Unit,** air cooled, operates on natural or LP gas and 115 v. A.C. Very quiet and economical in operation. Designed for use with direct expansion cooling coils.



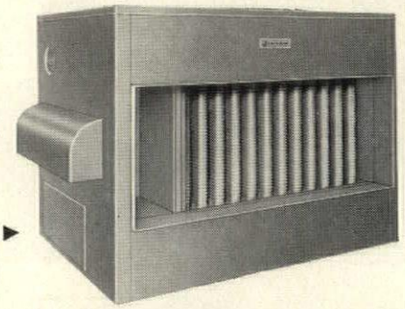
FOR COMMERCIAL-INDUSTRIAL HEATING



Skyliner Rooftop Units, for any combination of heating-cooling-ventilating. Factory-assembled, require no inside space. Heating is by natural, LP, mixed or manufactured gas; cooling may be either electric or gas engine powered. An ideal unit for modern single-story structures. ▼

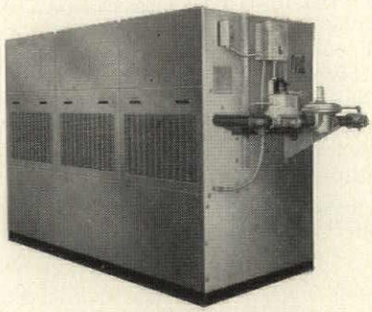


◀ **Gas-Fired Unit Heaters,** the Janitrol 67 Series, leader in design, with eleven models from 30,000 to 250,000 Btu./hr. inputs. Includes complete control system, and durable aluminized steel heat exchangers, with stainless steel optional.



Gas-Fired Duct Furnaces, ▶ weatherproof model shown, is designed for outdoor installation; also available in standard models. For heating circulated air or tempering make-up fresh air. Available with either aluminized or stainless steel heat exchangers.

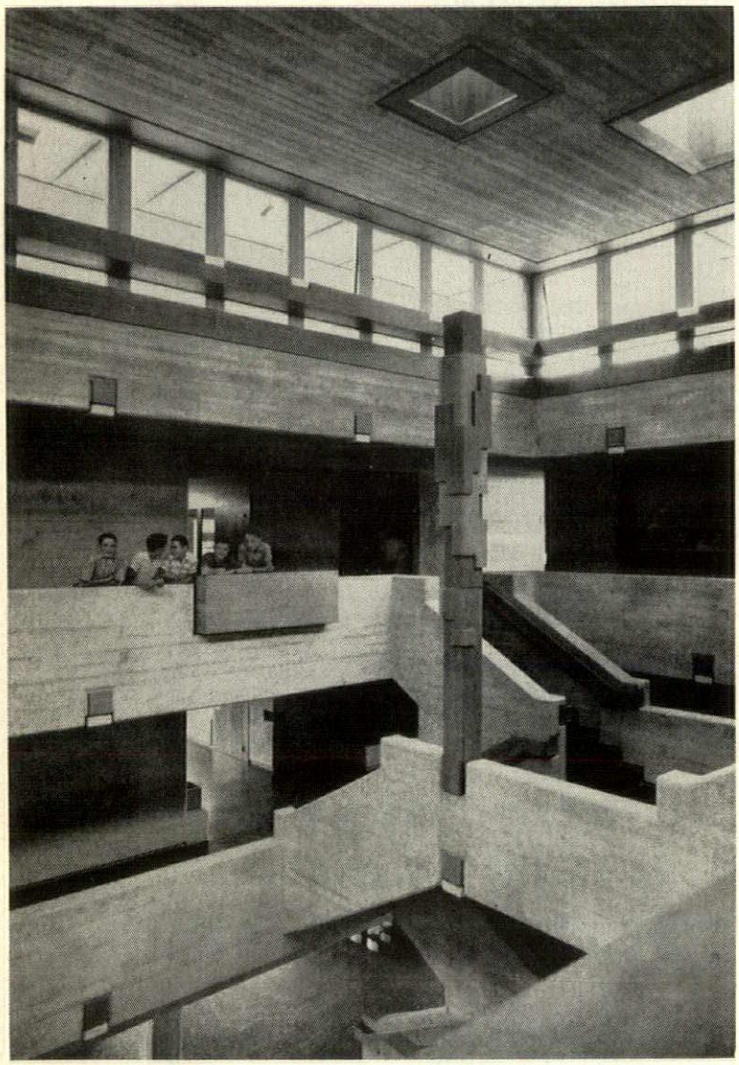
Heavy Duty Gas-Fired Blower Heaters ▶ for either free discharge or central system use. Equipped with high capacity blowers and aluminized steel heat exchangers with inputs from 250,000 to 1,750,000 Btu./hr.



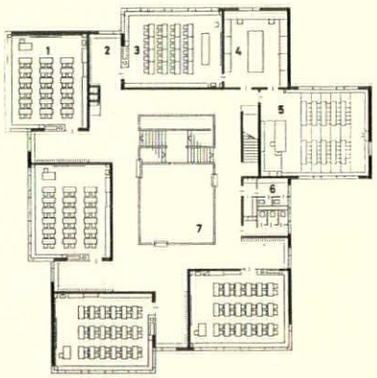
More Information? Detailed specifications and engineering information on all of these models are available from your local Janitrol representative. He's an expert in equipment utilization and ready to provide personal assistance. Give him a call, he's listed in the yellow pages. Or, you may write to the Product Application Manager at the factory in Columbus.

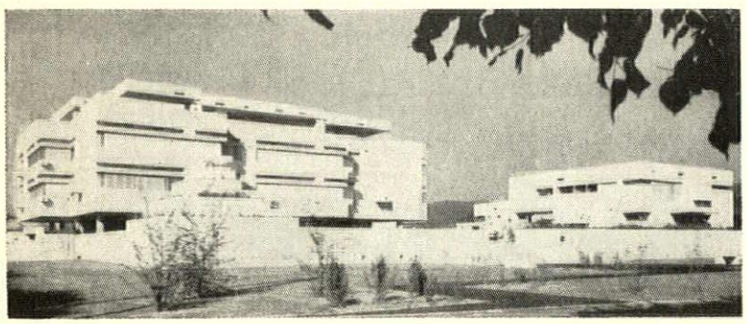
JANITROL® DIVISION
Midland-Ross Corporation • Columbus 16, Ohio MR

WERK

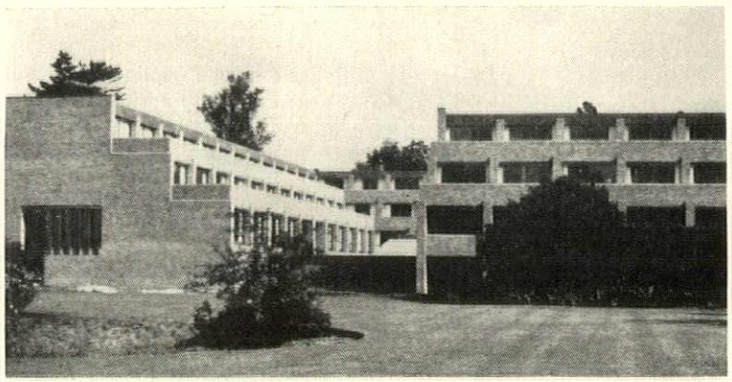


SWISS SCHOOL. Outsized children's blocks piled one on top of the other seem to form this competition-winning school at Aesch, near Basel. Designed by Architects Walter M. Förderer, Rolf G. Otto, and Hans Zwimpfer, the three-building complex (classrooms, auditorium, and gymnasium) is perched atop a concrete parapet. The four-story classroom building is centered around a large interior court and galleries (photo above and third floor plan, right).



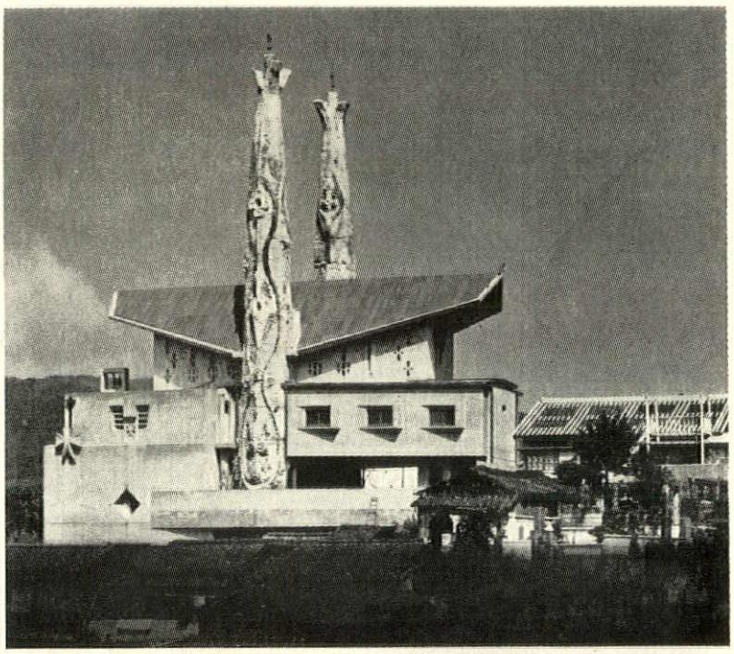


BAUWELT



ARCHITECTURAL DESIGN

ENGLISH DORMS. Three tiered levels of 100 student rooms surround a brick-lined courtyard in the new residential building for Gonville and Caius College at Cambridge. The new dorms were built fronting an existing garden (above, foreground) about half a mile from the main college. Common rooms and service areas are located on the ground level below the small raised court. The two top floors are recessed to form broad terraces, providing direct access for each room either to terrace or courtyard. Architect: Sir Leslie Martin, in association with Colin St. John Wilson.



JAPANESE SHRINE. Take a strong dose of Antonio Gaudi, a touch of Swiss chalet, and a bit of Oriental inscrutability; mix them all together and the result is this shrine at Nagasaki, designed by Kenji Imai to commemorate a group of sixteenth-century martyrs and the four-hundredth anniversary of Christianity in Japan. Included in the shrine are a chapel and priory (above), a mosaic-clad exhibition center (detail, right), and a monument to the 26 martyrs. The two towers are concrete, imbedded with ceramic fragments in symbolic patterns.

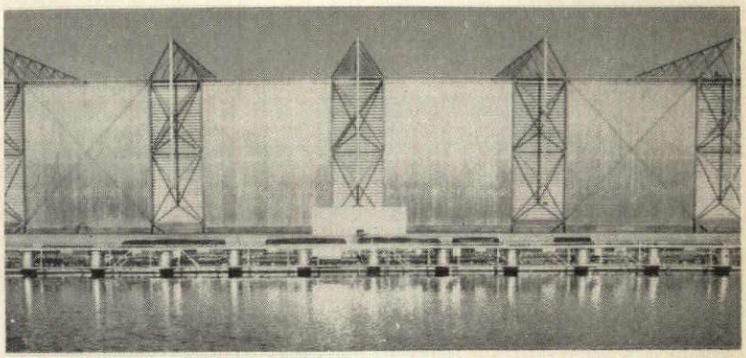
THE JAPAN ARCHITECT

FRENCH SKYSCRAPER. A new kind of *pied à terre* for Parisians, this 22-story apartment house on Rue Croulebarbe was designed by Architects E. Albert, R. Boileau, and J. Henri-Labourdette. Tubular steel filled with concrete was used in both columns and cross bracing; revealed through the glass curtain wall, it seems to form an enormous game of ticktacktoe. Reinforced concrete floors were cast in place. Atop the $1.2 million skyscraper is a roof garden.

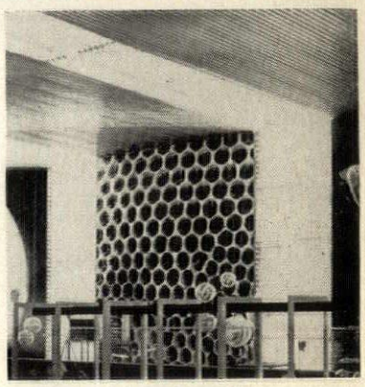
PETER BLAKE

ITALIAN OFFICES. Cloaked in a current commercial version of the International Style, these curtain-walled offices could be anywhere. Actually they house the Italian Ministry of Finance in Rome. The two low and three high-rise buildings are connected by a central, double-decked gallery; the minister and undersecretaries have offices in the low, porticoed building. Architects: Vittorio Cafiero, Cesare Ligini, Guido Marinucci, Renato Venturi, Pietro Ferri.

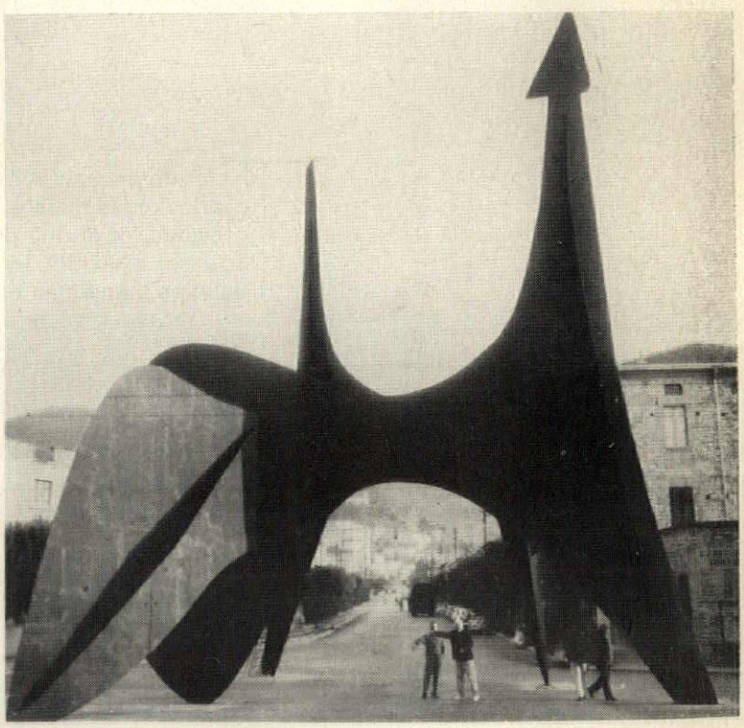
EDILIZIA MODERNA



GERMAN EXHIBIT CENTER. Reversing the usual order, the structural space frame (standard Mero parts) is outside and the skin (corrugated sheet metal) inside in this group of buildings for the German industrial exhibit at Khartoum, Sudan. Architects Georg Lippsmeier and Franz Reiser used translucent corrugated plastic in some parts of the skin for natural interior lighting (right) and jalousies in vertical strips down the façade (above), for both ventilation and sand-storm protection.

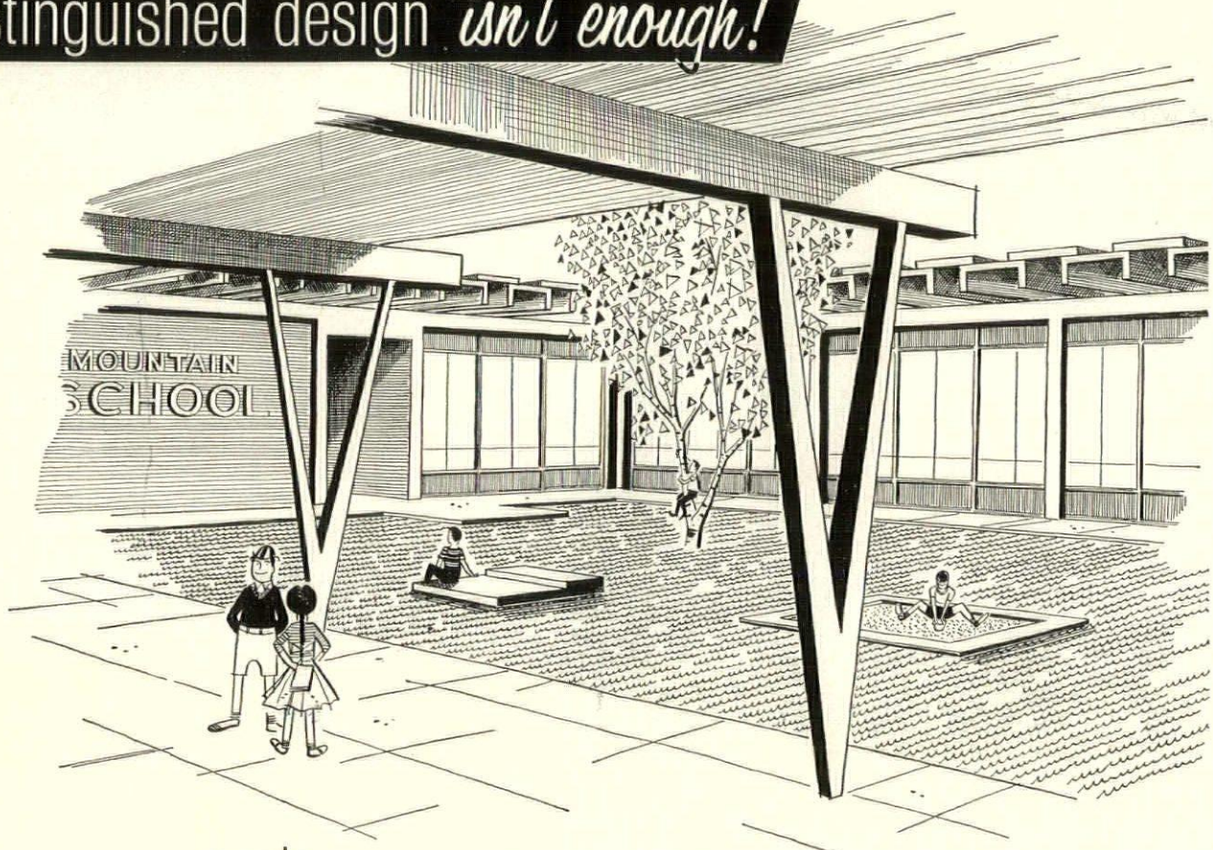


DEUTSCHE BAUZEITUNG



U.S. SCULPTURE ABROAD. This giant "stabile" by Alexander Calder remained behind after the Festival of Two Worlds' music and outdoor sculpture fair ended last year in Spoleto, Italy. Rather large to move, it was given to the city by the U.S. sculptor (shown above, standing under the arch in dark coat). The 30-ton piece, named "Teodelapio" after an Umbrian duke, dominates one entrance to the town, and at 59 feet high and 49 feet wide is doubtless the world's largest metal sculpture. It was made in Genoa of sections of ship plate and welded together on the site. END

distinguished design *isn't enough!*

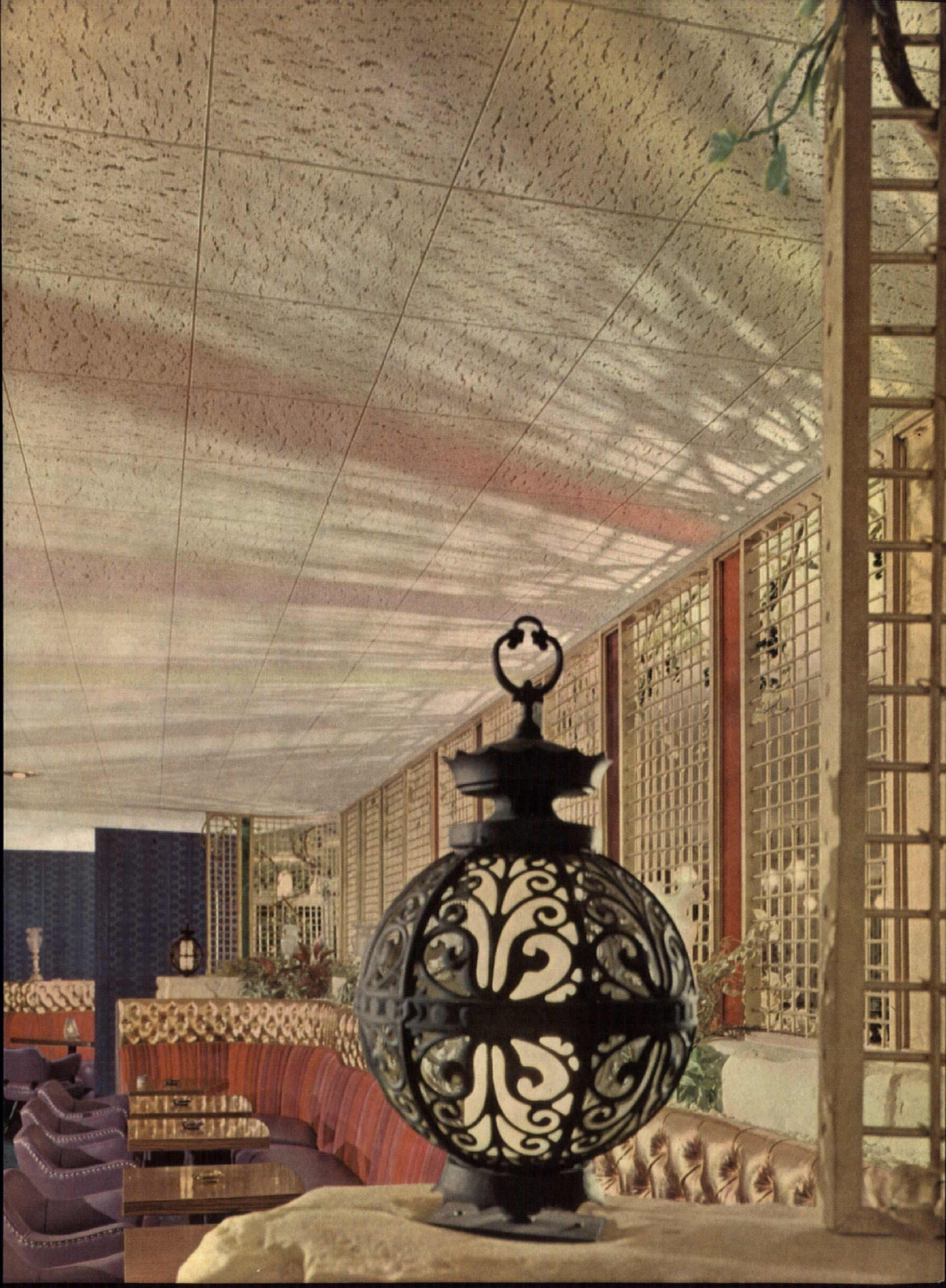


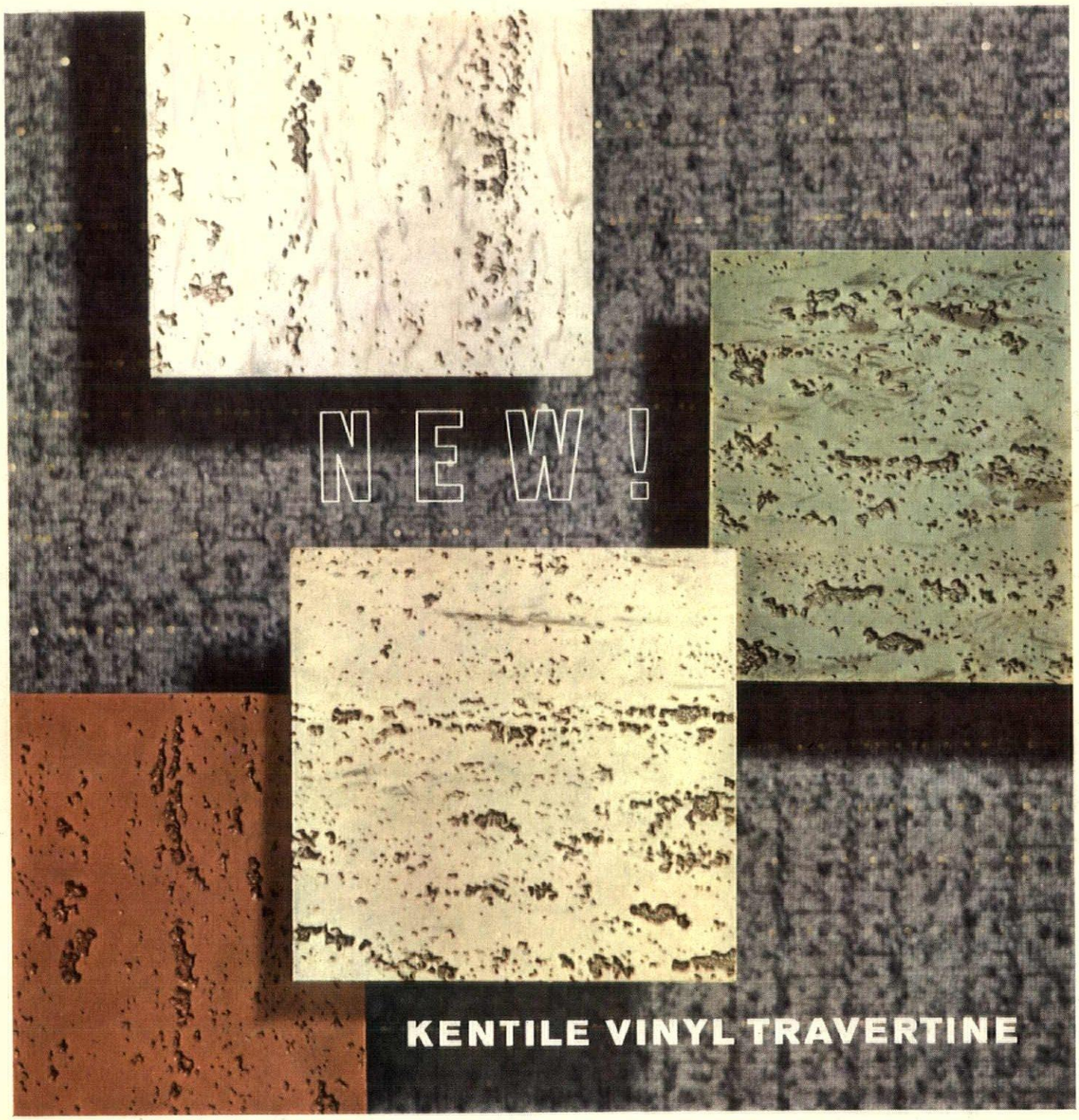
There are many other considerations, of course. And one that's often overlooked is **maintenance.** Yet high caliber, low cost maintenance can be provided for during **planning** of the building. Simply specify a **built-in** Spencer VACUSLOT® system, the complete housekeeping facility that handles many maintenance chores, including:

- CARRY-OFF OF DIRT AND LITTER
- DRY MOP CLEANING
- VACUUM CLEANING
- WET PICK-UP AFTER SCRUBBING
- BOILER FLUE CLEANING

Request descriptive Bulletin No. 153C.

The **SPENCER**
TURBINE COMPANY
HARTFORD 6, CONNECTICUT





CLOSEST TO NATURAL TRAVERTINE MARBLE!

New Kentile® Travertine Solid Vinyl Tile is greaseproof, easy to clean, need not be waxed. Its pitted texture and distinctive veining require minimum maintenance. Six attractive colors. Installed cost in jobs of 1,000 sq. ft. or more: about $1.00 per sq. ft. over suspended concrete floors. Standard sizes: 9"x9" and 12"x12". Thickness: .080". Prices are slightly higher for special sizes and ⅛" thickness.

KENTILE VINYL FLOORS