Cover: Photo by George Cserna of the Seagram building, New York (story, page 66)

VOLUME 109, NUMBER 1

Published monthly by Time, Inc.
9 Rockefeller Plaza,
New York 20, N. Y.
Entered as second-class matter
at New York, N.Y.
Subscription price $6.50 a year

THE SEAGRAM BUILDING: THREE SPECIAL ARTICLES

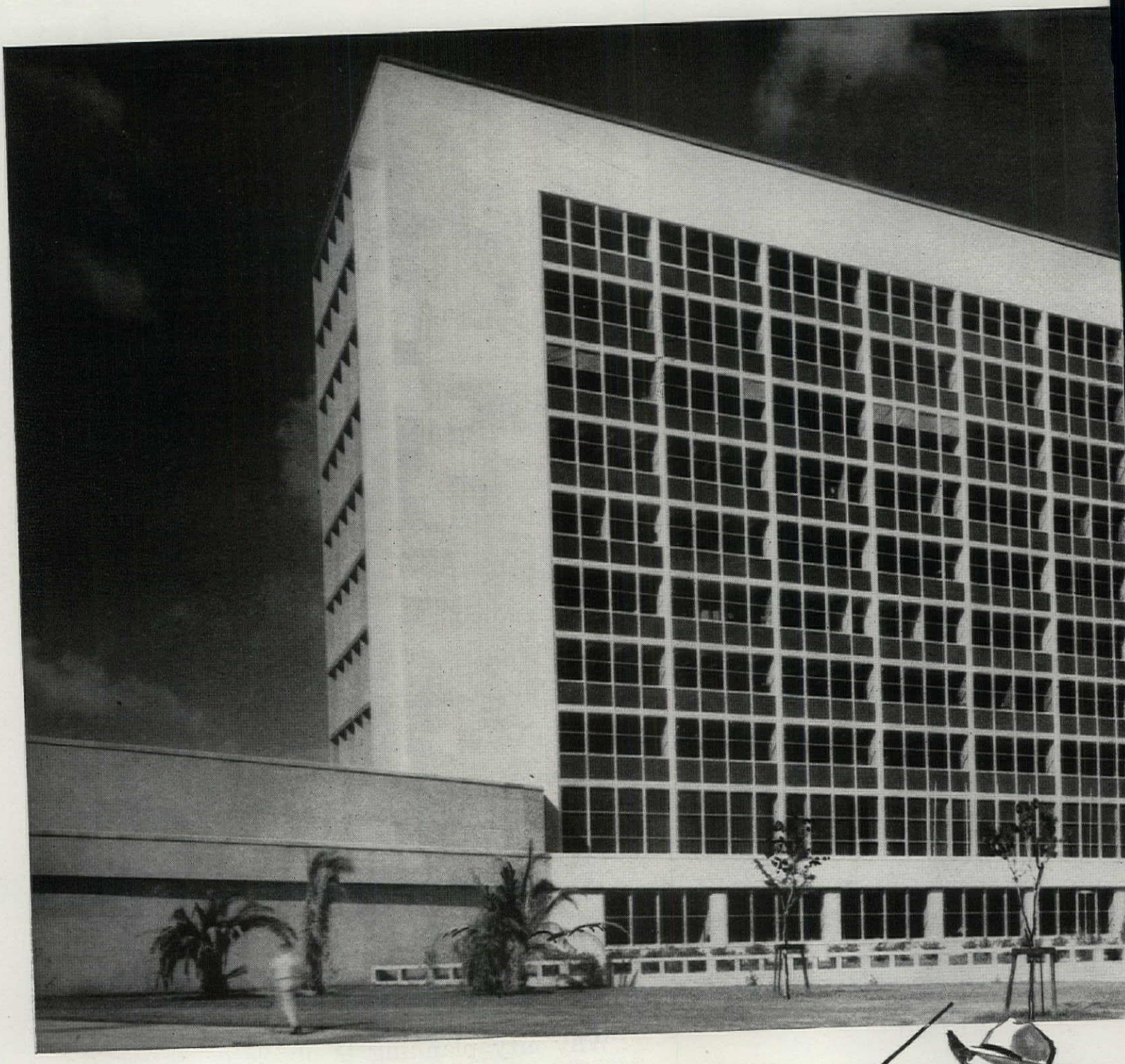
CURRENT ARCHITECTURE

THE BUSINESS OF BUILDING

CITY BUILDING

THE ART OF ARCHITECTURE

TECHNOLOGY



"New Orleans was never like this!

What happened to the filigree?"

Architects: Goldstein, Parham & Labouisse, and Favrot, Reed, Mathes & Bergman, New Orleans, La.

It's still in the French Quarter, Colonel, but up here at City Hall we need a practical form of architecture—practical, but still beautiful. The new City Hall is the first of a proposed five-building civic center—an excellent example of functional modern architecture. It is especially functional in the extensive use of glass for the vision and spandrel areas.

SOLEX®—*Pittsburgh's* heat-absorbing glass—in the windows keeps the interior cooler and more comfortable. And SPANDRELITE®—*Pittsburgh's* glass in color—brings a new-found beauty to the exterior, provides a "glass skin" that is exceptionally strong, durable, and weather and corrosion-resistant.

Another *Pittsburgh* product used in this impressive building is the PITTCOMATIC® automatic door opener. With this hinge, doors open at a feather touch. What's more, the PITTCOMATIC is the easiest device to install and maintain . . . the safest to operate.

In *your* architectural plans, consider Pittsburgh Plate Glass Company products. You'll find them basic in drawing up any building scheme. Our Architectural Representative nearest you will be pleased to assist you in solving any problem confronting you. Call on him. There is no obligation on your part.

PITTSBURGH GLASS

. . . the basic architectural material

75th ANNIVERSARY 1883—1958 PPG

SYMBOL OF SERVICE FOR SEVENTY-FIVE YEARS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

THE VAST MAJORITY OF THE NATION'S FINE BUILDINGS ARE SLOAN EQUIPPED

EGGERS & HIGGINS
architects

SYSKA & HENNESSY
mechanical engineers

GEORGE A. FULLER COMPANY
general contractor

MANCE ASSOCIATES, INC.
plumbing contractor

NEW YORK PLUMBERS SPECIALTIES CO.
plumbing wholesaler

AMERICAN RADIATOR & STANDARD SANITARY CORP.
fixture manufacturer

Award Winner...

1957 "Office of the Year"

• MUTUAL BENEFIT LIFE INSURANCE COMPANY's new Home Office in NEWARK, N. J., is the sixth building the company has occupied during its 113 years. Out of its long experience came the controlling decision to combine beauty and dignity with operating efficiency and economy. The exterior of this 20-story, $12-million structure is of Alabama limestone and blue-green, glare-reducing glass framed in aluminum and stainless steel. The lobby features Pyrenees black and Vermont white marble accented by vertical lines of stainless steel. All 20 floors are air conditioned. Sounds are deadened by acoustical ceiling tile, and lighting is provided by recessed fluorescent fixtures. To meet changing needs, the steel and glass office partitions are movable. An assembly room accommodating 800 persons and a 500-seat dining room are special features. As are thousands of other fine buildings, this Award Winner is equipped with SLOAN *Flush* VALVES.

SLOAN *Flush* VALVES

FAMOUS FOR EFFICIENCY, DURABILITY, ECONOMY

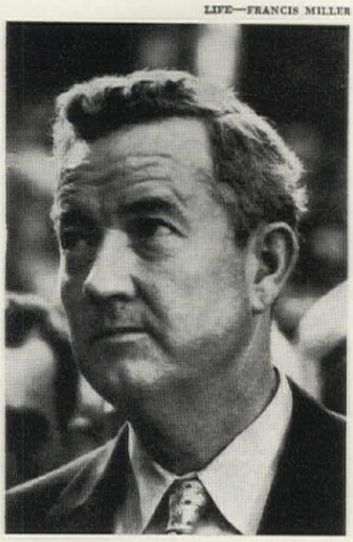
SLOAN VALVE COMPANY • CHICAGO • ILLINOIS

Another achievement in efficiency, endurance and economy is the SLOAN *Act-O-Matic* SHOWER HEAD, which is automatically self-cleaning each time it is used! No clogging. No dripping. Architects and Engineers specify, and Wholesalers and Master Plumbers recommend the *Act-O-Matic*—the better shower head for better bathing.

Write for completely descriptive folder

Senate committee approves housing bill that includes $2.1 billion, six-year urban renewal program

LIFE—FRANCIS MILLER



SPARKMAN
A victory over...

TIME—WALTER BENNETT

CAPEHART
...stubborn resistance

The Housing Act of 1958 may conceivably be one of the most significant pieces of housing legislation passed by Congress in years. As reported out of the Senate Banking Committee last month, the bill contains many controversial provisions, particularly those relating to urban renewal and public housing. But the bill still has a long way to go; it has yet to be approved by the Senate, acted on by the House, and signed—or vetoed—by President Eisenhower.

In its present form, the measure represents a victory for Democrats of the Banking Committee's subcommittee on housing. The Democrats, headed by Chairman John J. Sparkman of Alabama, won out over the stubborn resistance of Republican Senator Homer Capehart, of Indiana, the chief committee spokesman for the original Administration version of the bill.

Committee Democrats hammered out an urban renewal section, for example, that calls for a six-year, $2.1 billion program of grants to cities. This was a compromise between the ten-year, $3.5 billion program the Democrats wanted and the Administration-sponsored $1.3 billion, six-year program. But whereas the federal share of renewal costs would gradually have dropped from two-thirds to one-half by fiscal 1962 in the Administration bill, the committee bill calls for no decline in the federal share of renewal costs. The urban renewal section of the Senate bill, incidentally, is the most ambitious such proposal in terms of dollars and longevity that has ever gotten this far in Congress.

The closest fight in the committee hearings on the housing bill came on some radical proposals for overhauling the federal public housing program. The proposals were drafted by committee Democrats to meet many objections that the program had become too "federalized," that too much authority rested in the Public Housing Administration, which was not giving local authorities enough discretion to run their own shops. The Senate committee bill proposes that local authorities be allowed to keep one-third of the income they receive from low-income tenants above what is needed for maintenance to improve their projects as they see fit. At present all this money goes toward what PHA pays out for interest and principal on the local bond issues floated to build the projects. Washington officials say, off the record, that this measure would cost the government an estimated $25 million a year—the amount of the additional federal subsidies that would be needed to make up for what the local authorities would be allowed to keep.

Another radical provision written into the Senate bill would, for the first time, let families whose incomes had increased to the point where they were no longer eligible for low-rent public housing enter into a contract with the local housing authority to buy their units or, in some cases, to continue to occupy their units if no other suitable housing is available. (No mortgage arrangement would be possible, because if title to the unit passed, it might jeopardize the bonds sold to finance the project, since the conditional sale would represent, in effect, a transfer of the capital assets against which the bonds were sold.) This provision is expected to stimulate construction of more individual-house type public housing, such as that recently built at Cedartown, Georgia.

The Banking Committee ignored the Administration's proposal to extend for only one year the authorization for the construction of 70,000 public housing units originally voted in 1956. Instead, the committee extended such authorizations for two years and voted an additional 35,000 units. There is still a backlog of over 80,000 units from previous years' authorizations which have never gotten built, so the addition of these units is meaningless in terms of immediately foreseeable construction.

Actually, the public housing section of the bill only passed by a vote of eight to seven. Two Democrats, Senators Robertson of Virginia and Frear of Delaware, voted with the Republicans to kill the public housing provisions, but two Republican Senators, Payne of Maine and Case of New Jersey, voted to keep them.

The public housing provisions are sure to come under fire on the floor of the Senate. Senator Capehart promised as much when the Banking Committee reported out the bill and quickly drafted a minority report asking that

continued on page 6

LETTER FROM WASHINGTON

The outlook for real estate finance

Amid a business climate that still is fairly cloudy, at least two things—both very encouraging—are clear: 1) There is, and will be, plenty of money for financing real estate operations in the months ahead, and 2) mortgage interest rates are lower than they have been in several years and are still declining.

This real estate credit situation is a reversal of the 1955-57 period, which was characterized by high interest rates and a vast expansion of almost all types of credit—except mortgage credit. From 1953 to 1955, net new investment in mortgages rose from $9.9 billion to $16.2 billion; but from 1955 to 1957 mortgage investment declined sharply, to $11.6 billion. Moreover, investment in mortgages declined from 73 per cent of total new investment outlays in 1955 to 53 per cent in 1957.

One reason for the downtrend in real estate investment in the 1955-57 period was that mortgage yields did not advance so fast as yields on corporate securities — or on tax-exempt municipal bonds—thus putting mortgages at a competitive disadvantage. This was partially due to the fact that mortgage rates are normally slower to respond to changes in credit conditions than are the rates on other investments. More important, however, was the policy of arbitrarily administering interest rates on FHA and VA mortgages, which succeeded only in discouraging investment in these mortgages.

The period of high interest rates and formidable competition for investment funds came to an end early last year. Since then, monetary policy, which was designed to make borrowing tougher in the 1955-57 period, has changed direction—and with surprisingly good results. For instance:

▸ So far this year an enormous volume of bank credit has been created. Woodlief Thomas, economic adviser to the Federal Reserve Board, recently observed that, "The total increase in five months, when a seasonal increase is not customary, has been much greater than might occur in one year." In the past five months, commercial banks increased their total loans and investments by $7 billion, compared with a rise of $1 billion last year.

▸ Interest rates generally have declined, although, as usual, mortgage interest rates have declined more slowly than others. Nevertheless, declines of as much as half a point in the rate offered for attractive commercial properties are no longer uncommon. And the full impact of the Federal Reserve's credit loosening has not yet hit the mortgage market.

▸ Discount controls on VA mortgages have been eliminated, making VA loans relatively more attractive.

▸ A prospective drop in the volume of new corporate issues is expected to lure more investors to the mortgage market.

Given this vastly improved borrowing picture—lower rates and more funds—some economists have already asked, will the borrowers appear? The answer appears to be in the affirmative. The recent increase in applications for FHA and VA mortgages has been even more dramatic than the upsurge that followed the easing of credit in 1954. And a recent survey of home builders revealed that three out of five builders have already expanded their operations this year since the credit shift.

Other kinds of construction besides home building have responded to the credit shift. Conventional loans on commercial and apartment property remain in a favored class with many investors, and the same is true of sale-leasebacks. Despite the continued weak showing of rental projects financed with FHA-insured mortgages, there appears to be at least a mild renascence in apartment building. Office building construction has yet to hit full stride in many places, but the construction of shopping centers, which last year fell victim to high money costs and shrinking profit margins, is showing signs of revival.

All in all, we are certain to have a larger volume of mortgage financing this year than last. And it seems certain that we will have close to the same volume of private construction in 1958 as we had a year ago, with the promise of a still better year in 1959.

—MILES COLEAN

the bill be cut back to the same proportions as originally proposed by the Administration. He called the public housing measures "unworkable and too much of a drain on the federal government."

Legislative outlook

With majorities in both houses of Congress, the Democrats are in a strategic position to force through a 1958 housing act with strong urban renewal and public housing sections. And if the bill as approved by the Banking Committee gets through Congress in anything like its present form, the Administration will have a difficult choice to make. It has advocated a gradual scaling down of the federal urban renewal program, and has been unsympathetic with the Democrats' public housing ideas. If this bill is passed, the federal government will be in urban renewal more firmly than ever, and public housing will have been expanded in a year when it seemed vulnerable to cutbacks because of heavy criticism (FORUM, May 1958) and the already large backlog of units.

This year, one usually controversial element is missing from the debate over the housing bill: authorization for the Federal Housing Administration to insure an additional $4 billion of mortgages has already been passed in a separate measure. For the first time, FHA's insurance authorization was sent through Congress separately, instead of as part of the omnibus housing measure.

Usually, FHA's authorization is welded tightly into a whole package of housing proposals, thus putting opponents of the housing measure in the position of hampering the FHA home mortgage insurance program, which is the most politically appealing housing legislation on the books. This year, the Administration worked desperately to get an increased FHA authorization through Congress ahead of the regular housing bill, claiming that FHA was running out of funds because of the strong demand for new mortgage insurance. Housing & Home Finance Agency Administrator Albert M. Cole told Congress in mid-May that "FHA will reach the limit of its present authorization in another month."

Consequently, if the Administration should now decide that the housing bill passed by Congress is too unpalatable, President Eisenhower can veto it without impeding the insurance activities of FHA.

Upsurge in home building bolsters construction

The home building industry seemed to be catching its second wind last month. Builder William Levitt announced he was going ahead with plans for a 15,000-home development in Burlington, New Jersey (between Camden and Trenton), thereby ending rumors that the dip in home building earlier this year had caused him to postpone the project indefinitely. As the first model homes were opened (priced from $11,500 to $16,000), and work started on one elementary school, which Levitt himself will build, recouping the cost from the sale of the houses themselves, Levitt said: "We hope that what we do and what other builders

AP

LEVITT

do will help in licking the situation in which the country presently finds itself."

The home builders are, in fact, doing quite a bit to "lick the situation." Private nonfarm housing starts in May topped an annual rate of 1 million units for the first time since January. More importantly, the 98,000 new starts in May was the highest monthly total since August 1956, and nearly 2 per cent ahead of May 1957. Consequently, despite the business recession, nonfarm starts for the first five months of this year totaled 413,000, slightly more than in the same period last year.

As has been the case in every housing-boom year since World War II, federally insured housing and public housing have contributed importantly to the renewed vigor of residential building this year. The Federal Housing Administration insured 25,469 units in May, the highest monthly total since August 1955, and a whopping 71 per cent more units than in May 1957. The number of homes guaranteed by the Veterans' Administration has likewise risen, although the 6,043 units started in May were still only about one-half as many as in May 1957. Taken together, however, FHA and VA starts in May were 16.8 per cent higher than in May 1957, and comprised nearly one-third of total private housing starts. In May 1957, by comparison, FHA and VA starts together accounted for only 28 per cent of total private starts. Public housing totaled 25,300 new starts in the first five months of this year, compared to only 21,700 starts in 1957, a 17 per cent rise.

Even more encouraging than the rising totals of actual FHA and VA-insured housing starts has been the record number of applications for mortgage insurance pouring into FHA offices. The 90,000 applications received in May exceeded even the May 1950 total—and 1950 was the all-time peak year for both FHA-insured starts and total housing starts. May also established a new record for FHA insurance applications on existing housing units (55,449). Meanwhile appraisal requests for Veterans' Administration mortgages took a big jump, too, totaling 29,170 in May, the highest monthly figure in 18 months.

There were also hopeful auguries of rising construction activities outside the home building field. The Investment Bankers Association of America noted the record-breaking pace of new municipal bond issues so far this year (in the first five months of this year sales totaled $3.8 billion, 27 per cent above last year) and said "they are certain to be reflected in a rising volume of state and local government construction in the months ahead."

Capital expenditures still declining

Although residential construction is picking up, another important area of building, industrial construction, is still lagging. Three recent appraisals of industry's capital spending plans indicate that the 1958 cutbacks in business outlays for plant and equipment will be somewhat greater than originally anticipated:

▸ Last month, the quarterly report of the Department of Commerce and the Securities & Exchange Commission lowered the estimate of 1958 capital expenditures from $32 billion to $31 billion. This would be 17 per cent below the record $37 billion of 1957, and the lowest annual total since 1955. By the fourth quarter, total capital spending will have dropped to an annual rate of about $30 billion. Actual capital spending in the first quarter of this year turned out to be nearly 5 per cent below the $34 billion level forecast for the quarter. Second quarter spending was estimated at only $31.7 billion instead of $32.6 billion.

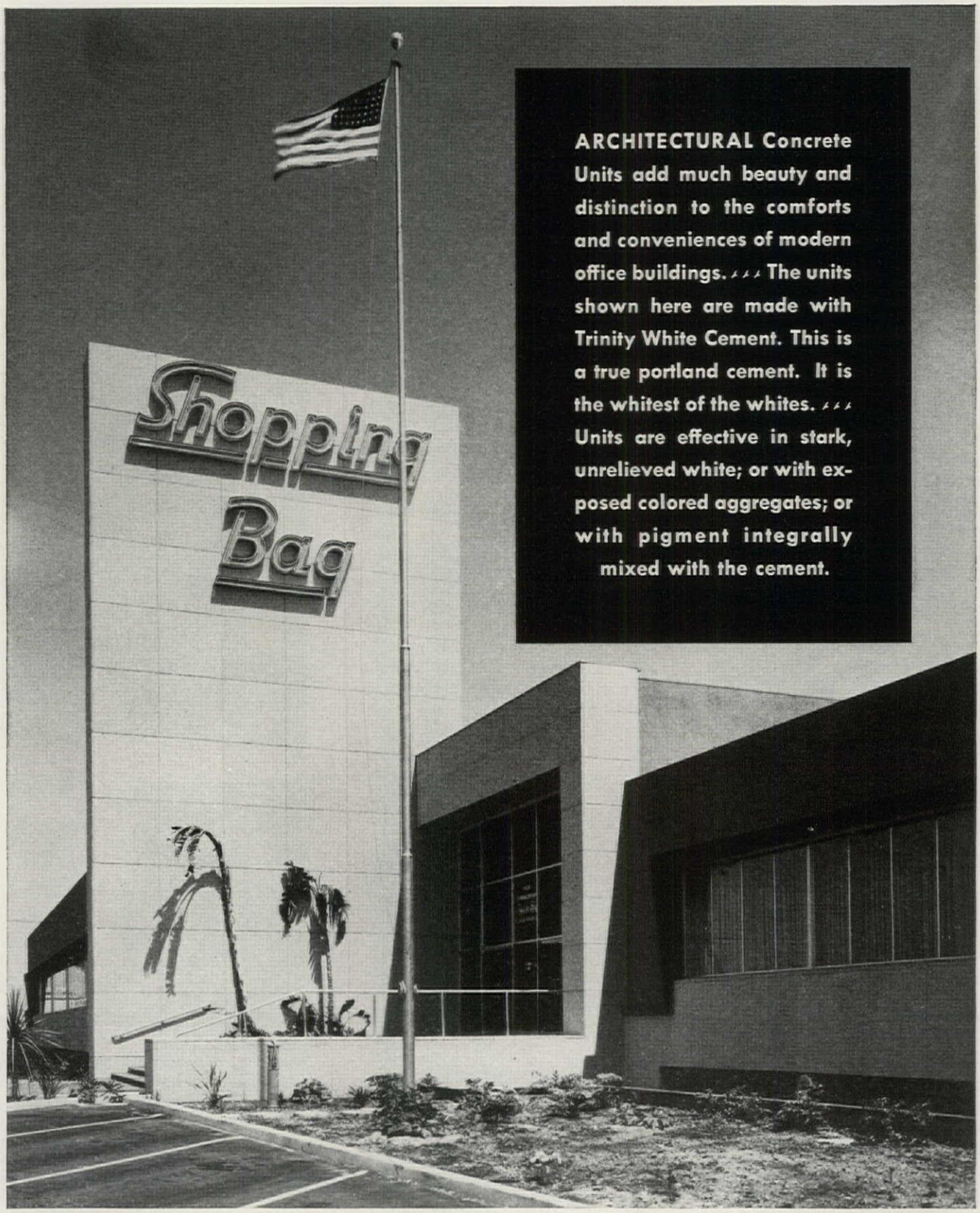
▸ The staff of the Congressional Joint Economic Committee estimated that the annual rate of capital spending would drop $2 billion each quarter during 1958, and would reach a level about $10 billion below the $37.5 bil-

continued on page 9

JAMES R. DUNLOP INC.

RENI PHOTOS

NIXON DEDICATES AGC HEADQUARTERS
Last month, a crowd of some 900 persons gathered a few blocks from the White House in Washington, D.C. to see Vice President Richard M. Nixon dedicate the new headquarters building of the Associated General Contractors of America. Assisted by AGC President Fred W. Heldenfels Jr. (center) of Corpus Christi, Texas, and former AGC president Frank J. Rooney, of Miami, Florida, Nixon sealed up the cornerstone, which contained a time capsule with ten forecasts of man's physical environment in 2000 A.D. These were written by editors of ten leading construction industry publications, including one by FORUM Consultant Lawrence Lessing. AGC's new headquarters was designed by the Washington firm of Chatelain, Gauger & Nolan, and built by AGC member Joseph F. Nebel Co., also of Washington.



ARCHITECTURAL Concrete Units add much beauty and distinction to the comforts and conveniences of modern office buildings. The units shown here are made with Trinity White Cement. This is a true portland cement. It is the whitest of the whites. Units are effective in stark, unrelieved white; or with exposed colored aggregates; or with pigment integrally mixed with the cement.

General Office Building, Shopping Bag Food Stores, Inc. • El Monte, Calif. • *Architect:* H. W. Underhill, Los Angeles • *General Contractor:* Ernest W. Hahn, Inc., Hawthorne, Calif. • *Concrete Products Manufacturer:* C. D. Wailes Co., Sun Valley, Calif.

Trinity White

PORTLAND CEMENT

A Product of GENERAL PORTLAND CEMENT CO., Chicago • Dallas • Chattanooga • Tampa • Los Angeles

lion peak rate of the third quarter of 1957. This would be a 20 per cent drop —the steepest in any postwar recession.

▸ The National Industrial Conference Board reported that appropriations of capital expansion funds by 1,000 manufacturing firms are declining at an increasing rate. Such appropriations were down 43 per cent in the first quarter of this year from the first quarter of 1957.

Lincoln Square clears one legal hurdle, hits another

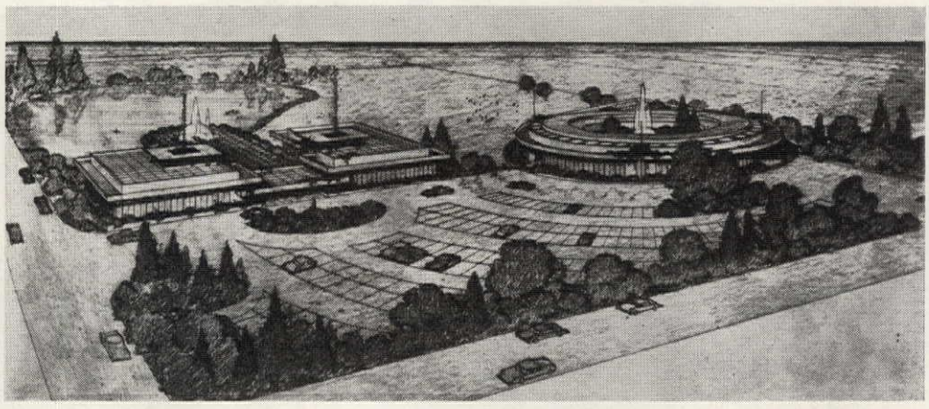
One major obstacle in the way of Manhattan's $205 million Lincoln Square renewal project was cleared last month, but another cropped right up in its place. The U.S. Supreme Court refused to hear a protest of the Lincoln Square Chamber of Commerce — composed largely of merchants in the 13-block redevelopment area — which charged that sale of two blocks to Fordham University constituted violation of church-state separation as guaranteed by the state constitution. (A similar suit was filed in Federal District Court months ago, based on violation of church-state separation as guaranteed by the U.S. Constitution, but now this action has been stayed by common consent of both the Lincoln Square merchants and the city's Slum Clearance Committee.)

The Supreme Court's refusal left standing decisions of lower courts that held that sale of condemned land to Fordham did not constitute a violation of constitutional guarantees. The city had paid about $16 per square foot for the land, and sold it to Fordham for about $7 per square foot. But Federal Judge Charles S. Desmond said that the cost of clearance of such property made the land worth less to the redeveloper, who bears these expenses, than to the city when it condemned the land. The court also held that any educational institution was free to bid for the land, so the fact that Fordham bought it did not indicate special subsidy. The court said that "Fordham would be deprived of its constitutional rights if it alone were excluded from bidding."

Following the Supreme Court action, the Committee on Slum Clearance swung into action on its plans for relocation of an estimated 3,000 families in the renewal area. Actual relocation will be carried out by Webb & Knapp, which is also building middle-income rental housing in the area. Such relocation had been delayed until the court case could be decided. Now, the city is offering tenants bonuses, ranging from $275 to $500 (less moving costs), to relocate in private rental housing which has already been set aside for them. Families that are eligible for public housing are only paid moving costs.

But the wheels may grind to a halt again, even before many tenants can collect any bonuses. A scant week after the Supreme Court action, attorneys for Lincoln Square tenants filed suit in District Court, raising a welter of

continued on page 11



Wright designs an elementary school "teaching laboratory" for Wichita University

On the only hill in Wichita, Kansas, the University of Wichita hopes to give form to a great architect's interpretation of a workshop for educational training. Last month, the university's Board of Regents unanimously approved a $1,250,000 design for an education center designed by octogenarian Frank Lloyd Wright.

The center will consist of two buildings. One will be a rectangular-shaped structure that will house administrative offices, a library, and classrooms for the university's 1,600 education students. Adjacent to this will be a circular building with a wedge-shaped structure set tangentially to it, the total space to accommodate 200 schoolchildren. In the wedge will be rooms for kindergarten, first, and second grades and in the center of the wedge will be a giant sand pile and other recreational facilities.

The circular part of the building will be divided into classrooms separated from each other by loggias planted with shrubs, and by washrooms. In the center court will be a fountain and statue of Friedrich Froebel, a pioneer in elementary school education and once a teacher of Wright's mother. Exterior material will probably be the same type of blue glass that Wright plans to use in his Baghdad Opera House (FORUM, May 1958). Wright himself has not seen the site, but did the design from topographical maps and aerial photographs. Wright will be paid his customary fee of 10 per cent, which includes supervision of landscaping and design of furnishings.

Harry F. Corbin, Wichita University president, hopes that the total cost of the building can be met from gifts to the school. If gifts come through as expected, construction will start within a year. Otherwise, if the university has to rely on public funds and its own regular building funds, it may be as long as three years before construction is started.

Wright was chosen to design the school by Dean Jackson Powell, who had read Wright's autobiography and remarked: "It seemed to me that many of the things he said about architecture were the things I'd said to myself about education." Dean Powell said: "We tried to imagine what the curricula of the next decade and a half will be like. Then we set about to construct the type of facility that would best handle that curricula." Wright, who has had his troubles with legislators, university overseers, and other such guardians of both public and private trust in the past, was accepted enthusiastically by WU's Board of Regents. When Wright was told that the board had unanimously approved his design, he said, "Well, isn't that interesting—and isn't it unusual."

the case of THE VANISHING LUNCHBOX

You don't need a Sherlock Holmes to discover that the old fashioned lunchbox is fast disappearing from the American scene. More and more factories and offices are switching to the idea of feeding employees in company cafeterias. And Blickman is a pioneer in the planning, fabrication and installation of *inplant food service systems*. Today the finest installations are "Blickman-Built". That's because no one else can muster the fabricating craftsmen and the overall experience of Blickman.

Fabrication of equipment for *mass feeding* is but one function of the Blickman organization. Blickman's Hospital Division supplies operating room equipment; the Special Products Division custom fabricates alloys and supplies research equipment to fields as diverse as medicine and nuclear energy; Blickman galleys are standard equipment on ships of all types.

Blickman labors constantly to develop new methods of working alloys. Their clients benefit from experience unmatched in the field. For specific information, write S. Blickman, Inc., 5807 Gregory Ave., Weehawken, N. J.

BLICKMAN

Pioneers in Alloy Fabrication

Look for this symbol of quality Blickman-Built ESTABLISHED 1889

KITCHEN EQUIPMENT • HOSPITAL EQUIPMENT • CUSTOM ALLOY PRODUCTS • LABORATORY EQUIPMENT

new protests to the Lincoln Square project. Among other things, they charge the project intensifies the housing shortage, fails to provide proper relocation for either businesses or residents, replaces low-rent housing with luxury housing, permits private redevelopers to obtain the land from the city at bargain prices without competitive bidding. They also charge that federal approval of redevelopment plans for the area without public hearings constitutes a violation of the Fifth Amendment, which forbids taking of property without due process of law. They seek a permanent injunction against the eviction of the area's occupants, and for a judgment that would, in effect, nullify all the city's actions to this time. Harris L. Present, attorney for the Lincoln Square group, says this case, like the one just settled, will be carried to the Supreme Court "no matter which side wins in the lower courts."

This action is considered a last gasp —but it could cause more delays for the Lincoln Square project.

Ed Stone to design Manhattan art gallery

A & P Millionaire George Huntington Hartford II, long a controversial figure in the worlds of painting and the theater, may soon cut a swath in the field of architecture. Hartford is not penning any bitter polemics on modern architecture, similar to those he ran as paid newspaper advertisements a few years ago denouncing "abstract expressionism" in modern painting. But last month Hartford did announce that he had asked Edward Durell Stone, 56-year-old architect of such recent limelit monuments as the U.S. pavilion at the Brussels Fair and the U.S. Embassy at New Delhi, India to design for him a new Gallery of Modern Art. This alone might be expected to stir at least a small ripple of excitement, for Stone will be forced to turn his expansive talents to a small (5,000 square feet), trapezium-shaped site on Manhattan's Columbus Circle. This, in Stone's words, forms "a unique problem because we must create a vertical museum."

But what is even more curious is that Hartford has created a situation in which Stone himself will be competing with a design for the new museum which Hartford admittedly is very fond of. This is the design of a young, Chinese-born architect, Hanford Yang, who only last year received his master's degree from M.I.T. Yang worked under Pietro Belluschi at M.I.T., who suggested to Yang that he tackle the problem for his master's thesis. When Yang sent the finished design to Hartford "as a gesture of courtesy," he was surprised to find that Hartford felt it was the best of many designs he had seen for the museum, and he wanted Yang to talk about how they could get it built.

As with many beginning architects, Yang's immediate problem is that he is not registered in New York state, and so Hartford had to hire a registered architect. Impressed by Stone's recent successes, Hartford commissioned Stone to work up his own design, and Yang was given the title "Project Manager" and assigned to work in Stone's office.

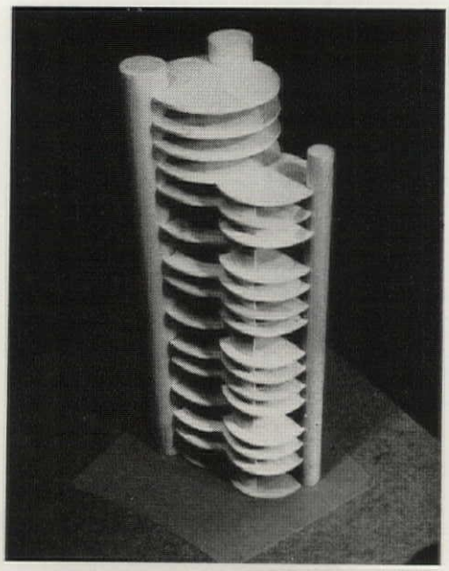
Hartford is still intrigued with Yang's design, but he is curious to see what Stone's answer to the same problem will be. Hartford was recently quoted as saying that he would like "something that is not as stark and cold as the contemporary buildings. I want something that has warmth. So many of our contemporary architects carry functionalism to a point where there is no humanity left. It becomes mechanistic."

Yang, who was born in Shanghai and is the son of Gen. Sen Yang, a former governor of Kweichow Province who is now in the service of Chiang Kai-shek on Formosa, attacked the problem of a "vertical museum" daringly. His design calls for two interlocking cylinders, which would afford seven exhibition levels within 11 stories. Short stairways would link each level and elevators would connect the main floors. The exterior of the main cylinder would be sheathed in translucent panels of plastic held by lightweight metal mullions. The smaller cylinders, serving as elevators, fire towers, and mechanical shafts, would have concrete exteriors.

Stone's design, although not formally announced yet, will call for smooth exteriors, in quadrangular form, with the characteristic Stone grillwork façade. His interior will have many levels, just as Yang's does. Stone has said: "I want to create a feeling of permanency in the design of the building that seems to be lacking in some of our modern architecture."

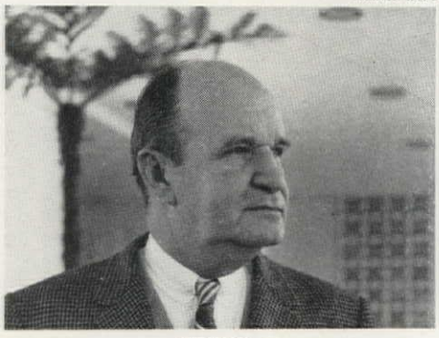
Hartford is delighted at being able to bring together two such talents as Yang and Stone to work on the $3 million museum, which he has long wanted to build as a sort of reaction to the

continued on page 13



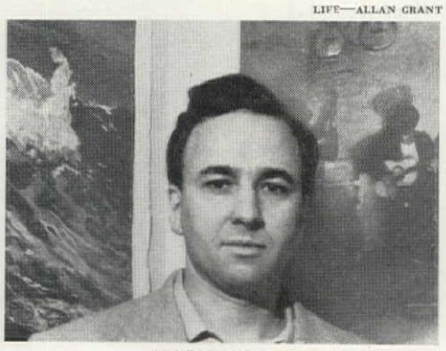
YANG AND HIS ART GALLERY

MARVIN RAND



STONE

LIFE—ALLAN GRANT



HARTFORD

How to be a most happy architect Put on a good face Put in . . . .

INSULROCK

to back it up

Take, for example,
this Chetwynd Apartments project.

The complete outside skin is aluminum. Insulrock back-up slabs—85,000 square feet of 32″ x 42″ slabs, 3 inches thick—furnish the "flesh" to back up this aluminum exterior.

The Insulrock wall back-up slabs provide an excellent base for efficient and easy application of plaster and attractive finish. The composition of the light, strong, easily handled Insulrock slabs, made of special long fibers pressure-bonded with portland cement, insures inside wall fire resistance—Insulrock, as you know, is incombustible and UL listed.

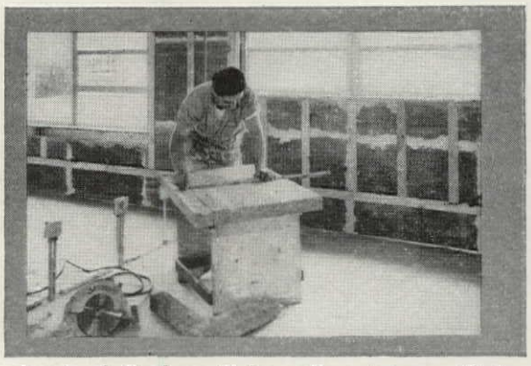
The Insulrock, as you also know, helps insulate efficiently: heat out, or heat in, as the season dictates.

The builders told us about "the remarkable ease of installation" of Insulrock. That's one reason why they have continued to use Insulrock for their succeeding building.

You ought to find out *all* the reasons why Insulrock is indicated for profitable jobs.

Write, call, wire

Chetwynd Apartments, Rosemont Construction Company, Bryn Mawr, Pa., Builders and Owners



Insulrock Back-up Slabs easily cut to specified sizes

Insulrock®

Division of The Flintkote Company

FLINTKOTE PROTECTION

INSULROCK COMPANY
Sales Office: EAST RUTHERFORD, NEW JERSEY
Plants: LINDEN, NEW JERSEY • RICHMOND, VIRGINIA • NORTH JUDSON, INDIANA

Museum of Modern Art. Hartford regards the Museum of Modern Art as the chief depository of the very sort of modernism that he most deplores, and he feels that the public should be able to see other modern works, such as those in Hartford's personal collection. This includes works of Seurat, Sargent, Courbet, Mary Cassatt and Hartford's wife, actress Marjorie Steele, who took up painting on her honeymoon. Hartford himself will decide what paintings will grace his museum, and he will charge an admission fee.

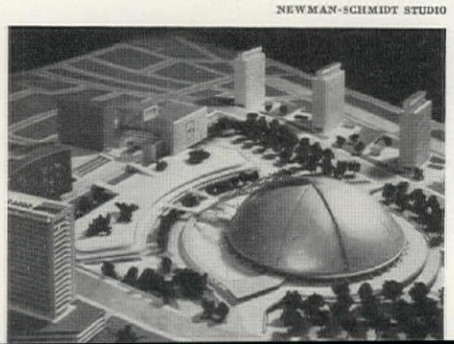
Pittsburgh civic arena to have steel dome

Steel won a decisive victory over aluminum last month in Pittsburgh, the steel capital of the nation and also the headquarters of the Aluminum Company of America. The five-member Public Auditorium Authority of Pittsburgh voted unanimously to have a steel, rather than an aluminum, dome on the proposed civic arena, despite the fact that steel will cost an estimated $195,000 more.

Only one of the five members would give a reason for his decision. David McDonald, president of the United Steel Workers union, who voted by proxy, telegraphed that he voted for steel because steel "would be melted and rolled by stainless steel workers in the Pittsburgh area. This will create about 22,000 man-hours of work for local members of the USW. Aluminum would not be melted or rolled locally."

The total cost of the auditorium will be about $20.5 million. It will sit in the redevelopment area in Pittsburgh's Lower Hill section, not far from the Golden Triangle. Designed by Pittsburgh's Mitchell & Ritchey, the auditorium features a dome split into eight sections, six of which will slide back over the other two, thus opening up most of the roof to form an open-air amphitheater. The arena will seat between 7,500 and 14,000 persons, depending on the event.

NEWMAN-SCHMIDT STUDIO



Los Angeles votes to give Chavez Ravine site to Dodgers for new baseball stadium

Last month, Los Angeles voters gave a go-ahead to baseball magnate Walter O'Malley and the city of Los Angeles to build a 52,000 seat, $12 million baseball stadium in Chavez Ravine just north of downtown Los Angeles. The vote, which was won by a bare 52 per cent majority of the 666,577 votes cast, climaxed months of wrangling over the city's plans to grant the 300-acre site to O'Malley, who is president of the Dodgers baseball club. Los Angeles City Attorney Roger Arnebergh estimates it will probably be another year before all legal hurdles are cleared, and work can start on the new stadium. In return for the Chavez Ravine site, the Dodgers will turn over to the city title to Wrigley Field, a smaller stadium valued at $2¼-million, which the Dodgers now own.

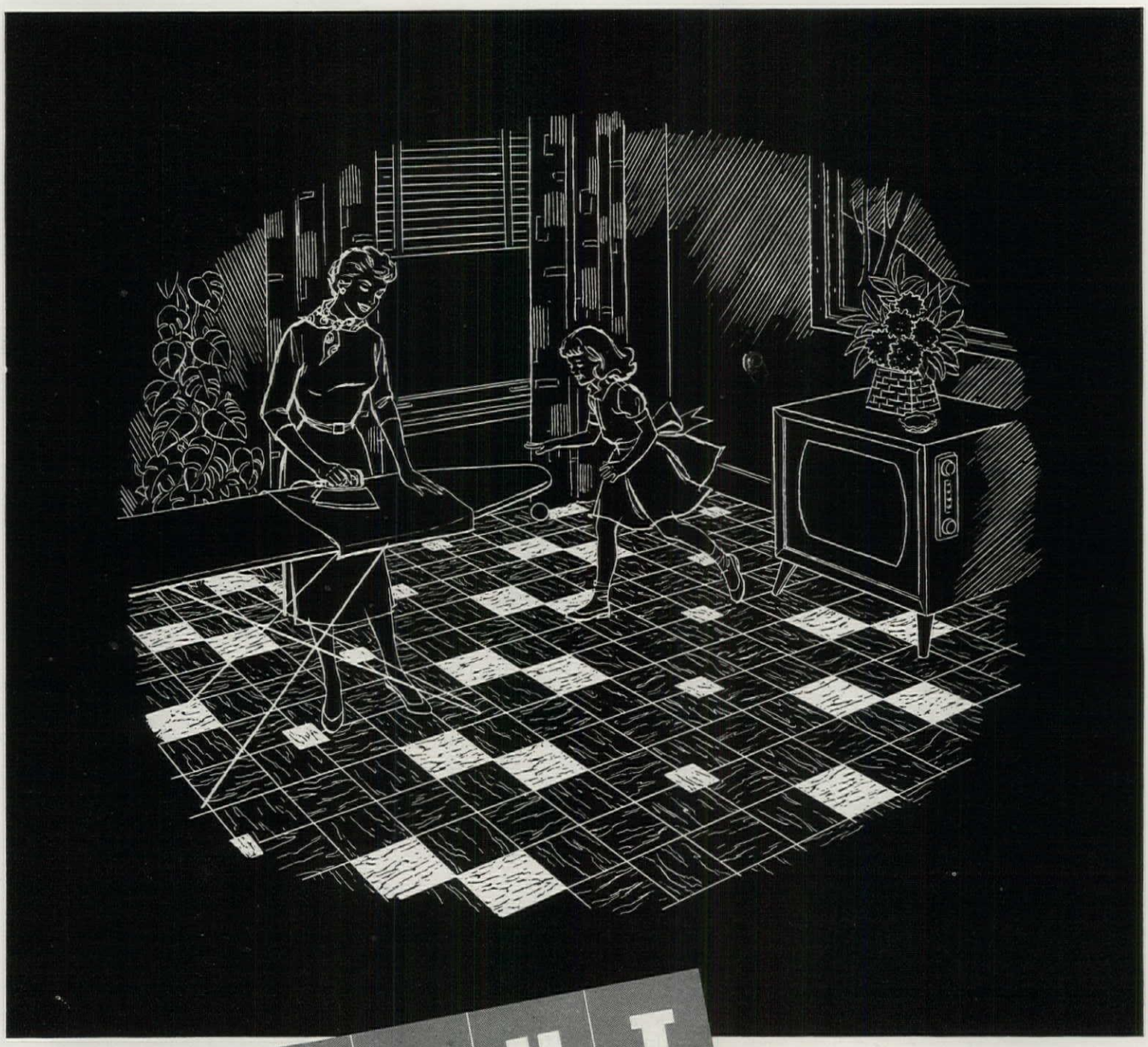
The city has already been enjoined by court order from transferring title to the Ravine site to the Dodgers, as a result of a taxpayer's suit. This action stems from the fact that part of the property came to the city from the Los Angeles Housing Authority, and was restricted to use for "public purposes." This is the first legal hurdle. The Chavez Ravine site also must be rezoned before the stadium can be built on it. And additional property still has to be purchased from private owners of land in the area.

The 300-acre stadium site is reportedly worth at least $2 million (some estimates run as high as $6 million), and the city may have to spend as much as $4,740,000 grading the site and building additional access roads.

When all the legal rubble is cleared away, O'Malley plans to build an ultra-modern stadium which will seat at least 50,000, and may seat a maximum of 70,000. His architects, Praeger-Kavanagh of New York City, have designed a multitiered horseshoe which will afford all spectators a view not only of the ball game but of the mountains that rise behind the city. There will be no obstructing girders to mar anyone's view, and all the seats will be arranged in an oval shape on three sides of the playing field. There will be 17,500 parking spaces, stacked in levels just like the seating in the stadium. Patrons will park their cars, and stay on the same level all the way to their stadium seats. END

LIFE—JOHN BRYSON

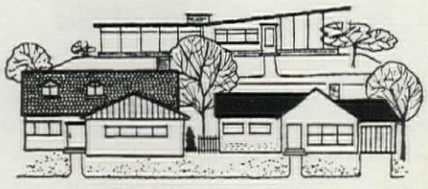
O'MALLEY



WRIGHT

RUBBER AND VINYL FLOORING

helps reduce 4 o'clock drag!



When there's work to be done, and mother's "done in", children can grate on nerves. But you can come to the rescue—by specifying WRIGHT flooring. Completely comfortable underfoot . . . wonderfully sound-softening, WRIGHT flooring helps reduce 4 o'clock "drag" in any home. WRIGHT colors and rich-looking patterns, its unmatched ease of maintenance have instant appeal for homemakers. WRIGHT is the perfect choice in flooring for every home . . . for every project. Consider WRIGHT next time you specify flooring.

WRIGHT MANUFACTURING COMPANY • A Div. of Mastic Tile Corporation of America

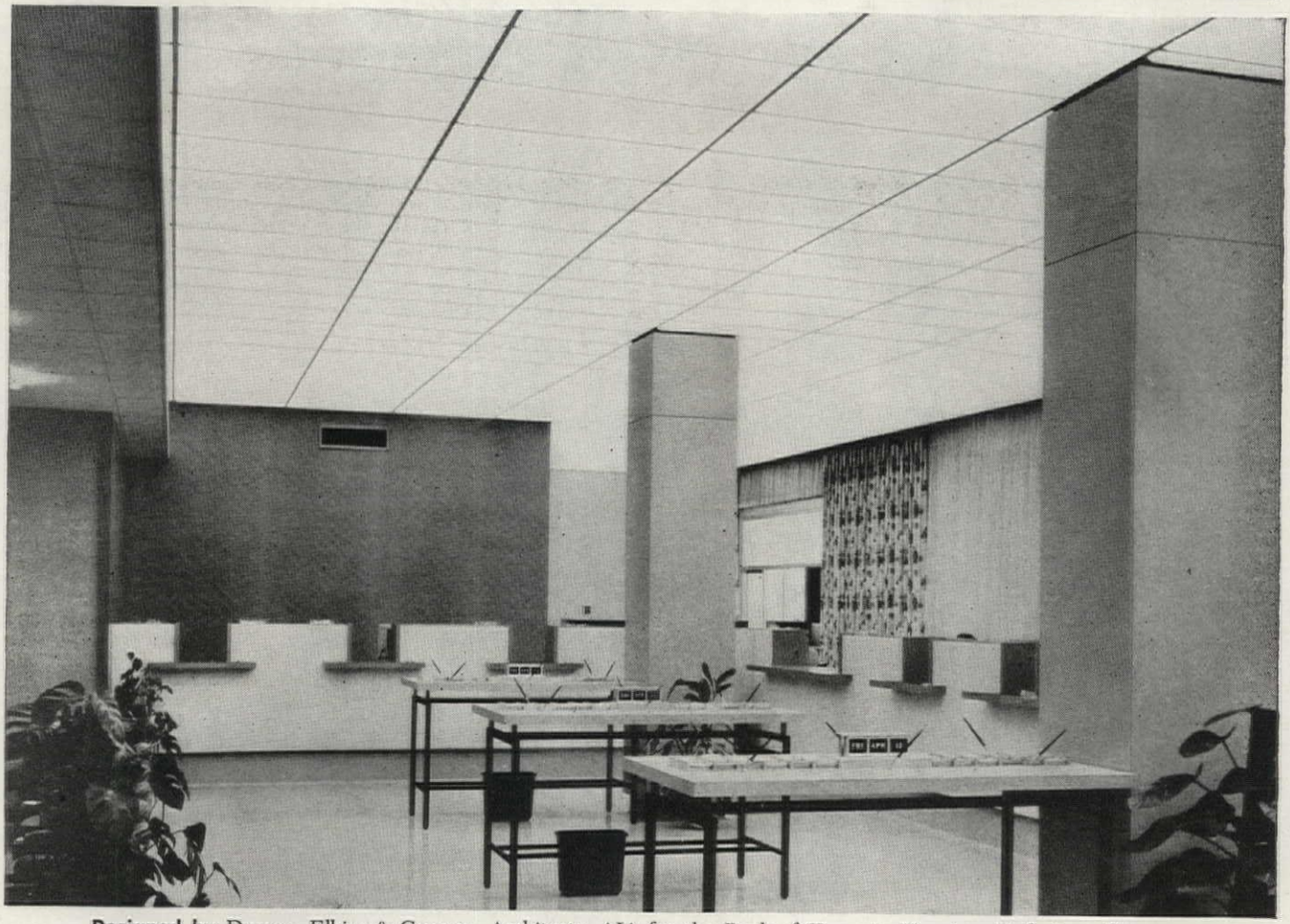
Houston, Tex. • Joliet, Ill. • Long Beach, Calif. • Newburgh, N. Y.

WA26

MAIL COUPON TODAY

WRIGHT MANUFACTURING CO., DEPT. W6-7, BOX 128, Vails Gate, New York
Please send me free samples and full information on WRIGHT Rubber and Vinyl Tile Flooring.
NAME ..... ADDRESS ..... CITY ..... ZONE .... STATE .....

LIGHT...



Designed by Duryea, Elkins & Greeson, Architects, AIA for the Bank of Texas in Houston. 50 foot-candles were obtained at desk level using "Acousti-Lux" panels by **The Celotex Corporation, Chicago, Ill.**

designed with the sky in mind

Pleasant feeling, visiting this bank. No dismal shadows, no harsh "puddles" of light. Obviously, it's the translucent ceiling that makes the difference. Notice the module panels. They pay off in greater flexibility of design, easier maintenance.

The panels are made of BAKELITE Brand Rigid Vinyl Sheet which means they are light in weight. They resist cracking, chipping and warping . . . can be easily cleaned with soap and water. Installation under sprinklers has met Underwriters' Laboratories specifications.

Have the facts on hand . . . for your next job. Write for free booklet, "New Dimensions in Creative Lighting", Dept. GO-11K. Bakelite Company, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N. Y. *In Canada:* Bakelite Company, Division of Union Carbide Canada Limited, Toronto, 7.

It pays to design with **BAKELITE** BRAND **PLASTICS**

UNION CARBIDE

The terms BAKELITE and UNION CARBIDE are registered trade-marks of UCC.

What the architect conceives ... aluminum achieves!

ARCHITECT:
Welton Becket, F.A.I.A., and Associates

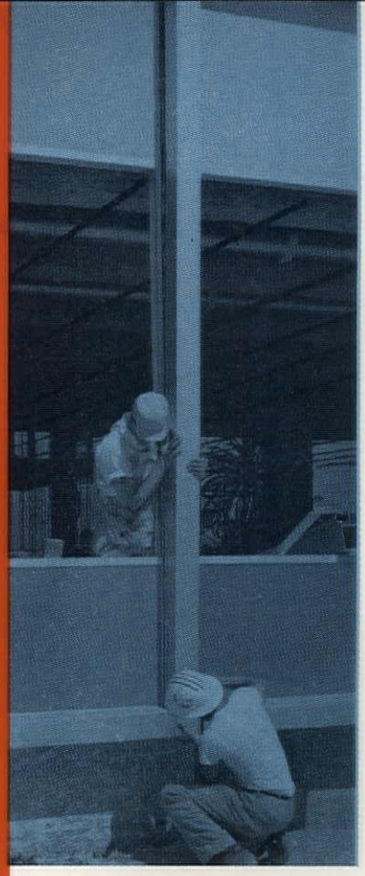
CURTAIN WALL FABRICATOR-ERECTOR:
Ador Corporation

GENERAL CONTRACTOR:
Del E. Webb Construction Co.

For The Texas Company's new Pacific Coast headquarters on Wilshire Boulevard in Los Angeles, the architect specified a curtain wall system unique in the area: a custom-designed grid type panel assembly with aluminum extrusions to create equally dominant horizontal and vertical lines.

The Ador grid panel units —incorporating Kaiser Aluminum extruded shapes— not only meet every architectural requirement, but also adapt to complete plant assembly (as opposed to field assembly). This "unit" system permits fast work, close quality control.

The lightweight (1.35 psf) grid units are installed from within the building, eliminating the need for scaffolding during erection. The factory-assembled units, stored at each floor level, are positioned individually and anchored to the building frame. Four men can easily handle installation of grid units.



Horizontal exterior members are attached to grids at the site prior to installation. Vertical mullions are attached after the grid system is installed. The Kaiser Aluminum extrusions, including snap-on glazing members, cover all fasteners throughout the assembly. Design of the massive aluminum mullions facilitates drainage and effective use of weatherproofing sealants and gaskets.

For both the architect and the fabricator, aluminum is an invitation to achievement

With more useful properties than any other construction material, it offers the architect almost unlimited opportunity for expression. It is light and strong, resists corrosion, reflects light and heat, offers permanent natural beauty with minimum maintenance.

And because it can be formed by any known method and accepts such a variety of mechanical or chemical finishes, it gives the fabricator unsurpassed opportunity for creative contribution to building construction.

Kaiser Aluminum Architectural Representatives are working closely with architects and fabricators throughout the country to help apply these advantages of aluminum to architecture. Their service is immediately available without obligation to any architect or fabricator who is interested in the virtually unlimited opportunities that aluminum offers.

For immediate service or further information, please contact the Kaiser Aluminum Sales Office listed in your telephone directory.

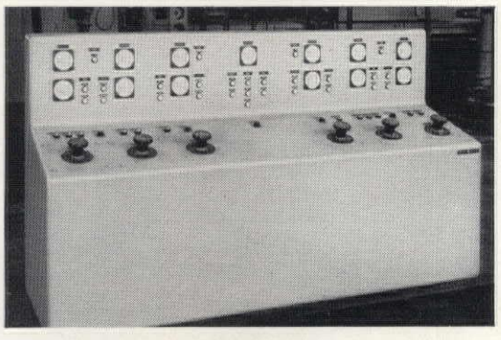
Kaiser Aluminum & Chemical Sales, Inc., *Executive Office,* Kaiser Bldg., Oakland 12, Calif.; *General Sales Office,* Palmolive Bldg., Chicago 11, Ill.

KAISER ALUMINUM

THE BRIGHT STAR OF METALS

See "MAVERICK" • Sunday Evenings, ABC-TV Network • Consult your local TV listing

NOW... color and decoration uniform all through



A triumph of electronic automation

This great new tile is made on an entirely new, ultra-modern production line controlled *throughout* by a tremendous electronic master-board especially designed for Gold Seal by GE automation experts. This means such absolutely accurate control that an entirely new standard of precision and uniformity is achieved in color, size, texture, gauge and strength . . . with maximum dirt resistance and gloss.

FOR THE LOOK THAT'S YEARS AHEAD

GOLD SEAL — CONGOLEUM-NAIRN INC.

Gold Seal® FLOORS AND WALLS

SPECIFICATIONS

ASPHALT—Size: 9″ x 9″ and 12″ x 12″—Gauges: 1/8″ and 3/16″—Colors: 17
VINYLBEST—Size: 9″ x 9″—Gauge and Color: 1/8″—15 Colors; 1/16″—13 Colors
APPLICATION—On, Above and Below Grade

Gold Seal® ends pattern wear in Vinyl Asbestos and Asphalt Tile flooring!

The tile photographed above reveals, by a special test, the most important improvement in this type of flooring since the invention of vinyl asbestos itself. A portion has been "peeled" up to show the center, proving that THE STRIATION IS JUST AS STRONG THROUGHOUT (RIGHT TO THE BOTTOM) AS AT THE TOP!

This means that when you install Gold Seal's sensational new Asphalt and Vinylbest Tile, with FEATHERVEINING Thru and Thru, your floor will never develop any areas where the pattern has been worn off—as in traffic lanes and near doors—nor show pattern differences from area to area.

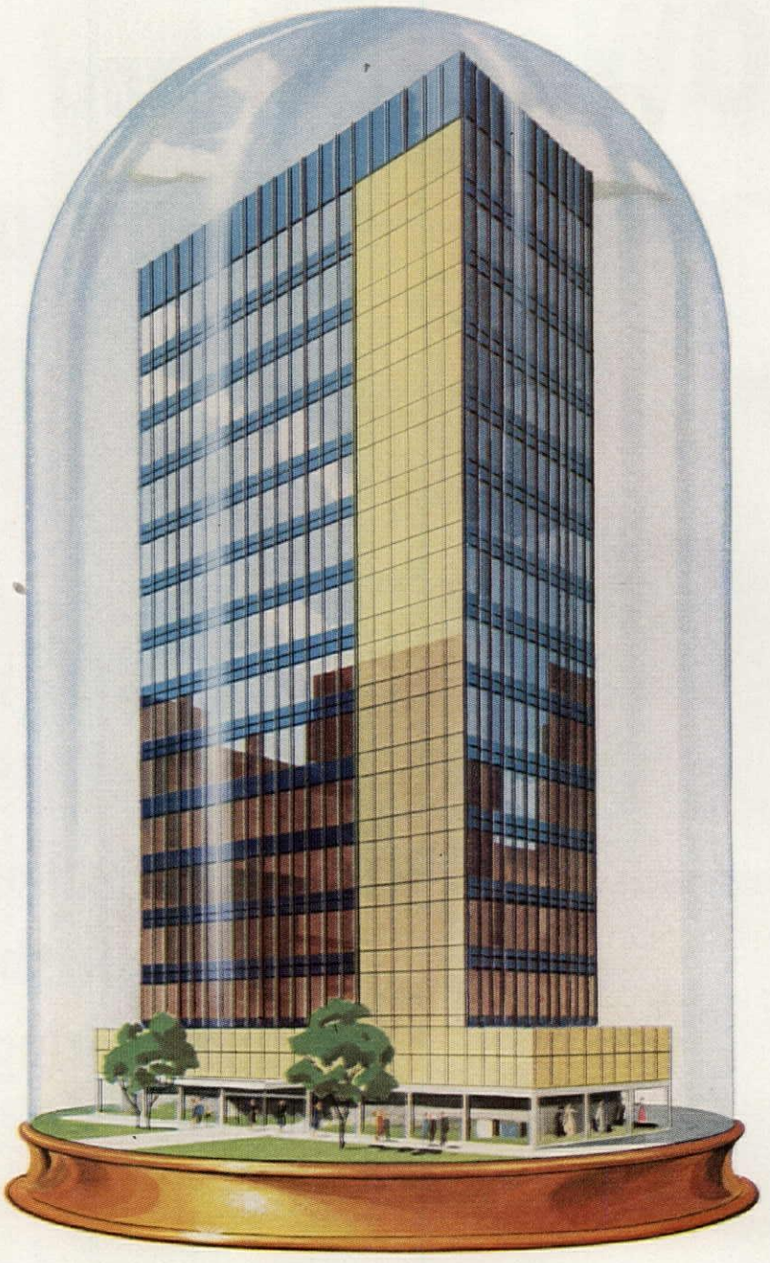
No matter how far you wear down this new Gold Seal tile, the intensity and distribution of the pattern never varies—can't be worn off!

And this is all guaranteed by the famous Gold Seal warranty—"Satisfaction guaranteed or your money back."

There is no extra cost for this new, tremendously better Gold Seal tile.

Write to Architect's Service Bureau, Congoleum-Nairn Inc., Kearny, N. J. for technical data and samples of Gold Seal Asphalt and Vinylbest Tile with FEATHERVEINING.

Time can't **discolor** buildings "under glass"



Vitrolux is heat-strengthened polished plate glass for spandrels. Ceramic enamel color is fire-fused to the back surface. It won't fade or deteriorate. Your choice of 16 standard colors, black, white, or matched to your color sample.

You'll see buildings on any city street that become dingy, discolored, a little disreputable. Not much can be done about it without great expense.

But you *can* do something about the building that's on your board right now . . . to keep it beautiful. Put it "under glass"—lustrous, colorfast *Vitrolux*® glass, between windows of *Parallel-O-Plate*®.

Glass washes clean. Time won't tarnish or fade its color, or dim its beauty. Glass won't corrode, or craze, or deteriorate.

For curtain walls, its quality is ageless. And for harmony, what could go better with glass than *glass*? With *Vitrolux* for spandrels and *Parallel-O-Plate* for windows, you can give the whole face of your building a lustrous oneness of sheen and reflection.

Write for specs and descriptive folders. Libbey·Owens·Ford Glass Co., Dept. 4878, 608 Madison Ave., Toledo 3, Ohio.

LOF GLASS

Curtain walls of

Parallel·O·Plate and Vitrolux by

LIBBEY·OWENS·FORD *a Great Name in Glass*

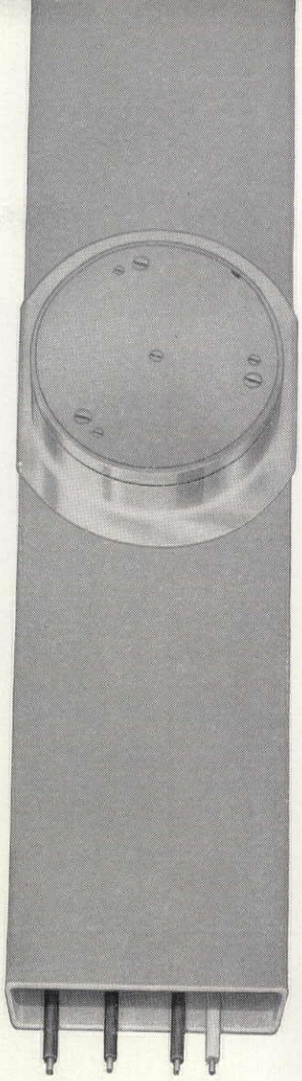
TOLEDO 3, OHIO

NOW!

NATIONAL ELECTRIC HEADERDUCT APPROVED FOR ALL CELLULAR STEEL FLOORS

Electrified Cellular Steel Floors energized with a National Electric Headerduct Raceway system give the owner complete electrical service throughout the floor area by utilizing the large area ducts of the cellular building unit.

If you're planning for any type of cellular steel floor construction, make sure the building never grows old electrically . . . specify a National Electric Headerduct underfloor raceway system.



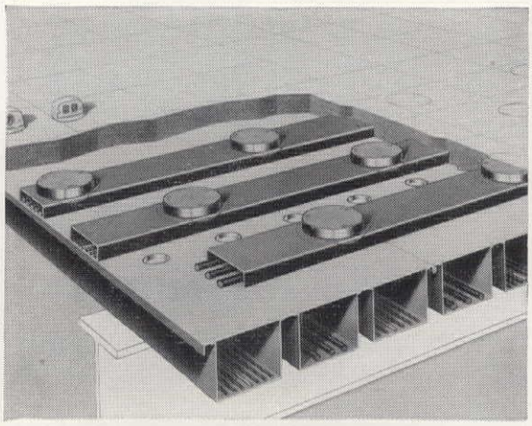
National Electric Products

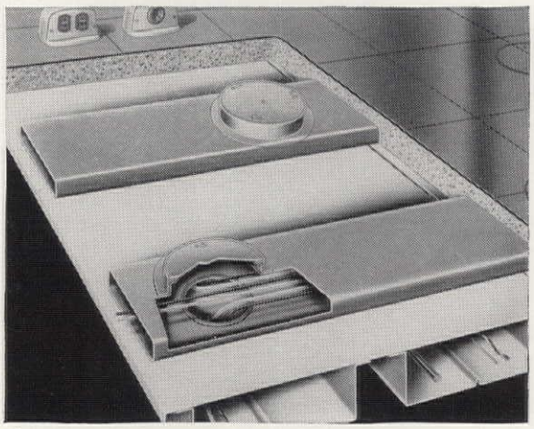
PITTSBURGH, PA.

4 Plants • 12 Warehouses • 41 Sales Offices

In Canada, Nepco of Canada, Ltd.

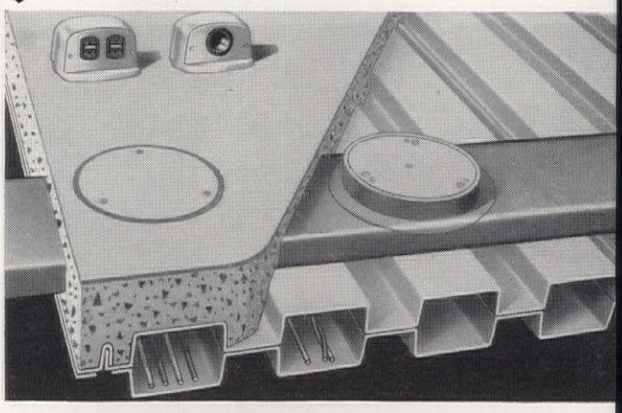
R. C. Mahon Company's M-Floor electrified by Nepco Headerduct.

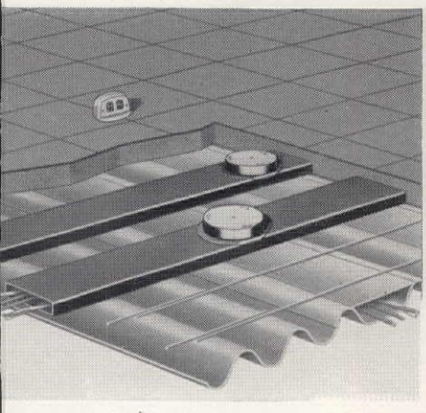




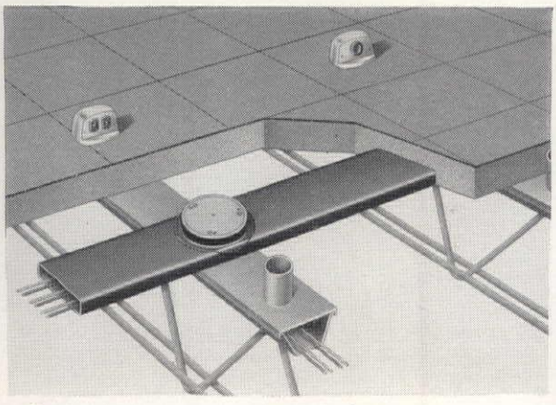
Nepco Headerduct installed on Fenestra Incorporated Electrifloor.

Headerduct used with Inland Steel Products Company's Milcor Cellufloor.



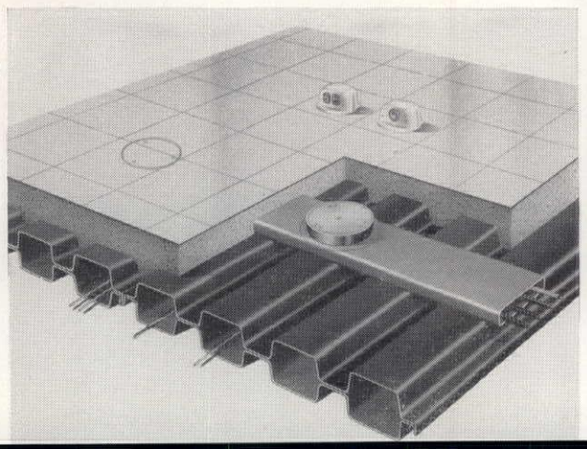


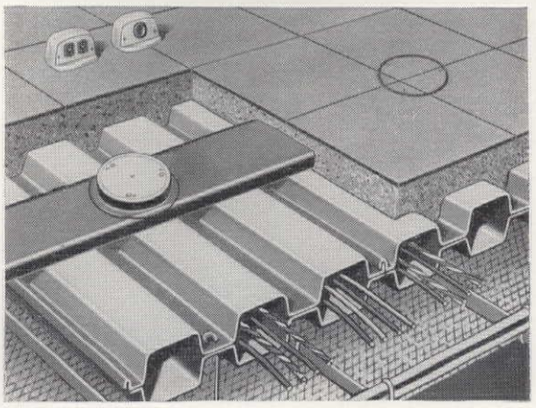
Nepco Headerduct and Granco Steel Products Company's Cofar reinforced concrete slabs.



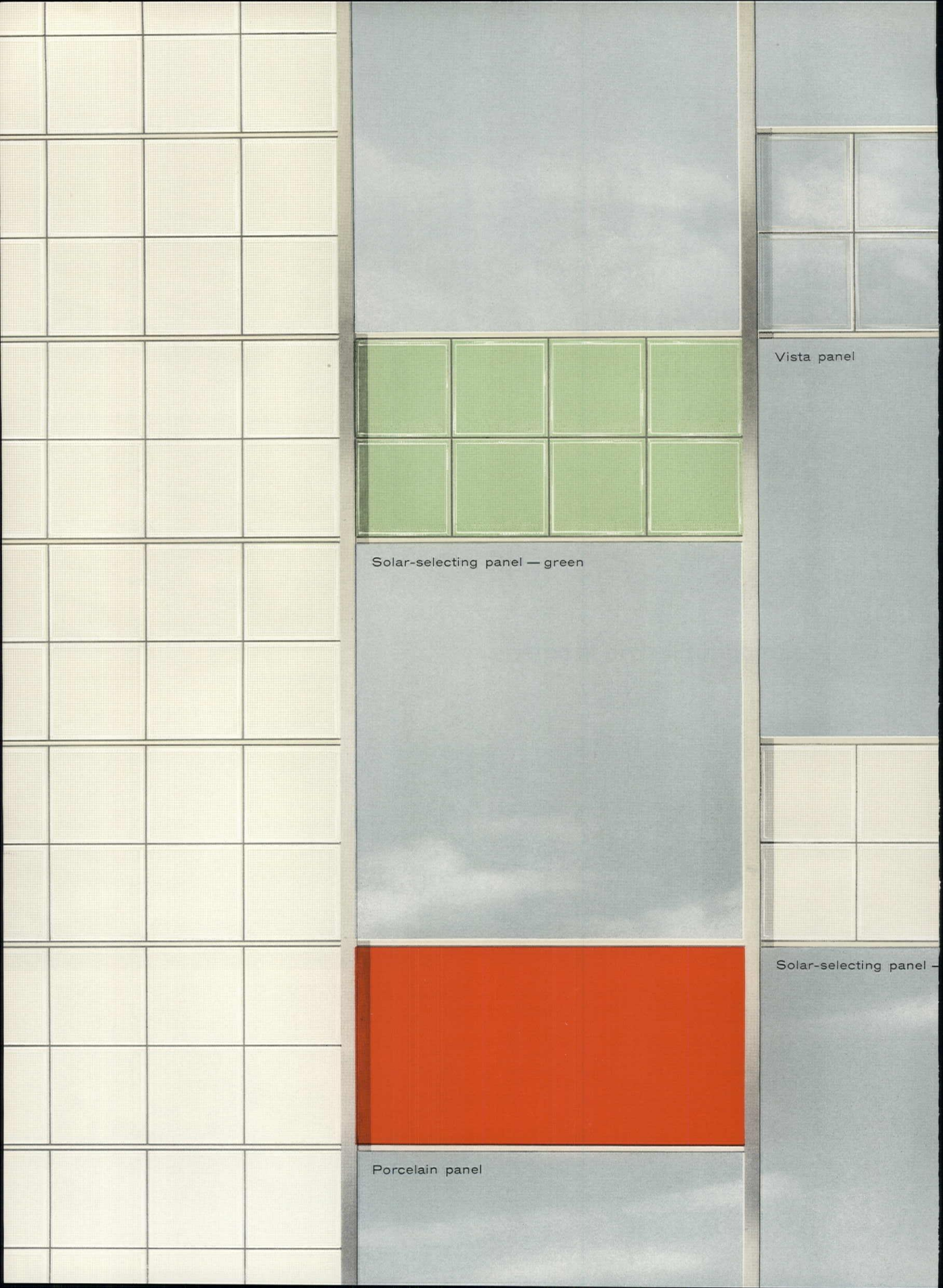
Ceco Steel Products Corporation's open web steel joist floors electrified with Nepco Headerduct.

Nepco Headerduct provides easy access to large ducts in H. H. Robertson's "Q" Floor.





Headerduct used to energize American Steel Band Company's cellular sub-flooring.


Vista panel
Solar-selecting panel — green
Solar-selecting panel —
Porcelain panel

OWENS-ILLINOIS THINLITE CURTAIN WALL

Window panel

Ceramic face glass panel

— white

Announcing Owens-Illinois Thinlite* — a revolutionary new concept in curtain wall construction!

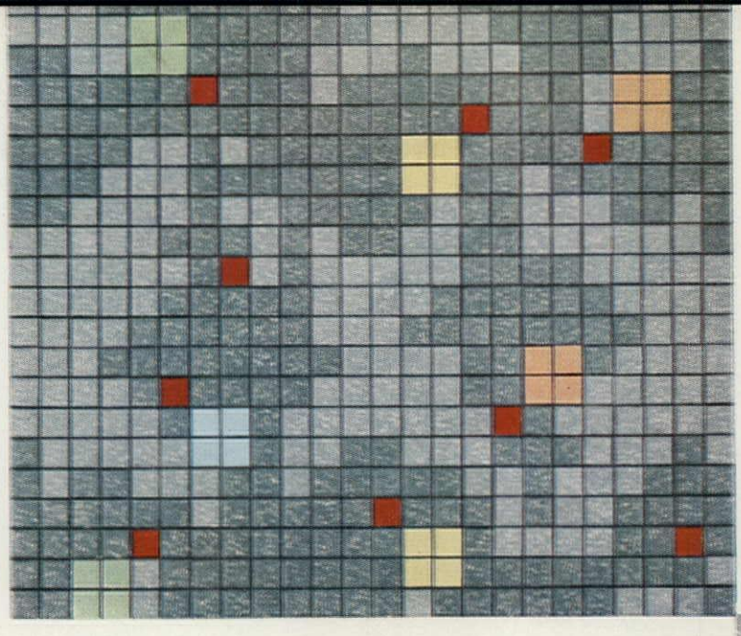
The extreme flexibility of this new system affords the architect *unlimited* freedom of design. Its simplicity of erection provides fast, easy installation in all types of weather. Its double gasket arrangement assures complete moisture protection.

As a special feature, the Owens-Illinois Thinlite Curtain Wall incorporates solar-selecting glass panels in white and color with the lowest solar heat transmission factor of any daylighting material available today.

For complete data on this radically new curtain wall, write Kimble Glass Company, subsidiary of Owens-Illinois, Box 1035, Toledo, Ohio.

*Patent pending

Solar-selecting panel — yellow



Designed with
Romany•Spartan

FAIENCETTE

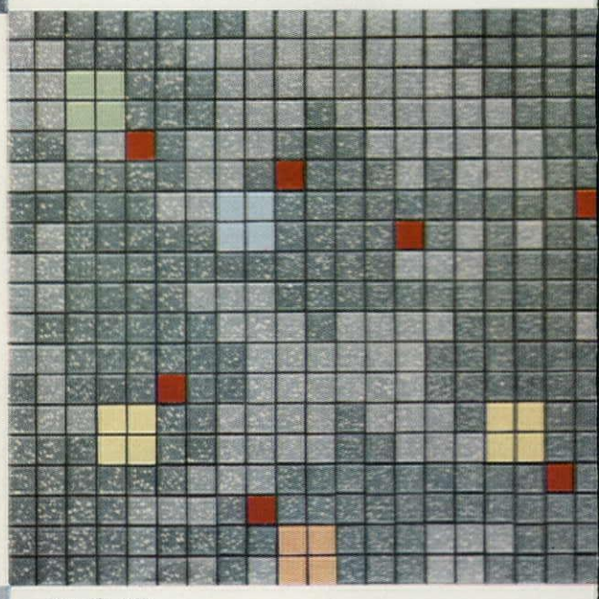
Light Blue	1060
Suntan	1041
Lemon	1012
Ming Green	1050

DECORATOR

Tangerine Red	5035

ORSAN

Light Green
Dark Green



School buildings can be made more practical, more attractive with Romany• Spartan ceramic tile indoors and out

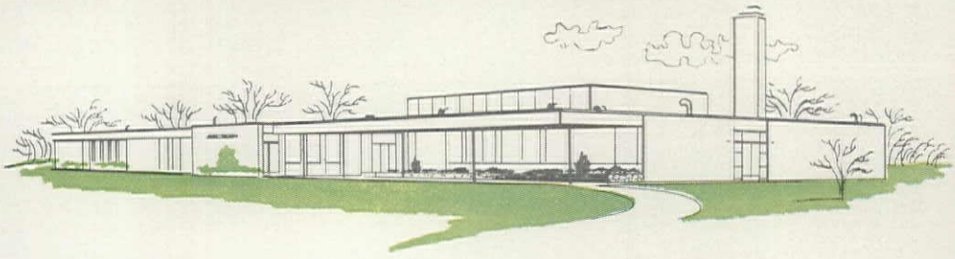
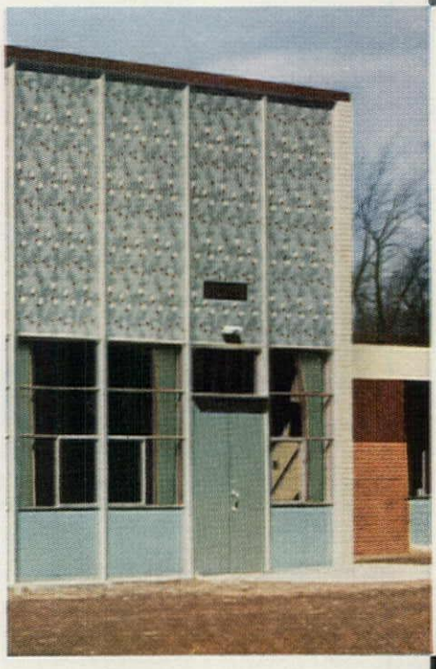


Plate No. 1057

While Romany•Spartan tile is well known as a superior floor and wall finish for use throughout school buildings, its versatility does not stop there.

For example: Bates Elementary School, Brownstown Township, Michigan, primarily a single-story structure, contains a two-story all-purpose room. On two of the walls extending above the main roof line, panels of Romany•Spartan "certified frostproof" tile, expertly designed and skillfully blended with surrounding materials, provide an interesting change of pace in exterior finish.

Here's just one of many ways Romany•Spartan's complete line of ceramic tile can be used in creating handsome, low-cost schools. For design help or information, contact your nearby Romany•Spartan sales representative. If you'd like a copy of "The Talents of Tile", a color brochure of Romany•Spartan school and college installations, write United States Ceramic Tile Company, Dept. A-21, Canton 2, Ohio.



BATES ELEMENTARY SCHOOL
Brownstown Township, Michigan

Architect:
WALTER J. ROZYCKI
Detroit, Michigan

Tile Contractor:
MICHIGAN TILE & MARBLE CO.
Detroit, Michigan

ROMANY
SPARTAN®

Genuine Clay Tile

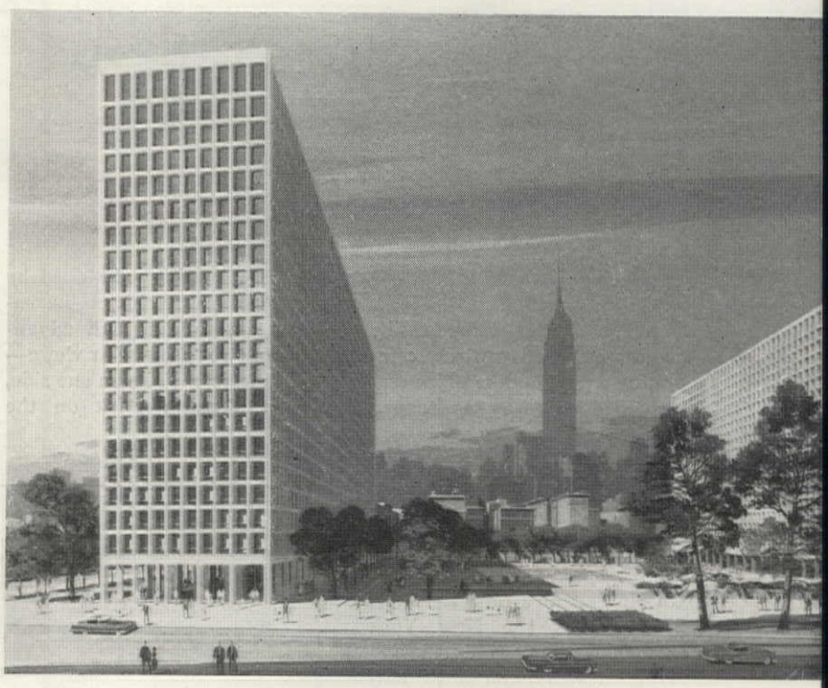
UNITED STATES CERAMIC TILE COMPANY
THE SPARTA CERAMIC COMPANY
MEMBERS: TILE COUNCIL OF AMERICA AND THE PRODUCERS' COUNCIL, INC.

Projects

A roundup of recent and significant proposals

TOLEDO OFFICE BUILDING

This freestanding, plaza-centered office building is sheathed with curtain-wall panels of glass. Any other material would be inappropriate considering the building's location (the heart of downtown Toledo), and its glass-conscious creators: the Libby-Owens-Ford Glass Co. and Architects Skidmore, Owings & Merrill. Fourteen stories tall with about 12,500 square feet of usable space per floor, it will be the first major office structure to be built in Toledo in 30 years. Eight floors will be occupied by the glass firm; the rest will be leased.

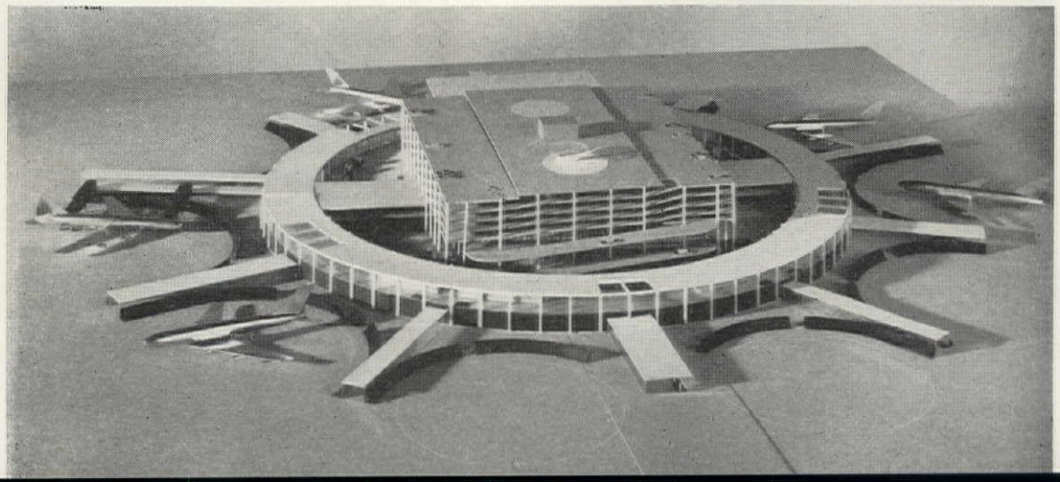


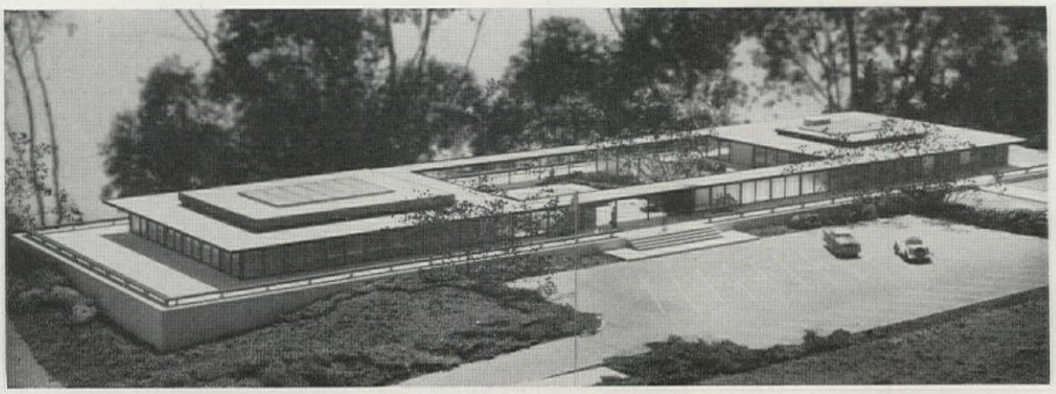
MIDDLE-INCOME HOUSING IN MID-MANHATTAN

Kips Bay Park — two 21-story apartment buildings designed by I. M. Pei & Associates — will be built by Webb & Knapp to provide mid-Manhattan with 1,136 middle-income housing units (about $55 per room). The reinforced concrete buildings, to be located on a plaza between First and Second Avenues and 30th and 33rd Streets, will cost $17 million, including a 250-car garage beneath the plaza. A shopping center and professional building are also planned for the Title I project.

JET-AGE AIRLINE TERMINAL IN TORONTO

In three years, giant jet airliners will be using Toronto's $20 million, doughnut-shaped, glass-paneled terminal pictured below. Designed to handle an annual jet-passenger volume of 4 million, the project includes a six-level parking system (capacity: 8,000 cars) conveniently located in the center of the 600-foot-diameter passenger dispersing and promenade building. Helicopter service will be from the garage roof and a restaurant lounge will be located above the ring building on the field side. Architect: John B. Parkin Associates of Toronto.





U.S. CONSULATE IN NIAGARA FALLS, CANADA

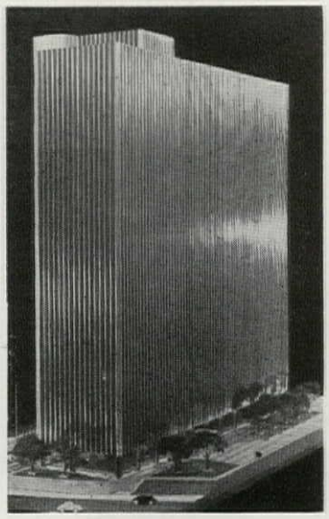
The model above is of the new U.S. Consulate to be built in Niagara Falls, Canada. The podium-mounted project, comprising a pavilionlike office and residence linked by landscaped gardens, has been designed by Los Angeles Architect Thornton Ladd to take full advantage of two spectacular views—the American Falls on one side, Queen Victoria Park on the other. Alternate panels of clear and opaque glass enclose residence (about 6,000 square feet), Consulate building (about 8,000), and gardens. Scheduled completion date: late 1959.

BROADWAY OFFICE BUILDING

Manhattan's 62-year-old St. Paul Building, once the world's tallest office structure (25 stories), will soon be replaced by a 31 story tower (above) to be built by the Western Electric Co. Designed by Shreve, Lamb & Harmon Associates to accommodate Western Electric's 3,000 New York employees, the building will occupy a 33,000 square foot block front on the east side of Broadway between Fulton and Ann Streets. Construction: structural steel frame and walls of two-toned glazed brick. Estimated cost: $20 million.

MULTIPURPOSE PIER

On Manhattan's East River, at 23rd Street, the New York City Department of Marine and Aviation will build a $1 million, three-story Marina—a combination seaplane-and-helicopter landing, waterfront service station, and small craft mooring that will also provide badly needed parking space (500 cars) in the thickly populated Peter Cooper Village–Stuyvesant Town area. Architects for the 350 by 125 foot, reinforced concrete facility are Praeger, Kavanagh & Waterbury. It will be leased and operated for 20 years by the Gulf Oil Corporation.

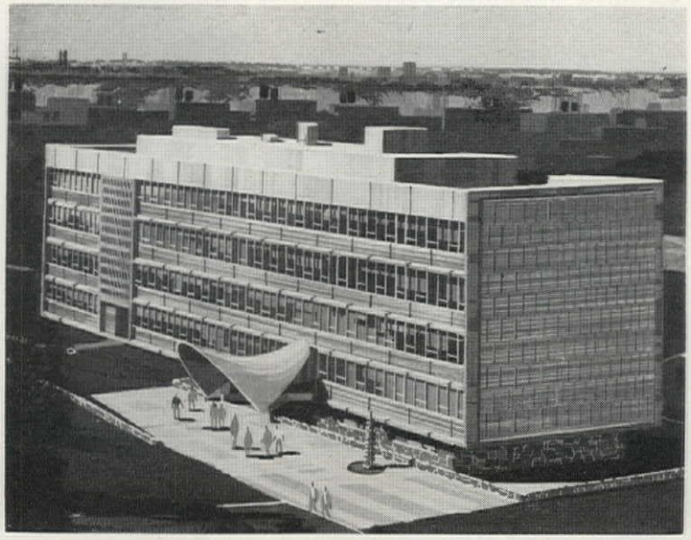


PITTSBURGH OFFICE BUILDING

In Gateway Center, at the point of Pittsburgh's Golden Triangle, a fourth office tower (left) is now being built by the Equitable Life Assurance Society, sponsors of the Center's original three (FORUM, December 1953). Twenty-two stories high and aptly sheathed in steel, the building will have more than 400,000 square feet of rentable floor space. Elevators and service facilities will be housed in an outside core. Harrison & Abramovitz are the architects. Cost: $16 million. A 700-car, subplaza garage is also part of the plan.

TORONTO OFFICE BUILDING

Penthouse-topped and sheathed entirely in polished plate glass and anodized aluminum, the 14-story Toronto office tower at right will serve as Ontario headquarters for the Sun Life Assurance Co. Construction: precast concrete slab floors; sealed, double-glazed curtain-wall panels with thermal breaks in all aluminum members; main floor and colonnade finished in gray granite. Total area: 280,000 square feet. Architects for the project, which is scheduled for completion by 1960, are John B. Parkin Associates of Toronto.



N.Y.U. ENGINEERING CENTER

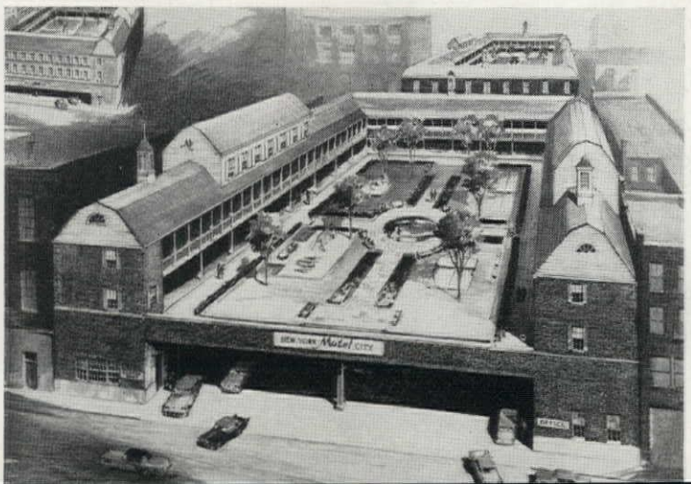
Marcel Breuer & Associates are the architects for the $2 million engineering and technological center (above) planned for New York University's Bronx campus. The first step in a long-range, multimillion-dollar development, the four-story, reinforced concrete structure will provide 56,000 square feet of floor space for laboratories, seminar rooms, and faculty offices. Scheduled completion date: 1960.

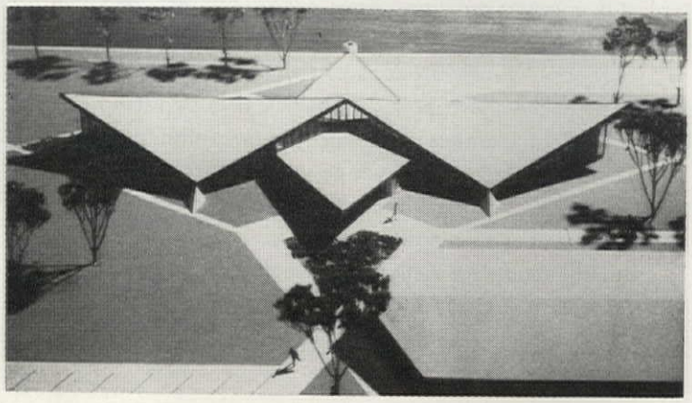
OFFICE BUILDING IN OMAHA SUBURBS

On the site of a former golf course in Omaha's suburbs, W. Clark and Campbell Soup Executive Gilbert Swanson are now building the $1 million structure shown above. Measuring 182 by 93 feet with 54,330 square feet of floor space, it will be Omaha's largest general office building outside the downtown business district. Architect for the project, which will be faced with aluminum fins, is Leo A. Daly Co.

DUTCH COLONIAL MOTEL FOR WEST SIDE MANHATTAN

By 1960 the New York Central Railroad will complete Manhattan's first (and the world's largest) motel over 2½ acres of the Central's west side track system. To be known as Motel City, the $4 million, Dutch Colonial development will include 400 rooms, landscaped courts, wading pools, cocktail lounges, ticket agencies, shuffleboard courts, and plenty of parking space. Architects: Wechsler & Schimenti of New York.





HYPERBOLIC CHURCH FOR INDIANA UNITARIANS

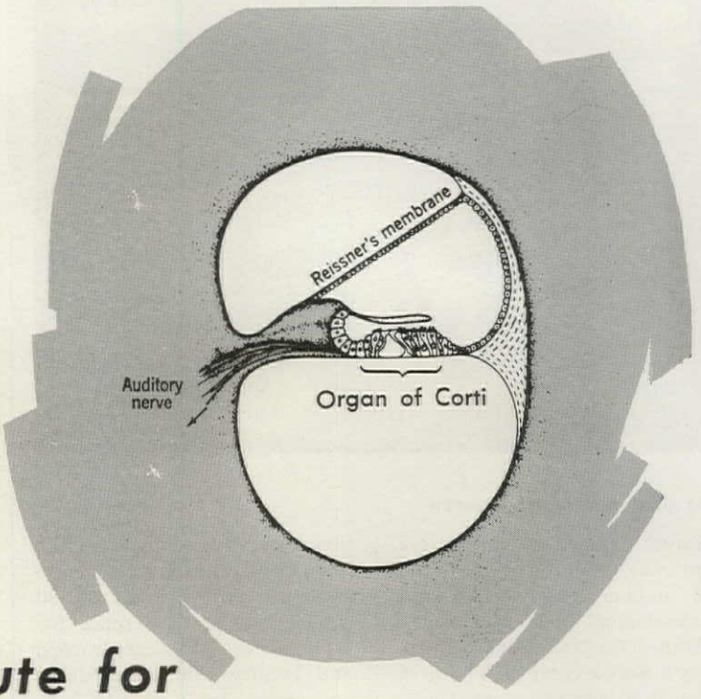
For the Unitarian Society of Fort Wayne, Indiana, Humbrecht Associates have designed twin hyperbolic paraboloids — one to serve as an auditorium for about 200, the other as a religious education area. Constructed of ¾ inch tongue-and-groove boards, each paraboloid is 96 feet long with a 52 foot span between buttresses. A folded plate roof section between the two units will be used as the main entry and for office space. Total area: 7,000 square feet. Cost: $80,000.

SIX APARTMENT TOWERS IN KANSAS CITY

Shown above, at left center, are five 12-story and one 11-story apartment buildings, with a total of 1,012 units, planned by Realtor-developer Lewis A. Kitchen for Kansas City's Quality Hill area (FORUM, November 1955). Designed by Kansas City Architects Kivett & Myers & McCallum as an extension of the five apartment towers shown at right center in the photo above, the new buildings are expected to cost $17 million. The Title I project will include a park with mirror, pools, and 10-foot waterfalls, as well as a motel.

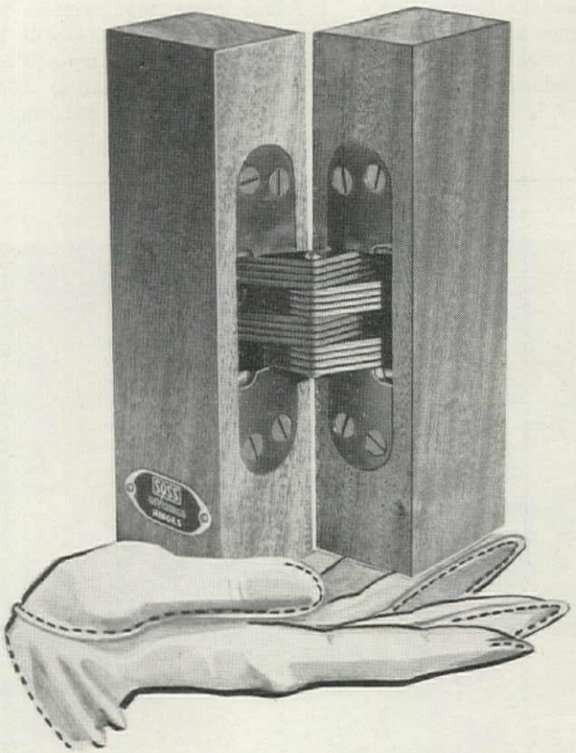
Heard From Your ORGAN OF CORTI, LATELY?

Of course you have. Your organ of Corti and its hair cells is located within your ear. It is supposed that vibrations of the liquid of the inner ear excite these hair cells which in turn set up chemical changes in auditory nerve endings. These chemical changes become neural impulses and travel along the auditory nerve to the brain where they are passed on to various parts of the body for action. So every time you hear anything you can thank your organ of Corti—for which there is no substitute.



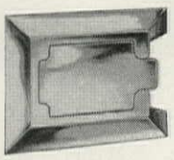
there's no substitute for

SOSS INVISIBLE HINGES *—either.*



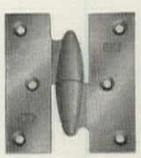
Here's the only hinge that creates flush, smooth surfaces. Around the globe, architects, builders, and home owners choose Soss Invisible Hinges whenever they want to create a masterpiece of modern architectural design. There's a place for Soss Hinges in every building. Use them whenever you want the best. There's no substitute for Soss Invisible Hinges, either.

Other quality Soss Products that offer unusual architectural effects:



SOSS LEV-R LATCH

This attractive, new-style door opener eliminates knobs. Its modern design brings style and modernity to every interior.



SOSS OLIVE BUTT

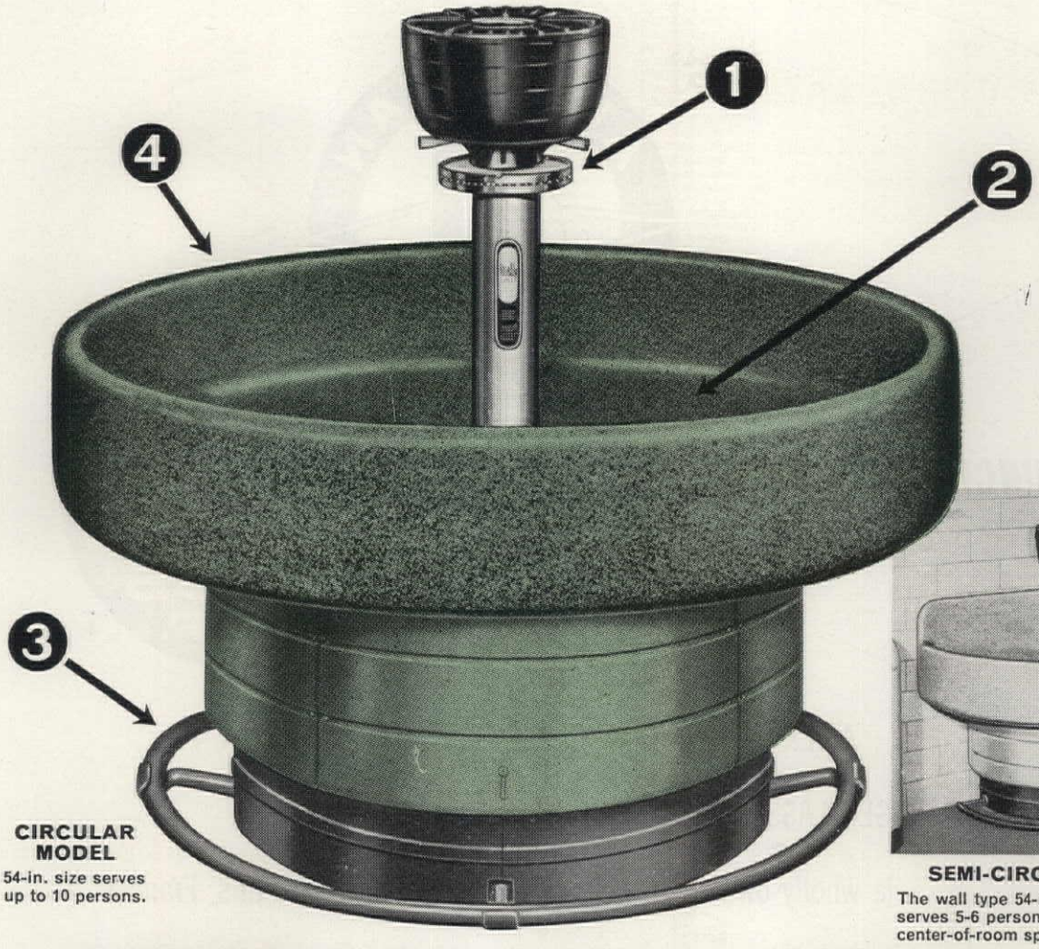
This low cost Olive Butt Hinge will add style, design and interest to any door.

Write today for price list and free illustrated catalogue on these advanced Soss products.

SOSS MANUFACTURING COMPANY

Department 208 • P. O. Box 38 • Harper Station

DETROIT 13, MICHIGAN



CIRCULAR MODEL
54-in. size serves up to 10 persons.

SEMI-CIRCULAR MODEL
The wall type 54-in. semi-circular model serves 5-6 persons, is well suited where center-of-room space is not available.

BRADLEY WASHFOUNTAINS HAVE *all these advantages*

1. **CENTRAL SPRAYHEAD.** Placed below soap tray or dispenser, running water is supplied to all—no faucets to touch or maintain.
2. **SELF-FLUSHING BOWL.** Used water is flushed away, keeping bowl clean and sanitary looking.
3. **FOOT-CONTROL.** Eliminates infectious faucet contacts—cuts supply of tempered water immediately as the foot is removed from ring . . . no wasted water.
4. **BIG BOWL.** Right height and size to thoroughly wash hands and arms. Lip of bowl to floor: Standard installation, 31"; Juvenile height, 27".

PRECAST STONE, VITREOUS ENAMEL, STAINLESS STEEL

You can select the material you want—precast stone in tints to harmonize with modern walls and floors; stainless steel; and vitreous enamel in six colors—white, citron yellow, mint green, sun tan, sky blue, and forest green. Colors encourage washroom cleanliness.

Bradley Washfountains provide the most sanitary facilities, serve more in less space and at lower installation costs—for new as well as in your present buildings. For complete details on all models, write for our latest Catalog 5601 . . . BRADLEY WASHFOUNTAIN CO., 2235 W. Michigan St., Milwaukee 1, Wis.

Write for Cat. 5601

BRADLEY washfountains
Distributed Through Plumbing Wholesalers

54-in. diam. full-circular precast stone Washfountains serve 8-10 simultaneously.

54-in. full-circular stainless steel Washfountains are preferred by some.

54-in. semi-circular wall type model, —also made in 36-in. diameter size.

Duo-Washfountains have foot-control and a sprayhead in place of faucets.

ANNOUNCING A MERGER:

AMERICAN WINDOW GLASS COMPANY, Pittsburgh, Pa.

and BLUE RIDGE GLASS CORPORATION, Kingsport, Tenn.

(a wholly owned subsidiary of SAINT-GOBAIN of Paris, France)

have merged to form a new company:

AMERICAN-SAINT GOBAIN
CORPORATION

with executive offices in New York City

and general operating headquarters

in Pittsburgh, Pa.

The merger pools the experience and technical skill of American Window Glass Company, the quality leader and oldest producer of sheet glass in the United States, with Saint-Gobain, the oldest and one of the largest plate glass manufacturers in the world.

Operations and activities of the former American Window Glass Company will be carried on by American Window Glass Division of the new corporation, and the former Blue Ridge Glass Corporation will henceforth be operated as the Blue Ridge Glass Division.

When it enters into the manufacture of plate glass and through continuing to produce Blue Ridge's patterned glass and American's sheet glass, American-Saint Gobain Corporation will be a fully integrated, full-line producer of flat glass products in the United States. The merged company plans to build a modern plate glass factory which will employ the latest manufacturing techniques of Saint-Gobain.

This combination of diversified facilities and extensive experience will enable American-Saint Gobain Corporation to contribute to further progress of the glass industry. Through expanded research, the development of new glass products and applications will enhance the living comfort of the nation.

AMERICAN-SAINT GOBAIN BLUE RIDGE
CORPORATION

FARMERS BANK BUILDING • PITTSBURGH 22, PA.

American Window Glass Division
Plants at Arnold, Jeannette,
Ellwood City, Pa.; Okmulgee, Okla.

Blue Ridge Glass Division
Plant at Kingsport, Tenn.

WSW 7199

"World's largest apartment building" planned for Penn Center; design opposed by Brickmaker Kelly

ELWOOD P. SMITH

ARCHITECT OSHIVER, BUILDER LOWERY
"The more units, the safer the investment."

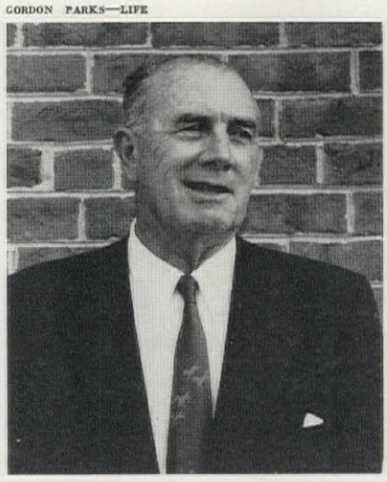
A massive new apartment project and a battle over curtain wall construction last month threw the spotlight on **Sylvester Joseph Lowery**, a builder little known outside his native Philadelphia. Lowery announced last month that he was going to build a $20 million, 30-story apartment project next to the new Sheraton Hilton hotel in Philadelphia's Penn Center. The building will be built over the Pennsylvania railroad tracks. Lowery will lease air rights from the Pennsylvania for the 3,300-room, record-size building, which is scheduled to be completed by 1960.

The 43-year-old Lowery is no newcomer to Philadelphia building, although the new project, to be called Penn Towers, is his debut in the downtown area. He has built over 1,300 apartment units in the city's suburbs, and in Atlantic City, New Jersey. (Most of his postwar ventures have been in association with Philadelphia Builder **Ephraim J. Frankel**.)

One thing that decided him on the Penn Center site was the fact that the new Sheraton had just been built next to it. "If the Sheraton would invest $15 million in a hotel there—a riskier venture than an apartment building—it must be pretty good." Lowery is not worried about building what he calls the largest single apartment house in the world, either: "The more units, the safer the investment. Big apartments develop their own communities regardless of what is or what is not around them."

For the moment, however, Lowery and his architect, **Samuel I. Oshiver**, are balked on further work on Penn Towers because Philadelphia's building code does not permit curtain wall construction. A top-notch bridge player—he is a life master, highest attainable rank in bridge play—Lowery is carefully weighing his chances of getting Oshiver's designs through the City Council. His chief obstacle: **John B. Kelly**, Philadelphia brick tycoon, and father-in-law of Monaco's Prince (see below).

GORDON PARKS—LIFE



BRICK MERCHANT KELLY
"A pretty big man"

THE BRICK CURTAIN

John B. Kelly, besides being a former national champion sculler and famous father-in-law, is also a powerful figure in Philadelphia building — and Philadelphia politics. As president of John B. Kelly, Inc., one of the three largest brick manufacturing firms in the city, Kelly has made his power felt by opposing a proposal of the Philadelphia Chapter of the American Institute of Architects, which last month asked the city council to act on a pigeon-holed bill that would amend the building code to allow curtain wall construction.

The bill has been held up for over two years, and Architect **Carl H. Faltermayer**, subchairman of the local AIA's committee on codes, charges point-blank that Kelly is the chief obstacle to passage of the measure. But so far Faltermayer is the only AIA official who has been so blunt. Mostly, the local AIA chapter has waged a quiet campaign, based on the fact that, as President **John Carver** says: "Metal panel exterior walls are already approved by 80 per cent of the building codes throughout the nation. Adoption of our resolution would result in savings in the cost of buildings, by reducing weight and reducing construction time."

Kelly has opposed the resolution largely on the basis that curtain wall construction is not so safe against fire hazards as masonry and brick construction. When Faltermayer called **Gaetano P. Giordano**, Democratic ward leader and head of the City Council's Committee on Licenses and Inspections, he was told that the resolution favoring curtain walls was being held up because of Kelly's opposition, adding that "Mr. Kelly is a pretty big man."

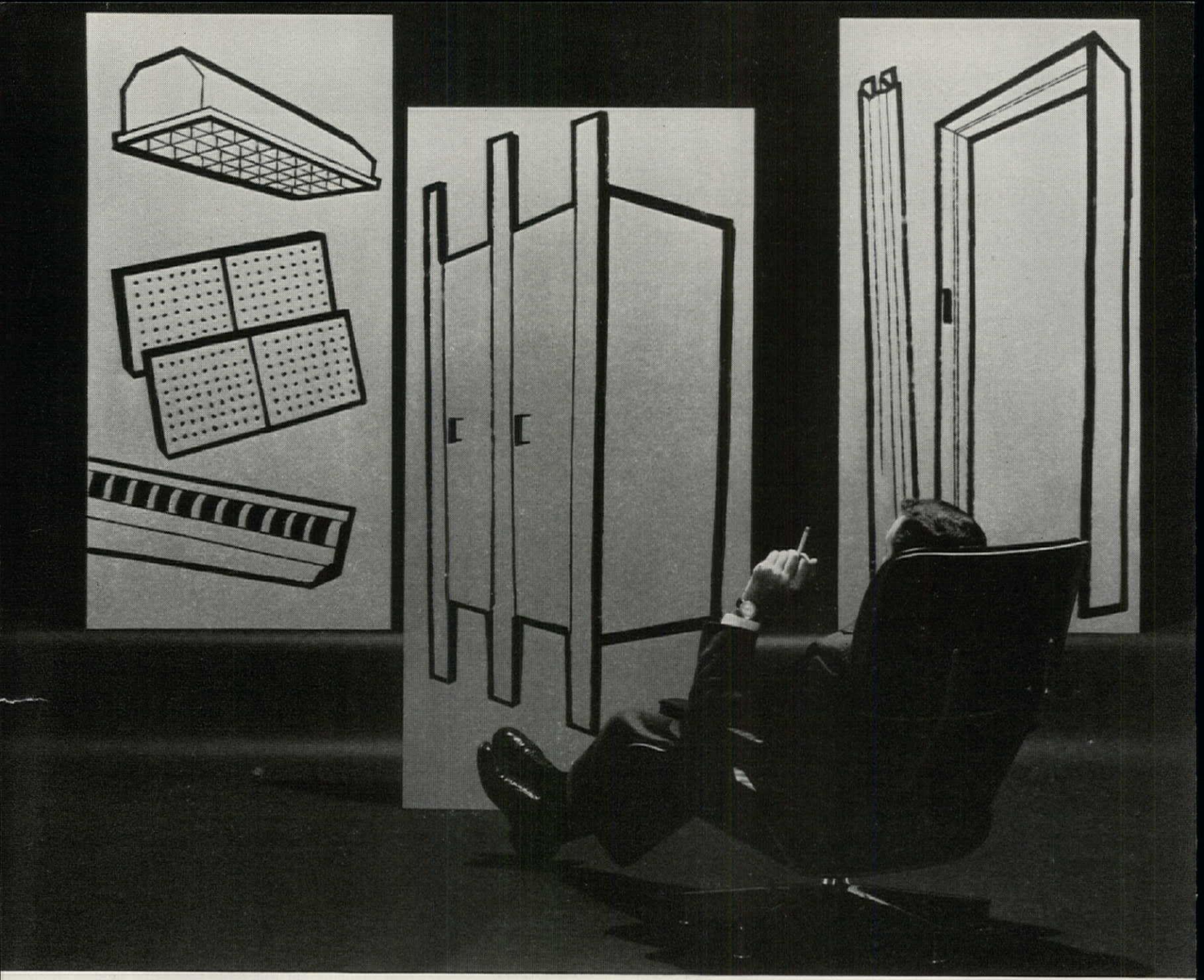
Kelly's partner, **Jesse D. Otley**, summed up the brick tycoon's opposition by saying: "The AIA proposals are not safe from a fire protection standpoint. Architects are good at nice designs, shading, proportion, all that. But safety is an engineer's specialty."

AIA CANDIDATES

For the first time in four years, the balloting for president of the American Institute of Architects may not be perfunctory. Two Ohioans, **Alexander C. Robinson III** of Cleveland (where the AIA National Convention will be held this month), and **John Richards**, of Toledo, have their hats in the ring, and both are apparently determined to stick it out until the last vote is counted.

Robinson, 66, has recently retired from the Cleveland firm of Garfield, Harris, Robinson & Shafer, and is well known in the AIA as a former secretary and former

continued on page 33



THE EASY WAY TO PREVENT CORROSION IN YOUR BUILDING? SPECIFY ZINC-COATED STEEL SHEETS, OF COURSE!

There's just nothing like zinc-coated steel sheets for enduring, economical corrosion prevention in the things you want fabricated—such as wall partitions. Or in the manufactured products you specify such as light troffers, metal ceiling tiles, baseboard heating units and scores of other products.

Take the formability of such sheets, for instance. With either electrolytic or continuous process zinc-coated steel, the tight coating can take the severest fabrication operations and never flake or peel. Result: permanent corrosion resistance for longer life and lasting beauty. First cost: low. Maintenance costs: nil.

How about paintability? Electrolytically zinc-coated steel sheets, chemically treated, are unexcelled for painted products. Paint digs in and holds its unbroken smoothness and beauty for keeps.

In electrolytic zinc-coated steel, the name that stands out is Weirzin. In continuous process zinc-coated steel sheets, it's Weirkote. Let us show you how Weirzin or Weirkote—or both—can help you meet your building requirements better.

Write for free informative brochure on each today. Weirton Steel Company, Dept. P-2, Weirton, W.Va.

WEIRTON STEEL COMPANY

WEIRTON STEEL COMPANY

WEIRTON, WEST VIRGINIA

a division of

NATIONAL STEEL CORPORATION

chancellor of the College of Fellows. He was a member of the Cuyahoga County Planning Commission from 1934 to 1946 and last year was appointed a member of the National Capital Planning Commission. Richards, 54, is a senior partner of Bellman, Gillett & Richards of Toledo,

ROBERT R. BLANCH

RICHARDS ROBINSON

and is a former president of the Toledo chapter of AIA. As first vice president of AIA, he would normally be in line to succeed out-going AIA President **Leon Chatelain**, of Washington, D.C. However, Robinson was nominated by friends last fall, before Richards' name was officially placed in nomination.

As a candidate for the top spot in AIA, Robinson is interested in 1) putting more emphasis on regional chapter meetings, so that individual members will feel more closely identified with AIA; 2) a closer relationship between the AIA board of directors and the staff; and 3) preparing for the shock that is sure to hit the AIA treasury as a result of the recession.

Richards says simply that his aim is to "tie the whole profession together." He specifically believes that the Association of Collegiate Schools of Architecture should have its headquarters in Washington, D.C. to permit closer cooperation with the national AIA. Both Richards and Robinson are in favor of Convention keynote Speaker William Tabler's proposal for uniform building codes (see page 88), but they believe that "local conditions have to be taken into account."

SHIFTS AT FHA

In another round of musical chairs at the Federal Housing Administration, **C. Franklin Daniels** has been appointed new Special Assistant for Urban Renewal by

FHA'S DANIELS

FHA Commissioner **Norman P. Mason**. Daniels, 50, has been Deputy Special Assistant of FHA's cooperative housing program for the past eight years. Daniels replaces **W. Beverley Mason Jr.** (no relation to Norman P.), 49, who took over as FHA's Assistant Commissioner for Technical Standards. Beverley Mason started with FHA in 1938, directed FHA's urban renewal program for the past three years. As head of technical standards for FHA, he will supervise and coordinate the administration's architectural, appraisal, and mortgage credit standards. The man whom Beverley Mason replaced, **Charles A. (Dell) Bowser**, 48, resigned to become vice president of Webb & Knapp Communities, the branch of Developer **William Zeckendorf's** real estate empire that oversees the 1,700-acre Godchaux Communities housing project near New Orleans.

APPOINTMENTS AND ELECTIONS

J. Orlando Ogle, chairman of the Birmingham, Alabama Housing Authority and president of the National Housing Conference, has announced that **Francis X. Servaites** will replace **Lee Johnson** as executive director of the NHC, an organization of local housing authority officials.

SERVAITES

Servaites, 48, has been regional director of the Federal Public Housing Administration in San Juan, Puerto Rico for the past ten years. Johnson, 52, will take over as executive director of the Denver, Colorado, Housing Authority after 14 years as NHC's executive director. . . . **L. Bancel LaFarge**, partner in LaFarge, Knox & Murphy, was elected new president of the New York Chapter of the American Institute of Architects last month, succeeding **Robert W. Cutler** of Skidmore, Owings & Merrill. Other New York AIA officers are: **Robert Carson**, of Carson & Lundin, vice president; **Gillet Lefferts Jr.**, of Moore & Hutchins, secretary; **Michael M. Harris**, of Harrison & Abramovitz, treasurer. . . . **Morris Ketchum Jr.**, of Ketchum & Sharp, was elected president of the Architectural League of New York, replacing outgoing president **Olindo Grossi**, Dean of the School of Architecture at Brooklyn's Pratt Institute.

Architectural Forum / the magazine of building / published by TIME INC.
Editorial & Advertising Offices: 9 Rockefeller Plaza, New York 20, N. Y.

THE PORTER BUILDING...ANOTHER PITTSBURGH LANDMARK WITH

CURTAIN WALLS

by GENERAL BRONZE

Here's another example of a modern office building with metal curtain wall by General Bronze. Located almost within the shadows of Pittsburgh's famous Alcoa Building (with its aluminum curtain wall fabricated and erected by General Bronze), this new Porter Building makes use of 1026 dark gray alumilited curtain wall panels. Its 864 vertically pivoted fully reversible windows are in natural color aluminum finish to provide a pleasing color contrast.

If you're thinking of curtain walls for new buildings (either skin or grid and panel system) in aluminum, bronze or stainless steel, we can be of great service to you. Our extensive experience in designing, engineering, fabricating and erecting curtain wall systems can help you avoid costly pitfalls in this highly specialized field.

For additional information on General Bronze products—curtain wall systems, windows, revolving doors, architectural metalwork—call in the General Bronze representative. He is ready and anxious to serve you. Our catalogs are filed in Sweet's.

The Porter Building—Pittsburgh, Pa.
Architects: Harrison & Abramovitz
Contractor: George A. Fuller Co.

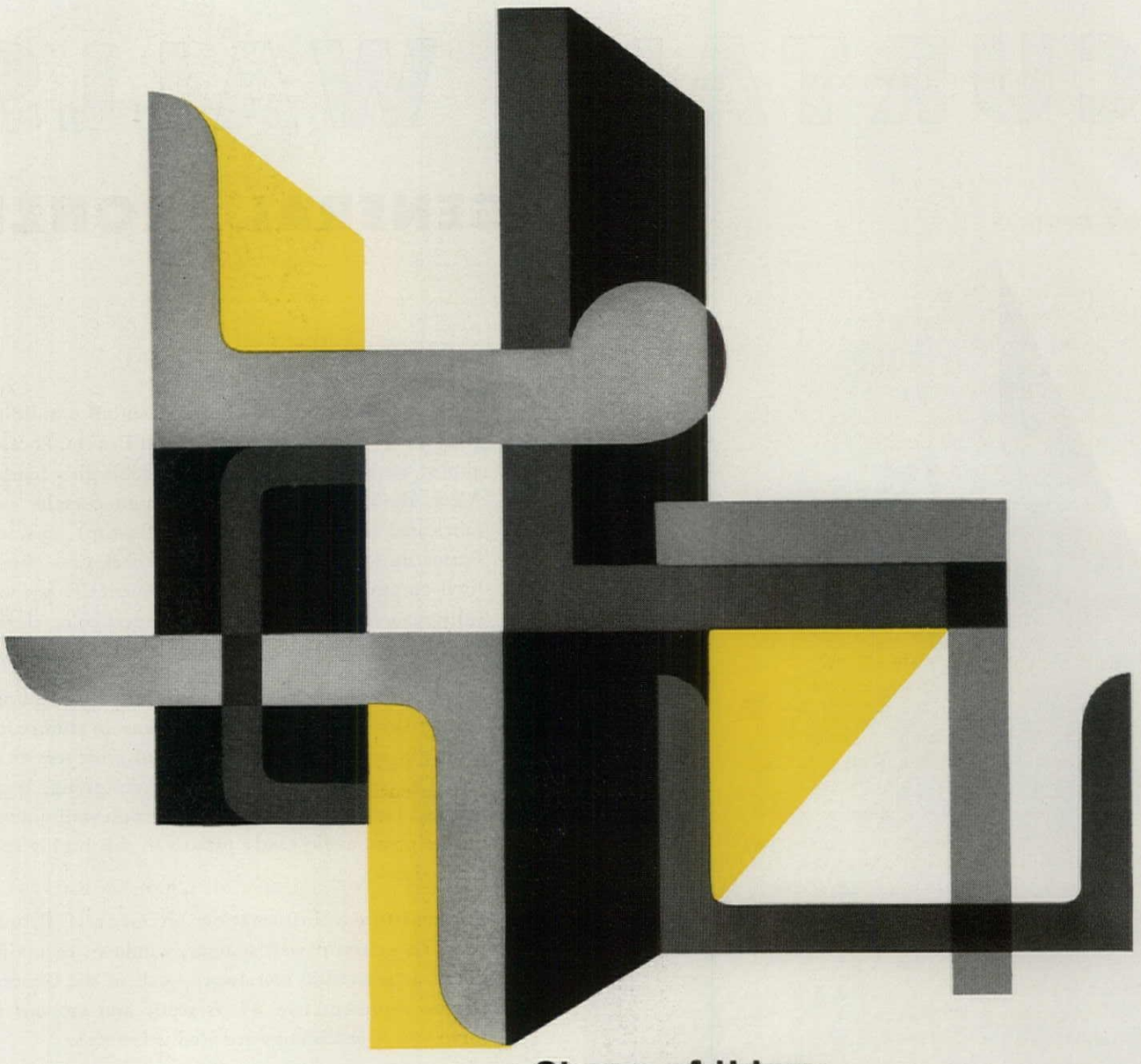
GENERAL BRONZE CORPORATION

GENERAL BRONZE

CORPORATION · GARDEN CITY, N.Y.

SALES OFFICE: 100 PARK AVE., NEW YORK, N.Y.

PERMATITE DIVISION—Custom-built Windows, Curtain Walls, Architectural Metal Work and Revolving Doors. ALWINTITE DIVISION—Stock-size Aluminum Windows and Doors. BRACH MFG. CO. DIVISION—Radio, Television and Electronic Equipment. STEEL WELDMENTS, INC. DIVISION—Custom fabrication in Steel and Iron.



Shape of things to come from Olin Aluminum

Whatever the shape or form of product you order from Olin Aluminum, you can count on it being right. Unusual attention to every detail of your order makes it advantageous for you—as a designer, builder or fabricator—to do business with Olin Aluminum.

As America's new major source of aluminum, Olin Aluminum has facilities capable of producing products for you in a great variety of forms and shapes—and offers technical services that can add to your increasing versatility in the use of metal.

For information, write Aluminum Division, Olin Mathieson Chemical Corporation, 400 Park Avenue, New York 22, New York. Integrated producer of aluminum pig, ingot, billet, sheet, plate, extrusions, rod and bar, pipe and tubing, electrical conductor.

® AND "OLIN ALUMINUM" ARE TRADEMARKS

Symbol of New Standards of Quality and Service in the Aluminum Industry

OLIN ALUMINUM

Wright's beacon . . . architects' pay

FLLW'S BABYLON

Forum:

The Frank Lloyd Wright story in the May issue of FORUM is a landmark of civilization, a beacon light of history and prophecy, and a key to the end-time events predicted in the *Bible*.

Bible students have long wondered if ancient Babylon would be rebuilt.

DONALD E. HARE
Peacepoint Bible Academy
Bethany, W. Va.

ARCHITECTS' FEES

Forum:

Your article on fees (FORUM, June 1958) does little but point out a state of confusion on the subject. I am not convinced an airing of confusion is constructive.

For my money, architecture is a profession. This conviction simplifies my attitude about my work and about my fees. I have lived with the percentage fee system for a long time. It is simple. I prefer it.

Aside from situations where a cost-plus fee is necessary because of the undetermined scope of the work, or where intangibles make percentage fees impossible, it has been my observation the fault with the percentage fee is not with the system but with the amount of percentage charged.

Obviously, the guaranteed profit evidenced in the cost-plus system has its attractions, but the push for cost to get the plus can be tiresome. A negotiated fixed fee ahead of design is packed with headaches. I like the surprise element of making more than I bargained for as well as less.

PAUL THIRY, *architect*
Seattle, Wash.

Forum:

The architect's fee should be concealed in the total cost of the project. After all, the client doesn't care how the money for his building is divided up so long as he gets as much building as the next man.

ROBERT C. DEAN
Perry, Shaw, Hepburn & Dean, architects
Boston, Mass.

Forum:

The percentage fee method places the value of architectural and engineering services on a business basis with the client, in that the amount to be spent for architect-engineer services can be ascertained at the beginning of the project, whereas in the cost-plus method neither the architect-engineer nor the client can make reference to a general amount of money involved. The cost-plus method places the architect-engineer at a disadvantage in combating the inroads made by the package builder who contends that the client's financial commitment [to the package builder] for both construction and design services is known from the start.

SOL KING, *president*
Albert Kahn, associated architects & engineers, Inc.
Detroit, Mich.

Forum:

This is one subject in which I find the status quo acceptable!

HARRY WEESE, *architect*
Chicago, Ill.

Forum:

Much about the architect's income is a matter of luck. Some jobs are profitable and some are not. Recently a job of ours with a fee of $40,000 required drafting cost of $18,000, engineering fees of $19,000, and 4,000 letters, whereas a job with a fee of $106,000 required $19,000 of drafting cost, $24,000 of engineering fees, and 500 letters.

WILLIAM F. R. BALLARD
Ballard, Todd & Snibbe, architects
New York, N.Y.

Forum:

I can think of no more urgent subject relating to proper architecture than this subject of fees, and I compliment FORUM for heaving into it.

Since we in architecture are more or less a dedicated group, we tend to sell our services cheaply, in many cases at a detriment to our own well being, financial and physical, and that of the client.

Since the product which the owner is buying is not a very definite, specific thing like a pair of shoes or an automobile, which he can see before he buys, the owner and the architect ought first to determine what he is going to buy. That can best be accomplished by awarding to the architect a contract for the definitive drawings or schematics. For this work, he should be paid his drafting cost plus one and one-half to two times this amount for overhead and profit. If the owner insists on an upset limit of figure on this item, the architect should be prepared to give him one. When the specific job has been determined and the schematics or definitive drawings pre-

continued on page 54

pared and approved, the outline specifications and the cost determined, the architect should then present a "fixed sum of money," for which he agrees to prepare the plans and specifications as per the approved definitive or schematic drawings.

The major problem, of course, is the question the owner will ask: "How do I know that we will be able to negotiate an equitable fee for the final working drawings?" You don't. The architect runs the risk of having to get paid off on his preliminaries and quitting the job if he can't get the kind of money he thinks he needs to do the job at a profit.

This fee system is now used by the Army and other military forces. It is the only equitable way to develop a fee.

B. SUMNER GRUZEN
Kelly & Gruzen, architects & engineers
New York, N.Y.

Forum:

While the architect can not assume responsibility for violent cost changes in the building construction market which may upset any well-considered budget, it is recognized that he may have to assume the responsibility for revising working drawings and specifications at his own expense if the bids on the project exceed more than 10 per cent of the approved budget, which was based on the preliminary plans approved by the owner.

There is a segment of the profession which is strongly opposed to assuming this responsibility, but there are others who feel that this is now a fact of life, which most architectural firms have to face.

When the above is related to the percentage fee, you cannot avoid having your fee considered a lump-sum fee. One has to recognize the fact that in both government, as well as industry, capital authority must be given in advance for projects in which the architect's fee is an integral part of the total building cost, and that it is not unreasonable to expect that the responsible representatives of the client may require some assurance as to the total fee.

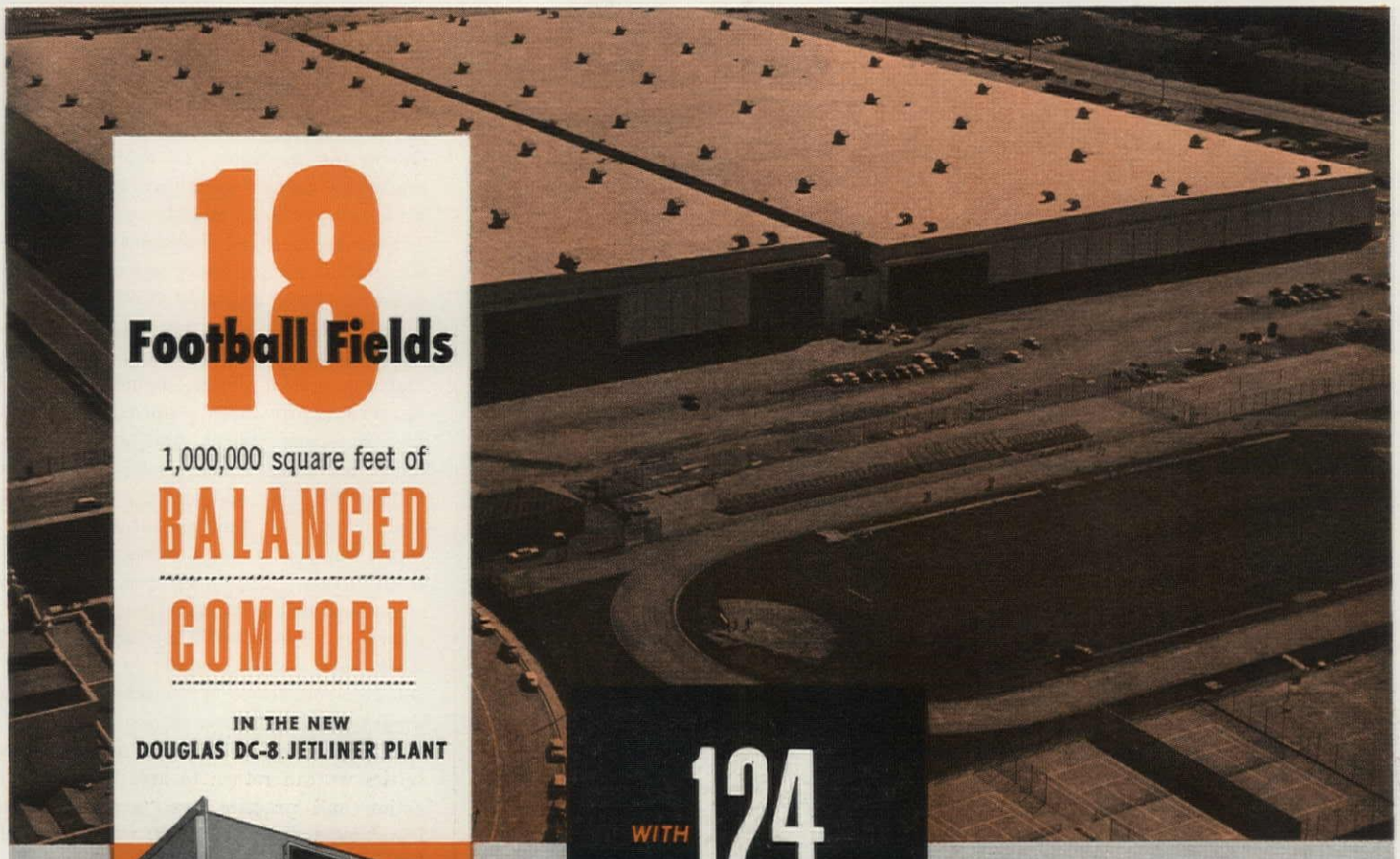
DANIEL SCHWARTZMAN, *architect*
New York, N.Y.

THE SHELL GAME

Forum:

American architectural talent is focused on sculptured form to the extent that it produces "exhibitionist" rather than "monumental" buildings, regardless of the task in hand. It is creating a school of mannerist eclecticism in concrete (the shell game) which stands in opposition to the industrialized building of our skyscrapers (the skin game).

continued on page 56



18 Football Fields

1,000,000 square feet of

BALANCED COMFORT

IN THE NEW
DOUGLAS DC-8 JETLINER PLANT

WITH 124

McQuay

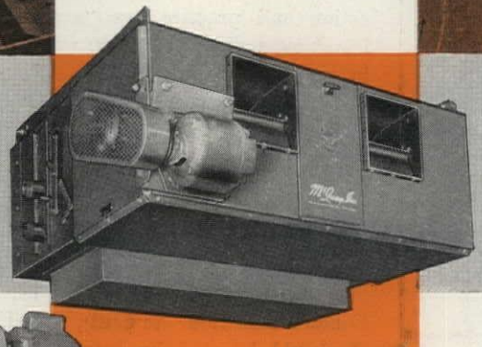
HEATING AND VENTILATING UNITS

New $20,000,000 Douglas Aircraft Company DC-8 Jetliner manufacturing plant, Long Beach, California.

Architects and Engineers . . . . . Holmes & Narver, Inc., Los Angeles, California

Mechanical Contractors . . . . . Southern Engineering & Construction Co., Inc., Long Beach, California

McQuay Means Quality



McQuay "HC" Heating and Ventilating Units are available in either horizontal (shown above) or vertical types (below) in 17 sizes with air deliveries from 1,280 cfm to 32,500 cfm, and capacities from 26,200 BTU/hr to 2,227,000 BTU/hr. There are four types with four or more fan discharge arrangements for each. Three types of coils are available—standard steam, jet tube steam or hot water, in both standard and heavy duty construction. A size and type for every job—each with all necessary accessories.

You may not have a million square foot job, such as the new Douglas Aircraft DC-8 Jetliner plant on your boards, but you will want to know that McQuay "HC" heating and ventilating units can handle and can produce balanced comfort over a large area—economically and practically. In the case of this Douglas plant, there are 124 McQuay HC-323 units.

The units are designed for use with high-pressure, high-temperature water, the temperature ranging from 210° F. to 400° F. with corresponding pressures.

The units are mounted at 56 foot elevation and strategically located to insure a 25 f.p.m. air motion at a 6 foot elevation.

Universal nozzles helped considerably in balancing the job by giving the desired air distribution over the entire floor area.

These versatile and flexible McQuay units can do the same for you on any job. Call in the McQuay representative near you.

McQuay INC.

MAKE THE SEASONS COME TO YOU

1609 Broadway St. N.E., Minneapolis 13, Minnesota

REFRIGERATION
HEATING
AIR CONDITIONING

We are being taught to think that this "Art Très Nouveau" is the only way, and the rest is but utilitarian monotony unworthy of the name of architecture. In truth the former is a far greater bore, being always loud and pretentious.

Even the identical elegancies of Ed Stone when repeated for the purpose of an embassy, a rather imperial pavilion (FORUM, June 1955), an exhibition pavilion, quite unsuited for display (FORUM, June 1958), and commercial offices, deductible luxury (FORUM, April 1958), appear, in spite of the architects' talent and sensibility, a somewhat questionable precept for us to follow. When we add together into an endless procession the exhibition pavilions which happen to be churches, art centers, transportation terminals, cow sheds, U.S. embassies, and what have you, the humble attack on problems with unspectacular hard work and often relatively "invisible" achievements seems by contrast a dull and dreary path to follow.

I hope that when the cement dust settles we can return to architectural education and practice less "academic" and less "mannered" than that which prevails in our romantic, inflationary culture.

SERGE CHERMAYEFF, *professor*
Department of Architecture
Harvard University
Cambridge, Mass.

HOMEWORK

Forum:

I congratulate you on the article "Form Follows Function" (FORUM, April 1958). It should be read by every architectural student.

DAVID H. WILLIAMS JR.
George D. Mason & Co., architects
Detroit, Mich.

END

ARCHITECTURAL FORUM is published monthly by TIME INC., Time & Life building, 9 Rockefeller Plaza, New York 20, N.Y.

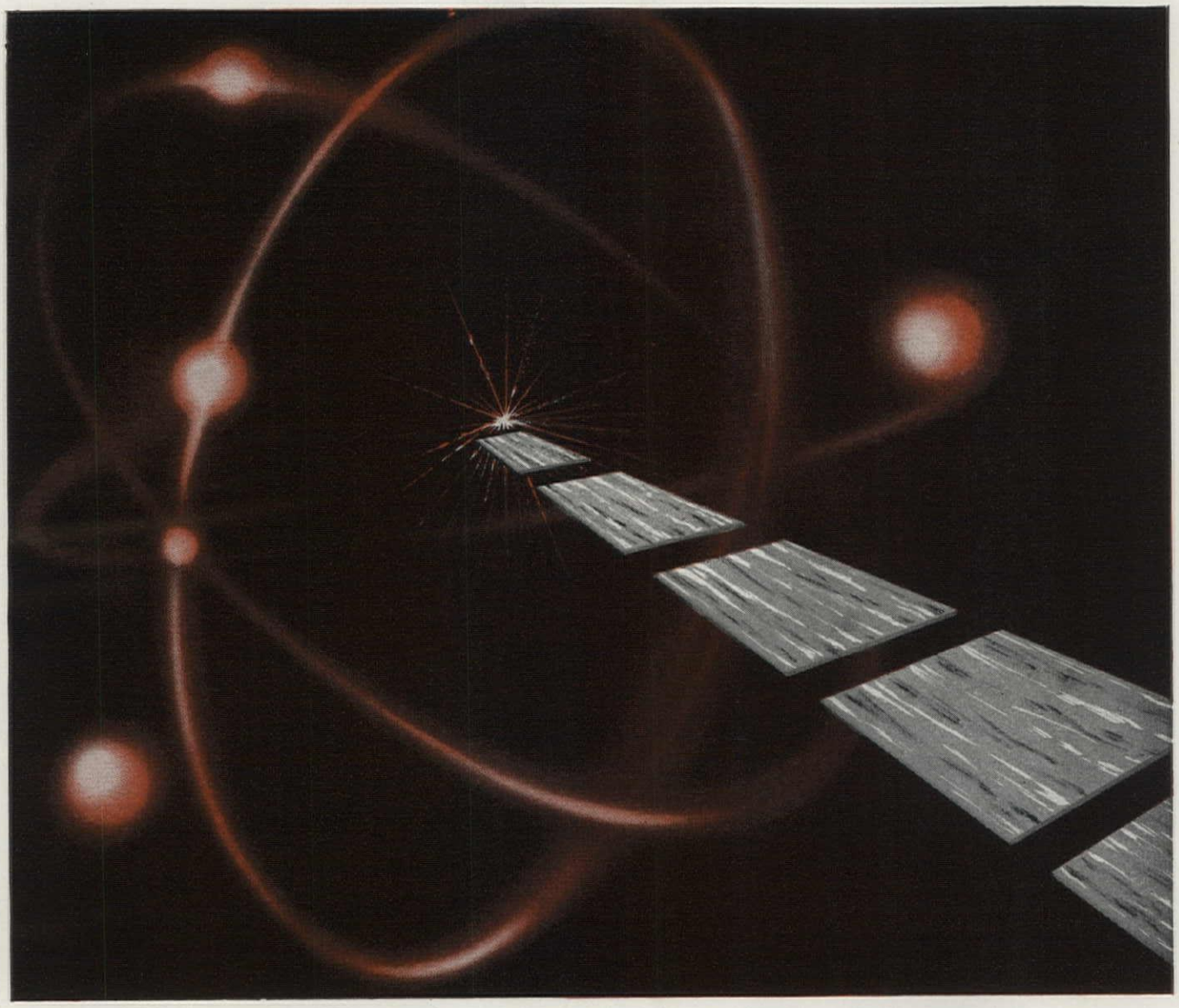
SUBSCRIPTION SERVICE: Address all subscriptions and correspondence concerning them to: ARCHITECTURAL FORUM Subscription Dept., 50 N. Michigan Ave., Chicago 11, Ill. Subscription rates: in U.S., U.S. Possessions and Canada, one year $6.50; elsewhere one year $10. Single copies, if available, $1.

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

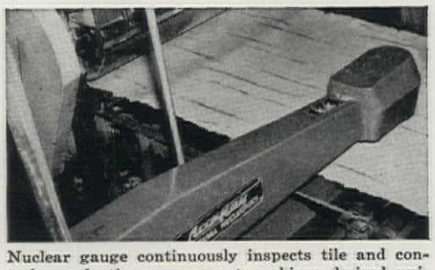
EDITORIAL CORRESPONDENCE should be addressed to ARCHITECTURAL FORUM, 9 Rockefeller Plaza, New York 20, N.Y. FORUM will not be responsible for unsolicited manuscripts or illustrations submitted, and it will not return such material unless accompanied by postage.

ADVERTISING CORRESPONDENCE should be addressed to the advertising director, ARCHITECTURAL FORUM, 9 Rockefeller Plaza, New York 20, N.Y.

TIME INC. also publishes TIME, LIFE, FORTUNE, SPORTS ILLUSTRATED and HOUSE & HOME. Chairman, Maurice T. Moore; President, Roy E. Larsen; Executive Vice President for Publishing, Howard Black; Executive Vice President and Treasurer, Charles L. Stillman; Vice President and Secretary, D. W. Brumbaugh; Vice Presidents, Edgar R. Baker, Bernard Barnes, Clay Buckhout, Arnold W. Carlson, Allen Grover, Andrew Heiskell, C. D. Jackson, J. Edward King, James A. Linen, Ralph D. Paine Jr., P. I. Prentice, Weston C. Pullen Jr.; Comptroller and Assistant Secretary, John F. Harvey.



Now Nuclear Science Assures MATICO Quality



Nuclear gauge continuously inspects tile and controls production processes to achieve desired uniformity. Deviations are corrected instantly.

Automatic recorder charts tolerances. This visual "profile" of quality allows constant improvements in formulation for an ever-better product.

MATICO USES AccuRay®

TO ACHIEVE NEW HIGH IN TILE UNIFORMITY

With AccuRay on the job, MATICO achieves the greatest product uniformity in tile history! By keeping tolerances within plus or minus 1%, MATICO gives you uniform thickness, tighter surfaces, improved dimensional stability. This means MATICO Tile looks better . . . wears better . . . even installs better, for it's always "on square."

AccuRay beams electrons at the tile, automatically adjusts the production process to maintain pre-set standards. MATICO gives you tile quality controlled by AccuRay, another mark of leadership for the tile you can always depend on.

MASTIC TILE CORPORATION OF AMERICA

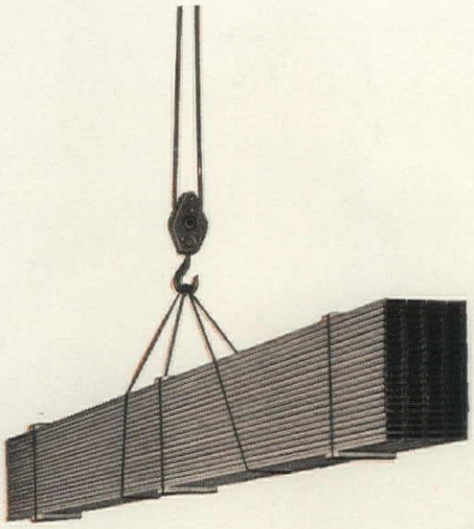
Houston, Tex. • Joliet, Ill. • Long Beach, Calif. • Newburgh, N. Y.

Rubber Tile • Vinyl Tile • Asphalt Tile
Vinyl-Asbestos Tile • Plastic Wall Tile

QUALITY CONTROLLED MATICO PRODUCTS

AccuRay T.M. REG. BY INDUSTRIAL NUCLEONICS CORPORATION, COLUMBUS, OHIO

7A477



Cut field painting costs with Milcor Bonderized Deck!

Milcor's prime finish withstands rough handling

Shipping, storage, and erection can damage ordinary factory-applied prime paint. And, as you know, a finished paint job can be no better than the prime coat.

To assure a high-quality base for field painting, Milcor Roof Deck is Bonderized, then flow-coated with an epoxy-resin enamel, oven-baked to abrasion-resistant hardness. The result is the most durable prime finish ever applied to steel roof deck. If field painting is required, one coat will do the job instead of two.

See Sweet's section 2f/InL — or write for catalog 240.

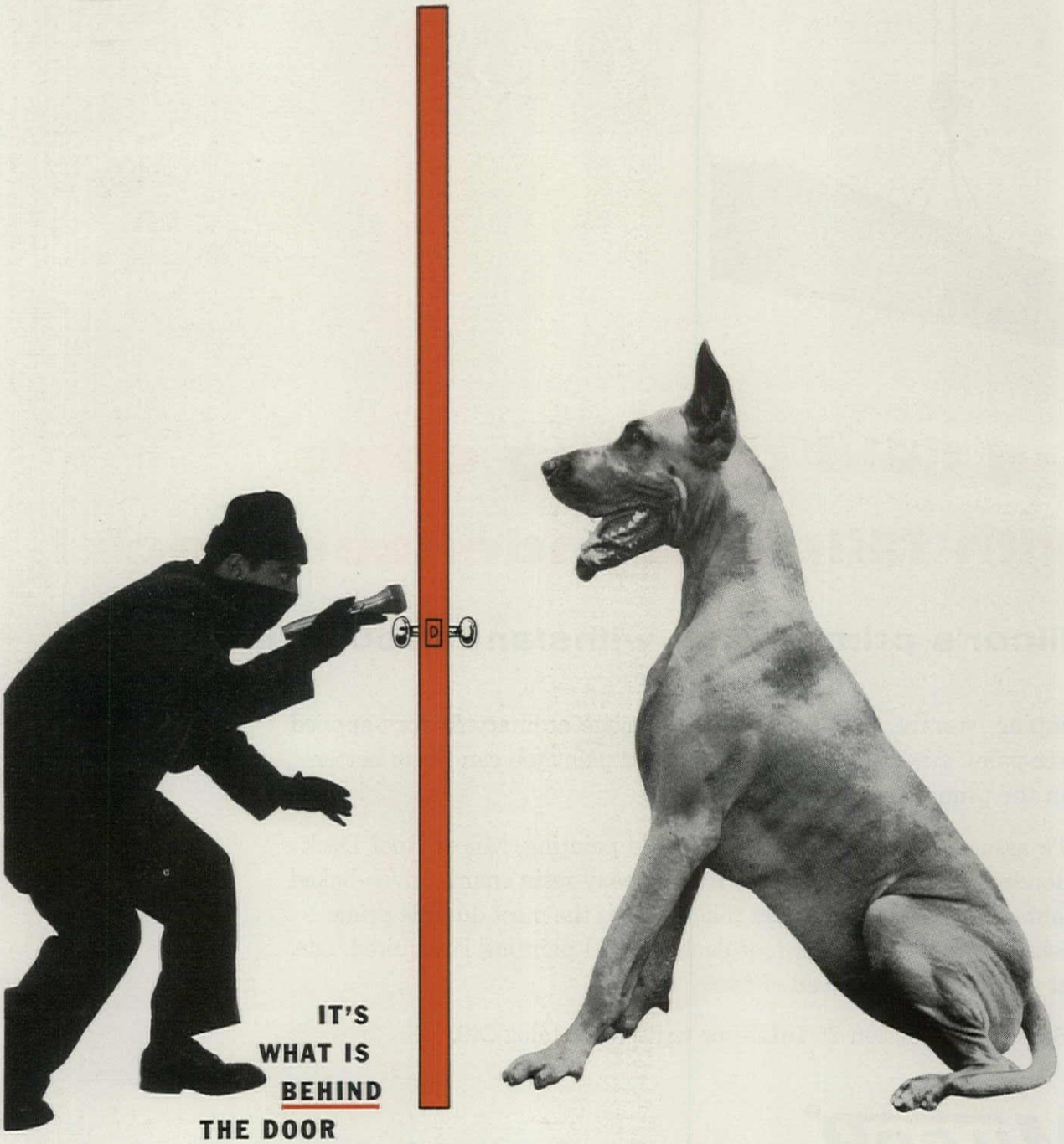
MILCOR® Steel Roof Deck

It pays... in many ways... to specify Milcor Steel Building Products

MILCOR WALL PANELS	MILCOR CELLUFLOR	MILCOR RIBFORM	MILCOR METAL TRIM	MILCOR CONVECTOR ENCLOSURE WALL UNITS
Sweet's, section 3b/In	Sweet's, section 2a/In	Sweet's, section 2h/In	Sweet's, section 12b/In	Sweet's, section 30h/In

INLAND STEEL PRODUCTS COMPANY Member of the INLAND Steel Family

DEPT. G, 4031 WEST BURNHAM ST. • MILWAUKEE 1, WISCONSIN • ATLANTA • BALTIMORE • BUFFALO • CHICAGO • CINCINNATI CLEVELAND • DALLAS • DENVER • DETROIT • KANSAS CITY • LOS ANGELES • MILWAUKEE • MINNEAPOLIS • NEW YORK • ST. LOUIS.



IT'S WHAT IS BEHIND THE DOOR THAT COUNTS . . .

and behind every door made by Simpson stands the protection of over half a century of superb craftsmanship, a production record of nearly 50 million of the finest doors used by the builders of America.

RELY ON Simpson®

A complete line of doors including Solid Core Flush and Hollow Core Flush, Entrance, Panel, Screen, Sash, French, Louver, Jalousie and Garage.

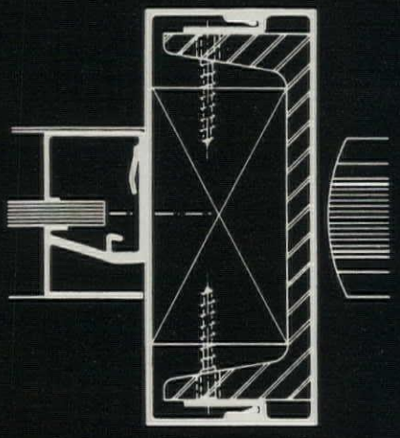
FOR INFORMATION CALL OR WRITE:

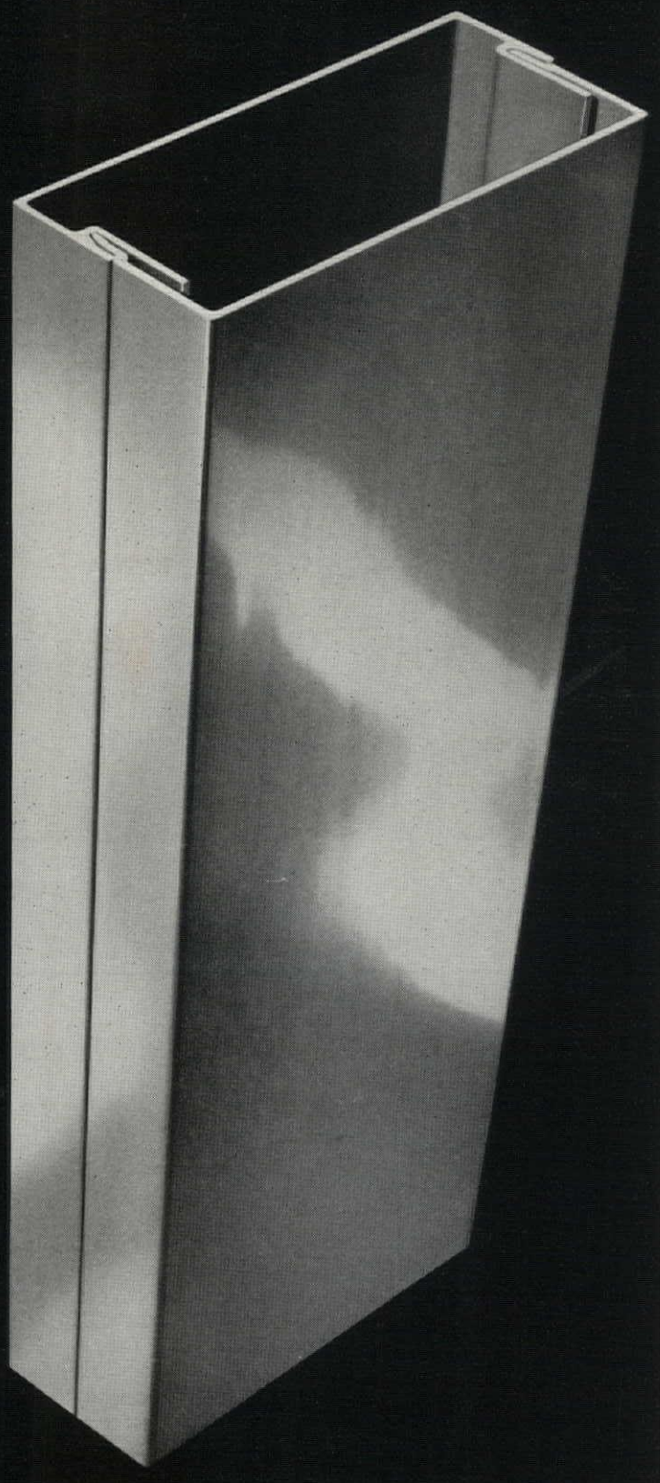
Simpson Logging Company, Sales Office Plywood & Door Products Room 901G, 2301 N. Columbia Blvd; Portland 17, Oregon, BUtler 9-1112;
Regional Offices New York • Cleveland • Chicago • Denver • Minneapolis • Memphis • Dallas • Los Angeles • Portland • Seattle.

PITTCO®

DOOR FRAME MOULDING

Here is grace, strength and beauty—combined with care to add genuine quality to your store front design. Every metal product in the PITTCO line is a distinctive form with an effective function. For details, see your PITTCO Store Front Representative, or refer to Sweet's Architectural File—Section 21.



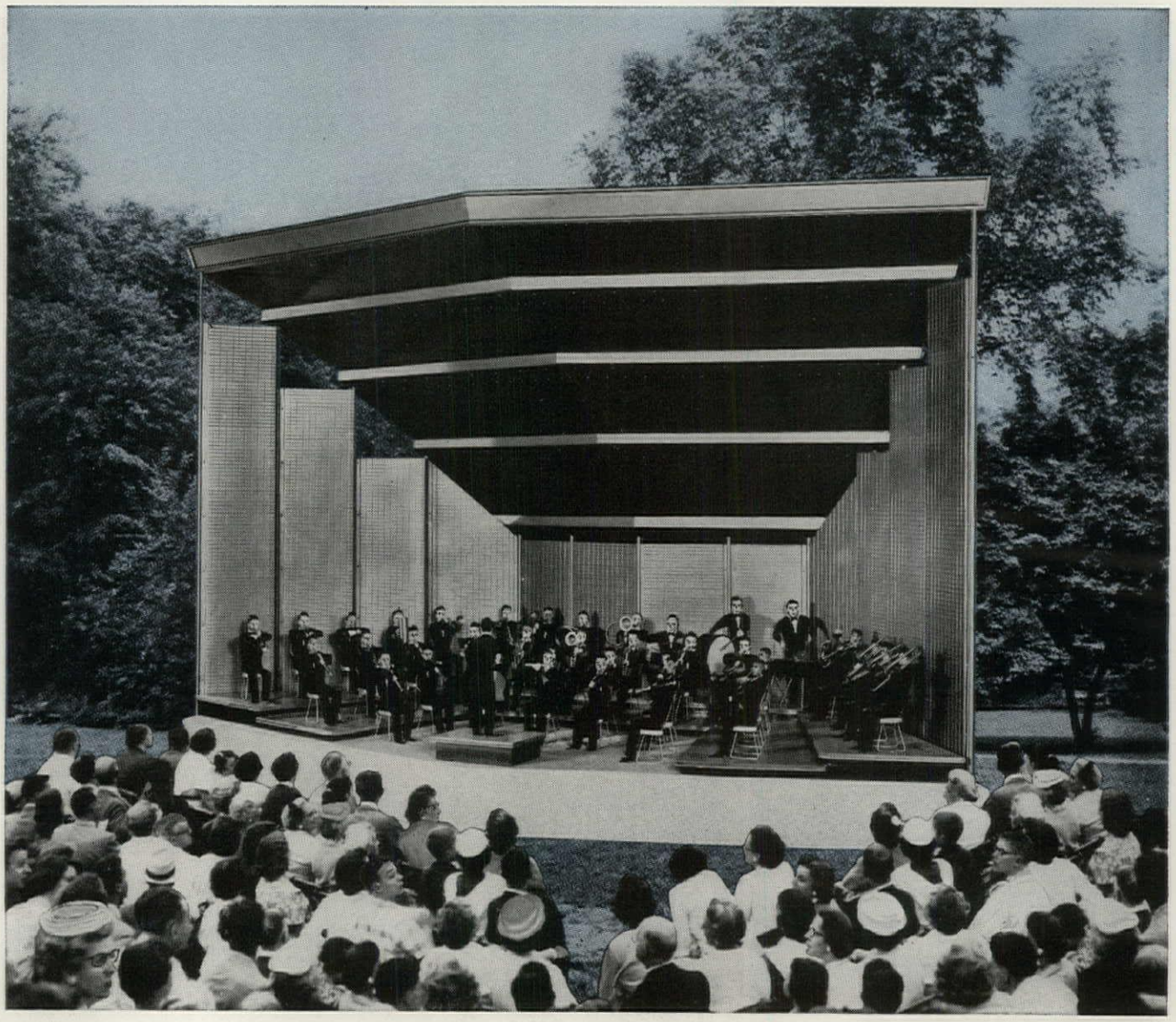


75th ANNIVERSARY 1883—1958

SYMBOL OF SERVICE FOR SEVENTY-FIVE YEARS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED



Overly HI-FI BAND SHELL

...the greatest advance in outdoor stage acoustics, beauty, color, comfort, convenience and durability combined

Overly's Hi-Fi Band Shell is a joint development with Alcoa, nationally known acousticians, bandmasters, architects and designers. It is the most complete answer to the outdoor stage acoustical needs of today and tomorrow. It is a composite of the *improvements* sought by schools, communities and others desiring better recreational and cultural facilities. Offered in four basic sizes, this Overly unit is adaptable for a wide variety of civic and cultural functions in addition to live band concerts.

Features. Durable; all aluminum. Choice of non-fading colors. Provides well dispersed live sound so that, no matter where the listener sits, he will hear well.

Write us today for your FREE copy of our new, 12-page, illustrated booklet. *Contents:* history of band shells, and problems with conventional types; superior design and engineering features of the Overly unit, details, specifications, applications, site selection and seating plans. Ask for booklet by name: "Overly Hi-Fi Band Shell." No obligation.

Send today for 12-page booklet... in full color!

Overly Manufacturing Company

Greensburg, Pennsylvania • Los Angeles 39, California

ENGINEERED IN ALCOA ALUMINUM

FORUM

ARCHITECTURAL FORUM
PUBLISHED BY TIME INC.
EDITOR-IN-CHIEF: Henry R. Luce
PRESIDENT: Roy E. Larsen

Editorial

What is a city?

Urban redevelopment, the great postwar experiment in city rebuilding, has developed one serious, and potentially fatal, flaw. The planners and redevelopers are, by and large, ignoring the single greatest fact about the city: that it consists of an intricate living network of relationships, and is made up of an enormously rich variety of people and activities. Look at the yellow pages of the telephone book, for example, and consider the thousands upon thousands of pieces, most of them quite small, which make a big city. Consider the interdependence, the constant adjustment, and the mutual support of every kind which must work in the city, and work well.

This network of human relationships is, in fact, all that the city has which is of unique value. All that the city possesses—of magnetism, of opportunities to earn a living, of leadership, of the arts, of glamour, of convenience, of power to fulfill and assimilate its immigrants, of ability to repair its wounds and right its evils—depends on its great and wonderful crisscross of relationships.

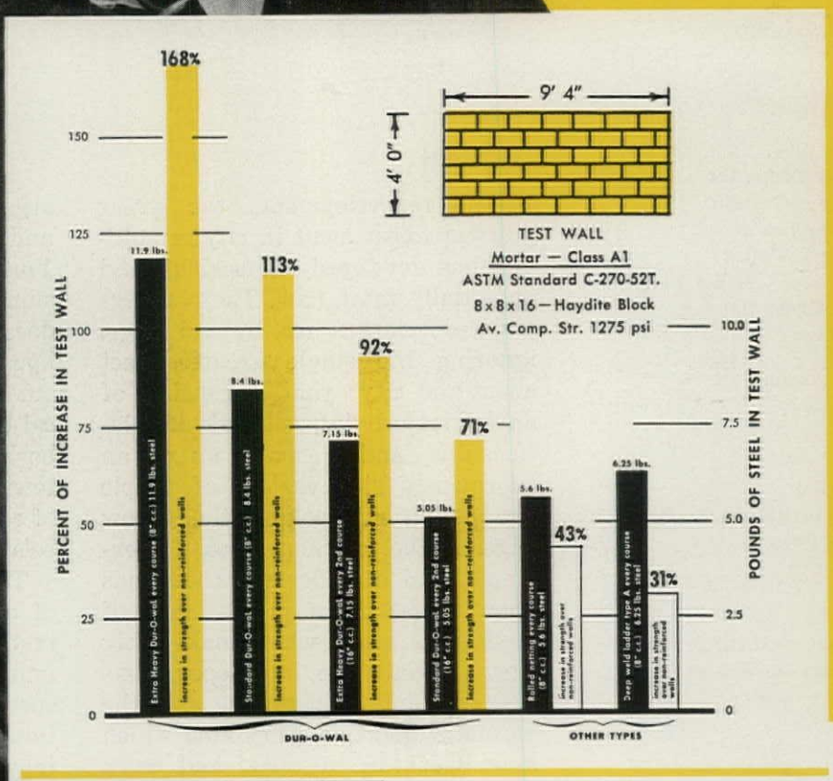
Yet, more often than not, urban planners and rebuilders have been treating the city as if it were mainly a collection of physical raw materials — land, space, roads, utilities. The result is destruction and disorganization of the city's economic and social relationships. The *New York Times* recently noted: "When slum clearance enters an area, it does not merely rip out slatternly houses. It uproots the people. It tears out the churches. It destroys the local businessman. It sends the neighborhood lawyer to new offices downtown and it mangles the tight skein of community friendships and group relationships beyond repair."

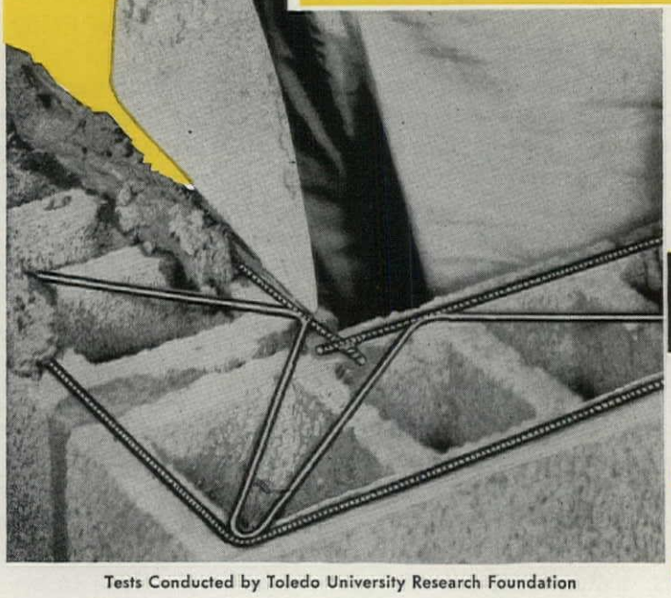
The theory of urban rebuilding, of course, is quite the opposite. It rests on the premise that subsidized improvement will catalyze further spontaneous improvement. Unfortunately, things are not working that way in most cities. Living communities, portions of living commercial districts, are so ruthlessly and haphazardly amputated that the remnants, far from improving, often develop galloping gangrene.

Furthermore, the newly built projects themselves tend to stifle the growth of new social relationships. We are now conscious that this is true of the huge public housing projects. What we may be less aware of is that this stifling of variety and of economic and social relationships is inherent in the massive project approach itself. Indeed, if today's massive redevelopment projects—public or private—are portents of the city of the future, we do not need to be prophets to see that we

continued on page 65

Test Results Prove that DUR-O-WAL is your Most Economical and Effective Steel Masonry Reinforcement





Tests Conducted by Toledo University Research Foundation

Dur-O-waL with patented trussed design out-performs other reinforcings two to one . . . reduces lineal foot requirements by half . . . cuts building costs. Every pound of high tensile steel in Dur-O-waL works twice as hard because the exclusive trussed design and superior bonding characteristics make every inch work together as a unit. Test results prove why building experts insist on Dur-O-waL . . . the steel masonry reinforcement that exceeds ASTM specifications . . . by far your best and most economical buy.

Research findings available on request.

DUR-O-WAL®

Rigid Backbone of Steel For Every Masonry Wall

Dur-O-waL Div., Cedar Rapids Block Co., **CEDAR RAPIDS, IA.** Dur-O-waL Prod., Inc., Box 628, **SYRACUSE, N. Y.** Dur-O-waL Div., Frontier Mfg. Co., Box 49, **PHOENIX, ARIZ.** Dur-O-waL Prod., Inc., 4500 E. Lombard St., **BALTIMORE, MD.** Dur-O-waL of Ill., 119 N. River St., **AURORA, ILL.** Dur-O-waL Prod. of Ala., Inc., Box 5446, **BIRMINGHAM, ALA.** Dur-O-waL of Colorado, 29th and Court St., **PUEBLO, COLORADO** Dur-O-waL Inc., 165 Utah Street, **TOLEDO, OHIO**

are creating an urban monster—a pseudo-city composed of economically segregated islands, of large, repetitive, separated, monotonous buildings.

The average U. S. city does need rebuilding, to be sure; in some portions it needs wholesale clearance. And because the need is so great and the available resources are still relatively so meager, it is tempting to gloss over the faults of current urban rebuilding efforts for fear that discussion may jeopardize the program itself. This is the same policy of expediency which was followed for years by the friends of public housing. It did not work for public housing and it will not work for redevelopment.

On the contrary, we must begin, right now, to examine and nurture what is good about the city. We may find much wisdom and practicality imbedded in city features we have considered beneath notice or have been willing to toss away because they are bedraggled. For instance, as we find out more about how a great city, full of strangers, informally polices itself, we may find the old city was not so stupid in orienting all its eyes and activities toward the street. As we find that a neighborhood has to do with numbers of people, not geographic size, we may find that drugstore owners and dry cleaners were shrewd in the ubiquity of their locations. As we learn more about big-city magnetism we will discover that the downtown theater owners were correct in their instinct to mix in where it is lively and to make the area even livelier.

We must also search for economic ways of rehabilitating structurally sound buildings without evicting their old, well-rooted communities in the process. We give tax aid to new apartments that rent at $70 a room (under Title I); surely we can find a way to save living communities when their habitations simply need new heating plants or bathrooms.

We must become much more astute, too, about where we locate schools, health centers, welfare offices, shopping areas, and parks, so that these facilities strengthen our city communities and reinforce the living network of relationships. And we must recognize that any community within a big city needs many kinds of activities and people mixed up in it to make it work. We must avoid fostering communities composed only of the transient—either the publicly housed transient poor, or the childless, transient rich.

And, finally, although it is tempting to want to fix the city in such a way that things will stay put, we may as well realize that the city is never going to get finished. On the contrary, we must repair and rebuild the city in such a way that its people will continue to have freedom and opportunity to make thousands of intricate adjustments, big and little; to repair the city in such a way that new needs, as they come along, new uses, new opportunities, new relationships, can be accommodated. If we do that, people in the future will continue to find that the most alive, challenging, varied place in the world to live is the big city. This is what makes the city worth fixing at all.

Mission to Moscow

The era of Cold Peace has produced some strange bearers of olive branches: a young man from Texas stands Moscow on its ear by playing the piano; a dancer from Moscow makes New Yorkers gasp by leaping through the air like a frog; and an architect from Arkansas is the toast of the Brussels Fair.

The most successful U.S. good-will emissaries, undoubtedly, have been America's architects. Even in countries where U.S. culture is not always treasured (to put it mildly), modern U.S. architecture is invariably excepted—and accepted. Some recent cases in point: the new U.S. Embassies and Consulates springing up all over the world, the modern U.S. houses that have been the hits of several trade fairs, the Congress Hall and Marshall Haus exhibit on U.S. architecture in Berlin last summer, and the numerous traveling shows, movies, and books on architecture in U.S. Information Agency centers throughout the world.

This month, the first American exhibition to be shown in Moscow in a great many years will open at Moscow University. Its subject, fittingly enough, is "American Architecture and the City." The exhibition was designed for the AIA by U.S. Architects Peter Blake (an associate editor of FORUM) and Julian Neski; it will be the AIA's contribution to the congress of the International Union of Architects, whose members from 40-odd countries will meet in the U.S.S.R. this year; and it will be an attempt to use modern American architecture as a backdrop against which to project a true picture of American life. The exhibit will probably be seen by thousands of Muscovites, and will later travel elsewhere behind, and in front of, the Iron Curtain.

How much such an exhibit can do to advance the cause of real peace remains to be seen. Three things are clear, however: the Moscow exhibit will show the U.S. at its creative best; it will show that free-enterprise democracy has its material rewards; and it will show that America has a very great investment in peace—and that anyone who says otherwise is talking through his astrakhan. END

Herewith three reports on the most luxurious skyscraper ever built. The first article (below) describes Seagram's architectural concept; the second (page 72), what makes the building work; and the third (page 76), why it may pay off.

Seagram's bronze tower

Across Park Avenue from McKim, Mead & White's Renaissance "Racquet Club," there now stands a stately tower of bronze, travertine, and tinted glass: the 38-story Seagram building, a skyscraper that has been hailed by its admirers as the most beautiful shaft ever to rise on the Manhattan sky line. It is, for sure, the most expensive office tower, per square foot, ever built in Manhattan or anywhere else ($45). It is also fast becoming the most widely and heatedly discussed skyscraper ever built; for in its over-all concept, in its details, and in much of its equipment, Seagram challenges accepted skyscraper practice all the way down the line.

The new headquarters for Joseph E. Seagram & Sons, Inc. is primarily the work of Architects Ludwig Mies van der Rohe and his collaborator, Philip Johnson. In Mies's career, Seagram is something of a milestone: it is his first building in New York; it is the largest structure he has ever built anywhere; and it is, finally, the climax of Mies' 40-year search for a new kind of skyscraper—a slab that is, in effect, a sheer cliff of glass. The search began with a primitive but eloquent sketch, back in 1919; it is now concluded, and the evidence is a $43 million monument that will be recorded as one of the great events in twentieth-century architecture.

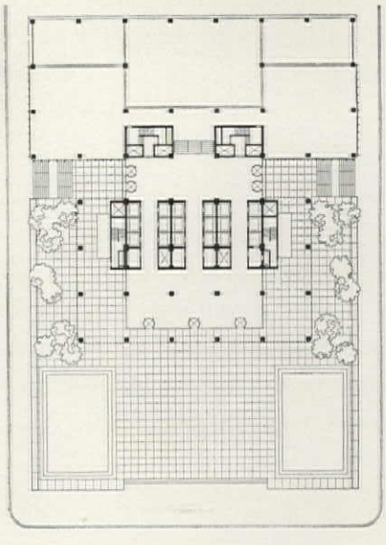
The building will be remembered, in part, for what it is not. Most New Yorkers expected Seagram to be as shiny as a brass button when completed; instead, it has the warm solidity of an old penny—and will get more of that quality as it weathers. It is, in short, a building of enormous restraint. As British Architect Peter Smithson put it recently: "Everything else now looks like a jumped-up supermart." There is restraint in the use of the site (50 per cent of which was sacrificed to make room for a serene plaza off Park Avenue); restraint in the use of color (none was applied) and light (no sources are visible); and restraint in every detail. In fact, the utter simplicity of every detail in the building belies the painstaking effort that went into the design down to the last doorknob and the last mail chute. Mies is famous for having said that "less is more"; when Architectural Critic Henry-Russell Hitchcock saw Seagram he commented that he had never seen more of less.

But Seagram will also be remembered for what it is: for its single-mindedness and strength, for its clarity and dignity. In the midst of Manhattan's turmoil and clutter, these qualities are rare and refreshing.

PHOTOS: (ABOVE) © EZRA STOLLER; (OPPOSITE) CSERNA

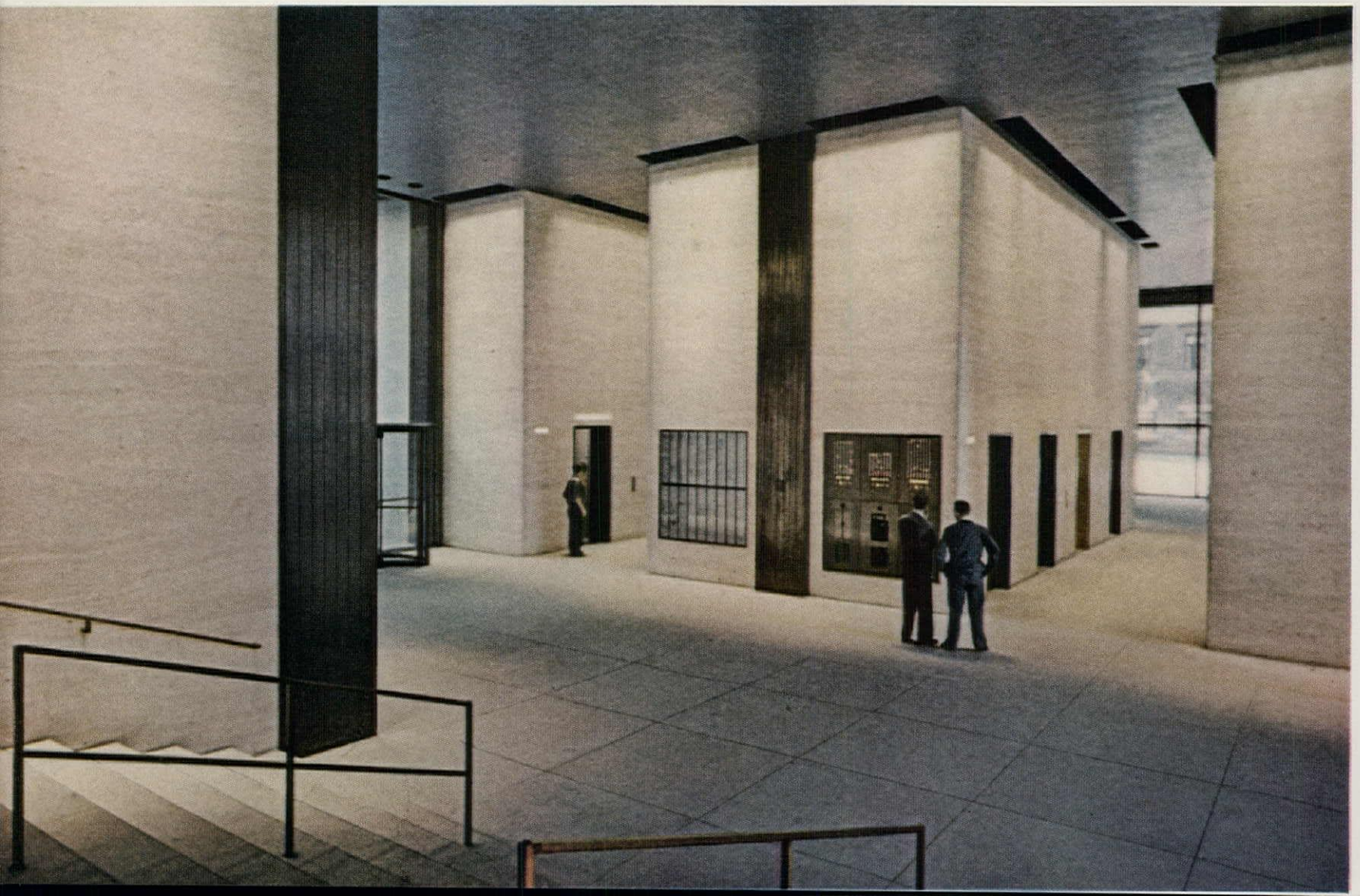
Green marble benches (opposite) form the edges of Seagram plaza. Weeping beech trees were planted to contrast with the rigid geometry of the plaza and building.

Granite-paved plaza and wide arcades recall the scale of Renaissance piazzas. The pavement is kept ice-free in the winter by radiant heating system, and pools will be overheated to generate steam for dramatic effect. Below: plan at level of plaza.



Seagram plaza. By knowing what to leave out, the architects of the Seagram building added a great deal to what they left in. For example, by setting the tower back a full 90 feet from Park Avenue, they achieved two results: first, they set a new and generous standard for open city space; and, second, they gave pedestrians and motorists something really stunning to gasp at—a sleek façade soaring straight up for 520 uninterrupted feet, and made to look even taller by virtue of its closely spaced, vertical ribs of bronze. The first result adds up to high prestige—and a fine public relations gesture; the second to high showmanship—and a fine institutional advertisement. Taken together, the results make for a dramatic building in a noble setting—a beautifully tooled prism of metal and glass, resting on a wide pedestal of pink granite inlaid with clear pools and beds of planting (opposite).

PHOTOS : CSERNA



Seagram lobby. Because the 24-foot-high lobby is glass-walled, it "reads" as an integral part of the outside plaza and seems much more spacious than it really is. At night, this spaciousness is further accented by the wash of light (from recessed ceiling fixtures on dimmers) spilling over the travertine walls that enclose the elevator shafts. The ceiling is finished in gray glass mosaic, set in black cement. This beautiful surface mirrors the subtle coloring of travertine walls, floors, and bronze columns (photos opposite).

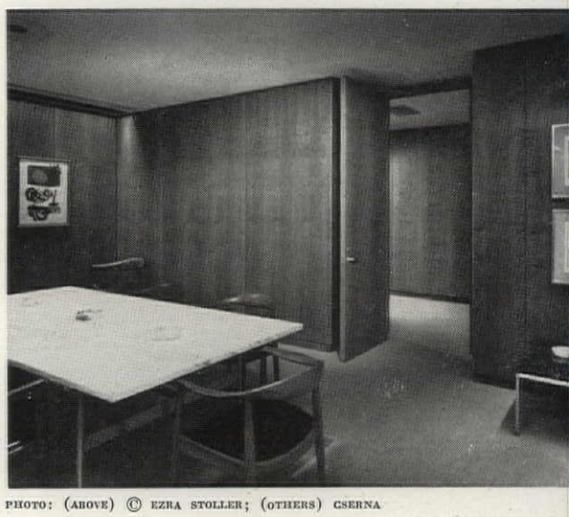
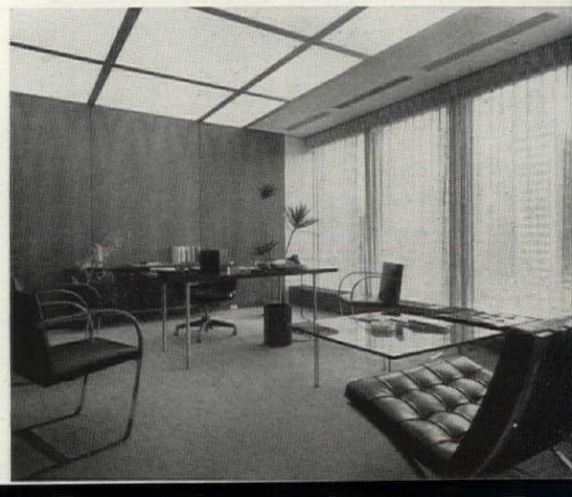


PHOTO: (ABOVE) © EZRA STOLLER; (OTHERS) GSERNA

Seagram offices. The entire building was designed to provide executive suites for prestige-conscious tenants. Seagram's own offices set a high standard which many tenants have followed. Above is a reception room sporting the bronze Seagram seal (redesigned by Herbert Matter) on a travertine wall, and lit from an invisible source in a recessed ceiling trough. Tapestries are by Miro and Stuart Davis. At right are a typical, oak-paneled conference room and an executive office with classic Mies-designed chairs and tables.



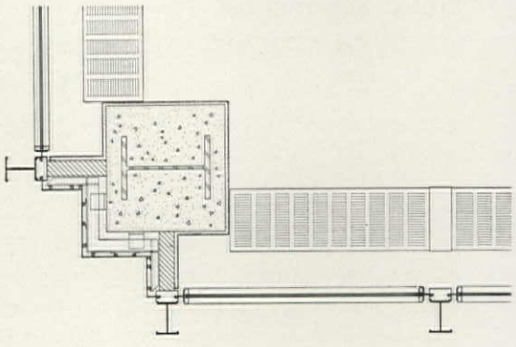
ARCHITECTS: *Mies van der Rohe & Philip Johnson;* ASSOCIATE ARCHITECTS: *Kahn & Jacobs;* GENERAL CONTRACTOR: *George A. Fuller Co.;* MECHANICAL ENGINEERS: *Jaros, Baum & Bolles;* ELECTRICAL ENGINEER: *Clifton E. Smith;* STRUCTURAL ENGINEERS: *Severud-Elstad-Krueger;* LIGHTING CONSULTANT: *Richard Kelly;* OFFICE LAYOUT & FURNISHINGS: *Philip Johnson Associates, J. Gordon Carr and Knoll Associates;* LANDSCAPE CONSULTANTS: *Karl Linn & Charles Middeleer;* ACOUSTICAL CONSULTANTS: *Bolt, Beranek & Newman;* TYPOGRAPHICAL CONSULTANT: *Elaine Lustig.*

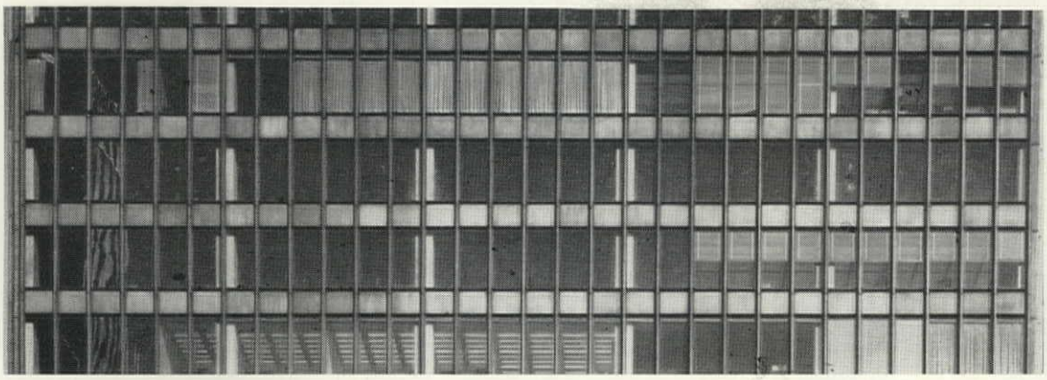
Seagram's custom look

13 new ideas for better skyscraper design

The Seagram building is, in effect, a half-million square foot laboratory in which new and special office designs are being tested in actual use. The building's architects refused to accept a standard material or standard method if they could see ways of improving it—and the result has been a whole catalogue of innovations that may soon affect office building design throughout the U.S. Some are merely redesigns of existing products to improve their appearance; others are more radical departures from present practice. All are part of the design vocabulary that makes this building speak with a clear, forceful voice.

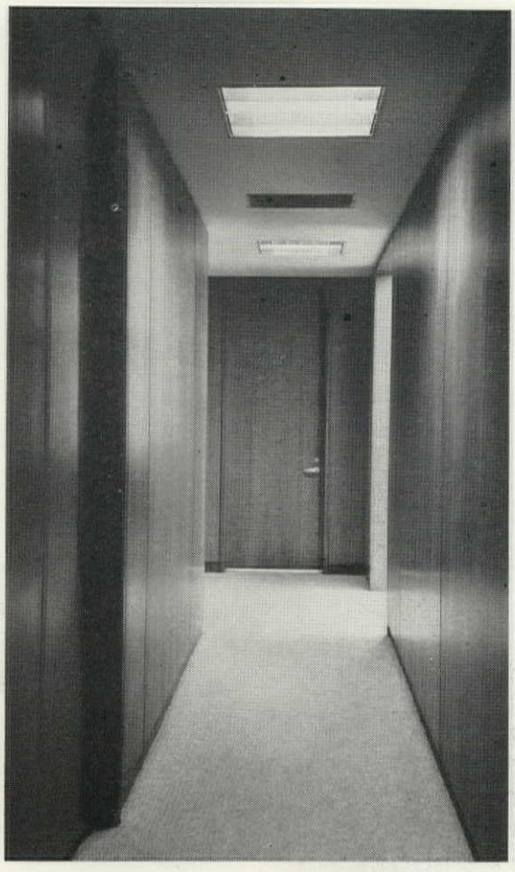
1. *Bronze and glass curtain wall* consists of 4½ by 6 inch I-beam extrusions (largest sections ever extruded in bronze), spandrels of Muntz metal (an alloy which resembles mullions in color, but contains more copper), and pinkish-gray, heat- and glare-resistant glass in story-high bronze frames. I-beams were extruded 26 feet long. Complete cost of wall: $18 per square foot. (Lever House, by comparison, would cost $13 today.)

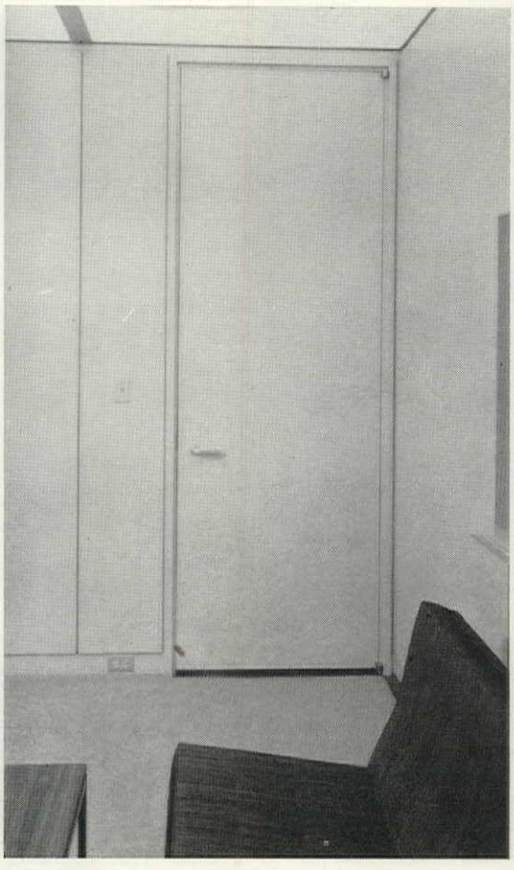




PHOTOS: (ABOVE) © EZRA STOLLER; (OTHERS) GEORGE CSERNA

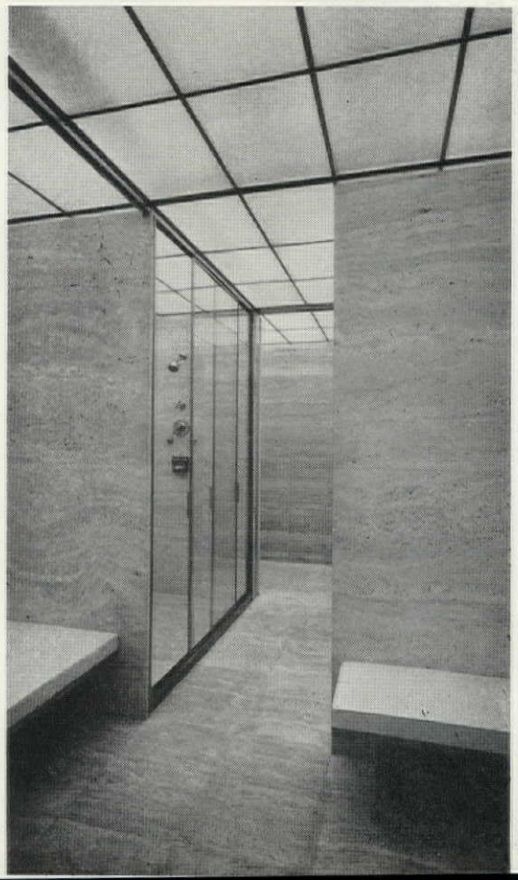
2. *Controlled Venetian blinds* were specially designed to stop in only three positions: all the way up, all the way down, and at half mast. The angle of the slats is fixed at 45 degrees to let pedestrians get full impact of lit-up building at night. These controls produce façade patterns that always look neat.

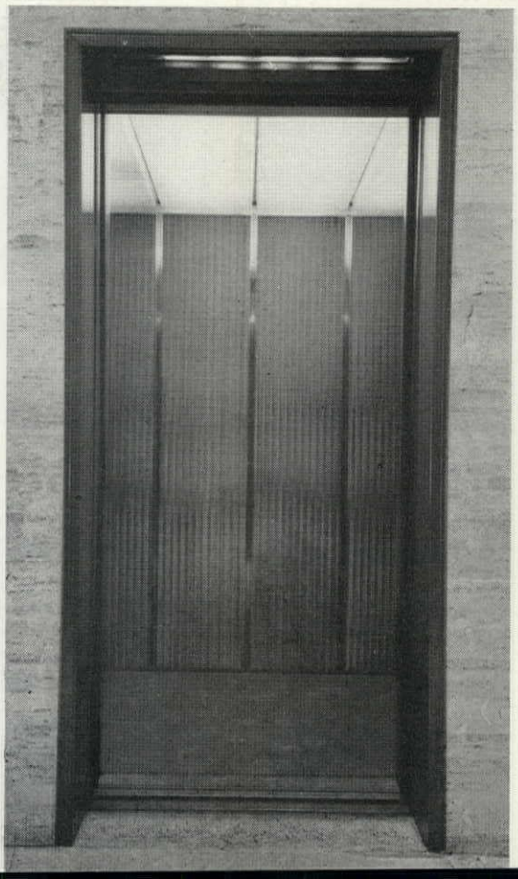




3. *Floor-to-ceiling doors* (far left) added nothing to the cost of each opening, made doors look like integral part of paneling, hence gave interiors greater unity. This corridor is part of Seagram's executive suite.

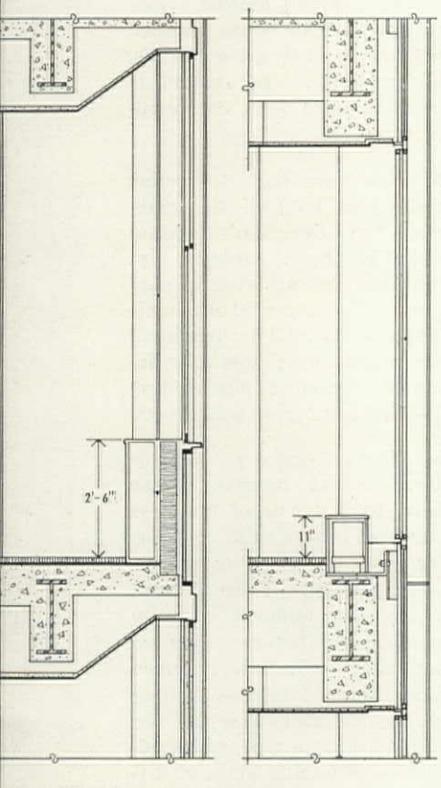
4. *Floor-to-ceiling partitions* (near left) are stock units reworked for Seagram by the architects. Greatly simplified in detail, partitions have reveals at panel joints, recessed wiring chases behind baseboards, specially designed doorknobs and hinges, and continuous tubular rubber stops around door frames. Panels were finished with many different materials, all washable. The system is now standard with its manufacturer.





5. *Floor-to-ceiling travertine* slabs (far left) divide washroom on Seagram's special executive floor. Orderly appearance was achieved in part by use of ceiling grid as module for partitions. All fixtures in all washrooms were specially designed, including pipe-connections at lavatories and toilets.

6. *Floor-to-ceiling elevator* doors reveal interior of cab lined with panels of stainless steel and bronze mesh designed for Seagram in a cartridge-belt pattern. These metal panels are removable, easily maintained (because they do not show scratches), reflect light from luminous ceiling above. Elevators are of the electronic brain type, which adjusts to changing loads at different times of day, eliminates need for elevator operators.



WALL SECTIONS
UN Secretariat Seagram

7. *New air-conditioning system* uses underwindow units that project only 11 inches above floor line (as opposed to 30 inches for similar units in UN tower—see comparative sections at left). These compact units make floor-to-ceiling glass walls practical for the first time. Seagram's system has unusually flexible temperature and humidity controls which can be adjusted to heat the lower portions of the south wall of the building (which may be shaded by adjacent buildings), while cooling the upper portions of the same wall (which may still be exposed to broiling sun). Office above, showing low underwindow unit, is part of Olivetti suite.

8. *Special lettering* (below) for use throughout building was designed by Elaine Lustig, is square serif.

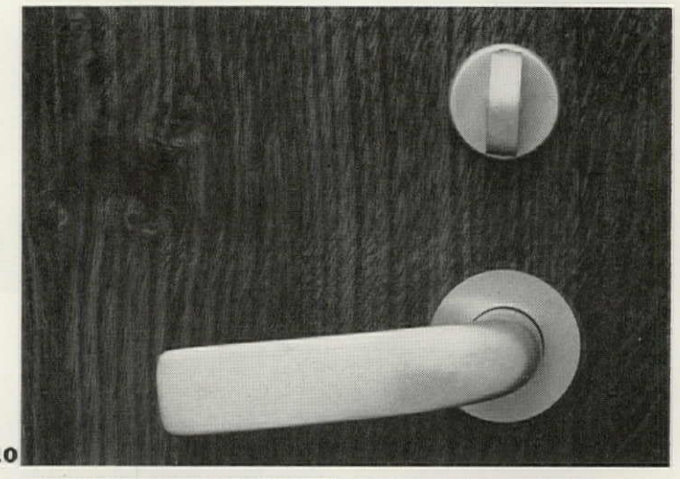
9. *Special faucets* and other washroom fittings were designed by architects to harmonize with elegant detailing throughout the building.

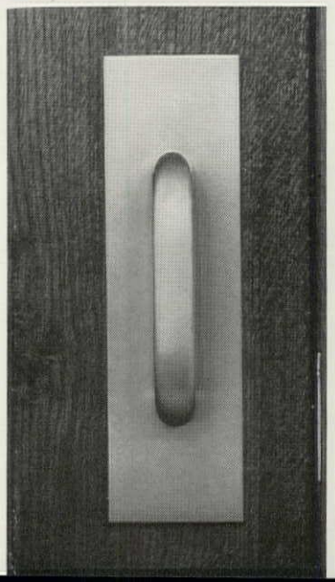
10. *Special hardware items* of brushed aluminum and stainless steel (see bottom photos) were custom-designed, and are now part of manufacturer's standard line. Original extra cost of these special items over top-quality hardware was "very, very minimal," according to manufacturer.

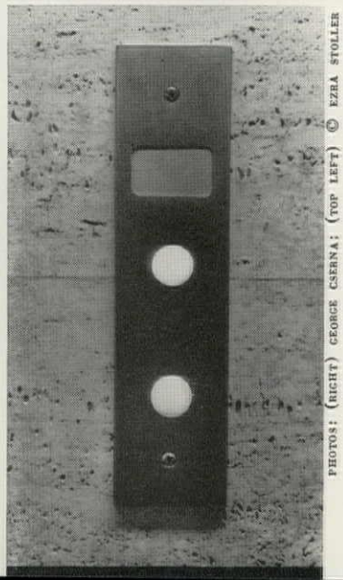
8

9

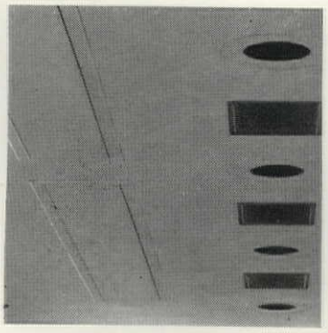
10

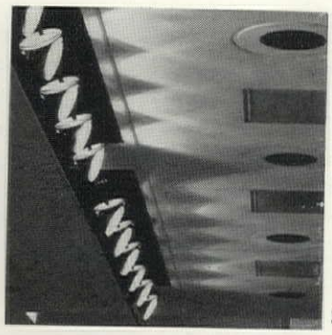






PHOTOS: (RIGHT) GEORGE CSERNA; (TOP LEFT) © EZRA STOLLER

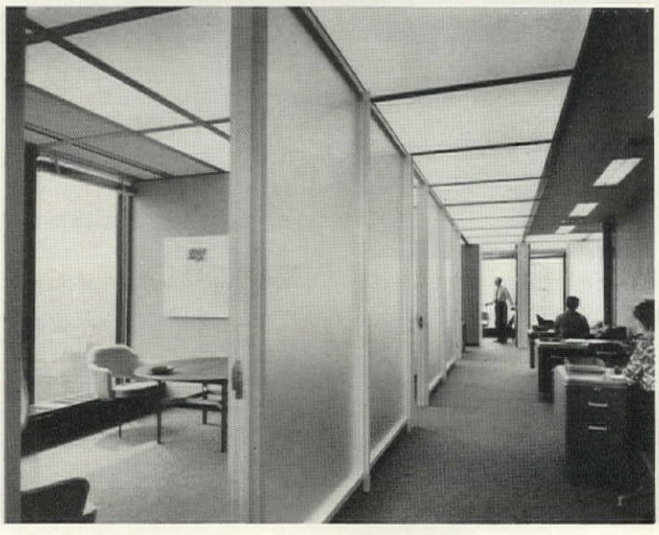




11

GEORGE CSERNA

12



ALEXANDRE GEORGES

13

11. *Display lights* (top) were designed for executive meeting room, disappear into ceiling when not in use. They turn one end of meeting room into effective stage.

12. *Invisible light sources* (center row above) were used throughout building. Here they spill a wash of light over conference-room walls, and make a pool of light on conference table. Lighting Consultant Richard Kelly, in collaboration with Lighting Designer Edison Price, used concealed light sources to illuminate marble-faced elevator stack in lobby, and to light paintings and tapestries in Seagram offices. Result: one of the best-illuminated buildings ever constructed.

13. *Luminous ceiling* forms a continuous 11½-foot-wide band around the perimeter of the building. Office (above) was designed by Ketchum & Sharp for O. E. McIntyre, Inc., shows modular ceiling grid in outside offices and corridor, plus a low-brightness system for interior office spaces. This system provides excellent light at desk surfaces. Each night, the luminous ceiling band is lit up on every floor, provides a dramatic spectacle on Manhattan's sky line (right).

© EZRA STOLLER

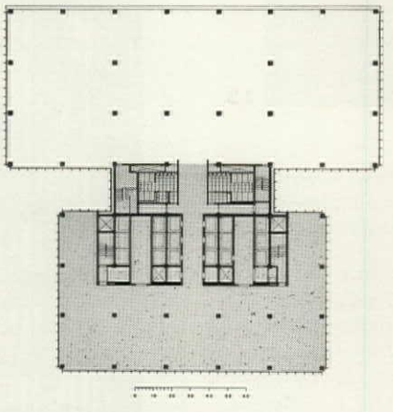
Seagram's bet on elegance

Most office towers today are built primarily for profit. This one was built primarily for prestige. Yet prestige may prove to have a considerable long-term cash value.

Can a custom-built, luxury skyscraper like the Seagram building—designed by a master architect and under a luxury budget—be made to pay its way in today's commercial real estate market? Samuel Bronfman, president of Distillers Corporation-Seagrams Limited, who has some $43 million of his company's funds invested in an elegant new Park Avenue *palazzo*, is obviously keeping his fingers crossed. But the preliminary figures seem to indicate that the Seagram building, from 52nd to 53rd Streets, may not only pay its way, but also earn a modest profit for the company.

This is important, for if the Seagram building pays its way, every architect and builder in the U. S. will share in the profits. For they will, then, be able to cite Seagram to other clients who may be inspired to erect more structures of outstanding design by outstanding architects—if such ventures do not have to be recorded in red ink.

Seagram, to be sure, is a very special kind of real estate project: it was not built primarily as an investment intended to produce a fast money return; it was built to produce a long-term return in public good will, institutional advertising, and — only incidentally — in cash. This distinction is important. For if Seagram were judged as a fast-return real estate investment, it would obviously have to be judged a failure—just as most postwar run-of-the-mill New York office ziggurats must be judged a failure as generators of public good will, institutional advertising, or for that matter, long-term cash value.



Prestige tower floors (shaded area above) are relatively small; from the 11th to the 38th story each floor has about 12,000 square feet of rentable area as compared to the 28,300 square feet on the second to fourth floors, which include the block-wide wing at the rear of the tower (plan above). The intermediate fifth to tenth floors are reduced to 18,600 square feet each by a setback.

The public be pleased

From the beginning President Bronfman wanted "something special" in the way of a new corporate headquarters and he was willing to pay a premium to get it. So, although the 60,000 square foot Park Avenue site for which Seagram paid $5 million would have accommodated a much larger building of perhaps 1 million square feet, Bronfman decided that a building of "about 500,000 square feet" of rentable floor area would probably be most suitable for the company's purposes.

As for quality, Bronfman made it clear to all hands that he wanted a structure that would offer prestige tenants space in a new, unsurpassed luxury building in units as small as 500 to 700 square feet if desired. (Most new commercial buildings in New York spurn small-space tenants in favor of full-floor or multifloor renters.) For these prestige accommodations, of course, Seagram would charge premium rents. The big question was whether the company would be able to get premium rents.

As it turns out, the building, which was officially opened at the end of May, is already 90 per cent rented, and the remaining 10 per cent is being rented with comparative ease—a tribute to the subtle, attractive elegance of the completed structure itself. Moreover, space is being rented at $7 to $8.30 per square foot in the 28 tower floors, as compared with the going rate of about $5 to $5.25 a foot for ordinary new buildings. By last month, the building had about 77 tenants, and was expected to be filled with a total of perhaps 100 tenants (averaging about 3,800 square feet of space each) by early fall. All tenants, happily, are on leases of at least ten years.

Here is how the economics of the Seagram building shape up. The final cost of the building will be in the neighborhood of $43 million: $38

million for the structure (including all fees, tenant partitions, and finished interiors of Seagram floors) and $5 million for the site. Thus the building alone, with 854,000 gross square feet of floor area, cost $45 per square foot to build (about $50 per foot including the land). By comparison the cost of ordinary New York office buildings today is only about $25 to $30 per square foot, including tenant partitions and alterations, but exclusive of land.

The company financed the construction of the building entirely on its own, and has no mortgage. It initially used working capital and, last April, marketed a $40 million, 4¼ per cent issue of 25-year debenture bonds to replenish its working capital. It now appears that rents (Seagram charges itself $6.36 per square foot for the 159,000 square feet it occupies on the eight lower floors) will more than pay for all the operating expenses, real estate taxes, and interest. In the first year these will total an estimated $3,456,000 as against a rent roll of $3,843,000.

Thus, in the simplest terms, the building may net about $400,000 the first year, or 13 per cent on the company's initial $3 million cash investment (the difference between the $43 million cost of the building and the $40 million borrowed), before federal taxes or amortization. This net would rise each year, as interest charges decline, to perhaps $750,000 in the eighth year, for example. But depreciation completely changes this simple picture. For tax-deductible depreciation that will be allowed can be applied against other company income for a tax saving of 52 per cent. Thus on a 50-year straight-line depreciation basis, the $38 million building would preserve $395,000 of corporate profit annually.

What price quality?

As against this far-from-gloomy prospect, what would have happened if Seagram had covered its entire plot with a more conventional and less expensive building of the maximum allowable floor area? Obviously, a larger, ordinary building would have shown a much greater net cash yield in its early years. But the premium building should command premium rents long after the bloom would have faded from an inferior building. Indeed, some real estate experts think Seagram's decision to build in moderation and good taste may prove to have been the most profitable business decision over the long pull.

If Seagram had wanted to exploit its site to the fullest it could probably have erected an ordinary office building with about 1 million square feet of rentable area for just about the same cost (i.e., $38 million) as its luxury building, which is only about two-thirds that size. In that case, in contrast to the estimated 4.8 per cent return—before federal taxes or depreciation—that the company may earn on a "free-and-clear" basis (the difference between total income and total operating expenses and real estate taxes) from the present Seagram building, the company might have achieved a speculative builder's yield of about 12 per cent to 20 per cent. But in that case it would have "earned" very little prestige or good will. Of course, even a 4.8 per cent free-and-clear return (the $2,087,000 spread between income of $3,843,000 and operating expenses and real estate taxes of $1,756,000 expressed as a percentage of the $43 million cost of the building) would make the project a poor conventional real estate "investment" at $43 million. For, if that yield was capitalized at 7 per cent, a rate often used in valuing first-class office buildings in prime locations, the property might only command a price of about $30 million if offered for sale to professional realty investors.

It could also be argued that the 27,000 square feet of plaza land cost Seagram an unnecessary $2,250,000. But that would again ignore the intangible value this area adds to the entire project. It would also ignore the very tangible value derived from the space beneath the plaza which is used for a parking garage, storage area, and building maintenance shops.

But even if the Seagram building were not to "pay off" in dollar and cents at all, even if all the profit had to be taken in good will, even then Mr. Bronfman's investment would be a sound one. END

THE LADY AND THE ARCHITECTS

UP

Johnson and Mies, Client Lambert

The Seagram building was the work of an unusual team headed by three people: Architects Mies van der Rohe and Philip Johnson, and 31-year old Phyllis Bronfman Lambert, daughter of Seagram President Samuel Bronfman, and long a passionate *aficionada* of modern architecture. After seeing some preliminary, less-than-inspiring proposals for Seagram's new headquarters in 1954, Mrs. Lambert told her father that he was on the wrong track, that he ought to try to build the finest skyscraper that modern architecture could produce, and that she would help him do just that. There followed a two-and-one half-month search for an architect. Mrs. Lambert got Philip Johonson, then director of architecture at New York's Museum of Modern Art, to draw up a list of the top dozen men in U.S. architecture, talked to them and saw their work. Mrs. Lambert's final choice: Chicago's Mies van der Rohe, with Johnson (who had a New York office and was registered in the state) as Mies's associate. Seagram President Bronfman approved wholeheartedly, appointed his daughter director of planning to represent the clients in Mies's and Johnson's office. In her position as client, Mrs. Lambert took an active part in almost every major—and many minor—design decisions, helped select materials, equipment, furnishings and, most importantly, the paintings, sculpture, and tapestries that distinguish the interiors of the building. Her ultimate triumph will be the art commissioned for a luxurious ground-floor restaurant that will be opened to the public next year.

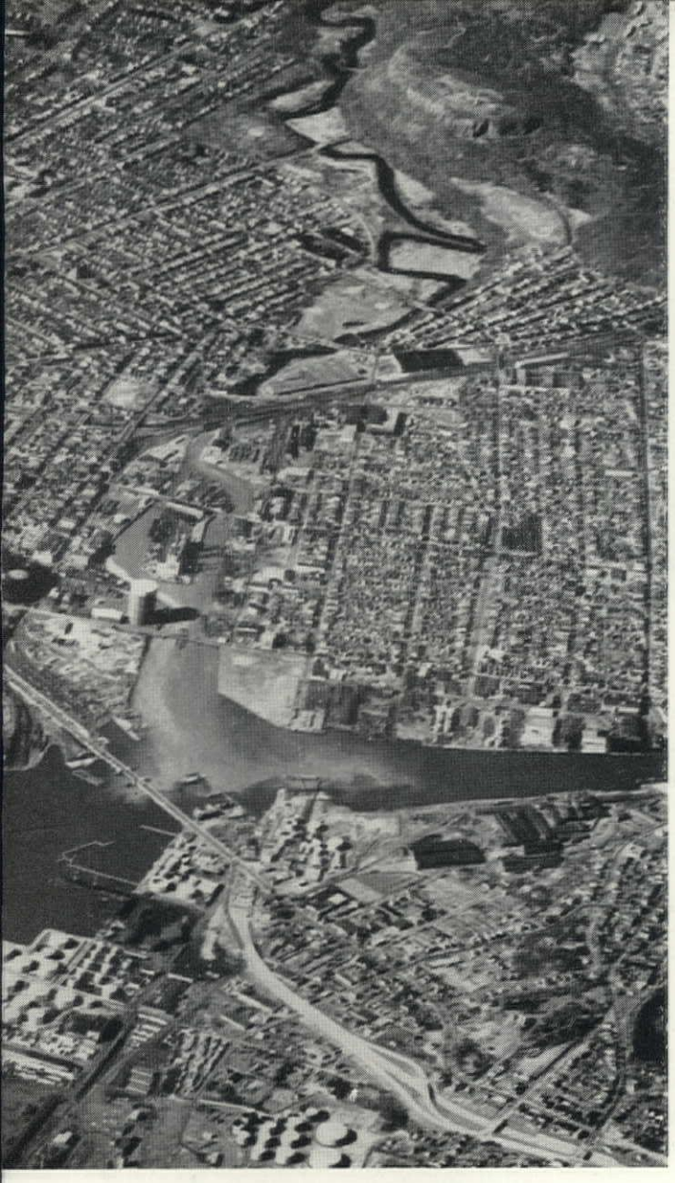
FAIRCHILD AERIAL SURVEYS, INC.

New Haven: test for

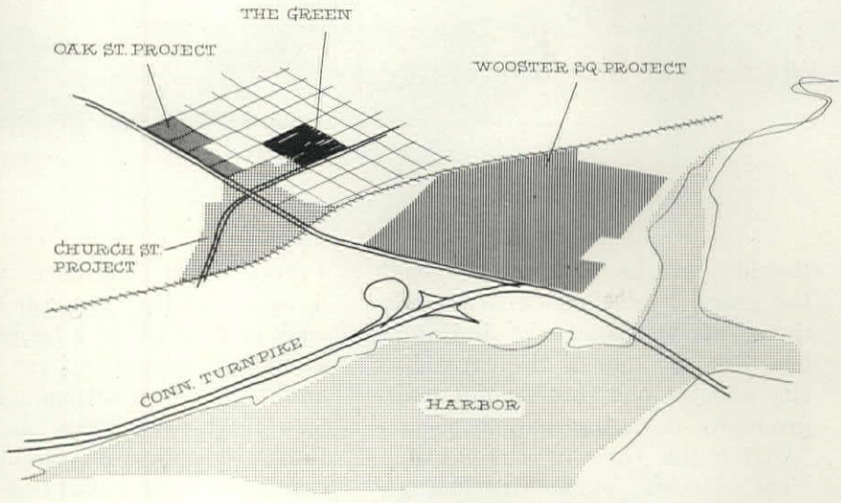
Many a smaller American city may well be strongly influenced in the next decade by what is taking place today in New Haven, Connecticut, a city that led the way in U.S. town planning over three centuries ago. Since 1955, New Haven has cleared nearly 80 acres of slums, brought 750 units of private redevelopment housing to the verge of construction, and turned its once lagging renewal program into a model of civic action (FORUM, October 1956). Now it has struck its boldest blow thus far, in the very heart of downtown, where few cities have ventured with renewal, to reveal more fully the scope of its plans to make New Haven a modern regional city in a larger pattern. Not only will New Haven be a cosmopolitan cultural center, based on Yale, but also, and more strongly in the future, a seaport, trade, and distribution center for a large New England area.

The new project, estimated to cost $85 million, embraces 96 acres of central New Haven (see Church Street Project, map, right above), comprising mainly run-down commercial buildings, fringe slums, and a time-worn wholesale-retail food market, which will be moved to a new site near the harbor. On the bulk of this area, which is now being bought up under the Title I renewal provisions of the National Housing Act, the city plans a 19-acre commercial park for office buildings and laboratories, an 8-acre school and recreation center, along with new housing and parking facilities. But the whole focus of redevelopment is on the district's edge, fronting on New Haven's sacrosanct Green, where, in the boldest stroke of all, the city government pushed for the demolition of four blocks of aging shops and lofts along Church Street, the town's main shopping artery, and erection thereon of a commercial development, including a shopping center, a bank, a 16-story hotel-and-office tower, a restaurant, and a parking garage for 1,500 cars.

Without this lively commercial center, officials felt, all plans for a revitalized downtown would fall dead. And events seem to bear out the planners' good sense. The whole redevelopment is now officially known as the Church Street Project.



Guided by a bold plan, New Haven is pushing its rebuilding program into an area where few cities have ventured: the very center of downtown.



Key renewal projects for New Haven focus on: 1) the city's Green (map above, center of photo, left); 2) its harbor; and 3) its traffic net. Church Street Project runs to the edge of the Green and takes in four blocks of business district. Oak Street and Wooster Square Projects are primarily residential.

downtown renewal

Voters last fall re-elected by the biggest margin in years New Haven's smart young Mayor Richard C. Lee, who initiated the project. And its status as a good calculated risk has already drawn in a developer, Real Estate Investor Roger Stevens, who next month will sign an agreement to buy the land for the Church Street center and will put down 10 per cent of its $4 million cost, looking toward the center's commercial realization.

But all this is part of a bigger plan, some of which has gone before, much of which is yet to come. The city's entire rebuilding program has been geared to the thesis that the community's prosperity depends on its traditional role as a trade and distribution center, and that growth can resume only when more, rather than less, traffic moves freely in and around the city. Stevens was attracted to the Church Street development not only by its commercial possibilities but also by the fact that it included a widening and extension of Church Street itself, which will link the Green with the railroad station, and that the whole links up with other traffic improvements. Earlier, New Haven had put through a new Oak Street depressed highway link with the Connecticut Turnpike, which is now the focus of other developments. This stress on movement and regional interchange has been a dominant precept in New Haven's planning. As far back as a decade ago the city took the lead in setting up with seven neighboring communities the first regional planning authority in the state. And, in fact, New Haven's foresight in planning goes back much beyond this.

American green

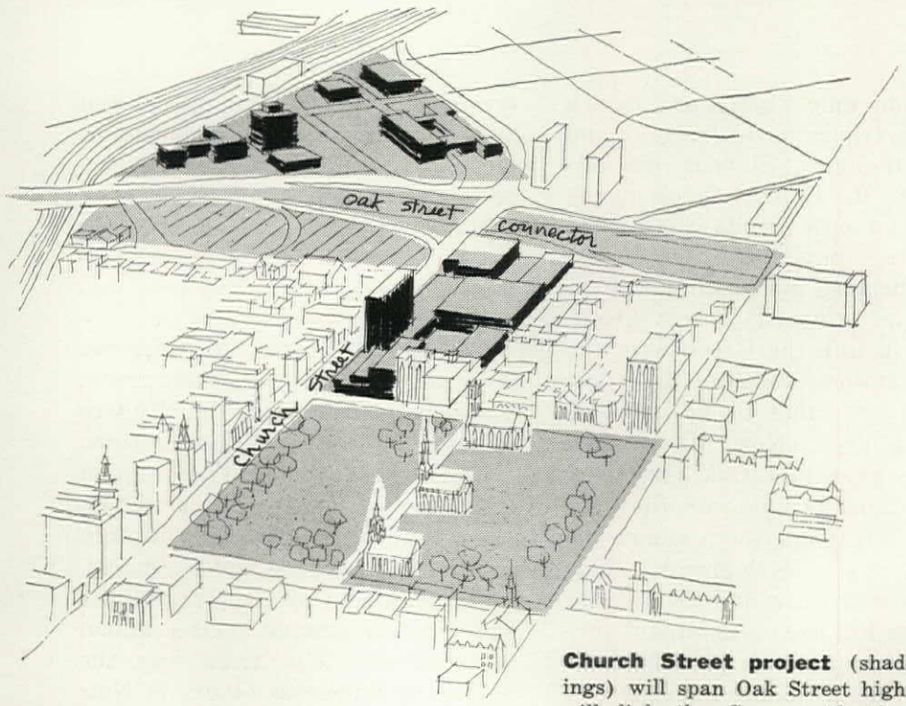
New Haven's legacy to American town planning was the village green, conceived in 1638 when the city was founded on the first formal town plan in the colonies. The original scheme, which still can be traced on a street map, was a simple 2,700-foot square grid of nine equal squares, with the middle square reserved for worship and grazing. This common of grass and elm trees was the model for numerous others in New England, and later settlers carried

the idea to the Midwest. Through the years, New Haven's Green, like those of many of its imitators, has been the hub of the expanding city and the one stable point in its gradually changing neighborhoods.

After the turn of the century, New Haven grew increasingly stodgy and shabby, but still retained a receptiveness to planning and the principle of orderly growth. Years before the passage of the federal urban redevelopment act of 1949, it had a truly modern plan for the future, drawn in 1941 by Planning Consultant Maurice Rotival, which was to become the basis for all its current rebuilding program.

Rotival came to Yale in 1940 as associate professor of planning. A French-born engineer who had flown under U.S. General Billy Mitchell in World War I, he got his first glimpse of planning from air views and from conversations with American architects such as William Perry. Deciding on planning as a career, he took a doctorate in engineering at the Sorbonne, went on to study law and economics. Before World War II, he did plans for Algiers and Baghdad. At Yale, he produced, with the university's help and the city's money, the scheme that New Haven is using today. (At the same time, he also managed to turn out a plan for Caracas, Venezuela.)

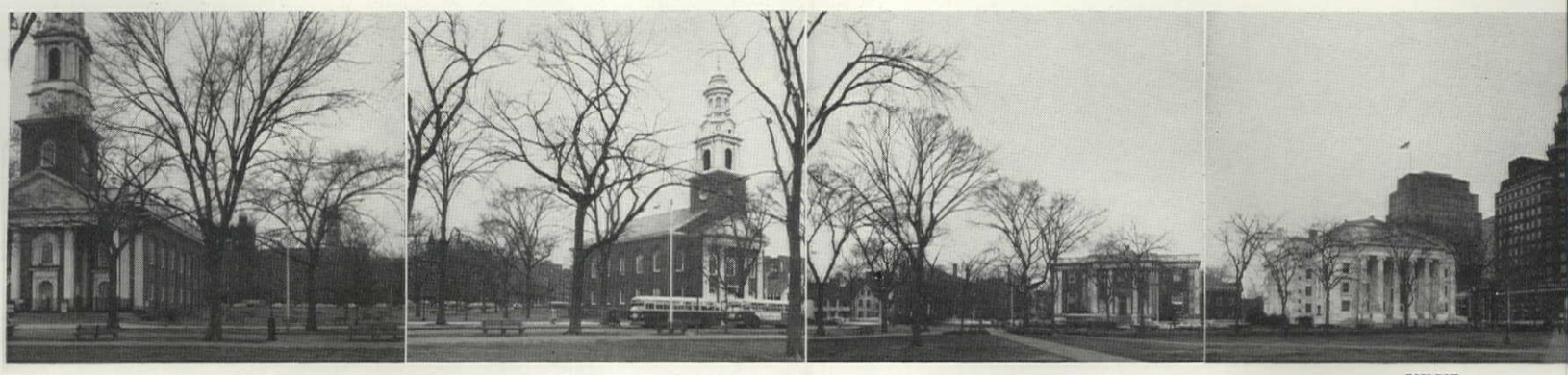
Rotival saw New Haven as a city with strong historical and cultural ties, an established reputation as a trade center, and an excellent location—in short, one with many attributes that could make it a thriving regional service complex, provided its transportation was overhauled. "Fresh, healthy arteries," Rotival believes, "encourage all kinds of tissue to grow around them." This was the overriding theme of his 1941 blueprint. Focused on a reuniting of the Green and the city's once-famed harbor — the two had long been separated by the tracks of the New Haven Railroad — the plan called for a new highway into the center of the city, which would connect with a bypass parkway. The parkway would be constructed on reclaimed land alongside the harbor, and the idea in Rotival's mind was to emphasize with these roads the significance of the harbor which he felt was the city's most important natural asset. Rotival's route for a bypass is now the path of the new Connecticut Turnpike, and the proposed connector to the center has led to the renewal of the city's worst slum area which had spread to the very edge of Yale University.



Church Street project (shaded buildings) will span Oak Street highway, and will link the Green with the railroad (upper left). Estimated cost: $85 million.

An unkind cut

When the state in 1953 announced plans for a New Haven interchange highway link with the new turnpike that would have wiped out the city's Wooster Square area east of downtown and cut a swathe through this thickly Italian and politically potent neighborhood, New Haven did more than protest. It offered a better alternative. In line with the Rotival over-all concept, the City Plan Com-



DON ROY

Panoramic photo of the Green shows its four sides. The Green was result of plan drawn in 1638 and has been city's pivot point.

mission proposed that the state shift the interchange farther to the east and build a six-lane connector road which would link the turnpike to the downtown center as well as to other highways. The depressed connector would run through a dense slum along Oak Street on a line 1,500 feet south of the city's main business district. The state highway department agreed the connector made good sense, but it questioned who should pay for it. The next year Mayor Lee, who had campaigned and won the mayoralty on a program of redevelopment, persuaded the state to foot the bill for the construction, and the connector, which will cost close to $15 million, is now under way.

The start of the Oak Street Connector gave Mayor Lee, now in his third term, the opening wedge for his renewal program. An ambitious 42-year-old ex-newspaperman, Lee, a Democrat, climbed into the mayoralty from a job as publicity director at Yale; unquestionably, he has been the main spark behind the city's resurgence. One of his first moves was to get Rotival, whose offices are in Woodstock, Connecticut, as well as New York, Paris, and Caracas, to set up a permanent staff in New Haven to work along with the redevelopers, the traffic engineers, and the director of the City Plan Commission, Norris Andrews. Lee also brought in, as redevelopment director, H. Ralph Taylor, who had headed the Somerville (Mass.) redevelopment program, and as personal deputy and redevelopment administrator, Edward Logue, a lawyer who had been associated with Chester Bowles. Beyond this, he created in 1954 a Citizens Action Commission, made up today of 600 city-and-area businessmen, professionals, labor leaders, educators, and housewives, with the express purpose of winning public support for renewal.

Mainly because of the Oak Street Connector, New Haven's first redevelopment effort in 1955 was a crash program for Oak Street, a spot which had been certified for redevelopment as far back as 1951. There were frustrating delays, but by last year a tract of 42 acres adjoining the highway had been cleared of decaying tenements and stores, 515 families relocated, and work begun on the rebuilding. (All told, the federal government has put about $7.5 million in Title I loan and grant funds into Oak Street, while New Haven's contribution has been about $1.3 million.) The Southern New England Telephone Co., whose president, Lucius S. Rowe, is now also chairman of the Citizens Action Commission, bought 5 acres of the cleared land for a $12 million office building, now going up, and parking space for 400 cars. On an adjacent 10-acre site, Builder Seon Pierre Bonan hopes to start construction this summer on a $10 million project comprising three high-rise apartments with more than 750 units, about 75 professional suites, a penthouse club, a nursery school, play areas, and parking for over 800 cars.

Lose one, win one

The Oak Street project is one of the big reasons why real estate man Roger Stevens is involved in downtown New Haven today. Stevens had hoped to buy the Oak Street apartment site jointly with Yale University. (Yale wanted to provide housing for about 200 faculty families in one of the three towers.) But a charge of "giveaway" to Yale was raised, and partly because of it, Lee decided to hold an auction for the site. Yale-Stevens offered $1,140,000, but the bid was not enough; Bonan took the 10-acre tract for University Towers, Inc., for $1,150,000.

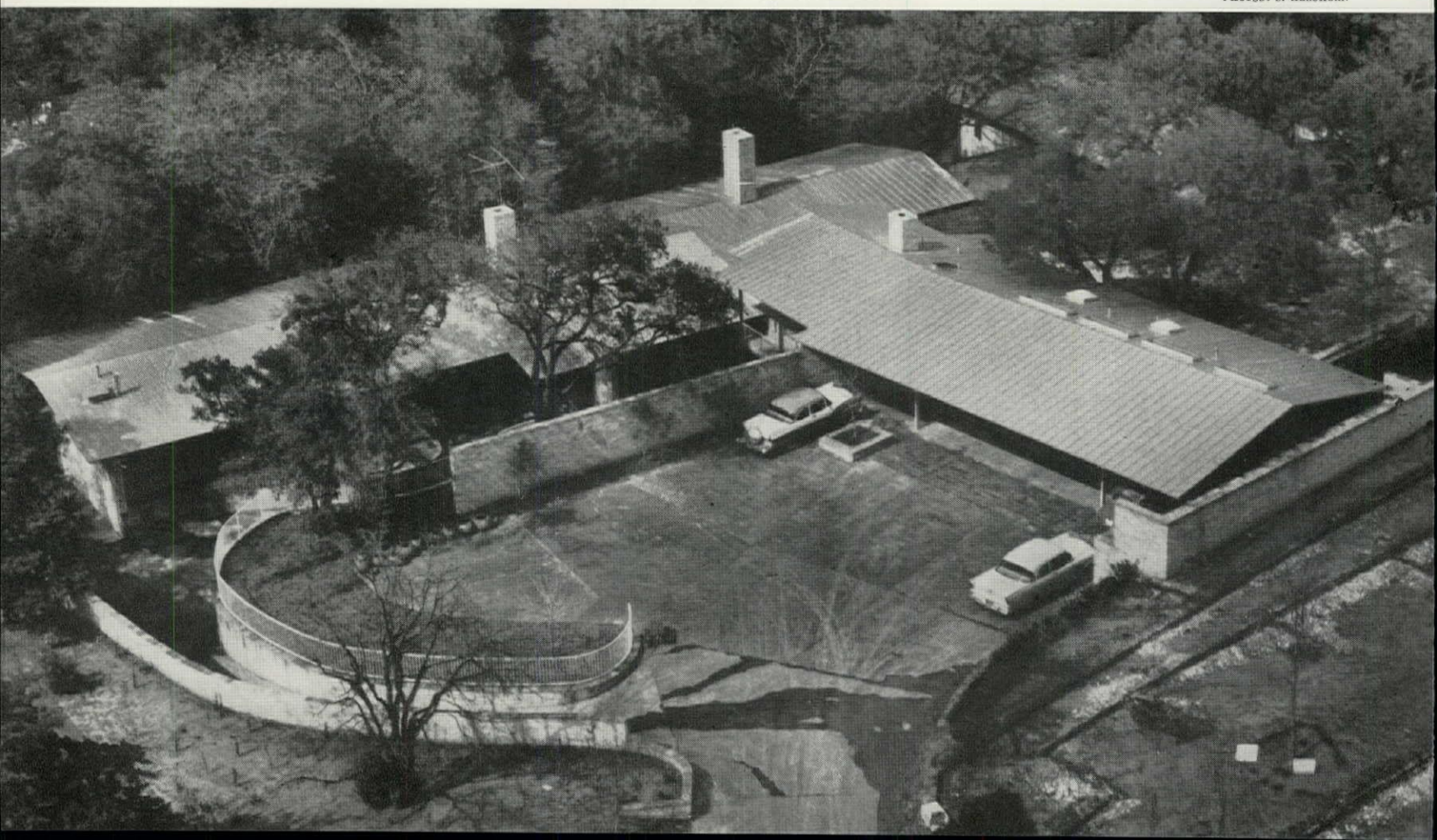
Losing out on the Oak Street bidding only fired Stevens' interest in the city. A strategist in Democratic politics as well as in real estate, Stevens, who is chairman of the Democratic national finance committee, has found New Haven's political climate to his liking, and the city's clean administration and good transportation have been definite attractions. Thus, after Oak Street, Stevens turned to the area that had caught his attention several years before, the downtown center.

Last autumn Stevens offered to redevelop 12 blocks south of the Green (earlier, he had taken a lease on a vacant store site to keep the property off the market). Lee felt this 12-block tract was too big for digestible redevelopment. Ultimately, they agreed on the present site, fronting on the Green. Although this tract covers only a small part of the present business district, the new commercial center is laid out in such a way as to give the surrounding activities an incentive to spruce up or rebuild. Lee's deputy, Edward Logue, walking past a neat line-up of bricked store fronts on a narrow

continued on page 152

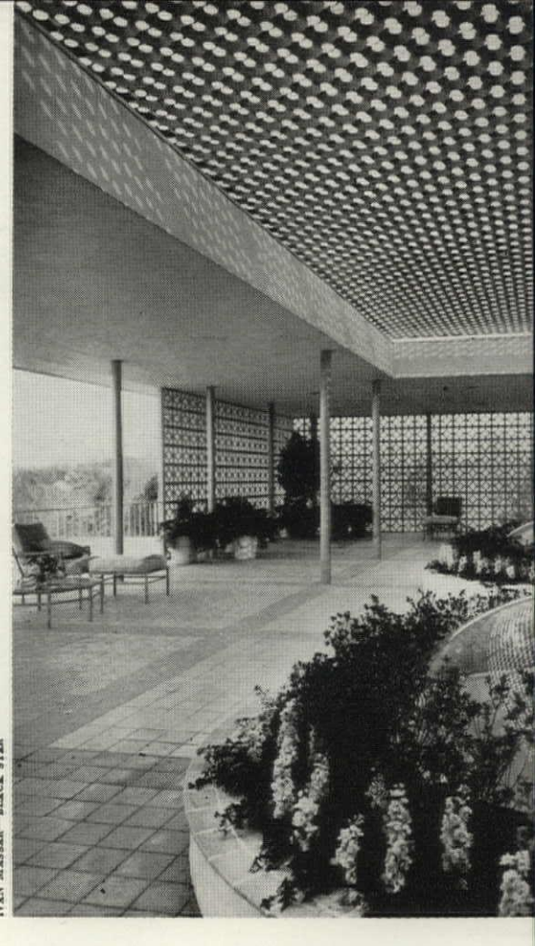
Contrast between the Grafs' "Pompeian villa" (above) and the Haggerty's "hacienda" (below) shows clearly from the air. The classic Graf house and the sprawling Haggerty house both appear to be smaller than they really are—but for different reasons. The white-wrapped rectangular form of the Graf house offers few built-in clues to its size. Only a comparison with the large neighboring house (top, photo above) suggests its mammoth scale (80 by 100 feet on the ground). The Haggerty house does not seem big because it is planned like a cluster of pitched-roof "cottages" lightly linked and tucked into the wooded terrain. One whole wing, containing the master bedroom and library, and swimming pool terrace, can barely be discerned under the heavy foliage (top right corner of photo below).

PHOTOS: S. HERSHORN



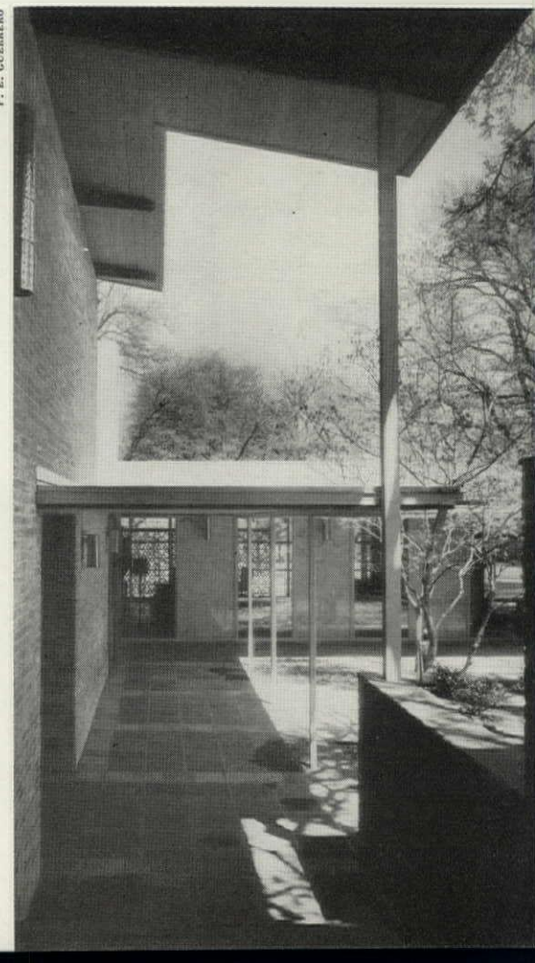
These two new Dallas houses are both "modern" —yet as different as marble is from mud-brick.

Contrast in Texas



IVAN MASSER—BLACK STAR

Outdoor courts are important adjuncts of each house. In the Graf house (above) they are elegant outdoor rooms, walled-in or screened from viewing-in. At the Haggerty house (below) the courts are tucked into corners or recesses formed by the "cottage" wings. Sheltering overhangs form passages and walkways connecting various outdoor spaces.



P. E. GUERRERO

Among the things that the two houses at left have in common is that they are both big, located in Dallas—and expensive, even by Texas standards. Architect Edward D. Stone's 15,000 square foot house for Mr. and Mrs. Bruno Graf (she is the widow of millionaire Oilman John W. Herbert) cost more than $500,000, and Architect O'Neil Ford's 9,000 square foot house for Mr. and Mrs. Patrick Haggerty (he is president of Texas Instruments) cost more than $250,000.

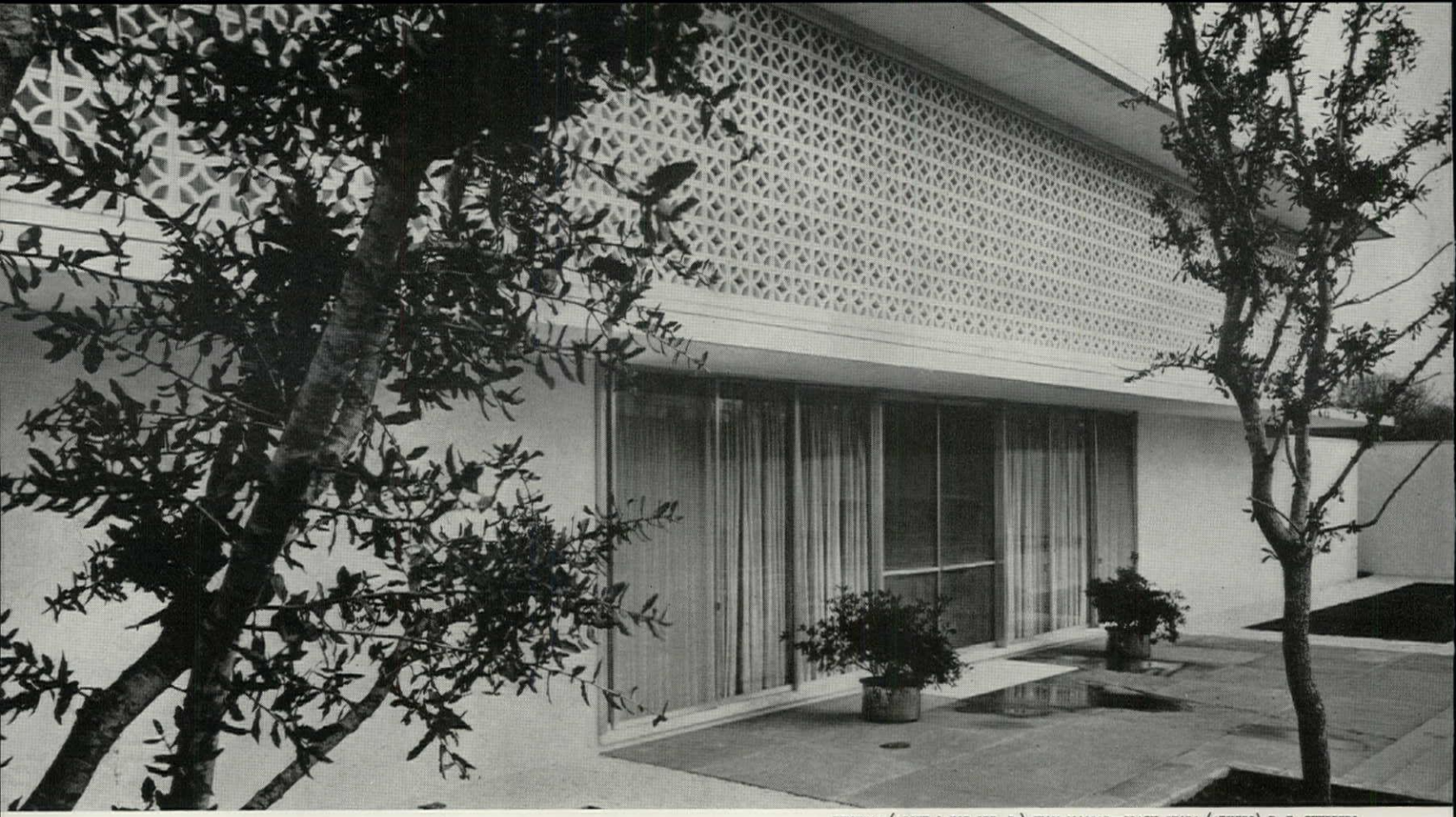
Actually, the two have other things in common. Both houses are finely detailed and carefully crafted; both provide ample room for Texas-size entertaining; and, of course, both houses have swimming pools. (The Graf's swimming pool happens to be inside, the focal point of a huge, screen-divided living area.)

But in living terms—and particularly "party" terms—the houses are obviously very different. The Graf house is styled for white-tie and breast-of-guinea-hen affairs, while the Haggerty house provides a good setting for tweed-jacket and barbecued-spare-rib parties.

The contrast between the two houses also reflects the difference between the families for whom the houses were built. The Grafs (whose children are married) only live in Dallas during the winter social season—when the weather outside is not conducive to swimming. Mrs. Graf collects rare books and Mr. Graf is an accomplished pianist. They wanted a house that would be easy to operate with servants, yet habitable without them. So Architect Stone provided them with their own apartment on the second floor (reached by an elevator), complete with separate dressing rooms, a bed-sitting room, and a small pantry.

The Haggertys, on the other hand, have an active family of three girls and two boys. Architect Ford therefore equipped the stretched-out house with a separate children's wing at one end, a master suite at the other. In between, as neutral ground, are a recreation room and a more formal living-dining area.

The difference between the houses is more than a matter of room arrangements or even of "style." Terms such as "Pompeian" and "Mexican," however tempting, do not adequately describe the difference in the way of life each house allows. A comparison of these houses more aptly demonstrates the richness, diversity, and freedom of choice available in the "style" called "modern."

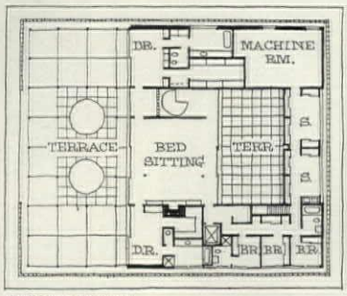


PHOTOS: (ABOVE & TOP OPP. P.) IVAN MASSAR—BLACK STAR; (OTHERS) P. E. GUERRERO

ARCHITECT: *Edward D. Stone*
INTERIOR DECORATOR: *T. H. Robsjohn-Gibbings*
LANDSCAPE ARCHITECT: *Thomas Church*
GENERAL CONTRACTOR: *Chester R. Ingram*

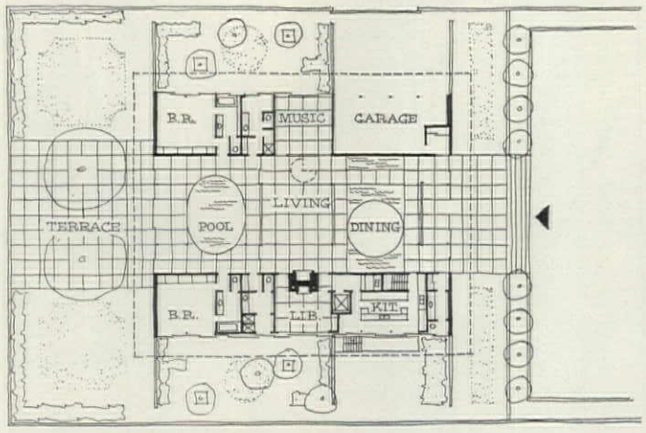
ARCHITECT: *O'Neil Ford & Associates*
LANDSCAPE ARCHITECTS: *Arthur & Marie Berger*
GENERAL CONTRACTOR: *Erle P. Grossman & Co.*

Entrances to the houses express their character. The front door of the Graf house (above) seems to invite an approach in formal attire for a reception at the opening of the opera season, for example. The front door opens directly from the walled-in parking court to the living area of the house. Family privacy is obtained further on, at the elevator to the second-floor family apartment (plan right). The front door of the Haggerty house is gained only after following a circuitous route from the parking court, through a passageway, down a flight of stairs, and along a covered walk (seen in rear of photo below). Thus, a kind of decompression sequence gradually introduces the visitor to a casual and informal family life. The flight of steps in the foreground leads to the swimming pool.



SECOND FLOOR

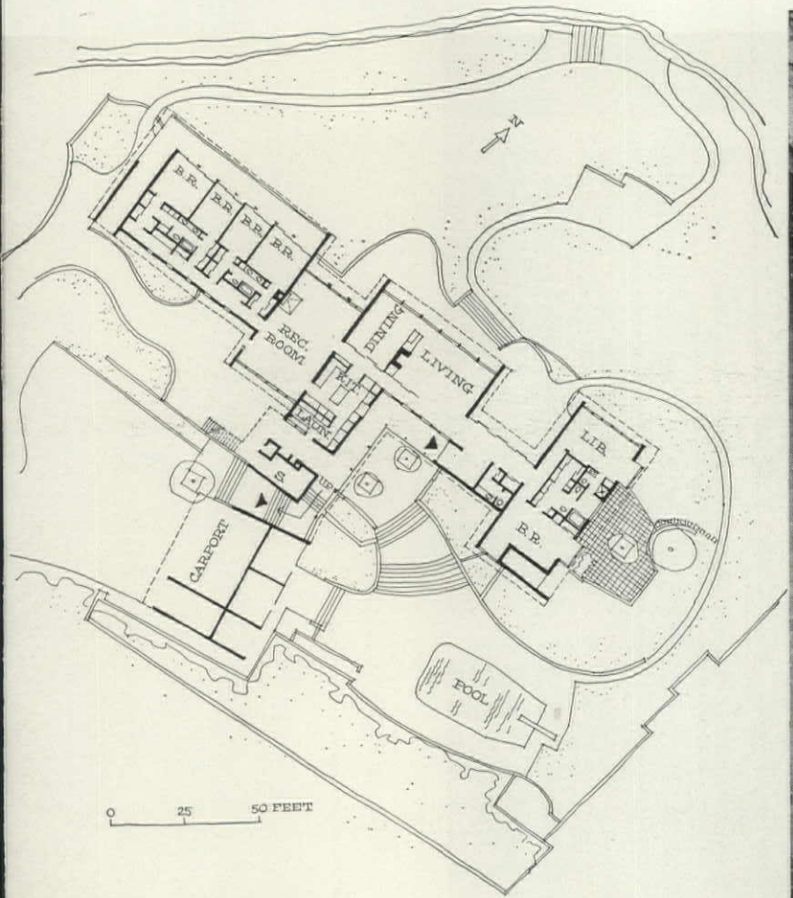
0 25 50 FEET



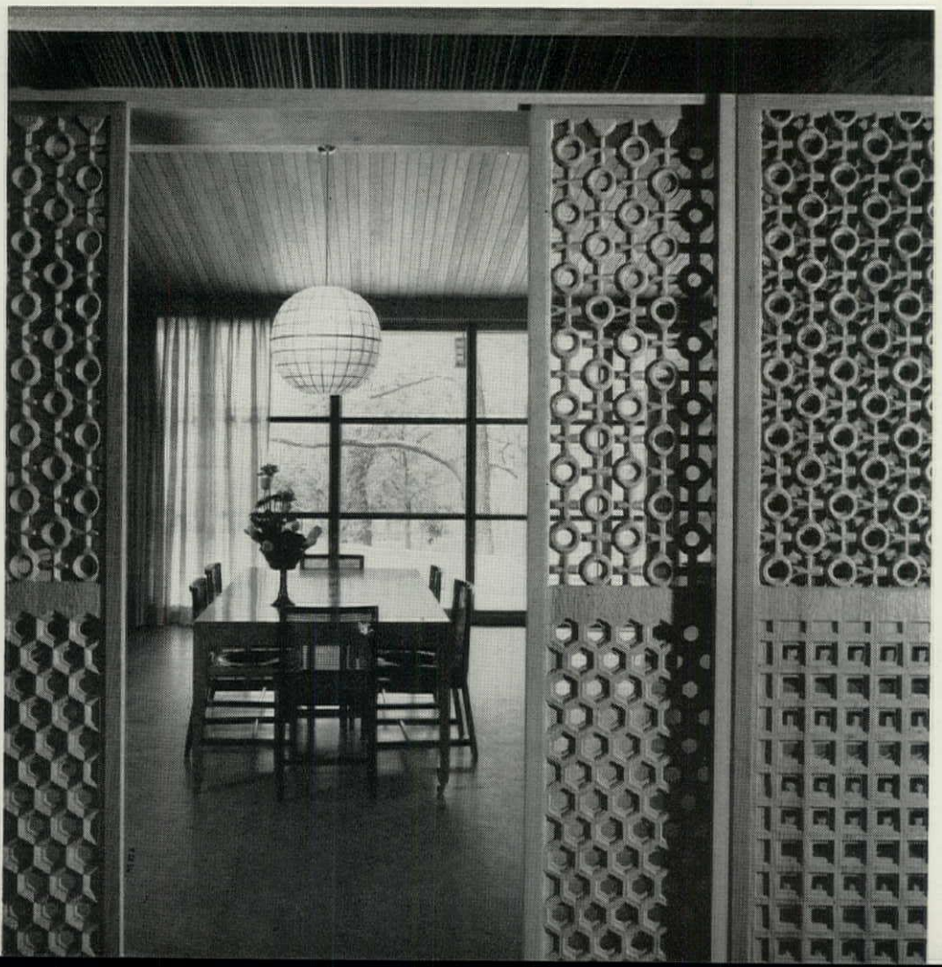
FIRST FLOOR

Floor plans of the two houses (Graf house, above, Haggerty house, below) point up the basic difference in their planning. The Graf house is organized tightly around a great central room, which is only lightly divided into a sequence of spaces by wood screens. The Haggerty house does not have a strong central element. The living-dining room "cottage" is simply one of several living units.

Terraces open off the living area in each house. In the Graf house (above), the terrace is a rectangular parterre of lawn and paving enclosed by a wall. Formal, clipped trees in tubs, and flat panels of grass continue the formality of the interior outside. At the Haggerty house (below) the terrace joins the garden at a sinuously curved retaining wall. Thick-branching trees overhang the terrace.



Dining areas are located behind carved wood screens in both houses. In the Graf house (above) the table is isolated on a marble-paved island in the center of a shallow pool. The entrance gallery is behind a screen (right side of photo above). In the background is a bridge connecting the gallery to the living room, music room, and library—each behind screens separating them from one another. In the Haggerty house (below) screens separate the dining room from a passage to the children's wing. The screens themselves offer a clue to the contrasting character of the two houses. Decorator Robsjohn Gibbings' design for the Graf house screens is arabesque, while Sculptor Lynn Ford's Haggerty house screens are Spanish mission in character. Ford's screens vary in detail from panel to panel.



Living room of each house is primarily an entertainment center, with private family living allocated to other rooms. In the Graf house (above) the most dramatic feature of the living area is the oval-shaped 25 foot long indoor swimming pool. From the pool area, doors (rear) open into dressing rooms and guest rooms, which are adjoined by an outdoor, walled court. In the Haggerty house (below) the living room is at the center of the house. Behind the alternating panels of onyx and glass (rear) the entrance court and the heavy carved-wood entrance doors can be seen. The warm light diffused by the onyx panels, the wood-striped ceiling, and the mud-colored Mexican brick walls of the Haggerty living room offer a vivid contrast to the elegant gold-hued, marble-floored interior of the Graf house.

END

PHOTOS: (BELOW & BOT. OFF. P.) P. E. GUERRERO; (OTHERS) IVAN MASSAR—BLACK STAR

Those chaotic building codes

BY WILLIAM B. TABLER, AIA

A snarl of inconsistent and irrational building rules is keeping U.S. construction from attaining peak efficiency. Needed: an AIA-led campaign for modern, uniform standards.

If ever a problem begged for action by the American Institute of Architects, it is the chaotic state of building codes and building regulations in most U.S. cities today. Practically every city in America has its own code governing building design and materials, and the codes vary enormously — and unpredictably — from city to city. To compound the confusion, labor unions have working rules, rigidly enforced, which are frequently irrational, and nearly always frustrating to builders and architects.

Now, rules in themselves are not bad. Public health and safety obviously require that some curbs be imposed on builders. But we have created such an unholy mess of regulations, and have mixed so much antiquated nonsense in with the good, that our building efficiency has been seriously impaired. Unless we can make our building rules more uniform—and uniformly sensible—American construction is never going to realize its full potential. I am convinced that in many parts of the U.S., construction costs as much as one-third more than it should, mainly because our building codes are antiquated and anachronistic.

Consider these peculiarities in union regulations and big-city codes that I have encountered in designing hotels:

▸ The preferred location for a hotel ballroom is usually on the second floor. But in Hartford, Connecticut, the exit requirements of the building code make the roof about the only feasible place for the ballroom. In Dallas the ballroom cannot be placed above the sixth floor; in San Francisco it must go on the ground floor; and in New York City it is almost impossible to put it anywhere but underground. (New York's ballroom rule is somewhat academic, for under the present building codes and zoning laws you simply could not build a profitable convention hotel in New York, and not one has gone up in the last 26 years.)

▸ Plumbing regulations across the country are really weird. New York is still in the "brass age." You cannot use copper pipe with ordinary soldered fittings for water piping in New York City. You can use iron pipe, for iron was the age before brass. As for plastic pipe, in most cities the word has not even entered the building lexicon yet.

▸ Or consider drum traps for bathtubs—i.e., the oversize catch basins used in place of the more common "P" trap. In Boston, New York, Washington, D.C., and Los Angeles they are prohibited. But in Dallas, Denver, and hundreds of other cities, drum traps are still *required*, or have been until recently. Added cost of drum traps to the house owner: about $50 per bathroom.

▸ The Pittsburgh plumbing code requires about 400 per cent more vent piping in bathrooms than is specified by the National Plumbing Code. You can see that they like plenty of iron in Pittsburgh.

▸ Incidentally, although I design hotels I often have a tough time getting a hotel room at the desk. But thanks to the old-fashioned, easily punctured lead-bends that some plumbing codes require be put on toilet bowls, I always manage to get a room. What I do is go around to the back of the front desk to find out what rooms are out of service because the lead-bends are leaking. The toilet bowl may be sitting in the bathtub, but I can brush my teeth and have a bed for the night. This room reservation system has not failed me once in 12 years. Throw away your hotel guide and use a plumbing code.

▸ Doorway and room-size requirements are wonderfully inconsistent,

---

Architect William B. Tabler, who heads his own firm, has designed many hotels, principally for the Hilton chain. The theme of this article will be the basis of his speech on July 8 to the AIA convention in Cleveland.

too. My wife is from Massachusetts, and I tease her about the fact that people must be pretty broad-hipped up there. Exit units on buildings in Massachusetts have to be 24 inches wide if the buildings have public assembly rooms. This compares with a mere 20 inches in Pittsburgh. On the other hand, you could also argue that people must be thin in Massachusetts for they require only 6 square feet of assembly room space under the Massachusetts code as against the 15 square feet per person required in Jacksonville, Florida.

▸ Surprisingly, in Texas, where men are supposed to grow so tall, ceilings need to be only 8 feet high with portions dropped to 7 feet; in Puerto Rico, by contrast, the minimum ceiling height is 9 feet.

▸ The Massachusetts Department of Public Safety required that we provide 136 feet of swing-door egress from the lobby-area public rooms of the Boston Statler Hilton, which had a maximum occupancy of 2,863. By comparison, the Empire State Building, with 22,000 tenants, has a swing-door egress of only about 31 feet.

▸ Stairway requirements are also peculiar. Because of hotel fires, codes generally prohibit transoms into bedrooms on the theory that a fire in the corridors gets air and oxygen through the transoms. Yet today in fire-tower stairs, which are reached only by opening a door to the outside, air and oxygen are poured onto the fire each time the door is opened. Further, some cities which require fire-tower stairs in new construction still allow open interior stairs to exist, though these inside stairs are obviously fire avenues. Perhaps most of New England is right, for there you can have a rope at the window to shinny down. Why worry about stairways?

Obviously, satisfying all these peculiar code requirements takes a tremendous toll of time and efficiency. Let me cite just one example. The plans of the Statler Center in Los Angeles had to conform to 21 different city, county, and state codes, and more than 200 appeals for modification had to be made. And Los Angeles and California are, relatively speaking, progressive. Try to build a hotel—or any other big building—in cities or states where there are no appeal provisions.

Union-made snarl

For sheer irrationality and induced inefficiency, of course, the rules of many construction trade unions are even worse than the provisions embedded in our building codes. It is virtually impossible to install sheet metal in New York, for example, unless it was fabricated by New York sheet metal workers. It is likewise taboo to install electrical fixtures that were not wired by New York electrical workers.

For buildings in Pittsburgh, manufacturers of electrical equipment, such as fans, have to remove the equipment's motors at the factory, ship them separately to Pittsburgh where they are reinstalled by the electrical workers, and then realigned by the mechanical workers.

The jurisdictional labor situation, I am told, is improving, but if so, it must be improving awfully slowly. In Dallas, when we were building the Statler Hilton in the summer of 1955, the plasterers claimed that they should do the painters' spackling on the ceiling slabs. After the plasterers walked off the job a couple of times, the National Joint Board for Settlement of Jurisdictional Disputes in Washington was notified. The National Joint Board notified John E. Rooney, president of the Plasterers Union in Cleveland to order the men back to work. Instead, we got word that they had "gone fishing." Those Texas plasterers must certainly like to fish, for they fished, off and on, for about six weeks until Mr. Rooney just happened to stop off at the Dallas Airport between flights.

Working tools are another source of jurisdictional trouble. I learned that if you attach a handle to a blade in the same direction as the blade you have a trowel and you are a plasterer. If you attach the same handle at right angles to the blade you have a broad knife and you are a painter. Now a trowel happens to be a more efficient tool for spackling, but the painters cannot use it. Far worse, in New York we cannot spray paint or roll it on without special permission from the union. But do not laugh. In New York we can at least use a brush 5 inches wide. In many cities you can use only a 4-inch brush.

All these restrictions cannot help but affect costs, and they do. The electrical subcontract bid on our Pittsburgh Hilton Hotel last year, with 815 rooms, no boiler or refrigeration plant, and with no laundry to connect, was twice as high as the electrical bid on our Dallas hotel in 1953. And the Dallas job had 1,000 rooms, a complete boiler and refrigeration plant, and a laundry. There had been some inflation in the interim, to be sure, but prices had not risen that much.

Progress denied

The point that emerges is this: American building, with all the technical developments and mass production methods supposedly at its command, actually can use only a small portion of the available technology. Why? Because of the provincialism and isolationism of local interests. In Pittsburgh when I tried to quote a nationally recommended code on ventilation recently I was advised, in effect, that "you are in Pittsburgh now." Contrast this featherbedding and restrictionism with our experience in countries abroad where we are building five hotels. In every case the foreign governments wanted to capitalize

continued on page 157

New drama: Sears' Tampa store, by Architects Weed, Russell, Johnson

Sears, Roebuck's new look

Old look: Chicago plant, site of first store in 1925

FRAN BYRNE—FORTUNE

Sears President Charles H. Kellstadt was vice president in charge of southern territory until he moved to Chicago headquarters (left) last May.

ROCCO MORABITO, "JACKSONVILLE JOURNAL"

Top construction man in Sears' bustling southern region, where 62 new stores have been built since 1946, is Property Manager Emory Williams.

ALEXANDRE GEORGES

The biggest mail-order house in the U.S. has adopted some startlingly young and fresh standards of design. Here is a handsome catalogue of new Sears stores down South. BY OGDEN TANNER

Last year, Sears, Roebuck & Co., the world's largest purveyor of general merchandise, spent some $50 million sprucing up its retail system with 27 new stores across the U.S. This year Sears is building 28 more, which will bring its total number of U.S. stores to 735. The most interesting aspect of Sears building program, however, is not its sheer quantity, but the freshness and variety of architecture it continues to produce. Virtually no new Sears outlet has a "chain store" look, and a good many of the buildings reflect outstanding concepts of design.

Nowhere is the high quality of Sears architecture more evident than in the 11-state southern region, one of the company's five semi-autonomous territories in the U.S. (see map, page 93). At regional headquarters in Atlanta, a 40-man planning and construction department lays the groundwork for a continuing array of new stores. In the South alone Sears has built since 1946, or has under construction, 62 new stores and 15 major additions —a $118 million program. Significantly, 52 of these projects were handled by local, independent architects working with Sears' own staff under Territorial Vice President Charles H. Kellstadt (who last May moved to Chicago as Sears' new president).

Directly responsible for the southern building program are Property Manager Emory Williams, Staff Architect F. E. Davidson, Store Planning Chief Merrill Long. These men analyze the market potential for a new store, tot up space requirements, and explore the possibilities of a new site. Locations generally are picked to serve a market area with a radius of 35 to 40 miles, and are pinpointed near the area's center of population, or in the path of its expected growth. A major requirement is that the store be accessible from all parts of the area over good arterial highways, and that it have plenty of space for parking, a necessity Sears foresaw back in the twenties, when it helped start the move to the suburbs. Parking is figured on a basis of 4 to 5 square feet of car space per square foot of

ALLIED PHOTOGRAPHIC ILLUSTRATORS

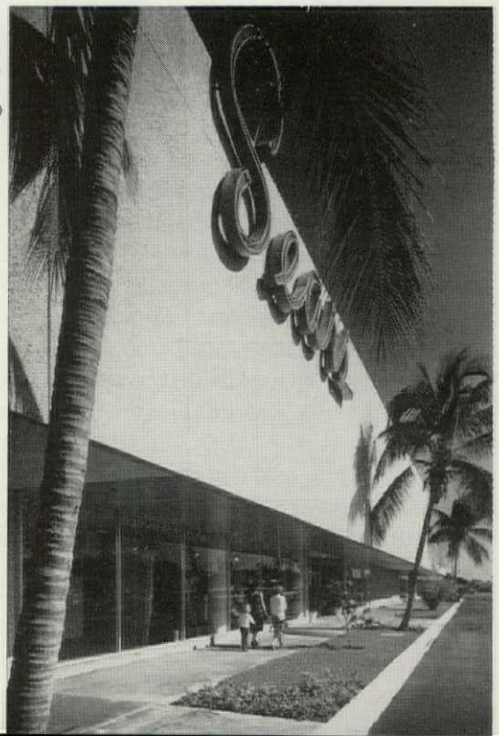
MEMPHIS, TENNESSEE. ARCHITECTS: A. L. AYDELOTT & ASSOCIATES.

PINE BLUFF, ARKANSAS. ARCHITECTS: A. L. AYDELOTT & ASSOCIATES.

FRANK LOTZ MILLER

NEW ORLEANS, LOUISIANA. ARCHITECTS: WEED, RUSSELL, JOHNSON ASSOCIATES.

CORAL GABLES, FLORIDA. ARCHITECTS: WEED, RUSSELL, JOHNSON ASSOCIATES.



© EZRA STOLLER

sales area, and almost all of the parking space is located out front. Generally a service station selling Sears auto supplies is placed near the road, and the store's inventory storage area is given separate access in the rear of the main store. A garden center is sometimes attached to one side.

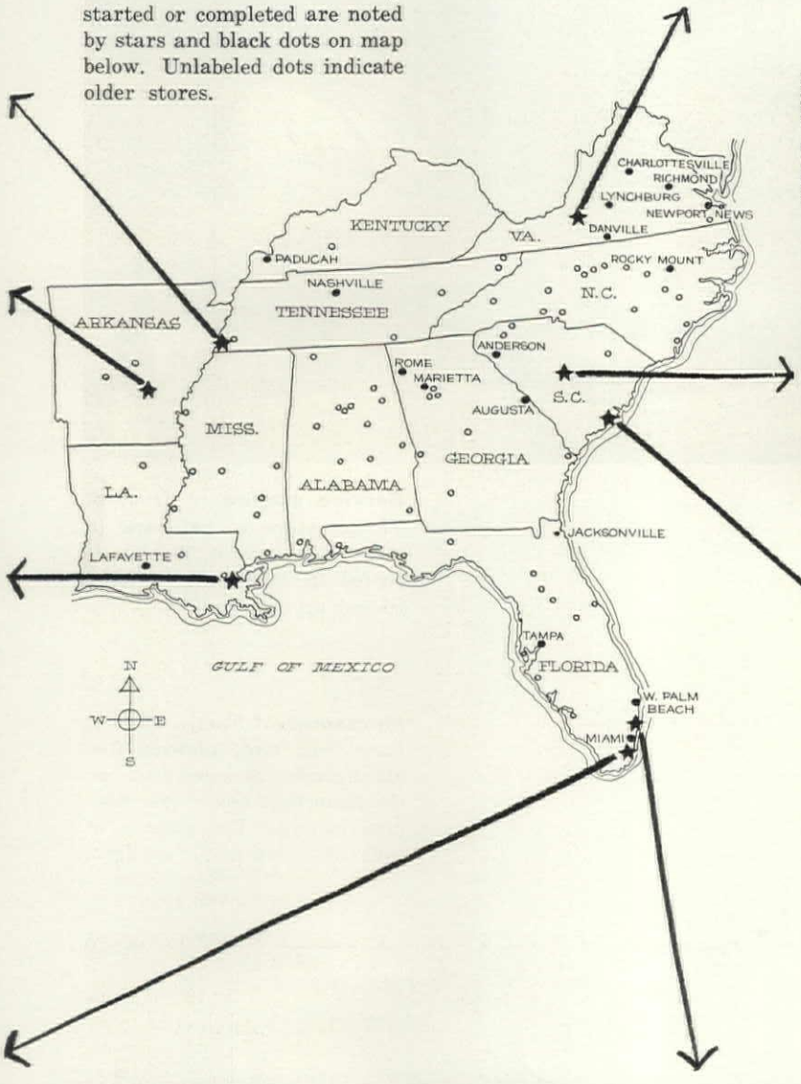
Shrewd layout is credited with giving Sears twice as much sales volume per square foot of space as most general merchandisers. Goods are carefully consolidated on special 4-foot modular display tables. Just how many tables and linear feet of wall display for a particular department in a particular market area is figured from a "Draftsman's Bible," a loose-leaf index published by the parent planning department in Chicago and updated periodically from the experience of all Sears' U.S. stores. "Big ticket" items such as major appliances are prominently displayed up front and are usually visible through a corner store window. Other departments are related in logical sequence, so that when a customer comes in to buy a work shirt, for example, he is exposed to men's suits on one side and hardware on the other (see plan, page 94). Aids to shopping include clear markings for entrances outside and departments inside, 16-foot ceilings and 80 foot-candles of electric light.

Where standardization stops

When it comes to appearance, however, Sears wisely drops the standardization that helps it in merchandising. Once a layout has been drawn up by the Atlanta planning and display department, it is sent to an independent local architect, who is encouraged not only to put the design into three dimensions and details, but to adapt it to local site, climate, and materials, modify the layout, or suggest a new concept. On the big Tampa job, for example, Architects Weed, Russell, Johnson proposed a greatly simplified plan made possible by a unique

New Sears stores in the South display a handsome variety of modern fronts in everything from textured cast stone to mosaic. Cities where new stores have been recently started or completed are noted by stars and black dots on map below. Unlabeled dots indicate older stores.

ROANOKE, VIRGINIA. ARCHITECTS: STEVENS & WILKINSON.



JOSEPH W. MOLITOR

COLUMBIA, SOUTH CAROLINA. ARCHITECTS: STEVENS & WILKINSON.

CHARLESTON, SOUTH CAROLINA.
ARCHITECTS: ARMISTEAD & SAGGUS.

© EZRA STOLLER

FORT LAUDERDALE, FLORIDA. ARCHITECTS: WEED, RUSSELL, JOHNSON ASSOCIATES.

folded-plate roof. Adopted almost in its entirety, this design turned out to be one of the most exciting in Sears' whole new southern catalogue (see photos and plan at right).

To encourage similar initiative throughout the rest of the building process, Sears' Atlanta office pays building contractors a guaranteed price plus fixed fee (established by competitive bidding), with a "save-and-share" provision which gives 25 per cent of any cost saving to the contractor.

In fitting individual stores to individual communities, a point the Atlanta office continually stresses, Sears occasionally runs into special situations. In Charleston, South Carolina, for example, the company catered to local pride and donned unaccustomed Colonial garb for a new store on an old downtown street. (This concession, one Sears executive estimates, cost the company $100,000 more than would have the same store in modern design.) More significant departures from Sears' suburban pattern have occurred at Newport News, Virginia, and Jacksonville, Florida, where the company is now building modern stores close to the center of the city, as part of big local urban renewal programs that make large downtown parking areas available.

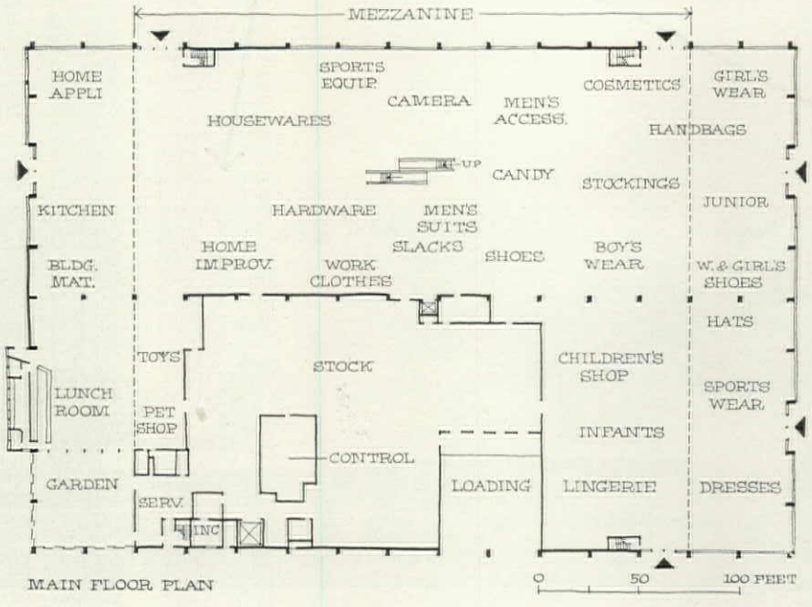
In their experiments with new layouts, new designs, and new materials, Sears' southern store builders are setting a high standard for the retail industry. Some Sears people fear that such innovations as the big abstract sculpture pool for the new Memphis store (see photo, page 92) may create a "high price" look that will frighten bargain-hunters away. But most Sears executives are confident that the adoption of such architectural refinements, even at the popular level, is only a question of time. As one put it: "We have learned that good architecture will pay off any time. You can't ring it up as a separate item on the cash register, but there's no doubt in the world it's there."

END

Shell roof of Tampa store has W-shaped sections spanning 125 feet from front and back to a central row of columns. Engineers: Norman J. Dignum; Ammann & Whitney.

Service station in front of Tampa store is hallmark of larger Sears stores. This one is roofed in shell-concrete folds, turned up at edges.

Mezzanine of Tampa store is hung from roof, allowing free arrangement of sales areas on the main floor below (see floor plan below). Tile screens at ends filter low-angle sunlight.



PHOTOS: ALEXANDRE GEORGES

Why city planning is obsolete

BY NATHAN GLAZER

The trouble with big-city planning today, says this critic, is that it is designed for nineteenth-century small towns.

Modern city planning has completely failed to plan for big cities in the twentieth century. It has failed because it has not yet broken loose from the "garden city" dream with which the planning movement began—an essentially small-town vision concerned with small-town values. What passes for city planning today is fundamentally a rejection of the big city and of all it means—its variety, its peculiarities, its richness of choice and experience—and a yearning for a bucolic society.

Solutions to the problems of the twentieth century big city are still to be found. But they will not be found unless we discard the outdated diagnoses and irrelevant solutions on which the planning movement grew, and which have been given sufficient trial to demonstrate their shortcomings. By now, there is a growing awareness of these inadequacies, on the part of some planners, but it may be helpful to explore how city planning wandered from the mark, and to suggest the kind of problems that must be faced if planning is to deal properly with big cities.

The garden city idea—which remains the strongest force in city planning even though it has taken on new guises and has been adapted to high population densities—was launched in 1899 in England by Ebenezer Howard, a court stenographer whose avocation was planning, as an effort to overcome the horrors of life in the nineteenth-century city. Howard's aim was to destroy the uniformity of the great city, to break it up into a series of small communities, places in which people could again live close to nature, in which they would be closer to their work, in which overcrowding would be reduced and anonymity replaced by small-town feeling. The image was the English country town—with the manor house and its park replaced by a community center, and with some factories hidden behind a screen of trees, to supply work.

The "garden city," from its inception, was thus suburban planning, not city planning, and the garden cities were physically placed outside the city proper. Nevertheless the garden city was conceived as an alternative to the city, and as a solution to city problems; this was, and is still, the foundation of its immense power as a planning idea.

Nathan Glazer, a lecturer in the Department of Sociology and Social Institutions at the University of California, is also an editor of Doubleday Anchor Books. He will shortly join the faculty of Bennington College.

Made in America

The man in American town planning who stands closest to Howard in the character of his work, and his influence, is Architect and Planner Clarence Stein, now 76 years of age. Like Howard, Stein has been more than a propagandist for the values of the planned community. During the 1920's and 1930's he actually built new communities expressing his ideas and values. These communities demonstrated advantages over the customary suburb. There were superblocks, which were more varied than the gridiron street pattern, and which made it possible to merge back yards into parks and playgrounds in the middle of blocks. In Radburn, N. J. (see photo, page 97), Stein's most impressive superblocks were built, separating motor traffic and pedestrian traffic.

It was obviously impossible to copy such planned garden communities *within* the dense city. This would have been much too expensive for the private philanthropic builders who were supporting the schemes of Stein and his colleagues. The power of eminent domain was also unavailable to Stein's backers. So these communities were built on the city outskirts. "This we should do," Stein wrote, "until such time as we have adequately demonstrated, by contrast, how unworkable and wasteful are the obsolete patterns of the old cities, and how completely they demand replacement."

The skyscraper town

Before the planned community could invade the great city, however, some way had to be found by which population densities might be raised far beyond those envisaged by the garden city planners. The needed idea was dramatized by the French architect, Le Corbusier, who was fascinated by the vision of residential skyscrapers in a park (see photo, page 97).

The Le Corbusier idea is in some respects diametrically opposed to the garden city idea; it is a scheme for building vertically instead of horizontally, for centralizing instead of dispersing. And yet, crucial concepts are common to both these main lines of plan-

ning: the notion of locating buildings in a park; and the corollary to this idea, the attack on the continuous row of linked buildings, lining the city street, which had been the major visual characteristic of cities throughout history. Even more fundamental was the idea, common to both approaches, that the city could be improved by replacing its chaos and confusion with a single plan, different from the urban plans of the past in that it was not conceived as a general outline of streets and major public institutions, but as a placement of every residence, every facility, every plot of green.

The fundamental kinship between the garden city and the towers in a park is demonstrated by the fact that today the most advanced planning ideas call for a mixture of the two, as in the English "New Towns" built since the war (see photo, opposite), or in such American examples as Fresh Meadows, Long Island; Mill Creek, Philadelphia; Lafayette Park in Detroit.

These ideas have influenced a vast amount of new building: low-rent housing projects, cooperative apartment projects, government-insured "garden apartment" developments, and housing tracts developed by private builders.

How far have we come?

It is true that the ideas have been applied mechanically and tastelessly; that the superblocks now very often enclose only garages; that the pedestrian paths neither bridge nor pass under the roads for vehicles; that the green has been reduced to tiny patches; that the overcrowding is so great that even these patches must be protected by fences or be trampled into dust by the too numerous children. Certainly Clarence Stein and the small band of energetic planners and reformers that worked with him would have hoped for much more.

But even if all these attempts to rebuild the city were as good as Radburn or Sunnyside, how far would we have actually come in dealing with the problems of the huge, metropolitan twentieth-century city? Certain problems of the nineteenth-century city have indeed been overcome; we have more green, more air, less dirt, fewer people living in cellars. But the startling result is that the planned developments have also in large measure destroyed the central values of the city—its value as meeting place, as mixing place, as a creator and consumer of culture at all levels. And the destruction would have been no less great if all the new interior-city developments had somehow been as good as Radburn or Sunnyside, or as refined as Le Corbusier's skyscraper schemes.

Of course the city does not exist only to create and consume culture, to supply a center for meeting and mixing. Is it not true, then, that other values have been enhanced, that the city as a place to live now satisfies more people who live in it?

Even this proposition seems questionable.

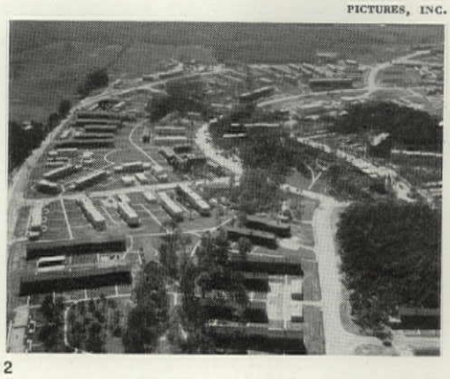
Consider, to begin with, the condition of the poor. The great experiment of the destruction of the slums has taught us something unexpected: that it is no simple matter to plan an environment for the poor that is any better than that which the slums provided. We have cleaner and better public housing apartments, but no less crime, drunkenness, or social disorder. And if there is less disease, this is because of advances in medicine which have reduced death rates dramatically, regardless of the social conditions under which the people live. There were values in the slum areas, it now appears. People lived in them even if they could afford better because they liked the neighborhoods. And when slums were destroyed, many people did not leave them willingly; they had to be forced out. The former slum-dwellers may now be secured from having prostitutes and drug pushers for neighbors—but they also no longer have poets, politicians, and businessmen for neighbors. They can now shop in supermarkets, but they can no longer enjoy the stimulus of the coffee house or bar, the grocery or bakery oriented to an ethnic group. And they no longer have the rows of stores in which they established storefront churches, radical political headquarters, or whatever else they willed. In short, it was not so easy to plan a better neighborhood than the one that had grown up chaotically, unplanned, under the impact of private profit-seeking and pleasure-seeking.

So much for the poor. What have the middle classes gained? Their apartment houses and two-family row houses have been replaced by small, fragilely built, freestanding houses on distant plots—and again consider how little would be different if they were all Radburns. The inhabitants' trip to the city has

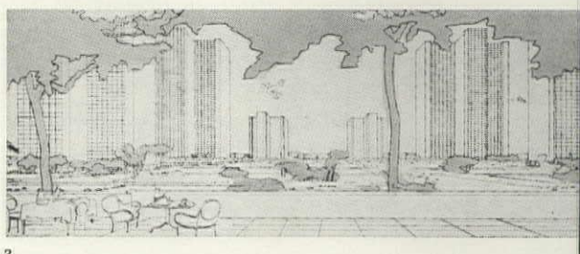
MCLAUGHLIN AERIAL SURVEYS

1

PICTURES, INC.



2



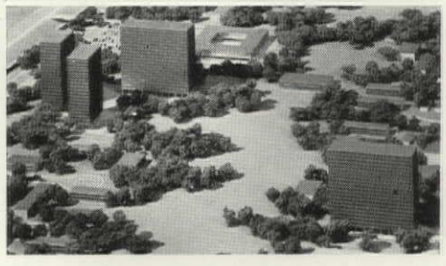
3

WAINWRIGHT

4

HEDRICH-BLESSING

5



The makings of "urban" planning

The suburban horizontal garden city, such as Radburn, N. J. (1) and Greenbelt, Md. (2), has a basic kinship with the vertical park city dramatized by the schemes of French Architect Le Corbusier (3). The two are combined in modern plans for housing, such as those for Harlow New Town, England (4) or Detroit's Lafayette Park (5) by Architect Mies van der Rohe.

been lengthened; their neighborhood narrowed and impoverished; even the amount of covered living space they have is often less than they possessed in the six-room tenement flats or in once-fashionable apartments which had filtered down to the middle class. Indeed, the most desirable living space a middle-class family can generally find today in the city is one of the old houses or apartments built long before planners had any influence, and when private profit seekers were unrestrained by government control, unaided by government subsidy, and uninfluenced by the ideas of city planners. Uncontrolled capitalism may have had less to do with the problems of our cities than we assume it did.

And finally, what has happened to the city core, the center that people visit, that eager migrants want to live in, that produces what is unique in the city, both good and bad? It has been losing the vitality that gave it its attraction; and the greater the suburbanization of the city, the weaker the city's core has grown.

In short, city living is still, for most people, as difficult as it ever was, and for many it is more difficult. If the poor have gains to set against their losses, the rich and middle-classes are worse off. Artists, intellectuals, and professors have poorer quarters, or enjoy those they have less, as city centers weaken and can no longer match their former array of pleasures and services.

This is where the great effort that began with Howard, at the end of the last century, seems to have left us. What went wrong?

No plan for the city

The main thing that went wrong was this: the planners did not plan for the city at all. They confined themselves to carefully worked out suburbs. They made the diagnosis: something is dreadfully wrong with the big city. The cure: let us build better towns.

But nothing much was wrong with the *town* to begin with. Since land values were low in towns, people could enjoy big lawns and gardens. Since towns were small, they had easy access to the country. But the main point in building Radburn—when towns as attractive as Morristown and Madison were not far off—was not to revolutionize the town. Radburn was built to influence the city core. The trouble was that in working to influence the city, the planners did not plan for cities.

How does one plan for cities, with all their variety, richness, and life, and yet retain such simple pleasures as space, light, and natural things? Or put another way: how do we plan for space and light, and simultaneously retain the city's quality of being a city?

Even to begin, we must examine the crucial factors affecting our big cities and disentangle from them the assumptions bequeathed us by the garden city planners. Among the most crucial factors are these four: size, texture, traffic, and taste.

Sprawl versus density

Size is the most overwhelming fact about the modern city, and we have failed to come to grips with it because we have continued to misconceive the problem as being mainly a question of density, of numbers of people per acre.

But size itself was, and remains, the problem—not density as such. Even if London had been successfully broken up into garden cities of 50,000 population each, what would have been gained? It would have required 200 garden cities. It would have sprawled over even a larger area than it now does, and the city—London itself—would have disappeared in the process. A city needs a center, and its center must be characterized by the highest possible density: theaters, stores, offices, organization headquarters, hotels, restaurants, residences, town houses, apartment houses, even slums (the Bohemians must live somewhere). All these must be crowded together to have a city. This richness, this crowding together of many different things, cannot be accomplished by reducing density. Had the planners really been successful in reducing population densities to 50 people per acre, or some such ideal, we would not have to save our great cities; we would have to create them!

The problem was that cities, as a result of the enormous population growth and the industrial revolution of the nineteenth century, became so large that it was no longer possible to combine great density with access to country, as the great cities of the past had done. The problem was that the cities spread far over the landscape, destroying the values of wild land, farmland, countryside. And this problem, far from being solved, is only intensified by reducing population density, for lowered densities cause the city to spread out even further.

Perhaps one answer lies in attempting models of much larger cities than have ever been planned, plans maintaining the variety, density, and richness of a city, yet limited by green belts: cities of a half-million people, rather than 50 thousand, with an urban variety of residential quarters, cultural amenities, and economic opportunities. In effect, this would be to multiply the population of the garden city by ten, and aim at the character of a city rather than that of a suburb or a town.

Whims of a multitude

The characteristic texture of the true city, its liveliness and variety, is the second great factor to be considered. This aspect of the city has not been fostered by planners. Instead, the planners saw this simply as disorder, a negative factor. The garden city planners thought it was capitalism—the unrestrained activities of private individuals, seeking private profits and private convenience—that was at the root of the nineteenth-century city's difficulties, and they reasoned that a central intelligence, unconcerned with the profit motive, would inevitably produce a better city for all. "The shape and appearance of things," wrote Stein, an imposer of order, "and the relation of the parts that make the chaotic accidents called cities, are the summation of the haphazard, independent whims of a multitude of individuals. They ultimately determine the pattern for living by filling in the cubbyholes marketed by the subdivider; and for the individual there seems to be no alternative."

The diagnosis was faulty. For the free enterprise that the early planners viewed with suspicion was not the explanation of what went wrong with the nineteenth-century city. In Athens, Florence, Venice, or Bath, private profit was also a consideration. There too "developers" sold either plots or houses. There too the "independent whims of a multitude of individuals" worked, but in a framework set upon the basis of a combination of utility and the desire for beauty in order. And indeed, were it not for the "independent whims of a multitude of individuals," there

continued on page 160

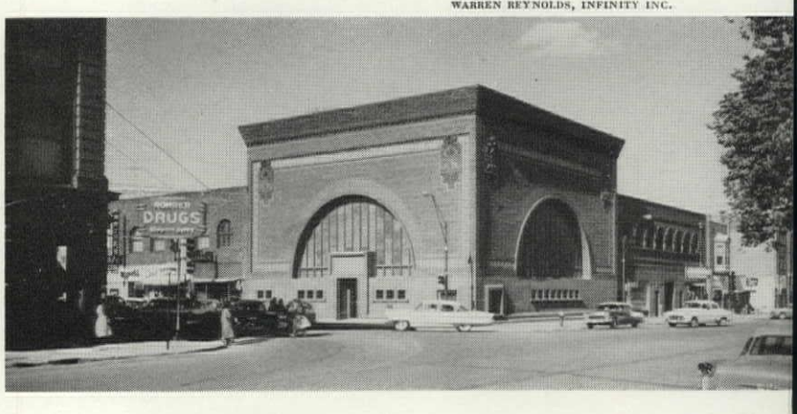
How Sullivan's Minnesota bank was remodeled and restored to its original beauty and grace.

Making a monument work

In 1908, when Louis Sullivan's first small-town bank was completed in Owatonna, Minnesota, his client, Carl Bennett, predicted that "though built for business, the structure will be as fresh and inspiring in its beauty one hundred years from now as it is today." Unfortunately, by January, 1955, when Clifford C. Sommer became president of the Security Bank and Trust Company, the freshness was gone, and the inspiration could only be sensed behind a crowded and cluttered banking room. A noble space remained, but Sullivan's careful fittings had given way to the pressures of increased business and to changes in banking practice. "The minute I saw the building," says Sommer, "I had remodeling on my mind."

But Sommer planned as a banker, and not as the custodian of a monument. When he was ready to begin, he found that his plans had become the center of a storm of protest from architects and historians. With uncommon sensitivity, Sommer listened to the objections—and agreed to call in Architect Harwell Hamilton Harris as a consultant. What Harris did for the *monument* without affecting Sommer's plans for the *bank* is shown on the following pages. For the detailed story of how Architect Harris and Banker Sommer got together, see page 156.

WARREN REYNOLDS, INFINITY INC.



The ornament (left) and the exterior were restored.

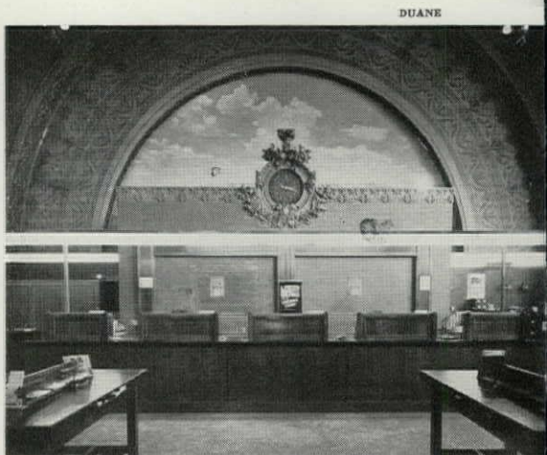
CHICAGO ARCHITECTURAL PHOTO CO.

REMODELING OF THE SECURITY BANK AND TRUST COMPANY *(formerly National Farmers Bank)*, OWATONNA, MINNESOTA. CONSULTING ARCHITECT: *Harwell Hamilton Harris.* ARCHITECTS: *A. Moorman & Company.* ENGINEERS: *Edward Gould (structural), Gausman & Moore (mechanical-electrical).* ACOUSTICAL CONSULTANTS: *Bolt, Beranek & Newman.* GENERAL CONTRACTOR: *Lysne Construction Co.*

The heavy brick wall and ornamental grillwork (photo left) which separated customers from tellers in Sullivan's day (below, left) were replaced in 1931 by nondescript wood counters, thus revealing the wall of the bank vault (below). In the new plan (right) the original vault was removed and replaced by a visitors' balcony to recall Sullivan's massing of elements and to allow the clock to remain in its original location.

1908

DUANE



1931

INSERT PHOTO: CHICAGO ARCHITECTURAL PHOTOGRAPHING CO.

PHOTOS: WARREN REYNOLDS, INFINITY INC.

1958

1958

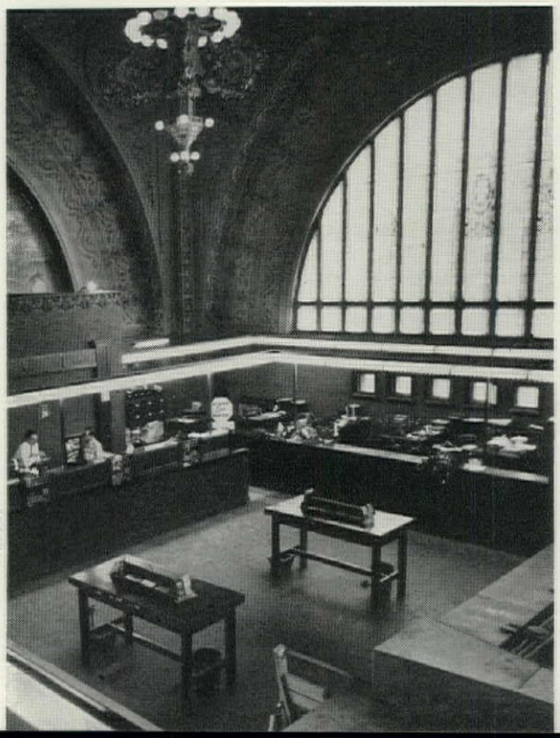
The pergolalike construction above the officers' platform was Harris' solution to a difficult lighting and acoustical problem. Quietly tied in with Sullivan's exuberant terra-cotta ornament, it preserves the unity of the big room. In the ceiling above the chandelier is an unobtrusive air-conditioning outlet, the only new note in an otherwise painstakingly restored upper space.

1958

PHOTOS (ABOVE AND RIGHT): WARREN REYNOLDS, INFINITY INC.

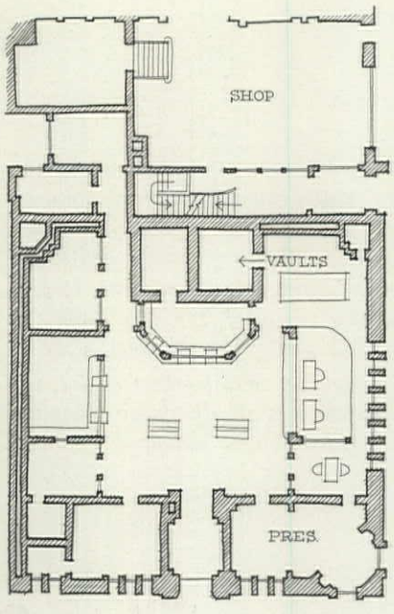
Crowded working conditions of the 1931 plan (below) were relieved by the addition of space obtained when the bank acquired the Sullivan-designed building behind the bank (plans, right).

1931

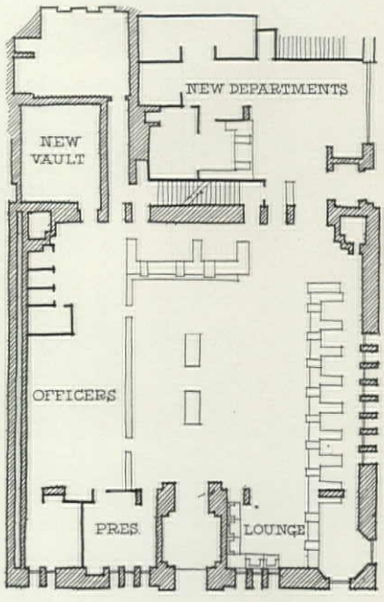


DUANE

1908

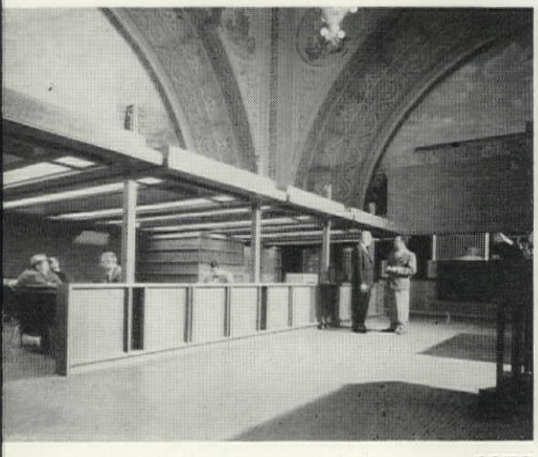


1958



From the visitors' balcony, the great arches encrusted with Sullivan's plaster ornament can be studied more closely. Canopies over the tellers' cubicles provide high light levels and machine-quieting conditions. Brass spotlights mounted on top of the canopies add a bit of ornament to the view from above. They are used to light up the gold-hued windows at night.

Outside and inside view of officers' platform (below) reveals sympathetic way in which Harris brought modern conditions to Sullivan's great, arch-walled room without destroying the rich detail which remained overhead (photo right).



1958

1958

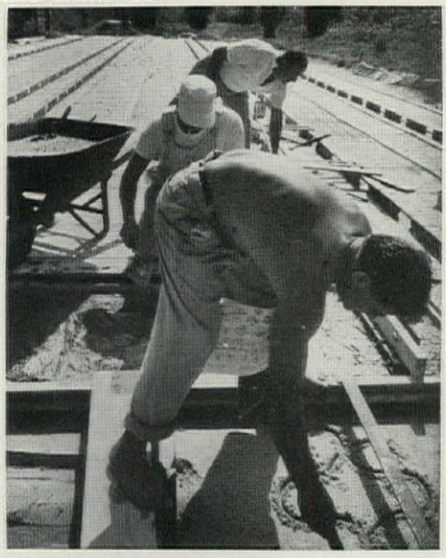
Sand sculptor Tino Nivola

The most popular sculptor of walls in the U. S. is a talented

On the Wednesday before Memorial Day week end, Costantino Nivola, the sandman of U.S. sculpture, packed his family and a case of *Beaujolais* '47 into his red Jeepster, headed out of New York for the beaches and dunes of Amagansett, Long Island. From Amagansett he turned the Jeepster up the winding road to Springs, where late dogwood was blooming and stunted pines basked in the season's first sun. Finally Nivola swung the car into the drive by his pale blue frame house, leaped out, dog-trotted around to the back yard. There, framed by an arbor bearing a particularly lush wisteria vine, was his studio: a gently mounded acre of sand: veined, shadowed, hot. Nivola took off his shirt, was ready to go to work.

Architectural sculptors are in great demand these days, and Sardinia-born Tino Nivola, 47, is probably more in demand than any artist in his field. In the last two years, public schools in New York City alone have accounted for $24,000 worth of Nivola commissions. In February his $40,000 sculpture for the Mutual Insurance Company of Hartford was fully installed. He has submitted an even bigger project for the University of Michigan.

BRUCE DAVIDSON—LIFE



Nivola at work traces a figure for the Mutual of Hartford headquarters façade. Behind him two workmen, as if building a road, prepare forms to be filled with concrete after Nivola has made the mold.

Eleven years ago, when sitting on the Amagansett beach with his wife, commissionless and dejected, watching their son play in the damp sand, Nivola got the idea of sculpturing in sand. A mason's form could be set around those towers and tunnels; plaster or white concrete could be poured into the form to pick up the shapes and texture of the sand, and the resulting sand-textured block would be readily adaptable to modern construction techniques.

Since that day, in much the same way that Mobile-maker Alexander Calder has brought out the exciting fragility of modern engineering, Nivola has brought out the best qualities of concrete: its earthiness and its plasticity. His weatherproof bas-relief panels, which seem to capture the sunlight as well as they retain their sandiness, are figured with abstract forms of tremendous variety and vitality. "What makes a relief read is light," says Nivola as he runs his hairy hands over the modulated molded forms. The invention of his inexpensive technique was well timed to coincide with an upsurge of American interest in the architectural uses of concrete; and it happens that the character of his art, which reflects the sun-filled primitivity of his personality, is well tailored to the present reaction against urban slickness.

Courage, boys!

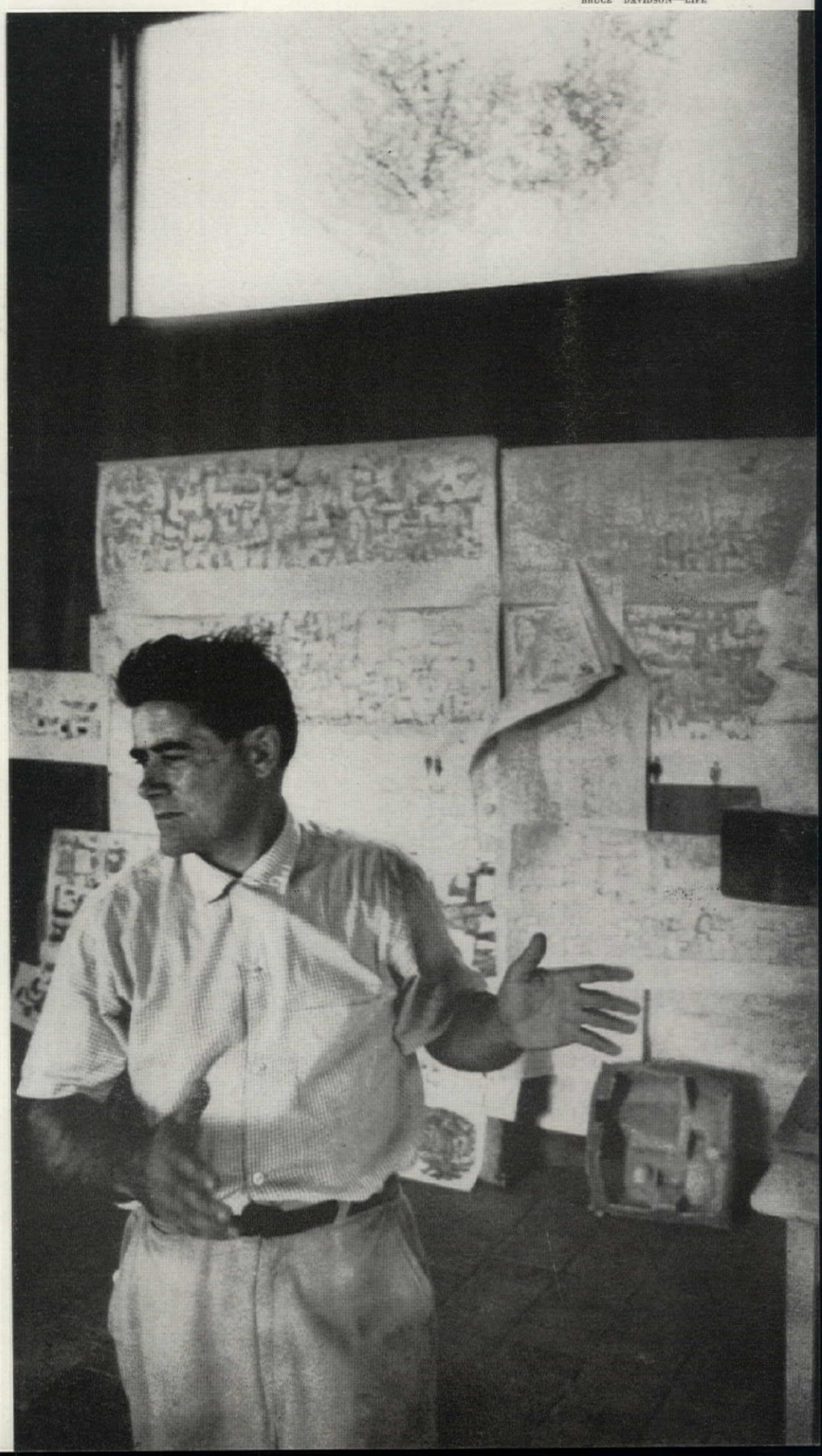
When Nivola first went to the mainland in 1930, fresh from a mason's apprenticeship in his native Sardinian village, the most progressive art school in Italy was the Art Institute Monza in Milan, a frank imitation of Germany's famous Bauhaus. According to Nivola (whose English is technically correct but sounds, nevertheless, like a difficult Italian dialect): "The only trouble was that no one had bothered to translate the Bauhaus program into Italian! We students would stand at the foot of a great statue a sculptor was working on. He would look down at us full of compassion that we were learning nothing. Finally he would cry out, 'Coraggio, ragazzi!' [courage boys!]." Despite this inspirational instruction, Nivola picked up the necessary skills, by 1936 had become art director of Italy's design-sharp Olivetti Corporation.

By then he had also married a handsome Jewish girl, and life under the Fascists was getting quite uncomfortable. "At night on the sleeping platform in our studio," Nivola recalls proudly, "when I took things out of my pockets I would seize the great bundles of lire I had earned and throw them around the room like a drunken peasant. Ruth would sweep them up and bundle them off to the bank the next day." Life was considerably less rich after the Nivolas arrived in New York as refugees in 1939; Ruth's nest egg had been spent in getting there. "We were the classic immigrants," Nivola laughs, "complete from speaking no English to having to start work in a factory." Two years later, however, having helped launch the magazine *Interiors*, as art director, Nivola was able to re-establish contact with his friends in the international art world.

During the winter of 1946, for example, in his apartment, four walk-up floors above the garbage can clutter of Greenwich Village's West 8th Street, he and his old friend, Le Corbusier, who had come

Sardinian whose studio is his back yard. BY RUSSELL BOURNE

BRUCE DAVIDSON—LIFE

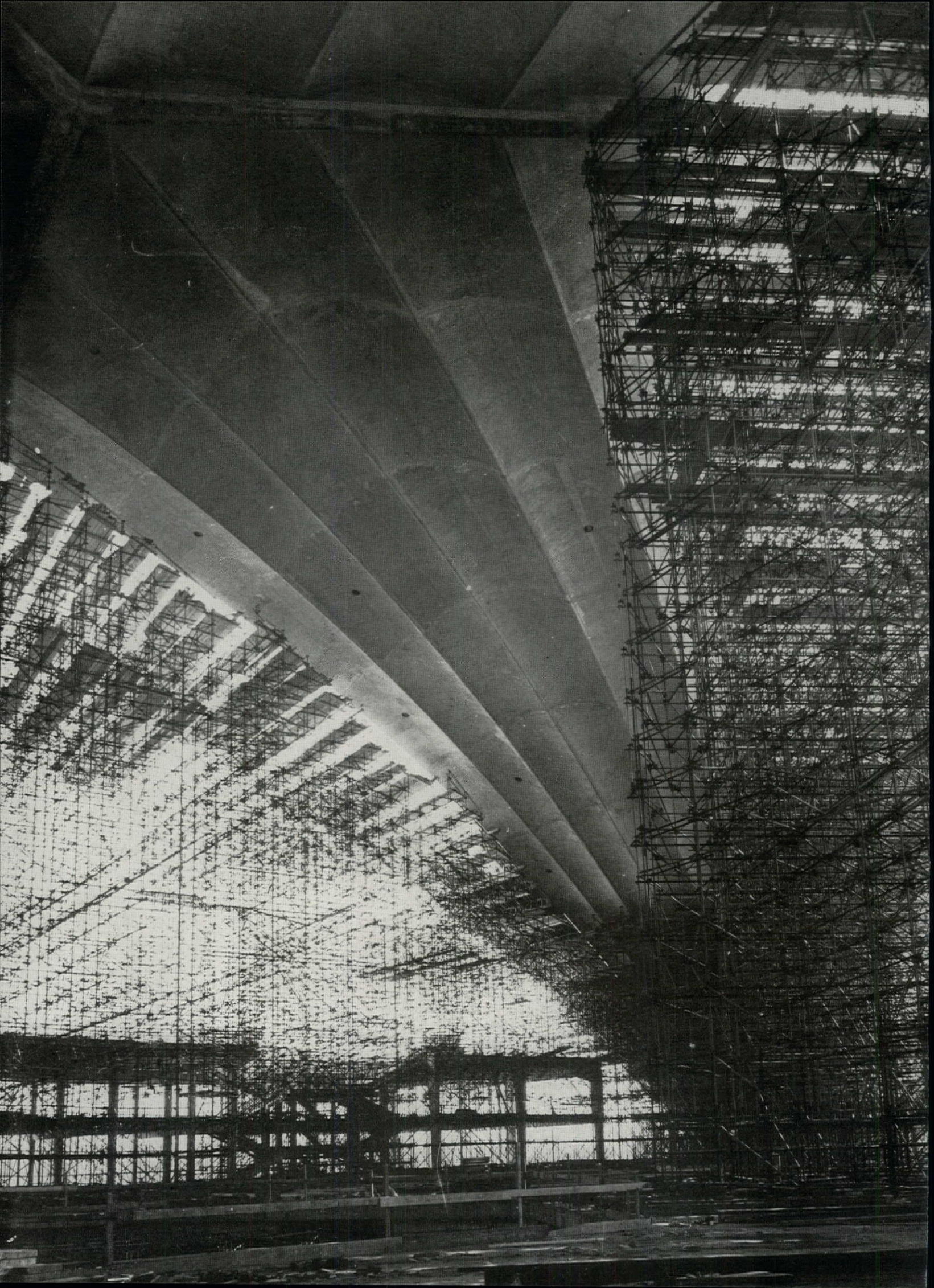


to New York to help with the UN design, passed cold evenings drinking wine, discussing the possibilities of a postwar world in which man, "the victim of science and tradition," would feel at home. "Corbu would talk wonderful talk about concrete structure and now and again say something nice about my little dolls," Nivola remembers now, pointing to the vaguely cubistic, plaster block figures that date from that time. Gradually the thought came to Nivola of integrating sculpture with structure, of updating the classical bas-relief process by the use of modern techniques and materials. All that was needed was the coming of summer to bring the idea to fruition. Eight years later, when the application of the idea had been perfected, Nivola's first sculpture to attract public attention was put in place, the "sand wall" at Olivetti's Fifth Avenue showroom.

Look out for cannibals

Since then Nivola has been refining his technique, picking up commissions, and carefully guarding the details of his sand-absorbent concrete technique from "the cannibals who would eat you up." One of the most enthusiastic of Nivola's many boosters, and no cannibal, is Thorne Sherwood, a senior partner of Sherwood, Mills & Smith, architect of the Mutual Insurance Company of Hartford's new headquarters. The building, which will open officially in September, presents a mammoth, 110 by 30 foot, sand-concrete front to the passing world, a scale which Sherwood describes as "just right for urban architecture—big. The closer you get to it, the more you see in its abstract forms, or want to. Another attractive thing about it is the cost, only 20 per cent more than a standard, prefab masonry job." Nivola, who supervised

continued on page 152



Technology Thin-shell structures, long lagging in U.S. development, are taking off on a fashionable whirl. It is time to re-examine first principles and the future.

The rise of shells

BY LAWRENCE LESSING

Thin-shell construction, an advanced structural method of enclosing space, is reaching a critical stage of development in the U.S. It is not only finally accepted and thriving, but increasingly fashionable, a dangerous stage for any new engineering or art form. The quip is that h.p. no longer stands for horsepower but for hyperbolic paraboloid, a swooping shell form that fills many architectural dreams these days. This may be a slight exaggeration, but, with some large pockets of resistance remaining, the shell has arrived.

In recent months, shells have appeared in a Tampa chain store (see page 90), a Connecticut supermarket, a Denver department store (page 110), a Puerto Rican church (page 108), a Texas factory, and in no less than a dozen other sizable edifices. Soon to arise like a bird at New York's Idlewild Airport is the parabolic-winged TWA Passenger Terminal (FORUM, January 1958), which even before construction has acquired a modish sobriquet, "The Flying Brassiere." A mammoth shell-domed arena will go up this winter at the University of Illinois (see page 111), and another sometime later at Dartmouth College. Inevitably, shell-roof elements have appeared in at least one of the plans for New York's projected Lincoln Square Center for the Performing Arts, the new Metropolitan Opera building.

BIGGEST SHELL to be built thus far is rising in Paris on an incredible spiderweb of scaffolding and formwork. A triangular concrete shell roof, it will span a clear 720 feet to cover a huge Industrial Exposition Hall.

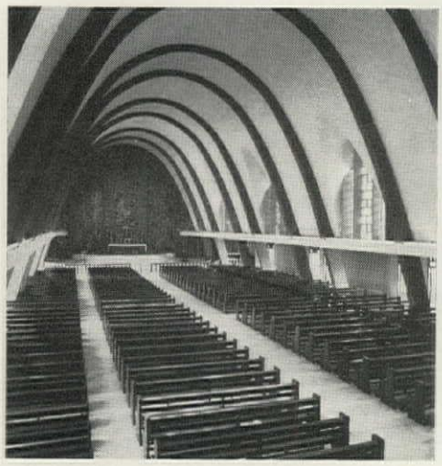
PHOTO (OPPOSITE): JEAN BIAUGEAUD

The shell was a long time getting here. The mathematical fundamentals that led to shell theory were laid down in 1828. Their first expression in building was in France and Germany around 1910, when a number of shell-like structures arose. Nearly all the technical development, however, dates from the twenties, when engineers of Carl Zeiss, the German optical firm, built and studied a small, thin, barrel-roofed structure of reinforced concrete, with reinforcements set in a calculated pattern, from which issued the famous Zeiss-Dywidag patents, which played a role in this type of construction until World War II. (Zeiss discovered that a differential equation for one of its lenses applied to shells.) The essential fact here is that a relatively new material, reinforced concrete, theretofore used in imitation of other materials in the traditional beam, column, and arch, was finally given a continuous molded structural form to fit the basic plasticity of concrete itself. Rising out of the fruitful twenties, it was one of the first basically new structural principles in building in centuries.

In principle, the shell structure is somewhat akin to that of sea-shell animals or crustaceans, in which there is no interior skeleton, only a rigid exterior carapace or skin. All supporting structure as well as enclosure is in the skin. Other similar forms in nature and the everyday world are ribbed flower petals or leaves, the teaspoon, and the egg. Ideally, the shell structure must emerge as complete and continuous as an egg. In more practical engineering terms, a shell is a rigid, curved membrane in which all stresses, compressive or tensile, are continuous and three-directional in the skin's structure, and are conducted to the ground through the curvature by suitable supports. If the shell is thin enough in relation to its radius (less than 1/50 to 1/300 of radius), it produces a structure highly economical in materials and capable of supporting heavy loads, including its own weight, with a minimum of bending or twisting stresses. The classic demonstration is to take a sheet of paper, limp and flexible in the hand, and give it a sharp curve, whereupon it shows a surprising increase in rigidity and load-bearing strength. This is the opposite in principle of conventional beam-and-column construction, in which loads are borne by resisting bending. Hence the shell's revolutionary claims.

The European nesting

Through the thirties and following World War II, shell construction was boldly developed in Europe, spreading from Germany and France to Italy and Spain, and through these Latin countries to Mexico and South America. The shell's sparing use of materials, particularly expensive steel, had a definite economic appeal in these countries, and the well-known Latin bent toward the plastic arts may have had a good deal to do with acceptance of the new form. Three of the masters of shell construction who arose in this period were Pier Luigi Nervi of Italy, Eduardo Torroja



BARREL SHELL, graceful as the inverted hull of a ship, forms this church in San Juan, Puerto Rico, designed by O'Kelly & Mendez, engineered by Mario Salvadori of New York.

PHOTOS: FLIP SCHULKE—BLACK STAR

of Spain, and Felix Candela of Mexico.

Of these, Nervi, a sinewy combination of architect, engineer, and master craftsman, who carries through the construction of all his own designs—as do most of the other leaders in this field—has most consistently raised the new form to architectural fitness and grace. Beginning in 1929 with his now famous Florence Sports Stadium, and running through a great series of soaring aircraft hangars, factory buildings, markets, churches, and exhibition halls, culminating in the great patterned shell of the new Sports Palace in Rome (FORUM, March 1958), his genius has produced an inexhaustible succession of new details and designs. Nervi's particular contribution to the art, not widely followed by others, is prefabrication of shell units to eliminate the heavy amount of formwork and scaffolding required to cast such continuous structures in place. Nervi casts small repetitive units on the ground, then raises them into place on light movable scaffolding, welds their reinforcing rods together and fills in the joints with high-strength concrete. Torroja and Candela, working in countries where labor is cheap and monolithic masonry construction traditional, have favored cast- or troweled-in-place shells of daring geometrical shapes.

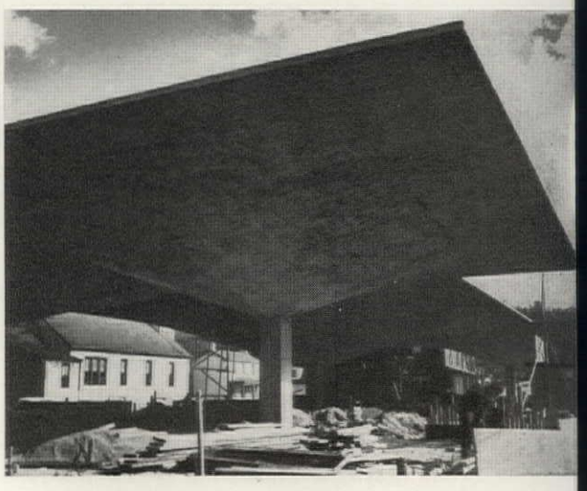
The number of possible geometric designs for shell construction so far has proved almost endless. Basically, there are three families of shells: the cylindrical or barrel-shaped; the spherical or dome-shaped; and the conoid and hyperbolic paraboloid. The latter is a type of paraboloid surface generated by straight lines—the most familiar example is a Western saddle—a shape useful in shell construction because it allows formwork to be made of straight timber sections. These may be used respectively in single, double, or compound curvatures. They may be used in segments as cantilevers or canopies. They may be used in a series of small repetitive shells joined to form scalloped roofs, interconnected conic sections, or corrugated or folded-plate structures, which most purists do not recognize as shells, but which secure their space-spanning rigidity and strength from the curvilinear principle embodied in paperboard. The freedom allowed is so great that it may easily produce bastard combinations or mere oddities. To the purist in shell engineering, however, there are four criteria. A shell must be thin; it must be curved; it must have a continuity of structure in which the principle dimensions are in nice mathematical relationship; and it must be properly supported.

In pursuit of these principles, the Europeans and Latin Americans are still the most daring innovators and experimentalists. Still the major drive in shell development is to achieve ever bigger free-span structures and flatter shells, i.e., shells with very small rise. In a structure dependent for a large part of its support on curvature, a flatter monolithic shell presents a tough mathematical problem, possibly only solvable by new design or stronger materials not yet in use. Some shell specialists regard the goal of ever bigger shells as silly, but probably inevitable in the muscular flexing of any new structural form.

Rising on a triangular plot in Paris' Place de la Defense, a mile from the Arc de Triomphe, is the world's largest free-span shell-roofed structure thus far: a 720-foot-span Industrial Exposition Hall whose great corrugated shell roof soars up in three sections from supports at the points of the triangle to a peak 168 feet above the ground. Its array of construction formwork and scaffolding, one of the most fantastic ever assembled, has been a Parisian spectacle for many months. The result of a design competition, in which Nervi and other well-known shell designers were edged out by the French firm of Camelot–deMailly–Zehrfuss, the new building will be a curious complex. Partly under the soaring rims of the great roof, along the sides of the triangle, will be three blocks of conventional four-story office buildings and meeting rooms, structurally unconnected with the shell but an integral part of the building complex, with access to the great central hall. Though uncompleted and difficult to assess, this mixture of straight horizontal and curved masses puzzles and disturbs shell purists.

In the eyes of the purists, the most unusual and esthetic shell structure recently built is the small, now familiar Philips Pavilion for the Brussels Exposition, in which France's great Le Corbusier tried his hand at a fantastic exercise in hyperbolic paraboloids. This modest-sized building, with its deep vertical parabolic curves, doubled in dissimilar dimensions, plays to the hilt the plastic qualities of shell construction. Moreover, in addition to introducing a new form, it introduces a new method of construction — prefabricated warped concrete slabs, prestressed and mortared together on the formwork—which is not likely to be widely copied, for each slab had to be precisely dimensioned for its place in the curvature. For the purposes of a small exhibition hall, however, it is a playful gem, leading the visitor from entrance to exit through an S-curve of molded space, a typical example of the Continent's still

SCALLOPED SEASHELL CANOPY, designed by Charles H. Warner Jr, and Toro-Ferrer, engineering by Weidlinger & Salvadori, stands before Puerto Rican club and resort hotel.



CHRISTOPHER GERGULD

MUSHROOM SHELLS, inverted hyperbolic paraboloids placed edge to edge on columns, form this small parochial school in Pennsylvania, by Engineers Triggs & Mellett.

strong experimentation and readiness to try strange and novel forms.

The American incubation

Nothing quite so bold as the Philips Pavilion has yet appeared in shell construction in the U.S. The technique migrated to this country in the early thirties, when the Chicago engineering firm of Roberts & Schaefer Co. acquired U.S. rights under the Zeiss-Dywidag patents, and with them a young Viennese engineer, Anton Tedesko, who had become interested in shells in Germany and had written an article on them which brought shells to the Chicago firm's attention. The first structure built was a small, four-cornered double-curved shell of 21-foot span, 9/16-inch thick, similar to the first Zeiss shell, built as a test exhibit for Roberts & Schaefer at Chicago's Century of Progress Exposition in 1932. This was followed in the next few years by two major shell projects: the Hayden Planetarium in New York and the Hershey Sports Arena in Hershey, Pennsylvania. Toward the end of the decade a few utilitarian shell warehouses began to arise. But progress was slow and almost barren of architectural interest.

Various explanations are offered for the unenterprising slowness of shell development in the U.S. The reason most often given is that economically the shell did not fit easily into the U.S., where there were few incentives to save steel and other materials, which were plentiful and cheap, and where high labor costs made the shell's elaborate formwork an expensive construction job, almost equal to erecting two buildings to get one. But the major block to shell development in the U.S. was the sharp separation of engineering and architecture in this country, both in practice and schooling, and along with this the architect's antiquated fee system (FORUM, June 1958), based on percentage of construction costs. Complex shells cost much more in the design and engineering stage than conventional structures, make their savings on materials and construction, hence the U.S. architect, whose fees do not fully reflect design costs, has little incentive to pioneer shell or other advanced designs.

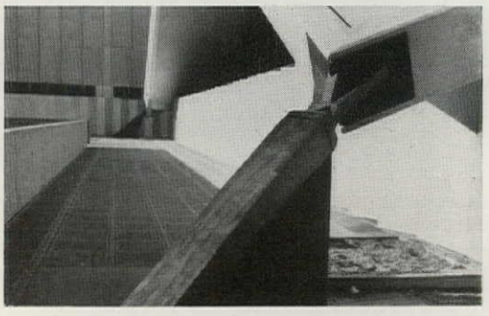
In Europe, design and engineering of these new structures are closely wedded, often in one man, who also often acts as his own contractor, bidding on the whole job and making his profits from the whole. In addition, this system furthers the unity of shell structures, in which design, engineering, and construction problems must be considered almost simultaneously and followed through each stage, a form of close architectural supervision that rarely gets done in the U.S. division of labors.

At the root of the U.S. problem are architectural schools that provide only the most superficial understanding of science and engineering, and engineering schools that train routine engineers with only a smattering of understanding of the arts, so that rarely do the twain fruitfully meet. And to create complex new structures like shells, they must meet with deep understanding, for the basic analysis and roots of these new structures are in a geometrical and mathematical form different from traditional construction, hard to accept, and worked out only with the greatest labor. (Typically, only a scattering of shell research has been done in U.S. schools, none of it very consistently.) Almost invariably, the pioneers found, the proper mathematical solution to a shell problem was also the most esthetic. "Which evidences once more," says Nervi, "the mysterious connection between the laws of physics and our esthetic sensibility."

The U.S. shells emerge

World War II, paradoxically enough, was a turning point for shell construction in the U.S. The large free spans made possible by shells, their strength, economy of critical materials, and speed of erection, made them particularly suitable for hangars and other military structures. More architects, engineers, and contractors got into shell construction, and this healthier competitive state carried over into and enlivened the postwar years. A major element in the new forces was the substantial engineering firm of Ammann & Whitney. And among the other lively elements were a number of young West Coast engineers and the New York firm of Paul Weidlinger and Mario Salvadori, who had had shell experience in Europe and who together took on a variety of projects. The bulk of activity was still in utilitarian shells, some notable examples being a series of hangars for the Air Force by Roberts & Schaefer of 340-foot span, the longest span yet built in the U.S., and some hangars nearly as big by Ammann & Whitney.

Two notable, monumental-type of shells were built in the first round of postwar construction. One of these was the now familiar great sphere of the new M.I.T. Auditorium in Cambridge, Massachusetts, by Architect Eero Saarinen, engineered by Ammann & Whitney; the other the famous multiple arching vault of the new St. Louis Airport building by Architects Hellmuth, Yamasaki & Leinweber, engineered by Roberts & Schaefer. While both were



PARABOLIC CURVED entrance hall to May Co. department store in Denver, engineered by Roberts & Schaefer, is largest hyperbolic paraboloid shell in U.S.: 113 by 132 feet.

forward-looking, pioneering efforts, with a more spectacular quality than had yet appeared in shells in the U.S., their architecture and engineering did not quite mesh, and shell purists have criticized them for being too heavy and thick, for being excessively ribbed or edge-stiffened, and not solving well such practical problems as drainage. But practical engineers ask whether the goal is thinness or a functioning building. In the M.I.T. shell, necessary acoustical treatment added 3 inches to the shell's 3½-inch thickness.

From this early postwar activity, a great deal has been learned, and the economics of shells does not now look so formidable as it once did. Careful planning of formwork for reuse, and the use of mobile forms for repetitive sections, bring shells reasonably within the competitive structure of U.S. building costs. In utilitarian buildings, for free-span requirements above 50 feet, shells often prove to be the preferred, most economical type of construction, partly due to their built-in fireproofing. A great deal depends, as in all building, on the design, site, and regional conditions, and labor costs. For instance, in a special site situation, a small parochial school to be built on a filled alluvial creek bed in Etna, Pennsylvania, was first designed (by Architect J. Kenneth Myers and Engineers Triggs & Mellett) for conventional steel-frame construction, then, for a somewhat smaller structure, in the umbrella-type of inverted hyperbolic paraboloid shell units used successfully by Candela in Mexico (photo, page 109). The shell structure came out under bids at about half the cost ($250,000) of the steel frame, due mainly to savings in foundation costs.

In the current round of shell construction, completed or projected, two structures stand out particularly for size and technical interest:

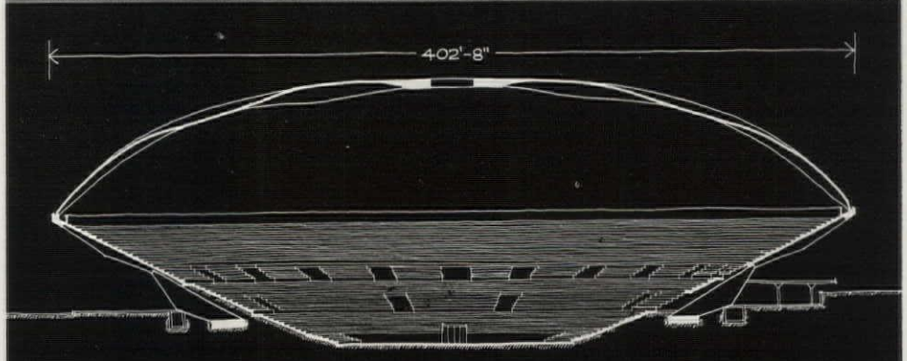
▸ The widest-spanning hyperbolic paraboloid shell yet built in the U.S., covering an area 113 by 132 feet, forms a curving entrance structure for the severely linear new May Co. department store in Denver, Colorado (photo, above). Designed by I. M. Pei and Associates and engineered by Roberts & Schaefer, it has a minimum thickness of 3 inches (meaning an overall 3 inches except where ribbing and stress concentrations require thicker sections) and a rise of 28 feet. It is supported at the four corners by heavy steel buttresses in such a way that all stress reactions come through cylindrical pins in the buttresses, allowing the engineers to determine exactly where reactions cross. To get the smooth, high-rise effect the architect desired, outspoken ribs in the shell were changed to rib bands, which added concrete, steel, and weight.

▸ One of the largest spherical shells of its type, 400 feet in free-span diameter, with a minimum thickness of 3½ inches, will be built on the University of Illinois campus this winter at a cost of $7½ million, for a multipurpose auditorium, amphitheater, and sports arena (see photos, right). Designed by Harrison & Abramovitz and engineered by Ammann & Whitney, it will seat 17,500 to 19,000, depending on use. The huge structure is actually two shells, one atop the other, the bottom inverted shell a folded-plate structure, providing step-down seating, the top a radial-patterned dome, like a cover on a soup tureen, the two halves joined by a tension ring. The big roof will be cast in 48 radial segments, four at a time, against a revolving tower-supported form, used 12 times. In this way, the cost of formwork, which may run $8 per square foot to begin with, will be spread out by re-use to 60 or 70 cents per square foot.

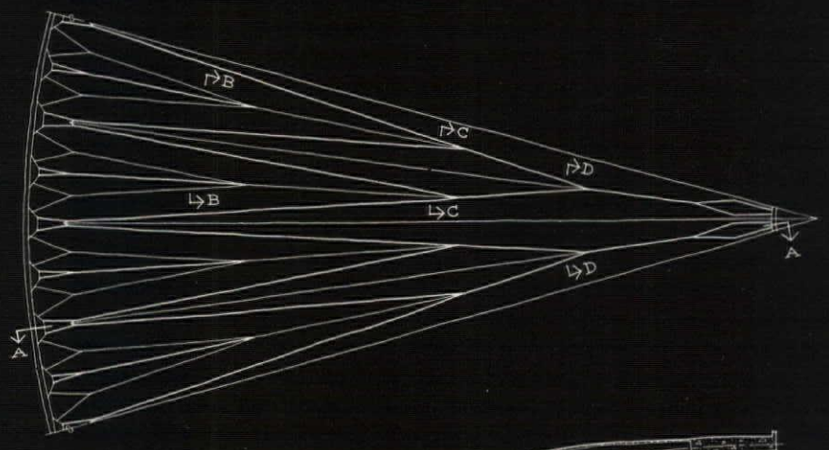
The future in shells

Thus U.S. shells are moving up in size and boldness, but the general run of designs remains cautious, pedestrian, still some distance behind the best of foreign designs. Few if any U.S. architects fully understand shell principles as yet or think in the three-dimensional terms necessary to mold shells to just proportions. And engineers often acquiesce too easily to poor designs. The great danger is that shells, in their sudden fashionableness, will be superimposed as a cliché on design, will be misused, or get into the hands of incompetents. The architect is not always at fault. There are other factors of ignorance. A reasonably good thin-shell structure of 100-foot span was designed for a savings bank in California by Bank Building & Equipment Corp., but local building codes were incapable of coping with shell principles. The design had to give way to the incorporation of two arches to "support" the shell, which in the original design supported itself, and to much additional weight to meet conventional earthquake-stress requirements, whereas the original design was earthquake-resistant by its very nature.

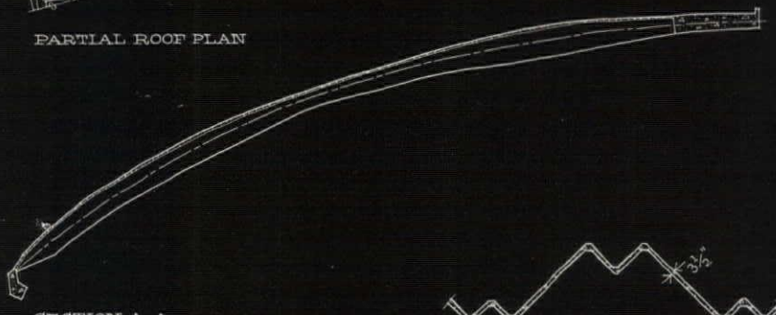
It is rash to expect that shell construction, little more than thirty years old, will be molded quickly to the expertness, grace, and proportion of lintel, beam, and truss construction, which has been worked up by the hands of centuries. But there is progress, not only in shell design, but in materials.



WEST-EAST SECTION

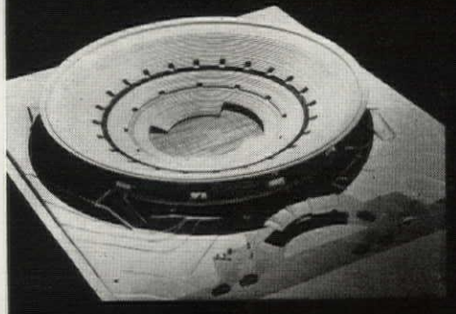


PARTIAL ROOF PLAN

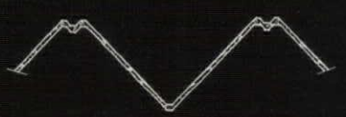


SECTION A-A

SECTION B-B



SECTION C-C



SECTION D-D

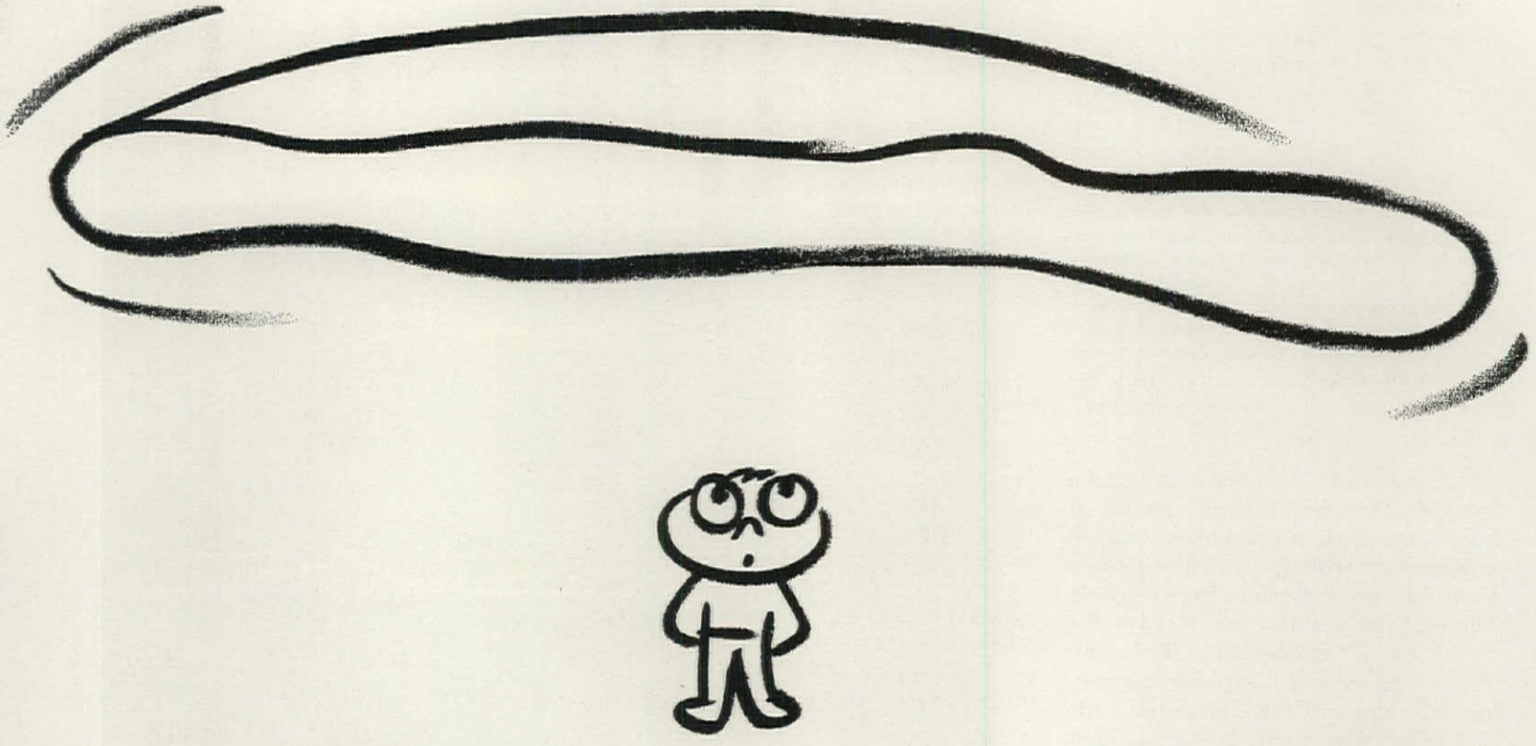
SPHERICAL SHELL for new University of Illinois arena and auditorium, engineered by Ammann & Whitney for Harrison & Abramovitz, will be biggest of its kind. Patterned roof shell (details, center right)—400 feet in clear-span diameter—will cap inverted bottom shell of folded-plate design (below), which will seat up to 19,000.

Various thin, weatherproof plastic spray coatings are coming into use to replace the thick, old-fashioned, built-up composition roofings which, to many architects, spoil the clean lines of shells. The coatings are too new to have had their aging properties thoroughly tested, and some already have cracked up under use, but there seems no doubt that this problem will be solved. Reinforced plastics themselves, if their costs can be reduced, offer a potential shell molding material of great lightness, strength, brilliance, and versatility. And laminated plywood is moving toward true shell designs. Prefabrication in shell construction may move up more quickly with the development of new, extremely strong epoxy plastic adhesives, which experimentally are showing themselves capable of holding together heavy concrete members. And development of fantastic new tensile strengths in metals through the growth of hairlike crystal strands of metal may have profound effects for the future. With present materials, shells cannot be built thin enough as a practical matter to reduce to a minimum all bending or twisting stresses in very large spans. If reinforcing meshes of the new metals come into use, and they are already moving experimentally into military materials, Shell Engineer Paul Weidlinger foresees the day when huge gossamer-thin shells of enormous rigidity and strength may be built to cover great areas, such as whole shopping centers.

Thus the technology of the day inspires and supports new structural forms. And in shell structures there is a new freedom, plastic grace, flexibility of use, and open molding of space worthy of development and discipline by the arts.

END

The psychology of shells



Shell structures unsettle many traditional assumptions about shelter. If the shell designer does not want to create emotional problems for his client, he must revise some of his own assumptions about architecture.

BY MARIO G. SALVADORI AND EUGENE RASKIN*

Thin shell structures, until now familiar to most Americans only as exotic photographs, are gradually becoming part of the everyday landscape: for example, in the form of great vaults at the St. Louis airport, little domes in a Connecticut supermarket, parasol roofing over a Florida motel, wavy-roofed bus shelters at schools here and there. A few families already live under shells. And as the preceding pages testify, the practical uses of shells are multiplying.

This poses quite a problem for architects. For to be underneath thin shells that roof over large spaces is still an unusual experience for most human beings. And to make this new experience satisfying, rather than distressing, is a much trickier architectural problem than might be supposed because shells unsettle so many traditional assumptions about buildings. For example, they look insubstantial and easily pierced. They have no inherent clue to their size. They appear tense, rather than at rest. Their shapes are not only unfamiliar but hard to comprehend.

Architects and engineers who want to use the new shell forms effectively must understand the disturbing reactions they can evoke—and how to deal with them. If the designer does not understand these reactions, or if he attempts to counter them by compromise with traditional design, he will likely make a botch of it because the esthetic principles which have traditionally applied to conventional roofs simply do not apply to shells.

One such basic assumption is that a roof is for safety and protection; it is an emotional as well as a physical symbol of security. How can the shell provide reassurance on this point? It looks as though it had recently and temporarily alighted from a voyage on the wings of a breeze. To the eye which seeks protection in the conventional terms of bulk and strength, the shell will seem unsatisfactory, forcing the designer to solve the human need for a sense of shelter by another approach.

Another approach already exists; the designer need only recognize and employ it. Man today regards the daily miracles of science with a quasi-religious awe. His faith in physics, in electronics, in mathematics, is rapidly superseding reliance on the bulk strength of stone or steel. Today the formula, the theory, the graph, and the symbol represent the magic that, like Joshua's horn, tumbles the walls of Jericho—except that, in this case, it holds them up.

The shell is just such a mathematical symbol. Whether it is a translational surface, a surface of revolution, a conoid, or a hyperbolic paraboloid, it

---

*The Authors: *Mario Salvadori is a professor of Civil Engineering at Columbia University and Eugene Raskin is an associate professor of architecture, also at Columbia.*

is as much the graphic representation of a mathematical statement as it is a tangible structure. It is an incantation, rather than a shield, and therein lies its expressive strength.

For the architect to ignore this essential aspect of shell design is artistically fatal. He must, on the contrary, do everything he can to emphasize it. Rather than attempt to give the shell an appearance of weight and permanence, he should frankly, and insistently, express the adventurous exploration of thought which gives these structures their bold air of excitement. There should be no compromise. Either the "faith in formula" is totally expressed, both inside and out, or the shell becomes a fragile and inadequate substitute for a conventional roof.

How big, how far?

Another problem is that shells, large or small, have no scale at all, no clues to how big they are or, therefore, how near they are to the observer. They are not comprised of the familiar components (such as bricks or windows or columns) which usually disclose size or at least hint at it. Shells are mathematical abstractions, just as well represented by paper models as in concrete over 300 foot spans. A shell set out in lonely splendor on a stark plaza may be pictorially effective, but it almost always achieves an effect of impersonality—which simply means that the observer has been called on to make an undue effort in relating himself to the building and so has rejected the relationship. More than that, it is psychologically disturbing to people when they are unable to judge sizes and distances with reasonable accuracy. (If the viewer's judgment is too much in error, he criticizes the building as being "out of scale.")

The way out of this impasse is for the architect to place the shell in a context and surroundings that will give it immediate, unmistakable dimensions. Terraces, planting, steps, and paving become in this case not so much adjuncts to the architecture, as essential functioning elements of it. This is hardly a new principle, but a whole generation of architects has sadly neglected the statement of scale, and now must perforce rediscover this principle. The same reasoning applies to the treatment of shell interiors, although the inevitable presence of human furnishings and such details as doors means that failure to state scale inside the shell must be an intentional omission.

A feeling of insecurity about shelter—perhaps accentuated by the shell's lack of scale—will have psychological effects that can be either adverse or beneficial. In either case, these effects are physiologically real. Tension and anxiety, for example, cause more rapid pulse rates, higher blood pressure, and increased adrenal output. This is part of our ancient, useful biological equipment for self-preservation. Thus, if a person indoors feels the absence of a sense of shelter, he will preserve some of the alertness which he experiences in an unprotected outdoor environment.

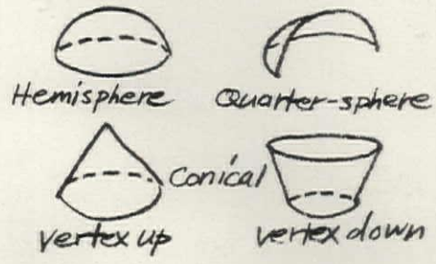
The corollary is that living under a modern shell can never be entirely restful, in the physiological sense; there will always be a residue of tension, anxiety, and stimulation. The degree of this reaction will depend upon the degree of strain. Shells which resemble familiar forms, such as segments of spheres, or barrel and segmental vaults, will be least disturbing; they have a kind of built-in acceptability owing to their familiarity and visual simplicity which eliminate at least the barrier of strangeness. The more complex surfaces, such as the conoids and the saddles (hyperbolic paraboloids), are harder to understand visually, and therefore harder for the inhabitant to relate himself to.

The uses of anxiety

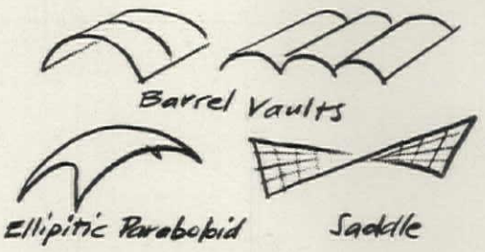
The tension and anxiety that these unfamiliar shapes generate are not always undesirable, however. Games of skill, for example, produce tension and anxiety in a pleasurable sense; so does the reading of an adventure novel, or the watching of a suspense drama. There is no reason why these emotional states should not be favorably exploited architecturally as well, for example in public buildings for sports, shopping, meeting, or in domestic spaces for entertaining. Actually, the argument could be made that serenity, calm, and restfulness are obsolete as expressions of our age, and that the shell is not only the outcome of a technological advance, but also the inevitable symbol of a twentieth-century esthetic.

The success of the architect in coping with shells depends on his ability to absorb the strange mixture of boldness and psychic anxiety which characterizes our time and to interpret it in positive terms. There is adventure and inspiration in the hearts of men today—as well as gloom and doubt—and this is what the shell can say. END

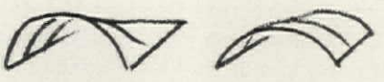
A guide to shell shapes



ROTATIONAL SURFACES: In shells of this group, the greater the degree of enclosure, the more the sense of shelter. For example, a hemisphere offers partial enclosure; but a quarter-sphere, such as a band shell, conveys only a sense of direction, not a sense of shelter. Conical shells offer considerable sense of shelter if the vertex is the highest point. Turned upside down, the effect is opposite; everything is directed outward and there is a feeling of escape toward the sky.



TRANSLATIONAL SURFACES: Barrel vaults or cylindrical shells belong in this group, even though their urves slide over a straight line; the sense of shelter they convey changes sharply, depending on whether the curve is steep and enclosing or shallow and merely covering. One shell of growing popularity is the elliptic paraboloid, which combines to a high degree a sense of shelter with an effect of airiness and lightness. The saddle shell has a more complex effect; it has an upward curve in one direction which gives an unsheltered openness and which contrasts with the downward sheltering curve in the other direction. When the saddle is supported by parabolas, it conveys a still greater feeling of shelter.

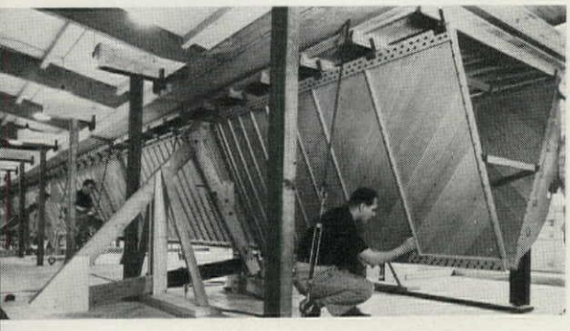


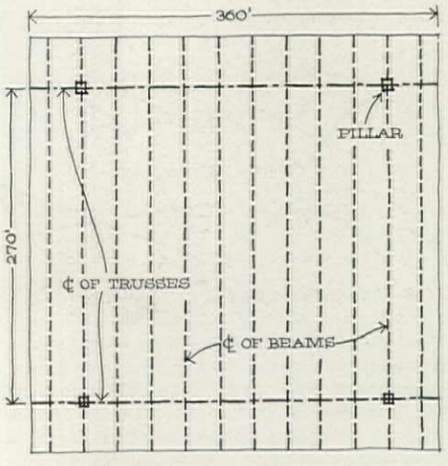
CONOIDS: The psychological effects of the subtly saddle-shaped conoids can be much like those of the saddles, or of the barrel vaults, depending on which conoid portion is used.

SCALLOPS, undulations, ribs, and coffers are very useful devices psychologically. They can suggest familiar dimensions, give the observer a sense of direction, and increase the feeling of lightness and delicacy.

NONMATHEMATICAL SHAPES: The designer can achieve a very wide range of expressiveness and subtlety by using freehand curves, for example as in a shape suggestive of a wind-filled sail.

Brief accounts of noteworthy developments





WOOD GIANT

The unusual delta-shaped beam, above, is a 1/5-scale model of one of a dozen huge wooden beams which will support the 360-foot-square roof of Portland, Oregon's new recreation-exposition center. The sketch above shows the structure in plan: the dozen delta beams—each 360 feet long, 22 feet deep, and 22 feet wide at the top—will be spaced parallel to one another on roughly 30-foot centers; all 12 will be carried on two timber trusses, set 270 feet apart.

The entire structure will be supported by four concrete piers, also spaced 270 feet apart. Thus, the structure will be a glass-walled square, measuring 360 feet on each side, with an interior free span 270 feet square, and 45-foot cantilevers along each of the building's four sides.

The beams were designed by Engineers Moffatt, Nichol & Taylor, of Portland, who are consultants to the building's architects, Skidmore, Owings & Merrill. For the past several months, scale models of the beams have been undergoing load-bearing tests at the Oregon Forest Products Laboratory. The initial tests were made on a 1/16-scale model, which deflected only ½ inch under a load of 90 pounds per square foot. The larger model—1/5-scale—deflected slightly less proportionally, because minor modifications had been made in stiffener placement after the first model had undergone extensive tests.

The delta beams, in addition to being more economical than either steel or concrete in the northwest, are expected to be an acoustical asset as well, because their accordion pattern on the huge ceiling will disperse sound waves.

DOME OF THE MONTH

Radar stations in the Far North are providing the most rigorous testing ground for both dome structures and the plastics which cover them. The dome in the picture below is of a new type, 55 feet in diameter, made of 156 rigid sandwich panels, each about 1 inch thick. Its plastic facing material is reported to have superior properties to the plastic used in the earlier domes of the north, designed by R. Buckminster Fuller.

Fuller's geodesic radomes, which have stood up under brutal weather,

NATIONAL RESEARCH COUNCIL

are made of sheets of glass-fiber reinforced polyester resin, which are fastened with steel bolts. The new dome, which is not a true geodesic type, but closer to a shell, is faced with sheets of epoxy resin—which has greater strength and lower moisture absorption than the polyester resin used in the first domes built.

The new dome was built by Long Sault Woodcraft, Ltd., of Canada, under contract with the Rome Air Development Center, at Rome, N.Y. The curved panels are molded so that the edges fit tongue and groove, locking firmly together. The panels' core material is a phenolic impregnated resin, developed for use in boat construction by the U. S. Navy.

SCHOOL RESEARCH

An outstanding program of school building research is under way at the State College of Washington, in Pullman. Its purpose is to support the tremendous volume of school building in the Pacific Northwest, but the College's approach to the problems of school construction and planning is likely to receive national attention with the completion this month of a Regional School Laboratory.

The new building at Washington State has no fixed dimensions or style; it is a flexible framework, adaptable to a variety of building materials and to changing sizes and shapes for differing classroom demands. Later this year, regular classes of public school children will attend the new laboratory school, which will provide educators with information on child behavior and teaching effectiveness under various environmental conditions.

Three features of the program give it a unique character. To begin with, the program is not limited solely to problems of teaching nor to problems of school construction. Rather, it is a three-sided endeavor which involves Washington State's Division of Industrial Research, its School of Education, and its Department of Architectural Engineering. Under Architecture Professor Robert P. Darlington, who is head of the college's building research program, the project is designed to carry on research "in any indicated field related to school planning, designing, building, and maintenance."

The program's second important feature is its successful enrollment of industrial support. Thus far, some 60 manufacturers have contributed materials. The Unistrut Corporation, for example, has provided all of the structure's steel framing materials. Other manufacturers have supplied plywood, insulating roof slabs, skylights, electrical equipment, wall panels, and many other items.

But perhaps the most unusual feature of all is the fact that the program is setting out to help develop better schools and not, like many school research programs, simply cheaper ones.

END

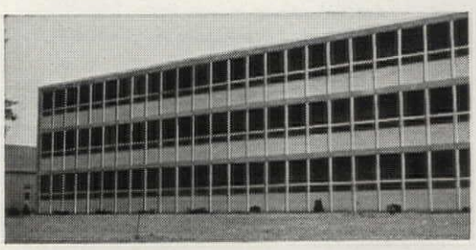
Another UNIVERSITY builds the modern way... with HASKELITE® PANELS

Taylor University in Upland, Indiana is the latest university to utilize Haskelite building panels. This 176-student dormitory requires very little maintenance. Architect—Orus O. Eash, Ft. Wayne, Ind. Contractor—Bowman Construction Co.

■ To meet booming enrollments, our colleges and universities must take full advantage of every building dollar. Haskelite building panels help them do this by providing bonus floor space. Buildings go up faster, too.

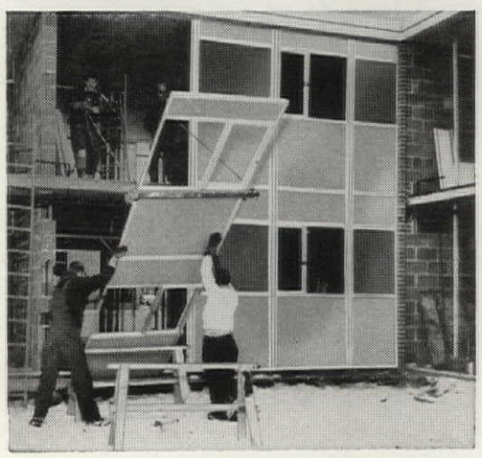
Along with being prefinished, Haskelite plastic laminated panels are structurally strong, moistureproof, noncorrosive, rotproof, verminproof, lightweight and provide a constant insulating value. They add a modern appearance to curtain and window wall buildings . . . are easily installed with a minimum of labor.

Haskelite panels are available in a wide range of stock sizes and thicknesses, or in special sizes when specified. For the complete story on the advantages of Haskelite panels, write: Haskelite Manufacturing Corporation, Department BN-6, Grand Rapids 2, Mich.

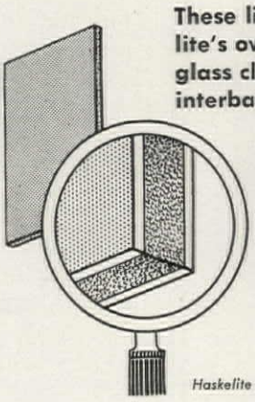


The modern, attractive appearance that can be gained with Haskelite panels is shown here in the students' dormitory at Marion College, Marion Ind. Architect—Orus O. Eash. Contractor—Bowman Construction Co.

New student housing at Michigan State University goes up rapidly with Haskelite panels. Entire wall can be installed without expensive erection equipment. Architect—Manson Carver Associates, Lansing, Mich. Contractor—Christman Co.



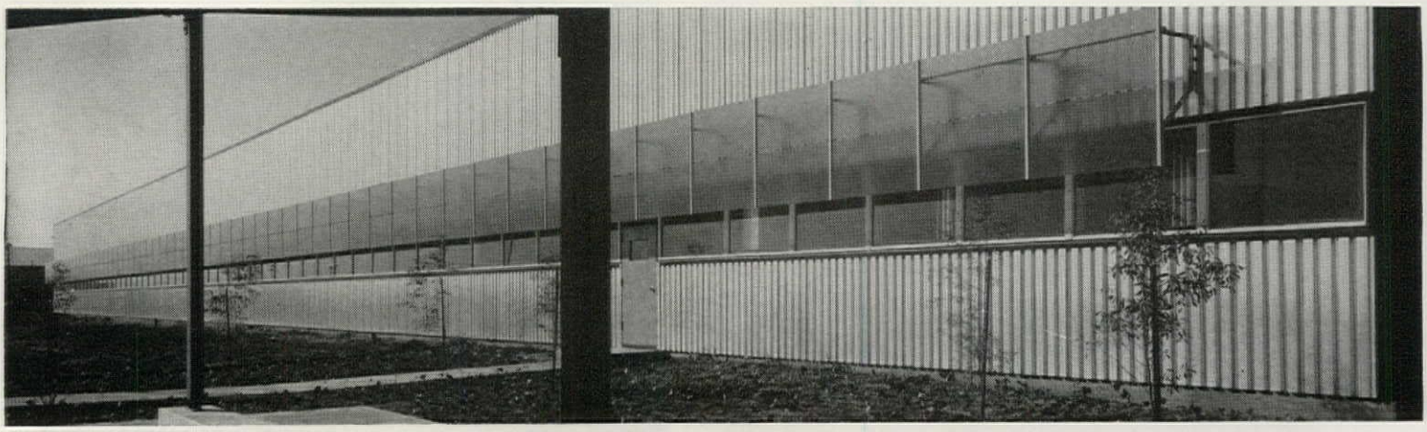
These lightweight panels incorporate Haskelite's own Polyester Resin impregnated fiberglass cloth faces, bonded to cement asbestos interbands, and a foamed polystyrene core.



HASKELITE
MANUFACTURING CORPORATION
Grand Rapids 2, Michigan

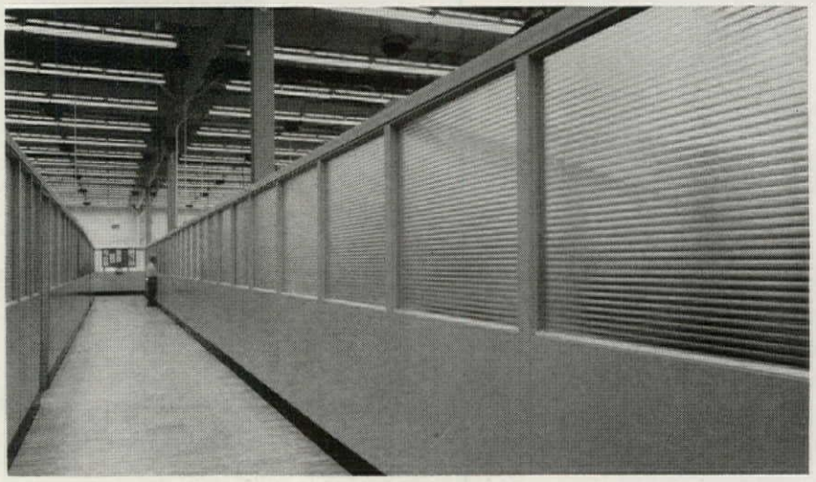
Haskelite is a registered trademark

LIGHT DIFFUSING GLASS MAKES . . .



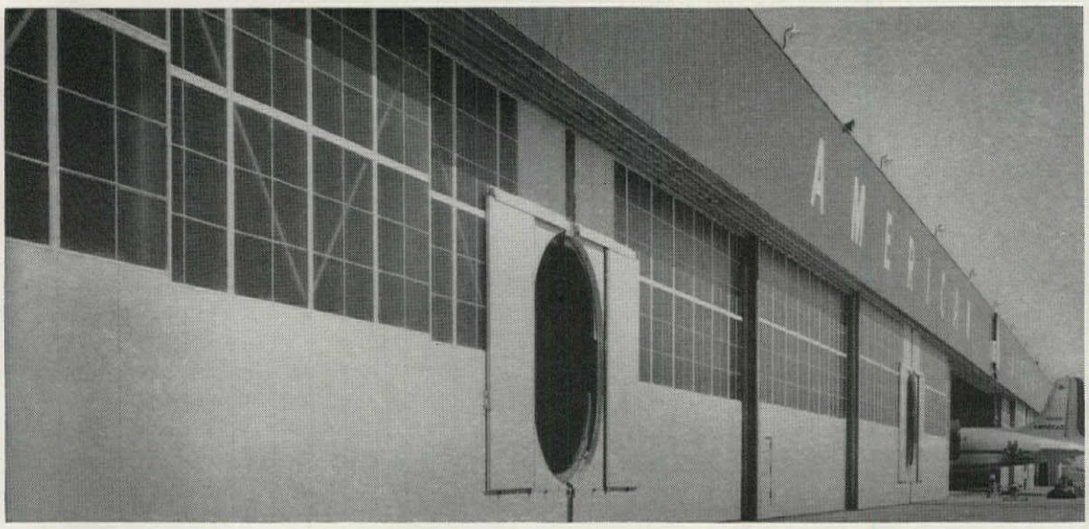
Architects: Marcel Breuer and Associates
Supervision: Craig Ellwood

A point of special architectural interest in the new Torrington Manufacturing Co. plant at Van Nuys, California is the sunshade of Coolite heat absorbing wire glass that spans the western elevation.



Complementing the spectacular new IBM offices in San Jose, California are these Hauserman partitions, glazed with lustrous Mississippi Broadlite glass.

Architect: John S. Bolles, San Franciso, Calif.
Partitions by: E. F. Hauserman Co., Cleveland, Ohio



1260 lights of ¼" Coolite Wire Glass provide better daylight with protection, while absorbing excess solar heat in expansive American Airlines Hangar at Los Angeles International Airport.

Architect: Quinton Engineers Ltd., Los Angeles, California
Glazing by: W. P. Fuller and Company, Los Angeles, California

M I S S I S S I P P I

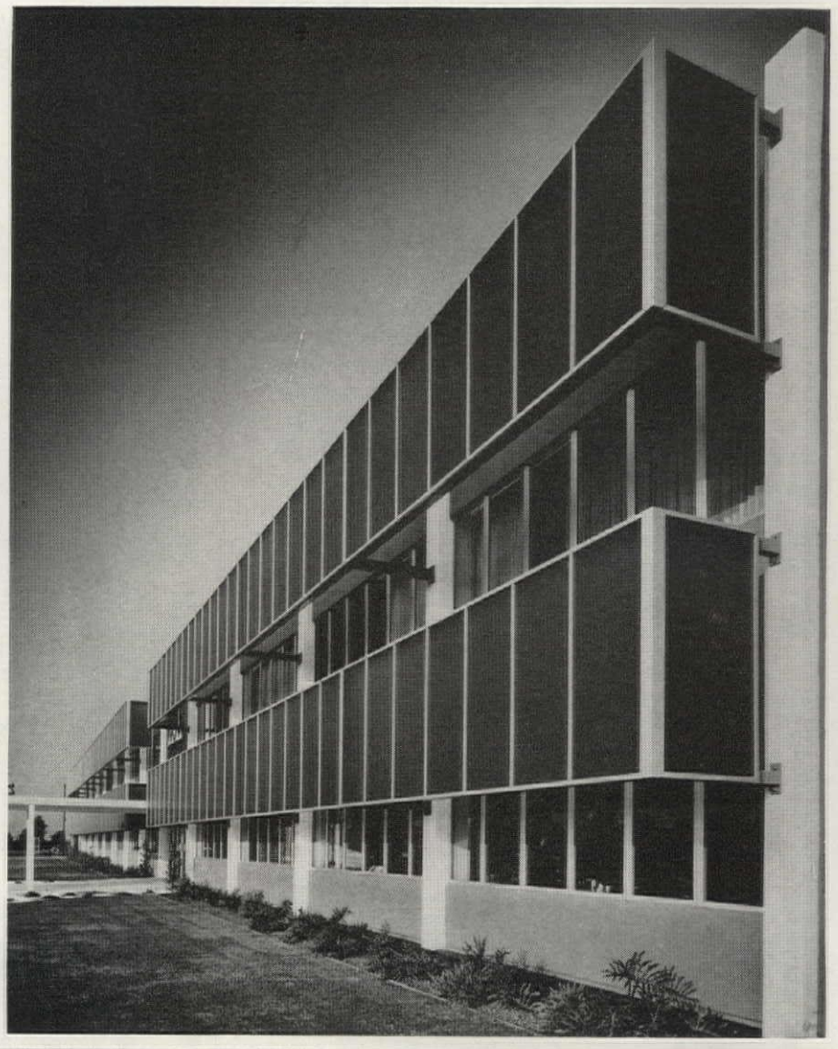
NEW YORK • CHICAGO • FULLERTON, CALIF.

WORLD'S LARGEST MANUFACTURER OF

Daylighting and *Dollars* GO FARTHER

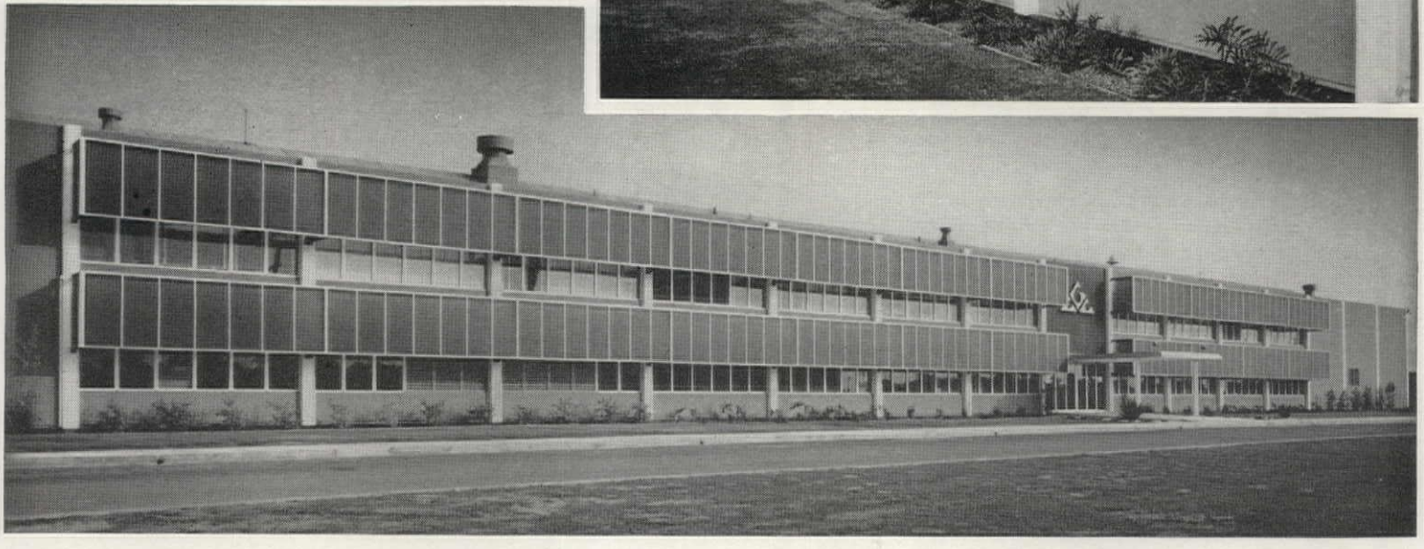
To make the most of daylight, use translucent, light diffusing glass by Mississippi. For utility, beauty and economy, unmatched by any other glazing medium, specify Mississippi Glass. Available in a wide variety of patterns, wired and unwired, at better distributors everywhere.

Write for new 1958 Catalog. Address Department 6.



A place in the sun is especially desirable when heat absorbing blue-green Coolite Glass is there to help employees see better, feel better, work more comfortably. A brand new concept in "extended screen" glazing technique that combines beauty and utility.

Growers Container Corporation, Fullerton, Calif.
Architect: Falk and Booth, San Francisco, Calif.

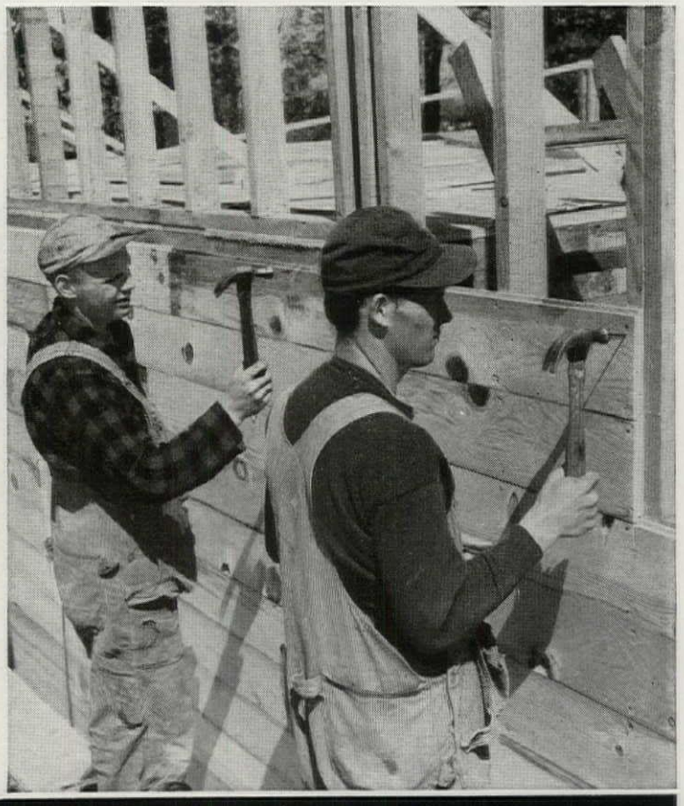


G L A S S C O M P A N Y

88 Angelica St. • St. Louis 7, Mo.

ROLLED, FIGURED AND WIRED GLASS

Wood Sheathing gives homes greater value



● Builders know that the selection and application of sheathing is an important step in building homes. Many use wood sheathing because it does much more than merely cover the framework. Fine homes are made even better when wood sheathing is used to add strength to the structural framing.

Weyerhaeuser 4-Square wood sheathing helps you build a rigid structure . . . tying it together securely and permanently. Weyerhaeuser 4-Square wood sheathing is kiln-dried for great stability and increased nail holding power. Wood serves as a durable base for exterior coverings without the need for furring strips.

Kiln-dried Weyerhaeuser 4-Square wood sheathing has been a favorite of builders for generations. Ask your local Weyerhaeuser 4-Square Lumber Dealer about the various species and grades readily available.

Weyerhaeuser 4-SQUARE®

LUMBER AND BUILDING PRODUCTS

DESIGN NO. 6115

Shown here are two of the many professionally planned modern home designs available to builders at the yards of local Weyerhaeuser 4-Square Lumber Dealers. Homes to suit every taste and budget are included in the complete selection. All are engineered for durability, lasting value, and economical construction. Complete blueprints and accurate material lists available for each home.

DESIGN NO. 7105

Basically better because...

IT'S KILN-DRIED

● Trademarked Weyerhaeuser 4-Square Lumber is properly seasoned by scientifically controlled methods of drying. The result is lumber which has maximum strength, finishes easily, and holds nails securely. Kiln-drying also promotes dimensional stability.

● Besides being kiln-dried, Weyerhaeuser 4-Square Lumber is precision manufactured, uniformly graded and identified, and carefully handled. All these features contribute to the consistently high quality of Weyerhaeuser 4-Square Lumber, creating customer satisfaction and profitable repeat business for builders who use it. The Weyerhaeuser 4-Square trademark is your assurance that you are buying lumber and building products which are basically better.

Weyerhaeuser Sales Company

ST. PAUL 1, MINNESOTA

A focus on current architecture

PHOTOS: CHAS. R. PEARSON

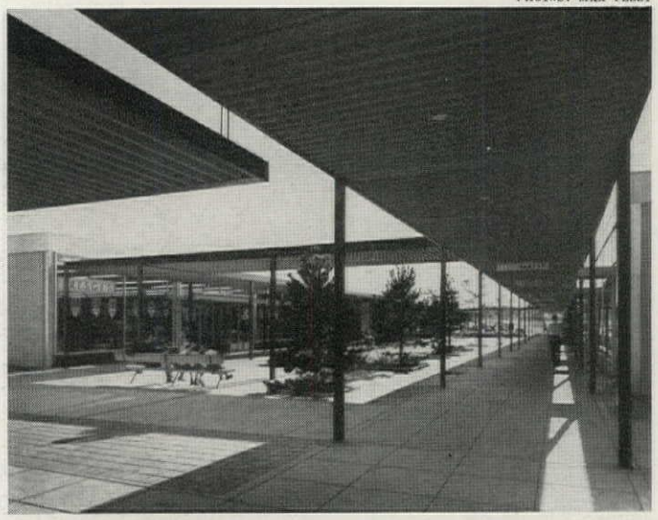
GLASS BANK

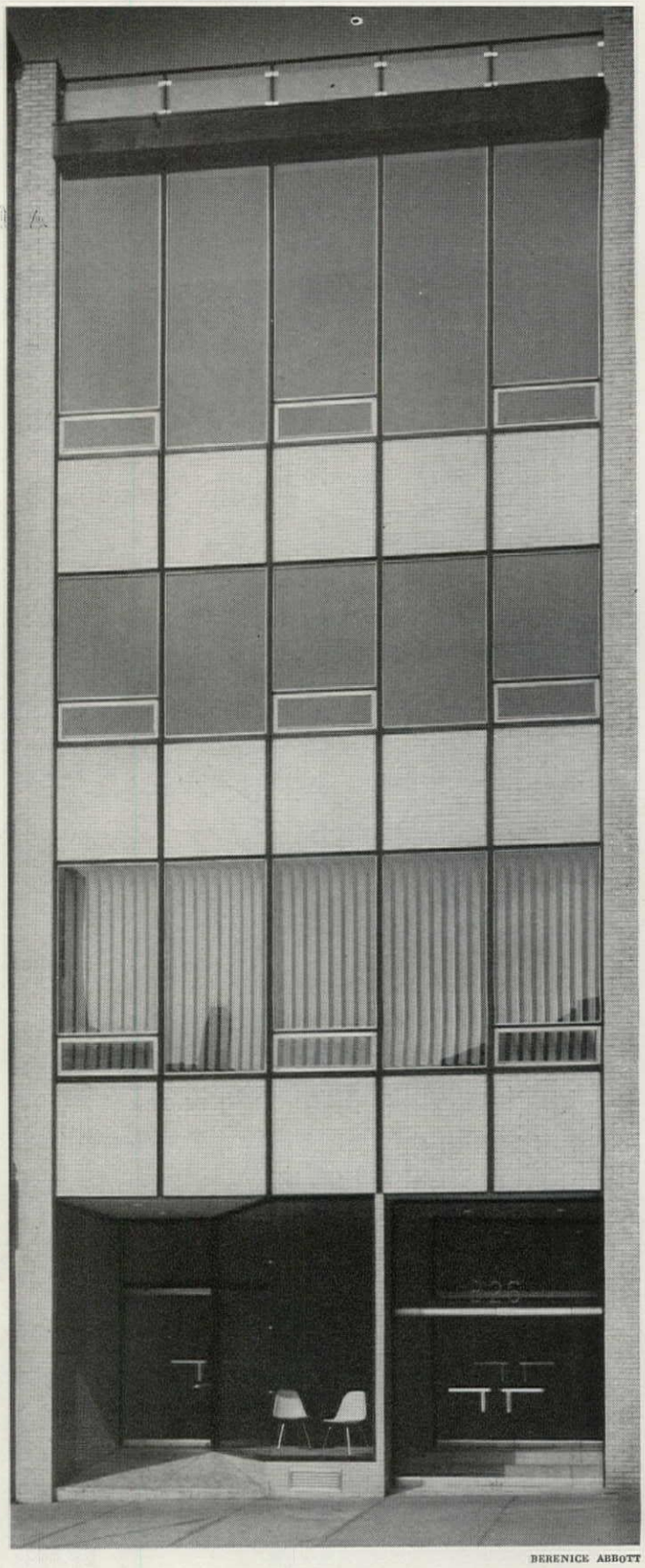
In the new open-look spirit of bank design, this small community branch bank has come out with an unusually elegant appeal to the passing public. The Seattle First National Bank's Bellevue branch, winner of a 1958 AIA Award of Merit, is all glass to the north, south, and east. The height, openness, and light colors of the main banking room practically eliminate the need for electric light during the day, and reduce light contrast between inside and outside. In summer, high-angle sunrays are reflected by double glazing, and a 1-inch film of water on the roof. In winter, the lower sun angle allows more rays to penetrate the glass and help heat the interior. The result, surprisingly, is that the all-glass bank can be comfortably lighted, heated, and cooled at considerably less expense than many conventional buildings in the area. Some of the savings are used to light up the bank as an advertisement at night. Mithun & Nesland, Ridenour & Cochran, architects.

SHOPPING IN A GARDEN

From a distance, the new Don Mills shopping center in Toronto, Canada, looks like many others: low modern buildings behind a sea of parked cars. Inside the center, however, Architects John B. Parkin Associates have created a gardenlike atmosphere within a framework of restrained, well-detailed stores connected by canopied walks. Paving changes from wide-set concrete patterns on the walks to a warm brick texture for sitting areas, where there are benches on graceful steel legs. Even between the windowless backs of buildings (center photo), planting and paving are carefully used to brighten what might otherwise be an alley. In a central plaza, a pool adorned with planting and boulders makes a pleasant focus for shoppers.

PHOTOS: MAX FLEET





BERENICE ABBOTT

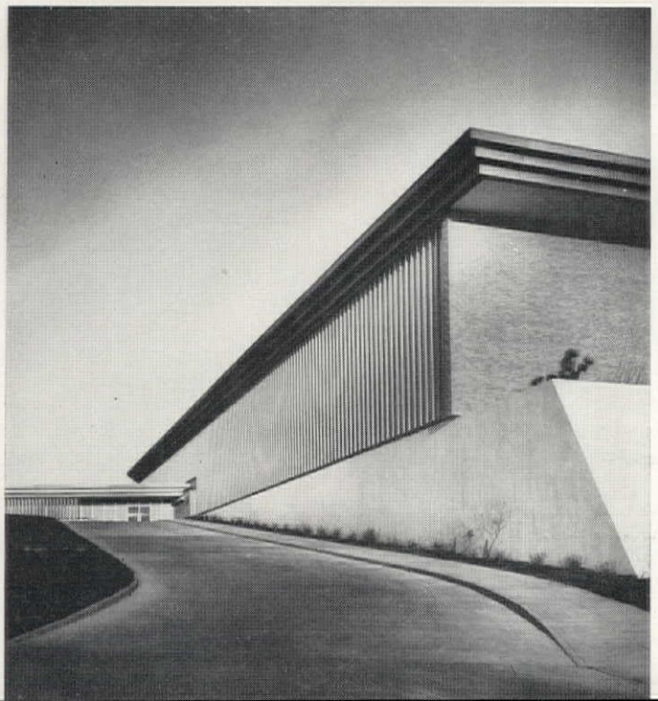
TAILORED RECONSTRUCTION

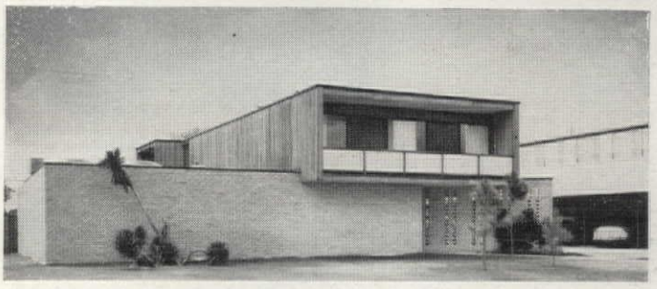
In the midst of nondescript buildings along New York's Seventh Avenue, Architect Giorgio Cavaglieri has transformed an old warehouse on a 25 by 100 foot lot into a smart, slim-lined office headquarters for the Theater and Amusement Service Employees Union. Retaining old side walls, rear wall, and floor beams, Cavaglieri added steel columns at the front corners, supporting steel spandrel beams at each floor. From these hangs a grid of steel mullions painted black, smartly set off by gray brick spandrels and bright aluminum window trim. The irregular spacing of the old floors lends a fresh note to the façade. Reconstruction included air conditioning and an elevator.

INSURANCE COMPANY HEADQUARTERS

The flat, sweeping lines and sandy hues of the prairie are echoed in this new home office building for the Commercial Standard Insurance Co. outside Fort Worth. Situated above a main highway intersection, the long, L-shaped building sits behind a visitors' parking lot. A low wing for executive offices has a canopied walk from the main entrance down to the angular fireplace wall of the president's office (top photo). The general-office wing raises an end wall of natural brick above a concrete planting bed and employee dining terrace. Offices are shielded (middle photo) by adjustable metal louvers. Associated architects: Preston M. Geren and MacKie & Kamrath.

PHOTOS: MAYNARD L. PARKER





PHOTOS: FRED WINCHELL

ARCHITECT'S RETREAT

Getting home from the office should be a pleasure for Robert H. Wilson Jr. and his three tenants in this small apartment building Wilson designed near Houston's River Oaks section. Living rooms face out in different directions for privacy—upstairs, they open out to balconies; downstairs, to high-walled garden courts. When Wilson has parties in his own ground-floor bachelor apartment, he can almost double its size by sliding open big glass walls to a terrace landscaped with plants, pool, and sculpture, and floored with terrazzo. Sliding screens (bottom photo, foreground) can also be opened to add the bedroom to the space. Smart & Whitehead, associated architects.

17,000 SQ. FT.

More than 10% of the exterior surface of the giant new Seagram Building in New York City is sheathed with marble panels, and an additional 46,000 square feet of marble is used in the lobby and throughout the upper floors. Architects Mies van der Rohe and Philip Johnson specified this great quantity of marble as part of a design plan which utilizes a small number of rich, compatible materials to enhance a classical simplicity. The total effect is luxurious without being gaudy, modern without being coarse, and monumental without being pretentious.

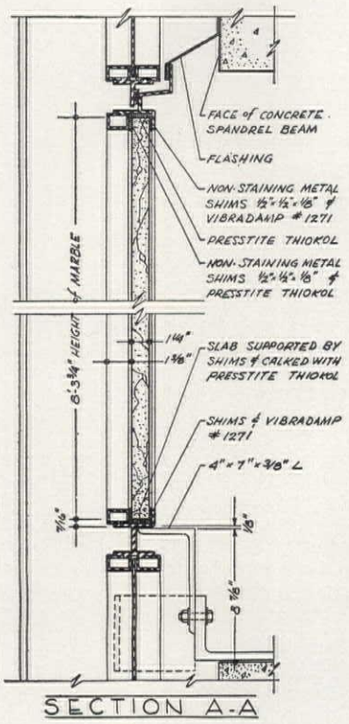
It is significant that these effects were achieved at reasonable cost. The vast areas of marble, for instance, absorbed less than 3% of the cost of building; and this small amount will eventually be written off through savings on low maintenance.

MIA

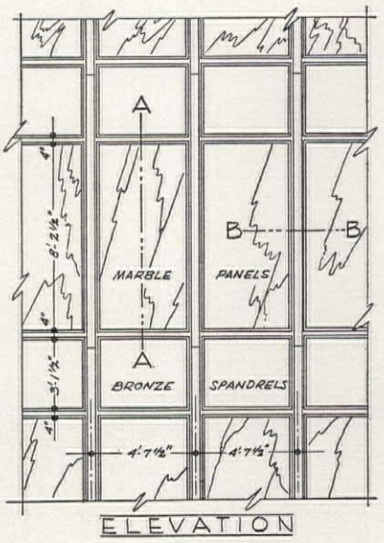
Marble is as modern as the building in which it is used, and more economical than most materials which might be used in its place.

THE SEAGRAM BUILDING,
New York City
Architects: Mies van der Rohe and Philip Johnson
Associate Architects: Kahn and Jacobs

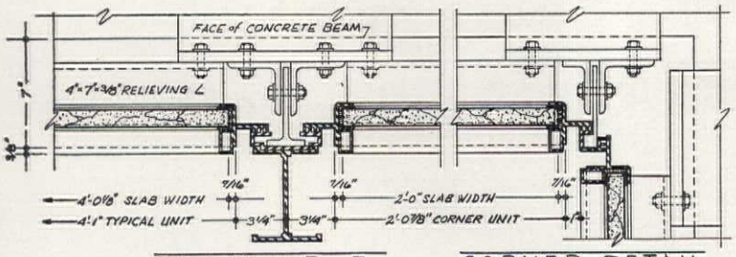
OF MARBLE PANELS



SECTION A-A



ELEVATION



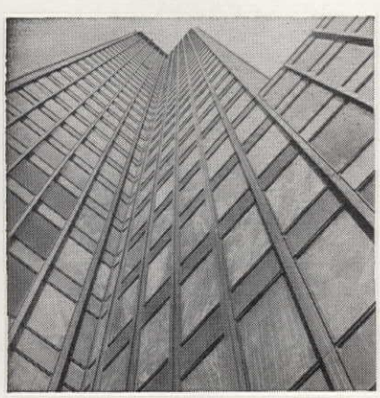
PLAN B-B

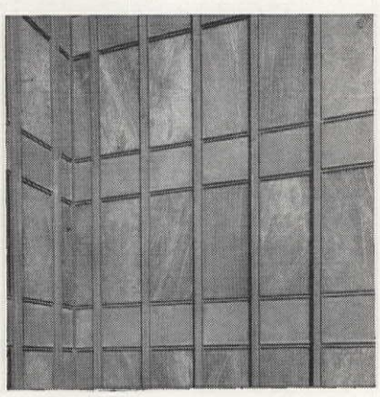
CORNER DETAIL

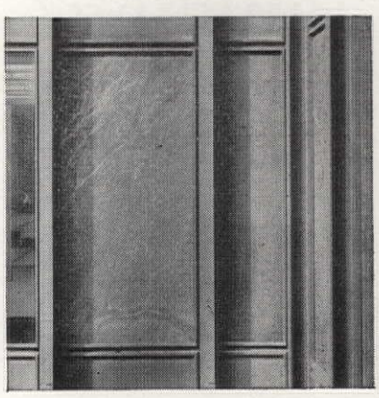
The Marble Institute of America has developed a wealth of information on marble which is available on request by writing:

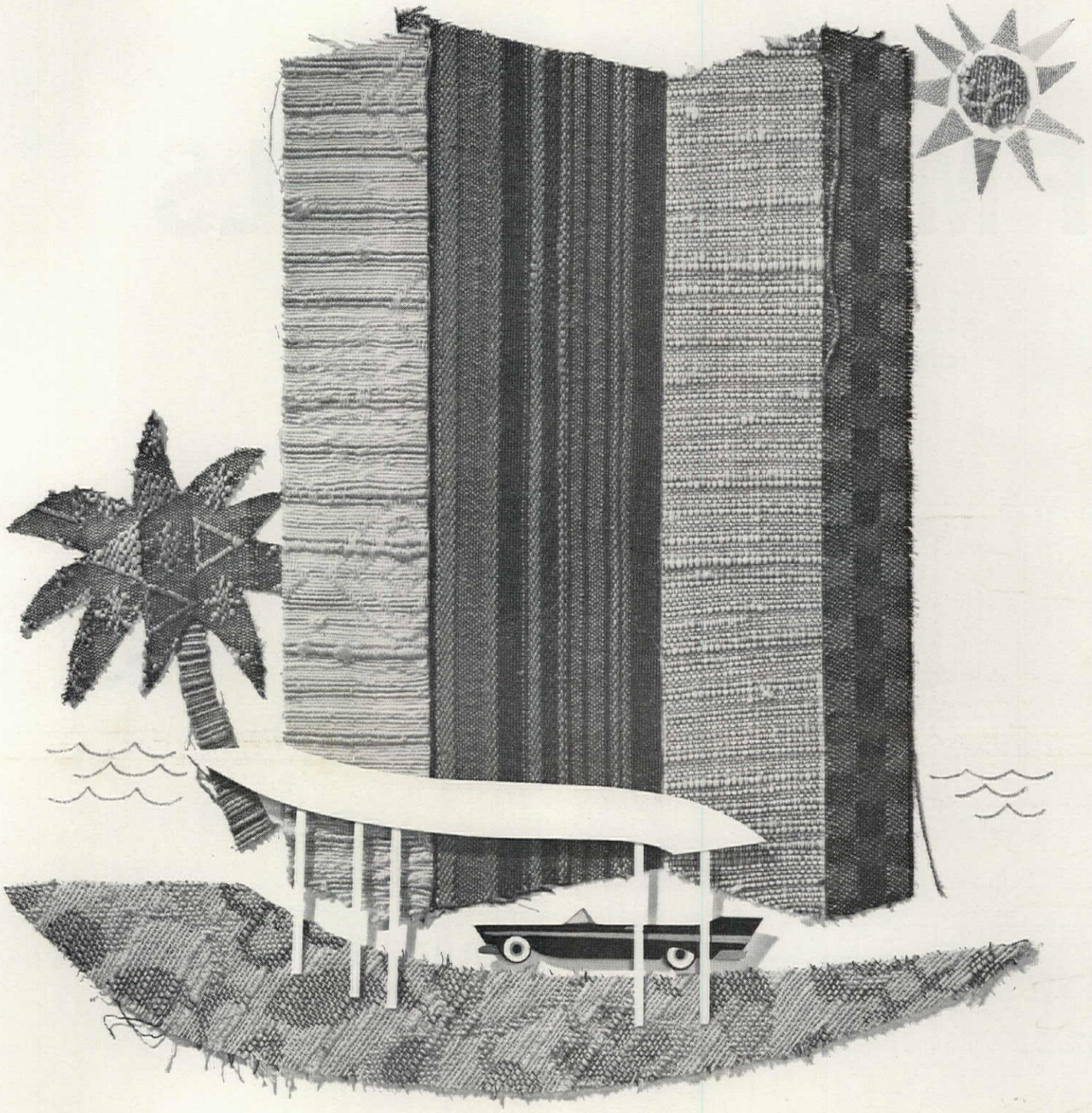
MARBLE INSTITUTE OF AMERICA, INC.

32 SOUTH FIFTH AVE. • MOUNT VERNON, NEW YORK









Hotel Building? For rooms that register with guests, specify Thorp drapery and upholstery fabrics... from a nearby, efficient Thorp office.

MEMBER OF fine Fabric Houses

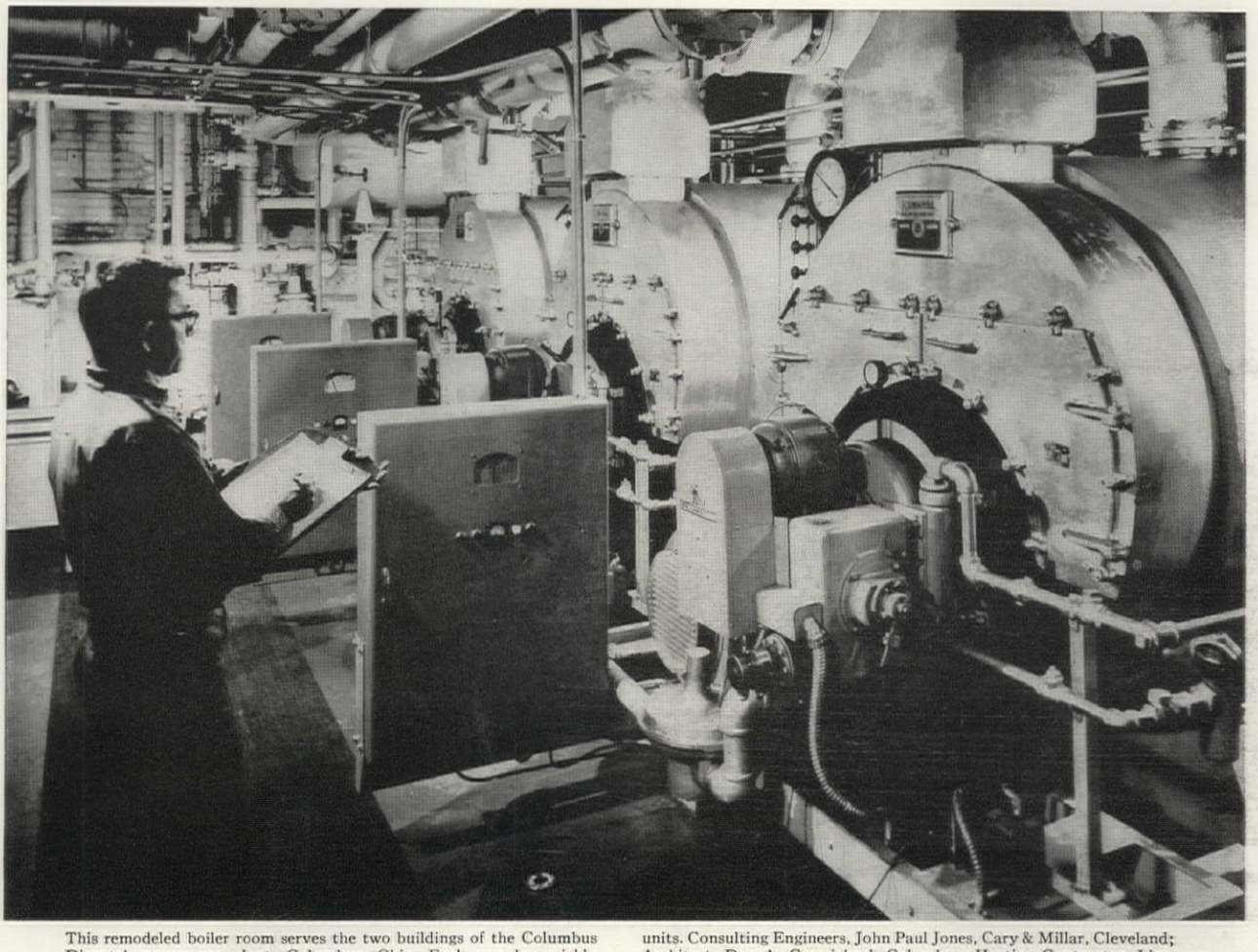
A WORLD OF FINE FABRICS

Thorp

J.H. THORP & CO., INC., THE DECORATOR'S MART, 425 E. 53rd ST., NEW YORK • BOSTON • PHILADELPHIA • CHICAGO • MINNEAPOLIS • DALLAS • LOS ANGELES • SAN FRANCISCO

The smart way to modernize

. . . specify your heating plant in one package



This remodeled boiler room serves the two buildings of the Columbus Dispatch newspaper plant, Columbus, Ohio. Fuels can be quickly changed in these three Iron Fireman-Kewanee gas-oil boiler-burner units. Consulting Engineers, John Paul Jones, Cary & Millar, Cleveland; Architect, Dan A. Carmichael, Columbus; Heating Contractor, Limbach Co., Columbus.

Iron Fireman burner with boiler — engineered as a single unit

These famous boiler-burner units are the products of two great specialists—each in its own field. They are engineered for each other. Included in one catalog, they can be ordered by a single model number from one set of specifications.

Plenty of reserve power

You can feel *safe* in specifying Iron Fireman equipment. These thoroughly engineered units are conservatively rated. The normal firing rate is a comfortable cruising speed—less strain, low maintenance, quiet operation, higher efficiency —and that big extra capacity is always standing by to pick up extra loads.

Compact and complete

These complete steam or hot water generating units require little more than service connections. Automatic controls, air and fuel systems are built in. No special boiler settings; low headroom; no high stack.

Please mail coupon for catalog and specifications.

IRON FIREMAN®

AUTOMATIC FIRING EQUIPMENT
FOR OIL, GAS, COAL

IRON FIREMAN MANUFACTURING CO.
3041 West 106th Street, Cleveland 11, Ohio
(In Canada, 80 Ward Street, Toronto, Ontario)

Please send catalog and specifications on following equipment:

☐ Complete boiler-burner units
☐ Forced draft firing unit only

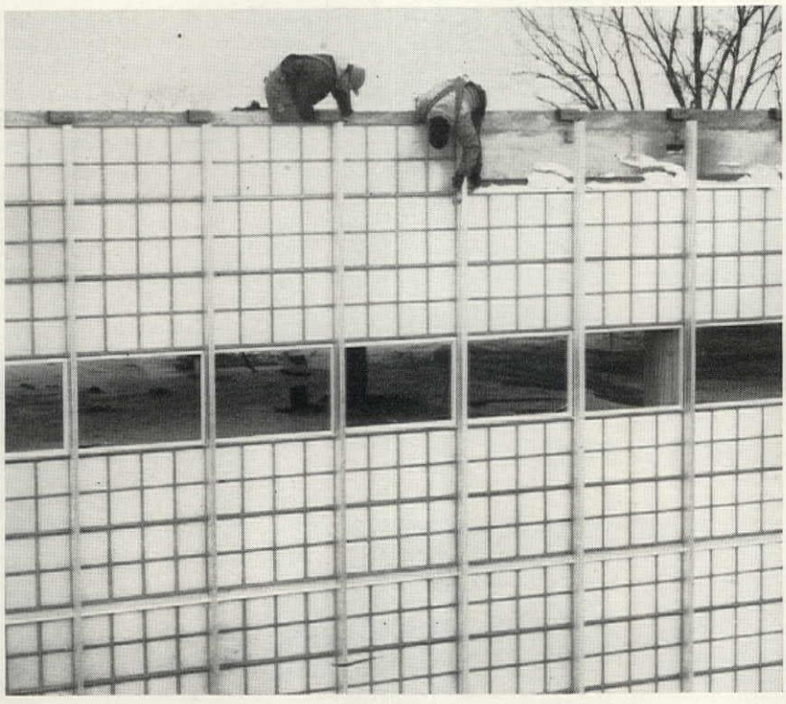
Name_____

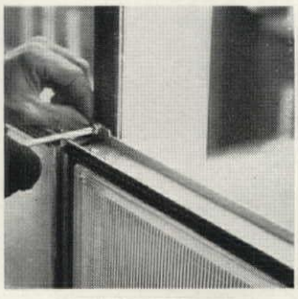
Firm_____

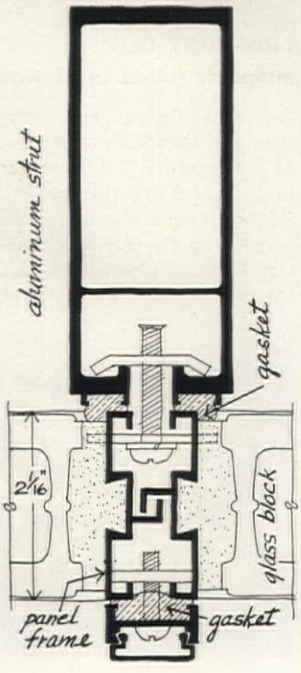
Address_____

City_____ State_____

Glass block curtain wall . . . stainproof floor finish . . . weatherproof plastic dome . . . street-spanning escalator







THIN GLASS BLOCK
preset in curtain wall panel

By adapting thin (2 inch thick) glass block to the curtain wall concept, Owens-Illinois has come up with an exterior paneling system that is easy to assemble—and quite handsome. Known as the *Thinlite System,* its basic parts are vertical aluminum struts (which can be positioned either outside or inside the façade) and panels of glass block preset at the factory with a special cement. These panels, which are framed in extruded aluminum, are 4 or 5 feet wide, 2 feet high, and 2 inches thick. At the job site they are simply stacked one on top of the other and bolted to the struts, as shown in the photo at left. The aluminum frames interlock to speed installation; a unique arrangement of hard and soft neoprene gaskets weatherproof all panel joints; and an assortment of aluminum batten strips, sills, head members, and connectors provide a neat, trim finish. All elements in place, the wall is complete, inside and out.

Panels with standard prismatic, foot-square glass units are available in three colors: white, blue-green, and yellow. To afford further design flexibility, panels with a ceramic or porcelain face, and of clear or decorative glass, are also available. Standard 2 by 4 foot panels weigh 90 pounds and are designed to support their own weight, though they are not load bearing. Individual glass blocks in each panel contain a 1 inch air space and are said to have an over-all insulating value equal to double glazing. Panel cost per square foot: $4.50 to $5, installed.

Manufacturer: Owens-Illinois Glass Corp., Owens-Illinois Bldg., Toledo 1, Ohio.

CONCRETE FINISH
makes industrial floors stainproof

In England, where it has been extensively tested in airline maintenance hangars, a new finishing compound for concrete floor slabs provides a white, light-reflective coating that is said to be completely stainproof, even if ill-treated daily with grease, lubricants, and brake fluids. Known as *Snow-Top,* the compound is applied to the wet slab. Cost: 95 cents a square foot. A "diamondlike" hardness that will last as long as the concrete itself is also claimed for the product.

Manufacturer: J. H. Sankey & Son Ltd., England. U.S. Distributor: Perma-Stone International Ltd., 320 5th Ave., New York 1, N.Y.

AIR-SUPPORTED DOME
made of tough, clear plastic film

The *Schjeldome*—an air-supported bubble-shelter which serves as a low-cost, easy-to-assemble maintenance or storage unit—is fabricated from the Du Pont Company's recently developed *Weatherable Mylar,* a thin (0.005 inch), transparent polyester plastic with a probable all-weather life of six years (previous *Mylar* films had a probable three-year life-span). Shown

here (with a special air lock entrance for fork-lift trucks), a 30-foot-high and 60-foot-diameter model affords 3,000 square feet of protected floor space and, according to the manufacturer's wind-tunnel tests, will ride out 75-mile-an-hour gales. Two small (1 horse power) electric blowers support the unique 300-pound structure. Inflation time: 25 minutes. *Schjeldomes* now on the market range from a 20-foot-

continued on page 128

diameter hemisphere at $1,130 to an 80 by 180 foot oblate model at $14,789.

Manufacturer: G. T. Schjedahl Co., Box 170, Northfield, Minn.

METALLIC PUTTY
gives wood a low-cost face lifting

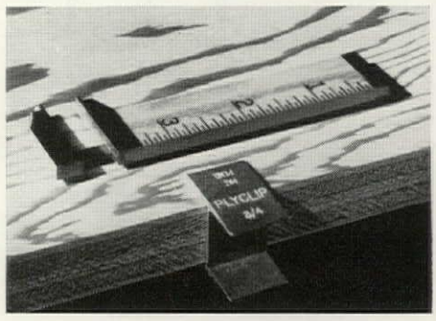
The material being brushed onto a rotted window sill in the picture below might be called the answer to a repairman's prayer. It is *Magna-Bond Putty X*, a tough aluminum-vinyl compound that restores and protects rotted wood or scarred metal at a cost of about 40 cents a square foot (or, in the case of sills, about $1 each). Developed first as a sealant for refinery bulk tanks, *Magna-Bond* is easily applied with brush, spray gun, or trowel and dries to a grayish-dull, metal-smooth finish that can be painted, buffed, or left as is. When dried it is nonflammable, odorless, nontoxic, and a nonconductor of electricity. In addition, it is said to be rustproof, highly resistant

to most acids, and impervious to weathering or temperature extremes. Cost per gallon: $22.

Manufacturer: Magna-Bond Inc., 1718 S. 6th St., Camden, N. J.

LOW-COST CLIP
supports joints in plywood decking

An inconspicuous and inexpensive aluminum clip that looks much like a section out of a miniature "I" beam can now be used instead of 2 by 4 blocking to reinforce the joints between plywood roofing panels. Developed by the Plywood Research Foundation to speed plywood sheathing over large spans (and thereby make plywood a more



popular roofing material), the tiny fasteners, called *PlyClips*, are merely slipped over the edges of adjacent panels midspan between rafters or purlins. With supports on 2 or 4 foot centers, about 125 clips are required per 1,000 square feet at a cost of about $5—or roughly one-sixth the cost of in-place blocking for the same area. Priced at 3½ cents each, *PlyClips* are an inch long and ¾ of an inch wide with webs suitable for ⅜, ½, ⅝, ¾, and 3/16 inch plywood thicknesses.

Manufacturer: Fluke Metal Products Inc., 11040 Alton, N.E. Seattle, Wash.

WOOD SHEATHING PANEL
faced with heavy kraft paper

For roof and side-wall sheathing, subfloors, and concrete forms, Weyerhaeuser Timber Company has developed a new panel that is said to cut application time by 30 per cent. The *Sheath-All* panel is a sandwich consisting of two sheets of

heavy (42 pound) kraft paper glued to a core of fir, hemlock, or cedar boards. Designed for easy handling by one man, the panel weighs 30 pounds, measures 2 by 8 feet, and is ¾ inch thick. Boards used in the core are not edge-glued, which allows for expansion and contraction, and prevents warping. Over-all insulation value ranges from 0.8 to 1 Btu, and the shiplap edges are said to provide an even, windtight, draftfree surface. Cost per 1,000 square feet: about $75.

Manufacturer: Weyerhaeuser Timber Co., Tacoma Bldg., Tacoma 1, Wash.

ARCHED ESCALATOR
carries passengers over busy street

In San Diego next year, the world's first *Trav-O-Lator*, a two-way moving sidewalk developed by Otis Elevator, will arch 127 feet across a busy thoroughfare to connect a new hotel and its affiliated motel. Designed as a level or contour conveyor, the *Trav-O-Lator* is essentially a modified escalator incorporating the same concept of flexible, safety-cleated platforms and "combed" landings. Each *Trav-O-Lator* travel-strip is 32 inches wide and capable of moving 7,500 passengers an hour. A balustrade supporting two moving handrails separates the two strips.

Manufacturer: Otis Elevator Co., 260 11th Ave., New York 1, N.Y.

continued on page 130

DECORATIVE ART
sealed into laminated plastics

The Formica Corporation of Cincinnati has announced development of a technique whereby hand-painted murals, silk-screened wallpaper patterns, and inlayed trademarks or abstract designs can be sealed into the manufacturer's plastic laminate. Original paintings and silk-screen prints are executed in special inks on the resin-impregnated surface of a *Formica* sheet, prior to the final pressing operation. For inlays, sheets of *Formica*-treated paper are cut to desired shapes and laid into the laminate. Shown above is a Chinese hand rubbing that has been reproduced with the silk-screen technique. *Formica's* custom process costs from $2.50 to $20 per print, plus initial tooling and set-up charges.

Manufacturer: Formica Corp., 4614 Spring Grove Ave., Cincinnati 32, Ohio.

VINYL ROOFING SHEET
acts as nonflammable vapor barrier

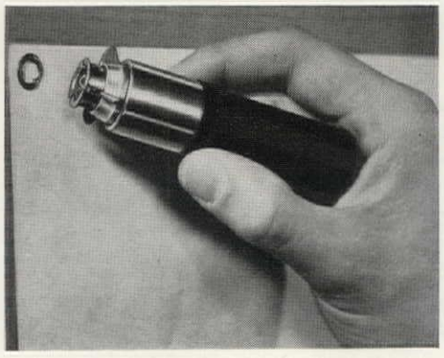
An inexpensive, film-thin (0.004 inch) vinyl sheet with a highly reflective metallic sheen has been developed to serve as a fire-resistant vapor barrier between decking and insulation in built-up roofs. Easy to apply, the film is simply rolled on and secured with a special rubber-base, "cold"

adhesive. The machine automatically coats the film's underside, lays it on, and at the same time applies ribbons of adhesive across the top for imbedding the insulation. With or without such a machine, no heating (as with asphalt or pitch techniques) is necessary. A 27 pound roll, 32 inches wide, covers 1,080 square feet at a cost of about 6 cents a square foot, labor and adhesive included.

Manufacturer: Reflecto-Barrier Sales Co., Inc., P.O. Box 1452, Hartford 1, Conn.

SWISS DRAFTING TOOL
fixes and retracts special tacks

The *Tack-N-Taker* shown below is an ingenuous little Swiss device that fixes paper to the drafting board with a special three-pronged tack. The operation is much like that of a stapler: light down-pressure on the tool's magazine-handle rams the tack home. But unlike a stapler, the *Tack-N-Taker* can also be used to extract and reclaim the same tack back into the



magazine. Magazine capacity: 60 tacks. Price for the tool, plus a box of 100 reusable tacks: $5.95.

Distributor: Color Fix Import Co., 1409 Willow St., Minneapolis 3, Minn.

BELGIAN WALL PANEL
has resin-supported flax core

The raw material that linen is made of, flax, is impregnated with special synthetic resins to form a lightweight, but rigid insulating core for a thin (1⅜ inch) curtain-wall panel from Belgium. Known as *Eternex*, the new panel is faced back and front with stone-hard, enamel-smooth, asbestos cement sheets. These sheets, which are just ⅛ inch thick, will not crack when hit with a hammer, or scratch when scraped with a knife. They are said to be completely impervious to temperature extremes, weathering, and acid attacks. Available in sizes of 4 by 8, and 4 by 10 feet, and in 25 colors, *Eternex* panels weigh 5½ pounds per square foot and are reported to have an insulating capacity equal to that of a brick wall 22 inches thick. Panel cost: $1.35 a square foot.

Manufacturer: S. A. Eternit Emaille, Kapelle-op-den-Bos, Belgium. U.S. Distributor: Sockin Enterprises, 11 Broadway, New York 4, N.Y. END

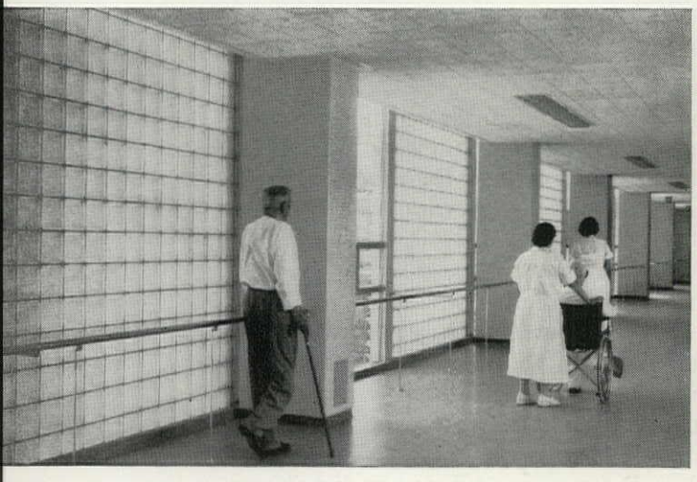
CURTAIN WALL IN A CORE BUILDING

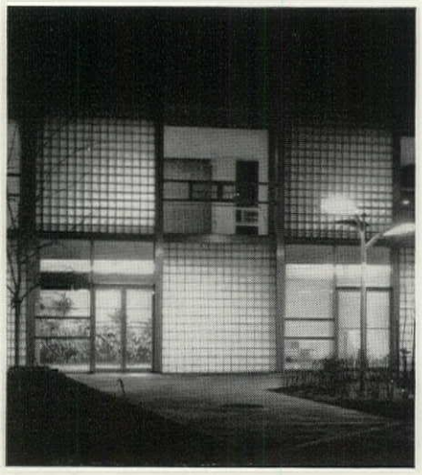
The structure that links together the three basic units of Pittsburgh's John J. Kane Hospital is called the Core Building. This facility is an orderly system of corridors that serves as a main traffic artery for staff and patients. In a way, the Core Building functions as a "Public Square" within this Hospital City of hope and rehabilitation for the aged.

With the exceptions of two passageway connections, both sides of the Core Building are uninterrupted curtain walls of alternating panels of functional Glass Blocks and plate glass.

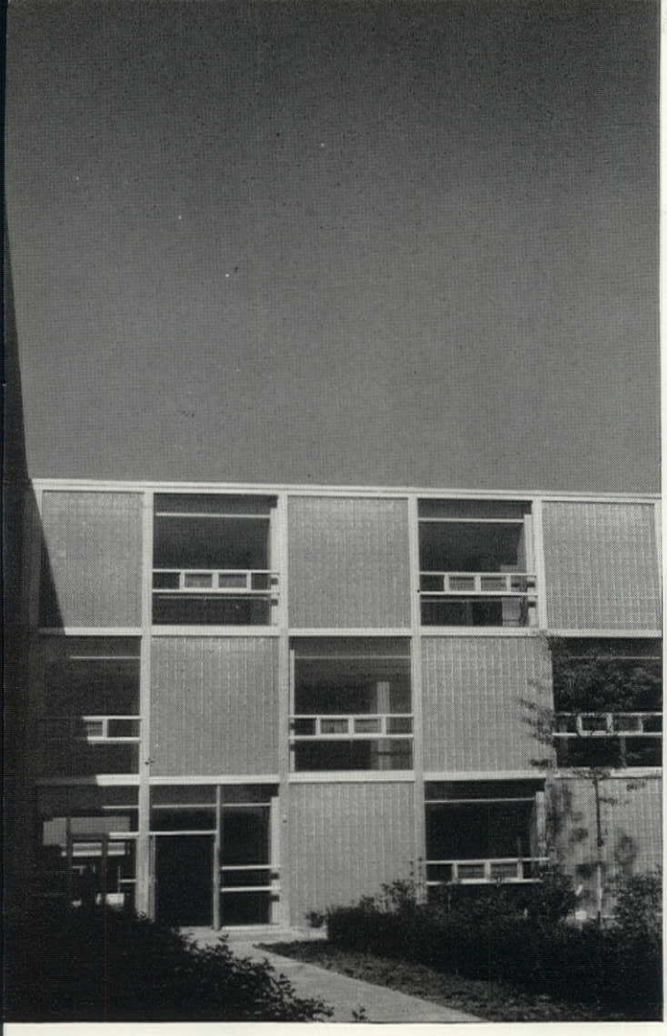
Psychological security dictated part of the thinking behind this design. The Glass Block panels, set at regular intervals, help create the feeling of solid, protective balusters in a huge railing. This aspect of the design works toward overcoming the "falling off" sensation that many people, and particularly the aged, experience when walking near the outside edge of a multi-storied building. The need for this security-impression is heightened here because handrailings, close to the curtain wall, support feeble, halting patients as they move from one area to the other, or pull themselves in wheel chairs.

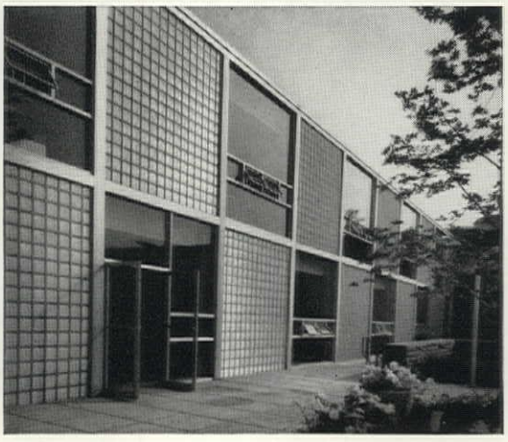
Therapeutic value provided additional support for the curtain wall design. Because monotony is so much a part of the lives of so many of the patients, the Kane Hospital planners





PITTSBURGH



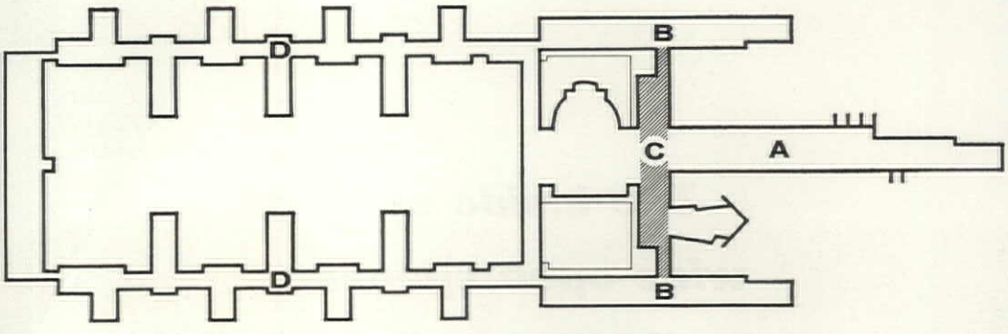


determined that the interplay of voids and solids, and the varied effects of incoming light in the corridor areas, would considerably increase the interest level of the environment.

Exterior interest and harmony were final considerations. Texture, substance, and a non-institutional appearance were all requirements that the Glass Block panels helped to satisfy.

The Glass Blocks used in the Kane Hospital were manufactured by Pittsburgh Corning Corporation. These Glass Blocks, identified as Prism B, are designed to reduce glare and heat, and transmit diffused and softened daylight. Their insulation value is equal to an eight-inch thick masonry wall. This feature lowers heat loss. And the maintenance-free characteristics of the PC Glass Block panels blend effectively with the other materials used in the curtain wall.

For product details on conventional PC Glass Blocks, and our new Color Glass Blocks, write for our General Catalog. Pittsburgh Corning Corporation, Dept. E-78, One Gateway Center, Pittsburgh 22, Pennsylvania. In Canada: 57 Bloor Street West, Toronto, Ontario. Also manufacturers of FOAMGLAS® insulation.

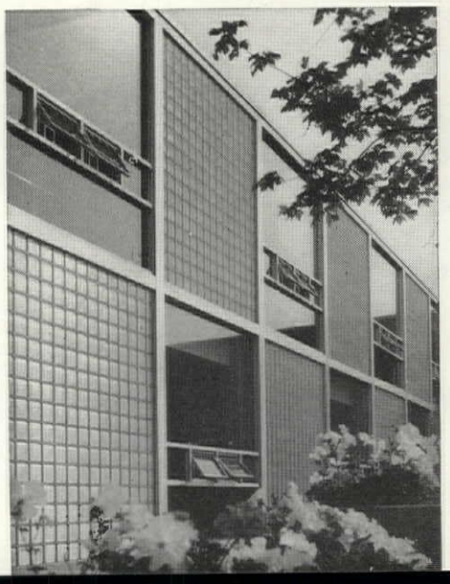


A. Main Hospital B. Semi-ambulant C. Core Building D. Ambulant

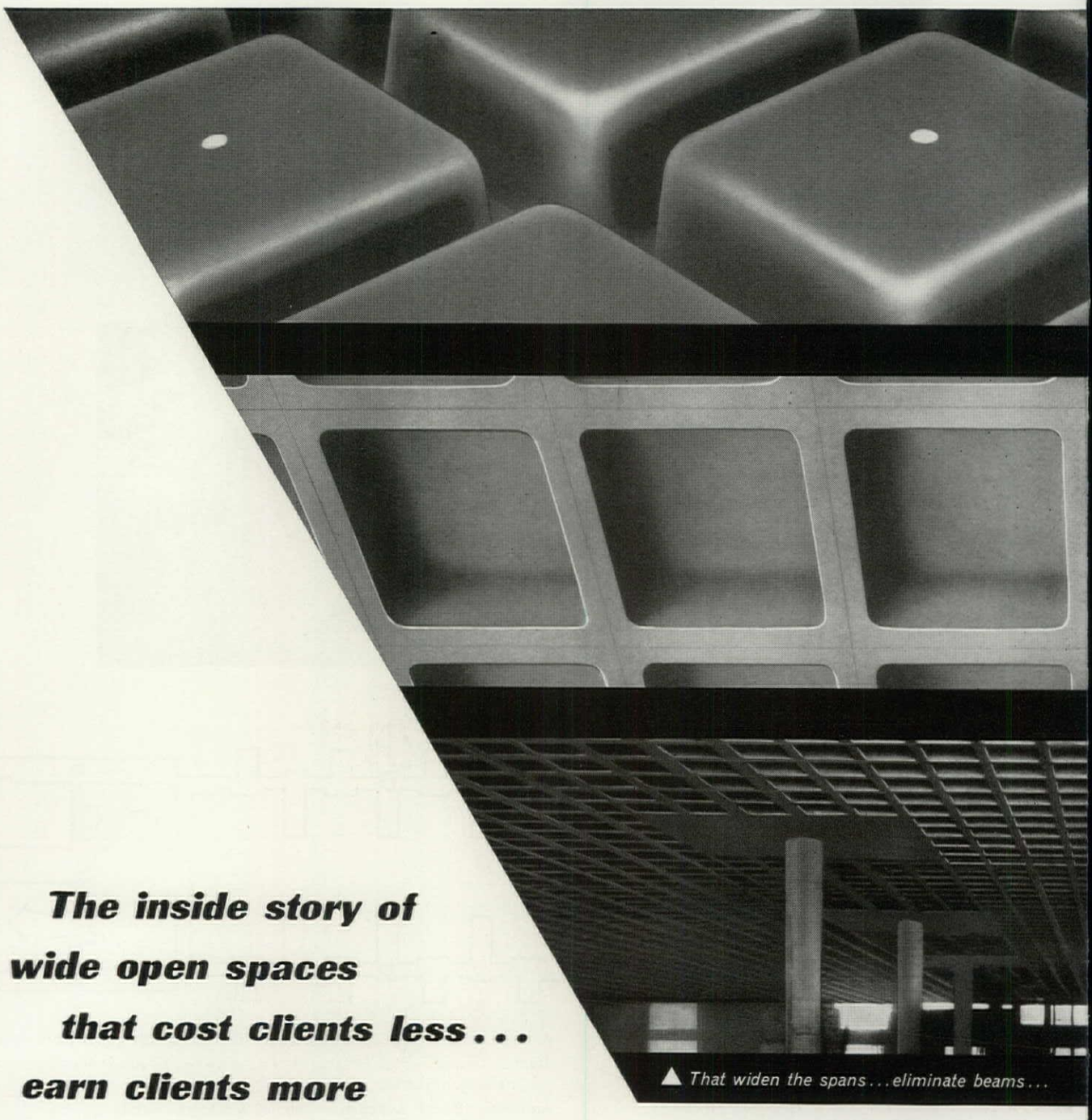
John J. Kane Hospital, Pittsburgh, Pa., is owned by Allegheny County Institution District.

Architects: Button & McLean—Mitchell & Ritchey, Pittsburgh, Pa.

General Contractor: Sherry-Richards Company, Chicago, Ill.



PC CORNING

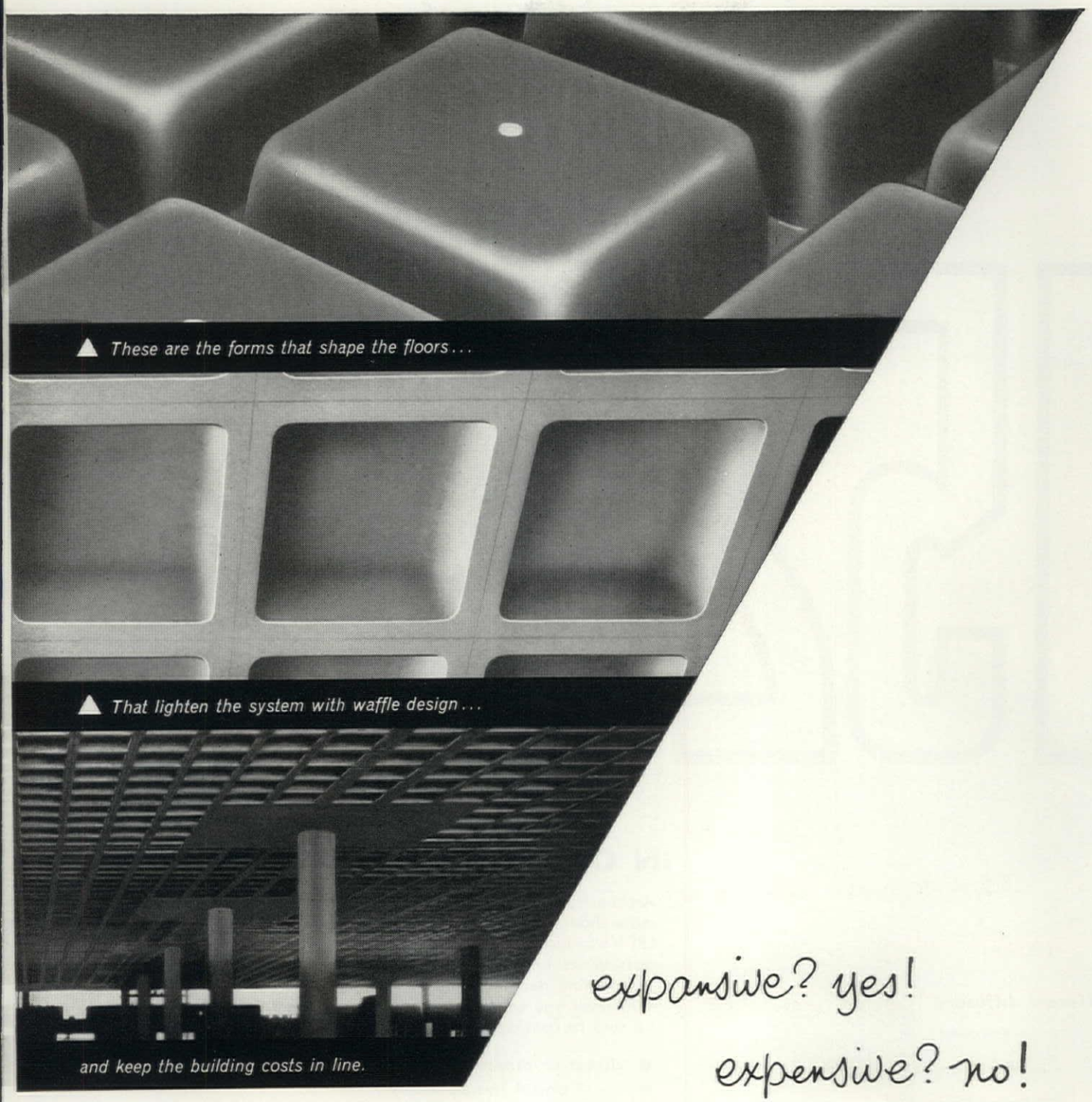


▲ *That widen the spans... eliminate beams...*

The inside story of wide open spaces that cost clients less... earn clients more

Ceco Steeldomes provide flexibility to meet span and load requirements. Available in four depths: 8", 10", 12" and 14".

CECO'S ONE-PIECE STEELDOMES TELL THE TALE . . . Architects and engineers are always seeking ways to span wider areas at lower costs . . . to design buildings that offer the highest return to the client. Ceco offers a solution: Two-way dome construction, using one-piece Steeldomes. Result: Fewer columns . . . uniform ceiling heights . . . no flared heads . . . no drop panels . . . more unobstructed areas for owners to use. The spans are expansive—but not expensive.



▲ *These are the forms that shape the floors...*

▲ *That lighten the system with waffle design...*

and keep the building costs in line.

expansive? yes!

expensive? no!

Savings in material and time are assured by the two-way design. And there is no higher quality concrete finish than provided by Ceco Steeldomes removed by compressed air. Ceco Steel Products Corporation. Sales offices, warehouses and fabricating plants in principal cities. General offices: 5601 West 26th Street, Chicago 50, Illinois.

IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE... Steelforms / Concrete Reinforcing Steel Joists / Metal Roof Deck / Windows, Screens, Doors / Cecoframe Buildings / Metal Lath

CECO STEEL

WRITE TODAY—WRITE NOW!

AF

CECO STEEL PRODUCTS CORPORATION
5601 West 26th Street, Chicago 50, Illinois
Please send catalog No. 4007 covering Ceco Steeldome construction.

name_____

position_____

firm_____

address_____

city_____ **zone**_____ **state**_____

new....LPI....VERSATAIRE

BRINGS YOU

152 different type units

IN ONE FLUORESCENT SERIES

Architects, engineers, and designers can command more than 152 different type units in this new LPI Versataire Series. Versataire offers unlimited possibilities to satisfy most all design and engineering demands and illumination benefits. Whenever you specify or consider fluorescent lighting be sure to consider the versatility of Versataire.

- **direct or direct-Indirect**
- **for 2 and 4 lamps**
- **in 4 and 8 foot lengths**
- **with solid and luminous sides**
- **with 6 different diffusers**
- **12" - 18" - 24" wide**
- **for close-ceiling or pendant mounting**

6 different diffusers

Ventrolens

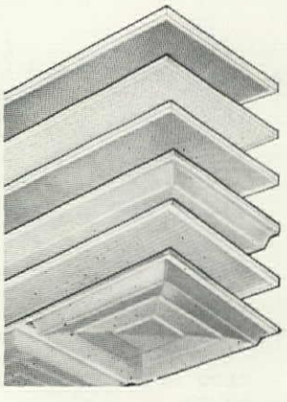
Polystyrene

#70 Corning Glass

Formed Acrylic

#93 Alba Lite Glass

Pattern Vinyl



most lighting per dollar

lighting products, inc.
Highland Park, Illinois

LPI

LIGHTING PRODUCTS INC.,
Dept. 2-G, Highland Park, Ill.

Gentlemen: Please send Free Literature.

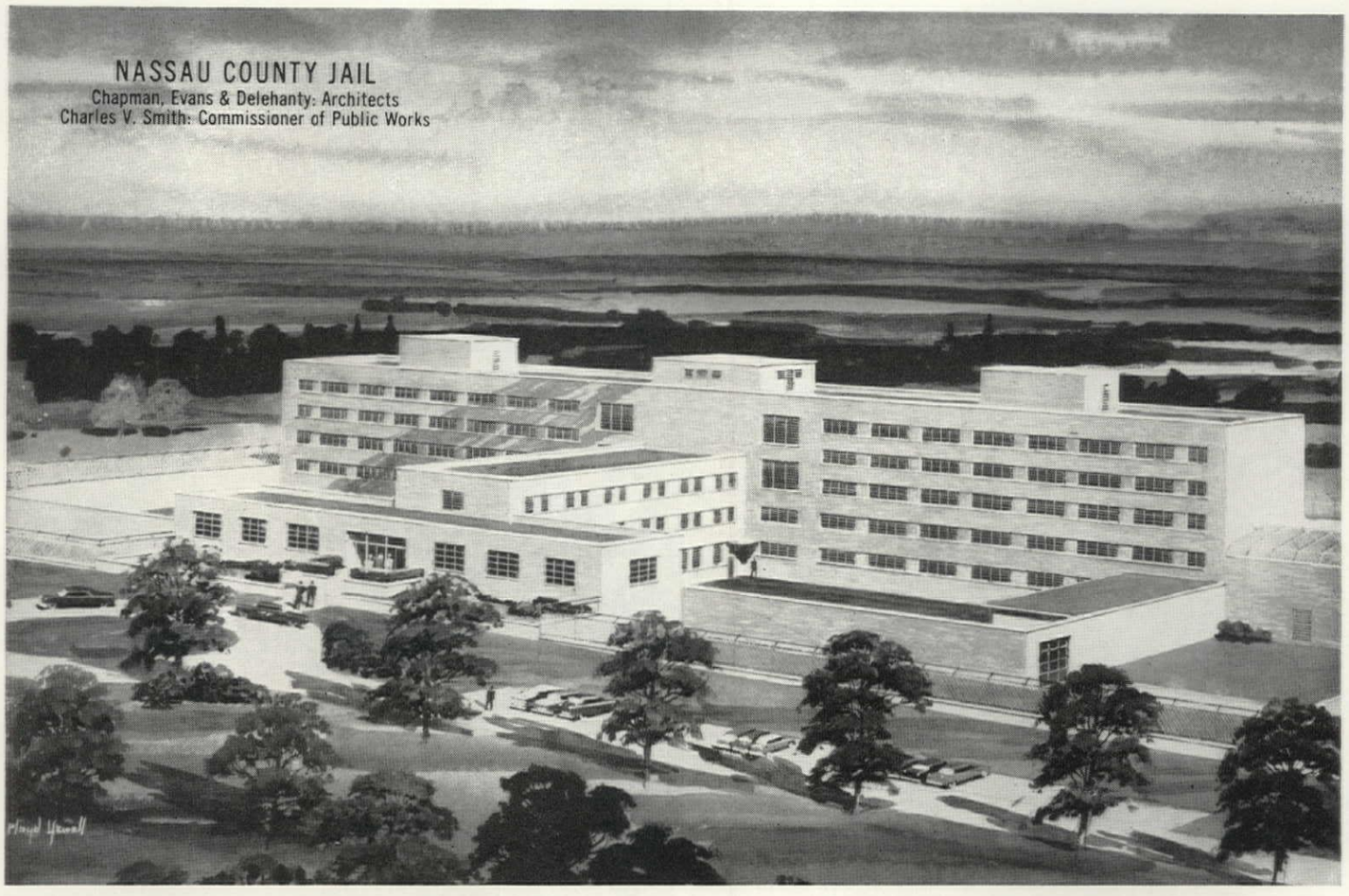
Name_____

Firm_____

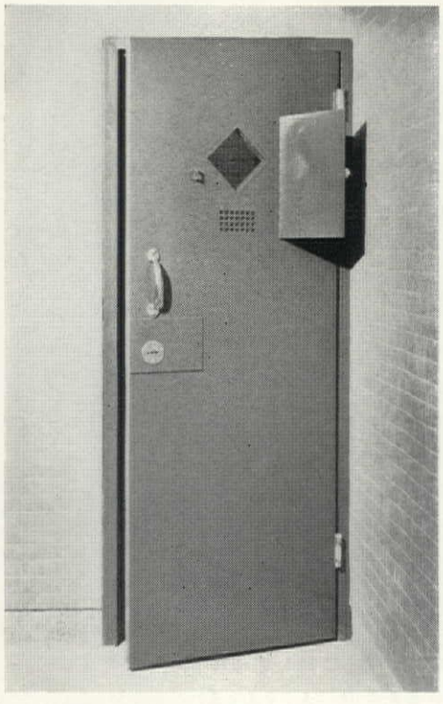
Address_____

City_____ State_____

Versataire.



PRISON Hollow Metal at its best



SUPERIOR FIREPROOF DOOR & SASH CO., Inc.
manufactures Prison Doors and Frames to meet all Security Specifications.

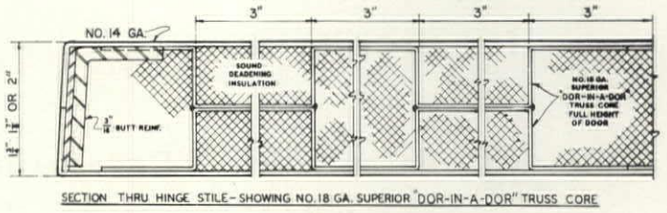
SUPERIOR FIREPROOF's Security Type Door, pictured at the left has been specified and used in the country's newest prisons, jails and neuropsychiatric hospitals. The Nassau County Jail pictured above is only one of the many modern institutions in which this unit has been used.

Prison Hollow Metal work is not only a door and a frame.

In Prison Hollow Metal work, SECURITY must also be considered for borrowed lights, borrowed light partitions, speaking and observation cubicles, detention window trim and detention screens.

These are Hollow Metal Products which are required in prison type work.

SUPERIOR FIREPOOF has available for architects doing prison type work, a complete catalog covering prison hollow metal work, proper specifications, designs and details, that may be required for your project. Send for SUPERIOR catalog A. I. A. #16-A-58-2.



SECTION THRU HINGE STILE – SHOWING NO. 18 GA. SUPERIOR "DOR-IN-A-DOR" TRUSS CORE

SUPERIOR "DOR-IN-A-DOR"

Superior FIREPROOF DOOR & SASH CO., INC.

EXECUTIVE OFFICES: 4175 PARK AVENUE, NEW YORK 57, N. Y. • **PLANTS:** NEW YORK AND SCRANTON, PA.

bright future

Buildings constructed and decorated with Stainless Steel are cleaner, more attractive places to work and live. When you're planning a building . . . design it, improve it and protect it with McLOUTH STAINLESS STEEL.

specify

McLOUTH STAINLESS STEEL

HIGH QUALITY SHEET AND STRIP

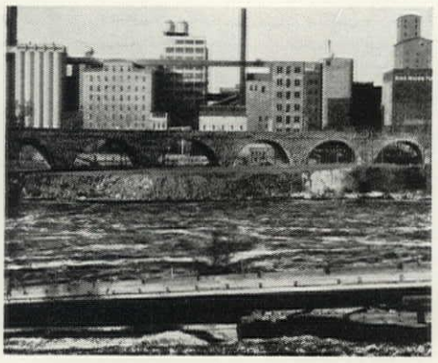
for architecture

McLOUTH STEEL CORPORATION DETROIT, MICHIGAN

MANUFACTURERS OF STAINLESS AND CARBON STEELS

Books

Minnesota's Face . . . Japan's houses



THE FACE OF MINNESOTA. By John Szarkowski. Published by the University of Minnesota Press, Minneapolis, Minn. 302 pp. 7¼" x 10¼". $5.

Author-photographer John Szarkowski, whose first book, *The Idea of Louis Sullivan*, helped warm up the atrophied art of architectural photography a few years ago, has here turned his sensitive eye to the more ambitious project of catching the image of an entire state. As in the Sullivan book, Szarkowski couples his photographs with word-vignettes to build a rounded view of his subject—the people, the land, and the building of Minnesota.

Although the new book lacks the distinctive layout and superb quality of the Sullivan book, it is nevertheless important as a lesson in truly *seeing* the world we live in—certainly the most important (and most neglected) talent of those who would change it by design.

JAPANESE HOUSES TODAY. Edited by Yamawaki, K. Yamakosi, K. Katsumi, and T. Saito. Published by The Asahi Shimbun Press, Tokyo, Japan. 270 pp. 8½" x 11¼". Illus. $16.

A good deal has been said and written about the influence of the *traditional* Japanese house upon modern Western architecture. Now comes a book about the *modern* Japanese house—and it displays a high standard of design and craftsmanship that modernists elsewhere will find difficult to match. For only in Japan, it seems, has modern architecture grown effortlessly out of a strong and well-rooted tradition. Everything about these houses is just simply "right"—the forms, the spaces, the details, the restraint, the excellent taste, the workmanship. All these are a natural, unpretentious part of a continuing tradition. The only false note is sounded when an occasional "sophisticated" Western touch creeps in.

While the book is beautifully illustrated and designed, it will seem a pity to many American readers that plans and detail drawings were not shown next to the handsome photographs. To Japanese architects it may have seemed obvious how these effects were achieved—and so there appeared to be no need for technical drawings.

TOWN BUILDING IN HISTORY. By Frederick R. Hiorns. Published by Criterion Books, Inc., 257 Fourth Ave., New York 10, N.Y. 436 pp. 7½" x 10". $15.

This monumental book covers in text (and copious illustrations) nearly 5,000 years of city planning. Indeed, the book is a basic source of material on the subject which few libraries could duplicate in an entire collection.

Although somewhat textbookish in typography and pedantic in writing style, it should be of absorbing interest to the architect, city planner, sociologist, and the increasing number of kibitzers in the field. Lewis Mumford has called the book "unique in the literature of cities."

HOW TO BUY REAL ESTATE FOR PROFIT. By Clyde T. Cadwallader. Published by Prentice-Hall, Inc., Englewood Cliffs, N.J. 308 pp. 6¼" x 9¼". Illus. $5.95.

This is an elementary guide to the small-scale "speculative" purchase of real estate (mainly acreage, or scattered suburban parcels, that are served by good roads and that lie in the path of metropolitan expansion). If purchased for the right price, these parcels can often be resold at considerable profit within a year or two. The burden of the book's advice, however, is: "cultivate speculative stability"—a willingness to take a calculated investment risk without becoming an overeager, overpaying buyer; do not expect to make a rewarding resale too quickly, or without patient, imaginative sales effort.

continued on page 140

RECREATION AREAS — Their Design and Equipment. Second Edition. By George D. Butler. Published by the Ronald Press, 15 East 26th St., New York 10, N.Y. 174 pp. 9" x 12⅛". Illus. $6.

With leisure time and the healthy life on the upswing in America, this compendium of playground data accumulated for the National Recreation Association should make practical reference reading for many architects, planners, schoolmen, and community leaders. Specifications are given for everything from tot lots and wading pools to high school athletic fields and whole municipal reservations. Included are design standards for playfields, and courts for some 40 sports. Examples of landscaping and architecture, however, are often dated and heavily "municipal" in character. A fresher approach to design would have made the book more valuable.

THE ART OF THE PALLAVAS. By O. C. Gangoly. Published by George Wittenborn, Inc., 1018 Madison Ave., New York 21, N.Y. 74 pp. 10" x 12". Illus. $8.50.

A pictorial record of the art and architecture of an obscure dynasty which became a cultural and political force in India during the fourth century.

AIR CONDITIONING AND REFRIGERATION. By William H. Severns and Julian R. Fellows. Published by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N.Y. 543 pp. 9" x 5½". Illus. $10.25.

Based on the second edition of the author's early work titled "Heating, Ventilating, and Air Conditioning Fundamentals," this volume is written principally as a textbook, but it should nevertheless be of interest to practicing engineers.

BOOKS RECEIVED

THE ORGAN IN CHURCH DESIGN. By Joseph Edwin Blanton. Published by Venture Press, Albany, Tex. 492 pp. 9" x 12". Illus. $20.

LIVING WITH THE SUN. Vol. 1. Published by The Association for Applied Solar Energy, 3424 N. Central Ave., Phoenix, Ariz. 70 pp. 14½" x 14". Illus. $6.

CONTRACTS, SPECIFICATIONS AND LAW FOR ENGINEERS. Clarence W. Dunham and Robert D. Young. Published by McGraw-Hill Book Co., Inc., 330 W. 42nd St., New York 36, N.Y. 550 pp. 6¼" x 9¼". $7.50.

COURSE IN MAKING MOSAICS. By Joseph L. Young. Published by Reinhold Publishing Corp., 430 Park Ave., New York 22, N.Y. 60 pp. 8" x 10½". Illus. $3.50.

EDUCATION FOR PLANNING: CITY, STATE, AND REGIONAL. By Harvey S. Perloff. Published by The Johns Hopkins Press, Homewood, Baltimore 18, Md. 189 pp. 5¼" x 8½". $3.50.

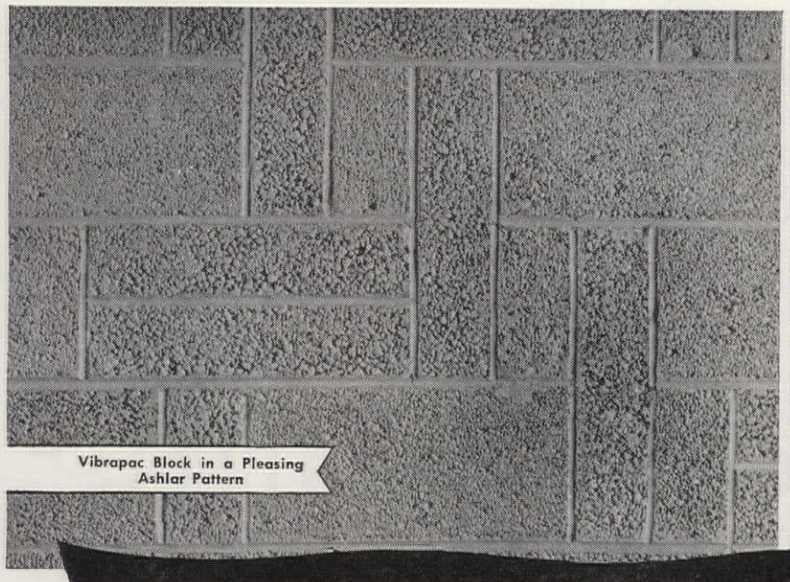
STRENGTH OF MATERIALS. By F. R. Shanley. Published by the McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N.Y. 783 pp. 6¼" x 9½". Illus. $8.50.

SPECIFICATION OUTLINE. As developed by The Michigan Joint Cooperative AIA-AGC Committee. Published by the Associated General Contractors of America, 716 S. Capitol, Lansing, Mich. 16 pp. 8½" x 11". Paperbound. $1.

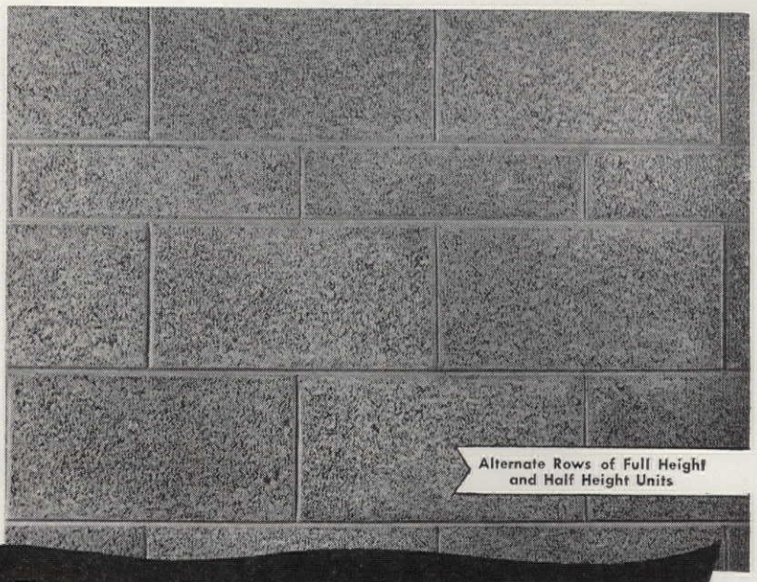
UNIFORM HOUSING CODE. 1955 Edition. Published by International Conference of Building Officials, 610 S. Broadway, Los Angeles 14, Calif. 91 pp. One to 24 copies, $1.75. In larger quantities, less.

USA IN NEW DIMENSIONS. The Measure and Promise of America's Resources. By Thomas R. Carskadon and George Soule. Published by The Macmillan Co., 60 Fifth Ave., New York 11, N. Y. 124 pp. 8½" x 11". Illus. $1.50.

END



Vibrapac Block in a Pleasing Ashlar Pattern



Alternate Rows of Full Height and Half Height Units

Vibrapac Block is Versatile!

Basket Weave at Left and Vertical Stacking at Right

. . . Provides an Endless Variety of Textured Patterns . . . Sizes Available in Direct Proportion to Wall Areas

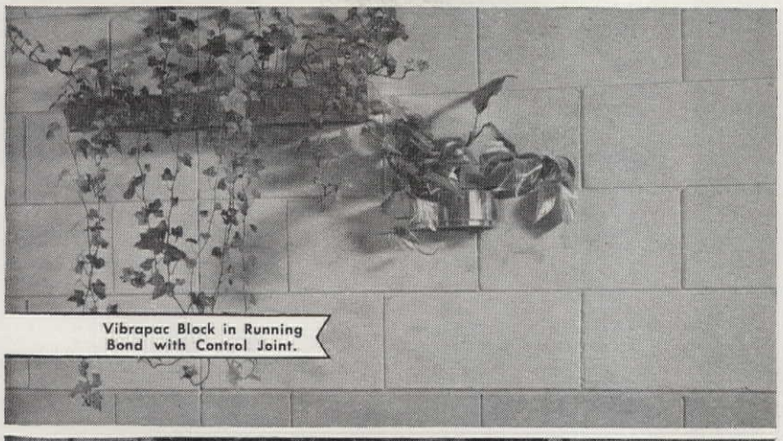
You get beauty at its permanent best when homes and other buildings are built of Vibrapac Block. This modern, low-cost building material provides almost unlimited opportunities for creative architecture and structural versatility. Numerous styles and sizes, interesting textures and distinctive color tones challenge both architect and builder in their efforts to achieve beauty and permanence. Ask your nearby Vibrapac Block plant for literature, or write direct:

BESSER COMPANY, Box 179, Alpena, Mich.

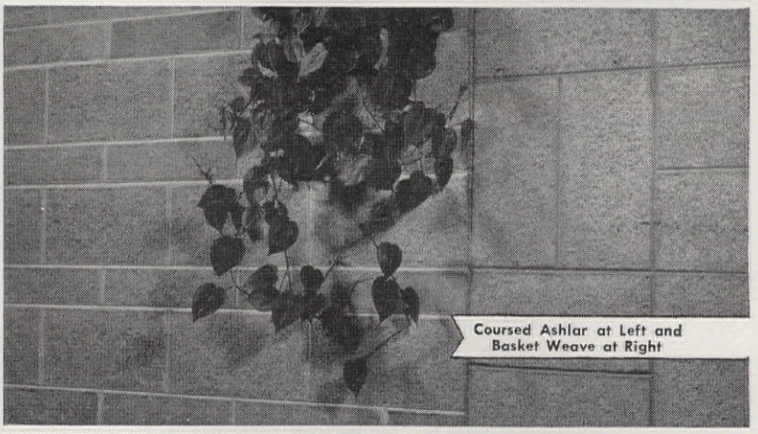
Complete Equipment for Concrete Block Plants

All pictures shown here are unretouched

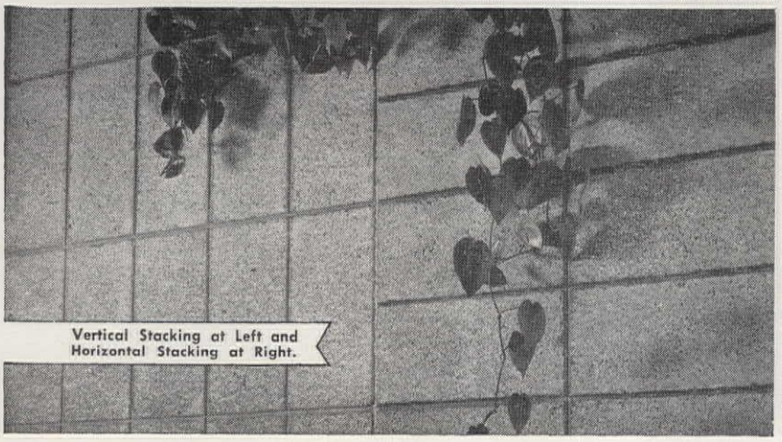
Half Block Stacked. Even the Clock is Made of Vibrapac Block



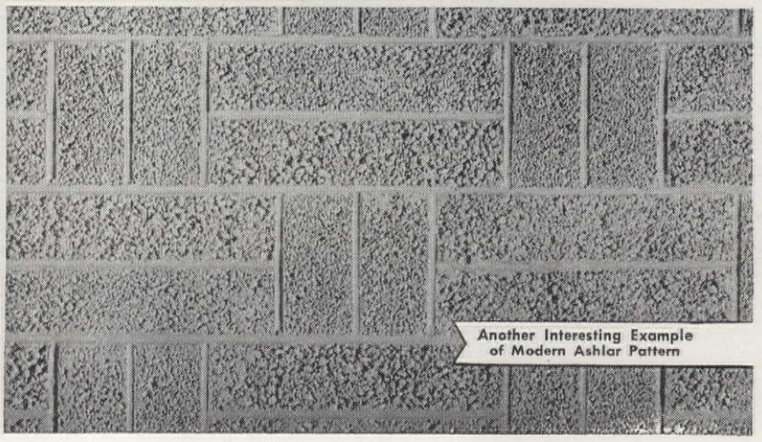
Vibrapac Block in Running Bond with Control Joint.



Coursed Ashlar at Left and Basket Weave at Right



Vertical Stacking at Left and Horizontal Stacking at Right.



Another Interesting Example of Modern Ashlar Pattern

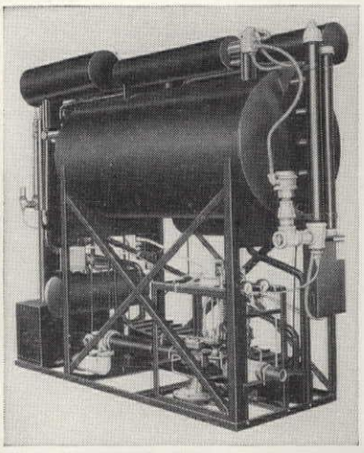
...now we're cooling

Specify Arkla-Servel Gas Air

With their new Arkla-Servel Gas Absorptive Cooler, the La Grange Federal Savings and Loan Association keeps customers cool in summer with the same compact system that keeps them warm in winter.

Before installing Gas, a complete study was made of available air conditioning systems. The Arkla-Servel unit—the only 25-ton absorptive cooler—was chosen because it is compact, easy to install, and costs are low for installation, operation and maintenance. No specially trained operating or maintenance personnel are required.

with GAS



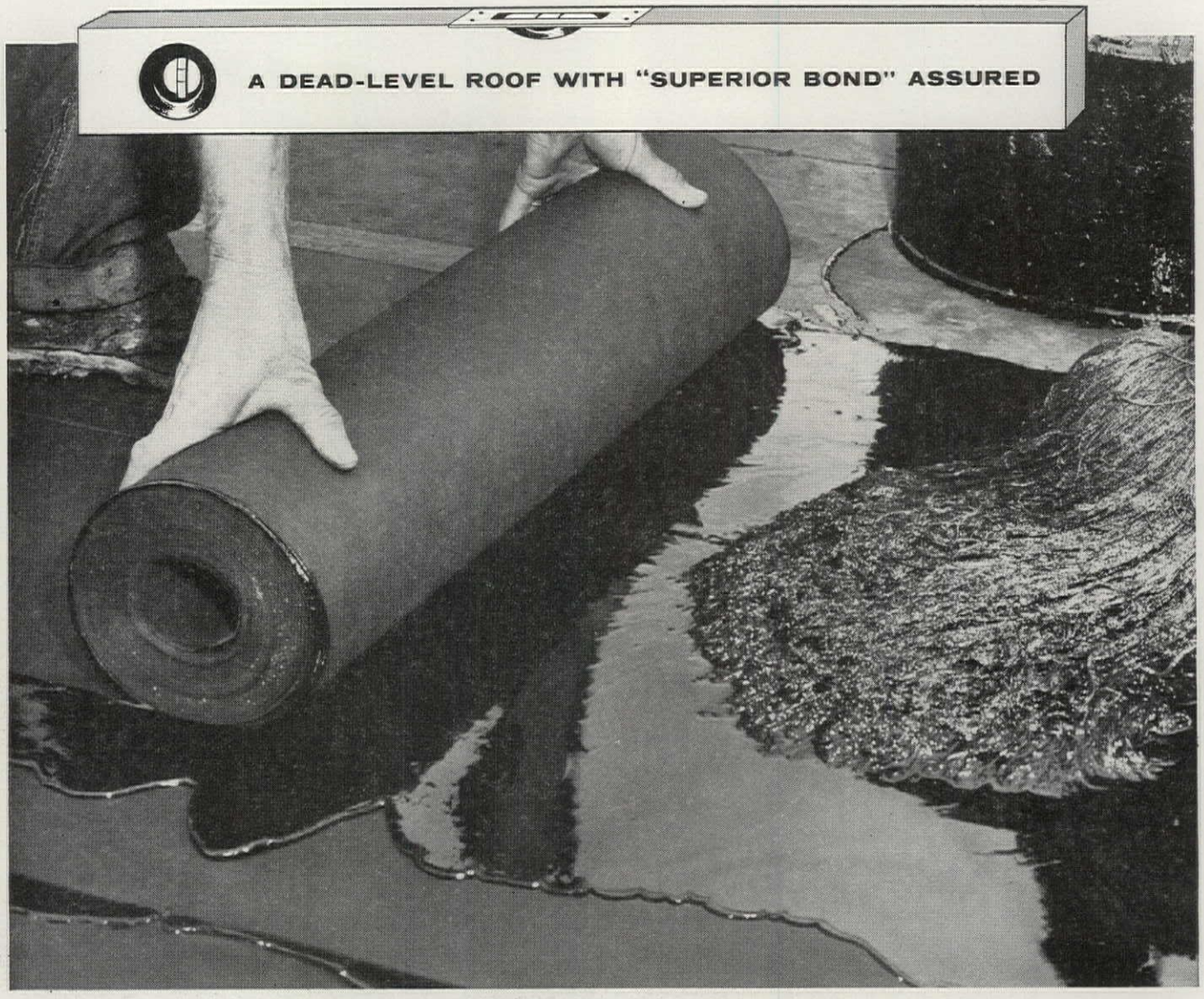
Conditioning and you specify years of trouble-free comfort

Only Gas gives these important advantages:

- high efficiency at all times—even during the light loads
- temperature control is constant
- modular adjustment of capacity (instant automatic adjustment to match actual cooling requirements)
- dependability of fuel service at all times

Gas absorptive cooling can put your commercial and industrial clients' heating plant on a year around paying basis. It utilizes low pressure steam to cool water, has no moving parts to wear out, and provides quiet, economical operation. What's more, it's vibration-free.

Take advantage of the consulting services provided by your Gas company. They have trained specialists who have been working with architects and engineers for years. They belong to your associations or affiliations and are familiar with your problems. Check the facts about Gas and you'll see modern Gas air conditioning out-performs all other fuels. *American Gas Association.*



Johns-Manville *Aquadam* Built-Up Roofs

pay off in longer roof life and maximum protection

AQUADAM ROOFS take their name from a superior cementing agent developed by Johns-Manville. This unique bitumen, Aquadam, possesses the best features of coal tar pitch and of asphalt without their weaknesses. It is the best bitumen on the market for roofs with inclines from dead-level to ½ inch per foot. It is used for both smooth-surfaced asbestos roofs and gravel- or slag-surfaced roofs.

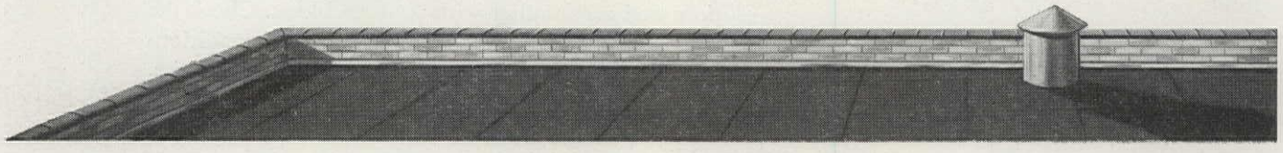
The picture above shows how Aquadam spreads, wets and saturates the roofing felts uniformly. And, as the felts are mopped and broomed-in, the exceptional adhesiveness of Aquadam assures a thorough bonding together of the plies.

Besides this "superior bond," an Aquadam roof provides these other advantages: excellent self-healing properties; exceptional ability to expand and contract with normal deck movement; ability to withstand water when a downpour floods the roof; and proven weather resistance under wide-ranging climatic conditions.

To give your clients the best roof protection, specify Johns-Manville Aquadam Built-Up Roofs—and be sure. For a copy of booklet "J-M Aquadam Built-Up Roofs" write to: Johns-Manville, Box 158, New York 16, New York. In Canada, write 568 Lakeshore Road East, Port Credit, Ontario.

JOHNS-MANVILLE

JOHNS-MANVILLE PRODUCTS



Now

ANEMOSTAT®

presents

Standardized Constant Volume

TURBULATORS

The Anemostat Constant Volume Turbulator is a standardized high capacity dual duct unit handling from 800 to 7000 CFM. It provides an economical solution to many air distribution problems in which a large volume of air at controlled volume or pressure, and temperature, is involved.

With the Anemostat system, all thermal functions—heating—cooling—ventilating—are accomplished with air. Coils and resultant coil lag are eliminated together with required piping. Pressure losses are low and so are noise levels. Quality-built Anemostat Turbulators function automatically. They are easy to install, simple to maintain.

Anemostat Constant Volume Turbulators provide zoning up to 7000 CFM with one set of controls—save money by replacing coil reheat zone-control with all-air system.

New Bulletin gives important engineering data on Anemostat Constant Volume Turbulators. Write for your copy today.

ANEMOSTAT®

DRAFTLESS *Aspirating* AIR DIFFUSERS

ANEMOSTAT CORPORATION OF AMERICA

10 EAST 39th STREET, NEW YORK 16, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

AC1368

What other people are saying

OUTLOOK FOR CITY LAND PRICES

Realty Tycoon William Zeckendorf, president of Webb & Knapp, recently told the Mortgage Bankers Association's Eastern Mortgage Conference in New York City that high-grade city land prices will never again be as high as they were in 1929.

Some time ago Webb & Knapp acquired 120 Broadway, otherwise known as the Equitable Office Building. When we bought it, we bought a corporation that had a set of meticulously kept records of the gross and net of operations of this building ever since it was built in 1916.

In these records I found a very interesting fact: that the building achieved its peak gross and net income in the year 1931—two years after the depression had set in. That was easily explainable because the momentum of any great upsurge in the economic cycle carries forward through the early phases of a down cycle, because plans for office-space occupancy are made in advance. The building's income reached its low point in 1944, considerably after the cycle had turned up again, and the same explanation applies.

I also observed that the gross rental from this building once again equalled the high point of 1931 in 1957. That is startling, because it indicates that gross rentals in office buildings are now about the same per square foot as they were at the peak of the 1929 cycle.

If it is true that $5 or $5.50 a square foot is the going rate for office space today and was the going rate for the last high point, and if we sell an office building of comparable quality at the same net capitalization rate, what has happened as a result of the increased operating and construction costs?

We know it costs 100 per cent more to build that building today than it did in 1931, or in 1929. We know the operating expenses are up at least 50 per cent. Taxes in most communities are up by a like amount. Yet we are getting only the same gross dollar per square foot of rent. This is pretty true across the country. So, if the gross is the same and the net is down, and inflation has doubled construction costs, then obviously the squeeze is on the land. You will find that your high-grade urban land values are down in 1958 by at least 50 per cent as against the same land values at the peak of the last great boom.

In 1929 you could pay $400 to $500 per square foot for high-grade office land on Fifth Avenue and in the Wall Street district. Today nobody can afford to pay over $200 a square foot for the same kind of land anywhere. The ratio of what you can afford to pay for land to the total of what you can pay for land and building has shrunk as a result of the increased cost of the building, because the building, upon completion, does not rent for any greater gross per square foot than in 1929.

We have seen the high point, probably forever, of high-grade commercial urban land. The same thing is true of high-grade residential urban land. Park Avenue land in the 70th Street area of New York once sold for as much as $225 a square foot, but today nobody can afford to pay over $100 a square foot for it.

This is very significant. For we were once taught that high-grade urban property was the one imperishable and only absolutely safe investment, and yet it has shrunk 75 per cent in terms of buying power in relationship to today's dollar.

However, I feel that there is a great resurgence in the cities, and that an increment in city land values is possible—but only in low-grade urban areas, in the peripheral areas that are now being restored through Title I of the Federal Housing Act. These areas have great opportunities for increment, because the ratio of land cost to the total land-and-building cost is relatively small. Where land runs from $2 or $3 a square foot to $10 to $15 a square foot, the ratio of land cost to total cost is insignificant.

THE ARCHITECT'S HIGH TASK

According to Sir John Wolfenden, vice chancellor of Reading University in Reading, England, it makes a difference to man's heart and soul if he is surrounded by gracious buildings or mean ones. This was the theme of his recent talk before the Royal Institute of British Architects.

Architects' works are so damnably permanent. We can ignore music which offends us; we can, if we are fools enough, shut our ears to poetry; we can even, if we feel like it, slash a picture with a palette knife. All these we can destroy, or ignore; and we can treat them, if we are so disposed, as ephemeral nonsenses. But you cannot just ignore buildings; you cannot ignore the house you live in. It is there, and, for good or ill, you have to live with it. But even the permanence and obviousness of a building are not, of course, the main things about it. The main thing is the simple fact that architects' works are all around us, that they are,

continued on page 144

in a very real sense, the background of our daily lives. The influence of that background may be incalculable, but it is assuredly very real.

I believe that it makes a difference to man's very heart and soul if he lives in a gracious and civilized house, and it makes a difference to his heart and soul if he lives in a mean and squalid tenement. Why this should be I cannot explain. But Plato knew it: "Beauty, the effluence of fair works, shall flow into the eye and ear, like the health-giving breeze from a purer region, and insensibly draw the soul from earliest years into likeness and sympathy with the beauty of reason."

Your influence is not at its strongest when it flows from what is spectacular or dramatic or aiming at effect. The unobtrusive natural good manners of a building or a crescent or a square can be, I humbly suggest, more influential than something which shouts louder. We do not need to be professional psychologists to appreciate the profound and lasting nature of insensible or unconscious influence; all good education is based on it.

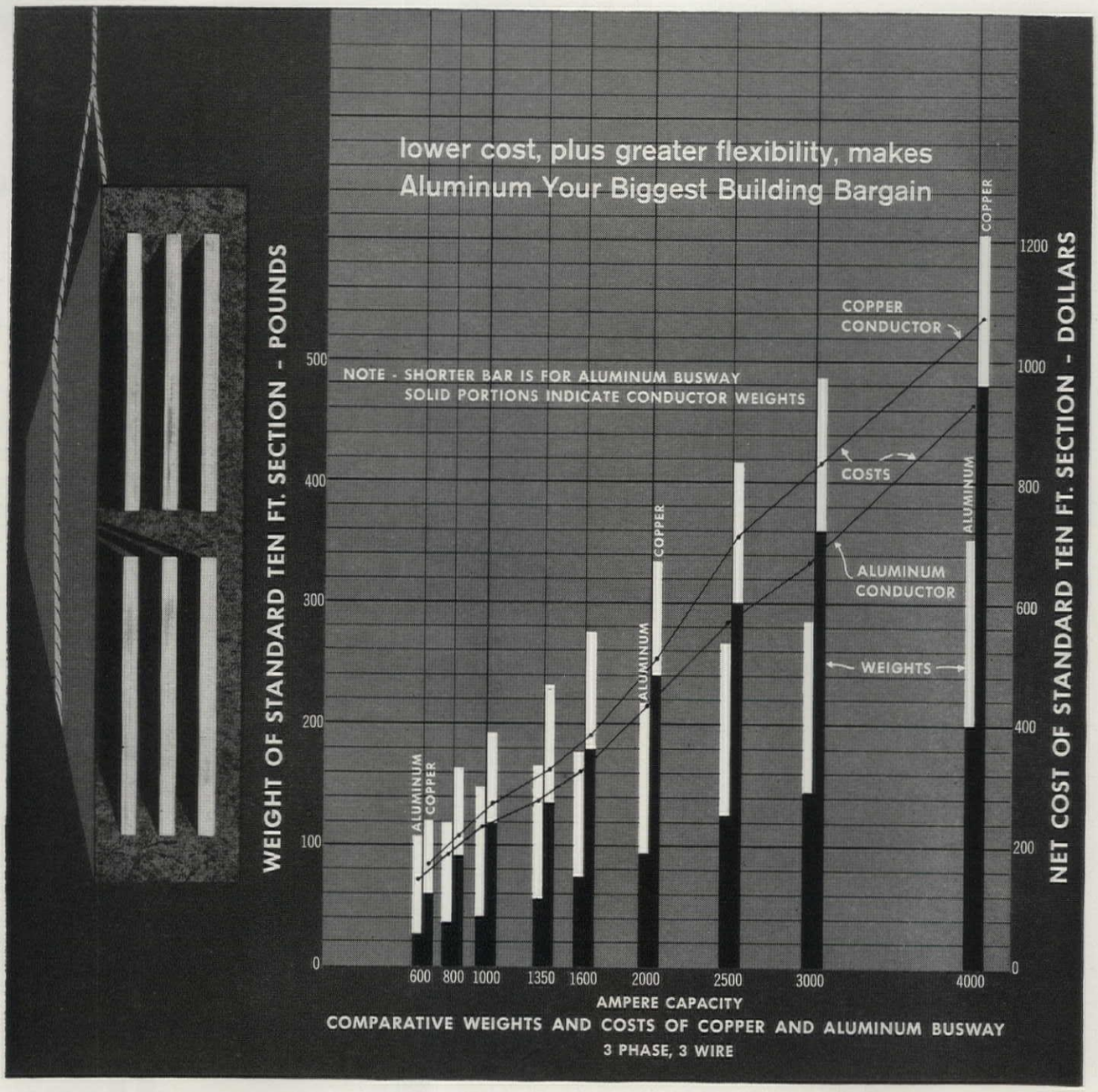
Let those who will argue about the True, the Beautiful and the Good. There is no ultimate conflict between them. There cannot be any such conflict, for they are all part of the nature of the eternal and the divine. It is your high task to embody them all, to materialize these forms, to make for all of us things beautiful and true and good to be the background whose ceaseless influence will make our humble ordinary daily lives more true, more beautiful and more good.

SCALELESS BIG BUILDINGS

Commenting on the problems of urban esthetics at a recent meeting of the Philadelphia Housing Association, Architect Henry Churchill pointed out that the appearance of most tall buildings would not be noticeably affected by the addition or subtraction of several stories.

The esthetics of the high building, along with the esthetics of movement (the expressway, the thing-at-a-distance, etc.) are still rudimentary to our feeling. We are still accustomed to the static quality of "one position" architecture, with its inner relationships, whereas the basic quality of today's construction lies in its dynamism. This results in a lack of conventional scale because we must now see it relative to another element: time. In relation to time, that is speed, conventional scale has no meaning. Most of our skyscrapers could have stories added or taken off, without any harm being done to the visual appearance or, in fact, anyone being the wiser. Furthermore, such structures, seen in passing, have only absolute form, like distant hills; there is no static relationship of one part to another, either of medieval ratio or classicist proportion. This obviously is not true of the architecture of the past, which contains within itself relations to itself that cannot be changed without destroying the entire composition. I can think of no high-rise building, no matter how good, to which the alteration of any dimension would in any way impair its quality.

This is what I call "modular scale" and is the characteristic of structures which conform to group needs rather than to personal ones. It derives its significance not from the individual as an individual, as in Gothic (the Church cared for the individual soul, quite specifically), nor from the power of the personalized state—as in the "High Renaissance"—the architecture of which, at times, came quite close to the "module"—but from the sociologically abstract idea of a *group* which, although composed of human beings, is still not quite human. END



Aluminum Busway helps reverse trend to higher building costs

Comparison of initial cost of aluminum busway compared to copper shows aluminum has a price advantage, even in the smallest sizes.

Probably no other product used by the building industry can offer savings comparable to aluminum busway: up to 20% on material costs, up to 20% on installation costs and savings in weight permitting the use of less costly busway supports. Aluminum busway requires less space than cable and conduit.

Modern aluminum busway, with lightweight Alcoa® Aluminum Bus Bar, also offers flexibility to meet new and increased power demands. Future loads can be tapped off at any point. Pound for pound, aluminum busway has greater current-carrying capacity at less cost than conventional wiring systems.

When *you* need a modern, flexible distribution system, specify busways made of Alcoa Aluminum . . . and *save*. Aluminum Company of America, 2295-G Alcoa Building, Pittsburgh 19, Pennsylvania.

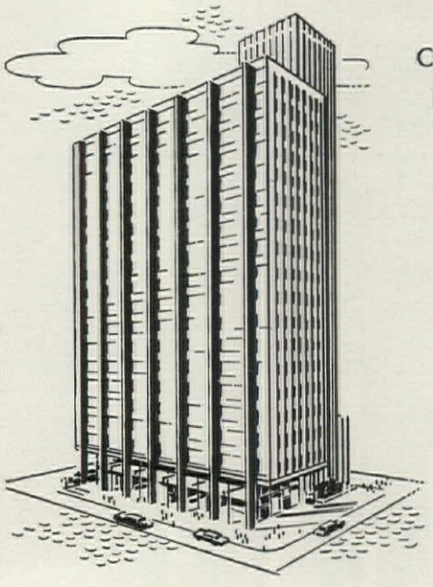
Your Guide to the Best in Aluminum Value

ALCOA ALUMINUM
ELECTRICAL CONDUCTORS AND ACCESSORIES
ALUMINUM COMPANY OF AMERICA

"ALCOA THEATRE"
Exciting Adventure
Alternate Monday Evenings

Custom-Designed

modular acoustical ceiling . . and partition installation . . in new Inland Steel Building



Chicago's newest skyscraper has a unique acoustical ceiling that provides maximum layout flexibility in its large open floor areas.

The ceiling is made up of Acousti-Celotex 12″ x 24″ Acousteel metal pan assemblies, in combination with 2″ wide grid panels spaced 62″ o.c. in both directions. Partitions can be placed anywhere along the grid panels, in either direction, with studs fitting up into the 2″ x 2″ square openings formed at every grid intersection. When new office layouts require changes in partitioning, the removable 2″ x 2″ corner blocks are taken out to allow insertion of studs.

Light fixtures and air diffusers (which are Acousteel pans with sound absorbing elements removed) snap into the same T-bars as the standard Acousteel units, making an integrated, dead-level ceiling that gives top performance for owners and tenants.

This building is another example of the results that can come from careful ceiling planning. Take advantage of the knowledge your *Acousti-Celotex distributor* has developed in this relatively new field of integrated, multi-function ceiling construction. He has the acoustical products, suspension systems and experience to help you put ceilings to work in new ways to meet your design requirements.

Architects: SKIDMORE, OWINGS & MERRILL
Acousti-Celotex installation by JAMES L. LYON CO.

CAVITY TILE**

SUPRACOUSTIC PANELS‡

ACOUSTI-CELOTEX

TRADE MARK REG. U. S. PAT. OFF.

Sound Conditioning

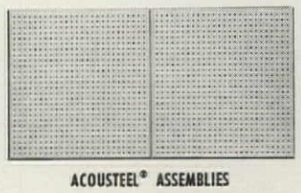
Products to Meet Every Sound Conditioning Problem . . . Every Building Code
The Celotex Corporation, 120 S. La Salle St., Chicago 3, Ill.
In Canada: Dominion Sound Equipments, Ltd., Montreal, Quebec

STEELACOUSTIC® PANELS

PERFORATED CANE FIBER TILE*

PERFORATED MINERAL TILE*

CELOTONE® TILE

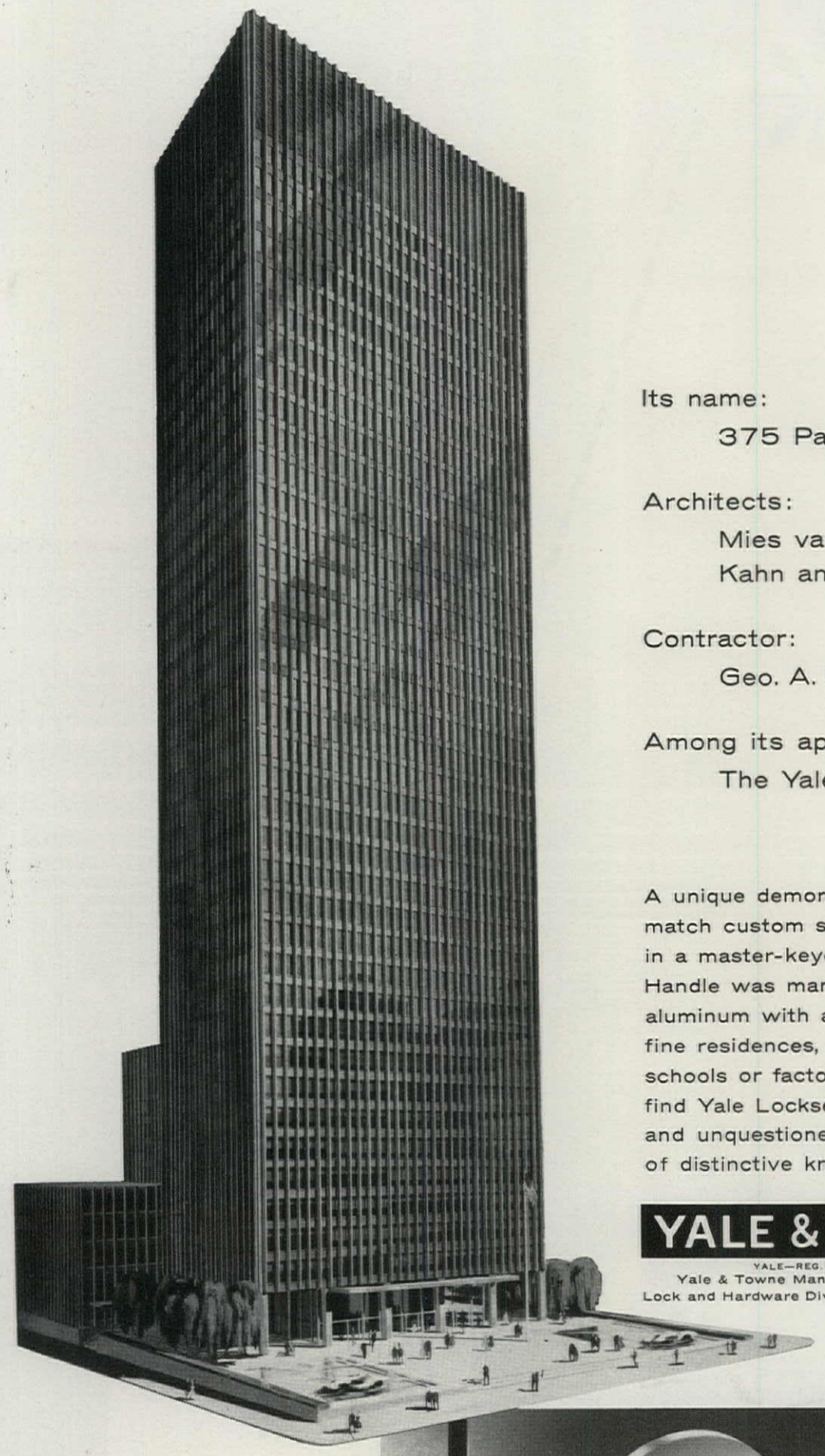


ACOUSTEEL® ASSEMBLIES

STRIATONE® TILE

*U. S PAT NO. D-168,763
**U S PAT NO 2,838,806 ‡TRADEMARK

In this ceiling of Acousti-Celotex acoustical panels, a removable block at each grid intersection allows partitions to be readily located in any position within the 62" o.c. module.



Its name:

375 Park Avenue, New York City

Architects:

Mies van der Rohe, Philip Johnson,
Kahn and Jacobs

Contractor:

Geo. A. Fuller Company

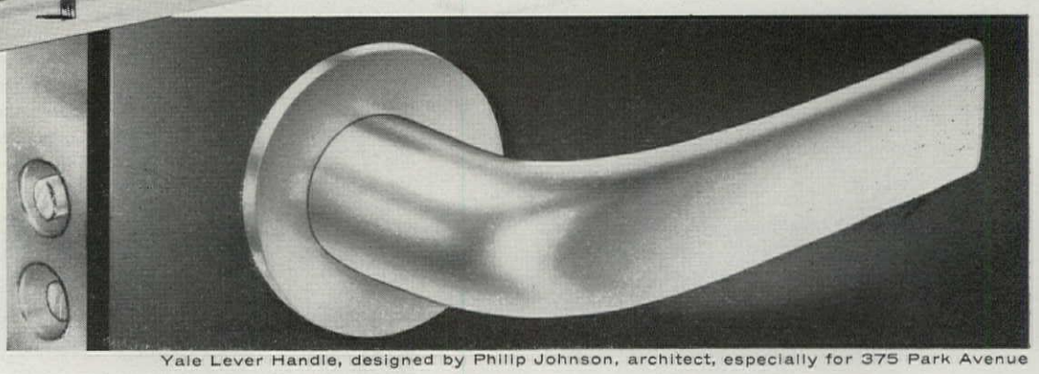
Among its appointments:

The Yale Lever Handle

A unique demonstration of Yale's ability to match custom styling with maximum security in a master-keyed system. The Yale Lever Handle was manufactured by Yale in aluminum with a rich satin finish. Wherever fine residences, office buildings, hospitals, schools or factories are built, you will find Yale Locksets of elegance, precision and unquestioned security in a collection of distinctive knob and trim designs.

YALE & TOWNE

YALE—REG. U. S. PAT. OFF.
Yale & Towne Manufacturing Company
Lock and Hardware Division, White Plains, N. Y

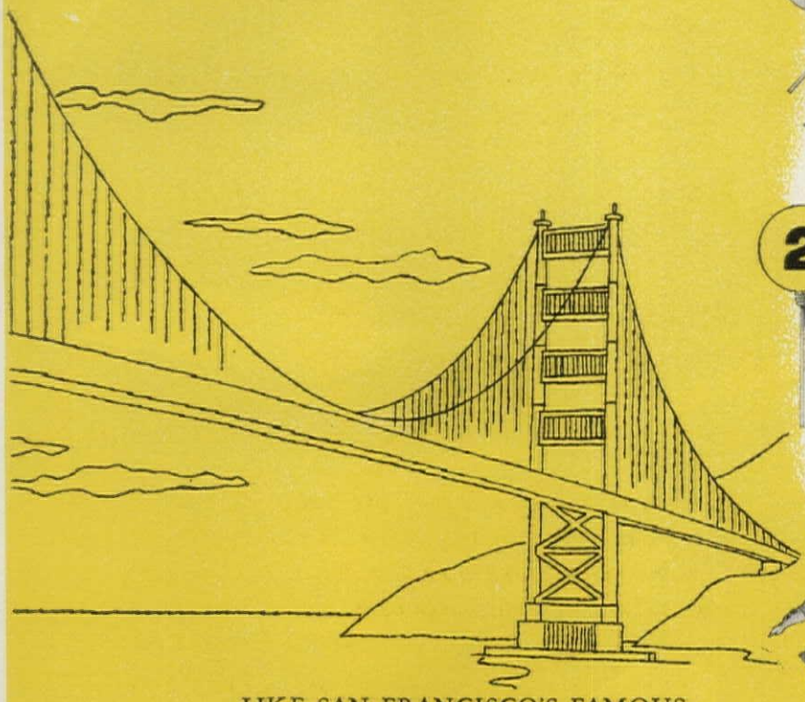


Yale Lever Handle, designed by Philip Johnson, architect, especially for 375 Park Avenue

Golden Gate DOOR...

PROVES BRIDGE-LIKE CONSTRUCTION KEEPS FIAT YEARS AHEAD IN TOILET COMPARTMENT DESIGN

The *inside* story proves it! FIAT'S Golden Gate Door is engineered far beyond accepted standards—steadily absorbs roughest punishment—readily withstands heaviest stress and shock.



LIKE SAN FRANCISCO'S FAMOUS GOLDEN GATE BRIDGE, the FIAT Compartment Door has been designed to meet unusual stress, load and impact factors. FIAT'S bridge-like construction establishes a new standard in compartment door construction.

LOAD EQUALIZER—Heavy gauge channel reinforcing distributes load away from the top hinge—gives triple additional support to the pintle. This extra reinforcing provides permanent, practical protection against unusual loads —specifically, when children hang from or swing on the door.

IMPACT ABSORBER—Formed, heavy gauge plate anchors the slide bolt —distributes shock of severe door "slamming" over wide area. Prevents tearing out of slide bolt or damage to door.

STRESS RESISTOR—Channel type reinforcing unit is interlocked with the panel edges—provides basic side-to-bottom support —anchors *Life-Line** Gravity Hinge in position—positively prevents door "sway."

CLIP AND MAIL COUPON BELOW FOR NEW FIAT LITERATURE

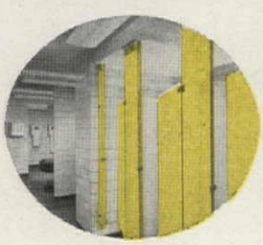
FOUR COMPLETE PLANTS STRATEGICALLY LOCATED FOR BETTER SERVICE LOWER COST

Long Island City 1 New York | Franklin Park Illinois | Los Angeles 63 California | Orillia, Ontario Canada

FIAT

Manufacturing Quality Showers and Compartments since 1922

YEARS AHEAD FEATURES



Wide Range of Models

FIAT offers a range of models to meet every budget. Choose from the ceiling or floor supported *Aristo* with exclusive wood-core pilaster, the flush paneled *Duro* or the economical *Permo* models.

*FIAT TRADEMARK **DUPONT TRADEMARK

FIAT METAL MFG. COMPANY
9319 Belmont Ave., Franklin Park, Illinois

☐ Please send me new, fully illustrated catalog
☐ Please have your representative call.

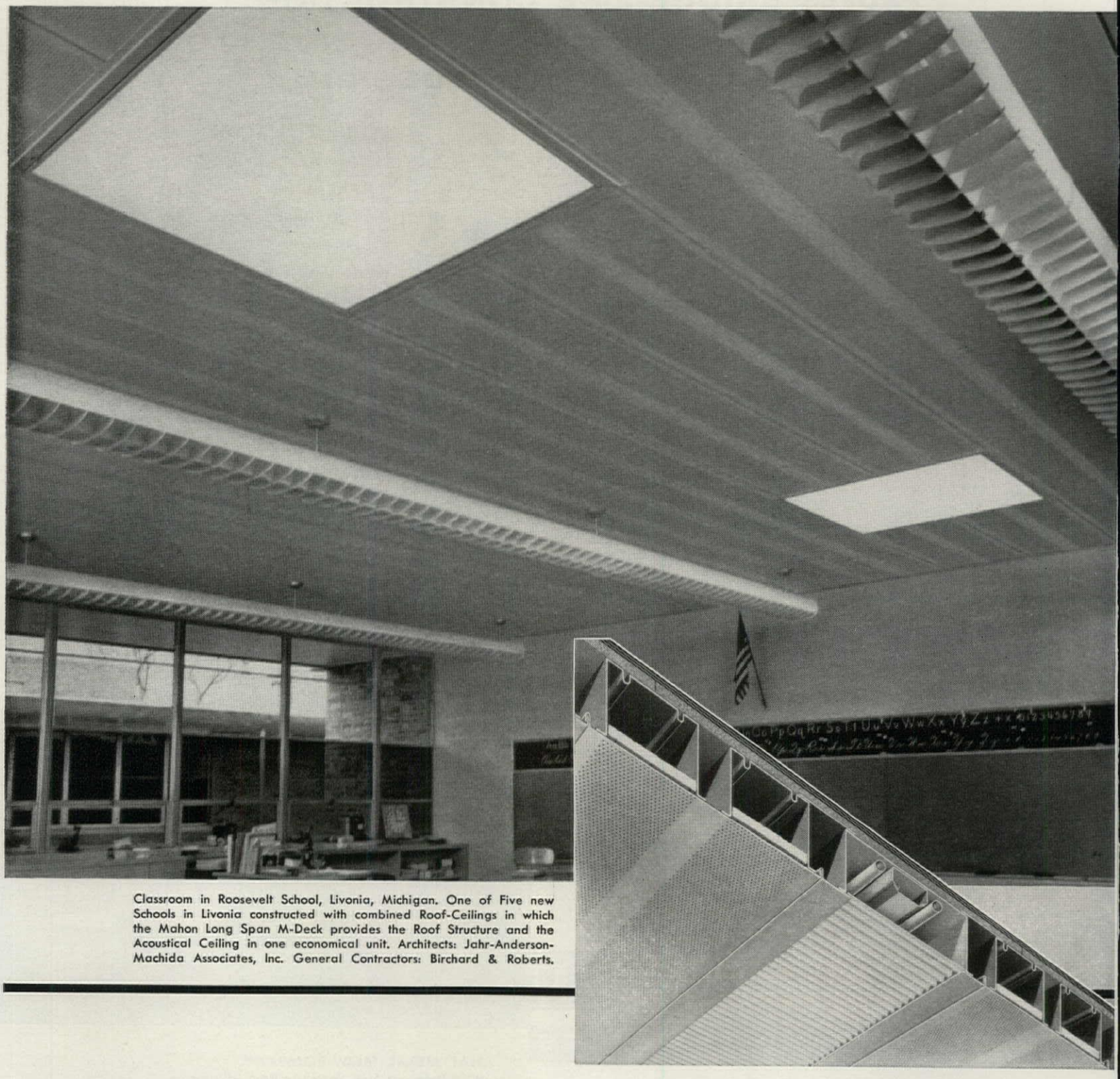
Firm_____

Address_____

City_____ Zone____ State_____

Individual_____

Long Span M-DECKS Provide



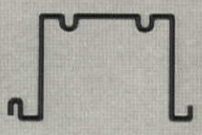
Classroom in Roosevelt School, Livonia, Michigan. One of Five new Schools in Livonia constructed with combined Roof-Ceilings in which the Mahon Long Span M-Deck provides the Roof Structure and the Acoustical Ceiling in one economical unit. Architects: Jahr-Anderson-Machida Associates, Inc. General Contractors: Birchard & Roberts.

Serving the Construction Industry Through Fabrication of Structural Steel, Steel Plate Components, and Building Products

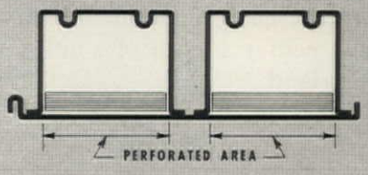
the Structural Roof, Finished Ceiling Material and Acoustical Treatment!

Cel-Beam Sections Span from Wall to Wall or Truss to Truss . . . Eliminate Purlins

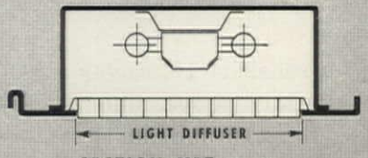
MAHON
Long Span
M-DECK SECTIONS



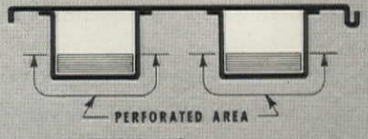
SECTION M1-OB
OPEN BEAM DEPTH 3", 4½", 6" or 7½"



SECTION M2SR (Acoustical)
CEL-BEAM DEPTH 3", 4½", 6" or 7½"



SECTION M1T (Troffer)
DEPTH 6" or 7½"



SECTION M2 (Acoustical)
CEL-BEAM DEPTH 1½", 3", 4½", 6 or 7½"

At Left: Cross Section of Long Span M-Deck Combined Roof-Ceiling with Troffer Lighting.

☆ OTHER MAHON BUILDING PRODUCTS and SERVICES:

- M-Floors (Electrified Cellular Steel Sub-Floors)
- Insulated Metal Curtain Walls
- Underwriters' Rated Metalclad Fire Walls
- Rolling Steel Doors (Standard or Underwriters' Labeled)
- Steel Roof Deck
- Permanent Concrete Floor Forms
- Acoustical and Troffer Forms
- Acoustical Metal Walls and Partitions
- Acoustical Metal Ceilings
- Structural Steel—Fabrication and Erection
- Steel Plate Components—Riveted or Welded

☆ *For INFORMATION See SWEET'S FILES or Write for Catalogues*

THE R. C. MAHON COMPANY • Detroit 34, Michigan
Sales-Engineering Offices in Detroit, New York and Chicago
Representatives in all Principal Cities

of Steel and Aluminum

MAHON

NEW HAVEN *continued from page 81*

side street near the corner of the new center, remarked a short while ago that "with a few well-designed signs and a little paint on the doors, this alley could be as charming as San Francisco's Maiden Lane."

Stevens figures the cost of his part of the project, which is being designed by Architect John Graham, will ultimately run to about $25 million, with most of the money to come from outside financing. He says frankly that he considers the project "highly speculative," but he feels that if downtown redevelopment can work anywhere it should in New Haven, where conditions are close to optimum. Thus, New Haven is something of a pilot project, which may or may not lead to Stevens' involvement in other downtown renewals.

All told, Church Street will cost the city about $500,000 in cash, $2.9 million in capital improvements, plus a Parking Authority outlay of roughly $7.5 million. Under the loan-and grant contract signed with the Urban Renewal Administration last January, the federal government will put up $25.9 million as a loan and $13.2 million as a grant, representing its share of the project's write-down cost. With an expected $580,000 in additional taxes to come from the redeveloped property, plus revenue from the parking facilities, Lee and his development staff believe that the Church Street project can be carried out without putting a tax burden on the rest of the city.

New Haven already has several other renewal projects that are well along in planning. The most imminent of these is a 245-acre redevelopment and renewal scheme for the Wooster Square area; a loan-and-grant contract on this project is expected to be signed this year. But, long range, Maurice Rotival feels that the richest source of prosperity for the city and the Connecticut Valley beyond is in further development of its harbor and dock facilities. Since the main harbor channel was deepened to 33 feet in 1948, fuel handling has increased from 2 to 6 million tons a year. Now the city itself is moving back toward the sea. The Oak Street tower apartments and office building will make the water front visible. The Church Street project will stretch over the railroad yards to within 1,500 feet of the shore line. The plan is to give even greater emphasis to the harbor in the future by building a new general pier, a marina, and a general transportation terminal. This general terminal would be a centralized exchange point for all kinds of passenger and freight transport—bus, truck, train, and ship—and were it to come about it might well fulfill the vision New Haven has today: to be the unchallenged junction and distribution center for all of southern New England. END

TINO NIVOLA *continued from page 105*

the placement of the façade's 132 panels last winter, has commented: "My dream is to make my sculptures as big as a building."

Eero Saarinen, architect of the General Motors Technical Center, shares Sherwood's appreciation of Nivola, and has encouraged Nivola's larger dreams by asking him to think about a design for the façade of Saarinen's proposed music center at the University of Michigan.

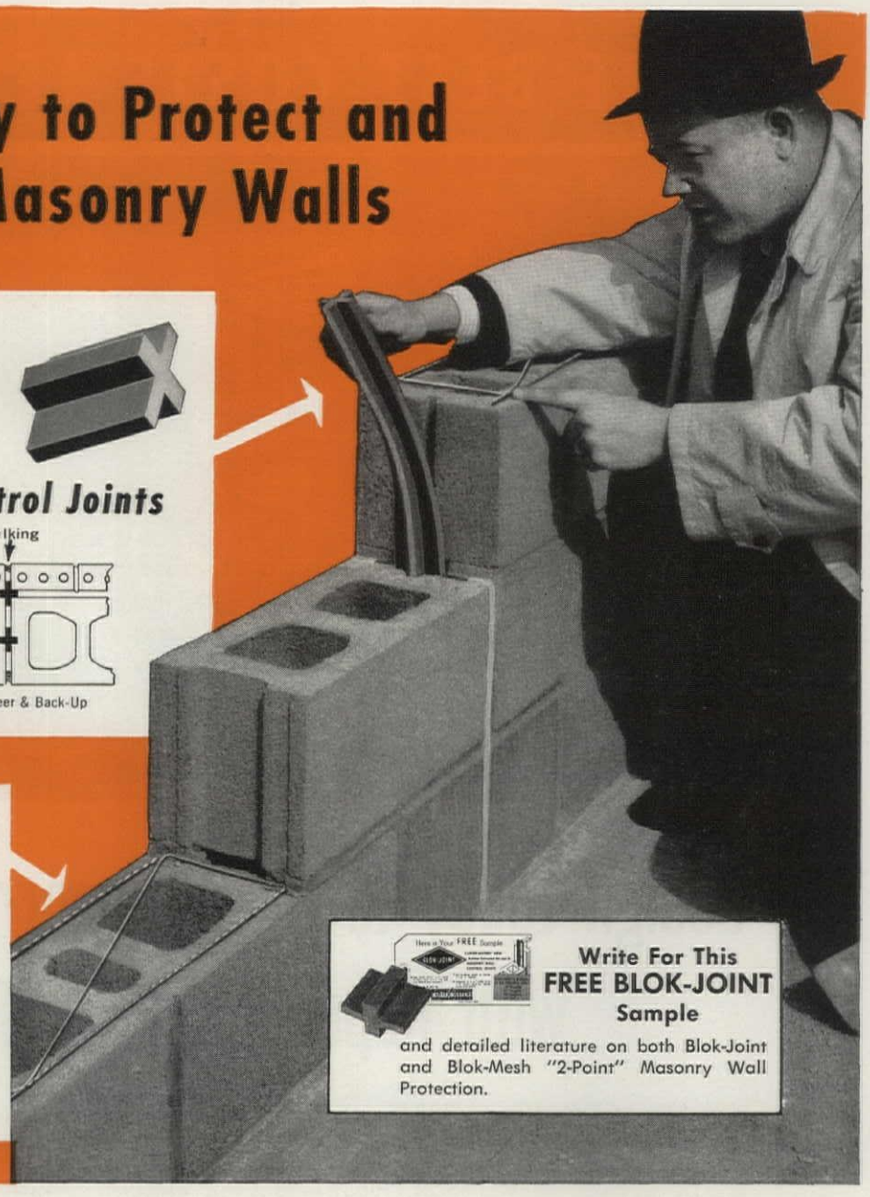
But there are, of course, some architects who can find no room for Nivola's personal enthusiasms in today's buildings. In the preliminary planning of Madison Avenue's latest corporate tower, the Union Carbide building, Architect Gordon Bunshaft of Skidmore, Owings & Merrill was urged to try a Nivola sculpture in the lobby. Nivola, very much interested in the feeling of the entire space, did a design for the walls of the elevator core. "I guess Bunshaft thought it was too much," Nivola says ruefully, "SOM prefers harmony to contrast."

Undaunted, Nivola looks forward to the day when the building client ("the man, after all, who has the heart and the money") will be the determining factor in the question of how much architecture and how much art should go into a building. And, realizing that the artistic taste of clients present and future must be considerably developed before our cities can be made beautiful, Nivola was pleased to be invited to direct Harvard's newly established Design Workshop three years ago. To his students the experience was extraordinarily stimulating. But for Nivola, disliking the academic routine and hating the Boston-to-New York commutation, running the Workshop was not a successful undertaking. "They needed a director who was more of an executive and less of an artist," Nivola confesses.

The complete artist, Nivola, eyeing current taste trends, is confident about the future. "I like to think of a sensitive character out of Kafka coming across one of my façades. He would have been tortured by walking down streets and corridors blinding and shiny, then he comes on this building of sun and shadow, form and evocation. He would live again."

Yet Nivola realizes the dangers of being type-cast as the man who does the sandy concrete. So although happy in his medium, he is still experimenting with other materials. One project planned for execution in August is a small, fiercely heathen memorial to his mother in Sardinia: miniature, exquisitely carved bronze figures will stand above a plot of stones and barley. "To keep experimenting is to stay alive, to keep the lice out of your hair," he maintains. "I would like to try some teaching again, this time irregularly, to graduate students. But what I need most now is some more time in the studio, another summer in the sand." END

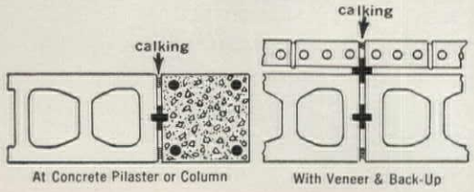
The New Way to Protect and Strengthen Masonry Walls



BLOK-JOINT

Pat. Pend.

For Control Joints



BLOK-MESH

Deep Swedged Reinforcing

SIDE VIEW

Write For This FREE BLOK-JOINT Sample

and detailed literature on both Blok-Joint and Blok-Mesh "2-Point" Masonry Wall Protection.

BLOK-JOINT Permits Contraction AND Expansion In Control Joints

BLOK-MESH Reinforcing Has Deep Swedges For Better Mortar Bond

Today's accepted method of building masonry walls includes reinforcing and control joints. Control joints relieve stresses and strains and reinforcing adds strength and resistance to cracking. Use both to provide maximum strength and protection.

BLOK-JOINT is a cross shaped rubber extrusion for making fast, effective control joints in masonry walls. It is used with ordinary metal sash blocks. No special blocks or building paper and mortar fill is needed. Blok-Joint forms a secure interlock for lateral stability —allows *both* contraction and expansion. It can be used in single walls, block walls faced with other masonry, cavity walls and at pilasters or columns. Molded of "100-year life" rubber, Blok-Joint meets ASTM and Federal specifications.

BLOK-MESH is the masonry reinforcing with the exclusive deep swedged deforming. The well-defined, squared notches give more gripability with the mortar than conventional reinforcing with superficial nicks or burrs. Blok-Mesh provides effective dovetailing—yet requires no more area in the joint than other types.

For Further Information See

4h/Car Architectural File

3c/Car Industrial Construction File

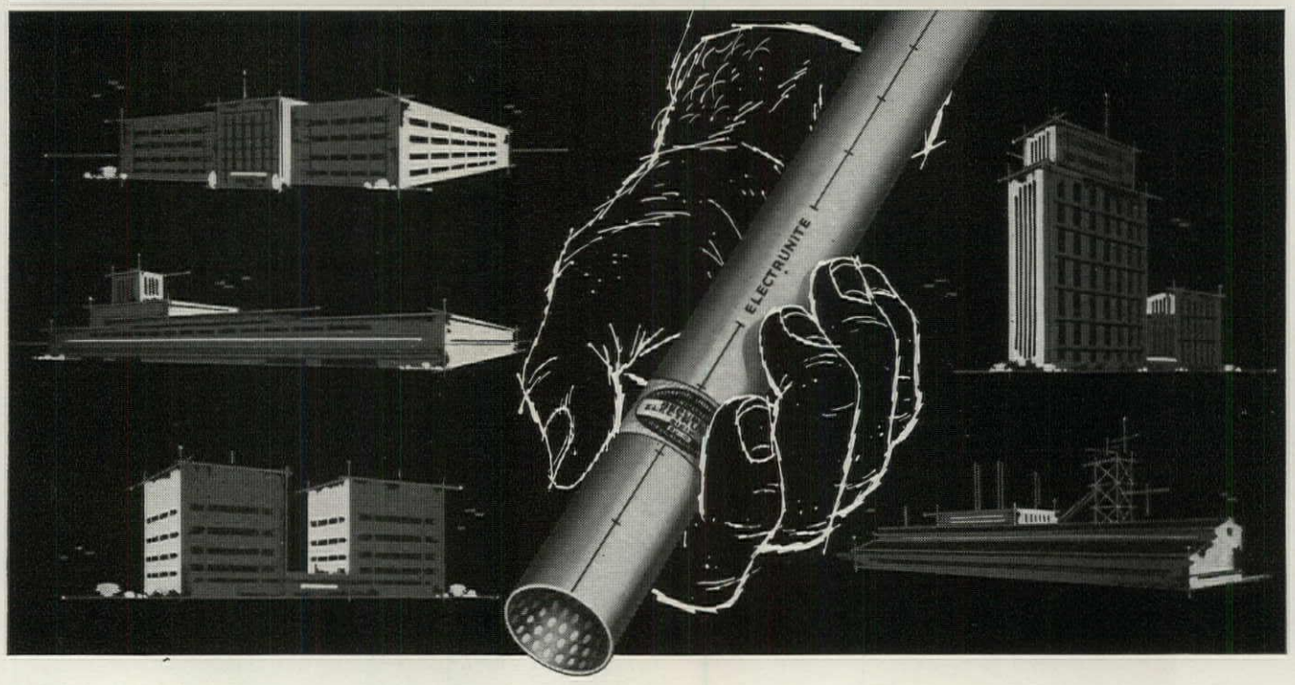
CONSTRUCTION MATERIALS
CARTER-WATERS
KANSAS CITY ... MISSOURI

Blok-Joint and Blok-Mesh are products of The Carter-Waters Corp., 2440 Pennway, Dept. AF Kansas City 8, Missouri.

Available in the U. S. through Concrete Block Manufacturers and Building Material Dealers.

Blok-Joint is distributed in the Canadian Provinces of Alberta, Saskatchewan and British Columbia by CONSOLIDATED CONCRETE INDUSTRIES, Ltd., 9th Ave. & 24th St. East, Calgary, Alberta, Canada.

THE BEST COSTS LESS INSTALLED



design today to meet tomorrow's electrical loads with Republic ELECTRUNITE

ELECTRICAL METALLIC TUBING

Republic ELECTRUNITE® E.M.T. sets the pace for designing tomorrow's load-building capacities economically. The ever increasing demand to produce more goods, services, conveniences, requires built-in electrical conduit capacity. Reasons why . . . the *best* costs *less* installed.

ELECTRUNITE offers architects, engineers, and builders cost economies that allow adequate plus-sized raceways to be installed now . . . with a pull-in, pull-out grounded electrical wiring system that protects now, provides for the future.

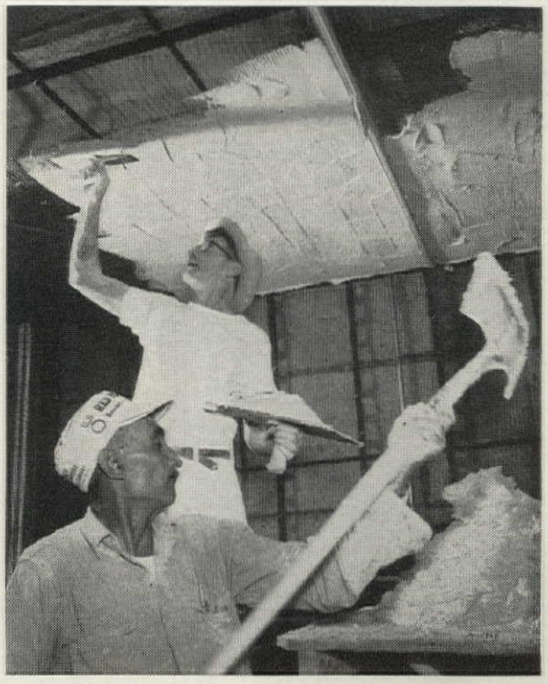
Economy of installation, too, is a factor. Lightweight Republic ELECTRUNITE E.M.T. speeds handling, lowers installation cost. "INCH-MARKED"® in feet and inches on all popular sizes for fast, accurate measuring every time. Full length "GUIDE-LINE" helps keep bends in the same plane. And exclusive "INSIDE-KNURLING" makes wire pulling as much as 30% easier.

ELECTRUNITE E.M.T. offers complete wiring protection as approved in the National Electrical Code. Produced to A.S.A. Specification C80.3 and Federal Specification WW-T-806, latest revisions, ELECTRUNITE E.M.T. carries the Underwriters' Laboratories Seal of inspection.

Investigate these money saving advantages and see why it's good business to recommend Republic ELECTRUNITE E.M.T. to your clients and customers. For more information, call your Republic representative, or use the coupon below and write direct.

Strong, sturdy, Republic ELECTRUNITE E.M.T. is the ideal electrical raceway conduit for concrete installations. Special galvanized finish protects every inch of Republic ELECTRUNITE—will not chip, peel, or flake even when the tube is bent. Another built-in quality reason for specifying Republic ELECTRUNITE to your clients and customers.

THE AMERICAN HARDWARE MUTUAL INSURANCE BUILDING in Minneapolis consists of two main elements: (1) a four-story office unit and penthouse; (2) a wing combining auditorium, employee dining facilities, and garage. Republic ENDURO® Stainless Steel is used for elevator doors, moldings, and fluted wall panels in lobby area. The softly finished metal enhances the beauty of the Monte Verde marble floor and Italian Cippolino marble walls. Yet, does not compete for attention.



TRUSCON METAL LATH and plaster provide flexibility in ceilings that are sometimes level, sometimes domed, sometimes formed into unusual contours. And you get additional structural advantages, such as rigidity, resistance to cracking and impact, sanitation, relative lightness of weight, and long-term economy. Write today.

TRUSCON VISION-VENT® WINDOW WALLS are an exciting type of fast, economical wall construction. Vision-Vent goes up quickly and efficiently! And offers this important plus—it's a wall with the window already in place, completely contained within the depth of window-framing members. In planning, designing, building—Truscon Vision-Vent Window Walls offer many advantages in all types of single story and multi-story applications. Truscon window engineers will be glad to work with you in developing design details and costs. Call your Truscon representative, or write today.

REPUBLIC STEEL

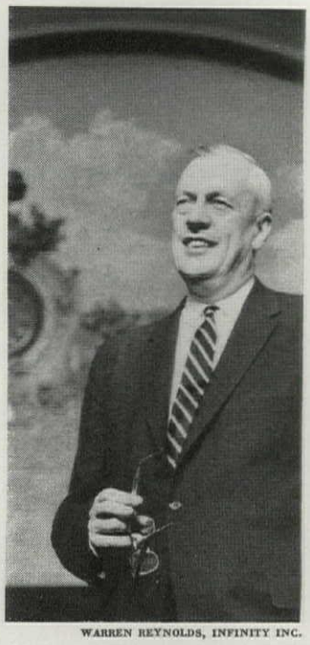
World's Widest Range of Standard Steels and Steel Products

REPUBLIC STEEL CORPORATION
DEPT. AF-5920
1441 REPUBLIC BUILDING • CLEVELAND 1, OHIO

Please send additional information:
- ☐ Republic ELECTRUNITE E.M.T.
- ☐ ENDURO Stainless Steel for architectural applications
- ☐ Truscon Metal Lath
- ☐ Truscon Vision-Vent Window Walls

Name_____ Title_____
Firm_____
Address_____
City_____ Zone____ State_____

MAKING A MONUMENT WORK *continued from page 103*



WARREN REYNOLDS, INFINITY INC.

Now that the Owatonna bank remodeling is complete, Banker Cliff Sommer (photo, right) is genuinely glad that the protesting groups intervened before he could proceed with the original plans. But on November 2, 1956, when the *Minneapolis Morning Tribune* reported the combined protest of the Minnesota State Art Society, the Twin Cities Chapter of the AIA, the Minnesota Society of Architects, and the University of Minnesota's School of Architecture, he was anything but pleased.

When the *Tribune* called him, Sommer declared: "We've studied the Sullivan tradition and have urged our architects to be conscious of his influence in planning the remodeling—and we think it's going to look nice. The basic design will not be altered."

But then Sommer added: "If the groups who are worried want to come to Owatonna to talk, we'll listen."

Less than a week later, a five-man committee came to see his plans. Sommer fully expected them to be reassured—but they were not. On the one hand, they agreed that remodeling was needed. But, on the other hand, they maintained that the plans developed by Architects A. Moorman & Co.—sound and efficient though they were—sacrificed too much of the original Sullivan design. Two things particularly concerned them: the metal-grid and plaster ceiling, which was to be hung around the perimeter of the room, would unduly conceal the upper space; and the removal of the remaining brick partitions would further destroy the balance of the room and cause more of Sullivan's ornament, including the central clock, to be lost.

A few days later, after Sommer had had a chance to discuss the affair with his directors and with officers of the Northwest Bancorporation, with which the Owatonna bank is affiliated, the committee met with Sommer again. Now, the committee proposed that a consulting architect "with exceptional talent and understanding of Sullivan's work" be added to the planning group. Sommer accepted the proposal and immediately called Architect Harwell Hamilton Harris in Fort Worth, Texas—the group's first nominee.

On a trip east the previous summer, Harris and his wife had driven many extra miles to see the bank. Now, remembering his impressions, Harris, a dedicated Sullivan scholar, accepted the commission with enthusiasm.

Cliff Sommer, who has, by now, become something of a Sullivan expert himself, says: "I guess I've been involved with architecture all my life, but I didn't really think of it that way until we tackled this job. Maybe everything I did before was preparation for this." END

BUILDING CODES *continued from page 89*

on the latest technical developments of the U.S. On each of the jobs, for instance, we are following the recommendations of the National Plumbing Code and consequently we are using only a fraction of the amount of pipe that we would have to use here.

Masters or slaves?

How can we solve this problem of anarchic codes and restrictive union practices? This is no job for one architect, certainly, or even for a dedicated group of architects. It is a job for the entire architectural profession. Are we to be master builders, or are we to be pliant slave builders who will accept the tyranny of senseless codes? What we need is joint action. If one doctor advises the use of a new vaccine, his voice will probably not carry far. But if the American Medical Association announces that a certain vaccine is beneficial, the public listens. Why does not the AIA emulate the AMA? Why does not the AIA speak out on codes?

What the AIA must do is clear. It must: 1) proselytize local governments to adopt and follow the national codes proposed by various national construction organizations and other groups; 2) undertake a well-organized campaign to educate the public to just how damaging restrictive union practices are.

The AIA should adopt forthwith a resolution calling on the cities and states to prescribe that builders meet the specifications of recommended national codes such as the National Electric Code, the National Plumbing Code, the codes of the American Concrete Institute and the American Institute of Steel Construction, and the standards of either the Building Officials Conference of America or the Uniform Code of the International Conference of Building Officials. Later, the AIA should propose amendments and improvements to these codes, and make sure that local appeals boards are set up to correct the more serious flaws that show up. (Actually, the blame for our code inadequacies lies not with local officials but with an indifferent public which has let special interest groups get what they wanted in codes.

The second task—educating the public to the harm done by restrictive union practices—is more difficult of achievement. The public must be told, through a vigorous public relations campaign waged by the AIA, through institutional advertising, and through local chapter action, just how much these practices are costing home owners and citizens generally. And the public must also be told which practices are causing the most damage—a list of the 20 or 25 worst rules could readily be drawn—and what must be done about them.

Clearly, this is a tremendous challenge. To meet it will not only require great effort but a unity of purpose rarely achieved by the architectural profession. Yet is there really an alternative? Unless architects take the lead in bringing more sense to building codes and union rules, they may find themselves increasingly penned in by more and more restrictions. And this would be intolerable, not only for the profession but for the whole of building which needs so urgently today to share in the marvels of our mass-production technology. END

KEYWALL

GALVANIZED MASONRY JOINT REINFORCEMENT

The Chicago Sun-Times Building contains newspaper offices, printing facilities and rented office space. Architects: Naess and Murphy. General Contractor: George A. Fuller Company.

Masons like to use Keywall. It easily unrolls in place on the wall. It's easy to lap at corners without adding thickness to the joint. Mortar flows readily in, under and around Keywall to give full embedment and a complete bond. Masons find Keywall easy to handle on the scaffold.

Keywall is made for the following wall thicknesses: 4″, 6″, 8″, 10″ and 12″.

the reinforcement that does what masonry joint reinforcement is supposed to do..fights cracks!

Resistance to stresses that cause cracking is a basic purpose of masonry joint reinforcement. While it does increase the ultimate lateral strength of masonry walls, architects and builders depend on masonry joint reinforcement mainly to eliminate damaging and unsightly cracks caused by shrinkage during curing and aging.

The basic multi-directional design of Keywall assures superior resistance to cracks. This has been demonstrated repeatedly on jobs from coast to coast. The new Chicago Sun-Times building is just one example.

Keywall-reinforced walls in the new Sun-Times building show far greater resistance to cracks than comparable walls with other masonry reinforcements, extensive studies reveal. Keywall was used to reinforce exterior masonry backup walls and interior partition walls of the Sun-Times building.

KEYSTONE STEEL & WIRE COMPANY

Peoria 7, Illinois

Keycorner • Keybead • Keywall • Keymesh • Welded Wire Fabric

Department AF-78
Keystone Steel & Wire Company
Peoria 7, Illinois

Please send me complete information on Keywall.

Name_____

Firm_____

Street_____

City_____ Zone_____ State_____

would be no way to develop the density and richness of texture that defines the city.

To get this richness of texture it is necessary to allow far more free play to individuality, to allow many more functions to crowd together, and jumble together, and rub against each other, than even the best plans have permitted. No plan has ever come within hailing distance of recreating what are in some respects the best and richest parts of our cities—Greenwich Village in New York, North Beach in San Francisco. Such areas seem to require a mixture of lower-class residential area, preferably Italian, as a base—with its stores, coffee shops, churches, and the like—offering cheap living for poor young people, combined with expensive apartments or town houses, combined with art stores, used furniture and antique stores, night clubs, restaurants, all kinds of shops. This kind of thing, one of the glories of the city, no planner can plan.

Traffic and taste

Motor traffic is now well recognized as a crucial city problem, but so long as we cling to garden city concepts of planning, the full seriousness of motor traffic in the city will not be realized. The dense texture of the city is destroyed by motorcars if the streets are widened and parking lots opened up for cars. It is questionable whether we can retain city centers at all if they are adapted to private automobiles. The most hopeful idea to have emerged in planning in recent years is the proposal that downtown streets be turned into malls and pedestrian ways, and the car banned from the city center. But this is not a complete solution. Perhaps to the shopping centers and to city centers which require that the car be left outside, we shall add new urban residential areas, of urban texture and density.

Finally, a fourth factor in the unsatisfying state of our cities must be faced: the catastrophic decline in taste that has accompanied the industrial revolution. This is the most difficult thing to talk about. Aside from its controversial nature, what can possibly be done about it? What can be done about the fact that buildings, neighborhoods, squares, and streets lack beauty, variety and exhilaration? One very small thing that can be done, and is done increasingly, is for people to become aware of the minor virtues in design that turn up almost continually in old buildings, old neighborhoods, old streets (and they need not be very old to compare favorably with much contemporary design). We must be more careful about destroying these to build new areas that will very often be inferior. Certainly the encouragement of better city design is of first importance but, in the meantime, even a defensive or holding operation has some virtues.

Whatever solutions we find to deal with these urgent problems of our cities, one thing is sure: nothing will be cured by bringing the suburb, even in its best forms, into the city. And yet this was the main objective in the program of a whole generation of city planners. We have come to the end of that road, and we must now discover or invent forms of planning appropriate to the great city. END

WHERE

Windows reflect savings

Savings are mirrored in every gleaming aluminum framed Brown & Grist window at "One Bala Avenue." Initial cost was low. B & G engineered "shortcuts" saved costly installation time. And superior aluminum construction means a lifetime of top performance with little or no maintenance.

HOW

code problem was decoded

Building code regulations required 4" masonry backing for porcelain enamel spandrels. This created an extraordinary sill condition. But, as the architect said, "Details of B & G windows were so flexible they adapted easily to this unique form." B & G custom-designs windows to your specifications.

WHAT

did the architect say

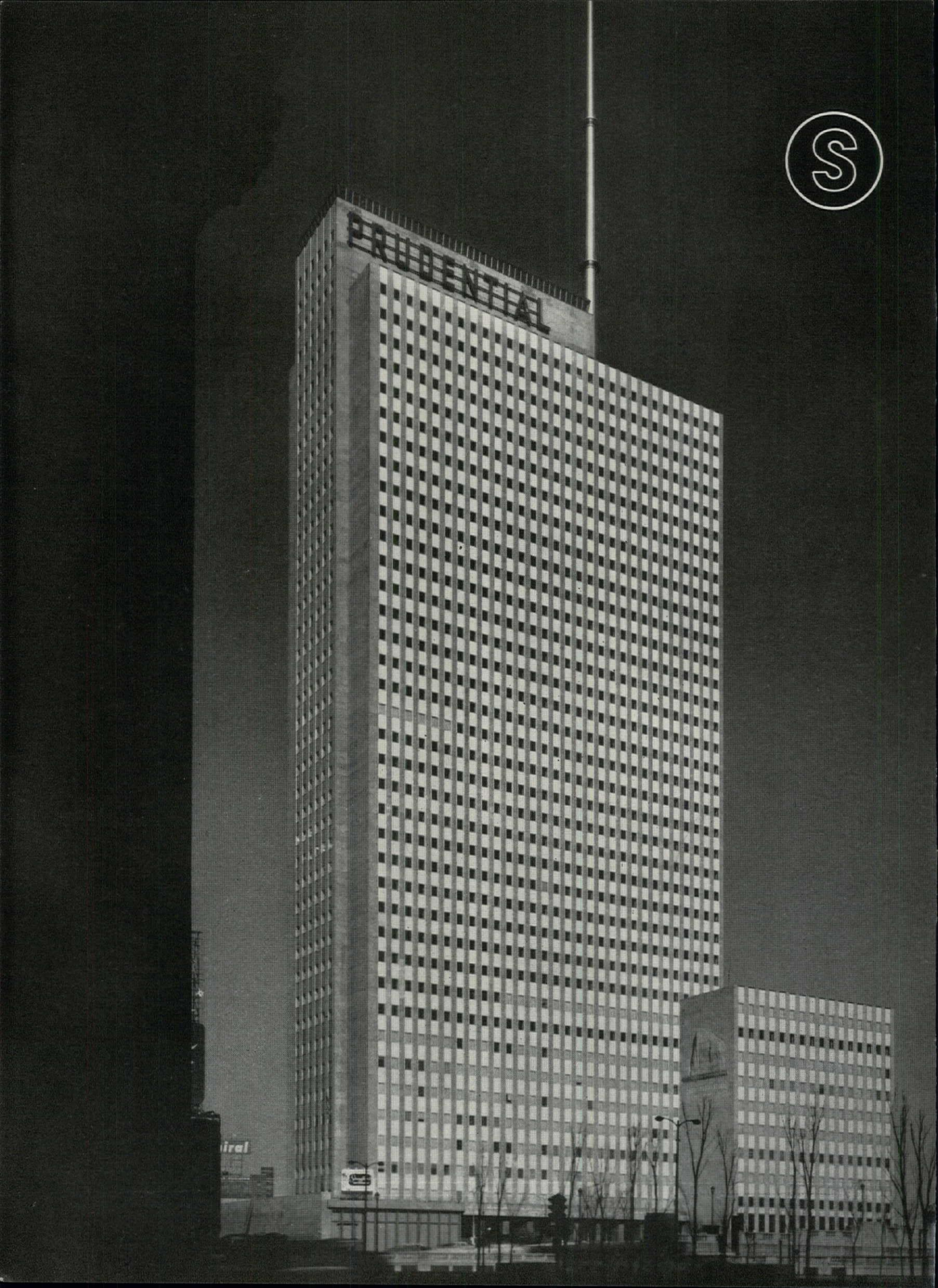
Architect Aaron Colish said Brown & Grist Windows were picked for "excellent design and strength of sections, ease of installation and adjustability of mullions." Other important factors: "ease of operation, weather tightness, and excellent appearance." We're always understandably proud when our product wins this kind of professional praise!

Office Building—"One Bala Avenue," Bala Cynwyd, Pa. • Architect—Aaron Colish • Builder—S. Yellin and Son
B & G Representative—Charles G. Noska Co., Philadelphia

BROWN & GRIST AWNING WINDOWS

Got a building on the board? Refer to Sweet's for B & G Window and Window Wall Catalogs.

BROWN & GRIST, INC. 25 Tyler Avenue, Warwick, Va.


PRUDENTIAL

CHICAGO'S FABULOUS PRUDENTIAL PLAZA

...SERVED BY

THE "OVERHEAD DOOR" TRADE MARK

ARCHITECTS: NAESS AND MURPHY

CONTRACTOR: GEORGE A. FULLER COMPANY

OWNED BY: PRUDENTIAL INSURANCE CO.

The magnificent new Prudential Plaza was created to provide business firms in Chicago a better, more convenient location . . . offering the finest of today's service features.

Naturally, The "OVERHEAD DOOR" was selected for installation on the Prudential Plaza truck loading entrance. These aluminum doors seal out the powerful winds off Lake Michigan . . . yet each door glides swiftly up, over and out of sight at the touch of a button.

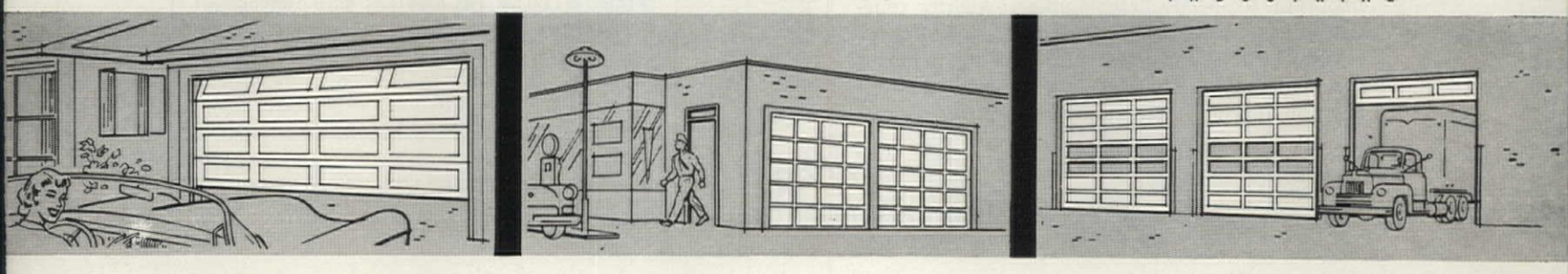
Installation of The "OVERHEAD DOOR" in the Prudential Plaza is another example of the confidence architects have in America's finest upward-acting sectional door. For three and a half decades, The "OVERHEAD DOOR" has met the exacting standards of quality, installation and service demanded by architects everywhere.

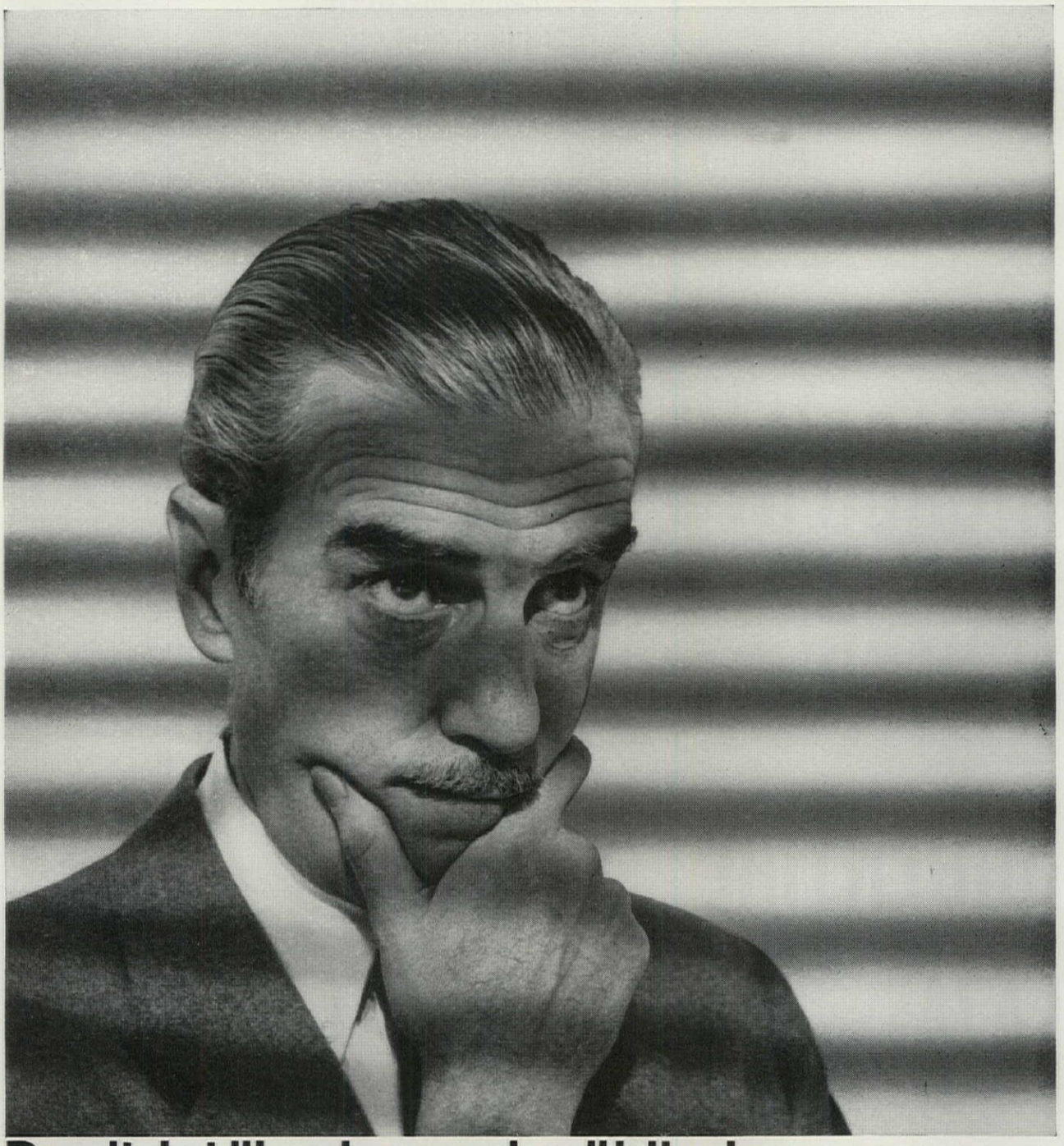
Today the Overhead Door Corporation produces The "OVERHEAD DOOR" in sizes to fit all standard door openings . . . and is pleased to cooperate on doors of unusual sizes and special problems. Architects and contractors need only call on us for our special services.

Available in wood, aluminum and steel, there is a type of The "OVERHEAD DOOR" to serve every need. As America's pioneer and leader in upward-acting sectional doors, the Overhead Door Corporation offers a complete line of doors—residential, commercial and industrial—with or without electric and Ultronic door operators.

OVERHEAD DOOR CORPORATION. General offices: Hartford City, Indiana • Mfg. Dist.: Cortland, N.Y.; Hillside, N.J.; Lewistown, Pa.; Marion, Ohio; Nashua, N.H. • Mfg. Div.: Dallas, Texas and Portland, Ore. • In Canada: Oakville, Ontario.

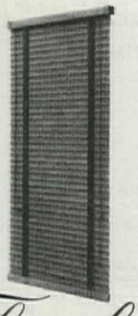
RESIDENTIAL COMMERCIAL INDUSTRIAL





Don't let "hodgepodge" blinds cast a shadow on any job of yours!

Because all venetian blinds are assembled locally, there's always the risk of getting blinds that are assembled from a *hodgepodge* of components. This can cause operating malfunctions, light leaks, and service maintenance problems. That's why it's important to specify "Flexalum Twi-Nighter venetian blinds." This is the blind that assures tighter closure (a must for direct sun exposures), longer life and less care. The Flexalum Twi-Nighter is the only blind where *every component, including raw materials, is made by one manufacturer.* And it is assembled locally *only* by licensed Flexalum Manufacturers under strict Hunter Douglas quality control. Protect yourself *and* your clients.

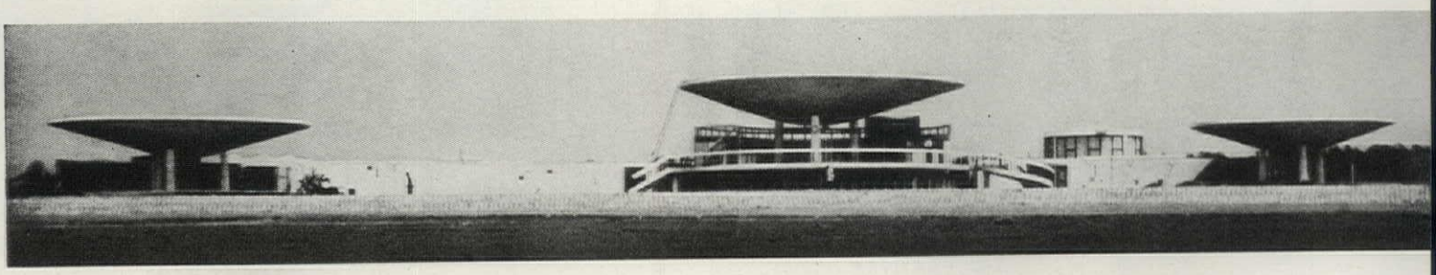


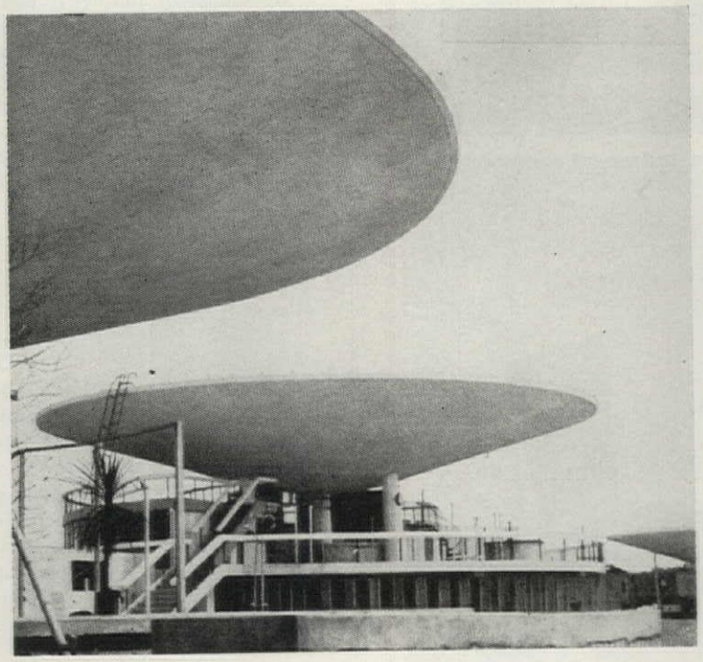
SPECIAL FLEXALUM TWI-NIGHTERS USED THROUGHOUT THE SEAGRAM BUILDING. To achieve a uniform appearance from the exterior, two custom devices were engineered: 1) a 3-position stop on the lift mechanism; and 2) a control to limit the tilt-angle.

Flexalum TWI-NIGHTER® VENETIAN BLINDS

Hunter Douglas Aluminum Division of Bridgeport Brass Company, 405 Lexington Ave., N.Y. 17.

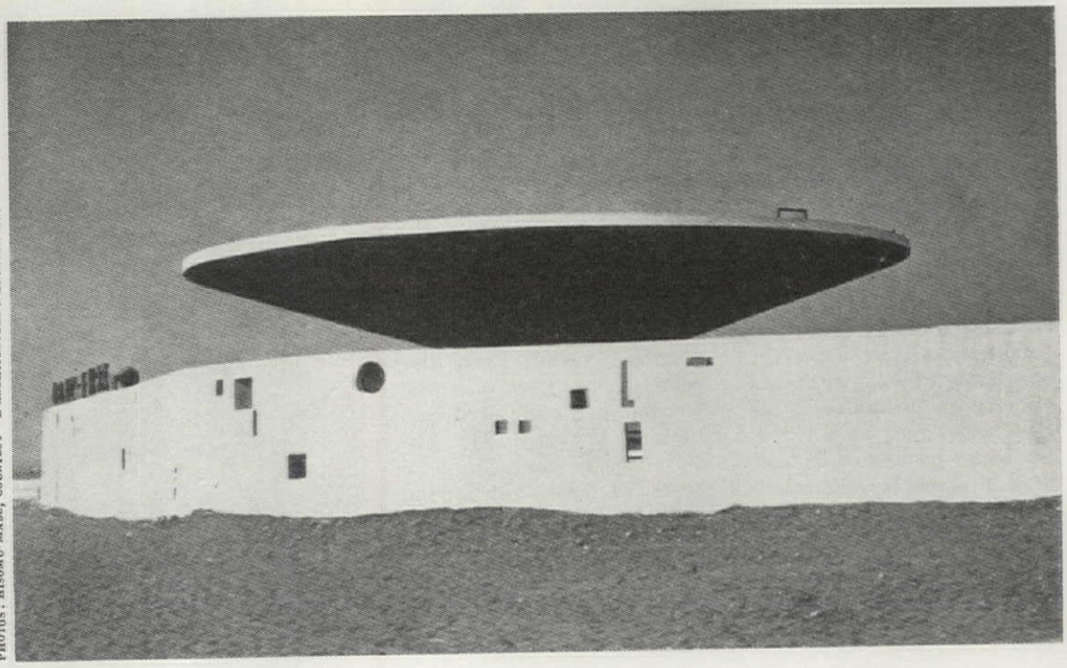
A continuing review of international building





SAUCERS OVER TOKYO

Well back from the water's edge at Katase Bay, near Tokyo, three thin-shelled concrete parasols stand above the beach. Although they look like a well-designed landing strip for flying saucers, they actually shelter a resort built by the Society of Odakyu Tramways for its employees. Below the ground level are baths and pools for unathletic guests who prefer a fresh-water shower to a salt-water plunge; shaded by the parasols are terraces for guests who prefer just to relax and drink tea. From the rear (below) the terraces are sheltered by a curved wall perforated by an assortment of portholes. The complete layout was planned by Kume & Associates of Tokyo.



PHOTOS: HISOMU-MASE, COURTESY "L'ARCHITECTURE D'AUJOURD'HUI"

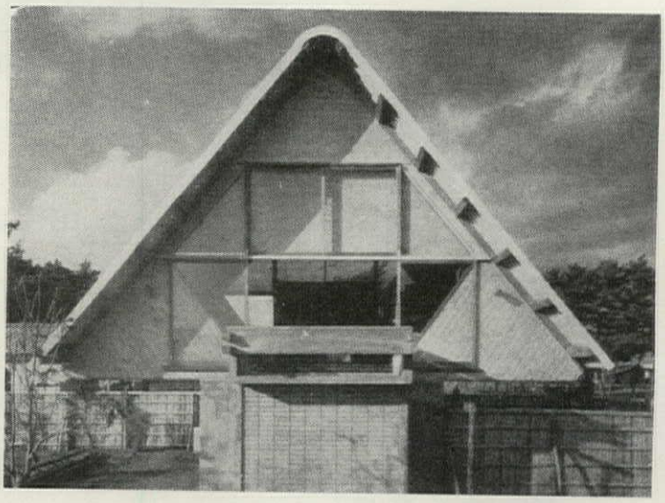


PHOTO: Y. FUTAGAWA, COURTESY KENCHIKU BUNKA

JAPAN AT HOME

Emancipated and newly prosperous Japanese young people have taken to building their own small houses away from the family-dominated, relative-cluttered homes of the past. Near Yokahama, Architect Chigasaki has built this cottage, resembling a partly open book. At one end of the house there is a picture window whose sliding panels open onto a porch. At the other end is a bar-kitchen convenient enough for any emancipated Japanese matron.

SWEDEN INDOORS

With suburban building going on apace and natural landscapes disappearing, Swedes have tried to make up for the loss of outdoor swimming holes by building indoor pools for adults and children. One of the largest is this pool at Lulea, in northern Sweden, designed by Architects Ericson, Gynnerstedt & Agren. Its most interesting aspect is a teak roof suspended from the concrete skeleton; the roof gives the vast room a sense of shelter without detracting from its openness to natural surrroundings.

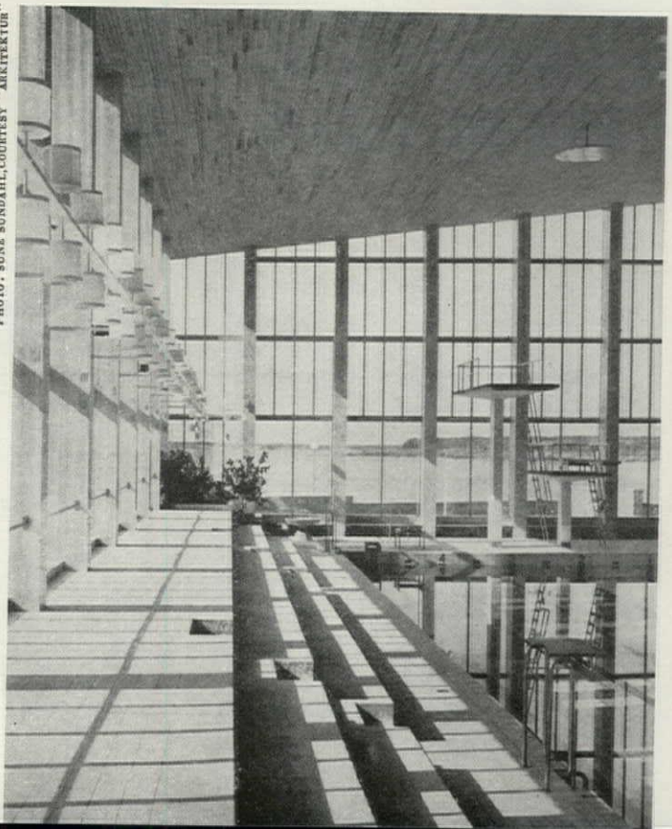
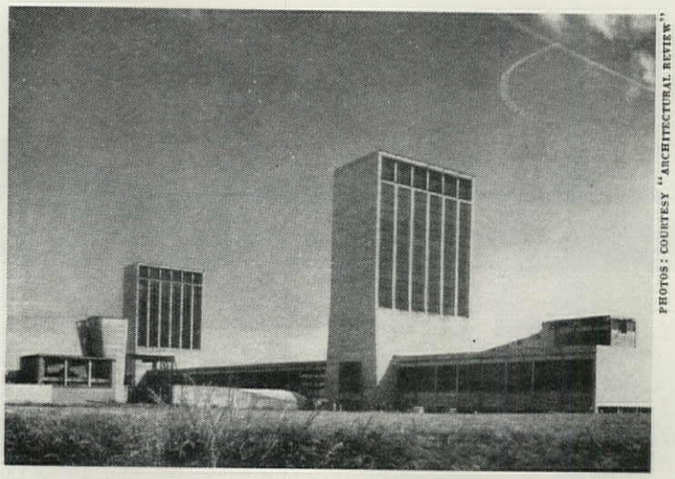
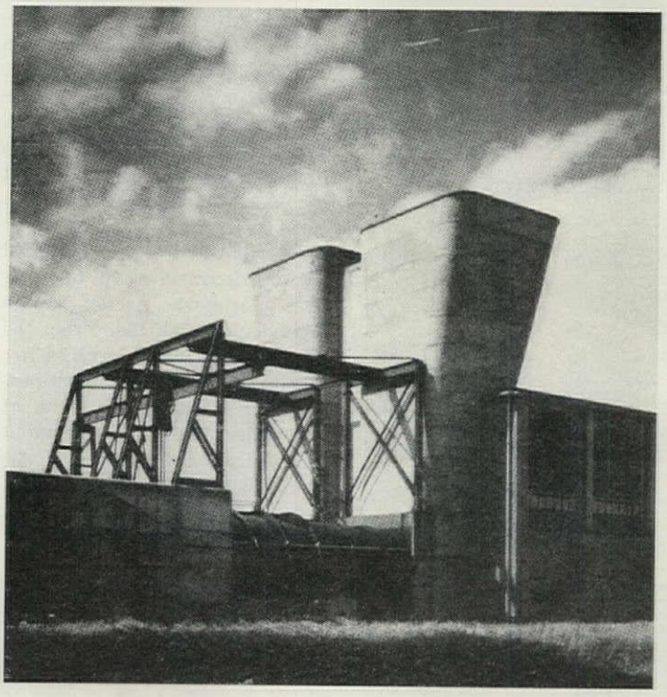


PHOTO: SUNE SUNDAHL, COURTESY "ARKITEKTUR"



PHOTOS: COURTESY "ARCHITECTURAL REVIEW"



COALS TO FIFESHIRE

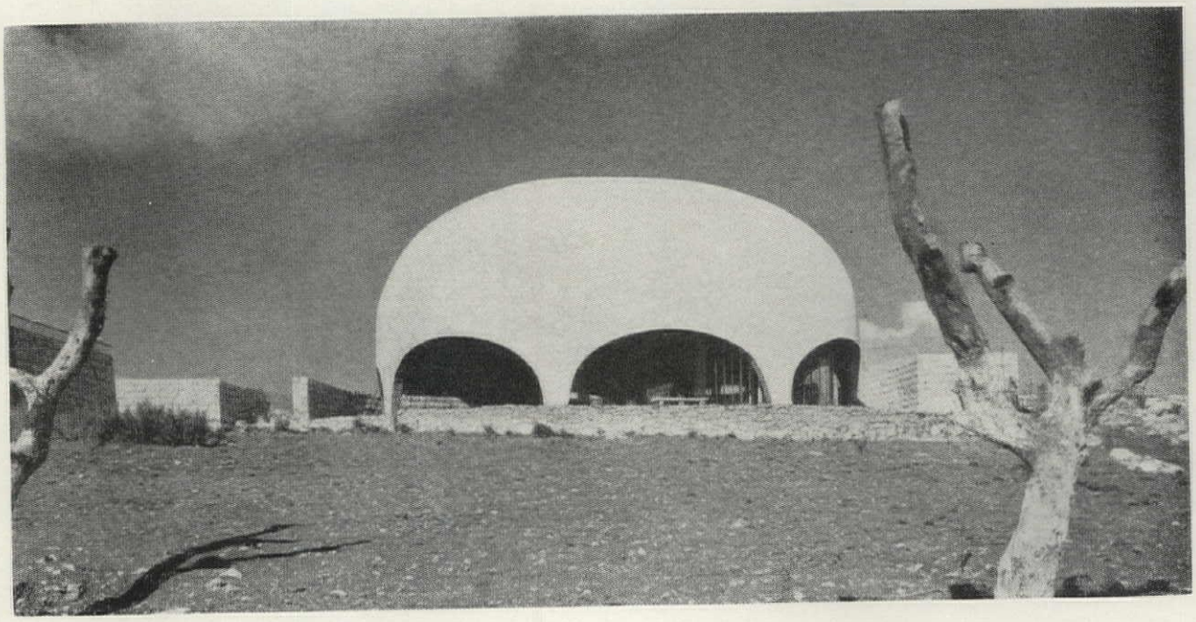
For three centuries coal mining has been a dirty smudge on the good looks of British industry. As if to atone for past error, the new Rothes Colliery in Fifeshire is as cleanly designed as a Swedish bath; by a nice balance of tall elements (the winding towers) and low-lying connectors (the car circulation hall), the many operations of mining have been brought under architectural control. Architect Egon Riss gave special attention to the scrubbed and sculptured ventilators (bottom). The colliery shafts descend to a depth of 2,600 feet, giving access to coal in some ten subterranean square miles.

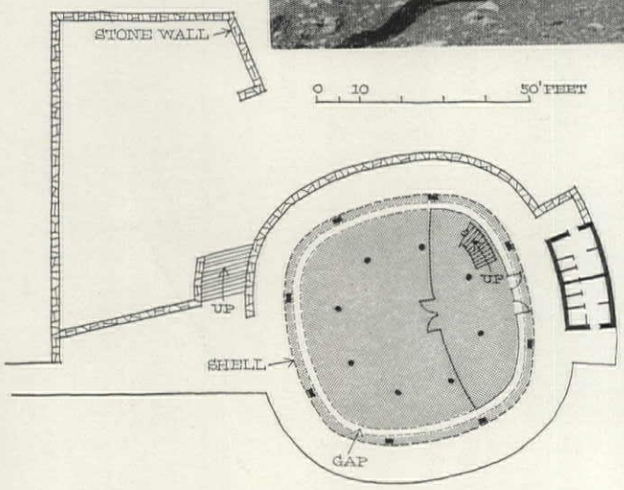
PHOTO: KOLMIO, COURTESY "ARKKITEHTI-ARKITEKTEN"

FINNISH SENSIBILITY

The religious revival that has powered a vigorous decade of church construction throughout Europe has derived much of its architectural inspiration from Finland. The Alppila Church in Helsinki by Keijo Ström & Olavi Tuomisto is the latest example of Finnish sense and sensibility. Particularly admirable is the interior, where a cross as structurally tense as the building itself is framed by a softening, free-form brick pattern. Also worth noting is the careful treatment of natural daylight which is admitted only at the altar end of the church and above the side walls.

PHOTO: COURTESY "WEEK"





ISRAEL SOPHISTICATION

As unusual as this sophisticated, shell-shaped synagogue looks on the sparse campus of the University of Jerusalem, its most extraordinary feature is hidden. For, resting on eight columns inside the shell, is a floor that divides the interior space into two horizontal sections. As designed by Architect Ezra Rau, the upper level is the main hall, or oratory; the lower comprises the courtyard and staircase. Indirect light enters the oratory through the gap between the outer shell and the circular floor (see sketch). One is prevented from falling into the gap by a rope life line.