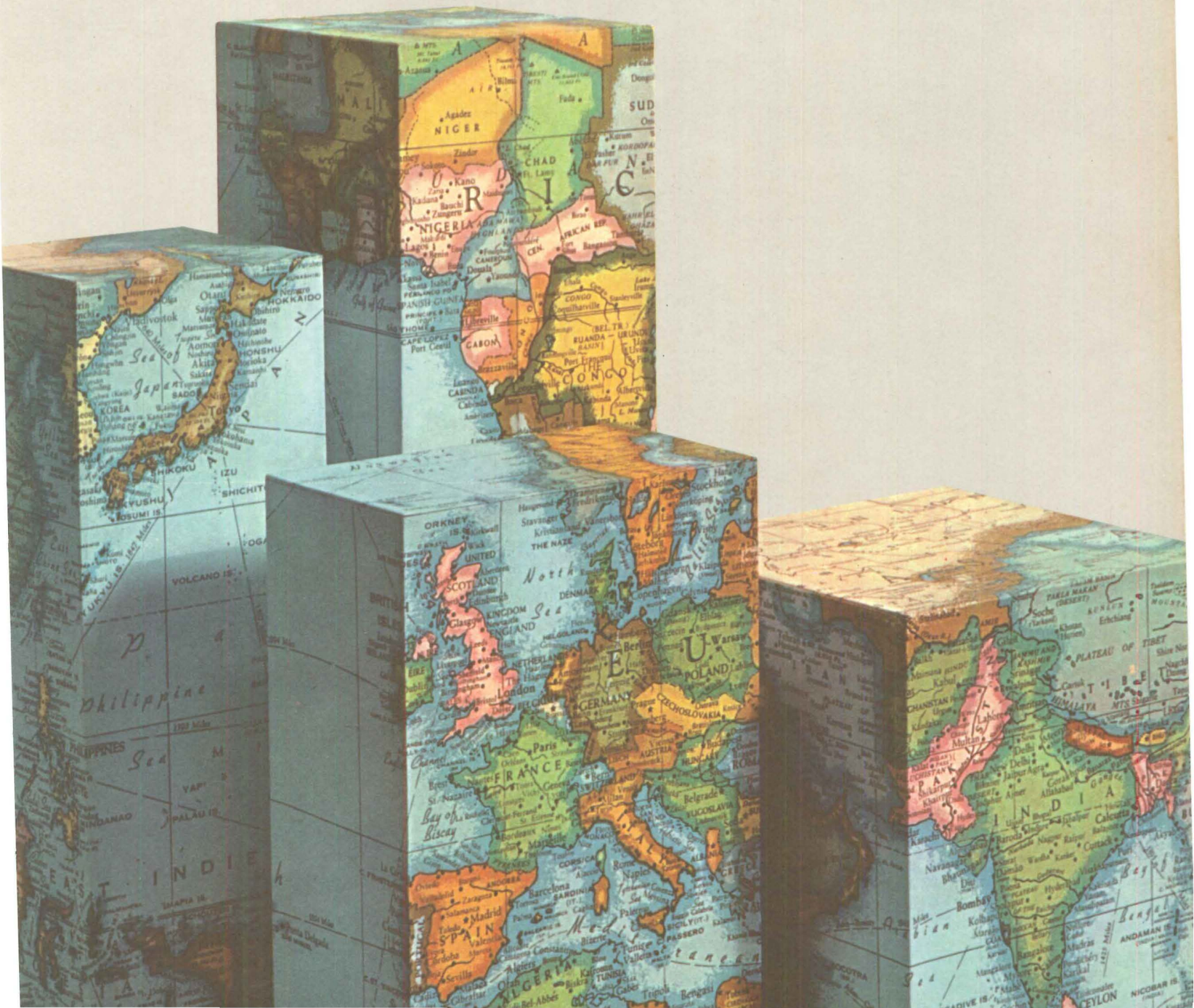
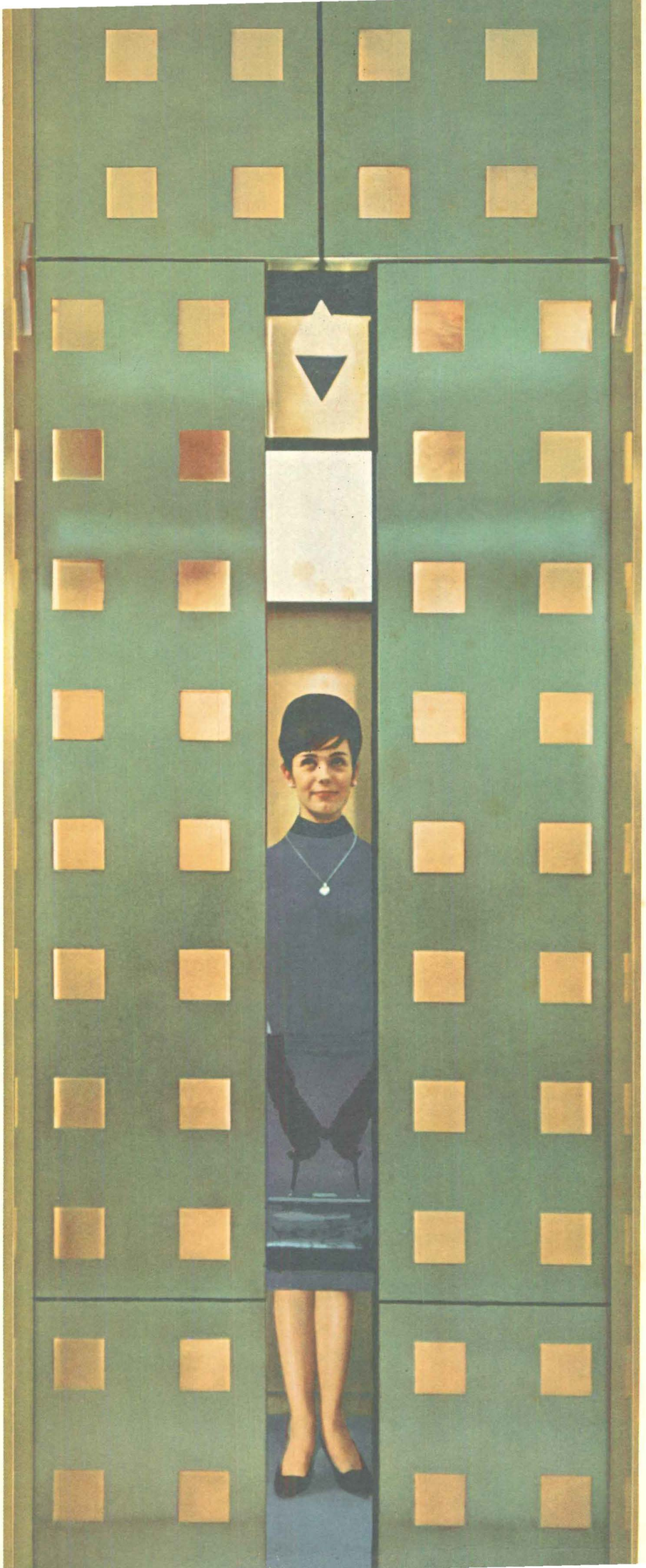
CHITECTURAL FORUM THE MAGAZINE OF BUILDING JUNE 1963

FORUM





W.S.TYLER

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PUBLISHER'S NOTE

This spring, contemporary architecture lost one of its great patrons with the untimely death of A. Whitney Griswold, president of Yale University. Rising on the New Haven campus are 28 new buildings which will stand for years as tributes to the architectural sensitivity of the man.

A tribute to Griswold of another kind appears on page 87—a thoughtful appraisal of his influence on the architecture of Yale by Senior Editor Walter McQuade. This article on the role of the client is an appropriate part of FORUM's editorial franchise, for the magazine's publishing philosophy has always been based on the firm belief that better architecture results when building clients have an appreciation of the professional architect, and an understanding of what makes architecture great. That is why FORUM is edited for clients and architects alike, and that is what sets FORUM apart from the fine magazines published for the architectural profession alone. (Today, 22,300 building clients of all kinds — commercial, industrial, and institutional—subscribe to FORUM along with 15,000 U.S. and Canadian architects and designers.)

Apparently architect readers appreciate the editors' efforts to win for them—and for architecture—the respect of those who commission, pay for, and occupy buildings. In recent weeks a number of architects have said so:

▶ "Great architecture is achieved when great clients retain great architects and demand their best. Too many good architects do poor work, not because of any lack of talent, but because of lack of understanding by the client"—a Coral Gables architect.

▶ "I see the FORUM more often in my clients' waiting rooms than in my own office, and I am very glad indeed that the magazine circulates among non-architects so widely"—a Princeton architect.

▶ "Design genius cannot flourish unless both client and architect understand what is to be accomplished and the tools that are at hand. It's a tough road you've taken, but please keep on it!"—a Houston architect.

FORUM's long-standing regard for the building client seems more pertinent each booming year—as more and more clients gain experience or become almost continuous participants in building. Their growing construction experience and their understanding of architecture bode well for the building of a better America.

* * *

Another auspicious trend in the same direction is the increasing use of the negotiated contract, which Senior Editor David Carlson reports on page 125. It brings the experienced contractor into the building project during the planning process, permitting him to share with both architect and client his intimate knowledge of techniques, materials, and costs. (Perhaps this trend explains the contractor's growing interest in FORUM: his ranks among its subscribers now number 7,300.)

To interest all who influence building is indeed, as the Houston architect says, "a tough road." But, FORUM's editors have been traveling that road for many years and happily report that it gets less tough, more rewarding as they move along. This month's 50-mile hike begins on page 5. Come along—J. C. H., JR.

GRISWOLD'S BUILDING YEARS AT YALE 87
Architecture loses a great client, and gains a legacy

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Cover: Building abroad; design by Chermayeff & Geismar Associates. Map, copyright by Rand McNally & Co., R. L. 63Y24.

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Several colorings of Montina Corlon in a custom design.

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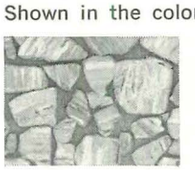

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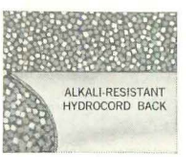

For specifications, complete data, and samples of Corlon, call your Armstrong Architect-Builder Consultant. A flooring expert, he can help you solve almost any flooring problem. He can also get you further assistance from Armstrong research, installation, and technical advisors. And since Armstrong makes all types of resilient floors—sheet and tile, vinyl and non-vinyl—he can make unbiased recommendations for any interior. Call him at an Armstrong District Office, or write to Armstrong, 306 Rooney St., Lancaster, Pa.

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Architects ponder the times, their work (below)
FHA sets new rehabilitation standards (page 7)
ACTION sires URDOA (page 9)
World's Fair rises in N.Y. (pages 10-11)

AIA QUESTS FOR QUALITY (IN MIAMI BEACH)

The American Institute of Architects last month undertook a search for quality in a somewhat unlikely spot. Quality was the official theme of this year's AIA convention, a relaxed, sunbathed gathering attended by 2,030. The principal business, however, seemed to be the exchange of comment—alternately sardonic, despairing, and tolerant—about the relentless white fantasy of Miami Beach (photo right) and the headquarters hotel, the Americana.

The exchange went on constantly at beach and poolside ("This is an ideal place for an architects' convention," said an educator: "It gives everybody *something* to criticize"). It even continued, for a few memorable moments, on the convention floor. Speaker Robert Anshen of San Francisco introduced the subject with an acid reference to "this vulgar building," constructed of "thin, cheap, improbable materials."

The Americana's architecture may bite, but it's all for fun

Sir Basil Spence of England, admitting that at first he was "a little afraid of being bitten by the architecture," nevertheless asked if "a certain vulgarity is not necessary for the normal person to enjoy himself." Added George McCue of the St. Louis *Post-Dispatch,* "This hotel is perfectly designed for what it is intended to do. It makes us feel that we are completely away from home."

As the laughter died away, a silver-maned figure stepped to a microphone. "I am Morris Lapidus," he announced, "architect of the Americana." Lapidus freely acknowledged that the hotel was budget built: "It is no masterpiece; it's designed as a place where people can have fun. . . . Isn't human comfort and emotional satisfaction quality?"

Anshen somewhat grudgingly allowed that the hotel did have "a sense of carnival and fun" (no one asked whether it were not possible to have these things and architecture too). The Americana was not mentioned again publicly.

Back to quality. The convention theme itself was treated by a panel of 10 under the quiet guidance of Dean Burnham Kelly of Cornell. In addition to Sir Basil, Anshen, and McCue, the panel members were Architects Paul Rudolph, John Johansen, and Wallace Harrison; Anthropologist Edward T. Hall; Critics Nikolaus Pevsner of *The Architectural Review* and Ada Louise Huxtable of *The New York Times;* and Karel Yasko, recently appointed design chief of the U.S. Public Buildings Service.

Rudolph focused on the necessity for choice and commitment. "The artist always ignores certain problems," he said, "addressing himself to a selected few. He proceeds to solve these so eloquently that everyone understands the statement and its glorious solution. . . . It is axiomatic that certain problems must be ignored if a work of art is to be created."

Timid clients. Pevsner emphasized the role of architect and client, "producer and consumer." The good old classical days, when programs were simple and clients cultured, gave way during the industrial revolution to "a time in which bad clients got bad architecture." The danger today, said Pevsner, is in the area of "self-expression," the priority of "abstract vision" over function. Particularly in the U.S., "clients tend to be too timid, to take the architect's vision with rather less intense checking of the program's fulfillment than there should be."

Mrs. Huxtable was harshest of all. Said she: "A generation has grown up that has never known quality or the tradition of quality, whose standards have been formed by the synthetic, the substitute, and the cut-corner. It is the same generation that has never tasted fresh orange juice or known real bread, and that celebrates its birthdays with ready-mix cake. . . . In this hideous evolution, the art of architecture has died. It

Medalist Paolo Soleri's drawings wind around the glazed rain forest in the Americana lobby

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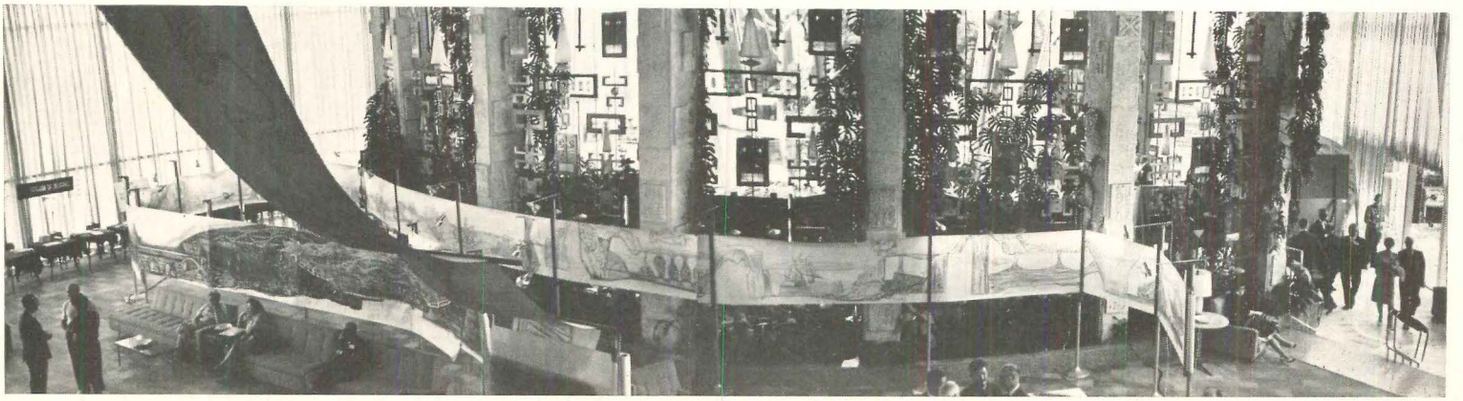

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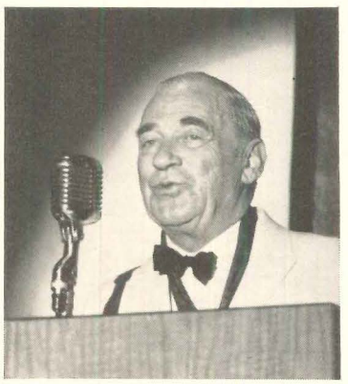
continued from page 5

lives only in the hands of its few most talented, dedicated, persuasive, and sometimes belligerent practitioners."

Elections, awards. In its business sessions—sensibly split from the professional program this year—AIA elected J. Roy Carroll, Jr. of Philadelphia as its new president; Arthur Gould Odell, Jr. of Charlotte, N.C., as first vice president and president-elect; Wayne S. Hertzka of San Francisco as second vice president, and Robert F. Hastings of Detroit as treasurer.

CHARLES MOORE—BLACK STAR



Alvar Aalto

Even the business meetings touched on quality at one point. After a brief discussion, the convention voted authority to mortgage the present site of its headquarters offices for construction of a new building behind the historic Octagon. Such prominent members as Vincent Kling of Philadelphia, Hugh Stubbins of Boston, and Paul Thiry of Seattle made a strong move to assess the membership for purchase of a larger site, however, maintaining that it would be impossible to design a building of suitable symbolic quality on the present plot. They were unsuccessful, but are expected to carry on the fight.

In other actions, the convention:

- Continued the present supplementary dues for special programs such as expanded services and urban design.
- Authorized chapter presidents to cast convention votes for absent delegates ("Next year you'll be able to hold the business meetings in somebody's hotel room," growled one dissenter).
- Presented its numerous awards and citations (*News*, March '63) to a group of luminaries including President Kennedy, who was not present, and Alvar Aalto, who was. Gold Medalist Aalto, slow-spoken and rocklike, spent the week relaxing and quietly conversing with his fellow professionals. His very presence lent the convention an aura of quality.

BUILDING RESEARCH GETS FEDERAL FUNDS

To spur more and better building construction, the Department of Commerce recently announced its Civilian Industrial Technology Program (*News,* Apr. '63). Exactly what Commerce had in mind was not clear—but the idea of the federal government entering the building research field irked just about every private, national organization connected with construction. Last month, the background report for the CITP was released. Called "Better Housing for the Future," and prepared by the White House Panel on Civilian Technology by its Sub-Panel on Housing, the report picks out the building industry's biggest problem: fragmentation. This leads to difficulty in circulating innovations and keeps even the largest contracting firms from having enough capital to finance extensive research and development programs.

The federal government, said the report, should 1) use its own housing procurement activities as a "laboratory" for experiments in technological innovation; 2) finance a "systematic and continuing study of building codes, zoning, and subdivision regulations"; 3) obtain full statistics on which to judge the merits and consequences of all actions.

Research should also establish criteria for evaluating not only materials and components, but also full systems of construction.

Despite much controversy, CITP received an appropriation of $625,000 for this fiscal year. Unexpected support came from Sen. Harry Byrd (D. Va.). Said Byrd: "We ought to spend more money on this type of research."

SYNDICATORS: MIDST THE WOE, SOME HOPE

Syndication's troubles were highlighted again last month when New York Realtor Sidney Schwartz, promoting through Warren Securities Corp., was banned from selling securities in New York State because of "contrivances, fraud, imprudent acts, and negligence." His $20 million real estate empire was described by the N.Y. State Attorney's office as "on the brink of collapse."

Another of the biggest real estate syndication firms, Futterman Corp., announced its entry into the second-mortgage and hotel-management fields. Behind the change, observers felt, was a continuing desire to diversify out of the still sticky syndication business (*News,* May '63).

Meanwhile, the first big, new real estate syndication deal since the bust in syndication was put on the New York market. A group of well-known realtors, headed by Edward Sulzberger, are trying to raise $4 million through the public sale of $10,000 shares to buy a mid-Manhattan office building from Tishman Realty & Construction Co. The offering differs from past syndications in that it does not ballyhoo payout projections, nor does it stand to profit the promoters until the public has been paid $900 per unit each year. Furthermore, the building will be operated by the syndicate itself rather than a company controlled by it. Realtors are watching the deal closely to determine whether syndication will be, once again, acceptable to the public.

NEW FEDERAL GUIDES TO REHABILITATION

Any talk about "new breakthroughs" in the knotty business of residential rehabilitation is liable to evoke yawns and snickers from urban renewal professionals. But last month, URA Commissioner William L. Slayton heralded just such a "breakthrough"—and the pros listened attentively.

The fact is that, after nine years of futility (FORUM, Aug. '62), URA and FHA have finally devised a system of mortgage guarantees which might make rehabilitation economically feasible.

Slayton points out that the new system, the product of many months of hard work, "depends heavily on close collaboration" between federal and local participants. Key to the scheme is a new set of FHA minimum property standards for rehabilitation housing in renewal areas, which will be available to local agencies this month. Says Slayton: "Once these standards have been modified to meet local conditions and have been agreed upon by FHA, URA, and the city, the city will be assured of FHA mortgage insurance for all residential property in the area if it is improved to these standards." Terms of the insurance will be 20 to 25 years, and, as Slayton adds, "the ability to refinance existing debt under the mortgage will make it possible for property owners to finance improvements which would not have been possible without such FHA financing." Wherever the mortgagor is unable to find a lender, the Federal National Mortgage Association is committed to buy the mortgage at par.

FHA's new minimum standards, however, leave much to be proved. Slayton himself acknowledges that a wide range of public services are needed in any area to make rehabilitation work, and that the city must at the same time encourage a high order of local self-improvement, as well as insure rigorous code enforcement.

Initial reaction to the new federal plan is highly favorable, however, despite the record of frustration. As Slayton says, "If the past nine years have taught us anything, it is that rehabilitation is a complex, individualized renewal technique that is much tougher to carry out than clearance and redevelopment." But he adds that, in light of the $500 billion of existing residential investment which already exists, "every house rehabilitated today, every effort made to upgrade a neighborhood, will return its investment many times in livability, stability, and financial soundness."

continued on page 9

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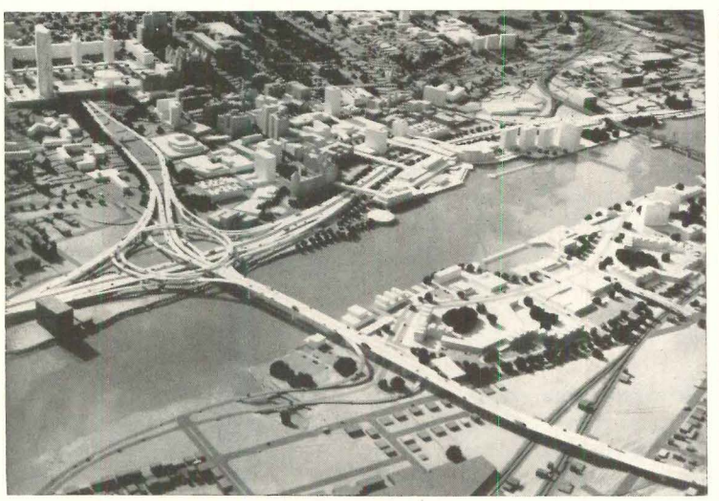


ALBANY: BIG NEW COMPLEX IN A CAPITAL

For nearly two years, planners and architects have studied ways to upgrade New York's capital city of Albany, which today consists of a grimy, badly planned commercial area moldering in the shadow of the hill-top State Capitol. Several weeks ago, the fruits of their labor were revealed, causing Governor Nelson A. Rockefeller to predict happily: "Albany will be the most beautiful capital city in the nation."

The plan calls for drastic changes. In place of 98.5 acres of deteriorated residences and small businesses will be a monumental government complex called "South Mall," a redeveloped waterfront (on both sides of the Hudson River), a new bridge, and a new highway network (see photo, above).

Planners for the Temporary State Commission on the Capital City (Rogers, Taliaferro, Kostritsky, Lamb, with Maurice E. H. Rotival & Associates, and John Galbreath Burdis Associates) made exhaustive studies of alternatives, finally chose to centralize Albany's biggest business, the state government.

This move would revitalize the city by integrating, for the first time, the business of the state government with Albany as a whole. The capital functions have been somewhat aloof, on their hill-top site, and previous plans called for even further withdrawal from the city—in 1950, a plan for putting the capital in a campus-type suburban complex was proposed. This was abandoned, and the new plan places the government center squarely in the midst of proposed commercial, residential, and light industrial areas not far from the existing commercial core itself. Hopefully, the state government's own organizational efficiency will be enhanced, while injecting new vitality into the city.

Simultaneously with the city-plan announcement, Architects Wallace K. Harrison, George Dudley, and Blatner & Williams released preliminary designs for the South Mall project. Among other structures will be one 43-story and four 19-story office towers, a half-grapefruit-shaped Meeting Center, a 336-foot-high Arch of Freedom, and a two-level concourse. Planned but not yet designed are apartment houses, a research center, a cultural center, and a marina—all near the riverfront. New arterials and an internal traffic loop are also proposed to free downtown of congestion and make Albany the focus of the Hudson–Mohawk region.

Total cost of the South Mall improvements has been estimated at $250 million. Financing will be by 40-year municipal bonds, to be repaid as the state leases buildings from the city. (Included in the rent will be compensation for the $600,000 Albany will not collect in annual city real estate taxes.) Completion of the massive project is scheduled for 1985.

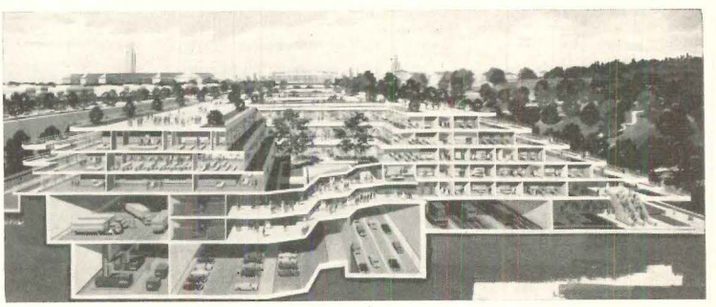
ACTION FORMS NEW REDEVELOPMENT GROUP

Last month, some of the biggest names in urban renewal gathered in Chicago to discuss new approaches to old problems. The highlight of the annual meeting of ACTION, Inc., was the creation of a new Urban Redevelopment Division. Its objective: "to facilitate effective public and private participation in redevelopment programs."

The new division is still in its formative stage. Developer Lewis Kitchen is its temporary chairman, and ACTION members are currently being solicited for contributions toward the $25,000 needed initially to establish a small staff in Washington, D.C.

The basic task of URDOA, as the new ACTION offspring is called, will be to act as a clearing house for suggestions and complaints about federal redevelopment procedures for local public agencies and member redevelopers. It will not lobby openly for new legislation, but will work with federal agencies to clarify and refine current administrative practices. Urban Renewal Administration Commissioner William L. Slayton has already said that the creation of URDOA should result in "real benefits for the whole urban renewal program . . . it will provide an opportunity for greater interchange directly among the three entities so vital to the success of any urban renewal project."

The invitation to local public agencies to become participants in URDOA might, however, prove a real stumbling block. There is certain to be criticism of LPA's which use URDOA as a pressure point upon federal renewal agencies in concert with private redevelopers. As one experienced local official says, "Many of our problems today stem from a confusion of what is public and what is private activity in redevelopment. It will not help matters to make it appear that local public agencies are teaming up with private developers to effect changes in renewal procedures."



PITTSBURGH: RESEARCH PARK IN A RAVINE

Pittsburgh enters a major new phase of its self-improvement program this month with characteristic vigor. The Oakland Corp., which includes the city's major educational, medical, and cultural institutions, has announced the final concept for a vast new research complex linking Carnegie Tech and the University of Pittsburgh.

Site of the project is a novel one: Panther Hollow, a ravine 1,000 feet wide and 150 feet deep through which run tracks of the Baltimore & Ohio Railroad. Filling this cut will be a $250 million, mile-long structure designed by Architect Max Abramovitz (see drawing) which, when completed in 1974, will provide about 10 million square feet of space. The roof will bridge the ravine: only two buildings, a theater and a nuclear center, will protrude above. Other tenants will find plenty of air and light, however; the design makes generous use of terraces and rectangular openings into landscaped courts.

Although owned by seven tax-free institutions, the Oakland Corp. itself will be profit-making and tax-paying. Chief tenants will be scientific research organizations, cultural facilities, as well as the sponsoring universities.

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NEW YORK'S FAIR—PROGRESS AND PROBLEMS

The sound and fury of construction fills the air at Flushing Meadows Park, 646-acre site of the New York 1964–65 World's Fair. On the ground, the $500 million construction program seemed last month to be humming along: highway ramps were rising and 50 or more structures were in various stages of completion, their stark, strange forms presaging the shape of things to come (above: Travelers Insurance's scalloped dome and I.B.M.'s airborne ovoid —see also page 47).

From the air, however, empty spaces emphasized two of the Fair's biggest problems: 1) signing up exhibitors for all the available space, and 2) getting them to build their pavilions in time for opening day next April 22. Said Fair Boss Robert Moses: "There are some unfortunate absentees in the exhibit areas, but there is little room for them in any event, and we must not ignore the demands for landscaping and greenery."

So far, the Fair corporation has rented out 70 per cent of its total space to some 150 organizations, many of them blue-chip exhibitors. The industrial section shows the most vacant lots, with some 24 out of 90 still unspoken for.

One reason for the gaps is undoubtedly the cost of participation in the Fair:

▶ Land rentals run from $6 per square foot (for the two six-month periods) in the international section, to $8 for industries.

▶ To New York building costs, highest in the nation, are added the expenses of acrobatic structures and eye-catching effects; cost of some of the more elaborate pavilions has been estimated at $30 to $40 per square foot.

▶ At the end of this month, contracts for construction workers will be renegotiated. Expected outcome: a 7 to 10 per cent wage hike. Furthermore, a surge of recent groundbreakings may cause a shortage of certain skilled workers, and increase overtime wages. (To offset some of these expenses, the City is waiving its sales tax for building materials and equipment used at the Fair.)

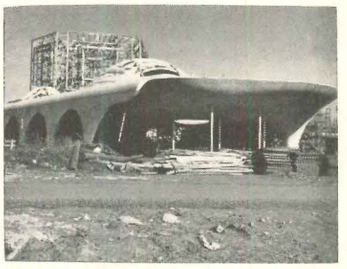
Among exhibitors still on the fence are such states as California, Texas, and Louisiana, which have plans, but have not signed contracts yet. To recoup costs, some pavilions will charge an admission fee of 25¢ to $1, beyond the $2 per adult to be collected by the Fair itself (from an estimated 70 million visitors).

Financing the show. Already blocks of tickets are being bought at discount prices by tourist agencies and large organizations.

Other sources of funds include: rental of space to exhibitors and concessionaires (at least $26.4 million); sales of World's Fair bonds ($31 million purchased to date); New York City's $20 million in permanent improvements to Flushing Meadows Park; and the federal and state government's $124 million in road construction to the Fair site. (Most of these building projects are close to schedule, but some of the road building lags seriously).

If the Fair's finances seem in good shape, its overall level of architecture is still in doubt. While the scene promises to look as hectic and colorful as a fair should, limited design standards and overall planning (the Design Committee quit in 1961) may be as apparent as critics have predicted.

Some buildings, however, will be structurally spectacular. In the Eastman Kodak pavilion (1), Architects Kahn & Jacobs are using a free-form concrete roof as a memorable prop for visiting shutterbugs. The Bell System (2) is building its "floating wing" like a bridge (Architects: Harrison & Abramovitz). General Electric's dome (3), by Architects Welton Becket & Associates, introduces to the U.S. the curvilinear lamella concept developed by Dr. Ferdinand Lederer of Czechoslovakia. Well under construction is the huge Ford Motor Pavilion with its spiky rotunda (4), also by Becket. Travelers Insurance (5), by Kahn & Jacobs, sports a raised saucer and a dome which will become the company's red "umbrella" symbol.



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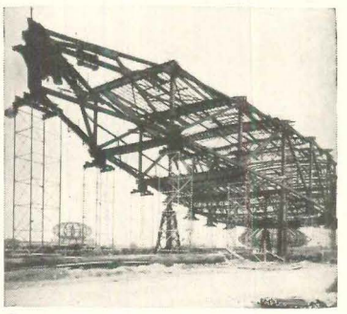

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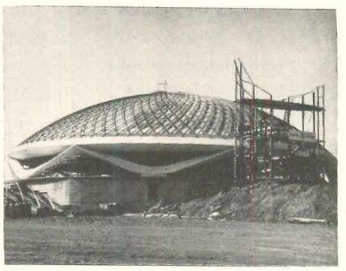

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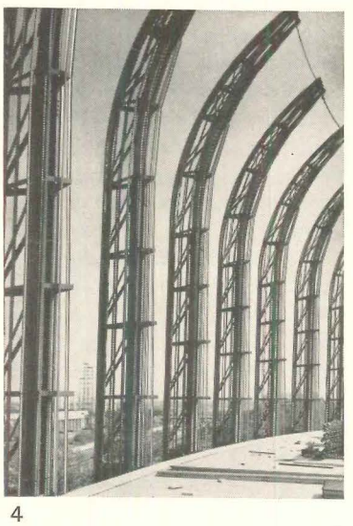

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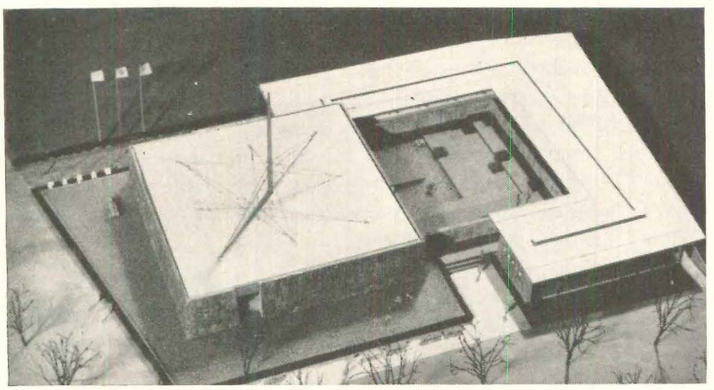


ORIENTAL SERENITY MARKS THE FAIR'S JAPANESE PAVILION

Architect Kunio Mayekawa, whose Japanese Pavilion at the 1958 Brussels Fair won widespread acclaim, has again applied his talents to exhibition architecture—and came up with this elegant $1.3 million design for Japan at the New York World's Fair.

Under the suspended roof, a 20,000-square-foot display area will be devoted to the Japanese government's exhibit. The seemingly massive walls are, in reality, a sculpted façade by Masayuki Negare.

Attached to the government area, and overlooking a modern Japanese garden in the courtyard, is the exhibition area of the Japanese Exhibitor's Association, co-sponsors of the pavilion. On an adjacent lot, the JEA also will have a theater and restaurant.

FOREIGN EXHIBITORS: SLOW—BUT COMING

As symbolized by the Unisphere, the Fair's theme, "peace through understanding," has already been put to the test.

Since the exposition will run more than six months, will charge rents, and will follow closely the Seattle Fair, officials knew they could not get approval of the powerful International Exhibitions Bureau in Paris. Without BIE's nod, 32 member governments could not exhibit *per se*. But business groups from these nations could participate, and many have signed up (e.g., France, Italy, Belgium, Japan, Sweden). Groups from Russia, Israel, Britain, Argentina, and other nations considered the Fair, but decided against any sort of representation.

More recent problems include costs, which have led to solutions like Austria's competition-winning A-frame pavilion, prefabricated less expensively at home, and Sierra Leone's conical "tents" of prefabricated plastic panels which will be sent to Africa after the Fair. Unfamiliarity with New York building costs led Pakistan to scale down its pavilion. Originally planned as a 2-story building, with a moving stair, waterfall, and pools, the pavilion was supposed to cost $250,000, but no contractor would put it up for less than $1 million. Solution: a single-story building with one pool.

The Fair tries to help new nations to participate as far as it can. For the Union Africaine et Malagasey, 13 French-speaking African countries, the Fair found architects, but was unable to help raise the balance of necessary funds. New financiers stepped in, plan to charge $1 admission to the gaudy pavilion they designed for the UAM—and the Africans are not sure they want to be represented in this fashion. UAM has not signed any firm contract yet.

Several nations which signed long ago have not yet started construction. Spain, for example, held a national competition for its pavilion's design; preliminary drawings arrived in New York only in April, and Fair builders have yet to see any final plans.

Despite these, and other, difficulties, the Fair will have some 45 nations represented in its International section (the 1939 fair had 60, the 1958 Brussels Fair 42, the 1962 Seattle Fair, 48). With these countries, and despite the conspicuous absence of any communist bloc representation, the Fair should have some justification for its resounding international theme.

LINCOLN CENTER'S COST GOES UP AGAIN

Another important New York City building project was having its problems too. Six weeks ago, Lincoln Center for the Performing Arts announced its latest, final (through 1966) budget estimate: an increase of $18.6 million over last January's $142.1 million.

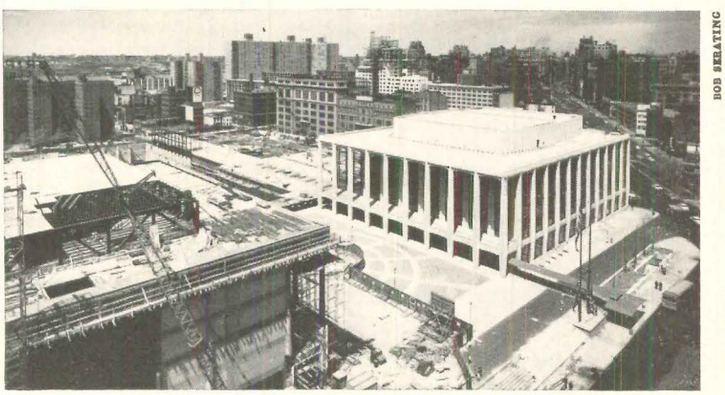
The money for the Center comes from public and private sources. In 1956 the federal, state, and local governments authorized $40 million (and no more) under urban renewal. Private groups have dug into their pockets, aiming at a $75 million target in 1959, $90 million in 1960, $101.7 million last year, and now $120.7 million.

The Ford Foundation, one of the largest backers ($12.5 million donated), pointedly asked Center officials where and when the skyrocketing costs would end. The $160.7 million answer was released in late April, and the foundation promptly announced it would give another $12.5 million towards the new figure.

Largesse oblige. Ford's gift was soon followed by a $5 million contribution from the Rockefeller Foundation, and two still anonymous donations totaling another $5 million—all of which brought the amount now collected to a tidy $141.1 million. Center officials are confident they will raise the missing $20.6 million.

The ever-soaring cost of Lincoln Center is largely due to its many modifications and expansions since 1958. As each building became more definite, its cost increased.

Philharmonic Hall is now functioning, but it is still drawing from Center funds to remedy recurring tuning pains (*News*, May '63). The New York State Theater is scheduled to open in time to accommodate World's Fair tourists, and the Metropolitan Opera House will be completed in the fall of 1965. These three buildings account for $10.5 million of the $18.6 million increase in the latest total. The increase includes $7.9 million for program and operating expenses and $10.7 million for construction ($6.45 million for building costs, $2.1 million for contingencies, $2.15 million planned to be financed by borrowing).



BOB BERATING

LINCOLN CENTER—RISE IN ESTIMATED COSTS ($.. MILLIONS)

Building (Architect)	Aug. '58	June '59	Jan. '63	Apr. '63
Philharmonic Hall (Max Abramovitz)	6.0	8.5	15.4	17.75
Vivian Beaumont Theater[1] (Eero Saarinen Assocs.)	3.0	3.5	8.2	9.25
New York State Theater[2] (Philip Johnson Assocs.)	6.0	3.5	18.25	19.1
Library-Museum [3](Skidmore, Owings & Merrill)	6.0	6.0	7.0	7.8
Metropolitan Opera House (Wallace K. Harrison)	23.6	24.5	35.4	42.7
Juilliard School [4](Pietro Belluschi, Catalano & Westermann)	5.5	7.5	16.2	17.2

(1) Now combined in one building with the Library-Museum.
(2) The sudden $15 million jump in 1963 is due to the inclusion of funds provided by N.Y. State and N.Y.C., which had not been specified previously.
(3) Originally planned as two separate, $3 million buildings.
(4) Includes a $2 million Chamber Music Hall.

continued on page 12

continued from page 11

People in the News

QUOTE . . . UNQUOTE

"I wish that Los Angeles were as great a lesson as it is an example."—*Designer Charles Eames.*

"I am convinced that we . . . have largely ignored the plight of our own displaced persons—men, women, and children who must move when a government project takes their neighborhoods. . . . It is the older citizen who now bears the brunt of our current relocation problem."—*Senator Harrison A. Willams (D., N.J.)*

"The individual architect . . . must become engaged in all facets of present-day life, and convince every client . . . that better buildings may cost more, but that, in the long view, the impoverishment of spirit engendered by the mean, the ugly, or the merely dull—the unimaginative horrors built in the name of expediency and economy—are far more costly to the fabric of culture and society."—*Architect Robert Anshen.*

"Ford Motor Company's purchasing department made a bit of history today when it placed an order for several dinosaurs and a family of cave men. . . . The prehistoric animals and men will be part of an extraordinary entertainment feature Walt Disney has been commissioned to produce for the Ford Pavilion at the 1964–5 New York World's Fair."—*Communication received from the World's Fair News Bureau.*

"The architectural face of the enemy has shifted. Twenty years ago Pennsylvania Station in New York City seemed a monstrosity, forbidding, old, dingy, unfunctional, wasteful of space, depressing in its passages and waiting rooms. And yet today the plan to demolish it is a small disaster."—*Author Norman Mailer.*

"Nothing but planning has ever been accomplished through planning alone."—*URA Commissioner William L. Slayton.*

W. DARAN

DUTTON TO NCPC

"He is an outstanding planner," said WILLIAM E. FINLEY last month, "and he certainly knows his field and knows Washington, D.C." Finley, now with a private development company in Baltimore, was referring to his successor as staff director of the National Capitol Planning Commision, WILMER C. DUTTON, JR.

Dutton, who is presently Executive Director of the American Institute of Planners, will need both his expertise and his knowledge of the ins and outs of Washington politics. He comes to his new job while the NCPC is preparing a comprehensive 1985 Plan for the District, and when considerable attention is focused on a proposed transit network (*News,* Dec. '62). Also, as Finley discovered, he will have to get along with a wide variety of political figures ranging from Congressmen to NCPC Chairman ELIZABETH C. ROWE, who felt that Finley often overstepped his bounds (e.g., preparing alternative proposals) when he wanted to enter the field of decision-making.

FAIR HOUSING GROUP

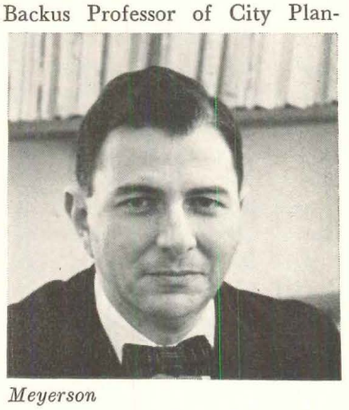
When President Kennedy banned segregation in federally aided housing projects, he announced that he would set up a Committee on Equal Opportunity in Housing. Immediately included were the Secretaries of Treasury, Defense, and Agriculture, the Attorney General, the HHFA and VA Administrators, and the Chairman of the Home Loan Board. Former Pennsylvania Governor DAVID LAWRENCE was tapped to head the Committee.

Last month, President Kennedy swore in his choices for the remainder of the committee: Mortgage Banker FERDINAND KRAMER of Chicago; Contractor CHARLES KELLER of New Orleans; Former HHFA Deputy Commissioner JACK T. CONWAY (now with the CIO's industrial union department); Savings Bank President EARL B. SCHWULST of New York; San Francisco Retailer CYRIL MAGNIN; and Boston Lawyer LEWIS H. WEINSTEIN. Two Negroes round out the committee: ROLAND M. SAWYER of Pittsburgh, housing consultant for the United Steel Workers of America, and Supreme Life Insurance Co. of America Manager THEODORE JONES.

THREE NEW DEANS

Planner-Author MARTIN MEYERSON, Acting Dean of the Harvard School of Design while JOSE LUIS SERT sojourns abroad, will take over next fall as Dean of the University of California (Berkeley) School of Environmental Design. He replaces WILLIAM W. WURSTER, who retires this month.

Meyerson first began to attract public notice in 1956 when he became a vice president of ACTION, Inc. In 1957, he was appointed Harvard's first Frank Backus Professor of City Planning and Urban Research and was chosen to be director of the Joint Center for Urban Studies of M.I.T. and Harvard.



Meyerson

Also appointed to high academic posts were Los Angeles Architect GREGORY AIN, who goes to head the architecture department at Penn State, and Cincinnati Architect CHARLES BURCHARD, who will be dean of Virginia Polytechnic Institute's College of Architecture next fall.

CALIFORNIA CHOOSES MC ELVY

For almost a year, California has been looking for the right man to be its state architect: an administrator and a judge competent to pass on the aesthetics of such diverse state projects as buildings, freeways, and parks. Last month,

McElvy

with the help of a nine-man advisory committee chaired by Sam Francisco Architect MARIO CIAMPI, Governor EDMUND G. BROWN picked CARL C. MCELVY, SR., now principal Architect of the University of California at Los Angeles. His past experience includes architectural posts with the federal government and the city of Los Angeles, and he has been credited with curbing the planning disorganization at the massive UCLA campus. McElvy's appointment, said Brown, will give the state's division of architecture "a new stature and importance."

A FIRST FOR PHOTOGRAMMETRY

The time-consuming technique of making precise, measured drawings of buildings has been all but lost in this country. In its stead, the science of architectural photogrammetry has evolved under the leadership of Ohio State University Architectural Professor PERRY BORCHERS. By taking a pair of photographs from slightly different angles, Borchers and his followers can translate them, with the aid of special plotting machines and measuring equipment, into drawings so minutely exact they can even be used to measure the slight structural deflections which occur when a building is under stress. Borchers has used the process mainly to record historic buildings for the National Parks Service.

In late April, however, Borchers became the first architect to receive a Science Faculty Fellowship of the National Science Foundation. He will study over the next academic year at the Royal Institute of Technology in Stockholm with Photogrammetricist Dr. BERTIL HALLERT. His subject: the photogrammetric measurement of structural movements.

BRIEFLY NOTED

One of the nation's leading mortgage bankers, CAREY WINSTON, president of the Carey Winston Co. of Washington, D.C., was selected for another high post last month: President of the Mortgage Bankers Association of America. He has also been president of the National Institute of Real Estate Management and vice president of the National Association of Real Estate Boards. Winston succeeds DALE THOMPSON as MBA head next fall.

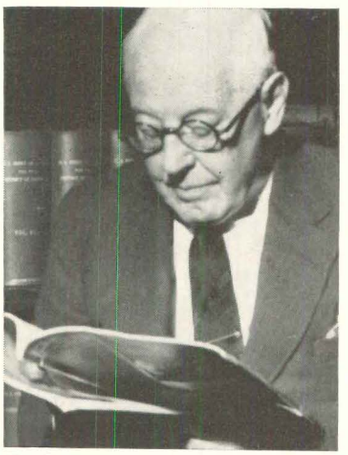
The Producers' Council last month announced the resignation of its president, DON A. PROUDFOOT, formerly of the Barrett Division of Allied Chemical Corp. His successor will be A. M. YOUNG, manager of marketing for Libbey-Owens-Ford Glass Co.

OBITUARIES

Famed Dutch Architect JACOBUS J. P. OUD died in his home town of Wassenaar on April 5, at the age of 73. A leading exponent of "de stijl," which flourished in the decade following the First World War, Oud attempted to attain in his buildings a rhythmical organization of pure line and area rather than a heavy monolithic effect. He and his contemporaries were successful in influencing the course of modern architecture; "de stijl" was adopted and modified into international style.

Among Oud's recent works are the Utrecht Building in Rotterdam, and a resort village for children recovering from polio near Arnheim. Probably his most famous structures, however, were his row houses at the Stuttgart housing exposition in 1927.

Lawyer and Conservationist ALBERT S. BARD, 96, died on March 26 in Orange, N. J. Throughout his life he was a champion of good government and good design, and included among his activities membership in such civic and cultural organizations as New York's Municipal Art Society, Regional Plan Association, and the City Club of New York. One of his pet peeves was outdoor advertising, and he was as fond of tearing down illegal posters as he was of condemning any move to broaden their use.



Bard

Appropriately, the City Club named its awards for excellence in municipal architecture, initiated this year, after Bard. Also appropriately, the jury charged with selecting the buildings to be honored found none worthy of the awards. Albert Bard might have been pleased with the panel's report: not only did his high standards remain uncompromised, but the jury made constructive suggestions for future civic building plans—including more open architecture competitions.

One of Britain's leading architects, SIR HOWARD ROBERTSON, died last month in London at the age of 74. Utah-born (but of British parents), Robertson designed the controversial Shell Center on the bank of the Thames, as well as some 60 other London buildings, many of which won awards. He also designed the British pavilion for the 1939 New York World's Fair, served on the design committee for the U.N. building, and was president of the Royal Institute of British Architects from 1952 to 1954.

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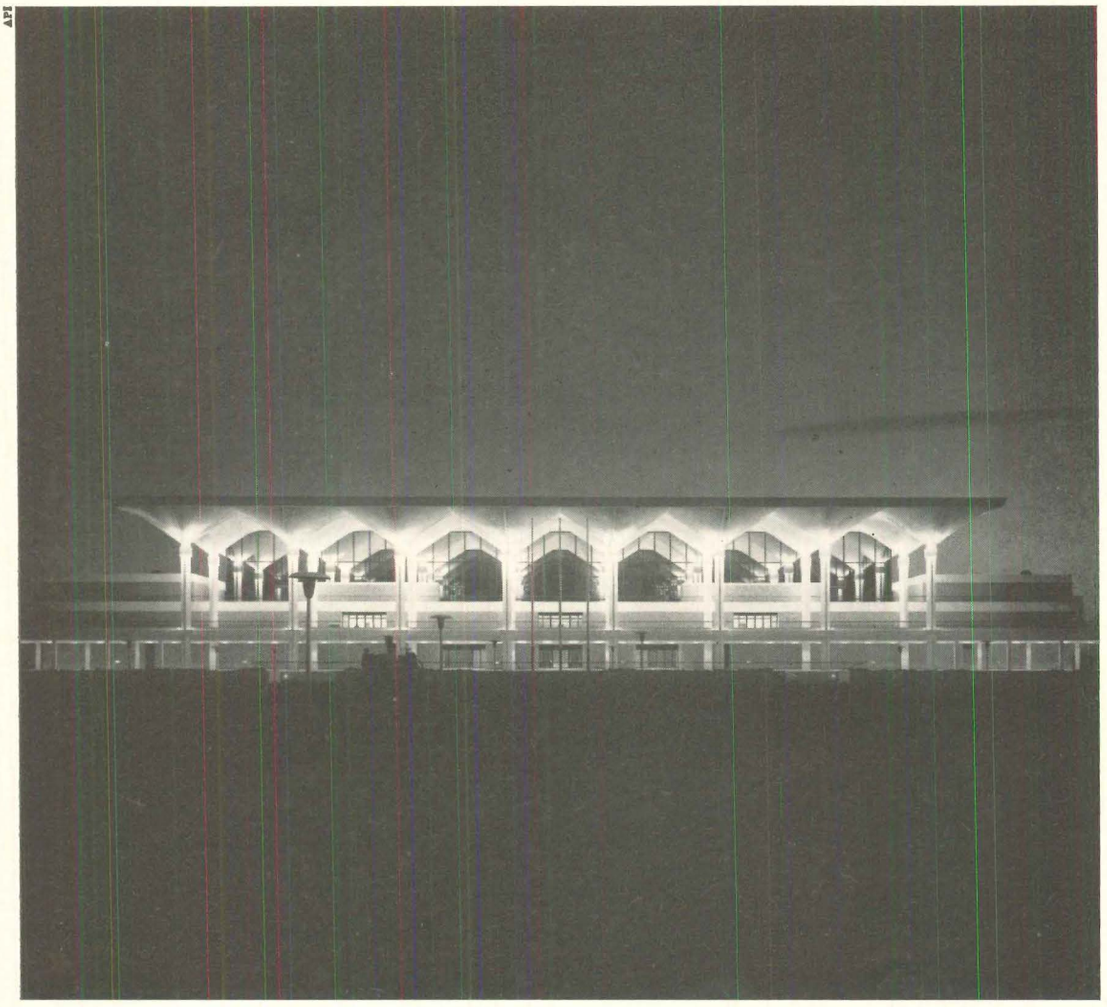
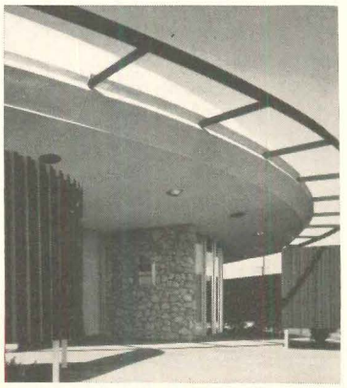
Building in the News



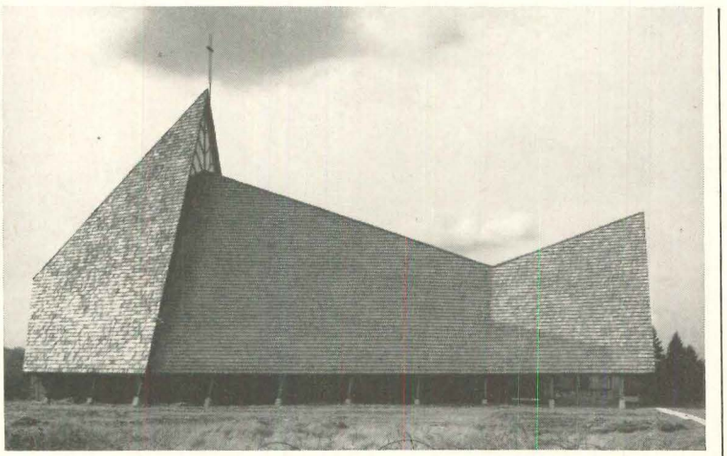
TENNESSEE AIR TERMINAL. The airy vaults of the Municipal Airport Terminal fast nearing completion in Memphis, Tenn., consist of thin shell hyperbolic paraboloids cast in place to form an elegant canopy high above the functional building mass. At night, dramatic uplighting will make a landmark of the building (left), which has two levels for passenger circulation and is approached on great vehicular ramps. Ticket and baggage counters line the walls of the great hall (above); all functions not directly connected with passenger movement have been removed to a mezzanine running completely around the big room. Architects: Mann & Harrover. Engineers: S. S. Kenworthy & Associates (structural), Allen & Hoshall (mechanical, electrical). Airport consultants: Landrum & Brown. Contractor: J. A. Jones. Cost: $5.5 million, including air mail and cargo buildings.

CALIFORNIA OFFICES (below). The crisp good looks of the new Gerwin-Ostrow Building, in Los Angeles, Calif., belie its modest cost: just under $12 per square foot. The fire-proofed steel frame, filled in with concrete block and glass, houses a business management company on two floors above an open ground floor for parking. Architect: Craig Ellwood. Consulting structural engineer: Robert Marks. General contractor: Chotiner & Gumbiner.

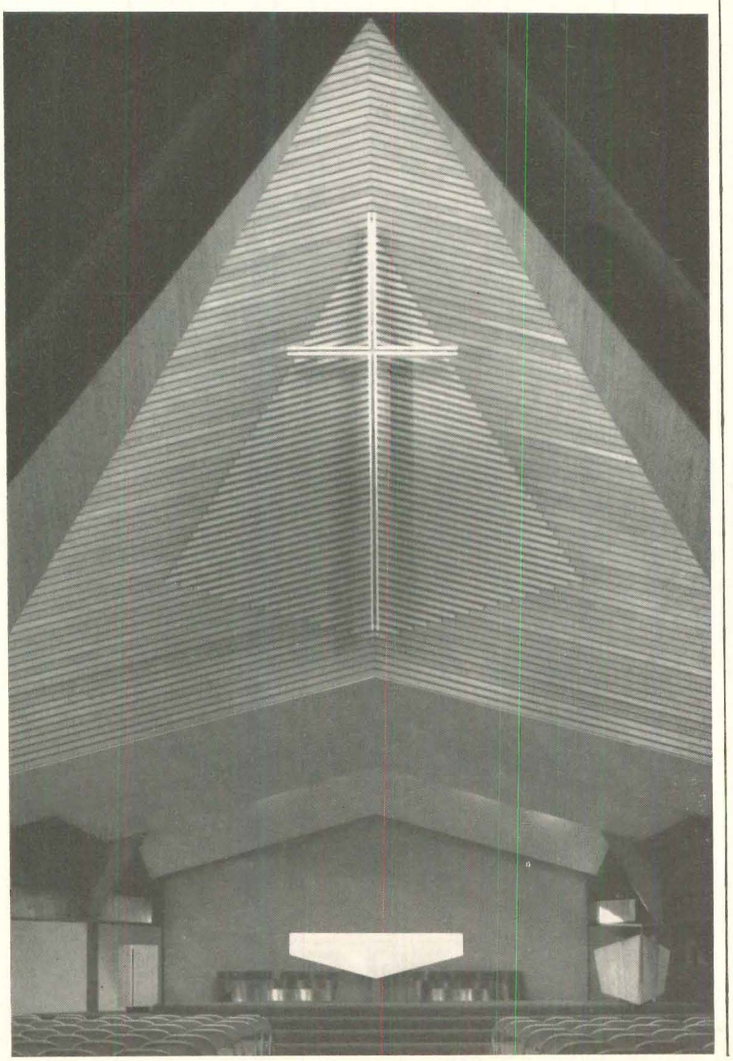
TEXAS BANK (above, right). A great saucer-shaped roof, culminating in a skylit dome at the center, imparts a mildly lunar look to the new Texas State Bank in San Angelo. The surface is covered with liquid neoprene protected by an elastomeric membrane. Outside, small gardens are screened from the street by free-standing walls of steel roof decking painted black. Architect: Donald R. Goss. Contractor: Douglas Guenthner. Construction cost: $13 per square foot.



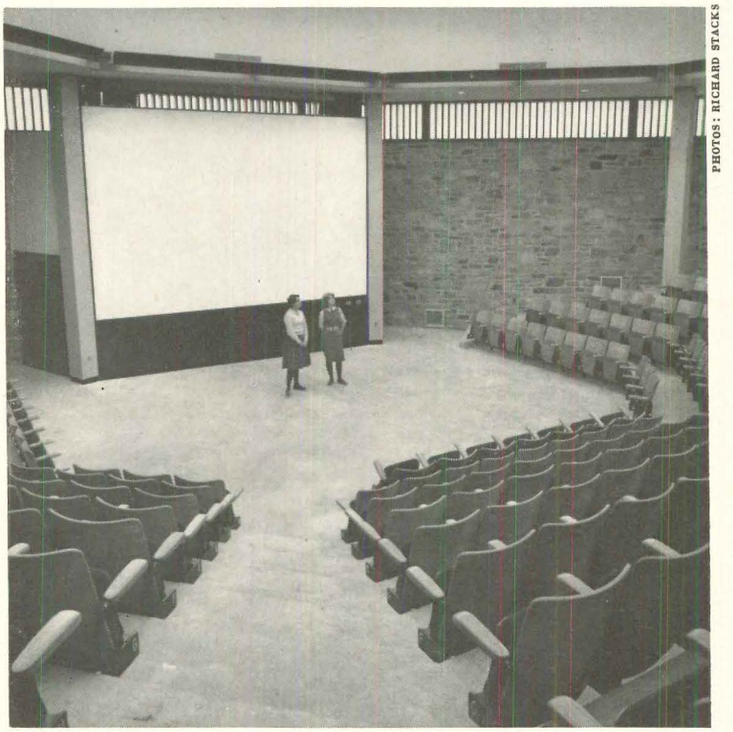
PHOTOS: HUGH N. STRATFORD



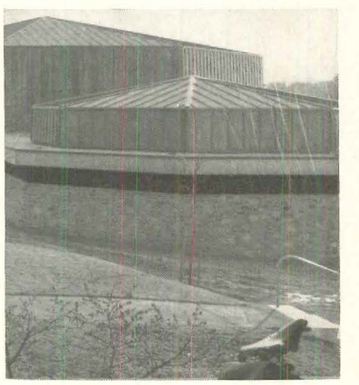
WASHINGTON CHURCH. The strong, simple shape of the Newport United Presbyterian Church in Bellevue, Wash., reflects the division of space within: apse, nave, and vestibule (left to right). The church has an A-frame wood structure covered over by rustic cedar shakes which seem at home in the woodsy setting. Inside, a skylight above the nave spills light across a pattern of wood slats which provide a finely etched background for the simple cross (below). With a seating capacity of 358, the church has an area of 10,000 square feet and was built for $138,000. Architects: Copeland & Chervenak. Contractor: C. B. S. Construction Co.



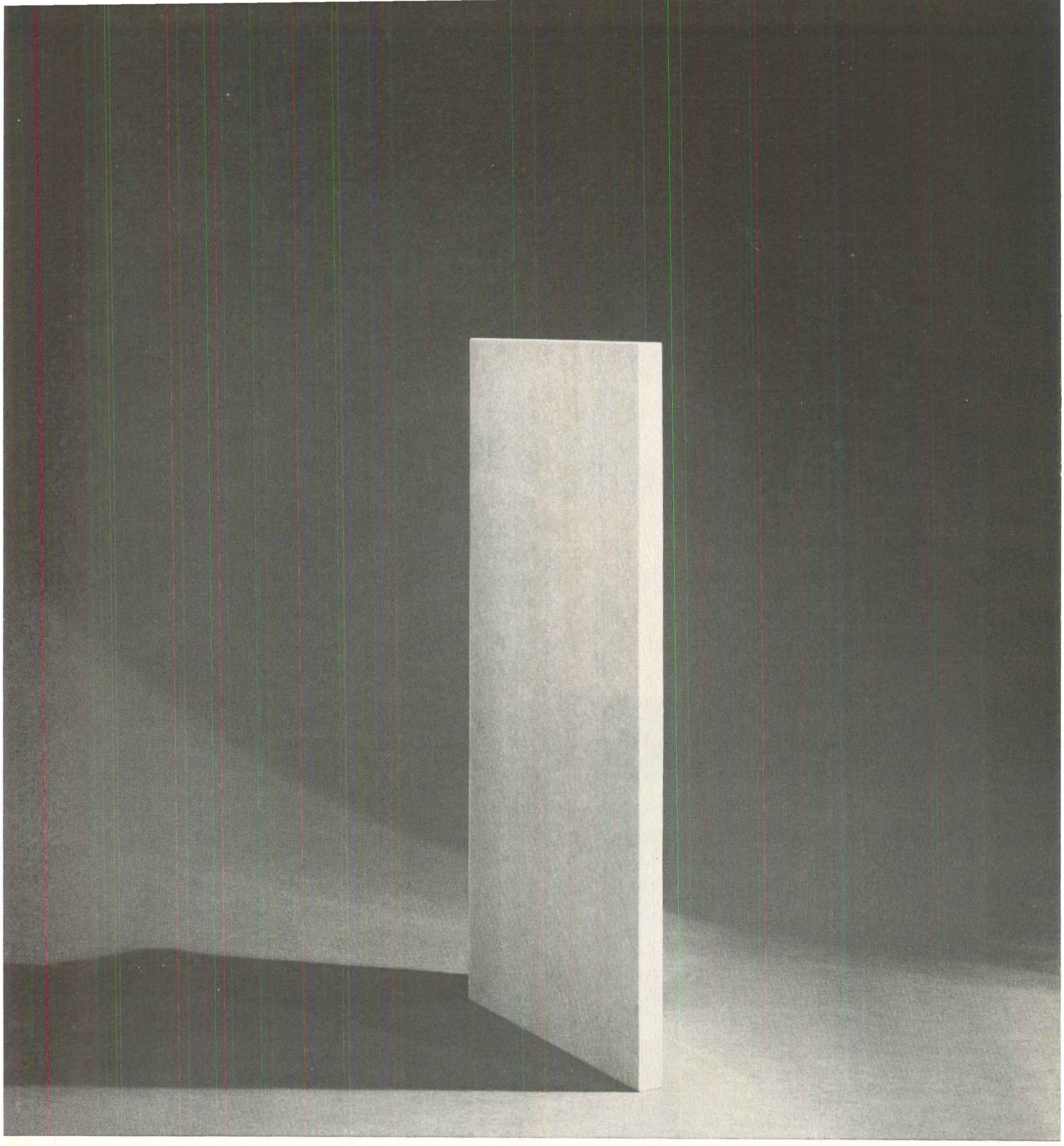
PHOTOS: RICHARD STACKS



MARYLAND COLLEGE CENTER. Warm fieldstone walls enclose a 240-seat lecture hall (above) in Goucher's new $2 million center for the performing arts in suburban Towson, Md. The lecture hall, and a larger auditorium–theater seating 1,000, both carry handsome copper-clad domes (right), polygonal like the rooms they shelter. Architects: Pietro Belluschi and Rogers, Taliaferro, Kostritsky & Lamb. Engineers: Henry Adams, Inc. Contractor: William T. Lyons Co.



NEW ENGLAND WAREHOUSE. One of the cleanest structures on Boston's industry-packed Route 128 belongs to Hansen-MacPhee, New England distributors for Volkswagen cars in Waltham, Mass. The 35-foot-high office–warehouse is patterned by precast concrete wall panels, cast in steel forms to produce a smooth surface, with ribs 5 feet apart. Construction cost: $8.79 per square foot, quite in keeping with the economical Volkswagen itself. Architects: Lord & Den Hartog. Contractor: White Construction Co. END



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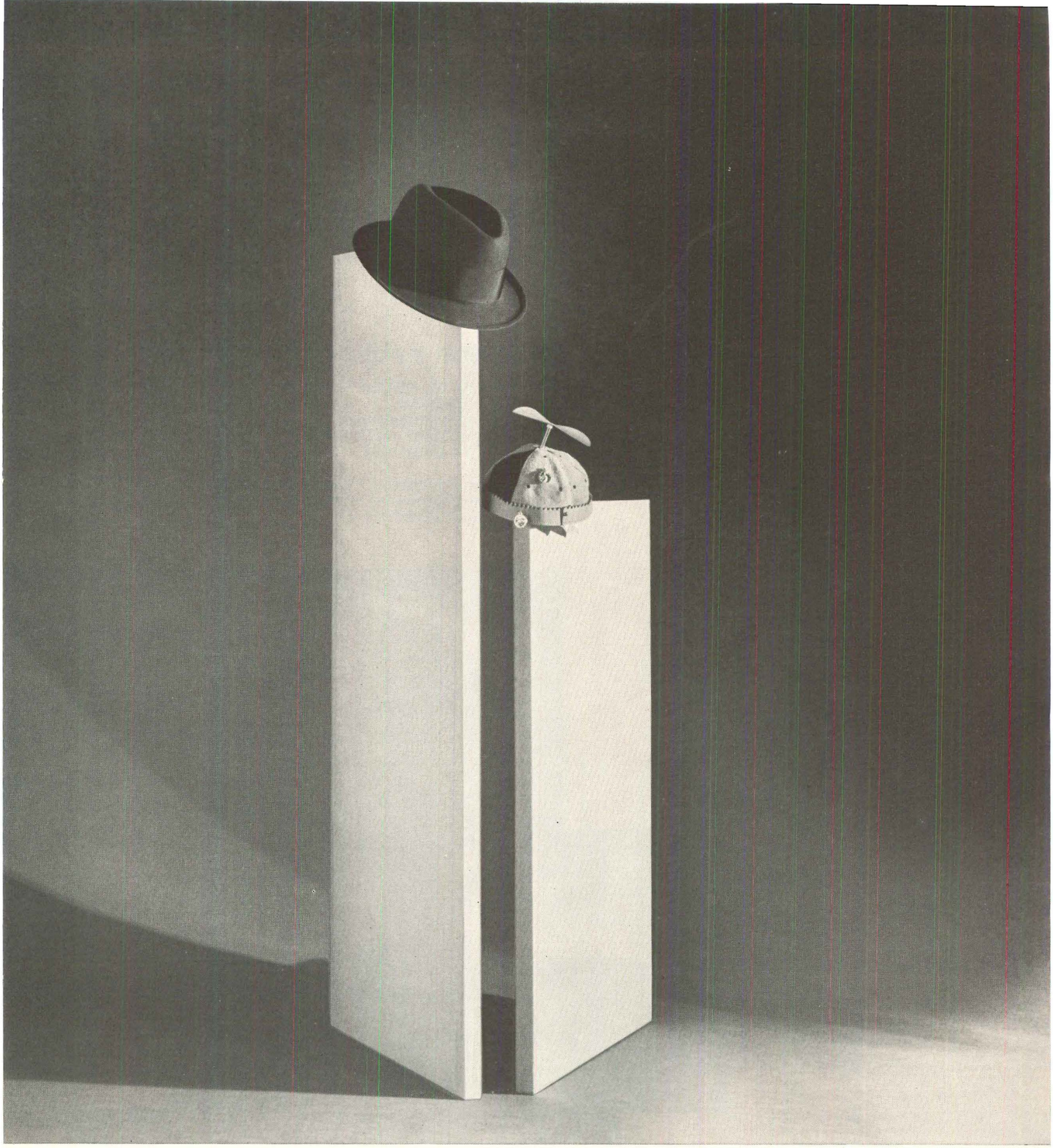

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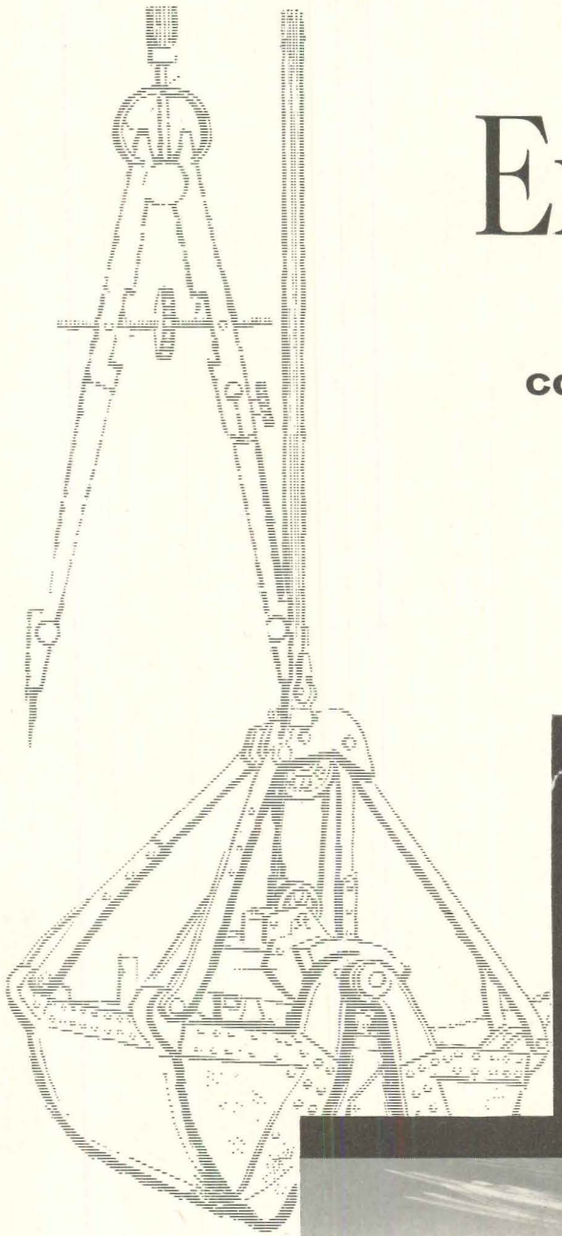
DOW



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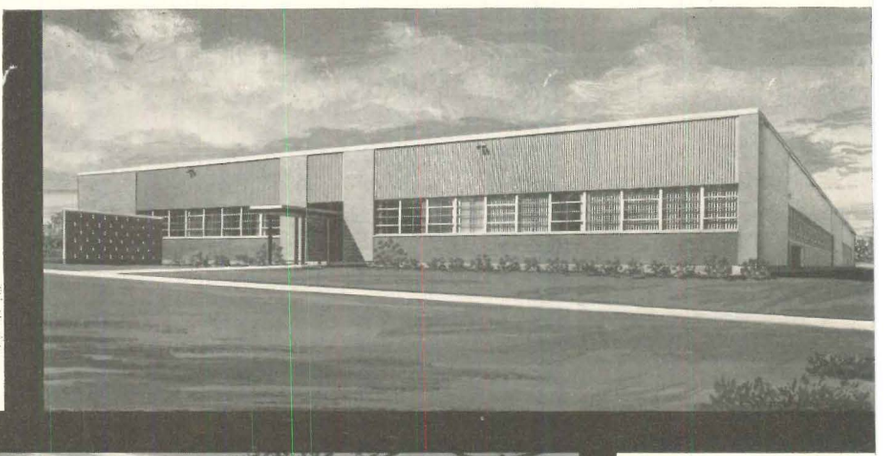

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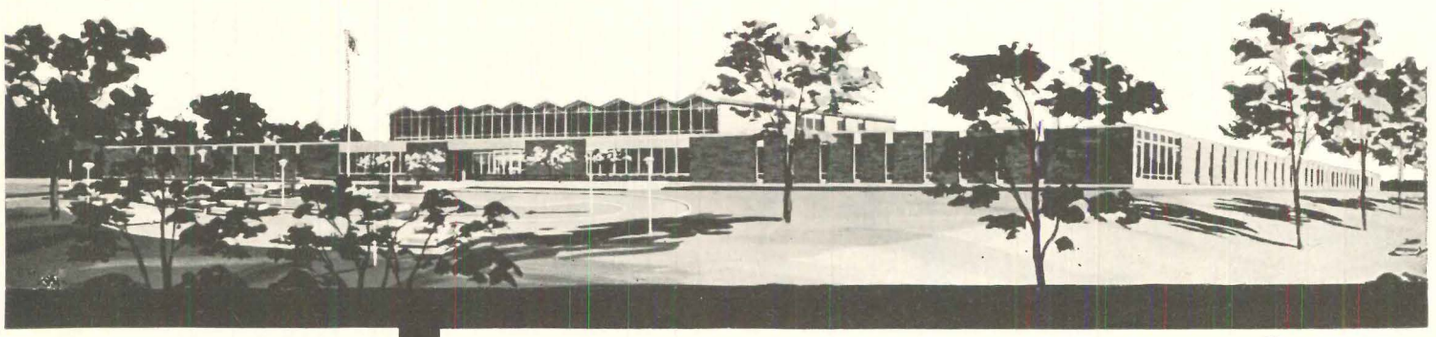

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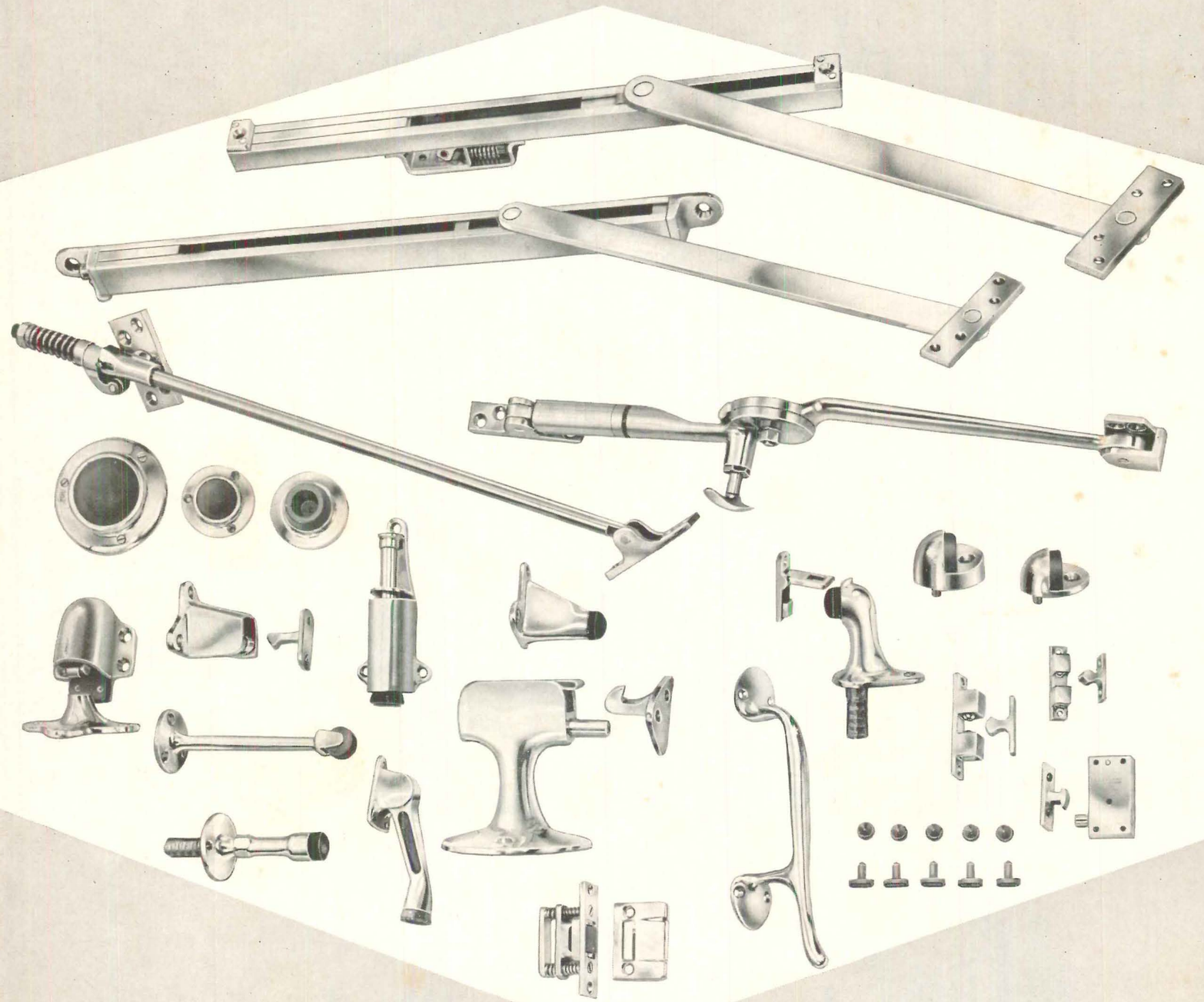
where only the finest is adequate...



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door control hardware

since 1923

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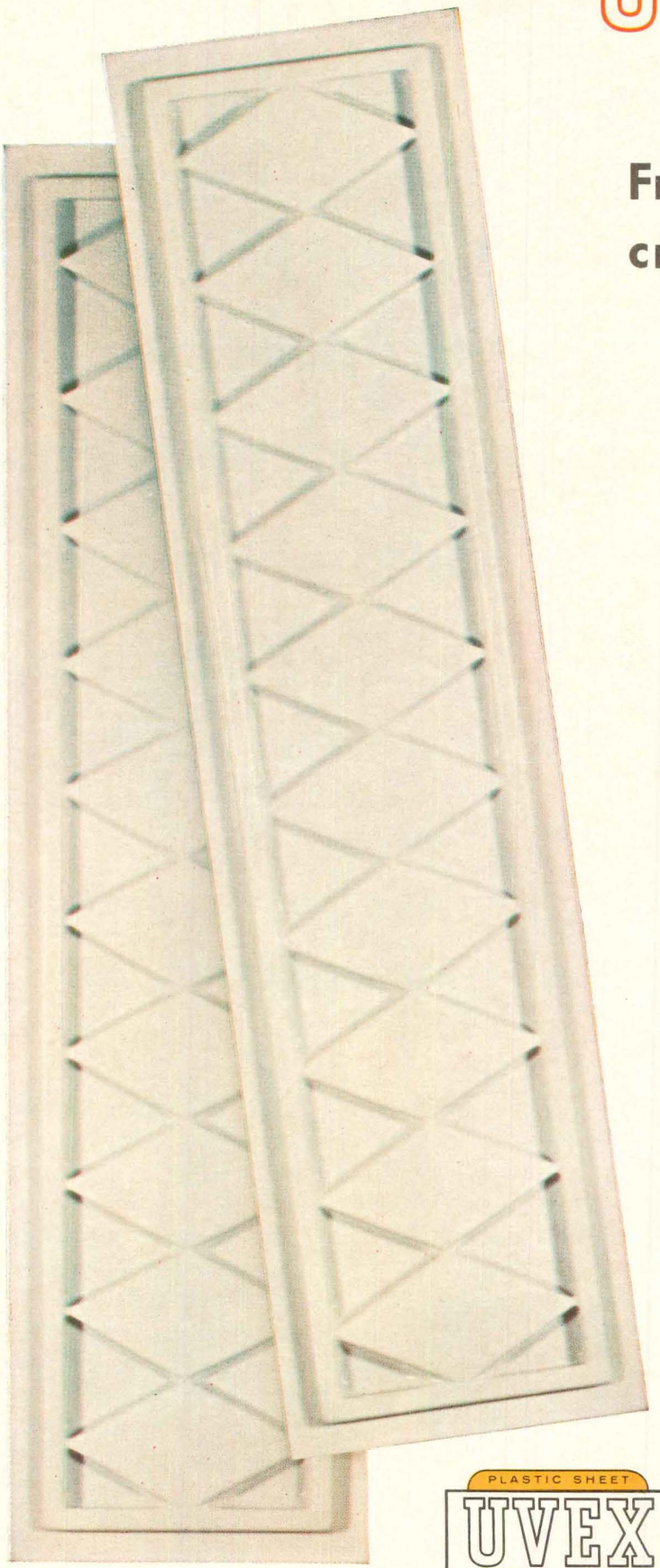
It's EASTMAN for UVEX Plastic Sheet*



From panels like this . . . create new store fronts

Patterned panels, vacuum-formed from 125-mil UVEX Plastic Sheet put a new face forward for an old building. They bring functional beauty and durability for up-to-date store fronts. And, at reasonable cost, thanks to the inherent qualities of UVEX—its unmatched formability and high lustre.

For whatever your use, you can count on UVEX . . . the versatile, high-impact plastic.

New life for an old building: *Scene from an older section of a growing eastern industrial city. Note how diamond pattern in UVEX panels placed vertically in the fasciae sets off the new front.*

For further details, call our representative or write:

Plastic Sheeting Division
EASTMAN CHEMICAL PRODUCTS, INC.
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* **UVEX Plastic Sheet** gives beauty by the square foot, indoors or out. A glossy, impact-resistant sheet characterized by high durability. Available in 36 standard combinations of colors and gauges.

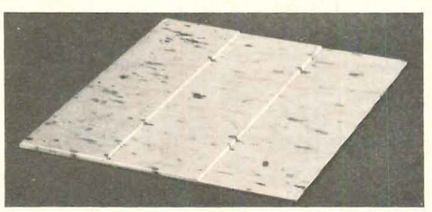
New B.F.Goodrich Ever-Thru vinyl asbestos floor tile

THE DESIGN GOES ALL THE WAY THROUGH EVER-THRU. IT STANDS UP BEAUTIFULLY IN HEAVY TRAFFIC AREAS.

New EVER-THRU is now in the line of "Trend Maker Designs" in floor tile from B.F.Goodrich! EVER-THRU is made of tough, Koroseal® vinyl-asbestos. It is easy to install, easy to maintain—and it wears and wears. The tile-deep design will last the full life of the tile.

EVER-THRU is a low porosity tile with a hard, calendered surface. EVER-THRU resists every kind of punishment—from shoe and furniture scuffing and scratching, to alkalies, grease and harsh cleaners.

EVER-THRU comes in 1/8" thickness. Standard size, 9" x 9". EVER-THRU is recommended for above, on or below grade installations. No matter what your tile requirements may be, you will find a special BFG Trend Maker Design to meet every one: in homogenous vinyl, vinyl-asbestos, asphalt and rubber. BFG also offers you the world's most complete line of floor tile accessories, including stair tread and cove base. So, always specify B.F.Goodrich floor tile and accessories by name. Your local contractor has the information. Or write: Consumer Products Marketing Division, The B.F.Goodrich Company, 300 Park Avenue, New York 22, New York.

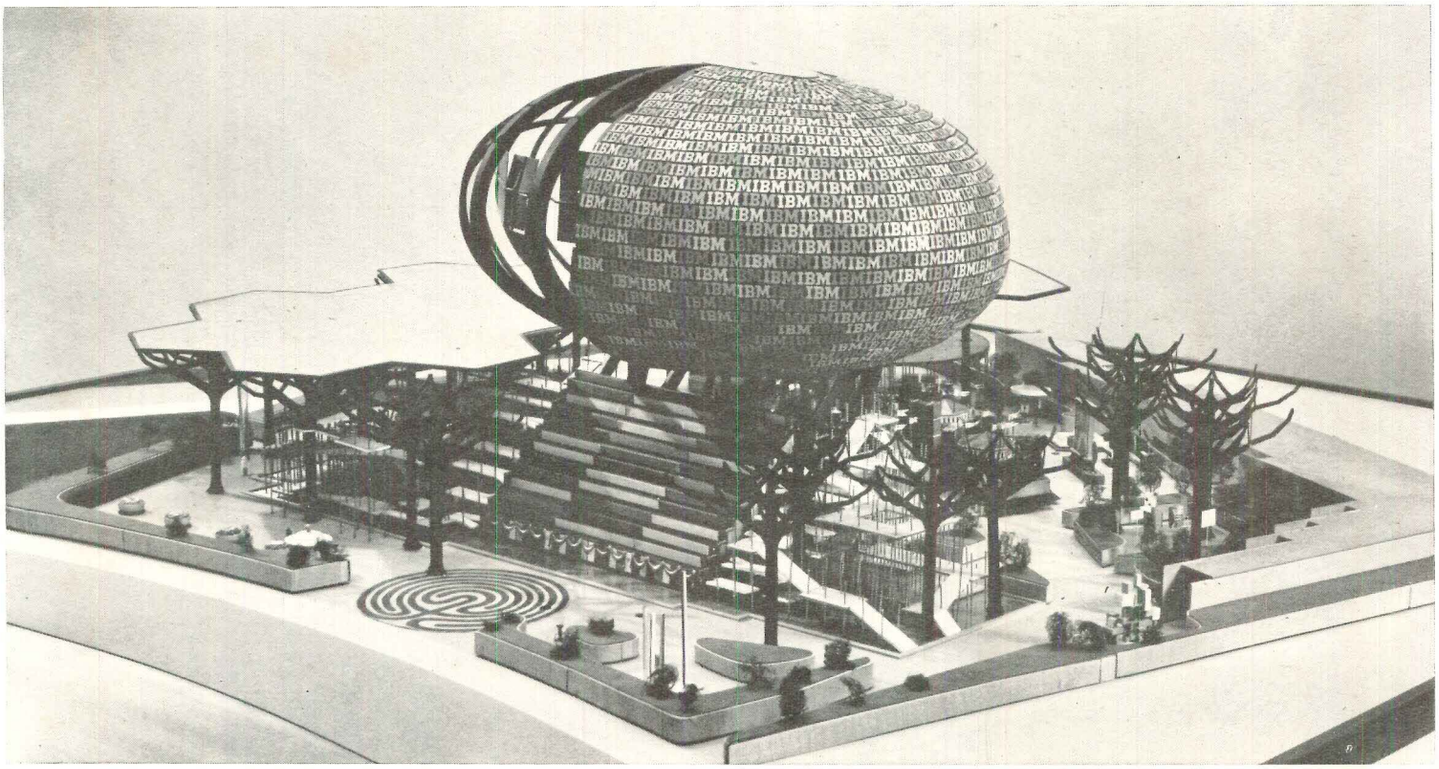


EVER-THRU is a Koroseal vinyl. The design goes all the way through as shown by cutaway tile above.

B.F.Goodrich **Consumer Products Marketing Division**

Household products • Furniture products • Flooring products • Drug sundries

IBM unveils its New York World's Fair pavilion (below)
Harvard's fortress for education (page 51)



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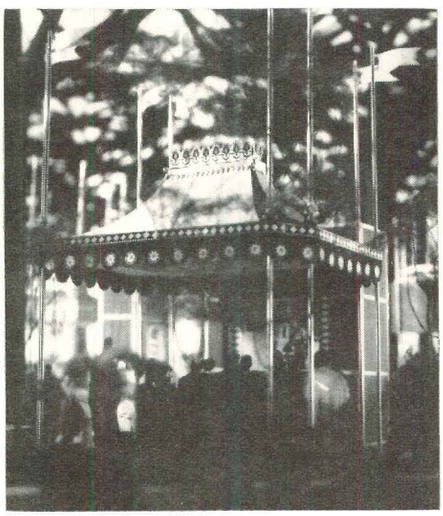

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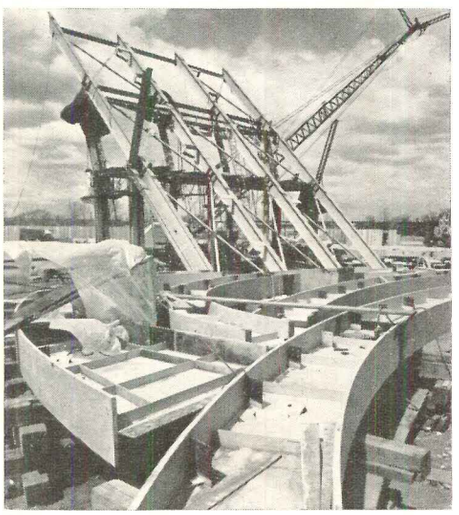

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1. IBM AT THE FAIR. At last there seems to be some genuine excitement at the New York World's Fair, now less than a year away. A good deal of it stems from International Business Machines, Charles Eames, and Eero Saarinen & Associates, who recently unveiled this model of the IBM pavilion. The collaboration promises a high degree of entertainment and instruction in an imaginative garden setting.

The exhibit theme is the story of information-handling devices, and the chief storytelling will take place inside the big egg-shaped theater that is the focus of the exhibit (1). The rows of seats discernible just below the egg are movable bleachers. On them 420 spectators at a time will be lifted hydraulically from the ground into the egg, the "information machine," where a master of ceremonies will greet his guests and present a short Eames film on a combination of nine screens. It will explain that, however complicated computer systems seem to be, they are based on simple concepts and techniques.

In another section of the pavilion, little theaters (2), like Elizabethan Punch and Judy shows, will explain computer logic, speed, and miniaturization by means of mechanical puppets, music, and narration. A court full of Eames's delightful "devices" and graphics will demonstrate probability theory, and a "scholar's walk" will illustrate something of the history of modern computer technology and how it evolved from earlier information techniques. Elsewhere in the pavilion IBM will display a full-scale data processing system and demonstrate how it solves problems such as traffic control, information retrieval, and language translation. There will also be new electric typewriters on which the public will be invited to hunt and peck.

Thirty-two-foot steel trees (3) will support and shelter the exhibit, their top branches covered by translucent plastic sheets.

Enough of the pavilion's structure is up now so that the frame for the bleachers (4) shows clearly, as do the curved sections for the theater.

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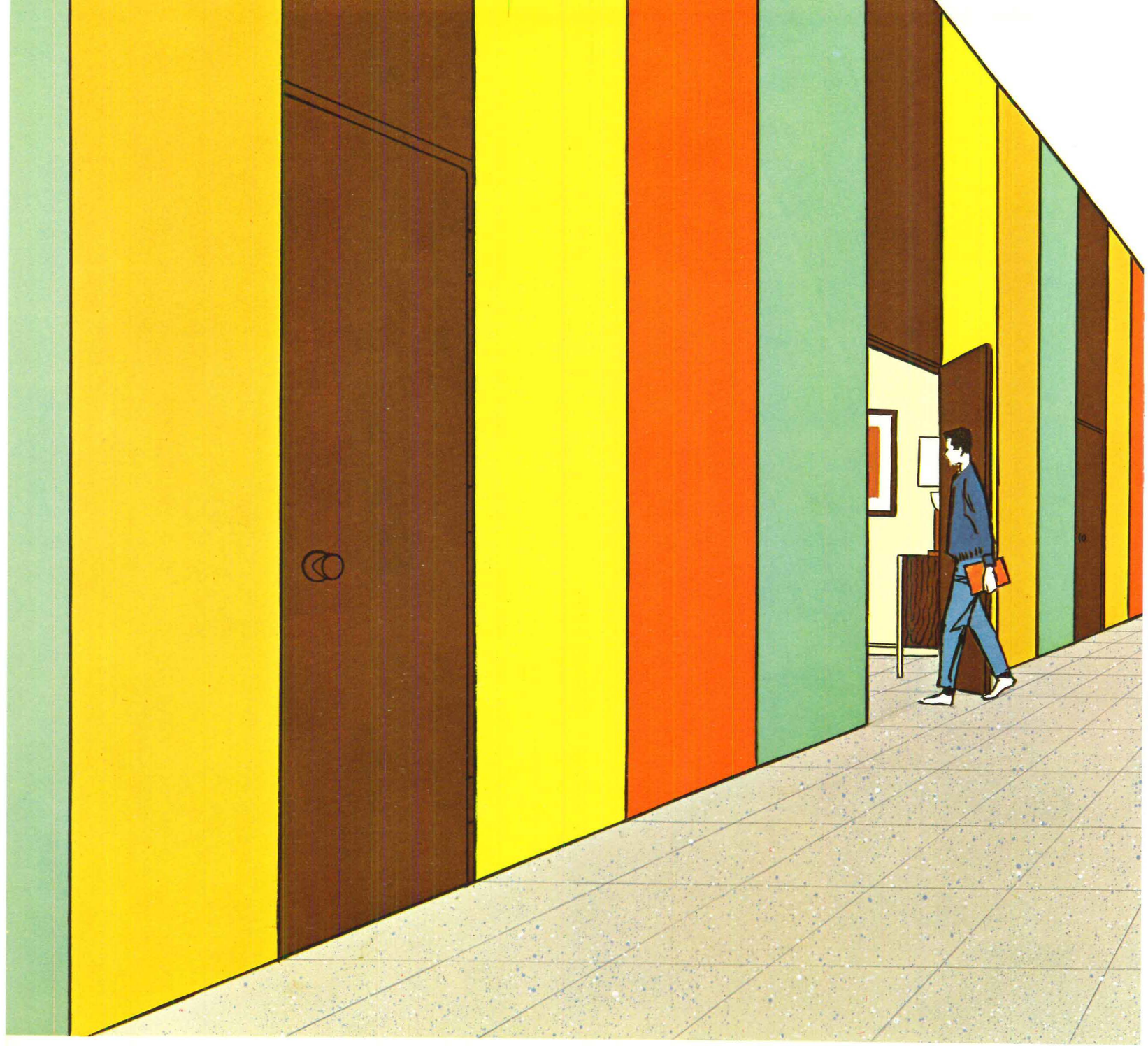
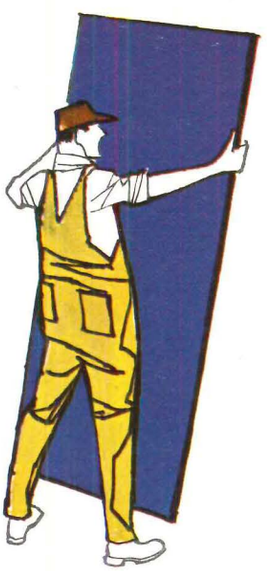
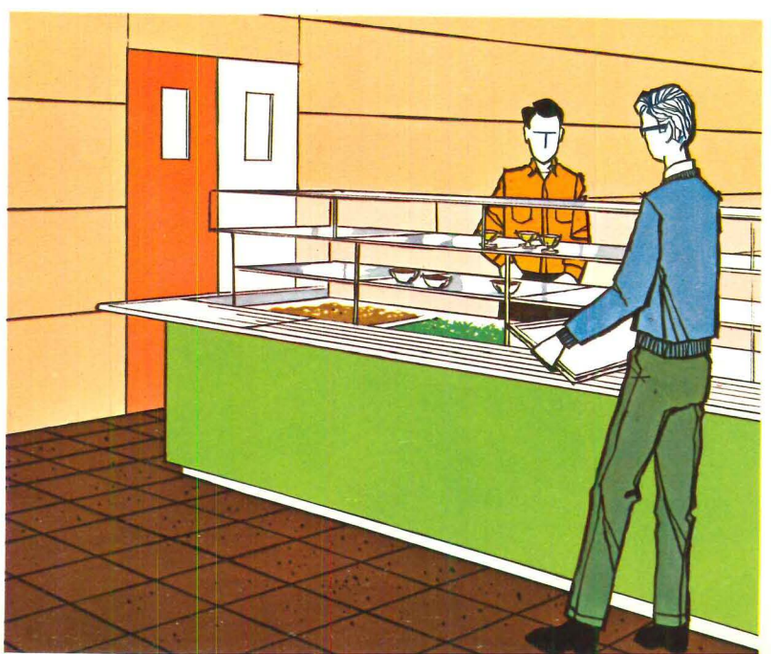
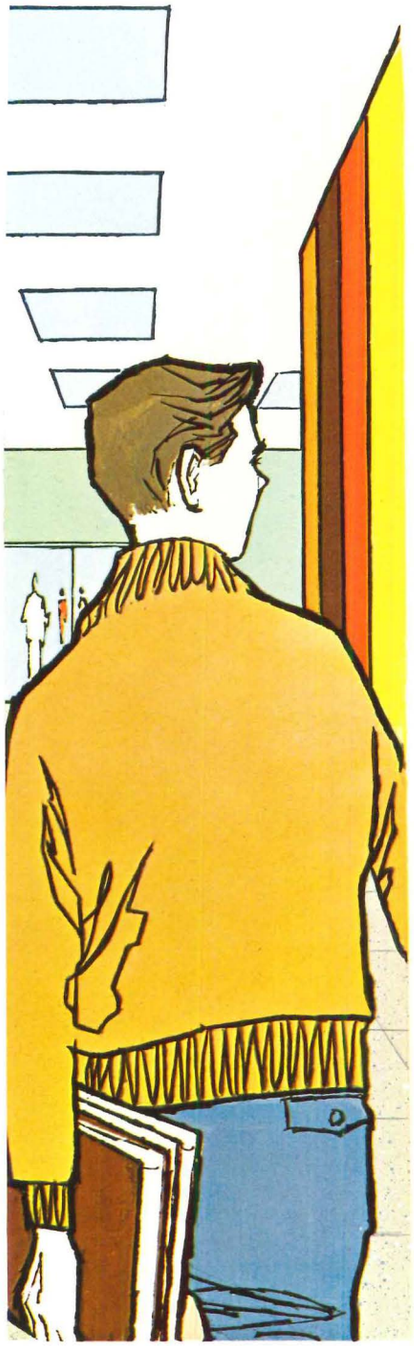








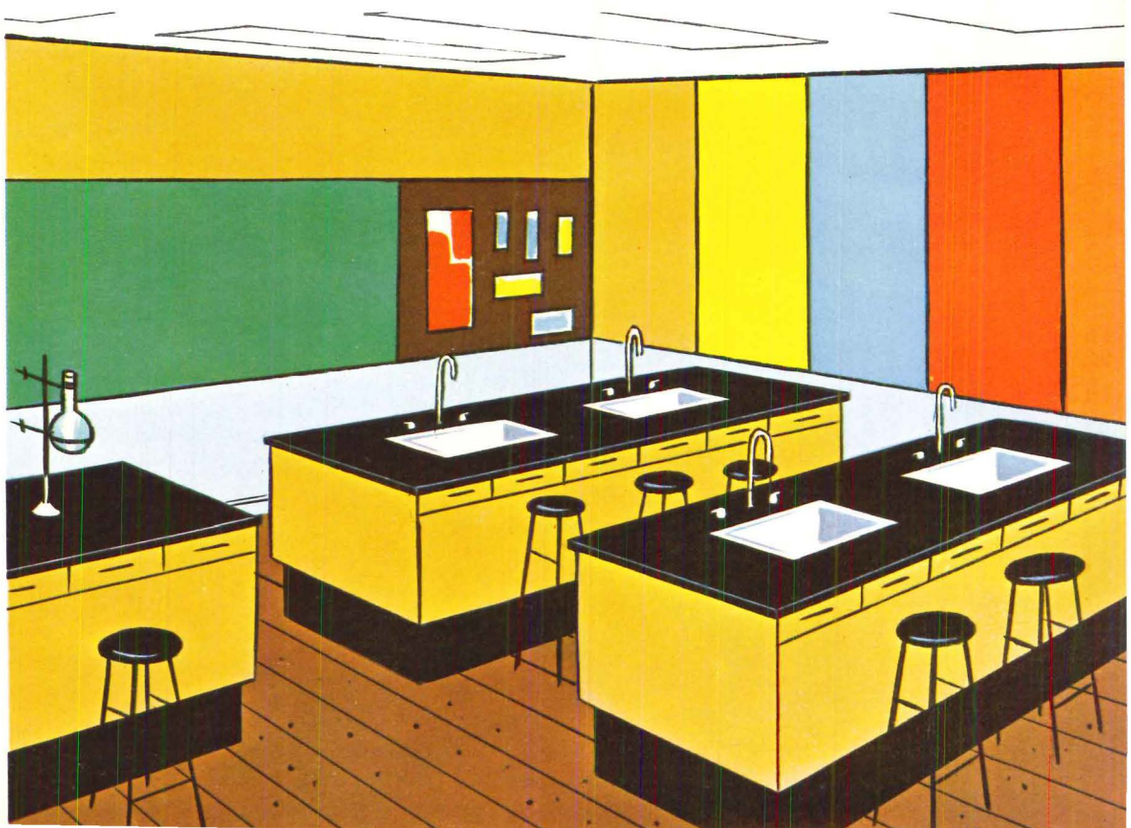
Porcelain Enamel brings 2-way savings to schools and colleges

Colorful, *carefree* interior walls are practically a "must" in the design of modern educational buildings. In assembly rooms and corridors! In classrooms and labs! In dormitories, dining rooms and recreation quarters there is a need to brighten up interior wall surfaces. And they must require little maintenance.

Porcelain enamel wall panels provide many advantages for such applications. They are colorful, durable, withstand hard abuse, easily wipe clean with a damp cloth. They are quickly installed, require no special tools or skills. Finally, they are relatively low in cost, permitting you to stretch construction dollars.

The lifetime porcelain enamel is *fused* to lightweight steel. Panels come to you ready for installation. Aluminum molding can be *porcelain enameled to match* if desired. You get a complete package. And you can choose from literally hundreds of colors.

With porcelain enamel panels you get both *low initial cost* and *rock-bottom maintenance*, proved in thousands of installations. Porcelain enamel panels are available in a *variety of finishes* from long-established, highly reputable companies. Look them up in Sweet's! Call them in! Or write us for further information. FERRO CORPORATION, 4150 East 56 Street, Cleveland 5, Ohio.



Attractive, distinctively cheerful are dormitory rooms and corridors in colorful porcelain enamel. Practical, too, as they withstand hard abuse, require little maintenance.

Porcelain enamel walls and chalkboards combine carefree beauty and utility in classrooms and labs.

School cafeterias and washrooms lend themselves to color, an excellent use of porcelain enamel wall panels with their fused-in, lifetime color, easy cleanability.

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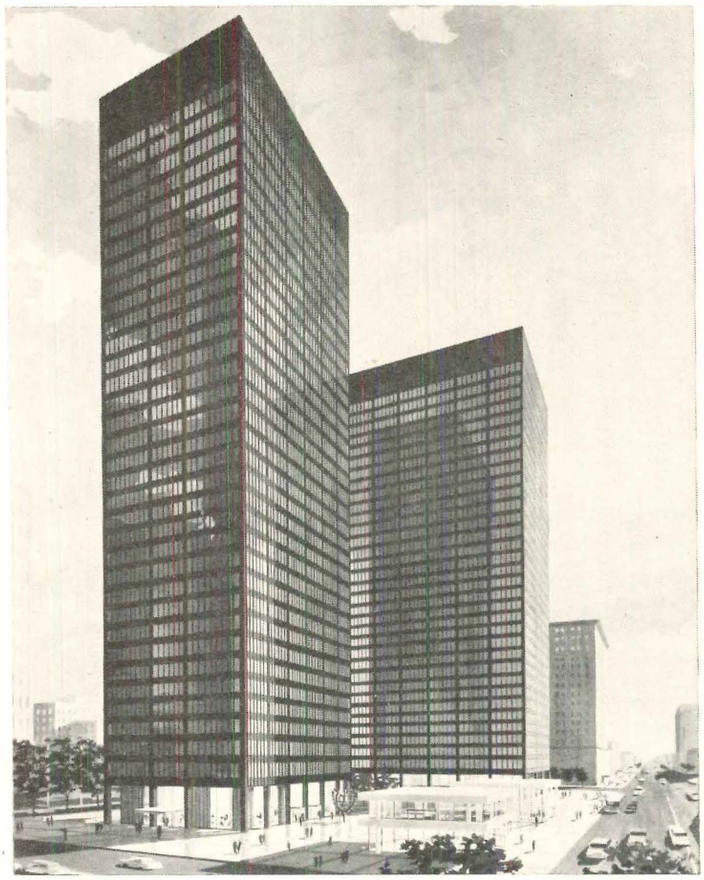

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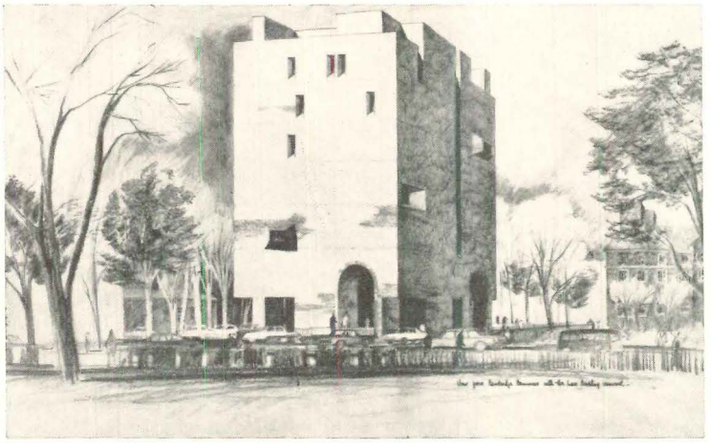

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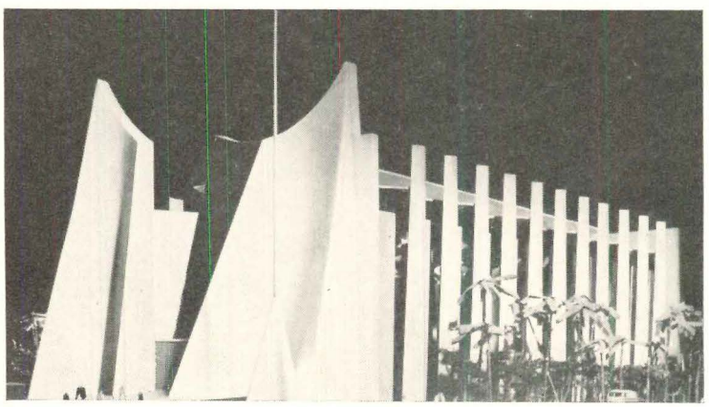

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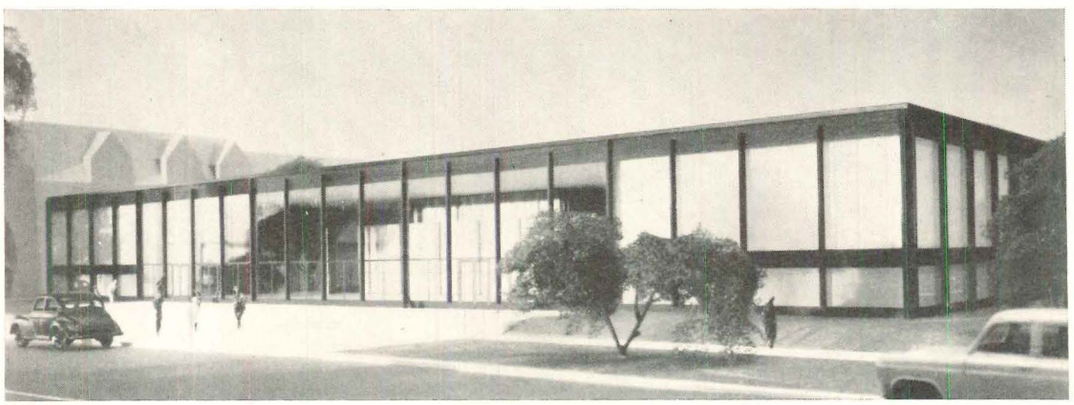

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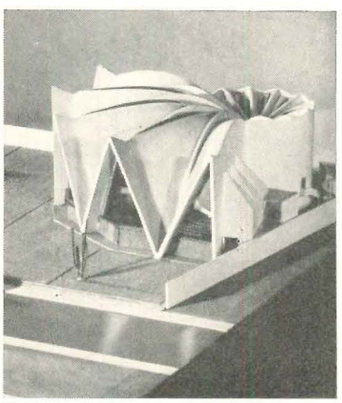

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5. PHILADELPHIA CENTER. Scrapping plans to build a city garage, a few stores and offices opposite City Hall, the Philadelphia Parking Authority commissioned a land-use study which recommended that it bury the garage and concentrate on distinguished offices. The Parking Authority recently accepted National Land & Investment Co.'s proposal for Continental Square (above): twin 33-story towers of dignified design and somber hue (black metal and gray glass), with 1,143 parking spaces underground. Architects: Milton Schwartz Associates and Skidmore, Owings & Merrill.

6. MIES IN CHICAGO. Next year the University of Chicago's School of Social Service Administration will move offices, classrooms, laboratories, and research facilities into this new building, designed by Ludwig Mies van der Rohe. Construction is to begin this year, while alumni pass the hat to raise a portion of the building's total cost of $1.5 million.

7. EDUCATION AT HARVARD. Harvard calls the plan for its new Graduate School of Education "a sharp departure from tradition," and it is. Architects Caudill, Rowlett & Scott succumbed to Harvard brick, but that was all. In some ways, of course, the building looks like a very traditional fortress with its small windows and bridges across courtyards, yet the structure is designed to express the very modern goings-on inside. Large windows indicate seminar-conference-social centers; small windows locate offices and working areas fitted into the service perimeter.

8. & 9. CANDELA CHURCHES. Félix Candela, the Mexican master of concrete structure, has designed two new Catholic churches, Villahermosa Cathedral in Tabasco (8) and Santa Monica Church in Mexico City (9). For Villahermosa, Candela designed double rows of tapered columns standing outside the concrete trees which form the roof. The Santa Monica church is to be roofed by folded vaults which meet over the main altar. Architects: Jorge Creel, Juan José Diaz Infante (8) and Fernando López Carmona (9).

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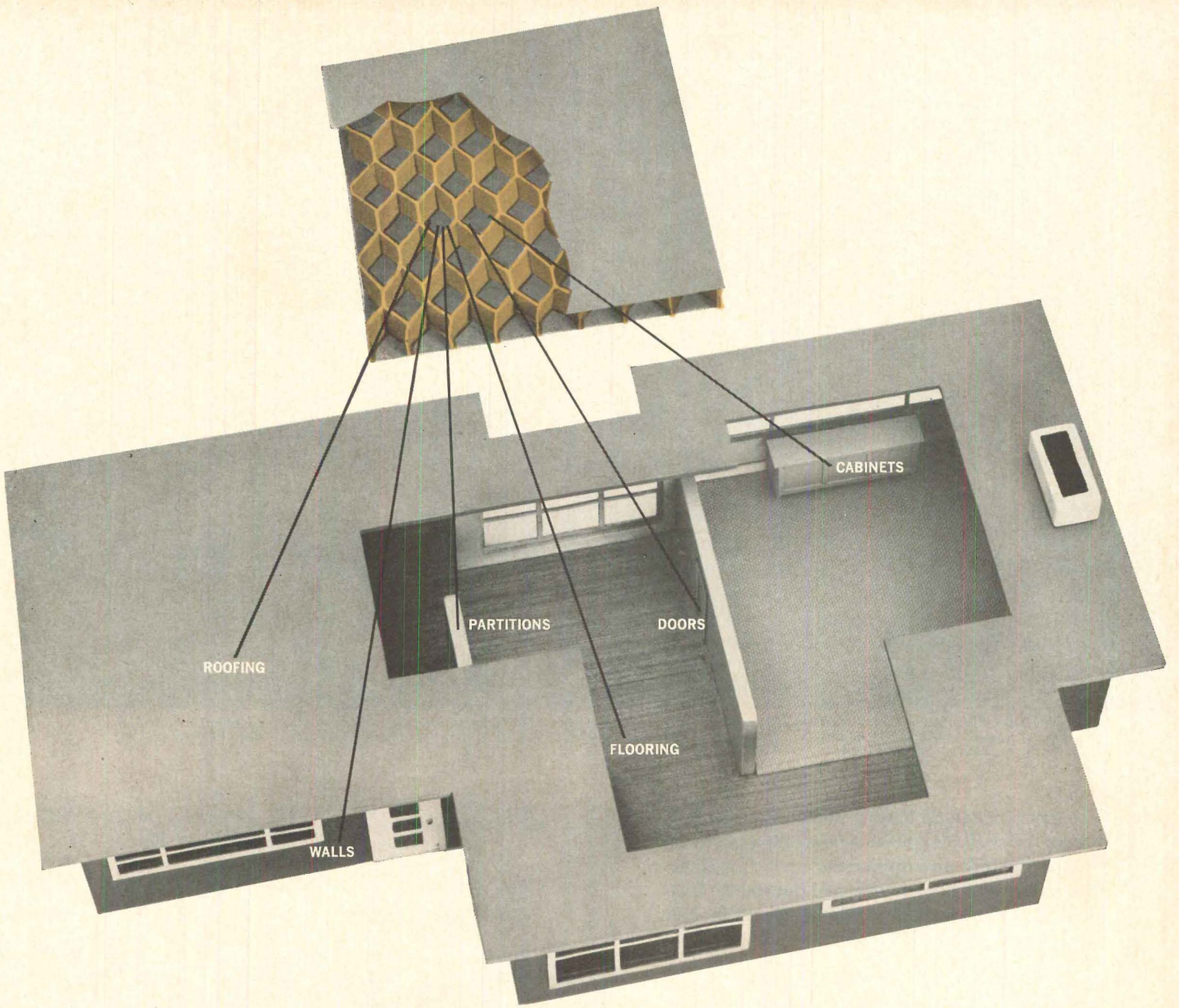


The Honeycomb house

Union HONEYCOMB is becoming increasingly popular as an inner core for pre-fabricated components — from floors to roofs. Read why.
What's really behind the trend to HONEYCOMB cores for pre-fabricated components? Design simplicity is one reason. You save hours of on-site assembly time.

Lightweight plus high strength is another reason. Union HONEYCOMB cores weigh .095 to .187 lbs. *per board foot.* Yet they have corresponding crushing strengths of from 33 to 170 p.s.i! This lightweight means easy fabrication, handling and erection. And minimum shipping and labor costs.

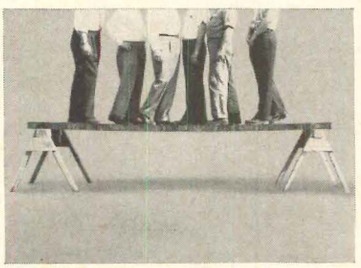
The cores can be bonded to almost any facing material—metal, wood, asbestos, gypsum, plastic, fibreglass—even marble.

Impregnated HONEYCOMB cores also deaden sound, resist moisture and temperature extremes. The fuel contribution of HONEYCOMB in panels also is exceptionally low. The cells eliminate flue lines parallel to facings—prevent spread of fire inside panels.

Write for details about Union HONEYCOMB'S unique structural advantages and economies.

UNION-CAMP
HONEYCOMB CORES
Union Bag-Camp Paper Corp., 233 B'way, N.Y. 7, N.Y.

LIGHTWEIGHT! Union HONEYCOMB cores weigh only .095 to .187 lbs. *a board foot.* This extreme lightweight speeds fabrication, handling and assembly—minimizes shipping and labor costs.



STRONG! On a weight-for-weight basis, Union HONEYCOMB is the strongest sandwich core material known. HONEYCOMB can meet a wide range of specifications required in building pre-fab components.

Union Bag-Camp Paper Corporation, Dept. AF-663, 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 ☐

Miscellaneous uses (specify).....

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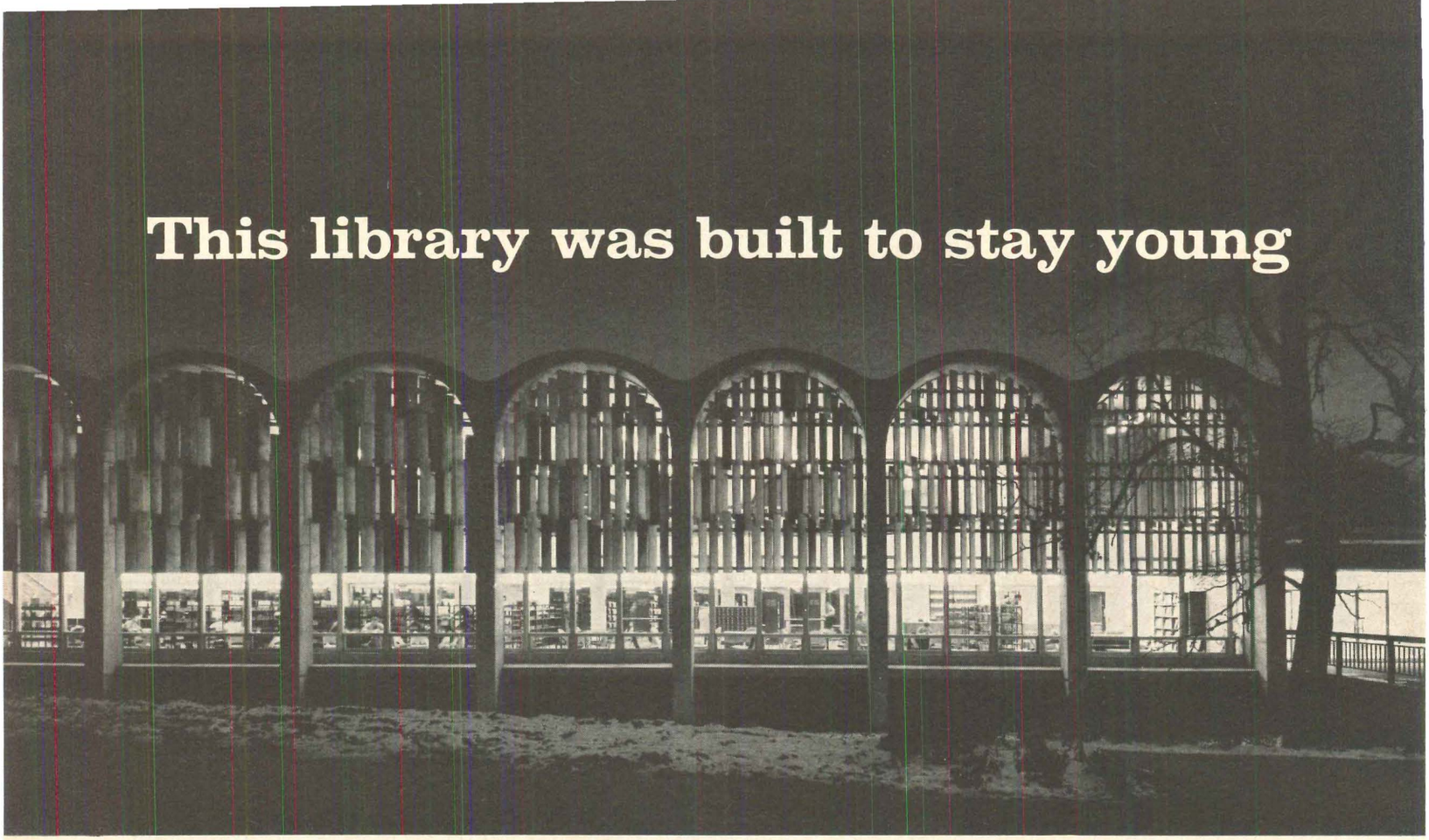
This library was built to stay young



SPRAIN BROOK BRANCH, YONKERS PUBLIC LIBRARY, Yonkers, N. Y.; Barrel vaulted concrete roof contributes architectural grace and column-free interior space. Architect: ELI RABINEAU, Yonkers; Structural Consultant: LEV ZETLIN, New York; General Contractor: CHIAPPINELLI-MARX, INC., Mt. Kisco; Ready-mixed Concrete: PLAZA CONCRETE CORP., Yonkers.

The combination of classic design and modern reinforced concrete presents interesting possibilities for dynamic new approaches to the problems of form and function, beauty and durability. Consider, for example, the new Sprain Brook Branch Library in Yonkers, N. Y.

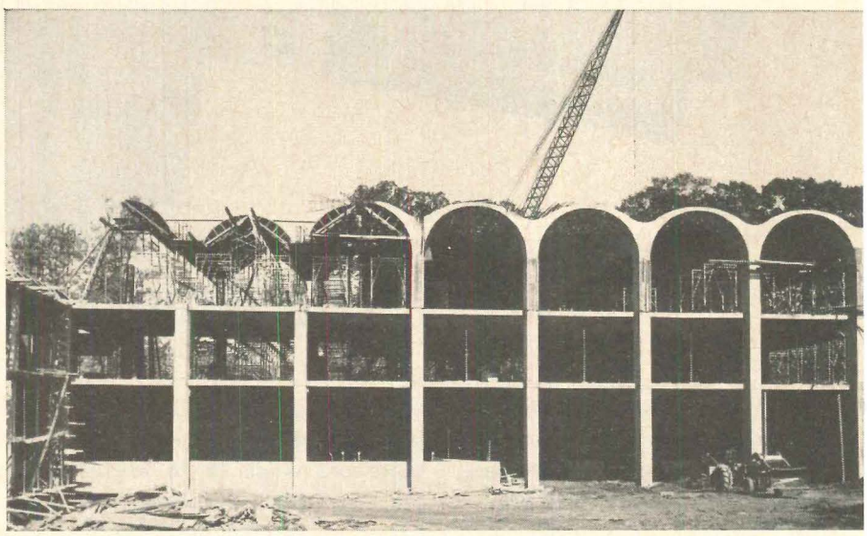
By using reinforced concrete, the architect had the advantage of freedom of design. Columns and pillars were proportioned to express a feeling of permanence and dignity. Concrete exterior columns and inside slabs were left exposed, so that structural members were visually integrated into the overall design. The result: a strong impression of unity.

Among the forward-looking features of the library are an outdoor reading area, a 100-car parking lot unobtrusively built into the multi-level landscape, and a community activity center.

In keeping with the timeless quality of the design and construction, Lone Star Portland Cement was used exclusively.

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

LONE STAR PORTLAND CEMENT



Beams, columns and barrel-arched roof are all reinforced concrete, cast in place.

South wing includes the children's reading room. The open area under this wing is available for "Story Hours."

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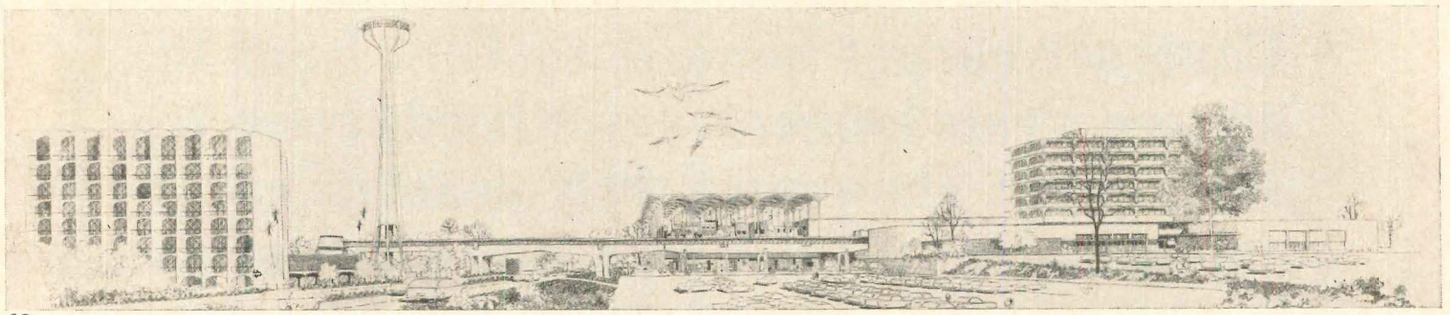

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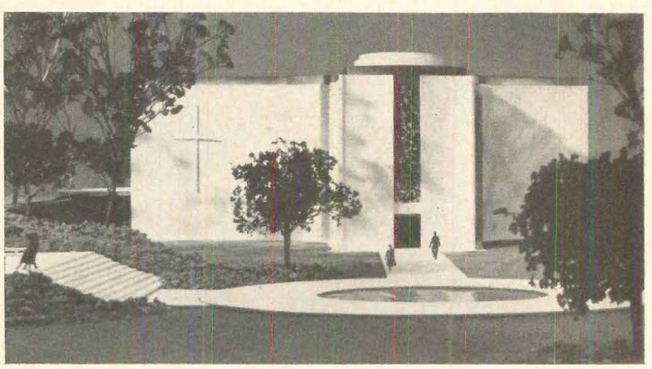

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10. FLORIDA SPACE CITY. Next to the long lagoon that separates Cape Canaveral from mainland Florida, a new town of 43,000 is in the planning stage, halfway between the cities of Melbourne and Cocoa. Part of the town center is shown above: (left to right) apartments, a water tower capped by a restaurant, retail and office units. It is one of the first stages of a master plan developed for Canaveral Princeton Lands Inc. by Victor Gruen Associates.

11. LOS ANGELES MOTEL. The Tishman Realty & Construction Co. contemplates still another project in Los Angeles: a motor hotel of 13 stories, to rise along Wilshire Blvd. in Beverly Hills. One of the outstanding features of the design, by Daniel, Mann, Johnson & Mendenhall, is a separate banking pavilion set between pronged concrete saucers. Massive piers, 56 feet apart, support the main building, whose exterior bearing walls, floor slabs, and room walls project in a strong grid pattern.

12. IBM BRANCH OFFICE. Four pairs of arched columns, shaped to reflect stress lines, will anchor IBM's new branch office on a site next to the Los Angeles International Airport. The big wall panels will be cast of dense concrete finished in quartz aggregate and punctured at intervals by six small windows. The glass-walled main floor will be recessed behind the building line. Architects: Eliot Noyes & Associates. Associated architects: Jones & Emmons.

13. WASHINGTON OFFICES. This commercial office building in downtown Washington, D.C., a Metro Investment & Development Co. project, will get under way this summer. Grouped around the perimeter of the ground floor will be specialty shops, their show merchandise shielded by precast canopies. Architects: Cohen, Haft & Associates.

14. CALIFORNIA CHAPEL. Occidental College in Los Angeles will start construction this month on a new chapel designed by Ladd & Kelsey of Pasadena. The entrance to the sanctuary will be via a bridge at left; the side entrance shown leads to the fellowship hall on a lower level. END

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No wonder it's being used in
The 1964 World's Fair Administration Building

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Kem-Blo & Ensolite Products Dept., Naugatuck, Connecticut

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Dust & Moisture Resistant unit

NOW! A complete line for every Dust & Moisture Resistant application

The Miller DMR units are the foremost Dust & Moisture Resistant lighting fixtures in the industry . . . proved-in-use . . . and now with an expanded line for every application.

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- for rapid start, high output and 1500 ma lamps
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Here's why:

safe . . . Nothing can get to the lamps to cause breakage. A sturdy, one piece plastic enclosure protects the entire lamp assembly. Lamps cannot get loose and fall out.

clean . . . Nothing can collect between the top of surface mounted fixture and ceiling to corrode, ferment or attract vermin. Enclosure has a smooth surface, rounded corners and can be easily wiped off. And it's gasketed to keep out dust, dirt and other foreign matter. Fixture can be hosed down.

easy to relamp . . . Captive, knurled thumb nut loosens easily — enclosure is held up by a strong, plastic cord—leaves both hands free for relamping.

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your foremost fixture **VALUE** = miller **QUALITY** / miller **PRICE**

For complete information on the new Dust & Moisture Resistant line, ask your Miller distributor—or write for the new "proved-in-use" catalog.

THE **miller** COMPANY
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Put public phones in booths that BELONG in your lobby

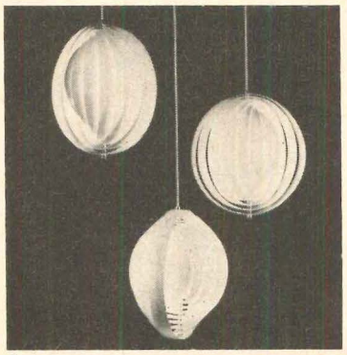
Besides being useful, public telephone booths can also enhance the design and decor of your lobby. You'll find this especially true if you ask a Bell System Public Telephone Consultant to work with you as plans for your commercial buildings develop.

He can suggest a wide range of materials and equipment that add to the total effect of your decorative concept. And he can give you expert advice on the number and location of booths—based on the function, floor plan and potential traffic pattern of the lobby.

Attractive, easily accessible public telephones are appreciated by visitors, and they provide profitable income for your client. So as you plan your next building, call in a Public Telephone Consultant while you're still in the blueprint stage. His help is a free service.

BELL TELEPHONE SYSTEM

Folding tables, molded chairs, hooded lamps



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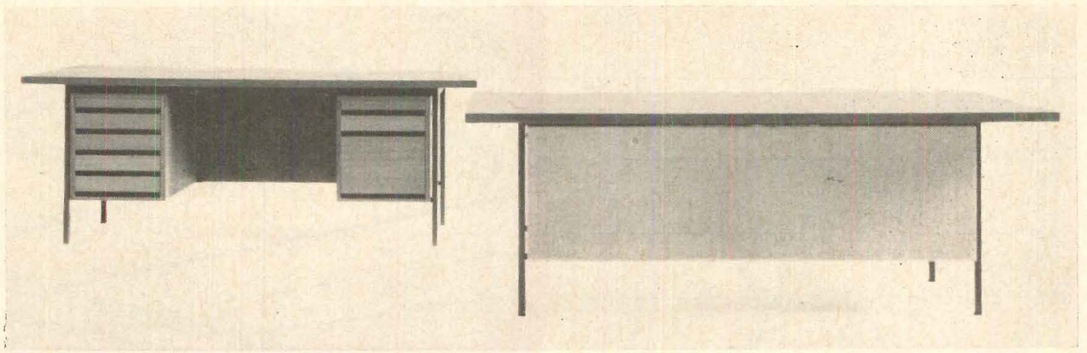

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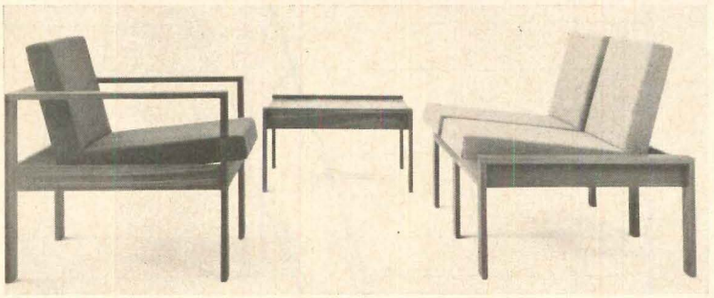

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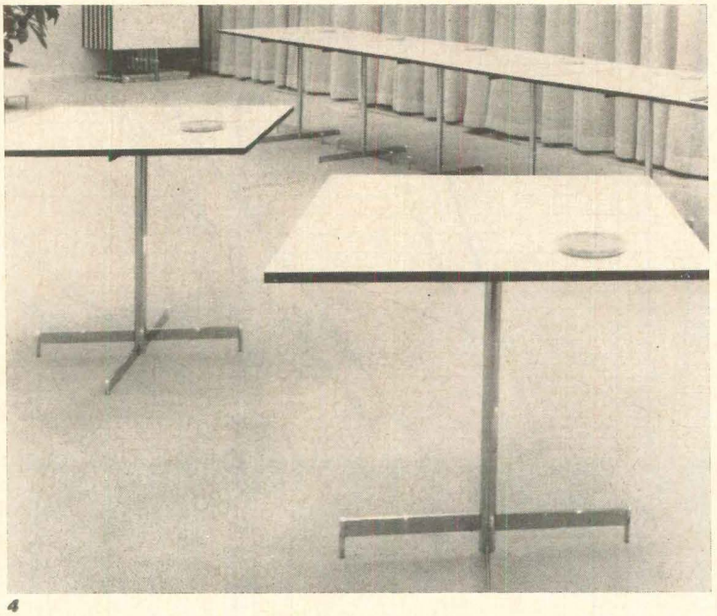

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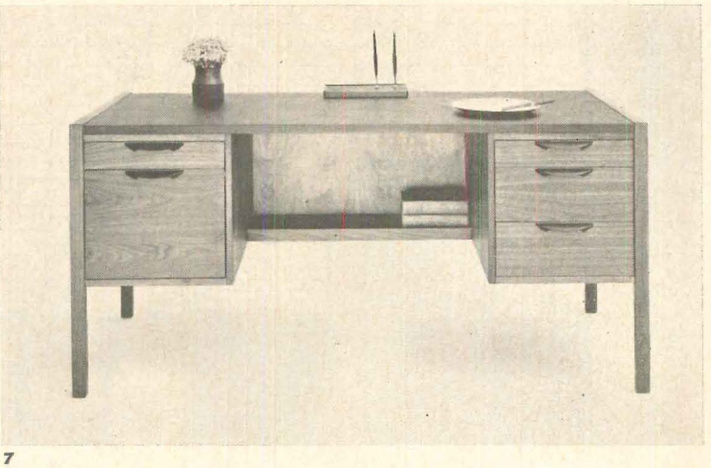

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1. VISORED LIGHT. Intricately balanced metal hoops shield the light in this ceiling fixture by George Tanier Lighting Inc., giving it the name of "Visor." Designed by Verner Panton, the lamp is white-sprayed metal, measures 13½ inches in diameter, and costs $65.

2. FINNISH DESK. Designed by Olli Mannermaa and imported by International Contract Furnishings Inc., this desk comes in a variety of sizes, several woods, and an assortment of accessories. Net prices run from $102 for the top and legs (no drawers), up to $472 for a large desk fully equipped.

3. LOUNGE GROUP. New reception-room furniture designed by Bodil Kjaer and manufactured by C. I. Designs is solid walnut with an oil finish. Foam rubber pads the seat and back of the armchair and settee. Cost: chair, $149; settee, $315; table, $128. Prices do not include upholstery.

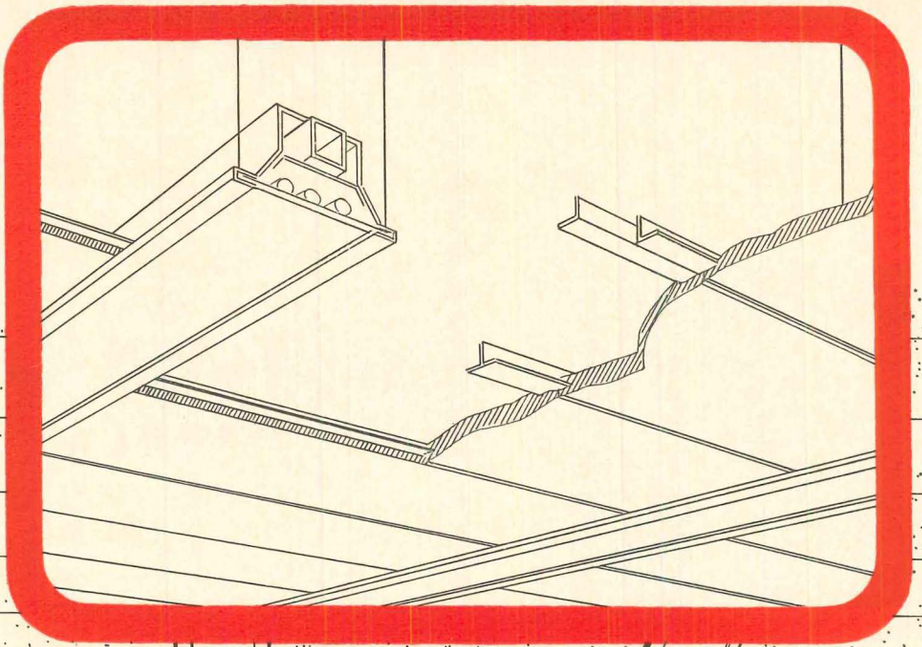
4. FOLDING TABLES. Hugh Acton's portable tables fold compactly when the crossed feet are brought together, and the top flips down out of the way. The base is of chrome-plated steel; the top, of plastic in white or colors. The tables are squares of 34 and 54 inches; circles of 24, 36, and 44 inches; and rectangles from 48 by 36 up to 84 by 36 inches. Cost of a 34-inch square: $160.

5. DOMED LAMP. An aluminum dome shades this table and desk lamp from Habitat, Inc., designed by Paul Mayen. The square at the base of the slender stem may be brass, chrome, walnut, marble, or travertine. Cost: $69.

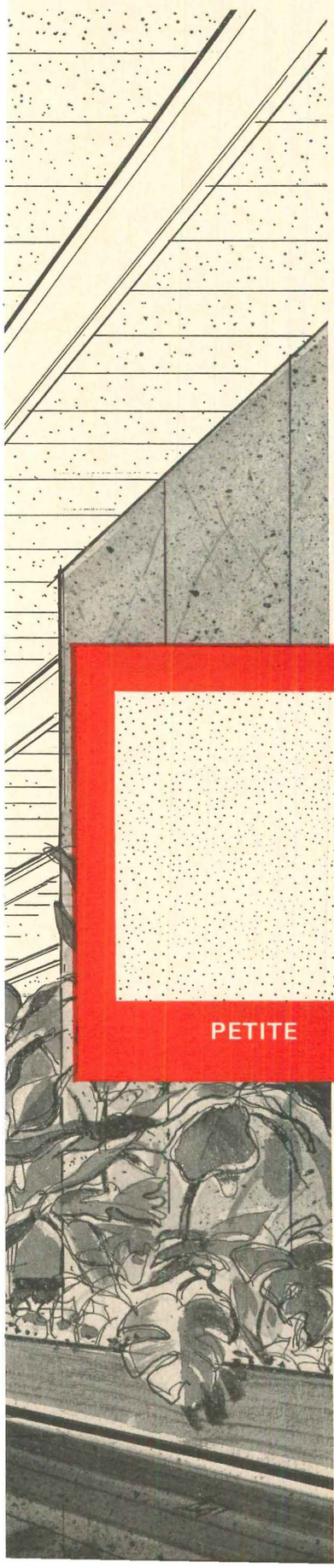
6. MOLDED CHAIR. For the Michigan Consolidated Gas Co. Building in Detroit (FORUM, May '63), W. B. Ford Associates designed a special chair, now part of Steelcase Inc.'s standard line. The molded glass-fiber shell, available on different bases, is shown here in the side-chair version, upholstered in nylon. Cost: $130.

7. WALNUT DESK. One of the new designs from Jens Risom's Group Seven collection is this natural-finish walnut desk. The larger of two sizes in the series, this one is 62 by 28 inches, and has a black vinyl top and black anodized drawer pulls. Cost: $508. END

Simpson®



Simplicity in sound design



Acoustical ceilings with clean, uncluttered lines are now made possible with new SIMPSON PCP LINEAR acoustical tile...Class I, UL listed.

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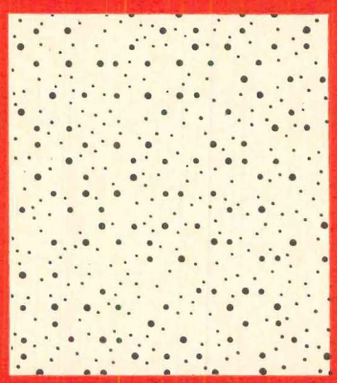
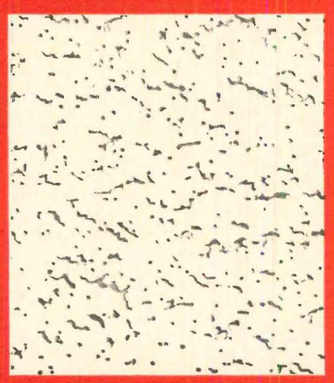
Linear is but the latest in the Simpson line of acoustical ceiling materials ranging from woodfiber to *UL* tested tile and board for time-rated floor/ceiling assemblies.

PETITE



RANDOM



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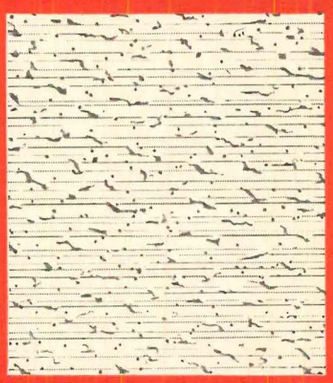

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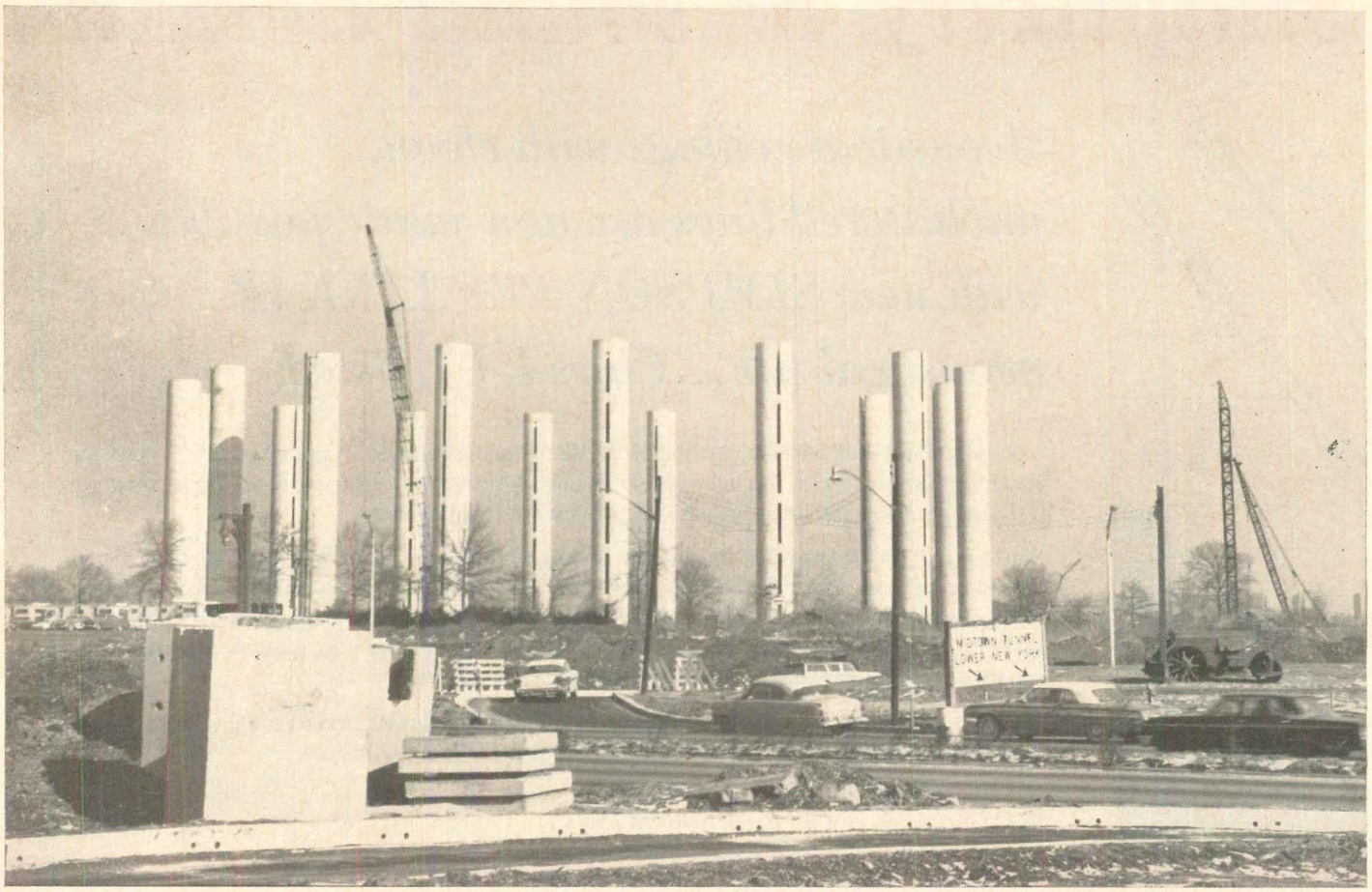

Architect: Philip Johnson Associates
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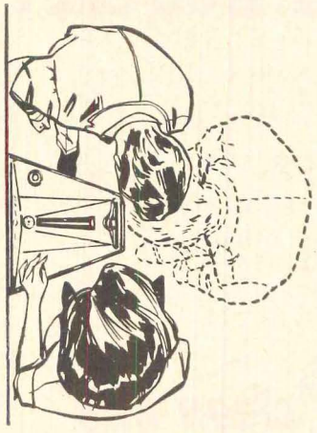

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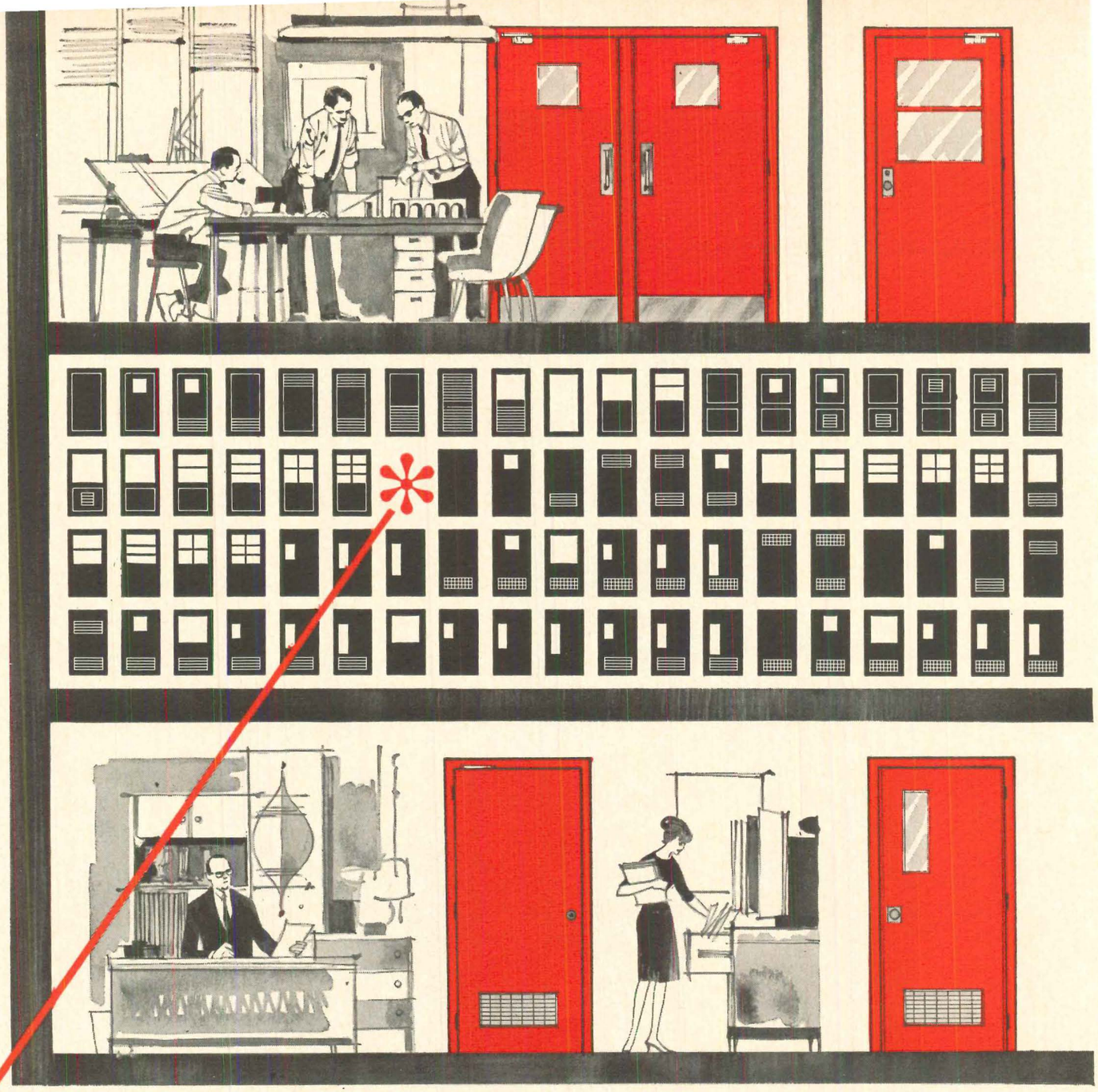

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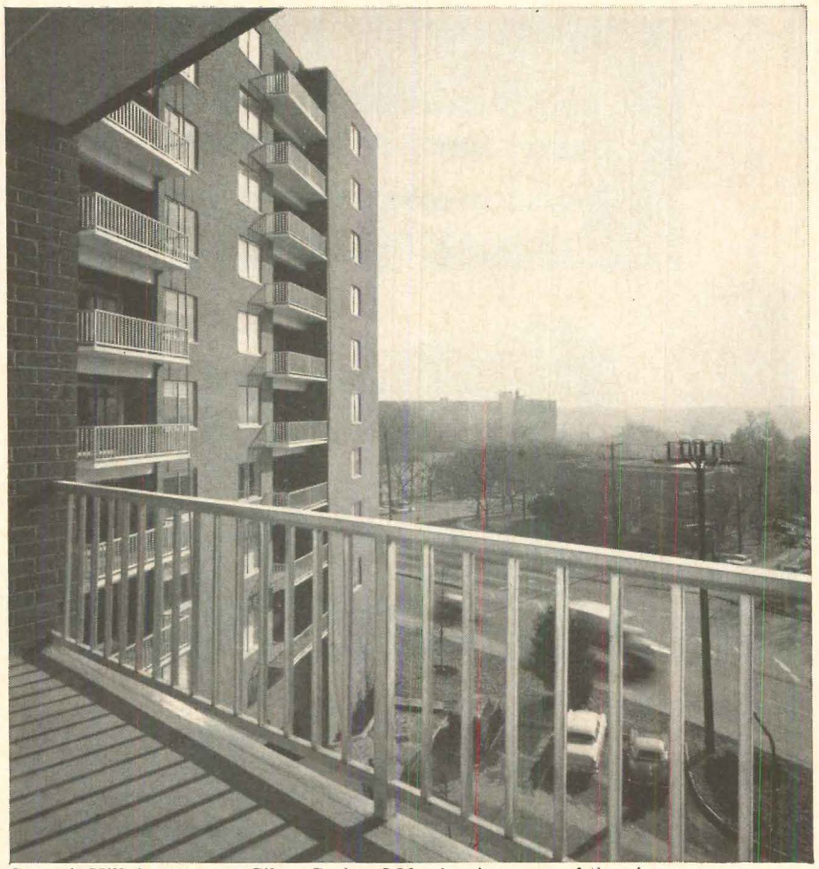

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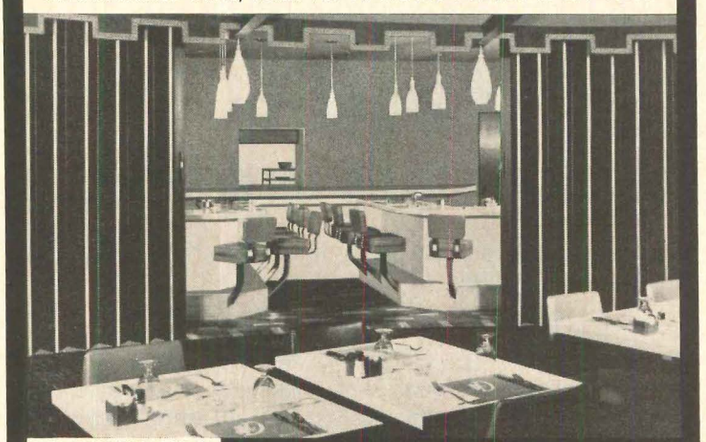

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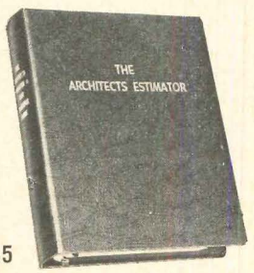

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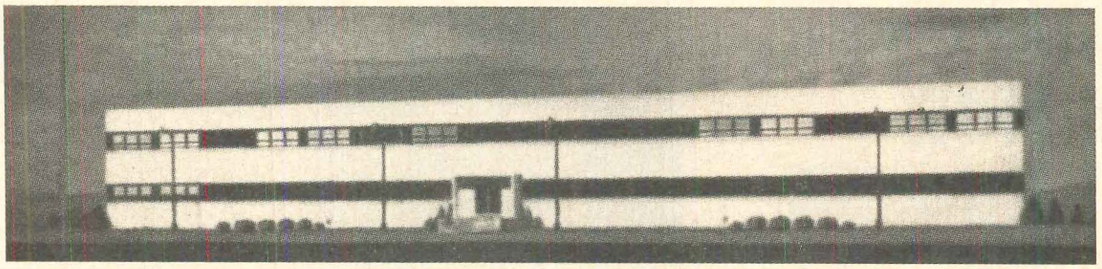
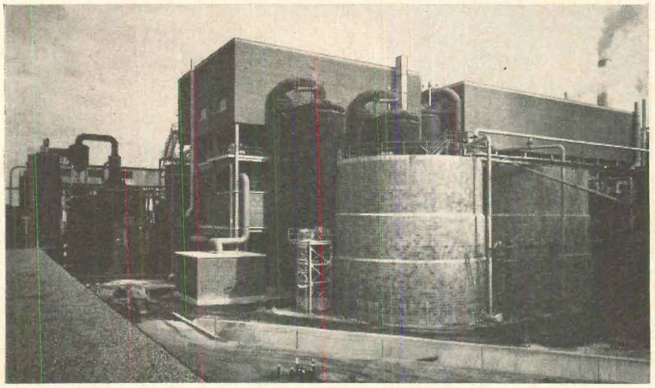
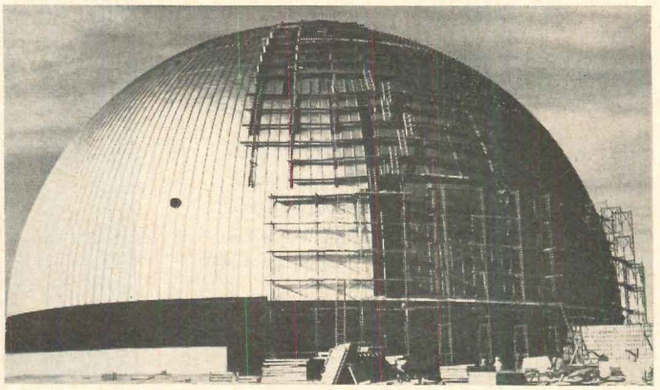


U.S.A.
Administration Building, North Dakota



U.S.A.
Pulp and Paper Mill, Florida



U.S.A.
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VENEZUELA
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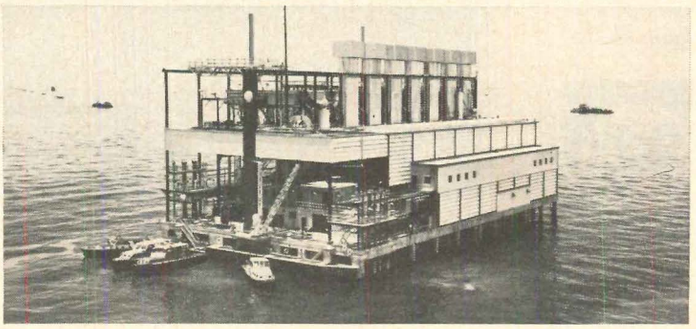

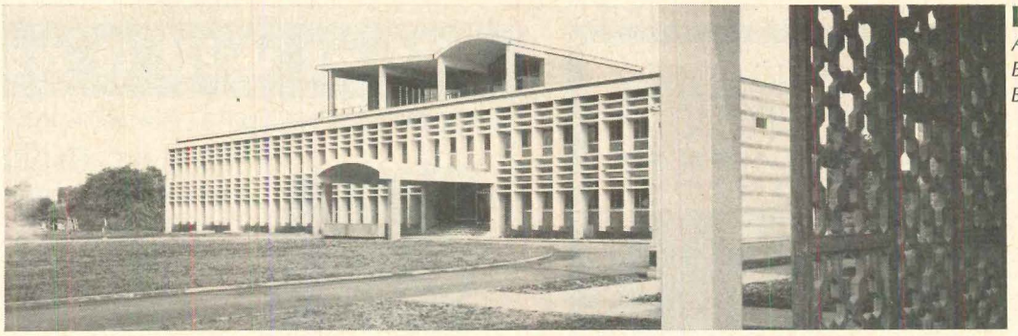

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There is a time in the life history of every building when only one man can see it. The time is the very beginning. The man is the architect. The building has just been born—as an idea.

Victor Hugo said every idea must have a visible enfolding. The architect's idea first takes visible form as lines on paper. Months, perhaps years later, these lines will become I-beams, glass, girders, panels, concrete. Now, the *builder's* ideas are taking shape.

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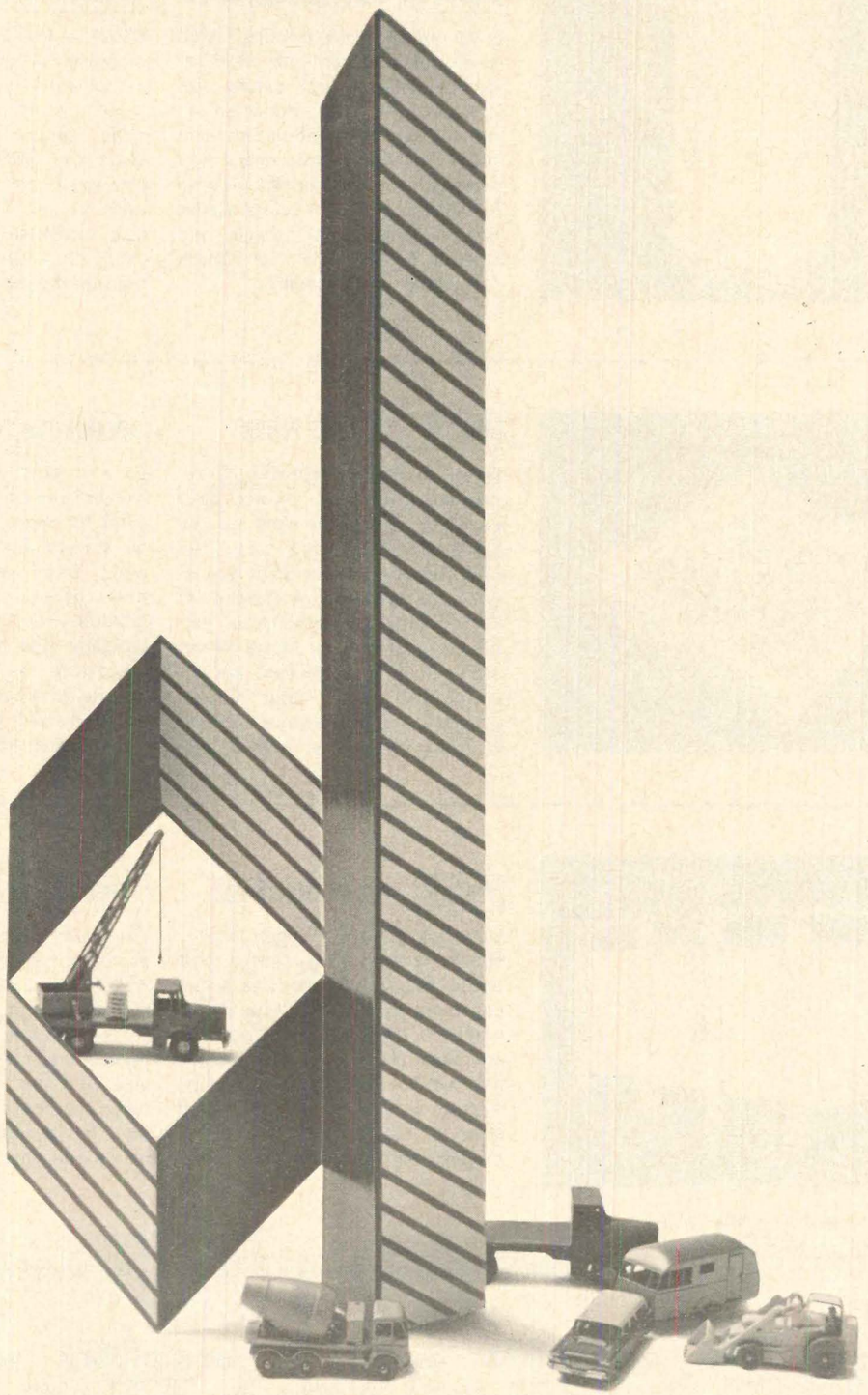

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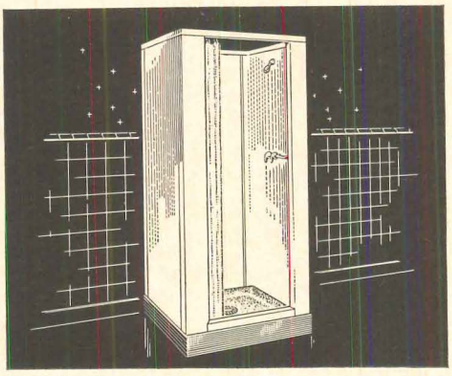

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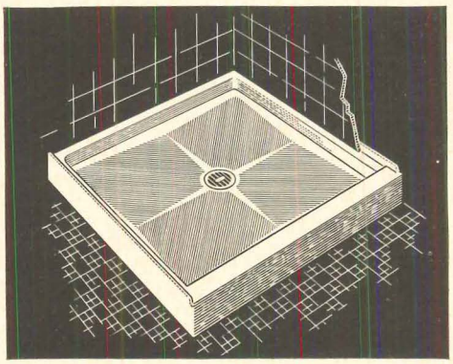
APPLICATION HOME/SCHOOL/CLUB

Cadet is the key to economy in planning for showers: Saves cost of carpentry (no lumber needed); saves cost of sub-pan (uses Pre-Cast Terrazzo floor); saves on call-backs (over 2,000,000 Fiat showers prove value and performance in new homes, remodeling and institutions). Contractors claim they save ⅔ the cost of built-on-the-job showers.

SHOWER FLOORS



PRODUCT CASCADE FLOOR

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APPLICATION ANY TYPE SHOWER

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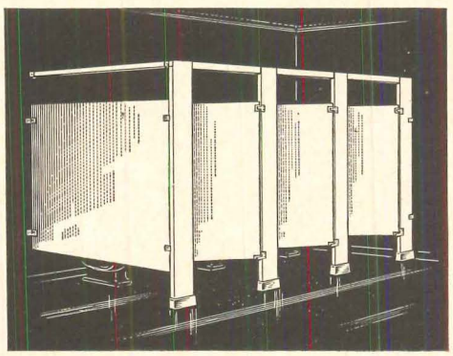
TOILET ENCLOSURES



PRODUCT TOILET ENCLOSURE

Duro headrail-braced model shown is the most simple and hence the least expensive toilet enclosure to install. It was deliberately designed to meet popular concepts of clean, modern design and yet was engineered to economize on details that do not detract from its appearance, nor lessen its performance or long-life.

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See Sweet's $\frac{22B}{Fi}$ and $\frac{26C}{Fi}$ or write nearest Fiat office for literature.

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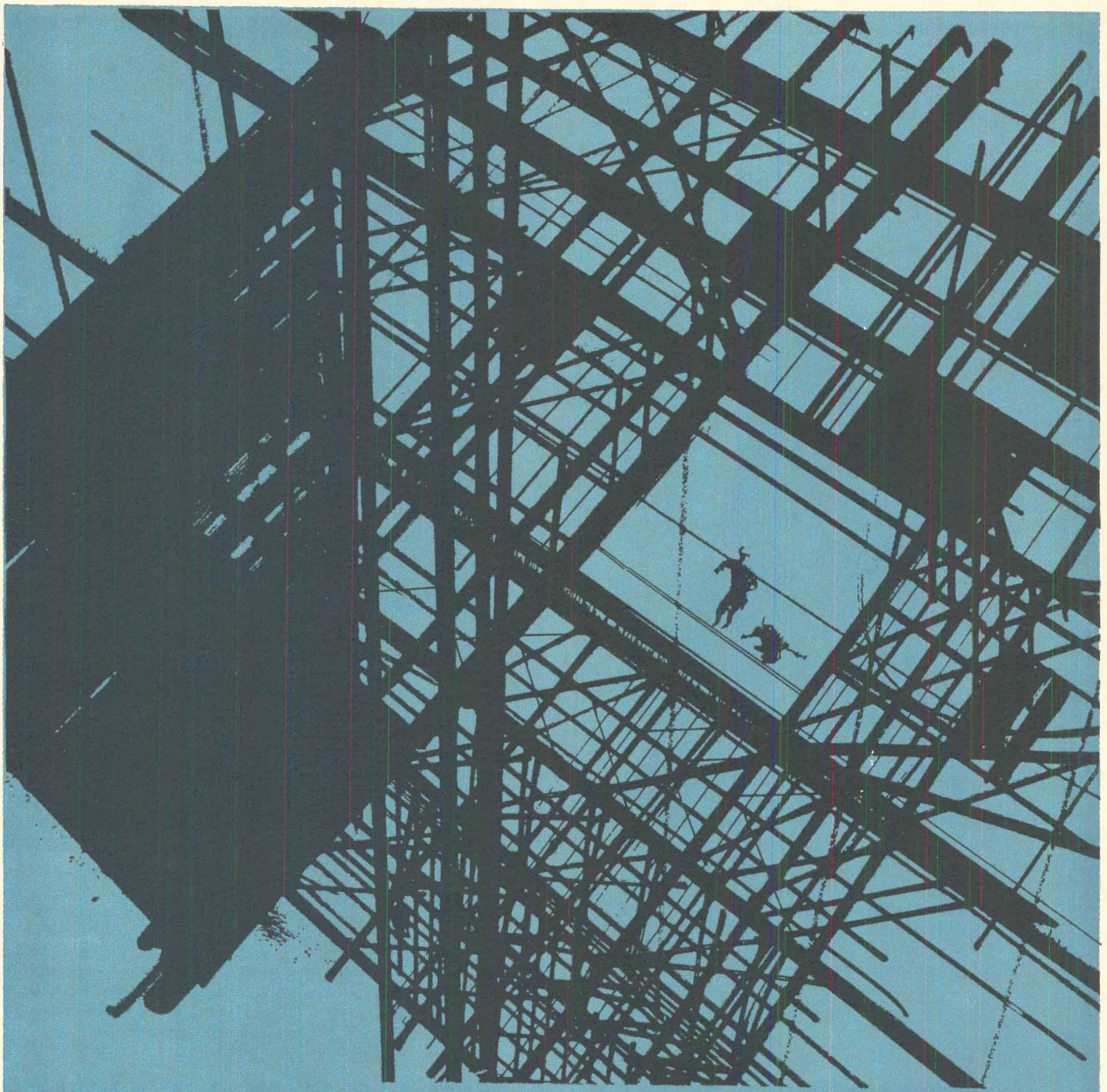
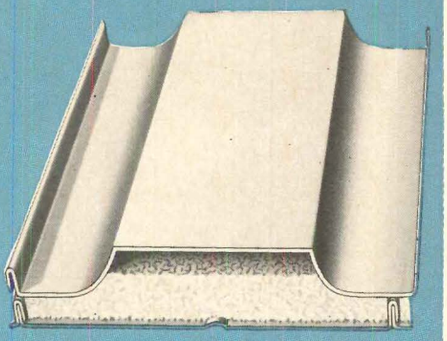


COVER STORY: **LOCATION?** A building under construction. **THE AUTHOR?** A free-thinking architect with an eye for practicality. **THE HERO?** Walcon's insulated 'S' Panel Wall. **TIME?** Remarkably brief—Walcon's 'S' Panels are pre-fabbed to fit the job, erected rapidly and economically. **PLOT?** A dramatic sequence of design, specification, custom planning, quick installation, years of attractive, maintenance-free service. **STORY CHANGES?** No trouble. Walcon 'S' Panels can be removed . . . even reused. **A CLASSIC?** This building will stand the test of time. No exposed fasteners to rust out . . . available in various gages of aluminum or steel . . . a full range of locked-in colors . . . surface patterns to suit the job. **CONCLUSION?** Investigate Walcon for a major role in your next project. Write or give us a call for 'full-spec' literature on the complete line of Walcon building products as sold, erected and serviced by the allied firm, W. Biddle Walker Company.



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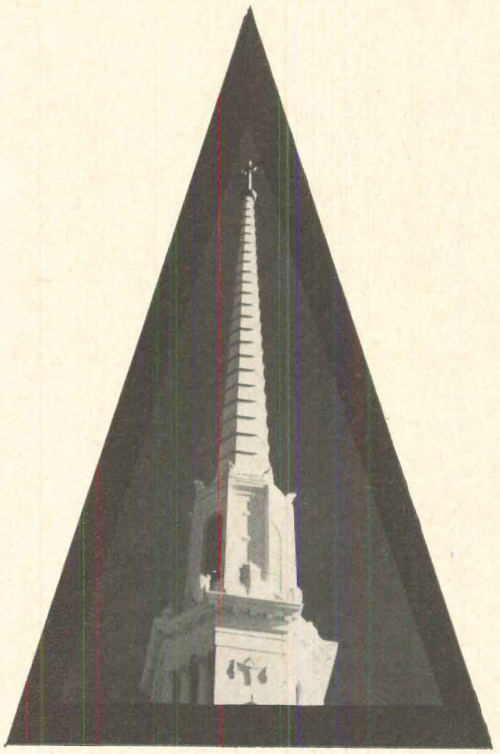
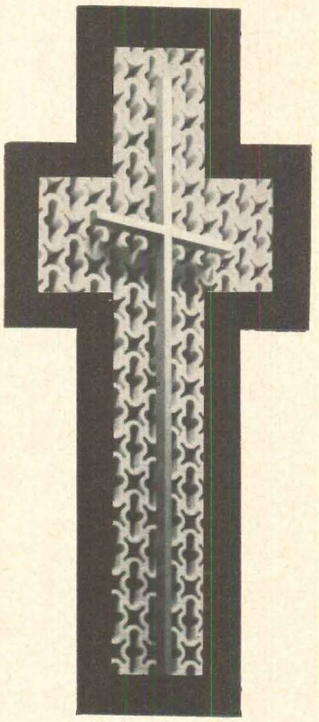
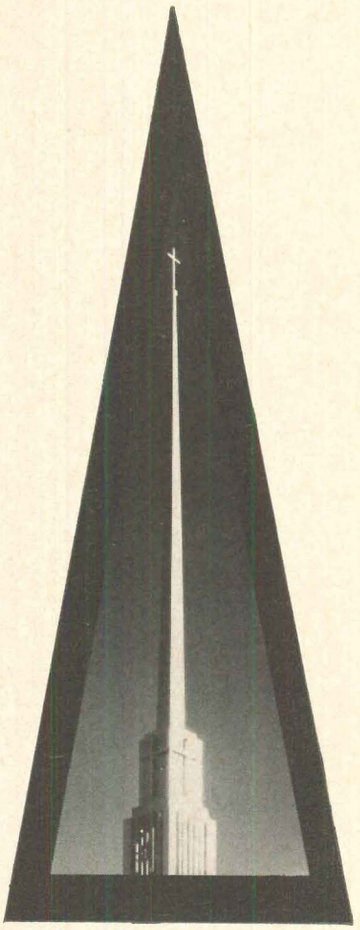


Colonial sculpture in copper — This striking spire reaches 155 ft. high above Asbury Methodist Church in Salisbury, Maryland. Each of the 23 octagon-shaped, tapered sections used was covered in 16-ounce, lead-coated copper. On top of the spire is a Celtic Cross also crafted by Overly. Architect: Harold E. Wagoner, Philadelphia, Pa.

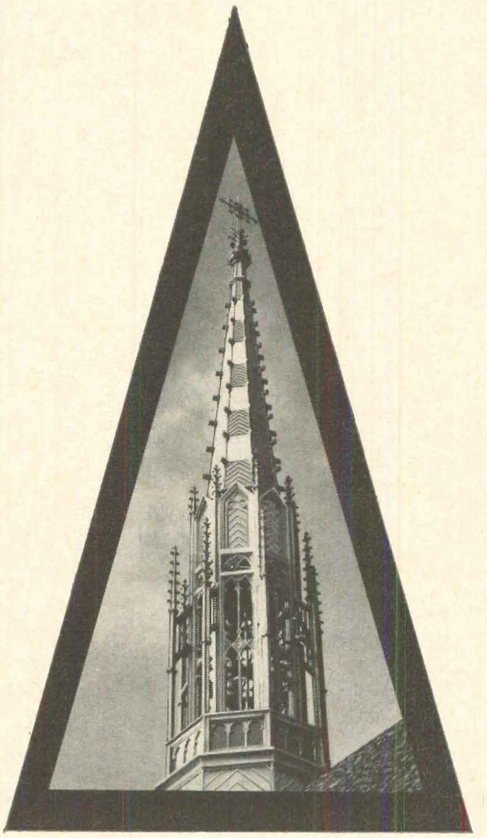


Symbols inside the church — One of over 140 Overly designs, this contemporary Latin Cross in gold anodized aluminum stands above the altar of the Evangelical Lutheran Church of the Good Shepherd in Greensburg, Pa. A gold anodized Overly grillage serves as a contrasting background. Architects: Bartholomew, Roach, Moyer and Walfish, Greensburg, Pa.



A contemporary welcome to worship — Soaring far above Messiah Evangelical Lutheran Church, Larchmont, Pa., this Overly spire will stand steadfast for the lifetime of this church. Crafted in mill-finish aluminum, its striking design complements the church's architecture. Architects: Mansell, McGettigan and Fugate, Philadelphia, Pa.

COMPLETE YOUR CHURCH WITH SYMBOLS



Gothic symbol of faith—A modern representation of an ancient design, this Overly lead-coated copper spire towers 97 ft. over the Second Presbyterian Church in Indianapolis, Indiana. Erection was simplified by factory assembly of intricate tracery, flying buttresses and ornamentation. Architects: McGuire and Shook; Compton, Richey and Associates; Indianapolis, Indiana.

This is an Overly spire. Over 600 of them point heavenward across the face of America. They have been installed on churches of all faiths. Some have been donated as memorials. Congregations have added them to adorn their places of worship. They have been fabricated and installed for as low as $800 and as high as $80,000.

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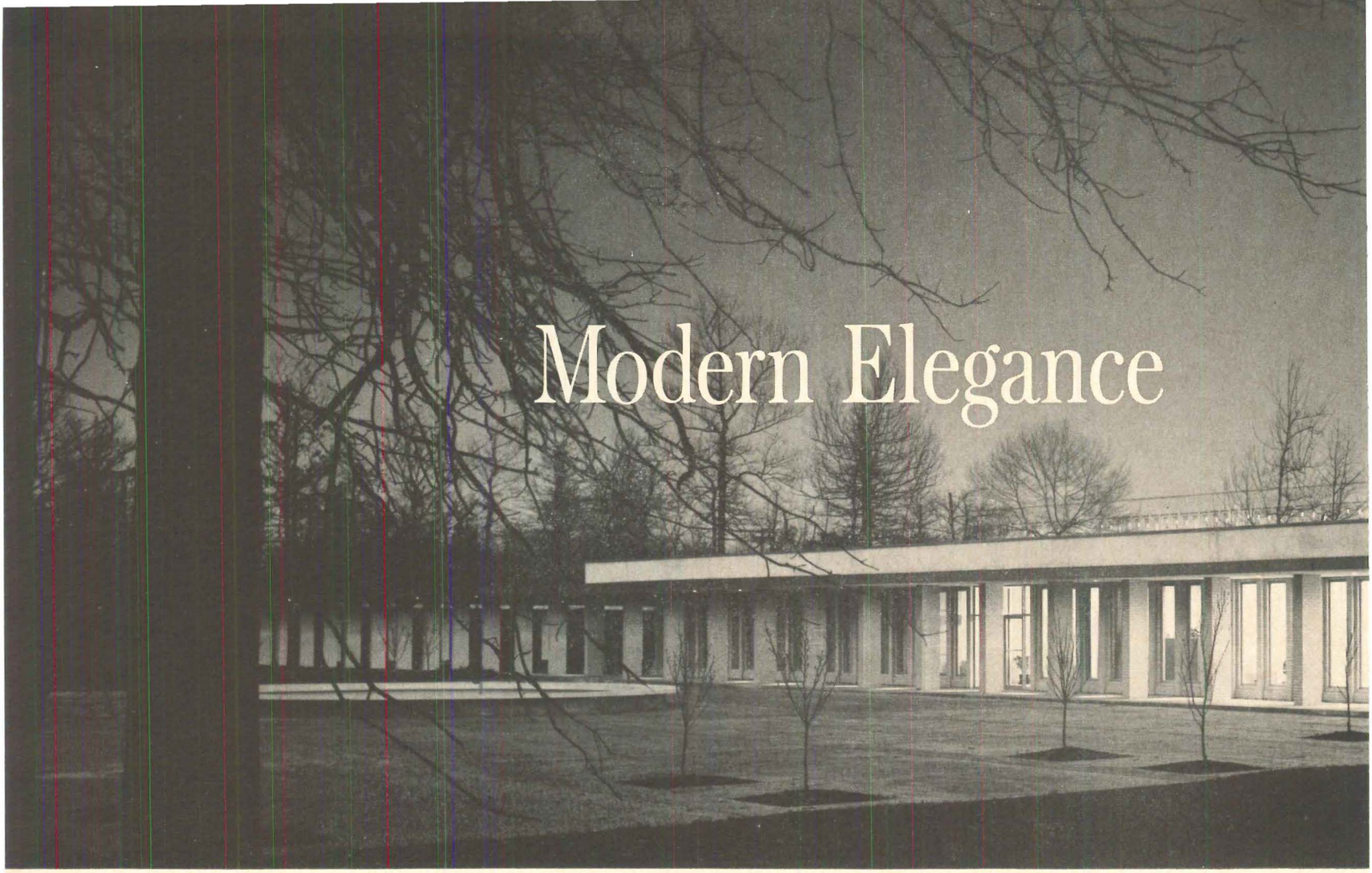
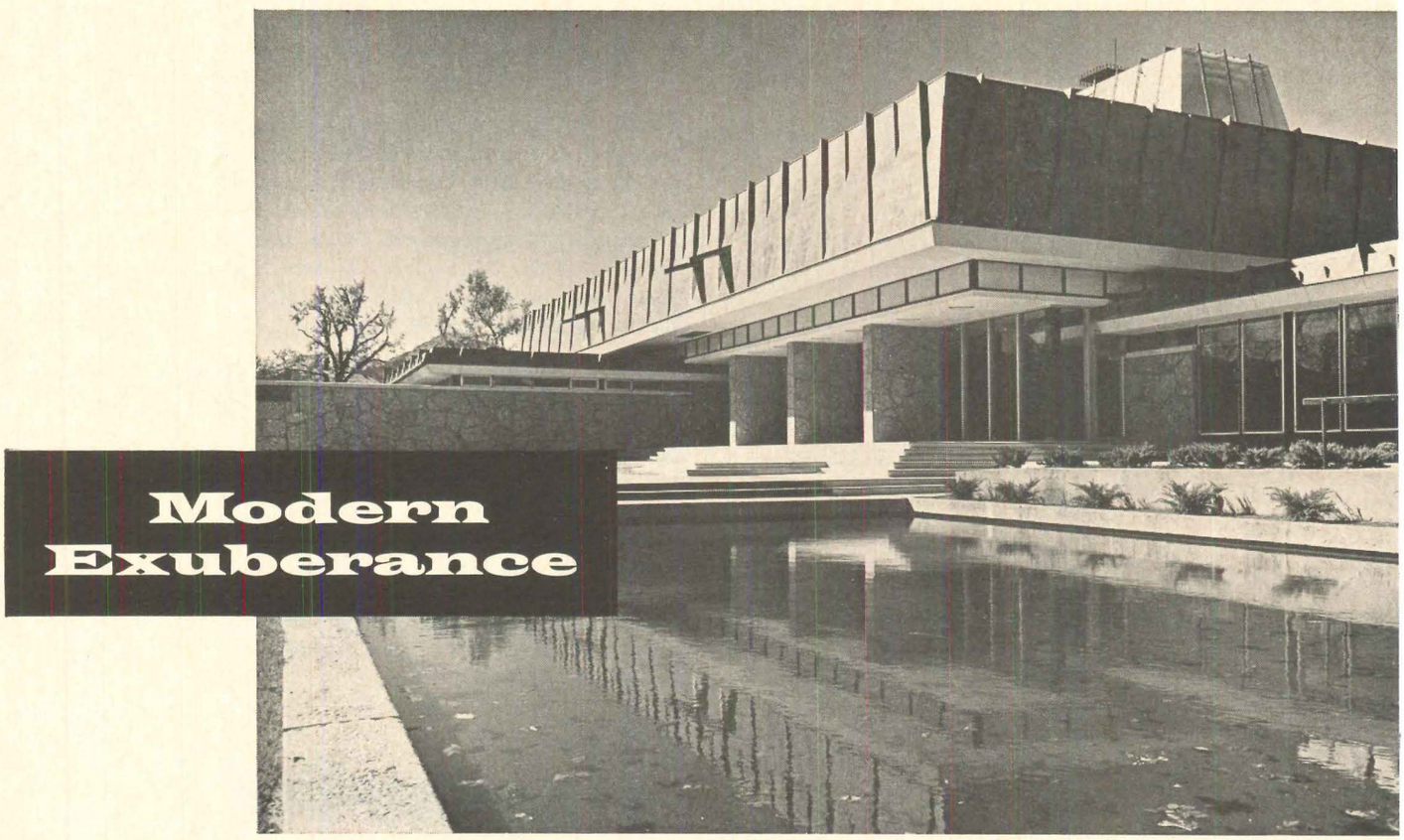
Overly

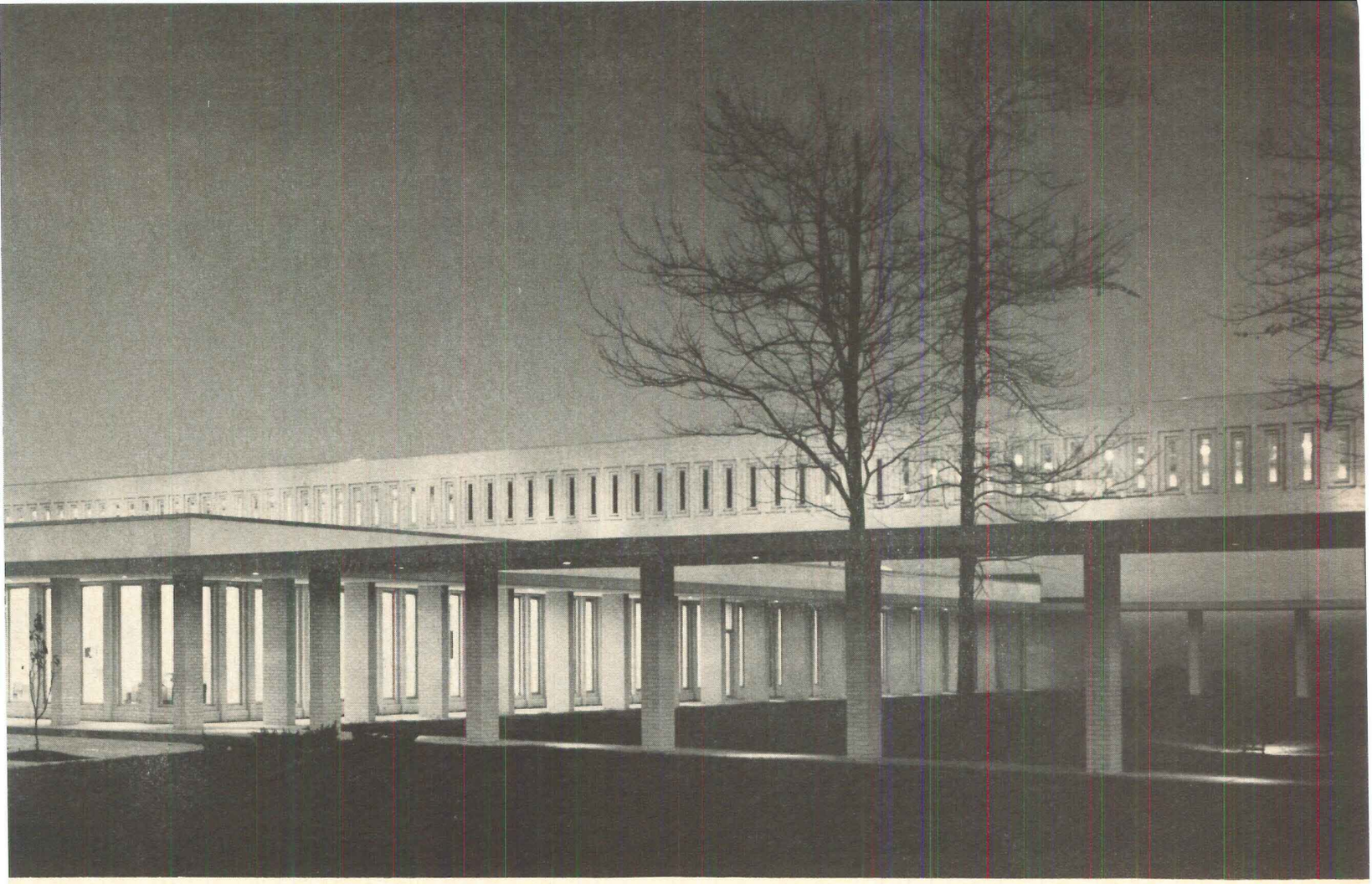
Greensburg, Pennsylvania



Yardley of London, Inc., Totowa, New Jersey. Architect: Edward Durell Stone.
General Contractor: Fred J. Brotherton, Inc. Rotary Oildraulic Elevator sold and installed by
Burlington Elevators, Inc., New York.



Fremont County Courthouse, Canon City, Colo. Architects: Nixon & Jones.
Rotary Oildraulic Elevator sold and installed by Dover Elevator Company, Denver.

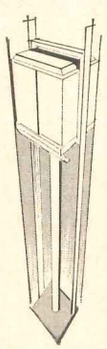


Modern Elevators... Rotary Oildraulic

THE stylistic difference between these two buildings is great, yet both are undeniably "modern", and both are served by the elevator designed for modern buildings, the Rotary Oildraulic.

Since it is supported by its oil-hydraulic plunger, the Rotary Oildraulic Elevator requires no penthouse to shelter hoisting machinery. This offers the architect complete freedom in roofline design, and permits construction economies as well. Because the shaftwalls need not be load-bearing, further economies are possible. The building owner will find that the Rotary Oildraulic Elevator operates economically and efficiently with a minimum of maintenance.

The Rotary Oildraulic Elevator is available in speeds to 200 F.P.M. for buildings to seven stories. Cabs and entrances complement any architectural style. See our catalog in Sweet's or mail the coupon below for further information.



Rotary Oildraulic Elevators

PASSENGER AND FREIGHT

DOVER®

DOVER CORPORATION, ELEVATOR DIVISION
Memphis, Tenn. / Chatham, Ontario

MAIL COUPON FOR COMPLETE DATA

Dover Corporation, Elevator Division
1009 Kentucky, Memphis 2, Tenn.

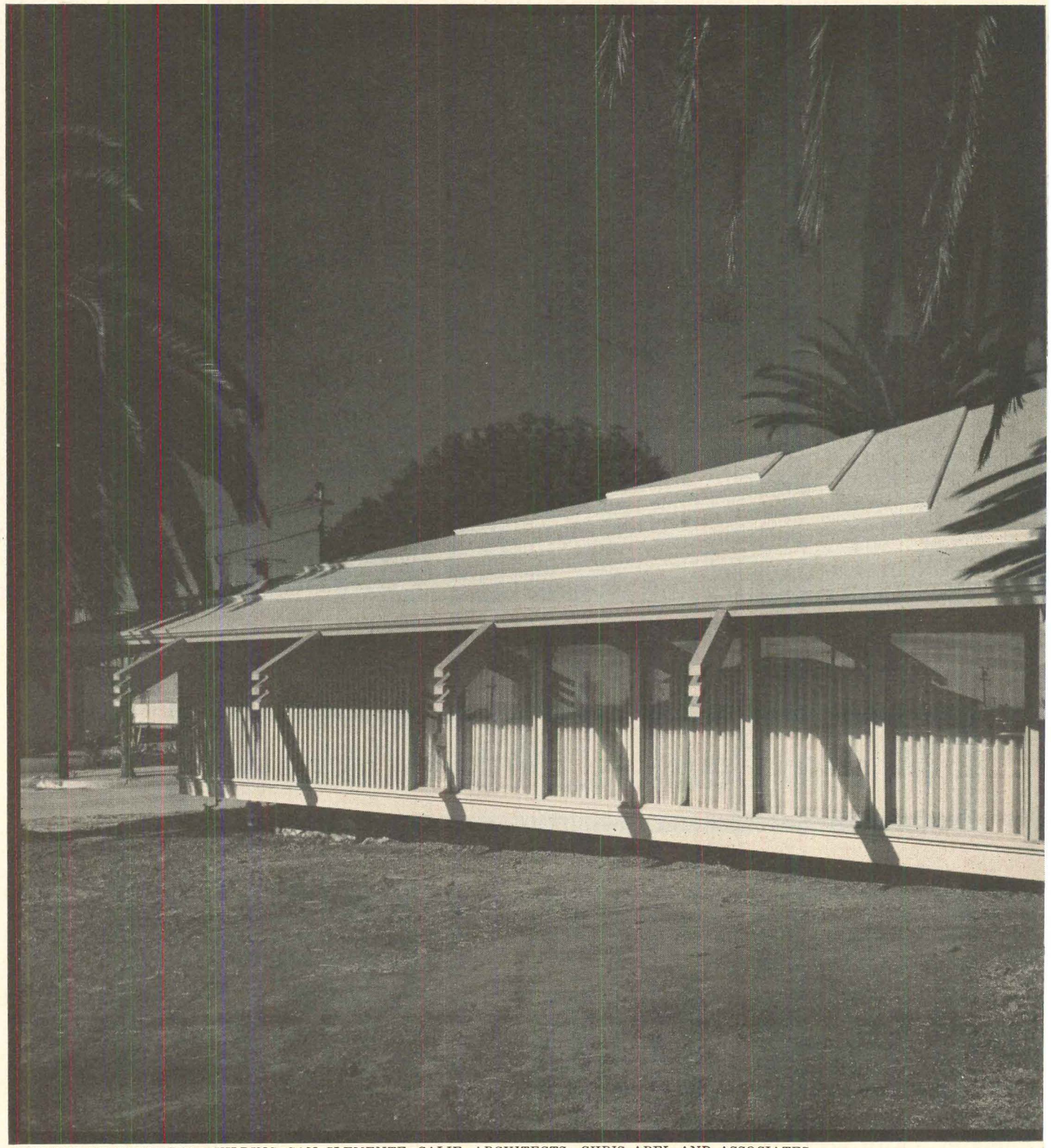
Please send information on Rotary Oildraulic Elevators to:

Name_____

Firm_____

Address_____

JOHNS-MANVILLE ANNOUNCES **LAST-O-ROOF**... *THE NEWEST DEVELOPMENT IN MEMBRANE ROOFING*

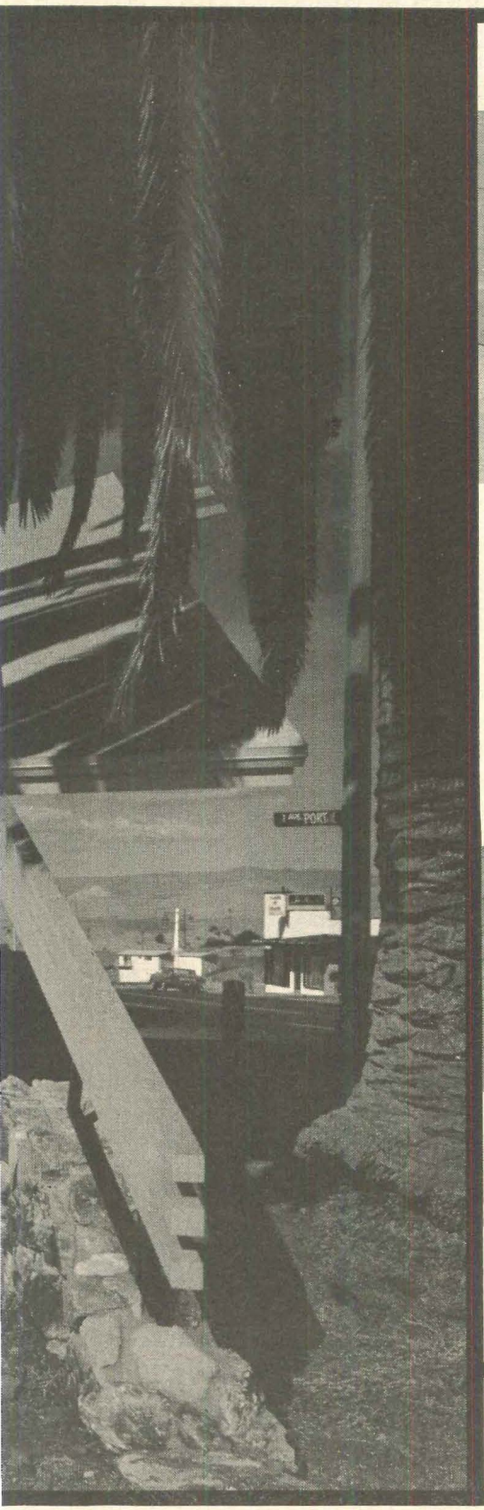


CHAMBER OF COMMERCE BUILDING, SAN CLEMENTE, CALIF. ARCHITECTS: CHRIS ABEL AND ASSOCIATES.

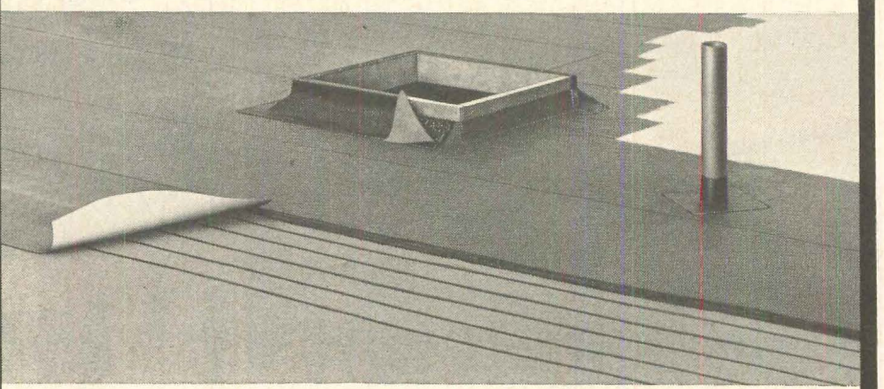
Now, you can design a "skin-tight" roof in any configuration, any slope, and in white or colors... with new **LAST-O-ROOF!**

Here's the newest development in a roof that conforms to any configuration or slope of the most imaginative roof design . . . and in color, too! New Johns-Manville LAST-O-ROOF is a *one-ply* plastic elastomer roof designed for one-step cold application . . . a roof that gives monolithic protection and lasts for years.

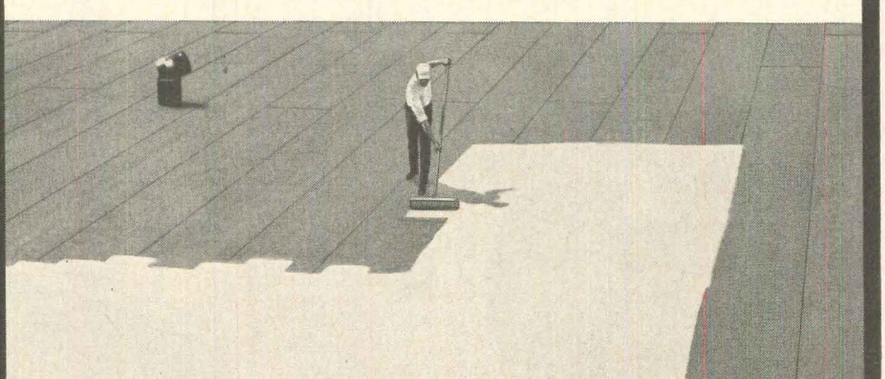
LAST-O-ROOF is light in weight,



SIMPLICITY IS THE PRINCIPAL FEATURE OF **LAST-O-ROOF**



Last-O-Bestos, the one-ply roofing membrane, is the main component of Last-O-Roof . . . consists of a weathering surface supported by an asbestos reinforcement. These are combined by a method that makes them inseparable so they form a true, one-ply membrane. Black in color, the weathering surface is a tough, durable polyisobutylene film. The light-colored supporting reinforcement is made of plastic-elastomer-bonded asbestos. Last-O-Bestos is applied in ribbons of **Last-O-Bestos Cement,** a pourable polyisobutylene adhesive that sets in a short time and gives a lasting bond. Side and end laps of Last-O-Bestos are sealed with **Last-O-Lap,** a brushable polyisobutylene adhesive reinforced with asbestos fibers for flow control . . . For use as through-wall flashing and at parapets, eaves or skylights, the one-ply membrane **Last-O-Flash** is provided. It has a weathering surface consisting of a heavy polyisobutylene film supported by a woven glass scrim and is adhered with **Last-O-Flash Cement,** an adhesive of heavy consistency . . . For roof projections such as vent pipes, **Last-O-Film** provides an elastic polyisobutylene film which is easily stretched and shaped to give a tight, weatherproof fit.



Last-O-Lume, the reflective surface finish, is an elastomer-based coating, formulated for compatibility with all Last-O-Roof membranes and adhesives. It's available in durable aluminum, white and metallic pastel colors to harmonize with any building design. The highly reflective surface will aid in lowering roof and interior temperatures.

Get the full details on this newest development in membrane roofing. Ask your J-M man about LAST-O-ROOF. Or call or write Johns-Manville, Dept. AF-6, Box 111, New York 16, N. Y. Cable: Johnmanvil.

actually *stretches* to accommodate normal stress and distortion. And, it's a roof that's reflective and colorful, too. LAST-O-ROOF is made up of compatible components based on the elastomer, polyisobutylene . . . and this roof is approved by Underwriters Laboratories, Inc., for Class A construction.

What's more, it's a roof that can be speedily applied to permit quick building closure. The result is a smooth, water-tight, completely homogeneous roof that will not crack, blister or shrink under extremes of heat and cold.

JOHNS-MANVILLE

JOHNS-MANVILLE JM PRODUCTS


DEPENDABLE
Cupples

A WIDE STILE, HEAVY DUTY
SCHOOL ENTRANCE DOOR
at a price that saves up to 30% on each unit

New "PACKAGED UNIT" in 2 standard sizes includes sturdy, 4″ wide stile aluminum entrance door complete with Von Duprin panic device, cylinder lock, 4″ frame and transom, aluminum threshold, 3 butt hinges and attractive pull

Here's how you can help keep down school building costs without cheapening the construction. As you plan new buildings be sure you detail and specify Cupples "Packaged School Door Units."

This is *not* a cheap, lightweight door designed down to a price. No sir, it's a rugged, heavy duty, wide stile entrance door, designed and constructed to withstand the tough demands of school use. It has 4″ wide stiles, 6″ high bottom rail; takes ¼″ plate glass; frame with transom up to 10′2″ in height; comes complete with Von Duprin rim type panic device, master control cylinder lock, aluminum threshold, three butt hinges and attractive outside pull handle.

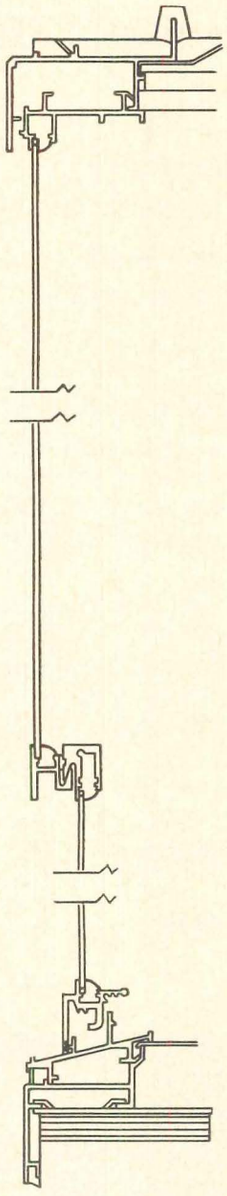
It's a door that will satisfy your toughest assignment. And, what's more, when compared with equal quality wide stile doors, this Cupples "Packaged School Door Unit" saves you approximately $75 to $100 on each unit.

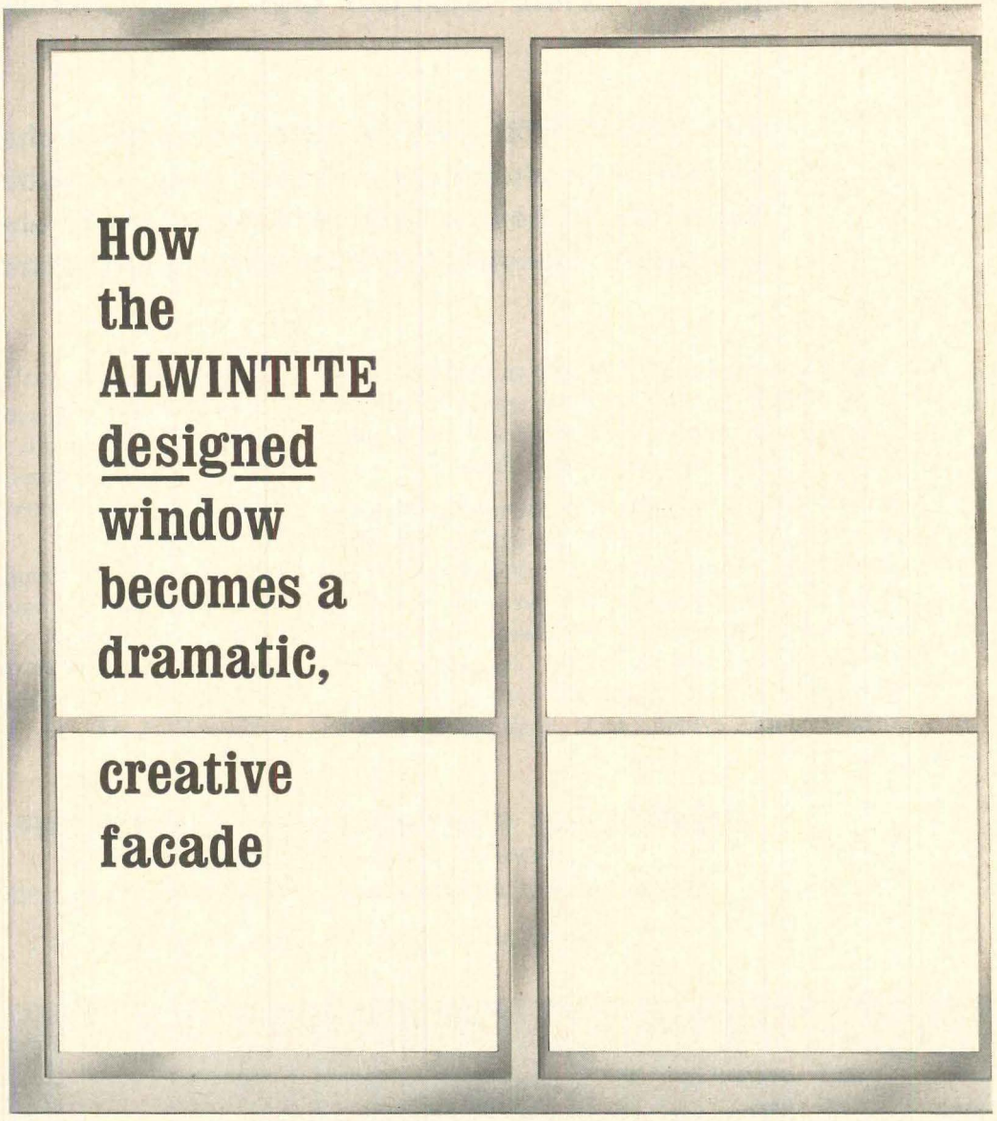
How do we do it? Simple. We offer this standard door package in only two sizes (36″ and 42″) — No specials — No exceptions. This standardization reduces our costs and we pass the savings on to you. Write today for complete information and details. Address Dept. AF-333.

CUPPLES PRODUCTS CORPORATION
A Division of Aluminum Company of America
DOWAGIAC, MICHIGAN • CORONA, CALIFORNIA
Warehouses at Dallas, Texas and Spring Valley, N. Y.

ALCOA
CUPPLES PRODUCTS DIVISION
ST. LOUIS, MO.

A complete line of custom and standard doors, store front metal, custom and stock curtain walls, stock projected windows, stock and special sliding glass doors. All Alumilited finishes are bonded and guaranteed.





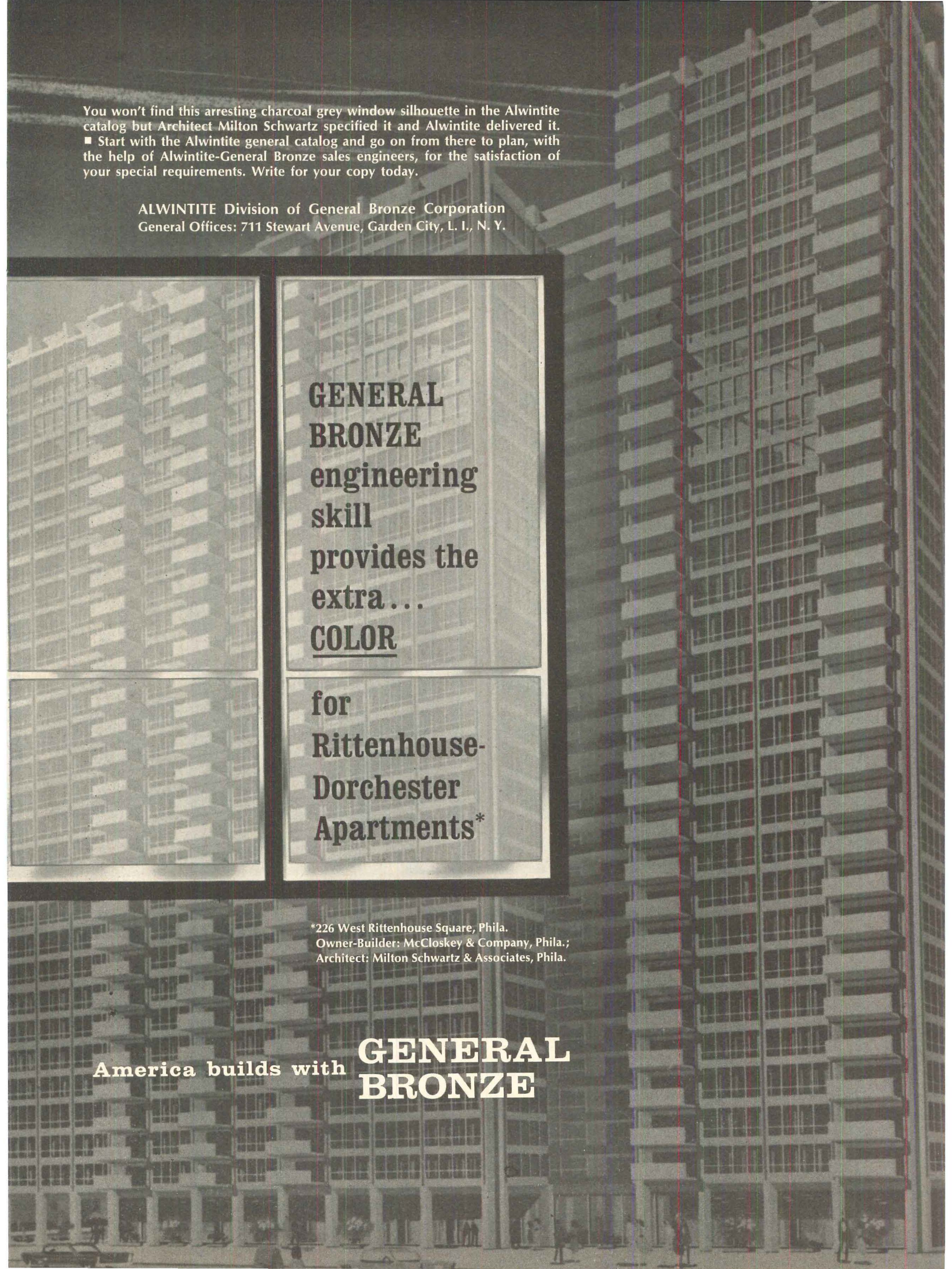
GENERAL BRONZE in a detail naturally means the finest in standard components . . . Alwintite for high-rise construction. The reason is simple. Alwintite is produced by the same engineers and craftsmen who design and fabricate windows and doors for America's most famous buildings*—and to the same rigid standards.

LOOK FOR SUCH CUSTOM-QUALITY FEATURES AS:

- 3, 4, 5 banks of double- or single-hung windows (continuous head and sill) which give the impression of one long window
- Locked-and-lapped corner joints which provide greater strength and prevent twisting of sash
- Stainless steel, cam-action lock for practical lifetime wear and ease of operation
- The guarantee of GB's testing laboratory that every product meets or exceeds American Window Manufacturers' Association specifications

ALWINTITE, BY GENERAL BRONZE: ANOTHER WORD FOR ASSURANCE . . .

*Seagram Building, New York; Lever House, New York; U.N. Building, New York; County Court House, Los Angeles; Equitable Life Assurance Building, Milwaukee.



You won't find this arresting charcoal grey window silhouette in the Alwintite catalog but Architect Milton Schwartz specified it and Alwintite delivered it. ■ Start with the Alwintite general catalog and go on from there to plan, with the help of Alwintite-General Bronze sales engineers, for the satisfaction of your special requirements. Write for your copy today.

ALWINTITE Division of General Bronze Corporation
General Offices: 711 Stewart Avenue, Garden City, L. I., N. Y.

GENERAL BRONZE engineering skill provides the extra... COLOR

for Rittenhouse-Dorchester Apartments*

*226 West Rittenhouse Square, Phila.
Owner-Builder: McCloskey & Company, Phila.;
Architect: Milton Schwartz & Associates, Phila.

America builds with GENERAL BRONZE

NEW TEXTURE, NEW COLOR FOR

The rich, nonrepetitive pattern of new TEXTURE•STAINLESS* offers unique architectural advantages

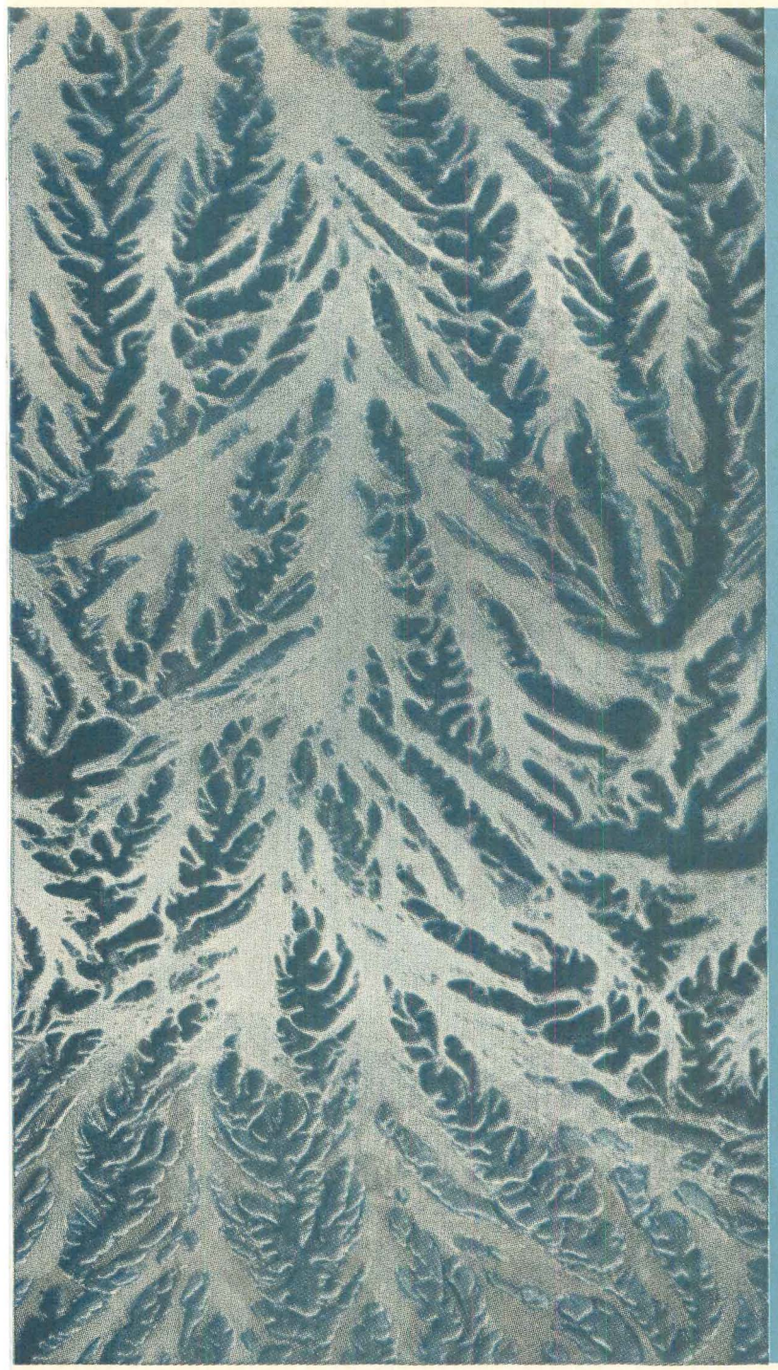
An entirely new kind of patterned finish for stainless steel captures the refreshing beauty of *variation*.

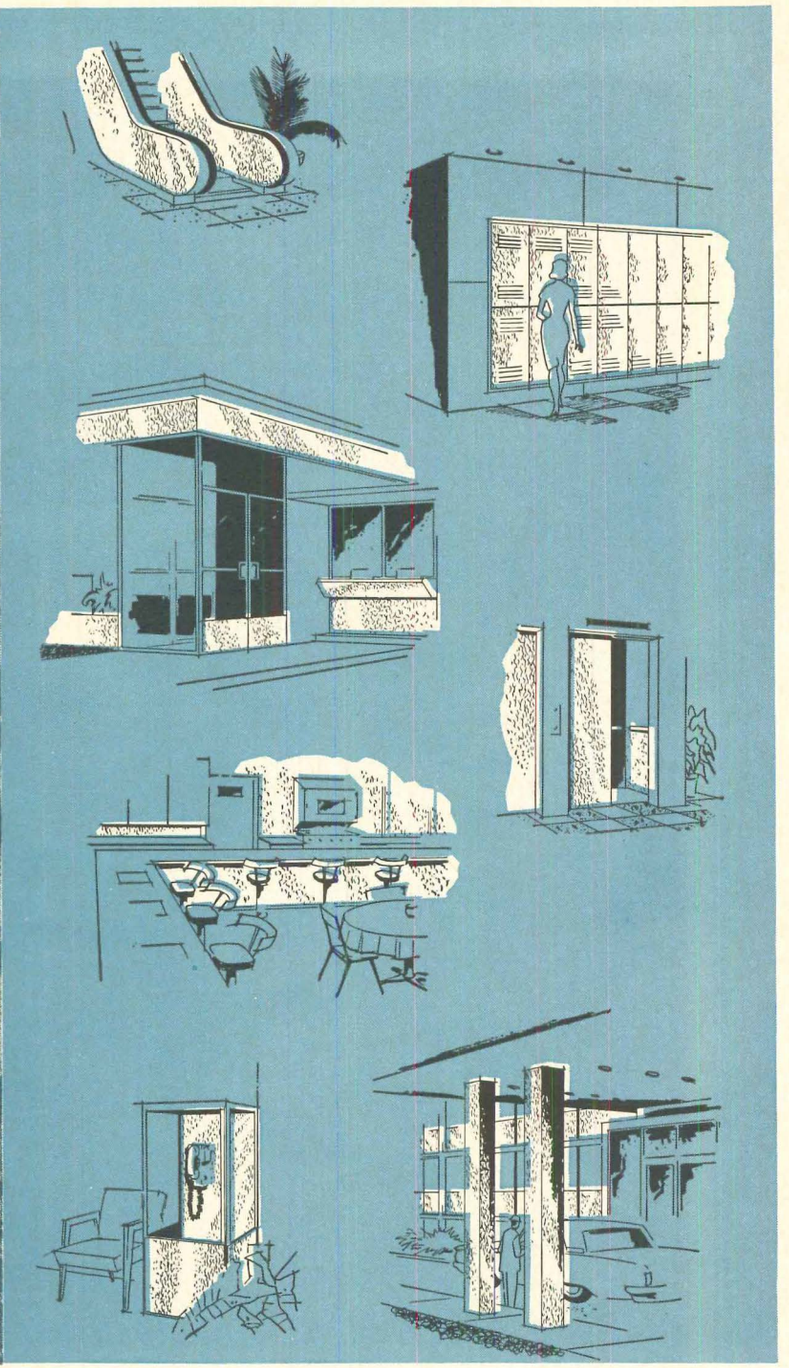
Republic's new TEXTURE•STAINLESS Steel has a distinctive, *nonrepetitive pattern* that contrasts beautifully with other stainless finishes—as well as with painted steel, brick, tile, wood, concrete, glass, stone, and plastic. No two sheets are identical, even though the overall effect is uniform.

This textured product can be supplied in the natural color of the stainless or with depressed areas colored** to accentuate the polished stainless steel highlights. Colors include blue, red, green, black, and white. The base metal is Type 304 or 430 ENDURO® Stainless Steel.

TEXTURE•STAINLESS Steel can be shallow drawn, bent, formed, and spot welded without destroying its unique texture. In fact, the texture tends to conceal fabrication mars that can be a costly problem with conventional finishes and patterns.

The same texture lets you cover large areas without noticeable reflective distortion. Maintenance is easier because fingerprints and scuffs tend to be concealed. And service life is longer because the inherent strength of stainless resists scratches, abrasions, and dents.





STAINLESS STEEL

Strong, Modern, Dependable

Select from three exquisite finishes: *Satin Rolled*—the soft, nonreflective mill finish; *Satin Highlighted*—with highlights polished for contrast; and *Colored and Highlighted*—with depressed areas painted and highlights polished. The material can be supplied in sheets up to 36 inches in width, 10 feet in length, in thicknesses from 24 to 16 gage.

SEND THE COUPON FOR SAMPLES plus a copy of the informative, 12-page booklet describing Republic TEXTURE•STAINLESS Steel.

*Trademark of Republic Steel Corporation.
**Not as yet recommended for exterior applications.

REPUBLIC STEEL
Cleveland 1, Ohio

REPUBLIC STEEL CORPORATION
Dept. AF-6016
1441 Republic Building
Cleveland 1, Ohio

Please send free samples and booklet (Adv. 1428) describing Republic's new TEXTURE•STAINLESS Steel

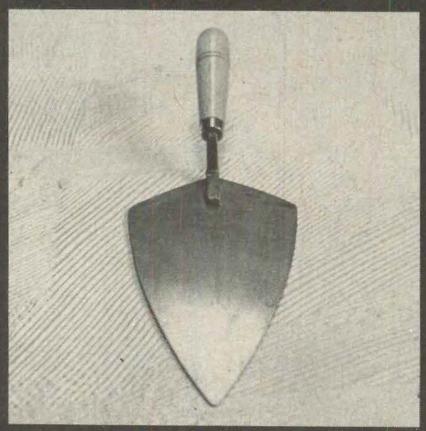
Name_____ Title_____

Company_____

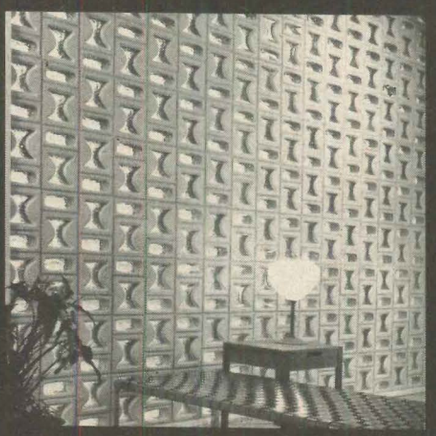
Address_____

City_____ Zone____ State_____

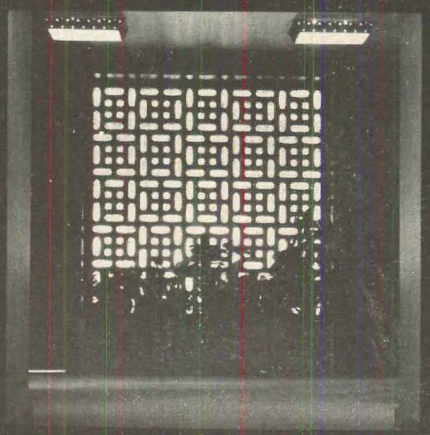
A screen wall that requires only one building material

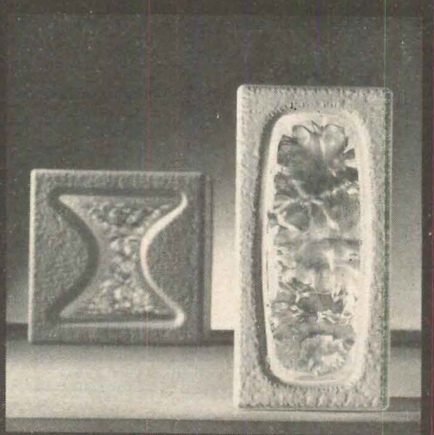


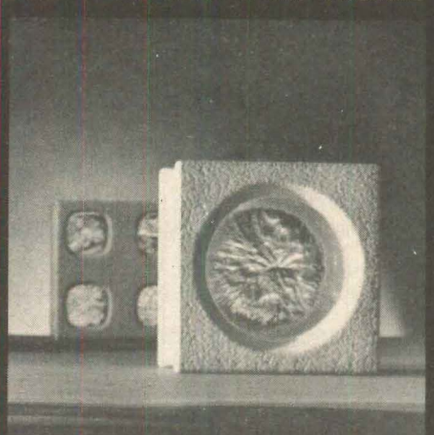
that can be installed by one trade

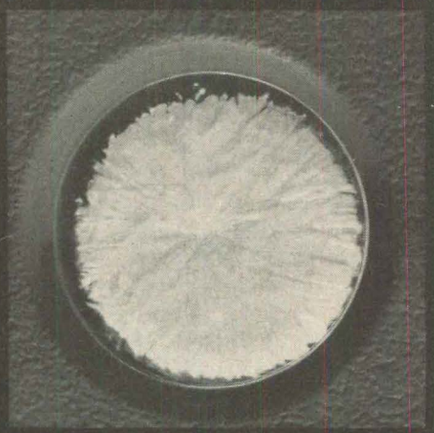


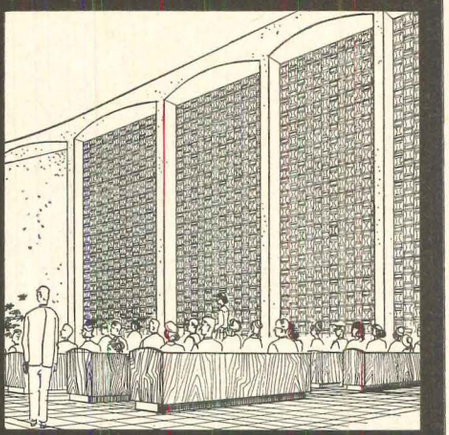
that gives a finished wall inside

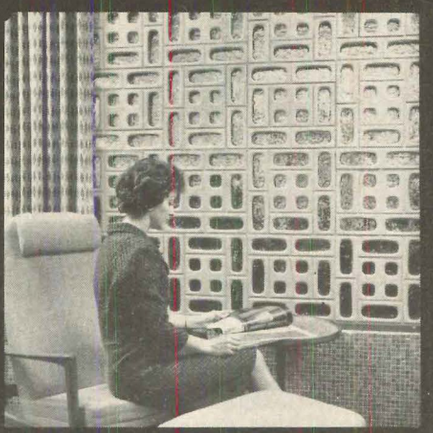








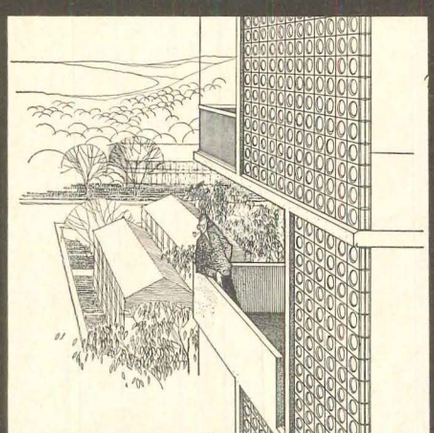




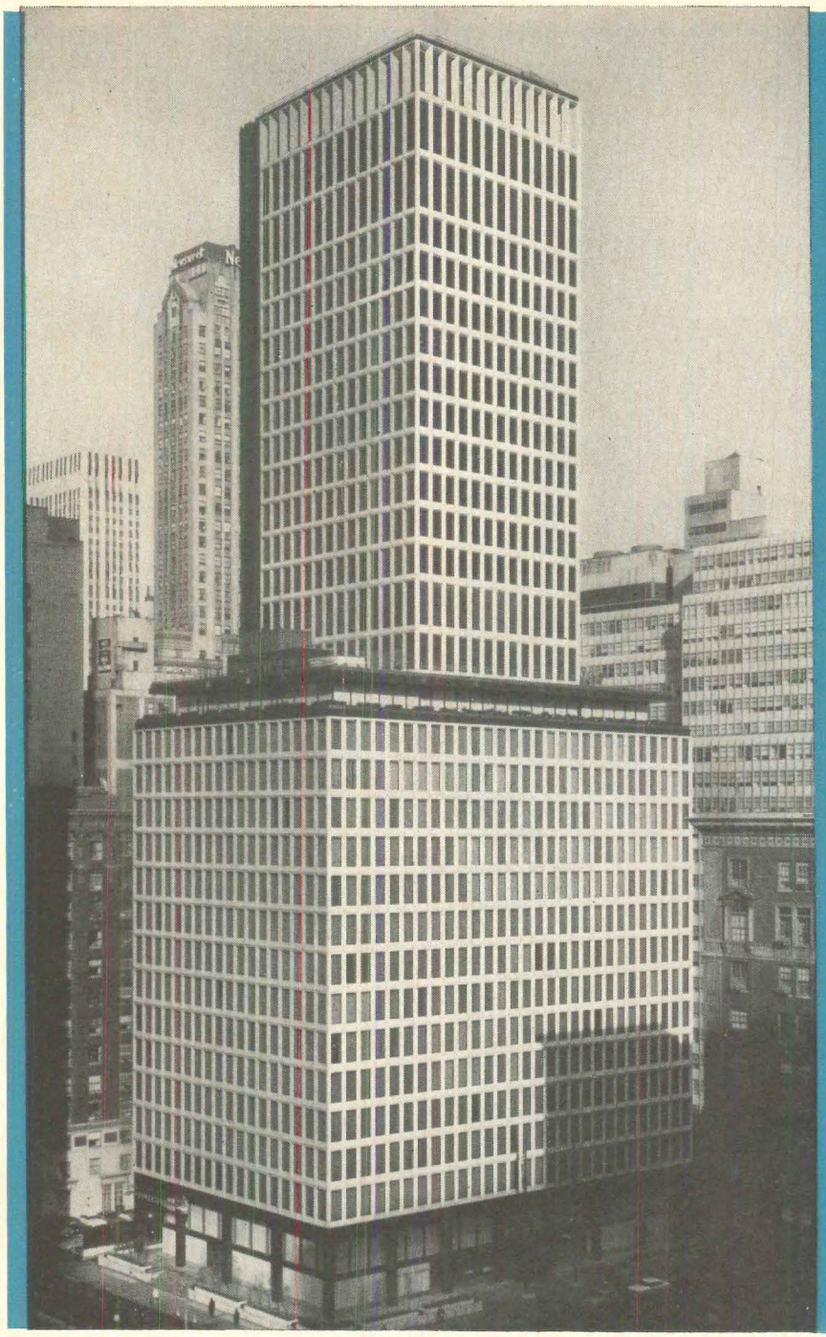
New Intaglio all glass units bring new practicality to the screen wall. In one material, installed in one operation, the Intaglio wall presents a perfect grilled wall finish inside and out, with lighting that changes dramatically by night and by day. Intaglio is available in four different face patterns, three in units 8″ x 8″ x 4″, and one 4″ x 8″ x 4″, suggesting endless design combinations. Both faces of all units are framed in a fired-on ceramic finish the color and texture of concrete. The center design area is an antiqued glass that admits light, but insulates against weather and sound. The beauty and light values of glass, the texture of masonry, and the artful patterns of the screen . . . now glass and grill are one. For more information, write for the new brochure that contains design ideas, product details and installation procedures. Pittsburgh Corning Corporation, Dept. AF-63, One Gateway Center, Pittsburgh 22, Pennsylvania.

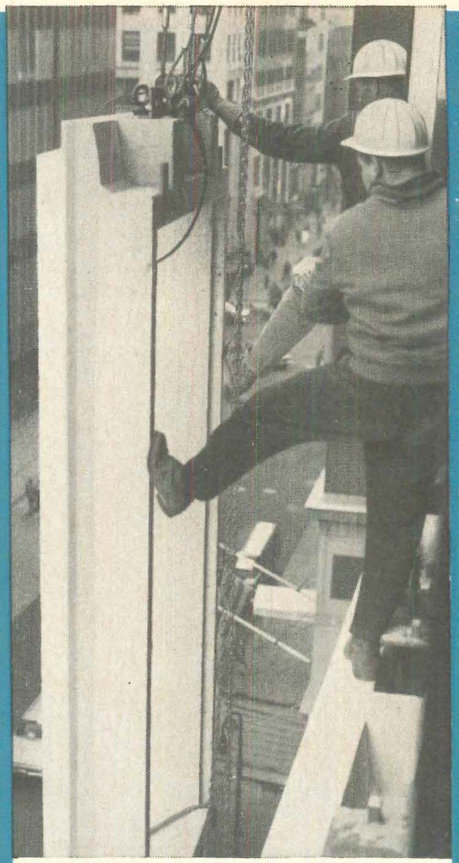
and out

Now glass and grill are one . . . INTAGLIO

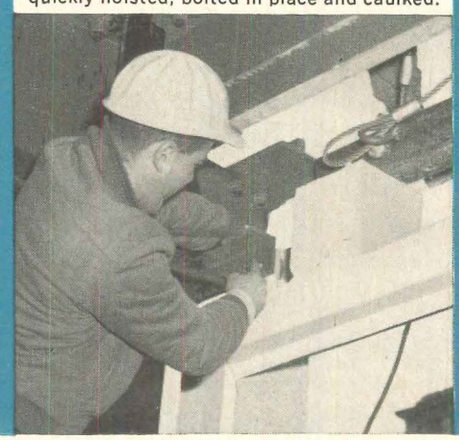


PITTSBURGH ®
PC
CORNING





Erected individually, the precast units were quickly hoisted, bolted in place and caulked.



Bankers Trust Building, New York. **Builder-Owner:** David Rose & Associates. **Designer:** Henry Dreyfuss. **Building Architects:** Emery Roth & Sons. **Interior Architects:** Shreve, Lamb & Harmon Associates. **Structural Engineer:** James Ruderman. **General Contractors:** Diesel Construction Company & Rose Associates. **Concrete Panel Manufacturer:** "Mo-Sai" by The Dextone Company, New Haven.

Precast concrete panels on Park Avenue. The new 30-story Bankers Trust Company Building features a façade of floor-to-floor windows framed in precast concrete. It is in sharp contrast to the glass and metal structures dominating New York's Park Avenue. The 1,600 precast window units were made with ATLAS WHITE portland cement, coloring pigment and quartz aggregate. The aggregate was exposed to add depth and texture to the surface and give the building a "sparkling" appearance. ■ Today, more designers and architects are using precast concrete to achieve distinction with low construction and maintenance costs. Panels can be designed in an almost endless variety of shapes, textures and patterns to afford individuality to a building. ■ For information about white, tinted or exposed aggregate units, see your local precast concrete manufacturer or, write Universal Atlas, 100 Park Ave., N. Y. 17, N. Y.

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

"USS" and "Atlas" are registered trademarks WF-62

THE LOOK OF CLASSICAL COLONNADES

...concrete brings timeless beauty to this modern office building

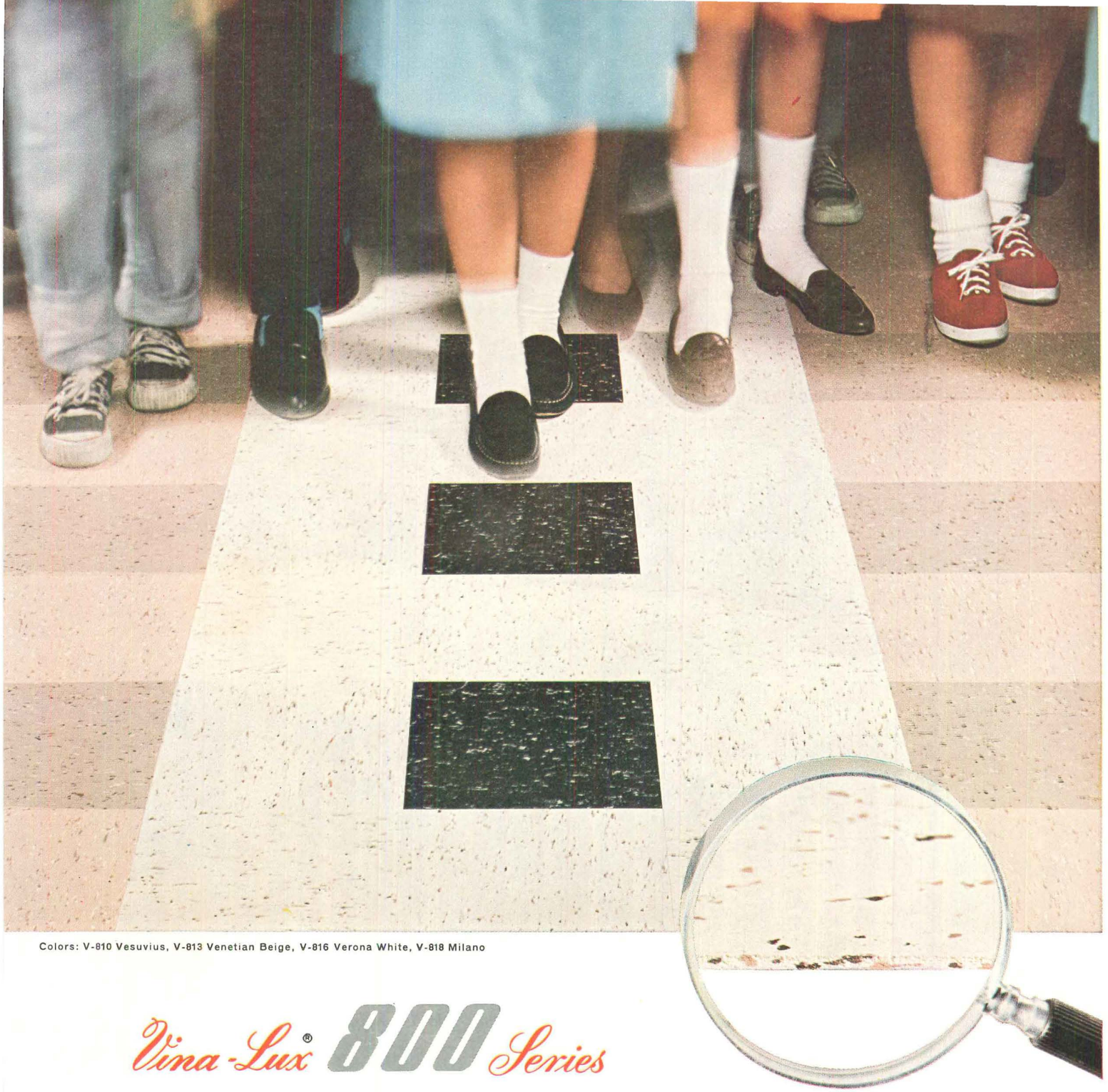
Minneapolis embraces progress in new buildings such as the home of the Northwestern National Life Insurance Company, to be completed in the fall of 1964. Reinforced and precast concrete, the structure will be a dramatic contribution to civic beauty. • Rows of slender precast, prestressed concrete columns with flaring capitals soar 80 feet high, and extend beyond the building to create an impressive portico. For full development of the arched colonnade effect, the columns are brilliant white, achieved with quartz and white portland cement. Additional accent is provided by dark green walls of faceted panels flanked with gray glass. • Concrete offers endless opportunity for striking departures from prosaic design in structures of every purpose.

PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of concrete

THE BEST IDEAS ARE MORE EXCITING IN CONCRETE

Architect: Minoru Yamasaki & Associates, Birmingham, Michigan • Structural Engineers: Worthington, Skilling, Helle & Jackson, Seattle, Washington • Owner: Northwestern National Life Insurance Company, Minneapolis, Minnesota



Colors: V-810 Vesuvius, V-813 Venetian Beige, V-816 Verona White, V-818 Milano

Magnified view shows pattern distribution through full thickness of tile.
Gauges: 1/8", 3/32", 1/16". Standard size: 9 x 9". Modular size: 12 x 12" available in quantities of 9000 square feet per color — at no extra charge.

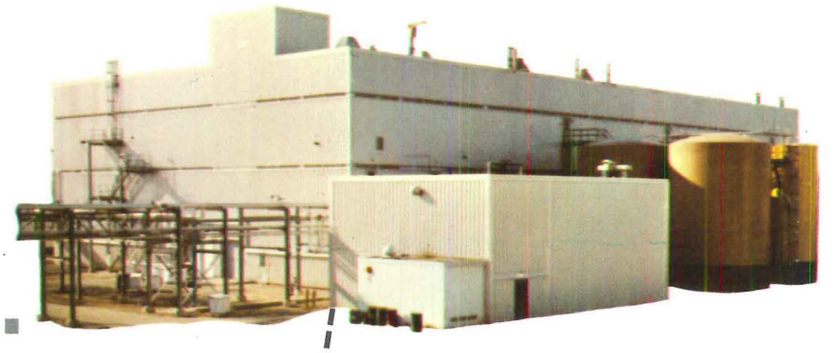
Vina-Lux® 800 Series

unique floor beauty that won't "walk off"...

. . . because the distinctive color-chip pattern is distributed through the full thickness of the tile. 800 Series in Vina-Lux vinyl asbestos tile retains its beauty and pattern under the heaviest concentrations of traffic . . . delivers so much more value and performance than surface patterns . . . yet costs no more. Specify Vina-Lux 800 Series, for installation over concrete — above, on or below grade, or over wood or plywood subfloors. Consult Sweet's Catalog — or let us send you samples, color charts and detailed architectural specifications. Azrock Floor Products Division, Uvalde Rock Asphalt Company, 503A Frost Building, San Antonio.

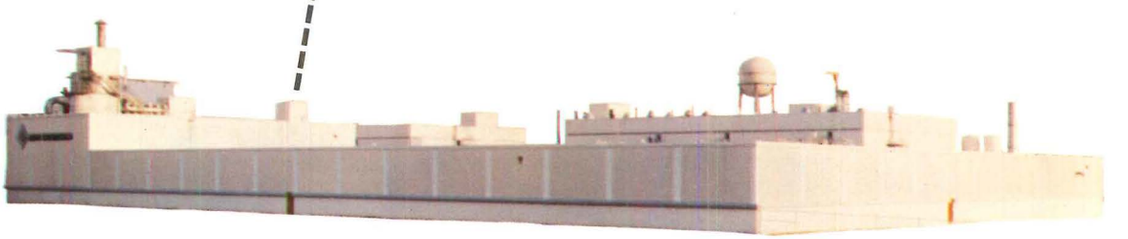
an exclusive styling by AZROCK®

INDUSTRIAL COMPLEX UNIFORMITY...



Archer Daniels Midland Company Plant, Mapleton, Illinois
Designed and Constructed by Girdler Corporation, Louisville, Kentucky

with SMITH metal walls



The family resemblance isn't accidental. The gleaming Smith insulated metal walls, in Shadowall contour, blend the separate structures of this sprawling industrial complex into a single corporate identity. So whether you're planning a single building or a multiple-unit project, it will pay you to investigate the economies of Smith metal walls.

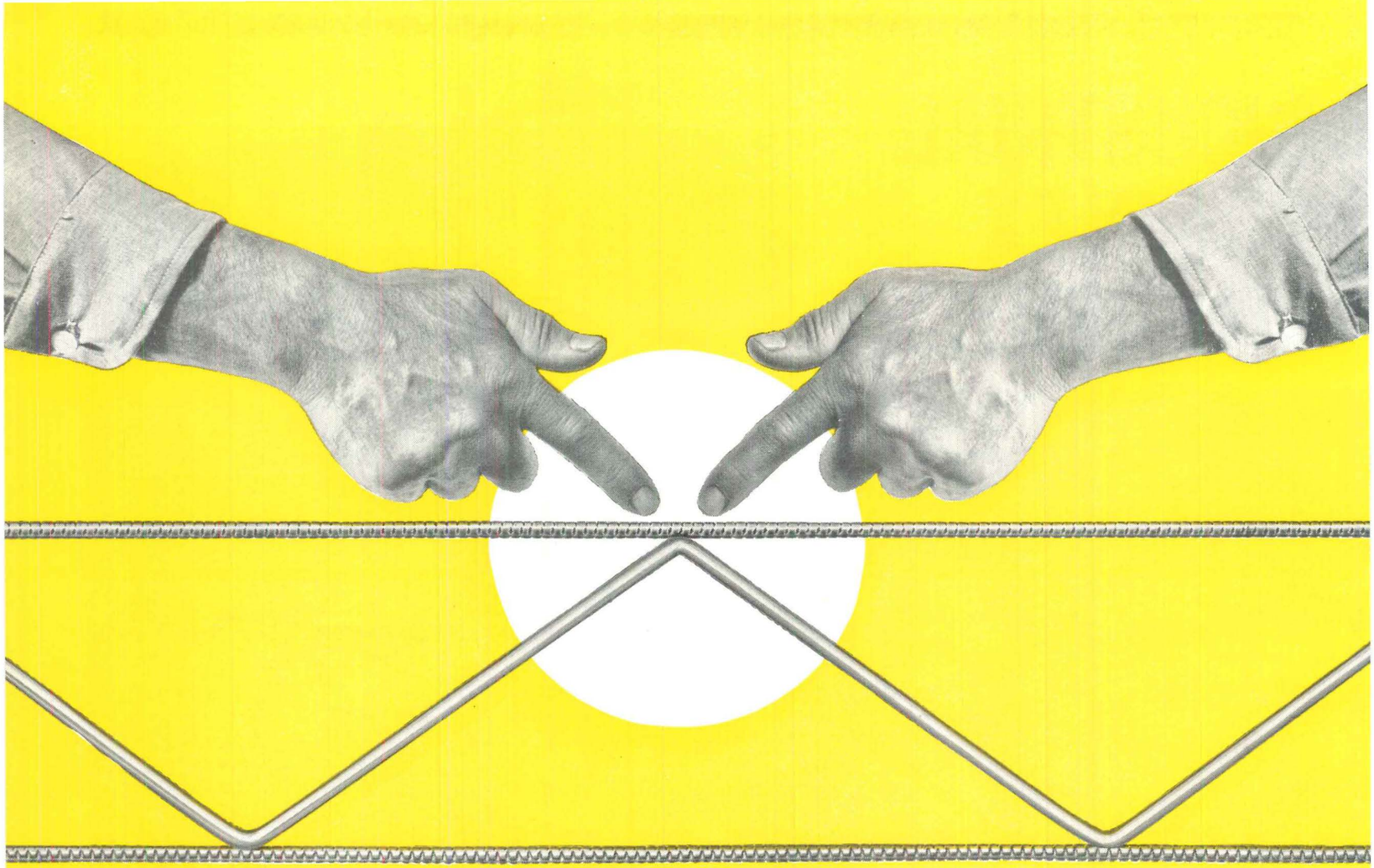
The advantages of dealing with Smith go beyond simple product superiority. Why? Because our responsibility embraces every phase of building wall construction. Smith walls are designed and adapted to your building plans by our engineers. We make them in our factory. Our own trailers deliver them, at the time they're needed, to your building site. Experienced Smith crews erect your walls by a specialized technique developed in over a generation of manufacturing and erecting building walls.

And when you deal with us, you get the construction know-how and facilities of the largest erector of insulated metal walls in the nation.

Best of all . . . economical Smith metal walls are architecturally aesthetic and structurally efficient. So for your next building assignment, whether industrial, commercial or institutional, contact your local Smith representative. For complete information, see Sweet's File 3a/Sm, or write:

"Smitty builds walls for keeps"

ELWIN G. SMITH & CO., INC. Pittsburgh 2, Pa. / Detroit • Chicago
Cincinnati • Cleveland • New York • Toledo • Philadelphia



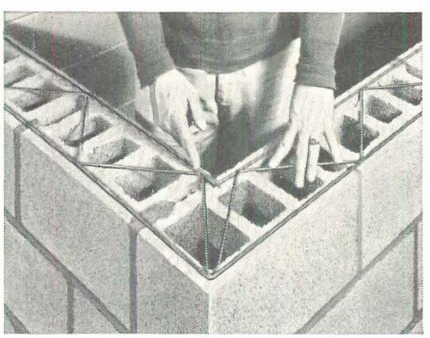
This is Dur-o-wal

the masonry wall reinforcement with the trussed design

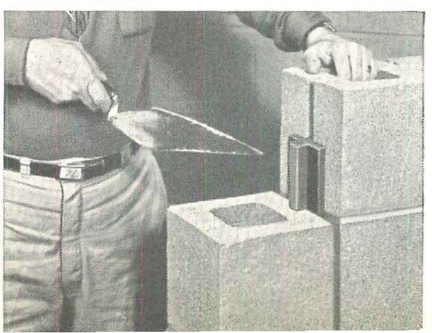
Don't be misled by the common habit of calling all metal-rod reinforcement "durowal". Look for this trussed design. It distinguishes the real Dur-o-wal, insures maximum flexural strength, with all steel members effectively in tension and working together.

Impartial tests of 8″ concrete block walls proved that truss-designed Dur-o-wal exceeds accepted standards—increases the horizontal flexural strength from 60 to 135 per cent, depending on the weight and spacing of Dur-o-wal used, and type of mortar.

An independent new research study shows that Dur-o-wal tied walls outfunction brick-header tied walls. Write to any Dur-o-wal address below for 44-page test report.



STRENGTH WITH FLEXIBILITY—this basic masonry wall requirement is met for sure (and economically!) when Dur-o-wal, above, is used with the ready-made, self-flexing Rapid Control Joint, below.



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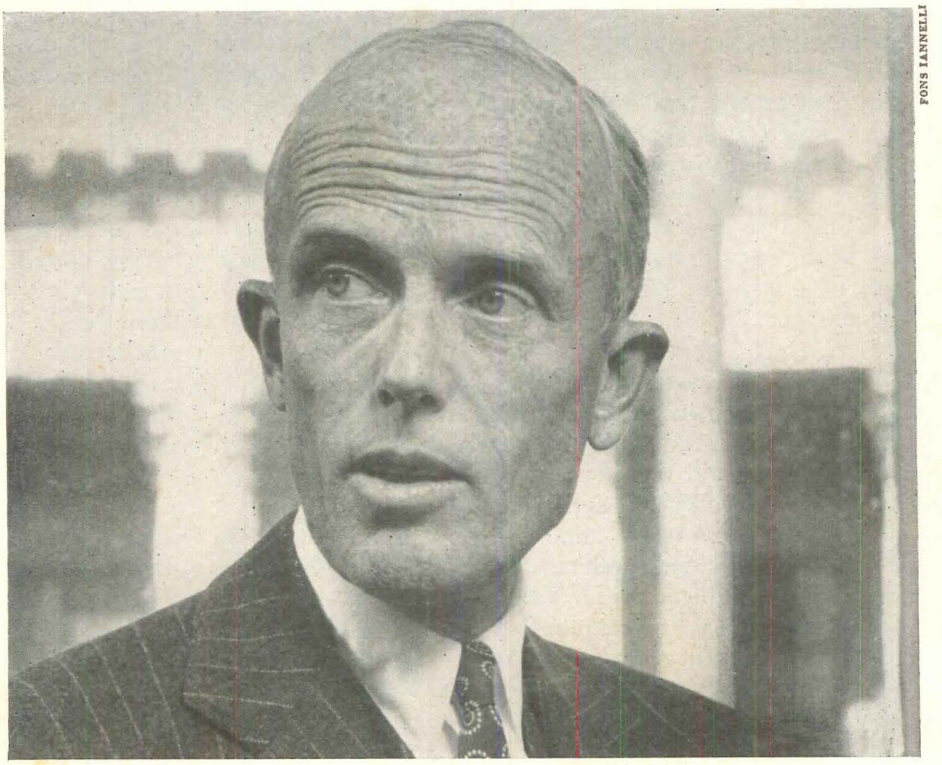

FOSS LANNELLI

A GREAT BUILDER DIES. With the death on April 19 of A. Whitney Griswold, president of Yale University, American architecture lost a marvelous client, a modern patron of wide and enterprising taste. It is said that courage kept Griswold in action as he dwindled under the attack of illness for the last two of his 56 years. This quality of his had also given a new vitality to the architecture of the Yale campus.

He had more than courage, of course; he was famous also for learning and for wit. But even the wit was a kind of courage, sparking a hidden force within his deceptive physical frailness. He had a pithy description for almost everything, but his sarcasm danced on the surface of a deep seriousness about the important things—one of which he knew to be the architecture of his campus.

If such conviction is shared by the presidents of the great American universities, it is not often implemented. Even the intellectual leaders of the Ivy League universities seem usually to pay lip service to architecture, rather than to build it. But of the 26 buildings commissioned under Griswold at old Yale, an amazingly high proportion are really proud attempts to put up structures with new intellectual content. They are widely diverse in their design and some are eminently controversial. But the important thing to Griswold, he said, was that these buildings are complete statements by individual architects—not designs by committees of architects.

In the end, a client has to trust two people: himself, and his architect. Whitney Griswold did; he showed faith in the future of the present. For a report on what he accomplished in these mere last dozen years of his life—the building years—see the next six pages.

THE BUILDING YEARS OF A YALE MAN

BY WALTER McQUADE

At a student gathering some months ago, a bold Yale undergraduate sprung a typically direct question on the president of his university. "What are you trying to do," he asked, "make an architectural arena out of Yale, picking a group of hot architects and letting them compete for effects?"

Unperturbed, the president told him, "We don't want one teacher or one architect at Yale. A great university should look at architecture as a way of expressing itself. It can do this only by choosing to use the very best architects of its generation, men who see history as a continuous stream, not a stagnant pool."

When A. Whitney Griswold was appointed president in 1950, Yale University had been for decades the envied stereotype of the conservative old collegiate Gothic campus. Until after the first world war it was still a pleasantly spare, generally Colonial college in appearance; but during President James Rowland Angell's administration (1921–1937) the dark ages did descend, architecturally. The immense Harkness and Sterling bonanzas for Yale, which totaled more than $65 million between them, rained down in this period, and much of it was spent on architecture of medieval or Georgian styles, beautifully executed by the official Yale architect, James Gamble Rogers.

In the 1930s a large part of the New Haven economy was sustained by the construction of nine residential colleges donated by Harkness, most of them Gamble Rogers' Gothic, and the feudal 14-floor Payne Whitney gymnasium designed by John Russell Pope. When Angell retired in 1937, the neo-Gothic atmosphere outweighed the old Colonial; architecturally Yale had been transformed into a great spitted medieval roast of beef, delectable with all sorts of carving and other aged architectural sauces.

Then building slowed down. During Charles Seymour's presidency (1937–1950), one more residential college was completed, mostly with Vanderbilt money, to a Georgian design, but then came the war and postwar—the quonset era of college construction. Seymour retired in 1950; selected to succeed him was Professor Griswold, then only 43 and feared as slightly too impetuous for an administrator.

One of his first statements was very thoughtful, however; he pointed out something very true about Yale: she had been allowed to lag seriously in the sciences, which could be fatal in the nuclear age. Griswold shortly put speech into action. The first building he commissioned was a wing to be added to a laboratory building. Architecturally it was rather faceless, but it now serves in retrospect to indicate that Griswold was turning off that old Gothic roast, ready to send out for a mixed grille of modern.

A Yale president, of course, like most university leaders, is hardly an independent man. Yale's alumni maintain a close working arrangement by way of the usual university trustees who form the Yale Corporation.

Some intimate observers point out that Griswold, even quite early in his presidency, began to add power to his position by the sheer dynamism of his administration. But firm as he was at the wheel, the Corporation continued as a strong navigator. It was they, for instance, who formally approved the architects for all the new Yale buildings. Even after having picked the architect the corporation could ask him to redesign a building, and did, recently, as many as five times for the same building. They could rule a campus site untouchable (and did) and could tailor certain parts of buildings by trimming specific appropriations. Chairman of the Corporation building committee during the past ten years has been Lawyer Edwin F. Blair ('24), who played tackle on some very successful Yale football teams, and who, when asked by President Griswold in 1953 to head the committee, worried that there wouldn't be anything to do. Griswold advised him just to wait awhile.

There wasn't, in fact, much money for building. The year Griswold took over as president, the academic deficit was $448,486, and if it had not been for the Yale Alumni Fund, sometimes known as the greatest money-making machine in higher education, the situation might have been insolvency. This fund was established in 1890 "as a present to the President of Yale to enable him to undertake some project not included in the budget" and has been imitated by most other alumni groups, but not equalled. In 1962 it yielded Yale $2.8 million.

On the money-raising function of his office, Griswold was sometimes criticized because he seemed to want to arouse, not to placate the alumni—a process not generally regarded as the role of the careful university leader, covetous of financial aid. Some of his sharp lancets: about institutions, "The family has become too scared of its children; the children too insecure in their remoteness from their parents." About football: "Colleges cannot be true to their mission and at the same time vie with one another in a form of the entertainment business that often degenerates into a racket." And about education: "The sales doctrine that the customer is always right does not apply. . . . The doctor cannot help the patient who insists on making his own diagnosis." Did this kind of thing anger the Old Blues? Some, perhaps, but it is hard to prove it, for in Griswold's brief administration, Yale's endowment was almost tripled, from $121 million to $375 million. It is to their and to his credit that directness seems to have counted more heavily than the suavely cringing stance of many a university leader.

Directness was what Griswold demonstrated when the time did come to begin building. Few universities are rash enough to build the way their architecture schools teach, but when

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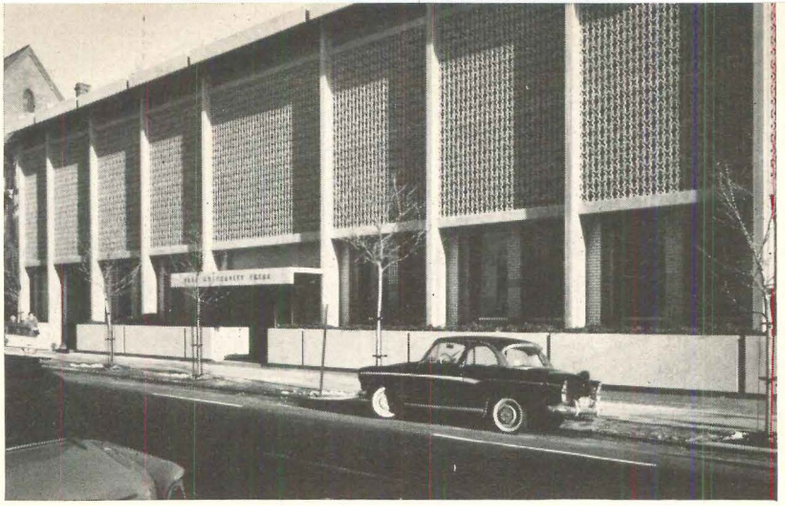

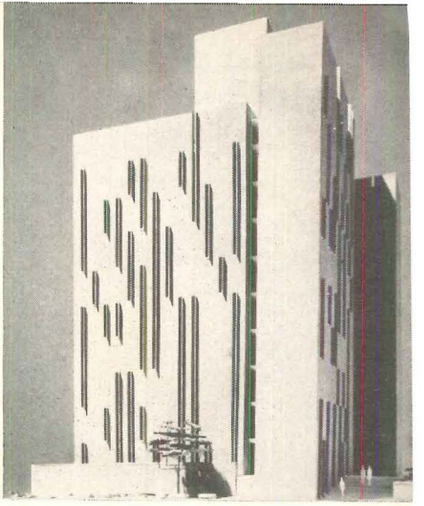

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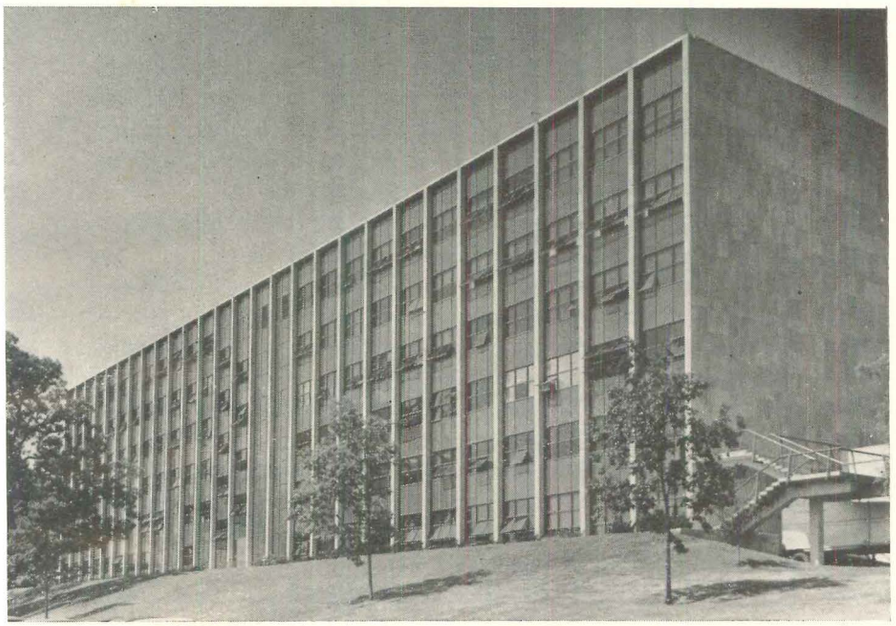
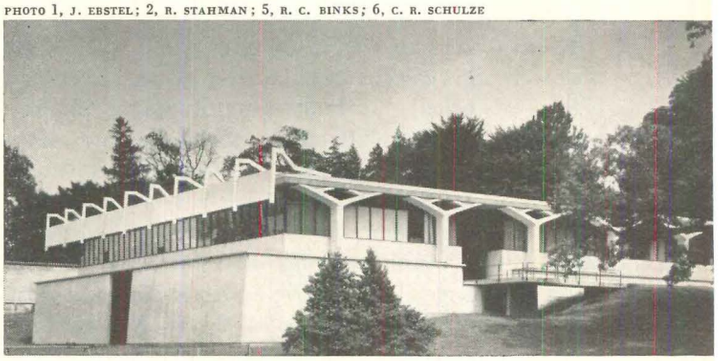


1. Addition to the art gallery; Louis I. Kahn, Douglas Orr, associated architects. 2. Yale University Press building; Office of Carleton Granbery, architect. 3. Model of the Laboratory for Clinical Investigation; Office of Douglas Orr, de Cossy, Winder & Associates, architects. 4. Josiah Willard Gibbs Laboratories; Paul Schweikher and Douglas Orr, associated architects. 5. Greeley Memorial Laboratory of the Yale School of Forestry; Paul Rudolph, architect. 6. David S. Ingalls Rink; Eero Saarinen, architect.

PHOTO 1, J. EBSTEL; 2, R. STAHMAN; 5, R. C. BINKS; 6, C. R. SCHULZE



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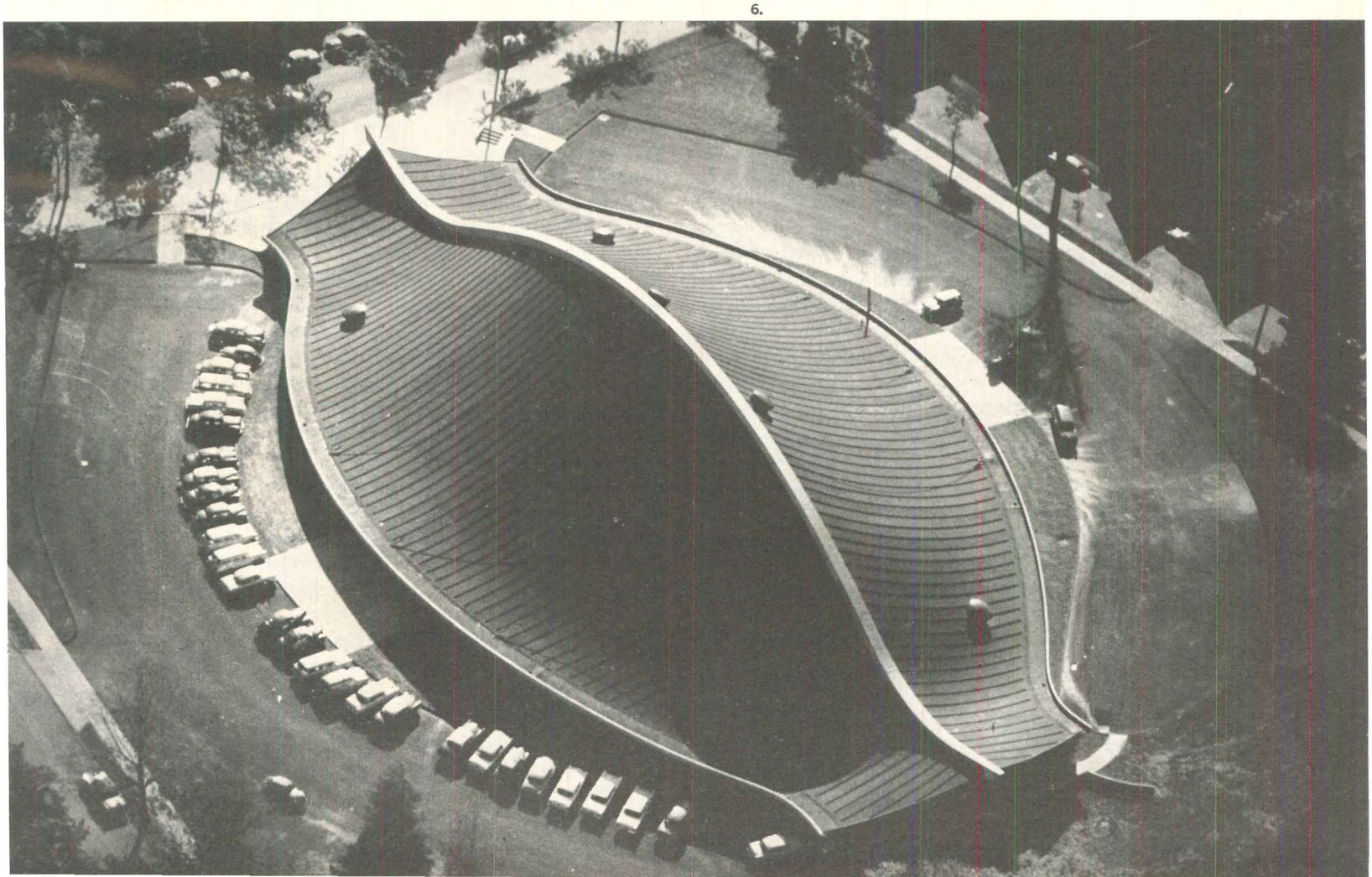


funds became available for a new art gallery at Yale (FORUM, Nov. '52), Griswold asked the head of the architecture department, the late George Howe, for an architect. Howe suggested the then senior design critic at Yale, a man named Louis I. Kahn, who had proved himself a mesmeric instructor, but who, at the age of 50, had not yet built a sizable building. It was a bold choice, although Griswold did team Kahn with the well-known office of Douglas Orr, a Yale man ('19), a past president of the American Institute of Architects, and a gentlemanly designer in various styles.

Kahn's building was in none of those styles. Behind walls that were alternately either entirely glazed, or sheer unbroken planes of brick, he built four muscular floors of what amounted to open loft space, which he said the occupants could partition off as desired with temporary walls. His rugged, roughly finished building has since grown famous —as also has Kahn, in his profession. Kahn recently recalled, "On alumni visiting day, the year the gallery was being completed, a bewildered old grad came over to the old student drafting room and said, 'I was just over in the basement of the new art gallery next door, looking around. Then I went upstairs to the first floor—but I was still in the basement!' "

Griswold later commissioned a close friend and Yale man, Architect Eero Saarinen ('34), to prepare a master plan for campus development, again in collaboration with Orr, that would preserve and extend the system of green and vistas and keep it coherent. But first he turned again to the Yale Architecture School, by now headed by Paul Schweikher. In association with Orr, Schweikher designed a large science building off to the north of the main college campus. It was built in a frankly utilitarian style, and was finished in 1955.

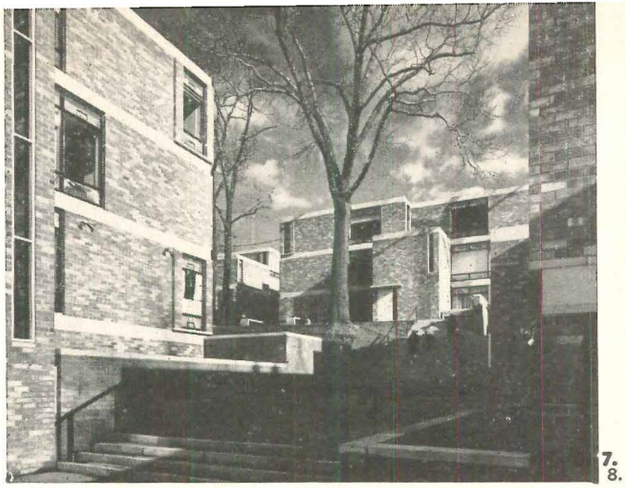
Other buildings, of various styles, began to grow in and around the old Yale campus and at its midtown medical center. The real revolution of style, however, occurred when Griswold and the Corporation commissioned a building whose exterior was fully as startling as the interior of Louis Kahn's gallery. It was by Saarinen—a skating rink unique enough to start world-wide architectural arguments (FORUM, Dec. '58). From a curving stem of concrete resembling the upended keelson of a sailing ship, its roof was draped, tentlike, over a web of steel suspension cables. The architect was accused by critics of shaping it for the sake of shape rather than function, a sharp criticism in the middle 1950s, when architectural design was still highly preoccupied with the morality of functionalism. The building also alarmed the Corporation by coming in far over budget.

By 1956 the building program was coming into full swing, with a new cluster of buildings soon coming up for commissioning. To help decide on their site planning, Griswold assembled a committee including four of the nation's better-known modern architects. Saarinen was one. The other three: Gordon Bunshaft, Philip Johnson, and Paul Rudolph who, in 1958, had succeeded Schweikher as head of the Yale architecture department (Rudolph had also completed a new building off the main campus of Yale at the Forestry School, a templelike hillside structure whose concrete columns flourished out to support a flat roof (FORUM, Oct. '59).

Perhaps the most essential site was one for an extension to Yale's undergraduate residential complex. In the middle of the 1950s, Paul Mellon ('29) and President Griswold had discussed, one Cape Cod summer, two urgent needs: a pair of new residential colleges to take the pressure off the still overcrowded ten existing ones, and an endowment to bring all the colleges closer to the Oxford prototype in that seminars and other smaller classes could be contained within them. In 1958 Mellon's Old Dominion Foundation put up $15 million for these purposes. Mellon and Griswold both backed Saarinen as architect for the two new colleges (FORUM, Dec. '62), and the Corporation was persuaded to assign him the commission. To provide a site, John Hay Whitney ('26), a Corporation Fellow, donated $2.5 million toward the $3 million purchase of three rundown New Haven high schools. This was the last project finished in Griswold's lifetime.

But the buildings he commissioned are still coming in. The architect with the greatest breadth of work to be completed in the Yale program is Philip Johnson, because Griswold tapped him to work on the sciences. The first of Johnson's handsome new buildings, for geology, is now under construction. It will be finished in old Yale materials, sandstone and brick, and, although its shapes are drawn from scientific demands, it will have a rich quality, with curved protrusions in the walls which are vaguely reminiscent of castle-wall stairways. (Actually, the protrusions are entirely functional, housing up-to-date exhaust vents.) Johnson's design task encompasses more than single buildings; he must organize a hillside studded with both Victorian and utilitarian structures, knitting it into a balanced complex with his new additions. True to the Yale pattern of courtyards surrounded by low buildings, brought into focus by an occasional tower, the new complex will be climaxed by a contemporary 14-story keep on the hilltop, the Kline Science Center. Johnson is collaborating with Douglas Orr on the sizable epidemiology building in the downtown medical group and the Orr office also is carrying out other commissions of contemporary character.

If Griswold's architectural statements in the scientific field were not extreme, two cultural symbols now under construction for the humanities are. One is a rare-book library by Gordon Bunshaft of S.O.M. (FORUM, Nov. '60) deep in the old college complex; the other is a new building by Paul Rudolph for arts and architecture, directly across the street from the Kahn Art Gallery. Between them they will represent



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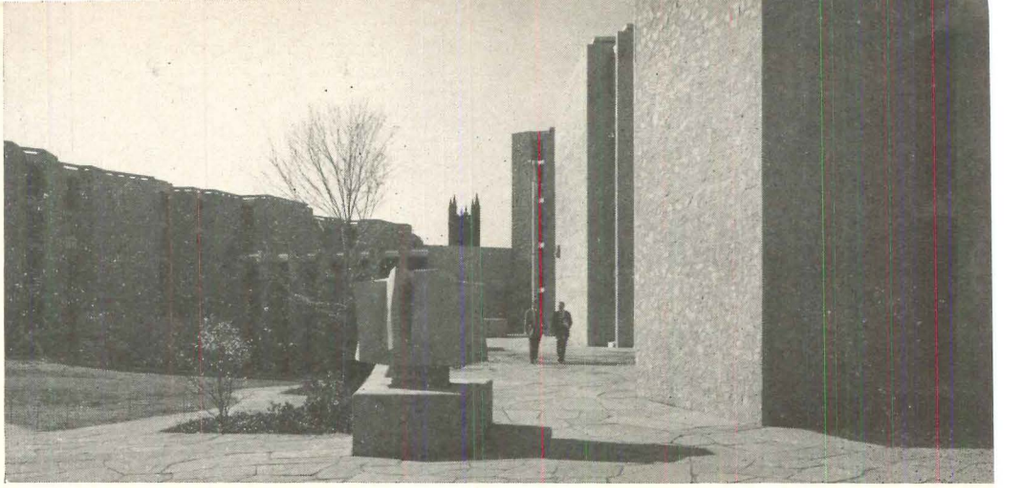

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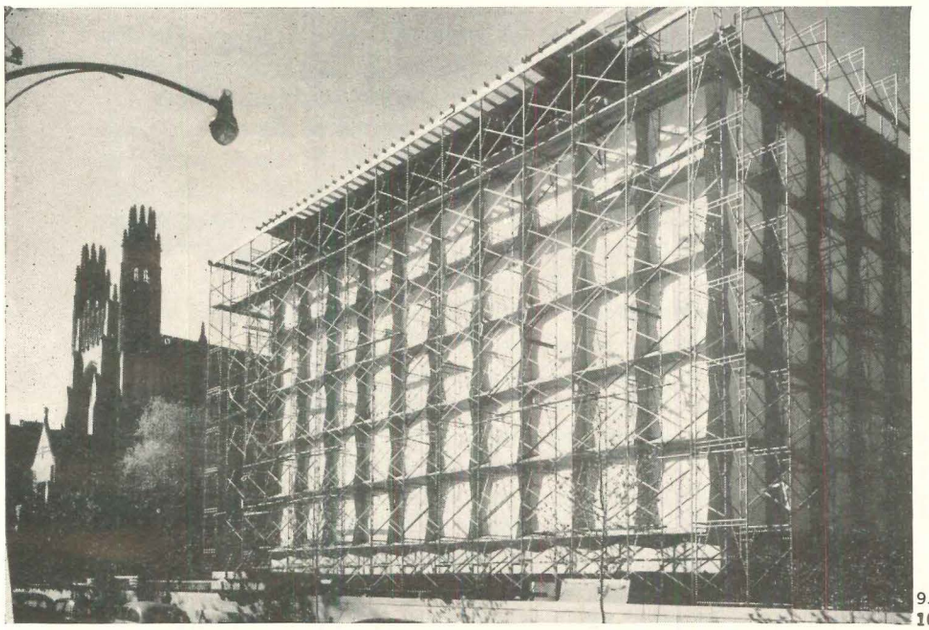

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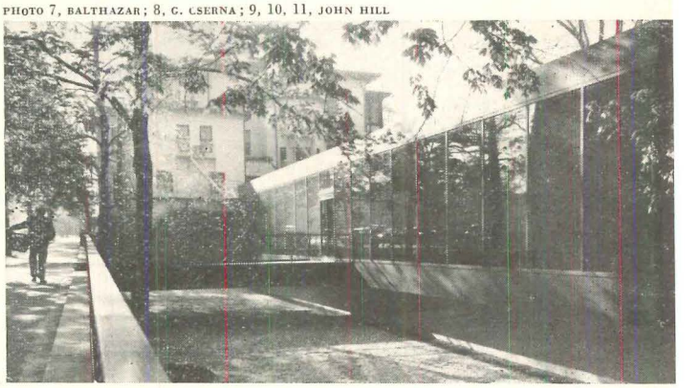
7. Mansfield Street Apartments for Married Students; Paul Rudolph, architect. 8. Ezra B. Stiles and Samuel F. B. Morse Undergraduate Residential Colleges; Eero Saarinen, architect. 9. Beinecke Rare Book and Manuscript Library; Skidmore, Owings & Merrill, architects, Gordon Bunshaft, chief of design. 10. Computer Center; Skidmore, Owings & Merrill, architects. 11. Kline Science Center; Philip Johnson, architect.

PHOTO 7, BALTHAZAR; 8, G. CSERNA; 9, 10, 11, JOHN HILL



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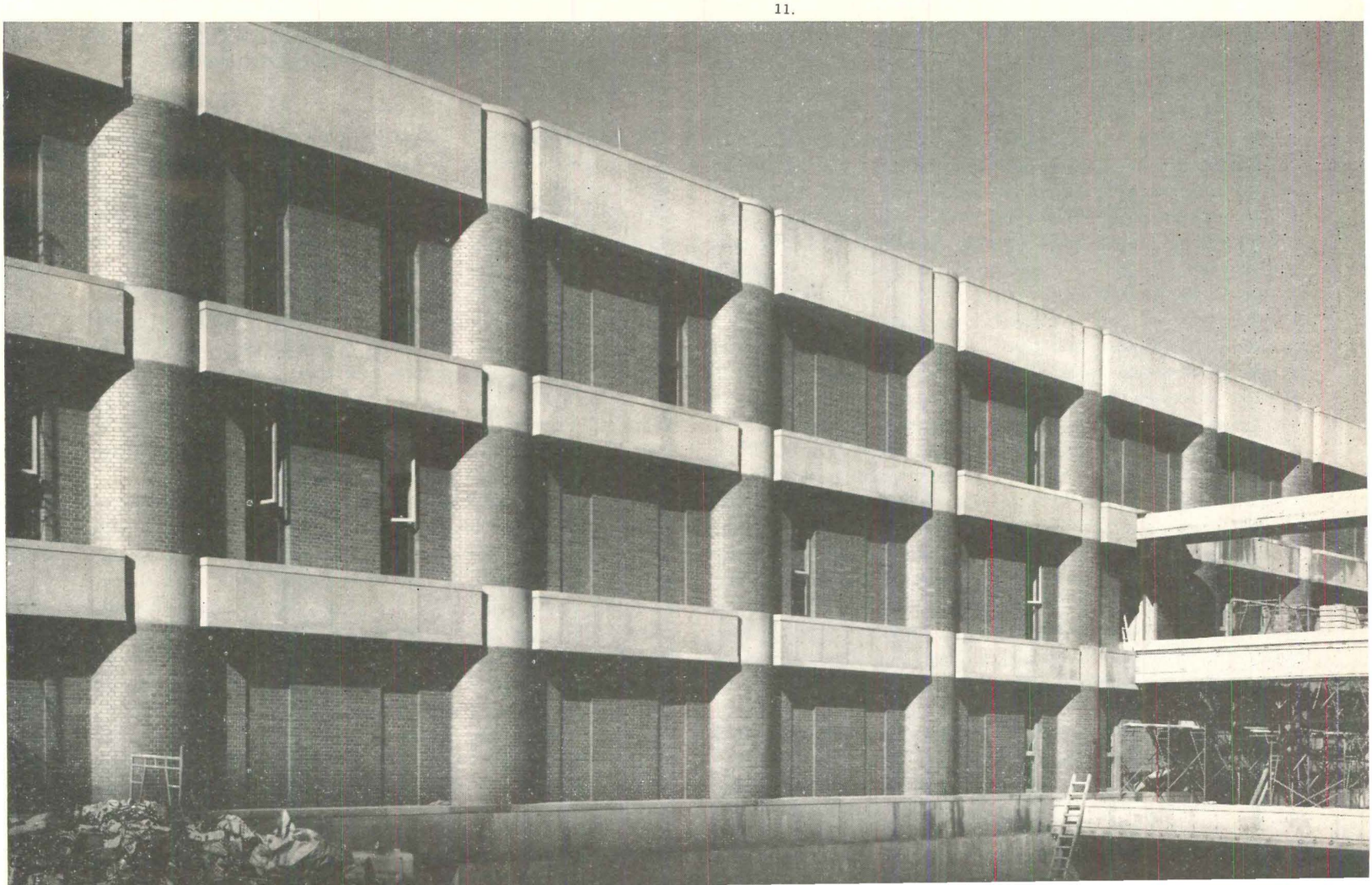


the most lavish of today's college buildings; they both make use of enclosed architectural space in astonishing ways, one quite formal, the other anything but.

Bunshaft's first architectural exercise on the Yale campus was a small building donated by the Watson family of I.B.M. to house a university computer, completed in 1962. This was in the expected Skidmore, Owings & Merrill vein of steel and glass, impeccably put together. His rare-books library will be equally impeccable, but will wear richer fabrics. Scheduled for completion late this year, the library is the gift of Edwin J., Frederick W., and the late Walter Beinecke and their families. No one will reveal its cost, but $6 million is a good guess.

The walls originally were to have been made of great sheets of onyx, honed down to a translucent thinness to admit some daylight, and, at night, to make the building glow from within like a great lantern in the middle of the campus. It turned out, however, that the only quarry which could provide the onyx in the proper sizes was in the hills of Algeria, and was inaccessible because of the French-Algerian war. After considering the possibility of requesting General de Gaulle to propose a truce in that area until the onyx could be shipped, the client decided to use white marble instead. "It will be a monumental building," said Griswold.

A somewhat less central, but even more emphatic, symbol of the individual and the learned arts is the new Paul Rudolph design for the Art and Architecture building now approaching completion, a headquarters which will make every first-year architectural student think twice, perhaps three times. This building is close to occupancy (photograph, facing page and FORUM, Sept. '62) and a climb through it indicates it may be the most studiedly spectacular of all buildings under construction not only in New Haven, but in the world. It is nominally a six-story structure, but actually has 36 different levels. Floors step up and down; ceilings soar or suddenly descend near head level, each room is as if invented as a new kind of space, and these volumes are ingeniously assembled in a great, burly, rough-textured concrete and glass frame. There are few comparisons available, unless it would be a conjunction of buildings by the famous Le Corbusier and Frank Lloyd Wright. This is a building being created by a gifted architect driven to demonstrate the spatial eloquence still possible in his chosen art. It is also a concept for which the Yale Corporation requested five redesigns, and Ted Blair reports the architect was very tolerant and understanding of their criticisms. Rudolph changed it in detail, but they did not ask him to alter the immense idea.

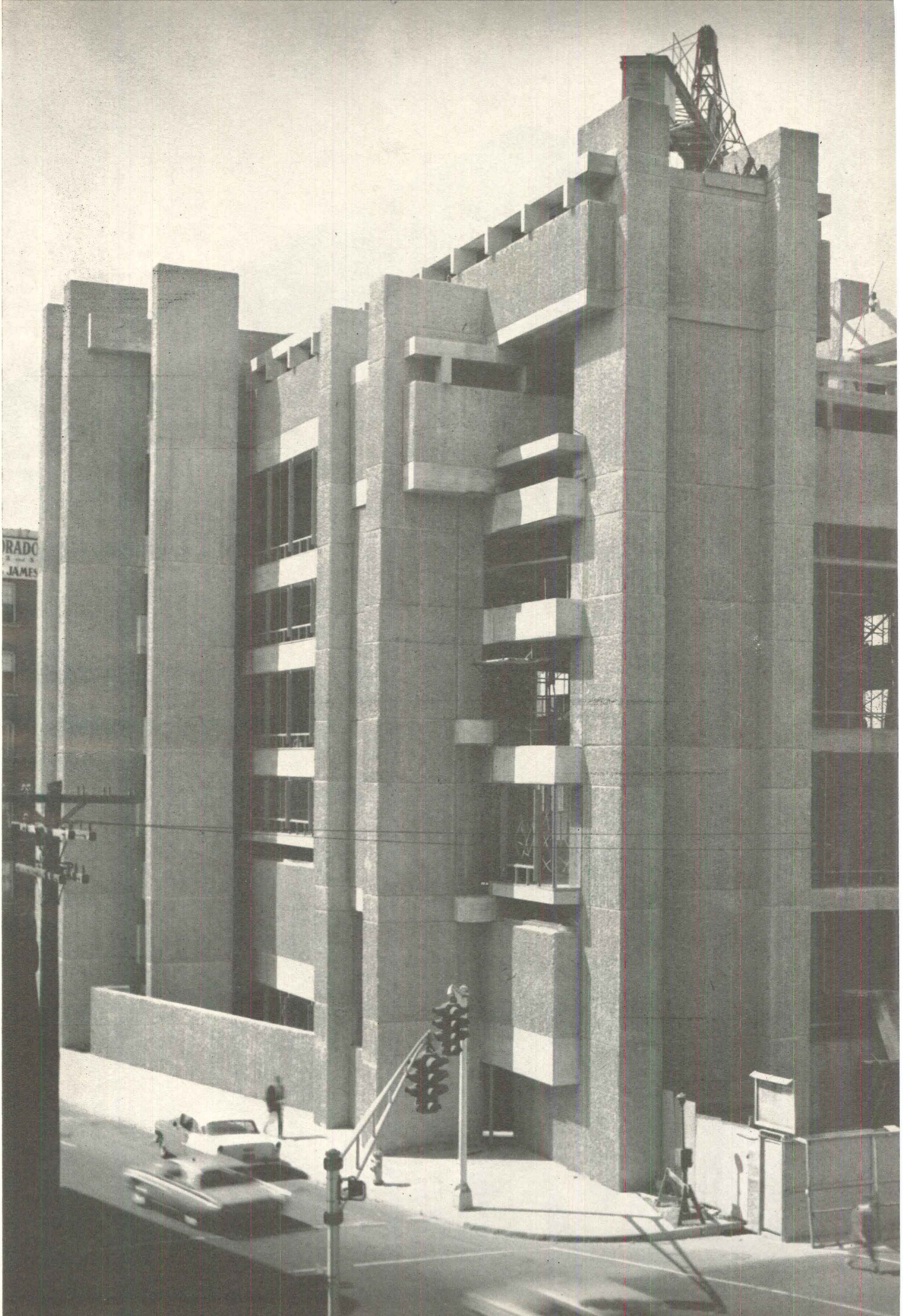
In the last several weeks a number of his architects have reminisced about A. Whitney Griswold. There are two characteristics they recall, in addition to the man's quick, valid personal charm. One is the quality of professionalism. "He was respectful of what his architects were creating," Gordon Bunshaft said recently, and thus recalled a judgement the late Eero Saarinen had once made, "Whit listens and learns . . . he has the professional's respect for other professionals." (Another exchange between Griswold and Saarinen went this way: when the building of the hockey rink got under way, Griswold asked the architect when it would be finished. Saarinen gave him the official target date. Griswold asked, "Is that real, or a tomcat's promise of marriage?")

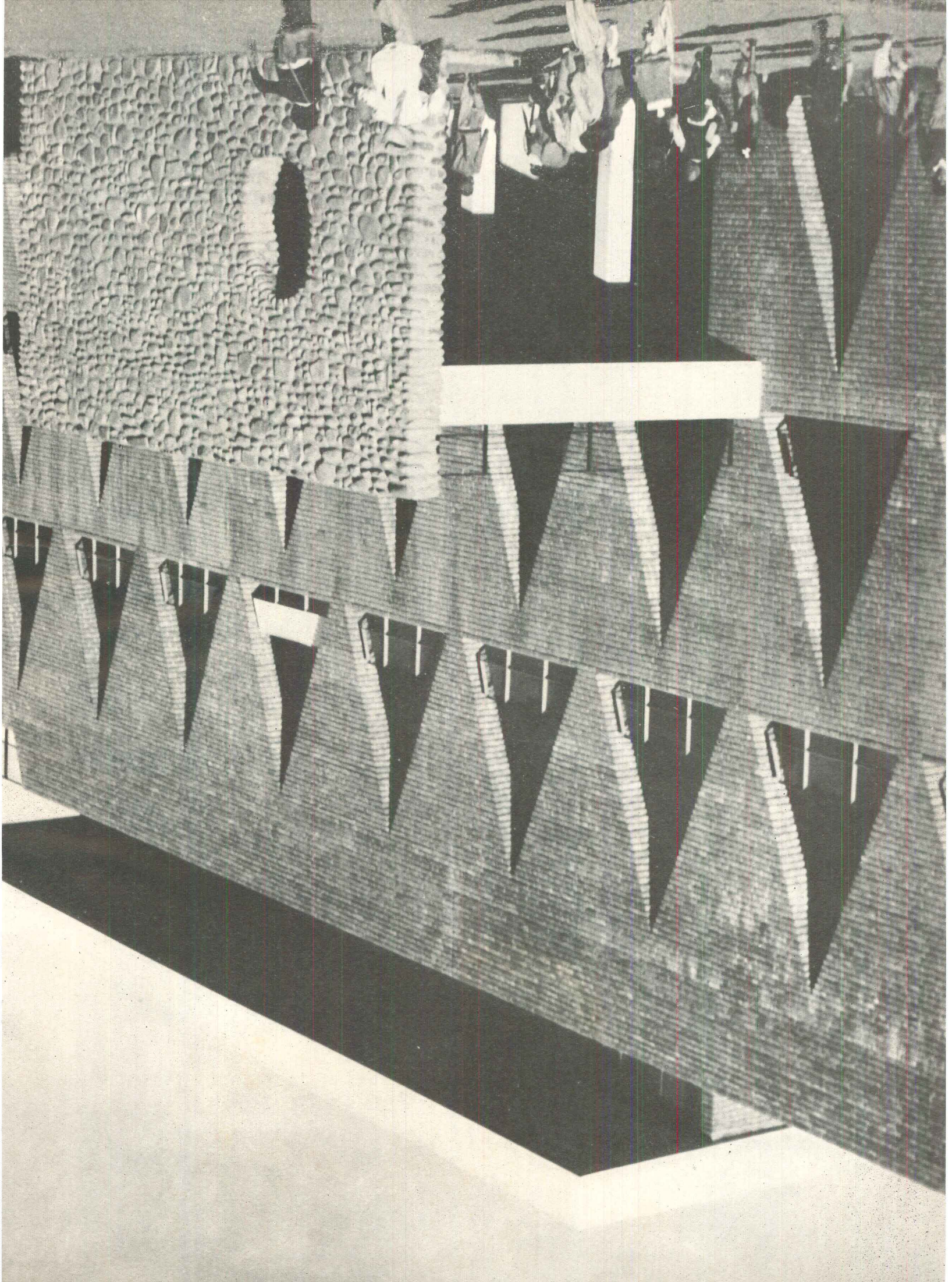
The other memory is, of course, of Griswold as a patron. Philip Johnson has pointed out, "The president of a university has an agony of choices to make during a building program, how much (how very much) is needed, and how little the money of our day can buy. Whitney Griswold never faltered; he knew the value of architecture for the sake of the future of Yale. He knew the value of architecture simply for its own sake." Paul Rudolph: "Talking with Mr. Griswold was unique. He reacted, contributed to the dialogue, and felt intuitively the essence of the matter. In the 20th Century one constantly feels like the man in a Kafka novel who never quite knows with whom he is talking, but Mr. Griswold was a magnificent exception. You knew instinctively that when an understanding had been reached he would defend it with outrageous courage."

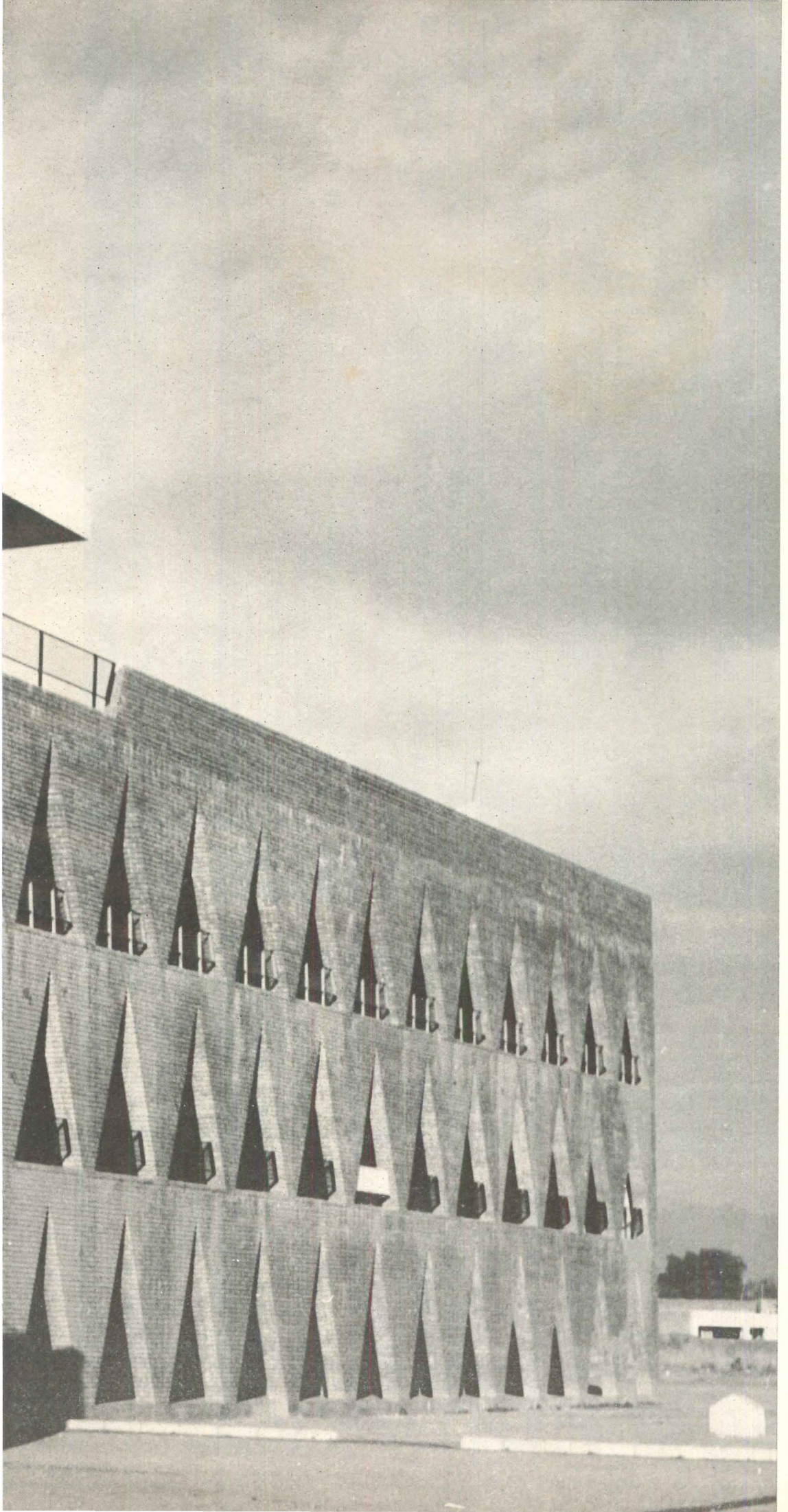
A year or more ago a visitor went to see, and to talk architecture, with Whitney Griswold in the Yale president's office on the second floor of Woodbridge Hall and found that President Griswold liked to play tricks with space, too. His personal office was quite small; unlike most administrators, he had given the vast room beside it, four times as big, to his secretary and kept the anticlimactic space for himself and his Yankee foldtop desk. He did not stay seated in his chair for long at a time, instead getting up to roam the room, with the nervousness of a caged sparrow and acting out his sentences. It was, incidentally, from these windows that he had watched Harry S. Truman, a visiting lecturer at Yale in 1958, spinning down the sidewalks on the famous Truman early morning walks for several days, then awarded him a varsity Y.

A little more than a year later the same visitor returned to talk with Griswold in the tall-ceilinged library of the vast Yale president's residence. Griswold was just back from a stay in the hospital, and this time he remained in his chair—but his mind continued to dart around the room, brilliantly. Thinner, he was even more typical of himself, even sharper—although it was apparent he was in some physical discomfort. Still, he wanted to talk about architecture, and, more specifically, about architects he should be using. At one point in that conversation, the visitor asked him if there was any common denominator in the work of the men he had found. Griswold winced and then he grinned and replied, "No *common* denominator. Just quality." END

PHOTO OPP.: JOHN HILL







NEW BUILDING ABROAD

A review of some of the most significant work being done in Europe, Asia, Africa, and Latin America. For details of the brick-walled secondary school at left, in Chandigarh, India, please turn the page.

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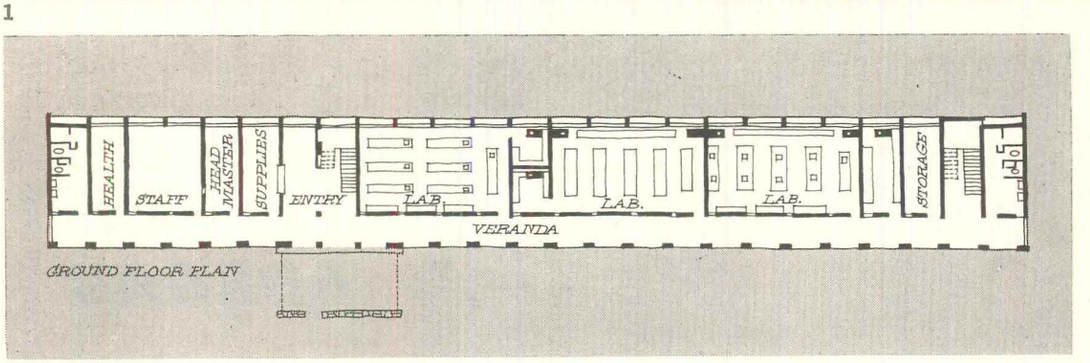

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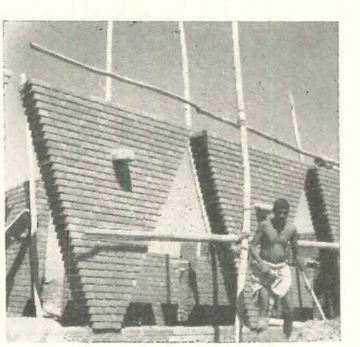

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INDIA: A short distance from Le Corbusier's famous government buildings at Chandigarh, Architect Jeet Malhotra's Higher Secondary School sets its own lively and highly original pace. Where Corbu, Pierre Jeanneret, and other Western architects have used reinforced concrete effusively at Chandigarh, Malhotra has taken advantage of a much cheaper material—locally manufactured brick of a deep red color.

The techniques by which local craftsmen have constructed the brick into corbelled "arches" (3) are centuries old in India. Malhotra has revived this traditional building form in all 14 of the low-budget schools he has built at Chandigarh—with appealing results both in terms of design and historical continuity.

The triangular brick arches line the wide verandahs that sweep across the school's façade on all three levels (1), acting as ventilation, sun and rain protection, and as independent equilibrium structures. While creating the archlike pattern, the corbelled façade avoids all lateral thrust and can be built as high as five stories.

There is only one entrance to the ground floor (plan, 2) behind a stone screen with a playful round cutout. Through this control point, students cross the verandah to reach the science labs on the first level (where teachers also have administrative offices) and the 12 classrooms above, each of which seats 50 students. On the roof is an open-air assembly area, a common room, and a canteen.

The composite block of Malhotra's school lends itself to easy extension when present facilities are outgrown. On the interior, alterations can also be made quickly and simply by interchanging the partitions.

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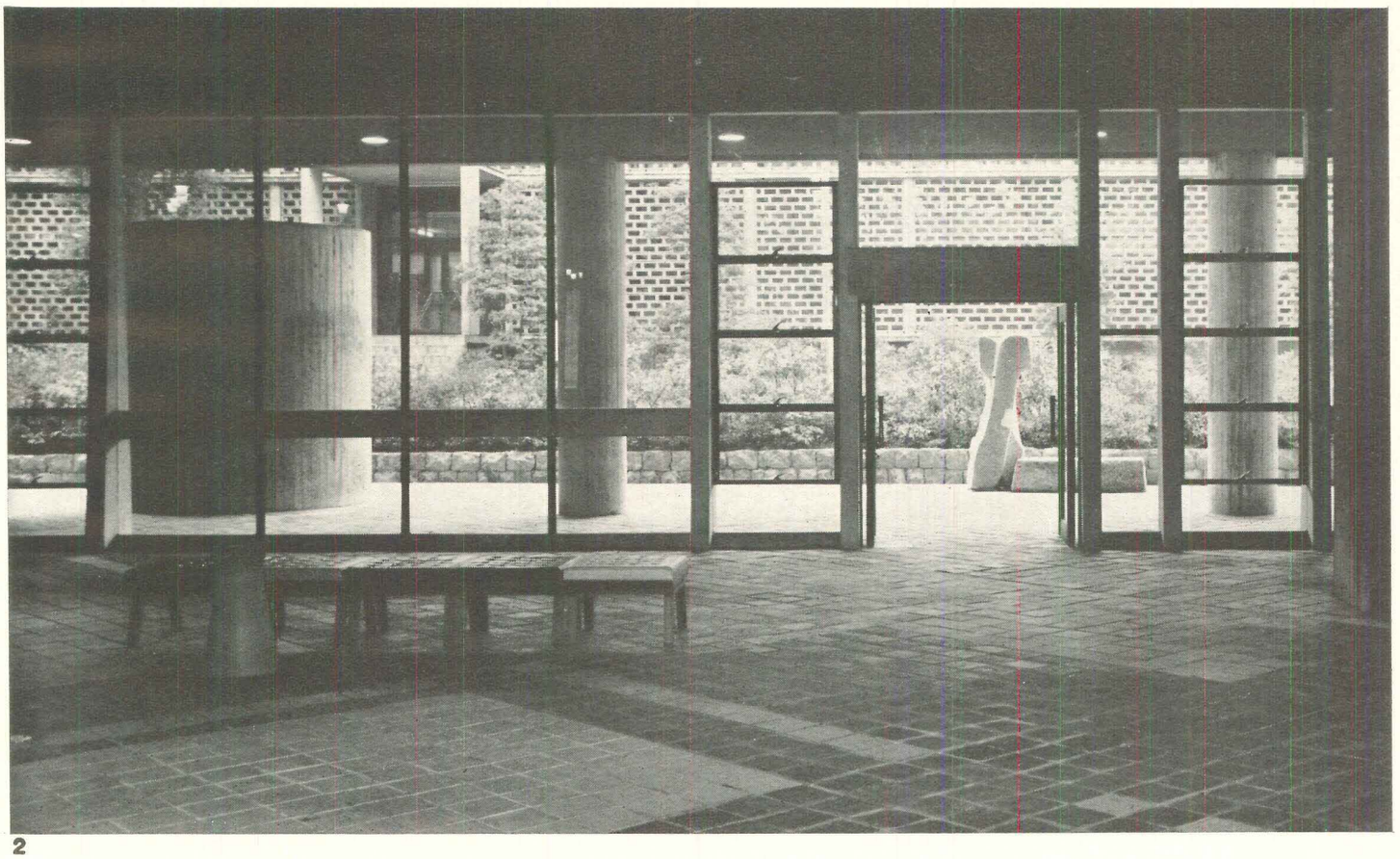

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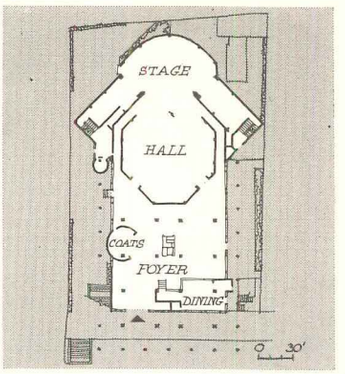
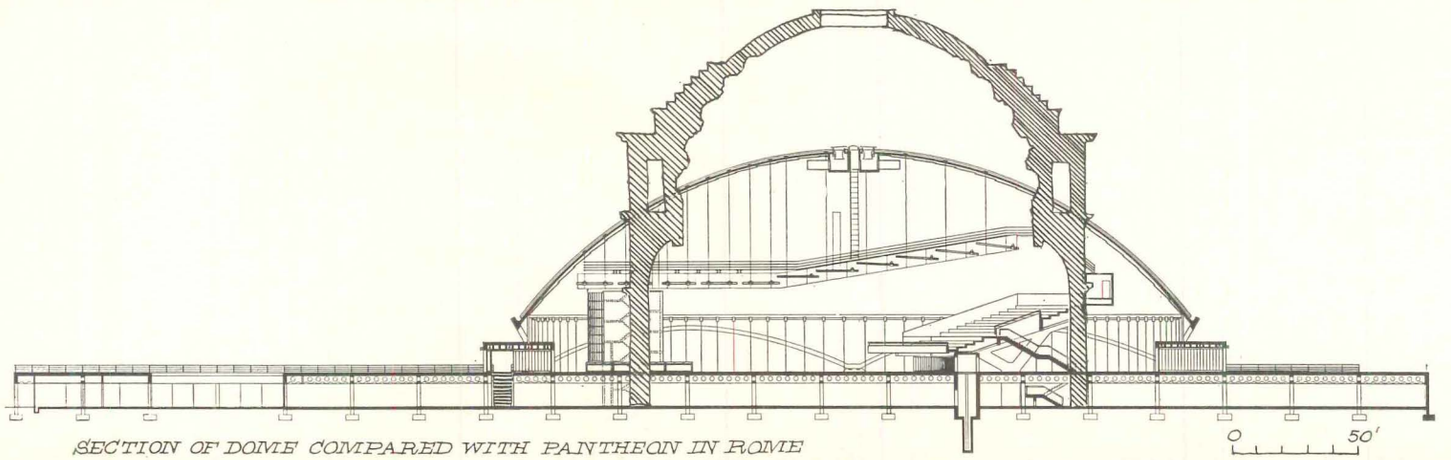


JAPAN: This piloti-supported youth center in Yokohama was designed by Architect Kunio Mayekawa, who is currently at work on the Japanese Pavilion for New York's 1964 World's Fair. The center is next door to a young people's library and concert hall designed earlier by the same architect. The new building is a strong statement of two ubiquitous influences in Japan today: The influence of Le Corbusier; and the growth of communal pride throughout Japan, manifested in cultural centers such as this one.

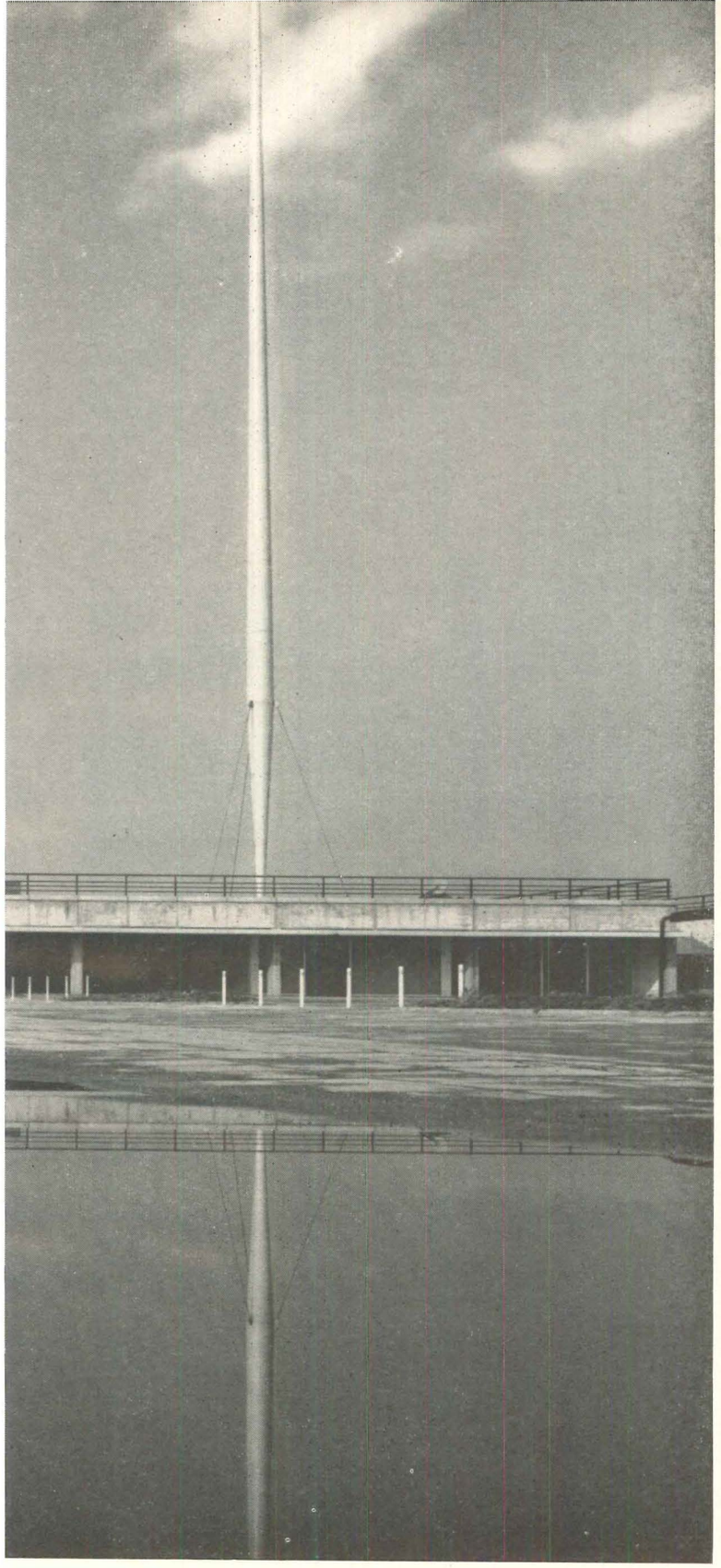
Limited by budget and site restrictions, Architect Mayekawa has placed exhibit space, art rooms, a laboratory, and a planetarium squarely on top of a 1,000-seat auditorium (1). This main hall is a square placed askew on the rectangular plan (3) with the seating arrangement forming an octagon. Unimpeded views of a revolving stage with two wings are assured by eliminating acute angles in the hall.

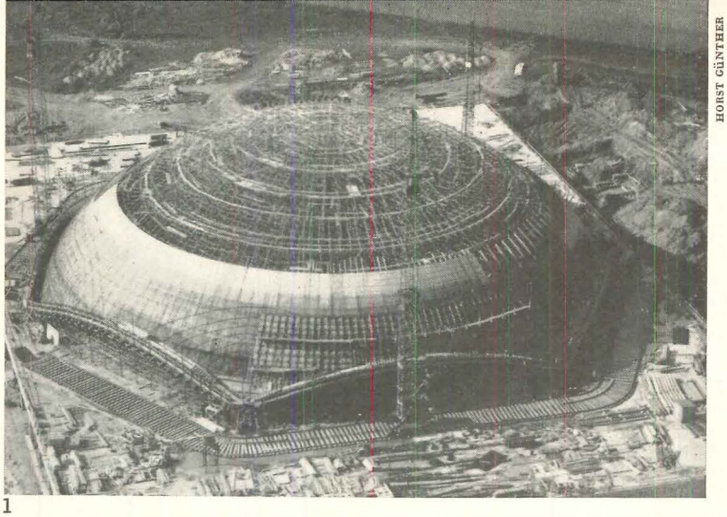
The reinforced concrete structure has four floors above a basement. A dining room, information desk, and entrance foyer (2) are on the first level.

Architect: Kunio Mayekawa & Associates. Sculptor: Masayuki Nagare. Engineers (structural): Yokoyama Structural Design Firm. Contractor: Shimizu Constr. Co.



SECTION OF DOME COMPARED WITH PANTHEON IN ROME





HORST GÜNTHER

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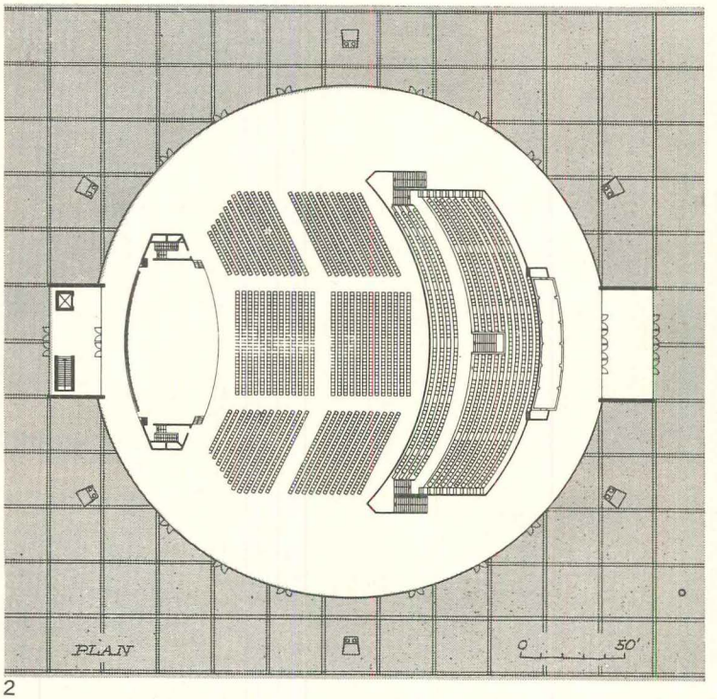

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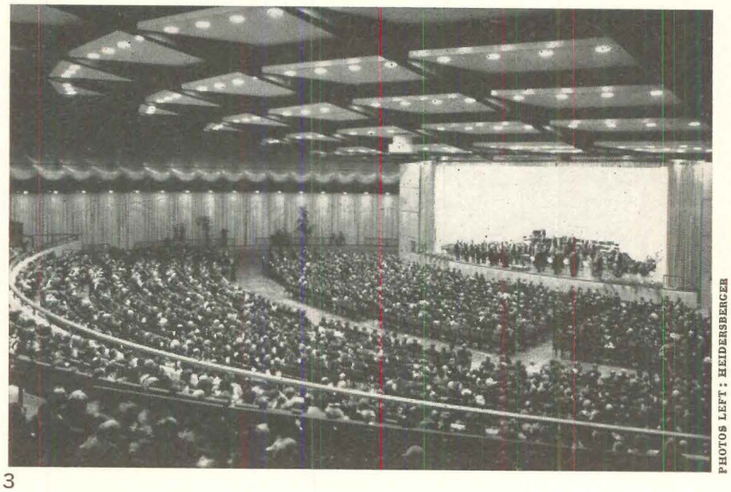


PHOTOS LEFT: HEIDERSBERGER

3

GERMANY: A monument to employee welfare on a colossal scale, this community center near Frankfurt was recently built for its workers by Farbwerke Hoechst, Europe's third largest chemical company and a survivor of the great German chemical combine, I. G. Farben.

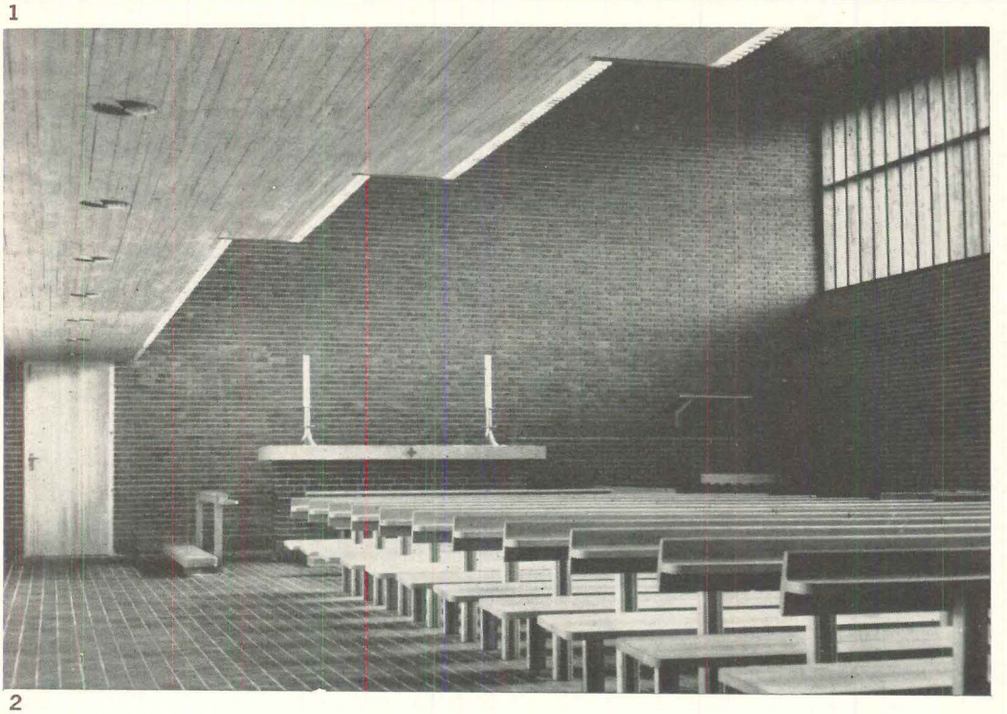
Friedrich Wilhelm Kraemer's competition-winning design for the low-slung dome, which covers Europe's largest concert hall, was constructed in a record-breaking 16 months to meet the company's deadline for its centennial celebration. The main hall is a vast "universal" space 282 feet in diameter, with six perimeter supports at intervals of 141 feet. It can be used for concerts, movies (using a wrap-around window curtain), theatrical performances, or sports. Audiences as large as 4,000 can be seated for concerts (plan, 2); banquets can be served for 1,500. A grid suspended from the roof (3) contains adjustable acoustical, lighting, and ventilation equipment. Beneath the great hall a 446 by 315-foot base houses clubrooms for 400 people, kitchens, dressing rooms, cloakrooms, and eight bowling alleys.

The thin roof shell (about five inches thick) was cast in place (1); prefabrication was originally planned but would have taken too long. One of the company's own building products, a high-impact plastic, was used in the large hexagonal shingles covering the dome; more than 5,000 were used in 105 different sizes (a computer was necessary to calculate the size and shape variations).

Architect: Dr. F. W. Kraemer. Collaborators: Günter Pfennig; Dr. Ernst Sieverts. Consultants: Dr. A. Mehmel (structural); Dr. E. H. E. Meyer and Dr. M. Grützmacher (acoustical).

JESPER HOM

1



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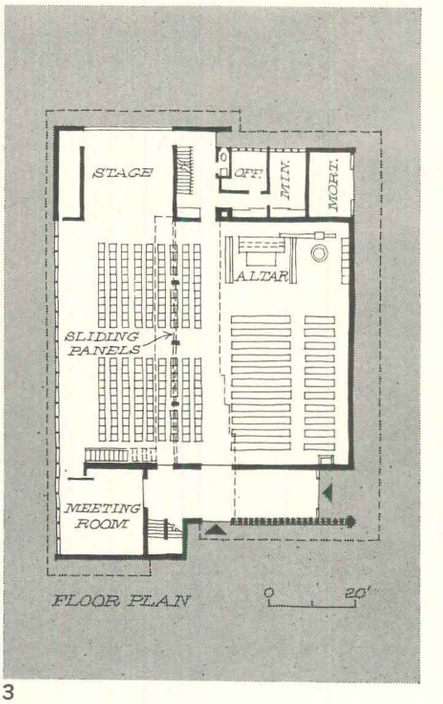


3

DENMARK: The cool serenity which seems a special province of Nordic architecture is exemplified by this small Lutheran church near Copenhagen. Designed by Architects Vilhelm Wohlert and Rolf Graal, the Stengard Church was recently completed to serve a community of postwar housing developments.

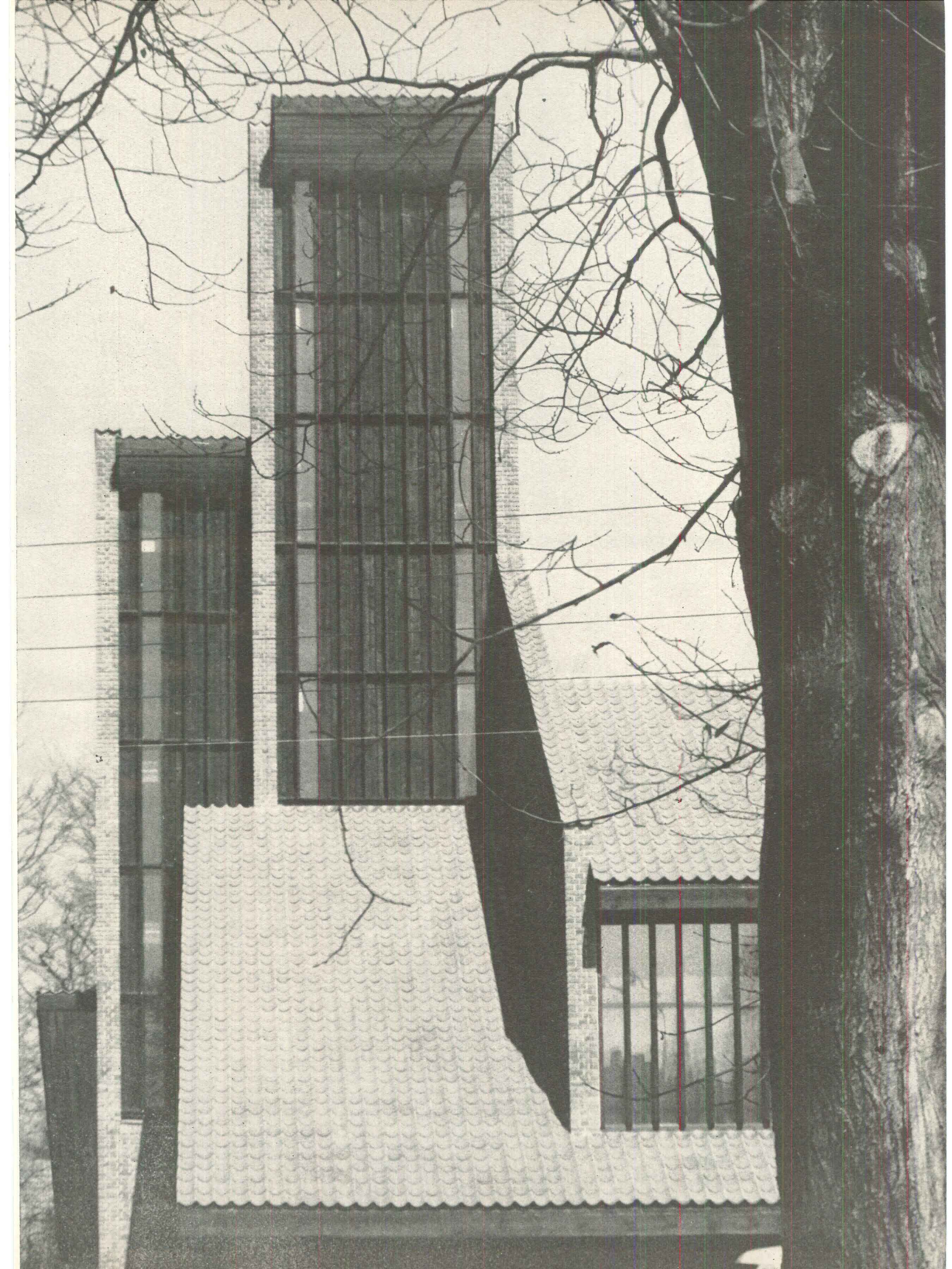
Mindful of ancient Danish churches whose towers formed the center of medieval townships, the architects created a strong, central belltower. It looms above the roof, intriguing the eye with its diagonal divisions, converging lines, and changing forms that are revealed as one walks around the church (right).

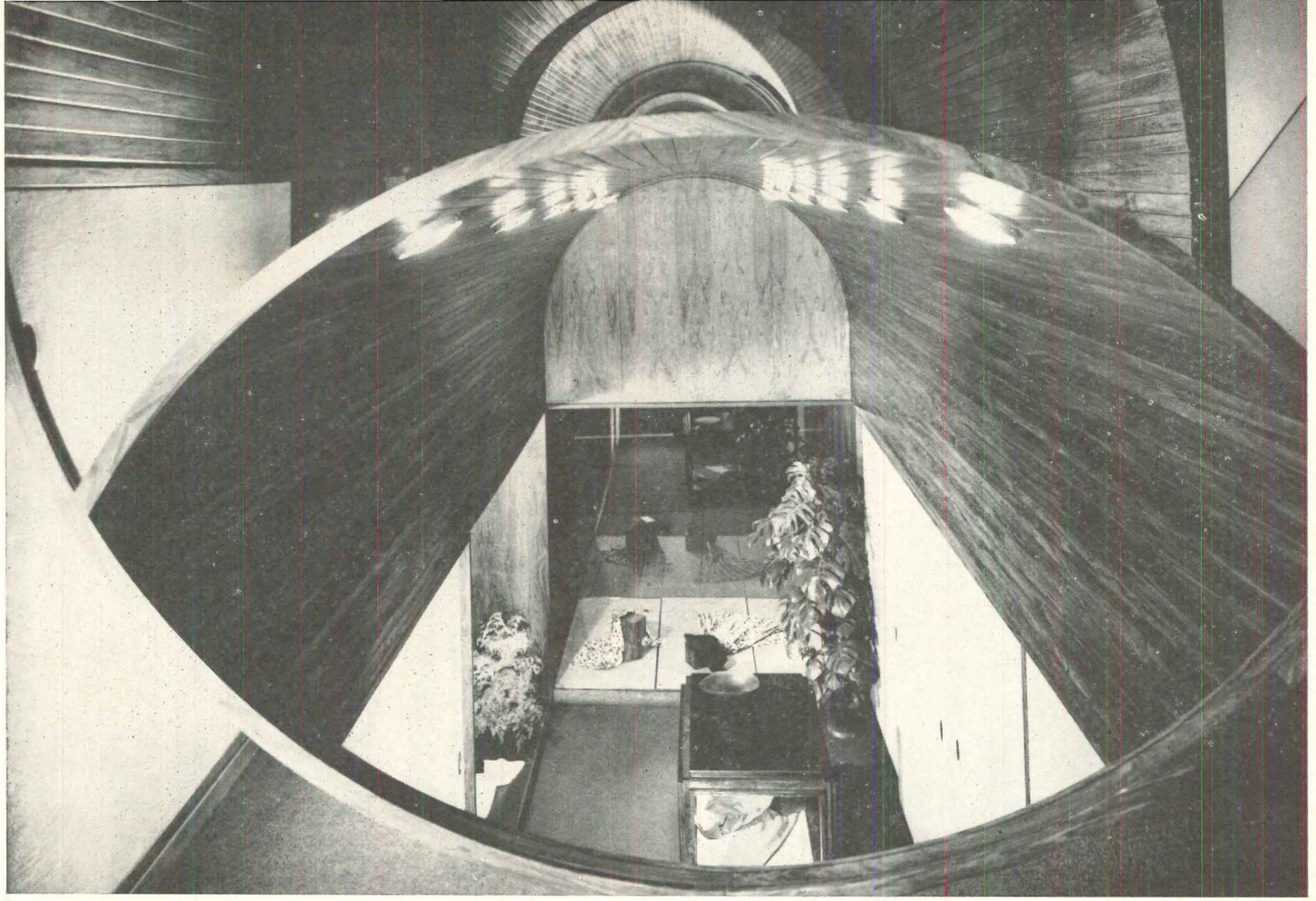
The prominent use of brickwork is patterned after medieval architecture. It has the added practical advantages of aging well and requiring minimal upkeep. In a search for other materials that would be kindly treated by time, the architects trimmed the exterior with wood stained black as protection against the humid Danish climate. All exposed concrete was kept indoors.

There are two doors into the church, one direct entrance for special Holy Days (1) and the other under a cantilevered roof on the side (plan, 3). Parishioners first pass through a vestibule, or "porch," before entering the main church beneath a balcony of exposed concrete (for the organ, choir, and overflow seats).

Sliding panels of unfinished pine divide the interior into a devotional area with fixed oak benches and an adjoining section with movable chairs which can be used either as an extension or, when closed off, as a community room. Walls are of rich red brick; the floor is covered with red tiles and pine lines the ceiling (2).

PHOTO OPP.: JASPER HOM





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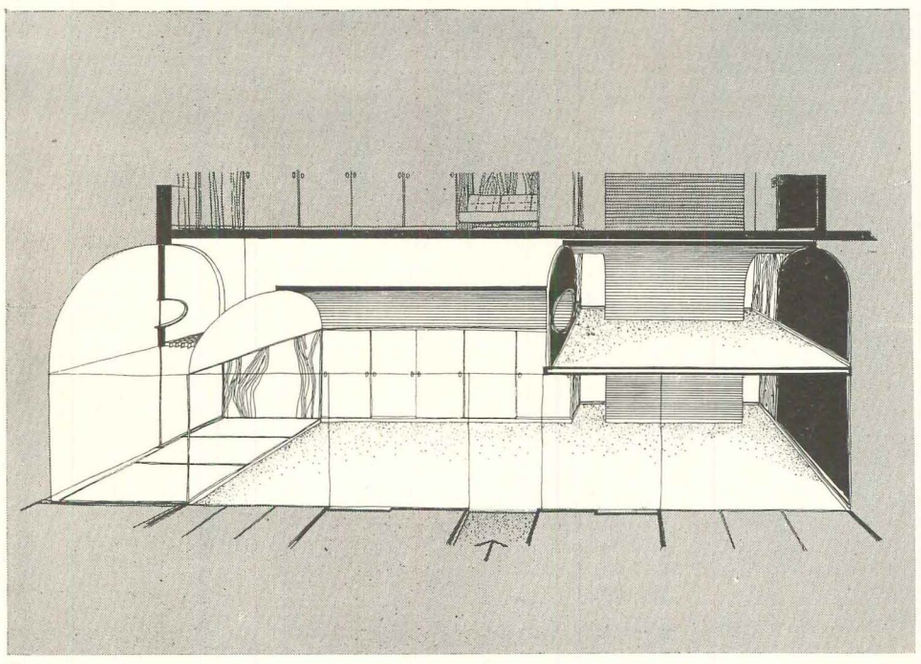

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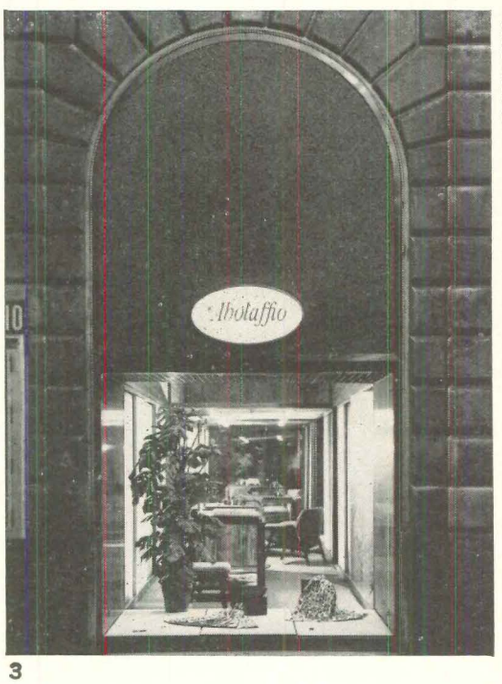


3

PHOTOS: BALLO

ITALY: This artful maze of mirrors could be the perfect set for a "New Wave" movie; actually it is an ingenious remodeling job by Architects Gianfranco Frattini and Franco Bettonica for a fashionable boutique in Genoa.

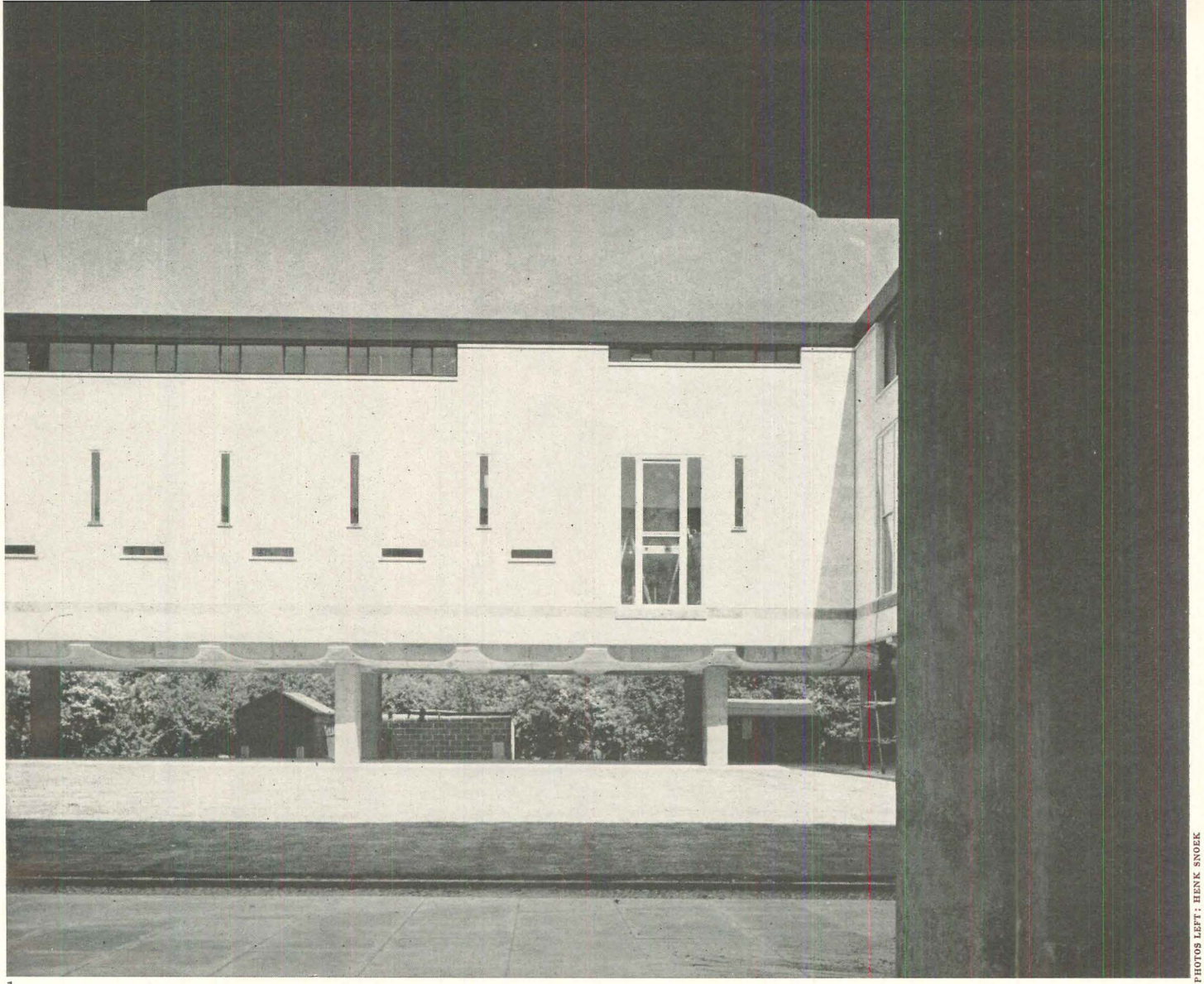
The shop occupies the first two floors of a venerable palazzo in the heart of the city. Before remodeling, the main floor of the narrow, vaulted brick structure had an unusually high ceiling which wasted needed space. A charming but inefficient winding staircase took up still more room.

The architects replaced the staircase with steps against one wall, leading up through a new mezzanine added at one end of the first-floor showroom (section, 2). Having added this working space, the architects next came up with a bag of mirror tricks to create greater apparent room in the small area, and to emphasize the shop's staggered wooden vaults.

To create more symmetrical proportions in the main room, they lowered most of the original vaulted ceiling, leaving only the portion covering the mezzanine unchanged. Their use of mirrors is especially effective at the point where the lower ceiling meets the higher mezzanine (photo left). The mezzanine railing is faced with a mirror cut out at the top to echo the curve of the vault overhead.

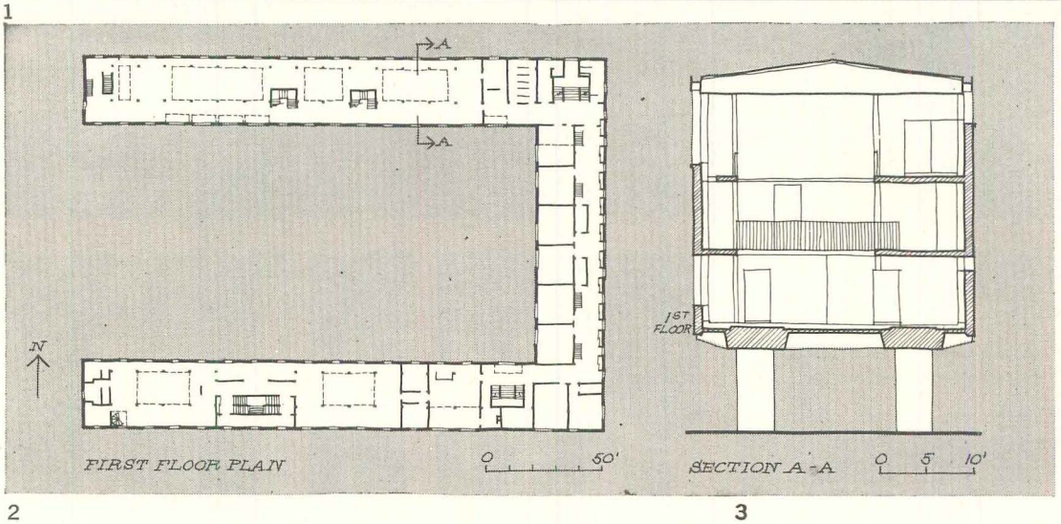
Looking down from above (1), customers see the ground floor and entrance through this eye-shaped opening, which has mirrors above and below it as well. Reflections here are further interchanged through mirrors lining the rear wall.

The arch motif is repeated over a deep show window on the side street (3), which provides a lengthwise glimpse of the interior.



PHOTOS LEFT: HENK SNOEK

1



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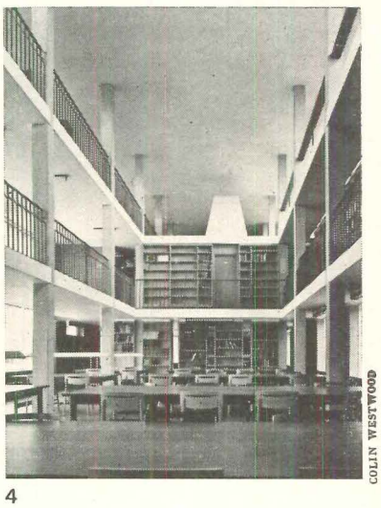


COLIN WESTWOOD

4

BRITAIN: The rugged contours of Cambridge University's new library, designed by Sir Hugh Casson, Neville Conder & Partners, seem as massive as the repute of British education.

The effect of brute strength (fast becoming a tradition in its own right in contemporary British architecture) is emphasized in the supporting structure (left) and deliberately focuses attention on the library, as the central building in the long-range Sidgwick Avenue Development Plan.

The great square pillars beneath the cantilevered second-floor slab stand widely spaced—at 36-foot intervals. A rough shot-blasted texture of reinforced concrete was used both in columns and slab.

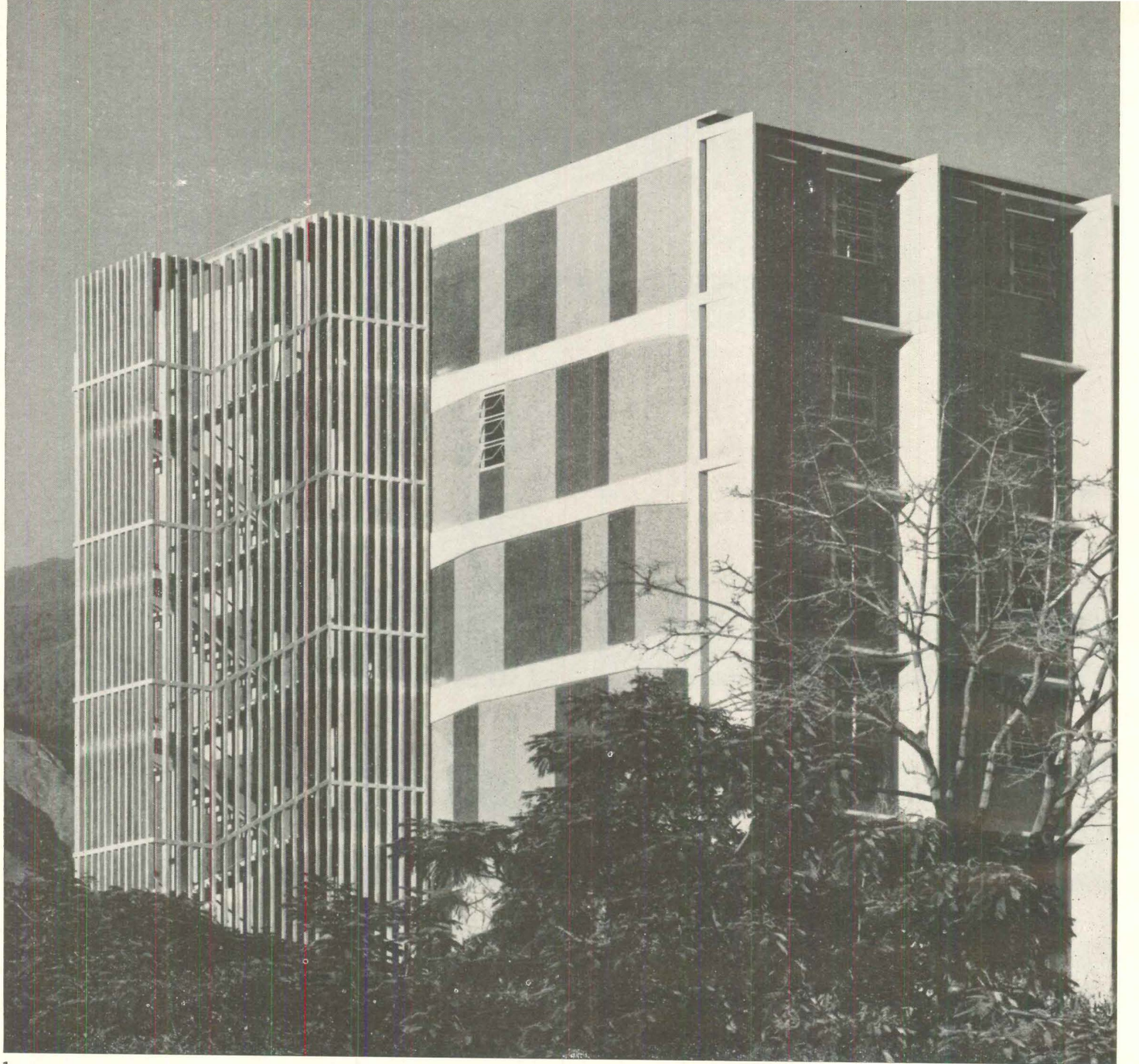
Shaped in the form of a large "C" (plan, 2), the building contains an undergraduate library for modern and medieval languages, a library for English and Moral Science studies, and some smaller seminar rooms and offices.

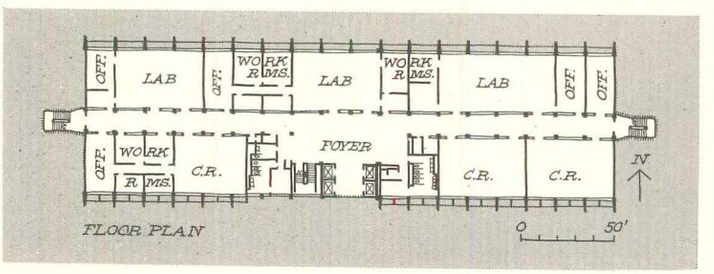
The three-story structure has been sharply differentiated from the lower arcades by sheathing the load-bearing walls in smooth Portland stone. The sight-lines from all windows are above the busy flow of pedestrian traffic passing through the arcades and across the courtyard (3). Atop the main wall is a long, unbroken line of clerestories with a lower level of slotted windows in an irregular, syncopated pattern (1).

Interior reading rooms are three stories high with open shelves running along the walls in tiers. Professors' offices on the top level help divide the study areas (4).

Architects (library and development plan): Sir Hugh Casson, Neville Conder & Partners. Engineers (structural): Jenkins, Potter & Bingham. General contractor: Johnson and Bailey Ltd.

1





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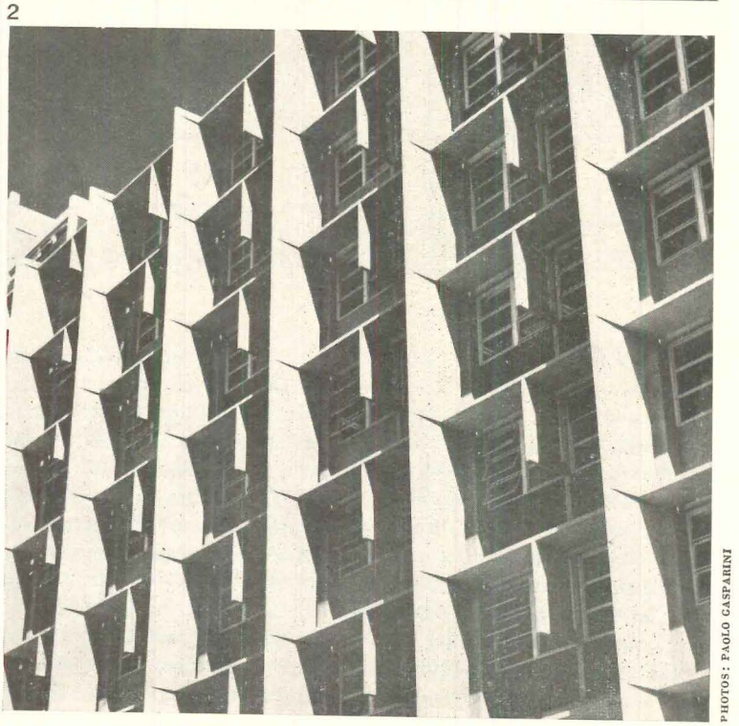
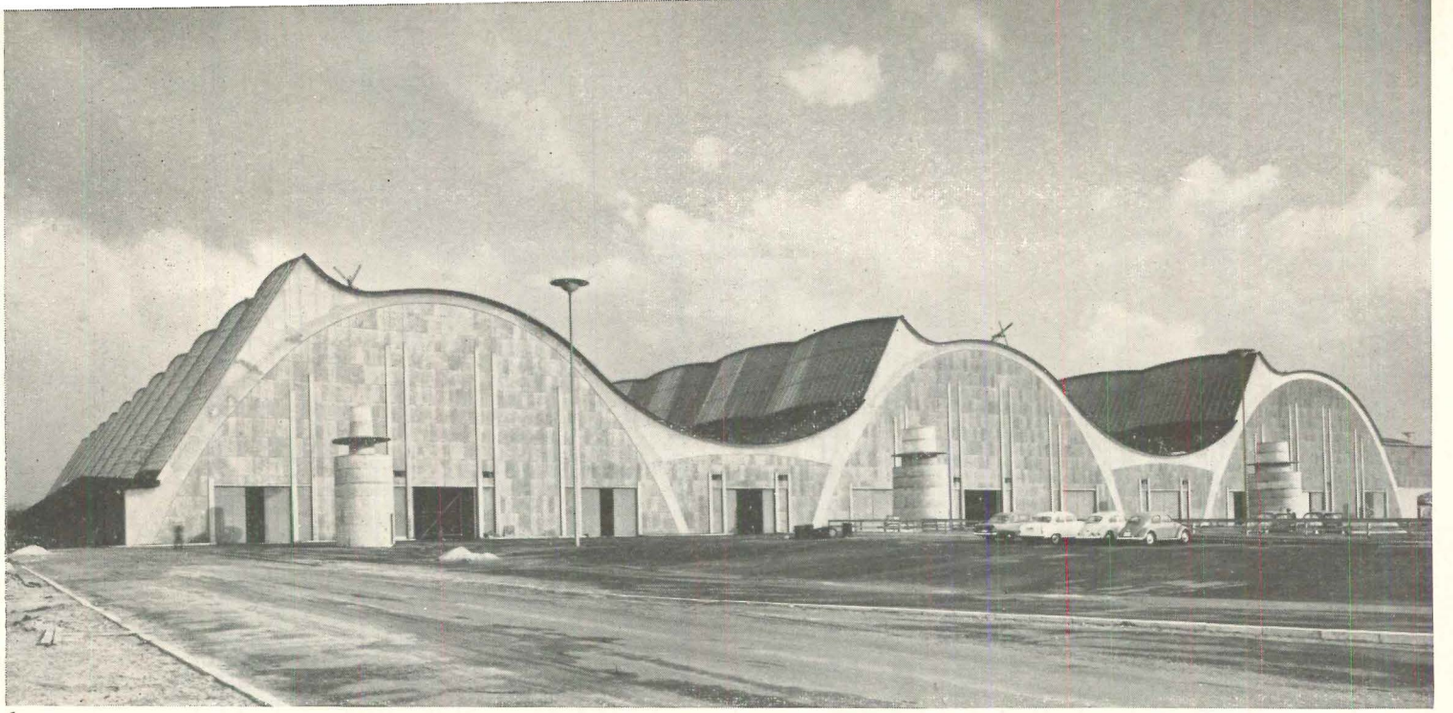


PHOTOS: PAOLO CASPARINI

VENEZUELA: Latin American architecture often has a verve and virtuosity which makes its northern counterparts seem cold. No exception is the new Pharmacy Faculty Building at Caracas' University City, designed by Architect Carlos Raúl Villanueva.

In a joyful play of line, shadow, and texture, an emergency staircase becomes a tour de force rather than just a necessary safety measure, its zigzag line of descent enclosed in a large-slatted cage (1). And instead of simply blocking sunlight, the architect covered the two long façades of the rectangular building with an intricate tracery of concrete sunbreakers and blinds (2).

The nine-story structure of unfinished concrete contains classrooms and laboratories; an additional wing is slated for use as a students' social center.



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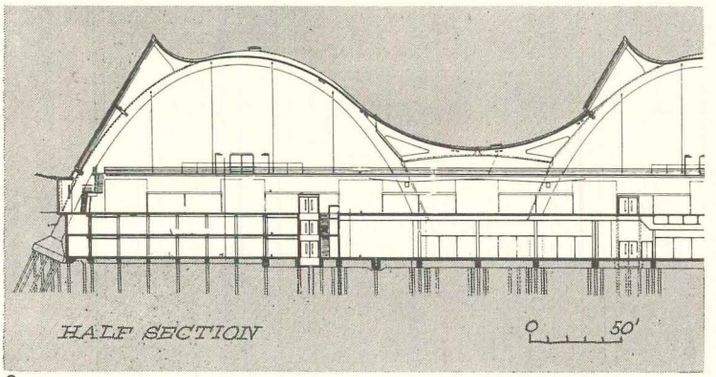

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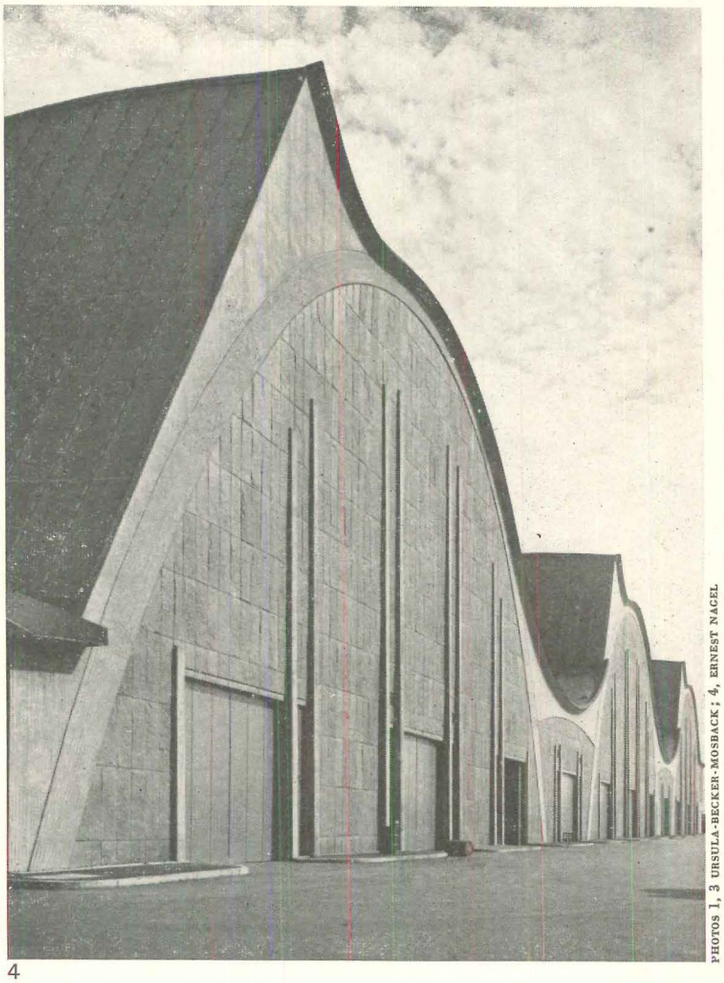


4

PHOTOS 1, 3 URSULA-BECKER-MOSBACK; 4, ERNEST NAGEL

GERMANY: This row of roller-coaster vaults covers Hamburg's vast new wholesale market, where 5,000 merchants sell enough fruit and vegetables for the 5 million people of Hamburg, Schleswig–Holstein, and Lower Saxony.

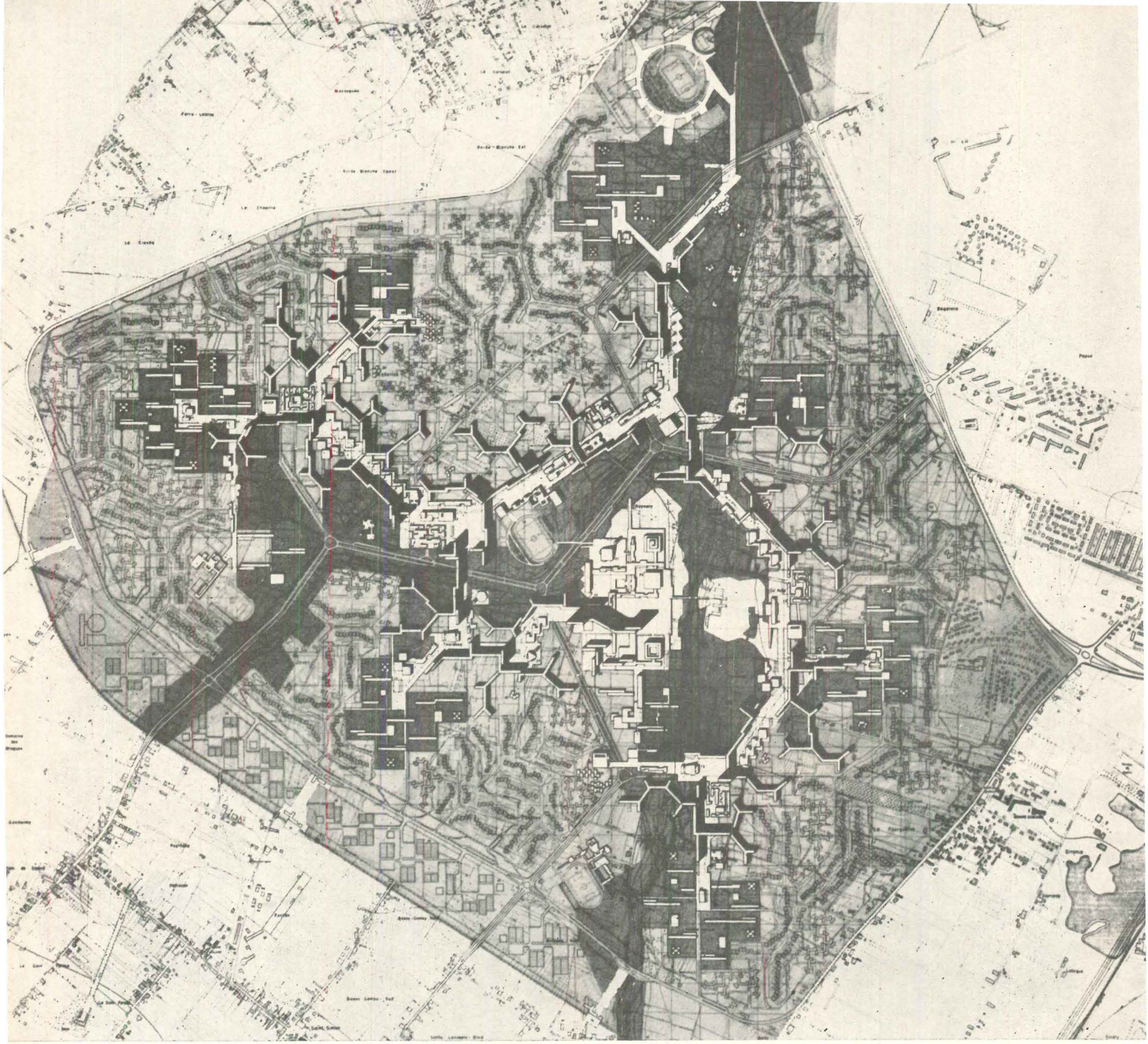
A competition-winning team of architects (Bernhard Hermkes, Gerhart Becker, G. Schramm, and J. Elingius) designed the trio of reinforced concrete vaults (1). Each spans 158 feet, is 70 feet high, and rests on twelve parabolic arches. The area covered by the market is so large (545,000 square feet) and construction was so complex that 3½ years elapsed before completion.

Situated on a 62-acre site, accessible not only to the city's center but also to docks and railway yards, the market's basement (used for storage) is below sea level. The floor slab and side walls are of waterproof concrete, built on 5,300 piles (section, 2).

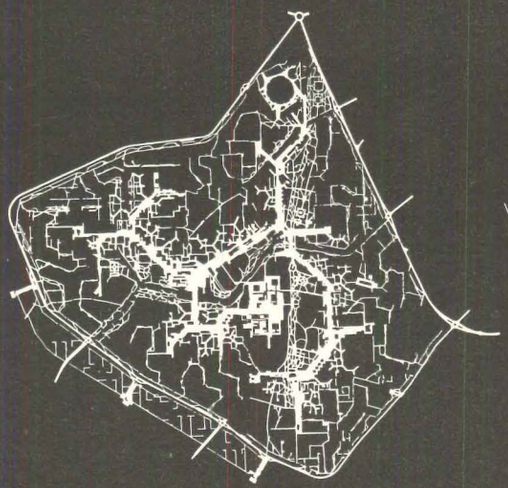
The shell vaults have an average thickness of 3 inches and were poured in place on a movable steel form. The 66-foot-wide scaffold spanned the area between parabolic supports and was moved longitudinally along the bays as each section was completed. Two months were required to pour each 66-foot span.

Inside, the great market-hall floor is divided into a series of grids, each covering 1,760 square feet and accommodating four stalls (3). The grids are created by 22 intersecting service roads. Glazed skylights rise to a point above each vault to provide natural light (4).

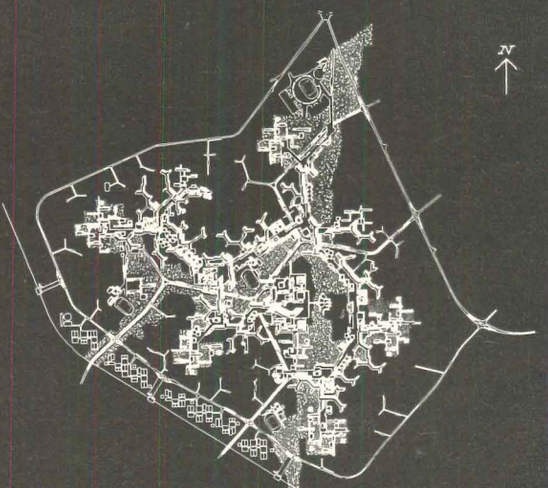
Architects: B. Hermkes, G. Becker, G. Schramm and J. Elingius. Senior engineer: Dr. H. K. Havemann. Contractors: Dyckerhoff & Widmann, Hermann Möller, Siemens Bauunion, Lenz-Bau.



VEHICULAR ROADS AND PARKING

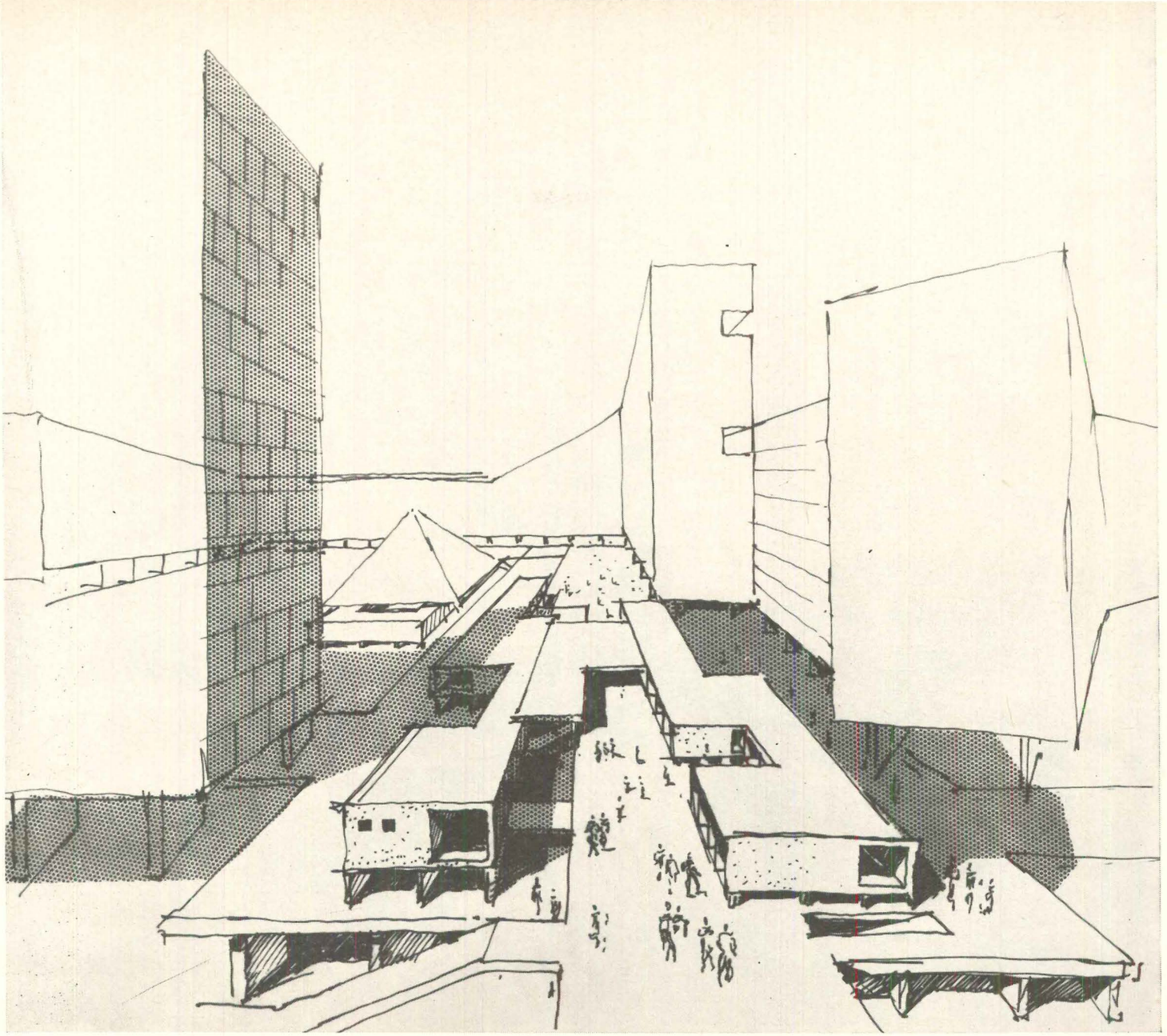


PEDESTRIAN STREETS AND PLAZAS



PRINCIPAL BUILDINGS AND PARKS

0 1640' APPROX.



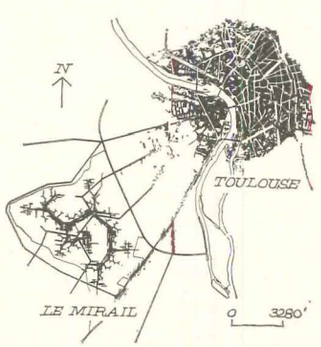
FRANCE: "They say that fortune smiles upon the audacious," said Louis Bazerque, mayor of Toulouse. "Our audacity has been rewarded. In the history of urban planning, a new landmark is established by this competition."

The mayor was speaking of the competition for Le Mirail, an entirely new satellite city for 100,000 whose first units are now under construction three miles from the crowded center of Toulouse. The winning scheme, by Candilis, Josic, Woods, Dony, Piot & Francois, amply justifies his enthusiasm: it has been hailed by Sigfried Giedion, among others, as a remarkable contribution to contemporary urban design.

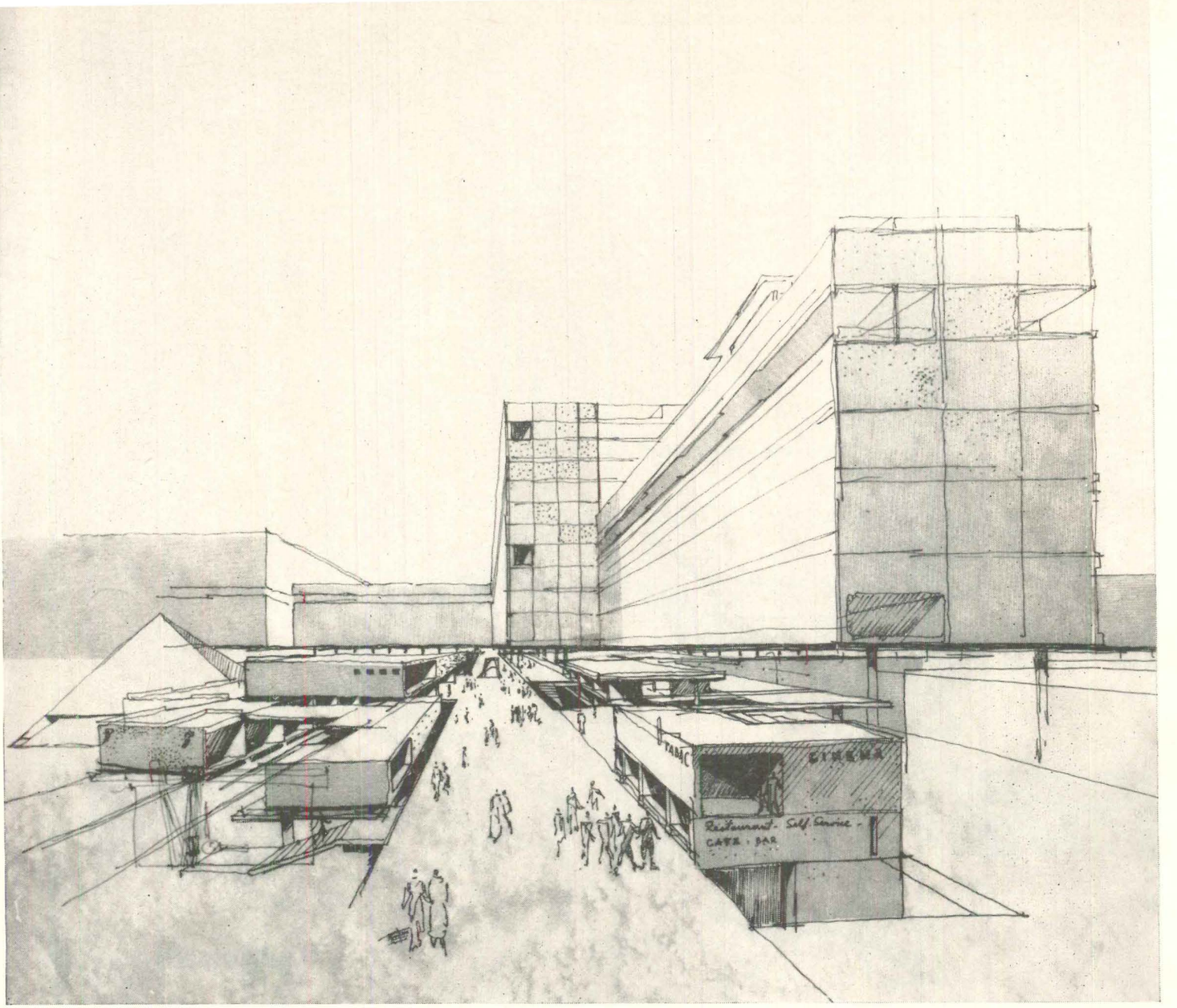
At the core of Le Mirail's tendrilous, multilevel plan (above left) is a regional center containing offices, public buildings, theaters, a museum, a shopping center, exhibition space, and meeting halls. Curling around this core, and extending outward to all corners of the 1,800-acre site, are a series of winding "stems": continuous pedestrian streets (above) lined with shops, markets, and community services, and flanked by clusters of schools. High-density apartments of seven, 11, or 14 stories, also continuous structures, rise above the stems and protrude from them in Y-shaped offshoots.

The irregular course of this skeleton of buildings is followed by wide rivers of green space, and the areas between are used for single-family houses and garden apartments. A strip of light industry occupies the southwest edge of the site.

The linear centers of life in Le Mirail will be totally free of vehicular traffic. The angular system of main highways, the vein-like network of feeder roads, and the series of garages serving the apartments and commercial buildings all will be sunken below the level of the stems (see diagrams at left). It will be possible to walk from one end of the site to the other without once crossing the path of an automobile.



Le Mirail was conceived as a bold response to a population problem that had reached the status of emergency. Toulouse, located on the main route from Spain and Africa to Paris, has been flooded with Frenchmen from Algeria, Morocco, and Tunisia; their influx, combined with a steady industrial expansion, has pushed its population from 270,000 to an estimated



FRANCE—LE MIRAIL (cont.)

350,000 in eight years—with the end still far from sight. Instead of allowing Toulouse to become still more bloated, the mayor and his cohorts decided to create a separate subcity, joined to the parent community but complete in itself. They also decided to hold a two-stage, nationwide competition for its planning and design.

The eventual winners are closely identified with "Team 10," the loosely organized group formed in 1956 to continue the work of CIAM. Le Mirail's plan has its conceptual base in the ideal cities of Le Corbusier (notably his 1930 plan for Algiers, combining highway and community in a single serpentine structure), their further systematic development in the urban theories of CIAM, and, finally, the more recent search of "Team 10" itself for an alternative to the cellular approach to city design.

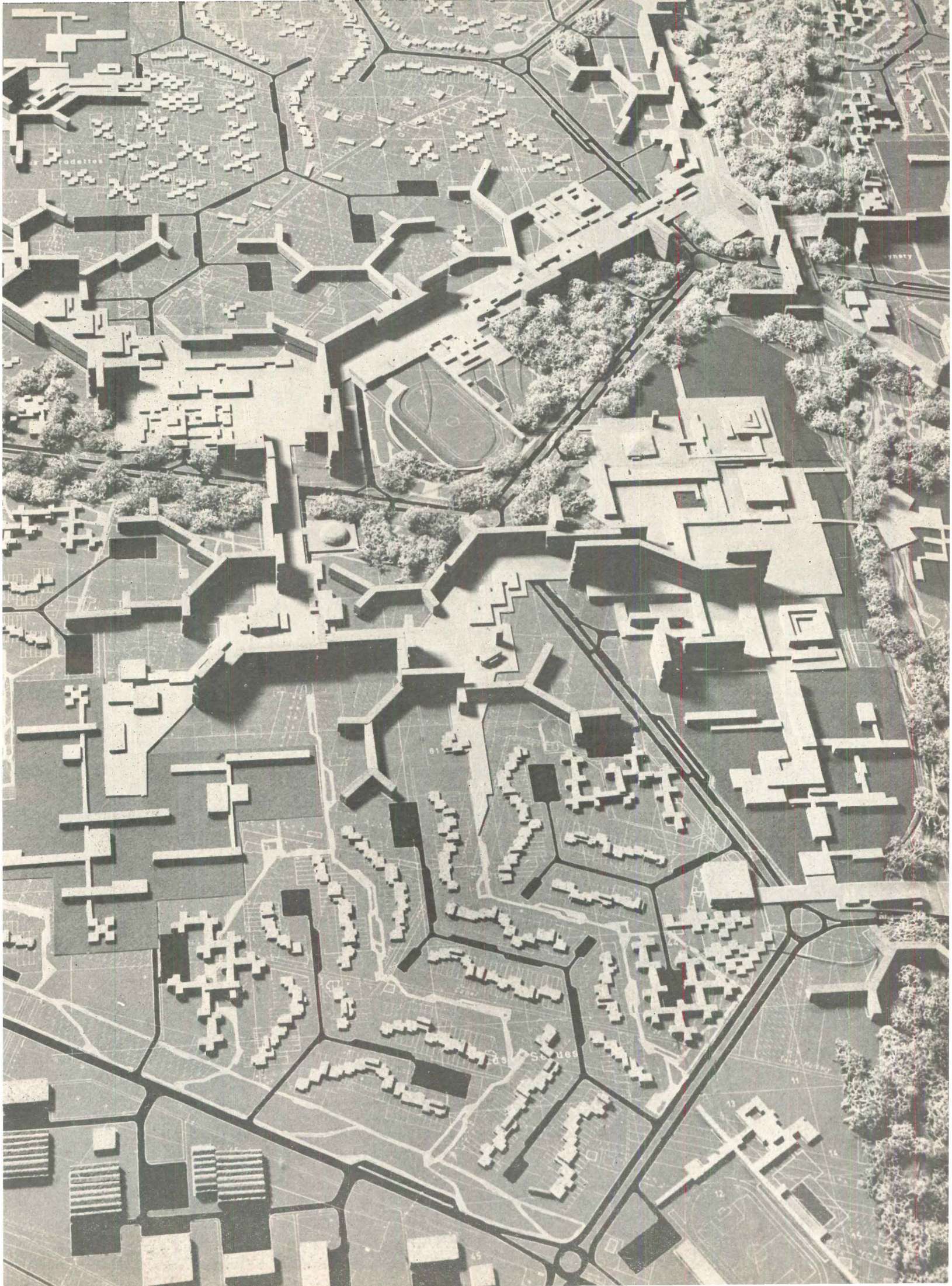
One result of the last was the concept of "stem," expounded by Shadrach Woods of the Le Mirail planning group in the May, 1960, issue of *Architectural Design* and later incorporated in the so-called "Team 10 Primer." To paraphrase Woods, the trouble with cellular plans is that the cells keep growing outward from the fixed core, with each layer becoming that much more isolated. Woods proposed that the core's components —commercial, social, and cultural facilities—instead be stretched along a linear stem, whose extensions and branches could follow the direction of growth, bringing a sense of community life with them. The idea of the street as a *place* rather than a vehicular passageway is inherent in the idea of stem, Woods pointed out.

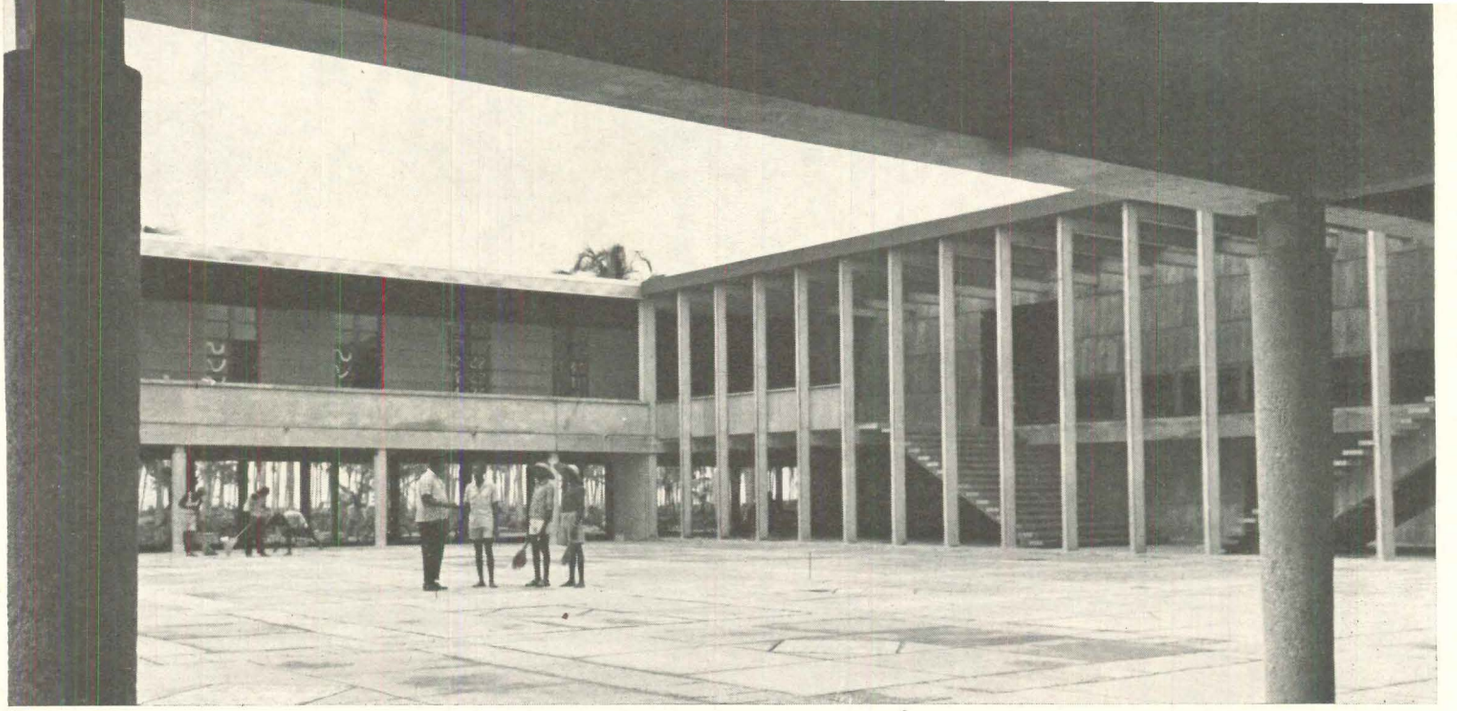
The growing literature of urban design is full of such broad-scale, promising theories. The difference is that in Le Mirail, the concept has emerged from the test of competition—and will actually be built. The first residents of Le Mirail will move in sometime near Christmas, 1964. Initial construction will consist of 2,000 dwelling units, scheduled for completion in 18 to 24 months.

Eventually, there will be 25,000 units, three-quarters of them in the high-density apartments. The cost of realizing the present plan is estimated at $290 million, 60 per cent of which will come from government banks and the remainder from private sources. If all goes well, LeMirail, as presently conceived, could be a reality in 10 to 15 years.

There will, of course, be changes along the way. Perhaps the most striking feature of Le Mirail's plan, however, is that it almost calls out for change, for adaptation to the kind of natural urban growth that no amount of long-range planning can precisely forecast. With its moving, reaching stems and tendrils, Le Mirail is the direct opposite of the closed urban composition.

PHOTO OPP.: YAN





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2

PHOTOS: MARC & EVELYNE BERNHEIM—RAPHO GUILLUMETTE PICTURES

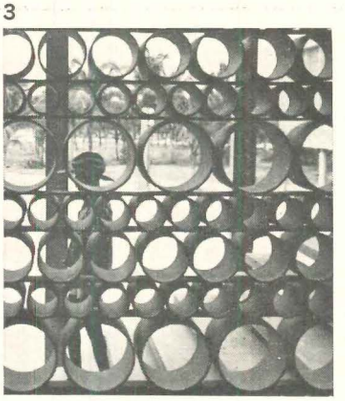
DAHOMEY: The new importance and self-respect of Africa's emergent nations is reflected in this court house in Dahomey's capital city of Cotonou. The building achieves appropriate dignity through a symmetrical plan and regularly spaced columns. Its two-story plan is U-shaped, enclosing a great open plaza (1), with courtrooms at the center of the U and offices in the two parallel wings.

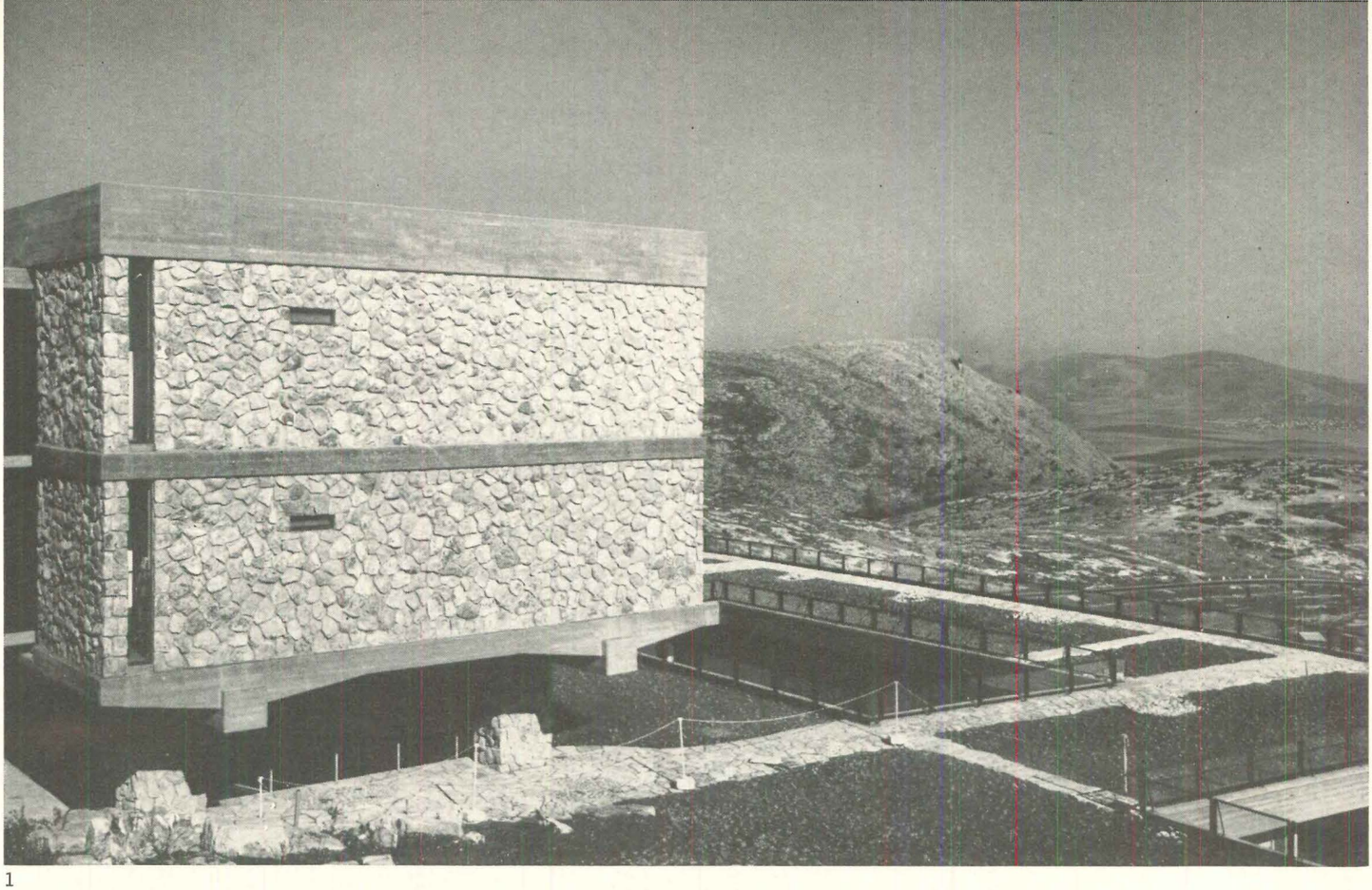
At the first-floor level, the wings are left open, raised off the ground on slender columns. Balcony-corridors line the plaza, protected from sun and rain by deep overhangs. Freestanding stairs (2), unencumbered by the slightest handrail, lead to the colonnaded second-floor porch.

To combat extreme tropical heat, the building abandons the African tradition of heavy single walls for double layers of thin concrete and roll-down shutters for the windows. The double walls have ventilated air spaces between them so that heat build-up will be dissipated rapidly at night.

Though formal, Dahomey's new court house is animated by several spirited touches: balcony grilles made of sawed-off metal pipes (3), a trademark of the architect; shutters painted blue, and pebble mosaic walls. Cost: $400,000. Architect: Henri Chomette.

3





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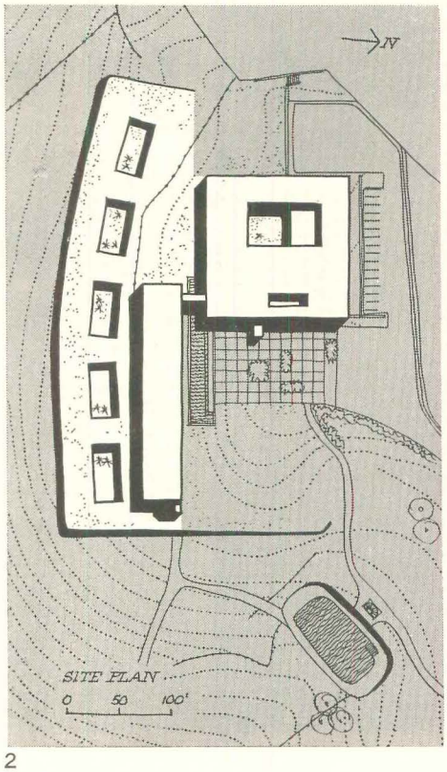

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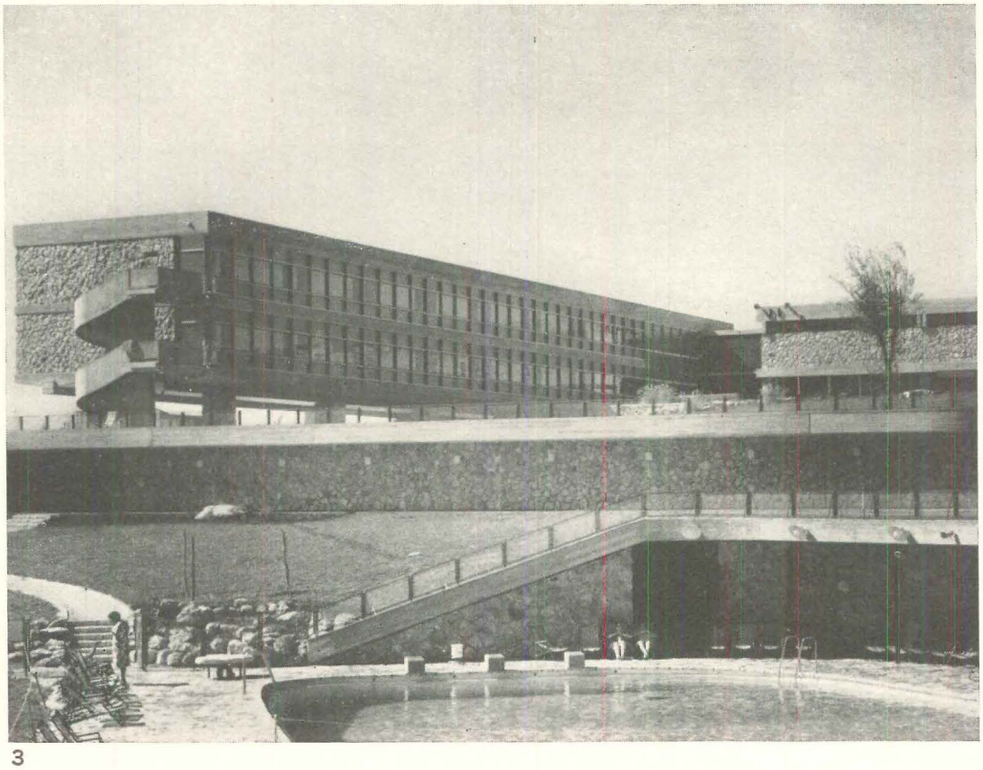


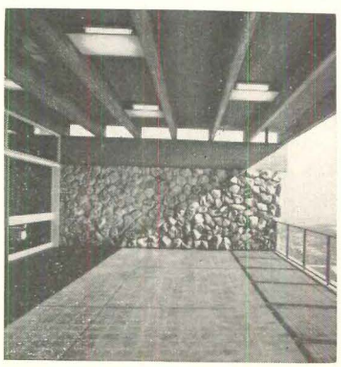
3

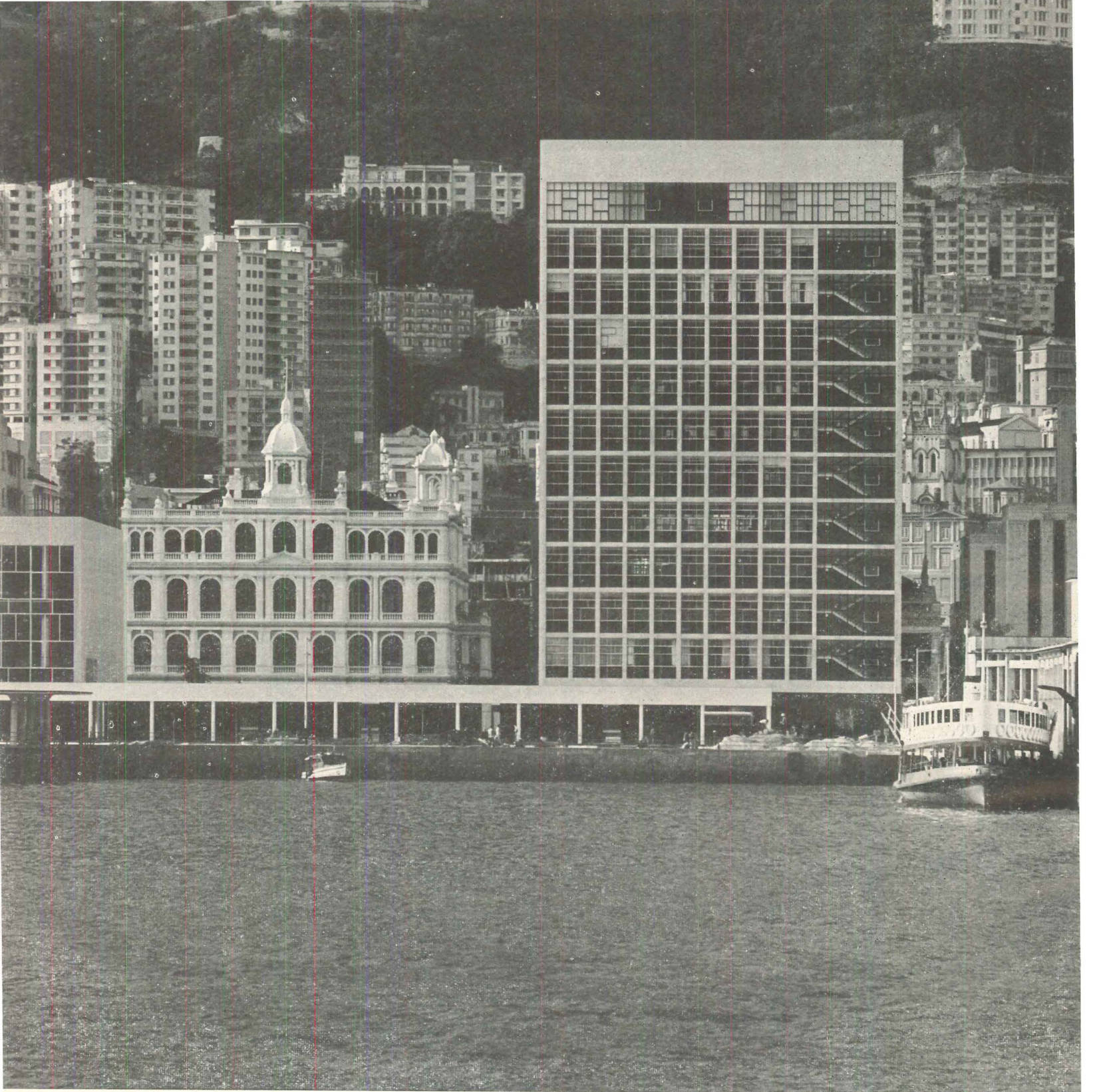
PHOTOS: I. KALFER

ISRAEL: Local fieldstone and raw concrete, two of the most popular building materials in Israel, help make this new rest home seem a natural outgrowth of its ruggedly beautiful surroundings. Located on a spectacular hillside site in Nazareth, the complex consists of three buildings, organized like a small hill village to make the most of sweeping views out over the valley. It is reached by car from a road which ends in a parking lot on the high side of the site.

The squarish main block (2) contains offices, recreation facilities, and a dining room which opens on a large, airy terrace (4). It is connected by a glassed-in bridge to a long two-story bedroom wing, raised on columns (1, 3). All 40 rooms in this wing face out on the valley. Further downhill, forming a platform for the other buildings, is a pavilion wing consisting of groups of bedrooms alternating with open, landscaped courts (2). The pavilion wing is divided into five units of six bedrooms each and will be used only in summer. Its roof is covered over with earth and planting. Off to one side a natural crater has been turned into a large swimming pool. Cost: about $1 million, or approximately $17 per square foot. Architects: Rechter, Zahry, Rechter.

4





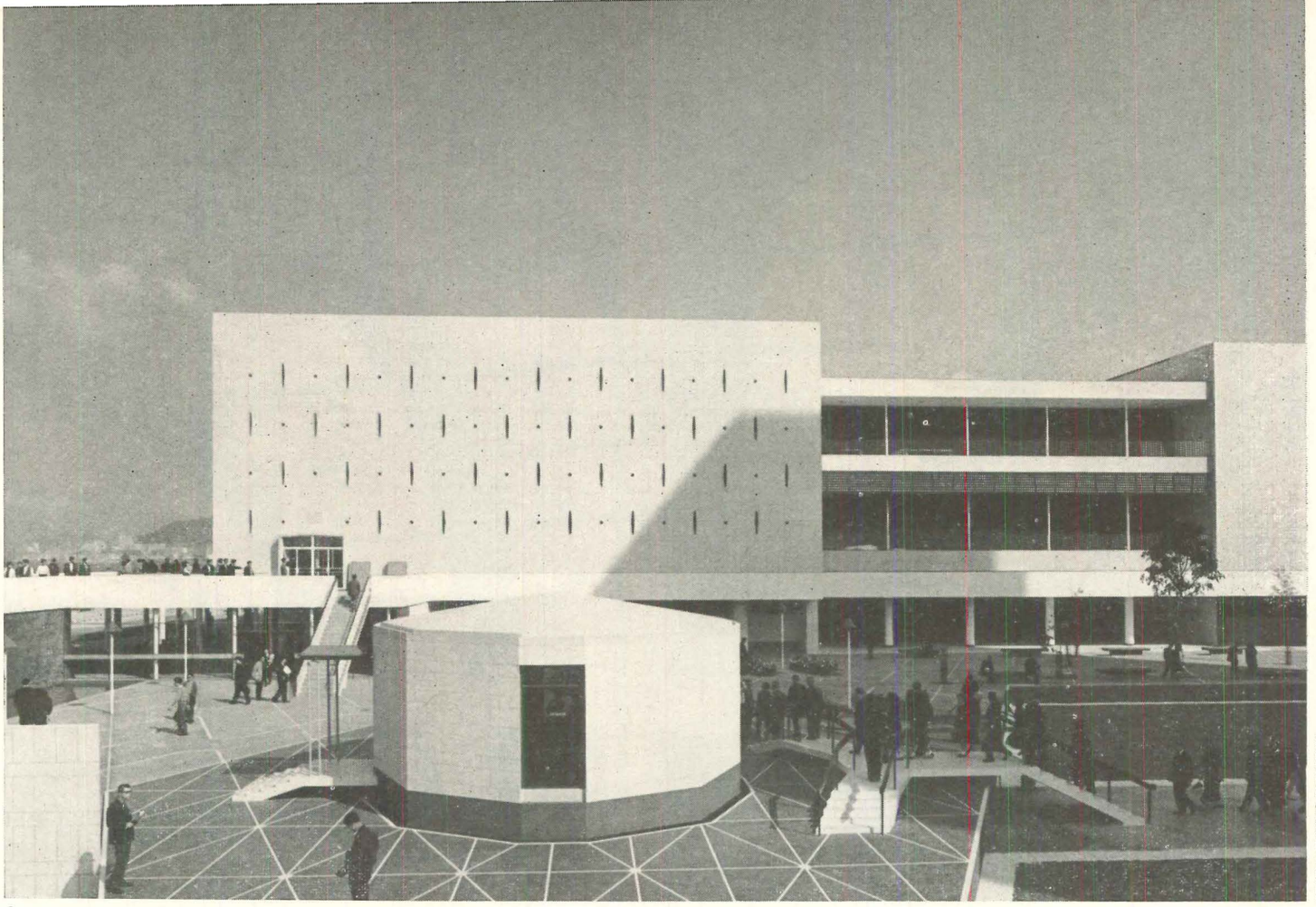
1

HONG KONG: Rising tall and razor sharp above Kowloon harbor, the "high block" of Hong Kong's new city hall is etched in lively contrast to older colonial buildings behind (1). The tower's fine, stark grid encloses offices, libraries, and exhibit rooms, with a marriage registry below and an art gallery on top.

Set on reclaimed land near the ferry that links the island with the mainland, the new city hall is actually a full-scale, well-unified civic center of which any community might be proud. Its focus, below the tower, is a garden plaza (2) containing a polygonal shrine to members of the Hong Kong volunteers who died in 1941-1945. Seen behind this are the patterned granite walls and balconies of the low cultural block, which conceals a main foyer leading to a 1,500-seat concert hall, a 467-seat theater, and banquet and ballrooms on the upper levels (plan, 5). Outside steps ascend to the ballroom balcony (3), and to a view-level walkway around the plaza.

Inside, the big concert hall (4) has been declared acoustically near-perfect by the visiting London Philharmonic. The whole center, in fact, has proved a great local success. It has also won the recognition of more remote British critics: "In most parts of the Commonwealth," noted the *Architectural Review*, "the initials PWD (Public Works Department) have come to be associated with dreary, routine official architecture. In Hong Kong, it is not so."

Architects: A. Fitch and R. .J. Philips, of the colony's PWD. Engineers: S. L. Au, S. C. Kung, H. K. Lee (structural); W. J. Hampton, H. K. Lee (electrical); J. Lim, A. J. Gayne (mechanical); H. Creighton (acoustical).



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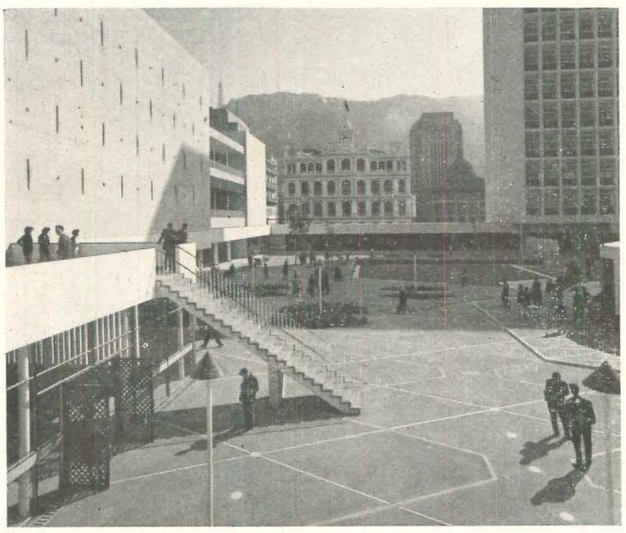
PHOTOS: RONDAL PARTRIDGE



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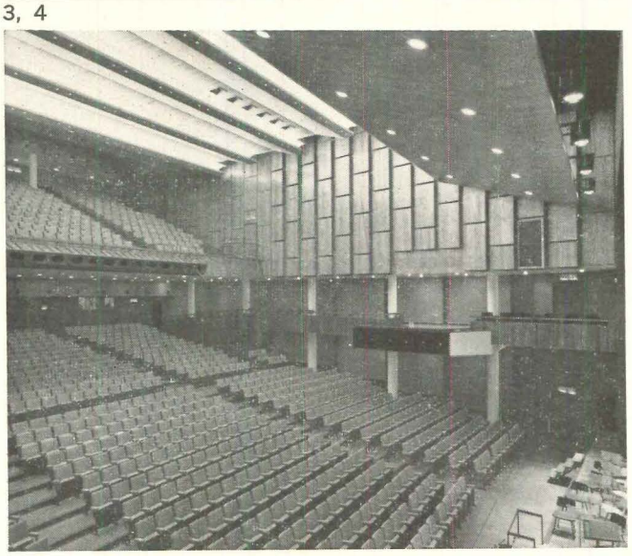

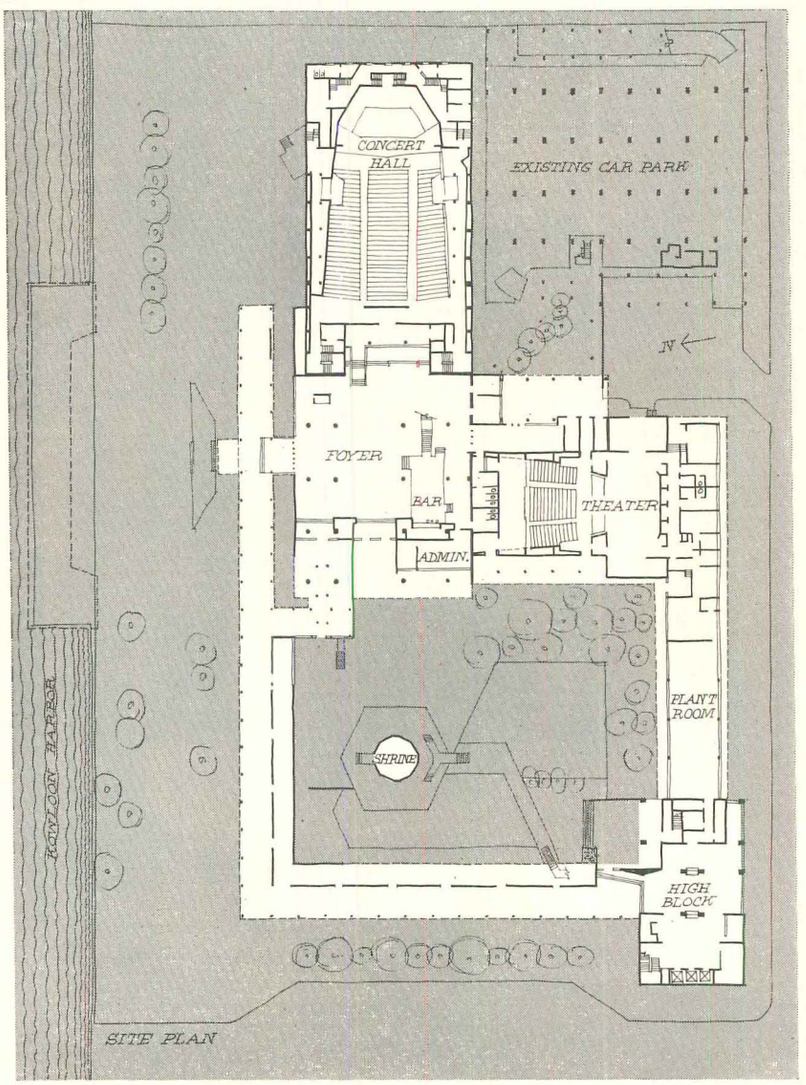

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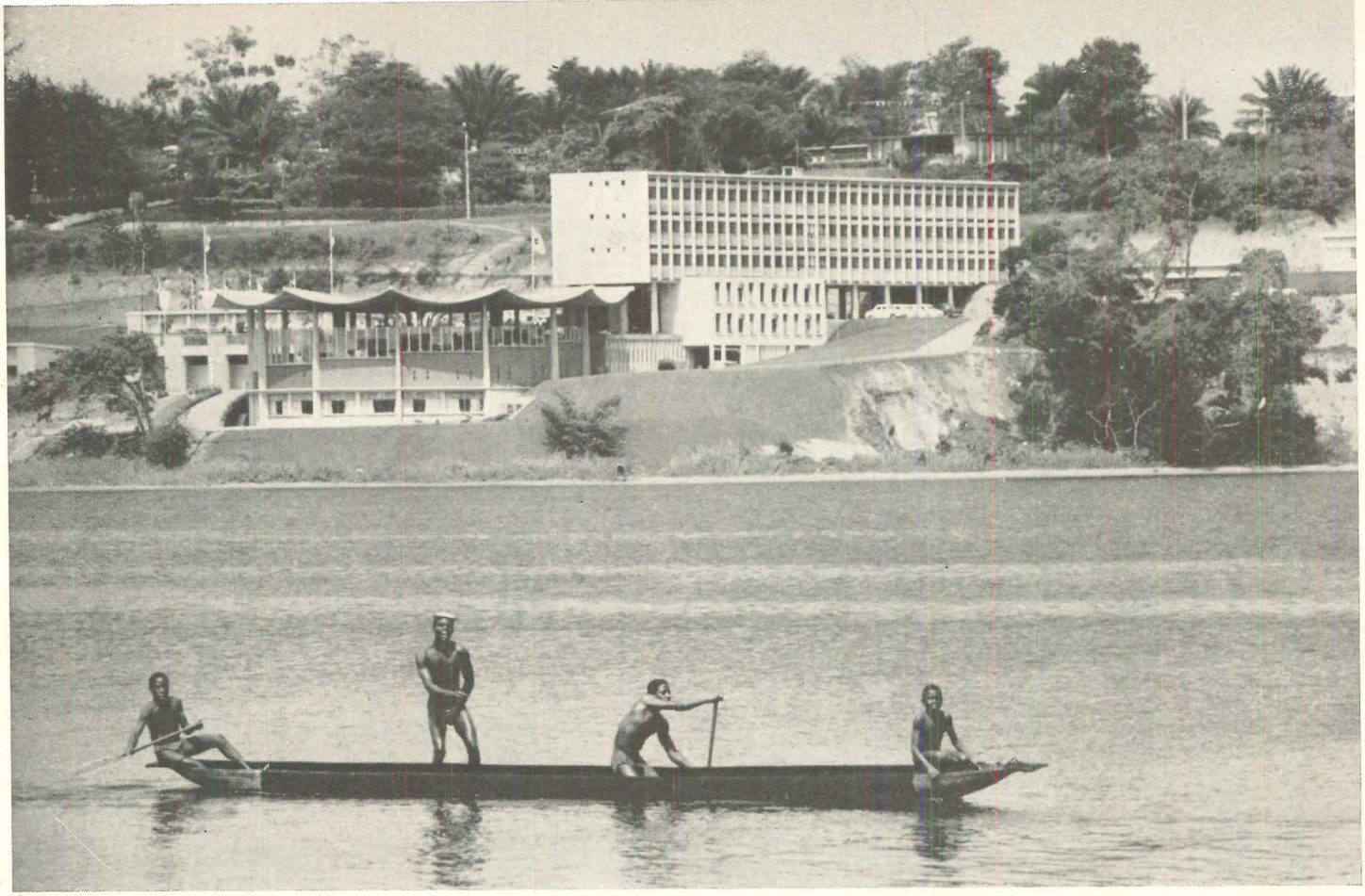

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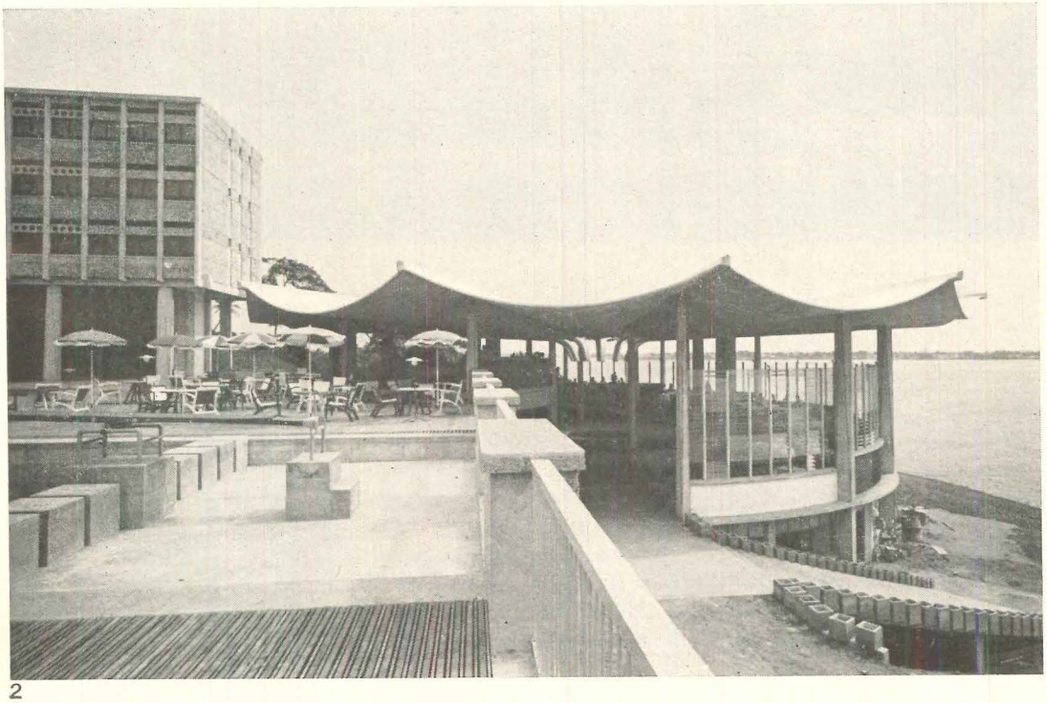

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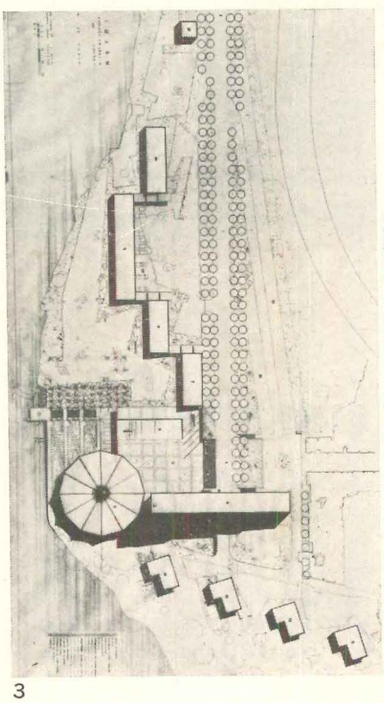


3

PHOTOS: MARC & EVELYNE BERNSTEIN—RAPHO GUILLUMETTE PICTURES

IVORY COAST:

The dramatic, tentlike restaurant shown at left is part of the new Hôtel Relais Aériens de Cocody in Abidjan, capital of the Ivory Coast. The thin-shell concrete roof is open at the center to provide a skylight over an interior court. Great sculptural downspouts hang down into the court, emptying the rain water into a small central pool. Diners sit at the perimeter of the glassed-in space on a spiral ramp which was designed to give unobstructed views out over the Ebrié lagoon from every table. Diners may enter the restaurant from either the high or low end of the ramp.

The hotel offers guests three classes of accommodation: tourist, first-class, and luxury. Tourist-class guests are housed in the main building, which contains 58 rooms on three floors (1). Made of reinforced concrete, the hotel is 177 feet long and faces east and west so that rooms on both sides have views of the lagoon. Together with the wheel-shaped restaurant, the main building helps mark off a large, paved plaza (2) which leads to landscaped terraces on several levels. Twenty-seven more guests can be accommodated in one-story, motel-like units (first-class) or individual cottages (luxury). These quarters are located along the curving shoreline, on either side of the main building and restaurant (plan, 3).

Primarily because of inexpensive labor, the cost of the hotel was only $640,000, or about $7,500 per room (compared with a big-city standard in the U.S. of over $21,000 per room). Owner is the Société Hôtelière des Relais Aériens, a chain which operates 25 hotels throughout Africa. Architect: Henri Chomette.

1 HANS PETER BAUR

SWITZERLAND:

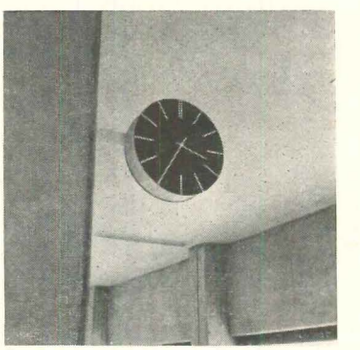
While today's collaboration between architects and artists has reflected something of the frenetic competitive atmosphere which pervades business, there has also been a less conspicuous but very solid development. It has to do with some of the special problems created by contemporary architecture.

Aside from a few memorable antiques like the Pyramid of Cheops, there are few large objects in existence quite as bald and naked as a major modern building. In such a structure the smallest flaws in detailing show up with exaggerated clarity for the simple reason that there is nothing else to look at. The door pulls at the bottom of 30 stories play a role all out of proportion to their functional significance: if poorly designed, they become an error which can be spotted from blocks away. Signs, containers, control devices, lighting fixtures, elevator cabs, and a host of previously inconsequential details now play a new visual role of critical importance. Since architects are not always geared to handling the design of hardware and other small items, and rarely concern themselves directly with problems of graphic design, a new type of collaborator has begun to enter the picture. He is more frequently identified as a designer than as an artist, and he plays out his role independently of the painter and sculptor.

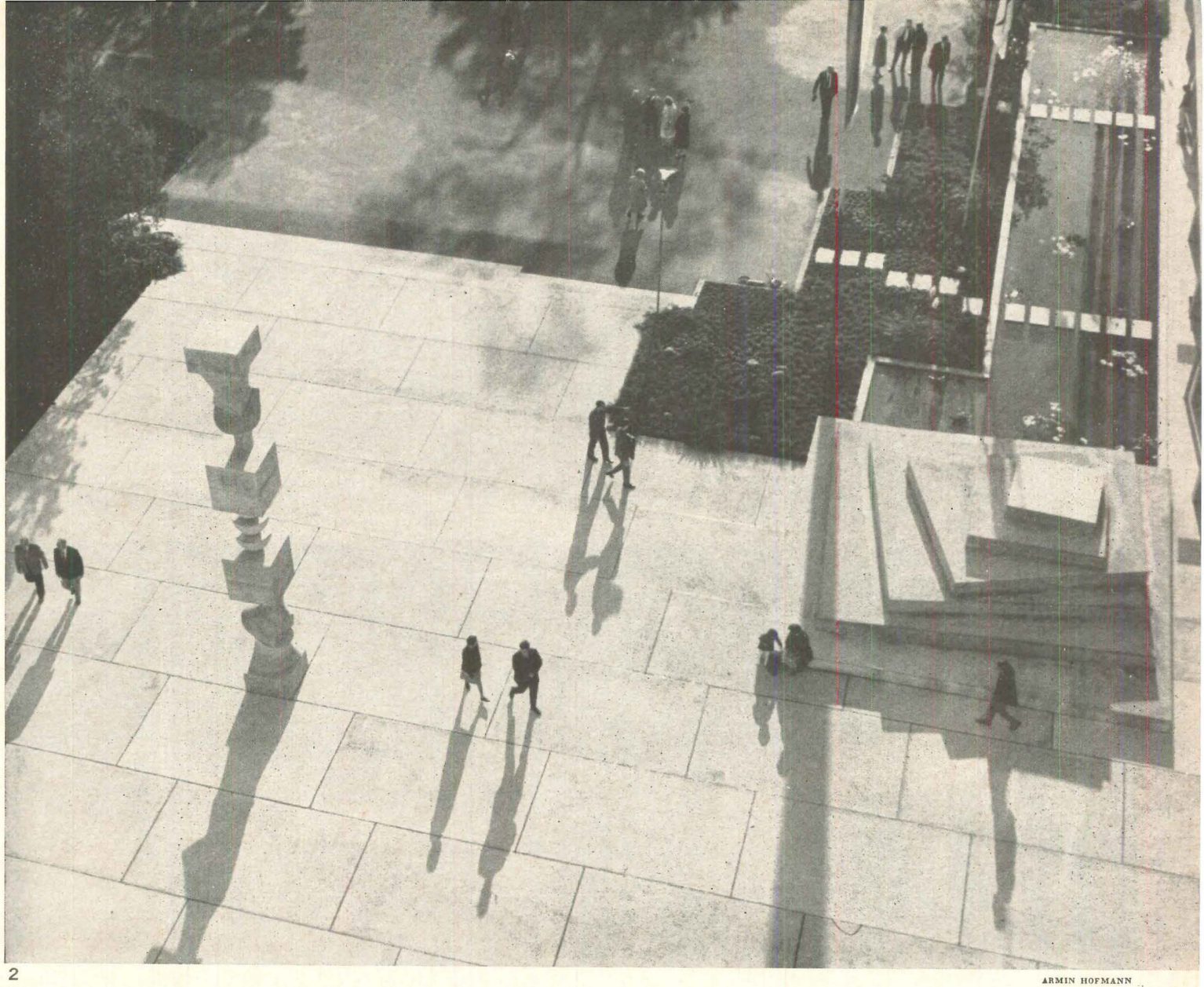
This is the second in a series of articles on aspects of European architecture written for FORUM *by George Nelson, noted architect and industrial designer. The first, on French expertise with glass, appeared in Nov. '62.*

My current favorite as an example is the new Gewerbeschule in Basel (1), a cluster of buildings designed to handle some 5,600 students in the applied arts and crafts. It illustrates both types of collaboration (designers and artists) and the whole thing is so quietly unified that one gets no feeling whatever of parts added to an architectural composition. Part of this generally muted quality is certainly due to the Calvinistic Swiss temperament, which abhors anything bordering on flamboyance, but one also senses that the architects, designer, and sculptor saw eye to eye on the desired character. The project, as a result of bureaucratic diddling, was almost a quarter-century in the making, and one wonders how the architects kept their frustration and boredom from showing.

The design for the school began as a competition in which 43



3, 4 SMALL PHOTOS: GEORGE NELSON



2

ARMIN HOFMANN

architects participated, and this was followed (in 1940) by a closed competition in which the five prize winners developed their ideas. It was won by Hermann Baur of Basel. In 1943 the authorities decided that the project was oversize and too expensive (9 million francs) and it was put aside. Between 1948 and 1950 the school was reduced by 25 per cent in cubage, but the cost for the smaller building was now double that of the first. A third pass was made in 1953, and nine years later the project was completed at an overall cost of almost 25 millions. There is probably a moral in this sad little tale, but it applies only in periods of inflation.

Through the years Baur managed to hold on to the planning concept which had won the competition, and the complex as completed looks as fresh and crisp as if none of the delays had occurred. Concrete appears both inside and out as the prime material, but due to the vigorous handling of the building blocks and superlative craftsmanship the effect is that of a project on which no necessary expense has been spared. The look of quality is typical of Swiss building, reflecting the attitudes of a nation of prudent investors who tend, in general, to be interested in the long pull. "Our most mediocre buildings," one architect remarked to me, "are put together as if they were masterpieces."

The two main forms of collaboration which exist today are both clearly indicated in this project. The designer's job has to do with "necessary" items: if people have to know what time it is, he designs the clocks; when a visitor comes, there have to be signs to tell him where to go. Such functional elements (3, 4, 5, 6) were handled by Armin Hofmann, a faculty member and one of the most sensitive of the Swiss graphic designers. But Hofmann also went on to produce a series of concrete and wood bas-reliefs which appear both inside and outside the building (7, 8, 9). His distorted pyramid, a popular sitting place for students (2), doesn't quite meet the description of either architecture

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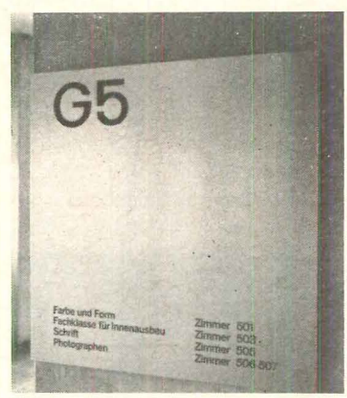


6

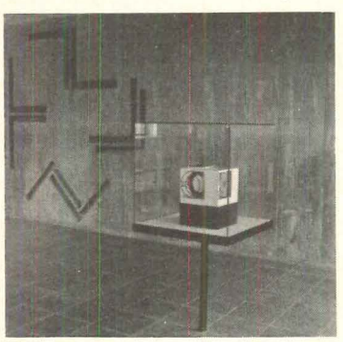
or sculpture, but it makes a real contribution to the interest of the courtyard and might be thought of as a natural expression of a collaboration in which architects, designer, and sculptor worked easily and naturally together without too much concern for areas of specialization.

The sculptor, Hans Arp, produced three pieces: a screen by

7

ARMIN HOFMANN

the entrance (opposite), a free-standing wall, (10) and a column (1, 2). The last plays an extraordinarily important part visually, so important that after one has visited the school a few times it gets very hard to imagine the big court without its focal point.



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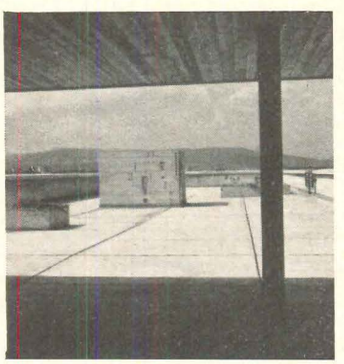
The column, in some curious way, exerts a pressure all out of proportion to its size, acting as a kind of radiator of energy, enriching the severe façades by



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which it is surrounded, giving the concrete walls new importance by its use of the same material, and loosening up the rigidity of the building walls through its lively combination of geometric and organic forms.

One wonders, on this exposure to Arp's work as a component of an architectural scheme, how it happened that his extraordinary talents have been so rarely used for this purpose. It is hard to think of another sculptor better fitted to handle this kind of problem. It is said that the city of Basel paid $2,400 for Arp's three pieces, and if this is so, it was the biggest bargain of the decade.

If there is a lesson to be derived from this school project, it is not that the Swiss know things about collaboration we do not, nor is it necessary to present the work as great architecture. What it says is that the pros and cons of collaboration are not a subject for discussion. There is room, on certain types of projects, for the exercise of talents which are not specifically architectural, and the results depend almost entirely on the quality of the talents—"almost entirely" because every project carries with it its own atmosphere, and good people have been known to do bad work under certain circumstances. The remarkable decency of this project, the relaxed way in which all of the elements find their own scale and place, clearly reflect a working situation in which everyone felt free to contribute.

Collaboration, in other words, is a fact rather than a theory, and to produce a high-quality fact it takes high-quality people. That, apparently, is all it ever takes—

GEORGE NELSON

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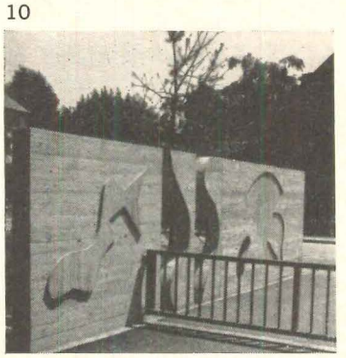


PHOTO OPP.: HANS PETER BAUR

100 BIGGEST BUILDING CONTRACTORS IN THE U.S.

Last year the nation's 100 biggest building contractors put in place $3.1 billion worth of new construction, up a healthy 6.9 per cent from the previous year's $2.9 billion.

At the same time, they maintained to the decimal point their share of the total market: while the 1962 total of $3.1 billion represents 5.1 per cent of the $60.7 spent on all construction, once heavy construction such as dams and highways is eliminated ($17 billion), the share rises to 7.1 per cent—matching exactly the figure for 1961. And, deducting $18 billion worth of houses (which accounted for only 3.6 per cent of the 100 biggest's volume), their share of the market jumps to 12.1 per cent.

Of the 96 contractors who submitted estimates for 1963, 52 expect to do better than last year, 38 expect to do worse, and 6 predict no change. Overall, the 100 biggest contractors expect that this year they will build $33 million (1.1 per cent) more than in 1962.

There are 11 contractors responsible for at least $50 million each in 1962, of whom 7 had reported this much volume in the previous survey (Darin & Armstrong, Diesel Construction Co., George A. Fuller Co., Huber, Hunt & Nichols, Inc., McCloskey & Co., Robert E. McKee, and Turner Construction Co.). Biggest volume reported by any firm was $150 million, about half of it in office construction. The second highest total was $138 million; the third, $130 million.

Of the top 100 contractors reporting, 58 did at least half their work in one of FORUM's seven categories. Industrial buildings again led the list, but by a slimmer margin than in other years, accounting for 21 per cent of the total. Offices and residential (apartment and hotel) construction were right behind, each accounting for 20 per cent. The other percentages: educational (9), medical (12), retail (4), other (14).

On the list for 1962 were 28 newcomers (marked by asterisks in the table at right), compared to 44 the preceding year. None of the new arrivals made it into the top category but eight reached the second highest bracket.

FORUM's list is based solely on the dollar value of all building construction put in place during 1962 in the U.S., and excludes bridges, dams, highways, pipelines, and other engineering projects, as well as all buildings abroad (the latter amounted to about $75 million among the 100 biggest). Several firms do considerable additional business in these areas, which are not represented in FORUM's list.

Several so-called "package builders" do sufficient work to qualify for the list but they are not included because of the difficulty in separating construction figures from design services and from the costs of heavy process equipment, which are often included in reported volumes. Also absent are some contractors who, seeking to counter tougher competition and shrinking profit margins, have moved out of general contracting into real estate development for their own accounts.

Construction put in place	Type of Construction as a per cent of 1962 Total							
Firm (home office)	Offices	Educational	Industrial	Residential †	Medical	Retail	Other ††	Forecast '63
$50,000,000 or more**								
Darin & Armstrong, Inc. (Detroit)	25	—	60	—	4	5	6	—2%
Diesel Construction Co., Inc. (New York)	59	—	—	41	—	—	—	—19
Fruin-Colnon Contracting Co. (St. Louis)	20	—	72	8	—	—	—	nc
George A. Fuller Co. (New York)	46	11	10	4	4	13	12	—7
HRH Construction Corp. (New York)	10	10	2	46	27	5	—	—9
Huber, Hunt & Nichols, Inc. (Indianapolis)	22	7	55	12	—	—	4	—9
J. A. Jones Construction Co. (Charlotte, N. C.)	20	6	27	9	13	1	24	+36
McCloskey & Co. (Philadelphia)	na	na	—	na	—	—	—	nc
Robert E. McKee, General Contractor, Inc. (El Paso)	10	13	4	3	19	—	51	—40
John McShain, Inc. (Philadelphia)	20	20	17	—	35	—	8	+3
Turner Construction Co. (New York)	39	4	24	7	5	6	15	+15
$25,000,000 to $50,000,000								
* Basic Construction Co. (Newport News, Va.)	32	5	34	5	17	—	7	+14
Henry C. Beck Co. (Dallas)	58	11	8	11	1	7	4	+17
W. S. Bellows Construction Corp. (Houston)	96	—	1	3	—	—	—	—45
Joseph P. Blitz, Inc. (New York)	2	1	8	77	10	—	2	+21
Blount Brothers Construction Co. (Montgomery, Ala.)	4	6	27	—	3	—	60	—25
Frank Briscoe Co., Inc. (Newark, N. J.)	50	—	40	—	—	—	10	+5
* Cafritz Construction Co. (Washington)	62	—	—	33	—	—	5	na
* Caristo Construction Corp. (Brooklyn, N. Y.)	—	na	—	na	na	—	na	+10
* Day & Zimmermann, Inc. (Philadelphia)	—	2	98	—	—	—	—	+5
Dinwiddie Construction Co. (San Francisco)	60	—	—	—	—	40	—	nc
Martin K. Eby Construction Co., Inc. (Wichita)	8	2	3	—	1	—	86	—32
Gilbane Building Co. (Providence)	20	10	10	40	5	12	3	+41
Haas & Haynie (San Francisco)	33	—	27	25	15	—	—	—6
Hunkin-Conkey Construction Co. (Cleveland)	1	—	48	25	15	—	11	—6
A. L. Jackson Co. (Chicago)	38	—	15	12	35	—	—	—18
* Kaiser Engineers (Oakland)	7	—	81	—	4	—	8	—14
C. H. Leavell & Co. (El Paso)	6	—	52	—	4	3	35	+49
Malan Construction Corp. (New York)	—	—	36	—	30	7	27	+10
Gust K. Newberg Construction Co. (Chicago)	8	1	16	45	23	—	—	na
C. L. Peck (Los Angeles)	30	—	32	—	30	8	—	+4
* Perini Corp. (Framingham, Mass.)	51	10	14	4	6	6	9	+76
* Ragnar Benson, Inc. (Chicago)	—	—	80	—	—	5	15	—17
F. D. Rich Co. (Stamford, Conn.)	15	—	—	60	20	5	—	—20
Frank J. Rooney, Inc. (Miami)	7	—	—	43	—	50	—	+31
Roscoe-Ajax Construction Co. Inc. (Washington)	35	—	—	57	—	—	8	—12
Swinerton & Walberg Co. (San Francisco)	10	—	55	18	10	7	—	+5
Robert L. Turchin, Inc. (Miami Beach)	4	—	—	86	—	10	—	—21
Arthur Venneri Co. (Westfield, N. J.)	25	15	5	35	20	—	—	+16
Walsh Construction Co. (New York)	15	1	70	—	—	—	14	+5
* F. E. Young Construction Co. (San Diego)	—	25	8	—	25	—	42	+9
$20,000,000 to $25,000,000								
*Aberthaw Construction Co. (Boston)	30	—	52	13	—	5	—	+25
Alcan Pacific Co. (Sacramento)	9	17	11	18	5	1	39	—13
* Baltimore Contractors, Inc. (Baltimore)	—	35	25	—	1	4	35	—3
Barton-Malow Co. (Detroit)	20	—	40	20	10	10	—	nc
Blake Construction Co., Inc. (Washington)	25	19	—	17	34	—	5	+36
* M. J. Brock & Sons, Inc. (Los Angeles)	—	1	4	49	—	—	46	—47
* Cauldwell-Wingate Co., Inc. (New York)	20	—	—	70	10	—	—	+105
H. L. Coble Construction Co. (Greensboro, N. C.)	—	12	39	22	—	12	15	+52

** Newcomers to list of 100 since 1962 survey*
*** Firms are listed alphabetically within ranges given*
† Apartments, hotels, motels—does not include houses

†† Other—Religious, recreational, military, 1-2 family houses, and misc.
nc—no change
na—not available (totals not broken down by building type)

Construction put in place	Type of Construction as a per cent of 1962 Total							
Firm (home office)	Offices	Educational	Industrial	Residential †	Medical	Retail	Other ††	Forecast '63
$20,000,000 to $25,000,000 (cont.)**								
* Consolidated Engineering Co., Inc. (Baltimore)	6	1	43	—	40	—	10	+9%
* George F. Driscoll Co. (New York)	—	—	—	100	—	—	—	+6
* Electronic & Missile Facilities, Inc. (Valley Stream, N. Y.)	20	—	—	—	80	—	—	+9
Kesk, Inc. (New Orleans)	—	—	—	19	—	—	81	+6
Lembke Construction Co., Inc. (Albuquerque)	20	30	—	—	10	—	40	—23
MacDonald Construction Co. (St. Louis)	20	10	70	—	—	—	—	+38
Miller-Davis Co. (Kalamazoo)	9	14	50	4	2	1	20	—15
Sumner Sollitt Co. (Chicago)	30	—	35	30	5	—	—	—58
Stolte, Inc. (Oakland)	5	39	1	2	39	—	14	+15
Terminal Construction Corp. (Wood-Ridge, N. J.)	—	—	—	75	20	5	—	+49
Paul Tishman Co., Inc. (New York)	50	5	—	—	45	—	—	nc
Twaits-Wittenberg Co. (Los Angeles)	47	3	43	—	—	—	7	+25
$17,000,000 to $20,000,000								
Allen Bros. & O'Hara, Inc. (Memphis)	10	—	2	85	—	—	3	+37
Crown Consruction Co. (Los Angeles)	15	45	—	40	—	—	—	+11
Leon D. DeMatteis & Sons (Elmont, N. Y.)	—	17	—	72	11	—	—	+11
Heftler Construction Co. (Beverly Hills, Cal.)	1	—	—	—	2	—	97	+133
* Jewel Builders, Inc. (Columbus, Ohio)	—	—	—	70	—	—	30	+24
H. A. Lott, Inc. (Houston)	3	44	—	4	21	2	26	+7
Mars Assoc. Inc. & Normel Construction Corp. (New York)	—	67	—	11	22	—	—	+39
Pozzo Construction Co. (Los Angeles)	35	10	25	—	30	—	—	—71
Wm. E. Schweitzer & Co. (Evanston, Ill.)	—	17	65	—	—	—	18	—49
* Starrett Brothers & Eken, Inc. (New York)	57	—	—	—	2	—	41	+5
John A. Volpe Construction Co., Inc. (Malden, Mass.)	15	—	5	—	80	—	—	—3
Williams & Burrows, Inc. (Belmont, Cal.)	19	18	18	18	7	6	14	—4
Winn-Senter Construction Co. (Kansas City)	63	—	10	25	—	—	2	—13
$14,630,000 to $17,000,000								
* Andersen-Westfall Co., Inc. (Portland, Ore.)	38	—	17	25	—	20	—	—32
* Barrett Construction Co. (San Francisco)	20	10	17	6	35	—	12	+13
Bryant & Detwiler Co. (Detroit)	55	10	15	—	15	5	—	na
* Cahill Brothers, Inc. (San Francisco)	8	6	21	63	1	—	1	+3
Corbetta Construction Co., Inc. (New York)	6	—	32	—	37	—	25	—50
John W. Cowper Co., Inc. (Buffalo, N. Y.)	10	19	35	—	28	8	—	+6
Crane Construction Co., Inc. (Chicago)	17	—	—	78	—	—	5	+19
* Dick Corp. (Pittsburgh)	15	60	—	—	20	—	5	—25
Diversified Builders, Inc. (Paramount, Cal.)	20	—	54	3	—	—	23	+30
* E. & F. Construction Co. (Bridgeport, Conn.)	—	60	5	—	18	2	15	—13
* R. P. Farnsworth & Co., Inc. (New Orleans)	8	8	—	45	4	15	20	+22
Fusco-Amatruda Co. (New Haven, Conn.)	2	60	—	10	—	10	18	+13
* Harmon Construction Co., Inc. (Oklahoma City)	24	20	9	7	40	—	—	+12
* Mahony-Troast Construction Co. (Clifton, N. J.)	8	2	36	—	11	30	13	nc
* James McHugh Construction Co. (Chicago)	13	—	—	73	14	—	—	—27
* McNeil Construction Co. (Los Angeles)	85	5	10	—	—	—	—	+33
Mead & Mount Construction Co. (Denver)	51	2	—	—	47	—	—	—4
Jos. L. Muscarelle, Inc. (Maywood, N. J.)	25	—	75	—	—	—	—	—9
Myers Bros. Construction Co., Inc. (Los Angeles)	6	6	13	19	2	8	46	—26
S. N. Nielsen Co. (Chicago)	—	—	29	55	16	—	—	+37
Signature Development Co. (Beverly Hills, Calif.)	—	—	—	—	—	—	100	+25
S. S. Silberblatt, Inc. (New York)	—	—	—	47	—	—	53	—11
William Simpson Construction Co. (Los Angeles)	45	—	40	—	5	10	—	+25
* Stofflet & Tillotson (Philadelphia)	—	30	—	—	—	70	—	—32
Tandy & Allen Construction Co., Inc. (New York)	—	—	—	97	—	3	—	nc
J. A. Utley Co. (Royal Oak, Mich.)	23	24	44	—	4	—	5	+6

* *Newcomers to list of 100 since 1962 survey*
** *Firms are listed alphabetically within ranges given*
† *Apartments, hotels, motels—does not include houses*

†† *Other—Religious, recreational, military, 1-2 family houses, and misc.*
nc—no change
na—not available (totals not broken down by building type)

MARTIN MUNKACSI

CONTRACTORS BID FOR PROGRESS

Midpoint in what promises to be the greatest year for building in history, two things seem obvious about the business of contracting as practiced in the U.S.:

- *Competition is ruinously fierce.*
- *The pace of progress in technology is aggravatingly slow.*

In the last five years, over 12,000 contracting firms have gone out of business; and since 1950, profit margins in contracting have plummeted an incredible 94 per cent (second only to the drop in agriculture)—this despite a 500 per cent rise in gross business. Profits after taxes sank to 0.2 per cent of sales by 1961, and even last year's record building boom is not expected to have improved the picture.

Meanwhile, contractors are aware of the great dissatisfaction with the pace of building technology in the U.S.—building contractors were among the first to react, almost too defensively, to the recent federal proposals for government grants to pep up the state of research in the building industry (FORUM, April '63).

The two factors—devastating competition for jobs and lagging building technology—are intimately related. Contractors fighting for their very lives when they submit each bid are certainly not likely to extend themselves for significant technological breakthroughs when it could well mean the breaking of the firm itself should costs get out of hand.

To solve this dilemma, many contractors—and architects—are using an old tool: they are turning increasingly to the negotiated bid form of contract. And this has worked well, in most cases, both to make contracting less risky and progress in building more significant.

Negotiated bid contracts are limited almost exclusively to private construction, because most public contracts require competitive bidding. The most significant difference between a negotiated contract and one based on competitive bidding is that, in the former, the contractor negotiates the total cost of the project and his fee directly with the client. This is usually done on either a total cost plus a fixed fee basis, or a total cost plus a percentage of that cost for the contractor. Other variations include a fixed fee plus bonus for any savings effected by the contractor, or a fixed fee with a guaranteed maximum "upset" price.

This form of contract in no way limits competition. The client, with his architect, will often see as many as a dozen different contractors for a large job, and the preparation of cost estimates for a given job might be just as arduous as it would be for a competitive bid. In fact, it is possible for the client to pit two or more contractors against one another, and in this way squeeze a bid out of the winner that might be even lower than if the job had been bid competitively.

The principal advantage of the negotiated bid contract has already been implied—it permits experimentation and innovation where the competitive bid system usually negates it. Architect Charles Haines, of Voorhees, Walker, Smith, Smith & Haines, puts it this way: "Anytime the architect cannot fully define a job, then the cost-plus negotiated contract is the only way." Obviously, experimentation is seldom easy to define as completely as most contractors would like.

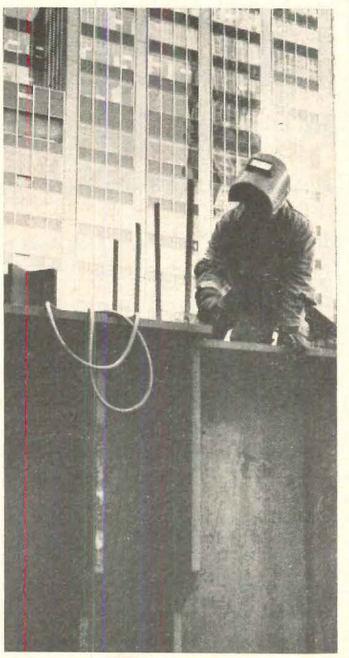
When to negotiate

There are other advantages, too, to the negotiated contract:

Speed. Under the negotiated contract, work can start on foundations and footings even before working drawings for the whole job have been fully developed. This can save considerable time over the conventional method of not breaking ground until full working drawings are finished and bid upon.

Efficiency. Because the architect has the full benefits of the contractors' know-how concerning materials' prices and technical processes (not the least of which are the complex logistics of getting the building built, frequently in a cramped urban site), he can plan the job more intelligently.

Better quality control. The contractor can work closely from the outset with selected subcontractors, who may be intimately involved with a special phase of the work. This was true, for instance, with the precast, prestressed concrete aggregate panels for the Michigan Consolidated Gas Building in Detroit, designed by Minoru Yamasaki (FORUM, May '63). Because of the special technological demands of the panel system the contractor, architect, and client all worked closely, and at an early date, with



the precast panel subcontractor.

All these advantages are especially important whenever a building is particularly large or particularly complex. The great pioneering buildings of the past century have invariably been built under some form of negotiated contract: The Tacoma Building, erected in the Chicago boom of the 1890s by the young George A. Fuller Co., was one of the first steel-frame skyscrapers. The client negotiated the contract for its erection, primarily because the technology of steel erection was relatively untried, and there was really no way to estimate with any accuracy what the cost might be.

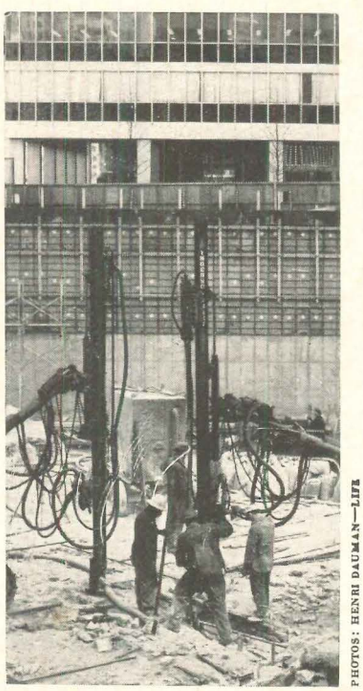
The Fuller Co. has consistently espoused negotiated bidding for large jobs. Today, the company negotiates about half its total contracts, and well over half its dollar volume of business—more than $100 million of work last year alone. Fuller President Raymond Daley says flatly that the pioneering buildings the company has built over the past 80 years could not possibly have been done so well under the competitive bid system. This is particularly true, he feels, of the first aluminum curtain wall building (Pittsburgh's Alcoa building), the first bronze curtain wall building (Seagram's in New York), or a building such as New York's Union Carbide headquarters.

Union Carbide is a prime example of the value of the negotiated contract. Fuller, which in the 1920s had built the Hotel Commodore and other structures over the railroad tracks running beneath Park Avenue, was called upon at an early date to explore the logistics of the foundations. Long before the architects, Skidmore, Owings & Merrill, had completed drawings for the building, Fuller was getting the foundations set. Both architect and contractor agree that if the job had not been handled this way, it would have taken considerably longer. And even if drawings had been completely evolved prior to construction, it is doubtful that accurate cost estimates could have been made. (Almost all big Manhattan building projects are now negotiated, primarily because foundations on the island are such an uncertain business. "No foundation contractor in his right mind would bid competitively for a Manhattan job," one builder says, "because he never knows what excavation conditions he will encounter. It's the sort of situation that almost has to be cost-plus.")

The need for flexibility

The Michigan Consolidated Gas Building is one of the most recent examples of the importance of negotiating contracts. Discussions were held with several subcontractors for the precast panels, and all the bids that were made presented problems. Finally, the bid of the Otto Buehner Co. was taken, despite the fact it was nearly 50 per cent above what the architects and contractor had estimated. In this case, the extra cost was believed necessary to insure the high-quality panels that the architect and client demanded.

This sort of flexibility—allowing a client to select contractors for reasons other than low price—is a key to maintaining a high level of technological innovation in building. Buildings such as Eero Saarinen's TWA terminal at Idlewild could hardly have been let out for competitive bids. The demands the building made upon the technology of poured concrete were much too severe. From the first, Saarinen worked with the contractors, Grove, Shepherd, Wilson & Kruge, particularly in trying to translate the complex calculations of the engineers into detailed shop drawings which workmen could readily understand. The contractors themselves made hundreds of drawings



PHOTOS: HENRI DAUMAN—LIFE

and brought to the job other special skills, the use of which had to be carefully planned from the very beginning. Chief among these was the building of the forms themselves, an art which is not covered in any catalogues or manuals. The drawings were so precise, in final form, that the contractor was able to hire extra carpenters directly from the hiring hall, rather than rely completely on his own limited manpower.

Architect Gordon Bunshaft of Skidmore, Owings & Merrill is a firm believer in getting the contractor in at an early date on large, complex jobs. "The real advantage to the negotiated contract," he says, "is to get the contractor and architect together on technical problems and let the contractor line up his subcontractors at an early date." On several large jobs which SOM has done with Fuller, the architects achieved many technological innovations—largely, it seems, because of close architect-contractor coordination.

Despite his firm belief that the negotiated bid is necessary for the large, complex project with many innovations, Bunshaft, like some other architects, still prefers the competitive bid wherever it is feasible. "If the client has plenty of time," he says, "and the job will cost under $25 million, then a lump-sum contract let on competitive bids will usually result in the lowest cost." But he always adds: "When the job is very large, or the client wants a high-quality building in a short time, it makes sense to negotiate."

There is little doubt that competitive bidding can result in the lowest cost, and that under the system "the client always knows where he stands," as one architect puts it. A recent Kansas City study showed that the larger the number of competing contractors is on a given job, the lower the final contract price.

Some architects also believe that the competitive bidding system has flaws which can be worked out without losing the cost advantages to the client. Architect Charles Haines believes that if the architect and client prequalify subcontractors to insure highest quality workmanship, and eliminate all "or equal" clauses in the contract to insure highest quality materials, the competitive bid can result in the lowest cost. But, along with the considerable time it takes to complete drawings upon which to take bids, these steps add critically to the time of a project. And Haines agrees that they are not sufficient in themselves to insure the best job at lowest cost—unless the building is "fully defined in the working drawings." This, as we have seen, is not always possible, however.

Competitive pressures

Until recently, contractors had been the main proponents of the negotiated contract, and their advocacy was often looked upon with suspicion because it was felt they were really interested in boosting their paper-thin profit margins. (The assumption is that a contractor can always make more on a negotiated job, but, as any contractor can readily demonstrate, this is not true.) But recently, more and more architects have begun to support the system, primarily because of the advantages of early architect-contractor cooperation in fully developing a project, but also for another critical reason to offset the competition of the package builder.

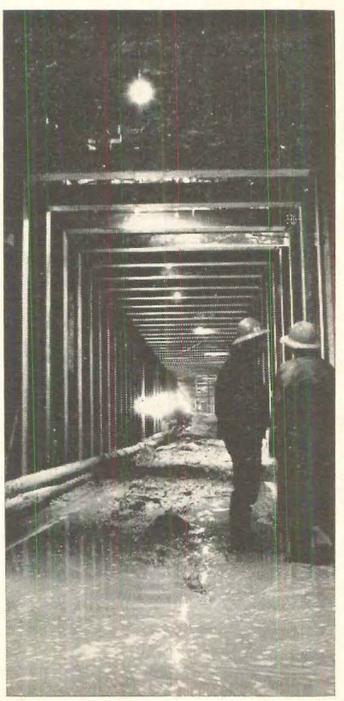
The package builder, of course, is the prime example of early architect-contractor cooperation, because the two are under one roof from the start. However, the package builders' finished product makes it clear that the mechanics of such cooperation alone do not insure high quality or technological progress. When the context of a project is cost rather than quality, the form of letting the contract doesn't much matter. But a client who cares about cost, at no sacrifice of quality, can best attain his goal through the traditional means of retaining an experienced contractor and a skilled architect, working together on every phase of the job.

The inroads of the package builder have created a growing trend for architects and contractors to form joint ventures, with contracts usually negotiated on a team basis with the client. Recently, a joint committee of the American Institute of Architects and the Associated General Contractors recommended joint ventures, and these are fast becoming more popular. Problems still arise from the question of architects sharing in contractors' profits, because this is not in accord with the AIA standards of professional practice. This problem is still being ironed out by the AIA-AGC committee.

The demand for progress

Perhaps the greatest spur to more negotiated bidding, and joint ventures, will not come from the economic competition between architects and package builders, or even from competition among contractors themselves. It may well come from the demands for a faster rate of technological progress in the industry. As R. J. Short of Procter & Gamble recently told the Building Research Institute: "Where the average manufacturer spends about 3 per cent of his sales for research, the construction industry spends only ½ of 1 per cent, and 95 per cent of this is spent by manufacturers."

The federal government is currently proposing far-reaching programs of aid to generate more progress in this area. But at the same time, the growing trend toward closer architect-contractor cooperation can meet the problem squarely on the building site itself. The record clearly indicates that significant progress has been made often under a negotiated type contract, with close coordination between all members of the building team. On the other hand, lump-sum competitive bidding has often evoked stale solutions. Contractors and architects agree that competition is as vital to the success of building as it is to any enterprise under a free economic system. But they are also coming to realize that competition must mean more than price-cutting if the construction industry is to avoid technological stagnation. There is no reason why anyone in the nation's biggest industry should pay more than necessary for anything. But neither is there any reason why anyone—client, architect or contractor—should settle for less than the best. END



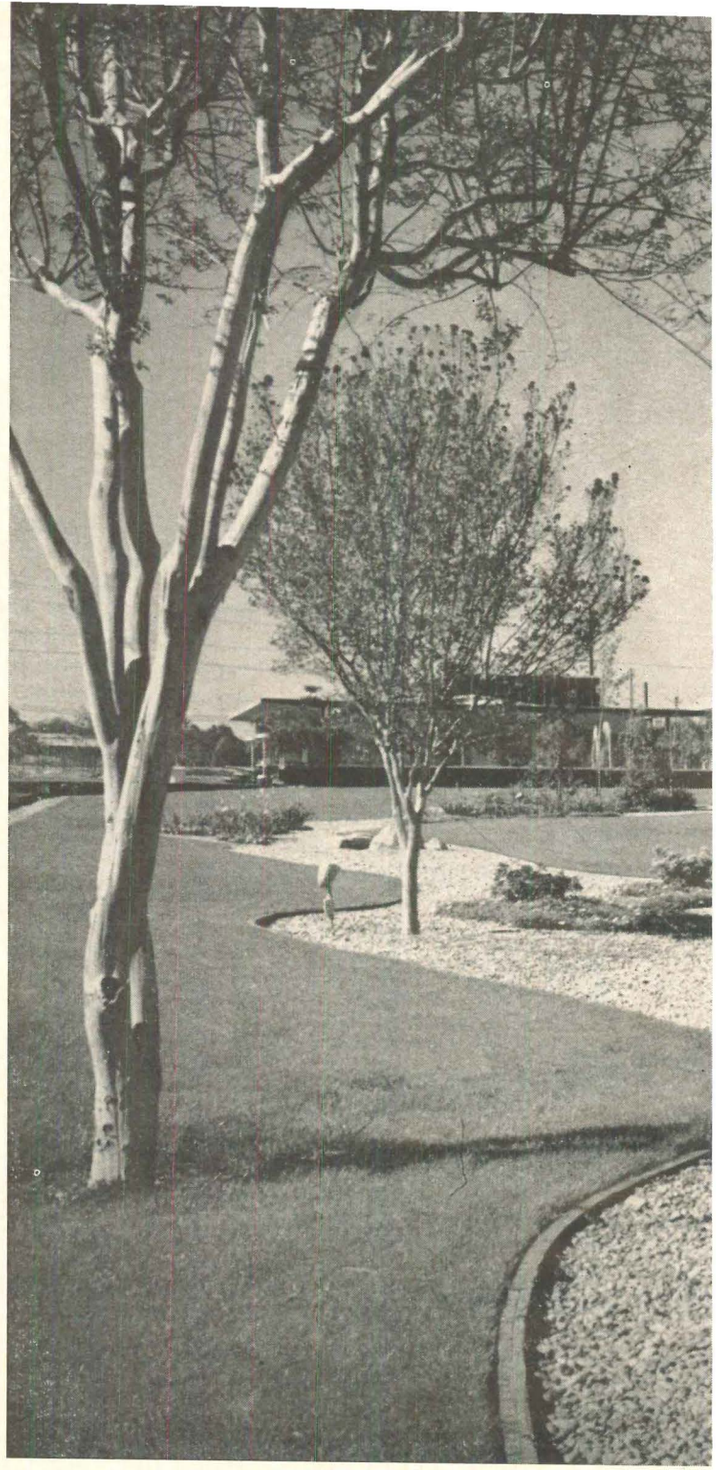
A PROCESSION OF METALLIC T'S

The sharply delineated, four-story structure at right might be the branch office at an insurance company or the administration building of a small manufacturing concern. Crisp, sophisticated, but modest in size and demeanor, it sits quietly on a green 13-acre plot in Fullerton, Calif., almost surrounded by one-story houses and factories.

In reality, the building, designed by William L. Pereira & Associates, is headquarters of Hunt Foods and Industries Inc., a huge firm of legendary fiscal appetite. The modesty reflects the nature of Hunt President Norton Simon, a self-made multi-millionaire of 56 who rigorously avoids publicity. Simon's fortunes were founded in Fullerton: he bought a small orange juice company here in 1933, later added 12 canneries, became head of Hunt in 1943, and in the subsequent two decades steered it through a total of 15 mergers. In the process, Simon has come to control such diverse enterprises as Ohio Match Co., Wheeling Steel, W. P. Fuller paints, *McCall's* magazine, and the *Saturday Review of Literature*.

Simon has also become a regent of University of California and a knowledgeable art collector. The lobbies and corridors of the Hunt headquarters are therefore adorned with original Picassos, Rouaults, Braques, and Daumiers rather than tomato-paste posters. Simon couples his cultural bent with philanthropy, and so the site is shared by a community library (pages 130–131) for which $485,000 were donated by the Hunt Foods and Industries Foundation. The dedication of the library was quite a civic event in Fullerton, a fast-grown Los Angeles suburb which has become a center of small industry. Everyone was there—except the man who made the library possible, Norton Simon.

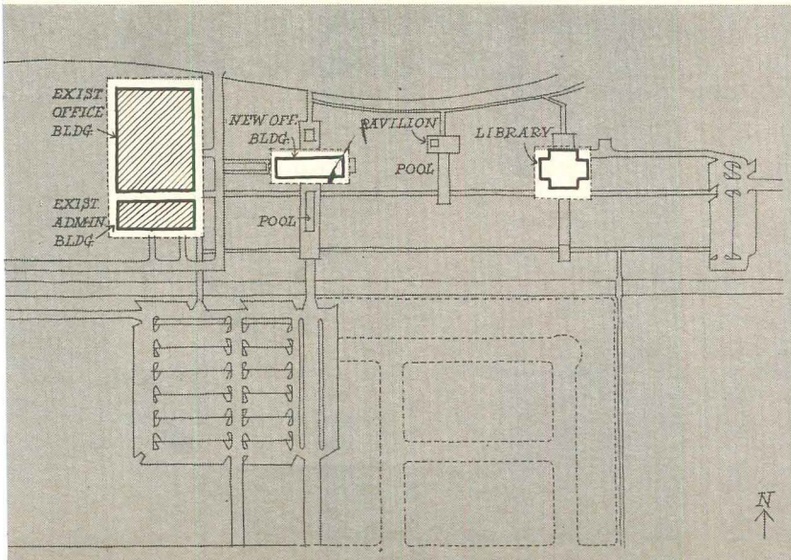
If Hunt's headquarters building is less sizable than might be expected, it nevertheless has a certain presence. It is set on a podium three feet above grade, reached by a series of wide pedestrian bridges past a large pool. The top and bottom stories are recessed, the second and third walled in aluminum-framed black and gray glass. Dominant elements of the exterior are a series of slender T's, also clad in aluminum, formed by the joining of the columns with tapering steel trusses at the edges of the roof (past the glass line, the trusses are replaced by conventional wide-flange beams above a flat suspended ceiling). The T's, in fact, are made the visual theme of the entire, spread-out complex. They provide the framing for both the library and a small garden pavilion (see site plan at right), and a string of them are joined in a portico placed around an existing single-story building, used by Hunt as secondary office space, to bring it into harmony.

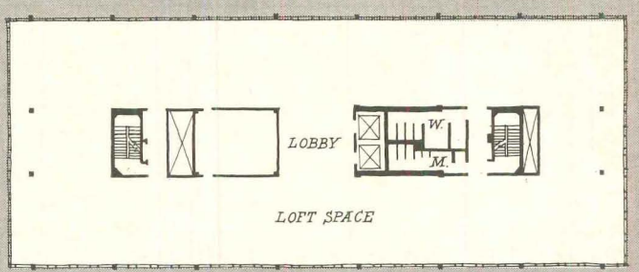


Bright metal outlines black glass in the modest headquarters

PHOTOS: JULIUS SHULMAN

of Hunt Foods and Industries, whose site is a landscaped park. The low structure in the background was remodeled as secondary office space.





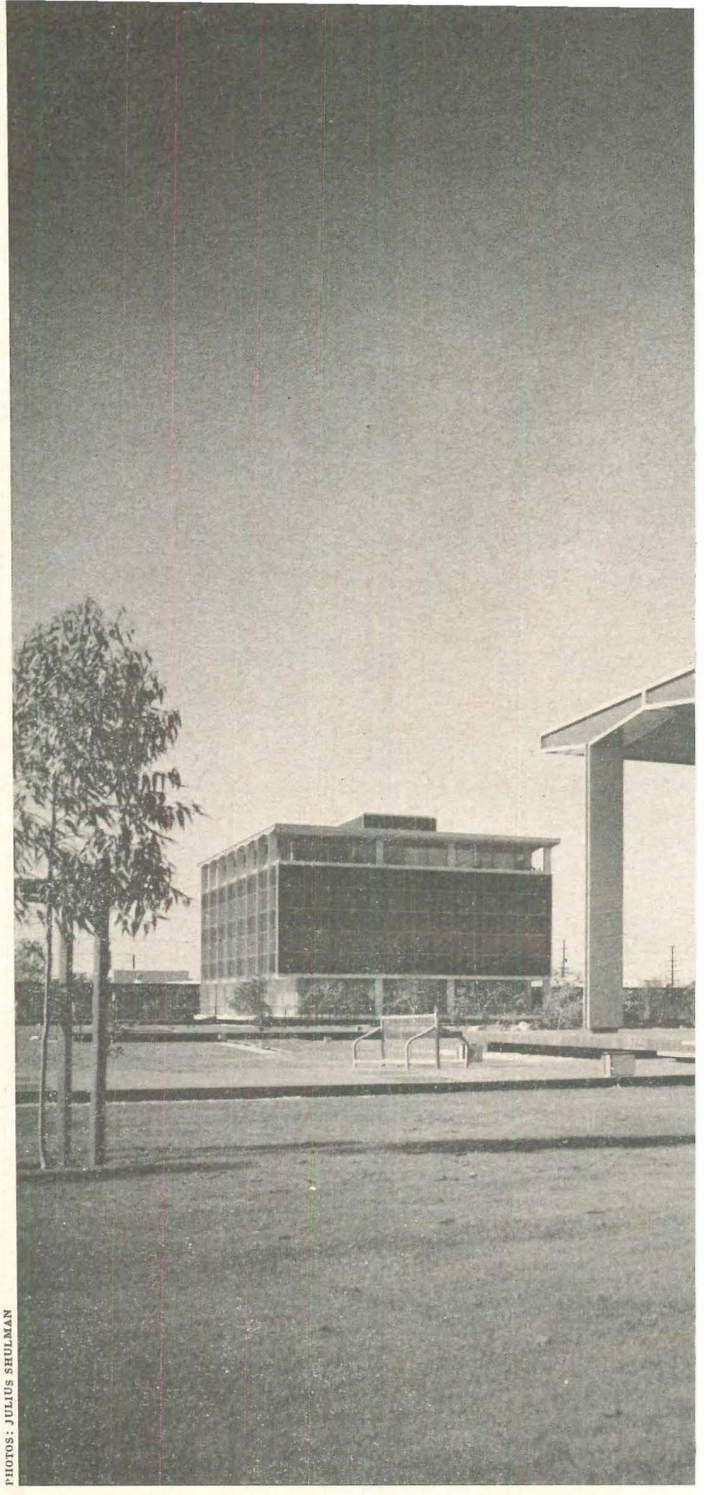
NEW OFFICE BUILDING FLOOR PLAN

0 25 50'

The library, placed in seven acres of park, is a serene structure strongly resembling the office building. The materials —dark glass in a bright aluminum gridwork—are identical, the massing is similar, and the T's are, if anything, given even more prominence. They are also somewhat more consistent: the tapered trusses continue front to back, giving the wide canopy of the ceiling a pleasing, gentle wave as they go.

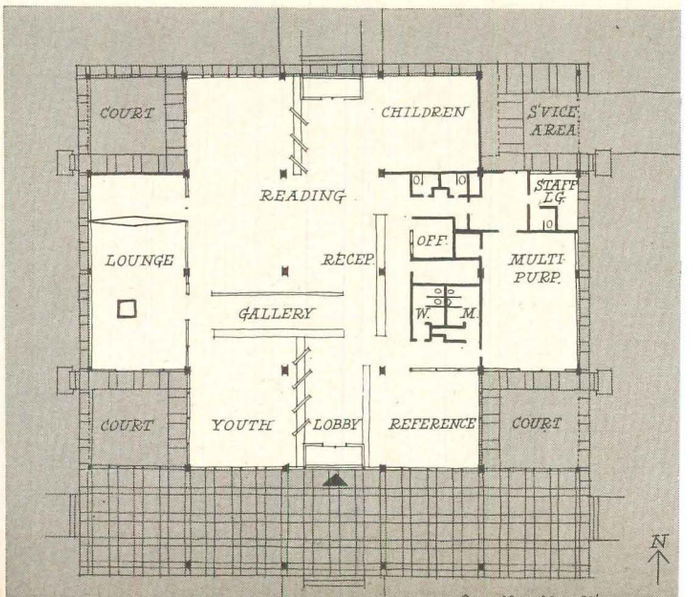
Actually, the library may be a little too much like the office building; instead of an invitation, it presents the visitor with a look of cool commercial composure. Inside, however, the atmosphere is far more welcoming. The central portion, generous in both area and volume, draws soft natural light from a continuous clerestory set well back behind the wide overhangs of the roof. Carpeting, colorful fabrics, and trim wood fixtures contribute a warmth that contrasts with the metallic sophistication of the structure.

In plan, the library is divided along its 25-foot structural module to serve three separate uses: a branch library for the city's west end, a community center for the surrounding neighborhood, and a school library for nearby Pacific Drive Elementary. The central volume is split into a youth room and the main reading room on one side, and the main desk, children's area, and reference room on the other. Past the glass line of the clerestory are a handsomely furnished, wood-walled lounge which opens from the reading room, and a community meeting room seating 50, placed behind the main desk and work areas with an outside entrance of its own. The four corners of the building are left open, one as a service yard and the other three as planted patios that extend and enhance the interior spaces. At the sides, the patios are enclosed by delicate metal screens, and each contains a sizable tree which raises a tuft of green above the library's sober aluminum and glass walls.



PHOTOS: JULIUS SHULMAN

Sharing Hunt's green acres, the rectilinear library sits beneath



FACTS AND FIGURES

Hunt Foods Corporate Office Building and Hunt Foods Foundation Library (a branch of the Fullerton Public Library), Fullerton, Calif. Owners: office building — Hunt Foods and Industries Inc.; library —city of Fullerton. Architect: William L. Pereira & Associates; Gin Wong, partner-in-charge. Engineers: Johnson & Nielson (structural); Boris M. Lemos (mechanical); Frumhoff & Cohen (electrical). Acoustical consultant: Paul S. Veneklasen. Landscape architect: Robert Herrick Carter. Interior designer for Hunt Foods executive floor: Zeda Zech. General contractors: Lindgren & Swinerton. Building area: office building, 62,000 square feet; library, 10,000 square feet. Construction cost: $2,127,528 (including remodeling of existing building.

a wide, waving canopy supported by a shortened version of the office building's T's. Below, the lounge and one of the planted corner patios.

A STACK OF CONCRETE BARRELS

The sturdy monogram of International Business Machines has never appeared on anything exactly like this fluted, see-through structure in Salt Lake City, Utah. Yet, somehow, the initials have the look of belonging there, giving further testimony, if any were needed, to the wisdom of the basic premise behind the IBM Design Program. Seven years ago, when the program was launched, IBM President Thomas J. Watson Jr. (now chairman of the board) first thought in terms of developing a single, consistent style for the firm's buildings. Consultant Eliot Noyes had an alternative suggestion: let the architects be free to work in their own idioms, and make quality the consistent element. Watson accepted the idea, and the IBM monogram became a hallmark of enlightened clientsmanship.

In the case of the Salt Lake City Building, Architects James M. Hunter & Associates used their freedom to come up with the fresh concept that shines clearly through the photo at right. The building is a transparent showcase for its basic structural elements: a series of long barrel shells of cast-in-place concrete. The shells, post-tensioned at their V-shaped haunches, act as beams spanning the columnless 80-foot depth of the floors, then protrude six feet beyond the glass line at each end as wavy, protective eyebrows. The crowns of the shells are only four inches thick (section below right), and their haunches are lightened by large circular voids which serve as air-distribution channels. The voids were created by insertion of paperboard tubes in the concrete during the casting process.

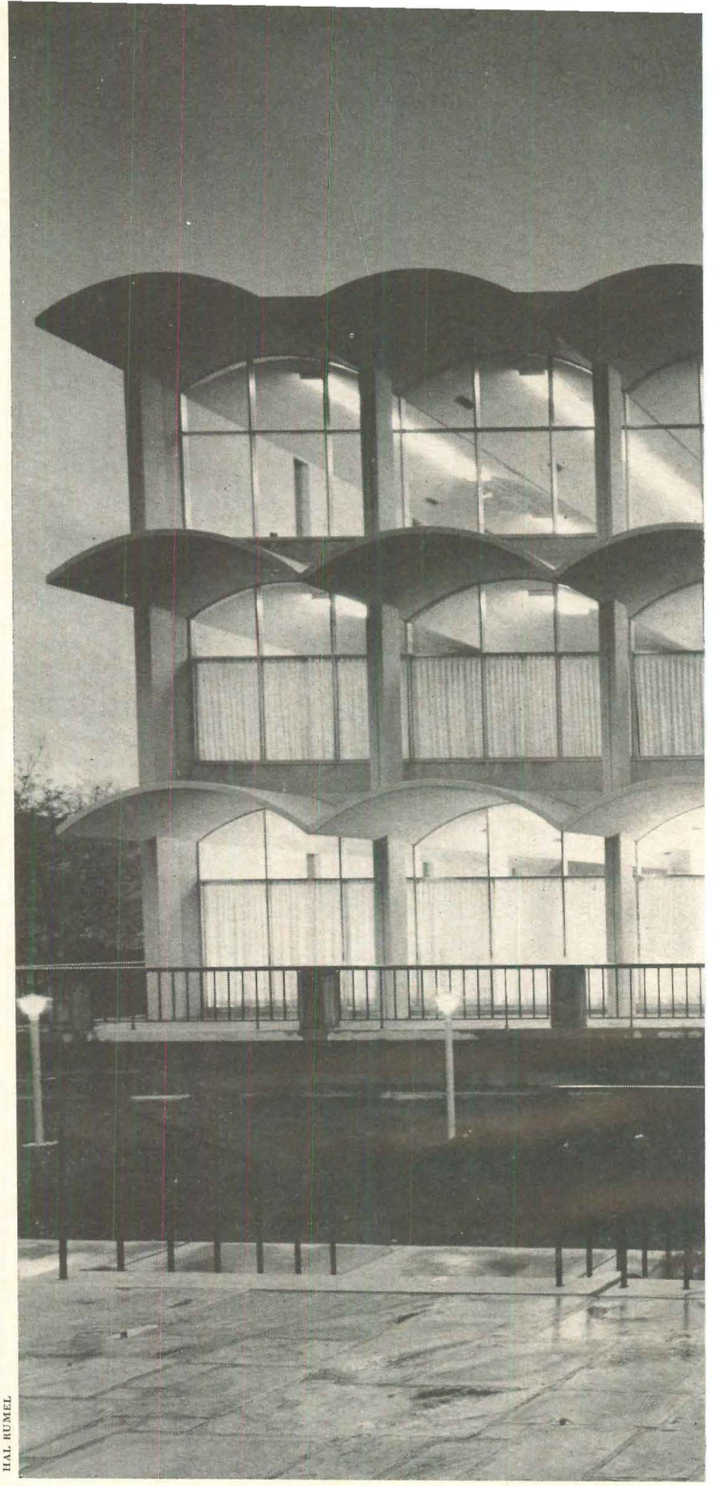
IBM's new regional office in Salt Lake City thus represents an unusually neat packaging of form, structure, and services achieved at no apparent premium in construction costs. Outside, the shells contribute a look of motion and gaiety that has made the building a minor local landmark; located along the city's main north-south street a few blocks from downtown, it constitutes an effective advertisement indeed for IBM. Inside, they produce the bright succession of sculpted, changing interior spaces shown on the following pages.

FACTS AND FIGURES

IBM Building, Salt Lake City, Utah. Owner: Amco-Utah Inc.

Architects: James M. Hunter & Associates; Don Panushka & Associates, associate architects for supervision of construction. Engineers: Ib Falk Jorgensen & Associates (structural); Marshall & Johnson Inc. (mechanical); Engineering Services Inc. (electrical). General contractor: Alfred Brown Construction Co.

Construction cost: $578,917. Building area: 31,778 square feet. Cost per square foot (excluding fees and furnishings): $18.22.

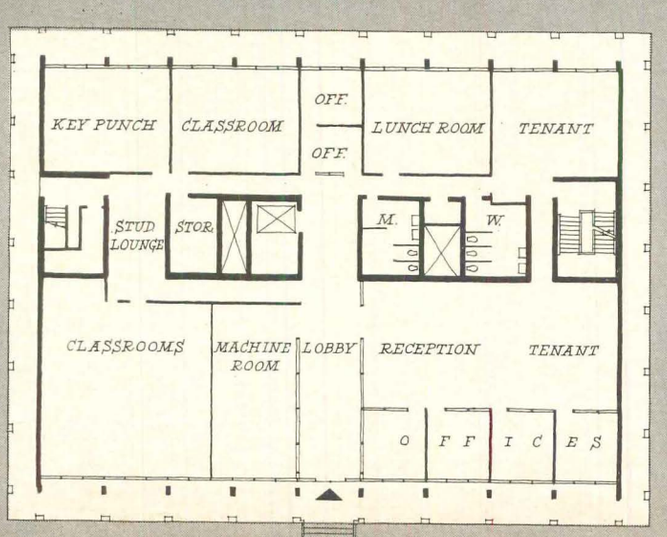


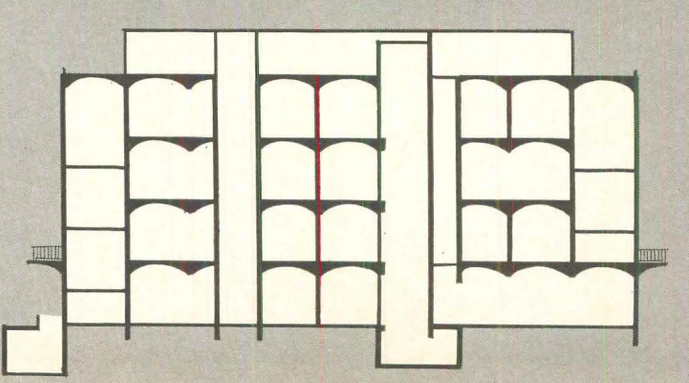
HAL RUMEL

At twilight, IBM's regional office in Salt Lake City places its

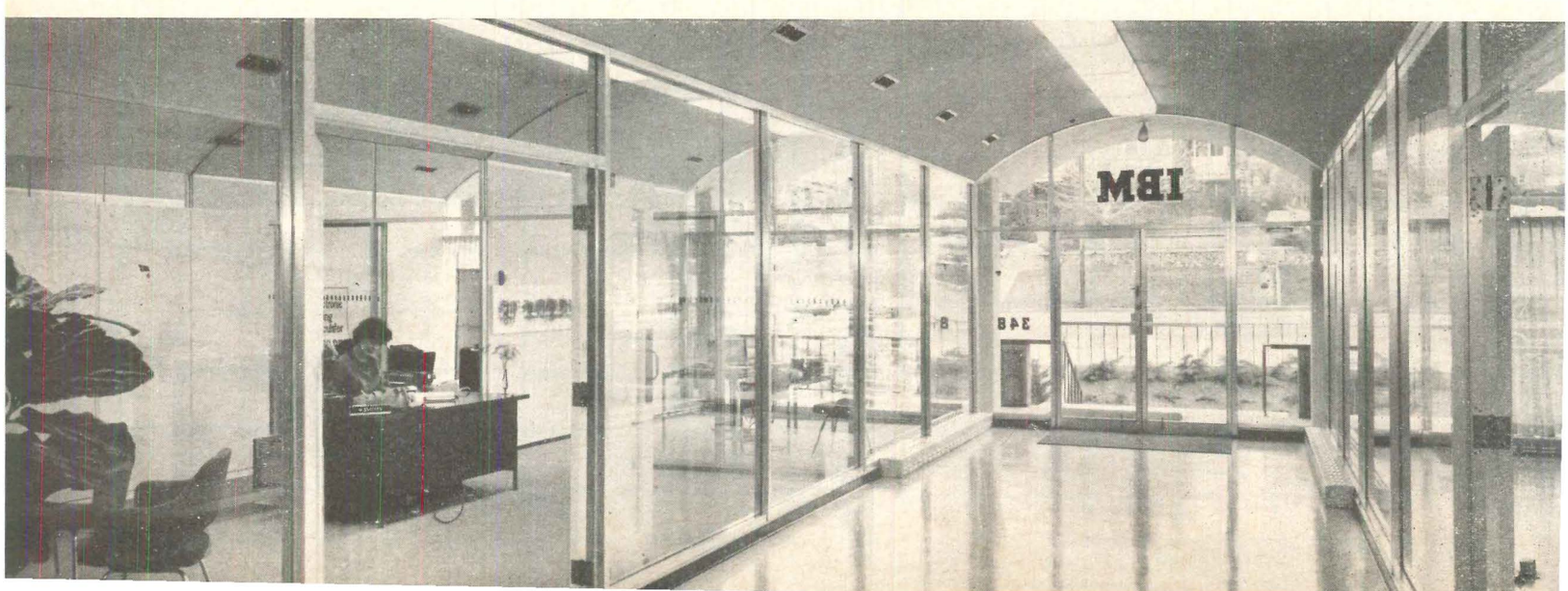
HAL RUMEL, COURTESY AMERICAN-SAINT GOBAIN

structural shells on bright display. The site drops off, so the building sits on a flared platform with a sunken garden between it and the street.

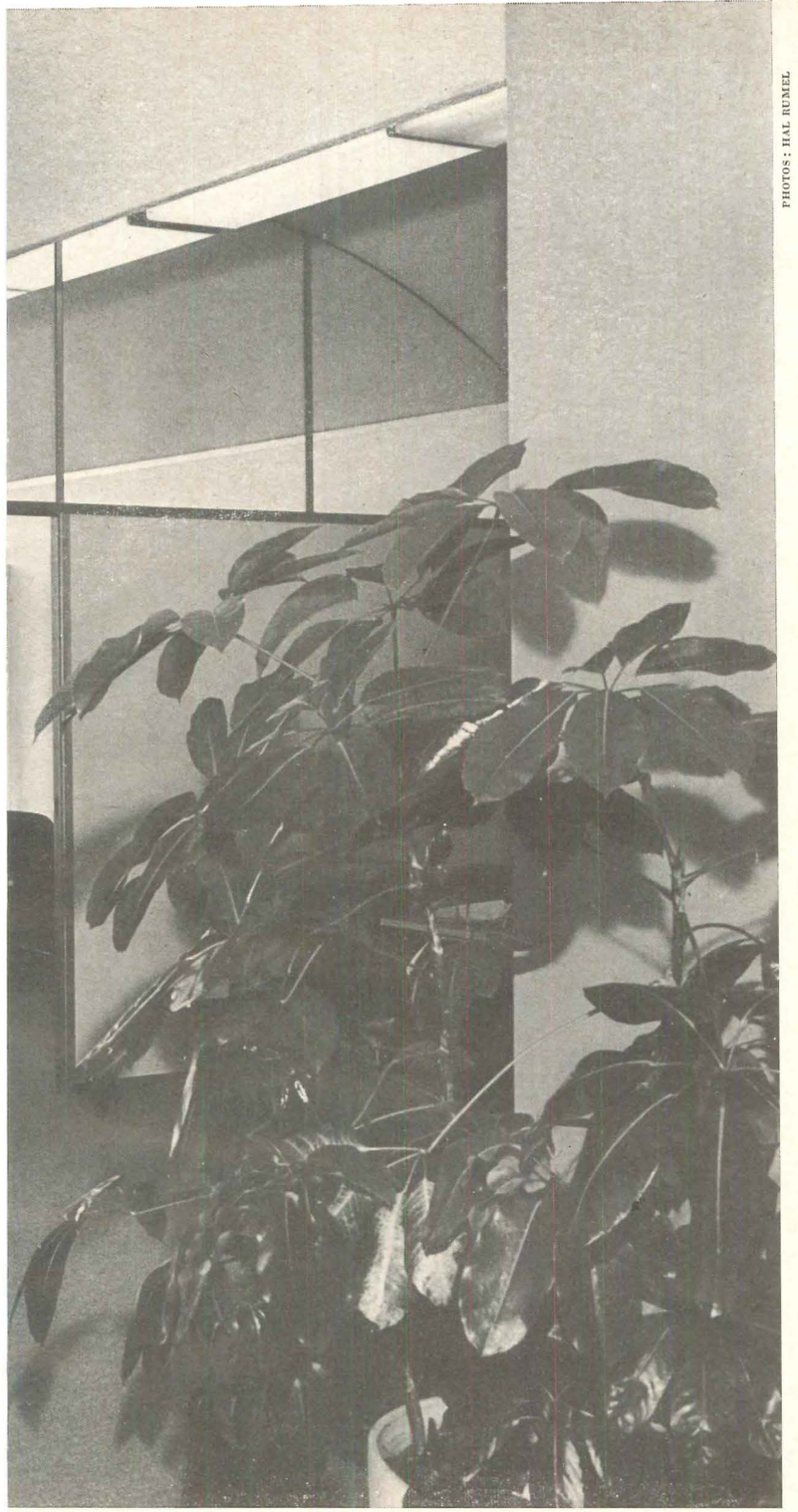




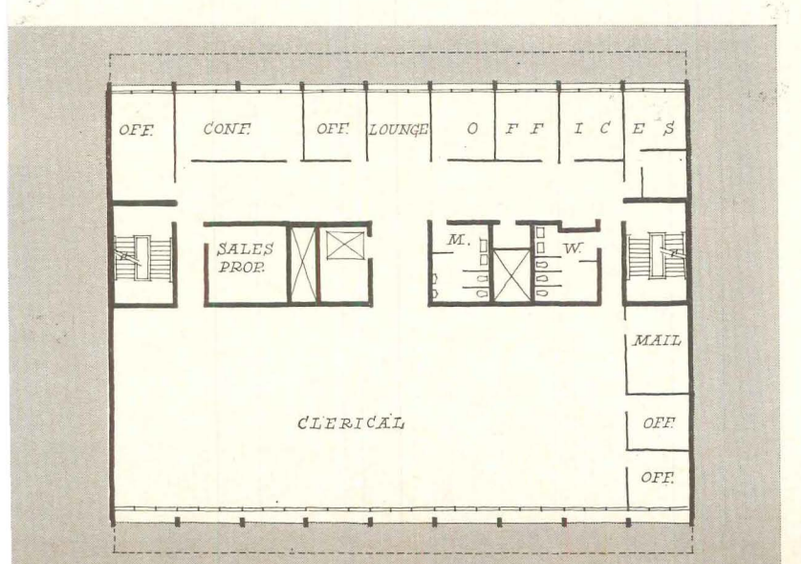
The small, second-floor reception area (above) and the glassy, first-floor entrance hall (below) both are in the building's center bay, one of three



PHOTOS: HAL RUMEL



where it is possible to look all the way through from end to end.



The Hunter firm has given the shells every possible chance at self-expression. Except for the concrete frame, the wide north and south walls are composed entirely of arched windows in thin aluminum frames (the end walls, by contrast, are solid compositions of rectangular exposed-aggregate concrete panels, broken only by narrow strips of gray glass). Even the siting of the building slightly above the street adds to the shells' visibility.

The solid core containing mechanical shafts, rest rooms, and the elevator shaft is offset toward the rear of the building and bisected by a wide central corridor that can double as a reception area. The partitions, all movable, are glazed from the doortops to the crests of the arches. As a result, the undulating undersides of the shells are visible from the street fully halfway through the building, whatever the disposition of partitions. At the open center and the twin stairwells on the sides, the entire depth of the interior is in view from one glass wall to the other. The effect is particularly striking after dark. "We created quite a traffic problem the first few weeks when the building was left lighted at night," Hunter recalls.

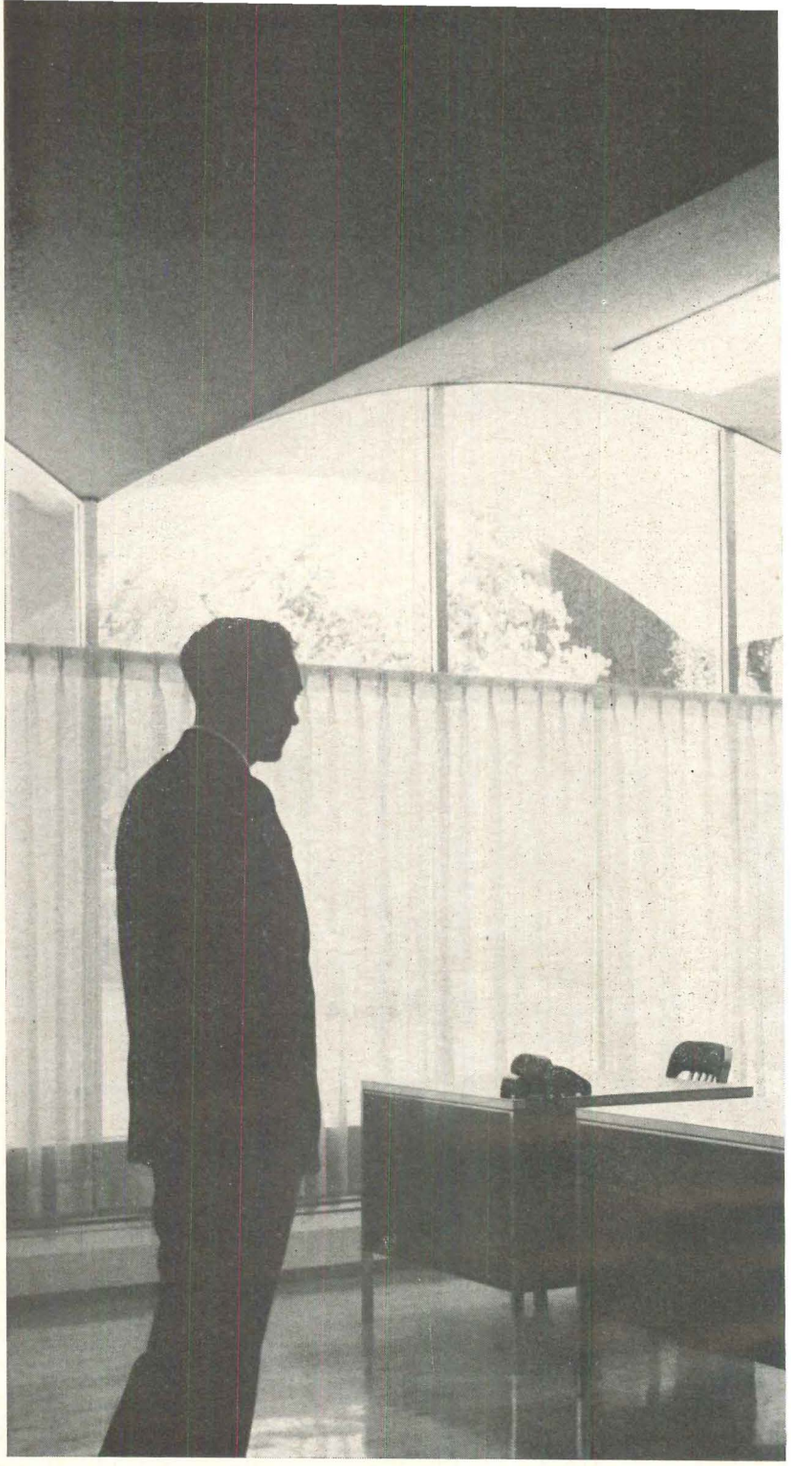
Windows work both ways, and those on the upper two floors of the IBM building admit wide views of the mountain ranges which surround Salt Lake City (in compensation, occupants of the ground floor look out on a metal-railed balcony, and, on the south side, a sunken garden joining the building to the street). The windows also admit a good deal of sun. Some of it is blocked by the helpful cantilevers of the shells, but here, as in most glass-walled buildings, most of the drapes are pulled on clear days.

The shells give the interiors of the IBM building a spatial character not often found in multistory office buildings. They are 12 feet in width, producing a bay suitable (if slightly generous) for a single private office. Used in sequence, they take a good deal of the monotony out of the large clerical lofts.

Their rolling surfaces are covered by a thick layer of acoustical plaster, made all the more acoustical by the coffering effect of the arches, according to Hunter. Walls are vinyl fabric and floors vinyl tile. All are white, except for natural birch doors and trim and frequent accents of the vivid primary colors which IBM likes so well. Reception areas and executive offices are also enriched by modern prints and paintings, another of IBM's enlightened predilections as a client.

Mechanical equipment is housed in a wide roof-top penthouse. The system combines fin tube convectors, continuous at the periphery, and circulating air. The air enters through small slit registers regularly spaced near the haunches of the shells. They are somewhat obtrusive, but not so much so as the lighting: boxy fluorescent fixtures are placed lengthwise along the crests of the shells. Such is the price paid for the crisp V's where the edges come together.

As with most of its other branch offices, IBM found a developer (Amco-Utah Inc.) to put up the Salt Lake City building to its specifications under a long-term lease. At present IBM uses about half of the 31,788 square feet of space; some of the first floor and all of the third is occupied by other tenants. The slope of the site makes room for a partial basement floor, used for storage and executive parking.

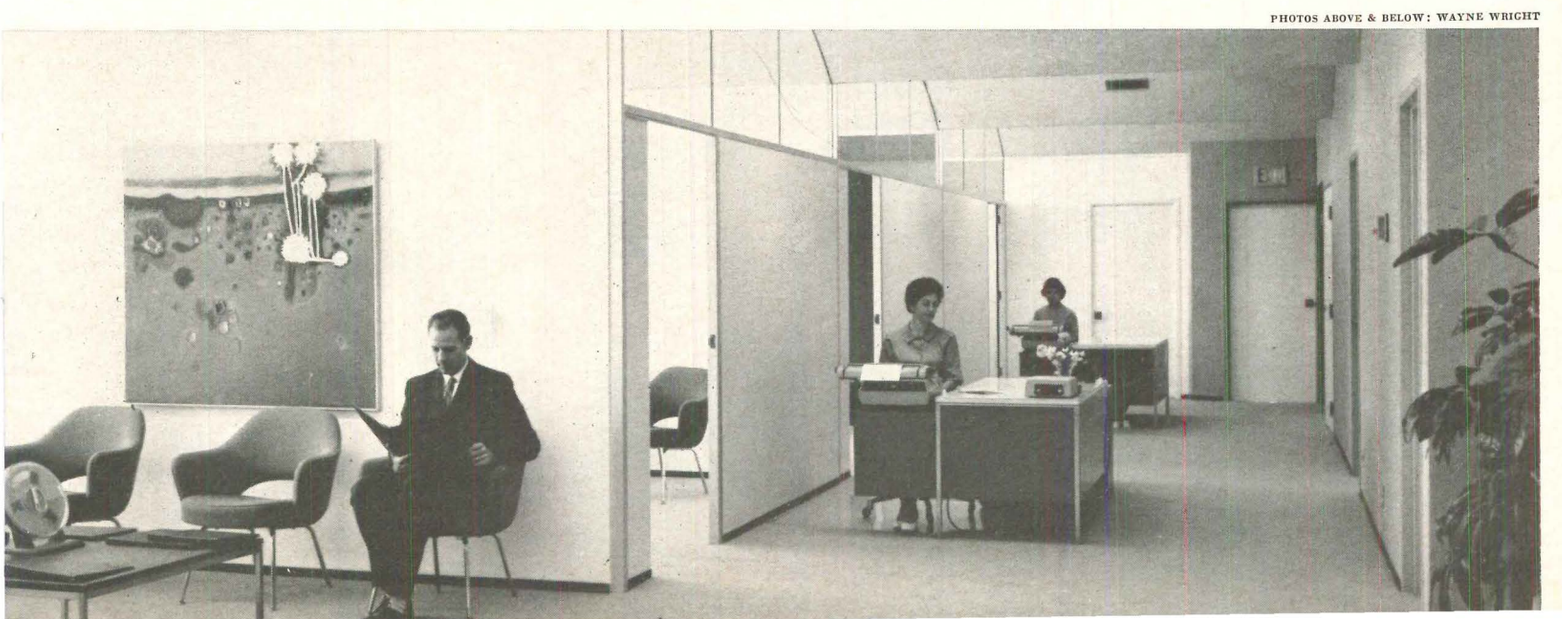


The shells' arched undersides make a lively ceiling for IBM's large

HAL RUMEL

second-story loft (above). Movable partitions divide the shallower south side (below) into a series of private offices and a small conference room.

PHOTOS ABOVE & BELOW: WAYNE WRIGHT




LARSEN & NIELSEN

THREE FAST CONCRETE SYSTEMS

It takes about two minutes for the 8-ton concrete assembly shown at left, complete with a factory-finished bathroom, to be lifted from a flatbed truck and set in place. Such rapid erection with room-size, factory-made components, for years a vision of building-industry prophets, is now well past the experimental stage in Denmark.

There, the contracting firm of Larsen & Nielsen has been putting up apartments at a steady rate of four units per day for the past few years. The cost of the system is so competitive that the firm can claim it has, single-handedly, driven down the cost of conventional apartment construction in Denmark by 5 per cent.

Among the many apparently similar systems of prefabrication that have sprung up in Europe since World War II, Larsen & Neilsen's is the only one that has proved so efficient that its use has begun to spread rapidly beyond the borders of the country in which it was developed. Recently, factories have been licensed in Austria, Holland, Sweden, Switzerland, West Germany, and Berlin. And, earlier this year, the London County Council, after a careful study of building systems, chose the Larsen & Nielsen system for its first venture into industrialized building. A British company has been licensed to manufacture components for the LCC's 562-unit Morris Walk development in Woolwich.

Labor supply critical

A key finding of the British study was that none of the new prefabrication systems, however simple, could be expected to save money at the outset. The main reason for investing in industrialized construction in Europe has been, initially, to overcome a shortage of building labor. Only after a system has been used for some time and production and erection crews are fully trained can a new system begin to compete with conventional construction on the basis of cost.

The gains in labor productivity and speed of construction, however, have been substantial. With the use of improved conventional methods, the labor required to build the average apartment unit in Europe has been cut from about 1,800 man-hours before the war to some 1,100 man-hours today. In contrast, Larsen & Nielsen have built units in only 110 man-hours, 60 per cent of which are performed within the casting plant. In addition, less skilled workmen are required and thus the cost per man-hour is lower with the prefab method.

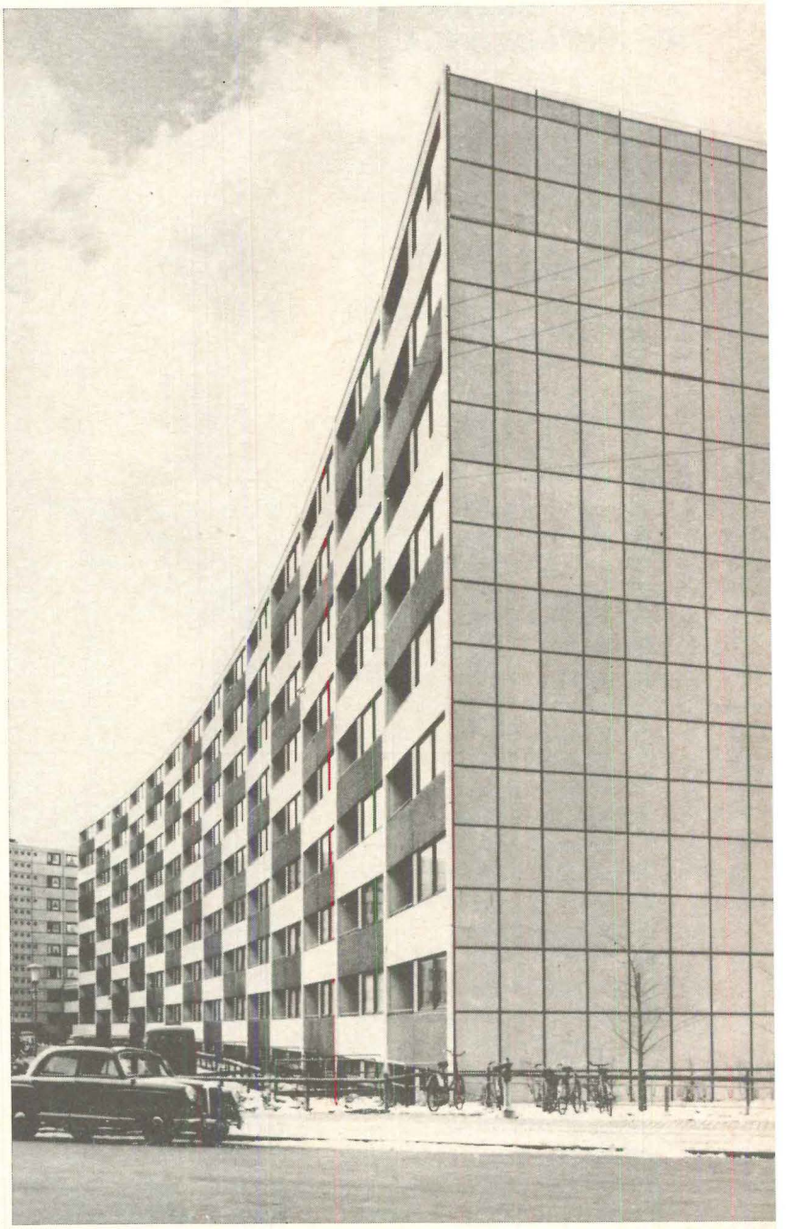
For the architect, the prime attraction of the system is its flexibility. Unlike the concrete panels of fixed design being turned out at a fantastic rate by Russian factories, Larsen & Nielsen's units are made with adjustable steel forms, easily reset to meet any design. The firm takes special pride, for example, in the ease with which it was able to put up the curved walls of the Bellmansgade apartments in Copenhagen (1), designed by the Copenhagen City Architect.

A reliable joint

The key to this design flexibility is the rather intricate but apparently foolproof joint the company has evolved over the past ten years (2). Interior floor panels have beveled, sawtooth edges. The bearing cross-wall panels are brought into alignment by bolts accurately located during casting.

The external joint has a double barrier which has proved to be weathertight even after considerable movement of the panels due to expansion, contraction, and settlement. A neoprene ribbon fits easily into a slot near the outer face. This is backed by an air space with corrugated sides which deflects any water that gets past the neoprene and also equalizes air pressure, further preventing rain penetration. The inner joint is sealed with grout.

Although the U.S. has not yet produced a system that approaches the sophistication of Larsen & Nielsen's, other new methods are being vigorously explored (see overleaf).



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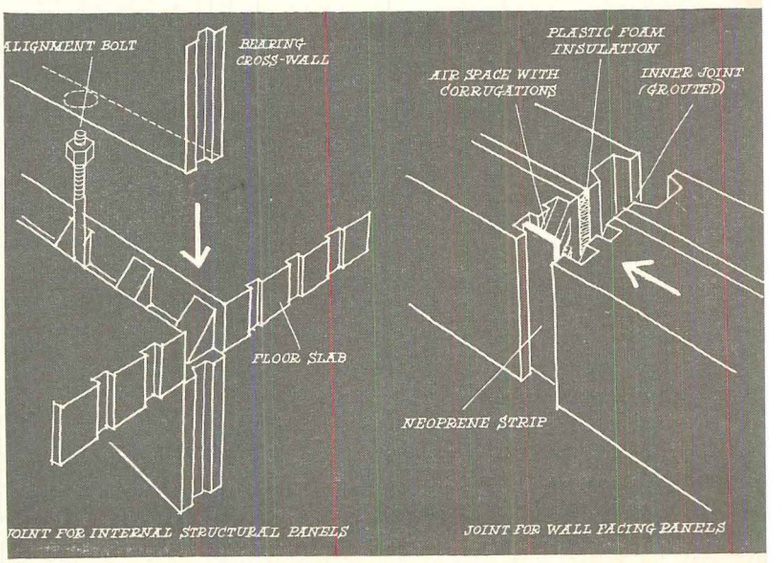


2.

PHOTO OPP.: SCHOU-JO

CHECKERBOARD WALL IN PHILADELPHIA

For several years, Architects Stonorov & Haws have wanted to put up an apartment building with precast concrete walls. But each time they tried, they were frustrated by a lower bid for their own alternate design using conventional materials.

By making their exterior wall panels fully load bearing and stacking them in checkerboard fashion (1), they finally found a way to realize their ambition. The exterior wall of the Oak Lane Park apartments in Philadelphia is now being fabricated, and will be put in place for only $3.35 per square foot. This is some 50 cents less than the cost of a conventional wall plus structural frame.

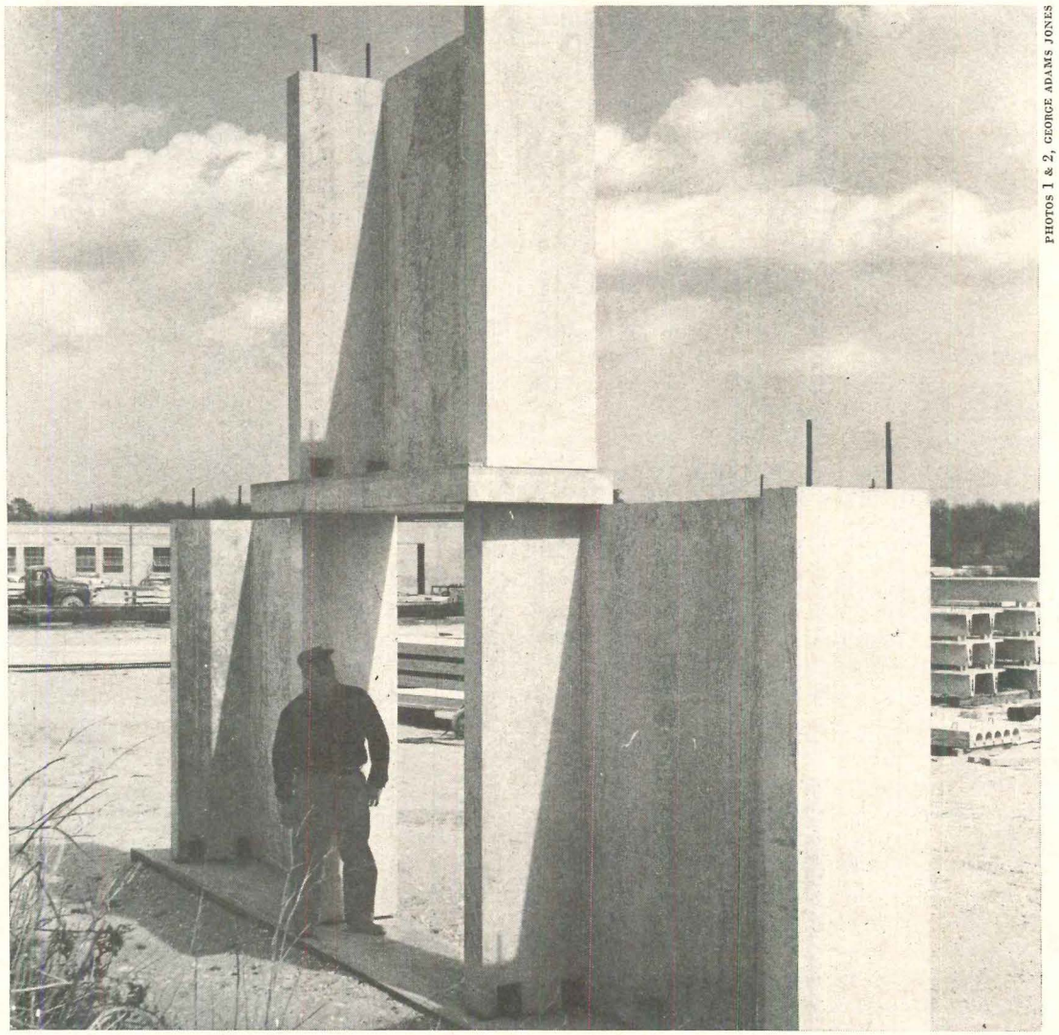
The 20-story, 304-unit Oak Lane Park cooperative is the first multistory apartment with precast bearing walls to win FHA approval. The full-scale mock-up of three of the 8-foot-square, channel-shaped wall units (each weighing 4,500 pounds) was erected at FHA's request to test the simple dowel bolted connection that ties the panels together (2). In the design of the building's structure, Engineers Garfinkel & Marenberg assumed that all of the lateral loads would be carried by the internal framework. Thus there is no horizontal thrust on the precast exterior wall panels.

The bearing-wall sections also work neatly into the planning of the apartments. Each living room and bedroom has one of the U-shaped units (see plan). In bedrooms they are closed in with sliding doors and used as closets; in the living rooms, they create a shallow alcove, and the top part of the recess forms a convenient hiding place for the fan-coil units which are used to heat and cool the building.

In all rooms, the space between panels is occupied by a sliding glass door; a token balcony 2 feet deep is created by the reveal (3). This not only extends the apparent size of the room but also shields it from sun and rain, and the ledge serves as a window-washing platform. Contractors: H. Korman, Inc. and S. Levy Co.

PHOTOS 1 & 2, GEORGE ADAMS JONES

1.



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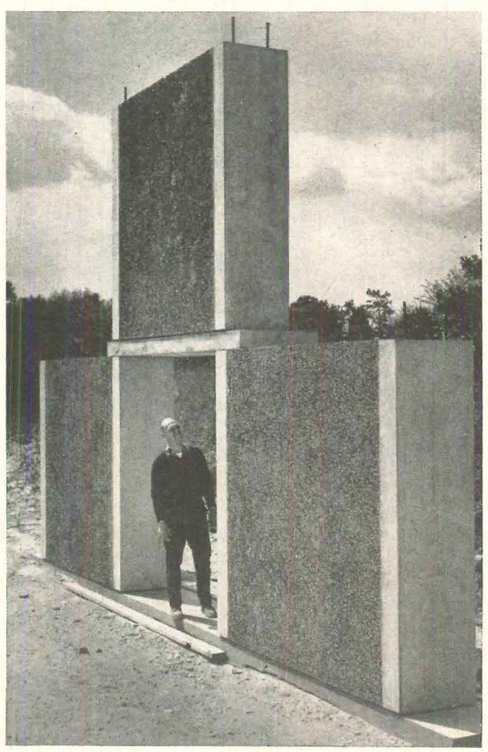

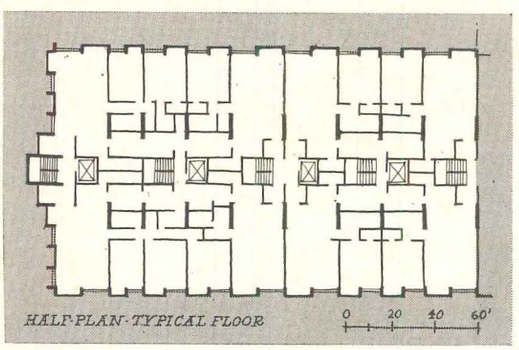

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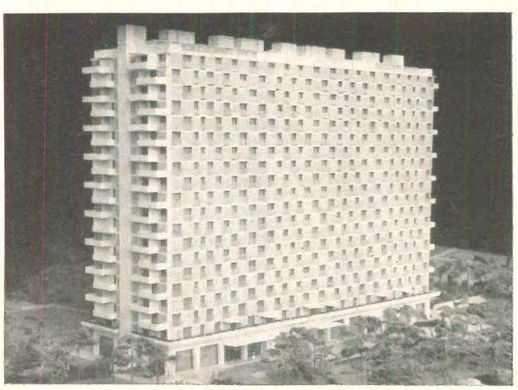


MASSIVE SLIP-FORM IN SANTA MONICA

Just about every wall in the 13-story Shorecliff Tower apartment now nearing completion in Santa Monica, Calif. (1) is a continuous bearing wall: a perfect situation for the slip-form technique. So, Architects Jones & Emmons and Contractor Peter Kiewit and Sons' Co. decided to find out if they could save time and money with a massive application of this method. A similar but conventionally cast job by Jones & Emmons in San Francisco served as a convenient comparison.

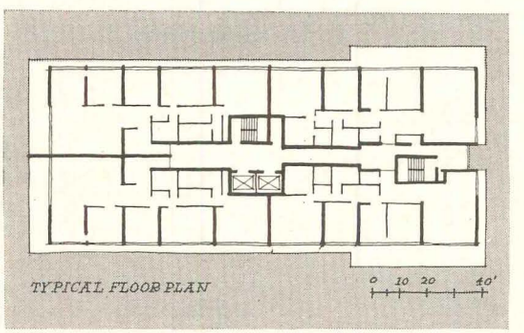
The slip-formed structure, it turned out, went up at better than twice the speed of the cast-in-place building (at the rate of one floor every four days), bringing the owner an early return on his investment. The structural shell of both buildings cost about $4 per square foot, with the slip-formed building lower by some 30 per cent per square foot. The savings were plowed back into the building's 50 luxury apartments in the form of better finishes.

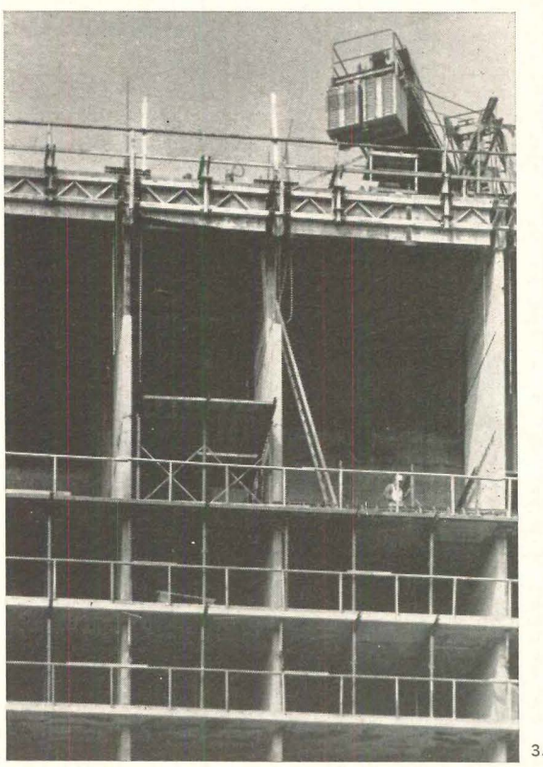
The unusually large moving formwork was tied together with a series of wood diaphragms which gave the lightweight concrete walls lateral support until the floor slabs could be cast between them. The 7½-inch-thick flat slab floors, complete with radiant heating coils, were cast in place about three floors behind the moving wall forms (2).

The floors were bonded to the walls with a simple joint developed by the contractor and Engineer Richard Bradshaw. Since the usual dowel ties could not be used with the slip-form system, a key connection was scored into the walls by workmen while the concrete was still green. And they were able to patch and smooth rough spots in the relatively plastic concrete as it emerged from the formwork (3).

As in the other bearing-wall apartments shown on these pages, owners and tenants can count on one important dividend beyond speed and ease of construction: with massive concrete walls separating neighbors, there should be no complaints about noise.

1.





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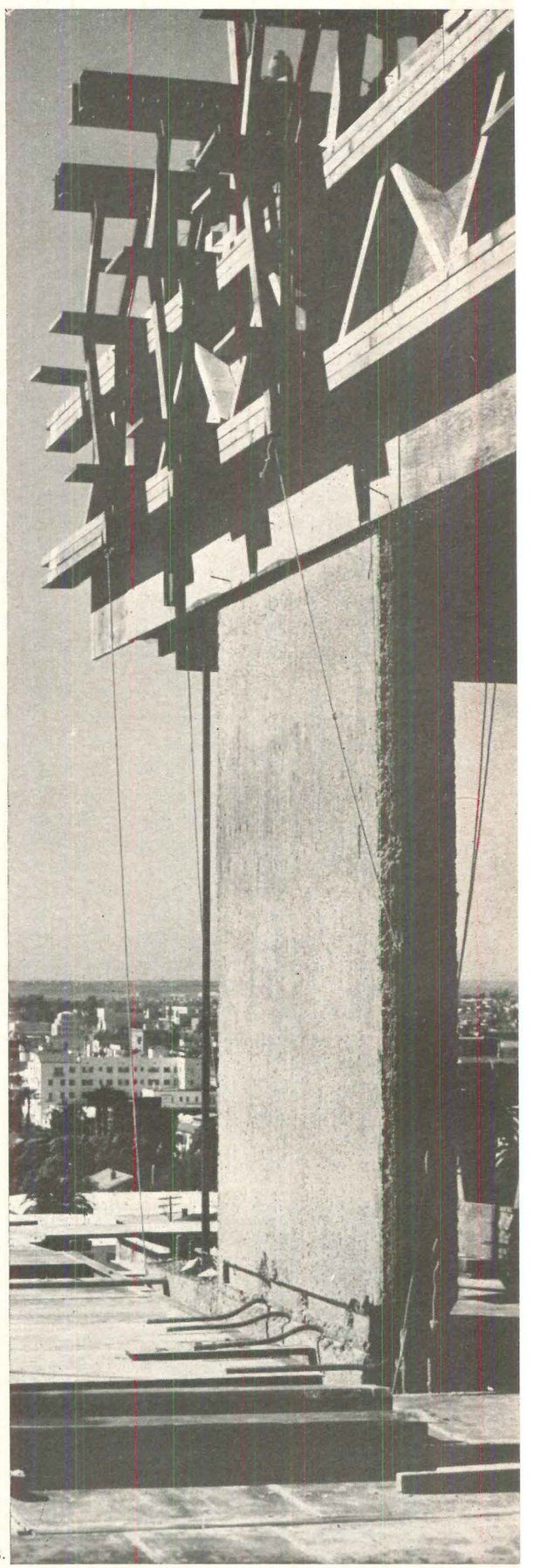


3.

PHOTO 1, MARVIN RAND; 2 & 3, ED DELGADO

SHOPPING CENTER AS "NUCLEUS"

A great brain-stretching exercise took place last month at the Harvard Graduate School of Design when James W. Rouse, the business leader and shopping-center promoter with social awareness, asked whether there was anything the regional shopping center could do to become more of an "intercity" social nucleus.

An amazing number of facets turned up in this discussion, including the question whether architects and planners today really like what the American people are doing, well enough to be useful helping them. Rouse implied nicely but clearly that architects and planners are not very useful because of their attitudes.

But he himself does not face some of the mental complications that they do, wonderful though his own community work at Cherry Hill near Camden, N.J. has been (photo below).

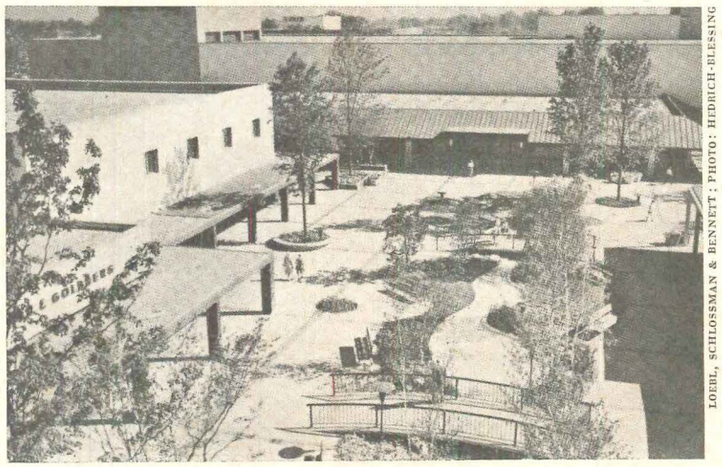
For a single "editor's note," let's take just a single difficulty:

A quite new problem which architects and planners face, along with the people who inhabit the vast new intercity pattern, is that what used to be tight "neighborhood" has become loose "network." All through history, planning and architecture have dealt with close contiguities. Architects have dealt with an "eyeful" at a time: one house, one building, or one street, one square, one project, one neighborhood, all standing near to one another, and well relatable to one another in use as well as in forms. At somewhat bigger scale, planners have dealt with contiguity too: a connected city fabric.

But today's citizen no longer lives as he did: his "neighborhood" is vastly distended and *discontinuous*. He and his wife may drive five miles to work, drive the kids two miles to school, drive half a mile to daily shopping in the central business district of their suburban town, and once a week drive as far as 30 miles to some "regional" shopping center such as Shopper's World or Old Orchard (right). The friends of this couple come distances of 20 miles for "neighborly" parties.

If the five different network patterns, just mentioned, were to be mapped on vinyl sheets, and these transparencies then superimposed, the composite map would show an intermittent pattern, ragged, very wide-ranging. Similar would be the composite map of various networks, as seen the other way round: that is, the network of *all* the regional shopping centers in a metropolitan area, the network of *all* the schools, of *all* the cultural centers, *all* the entertainment facilities. Thus, regional shopping centers might need 60-mile spacing (not just 80 acres), schools might be placed just two miles apart, etc. Each network is set up on different considerations which have little or nothing to do with trying to set up the others, let alone with setting up complete "new towns."

As the vinyl sheets showing different kinds of networks are dropped down on the pile, the places where two different kinds of center fall alongside one another on the map—e.g. a regional shopping center on one sheet falling next to a local town hall on another sheet—become quite coincidental.



LOEBL, SCHLOSSMAN & BENNETT; PHOTO: HEDRICH-BLESSING

This creates quite a chaos of mixed-up roadside googie, and today there are few agencies of governmental control that have scope as wide as the networks' scale of operations. So then a regional center like Old Orchard, which draws on a circumference of about 30 miles containing about 1 million people, has to have its zoning done by the town of Skokie, 60,000. It is Skokie, too, that must zone the land adjacent to the shopping center (as Skokie has not done).

It was noteworthy at the conference that quite a few planners and architects would have liked to turn the clock back under the pretense of turning it forward. For the future, they would have liked to get "metropolitan area" planning of a sort that would compel regional shopping centers not only to locate where new population centers could ultimately be made to grow out of them as ordered by planners, but also to keep to a size that would be "proportionate." All this, if successful, would restore to planners the chance to do tight old-fashioned "neighborhood" planning, shaping urban scenery by the eyeful at a time.

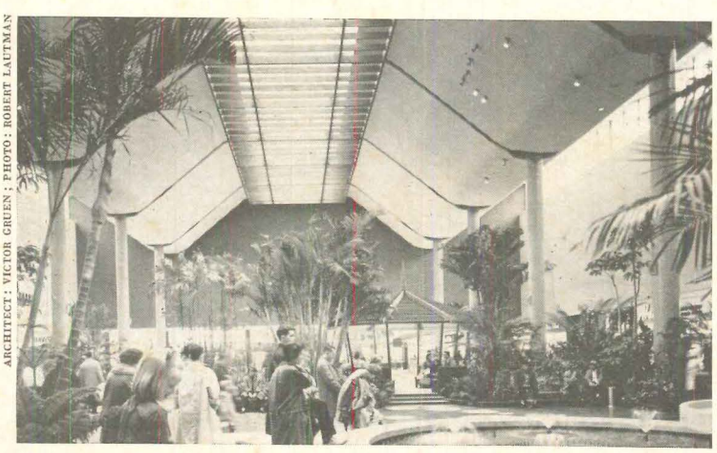
Unhappily such a thing is quite impossible. For, inadvertently, the planners would destroy the whole meaning of the regional shopping-center network if they departed from the carefully figured size, spacing, and placing that market conditions impose on the proprietors, trying *theoretically* to make the scale "proportionate" instead to something or other not organically relevant.

However, in the U.S. we do have a resource which should be called to the attention of doctrinaire planners from Europe. There is government here largely by give-and-take, and whenever the citizens of a town like Skokie make up their minds to zone better around shopping centers, and get more community use out of it, ways can be found for this to be done, even though the arrangements made may lack some diagrammatic logic.

SILENCE, PLEASE!

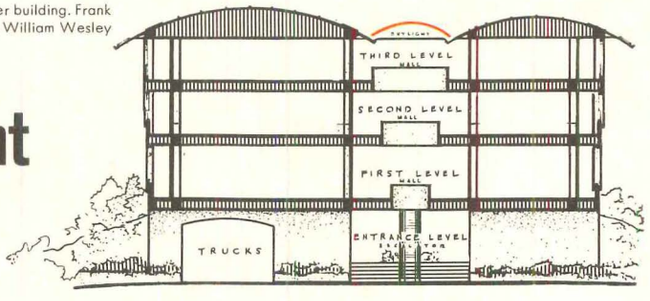
Columbia University and Dean Charles Colbert of the Architectural School decided to part company last month, and while this obviously indicated some deep disagreements, neither side has gone in for public discussions. Would that the same rule were followed by all individuals concerned, including highly placed people in some neighboring schools, who are talking too much irresponsible nonsense! Colbert is still young, has had a fine career, and will have one. Columbia is an important institution, also with a future to take care of. Personally I did promptly resign an adjunct professorship at Columbia after Colbert left. This was to register disagreement with Columbia, but nobody can afford to be vindictive.

Douglas Haskell



ARCHITECT: VICTOR GRUEN; PHOTO: ROBERT LAUTMAN

A soaring arch of Plexiglas admits natural light into mall areas of the Marin County Civic Center building. Frank Lloyd Wright, Architect; Taliesin Associated Architects of the Frank Lloyd Wright Foundation: William Wesley Peters, Chief Architect; Aaron G. Green, AIA, Architect Associated.



The 384-foot skylight is Plexiglas

Frank Lloyd Wright designed this skylight. PLEXIGLAS® acrylic plastic gave it form and substance. It is one of the distinguished features of a famed new structure, the Administration Building of the Marin County Civic Center, near San Rafael, California. The skylight is 384 feet long, 20 feet wide.

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Prestressed concrete gives you the longer spans you need with only moderate increase in per square foot cost. For example, with a double tee 14 inches deep and 4 feet wide, the only real difference in per square foot cost between a 30-foot-span member and a 50-foot-span member is the cost of additional prestressing strand. The same is true for a single tee on a 60-foot-span versus 110-foot-span. The extra cost is partially offset by savings in column, footing and erection costs.

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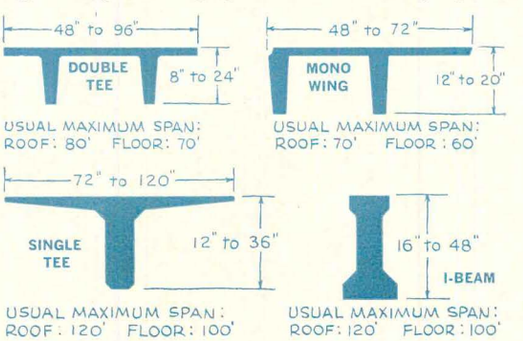

rooms to be quickly doubled or tripled in size through use of folding or non-bearing wall dividers.

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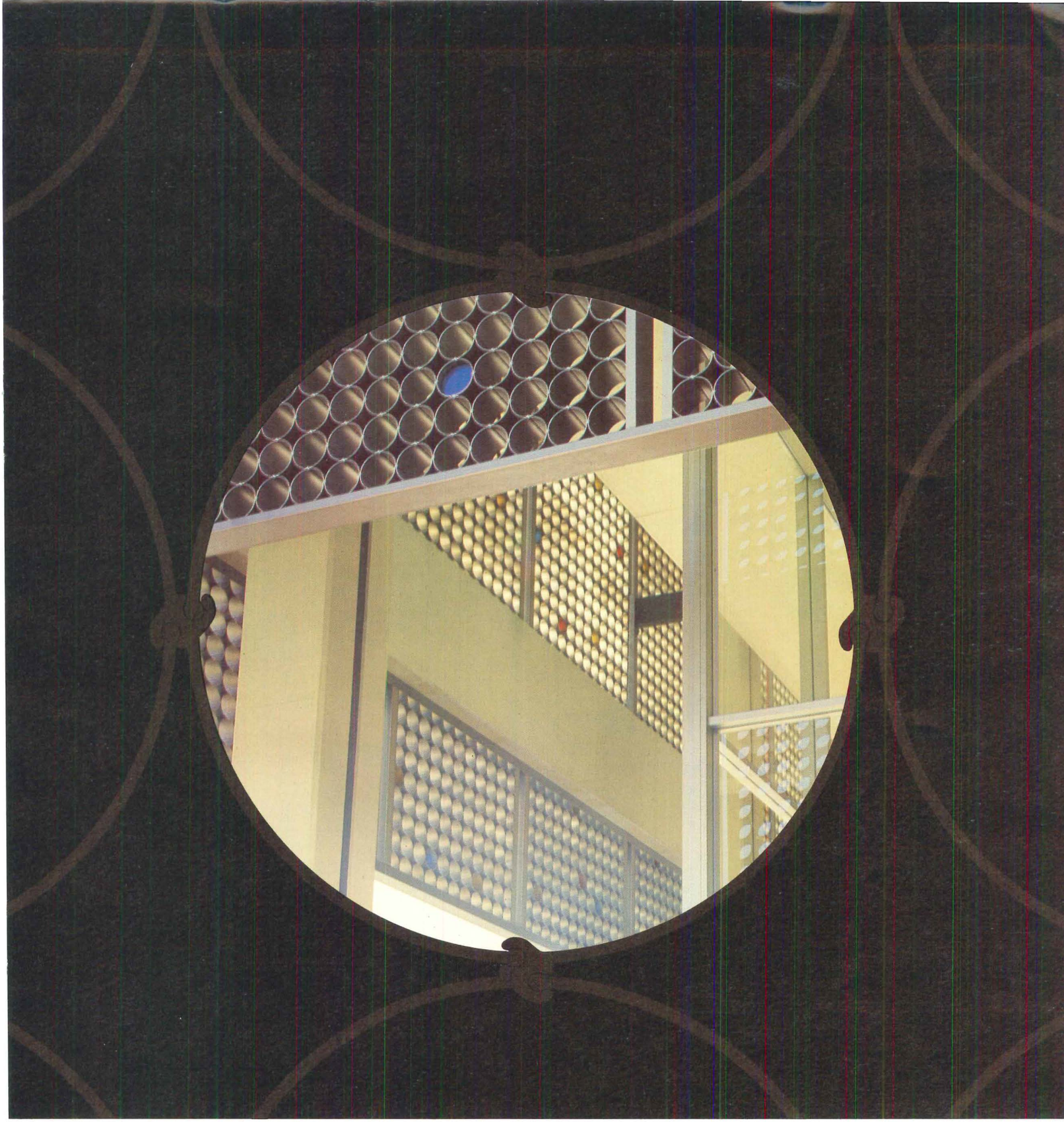

Central Valley National Bank, Oakland, Calif. Marshall Welch McDonald, Architect Fabricator: General Hydronics Corporation, Oakland, Calif. KALCOLOR Licensee: Baker Metal Finishing Co., Monterey Park, Calif.

AMBER, GOLD RINGS CATCH THE SUN AT CENTRAL VALLEY BANK

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KAISER ALUMINUM

COLOR IN ARCHITECTURE...ACHIEVED WITH ALUMINUM

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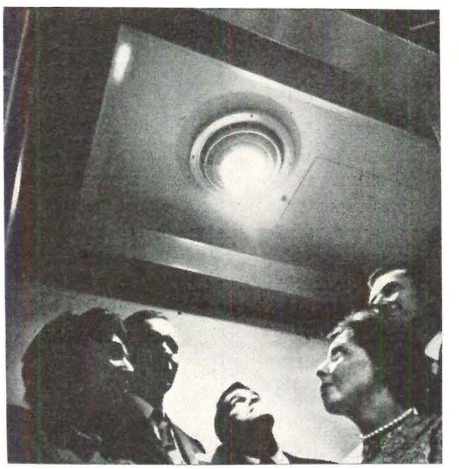
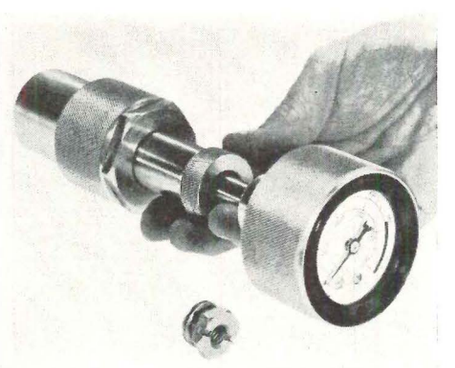


to the nearest exit. The building's regular power supply keeps the emergency batteries charged and also heats the lamp filament, preventing burnout caused by rapid start-up and indicating by a faint glow that the lamp is working.

Currently there are five types of models available, including the elevator unit shown. The manufacturer is quoting prices of $180 to $200 for each unit and six weeks' delivery time.

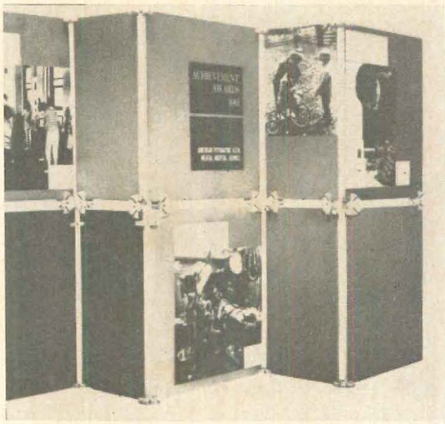
Manufacturer: Emergency Lighting Div., The Maintenance Co., Inc., 10-40 45th Ave., Long Island City 1, N.Y.

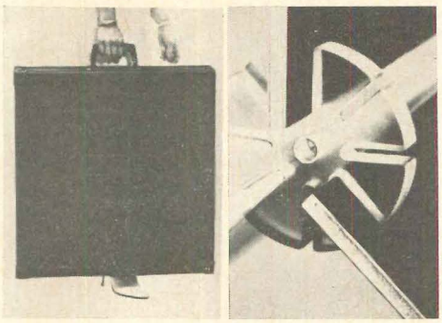


STUD TESTER

An instrument the size of a flashlight tests the holding power of studs set into steel or concrete by a powder-actuated fastening tool. The *Ramset Pull Tester* screws down over the fastener, and the gauge indicates the grip of the seated fastener (up to 5,000 pounds of tension stresses). The tester weighs only 2½ pounds and can be carried easily for on-the-job tests. The standard model, which costs $70, comes equipped with two adapters for testing ⅜-inch and ¼-inch threaded studs. Adapters for other sizes and types of fasteners are available on special order.

Manufacturer: Ramset, Winchester-Western Div., Olin Mathieson Chemical Corp., 289 Winchester Ave., New Haven 4, Conn.





PORTABLE EXHIBIT

Exhibitkit, a package of Tinker-Toy parts, turns presentation amateurs into exhibit designers. Packed in a broad but thin carrying case are all the parts necessary to mount an exhibit for a desk or table top, or a larger, folding-screen arrangement (top photo). The components are a set of modular sandwich panels of polystyrene and kraft paper, slotted plastic joints (detail), a booklet of display suggestions, three-dimensional letters, and a sheet of transfers. The case, completely packed, weighs 21 pounds and can be set up or dismantled in a few minutes. The designers are Will Hayett and Carl Ramirez.

The dimensions of the carrying case are 25 by 25 inches and 4 inches wide; the panels, 24-inch squares and 24 by 12-inch rectangles. Cost for a complete kit: $68.50.

Manufacturer: William Hayett Inc., 205 W. 25th St., New York 1.

BIG TILE SQUARES

Small ceramic tiles grouped in twelves and embedded in resilient vinyl make a new flooring called *Vinylbond Ceramic Tile.* The one-foot squares are said to cut installation time in half, for the large size makes them easy to handle and all grouting is done at the factory.

Vinylbond squares may be installed on, above, or below grade using either of two types of adhesive made by the manufacturer. There are six colors, all of them a combination of light, dark, and mottled shades in

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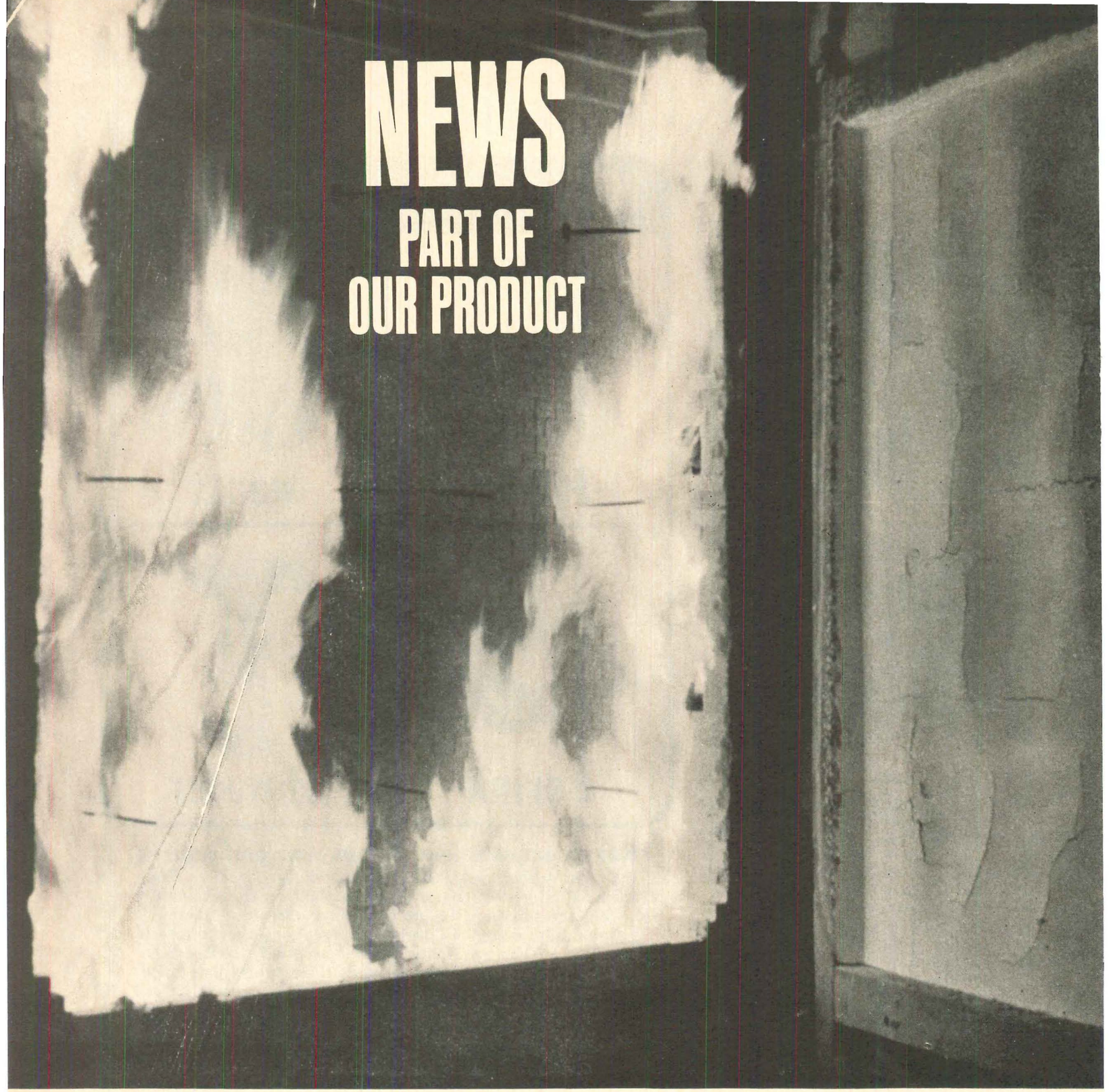

This picture of the fire in a furnace during tests under ASTM Standards shows the terrific fire load which reaches 1000°F. in 5 minutes, 1700°F. in 1 hour, 1850°F. in 2 hours

BESTWALL ANNOUNCES NEW IMPROVED FIRESTOP . . . reinforced with the highest glass fiber content of any gypsum product, achieves 2-hour fire rating in floor and ceiling assemblies. A gypsum tile, made from improved **FIRESTOP** and called **"Firestop-120"**, when used in lay-in assembly in fire-rated suspension systems, also provides 2-hour fire resistance. These constructions, one with a solid ceiling, the other a lay-in assembly, provide the lowest cost, 2-hour fire resistant, incombustible floors and ceilings available today. New, improved **FIRESTOP** is available at no increase in price. Learn of the many benefits of **FIRESTOP** and **"Firestop-120"**, and the services of our Systems Engineers, through our nearest district office or Bestwall Gypsum Company, Ardmore/Pa. Plants and offices throughout the United States.

FIREPROOF GYPSUM
BESTWALL
BUILDING PRODUCTS

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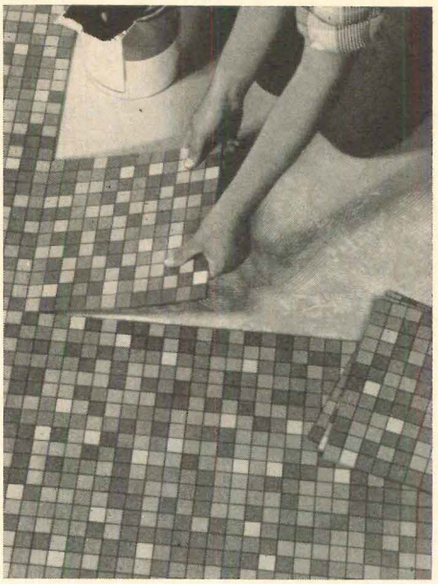
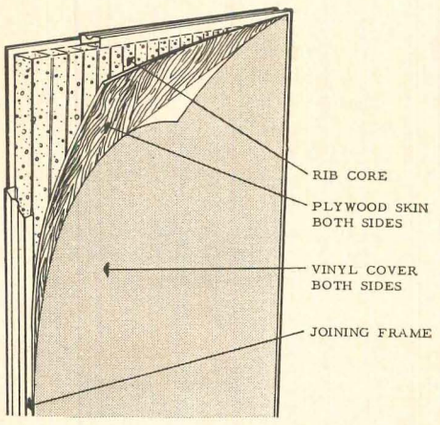


one square. The retail cost is $1.35 to $1.40 per square foot, which does not include installation.

Manufacturer: Stylon Corp., Milford, Mass.

PREVIEWS

After a long development period, Monsanto Chemical Co. is getting ready to market a prefabricated building system called *Loc-Pac*. So far the only actual structure built is a model house in St. Louis, but the system also lends itself to small apartment houses, dormitories, field hospitals, and office buildings, particularly those put up on temporary sites.



Loc-Pac components are based on Monsanto's rib core, a sandwich of polystyrene, kraft paper, and adhesive, to which are bonded facings of polyvinyl chloride over ¼-inch exterior-grade plywood. Panels are framed in metal and locked together mechanically. A bath and kitchen core, developed jointly with Lockheed Aircraft Corp., contains rough plumbing, heating, and electrical panel equipment, all packed in a vinyl-covered steel box.

continued on page 166

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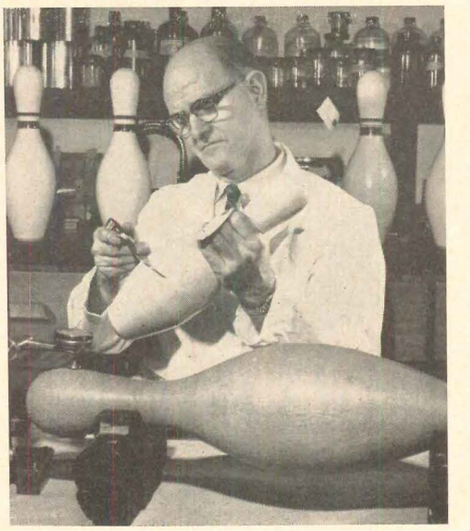
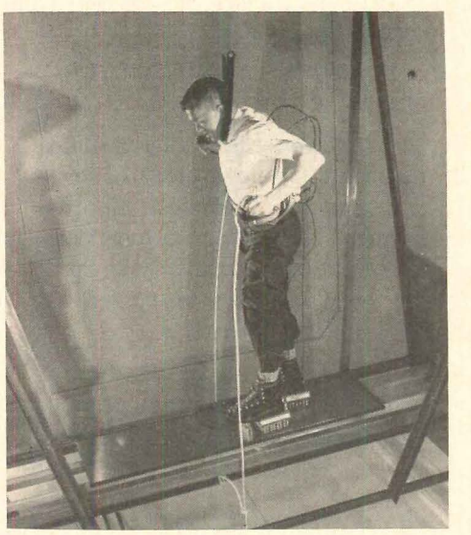
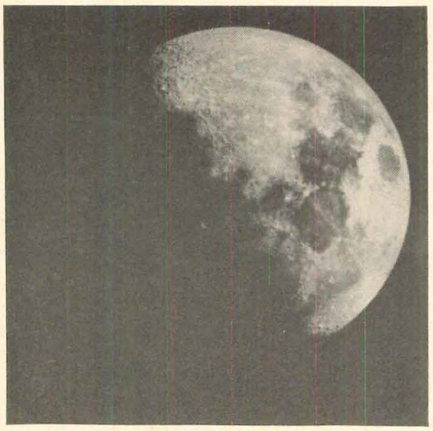


Dwindling supplies of hardwoods, particularly maple and persimmon for bowling pins, heel blocks, and so on, has led Goodyear to find a substitute. "Chemical wood," shown here in an experimental bowling pin, is a mixture of hard rubber, resins, pigments, fillers, and chemicals that are milled and vulcanized, then turned on a lathe. Relatively small objects will be the first products made, but chemical wood might some day substitute for other, bigger hardwood applications.



The human fly in this photograph is demonstrating a new magnet developed by Westinghouse. Permanent magnets in the soles of his shoes clamp him securely to the steel beam, yet permit him to lift his feet to take a step. When he puts his foot down (up?) again, he is securely fastened. Besides being good for eye-catching photographs, the new magnet has been used to build small electrical relays, and shows promise as a magnetic memory for computers. END



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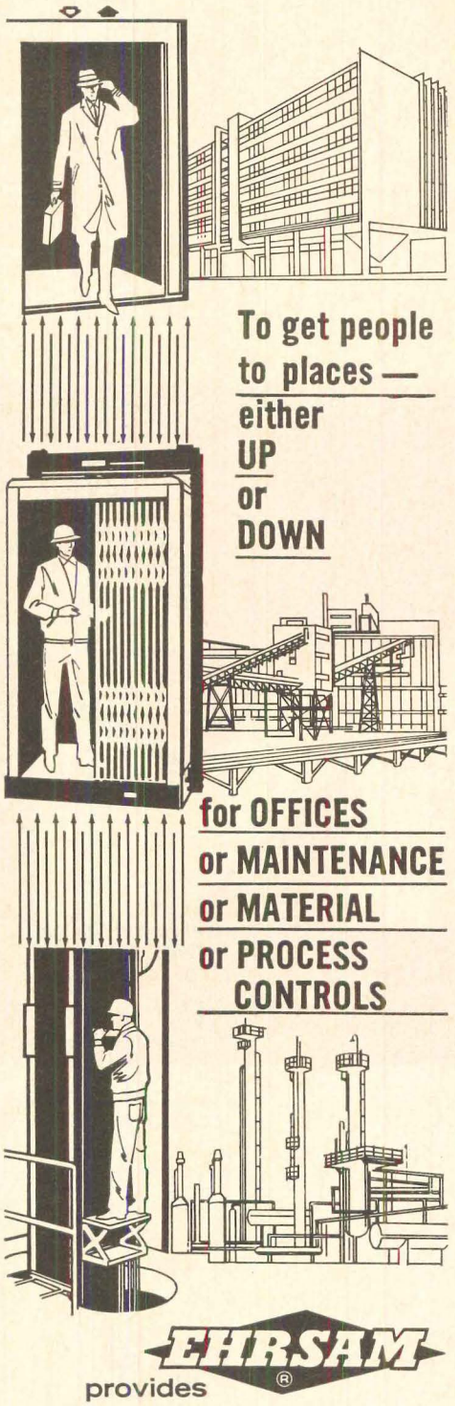

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Mechanical Engineers:
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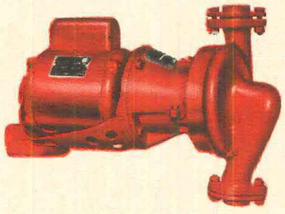
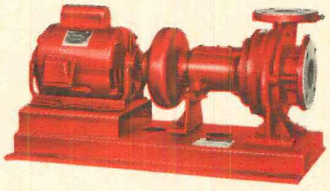
West Hartford, Conn.

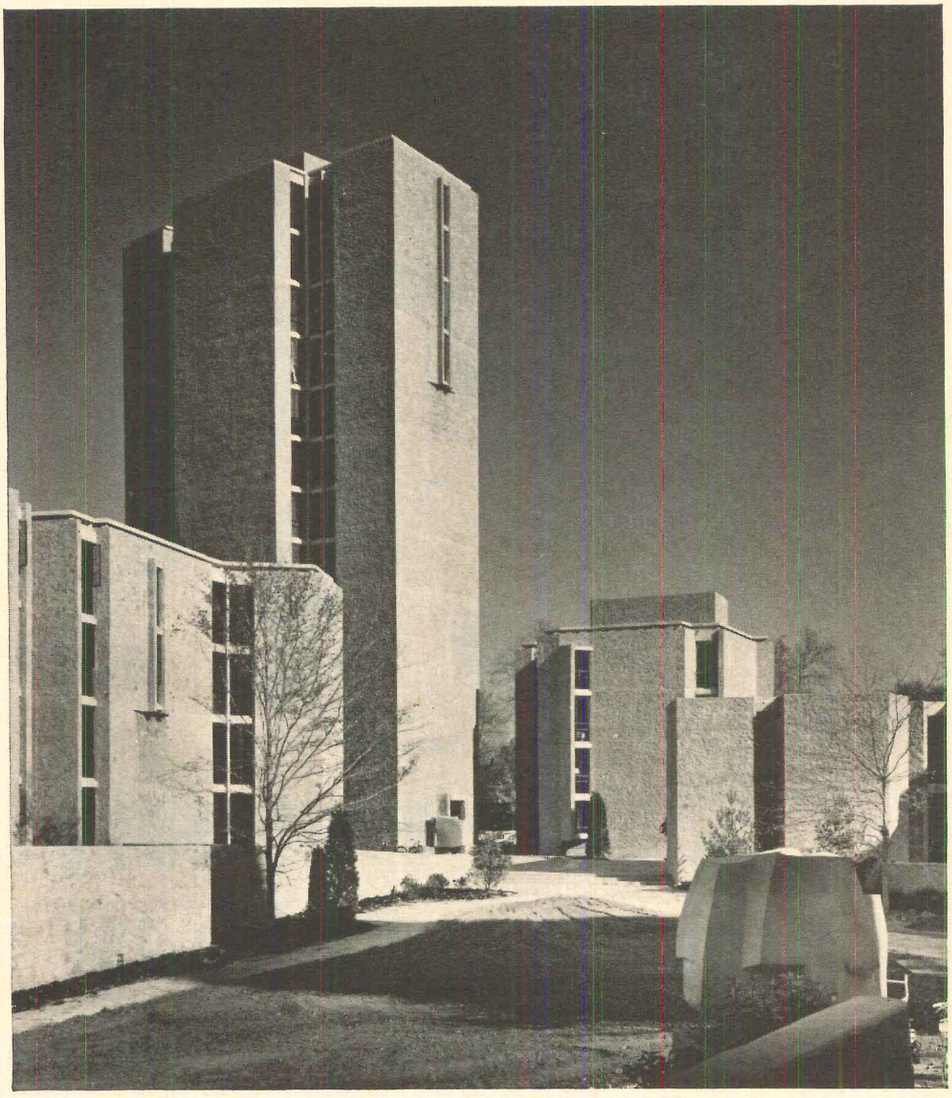
Mechanical Contractors:
Buckingham-Routh,
New Haven, Conn.



The snow melting system is circulated with an anti-freeze solution by a B&G Series 60 In-line Pump.



The circulators for heating and cooling systems are B&G Universal Pumps.



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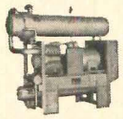
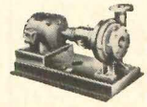
Booster Pumps

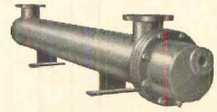


Package Liquid Coolers

Refrigeration Compressors



Centrifugal Pumps



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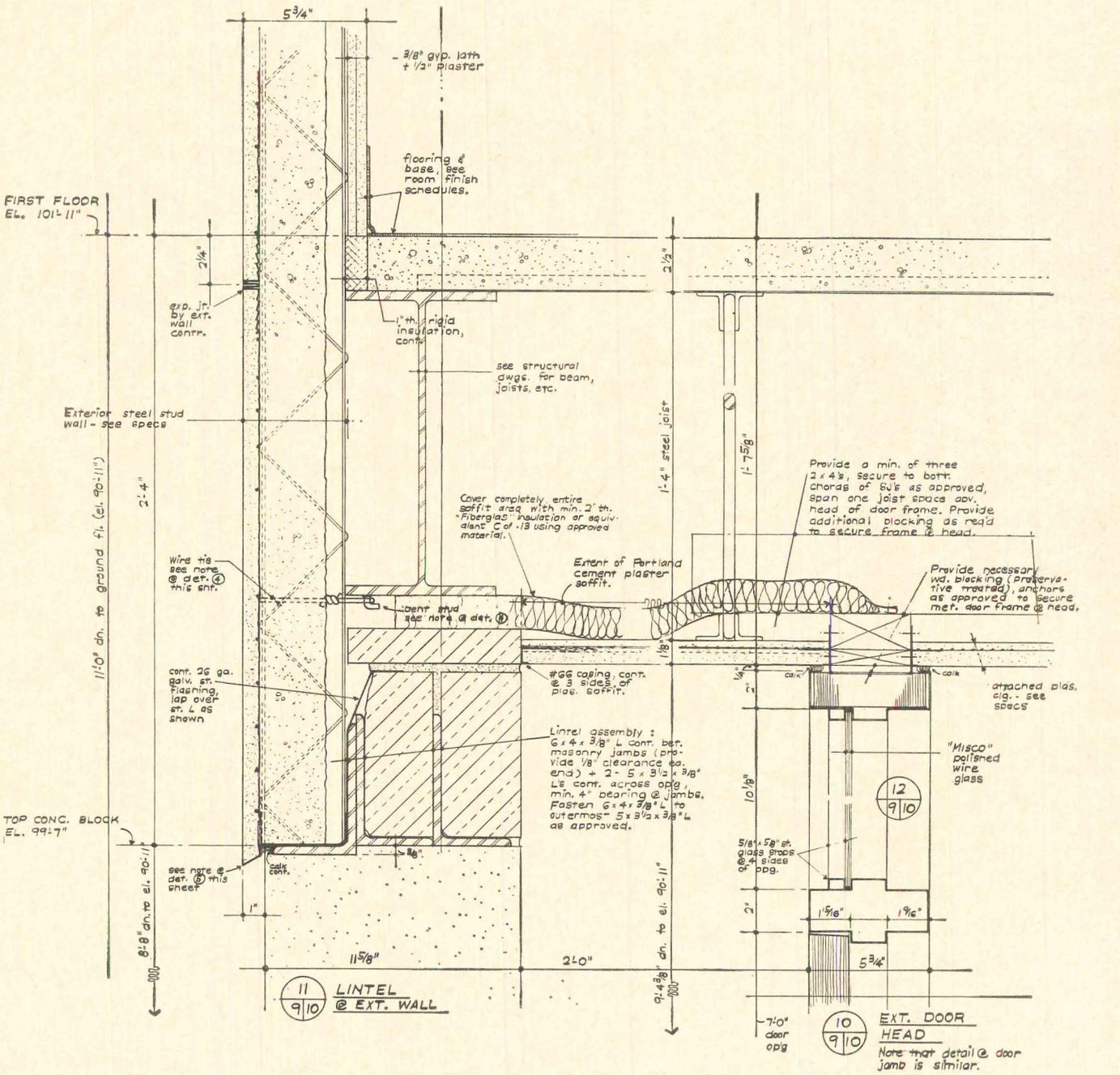


Eureka Hospital addition,
Eureka, Illinois

Architect: Evan A. Thompson, A.I.A., of
Foley / Hackler / Thompson / Lee, Peoria, Ill.

Plaster Development: L. H. Hobson,
Plaster Development Center, Chicago, Ill.

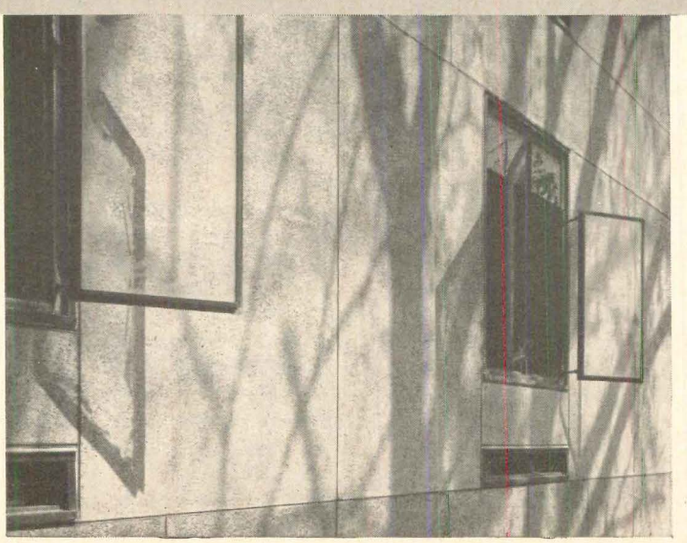
Mechanical Engineer: S. Alan Baird, *Peoria, Ill.*

Structural Engineer: Edwin A. Lampitt, *Peoria, Ill.*

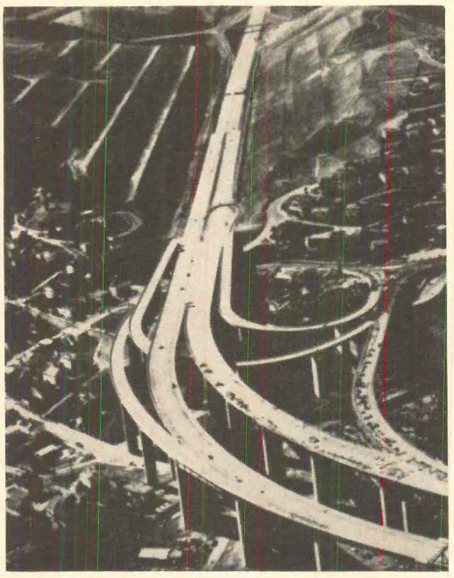
General Contractor:
O. Frank Heinz Construction Co., Inc., Peoria, Illinois

Plastering Contractor:
J. J. Kinsella & Son, Peoria, Ill.

(Note: Construction costs in Eureka, Ill., are approximately the same as those in Chicago, a high-cost construction area.)



Roads and roadsides . . . lords of the land



MAN-MADE AMERICA: CHAOS OR CONTROL? By Christopher Tunnard and Boris Pushkarev. Published by Yale University Press, New Haven, Conn. 479 pp. 8¼" x 11¼". Illus. $15.

Reviewed by Walter McQuade

A case might be made that highway design is the monumental building activity of our time, much as it was in the Roman era. Surely the unrolling of a ribbon of concrete or macadam through the countryside (or city) involves the greatest of all siting problems. But also the sensitivity or the haplessness of the way in which our roads lie on the still enormously empty North American landscape has a broader meaning. They will probably survive for several centuries as the answer to the sharp question of whether our industrial civilization can possibly yet become neighborly with nature, rather than remaining a juvenile antagonist (Burma-shave!).

That a close reciprocity between Detroit and the landscape is possible is known by those who admire the infinitely sympathetic progress of a road like New York's Taconic State Parkway over hill and across dale, or have a connoisseur's eye for the manner in which the new limited-access highway from Washington, D.C., to the new Dulles Airport lives with those little Virginia hills (excellent grandstands from which cows and sheep watch the Galaxies go by). The largest single contribution of this generous book by Christopher Tunnard and Boris Pushkarev may even be that the authors define the game of appreciating superhighways by writing down some of the rules, the requirements of a good road.

A highway can be made very good as a design piece, or it can be very dull in default of design, as the authors point out. They present the theory, well documented, that in a highway dullness means danger. They have listed a selection of major turnpikes by name, have judged their esthetic character, and then have discovered that the monotonous ones apparently have the highest fatality rate from accidents. Why? Too straight, too little variety. The very thrill of speed becomes a drone, and the driver drowses; ". . . unless the point of concentration is made to move around laterally by means of a curvilinear layout of the road, driving along an uneventful highway may become as hypnotic as gazing into a crystal ball."

But having laid a sound practical foundation, Tunnard and Pushkarev go beyond. What they ask for, bravely, is overall art in the design of highways, and they demonstrate clearly what this element of art is. The photographs are almost proof enough. They show numerous roads, bad ones and beautiful ones, and demand of any freeway's relationship to nature: "Does it flow along the river smoothly, hug the slope naturally, climb the hill in a convincing way? Does it grasp the mountain firmly, jump the valley decisively? Or does it, on the contrary, climb a ridge needlessly, descend into a valley thoughtlessly, violate a lake brutally, cut up the landscape violently? Or is it simply trite?"

And yet the discussion of roads is only one part of this rich book. Other main subject headings include the Urbanized Landscape, Industry and Commerce in the Landscape, Open Space, and Preservation of "Visible History." The highway section is followed closely in interest by the section on the suburbs and their low-density housing dilemma.

An urgent body of knowledge

This book is not completely successful in the fact that it is a little uneven (a number of different people besides Tunnard and Pushkarev worked on it, and in the end no one person could bring it all up to the same pitch). This seems a paltry complaint to make, however, because it is so obviously a book to reach for, to hold, and to recommend to any citizen. It diagrams no specific programs of rescue, but it does present, lucidly, nonpedantically, the inventory of knowledge and technique which professionals have accumulated on how to husband the visual resources of a place. It is all there, and it is an urgent body of knowledge.

There can be little doubt that Americans are at last getting seriously worried about the looks of their country, especially the character of the new suburbs created in the great binge of prosperity since World War II. Here many a hangover has already arrived. It is said that the mass psyche of our people suffers grievously from insecurity; can there by any worse insecurity than the neon dawn now breaking over so many subdivisions?

On one of the early pages, the authors point out the cruel paradoxes, the tragic alternative to the application of wise restraint in the exploitation of the land: "the expertly engineered automobiles are seen against a background of ramshackle slums, the winding rivers are dark with pollution, the waterfronts are crowded with ancient factories, and the spreading suburbs seem to have no centers of life or evidence of individual distinction. The tall buildings stand next to vacant lots and the highways are strung out between billboards and shoddy commercial salesrooms."

We Americans are great ones for drive-ins and chicken-in-the-basket—but must we southern-fry the whole continent?

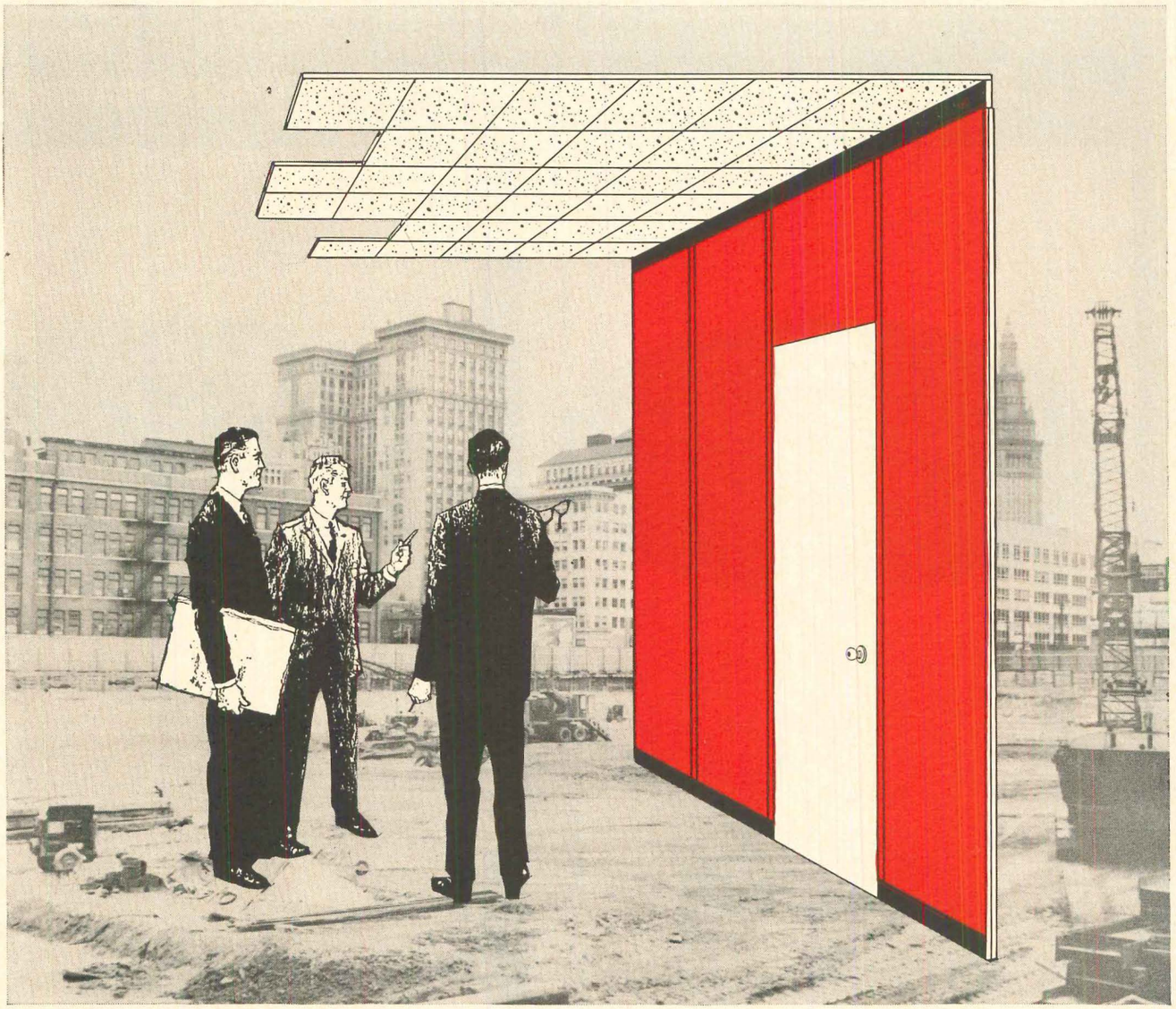
THE LAND LORDS. By Eugene Rachlis & John E. Marqusee. Published by Random House, 457 Madison Ave., New York 22, N.Y. 302 pp. 6½" x 10". Illus. $5.95.

The subtitle of this slick account of real estate moguls "from Astor to Zeckendorf" could be: How I raised Myself from a Failure to Success by Buying Land Cheap and Selling it Dear. It is not, however, a how-to book. In fact it makes real estate speculation seem ridiculously easy—all one must do is buy the right piece of land (preferably with someone else's money), hold it until a strategic moment, and then sell it for 10 or 20 or 300 times what it cost. If you are of a mind, you can even build things on the land, as William Levitt and Harry Black and Fred F. French did, and thereby speed the whole process.

It seems that this is the way these entrepreneurs did it, and they all got rich. (A notable exception was Addison Mizner, who got his mortgages caught in the crash of the Florida land boom.) Most of them did it in Manhattan, but the Florida craze is fully treated, too, if not from A to Z at least from Flagler to Ponzi. Somehow, mixed up among the speculators and confidence men whose careers are thumbnailed here, is Abraham Kazin, the devoted, hard-working man who sparked the union housing movement in New York. He is very definitely out of place in this account, sandwiched between the Florida land barons and con men, and the pious ("Jesus was the greatest salesman of all") profiteering of Fred F. French, creator of Tudor City. Kazin, like Flagler and French, had vision, but of a somewhat loftier nature.

The book is interesting enough, but reads rather like a collection of magazine articles. (Indeed, the credits at the end make it clear that much of the material is culled from periodicals.) And somehow, the cast of characters begins to blend together as they all trip along the trail blazed by Astor himself. And the authors somehow make most of them appear eligible for tarring with the same brush Harper's magazine took to Astor upon his death: "to get all that he could and to keep nearly all that he got—those were the laws of his being."

—DAVID B. CARLSON



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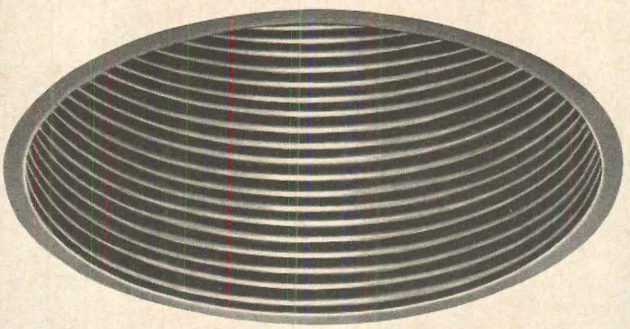

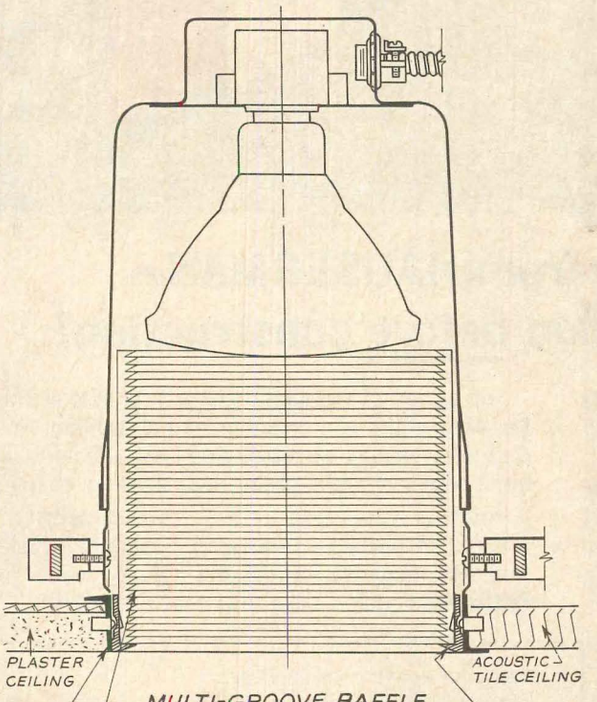

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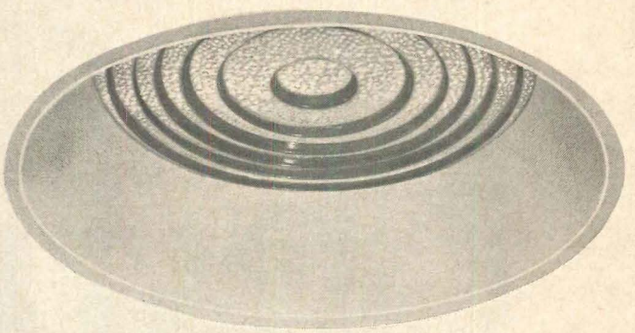

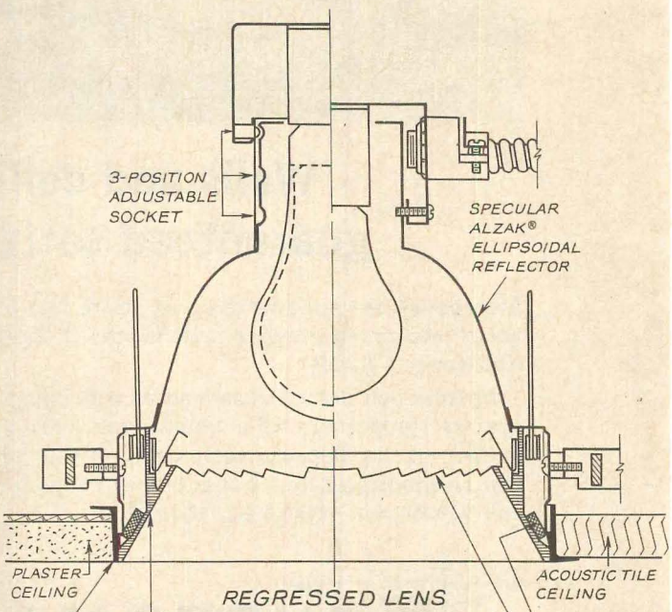

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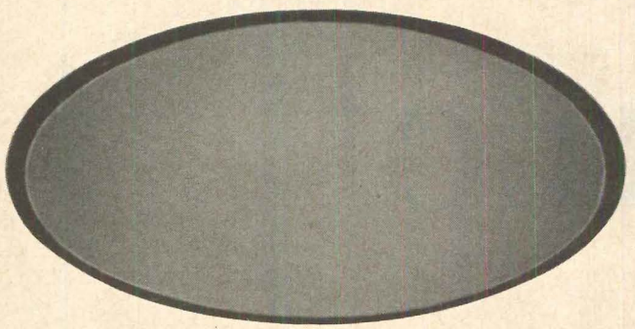

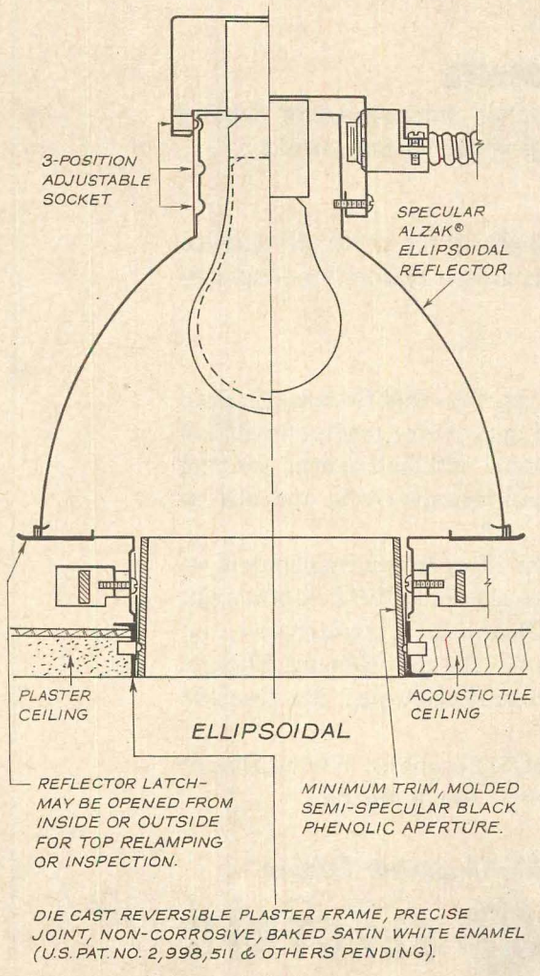

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Co. **New Haven:** Grand Light & Sup. Co. **New London:** United Elec. Sup. Co. **South Norwalk:** Klaff's Inc. **Stamford:** Marle Co. **Waterbury:** Starbuck Sprague Co., Suburban Supply Co. **DELAWARE Wilmington:** Tecot Elec. Sup. **DISTRICT OF COLUMBIA Washington:** Maurice Elec. Sup. Co., National Elec. Wholesalers **FLORIDA Miami:** Farrey's Whlse. Hdwe. Co. **GEORGIA Atlanta:** Atlanta Ltg. Fix. Co., Electrical Wholesalers, Noland Co. **Augusta:** Hart Elec. Sup. Co. **Columbus:** P. & W. Elec. Sup. Co. **Macon:** Noland Co. **HAWAII Honolulu:** Hawaiian Light & Sup. Co. **ILLINOIS Champaign:** Tepper Elec. Sup. Co. **Chicago:** Creative Lighting Division–Elec. Whlsrs., Efengee Elec. Sup. Co., Englewood Elec. Sup. Co., Harlo Elec. Sup. Co., Hyland Elec. Sup. Co., Metropolitan Elec. Sup., Steiner Elec. Co., Wholesale Elec. Sup. Co. **Elgin:** Fox Elec. Sup. Co. **Joliet:** Joliet Elec. Sup. **Kankakee:** Lang Elec. Sup. Co. **Rockford:** Englewood Elec. Sup. Co. **Springfield:** Springfield Elec. Sup. Co. **INDIANA Ft. Wayne:** Mossman-Yarnelle Co. **Gary:** Englewood Elec. Sup. Co. **South Bend:** Englewood Elec. Sup. Co. **IOWA Des Moines:** Weston Lighting, Inc. **KANSAS Kansas City:** W. T. Foley Elec. Co. **Wichita:** Architectural Lighting, Inc. **KENTUCKY Louisville:** Henry J. Rueff Co. **LOUISIANA Baton Rouge:** Electrical Wholesalers, Inc. **Harvey:** I. C. Elec. Sup. **New Orleans:** Interstate Elec. Co., Lighting Inc. **MAINE Bangor:** Standard Elec. Co. **Portland:** Holmes Elec. Supply Co. **MARYLAND Baltimore:** Baltimore Gas Light Co., Dominion Elec. Sup. Co., Dorman Elec. **Hagerstown:** Noland Co., Tristate Elec. Sup. Co. **Salisbury:** Artcraft Elec. Sup. Co. **MASSACHUSETTS Boston:** Boston Lamp Co., Mass. Gas & Elec. Light Co., Henry L. Wolfers, Inc. **Pittsfield:** Carr Supply Co. **Springfield:** Eastern Elec. Sup. Co., M. W. Zimmerman, Inc. **Waltham:** Standard Elec. **Worcester:** Benjamin Elec. Sup. Co. **MICHIGAN Benton Harbor:** West Michigan Elec. Co. **Detroit:** Fife Elec. Co., Madison Elec. Co., Michigan Chandelier Co. **Flint:** Royalite Co. **Grand Rapids:** Enterprise Elec. Sup. Co. **Jackson:** Electric Wholesale Sup. Co. **Kalamazoo:** West Michigan Elec. Co. **Lansing:** Michigan Elec. Sup. Co. **Muskegon:** Fitzpatrick Elec. Sup. Co. **Pontiac:** Standard Elec. Sup. Co. **Saginaw:** Schmerheim Elec. Co., Standard Elec. Sup. Co. **MINNESOTA Duluth:** Northern Elec. Sup. Co. **Minneapolis:** North Central Elec. Distr. Co., Northland Elec. Sup. Co., Terminal Elec. Corp., Whlse. Ltg. Elec. Sup. Co. **St. Paul:** Lax Elec. Co. **MISSISSIPPI Jackson:** Stuart C. Irby Co. **MISSOURI Kansas City:** Glasco Elec. Co., Rossner Elec. Sup. Co. **St. Louis:** M. K. Clark, Glasco Electric Co. **Springfield:** Southern Materials Co. **MONTANA Great Falls:** Glacier State Elec. **Missoula:** Western Montana Elec. **NEBRASKA Lincoln:** White Electric Supply Co. **Omaha:** Electric Fix. & Sup. Co. **NEVADA Reno:** Western Elec. Dists. Co. **NEW HAMPSHIRE Portsmouth:** Mass. Gas & Elec. Light Co. **NEW JERSEY Atlantic City:** Franklin Elec. Sup. Co. **Camden:** National Elec. Sup. Co. **Cherry Hill (Delaware Township):** Flynn's Camden Elec. Sup. Co. **NEW MEXICO Albuquerque:** The Lighting & Maint. Co. **NEW YORK Binghamton:** Freije Elec. Sup. Co. **Buffalo:** Buffalo Incand. Light Co. Inc. **Nanuet (Rockland Co.):** Rockland Lighting **Niagara Falls:** Hysen Supplies Inc. **Poughkeepsie:** Electra Sup. Co. **Rochester:** Rowe Electric Sup. Co. **Schenectady:** American Elec. Sup. Co. **Syracuse:** Superior Elec. Corp. **White Plains:** Wolar Lighting Corp. **NORTH CAROLINA Asheville:** Electric Sup. Co. **Charlotte:** Independent Elec. Sup. Co. **Durham:** Noland Co. **Greensboro:** Elec. Sup. & Equip. Co. **High Point:** Electric Sup. Inc. **Kinston:** Kinston Elec. **Raleigh:** Electrical Equipment Co. **Winston-Salem:** Noland Co. **NORTH DAKOTA Fargo:** Border States Elec. Sup. Co. **OHIO Akron:** The Sacks Elec. Sup. Co. **Alliance:** Robertson Sup. Co. **Cincinnati:** B. & B. Elec. Co., F. D. Lawrence Electric Co., Richards Elec. Sup. Co. **Cleveland:** The H. Leff Electric Co., Midland Elec. Co. **Columbus:** Elgee Elec. Co., The Loeb Elec. Co. **Dayton:** Duellman Elec. Co. **Lima:** State Elec. Sup. Corp. **Springfield:** The W. W. Elec. Co. **Toledo:** Gross Elec. Fix. Co. **OKLAHOMA Oklahoma City:** Elec. Sup. of Oklahoma, Hunzicker Bros. **OREGON Portland:** Baker-Barkon Co., Malloy Robinson Co. **PENNSYLVANIA Allentown:** Coleman Elec. Co. **Erie:** Kraus Elec. Co. **Harrisburg:** Fluorescent Sup. Co., Schaedler Bros. **Hazleton:** Power Elec. Co. Inc. **Lancaster:** Graybill's **New Castle:** Midwestern Elec. Co. **Norristown:** Norristown Elec. Sup. Co. **Philadelphia:** Gold Seal Elec. Sup. Co., Logan Elec. Sup. Co., Inc., Pyramid Elec. Sup. Co., Inc., Rumsey Elec., Silver's Elec. Sup. Co., Sylvan Elec. Fix. Co., West Phila. Elec. Sup. Co. **Pittsburgh:** Allied Elec. Sup. Co., Argo Lite Studios, Brown & Green, Wally Elec. Sup. Co. **Reading:** Coleman Elec. Co. **Scranton:** Lewis & Reif, Inc. **Uniontown:** Pioneer Electric Dist. **West Chester:** West Chester Elec. Sup. Co. **Wilkes-Barre:** Anthracite Elec. **Williamsport:** Lowry Electric Co. **York:** Graybill's **RHODE ISLAND Pawtucket:** Major Elec. Sup. Co. **Providence:** Leavitt Colson Co., Tops Elec. Sup. Co. **SOUTH CAROLINA Columbia:** Capital Elec. Sup., Noland Co. **Greenville:** Sullivan Hdwe. Co. **SOUTH DAKOTA Watertown:** J. H. Larson Elec. Co. **TENNESSEE Chattanooga:** Mills & Lupton Sup. 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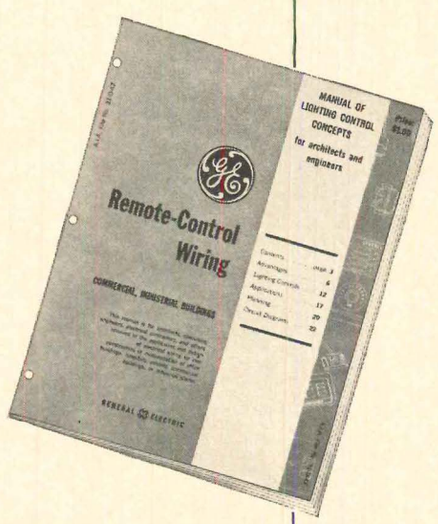

These are just a few of the ways that General Electric Remote-Control Switching provides greater flexibility of lighting control together with substantial savings in installation costs, maintenance costs, and alteration costs.

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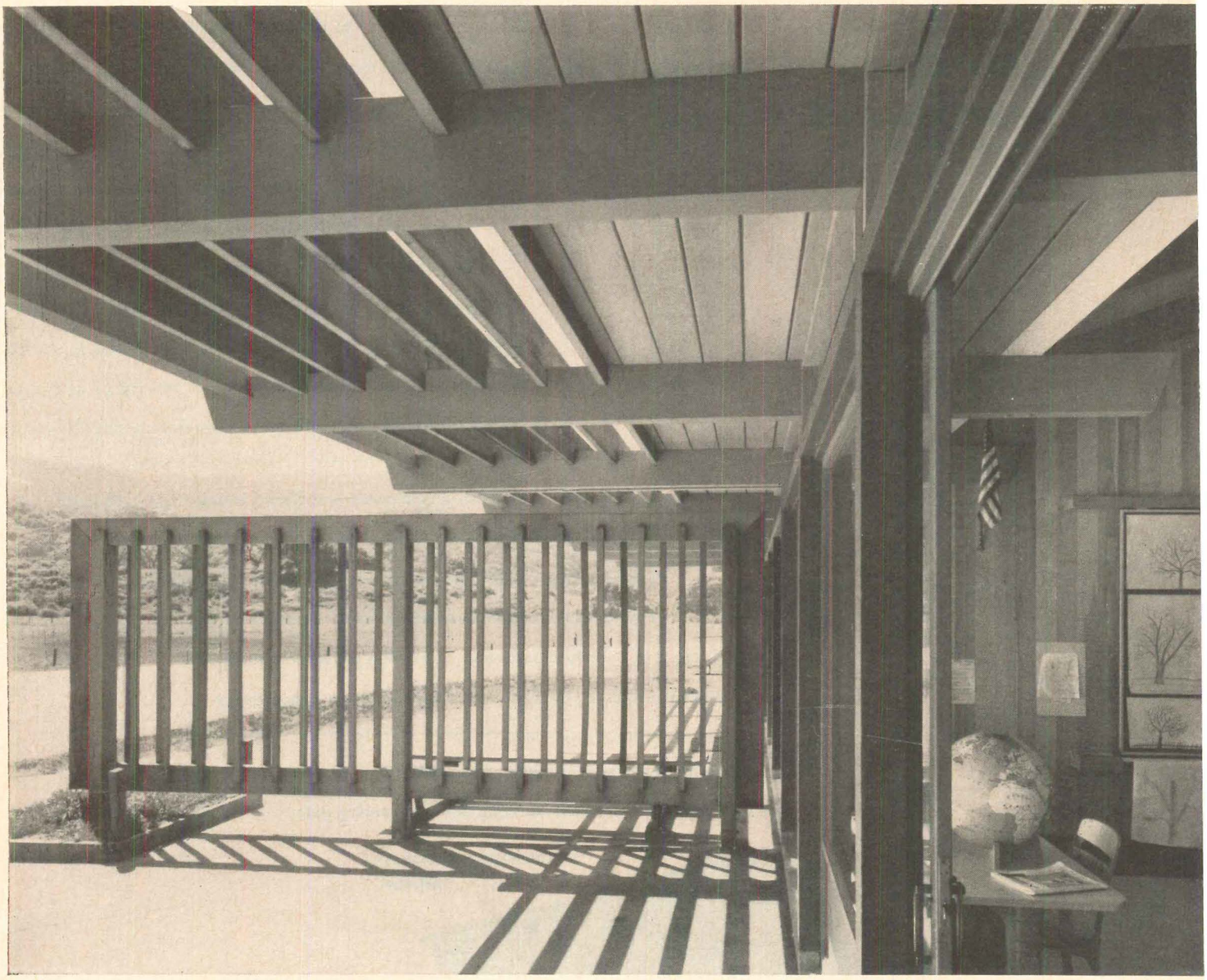
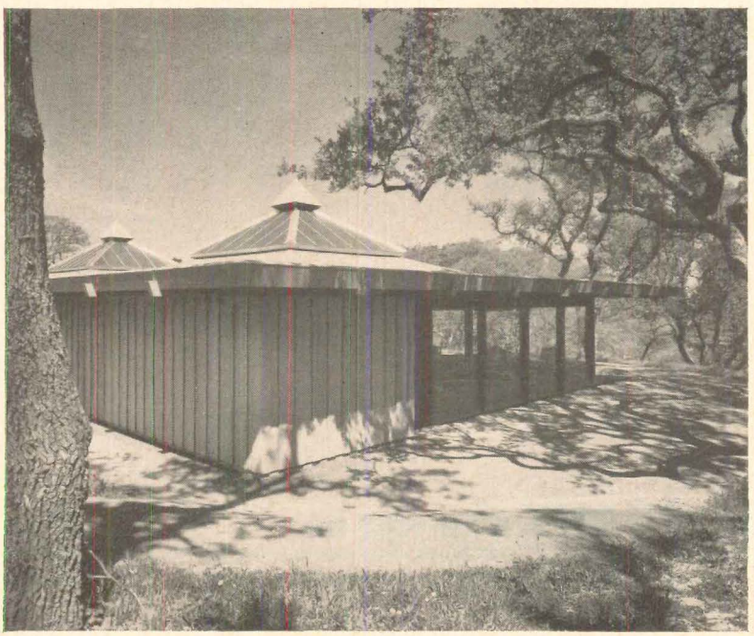
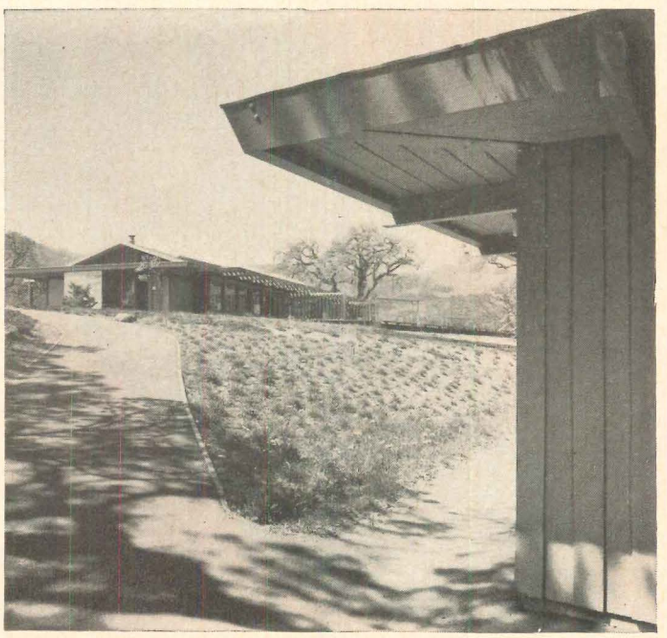


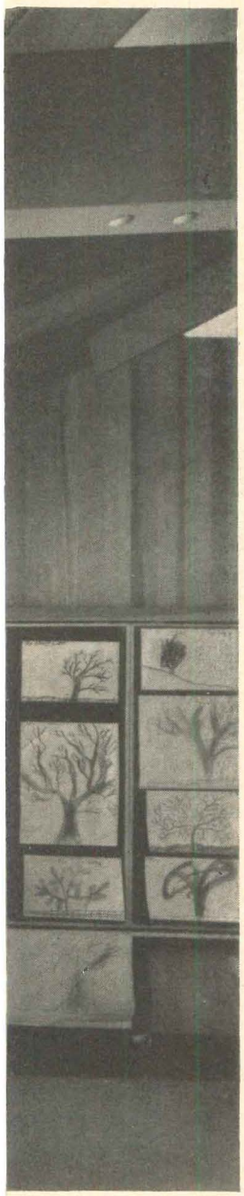
Looking in on a classroom reveals the natural continuity of wood in supporting beams, paneled walls, and tongue-and-groove ceiling. It also illustrates how the Corte Madera School in Portola Valley, California, openly takes advantage of the sunlight. Architect: Callister & Rosse.



The pavilion-like Corte Madera kindergarten, although placed away from other classroom units, maintains its close school ties with wood.



The board-on-board siding of the Corte Madera kindergarten and the buildings atop the knoll show off some of wood's wonderful economy.



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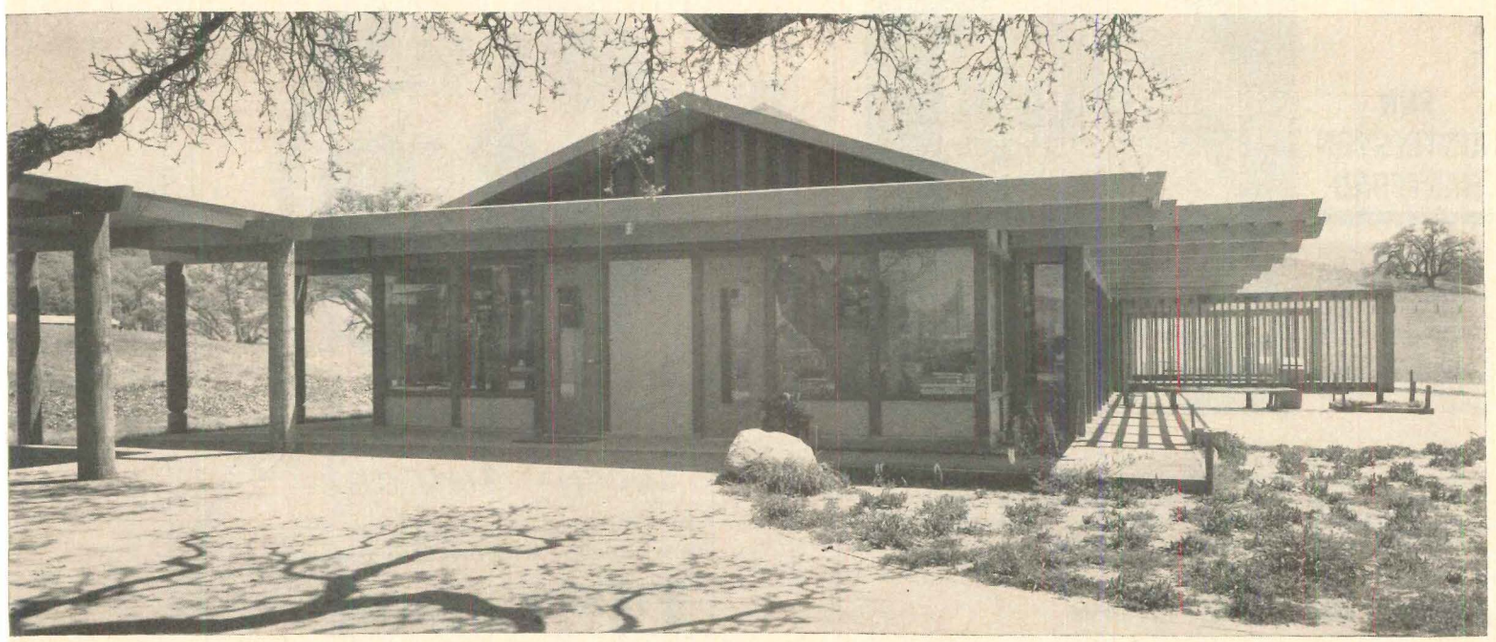
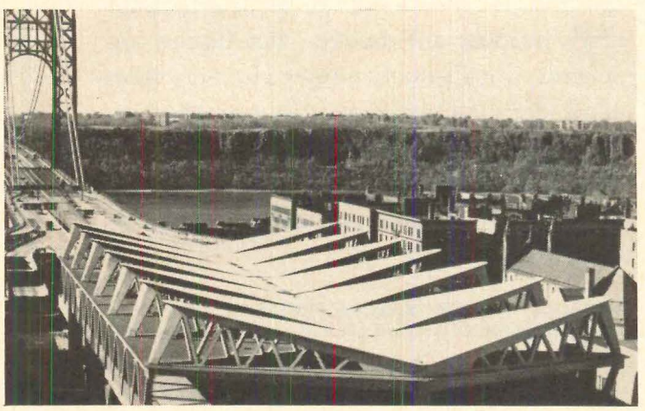


Exposed framing and rustic columns of wood stand out to help blend in a teachers' wing with this bucolic setting. Note the wood baffle grills that partition the areas outside each of the Corte Madera classrooms; also, how comfortably wood frames all the glass.

THE LOOK OF TOMORROW TODAY BY CROW

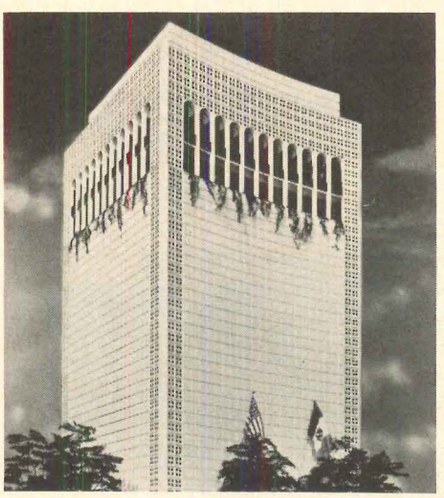
FOR IBM The Thomas J. Watson Research Center at Yorktown Heights, N. Y., is the largest of IBM's research and development laboratories. It is Crow's seventh contract for IBM. Architects: Eero Saarinen and Associates.



FOR THE PORT OF N.Y. AUTHORITY

George Washington Bridge Bus Station in New York City is a $13,000,000. project of Pier Luigi Nervi, famed Italian engineer (a joint venture of Crow Construction Company with W. J. Barney Corporation). It is characterized by the intricacy of its reinforced concrete columns and trusses.

FOR HUNTINGTON HARTFORD



The Gallery of Modern Art, including the Huntington Hartford Collection, on Columbus Circle, New York City, was designed by Edward Durell Stone. Load-bearing reinforced concrete walls are faced in dazzling marble.

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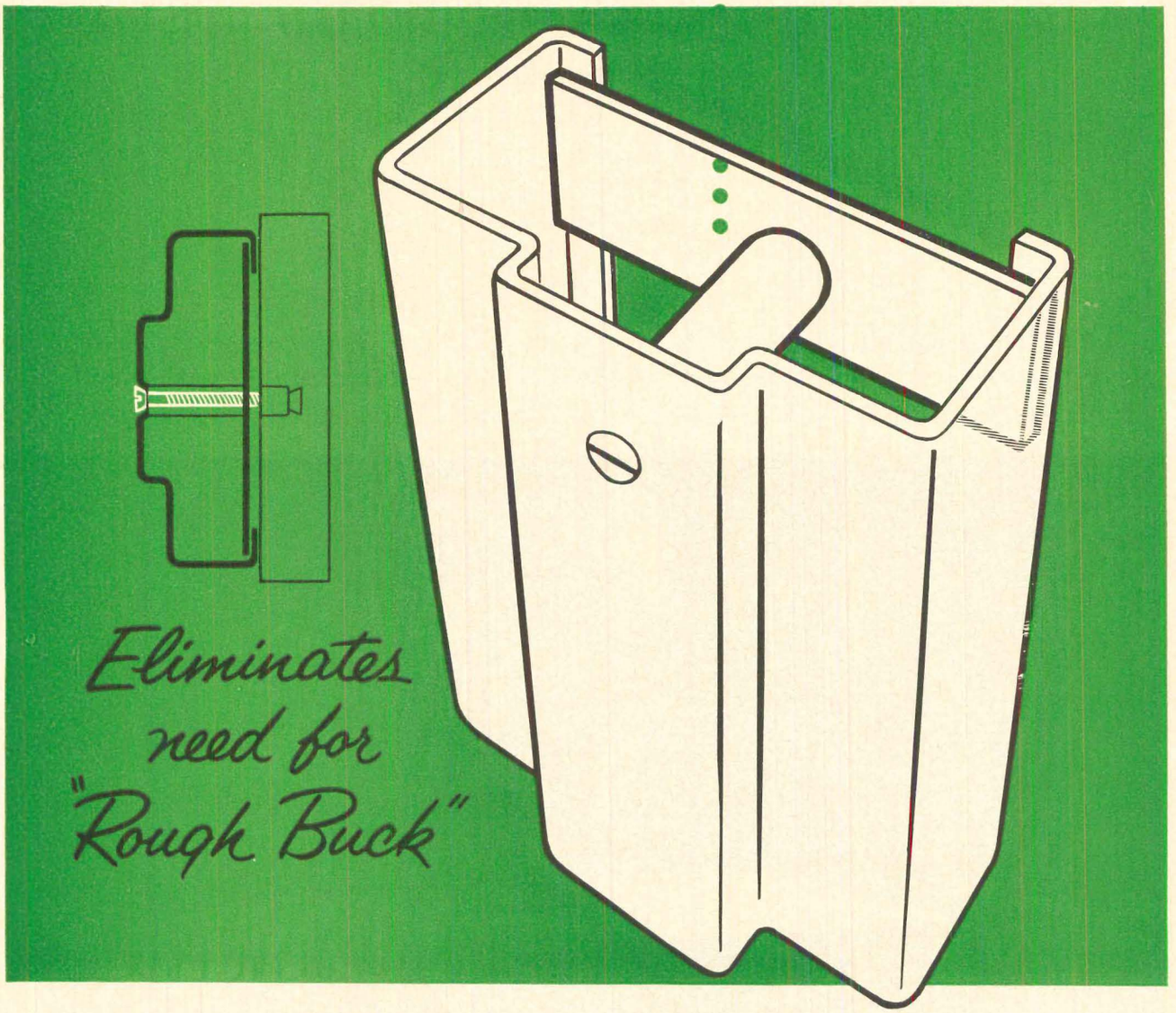

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The King Cole was completed last fall. This photo clearly shows the variety of attractive architectural effects that have been accomplished with concrete.

LUXURY IN CONCRETE

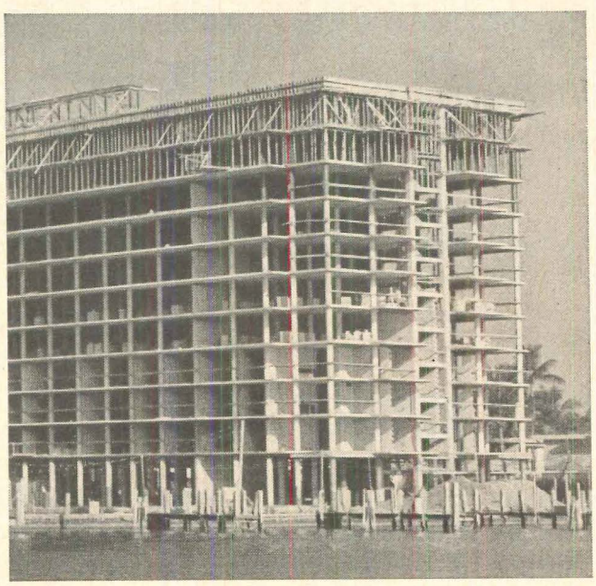
On Bay Drive at the crossroads of Indian Creek and Biscayne Bay in Miami Beach, occupants are enjoying the comfort and safety of the luxurious new King Cole Apartments. It's constructed almost entirely of concrete. The crescent shaped structural form is reinforced concrete. Partition walls are concrete masonry units. Walks, pools, canopies, boat landings—even the balcony railings are concrete.

3 LEHIGH CEMENTS USED

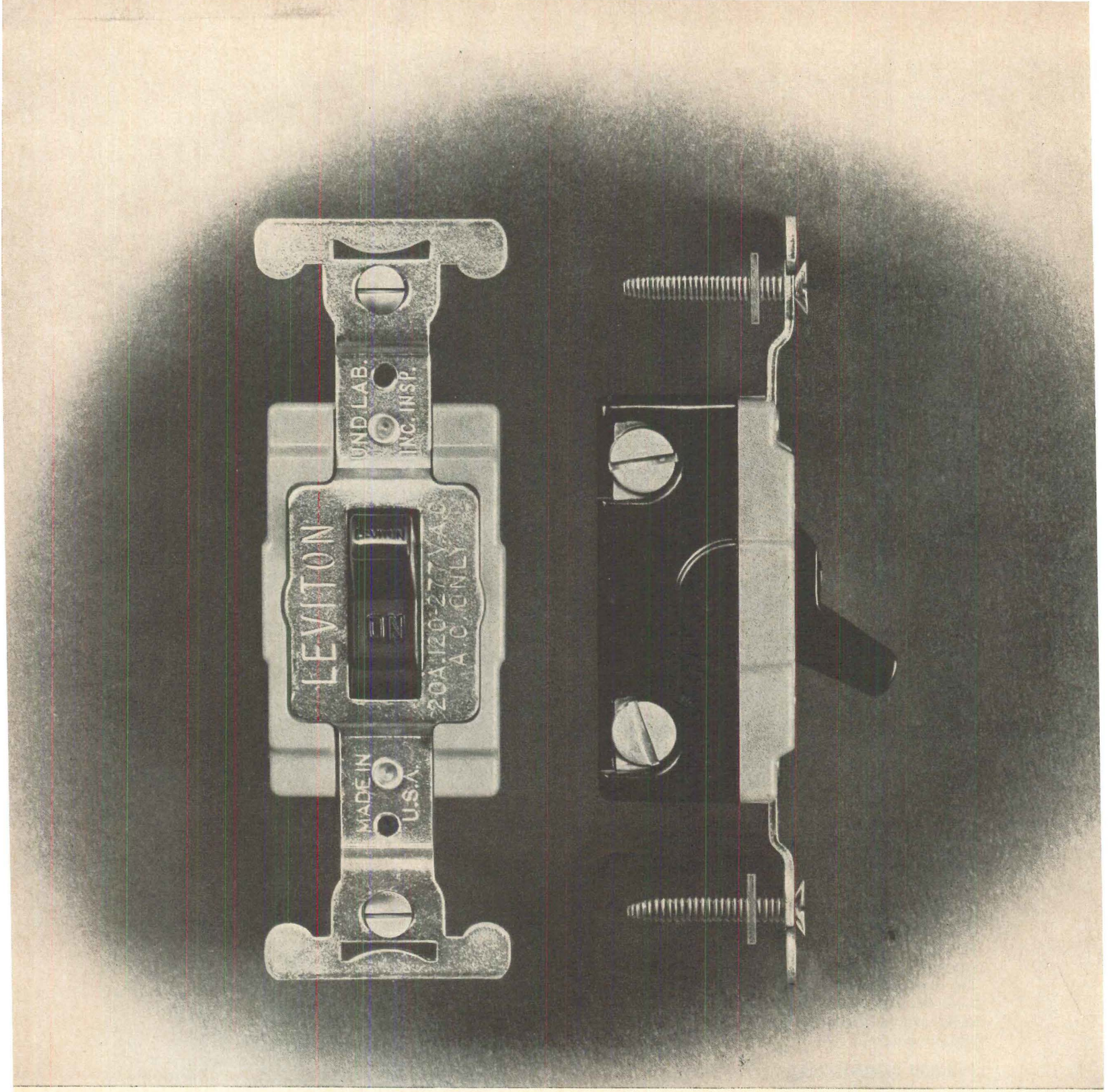
Acme Concrete Corp. used Lehigh Portland Cement in the ready mixed concrete. They used Lehigh Early Strength Cement for maximum production efficiency in the manufacture of the masonry units. And Cook & Pruitt, masonry contractor, used Lehigh Mortar Cement to lay up the masonry units. Lehigh Portland Cement Company, Allentown, Pa.

LEHIGH CEMENTS

Owner—Robert A. Rautbord and Robert L. Blum, Chicago, Ill.
Architects—Fridstein & Fitch, Chicago, Ill., and Melvin Grossman, A.I.A., Miami Beach, Fla.
Contractor—Robert L. Turchin, Inc., Miami Beach, Fla.
Masonry Contractor—Cook & Pruitt Masonry Contractors, Inc., Miami, Fla.
Concrete Masonry Units and R/M Concrete—Acme Concrete Corp., Hialeah, Fla.



More than 500,000 concrete masonry units were required for partition walls in this 12-story structure. The masonry contractor selected Lehigh Mortar Cement to lay up the units just as they have done previously in many well-known hotels and apartments in the area. They find it helps their masons do a better job.



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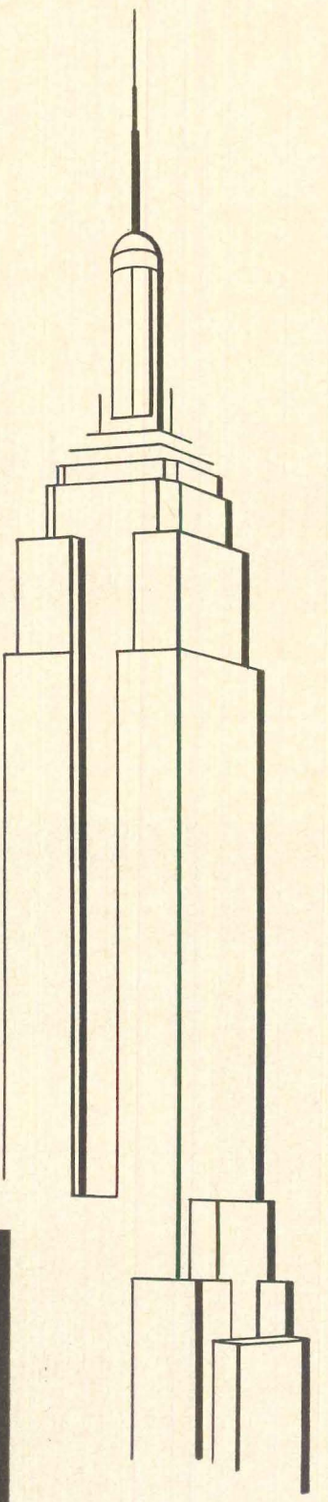

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Wish I may, wish I might... make that bathroom Eljer bright!

Eljer is the name to look for when it comes to bathroom fixtures. There's a gleaming array of styles and colors to choose from—many of them exclusive Eljer ideas, *all* of them manufactured to Eljer's high-quality lifetime standards.

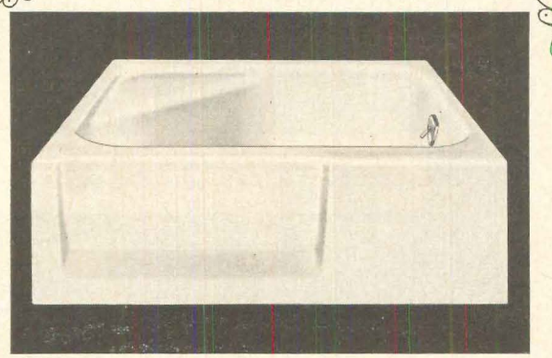
Here are just four Eljer bathroom fixtures—any one of which ought to set your imagination percolating with unique and different bathroom designs and arrangements. Available in six pastel colors and white.

The Planter

Eljer's bright new idea for bathrooms: add a touch of fresh greenery! Planter tank top has inset for live or artificial plants and space for magazines, books, tissue, etc. *An Eljer original.* (The Planter is optional with Ellis, Emblem and Estate toilets.)

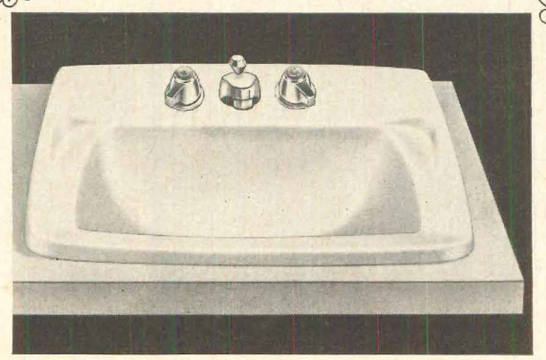
The Triangle

First "new look" in toilet design in past ten years. An Eljer original. Designed specifically for corner installation—a real space saver for bath or powder room.



The Montego Bath

Choose Eljer's shower receptor bath with the wide corner seat—where space is at a premium. Porcelain enameled cast iron.



The Brian Lavatory

A decorator favorite, Eljer's Brian vitreous china lavatory installs easily into prepared cabinet or counter top, providing a distinctive look to any bathroom. Absence of metal rim means cleaner, neater bathroom area. *An Eljer original.*

Eljer plumbing fixtures give you greater "freedom of design," more room in which to create new and different bathroom designs, soft colors to harmonize with over-all decor. The finish is as fine as the best table china, reflecting the rich beauty of each and every Eljer fixture. The Murray Corporation of America, Eljer Plumbingware Division, Three Gateway Center, Pittsburgh 22, Pennsylvania.

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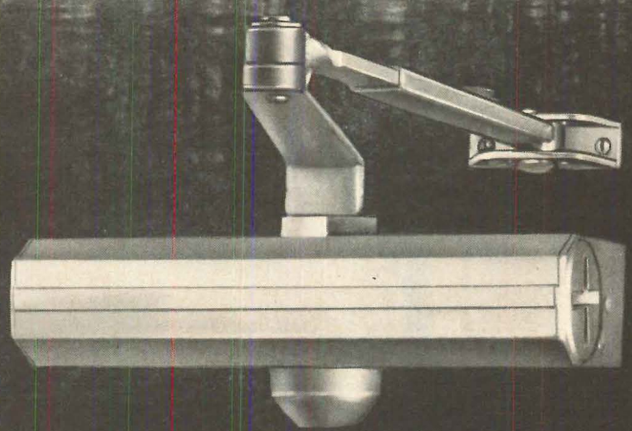

Norton Series 1600 offers the ultimate in clean, modern styling. Designed specifically to compliment the clear crisp lines of modern architecture. You also have a choice of three distinct mountings: standard mounting, back mounting and invisible mounting.

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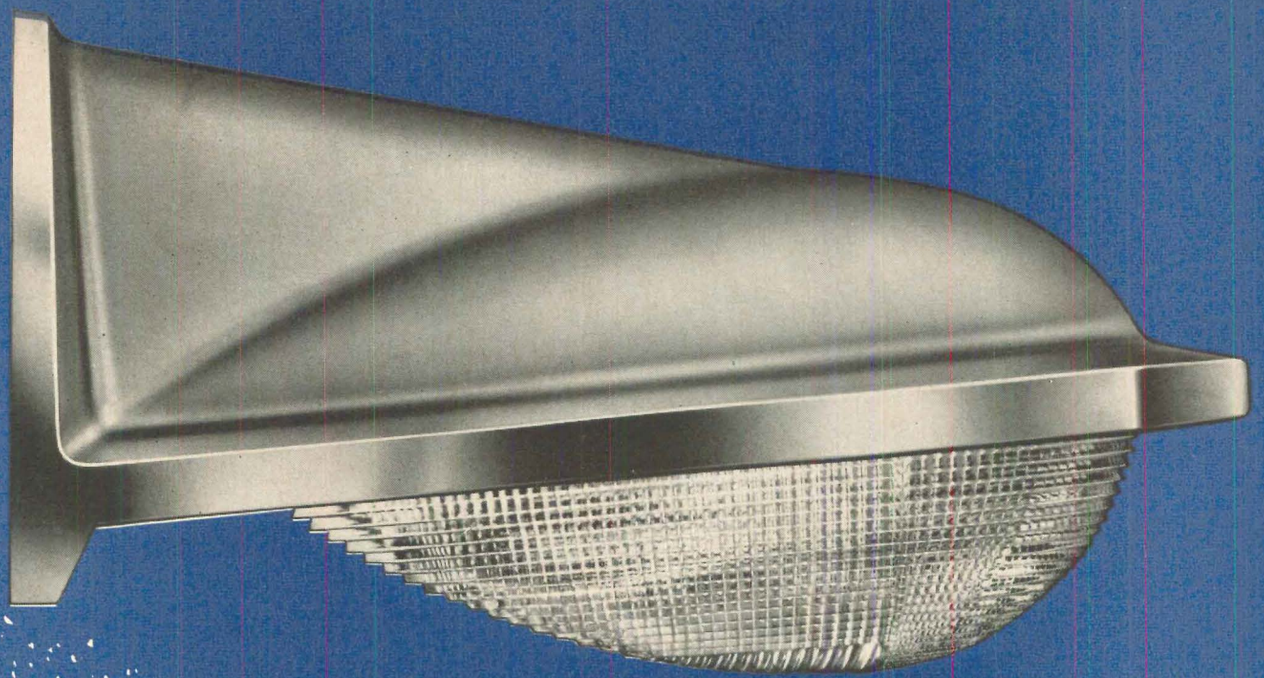

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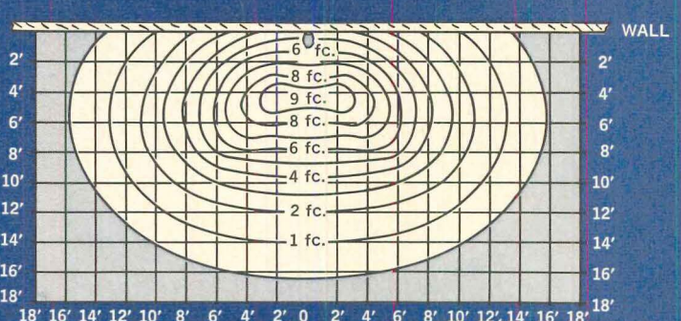

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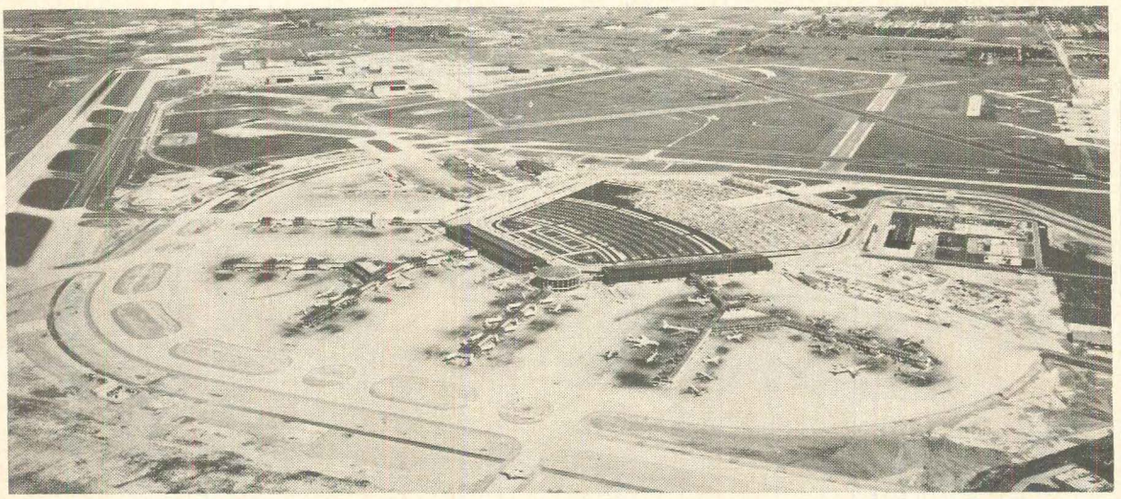

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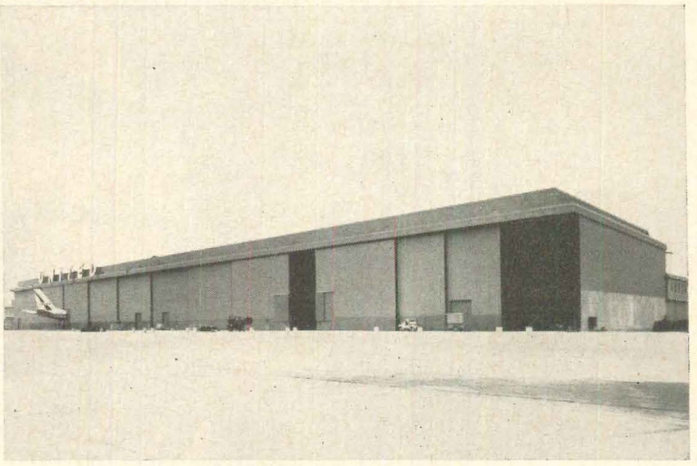

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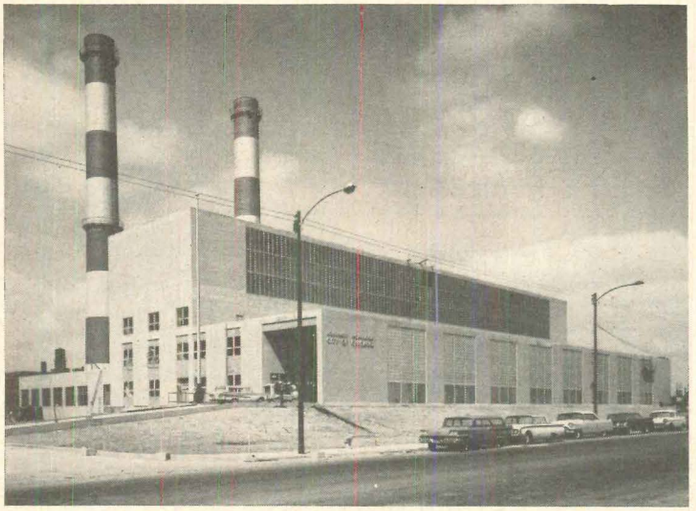
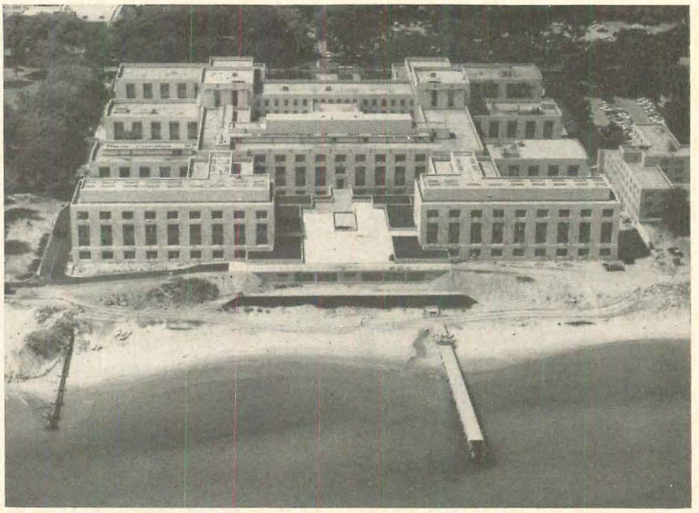


Just completed in September . . . the Southwest Incinerating Plant for the City of Chicago. General contract in excess of $6,500,000.



View of Northwestern Technical Institute, Evanston, Ill. Two new wings in foreground added. Addition and equipment costs $7,000,000.

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At some point in selecting a general contractor that question certainly should be discussed. The bigger the project, the more important the answer.

We believe the way to measure performance of a company in our business is to look at its *entire* record of achievement—from the first job up to last night's progress report.

For almost half a century we have been building a performance record that covers hundreds of projects in some two dozen states, representing nearly a billion dollars at current values. As the record has grown we have acquired vast and varied experience. We have demonstrated complete dependability and integrity. We have developed exceptional financial strength.

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When you consider general contract proposals you need all the assurance you can get that your final choice will be right.

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BASIC

CONSTRUCTION COMPANY
NEWPORT NEWS, VIRGINIA

"Apartment heating and air conditioning is really simplified with the new Janitrol comfort package"

Robert E. Smith, Builder and President
Columbia Street Apartments, Newark, Ohio

Right: The 12-inch wide, 570 Series conditioner is installed in a central utility closet directly over the return air plenum.

Below: The through-wall condensing unit is flush with the inside wall, yet has only a slight exterior projection.

"Each apartment in this 12-unit project is individually year 'round conditioned by the new Janitrol 570 Series package, that has proved to be the most practical system we've found. Since we've built this plan before, we can appreciate the extra design features built into this equipment. We were most impressed with the ease of installation, flexibility of location and service accessibility of the 570 Series".

This all-new heating-cooling package is built and priced especially for apartments and small homes. Most models are only 12 inches wide to conserve floor space . . . cooling evaporator can install through-wall, on slab or on the roof . . . cooling is optional for either original installation or economical later addition. All units are completely factory-assembled, tested and feature a precharged cooling system with quick-connect couplings to speed installation.

Packages are available with nominal 1½, 2 and 3 tons of cooling and in heating capacities from 50,000 to 125,000 Btu./hr. for natural, mixed or LP gases, in either upflow or downflow models.

Free Application-Specification File. For complete information on all of the unusual features of the Janitrol 570 Series ask your Janitrol representative for Form J-379S, or mail coupon.

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JANITROL DIVISION
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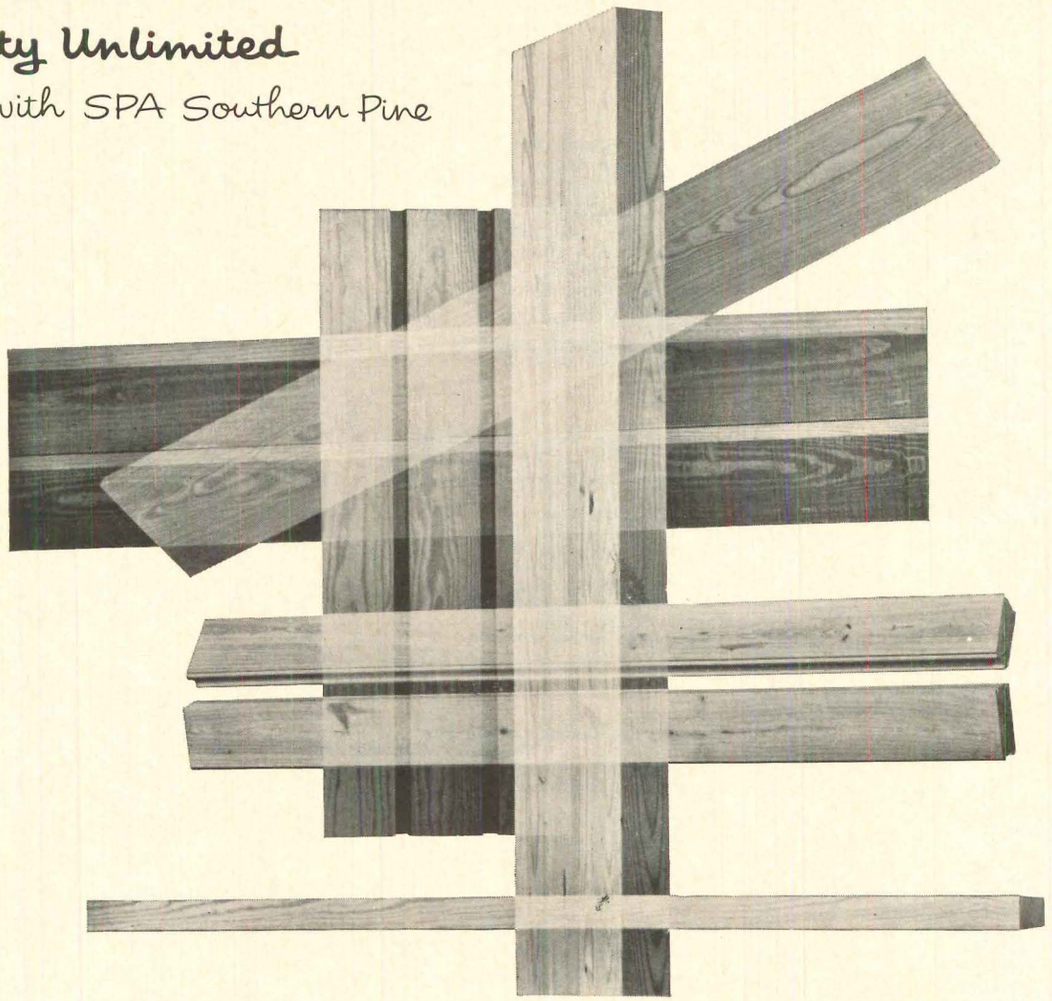

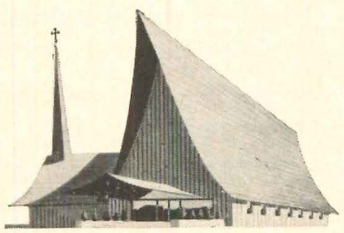

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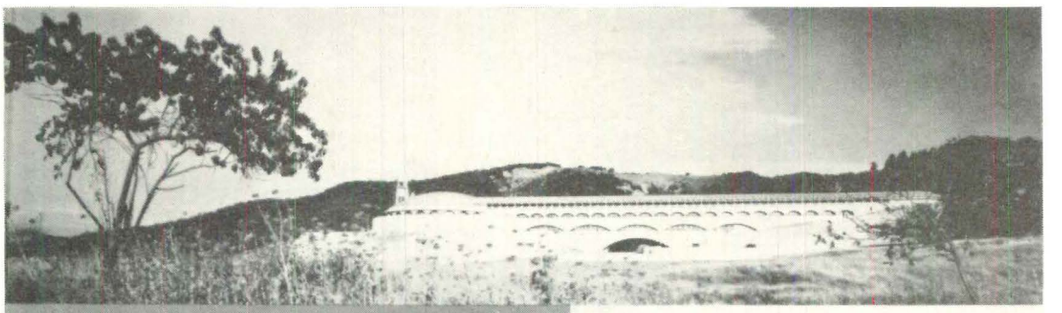
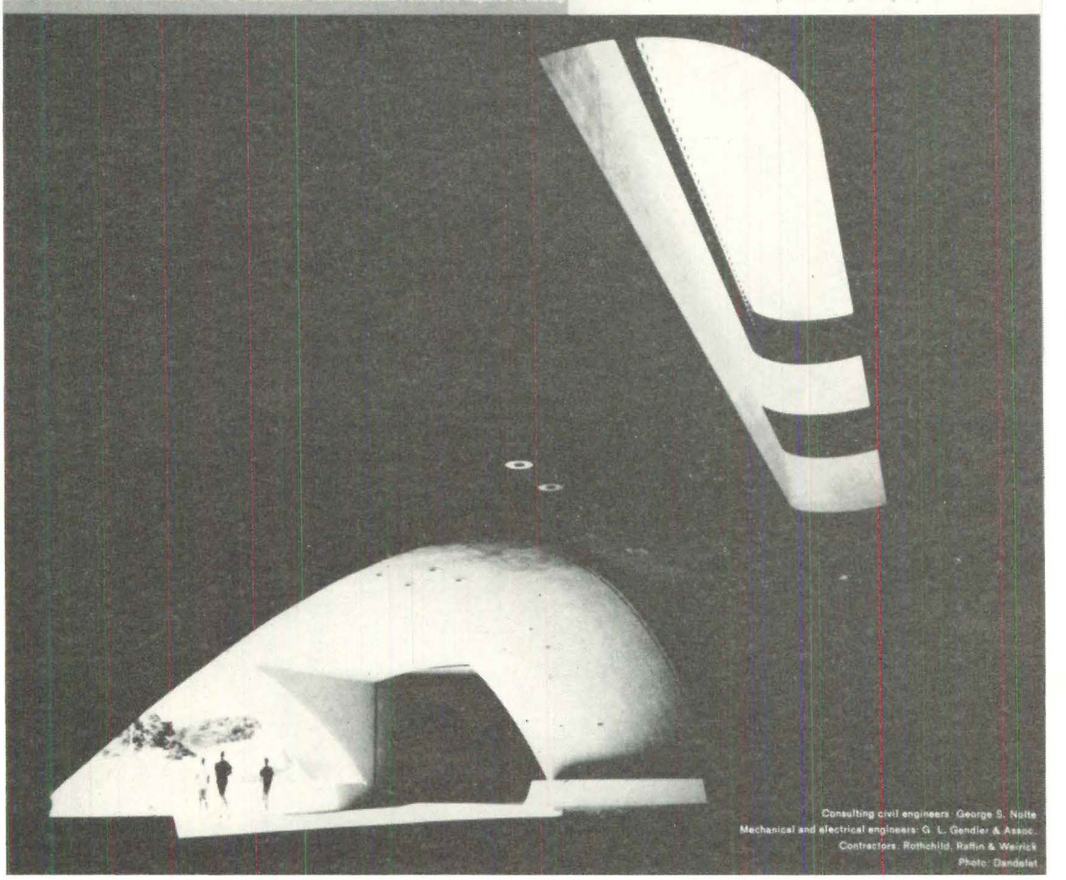


MARIN COUNTY CENTER CALIFORNIA

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

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



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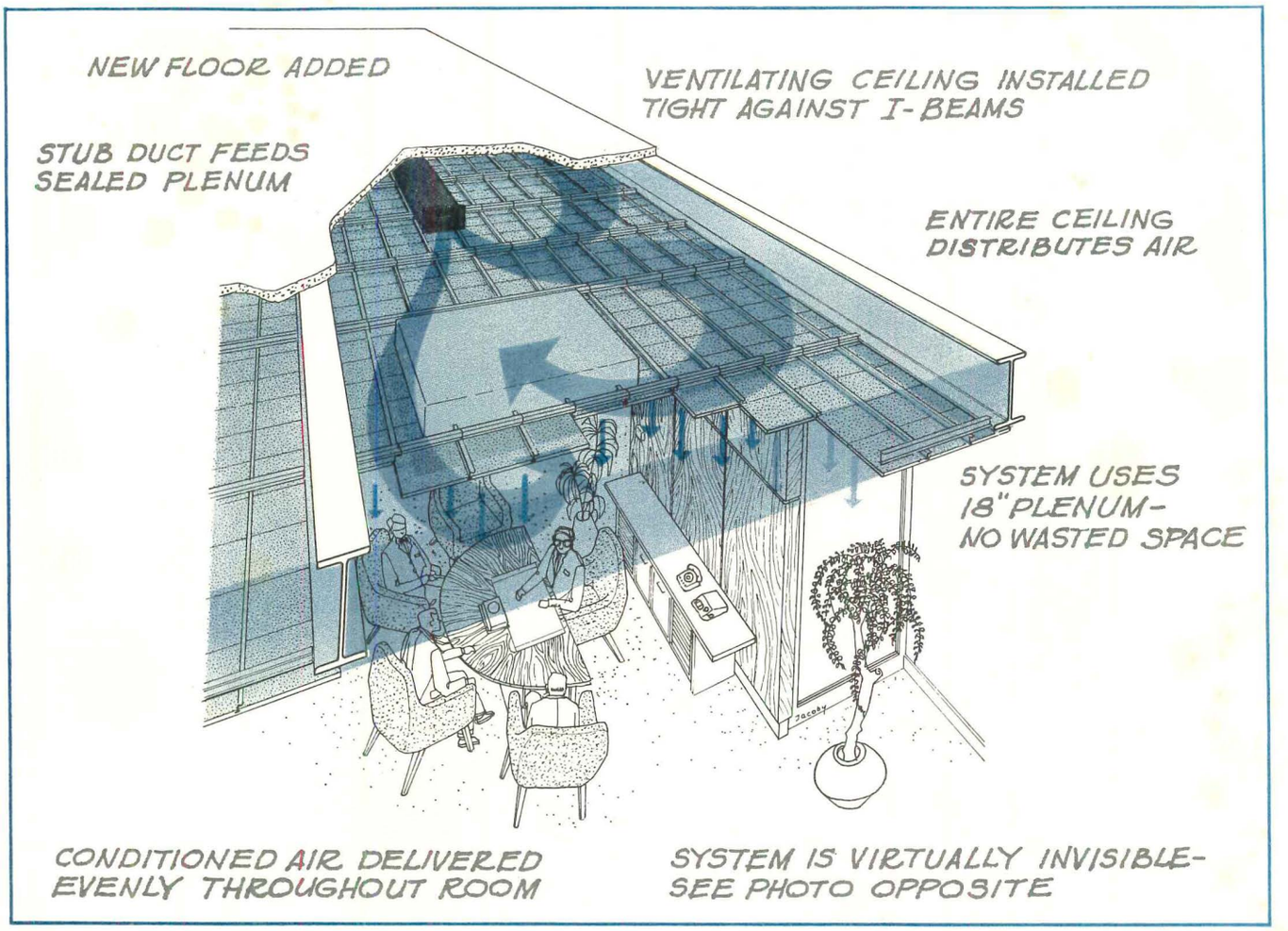
Due to the popularity and demand of its first poster exhibit (now completely sold out) Architectural FORUM has produced its second annual edition of posters for public exhibition. Incorporated in the poster set are handsome black and white photographs of ten new buildings* which, in the opinion of FORUM's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

Designed by John Martinez, a leading graphic artist, the ten posters are particularly suitable for display in schools, colleges, libraries, museums and other public areas such as convention halls, banks and department stores. Each poster measures 18½" x 24"; but the full set is designed to hang handsomely as a unit.

Cost: $5.00 per set postpaid while the limited supply lasts. Address all inquiries to Architectural Forum, Room 19-39, Time & Life Building, Rockefeller Center, New York 20, N.Y.

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

How a 20'-high bank lobby has been remodeled into two new air-conditioned floors–with an Armstrong Ventilating Ceiling System to deliver the air.



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