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Library of the
Minneapolis School of Art

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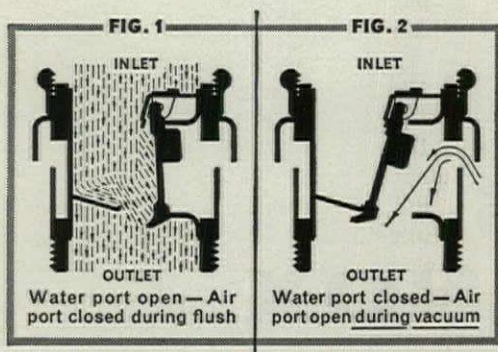
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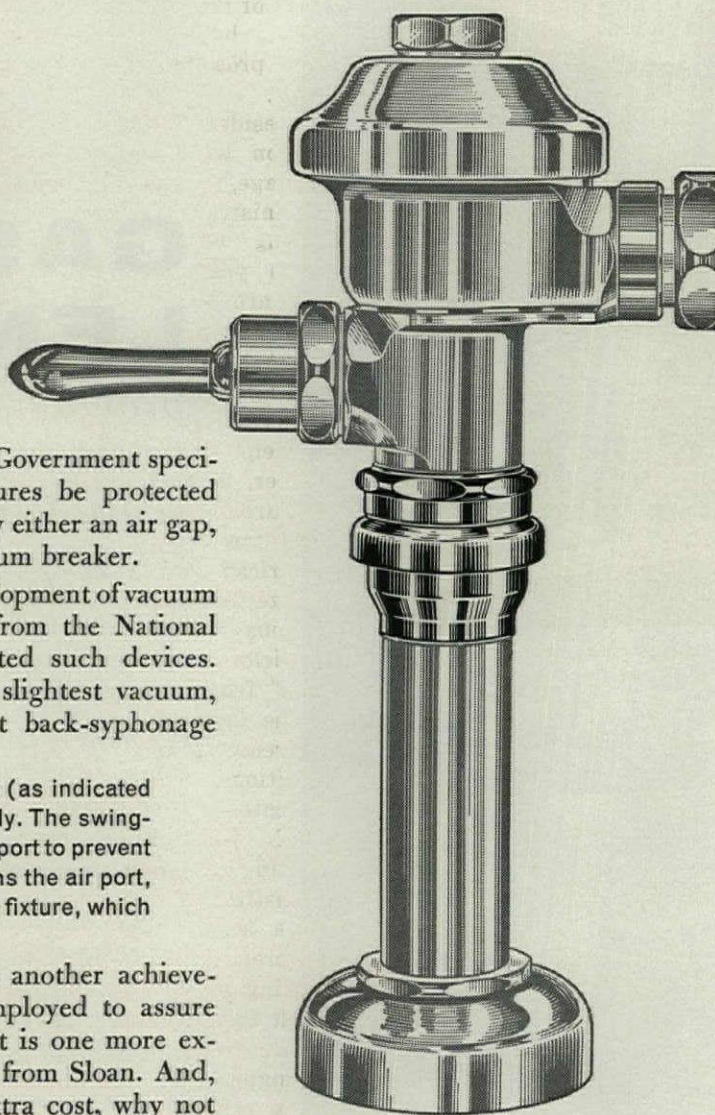


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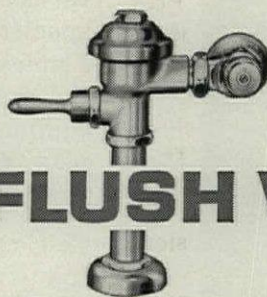
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School construction, housing programs shape up as key issues as Congress reconvenes for second session



"The roster of urban problems is staggering."

As the 86th Congress convened last month, it faced basically the same issues affecting housing and building legislation—and cities—that it did last year. And, it appeared that the final results of the upcoming session might not be any more fruitful than those of the past session, despite dogged efforts by some Congressmen to put these programs on some sort of realistic basis.

President Eisenhower opened the session with his State of the Union message, which indicated that the administration felt the same way about solving urban problems as it did seven years ago. While noting that "we are witnessing explosive growth in metropolitan areas," and granting that "the roster of urban problems . . . is staggering," the President did not prescribe any sort of federal program to help in meeting these problems. Rather, he said: "I do not doubt that our urban and other perplexing problems can be solved in the traditional American method. In doing so we must realize that nothing is really solved and ruinous tendencies are set in motion by yielding to the deceptive bait of the 'easy' federal tax dollar."

The implications of the President's reference to solving problems "in the traditional American method" clearly indicate that Congress will have a tough time attempting to expand existing programs for urban aid, or in instituting new ones. And certainly there seems little likelihood that a comprehensive federal program for housing and urban redevelopment can result from this session. As though to underscore the administration's unwillingness to promote, or approve urban renewal and housing programs, the President's budget message asked no new funds whatever for urban renewal or college dormitory housing, and no new authorizations for public housing. Also, the President would put future urban renewal grants at the mercy of the Appropriations Committee, which would mean annual Congressional wrangling over grant funds, with little hope of any continuity for the program.

In a presidential election year, the Democrats are not, however, showing a willingness to knuckle under to administration demands. Even if they know

that there is little chance of getting anything done, the opposition is already talking a good fight. Senator Joseph Clark (D, Pa.), for instance, was among the first to hit back at the President's message. Clark charged that "the President continues to turn his back on the cities of America," and criticized Eisenhower for not commenting on "the two most serious problems confronting our urban communities: housing and mass transportation."

Another Democratic Congressman, Representative Albert Rains (D, Ala.), is also critical of administration housing plans, or lack of them, and advocated a broad range of programs that have in the past suffered at the hands of the "conservative coalition" of Republicans and some, mostly southern, Democrats. Rains wants first an emergency housing measure, similar to that passed in the spring of 1958, which would give the Federal National Mortgage Assn. an extra \$1 billion of authority for buying home mortgages in amounts up to a maximum of \$13,500. Rains feels this is needed to offset the deleterious effects of tight—and scarce—mortgage money on the home-building industry. (It has been unofficially estimated that the 1958 emergency Fannie Mae appropriations resulted in the construction of 70,000 more homes than would have been built without it, and aided in the building of hundreds of other homes by making the mortgage money market more flexible.)

Rains also plans to introduce a major housing bill just before the Easter recess. The bill would provide new capital grant authority for the urban renewal program (probably at least \$600 million a year for at least ten years), would expand the college dormitory and public housing programs, and would give the Federal Housing Authority new insuring authorization. The latter may prove a sticky point, however. FHA is a favorite program in Congress and has in the past been used as a kind of Judas goat to lead other less popular housing measures through the legislative tangle. But this year FHA may not need new insuring authority. Congress beefed up its authority by \$8 billion last year, and the ensuing shortage of mortgage money and drop in FHA insurance

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indicates that FHA may get through 1960 without any need for new authorization. Rains himself foresees a big increase in home building this spring, and predicts that FHA will have to get an increase as a consequence.

Perhaps the most controversial building program that will hit Congress at this session is that of school building aid. In his State of the Union address, the President made clear that he would not support any large-scale expenditure of federal funds but rather favored the current administration proposal of using federal payments toward debt service and principal on long-term state and local school bonds. The National Education Assn. said the administration proposal constitutes "a course of inaction through a cumbersome, complicated debt-service bill" which would "do little or nothing to relieve the shortage of classrooms." NEA added that "the people, obviously, must look to Congress, rather than the White House," to meet the school shortage. (The classroom shortage was put at 132,400 rooms by the Department of Health, Education and Welfare Secretary Arthur S. Flemming, who also estimated that classroom construction will drop 10 per cent this year, making two successive annual declines, unless there is some form of federal assistance.) Meanwhile, Senate Democrats have already introduced a school construction bill calling for direct federal spending of \$500 million per year for the next two years. It is calculated to direct most of the aid to the neediest states.

Indianapolis starts tenth "no-aid" renewal project

Last month, the Redevelopment Commission of Indianapolis, Ind. was in the primary stages of buying land in a 42-acre area that will eventually be the site of the first new multistory apartments in the downtown area under the city's renewal program. There is no longer anything singular about a city redeveloping blighted areas, but in the case of Indianapolis, there is indeed a unique feature—the city firmly declines to accept any federal or state aid in its urban redevelopment activity. This year, Indianapolis rounds out 15 years of redevelopment activity. In that time, the city has cleared 263 acres of slums, and is rehabilitating another 280 acres. But the rebuilding phase of the program has not been so big as these acreages imply. Only 387 new dwelling units have been built under the program and 207 of these were single-family homes, although until 1957 the program was limited to a residential redevelopment. Total cost of the program so far: \$5.5 million. (This is just about 20 per cent of the amount of state federal and local funds spent since 1949 on urban renewal in Newark, N.J., which has approximately the same population as Indianapolis.)

Indianapolis' program may be modest, by the standards of many cities, but its advocates are proud of the fact that it has been financed entirely by local funds. About half of the \$6.7 million that has been available to the Redevelopment Commission since 1945 came from local taxes. (A tax of 5 cents per \$100 of taxable property has been levied annually since 1947. In the first two years of the program, the tax was 10 cents per \$100 of valuation.) The remainder of available funds, not all of which have yet been spent, has come from the resale of cleared land.

The commission also has the power, granted by the 1957 amendments to the basic law, to float bonds for specific projects. The first issue sold was for \$1,165,000 of bonds for an eight-acre commercial redevelopment site. The commission has complete powers to buy, condemn, or lease land to effectuate the redevelopment program, and it picks project sites and land uses in accord with the city's master plan. The commission itself is selected by five trustees, two of whom are appointed by the mayor, two by the president of the city council, and one by the judge of the County Circuit Court.

The latest of the city's ten projects, which calls for the construction of high-rise apartments on the fringe of the downtown area, is causing as much controversy as any of its predecessors. Only five major structures in the 42-acre site were originally slated to remain, and many of the buildings that have been marked for demolition are of recent vintage. The commission last November sold \$2.7 million of bonds for purchase and clearance of the land in the area, where some businessmen have vowed a "fight to the end" to prevent the demolition of their buildings. Mayor Charles H. Boswell has said he will oppose demolition of sound structures, and Redevelopment Commission Executive Director Jack W. Coffman agrees: "We're not out to destroy good buildings." Whether local businessmen will agree on what comprises "good buildings" is still to be seen. Some of those most opposed to the new project still grant that, by and large, Indianapolis' home-grown redevelopment program has been a good one.

New York Authorities suffer two setbacks

One of the most frequently heard criticisms of public authorities, whether they have been established for highways, ports, or whatever, is that they too often operate beyond the reach of public responsibility. Last month, however, two of the biggest of the authorities—the New York State Thruway Authority and the Port of New York Authority—suffered defeats that make it clear that authorities are answerable to the public that creates them.

The Port of New York Authority suffered what could be a decisive setback when the New Jersey State Legislature last month almost unanimously voted down its plan to build a \$220 million jet airport in Jersey's Morris County (FORUM, Jan. '60). When the Authority announced its plan two months ago for the huge (10,000-acre) airport near many suburban and semi-rural communities, it aroused a storm of protest. However, Austin J. Tobin, executive director of the Port Authority, simply told critics that there were no suitable alternate sites, and added that "if there's not a major airport for this area built here, there'll never be one built."

The Port Authority's take-it-or-leave-it attitude also stirred the ire of Congressman Emanuel Celler (D, N.Y.), chairman of the House Judiciary



HALE HABEMAN

STONE DESIGNS IDLEWILD GAS STATION
Edward Durell Stone, better known for his designs of the U.S. Embassy in New Delhi and the U.S. pavilion at the 1958 Brussels Fair, has recently designed his first building "primarily for sales and service purposes," namely, a gas station for the Gulf Oil Corp. Stone shrouded the small building, located near Idlewild airport, in the same grille façade he used in Brussels, and used transparent plastic domes to filter light into the center of the structure. An overhang, supported by golden columns, stretches across the entrance, and hung from the overhang itself are "three giant discs" containing vines.

Committee, who implied that the Authority's operations were probably ripe for Congressional investigation, and noted that there was "danger inherent" in the manner in which it conducted its business.

When the New Jersey Legislature voted down the Port Authority's plan for a Morris County airport, it also asked the Federal Aviation Agency for

\$300,000 with which to study an alternate site, probably in Burlington County, which would be some 60 miles from New York City, rather than the 25 miles involved in the Morris County site. FAA had once turned down a proposal for a jet airport in Burlington County, on the grounds that it would create a traffic problem with planes from McGuire Air Force Base and the

Philadelphia Airport, but it has said it would re-examine its stand.

Whatever the outcome of the search for an alternate site in Jersey, the Port has lost out on its scheme for a Morris County site. The plan would have had to be approved by the New Jersey Legislature, as it involved an area outside the jurisdiction of the Authority. Following the vote, the Port Authority said it would continue to study the possibility of finding a site for a jet airport.

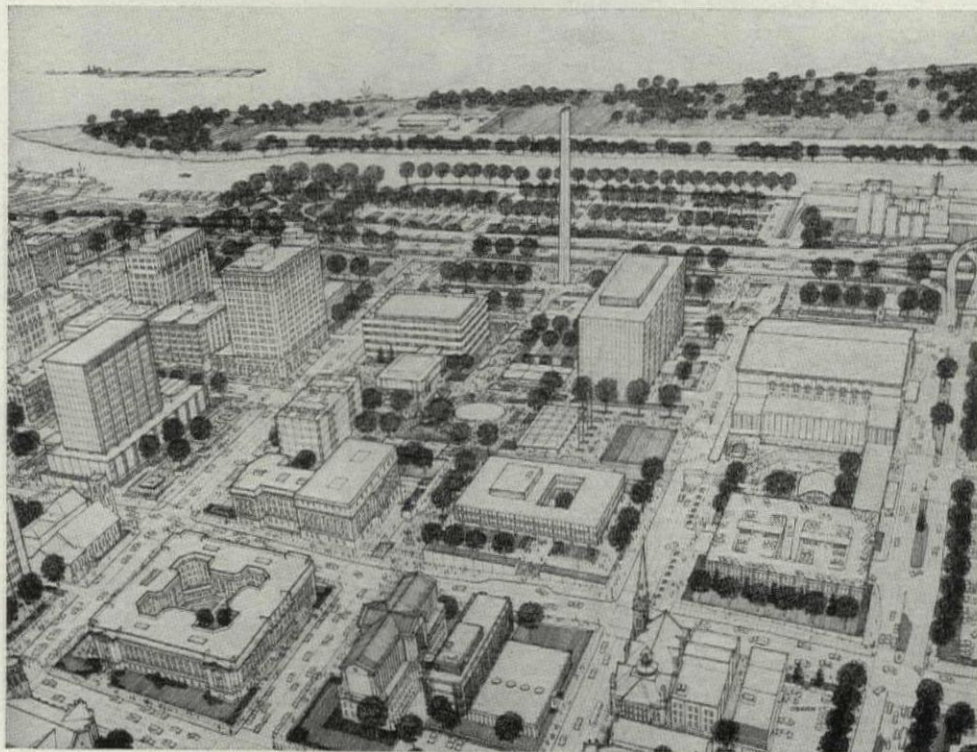
Meanwhile, in a less important but nevertheless significant action, a New York State Supreme Court Justice ruled last month that the New York State Thruway Authority was liable to suit by citizens for damages from highway noise, smells, and lights. Twenty-seven residents of Pelham Manor, N.Y. are seeking restitution for damages. When the Authority attempted to have the case thrown out, Justice Samuel Eager held that it was indeed liable for "substantial damage." He ruled that the Authority is not an "arm of the state" but rather is a separate body and can be sued.

Giants' baseball stadium called "firetrap"

Candlestick Stadium, scheduled someday to be the home of the San Francisco Giants, has been the center of an intermittent controversy that has sputtered in the West Coast city since construction was started in 1958. Last month, the issue blazed up when Albert Hayes, chief of the city's Bureau of Fire Prevention, called the handsome, water-front stadium "a firetrap" and said he would not permit the Giants to occupy the stadium until certain changes were made, particularly: installation of standpipes, hose reels, illuminated exit signs, an additional exit ramp, and sprinklers at the heads of all columns.

Architect John S. Bolles is particularly perplexed by Hayes's latest blast, because he thought that he had met all the department's objections. In fact, when the stadium plans were finally approved in 1958, it seemed as though Candlestick would probably be the most fireproof stadium in the country. The columns have been a particular bone of contention between Hayes and Bolles, who at first wanted to replace his 30-inch-wide reinforced concrete columns with 12-inch steel ones so as to offer the least visual obstruction. Hayes insisted on fireproofing the columns, and finally said they would have to have sprinklers at each

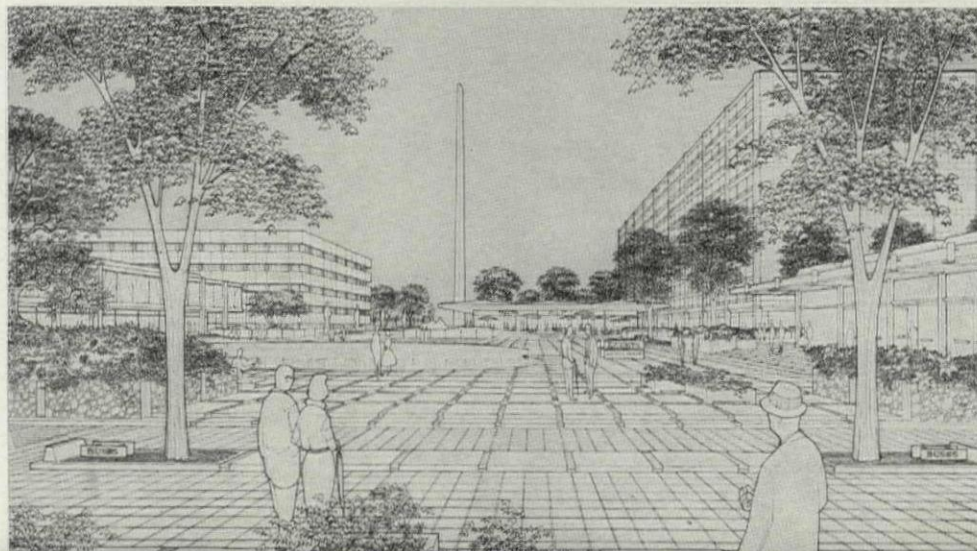
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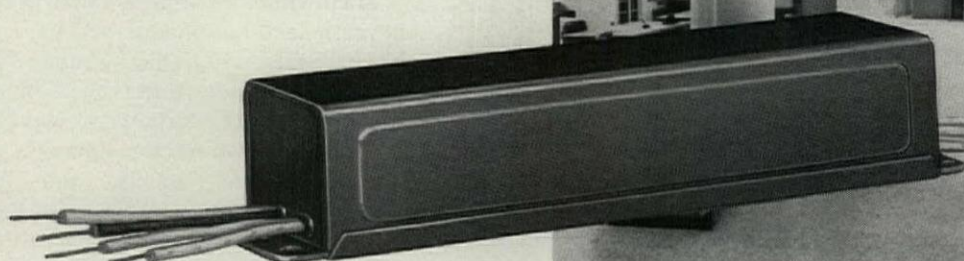
MEMPHIS ARCHITECTS ANNOUNCE FINAL PLANS FOR CIVIC CENTER

In an effort to give downtown Memphis, Tenn. a badly needed lift, members of the local AIA chapter formed a corporation in 1959 to design a new \$32.7-million civic center near the city's water front (FORUM, Nov. '59). Last month, the last of three reports on the architects' work was released, showing the design and position of the new buildings. In the picture above, four new structures are grouped around a plaza and fountain (picture, below), facing the 350-foot DeSoto Tower, which will have an open observation platform 20 feet by 10 feet at the top. The new buildings will be (clockwise): a 13-story federal office and courts building; a three-story state office building with an inner

court; a new parking garage near the existing police building; city hall with a council chamber attached by an enclosed walk. The new structure to the left in the picture will be the 14-story Memphis Light, Gas & Water Building, and on the right, adjacent to the vast Ellis Auditorium, will be a small restaurant (with hyperbolic paraboloid roof) and a large parking garage. A new plaza would be created between these two new buildings and the auditorium. The architects, who donated their services, charged only \$30,000 for costs of over 800 man-hours worked by the design team alone. They have scheduled construction over an eight-year period.



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column head. Bolles went to Fire Chief William Murray, who he says told him to disregard the sprinklers. (Murray since has said that Bolles misunderstood him.)

At any rate, Bolles figures that most of the changes Hayes wants can be made fairly easily, but he is miffed because he believes Contractor Charles Harney "is stalling" on making required changes. Bolles earlier had charged Harney with cutting corners on waterproofing, which in turn led to much-publicized leaks in the pressbox and other areas of the stadium. To add further spice to the in-fighting, both Harney and Bolles are still touchy about last fall's election, in which the group opposing incumbent Mayor George Christopher, attempting to use the issue of the contract for the stadium for political purposes, was defeated at the polls. Harney at that time supported the group battling Christopher.

Whether Bolles and Harney can get together and meet Fire Prevention Chief Hayes's objection in time for the opening of the baseball season is still uncertain, although the stadium is already behind schedule.

Lincoln Center's Opera House redesigned

A modified design for the new Metropolitan Opera House at the Lincoln Center for the Performing Arts was announced last month, at which time it was also revealed that fund-raising difficulties would probably push the completion date of the opera house back to 1963. (It had originally been scheduled for completion in 1961, but at that time, the opera house was expected to cost about \$23.6 million. Now the cost is expected to be about \$31 million.)

The most striking change in the new design, by Architect Wallace K. Harrison, is that the ten-story high-vaulted façade no longer will form a scalloped roof line, but is instead topped off with a horizontal roof. And the exterior generally is simpler, less flamboyant, than was the original design. Another major change has occurred in the 20-story building immediately behind the opera house itself, which will house offices, backstage, and workshop facilities related to the opera. Last May, the opera house was characterized by a sweeping line from the vaulted roof of the opera house right up to form a windowless stage house, the whole structure taking on the appearance of a mammoth foot (FORUM, June '59). Last October, however, it appeared

that the stage house would be a simple slab (FORUM, Nov. '59), and this has been confirmed by the most recent design, which is, according to a spokesman for the center, very close to what will be the final design.

The basic reason for the design changes in the 3,800-seat opera house, particularly the simplifying of the



REDESIGNED OPERA HOUSE

façade and its straight roof line, is to establish a closer relationship to its neighbor, the Philharmonic Hall, designed by Max Abramovitz, which is already under construction (FORUM, Jan. '60). In fact, the designs of all the buildings in the Center will probably show a much closer relationship to each other than was originally anticipated when the architects were selected, and on more classically monumental lines.

Right now, the financial problem is more pressing than any design questions. The Center has raised a total of \$57.5 million so far, but only \$19.5 million is available for the construction of the opera house, leaving at least \$11.5 million still to be raised. For the entire Center, it is estimated that a total of \$75 million will have to be raised.

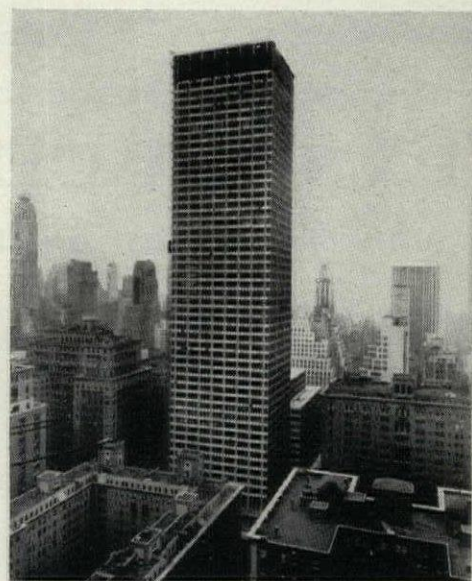
Architects, realtors split over N.Y. zoning plan

A year ago this month, a proposal for a major revision of New York City's 44-year-old zoning plan was announced by the City Planning Commission. In the year that has passed, City Planning Commissioner James M. Felt and his consultants, Voorhees, Walker, Smith, Smith & Haines, the architects, planners, and engineers who drew up a detailed proposal, have learned again how tough it is to put through major changes.

Generally speaking, New York's architectural, planning, and housing groups have approved the new zoning proposals, while realty organizations and one group of engineers have sharply opposed it. The Real Estate

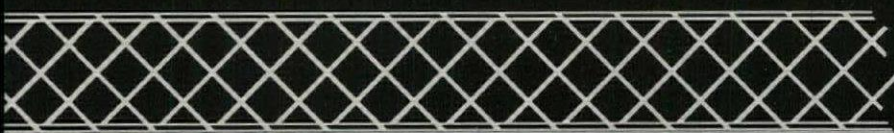
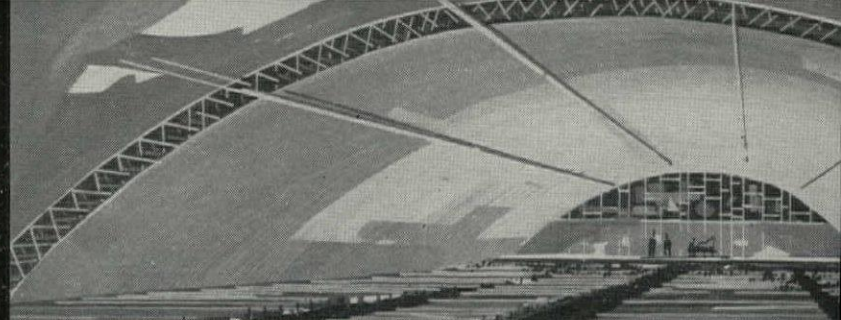
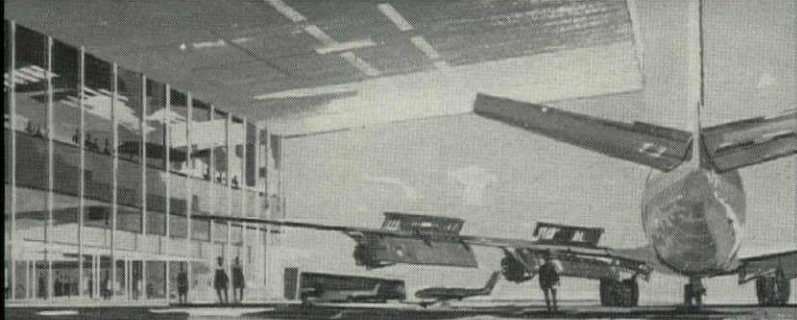
Board had been against the plan from the first, and it remained to be seen whether changes might occur in their attitude as some of the most prominent and sharpest realty men began coming out individually for the new zoning, notably City Investing's Robert Dowling, Webb & Knapp's William Zeckendorf, and in a closely allied activity, Otto Nelson of New York Life (speaking for himself as an individual). The complaint of the real estate board was that the new zoning will result in higher rents (because the size of buildings would be more strictly regulated) and because of possible lessening of the value of smaller land parcels. The city planning commissioner, himself a well-known realtor before assuming his city post, scoffed at these fears, and said pointedly that "the new zoning will hurt the exploiter of real estate, but will benefit the appropriately plotted and built project." Felt also pointed out that most of the same arguments being used against the present zoning proposal were used to fight the original 1916 ordinance—which was the pioneer big-city zoning scheme in the U.S. "These are the professional heirs of those who bitterly opposed the 1916 resolution . . . they predicted that grass

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UNION CARBIDE TOPS PARK AVENUE

Union Carbide's 52-story office tower, scheduled for completion this year, is the tallest building on Manhattan's Park Avenue. The new headquarters building is actually two structures—the Park Avenue tower is connected to a 12-story building which faces Madison Avenue. Together they will provide 1,150,000 square feet of office space. The exterior of both structures features glass and black stainless steel panels (which appear silver in photo due to protective covering) hung between stainless steel mullions. Architects: Skidmore, Owings & Merrill.



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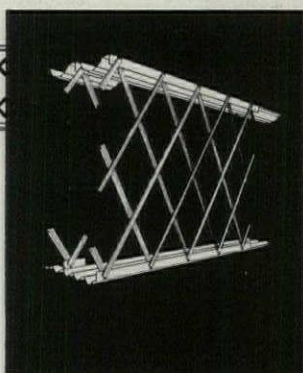
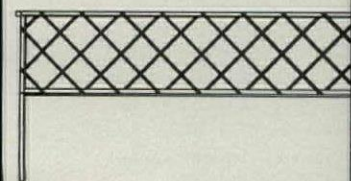
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would grow in the streets and building would come to a halt." To bolster his argument that building volume should not be adversely affected by the new zoning plan, Felt also stated that only 10 to 15 per cent of New York's post-war construction would not have been possible under the proposed zoning plan, "and that's the kind of construction we don't want any more of," Felt added.

Joining the realtors in criticizing the zoning plan was the Codes Committee of the Metropolitan Chapter Presidents Council of the New York State Society of Professional Engineers. However, it was learned last month that there was some disagreement about the zoning proposal among the engineers, and that the action of the Codes Committee by no means reflected a majority opinion of the various chapters. The newly elected chairman of the Council last month called the Codes Committee's action "premature" and said that the Council was still studying the zoning proposal.

Strongest supporters of the zoning plan, however, are the city's architects, as represented by the Architects Council, which includes five borough chapters of the AIA, as well as the New York and Brooklyn Societies of Architects (Arnold W. Lederer, the outgoing president of the Brooklyn Society of Architects, later denied that his group supported the plan, and claimed it had not been shown the resolution of support approved by the council. He added that "judging from the summary of the zoning proposal published in the newspapers, I am sure the Brooklyn Society would have disapproved the report.") After studying the zoning proposal, the architects requested several revisions, but generally favored it.

The architects were generally successful in getting the original zoning proposal amended, particularly on several key counts. Among the changes that Felt made in the original consultants' plan was one to provide greater incentive, in terms of higher "bonus" square footage, to builders to include plazas, arcades, and open space in their projects. Instead of being allowed extra square feet of building for every one of plaza space, as provided in the original consultant's proposal, the revised plan would permit builders to put five extra square feet per foot of open space. In answer to other criticisms, Felt also established the eventual population of the city at 11,830,000 allowable under the new plan. (The original resident population had been figured at an optimum of 10,940,000 compared to the present 8 million, and a potential of 55,645,000 that could occur under the present zoning system.)

Winnipeg picks modern design for new city hall

Not to be outdone by other Canadian cities (Ottawa, Toronto, Hamilton, Edmonton), Winnipeg, the capitol of Manitoba, last month revealed the results of its competition for the design of a new city hall. The winning firm, Green, Blankstein, Russell & Associates of Winnipeg, was chosen from a field of six which was in turn winnowed down a year ago from the original ninety-two Canadian entrants. (Only Canadian firms could compete.) The jurors were Pietro Belluschi of MIT; Ralph Rapson of the University of Minnesota; Alfred Roth of the Zurich Federal Institute of Technology; Eric W. Thrift, director of metropolitan planning in Winnipeg; and Peter Thornton, Vancouver architect. After two days of final deliberation, they unanimously agreed on the winning entry and gave Green, Blankstein, Russell their third Canadian civic competition award.

The jury gave the architects top marks for exemplifying "an excellent town planning concept in terms of its siting." Winnipeg wanted a city hall that would complement the existing legislative and provincial office buildings; and the new design, with its two open plazas, will not conflict with the view of the legislative building at the top of Winnipeg's Memorial Boulevard.

HENRY KALEN



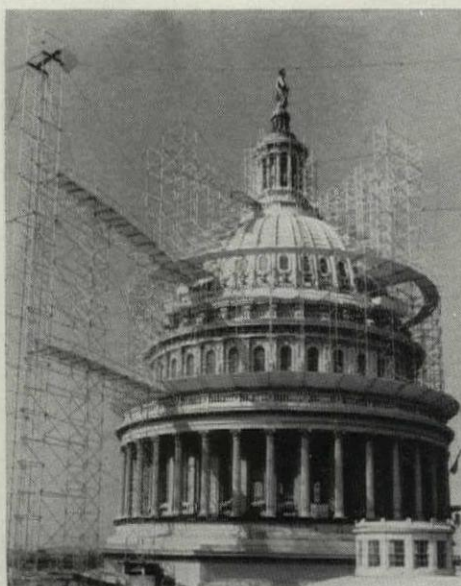
The Winnipeg city hall plan (shown in the model above) provides two separate buildings joined by a glassed-in walkway. The two main functions of city hall are thereby symbolically separated: the ten-story, stone administration building and the two-story glass and vaulted concrete area for public civic ceremonies. A subterranean parking lot for 360 cars is also planned for the site.

Briefs

Art got a boost in Philadelphia last month where the city authorized setting aside 1 per cent of the construction cost of any building financed with government funds for frescoes, mosaics, bas relief murals, and other enhancements. The Art Commission will determine when and where such art is "fitting and appropriate." The city, in passing the ordinance, became the first in the nation to do so, and also follows the lead of its own redevelopment authority, which sets aside an "ornament allowance" for its own projects.

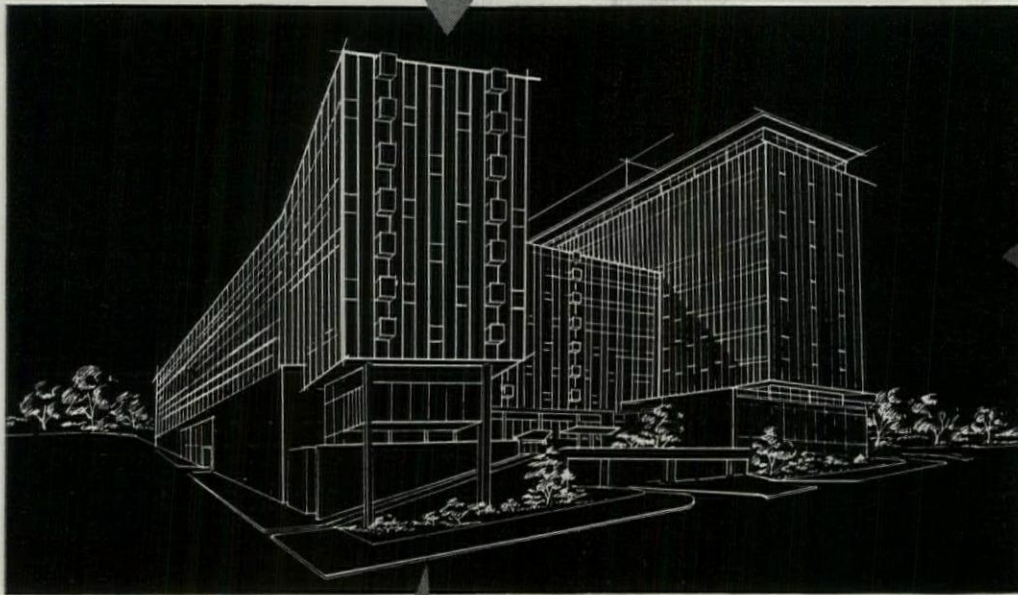
An English Channel tunnel crept closer to reality last month when an international study group of builders and designers opined that such a tube is feasible. The tunnel would cost about \$400 million, and would not carry cars but rather trains—a two-track, 36-mile line connecting Calais and Dover. British backers figure that the rail tunnel could gross \$26 million yearly. One of major reservations expressed by some defense-minded Britons is that a tunnel would end Britain's isolation from the Continent.

Flexible concrete is the latest claim of Russian technology. According to a *Tass* report, a Soviet scientist is reported to have come up with a flexible concrete having metallic properties—it can be welded, for instance. The metal-like concrete was reportedly made by rolling concrete under pressures of 30,000 to 45,000 pounds per square inch. **END**



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Inspecting, cleaning, and repairing the 180-foot U.S. Capitol dome was a delicate task, but engineers from the Universal Manufacturing Corp. designed an ingenious scaffolding of tubular members and guy lines so that workers could repair the surface of the dome with minimum pressure on it. Engineers later pronounced the historic cast-iron dome structurally sound.



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Britain's transport minister offers ideas for U.S. traffic; Atlanta's architect-builder branches out



MARPLES

The energetic bicyclist (left) is Great Britain's Minister of Transportation, **Ernest Marples**, who last month wound up a 17-day inspection tour of urban traffic, parking, and superhighways in Chicago, Los Angeles, Washington, and Baltimore. Marples frequently bicycles to work in London, and thus is in the minority (about 6 per cent) of all Britons who do not ride public transportation to and from work.

Marples came to this country primarily to find some answers to London's traffic snarl. However, he may have hit upon a better solution himself last Christmas than any he found in the auto-choked freeways of Chicago or Los Angeles. In an effort to avoid typical holiday vehicular crushes in London's downtown, Marples blocked out a 5-square-mile zone, called the "pink zone," in which only a minimum of moving traffic, and no parking at all, was allowed. Parking was provided in 17 special areas outside the central zone, and near bus stops or subway stations. The experiment was so successful that he and his staff are now figuring out ways to make it permanent.

Marples, 52, is the wealthy founder and head of a large civil engineering-building concern in London which specializes in apartments. (Marples got started in the business, after becoming an accountant, by converting Victorian mansions in Kensington into flats.) He was elected to Parliament in 1945 as a Conservative, and has served as postmaster general and assistant to the present prime minister, Harold Macmillan, when Macmillan was housing minister. (When he was first made postmaster general, Marples rose at dawn, delivered mail on a route for an hour, because, he said: "I am determined to learn my new job from the bottom to the top.")

Marples believes that there is more emphasis on town planning and less on highways as such in Britain, but thinks perhaps there could be a better balance between the attitudes toward highways in his country and in the U.S. He told Los Angeles traffic experts and city officials that "I have suggested that you send some of your chaps to study our town planning and we will send some of our chaps to learn your traffic engineering." But Marples has some serious reservations about allowing the motorcar to determine city patterns to the extent that they do in the U.S. "We have to design our cities

for living in the future and not let motorcars destroy them. . . . We can't afford to permit our rail passenger system to die. . . . We must see to it that we do not jeopardize public transportation by encouraging too many more motorcars."

As Marples toured the U.S., it seemed that traffic experts here had as much to learn from him as he did from them. London's pink zone has already stirred considerable comment, going, as it does, a step further than the small pedestrian malls that have been tried in Kalamazoo, Mich.; Toledo, Ohio; and other cities. And some U.S. planners were hopeful last month that Marples' philosophy regarding the automobile's proper place in over-all urban planning might inspire some fresh thinking among U.S. traffic engineers and city planners.

HE CREATES HIS OWN JOBS

Atlanta Architect **John C. Portman Jr.** believes that "architects are well-equipped to be developers. . ." and he is perhaps the best proof of that notion. Portman recently announced that he will build, in collaboration with Developer Trammel Crow, a new \$12-million "shopping city" complete with a 300-home residential area on the outskirts of Atlanta. Portman, who is 35, is already building the 22-story Atlanta Merchandise Mart, where he hopes to stage big trade shows and provide exhibition space not presently available in downtown Atlanta.

Portman's start as a developer of commercial properties came in 1955, when he first had the idea to redesign Atlanta's old Belle Isle Building into a location for permanent commercial exhibitions. When the owners of the building seemed hesitant about the notion, Portman went ahead on his own, checked out the economic feasibility of providing such space, and then set up a corporation to lease the building himself. At his first show, for furniture makers and dealers, 24 manufacturers were represented. At the latest show, there were over 400 manufacturers. As a result of the response to his revamping the building for exhibition space (Portman, of course, did the architectural redesigning), he pushed ahead with plans for a new \$15-million building, with space for appliances, clothing and other lines

continued on page 14



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that cannot be accommodated in the present building. Completion date for the new building is mid-1961.

With the Merchandise Mart well under way, Portman then surveyed Atlanta for a shopping center site, decided on the southwest area where he announced he would erect a large center that would be near Atlanta's planned circumferential highway system, in an area that still has plenty of room to grow. The morning after Portman announced the new center, 26 retailers contacted him, telling him of their interest. Portman does not believe that new centers, such as his, will adversely affect sales in downtown Atlanta. "It has been the experience of retailers that downtown sales decline slightly for two years after a major suburban center goes in, but they always rise even higher," Portman says. And Portman, as a member of the Central Atlanta Corp., devotes much of his time to the well-being of downtown. "I believe in downtown," he says. "Its retail function is never going to diminish."

As a partner with H. Griffith Edwards, Portman now devotes most of his design abilities to work on his own projects and tries to do as much of it personally as is possible. A graduate of Georgia Tech, Portman did not start his own practice until 1953, and the going was rough at



PORTMAN

first. In an attempt to create a job for himself, he worked with some realtors and builders on a plan to design and build a medical building, in which the doctors would buy stock, as a corporation, and finish off the interior of the building to suit their individual needs. "The idea won an award," Portman says, "but it never got done. But that is where I cut my teeth on promotion."

Portman has ambitious plans for the future — including a "decorative center," another suburban shopping center, and a 35-story downtown office building. Perhaps Portman's toughest job in the midst of this development activity is to maintain his identity as an architect, but his Atlanta confreres in architecture respect his "integrity in design." "I am first an architect," he says positively, "then I am whatever comes next."

ARCHITECT DELANO DIES

Architect **William Adams Delano**, 85, died last month in New York City after a long illness. "Billy," as he was affectionately known among colleagues, was the last survivor in a group of fine designers of an elegant age: to have one's club or one's mansion — perhaps on Long Island — designed by Delano & Aldrich was to qualify as a man of more than adequate wealth, of cultivated taste and manners. A recipient



DELANO

KATHERINE YOUNG

of AIA's gold medal in 1953, "Billy" was secure enough in his standards to risk opposing majorities; he and his friend Fiske Kimball, the critic and historian, persuaded Harry Truman to go ahead with his White House balcony in the face of noisy opposition.

Delano once described himself as "an individualist with a love of privacy." A cousin of Franklin Delano Roosevelt, he said he was glad he could practice his profession "in the first half of this century, when architecture had a more personal touch."

PRINCETON CRITIC RESIGNS

Princeton University, in the midst of a \$30-million building program, was stung several weeks ago by the resignation on an issue of principle of one of its architecture professors, **Enrico Peressutti**, of Milan, Italy. Peressutti, who has taught at Princeton for six years, forwarded his resignation to Princeton President Robert F. Goheen, saying that "my fundamental conviction and principles, and as a consequence, the meaning of the responsibilities I have as a teacher at this University, have been misshaped and completely reversed by the actual developments on the campus."

Princeton's building program currently involves a dozen buildings, counting student dormitory quadrangles as single structures. Peressutti's disagreement with the way this program was being handled was evidently brought to a head by the design for the new School of Architecture, al-

continued on page 16



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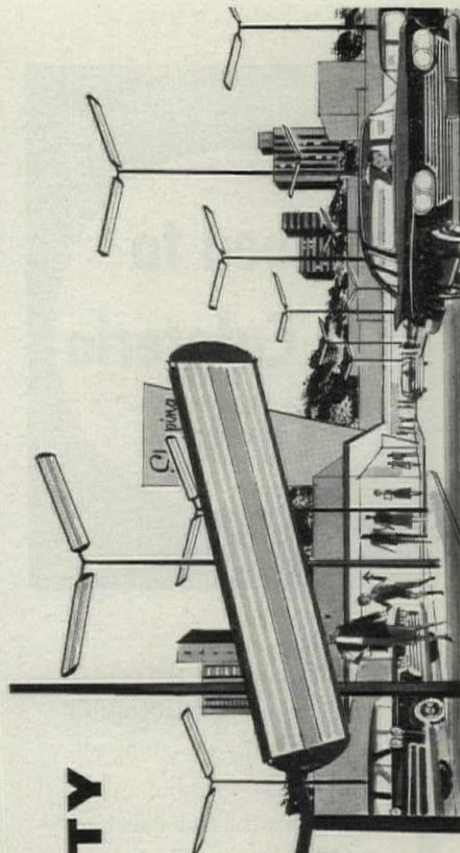
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though he also had expressed severe reservations about other of the new proposed designs (see pictures, below). Peressutti had wanted the school to be designed by "one of the most prominent, if not by the most important architect in the U.S.," and had himself put forward the name of Frank Lloyd Wright. (Architects for the building are Fisher, Nes, Campbell & Associates of Baltimore.) Peressutti also observed that "the unique chances this university had with its new program of expansion to become more than in any other time a leading factor in modern times, seems now, if not completely lost, certainly very badly compromised. . . ." Peressutti further commented that "Yale, MIT, Pennsylvania, Harvard, and others have built or have under construction on their campuses the most modern architectural expressions



PRINCETON'S COLLEGE OF MUSIC
Architects: Moore & Hutchins

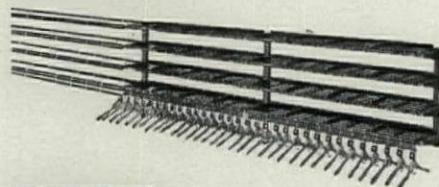


COLLEGE OF ENGINEERING
Architects: Voorhees, Walker, Smith, Smith & Haines

that will show to our and future generations their eagerness to be leaders in all fields through a deep love for quality."

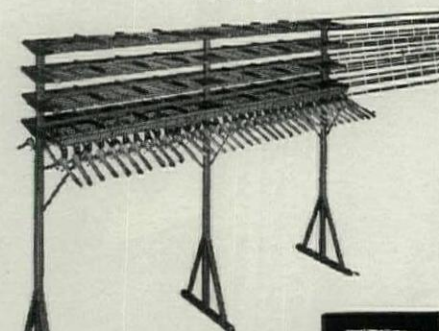
Princeton's President Goheen told FORUM last month, by way of commenting on Peressutti's resignation, that "architectural planning for the campus is under the supervision of the Trustees' Committee on Grounds and Buildings. The committee does not propose to argue its views with those expressed by Professor Peressutti. . . . We are grateful to Professor Peressutti for the fine work he has done in recent years as a part-time visiting professor in Princeton's School of Architecture. We regret that his various dissatisfactions have led him to terminate this relationship with the university." **END**

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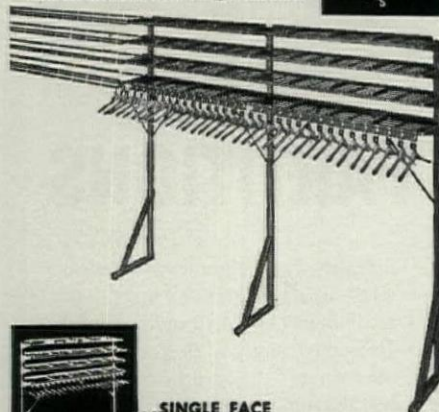
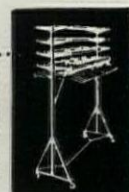
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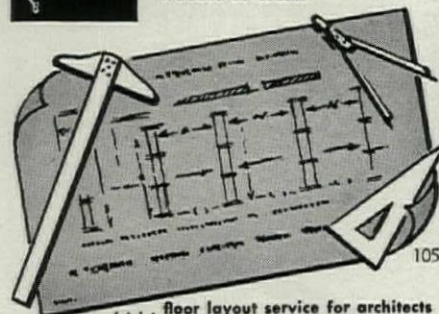
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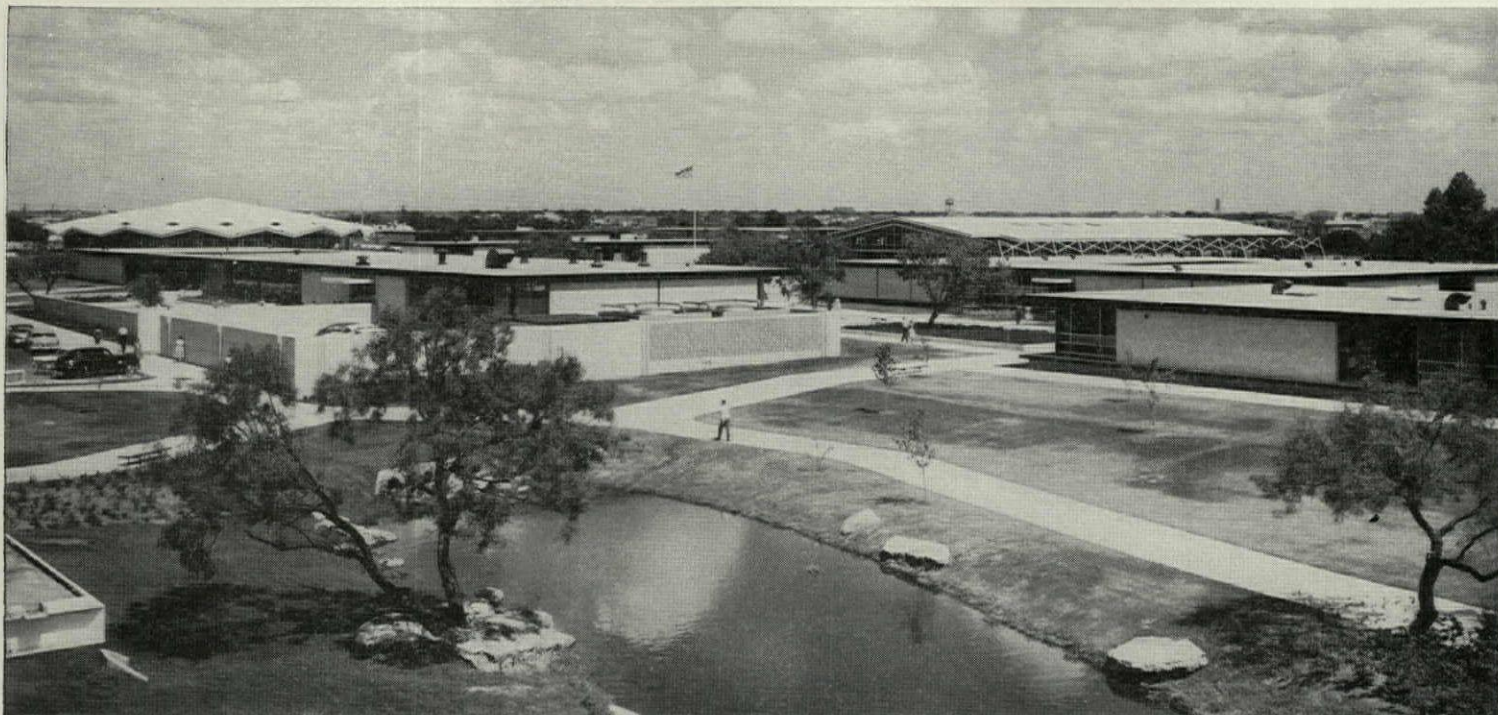


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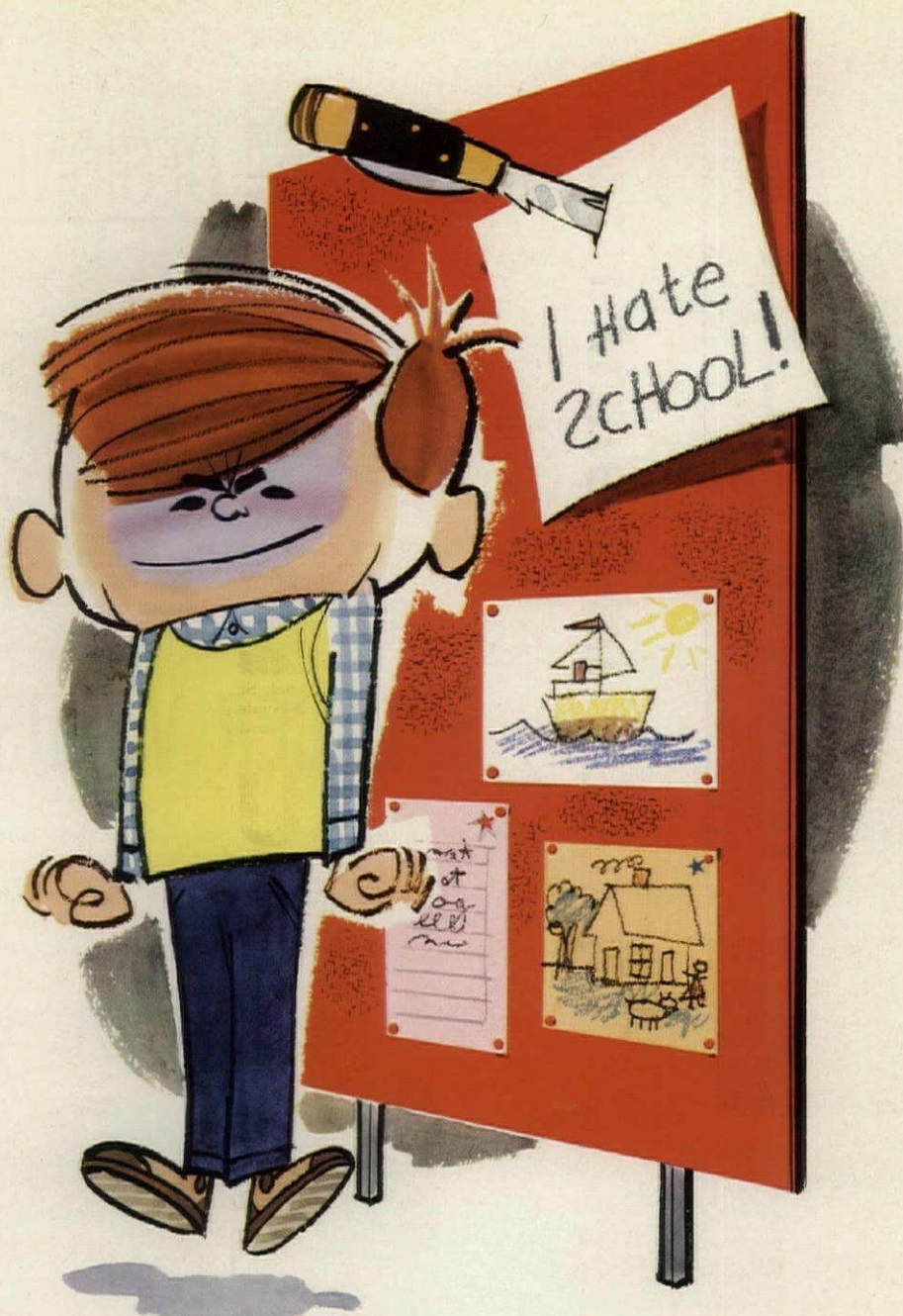
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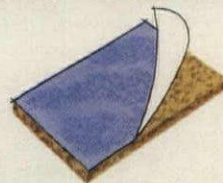


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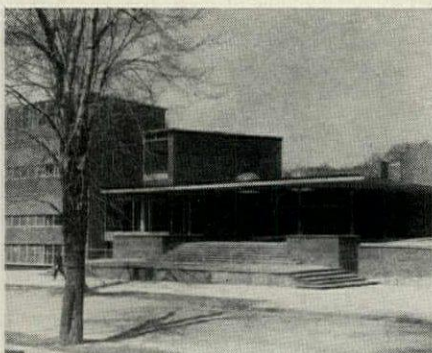
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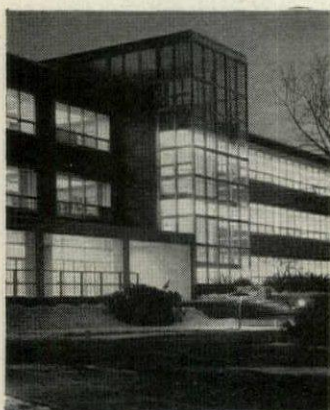
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Architects and Engineers:
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Community Arts Center,
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Architect: Suren Pilafian



St. Joseph Hospital, Burbank, California
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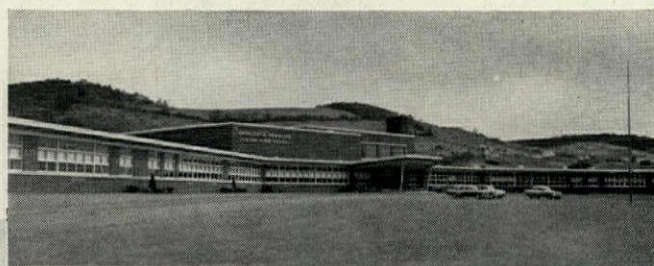


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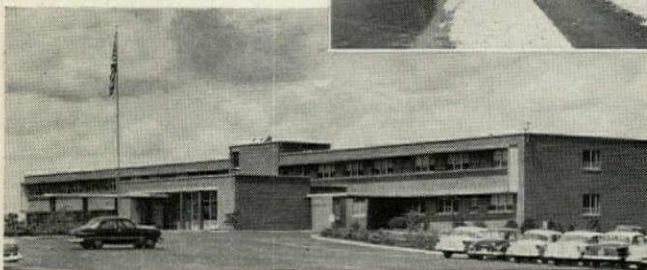
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Williamsport, Penna.
Architect: John E. Boodon,
Montoursville, Penna.



West Ridge School, Greece, N.Y.
Architect: Benedict Ade—Rochester
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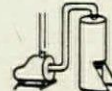


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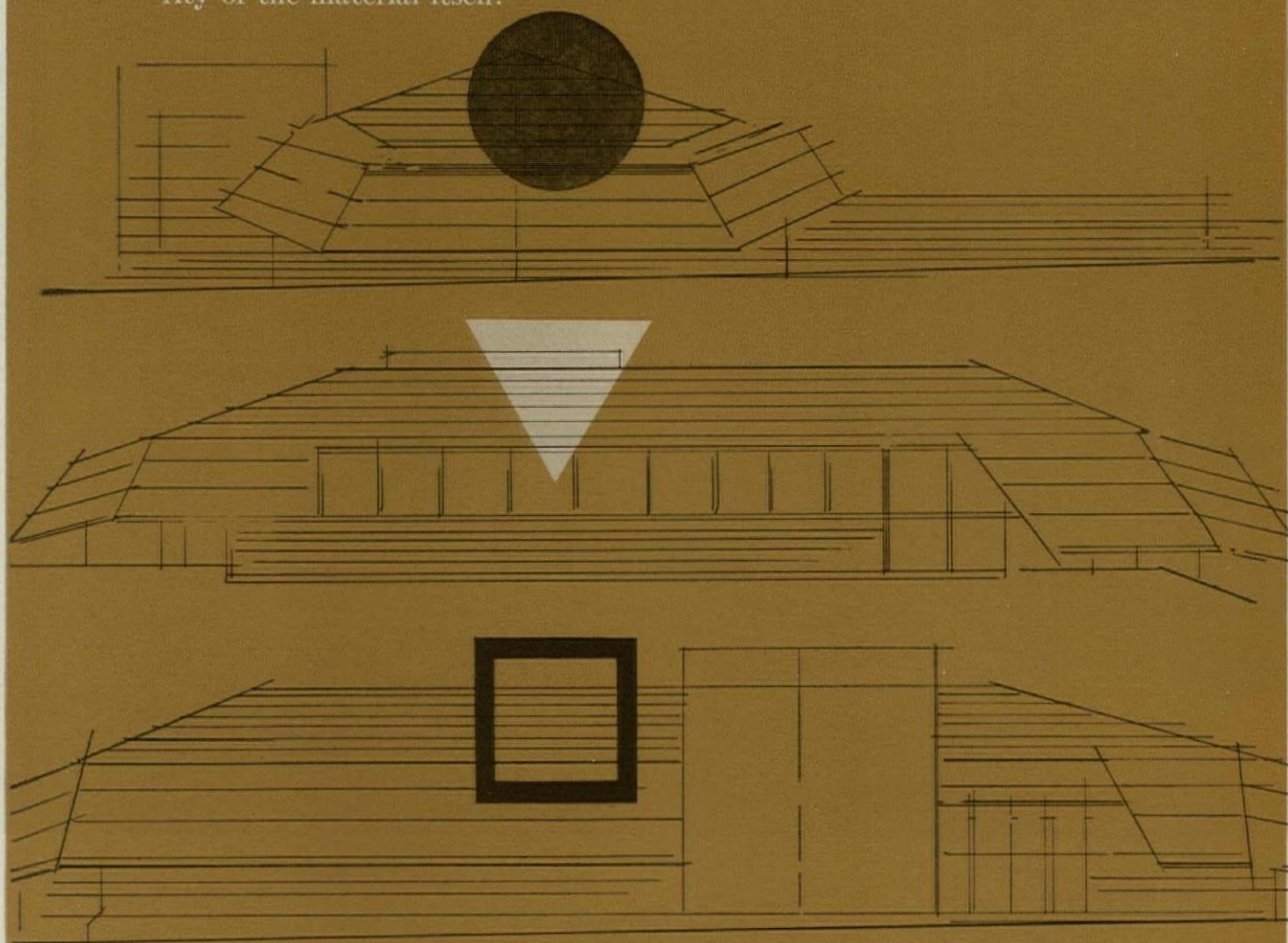
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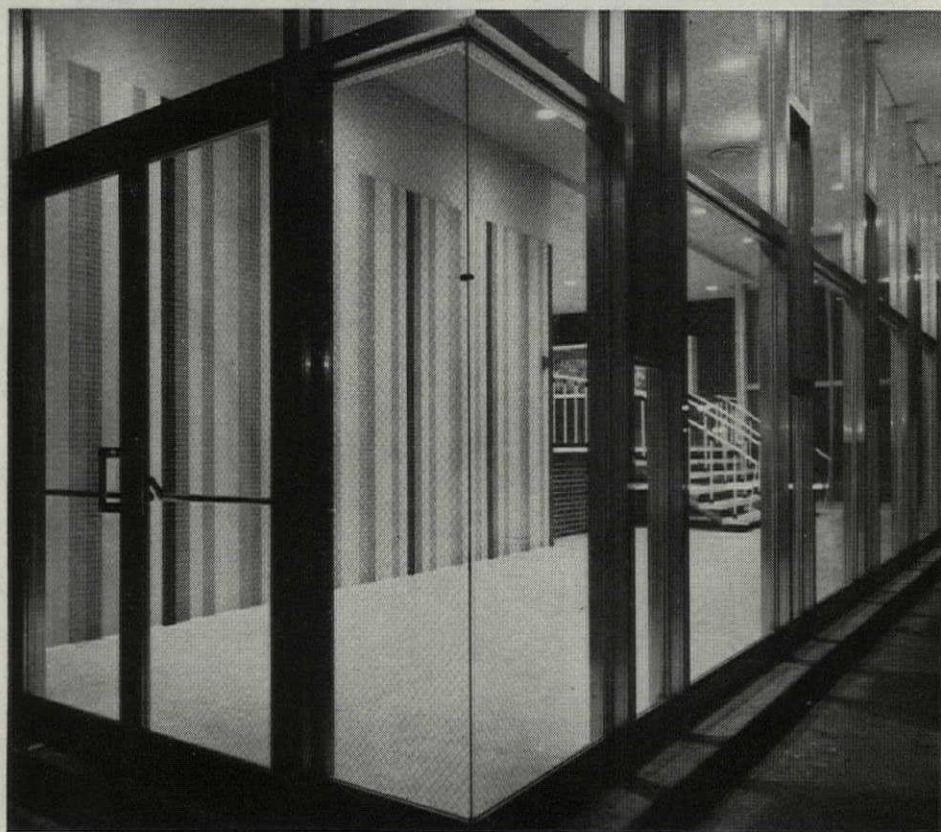


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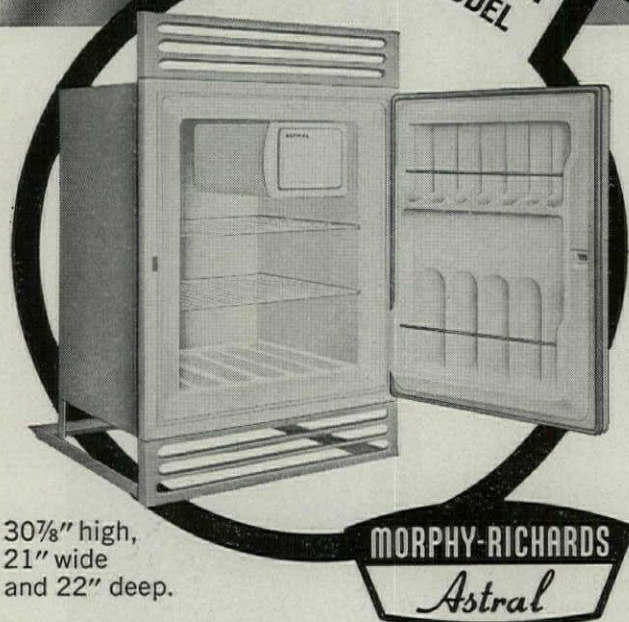
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LINDA FERRULE, Morphy-Richards home economist, introduces the Astral built-in wall refrigerator—silent servant for modern living.



ASTRAL
BUILT-IN
MODEL



30 $\frac{3}{8}$ " high,
21" wide
and 22" deep.

MORPHY-RICHARDS
Astral

Astral BUILT-IN WALL REFRIGERATOR

Spot Refrigeration Wherever Desired

EVERYWHERE — a bright new luxury for living—the Astral built-in wall refrigerator. Conforming through simplicity, the Astral will enhance any contemporary design and will blend with the most modern. Be it the office building, institution or apartment building, new spice for living is added with ease when spot refrigeration is incorporated in your plans. From the executive suite to milady's dressing room in the tallest pent-house, Astral is a new "must."

GET THE FULL FACTS ON THE VARIED APPLICATIONS OF THIS NEW LUXURY APPOINTMENT.

Installed in three easy steps, the Astral built-in refrigerator is guaranteed silent forever. No moving parts to require service...operates on electricity on AC or DC currents, 6 to 220 volts as required...or gas.

**GUARANTEED
SILENT
FOREVER**

Chip resistant standard white or modern walnut finish in addition to the new pre-paint finish to fit decorator's imagination.

MORPHY-RICHARDS, INC.
232 S. Van Brunt, Englewood, N. J.

AF 2-60

Gentlemen: Please rush me information on the new Astral built-in wall refrigerator—silent servant for modern living.

NAME _____

STREET _____

CITY _____ STATE _____

BRADLEY WASHFOUNTAINS AGAIN IN AMERICA'S FINEST PLANTS



ABOVE: 54-inch circular Washfountain;
at right: Semi-circular wall type models.



BUCYRUS-ERIE COMPANY
Richmond, Ind.
Designer-Engineer-Builders:
The H. K. Ferguson Company, Inc., Cleveland



NATIONAL BISCUIT COMPANY
Fair Lawn, N. J.
Designer-Engineer: Nabisco
Engineering Department
Plumbing Contractor: Frank A. McBride
Co., Paterson, N. J.



CUTLER-HAMMER, INC.
Lincoln, Ill.
Designer-Engineer-Builders:
The Austin Company, Cleveland
Plumbing Contractor: J. F. Weiskopf & Son,
Springfield, Ill.



**KAISER ALUMINUM & CHEMICAL
COMPANY, Ravenswood, W. Va.**
Engineer-Designer: Kaiser Engineers,
Division of Henry J. Kaiser Company



CHARLES BRUNING COMPANY, INC.
Mt. Prospect, Ill.
Engineer-Architect: A. Epstein & Sons, Inc.,
Chicago
Plumbing Contractor: Marcus Weil & Sons,
Chicago



SQUARE D COMPANY
Glendale, Wis.
Architect: Grassold-Johnson & Associates,
Milwaukee
Designer: Brooks Stevens Associates,
Milwaukee
Plumbing Contractor: P. J. Grunau Co.,
Milwaukee



TEXAS INSTRUMENTS INCORPORATED
Dallas, Tex.
Architects: O'Neil Ford & Associates,
San Antonio; Richard S. Colley, Corpus
Christi; A. B. Swank Associates, Dallas
Plumbing Contractor: Beard Plumbing Co.,
Dallas

FACTORY MAGAZINE'S *Top Plant Awards* 1959

Each year for 25 years, *Factory's* editors have selected Ten Top New Plants. It is noteworthy that so great a majority of such Top Plants have Top Washing Facilities—Bradley Washfountains.

The 1959 selections include—Bucyrus-Erie plant, Richmond, Ind.; Charles Bruning, Mt. Prospect, Ill.; Cutler-Hammer, Lincoln, Ill.; Kaiser-Aluminum & Chemical Corp., Ravenswood, W. Va.; National Biscuit, Fair Lawn, N. J.; Square D, Glendale, Wis.; Texas Instruments, Dallas, Texas.

And among the 1958 Top Ten there were: Automatic Electric Co., Northlake, Ill.; Beckman-Heliport Corp., Newport Beach, Calif.; Chrysler Corp., Twinsburg, Ohio; Johnson & Johnson, North Brunswick, N. J.; Marquardt Aircraft Co., Ogden, Utah; The Martin Co., Orlando, Fla.; National Lock Co., Rockford, Ill.; Polaroid Corp., Waltham, Mass., all Bradley equipped.

Better Washing Facilities In Less Space

Employees like the ease of water control by means of the foot ring, eliminating need for faucets—they like the cleanliness of the big self-rinsing bowl.

Economy of space, installation and maintenance costs—the maximum in sanitation—have lead to the wide use of Bradley Washfountains in plants of every size and kind—25-man plants and those employing hundreds and thousands.

When considering new plants, extensions, or improvements, install Bradleys . . . Latest catalog mailed on request.

BRADLEY WASHFOUNTAIN CO.
2235 W. Michigan St., Milwaukee 1, Wis.

In Canada
Aristocrat Manufacturing Co., Ltd.
Toronto 9, Ont., Can.

BRADLEY *washfountains*

Write
for
Catalog
5601



A continuing series of outstanding churches, schools, office buildings, hospitals and industrial structures using NORTON DOOR CLOSERS.



DESIGNED FOR HARMONY, EQUIPPED FOR SERVICE

New Michigan Church Uses Norton Closers Throughout

Skillful handling of lines and shapes has given the Napier Parkview Baptist Church of Benton Harbor, Michigan, a simple dignity and beauty that are unique in a church building. Equal skill was shown in selecting equipment to insure the ultimate in long-lived efficiency, with a minimum of upkeep.

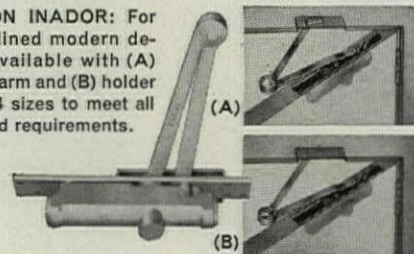
In door closers, this requirement was satisfied by specifying "Norton on all doors," a choice dictated by Norton's proved record of fine craftsmanship, dependability and low maintenance. There's a Norton for every door-closer need. Write today for the current catalog if you don't already have one.

NORTON[®] DOOR CLOSERS

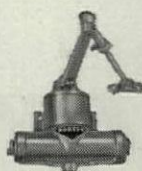
Dept. AF-20, Berrien Springs, Michigan

Complete Norton Line Meets Every Door Closer Need

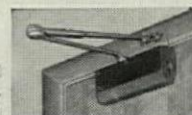
NORTON INADOR: For streamlined modern design; available with (A) regular arm and (B) holder arm...4 sizes to meet all standard requirements.



NORTON 750: New corner design with concealed arms, for all types of doors, particularly narrow-rail doors.



NORTON SURFACE-TYPE: For all installations where concealment is not essential.



NORTON 703-N Compact surface-mounted type... 1 1/2 inch projection.



San Angelo Central High School, San Angelo, Texas

Ulric Meisel photo

primary and
secondary
pumping with
B&G® PUMPS
keeps horsepower down

Architects: Caudill, Rowlett & Scott—
Houston, Texas, Oklahoma City, Okla.,
Corning, N. Y. and Stamford, Conn.

Associate Architect: Max D. Lovett—
San Angelo, Texas

Engineer: J. W. Hall—Bryan, Texas

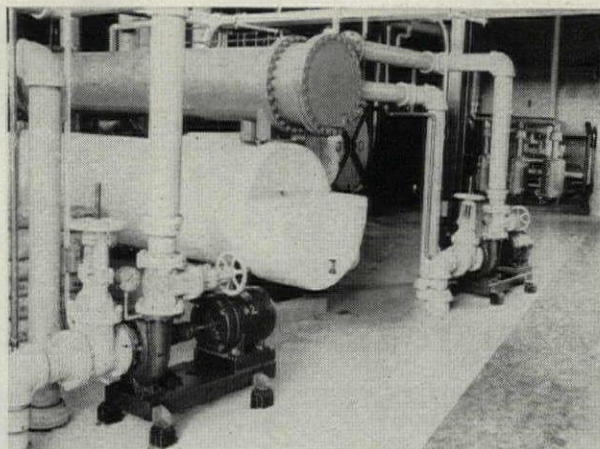
Mechanical Contractor: R. M. Wells—
Quanah, Texas

The twelve buildings of this campus-type high school are heated and cooled with water. The pumping equipment consists of six B&G Universals, twelve Series 1510-B pumps and eight Boosters.

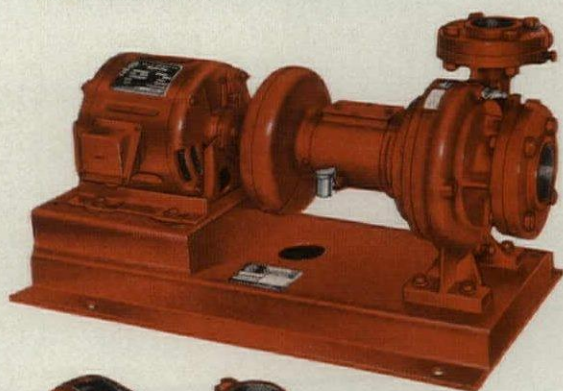
These pumps circulate single and dual coil units for heating and cooling and also the service water lines. Pump sizes range from 1/6 HP Boosters to 20 HP Universals.

To keep pumping horsepower at a minimum, a B&G primary and secondary pumping arrangement is employed, with the piping divided into three primary circuits. Each primary pump is sized to circulate the maximum demand for water through a single loop. The pump, therefore, need only be large enough to overcome the friction head in the primary piping circuit.

Secondary pumps in each building, and for each major zone in each building, handle water quantities out of these main circuits and overcome the balance of the head in the system.



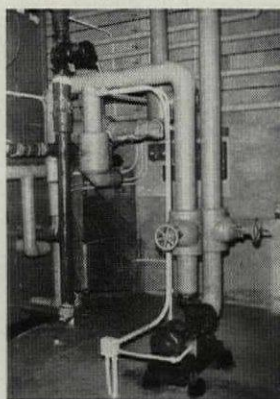
Two B&G Pumps for circulating chilled water



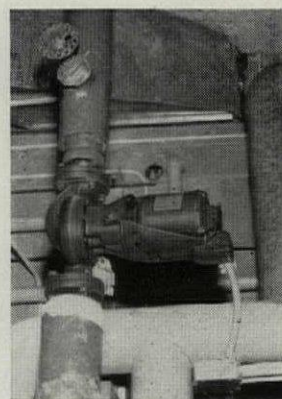
B&G Universal Pump



B&G Booster



*B&G Universal Pump for
circulating heated water
through primary circuit*



*B&G Booster circulating
one of the secondary cir-
cuits*

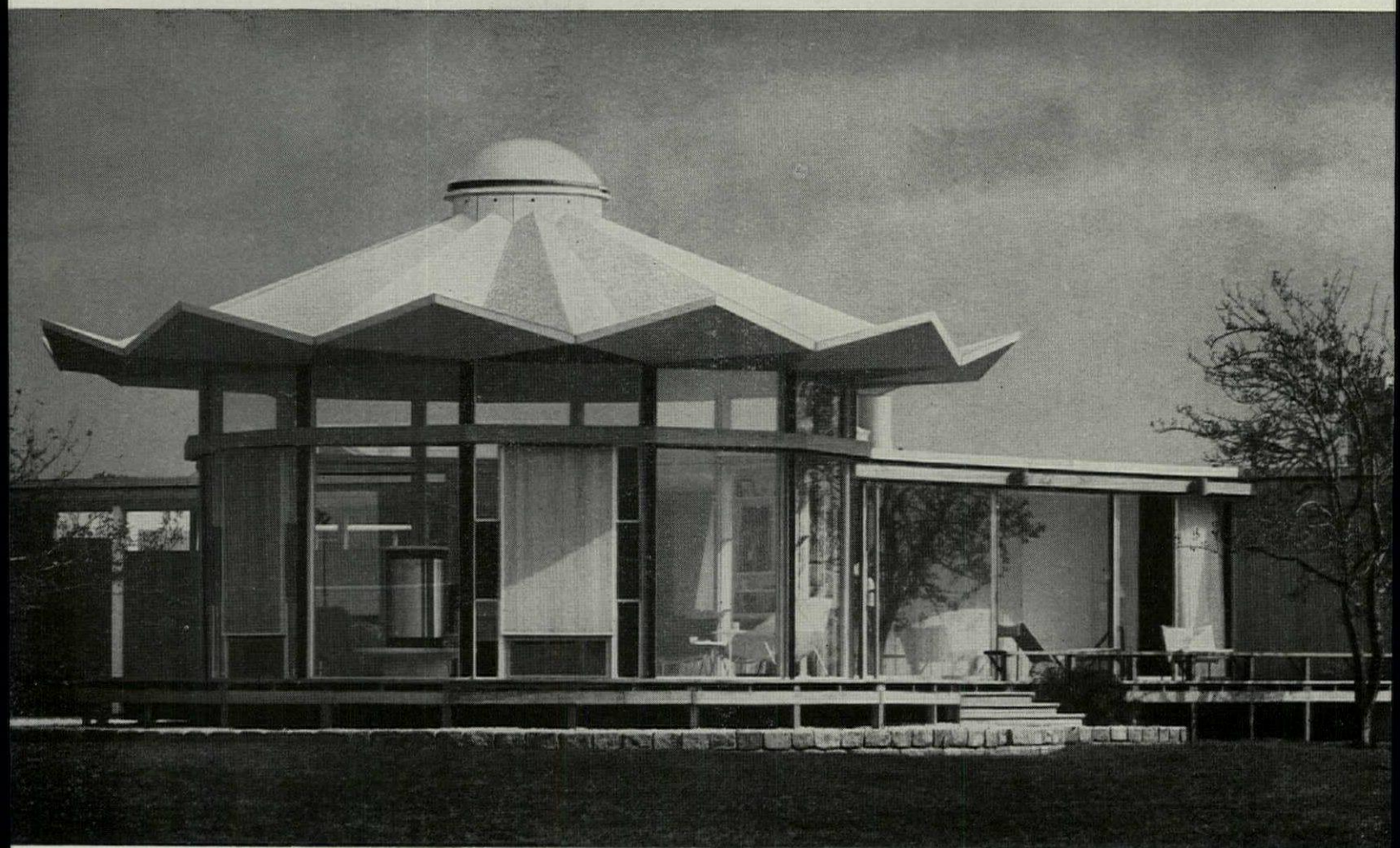
BELL & GOSSETT

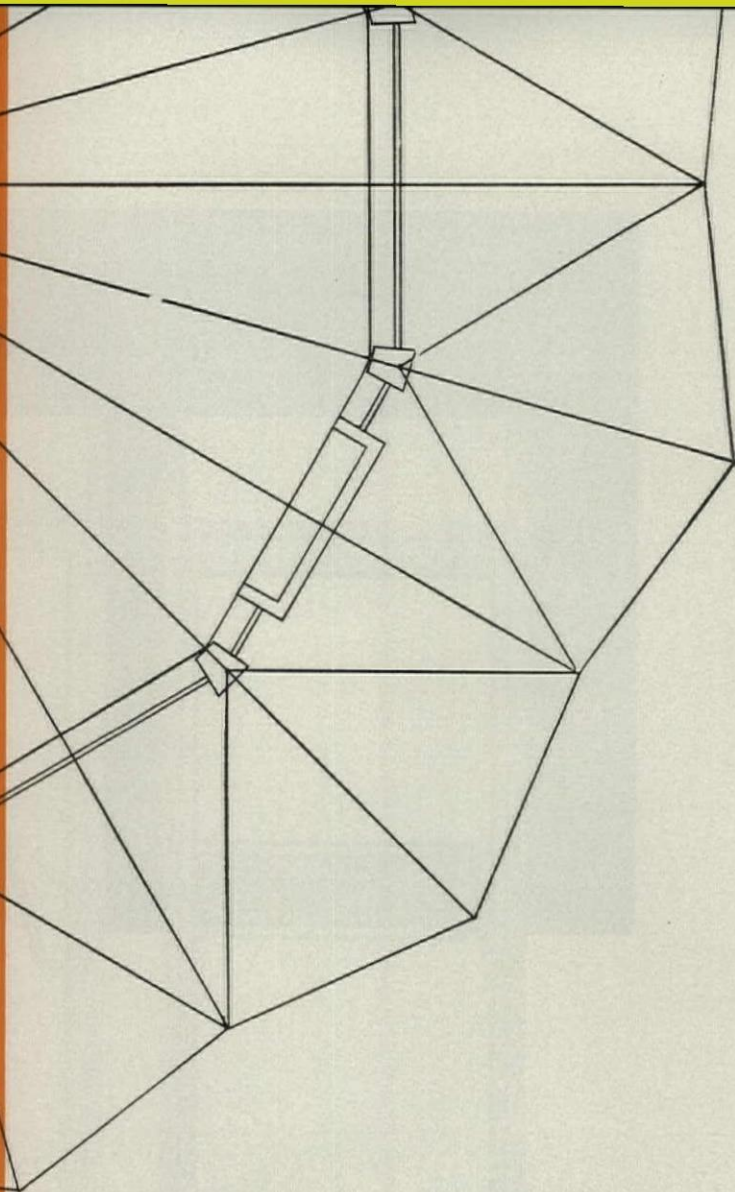
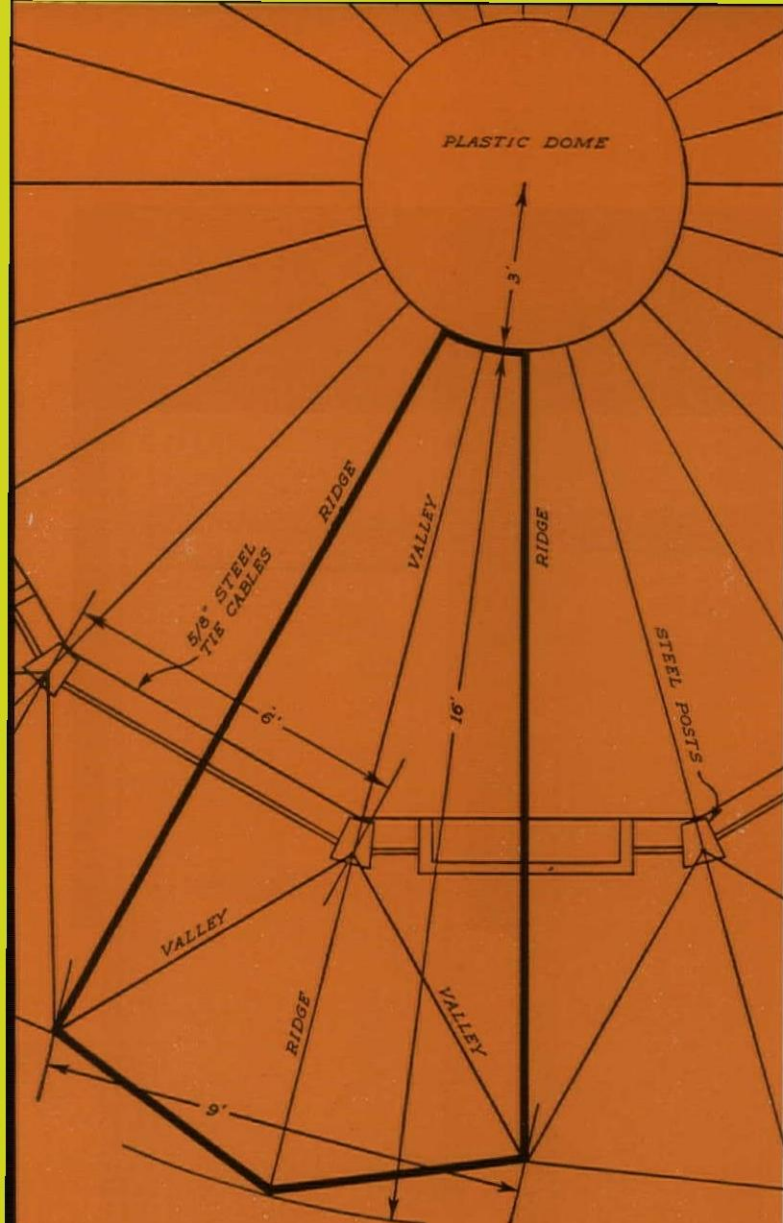
C O M P A N Y

Dept. GB-62, Morton Grove, Illinois

Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

new approaches to structural design with fir plywood



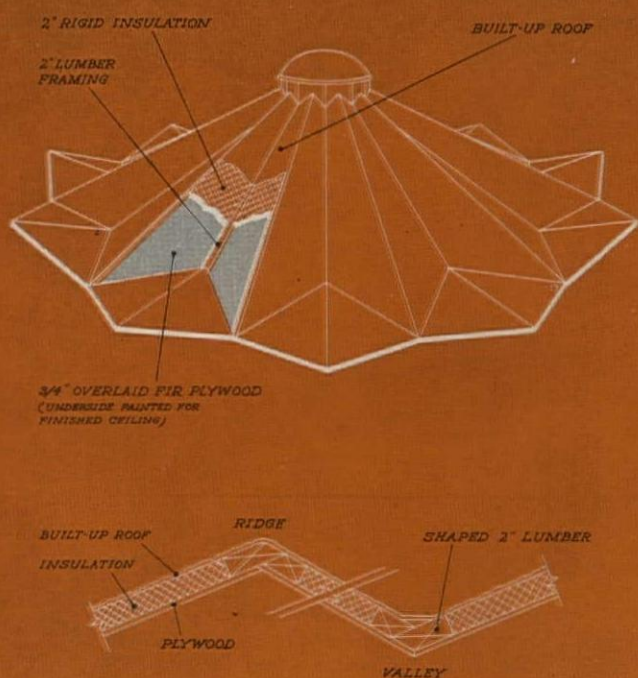


THE PLEATED ROOF that crowns this pavilion-like living room is a prime example of the bold and imaginative forms derived from the basic fir plywood folded plate principal. Shape rather than mass is the key to its strength. The distinctive sawtooth configuration capitalizes on fir plywood's high diaphragm strength to create, in effect, a series of rigid, lightweight "V" beams. Intermediate posts, trusses and bulky framing are eliminated.

In this sophisticated circular design, the plywood folded plates provide a dome, spanning 26 feet, wall to wall. No central support is required. Where desired, far greater spans could be achieved utilizing the same basic system.

The roof itself is composed of 12 basic "boat-shaped" fir plywood components which were crane-lifted into position atop the steel supporting columns. Each component, in turn, is made of four triangular pieces of $\frac{3}{4}$ " overlaid fir plywood, perimeter framed and interconnected with shaped two-inch lumber. Alternate projecting and recessed stiffeners along the ridges connect each component with its neighbors. Each component combines roof deck, insulation and finish ceiling.

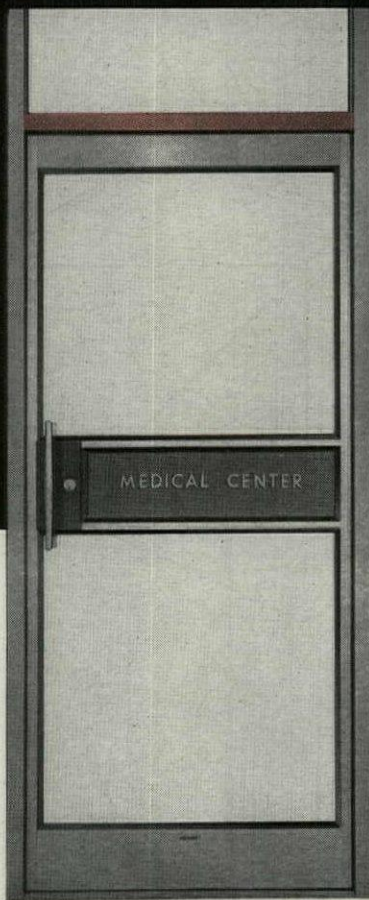
For basic design data or other information, write (USA only) Douglas Fir Plywood Association, Tacoma 2, Washington.



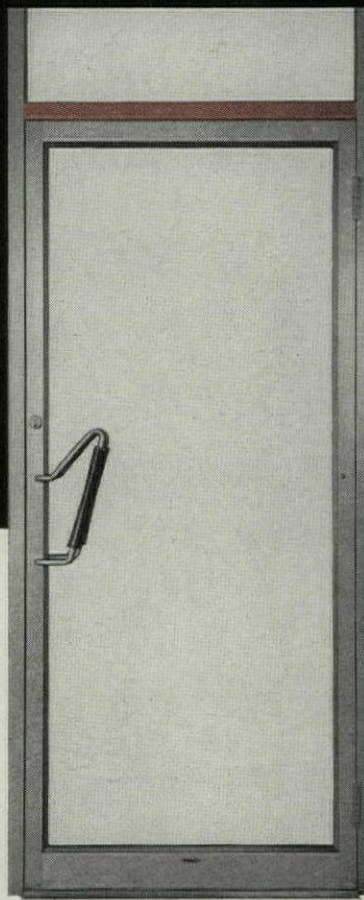
ARCHITECT: Alexander Knox
LaFarge, Knox & Murphy, New York, N.Y.
BUILDER: Charles Rush, Amaganset, Long Island
LOCATION: Bridgehampton, New York



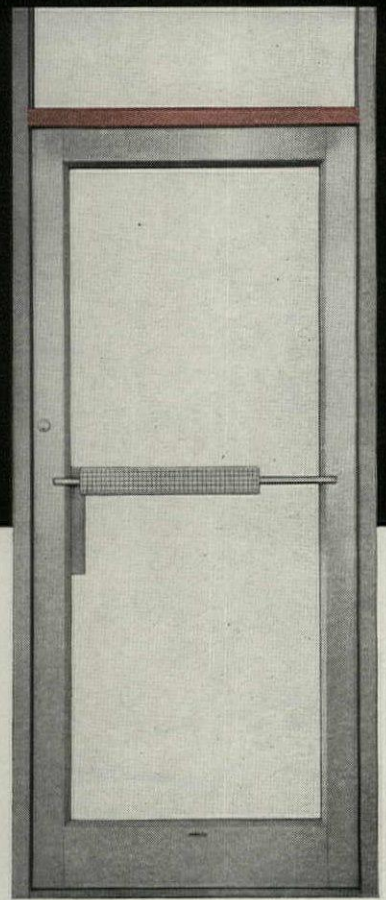
ALWAYS SPECIFY
DFPA TRADEMARK



The Style Leader 125 is designed for shops where atmosphere is important, such as jewelry stores, clothing stores and specialty shops, or for banks or stores desiring a prestige appearance.

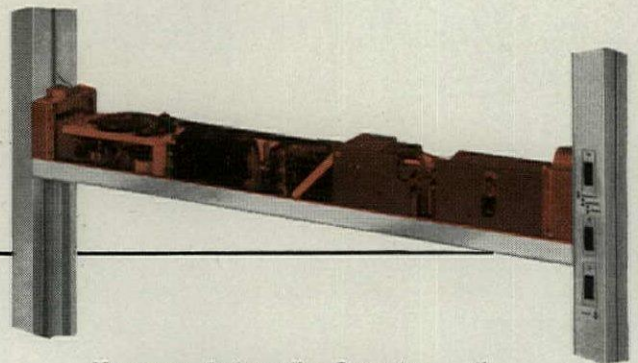


The Narrow Stile 188 is used in stores or buildings which have a normal to heavy flow of traffic.



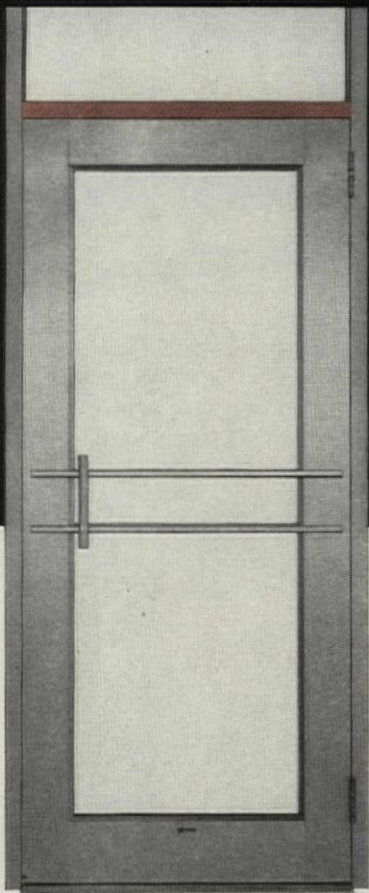
The Extra Duty 350 is for use in stores or buildings which have an extra heavy flow of abusive traffic, such as supermarkets and schools.

*Keys to the slim appearance
and low installed cost of
Kawneer Entrances...
manual or automatic*

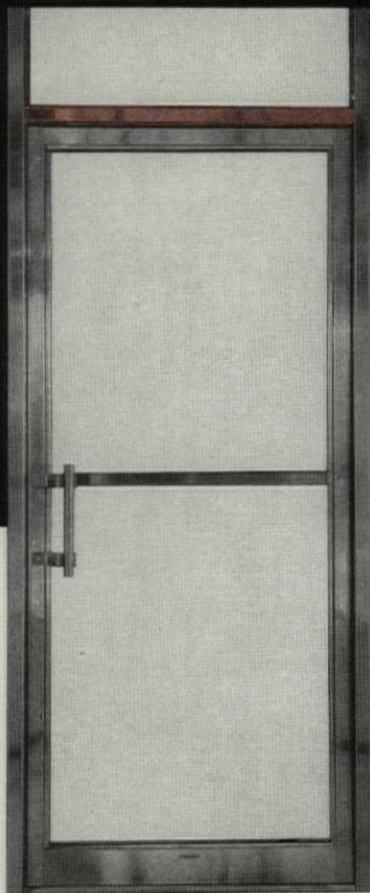


Kawneer Automatic Operator... the new idea in automatic operators. Nothing buried in the floor, nothing hanging over the door. The Kawneer Automatic Operator is completely concealed in the 4½" transom bar, wired to the mat through the frame. Available with all Kawneer entrance packages.

new! KAWNEER DUTY-RATED ENTRANCE PACKAGES



The Wide Stile 500 is for buildings where traffic is both heavy and highly abusive, or where a feeling of massiveness and solidity is desirable, such as banks.



The Stainless Steel 200 has been developed for those applications in which the design and decor of the building or store makes its use preferable.

with "tuned-to-the-traffic" design

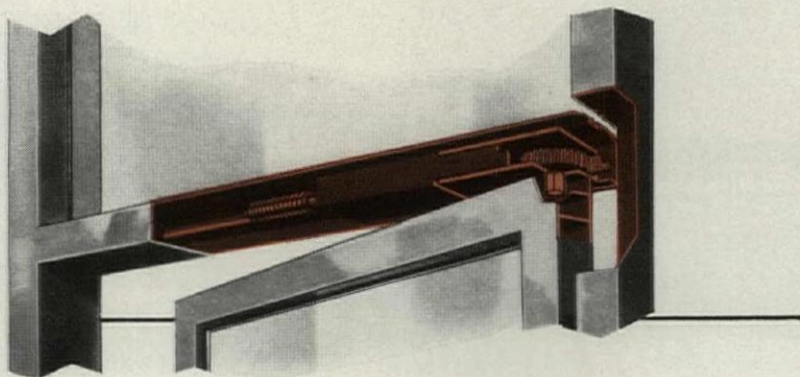
These new Kawneer entrance packages are built to meet specific entrance needs. They combine the economy of fabrication with custom design flexibility. You choose from

- ... five different doors
- ... twenty push-pull hardware combinations
- ... five (or more) closers
- ... eight frame and entrance wall glazing systems

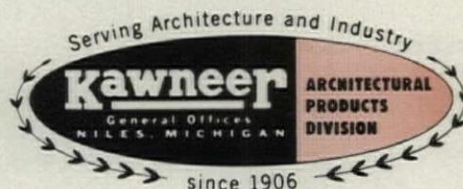
All components arrive in one package shipment, eliminating catch-as-catch-can deliveries and scheduling problems.

For complete information, tear out this corner and hand it to your nice secretary.

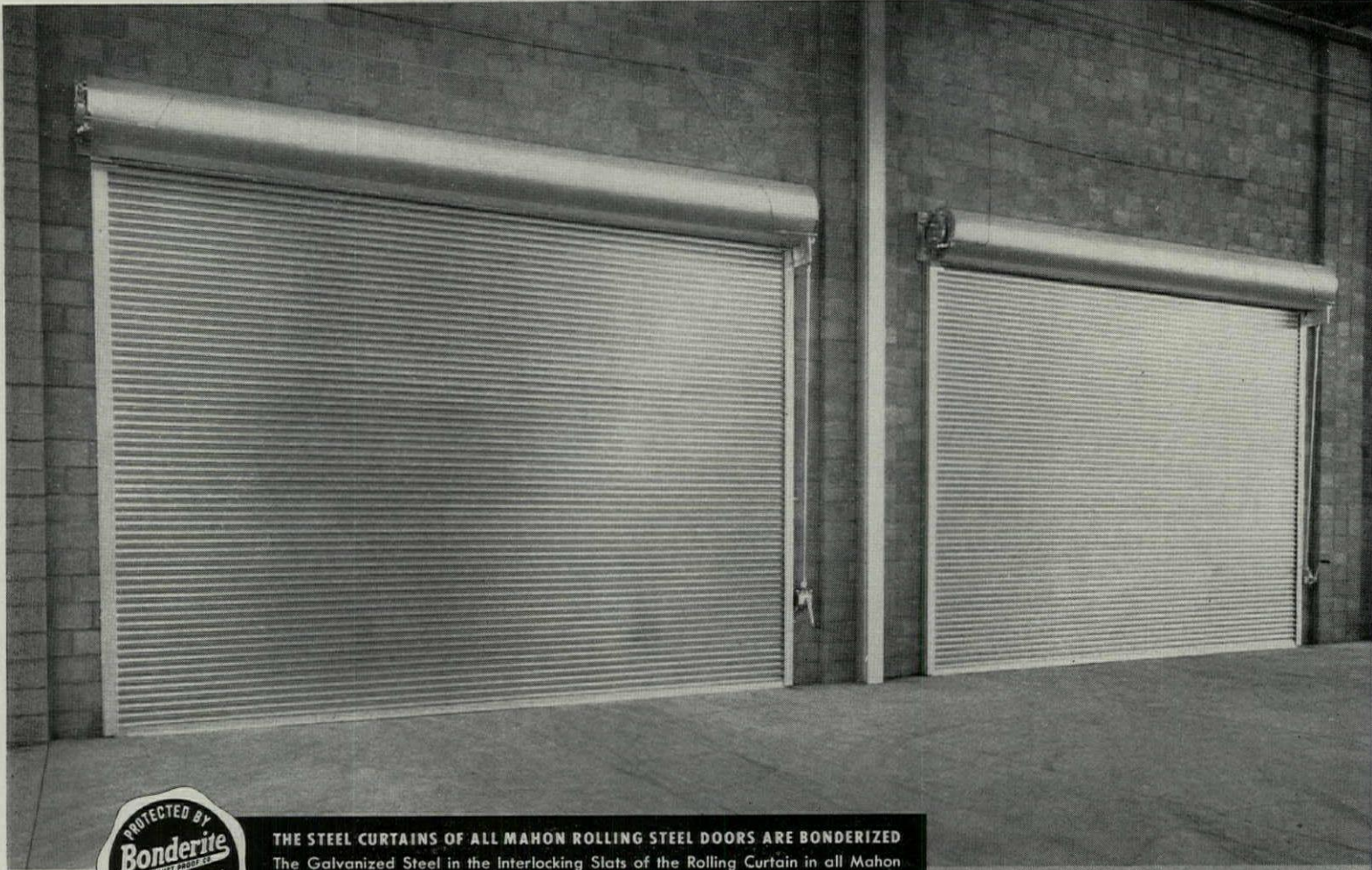
(Nice secretary: write for "The Second New Idea In Entrances", Dept. AF-20, Kawneer Company, 1105 N. Front Street, Niles, Michigan.)



Kawneer Concealed Overhead Closer
... It introduced the new sheer look in entrances—with low installed cost! No holes to dig, no cement case to set, no complex adjustments to make; this closer is completely concealed in the 1½" transom bar. Available with all Kawneer entrance packages.



64 Mahon ROLLING DOORS



THE STEEL CURTAINS OF ALL MAHON ROLLING STEEL DOORS ARE BONDERIZED

The Galvanized Steel in the Interlocking Slats of the Rolling Curtain in all Mahon Rolling Steel Doors is Chemically Cleaned, Bonderized, and Dip Coated with Rust-Inhibiting Synthetic Enamel which is baked on at 350° F. prior to roll-forming.

Above are two Mahon Automatic Rolling Steel Fire Doors. Eight of these 20' x 14' Automatic Fire Doors are included in a total of 64 Mahon Rolling Steel Doors installed in the Transit Shed and Warehouse of the new Seaway Wharf Facilities recently completed for the Seaway Port Authority of Duluth, Duluth, Minnesota.

Engineers: Pfeifer & Shultz

Gen. Contrs.: Johnson, Drake & Piper



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

Add to Efficiency and Security of New Seaway Wharf Facilities at Duluth !

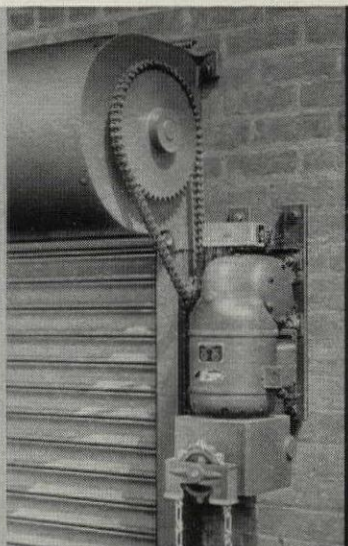
In Operation, the Fast, Vertical Roll-up Action Saves Valuable Time and Space — No Overhead Tracks to Restrict Headroom

**MANUALLY, MECHANICALLY, or POWER OPERATED DOORS
STANDARD and UNDERWRITERS' LABELED TYPES**

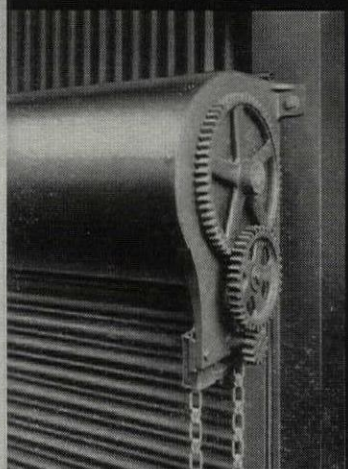
☆ **OTHER MAHON BUILDING PRODUCTS and SERVICES:**

- Insulated Metal Curtain Walls
- Underwriters' Rated Metalclad Fire Walls
- M-Floors (Electrified Cellular Steel Sub-Floors)
- Long Span M-Decks (Cellular or Open Beam)
- 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*



**MAHON STANDARD
POWER OPERATOR 920-P**



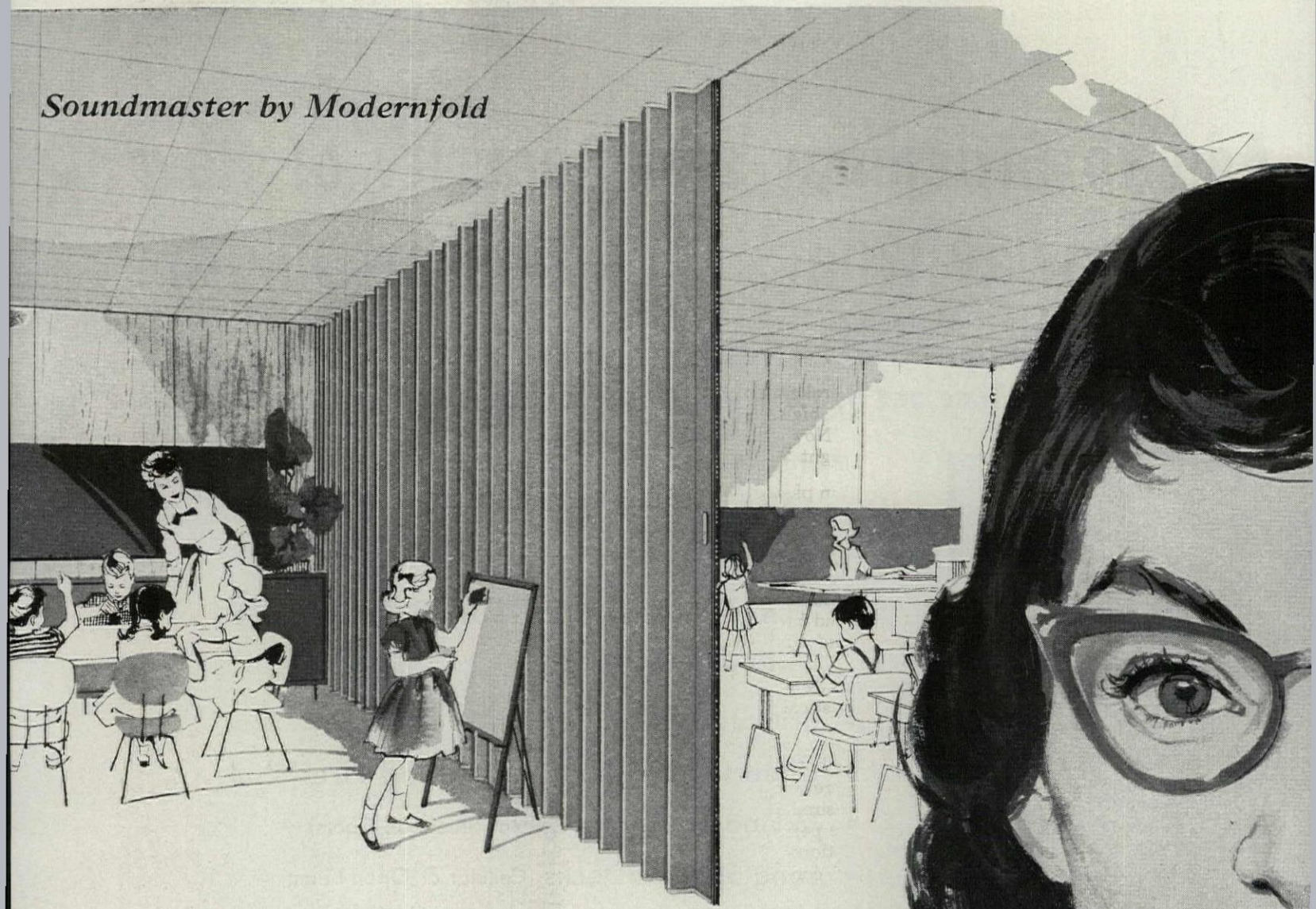
**MAHON
CHAIN-GEAR OPERATOR**

of Steel and Aluminum

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

MAHON

Soundmaster by Modernfold



Nobody ever says Shhh with this Modernfold on the job

● Now . . . the Soundmaster adds effective sound control to Modernfold's traditional space control. And you reap the greatest flexibility ever in wringing maximum utility from a floor plan.

Get the specifics now. Find out how efficiently a Soundmaster folding partition can blot down sound on any job you do.

See your Modernfold Man . . . he's listed in the Yellow Pages, under "Doors, Folding." Or, write for: Soundmaster Facts and Specifications; NEW CASTLE PRODUCTS, INC.; NEW CASTLE, INDIANA. (In Canada: New Castle Products Canada, Ltd., St. Lambert, Que.)

Here's why:

You get an *all-around* sound barrier with a Soundmaster. Sound-smothering chipboard (Fig. 1) lines *both* interior sides. Sealer strips (Fig. 2) guard top and bottom. And the baffle-design jamb (Fig. 3) has a foam rubber liner that guarantees a leak-tight installation.

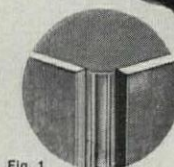


Fig. 1

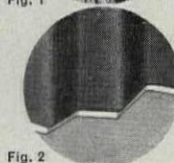


Fig. 2

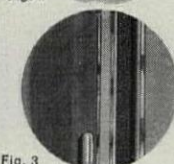
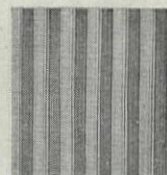
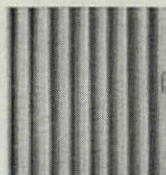


Fig. 3

Folding partitions for every need . . . every budget

From standard to giant-sized . . . from thrifty to luxurious . . . Modernfold has *the* door, divider or partition that answers your specific requirements. Choose from up to 60 vinyl fabric coverings in the steel framework models . . . or from the selection of rich wood finishes.



modernfold

®

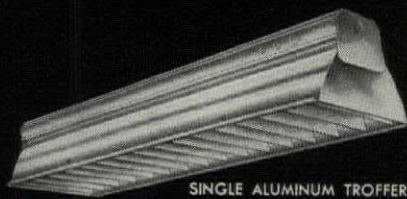
New Aluminum Troffers for POWER-GROOVE . . .

COMFORTABLE, High Footcandle Lighting at LOWER COST than Ever Before Possible

Another Lighting First . . . Miller has just broken through some long standing cost barriers to COMFORTABLE, high footcandle lighting for Offices, Stores, and Public Buildings. Now, you can obtain or provide today's needed higher levels of light at *much* lower cost.

For Example . . . The lighting installation pictured is designed to maintain 120 footcandles in this 60' x 80' general office area. Fixtures are Miller's new Twin Aluminum Troffers—2' x 8' units with Power Groove Lamps. Compared with conventional, 2' x 4' door type recessed systems using 40w Rapid Start Lamps, and providing comparable footcandles and comfort: this new Power Groove system requires only $\frac{1}{4}$ as many fixtures, and has an initial installed cost 30%-38% lower. Annual Owning and Operating cost figures 14%-18% less. And, fewer fixtures needed means a less cluttered, more pleasing ceiling appearance. Here, 34% more ceiling area is available for acoustical treatments.

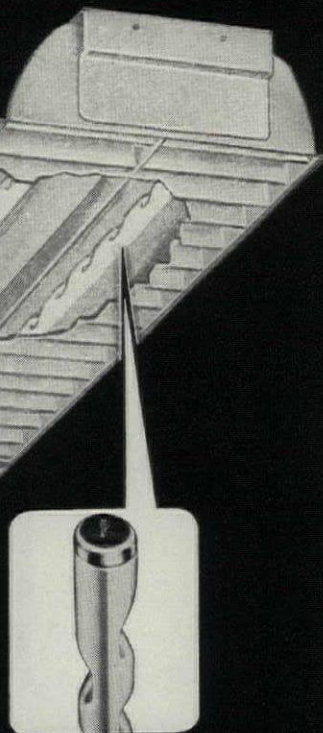
Substantial savings can be realized for both relighting and new construction . . . wherever comfortable, high footcandle lighting is desired. Let us prove to you how such savings are possible for this and other typical installations. Simply fill out and mail the coupon. Or, contact your Miller Representative.



SINGLE ALUMINUM TROFFER



TWIN ALUMINUM TROFFER



MAIL TODAY

To: Dept. A-260
THE MILLER COMPANY, Meriden, Conn.

- ☐ I'd like additional information on how I can obtain comfortable, high footcandle lighting at lower cost with Miller Aluminum Troffers.
- ☐ Have Your Field Representative contact me.

Name _____ Position _____

Company _____

Street _____

City _____ State _____

LIGHTING BY
miller
SINCE 1844



THE **miller** COMPANY
MERIDEN, CONNECTICUT

CHF

Award-winning designs for dining! The functional flair . . . touch of color . . . and carefree quality that befit your creative achievements.



THE QUADRON No. 947-A
A black column, baked finish with bases. Cast Solid Bronze \$54.76; Cast Solid Aluminum \$37.56; Cast Iron, Black Finish with Chrome edge \$30.80

Chicago

HARDWARE FOUNDRY COMPANY

"Dependable Since 1897"

9100 COMMONWEALTH AVE.
NORTH CHICAGO • ILLINOIS

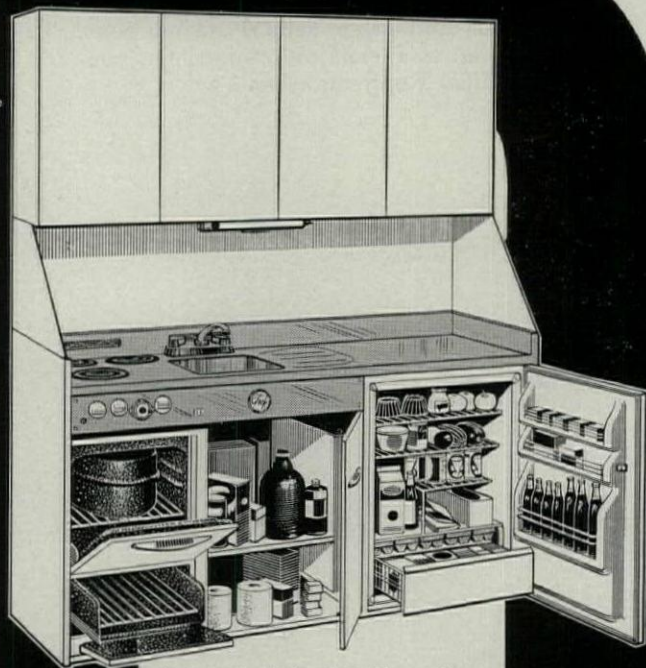
6-IN-ONE

"BIG SIX" NEWS FOR ARCHITECTS

GENERAL CHEF combines six kitchen-essentials in one compact, efficient unit:

**REFRIGERATOR • OVEN • SINK
STOVE • FREEZER • STORAGE**

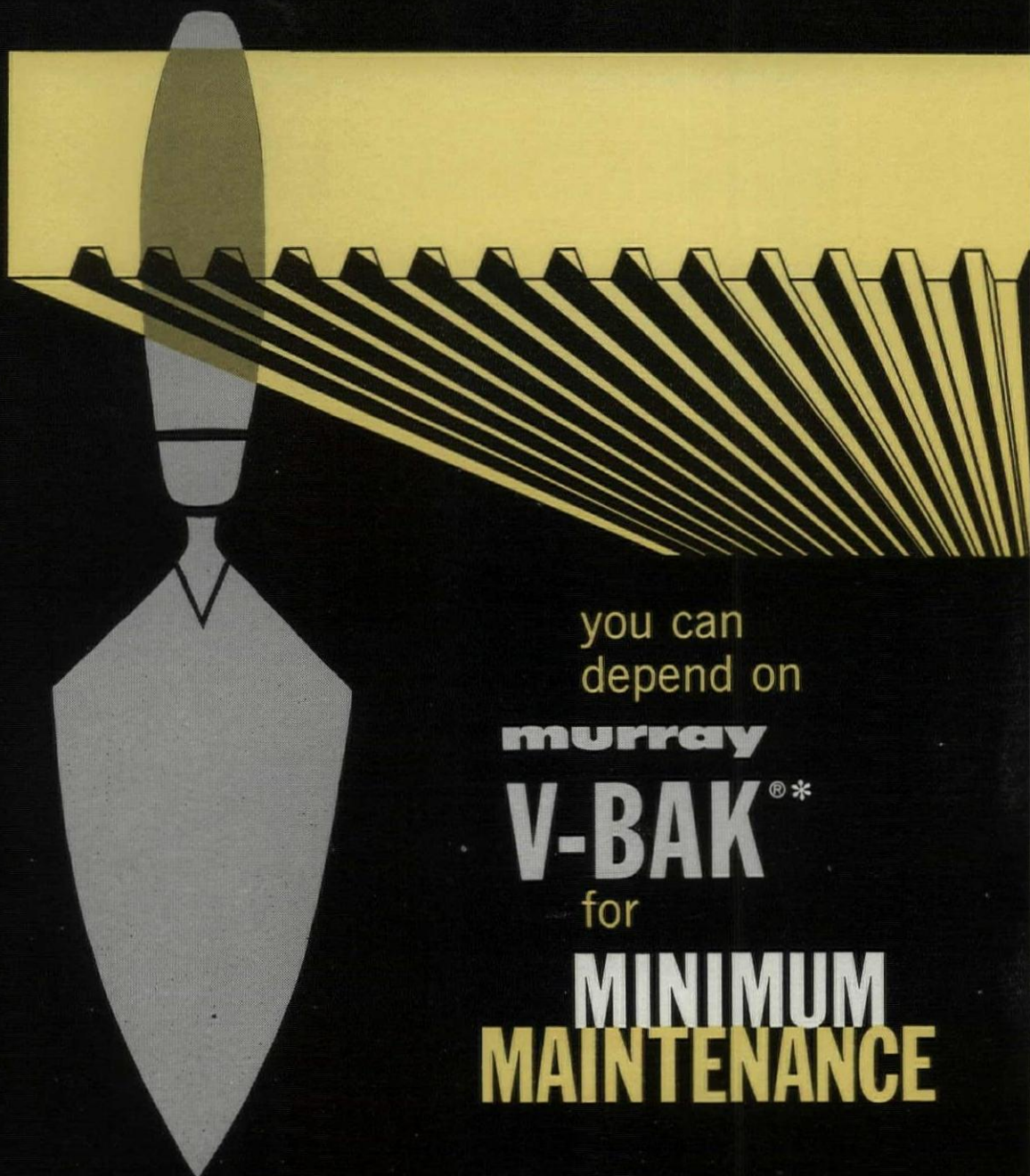
Every model available in white or several wood-grain finishes. Entire base unit factory-assembled and shipped in one crate. Available on all units: garbage disposal; one-piece stainless steel tops. And don't forget: GENERAL CHEF is the only Complete Kitchen Unit with factory-owned, nation-wide sales and service.



For complete details write:
General Air Conditioning Corp.
Dept. G-17, 4542 E. Dunham St.
Los Angeles 23, California

GENERAL CHEF

World's largest-selling
COMPLETE KITCHEN UNIT



you can
depend on
murray
V-BAK®*
for
**MINIMUM
MAINTENANCE**

Consider the constant care demanded for all floors and it is easy to understand the increased popularity of Murray V-Bak installations.

Murray V-Bak floors are permanent, easy to clean, never need waxing, no scuffing, and Murray V-Bak is guaranteed for "The Life of the Building".

There are many more miles on Murray V-Bak floors. Write today for details.



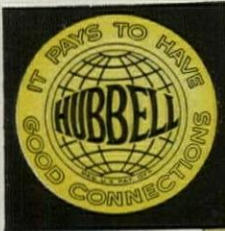
murray TILE COMPANY INC., LEWISPORT, KY.
DIVISION OF AMERICAN OLEAN TILE COMPANY

V-Bak Quarry Tile gives you all these features:

1. Perfect adhesion
2. Uniform size
3. Uniform color
4. Even texture
5. Smooth surface
6. Low maintenance
7. Lasting service

A.I.A. File No. 23-A-1

*PAT. PEND.



NOW THEY'RE BOTH.



SG-62-I (Safety Grounding)
Duplex Receptacle
15 ampere, 125 volt

*Listed by Underwriters'
Laboratories, Incorporated*

**EXTRA
SAFETY FOR**

HOMES
SCHOOLS
NURSERIES
HOSPITALS
SANITARIA
PRISONS
WORKSHOPS
GARAGES

SAFE

NEW HUBBELL TWINSAFE

SAFETY GROUNDING RECEPTACLE

- PROVIDES GROUNDING PROTECTION FOR USERS OF ELECTRICAL TOOLS AND EQUIPMENT
- SHUNTS CURRENT HARMLESSLY AWAY FROM OBJECTS INSERTED IN SLOTS BY CHILDREN

Only Hubbell "TWINSAFE"
provides these 2 Safety Features

FIG. I.—A slot for grounding power tools and appliances equipped with plugs having U-shaped grounding blade.

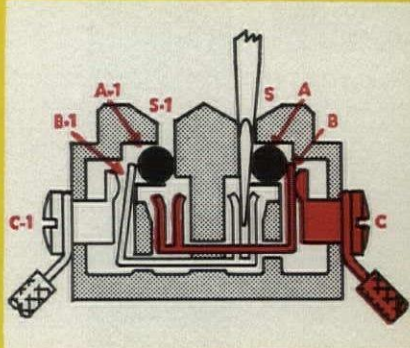
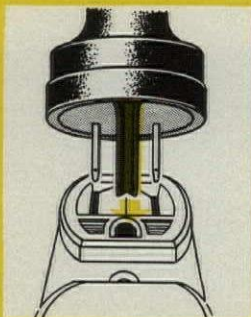


FIG. II.—Internal construction that shunts current harmlessly away from inserted metallic objects. Red indicates parts carrying current.

You will find *two* safety features in the new Hubbell "Twinsafe" receptacle that are combined in no other convenience outlet today:

A U-shaped grounding slot that instantly grounds power tools and appliances equipped with any standard grounding cap, as in Fig. 1.

A design that permits current to flow out through the slots only when both blades of a standard cap are firmly in place.

If, as shown in Fig. 2, a metal object thicker than 0.031" is inserted in one slot, it causes fibre insulating disc *A* to press against spring *B*, causing *B* to touch *C*, which is the power supply. But instead of the power's flowing to clip *B*₁ which the inserted object is touching, "Twinsafe" construction shunts the power harmlessly to the opposite slot. (Note that, on the side of the idle slot, spring *B*₁ is not touching power supply *C*₁ because disc *A*₁ is not pressing against it.

Protection is complete even if a child tries to insert both points of a hairpin in the two slots at once. The insulating discs are so positioned as to make entry difficult. Furthermore, for the discs to be moved enough to establish the internal electrical contact, the inserted object must be more than 0.031" thick—which the leg of a hairpin is not.

The Hubbell "Twinsafe" receptacle SG-62 for 15-ampere, 125-volt current costs only a trifle more than ordinary equipment, but it is worth many times the difference in added safety and peace of mind. In schools, mental institutions, hospitals, prisons, and similar structures, use of "Twinsafe" is practical insurance against tragic accidents.

"Twinsafe" receptacles fit standard outlet boxes and are installed by qualified electrical contractors.

For complete information see Sweet's 31 b/Hu, or write

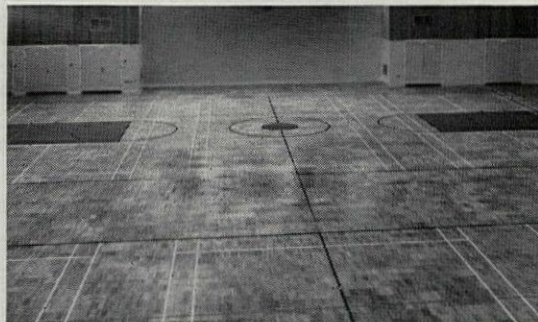
HARVEY HUBBELL, INCORPORATED

BRIDGEPORT 2, CONNECTICUT IN CANADA, SCARBOROUGH, ONTARIO



79,000 sq. ft. of smooth, resilient beauty for **MICHIGAN STATE UNIVERSITY**

The 60,000 sq. ft. Ironbound* Continuous Strip* Hard Maple Floor installed in the new Men's Intramural Sports Building at Michigan State brings MSU's total Ironbound floor area to approximately 79,000 sq. ft. This includes Ironbound floors in gymnastic areas, squash courts, exercise rooms and handball courts in the new building and the 19,000 sq. ft. installed in 1958 in MSU's Women's Gym, shown below.



Ironbound floor in MSU's Women's Gym. Arch: Ralph R. Calder, Detroit; Installer: Bauer-Foster Floors, Inc., Detroit



May we tell you of the many benefits Ironbound offers you? For information and name of your nearest authorized installer, write Robbins Flooring Company, Reed City, Michigan, Attn: Dept. AF-260.

ROBBINS FLOORING COMPANY

Reed City and Ishpeming, Michigan

Manufacturers of Ironbound* Continuous Strip* Maple Flooring, Perma-Cushion† Resilient Floor Systems and other hardwood flooring

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

†U.S. Pat. No. 2862255

Background photo is Ironbound floor in Men's Intramural Sports Building, Michigan State University, East Lansing, Mich. Arch: Lewis J. Sarvis, Battle Creek, Mich.; Installer: Bauer-Foster Floors, Inc., Detroit. Flooring Dri-Vac treated.

CONTROL:

first step to

comfort



The Proviso West High School, Hillside, Illinois. Perkins & Will, Architects and Engineers

Only precise control of indoor comfort makes space truly usable. That's why it's so important to integrate good design and comfort control right from the start in any type of building. You can depend on Honeywell to help your engineer specify the best system for each of

your clients' particular needs. You'll find that Honeywell's 75 years of leadership in temperature control will go far toward assuring client satisfaction. Call your nearest Honeywell office, or write Minneapolis-Honeywell, Minneapolis 8, Minnesota.

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YEAR

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Honeywell



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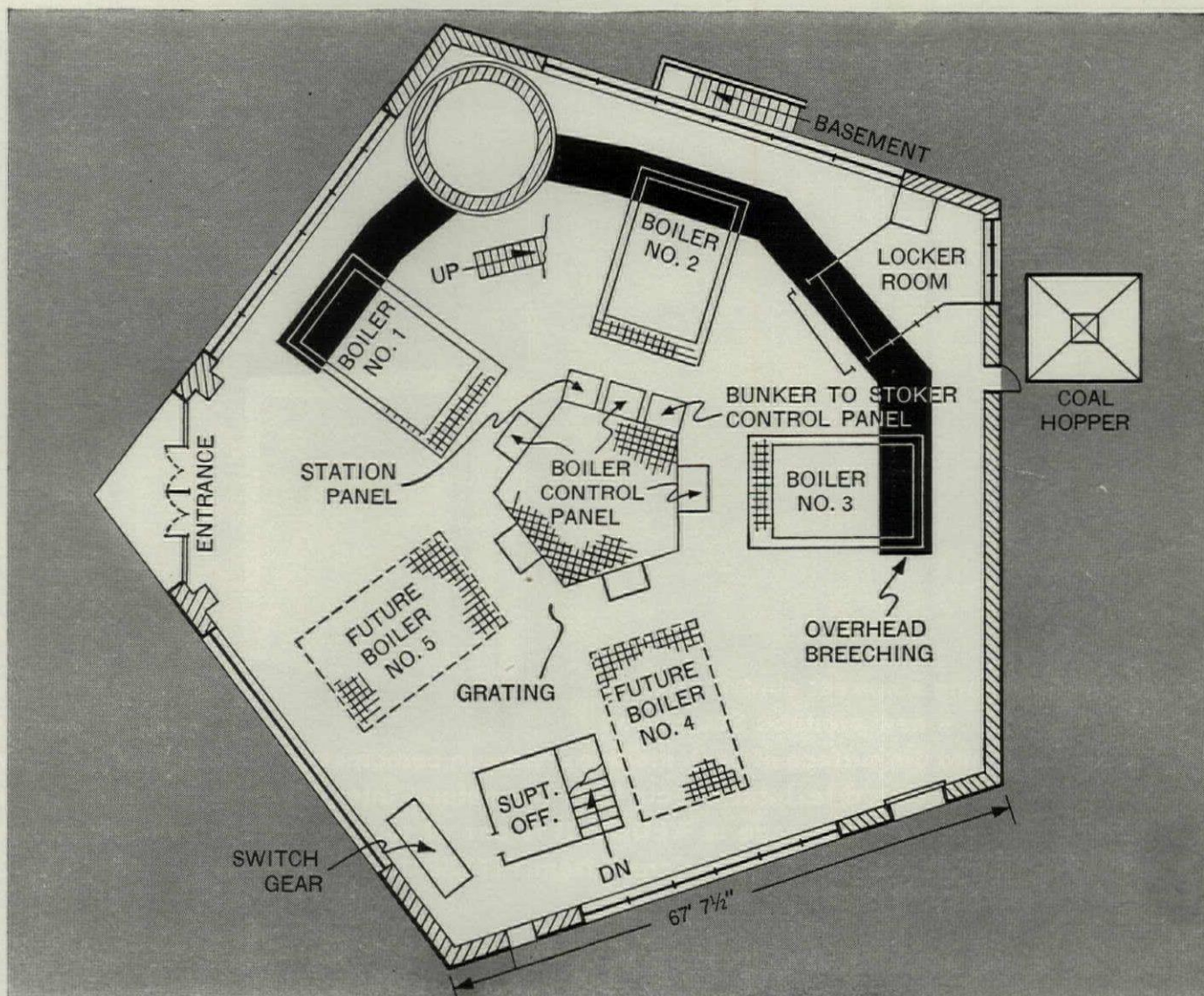


Entrance to the 1960 House Beautiful Pace Setter Home.

Tile Contractor: Lee Nordloh Tile Co. Tile Description: $1\frac{1}{16}$ " Squares, c.e., Pan-O-ramics: Slate Textone, Azure Textone and Blue Granite. Color Plate 116.

Tile creates an impressive entrance to a home . . . bringing rich texture and color interest to the exterior and striking a keynote of elegance in the inviting foyer. With American Olean ceramic tile, possibilities for such fresh and distinctive treatments are virtually unlimited. And of course wherever you use it, tile brings an assurance of permanence and ease of maintenance unmatched by other materials. For other examples of outstanding tile treatments, write for Booklets 451 and 550.

CERAMIC TILE
**American
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Hospital cures fuel ills with "little Pentagon"

Richmond State Hospital burns coal for economy and availability in modern pentagonal power plant

After a power system failure at the Richmond State Hospital, Richmond, Ind., the administration conducted an engineering survey of its steam-generating operation. Over-age equipment indicated the need for entirely new facilities. The shape of the boiler room site prompted the unconventional pentagonal installation for best possible adaptation of space to present and future needs. *Economy and availability* dictated the choice of coal as the fuel. Today a new power plant—designed by Fleck, Quebe and Reid, Indianapolis, with F. B. Morse, of Purdue University—burns coal in a completely modern, automatic operation. The outstanding features of this compact installation are its high combustion efficiency, minimum manpower requirement and continuing ease of maintenance.

Consult an engineering firm

If you are remodeling or building new heating or power facilities, it will pay you to consult a qualified engineering firm. Such concerns—familiar with the latest in fuel costs and equipment—can effect great savings for you in efficiency and economy of fuel.

Coal is lowest cost fuel

Today, when the annual cost of fuel often equals the original cost of the boilers, you should know that bituminous coal

is the lowest cost fuel in most industrial areas. And modern coal-burning equipment gives you 15% to 50% *more* steam per dollar, while automatic operation trims labor costs and eliminates smoke problems. What's more, tremendous coal reserves and mechanized mining procedures assure you a constantly plentiful supply of coal at stable prices.

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SEND COUPON FOR NEW BCI PUBLICATIONS. Guide Specifications, with complete equipment criteria and boiler room plans:



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Southern Building, Washington 5, D. C.

Gentlemen—Please send me:

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☐ GS-2 (high-pressure heating and/or process plant, ram-type underfeed stoker); ☐ GS-3 (automatic package boiler for heating and process plants). ☐ Case histories on larger plants.

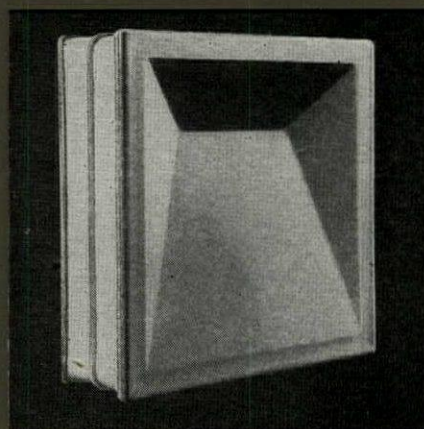
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Title _____

Company _____

Address _____

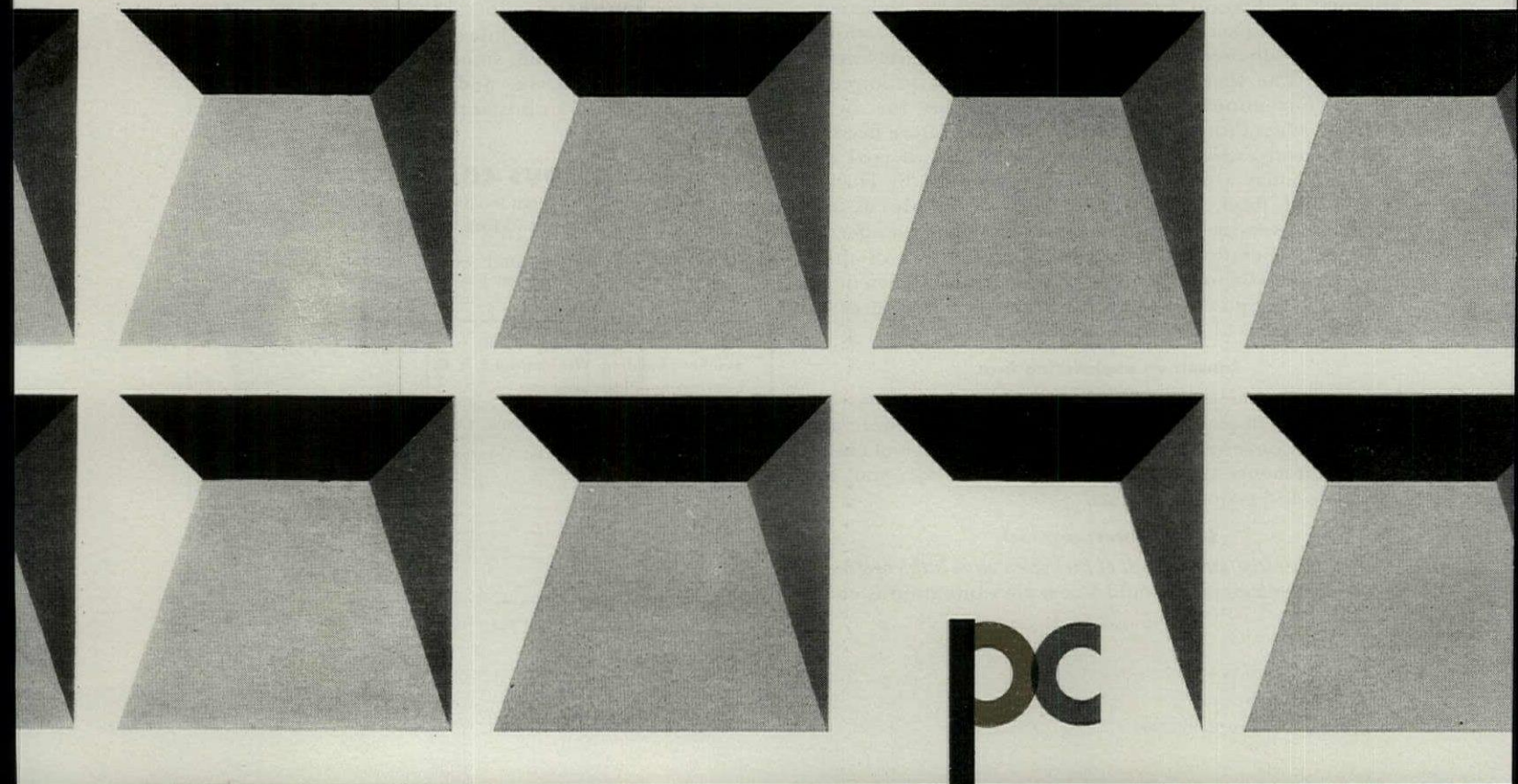
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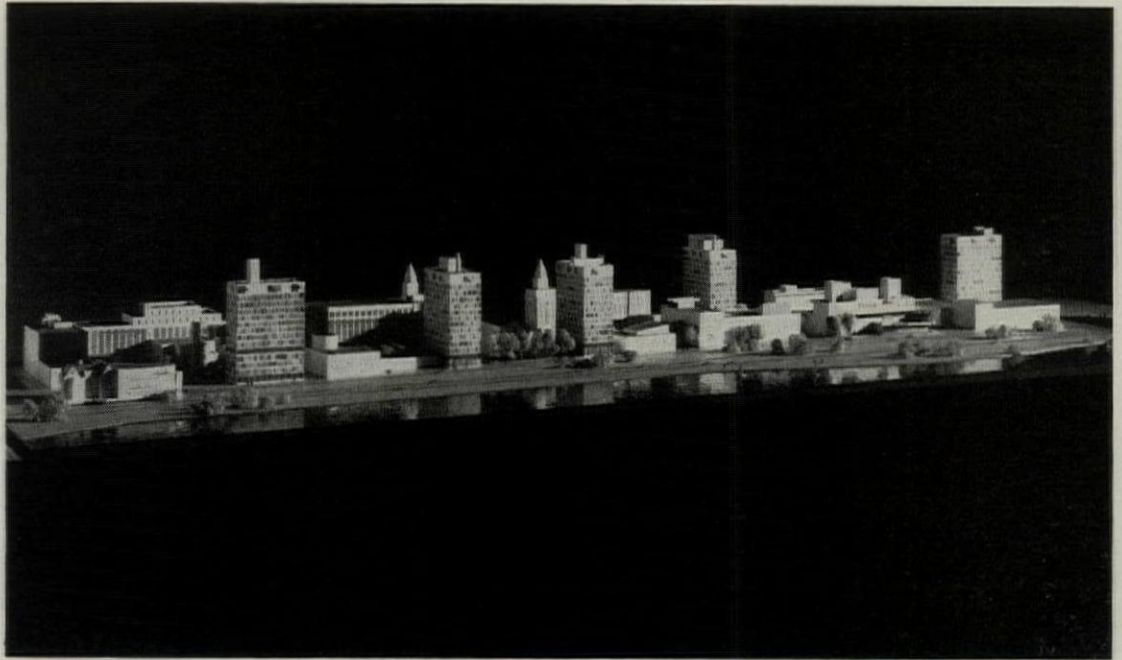
Here is Pittsburgh Corning's newest contribution to authority over design . . . a new product: Sculptured Patterns pressed deep into the surface of each module create, in combination, almost limitless capacity to develop carefully calculated textural effects from the natural interplay of light and shade on a wall. The pattern illustrated on this page is WEDGE. It is one of four patterns which are currently available exclusively on architect's specifications—from PITTSBURGH CORNING CORPORATION.

the architect's
Glass Modules.

WEDGE



A roundup of recent and significant proposals



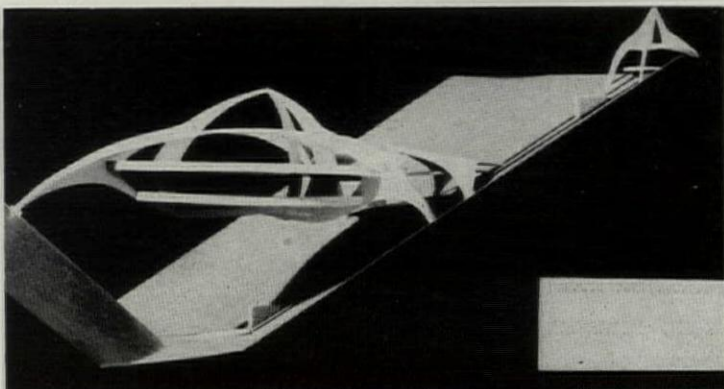
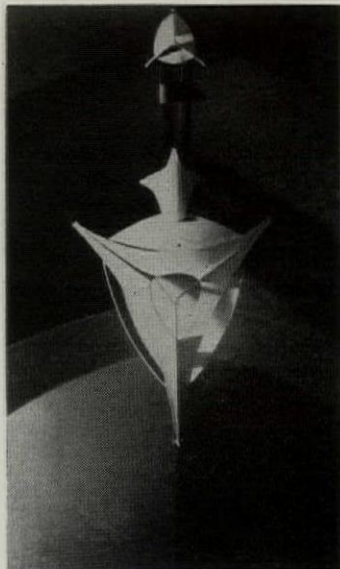
BOSTON UNIVERSITY GROWS UP: TOWER CLASSROOMS

Boston University's Charles River campus is spreading out and up—five 15- and 16-story buildings will dot the river bank in the next ten years. These classroom towers are part of a \$60 million development campaign which will ultimately move all scattered col-

leges, except the medical school, to the main campus. Also included in the plan, by Sert, Jackson & Gourley, are two auditoriums and a \$4.4-million library. First to be built: the towers on either side of the chapel (center) and a student union (right).

CLUBHOUSE SPANS CANYON

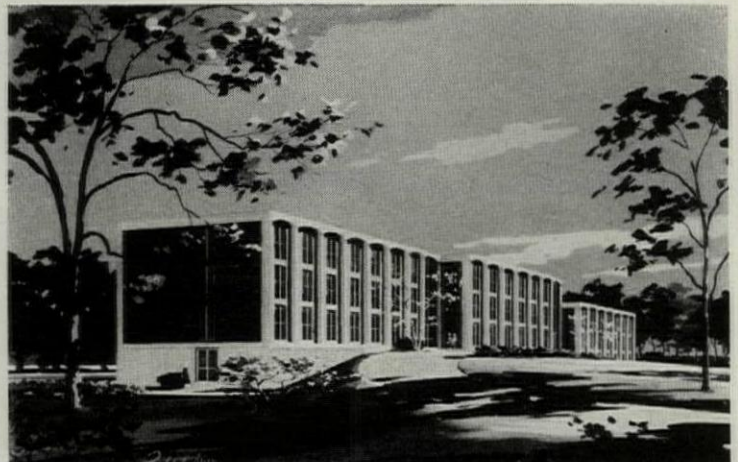
The odd shape shown at right and below is the model for a restaurant-clubhouse designed by two Oakland architects, Luckman and Cadwalader, for an Oakland park. It will hang between canyon walls over a golf course, giving diners a grandstand view of the play as well as a glimpse of San Francisco Bay in the distance. Above the double-decked restaurant will be a faceted glass dome 30 feet high. Below it will be reinforced concrete bents stretching out like a tripod to the canyon walls. Glass-enclosed funicular cars will run from a small entrance pavilion down to the restaurant.

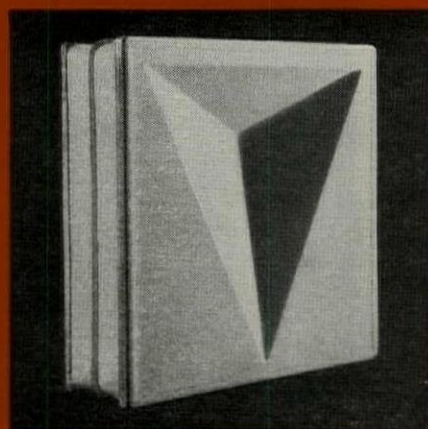


THREE-SECTION DORMITORY AT SARAH LAWRENCE COLLEGE

Next fall 150 Sarah Lawrence girls, first wave of a 40 per cent enrollment increase, will move into a new dormitory (below) on their Bronxville, N. Y., campus. The first of five new buildings in Philip Johnson's master plan, the red brick dormitory will be built in

three sections connected by glass-enclosed stairways. The architect took advantage of the sloping site to provide an extra story at the rear, adding a fourth level to the front three. Cost: \$1.2 million to be financed by a U.S. Government loan and private gifts.





A new architectural interpretation of an ageless material—glass. Here is an aspect of Sculptured Glass Modules which bears material-ly on the importance of this new product to curtain wall design. Now sweeping textural effects can be designed into a wall in concert with the only substantial wall material offering both light transmission and insulation value. Four patterns are available—exclusively on architect's specifications. The one you see shown here is PYRAMID. Design patents applied for. PITTSBURGH CORNING CORPORATION.

PYRAMID

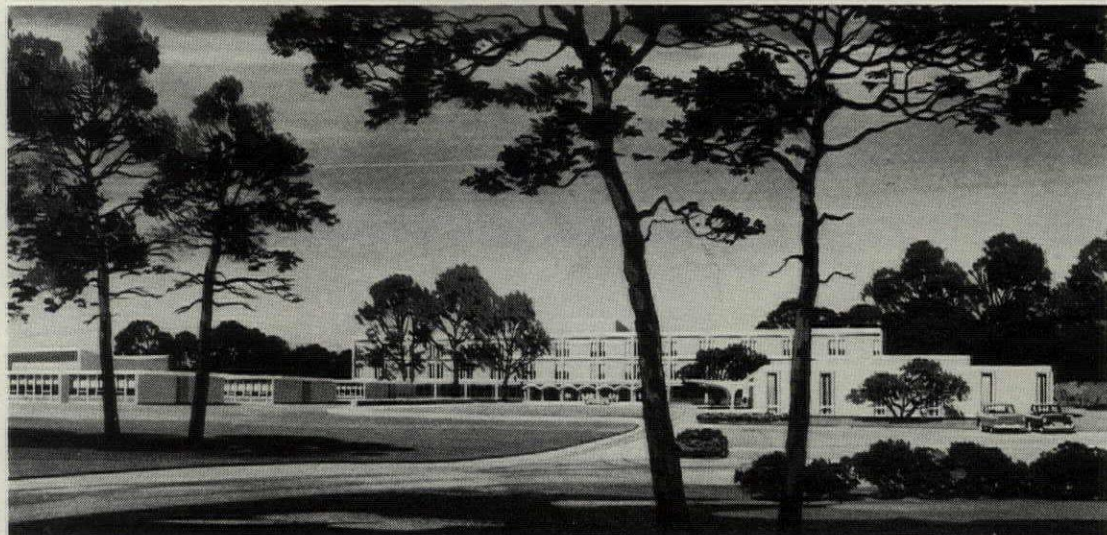


PENNSYLVANIA SCHOOL AND HOSPITAL FOR DISTURBED CHILDREN

Pennsylvania will build its first state institution for emotionally disturbed children on a 125-acre site in Bensalem Township, Bucks County (below). Though the three-story clinic and one-story school, rec-

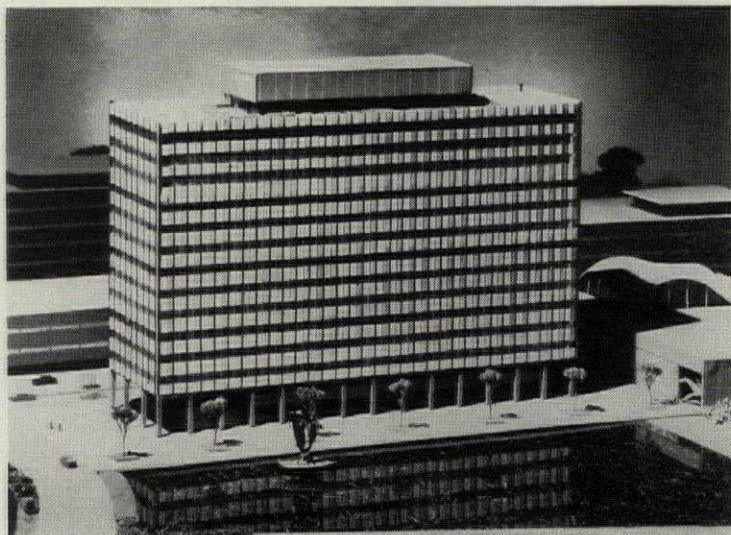
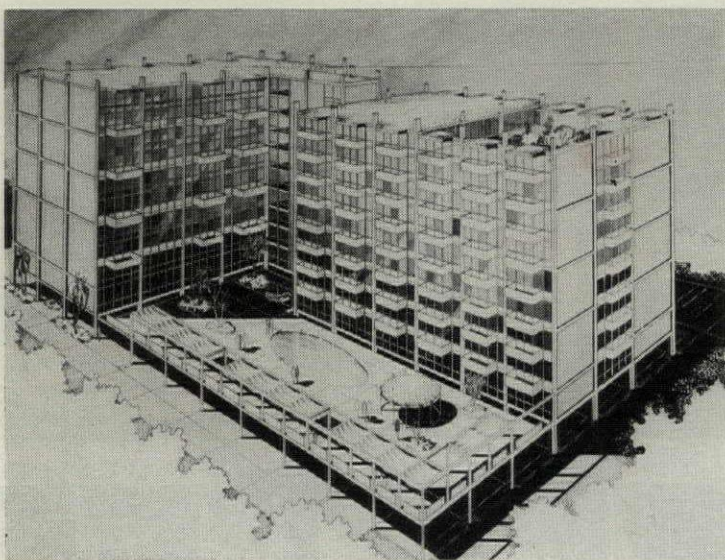
reation, and food service buildings will of necessity be "institutional," Architect Vincent G. Kling's design provides small gable-roofed cottages where children will live with their house parents. Initially,

the institution will cost \$8 million and serve 340 children; a second phase will add space for 168. The clinic's structure will be of reinforced concrete; the walls, of brick and porcelainized steel.



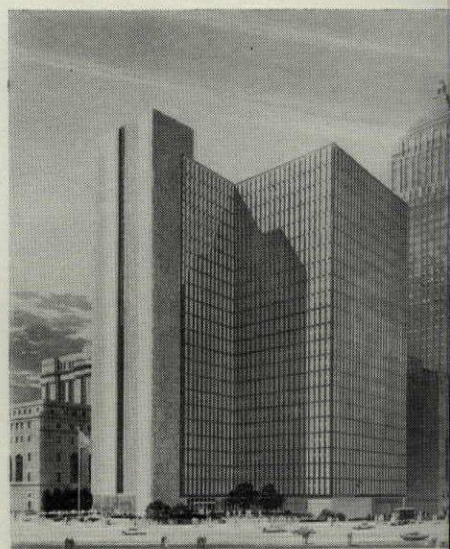
GALVESTON APARTMENTS

From their balconies, tenants of the Isle DeVile Apartments in Galveston, Tex. (right), will have a choice of views over the Gulf of Mexico or over their own second-floor deck swimming pool and cabanas. The \$2-million, ten-story apartment building will provide 100 apartments, ranging in size from one-bedroom up to two-story studio apartments. Architects Anthony Luciano & Associates of Houston have specified a reinforced concrete frame and aluminum and brick exterior walls for the building.



MINNESOTA OFFICES

By 1965 Minnesota Mining & Manufacturing Co. expects to have 1,800 employees at work in a 14-story administration building (left), which is part of the company's new 265-acre research center east of St. Paul, Minn. Designed by Ellerbe & Co., of St. Paul, architects for the entire center, the building's serrated, three-dimensional exterior will be cut stone, tinted glass, and aluminum "to give the look of a diamond, reflecting light in constantly changing angles visible at long distances." Cost: \$10 million.



PITTSBURGH TOWER

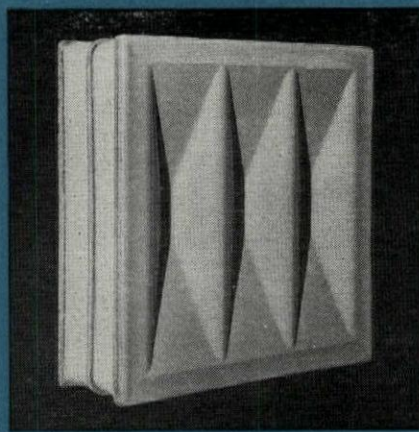
The General Services Administration will build this \$26 million federal building in downtown Pittsburgh from plans by Prack & Prack and Altenhof & Bown, local architects. Rising 23 stories above a landscaped plaza, the exterior of the office tower will be a steel and glass grid, contrasting with the limestone-faced elevator and stairway shaft (left). Twenty U.S. agencies will share the building's 795,000 square feet of air-conditioned office space arranged on a modular plan.

ATLANTA ELECTRIC BUILDING

Eschewing the usual sign on the roof, the Georgia Power Co. will label its new home office in Atlanta (below) just as effectively with special night lighting of the façade and a plaza fountain. The 21-story exterior will present a striped pattern of white Georgia marble, gray enameled steel, and gray tinted glass. Owner-builders H. C. Beck Jr. and J. B. Hutchison will lease the tower to Georgia Power. Architects: Finch, Alexander, Barnes, Rothschild & Paschal.

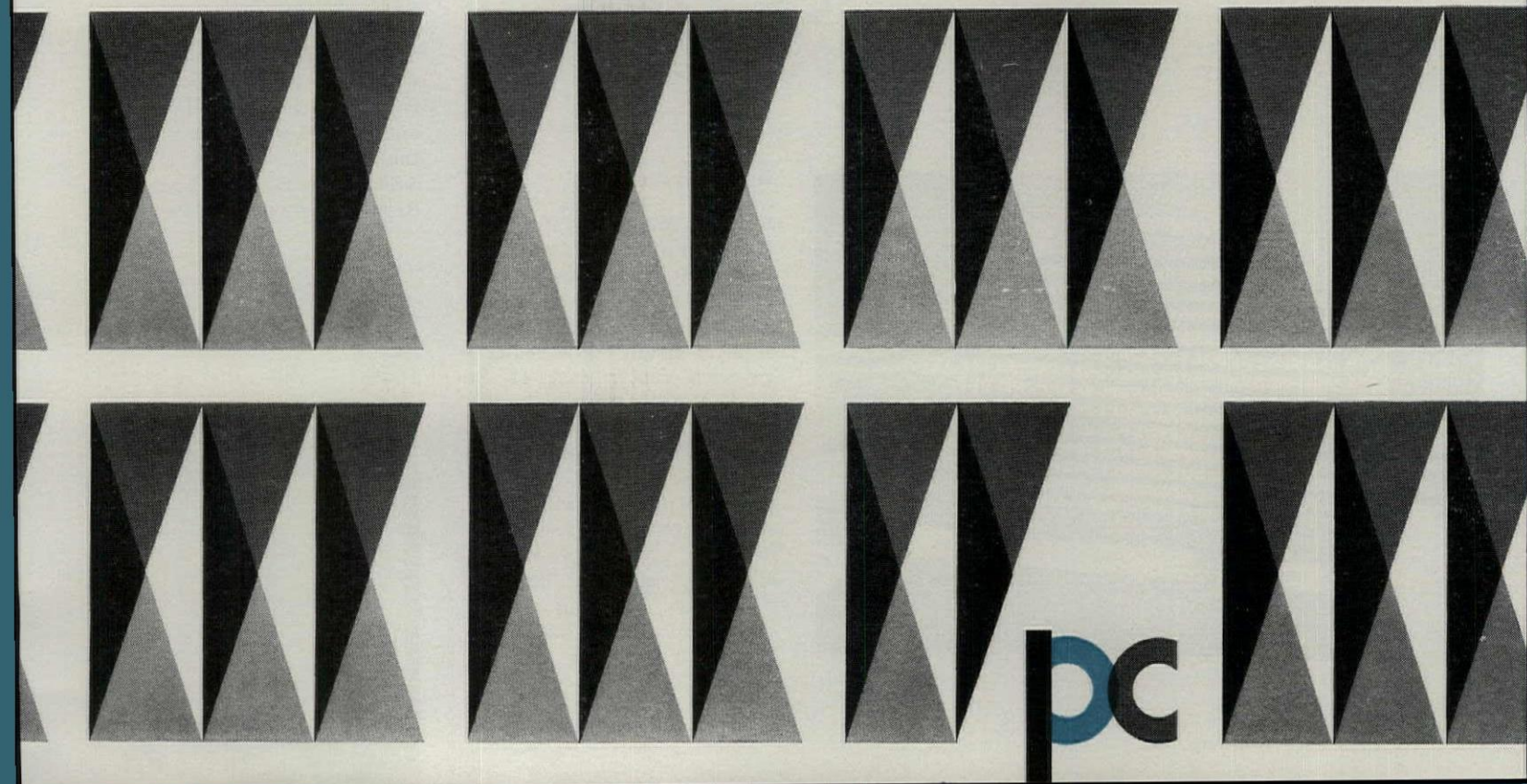


It would be difficult to assess the complete value of new Sculptured Glass Modules. In hands of the architect, these bold patterns in glass virtually defy regimentation of design. The total effect is to generate a complete new concept of the textural interpretation of light and shade on a wall. A single material carries the interpretation inside and out. HARLEQUIN, shown here, is one of four patterns available exclusively to architects—from PITTSBURGH CORNING CORPORATION.



architectural
the disciplined

HARLEQUIN



pc



HAWAIIAN SHERATON ADDS A TOWER

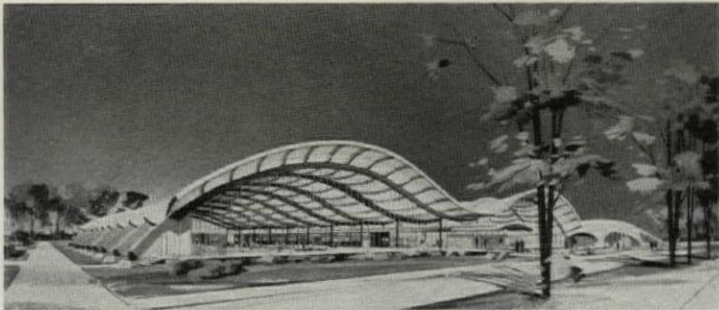
At right angles to the existing Princess Kaiulani Hotel in Waikiki, the Sheraton Hawaii Corp. is building an 11-story, 210-room addition (right, above), which will offer guests a choice of weather: air conditioning inside or individual lanais outside. To speed con-

struction, floors will be built up of precast concrete panels covered with an equal thickness of poured-in-place concrete. End walls will be non-bearing hollow block. Architects: Wimberly & Cook, George V. Whisenand, associate, of Honolulu.

WAVY-ROOFED BOWLING CENTER IN MICHIGAN

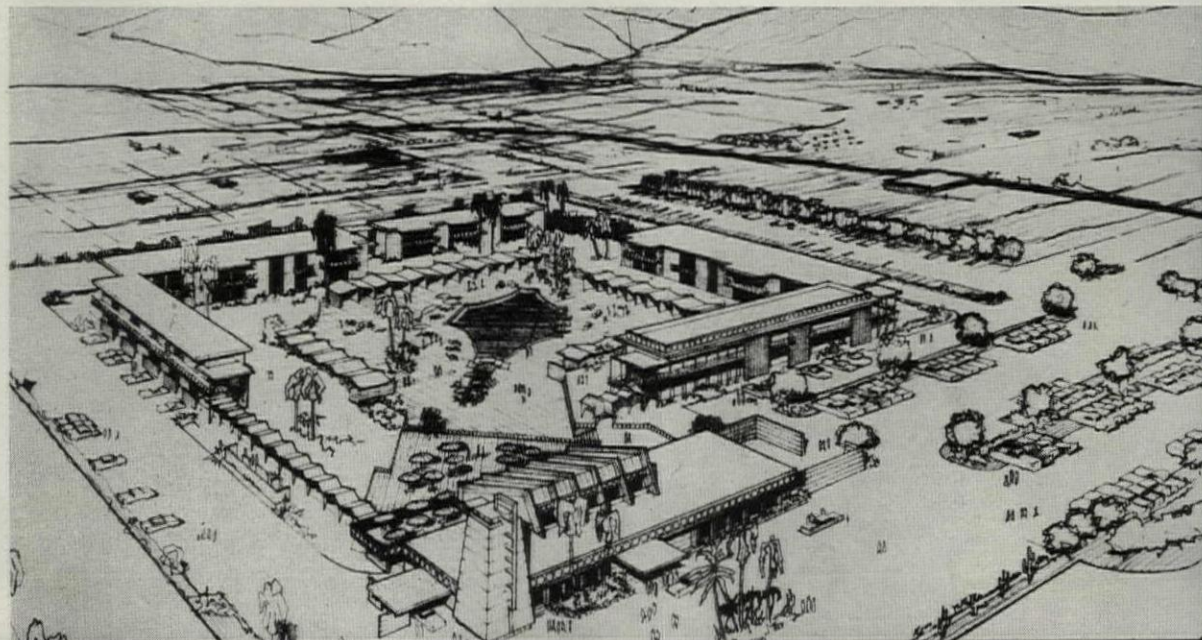
Undulating in two directions over a framework of laminated timbers, the huge roof shown below will span 64 bowling alleys in Livonia, Mich. Where the big roof dips in the middle, a snack bar and cocktail lounge will divide the lanes back to back, 32 on a side. A

large expanse of heat and glare-resisting glass will show passers-by the activity within. The adjacent restaurant (far right) is roofed with a shallow dome, also supported by laminated timbers. "Cloverlanes" was designed by Hawthorne & Schmiedeke, Detroit.



ARIZONA MOTEL

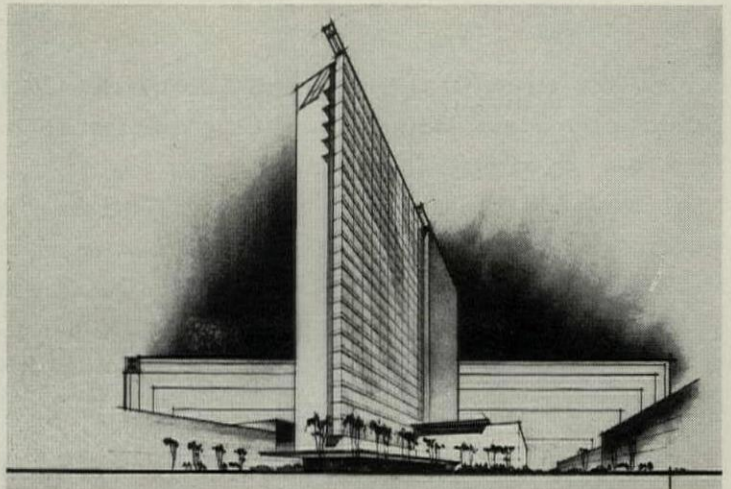
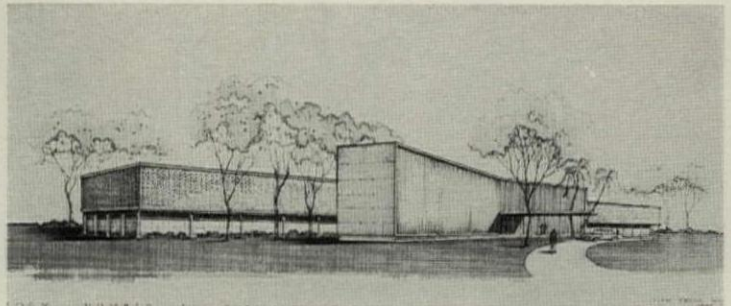
This Wrightian oasis in the desert near Scottsdale, Ariz.—a motel called the Scottsdale Inn—was designed by Edgar Tafel Associates, New York, and Gonzales & Ludlow, Phoenix, associate architects. The one-story office, restaurant, bar, and coffee shop, like the two-story motel buildings, will be built of precast floor and roof panels and block walls. Guests will swim in a sunken pool (center), approached from one of the 43 cabanas around it. Parking spaces will ring the motel, to be started this spring.



CIGARETTE FACTORY IN BANGKOK

With some help from an American architectural firm, the Thailand Government Tobacco Monopoly expects to double the country's cigarette output. The H-shaped factory and office building (below) will be equipped with the latest automatic cigarette-making ma-

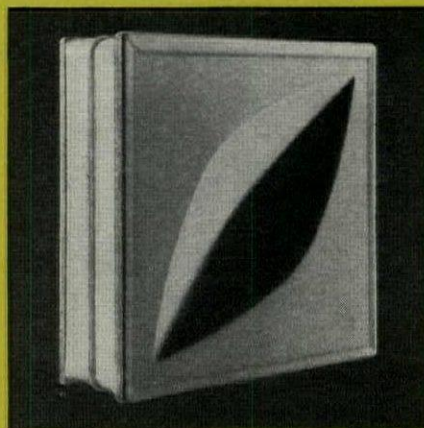
chinery, air conditioning, and music systems. Cast stone grilles will screen the factory half (rear). Including separate canteen and service buildings (not shown), the cost will be about \$3.5 million. Architects: Litchfield, Whiting, Bowne & Associates.



COLORFUL HIGH-RISE APARTMENTS IN HOUSTON

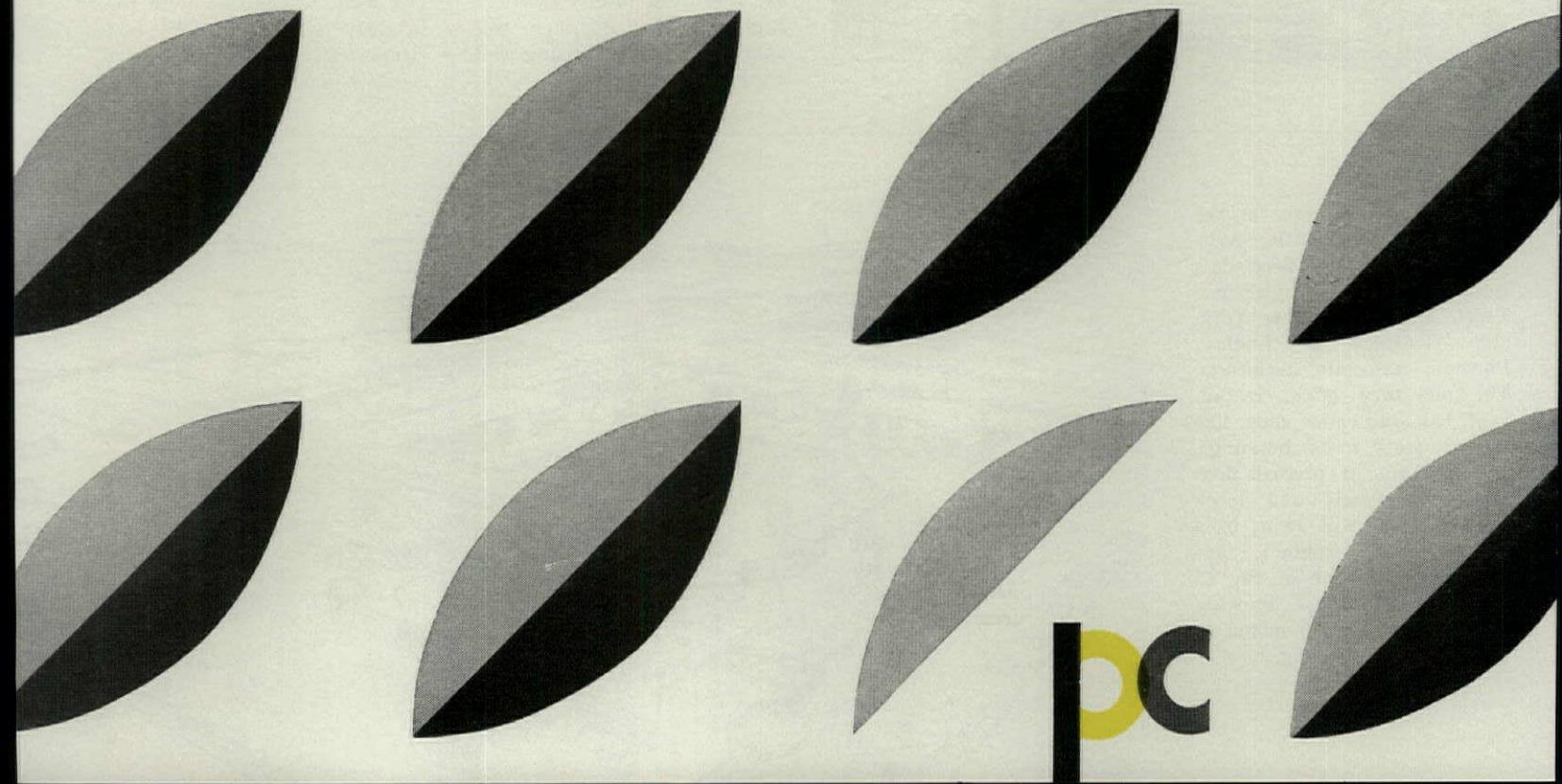
In downtown Houston Architects MacKie & Kamrath plan a 24-story apartment tower which will bring many suburban amenities to city dwellers. Right on their doorstep, tenants will find a swimming pool, gardens, badminton and shuffle-

board courts and, in the penthouse, a private club. The architects expect to use soft colors on the tall, slim masonry end walls to contrast with the brightly colored panels and draperies of the expansive window walls.



A new Architectural brochure discusses the full impact which
Sculptured Glass Modules can be expected to have upon the cur-
tain wall concept. It contains a variety of visual interpretations indicating the broad design
latitude possible with the product. The four patterns currently available are fully illustrated.
For a free copy and color chart showing the 12 bold and pastel ceramic face colors, write
PITTSBURGH CORNING CORPORATION, Dept. E-20, One Gateway Center, Pittsburgh 22, Pa.

LEAF



Three-dimensional glass block . . . storage heaters . . . thin movable partitions . . . automatic air purifier

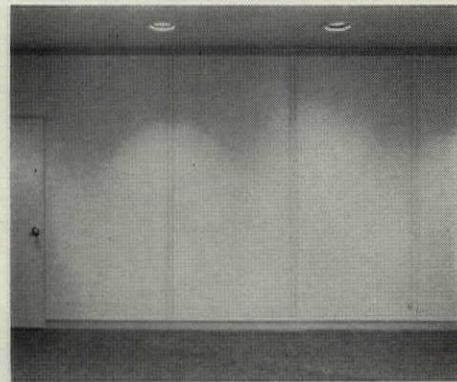
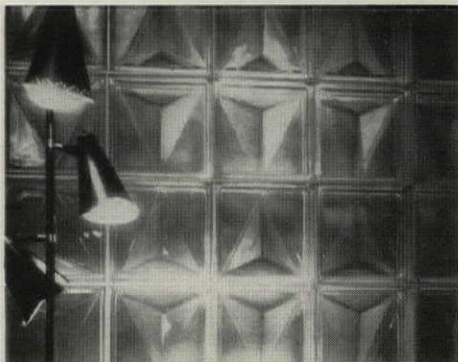
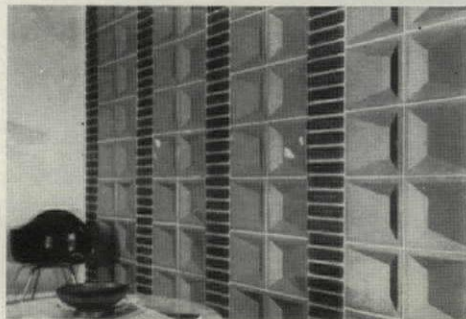
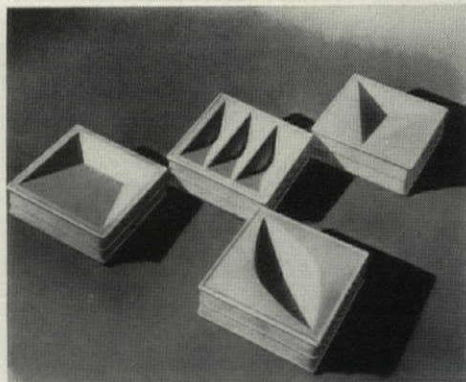
SCULPTURED GLASS BLOCK vary wall texture, pattern, color

To put new life into the appearance (and sales) of its glass block, Pittsburgh Corning sought advice from a number of leading architects. The result is four large new blocks (12 inches square, 4 inches thick), called *Sculptured Glass Modules*, which combine color, pattern, and texture with the other attributes of glass block.

Of the 12 strong colors available in the new block, seven were suggested by Mirko Basaldella and Vincent Solomita, both of the Harvard Graduate School of Design. The four patterns—leaf, pyramid, wedge, and harlequin—are simple geometric shapes pressed into glass while it is still in a semimolten state. For an idea of the rich textures made possible by the four "basics," see photographs, left. The block are finished in ceramic color on one side; the other side, patterned too, is clear. Pittsburgh Corning is currently experimenting with tints on both faces.

Like conventional block, these are made by joining two hollow halves, trapping dead air between them as an insulator. They offer an average 20 per cent light transmission. The sculptured block cost \$3.25 each, or \$1.80 if clear on both sides. Installation cost is about \$1.00 per block.

Manufacturer: Pittsburgh Corning Corp., 1 Gateway Center, Pittsburgh 22.

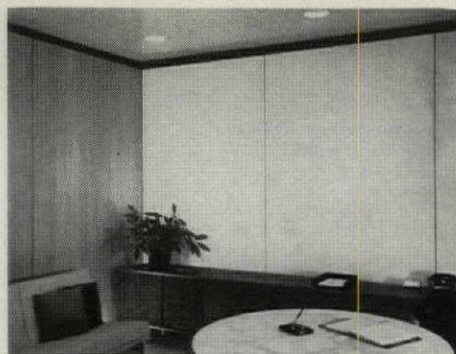


of sizes, shapes, colors, and textures and its spare lines fit into modern architecture. Wood veneers, rough or smooth textiles, and vinyls are wall-covering choices. Slightly recessed head, base, and feature trim may match the panel or contrast with it; in either case, the trim outlines the panel in a narrow frame. A cam action locking bar connects panels.

An equally slim, but less expensive, partition is the *Signature* (above), aimed at the commercial and industrial market. Panels in this system are flush with the interlocking posts covered by snap-on post caps. Panel connections are perceptible only as two narrow vertical lines.

Sample prices for the two systems: two 10 by 15 foot Delineator offices with door and hardware cost about \$2,850; two complete Signature offices of the same size cost about \$2,500. Prices drop in quantity and when one wall is shared by adjoining offices.

Manufacturer: E. F. Hauserman Co., 7516 Grant Ave., Cleveland 5.



TWO MOVABLE PARTITIONS tailored to slim lines, stock sizes

Design freedom and mass production economy were the twin goals set by the E. F. Hauserman Co. in developing its two new steel partitions. Both systems have certain common characteristics, such as thinness (2¼ inches), a 4-inch module, ready access to wiring and utilities, sound control, and a wide choice of finishes. They differ, however, in appearance, price, and joining method.

The more expensive of the two is the *Delineator* (above), designed for use by architects. It is available in a wide choice

TILT-UP FRAMING SYSTEM shortens curing time, pares costs

Tilt-Frame, a patented system of erecting precast concrete walls, originated with a Texas engineer who chafed at his crew's idleness while concrete tilt-up panels cured. To wipe out the usual seven-day curing time, T. W. Garmon worked out a process which allows slabs to cure after being set in place, shaving \$1 per square foot from total construction costs and 50 working days from the time needed to erect the walls of a 100,000-square-foot building.

Garmon's invention is a heavy steel frame on which wooden forms are built up. The concrete is poured into the forms and allowed to set for 24 hours before being tied down to the frame with temporary braces ready for the lifting operation. The form's sides are removed, leaving only the floor of the form clinging to the steel frame. A crane hooks onto a spreader

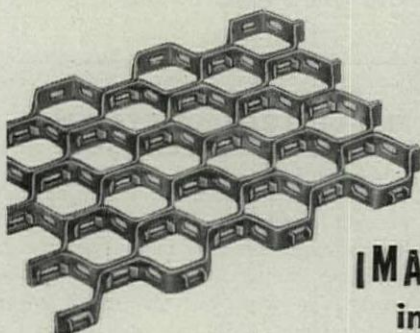
continued on page 56

CUSTOM EFFECTS in ORNAMENTAL GRILLES at low cost!



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"ALUMINUM GRIDSTEEL" is a honeycomb mesh that allows great flexibility in scale and texture, and diversity of application. Its third-dimension affords varying degrees of opacity depending on angle of view.



"ALUMINUM GRIDSTEEL" is available in rigid or flexible panels of various sizes... anodized, painted or mill finish.

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bar at the frame's top, swings the panel into place, and detaches the frame. To prevent toppling, temporary braces hold the panels in position until preformed T-shaped columns are inserted between them. Construction inside—floors, plumbing, inside dividers, etc.—takes place after roofing.

Of the advantages claimed for Tilt-Frame over conventional tilt-up building methods, the weightiest is that a minimum crew can be kept busy every day. For example, a crew can pour eight panels one morning, erect them on piers the next day, and that same afternoon pour eight panels,



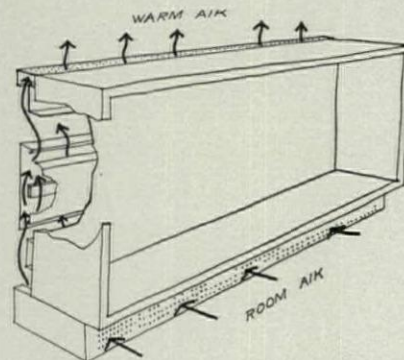
and so on. Standard Tilt-Frame walls are 23 by 15.8 feet, though their thickness may be varied to meet local code requirements. One drawback: Tilt-Frame requires enough maneuvering room on the site for a 30-ton crane, and adequate pouring space.

Manufacturer: Garmon Construction Co., 609 North Retta, Fort Worth, Tex.

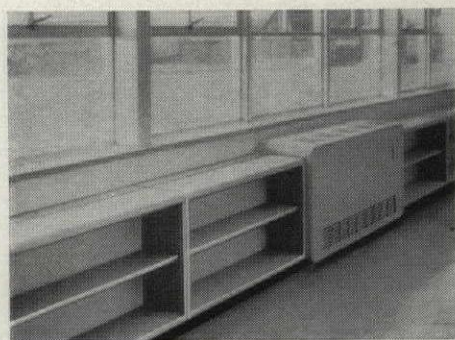
HEATING AND STORAGE UNITS combined in trim steel cabinets

Baseboard heaters mounted on the wall 9 inches above the floor are completely hidden by *Chromalox Draft Barrier Storage Cabinets*. Storage-heater units may be used alone or in conjunction with ventilators in schools or offices.

Cool air, sucked in through perforations at the bottom of the cabinet, warms as it rises over the baseboard, and floats out into the room through a grille at the rear



of the cabinet. This rising action counteracts cold window drafts. Grilles are especially sturdy, designed to resist pencils, rulers, or other items which might be thrust into them in classroom use.



Sliding doors, locks, and shelves are optional additions to the storage cabinets.

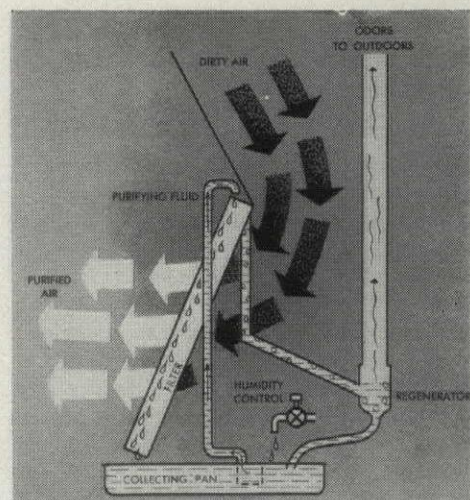
Cabinets are finished in coral-tan baked-on enamel (on 16-gauge steel) and are offered in 2-, 3-, and 4-foot lengths, 26½ inches high, 13¼ inches deep; prices run from \$53 to \$59. Electric baseboard units start at \$12 for 1 foot and go up to \$46 for the 8-foot length.

Manufacturer: Edwin L. Wiegand Co., 7500 Thomas Blvd., Pittsburgh 8.

AUTOMATIC AIR PURIFIER controls air's quality and humidity

Carrier's *Automatic Air Purifier*, designed for residential and small commercial use, supplies clean, humidity-controlled air to either new or existing central air-conditioning systems. Capable of cleaning 1,200 cubic feet of air per minute, the purifier costs \$250 installed.

Behind successful odor removal is Carrex, a glycerine-like solution, which flows over a slanted filter. The diagram (below) shows how the cycle works. Dirty air filters through an aluminum mesh screen, changing direction 17 times as it zigzags through. Because dirt particles are slower



to change direction than air molecules, they are thrown on the filter surface. A Carrex-and-water solution bathing the filter flushes particles down into the collecting pan. A small part of the fluid is scooped into the regenerator, which extracts odors and sends them outdoors. Waves of fluid washing down the filter keep it clean, never giving dirt particles a chance to stick. Dirt, lint, pollen, and other particles land in the collecting pan,

continued on page 58

**in Grand Central
Terminal**

**MILLIONS
have
WALKED
with
SAFETY**

**on
stairs and floors
of long-wearing**

ALUNDUM NON-SLIP TERRAZZO



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MicroRold Stainless Steel Sheet is available in widths up to 36" in gauges from .005 to .109, and in widths up to 48" from .010 to .109 in all commercial grades, finishes and tempers. MicroRold Strip can be supplied in widths up to 23 $\frac{5}{16}$ " in gauges from .010 to .109, and VERI-THIN Strip as thin as .0015 to .009 in all commercial strip finishes.

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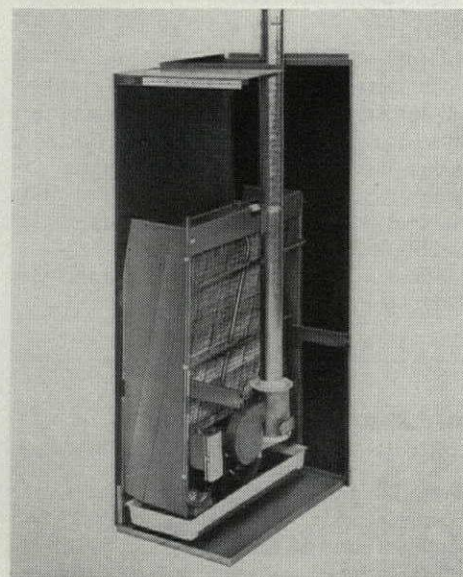
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which requires emptying once or twice a year. A humidistat controls the amount of water mixed with Carrex, insuring the proper quantity of moisture in the clean air as it completes the cycle.

Carrier claims that the purifier removes 25 per cent of air odors in each pass over the filter, and, since all air in the home passes through every ten minutes, any reasonable concentration of odors can be removed in 30 to 40 minutes.



Two small models, to be ready in April, are cabinets 57 $\frac{1}{2}$ inches tall and 27 inches deep, but there is a difference in width: the 1,200-cubic-foot model measures 20 inches around, and the 2,000-cubic-foot one 8 inches more. A larger, 4,000-foot model, for use in large air-conditioning systems, will be available next summer.

Manufacturer: Carrier Corp., Syracuse 1, N. Y.

HOOK-FACED TAPE clings tightly to nylon wall fabric

The burr-faced nylon tape, *Velcro*, which substitutes for zippers in several applications, is turning up on walls. For displaying products of various kinds, a soft nylon pile fabric, with a stiffened backing, is stuck to the wall with cellulose wallpaper adhesive. Bits of Velcro tape are glued, stapled, or stitched to the backside of display objects and then placed anywhere on the wall fabric. Result: a series of objects which seems suspended in midair. A 1-inch square tab is strong enough to hold an 8-pound object. The major advantage of tape and fabric is that displays can be changed without effort.

The pile fabric costs \$4.75 per yard, comes in black, white, light gray, beige, and yellow, but in only one width, 38 inches. The hooked tape is available in 11 colors and four widths (from $\frac{3}{8}$ inch to 2 inches). The 1-inch size costs \$1.35 a yard.

Manufacturer: Velcro Sales Corp., 681 Fifth Ave., New York 22.

COLORED CURTAIN-WALL SEALANT matches enamel, marble, or mosaic

Chem Seal 2424, a Thiokol-based, two-part synthetic rubber compound, can be matched to almost any curtain-wall colors, including those of porcelain enamel, marble, or mosaic. Seven standard colors—gray, blue, green, yellow, cream, orange, and red—sell for about \$23 a gallon kit, including the base compound and accelerator. Special colors can be mixed to order.

The sealant cures to a firm, flexible rubber unaffected by temperatures from -40 degrees F. to 200 degrees F. It is applied with a caulking gun or, in the case of small jobs, a putty knife or spatula.

Manufacturer: Chem Seal Corporation of America, 12910 Panama St., Los Angeles 66.

HEXAGONAL GRILLES move out of subway to decorative use

The Irving Subway Grating Co., long-time supplier of industrial gratings, has developed an aluminum version of its *Gridsteel* grating for use in sun deflectors, canopies, suspended ceilings, and decorative interior screens. Gridsteel is a honeycomb mesh fastened together by lugs clinched through slots in adjoining bars. By loosening the lugs, the grille becomes a flexible screen.

Aluminum Gridsteel bars vary from $\frac{3}{4}$ inch to $1\frac{1}{2}$ inches in depth, and the thickness of the metal from 0.083 to 0.100 inch. Standard panel sizes are 3 by 10 feet, 4 by 8 feet, and 4 feet square. For the least expensive mill finish, quantity prices start at \$1.20 per square foot. Anodized finishes in color cost more.

Manufacturer: Irving Subway Grating Co., Inc., 5036 27th St., Long Island City 1, N. Y.



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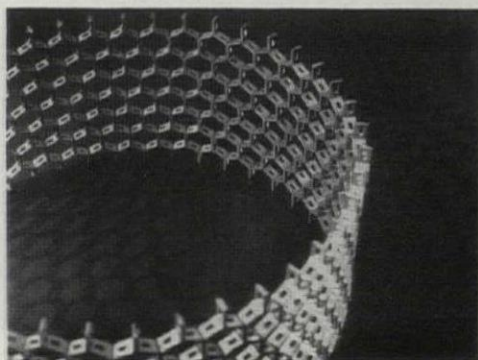
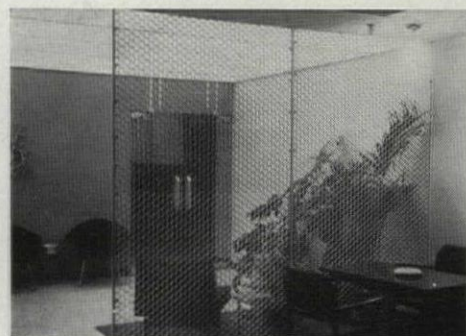
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END



Bowling alley under construction in Seattle uses laminated wood beams fastened to laminated cross members for structural strength, will leave them exposed for their decorative value as well. Architect: Stanley W. Marr.

for new answers...look to WOOD

Its inherent strength, enhanced by latest techniques, broadens the scope of wood's many uses

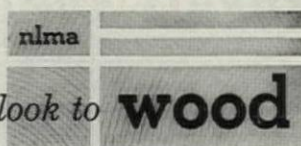


Using bolted A-frame members for rigidity and strength, ceiling and walls of this home combine to provide internal spaciousness while creating an unusual peak effect. Architect: Thomas C. Babbitt.

The *strength* of wood is a multi-faceted quality. Wood has the favorable strength-to-weight ratio of a low-density, cellular structure. Wood has natural elasticity under stress . . . the ability to give, not break. Wood has durability proved through the centuries, commending its use inside and out.

Today, man-made processes give wood still greater strength. You see this in laminated beams, trusses, new fasteners, new preservatives, other technological developments that have adapted wood to situations never before in its realm. Intrinsic or improved, the strength of wood opens unlimited vistas in structural design. For more information on designing with wood, write to this address:

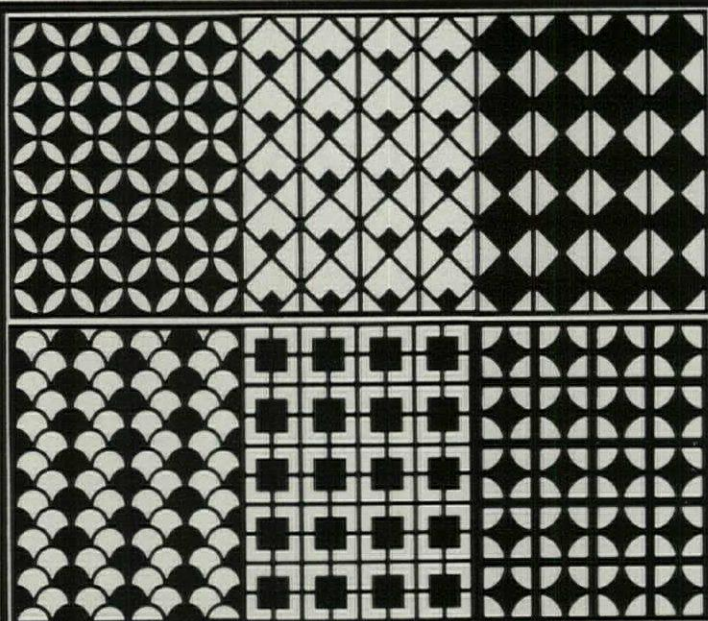
NATIONAL LUMBER MANUFACTURERS ASSOCIATION
Wood Information Center, 1319 18th St., N.W., Washington 6, D.C.



for freedom of design, look to **wood**



This carport boasts modern styling with a maximum of protection. Strength of wood in ceiling permits simplicity of design with exaggerated overhang. Wood fencing gives privacy. Architect: Van Evera Bailey.



These six patterns...

...are examples from the library of more than 100 designs in which Kurtzon 'Karvalum' color anodized aluminum screens and grilles are manufactured. Karvalum panels are available in standard widths, 3' and 4'; standard lengths, 8', 10' and 12'; and in a variety of thicknesses. On a custom basis, panels of any size are available and custom designed patterns can be reproduced. Write on your firm letterhead for application and installation information.

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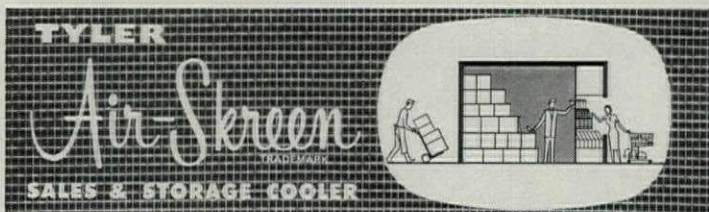
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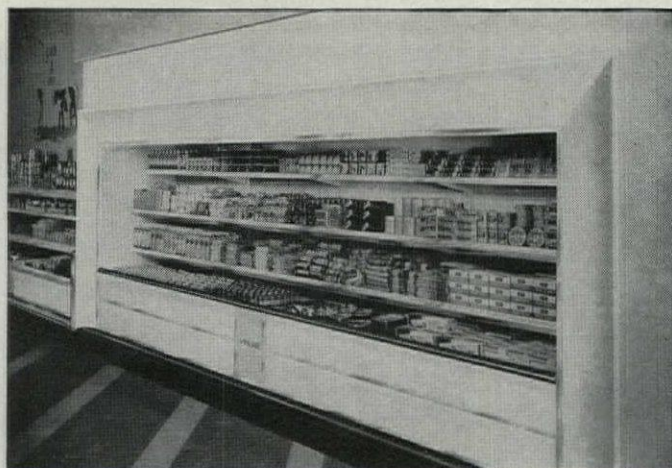
Tyler Refrigeration Corporation, Dept. AF-2, Niles, Mich.

Send data on ☐ new Tyler Air-Screen Sales & Storage Cooler ☐ free Store Planning Assistance available to architects.

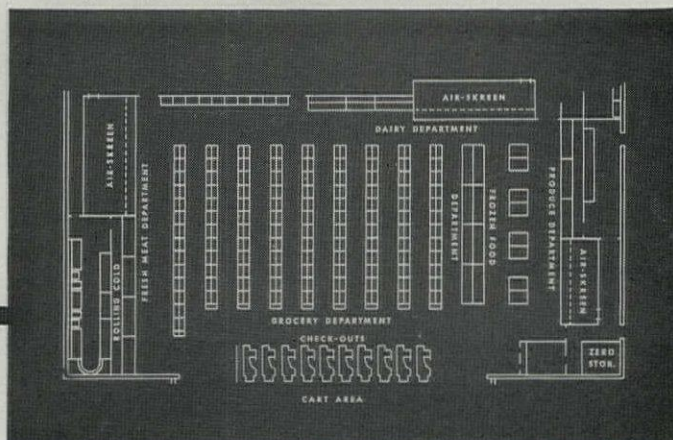
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Complete freedom of design

with prefabricated

THINLITE

curtain walls



Office Building for the State Employees Building Corporation, Sacramento, California.
Architect-Engineer West America Engineering Co., Inc., San Francisco, California

AS IT HAS for so many other new buildings all over the country, THINLITE prefabricated curtain walls bring design distinction and beauty to the proposed office building for the State Employees Building Corporation in Sacramento, California.

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THINLITE offers you a brand-new dimension in design freedom. Send for complete data file on THINLITE now. Write Kimble Glass Company, subsidiary of Owens-Illinois, Department AF-2, Toledo 1, Ohio.

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Denver banks on **terrazzo** for lasting beauty

The beauty of this floor at the Denver United States National Bank will last the life of the building, because it's colorful, durable terrazzo. Concrete-hard terrazzo stays new-looking in spite of heavy traffic. Maintenance costs are low, too, because terrazzo is so easy to clean. No refinishing, waxing or buffing. Savings of at least 20¢ per sq. ft. per year in cleaning can be realized.

And for this terrazzo installation, the specification was ATLAS WHITE portland cement. Its uniform whiteness helps bring out the true color tone of aggregates and pigments. Complies, too, with ASTM and Federal Specifications. For more information on the use of ATLAS WHITE in terrazzo, write: Universal Atlas Cement, 100 Park Avenue, New York 17, N. Y.



Denver United States National Bank — **Architect:** James Sudler Associates, Denver. **Associated Designers:** Maria Bergson Associates, New York. **Contractor:** N. G. Petry Construction Co., Denver. **Terrazzo Contractor:** J. B. Martina Mosaic Co., Denver.

WT-91



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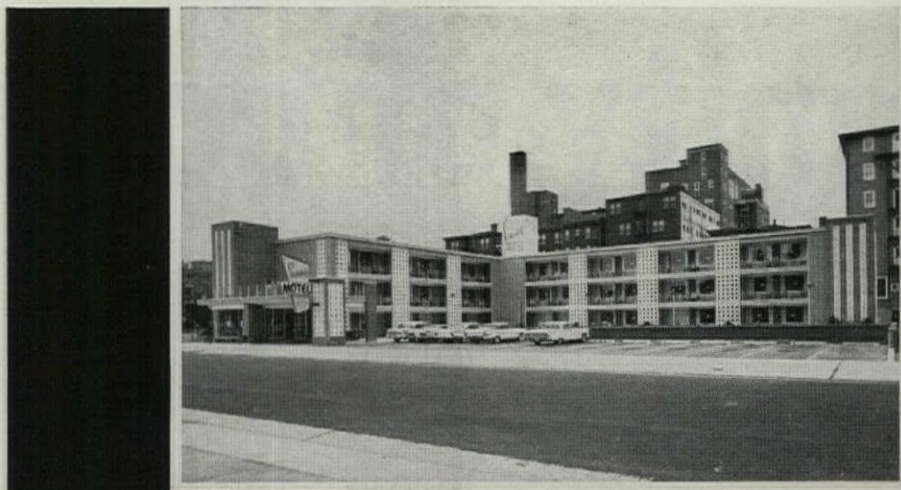
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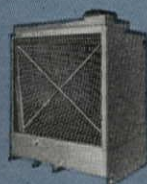
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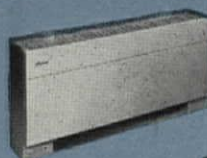
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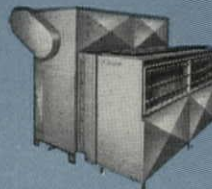
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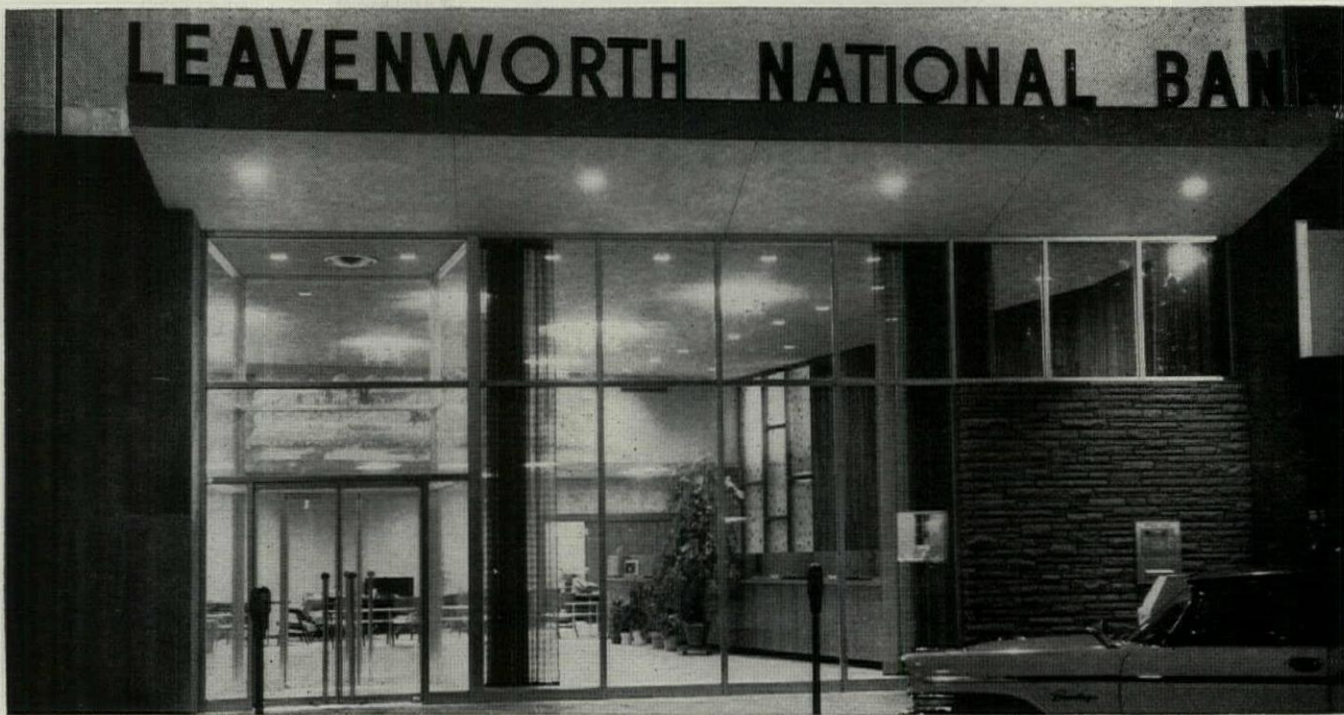
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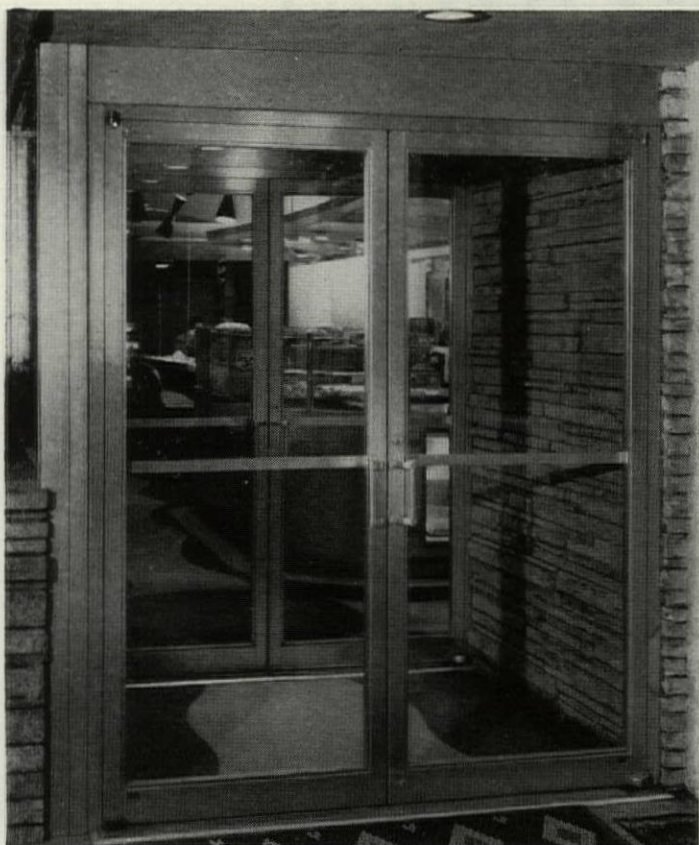
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Get complete details on Pittsburgh Doors from Sweet's Architectural File, Sections 16a and 16d. For additional information, contact your nearest Pittsburgh branch or distributor. Pittsburgh Plate Glass Co., Room 9230, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.



The Leavenworth National Bank in Leavenworth, Kansas, is the oldest bank in the state but takes a modern view of customer convenience. Its open-vision front makes full use of WEST TENSION Doors, set in TUBELITE Frames and handle-operated by the PITTCOMATIC Automatic Door Opener.

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Architect: Loren J. Staker, A.I.A., Columbus, Ohio; Contractor: Emil Windmiller, Columbus, Ohio.



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Architect: Simon B. Zelnik, A.I.A., New York, New York; Contractor: Medoff Construction Company, New York, New York.

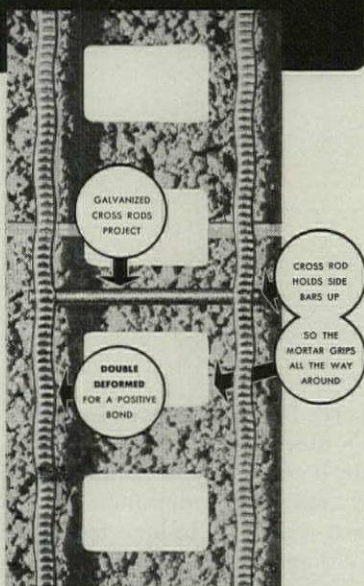
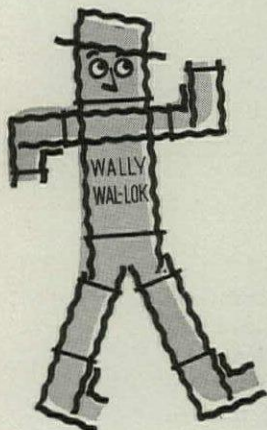


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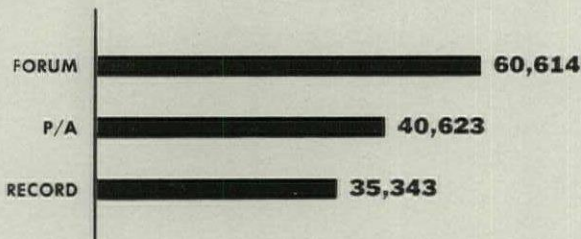
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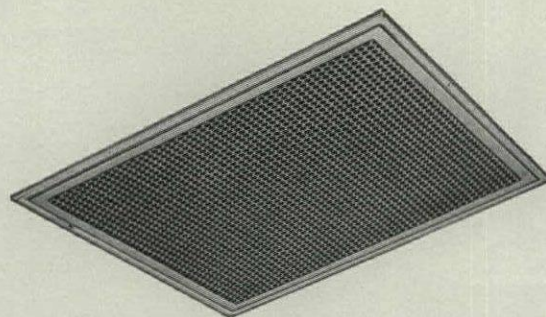
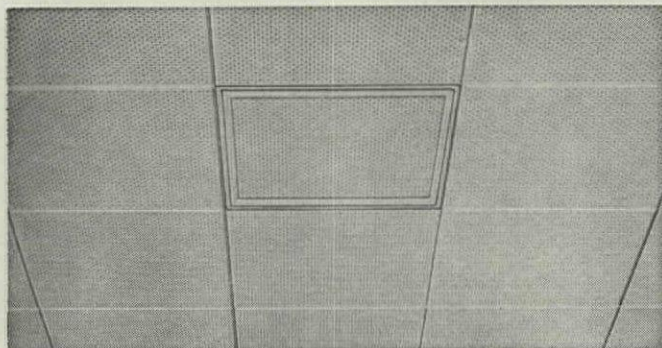
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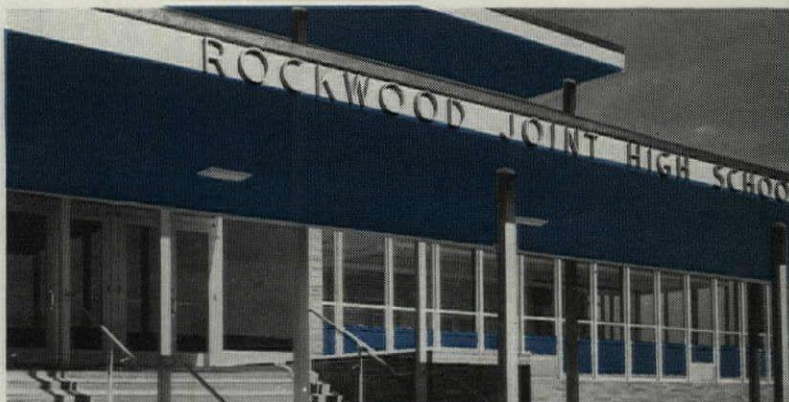
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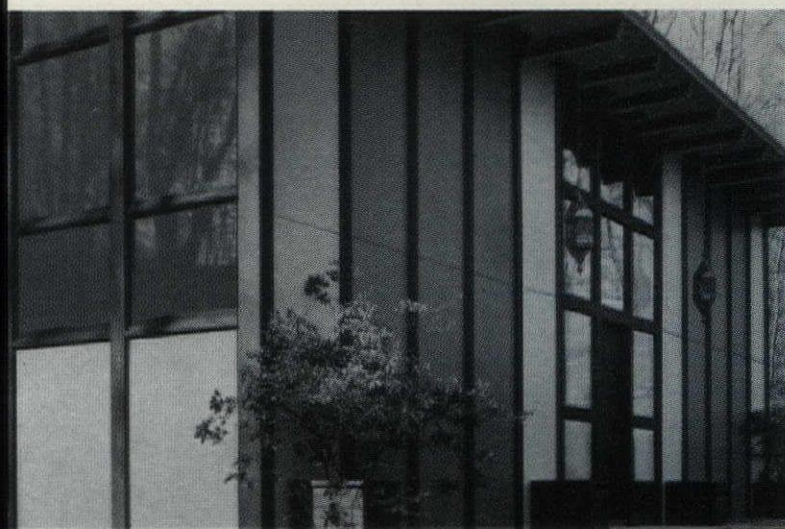


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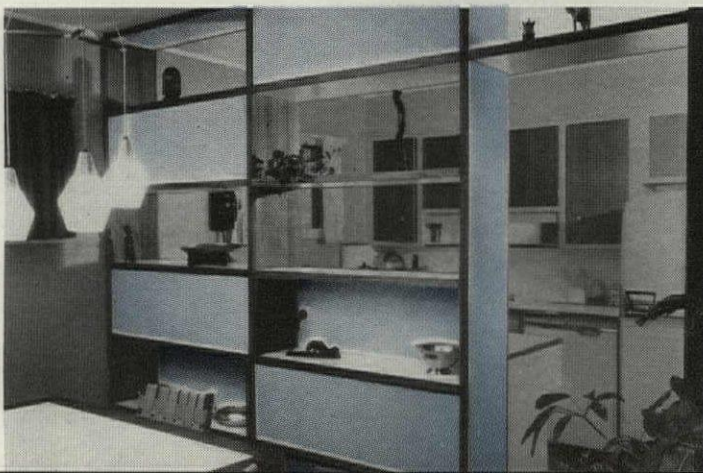
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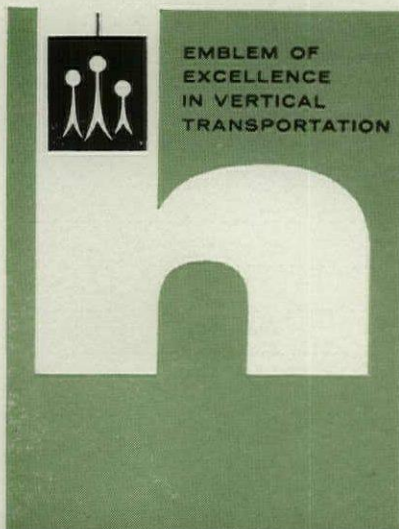
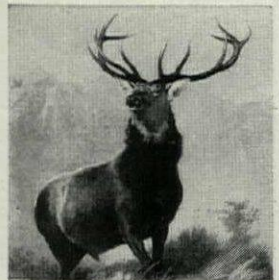
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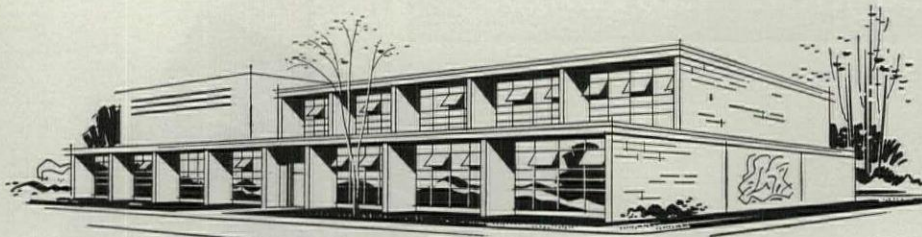
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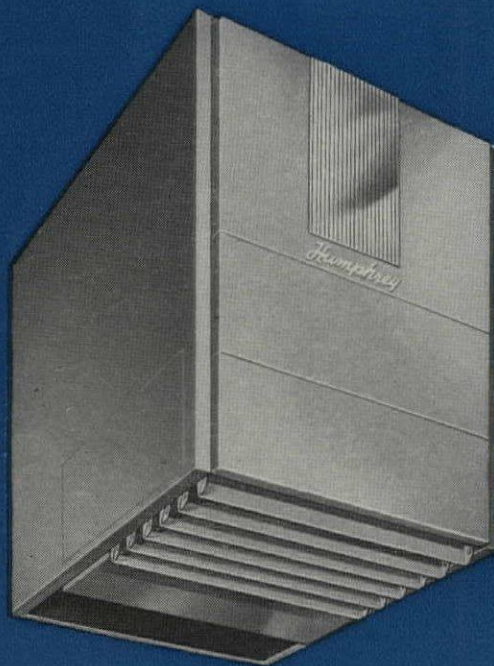
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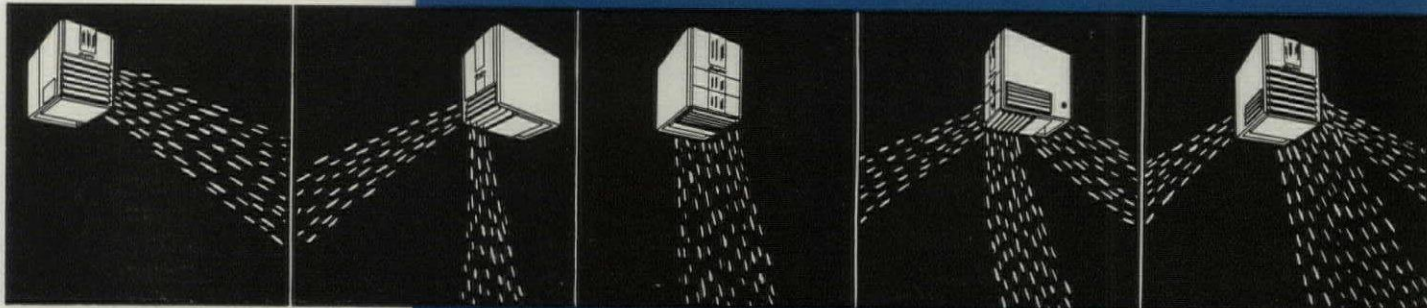
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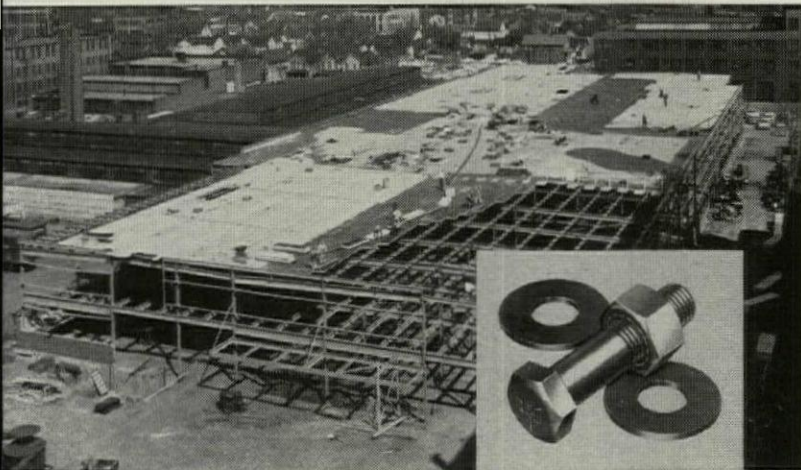
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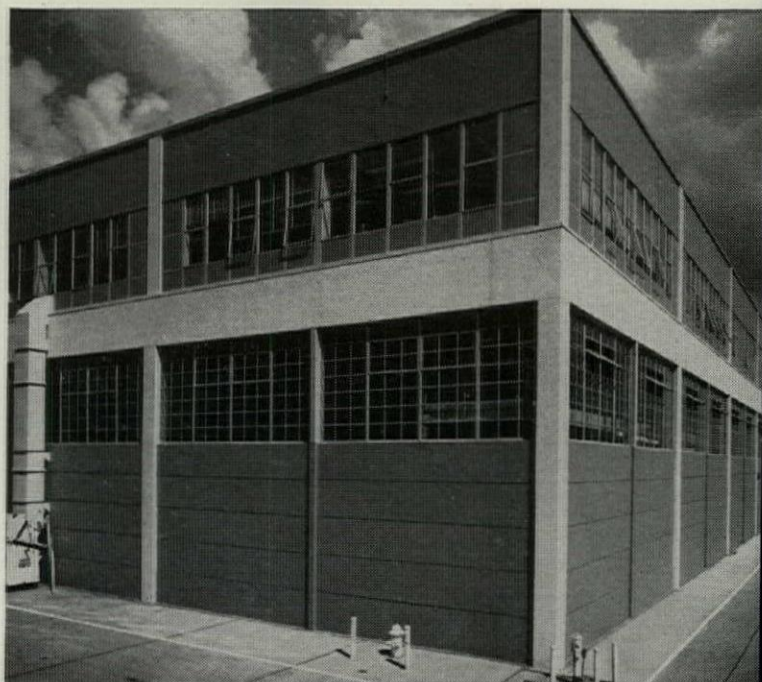
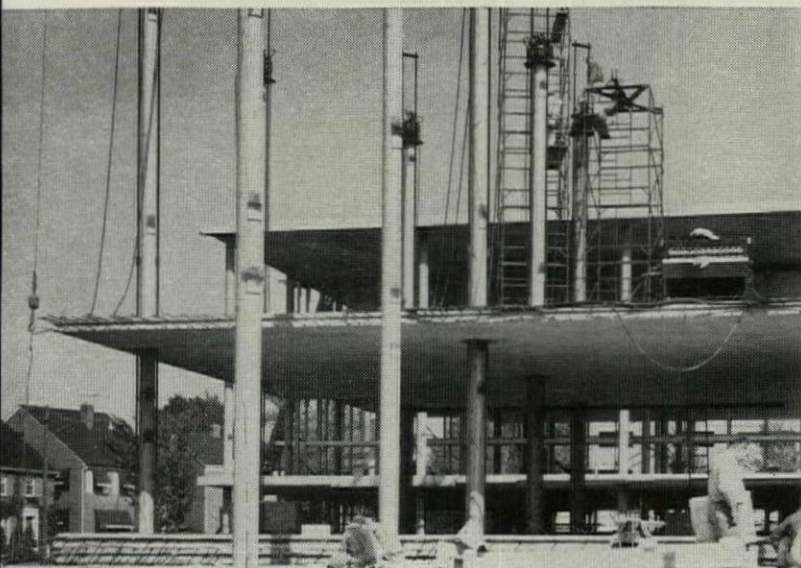
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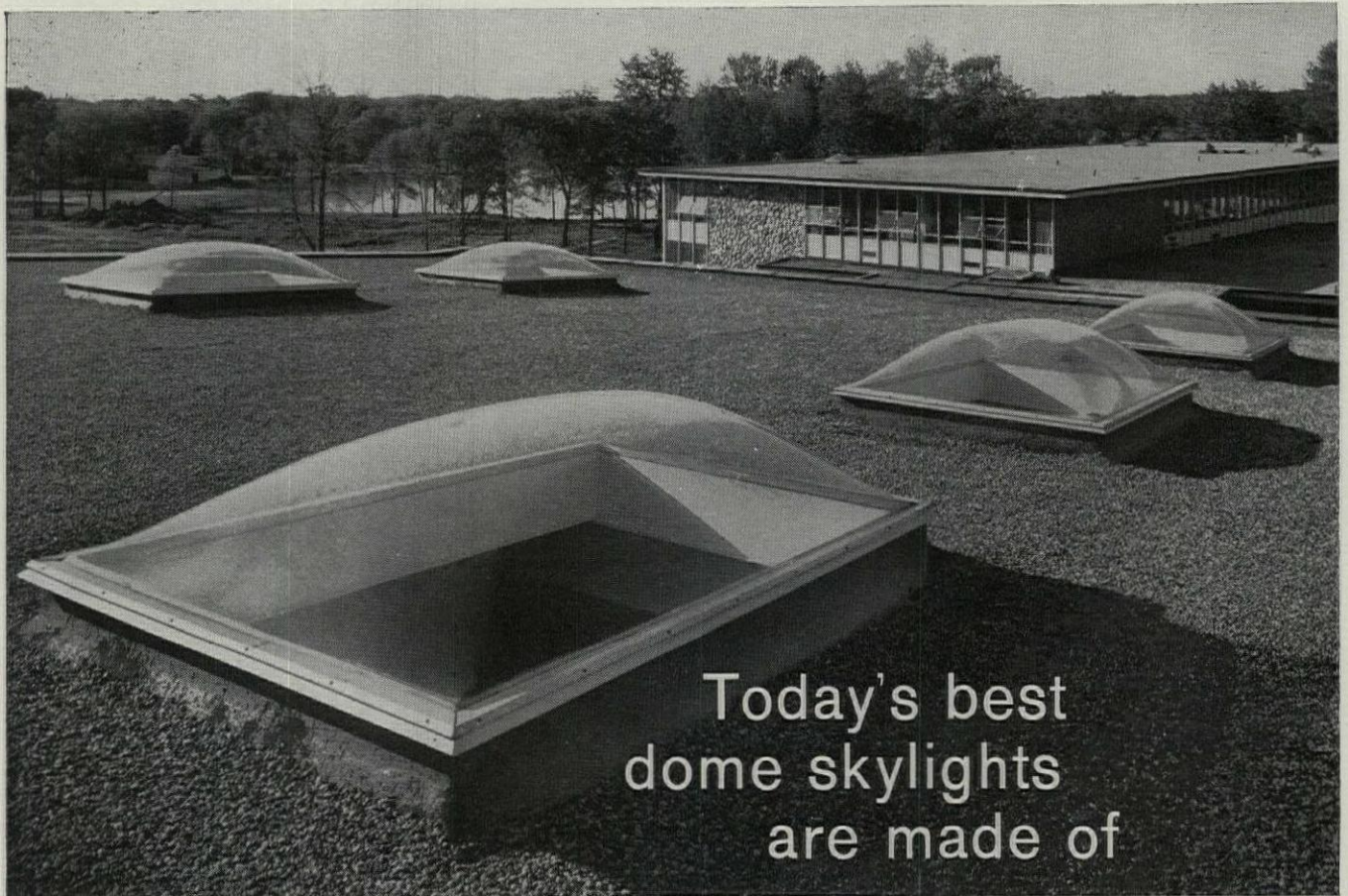
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ARCHITECTURAL FORUM

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Editorial

No vacancies?

The other day a good friend of the FORUM—a well-known speculative builder—decided to tease the editors about their alleged naïveté with regard to the facts of life in real estate. “The only seal of approval I ever want to see on one of my buildings,” said this friend, “is a sign out front saying ‘No vacancies.’” He explained, with obvious relish, how one of his latest projects violated just about everything the magazine has been advocating: it was very high in density, it occupied its lot a full 100 per cent, it was not likely to win any AIA medals. Apart from which it made plenty of money.

Perhaps this friend will forgive it if nobody doubles up with mirth. After all, it isn't exactly news that lots of money can be made by anyone who is interested, primarily, in making lots of money. You can make lots of money in magazine publishing (to take one unlikely example) if you publish pictures of pretty girls in bikinis instead of pretty buildings in curtain walls; you can make lots of money in TV if you fill the air waves with mayhem rather than Murrow; and you can make lots of money in building if you are more interested in cubage than quality.

But, let's face it, what are we here for, anyway? Are we no longer concerned with the *quality* of our acts?

One big difference between a man who builds and a man who prints pictures of girls in bikinis is that the builder is leaving a more-or-less permanent imprint in the face of the earth, and the publisher (perhaps unfortunately so) is not. In any case, this means that builders always face the question of the quality, even the morality of their acts. Percival Goodman, the architect who designs and builds a lot of synagogues, once explained to a congregation that man becomes most Godlike when he creates something of lasting value—a building, a painting, or what have you. Is this not something to keep in mind, together with the exact percentage return on investments?

FORUM does not propose to get stuffy about this. The magazine will continue to fight, editorially, to make goodness in building more profitable on earth as well as in heaven. It will continue to argue that good developers like Roger Stevens, William Zeckendorf, and James Scheuer should get more money for their trouble. It will continue to argue for zoning regulations that will reward a good builder with square-foot bonuses. And it will continue to

continued on page 91

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Our builder friend with the "No vacancies" sign out front may have missed a basic point somewhere along the line: for it would seem that he has got some very serious vacancies, and he's got them where it hurts.

Again a Trylon and Perisphere?

Ever since last September, when New York City's 1964 World's Fair Committee took a journey through the Flushing Meadow site in a jitney left over from the 1939 fair, there has been sweet nostalgia surrounding the entire promotion. Indeed, the only significant indication that 1964 will differ in the slightest from 1939 is the recent decree of Chairman Thomas Deegan: striped pants and silk hats are out for '64.

The 1939 fair, said Deegan, had given the impression that formal dress was required wearing apparel. "You got that through all the foreign delegations being received, and pictures of these were spread all over the U.S.," he continued. "Well, folks around the U.S. are kind of scared off by a silk hat and striped trousers, and I think the fairs are built for people—for folks."

This is pap and nonsense. Even in 1939, there were few "folks" so naïve as to believe that Grover Whalen wouldn't let them in if they weren't dressed as he was. But, in 1964 the naïveté is all going to be on Mr. Deegan's side; in 1964 "folks" will stay away only if fair planners continue to visualize their audience as a collection of Ma and Pa Kettles.

Unfortunately, official naïveté is not confined to a condescending attitude toward an audience. For example: despite the fact that costs

will be three times 1939, attendance three times, and traffic congestion perhaps 30 times as big, the 1,257-acre Flushing Meadows site will only be enlarged, according to Park Commissioner Robert Moses, by some 35 acres. Although it is perhaps too late to change the locale now, a site on the order of four times as large would actually be more appropriate. Indeed, advocates of a new site point justifiably to the permanent values which might be created therein. Most recent American fairs, including the one in 1939, were used as opportunities to create permanent value—in parks, at least. Chicago did it twice, once in 1893 and once again in 1933—on different sites along Lake Michigan. The result was a magnificent necklace of lake-front parks which is unexcelled anywhere. It is strange that Robert Moses, whose opportunism about acquiring more park land is one of his own oft-mentioned assets, cannot do as well for New York.

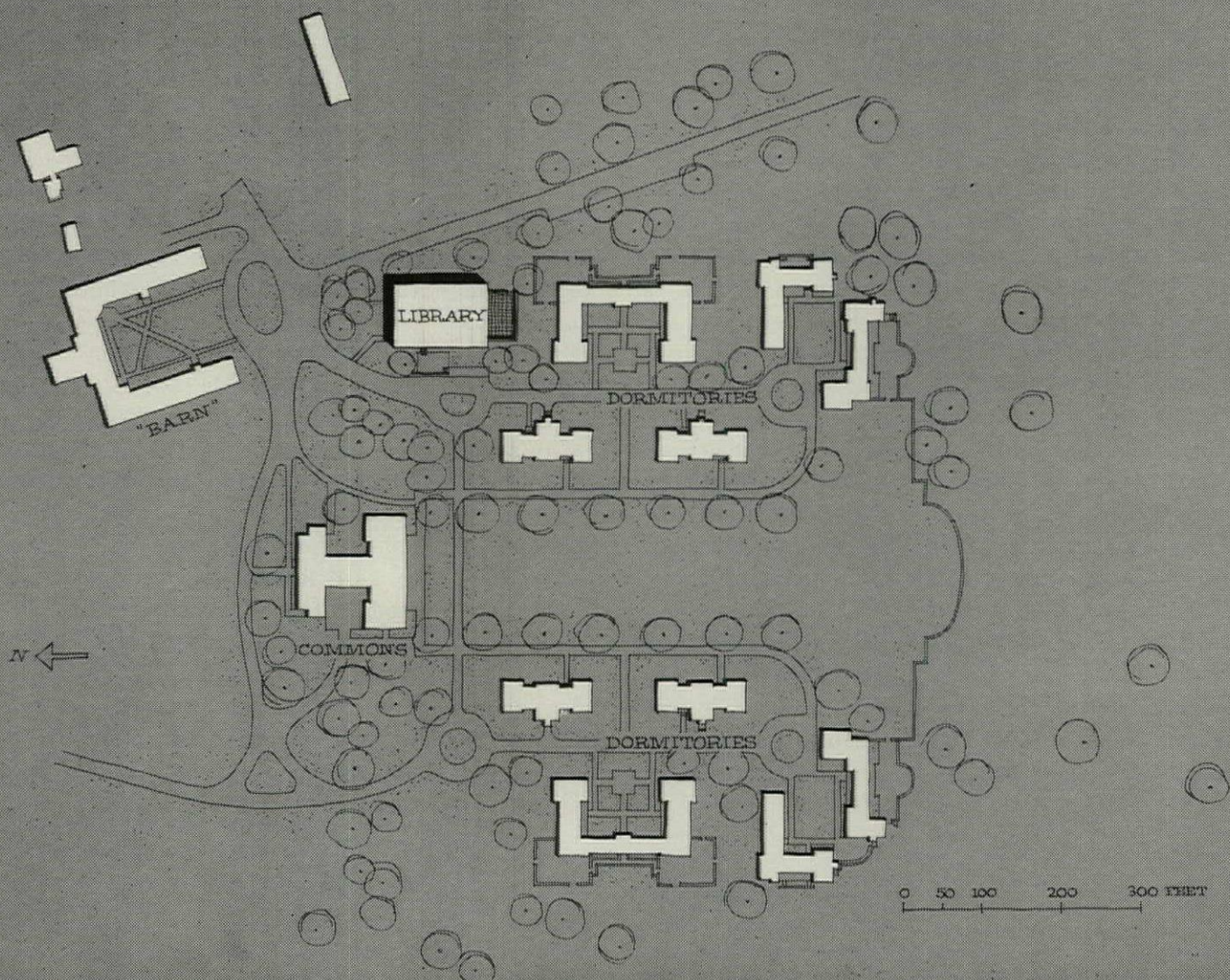
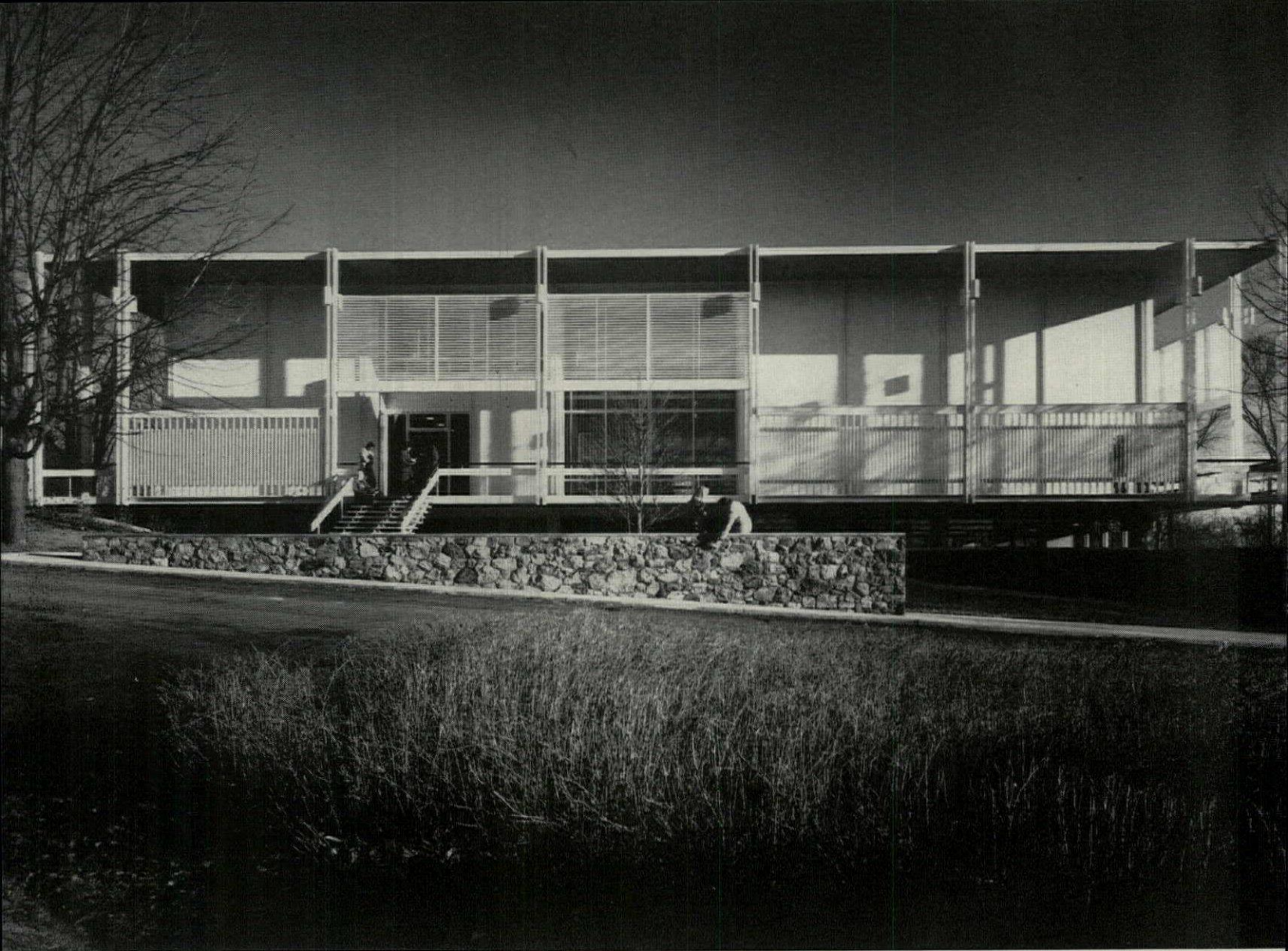
But parks are not the only permanent values which might be obtained. Architect Victor Gruen's plan for the vetoed Washington Fair, for example, planned to use the fair site for a much needed permanent benefit: a planned "new town" satellite. But, indeed, if the only permanent values were facilities for trade shows, a museum of science, and a fun-fair like Tivoli in Copenhagen (or Disneyland in Los Angeles, if you will), there would at least be something lasting gained.

Thinking in terms of permanent values might actually turn up some striking temporary values as well. The 1964 New York Fair should be a brilliant and festive event, set in an important new civic and architectural setting. But, if a new site cannot be used, let's at least have some fresh thinking about the old one, even if it means bringing in people—including talented planners and designers—who don't remember the 1939 fair.



Hatchitecture

Architects, who at one time or another seem to have been blamed for everything else, may now have to take responsibility as well for that ultimate expression of modern culture, ladies' hats. In Manhattan, at least, the new spring collection of Sally Victor, Inc. includes Bucky Fuller's "Geodesic Dome" in thin white straw, Wright's "Guggenheim Museum" in beige straw-cloth (also available in black), and Mies's "Seagram Building" in white felt. (Come on, Sally, it looks more like a crocus to us.) Rumor has it that a test model of the Air Force Academy took off in a high wind on Fifth Avenue, and that the G.M. Technical Center was badly crushed in a traffic jam at Saks. The game is on, however, and spring is still quite a few weeks off.



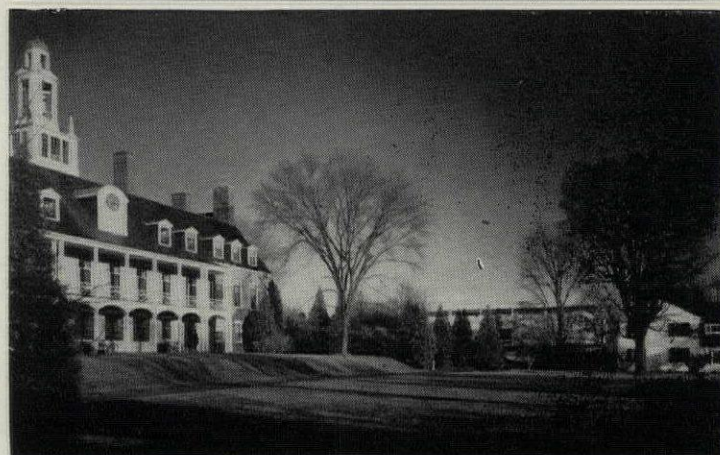
Bennington's trim new library suggests that modern architecture can be made to fit comfortably into a traditional New England setting.

Continuity without compromise

When Bennington's intimate little campus was built in 1932, it was felt that both the New England setting and the historical associations of the area called for a traditional, axial, colonial scheme. The decision may have been sound for its time; after all, there was not very much good modern architecture around to offer a convincing alternative. In any case, Bennington College became a sort of tiny "University of Virginia"—largely rendered in white clapboard: an imposing, central commons building at one end, and a series of small-scale dormitory houses extending symmetrically outward from the commons to form a U-shaped campus (see site plan, opposite). These delightful little houses were grouped around small courts that, in turn, created a sort of college community rather than an "educational plant."

Since that time, Bennington's campus has grown very little. Some converted farm structures outside the central quadrangle were put to use, and a few subsidiary buildings sprang up here and there. Then, three years ago, Bennington found it possible to move its makeshift library from a converted barn into a new building. At once, certain fundamental decisions had to be made concerning the site and the character of the new library structure, decisions typical of those faced by many an established college today.

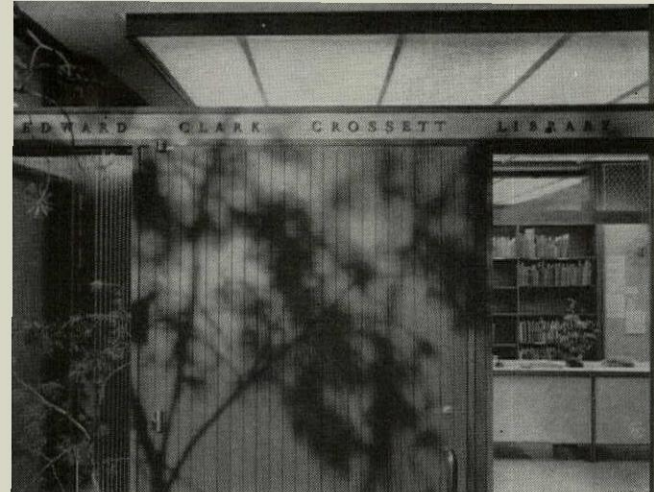
The first decision Bennington made was that the building must be a good example of modern rather than colonial architecture. Both the character of the college and the growth of the modern movement in architecture made the trustees reject any more fake-colonial structures. The second decision was to make the building a part of the central quadrangle, rather than quarantine it on the outer fringes of the campus where it might clash less violently with its



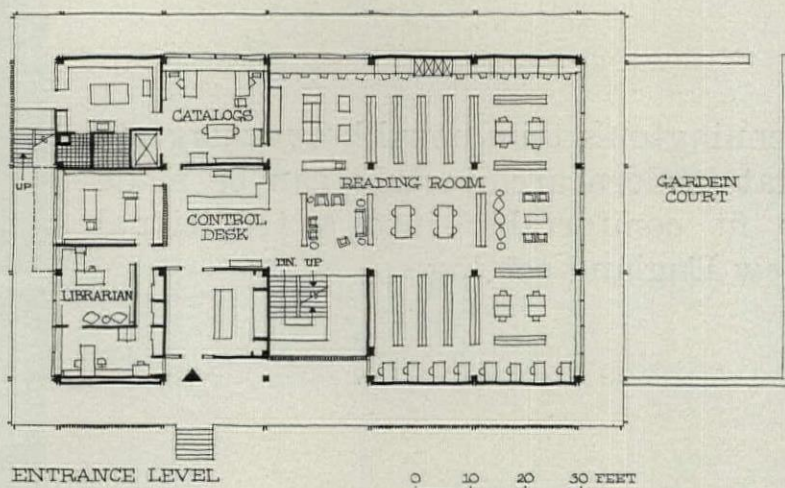
PHOTOS: © EZRA STOLLER

surroundings. The decision called for faith in the architects—Pietro Belluschi and Carl Koch & Associates—and in their ability to produce a design that would be both modern and in harmony with the existing clapboard campus. When the Edward Clark Crossett Library was completed, virtually all Benningtonians agreed that this faith had been justified.

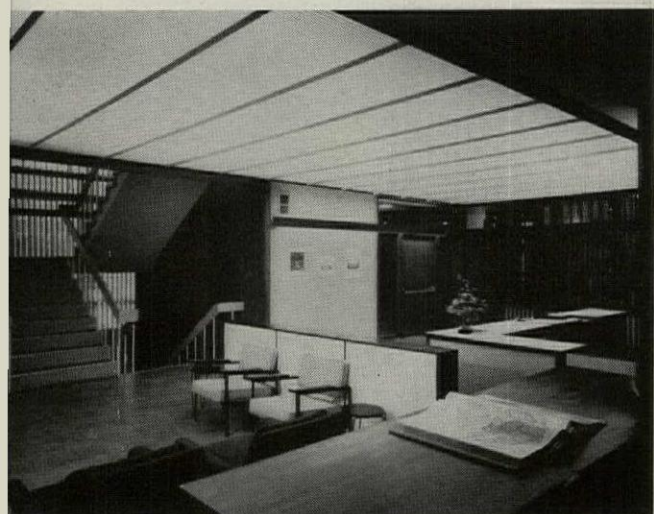
In trying to bring the library into harmony with its colonial surroundings, the architects used three devices: first, they sited the building so that it fitted naturally into the pattern of rectangular spaces formed by the existing dormitories and was approached almost axially by way of an existing cross-walk that passes in front of the central commons. Second, they used materials and details that recalled those of existing structures—white painted wood siding, horizontal wood louvers that relate to the clapboard patterns on the campus, vertical fins around the porch that recall colonial pilasters, brick and stone walls and paving that resemble similar details in neighboring structures. And, finally, the architects kept down the scale of the library so as to make it conform to the scale of the dormitories. This was done, partly, by sinking most of the bottom floor into the ground and making the building seem only two stories high, and partly by refining the details of wood trim and siding to maintain interest when the building is seen at close quarters. Bennington's President William Fels said of the new library: "This is a warm, pleasant building. It doesn't intrude. The campus has gathered around it." This was high praise indeed, but a leading library expert matched it, saying flatly that "this is the best undergraduate library of its size in the country." The facilities that make it "the best" are described on the next four pages.



Entrance to library is at second but main floor level, shown also in plan (below). Control desk is visible beyond the main door.



Main floor contains the single, controlled entrance to the library proper. Immediately next to the entrance is an elegant stair leading to upper and lower levels. On this floor are a reading room, a reference library, and facilities for periodicals, biographies, and catalogue files. Beyond the control desk are the librarians' offices, a catalogue room, and a shipping room. The latter is served by a freight elevator (see plan).



Assistant librarians' office is located behind the wooden screen, thus helps to control the main entrance to the building. Many interior finishes are natural wood (some of it walnut) with occasional bright color accents.



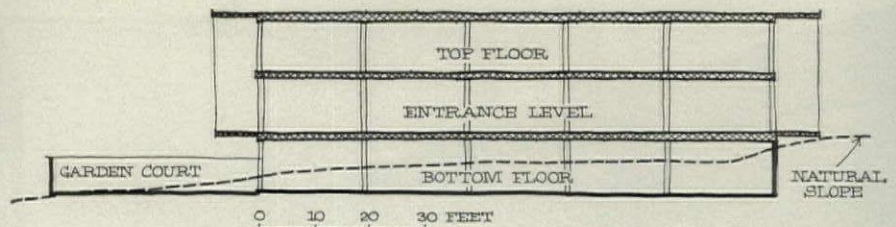
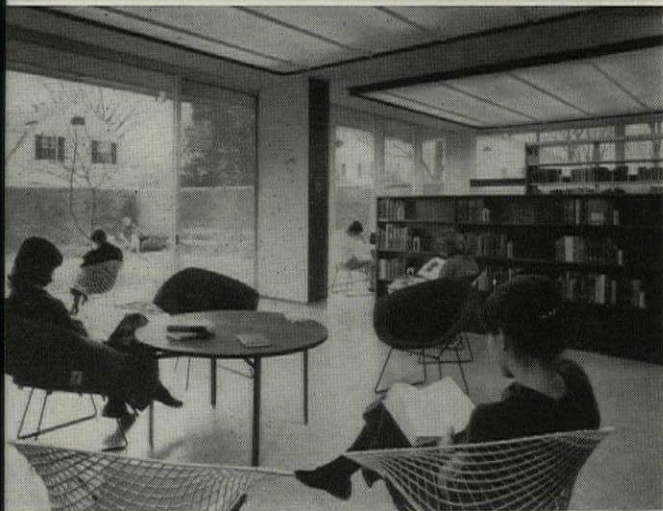
Typical study area on the main floor is an alcove created by shelving. The capacity of the library is 75,000 volumes, distributed over three floors. Here, as elsewhere in the building, the luminous ceiling hung above the reading areas is of a corrugated plastic with good sound-absorbing qualities.

Soundproofed booths are used throughout the library to give a high degree of privacy without taking up too much space. To drown out distracting noises in study areas, the acoustical consultants let the air-conditioning system emit a low hum. The resulting backdrop of sound helps students to concentrate.





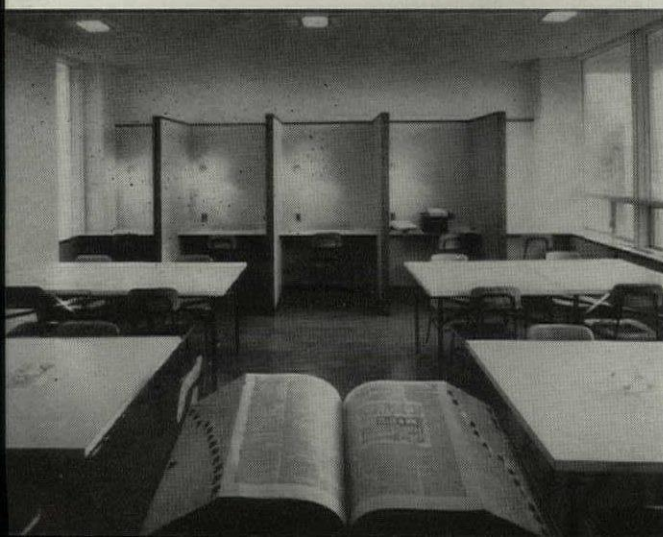
Sunken court at the south end of the building is an extension of the bottom library floor. This floor has shelves for more than 30,000 volumes, also contains a general storage area, mechanical equipment room, and toilets. Sliding glass doors (photo left) open the library to the court.



South-north section through the library shows how the architects took advantage of contours by sinking most of the bottom floor into the ground, thus lowering the silhouette of the building.



Top floor of the library contains special facilities such as the listening room (shown at left). The tables are specially designed for equipment to provide monaural, binaural, and stereo sound from both tapes and records for groups of up to 14 students, using earphones. Elsewhere in this room are three soundproofed booths for language training.



Typing room, likewise on the top floor, is equipped with soundproofed booths and has ceilings treated with acoustic tile. This room is directly accessible by means of an outside stair so that it can be used in the evenings when the rest of the library is closed. All windows in the building are double-glazed, and all spaces are fully air conditioned.

ARCHITECTS: Pietro Belluschi and Carl Koch & Associates; Frederic L. Day Jr., associate in charge; Warren Peterson, assistant in charge of project. LIBRARY CONSULTANT: Keyes D. Metcalf. LANDSCAPE ARCHITECTS: Sasaki, Walker & Associates. STRUCTURAL ENGINEERS: Nisso T. Aladjem and Edward K. True. MECHANICAL & ELECTRICAL ENGINEERS: Fred S. Dubin Associates. ACOUSTICAL ENGINEERS: Bolt, Beranek & Newman. GENERAL CONTRACTOR: Gordon & Sutton.

Porch 8 feet wide circles the entire building at the main floor level. Louvers for sun control, inserted into the exterior framework of the porch, give variety and depth to all façades. Although exterior finishes and trim are largely wood, the structural frame of the building is reinforced concrete. Cost of library was \$420,000.



Citizenship in building

PHOTOS: BALTAZAR KORAB



New financial headquarters helps cut a visual channel from Detroit's midtown to its river-front civic center.

In 1955 the president of the National Bank of Detroit was Charles T. Fisher Jr., whose family had fitted millions of alluring auto bodies to General Motors engines. When his bank, that year, acquired a \$3 million site beside old City Hall, he foresaw building a symbolic new banking headquarters that would match the industrial city's interest in merchandising by design. Incongruously, the vigorous young bank (set up by GM and the RFC in 1933, when Detroit's big banks failed to return from the bank holiday, it is now the nation's 12th biggest) was crowded behind the timid façade of a rented neoclassic office building put up in 1922, a Cadillac engine crammed into a Roman chariot.

Fisher died in 1958, at 52, while steel was being put in place for the new structure. But toward the end, watching the steel frame rise from his old office window across the street, he had another satisfaction to add to company pride. The building was set back just as far from the street as the old city hall next door, acceding to Detroit City Planning Director Charles Blessing's request that the bank help clear a majestic vista from midtown Cadillac Square to the river, where the vaunted new Detroit civic center was rising in spacious grandeur. Thus, civic pride abetted banking pride.

The new bank building, as intended, compels attention. Above the ground level, its walls are a mosaic on a mighty scale: 13-foot, 4-inch-high white marble panels alternate with spandrels set in deep stainless steel frames for emphatic shadowing. It is a "busy" wall, whose parts seem to shift and realign in the eye of the passer-by when he looks up. But, despite its ornamental feeling, it is also a shrewd wall, whose pattern is strong enough to survive any new neighbor's distractions. Columns supporting the building fit neatly behind the floor-to-floor overlap of the marble panels and windows (see page 100). Moreover, despite its drama, this wall is only 25 per cent glass, a much lower proportion than in conventional Detroit office building fenestration, deeply cutting the air-conditioning costs.

All for banking, the building ranks

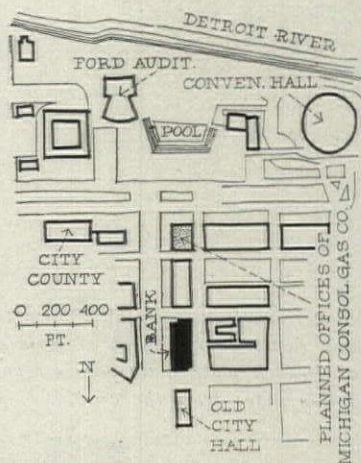


New bank is no skyscraper, at 14 floors including mechanical penthouse, but its patterned wall preserves its unique character even in the lap of taller towers. This view is from across Cadillac Square.

high among the largest bank structures in the country; when they go home at night these bankers lock the door, the downstairs door. The top three floors await further growth of the institution, entirely empty, neither rented nor even plastered.

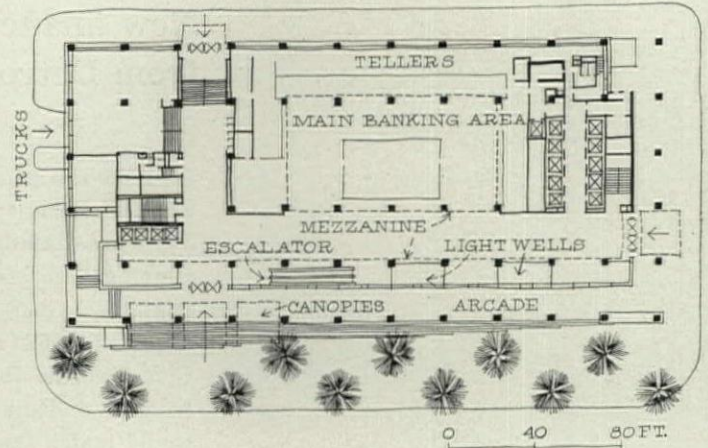
The bank's interiors are immaculately virile—a very flattering background for the working force, 71 per cent women. An even 60 foot-candles of illumination (at desk level) is poured from ceiling fixtures; there isn't a floor lamp or desk lamp in the building. A lavish, but farsighted touch: the ceiling fixtures today carry only two-thirds of their potential lamp capacity. "If lighting standards move up in years to come, we will want to be able to shift our standards up too—and easily, without plaster dust all over."

"We find our 2,700 people here at headquarters are dressing better in the new building," officers point out on tour. "We have more applicants for jobs. Look, do you see that fork-lift truck in the vault there? We have to move up to 30 tons of money every week in here, and the fork-lift truck seemed the smart way to do it. We don't say that we're unique, mind you, that other banks won't be doing things like this soon. But in this building we're doing these things now."

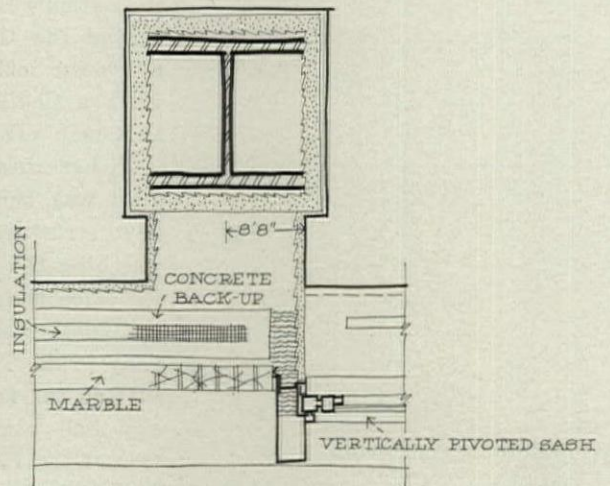


Wide Woodward Avenue was widened still more by setting the bank building back from the normal sidewalk line and including sheltered arcades in the outside bay of the structure. The sidewalk slopes away from the building, however, necessitating steps up to the arcade. On the river front at the end of the vista are the buildings of the new Detroit civic center. The new Michigan Consolidated Gas Co. building indicated above will also be set back, completing the civic gesture.

ARCHITECTS AND ENGINEERS: Albert Kahn
Associated Architects and Engineers, Inc.;
Walter B. Sanders, design consultant.
INTERIORS: W. B. Ford Design Associ-
ates, Inc.
GENERAL CONTRACTOR: Bryant & Detwiler.



Marble panels of curtain wall overlap each other from floor to floor, creating a cover for the columns which are tucked in behind (see detail drawing, right).

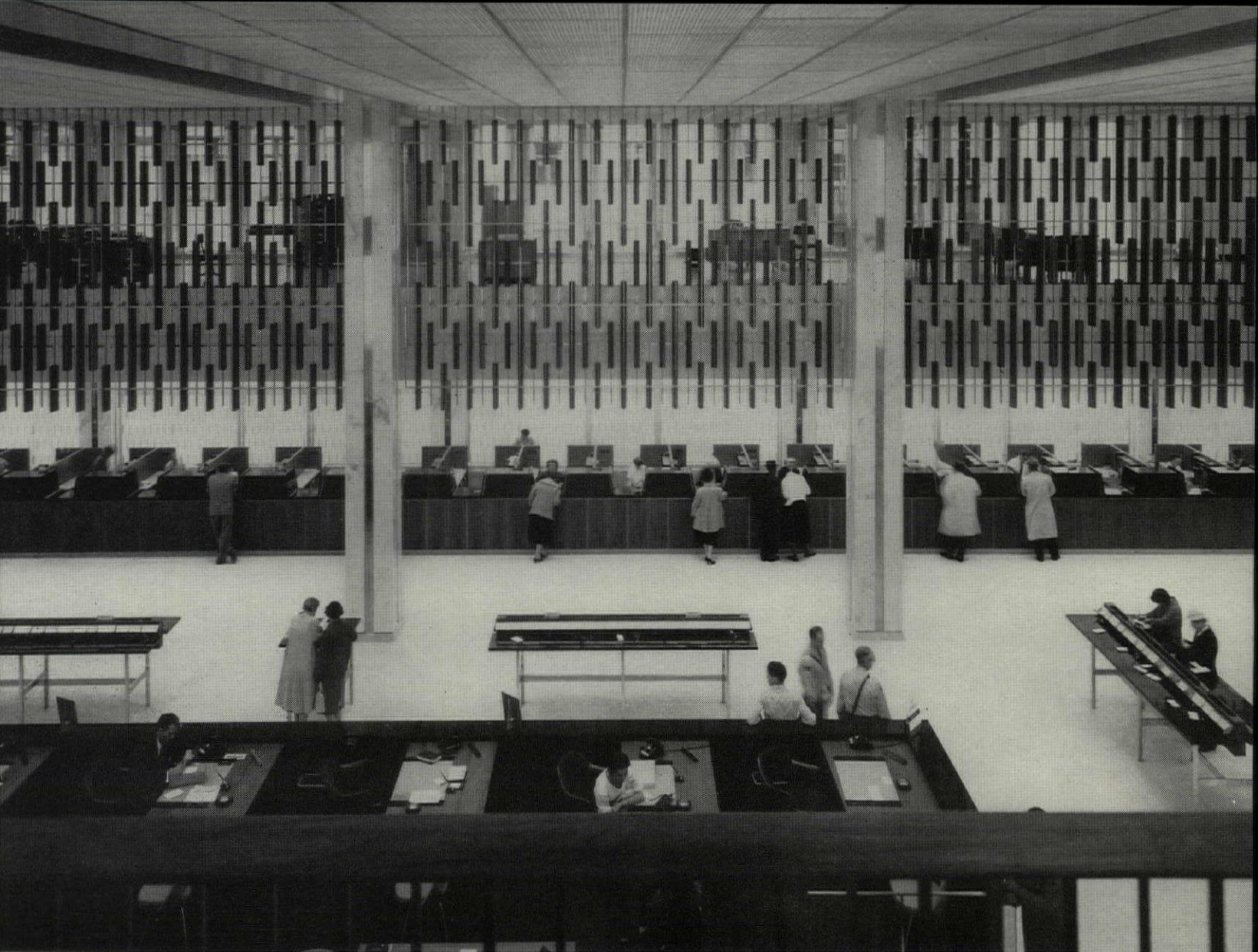


Window-wall detail at column is reversed on alternate floors.

Broad entrance stairway up to the main banking level at southeast corner was made necessary by the slope of the site. The banking floor has two other entrances.

Escalator leads from mezzanine down to the main floor. To the right of it is a wall of $\frac{1}{2}$ -inch plate glass panels separating this space from the arcade.



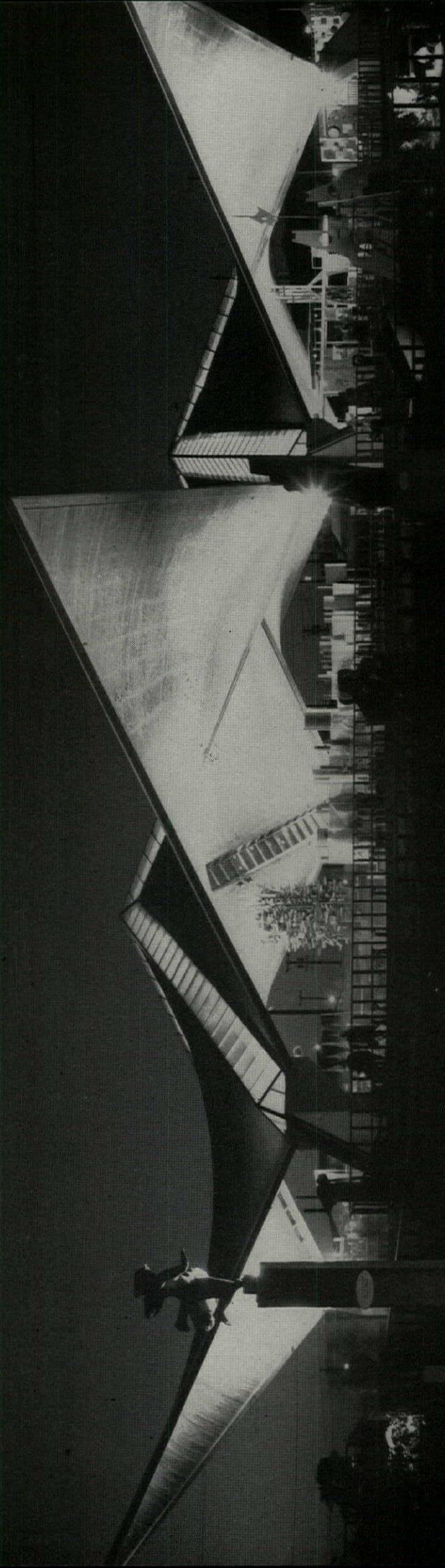


Wood screen, viewed from mezzanine, is the major decorative element in the main banking space. Tellers' stations are separated to keep transactions private.

Light wells add daylight and openness to the lower level which extends out under the outdoor arcade. Bulk banking and small loans are handled on this level.

Lighting is from recessed ceiling fixtures except in public spaces which have luminous ceilings. Polished counter on lower floor reflects fixture pattern.





Flying fir for a fair

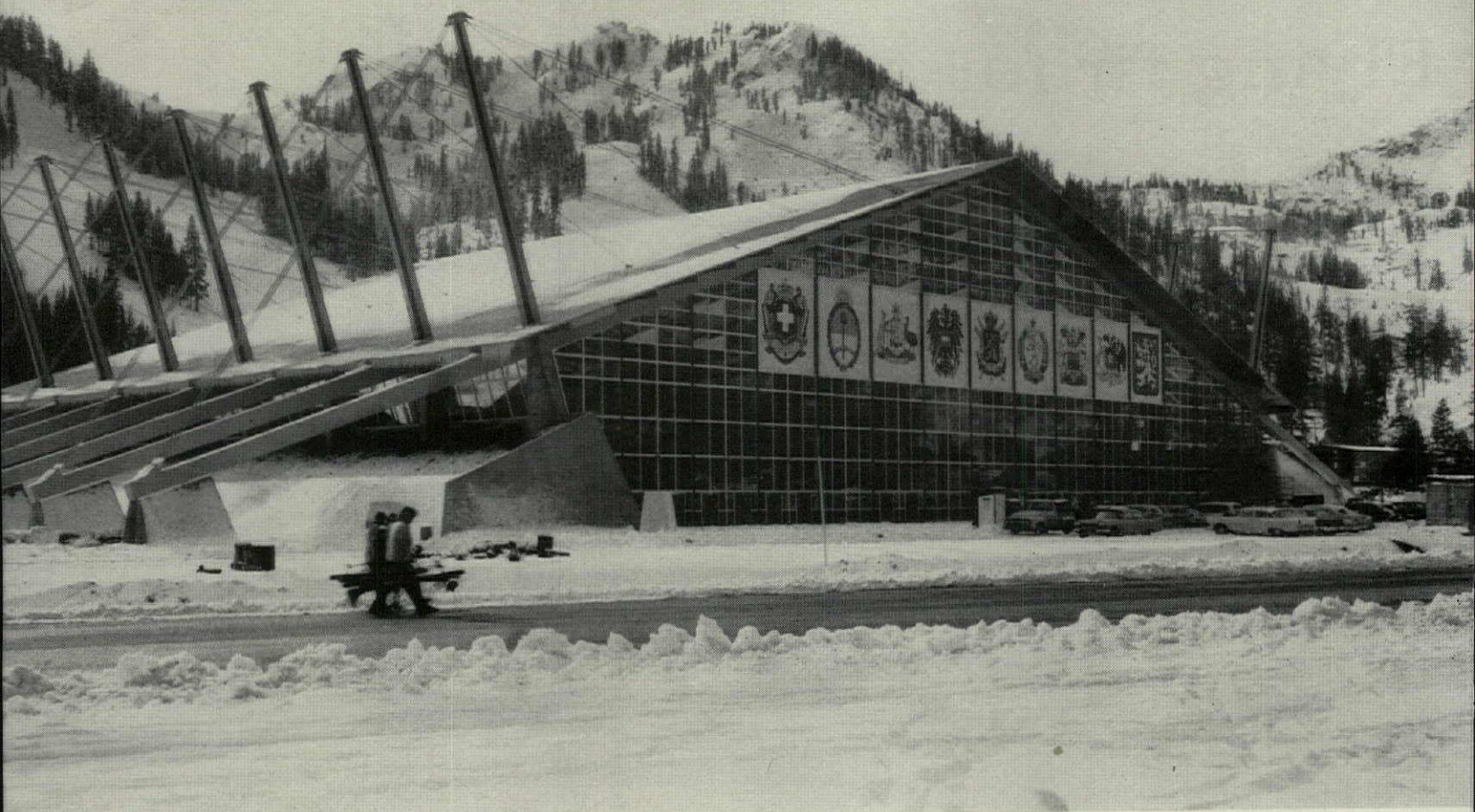
Star structure of the recent Oregon Centennial Exposition in Portland, and a dramatic demonstration of the capabilities of wood, is this graceful Forest Products Pavilion (1), designed by Architect John Storrs and Engineer James Pierson and built for the surprisingly modest outlay of \$84,000 (about \$4 per square foot). Its seven sweeping hyperbolic paraboloids, each 50 feet square and separated by 5-foot-wide plastic skylights (2), were formed in place of 1 by 6 inch tongue-and-groove boards of Douglas fir, bent over scaffolding and stapled and glued together in two successive layers set at right angles to one another. This cross-lamination forms thin (1½ inch), strong diaphragms spanning 75 feet, stiffened at the edges by beams made up of laminated 10-inch boards (3). Built with donations from some 800 lumber, plywood, pulp, paper, and logging firms in the state, the pavilion drew 1 million of the fair's 1,350,000 visitors (it has also brought building inquiries from churchmen, home owners, a manufacturer, a restaurateur, and a chain-store executive, and delighted a visiting band leader with its near-perfect acoustics). Plans are under way to enclose the building as a permanent structure for local youth activities. Display consultant: John Peter Associates. General contractor: George A. Moore.



2. Inside, wooden vaults hover over spare, sculptural exhibits of wood.

3. Outside, the shells soar above the gardens and playgrounds of the fair.





On the north, the main entrance to the arena is glazed against wind and weather, embellished with emblems of competing nations.

On the south, the arena is open to the sun and ski-jumping hill. Bleachers swing back for the opening and closing Olympic ceremonies.



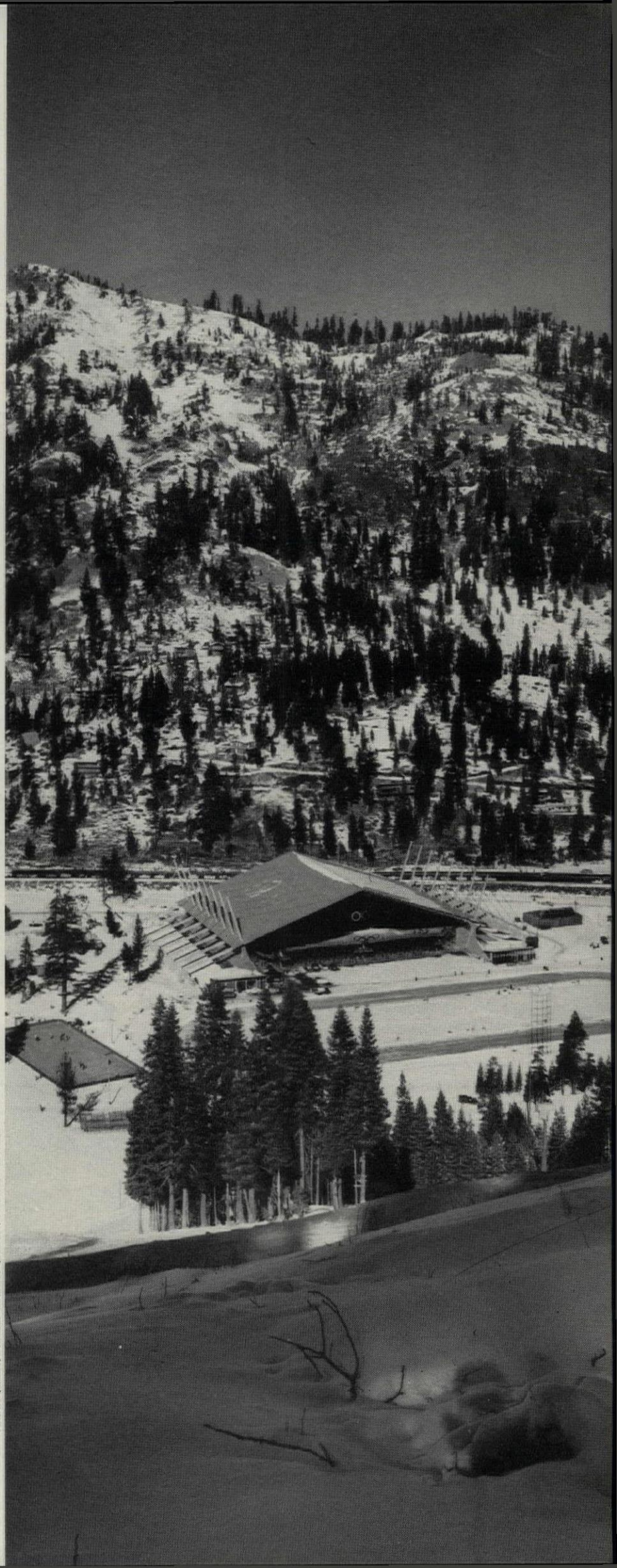
Squaw Valley's Olympic tent

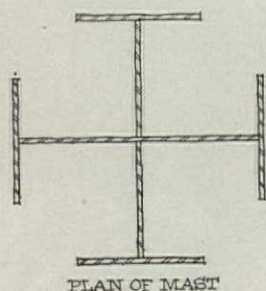
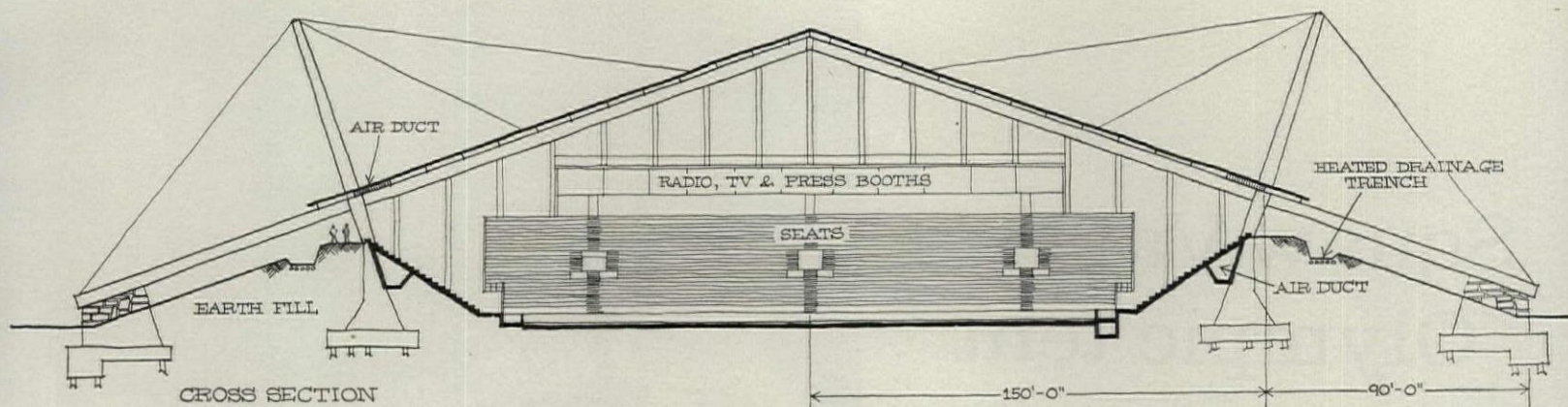
After more than three years of controversy and crisis, capped by two years of solid construction, California's fabled Squaw Valley at last stands ready for this month's Eighth Winter Olympic Games. Over \$16 million, including \$8 million in state and \$4 million plus in federal funds, have gone toward transforming this High Sierra wilderness into a veritable city for mountain sport, equipped with some of the best skiing and skating facilities in the world, dormitory housing for 1,200 athletes and officials, and scores of ancillary buildings ranging from restaurants and churches to a miniature shopping center, a hospital, and a social hall.

At the focus of this festive, if slightly scrambled, scene rises Blyth Arena, a \$3-million mountain tent under which 8,500 spectators will witness the major Olympic ceremonies, hockey, and figure-skating events. To gain a clear span of 300 feet while keeping heavy Sierra snow loads to a manageable 50 pounds per square foot, the designers suspended a roof of hollow cellular steel decking from steel bridge cables strung over 16 tapered steel masts. Heat cast off by a \$275,000 freezing plant (serving the inside rink and three others outside) is ingeniously blown through the hollow girders and roof deck, melting snow above and controlling condensation and drip inside. Ducts extend also under the stands to take the chill off the seats and help keep interior temperatures between 50 and 60 degrees. Across the south end, which is wide open to the warming sun, a pair of bleacher stands seating 3,000 will swing back on rollers to give spectators a clear view of the speed-skating oval and the Olympic torch and ceremonial pageantry outside. The arena, named for California Olympic Commission Chairman Charles R. Blyth, was built with a special federal appropriation and leased to the state. After the games it will be operated as an Olympic memorial stadium for sports, conventions, and other events which the promoters hope will be attracted to Squaw Valley's new year-round park.

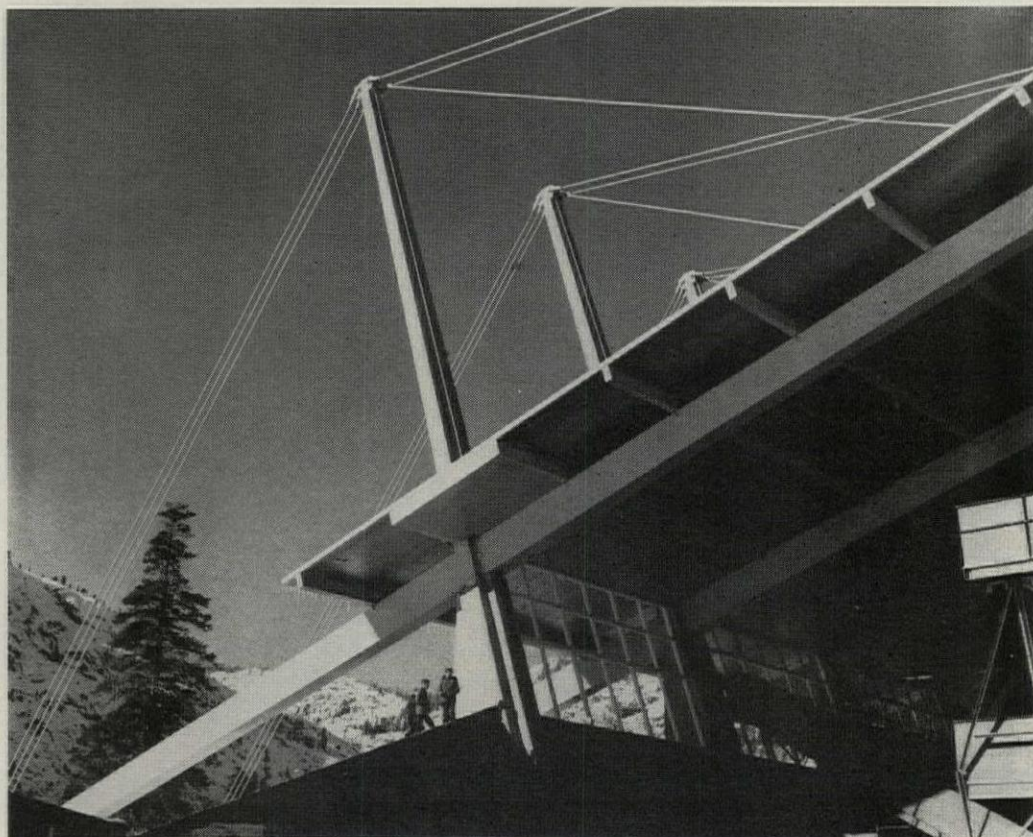
Spectacular setting of Sierra peaks is reflected in the design of Squaw Valley's "big top." In front is the speed-skating oval; to the sides, outdoor rinks and service buildings. Hills behind are dotted with private cabins.

PHOTOS (RIGHT) : GEORGE KNIGHT; (OTHERS) : RONALD PARTRIDGE





Built like a bridge, the arena's roof is hung from 31-ton test cables strung over 60-foot masts and tied down to concrete piers. Heat thrown off by the 1,200-horsepower refrigerating plant which freezes the inside and outside rinks is blown through the hollow steel roof girders and cellular decking to melt snow. It is also used to provide heat and hot water for dressing rooms and to heat pipe trenches which carry away snow sliding off the roof. A sliding connection at the roof's 90-foot-high ridge allows 22 inches of vertical movement as varying snow loads and temperatures cause the cables to expand and contract.



BLYTH ARENA, Squaw Valley, Calif.
 ARCHITECTS: Corlett & Spackman;
 Kitchen & Hunt, associated. INTERIORS: Maurice Sands. ENGINEERS: H. J. Brunnier, John M. Sardis (structural); Vandament & Darmsted (mechanical, electrical); Kennedy Engineers (utilities); Punnett, Perez & Hutchison (civil). CONTRACTORS: Diversified Builders, Inc.; York Corporation; Independent Iron Works, Inc.



PHOTOS: RONALD PANTHORN

During the next decade construction expenditures will exceed the total of the past 35 years, including the boom of the late twenties. By 1969 private nonresidential building alone will top the current level by 72 per cent—a FORUM forecast.

The forecast of money to be spent for new construction during the new decade is such a staggering total that it is difficult to comprehend: six hundred and seventy billion dollars, or two-thirds of a trillion. Only by comparison does this figure take on meaning:

► It is 60 per cent more than the total of new construction expenditures for the decade just closed.

► It is more than the total of all money spent on new construction since 1925.

► It far exceeds last year's gross national product (\$480 billion), the aggregate value of all goods and services produced by U.S. industry.

► And, if still further yardsticks are necessary, it is more than twice as big as the national debt (\$285 billion).

Despite its staggering size, this \$670-billion construction forecast is actually quite conservative. It is measured in 1959 dollars and does not therefore take into account any inflation that may occur between now and 1969. And, it is based on the assumption that future building activity will provide for no faster improvement in living standards and industrial capacity than has taken place over the past decade. Since the volume of construction seems to bear a fairly steady relationship to the total amount of economic activity, there will be more building than indicated in this forecast if there is to be an increase in the country's rate of economic growth. And this seems likely.

Not all categories of construction will participate equally in the coming boom. Some, as will be seen below, will even decrease in volume during the next ten years.

The trend of private nonresidential building will hold the spotlight. The annual rate of expenditures in this category is slated to increase 71.8 per cent between now and 1969 to almost \$15 billion. (The total for both public

and private nonresidential building for the decade is expected to be \$185 billion compared with \$110 billion during the past ten years—see chart, left). Within this category, private industrial building will be the prime mover; it is expected to increase 170 per cent (the steepest individual increase in the entire forecast) to \$5.4 billion.

Residential building expenditures (both public and private), while they will bulk larger than those for nonresidential buildings, nonresidential, will rise only 25 per cent to the \$29-billion level by 1969. (The total for the decade will be \$256 billion.)

Among the other major categories of construction, public utilities will rise 73 per cent; highways, 66 per cent; sewer and water, 83 per cent.

This bright forecast of the industry's future grows out of two studies just completed by FORUM's economic consultant, Miles Colean. One of these is a study of the probable trend of construction activity in the current year made last month with the aid of preliminary figures for the year just closed. The other is Colean's third long-range forecast for FORUM. (Earlier ones appeared in the December 1956 and February 1958 issues.)

Colean's detailed estimates are tabulated on page 114; the reasoning behind them and his comments are presented below:

1960. It cannot, of course, be expected that construction activity every year will be on the trend line. Last year was well above the line; the current year will be somewhat below it. In terms of physical volume (expenditures measured in 1959 dollars) total construction activity for 1960 will be about 2 per cent above 1959's spectacular outlay, compared with an 8.5 per cent gain in the physical volume of construction from 1958 to 1959. This temporary slowdown during 1960 in the year-to-year rate of advance will

not be widely distributed among the various categories of construction. On the contrary, it will be attributable solely to the behavior of residential building and farm construction on the private side and to a limited group of government activities—housing, military construction, and highways. Otherwise, 1960 will be a boom year.

The volume of commercial building will be much heavier in 1960 than in 1959, due to a continued increase in mercantile construction (mainly shopping centers) and to a revival of office-building construction which early in 1959 seemed to be in for a real slump. Private industrial construction will again forge ahead at a substantial rate, 25 per cent ahead of the 1959 performance, thus vigorously reversing a two-year slide. All other kinds of nonresidential building will also make satisfactory gains, overcoming the hesitations that showed up last year. Utilities construction will also continue the upgrade, and move past the previous high set in 1957.

Although residential building as a whole will be off around 4 per cent in terms of dollar outlays and 10 per cent in terms of new units started (1.2 million), private apartment building should at worst hold close to the 240,000 units estimated for 1959. The housing drop will be largely confined to single-family house production and to that part of single-family house production that is dependent on FHA and VA financing. Nearly all the apartment building will be conventionally financed, and a good part will be co-operatively owned.

Except in the categories previously mentioned, government construction will also make substantial advances in 1960, although, on balance, the total expenditure will probably move only slightly ahead of that of last year. Administrative and service structures will make the best gains, but both educa-

tional building and hospital and other institutional building should also advance. Last year's slump in school building will definitely be reversed.

The more moderate tone of activity in 1960 is largely traceable to the special exuberance in 1959 resulting from anti-recession measures which were taken the year before but became effective mainly after the recession was over. Thus 1959 borrowed in advance some of the activity which normally would have occurred in the present year. Taken together, the aver-

age rate of growth for the two years (6 percent) is a very healthy one and still somewhat in advance of the rates shown in FORUM's long-range projections.

1960-69. Plainly, the next decade will be a busy one. More than this, it will have to be a busy one if the U.S. is to supply the structures that will be required for a growing population and bettering life. FORUM's forecast figures are not dream figures. They are projections of minimums that are involved simply in maintaining a

current rate of improvement on a per-capita basis. The rapidly increasing population poses special problems. FORUM has based its assumptions on the second highest of the four latest census projections of rate of population increase. If the actual growth proves to be greater than this, the forecast figures will represent retrogression rather than progress. If the growth rate proves reasonably accurate, the figures still will not allow for any increase in the rate of improvement in living and working standards.

1969 FORECAST SUMMARY

	1959	1960	1964	1959-64 change	1969	1959-69 change
TOTAL NEW CONSTRUCTION¹ (expenditures in millions of 1959 dollars)	\$54,200	\$55,200	\$65,250	20.4%	\$79,000	45.8%
Private Total	38,000	38,900	44,550	17.2	54,250	42.8
Nonresidential buildings	8,700	10,050	11,350	30.5	14,950	71.8
Industrial	2,000	2,500	3,500	75.0	5,400	170.0
Commercial	3,850	4,400	4,550	18.1	5,700	48.1
Office, warehouse, loft	1,925	2,150	2,225	15.6	2,850	48.1
Store, restaurant, garage	1,925	2,250	2,325	20.8	2,850	48.1
Other nonresidential buildings	2,850	3,150	3,300	15.8	3,850	35.1
Religious	950	1,000	1,000	5.3	1,050	10.5
Educational	550	575	700	27.3	875	59.1
Hospital and institutional	570	650	675	18.4	925	62.3
Social and recreational	550	675	675	22.7	700	27.3
Miscellaneous	230	250	250	8.7	300	30.4
Residential buildings (nonfarm)	22,150	21,450	23,900	7.9	28,200	27.3
New dwelling units	17,000	16,000	18,000	5.9	20,600	21.2
Additions and alterations	4,400	4,600	5,000	13.6	6,600	50.0
Nonhousekeeping ²	750	850	900	20.0	1,000	33.3
Farm construction	1,750	1,650	1,700	-2.9	1,800	2.9
Public utilities ³	5,200	5,500	7,400	42.3	9,000	73.1
All other private construction	200	250	200	0	300	50.0
Public Total	16,200	16,300	20,700	27.8	24,750	52.8
Nonresidential buildings	4,450	4,650	5,875	32.0	7,400	66.3
Industrial	350	375	575	64.3	700	100.0
Educational	2,600	2,700	3,475	33.7	4,475	72.1
Hospital and institutional	450	475	575	27.8	750	66.7
Administrative and service	575	650	750	30.4	850	47.8
Other nonresidential	475	450	500	5.3	625	31.6
Residential buildings	1,025	800	800	-22.0	800	-22.0
Military facilities ⁴	1,500	1,400	1,400	-6.7	1,350	-10.0
Highways	5,800	5,700	8,000	37.9	9,650	66.4
Sewer and water ⁵	1,450	1,600	2,100	44.8	2,650	82.9
Miscellaneous public service	550	600	750	36.4	950	72.7
Conservation and development	1,200	1,300	1,500	25.0	1,650	37.5
All other public construction	225	250	275	22.2	300	33.3

1 Includes major alterations and additions.

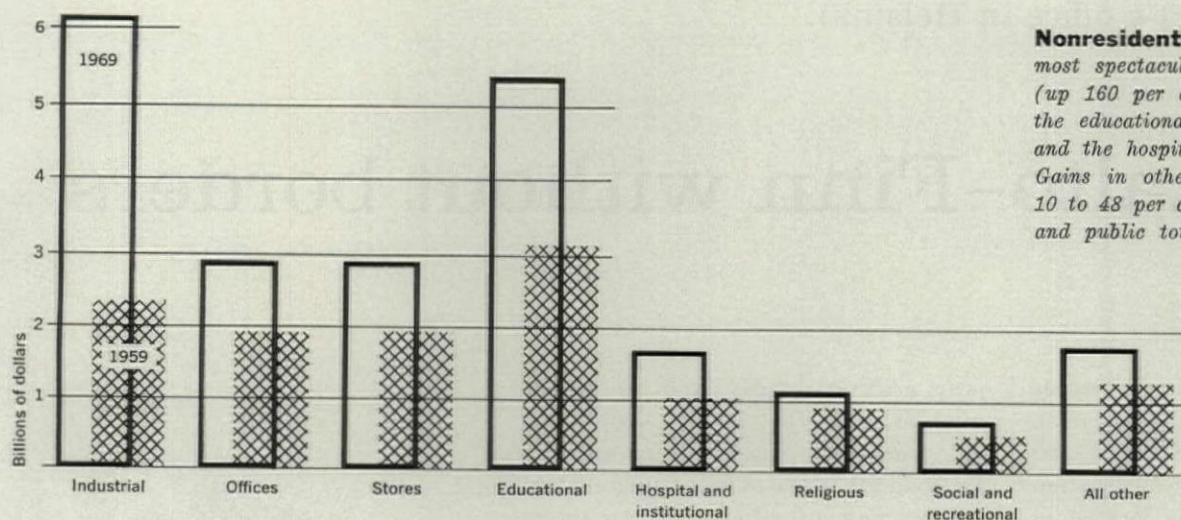
2 Includes hotels, motels, and dormitories.

3 Includes power plants, telephone exchanges, stations, maintenance shops, warehouses, etc., as well as power, telephone, and telegraph lines and other non-building construction.

4 Includes mainly warehouses, barracks, theaters, hangars, schools, etc., as well as airport, and other nonbuilding construction.

5 Includes sewage plants, pump stations, etc., as well as nonbuilding construction.

Note: All 1959 figures are estimates.



Nonresidential building gains will be most spectacular in the industrial category (up 160 per cent between 1959 and 1969), the educational category (up 70 per cent), and the hospital category (up 64 per cent). Gains in other categories will range from 10 to 48 per cent. Chart is based on private and public totals measured in 1959 dollars.

The decade may therefore be called the breathless decade as well as the golden decade, because it will involve a lot of exertion. The forecast assumes that the U.S. will be able to avoid serious economic setbacks and will avoid blowing itself up. But even with these essential accomplishments, there will be plenty of problems including those of adding to, reorganizing, and substantially rebuilding cities—the environment in which most of the construction work will take place. Fundamental to all this is the problem of how to provide the savings required to finance the massive outlays ahead. Construction men will, therefore, be deeply concerned with the attainment of government policies that promote growth and increase confidence in long-term investment.

By the end of the next ten years, total annual expenditures for new construction (in 1959 dollars) will be close to the \$80 billion mark, or about 46 per cent above the higher-than-expected level of 1959. Of the aggregate \$670-billion total estimated for the decade, private industrial and commercial building together account for \$90 billion. Another \$25 billion will be in religious and private educational and institutional building, and utilities will take about \$73 billion. Residential building, always the largest element in the private sector, will run to \$248 billion. Of this, new dwelling unit construction will account for over \$180 billion of which more than 20 per cent will be in apartment construction.

Government, including all federal,

state, and local public agencies, will become an increasingly important buyer of construction services as the decade progresses. During the fifties, which included a war with all its distortions, and also included a year such as 1959, with its special delayed anti-recession emphasis on public construction, government's share of total construction expenditures was about 29 per cent. By 1969, the government share can be expected to reach nearly 33 per cent and the level of public building will have reached \$24.8 billion, up 52.8 per cent from 1959. Aggregate government outlays during the decade will be at least \$200 billion.

On the other hand, privately financed construction is expected to rise 42.8 per cent to \$54.3 billion in 1969. Among the most crucial individual areas of activity are the following:

Industrial building. The two-year lag in business capital outlays is now over and, with good fortune, a protracted period of increase, replacement, and improvement of plant capacity can be expected. By 1969 private industrial building will be booming at an annual rate of about \$5.4 billion compared with 1959's \$2.0 billion. This 170 per cent increase will reflect the fruits of the millions of dollars of research in new products and methods now being conducted by industry and the constant need to improve the efficiency of operations in order to cut labor costs.

Utilities. On both private and government fronts, enormous additions to expenditures for power, transportation, and sewer and water facilities will be

required to cope with the demands of an increasing population and to service the expanse of urban development that will take place by 1969. Private public utility work will expand 73.1 per cent to \$9.0 billion; public expenditures on sewer and water systems will increase 82.9 per cent to \$2.7 billion.

Highways. The highway program is lagging because of problems of planning, cost, and financing. It is now clear that the original program was hastily and unrealistically put together. One of the most pressing immediate tasks facing the nation is to solve these problems and to proceed more rapidly with this vital operation. On the assumption that this will be done, highway construction expenditures by 1969 are expected to rise 66.4 per cent to \$9.7 billion.

Office and mercantile building. Both these areas have had very substantial growth rates during the postwar period, and both have recently showed tendencies to falter. For the next few years, rates of increase will be relatively moderate but in the latter part of the decade a large rise in activity should occur. By 1969 the annual rate of commercial construction should be \$5.7 billion, up 48.1 per cent from 1959. This kind of construction will, of course, be much involved in programs of urban vitalization and renewal.

Educational building. The number of persons of school and college age will be in the neighborhood of 77 million by 1969, compared with today's 60 million, and the race with classroom requirements will still be on. In addition

continued on page 192

A characteristic brand of humanism is being exported from this architect's office in Helsinki.

Alvar Aalto—Finn without borders

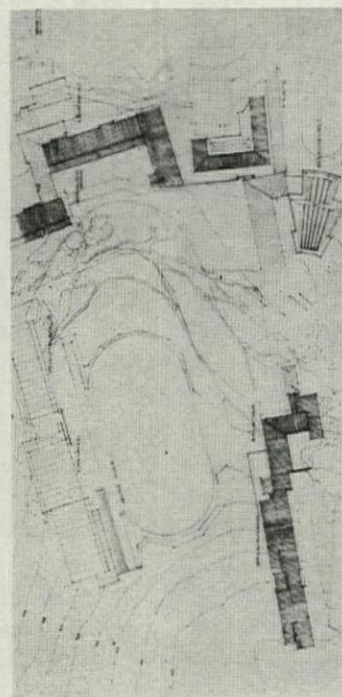
Finland's twentieth-century heroes include, most prominently, a musician and an architect—Jean Sibelius and Alvar Aalto. The small, forested nation (smaller than Montana) is located in the economic zone of the Soviet Union, practically on her physical front porch, and Finland's fierce determination to preserve her own identity may have a lot to do with this pride in cultural attainments. Sibelius is dead now, but Aalto, at 62, has never been more alive. In his new work, recently completed or still on the boards of his 25-man office in Helsinki, is new fuel for Finnish pride, and new lessons for architects all over the world. A long-time leader of the modern design movement, Aalto is going in for a forceful kind of romanticism, without remorse.

In the decade of the fifties Aalto practiced principally within Finland itself, and succeeded in producing deliberately rich architecture in his homeland's sparse economy. But now his buildings are being built in many far places, and—unusual for a modern architect, it can be said that each one of them is unmistakably, recognizably, his. In addition to recent completions in Finland shown on the following pages, Aalto's office has been producing: two buildings for Baghdad—an art museum and a post-and-telegram office; three for Germany—a cultural center in the Volkswagen town of Wolfsburg, a high apartment tower in Bremen, whose scheme is shown on page 119, and an opera house in Essen; one in France—a mansion for the Paris Art Dealer Louis Carré finished last year near Versailles; and one closer by, a museum at Aalborg in Denmark.

The single opinion most frequently voiced about Aalto's designs, old and new, is that they are unique, inimitable. Yet the motivations behind the spate of new work he recently has shown are exerting deep influence on young Euro-

pean architects today, and are beginning to cross the Atlantic and touch on young Americans' thinking too. Irregularity is one of his characteristics—a harmonious echoing of the subtle disorder of nature, the refusal of growing things (including people) to be entirely standardized. Another influence long present in his work, even in the metallic architectural movement of the thirties, is the loving use of ancient materials. The biggest words in his vocabulary still are wood and brick, and he likes to bulk his brick up in almost a mythical mood, in great windowless façades (see facing page and page 123). These familiar characteristics are even stronger today than in past decades, and strongest of all is his hearty insistence on freedom of form.

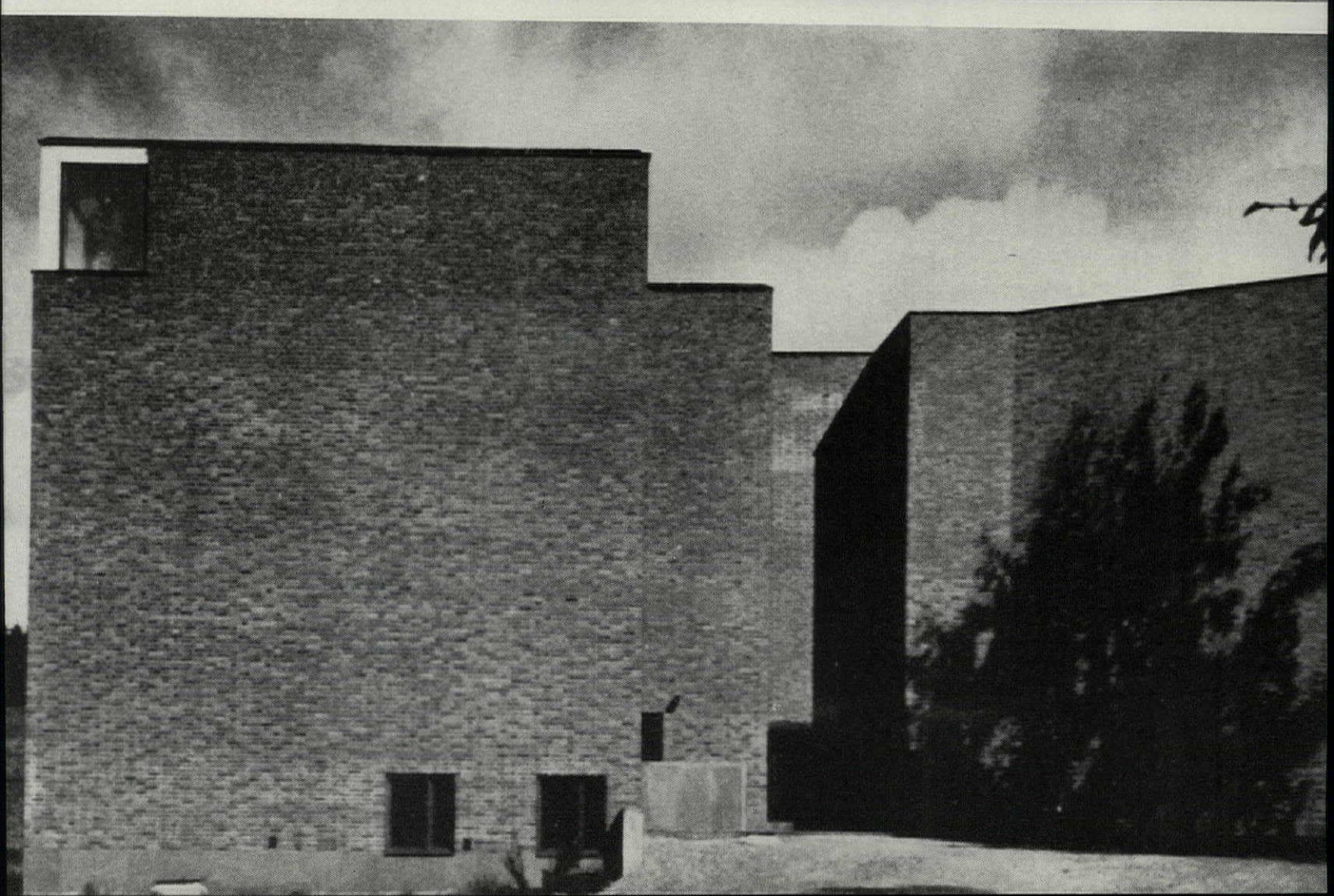
Aalto today is vituperative about the postwar styles of architecture which his colleagues in the modern rebellion of his youth helped lead up to. He scorns "... the inhuman dandy-purism of the cities ... there is a propaganda-born formalism pushing itself into the foreground. ... Grown-up children play with forms and curves which they do not control. It smells of Hollywood." But his expression in the medium of architecture itself is not vituperative or even violent, as are so many of the designs now being jarred into place by the young man's movement of modern architecture, the *new brutalists*. Aalto is gentle, very knowing, scrupulously detailed in his seemingly arbitrary compositions. His buildings are detailed down to the last lighting fixture to please, surprise, and delight people. In the words of Critic Frederick Gutheim, who shortly will publish a book on the great Finnish architect: "It is an architecture of allegory. ... Like poetry, this architecture succeeds by creating a world of its own, real but original."

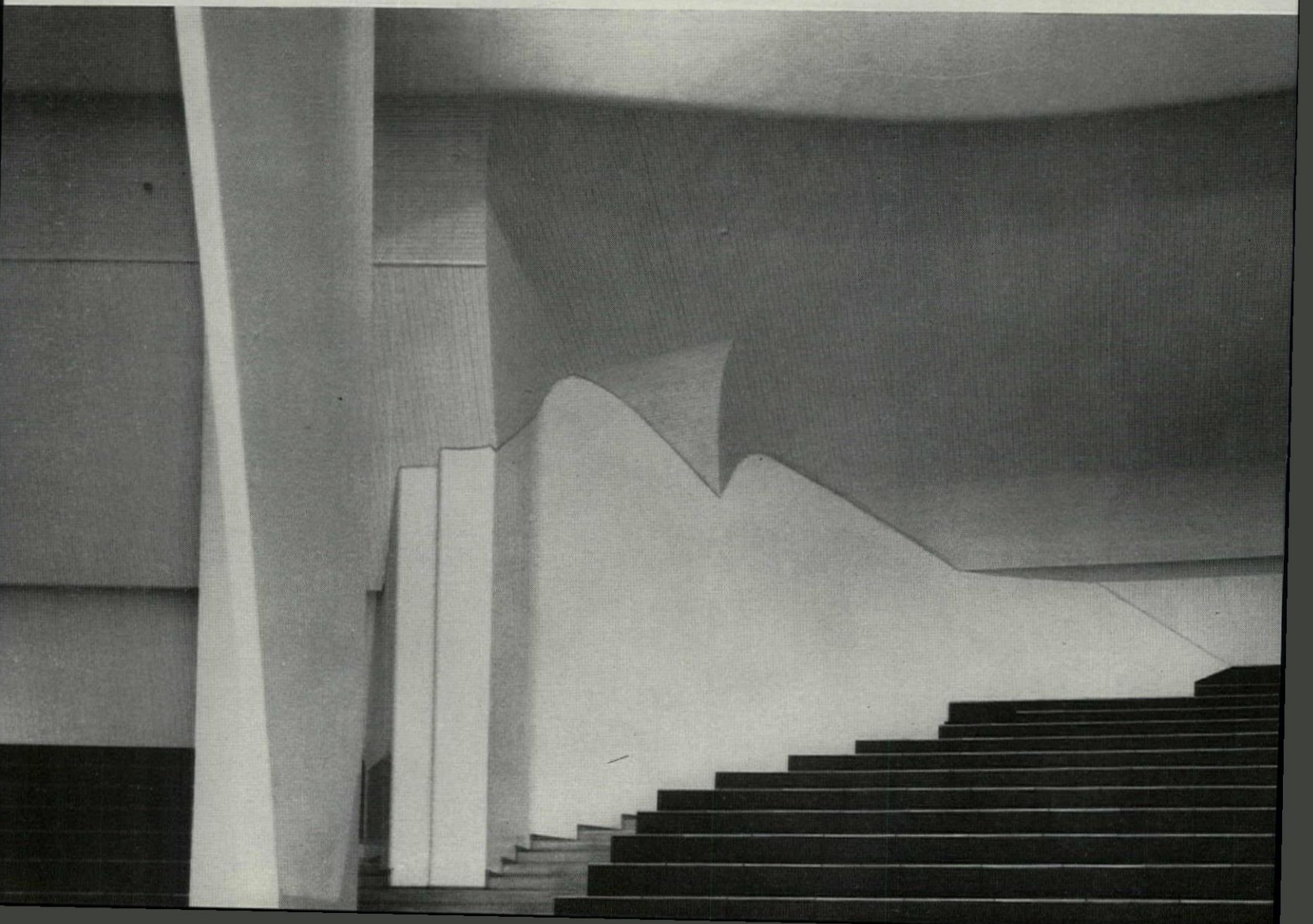
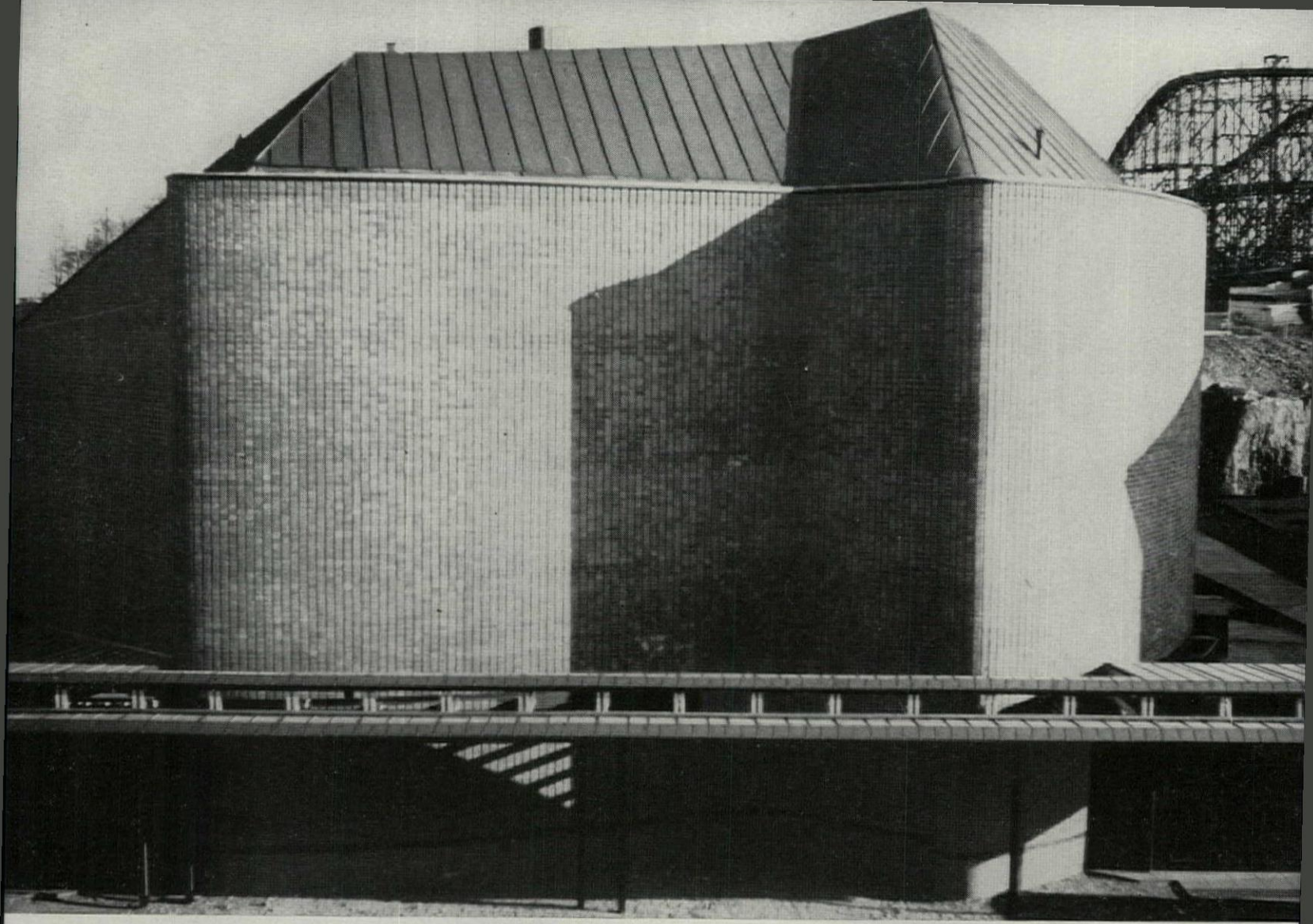


TEACHERS' COLLEGE
—mature educational buildings.

One of Aalto's most famous abilities is that of siting a group of sizable buildings in a beguiling arrangement, coherent yet lacking a formal or formidable air. In this new hillside campus he shows this ability well, and also demonstrates his control of the interspaces between buildings. As Gutheim comments, this architect's monumentality, informal as it seems, has its classic aspects too: "... Like the Greeks, he cloaks the approach to his building in the dynamic mystery of concealment, discovery, and rediscovery, at each point the building appearing in a fresh manner."

Inside college buildings, now in use, Aalto made a demonstration of another of his ingratiating talents for humanism. With the glass-walled lobby of the auditorium, upper right, he succeeded in matching the tranquil mood even of a surrounding forest.



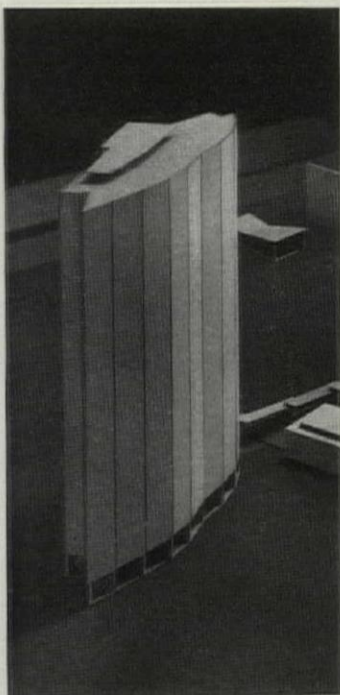




THE HOUSE OF CULTURE

-a comradely concert hall.

In Helsinki, left-wing political parties offered Aalto an uninhibited commission to design a large complex housing a 1,700-seat concert hall, with a cinema, café, hobby rooms, practice rooms and offices, and a small apartment house—a Finnish version of the Palaces of Culture in the neighboring U.S.S.R. The architect produced a lively, majestic shape by walling the large component, the concert hall (top photograph, facing page), in spacious sculptural curves of a specially made brick, laid with strong vertical shadowing. The roof is dark copper. The character is more personal than proletarian. An interior view of the concert hall is shown on facing page, bottom.

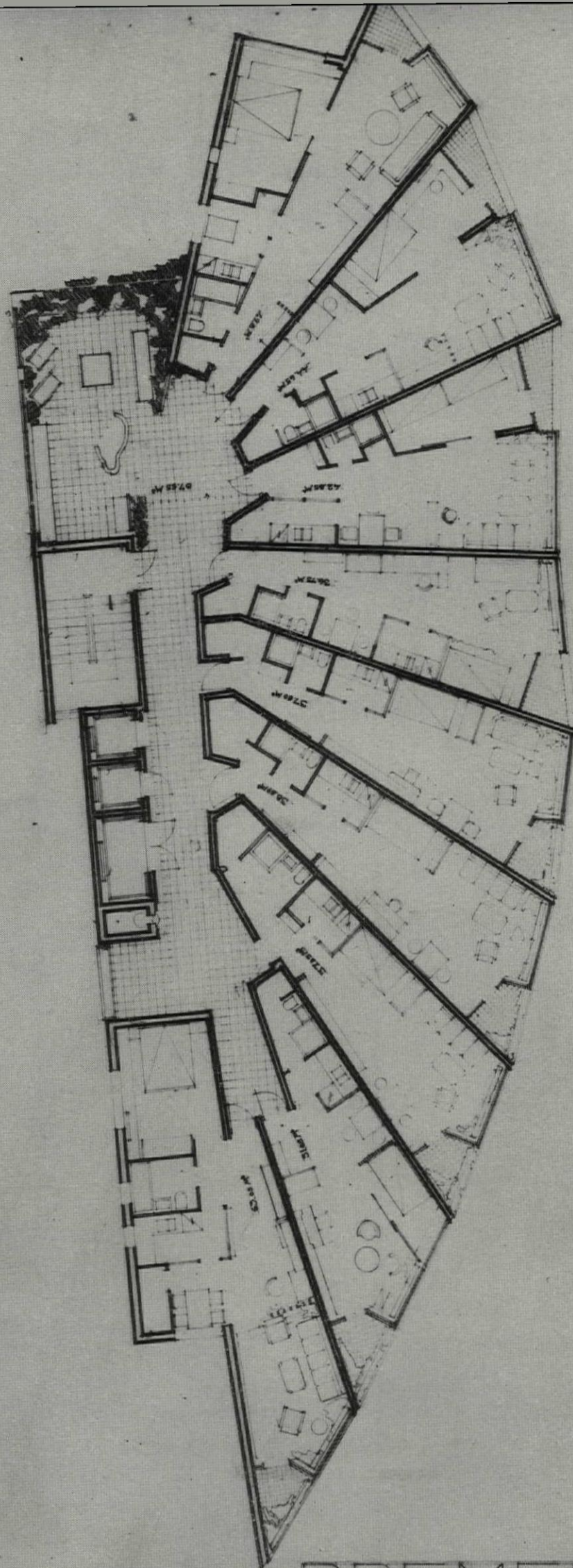


APARTMENTS

-a deal by a master hand.

Apartment house, designed by Aalto as part of the new business quarter in Bremen, Germany, has a startling layout (right), with apartments arranged in plan like a hand of cards. Larger apartments are at the ends, with three exposures. All have balconies. Intended for office workers, the apartments are generally oriented for access of an evening sun (above, model).

PHOTOS: (ABOVE) GEORGE SCHMIDT; (TOP OPP.) FREDERICK GUTHEIM (BOT. OPP.) RAYAS



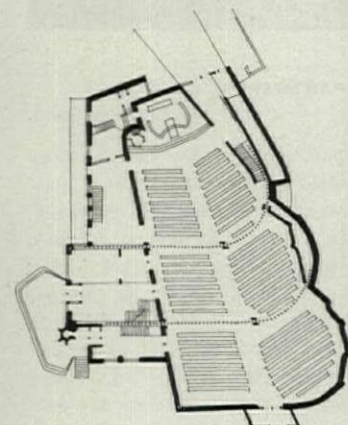
HOCHHAUS, BREMEN

IMATRA CHURCH*-enclosure of a spatial trinity.*

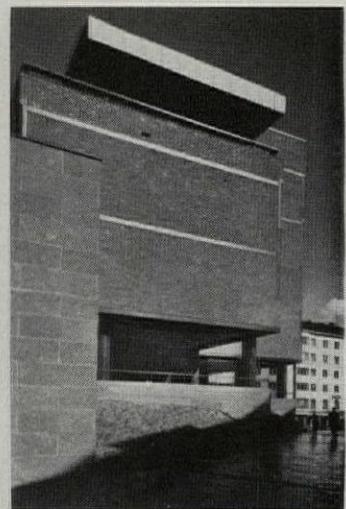
The physical task Aalto faced here was the balancing of space allotment among not only devotional functions but also the many social activities which actually are the most frequent use of the building by its congregation. Often these smaller activities happen simultaneously.

The architect's solution was dividing the large church "room" into three chambers, split by soundproof walls which can be slid into built-in housings. He expressed this division eloquently on the exterior of the church in making three distinct sections of façade, two of them curved to receive the sliding walls. High windows admit ample light; slanted inside some windows are other windows set in long slats to improve the daylight's quality (and to pick up the geometry of the handsome pipe organ). The roofs of the three sections of the church are also vaulted separately, extending the walls' visual parable of function upward. At the altar end the space is at its narrowest and highest.

The building is very white, and was intended to stand partly hidden by a thick grove of slender, tall trees; but most of the trees were uprooted by a freak tornado. The bareness of setting makes this plastic building almost too apparent, too bold—a little grotesque on the exterior. But the vitality of Aalto's forms and his unique handling of enclosed space make this, to his students, one of his masterpieces.







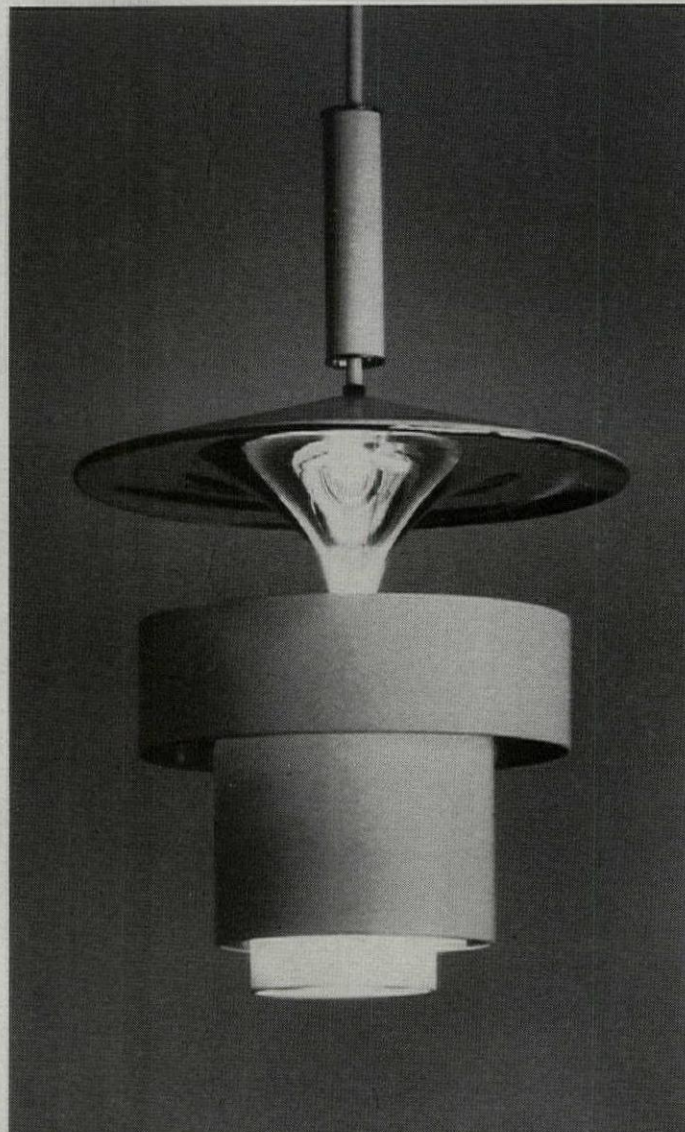
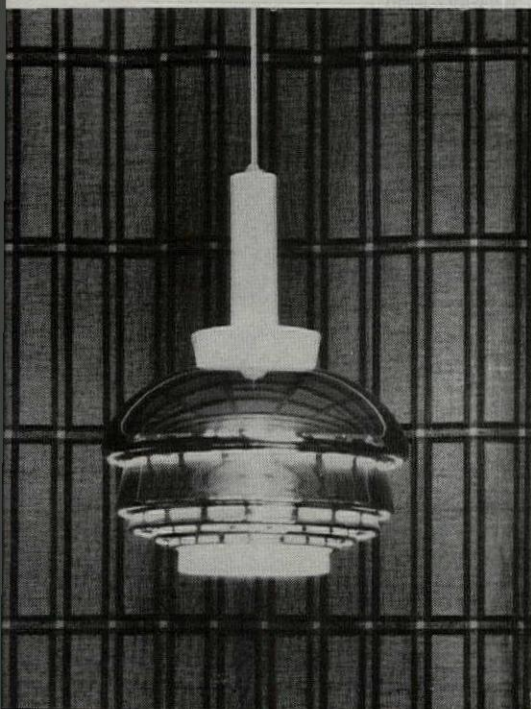
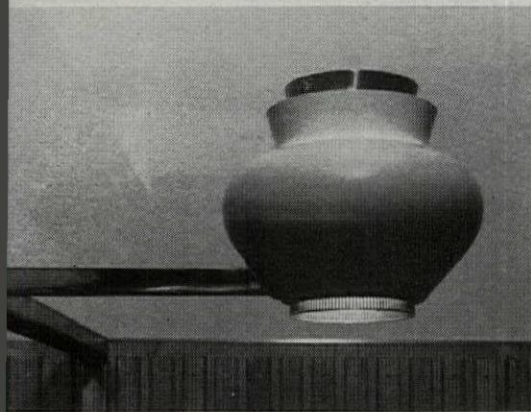
PHOTOS: HAYAS

PENSION INSTITUTE*-bureaucracy made palatable.*

In Finland old age has its terrors well cushioned; a beneficent pension plan is applied widely. The system is administered by a government bank which commissioned Aalto to design its headquarters in Helsinki.

The work which goes on in the bank is paperwork, but heavily mechanized, with batteries of automatic computers and many clerical employees (90 per cent of the 550 employees here are women). The building is luxurious, expensive, monumental—properly symbolical of one of Finland's characteristic social institutions. A great room on the ground floor, the only place where public and staff come in contact, glorifies this in furnishings and space, but most of all in its roof.

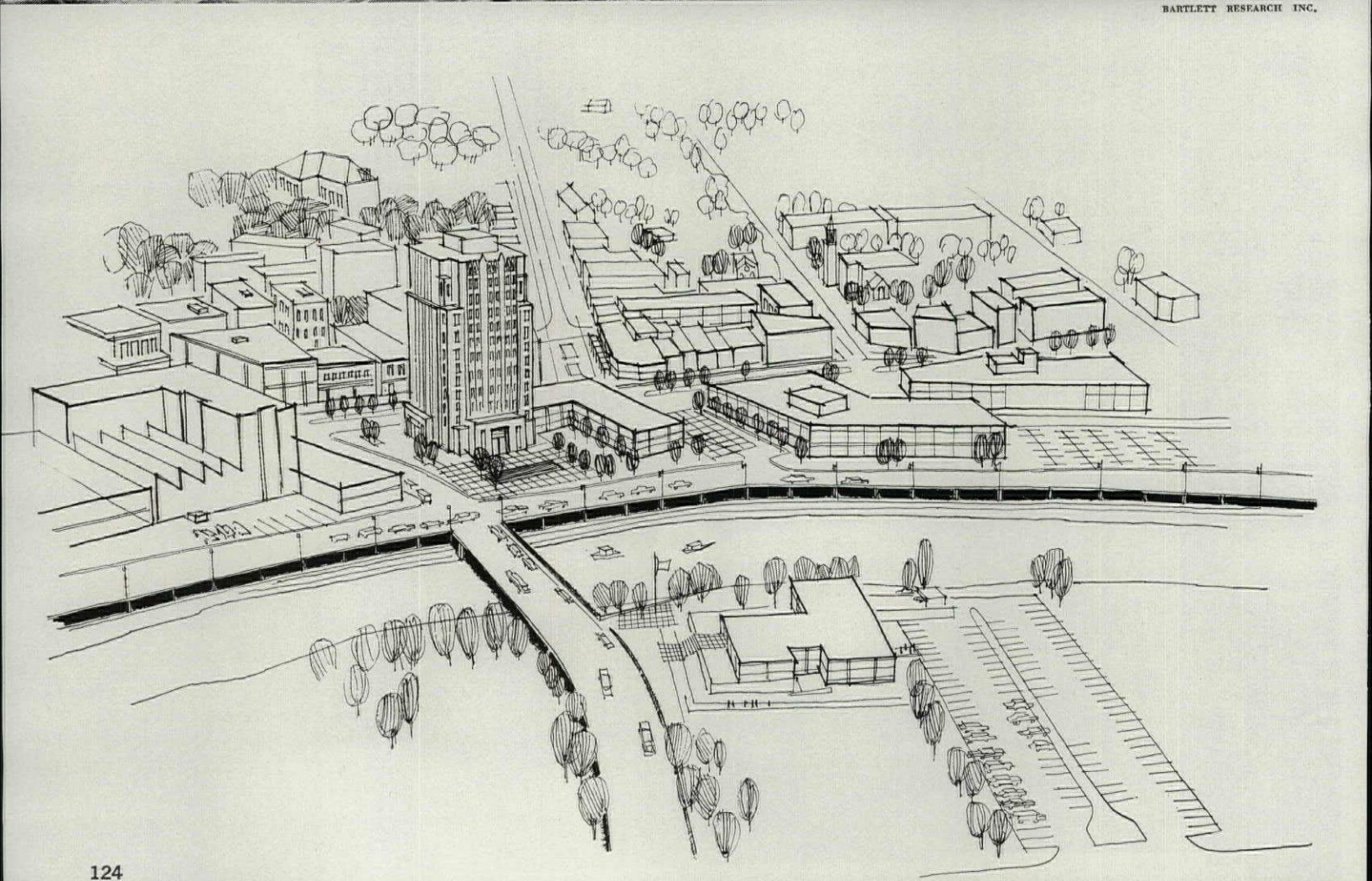
This roof (photograph upper left) is an elaborate structure of steeply pitched skylights, studded inside with lamps, designed to blend natural and artificial light, and to crown the room with vitality. Characteristic of Aalto's detail and consistency are the lighting fixtures illustrated (left), some of the numerous designs he produced for one-time use in this building. The north façade is solid brick. The south side is open to a pleasant garden. In this design Aalto sought to banish aridity from the processes of security, and succeeded powerfully. Photograph on facing page: one of the solid street façades.





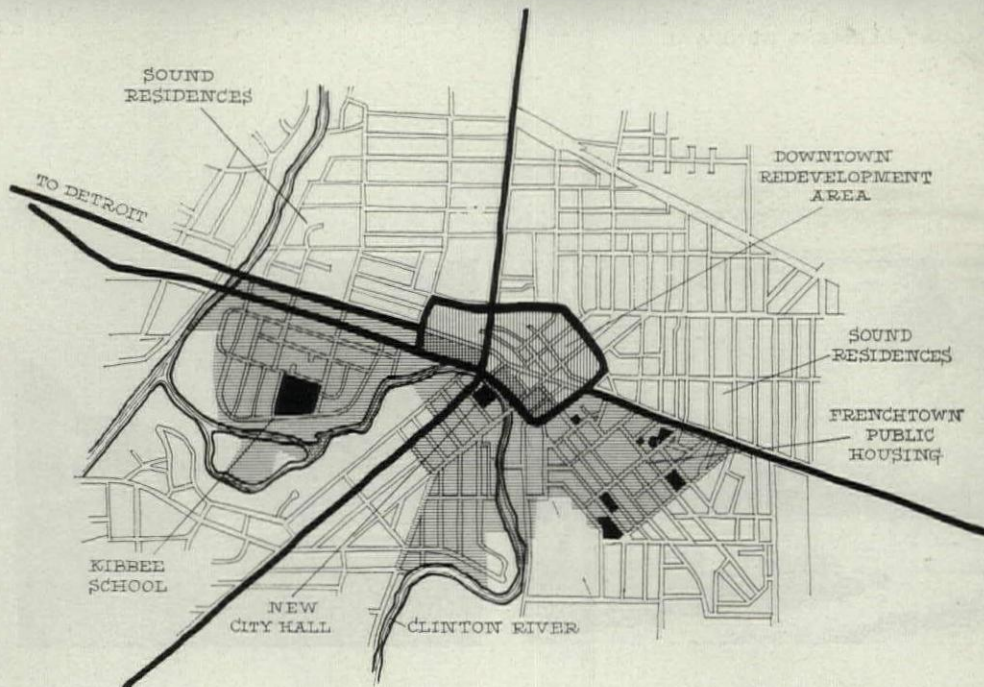


BARTLETT RESEARCH INC.



For six years, this small town has pushed a twofold program of reform and renewal. Now, the results are showing up in building projects.

BY RICHARD A. MILLER



Mount Clemens' boot-strap renewal

Like any self-respecting small town at the end of World War II, Mount Clemens, Mich., current population 21,000, 26 miles northeast of Detroit, had a raft of ambitious postwar plans. But by 1954, these plans, like most plans in most small towns, had come to naught. An antiquated government consisting of a mayor and departmental commissions was operating without progress and, worse yet, without plans. A planning commission, constituted in an optimistic moment in 1946, was operating on a kind of cracker-barrel basis, extralegal without zoning, platting, and building laws to back it up and without benefit of trained consultant planners. Frenchtown and the Kibbee section, shanty neighborhoods in low-lying pockets of the Clinton River on either side of downtown, were looking more and more like rancid slums. In between (map above), downtown streets were choked with useless through-traffic, and merchants had to sell hard

merely to maintain old business volumes. While prosperous house colonies pushed toward the city from Detroit, Mount Clemens' streets stayed unpaved, its schools stayed old, its tax-delinquent land stayed undeveloped, and the new city hall—for years a hope tied to the hope for the town itself—stayed a dim and distant chance.

Then, all at once, things changed—changed so fast that today Mount Clemens can stand as an example to any small town and many big ones. Now the city hall is under construction (sketch, left) not as a lonely symbol but as an integral part of a \$7.5-million renewal program (gross project cost) embracing 485 acres, 20 per cent of the town's area, 25 per cent of its population.

The engine of the Mount Clemens renewal, now manifesting itself importantly in terms of architecture and city building, was actually political reform. Through the efforts of the Civic Affairs Committee of the Mount Clemens Board of Commerce, a nine-man commission started to work in 1952 on a Home Rule Charter, and in the spring of 1954, after one electoral defeat, a program for a city manager and seven-member legislative commission was passed by the electorate with a slim five-vote margin. As a town with the colorful past of a booming 1890's Midwest spa, liberally mixed during the twenties with wide-open high living and a brisk

trade in bootleg booze from nearby Canada, Mount Clemens found itself, at first, discomfited by reform of any kind—particularly since its endorsement had been cleared by a mere five votes.

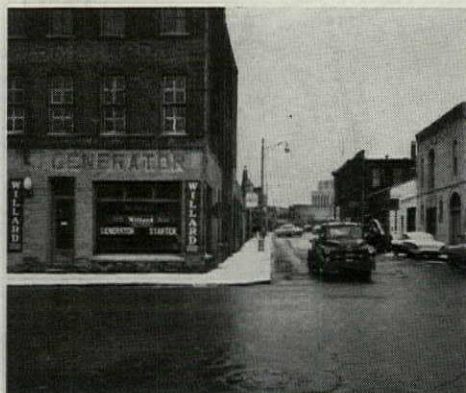
But with its worldly past, Mount Clemens knew a few things that more sheltered places are still finding hard to learn.

For one thing, once they had the proper administrative machinery, Mount Clemens citizens were neither afraid of using experts nor overawed by them. The first city manager, Robert D. Heitsch, now at Rock Island, Ill., established personnel policies, set up an efficient administration including the present manager, 33-year-old Edwin E. Whedon as city engineer, and 30-year-old Max D. Petersen as housing and redevelopment director. And in these early days of reform, Geer Associates came to act as planning consultants.

For another thing, without administrative worries, the new, seven-man commission had some time to think about Mount Clemens' future. Under newly elected Mayor Harold "Bugs" Lindsey, who was long the city assessor in the old government, citizens began considering the facts of twentieth-century life for Mount Clemens. The "bath industry" (a rather loose term describing the previous activities of the town) was substantially dead. Downtown, ringed with cavernous old



City hall, now under construction, will face the existing courthouse across the Clinton River. A new bridge and plaza will connect the two buildings. Along the river, plans are being drawn for a loop street construction, with parking provided underneath. To the right of the courthouse, beyond a possible administration wing, is a proposed department store.



PHOTOS: RICHARD A. MILLER

hotels and bathhouses, had a definite future, but as a regional shopping center for the rapidly developing north suburbs of Detroit.

Since World War II, Mount Clemens had, indeed, become a part of metropolitan Detroit. And this change in status, so hard for many towns to recognize, was looked at unflinchingly in Mount Clemens. The people in Frenchtown and the Kibbee neighborhoods, many of them Negroes, were mostly workers in Detroit industries. As slums, these areas were rapidly losing their near-rural character and looking more and more like slums on the edge of a big city.

Mount Clemens citizens, seeing these things, began listening closely when their new-found expert associates, led by Planner Dave Geer, began talking about a federal urban renewal program for Mount Clemens. Such a program, carefully including the Frenchtown and Kibbee sections and as much of downtown as possible, could wrap up in one package the worst of the city's physical decay.

For many small towns, the idea of tackling a big program such as Geer outlined would be a frightening prospect—especially if such a program involved the use of federal aid for planning, renewal, or, especially, public housing. But here again, Mount Clemens faced the facts of life: if big cities like nearby Detroit could rebuild whole sections of town, if these same big cities could use federal aid for renewal and housing as a tool and a convenience in achieving their local objectives, why shouldn't Mount Clemens do so too?

So it is that Mount Clemens is busily engaged in the biggest building effort of its history. In the Kibbee district, an elementary school by Architects Smith, Hinchman & Grylls Associates, is complete, constituting a major part of the city's one-third contribution to the renewal program. Downtown, state-highway improvements will provide a major stretch of the downtown street loop, a \$650,000 off-street parking program is under way, and clearance is proceeding on the private redevelopment parcels. And in Frenchtown, 100 units of public housing, outstanding in architectural design and location policy, are complete (opposite page).

All of these things are marks of uncommon small-town sagacity. But the outstanding mark is that when, in the fall of 1958, the first city commission under Mayor Lindsey was swept out of office by the electorate, the new commission, given a mandate to provide a "businesslike" city administration, took a close look at the renewal program and carried it along virtually without basic change. It looked like a pretty sound business proposition to them, as indeed it is.

Mount Clemens, knowing that fate and the federal government help those who help themselves, found a typically ingenious way of paying for the new city hall now under construction to the plans of Architects Earl W. Pellerin and Joseph F. Dworski. They took some parcels of city land, acquired for back taxes, built a subdivision, and from the sale of lots financed the new city hall. By such methods, Mount Clemens is indeed engaged in a bootstrap renewal.

Three projects in three sections of town are intended as spurs to private renewal and rehabilitation. In the Kibbee neighborhood, a new elementary school is complete (left). Downtown, old stores will be replaced by new shopping facilities (center). In Frenchtown, public housing of excellent design spurs private remodeling and building (above).

Mount Clemens' fresh-start housing

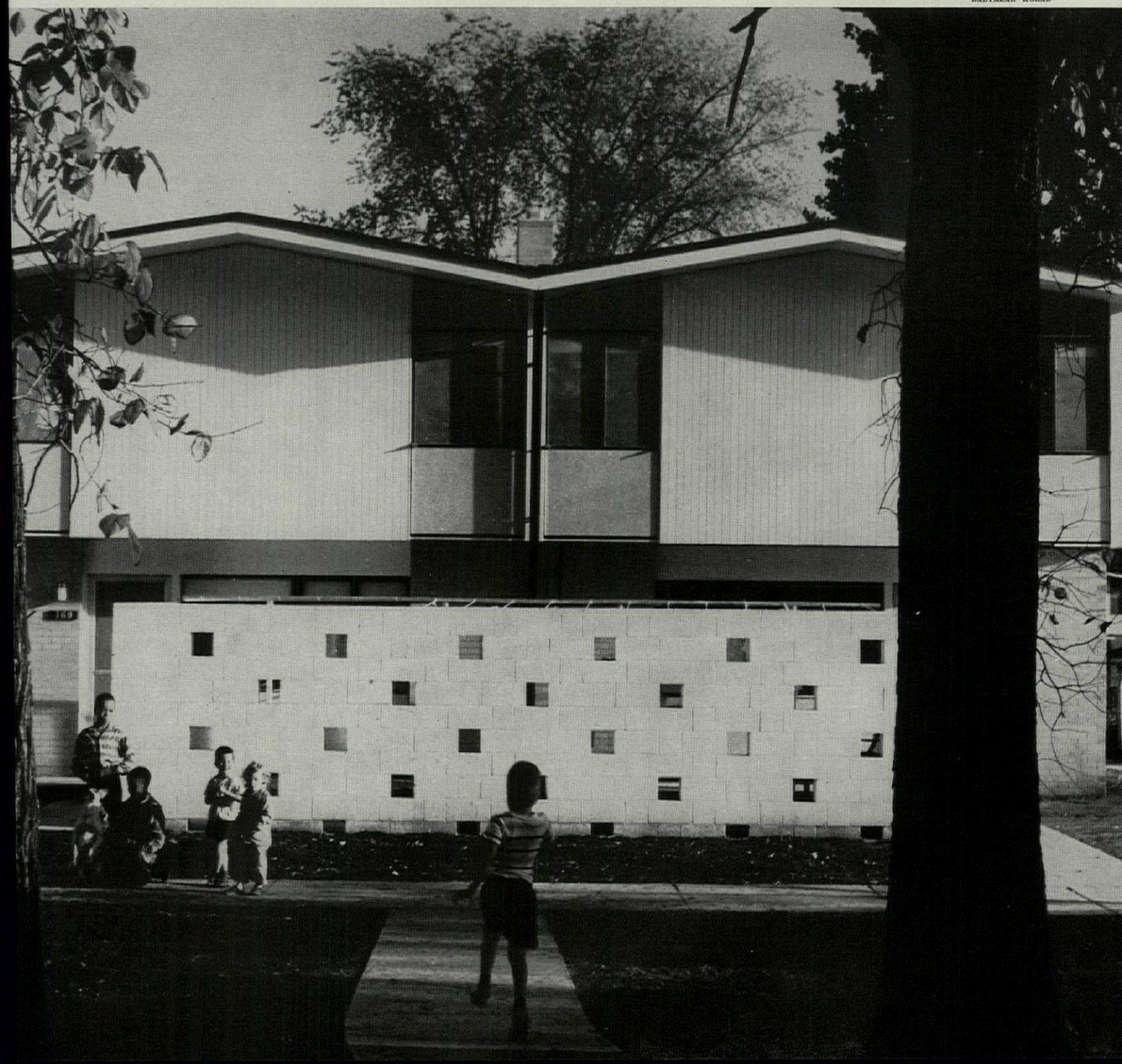
In contrast to the tired clichés of the typical public housing program, this clean-cut project helps upgrade its environment.

The newly completed 100-unit public housing project in Mount Clemens is not only successful as an essential part of a coordinated small-town renewal program (page 124); it is an unqualified success taken alone—as public housing per se. It is a particularly impressive achievement this year, when the public housing program is at low ebb, when the whole notion of public housing has few adherents and fewer enthusiasts, when, indeed, P.H.A.'s ad-

ministrators of 6½ years, Charles E. Slusser, has just resigned, more weary than defeated.

Although today the Mount Clemens project makes a good case for the continuance of a national program of public housing, the difficulties during its three years of planning and construction make an illustration of what's wrong with the public housing program. The Mount Clemens project is such a refreshing departure from the

BALTAZAR KORAB



characteristic "rubber stamp" projects that it is a wonder the Mount Clemens project was built at all.

But in fact, now that it is complete, the director of P.H.A.'s regional office in Chicago, William E. Bergeron, considers it a notable success, and the project architects, Detroit's Meathe, Kessler & Associates, are at work on a second project (for Wayne, Mich., see page 200) with the blessing of Bergeron and his staff in Chicago. P.H.A.'s final approval of the Meathe-Kessler approach to public housing design is a hopeful sign. Perhaps more projects can now be made attractive, human, and friendly.

P.H.A.'s extremely cautious, even niggling, concern over the Mount Clemens project was assured from the start. Unfortunately, it seems axiomatic to any government housing agency that anything once done is worth doing again and that there is no room for new ideas. The Mount Clemens Housing Commission, on the other hand, wanted a project with good, fresh design that would inspire neighborhood rehabilitation, and it had selected a young firm of architects who would not consider churning out a routine solution. Indeed, they could not; their firm had never done a public housing project.

Their only experience in this field came before they were associated. Michigan-educated Phil Meathe, the firm's architect-engineer and "salesman-partner," and Harvard-trained Bill Kessler, the "designing partner," both in their mid-thirties, had met while working on housing projects for the Detroit firm of Leinweber, Yamasaki & Hellmuth. They established their own office in nearby Grosse Pointe Park in 1955.

Actually, the Mount Clemens Housing Commission hired the young Meathe-Kessler firm as much because it had had but little public housing experience as they did for any other reason. The firm was welcomed by Housing and Redevelopment Director Max D. Petersen, because Meathe and Kessler could not tell him what old-line public housing architects were already telling him in interviews: that they had been doing projects before he was dry behind the ears, in case he might want to have ideas of his own.

The Mount Clemens Housing Commission signed a contract with Meathe and Kessler at the end of November

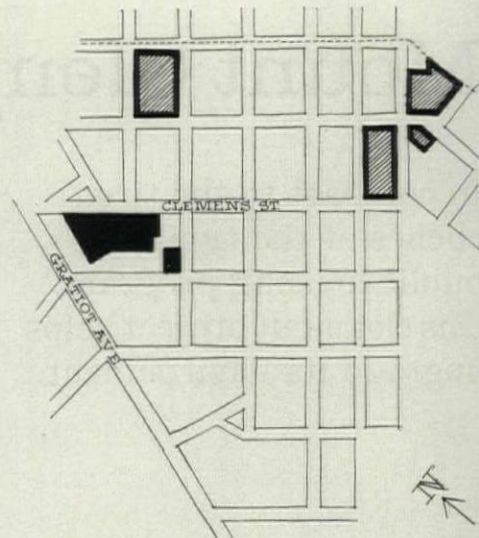
1956. In early 1957 the architects came up with their scheme, and on March 18, 1957 the Mount Clemens Housing Commission approved the plans. The architects, with Housing Director Petersen, went to Chicago to submit the so-called "Working Agreement Documents" to P.H.A.

At this stage in any project's life, P.H.A. requires a budget, outline specifications, and tentative utility, site, and unit plans. Although these documents are detailed enough to be nearly all that's necessary to build a similar private project, P.H.A. regards them as only a preliminary submission. And until this stage is reached, it is impossible to get a definite yes or no from officials on any aspect of a project. Old-line public housing architects have therefore learned to submit proposals similar, if not identical, to proposals approved before, in order to avoid the hazard of rejection after all this work.

The Mount Clemens submission, however, included a number of design innovations which required the closest scrutiny by P.H.A. Such features as inside bathrooms lit by skylights, side-to-side pitched roofs, vertical alignment of windows, and prefabricated spandrel panels were new to P.H.A. practice, even if they are familiar in private construction, and all these things were questioned. It took unusual persistence—for more than a year after the March 1957 submission—to hang on to these all-important features, but the core of the issue with P.H.A. lay in the Mount Clemens site plans.

The scattered-site policy, which marks the Mount Clemens housing program, was a result not only of purely local desires; the policy reflected the new ideas of P.H.A. Commissioner Slusser. But, as things worked out, this didn't help.

The site proposal suggested by Mount Clemens Planning Consultants Geer Associates in the Frenchtown neighborhood not only got rid of some bad housing, but neatly obtained 100 units on eight scattered sites. Appropriately for these small parcels, the Meathe-Kessler site plans kept car parking off the sites, in recessed bays of the public streets; the plans created pleasant on-site yards and spaces by turning and grouping houses in varied patterns; and they screened the inevitable clutter of garbage cans, clothes racks, and



children's wheeled toys behind perforated concrete block walls.

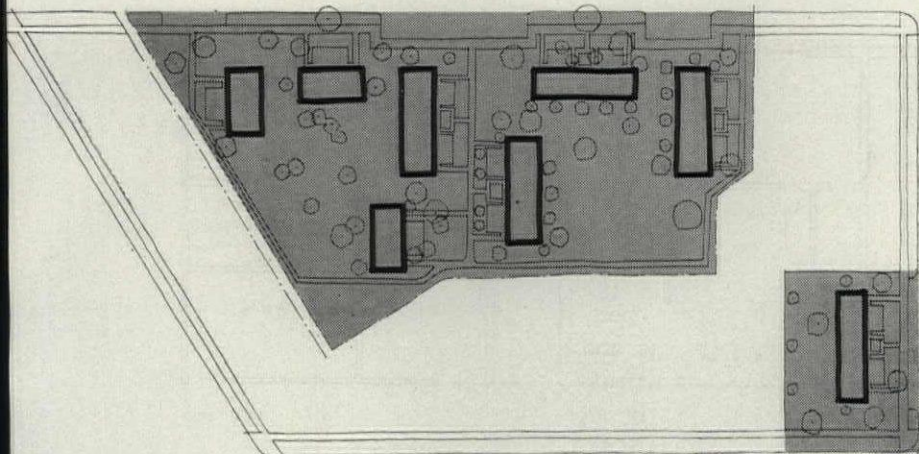
All these features represented good site-planning practice, and yet, from initial objections raised in April 1957, all the way through to a final suggestion that the site plans be voided completely the following November, P.H.A. dragged hard on the site-planning features of the project. The reason for the opposition was clear: Commissioner Slusser's scattered-site policy had never been matched by adequate design thinking—and despite the expressed policy that more freedom should be given to local authorities in design matters, the regional P.H.A. was not prepared to accept responsibility. But, with uncommon persistence, Mount Clemens Housing Commission with Meathe and Kessler took their cause to Washington in November 1957. At last, in a meeting in Slusser's office, they obtained the approval they needed.

One final doubt remained to be settled: some P.H.A. officials were convinced that the project could not be built within the prebid construction estimate of \$1,156,213. But, on June 15, 1958, Architect Phil Meathe had the satisfaction of seeing his estimate vindicated. The low bid came in \$30,000 below Meathe's estimate. Average cost per unit was therefore \$11,260, or \$10.59 per square foot. All five submitted bids were, in fact, low enough for an award without project revision.

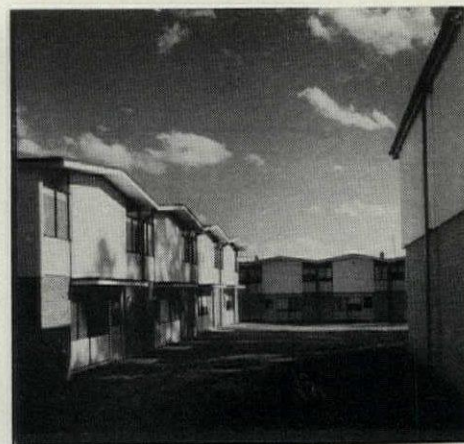
The architects received a standard fee of 2.66 per cent (\$31,349); and, despite all their extra effort, they made a profit on the job.

Now, with the project finished, it might be expected that both Mount

continued on page 200



Scattered sites in the urban-renewal area contain from 10 to 28 units each. Typical site (plan above, photo below) contains a grouping of 26 two-, three-, and four-bedroom units.

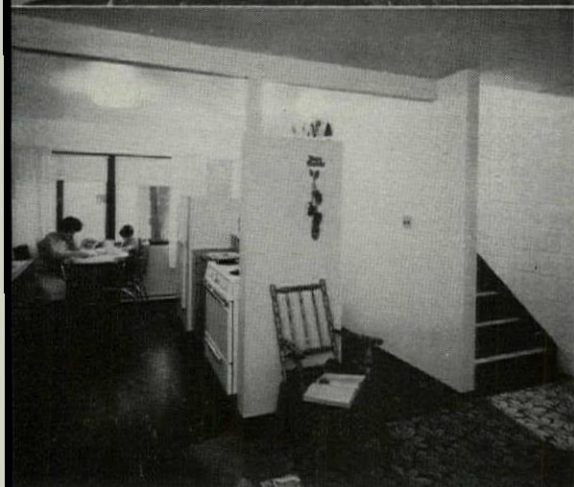


PHOTOS: BALTAZAR KORAS

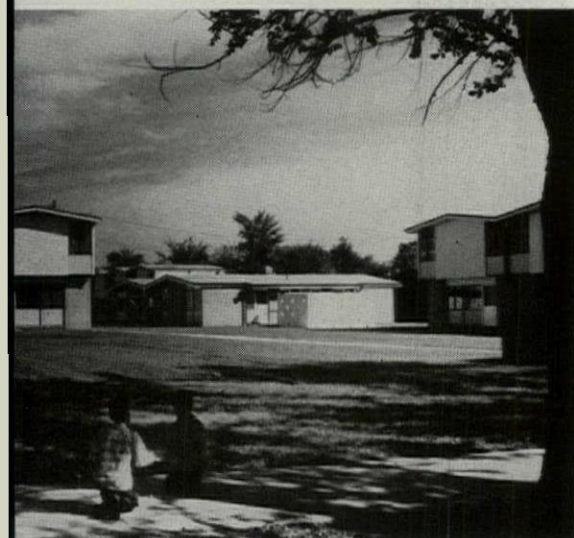
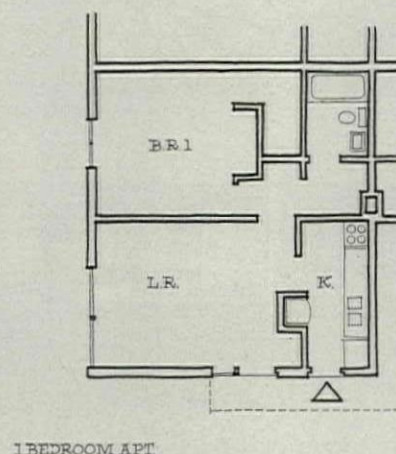
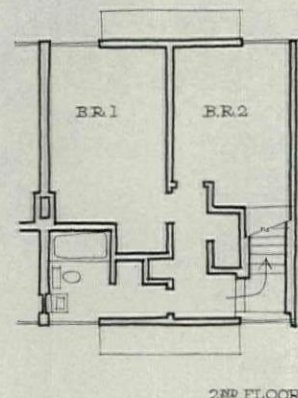
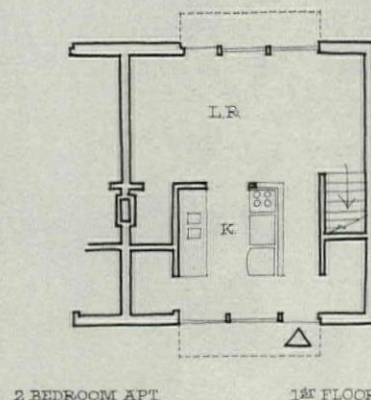
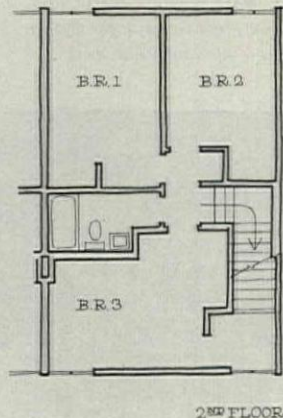
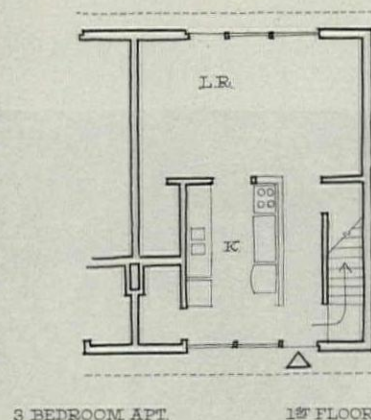
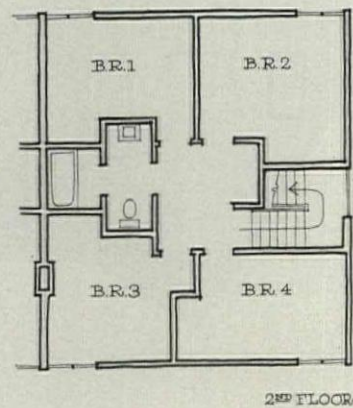
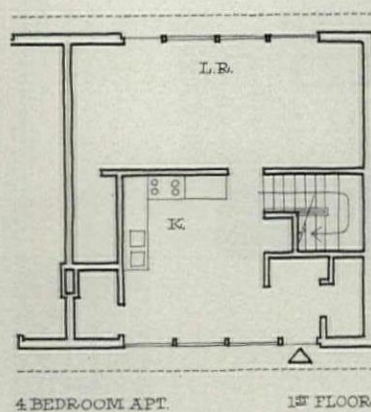
Side-to-side roof pitch over each unit was a hard-fought departure from accepted public housing practice. It gives each unit in the row a separate, self-contained look.



PHOTOS: BALTAZAR KOBAR

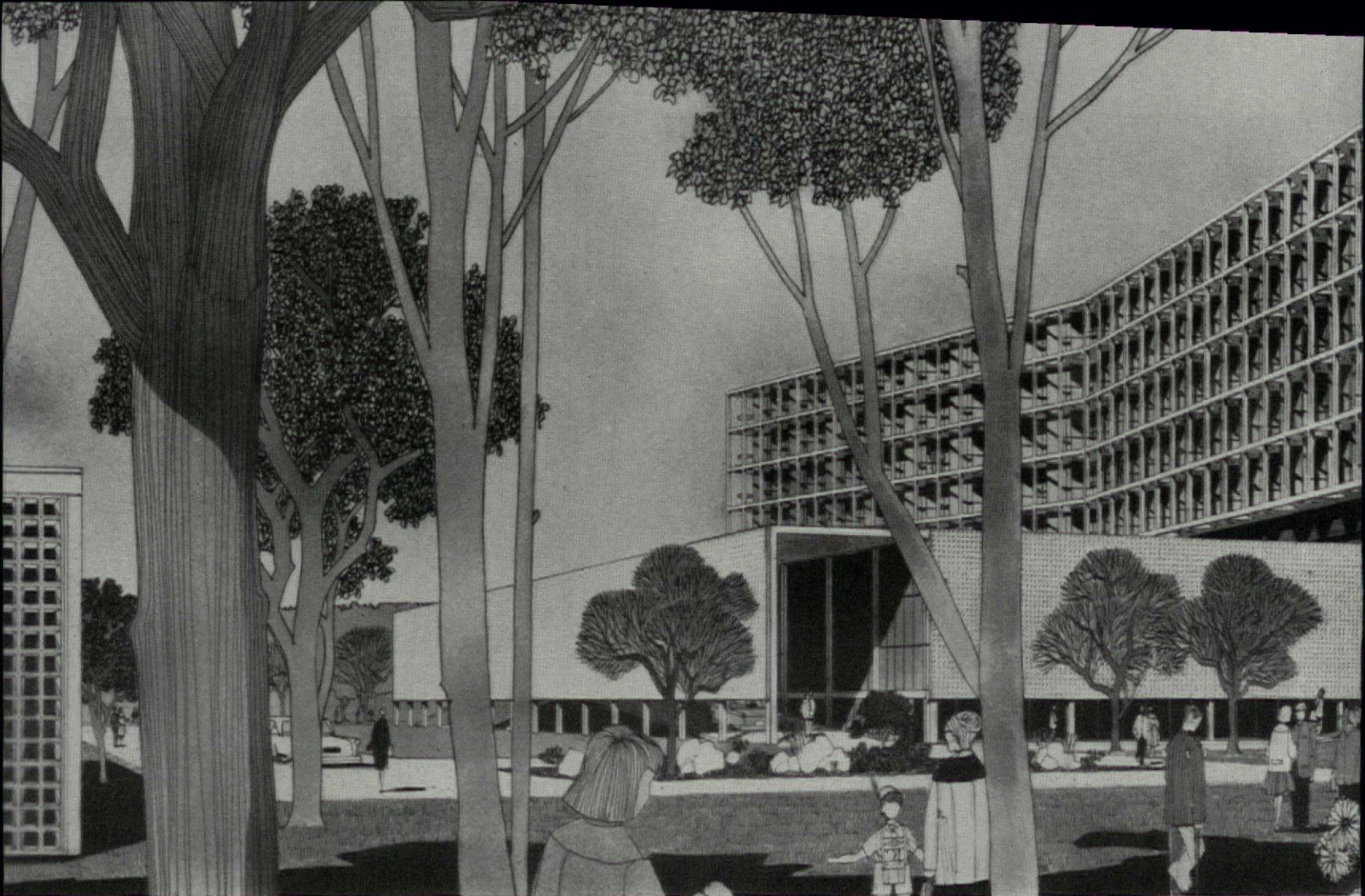


Two-story units feature pleasant dining-kitchens (photos above). The plans for these units vary from two-bedroom size (right) to four-bedroom types (right, above) by changes in the width and length of the basic plan. A five-bedroom plan (not shown) is obtained by partitioning one end of the living room.



Grouped houses range in pleasantly varied outdoor spaces kept from clutter by concrete block screen walls which shelter driving





Medical center for Free Berlin

Joint German-American effort produces a monument to the service of humanity.

On October 21, 1959, in West Berlin, ground was broken for the 1,500-bed hospital and medical center shown above and on the next five pages. The event was of more than passing significance; for, when completed, the new \$31 million medical center for the Free University of Berlin will probably be the most modern structure of its kind in Europe, and of interest all around the world.

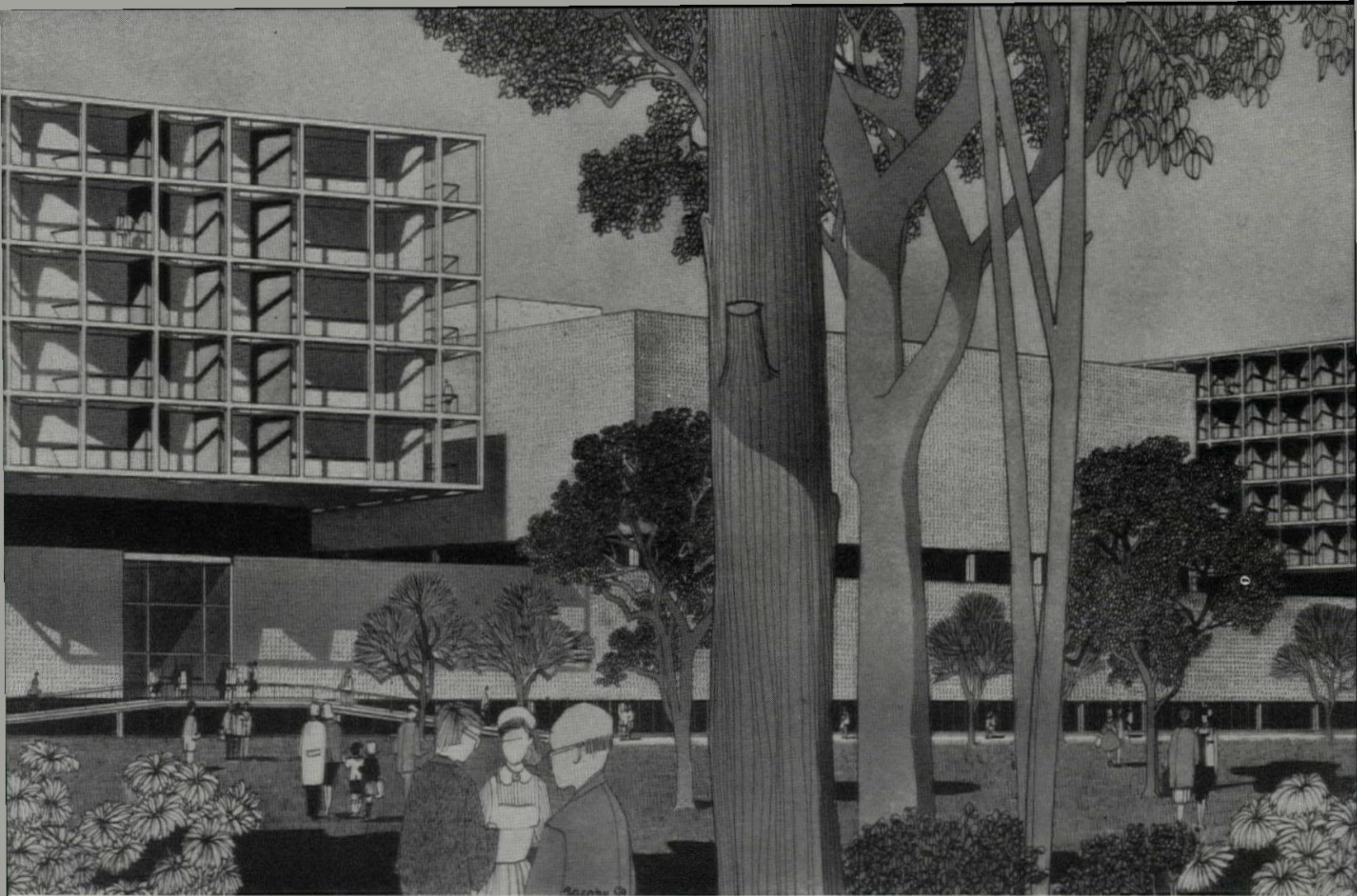
It will be the most modern structure of its kind in Europe because

its architects worked around the many archaic planning restrictions imposed on such buildings by European codes and persuaded Berlin to try the efficiencies of the less inhibited American type of hospital organization and hospital building.

Berlin's medical center is of further interest because it will show that even a very complex hospital program can be solved with a very simple building. This is an important lesson: for years, hospital structures have become more and more complicated in form—and hospital architects have explained this by pointing to the increasing complexity of hospital requirements. Now comes this Berlin project, with one of the most difficult sets of requirements ever—facilities for teaching, research, surgery, nurs-

ing, training, outpatients, etc. (all listed in a massive, 150-page program)—and the solution turns out to be a building of unusual clarity and simplicity (see pages 134 and 135).

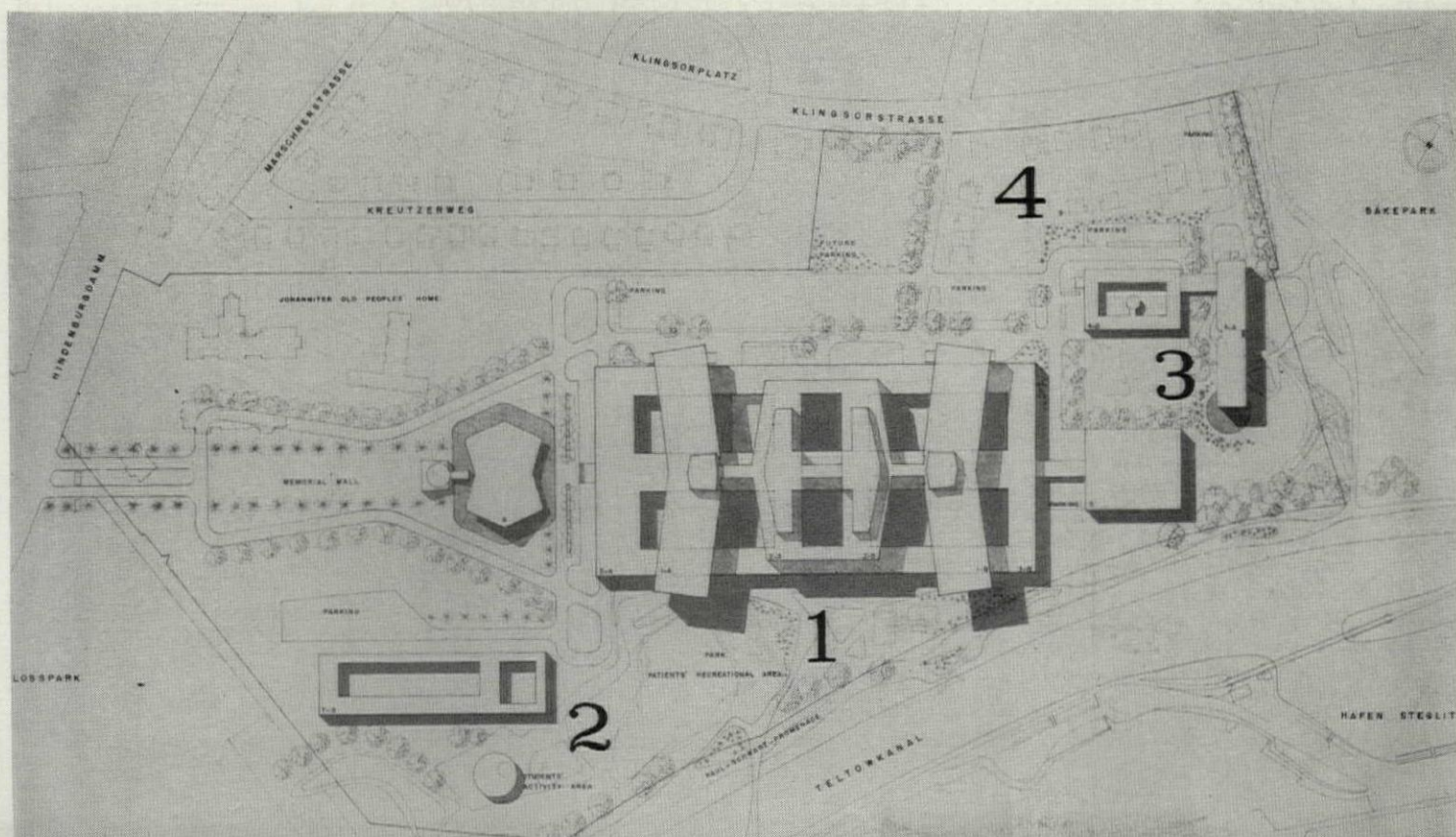
In these and other respects, the Berlin medical center is the result of the finest sort of international cooperation: for here, under the sponsorship of the American-German Benjamin Franklin Foundation, which put up Berlin's Congress Hall in 1957 (FORUM, Jan. '58), some of the best technicians of both countries in architecture and medicine came together to establish a lasting service to humanity. When the medical center is completed in 1962, it should be evidence, in an area where it counts, that the brotherhood of man is more than an empty slogan.

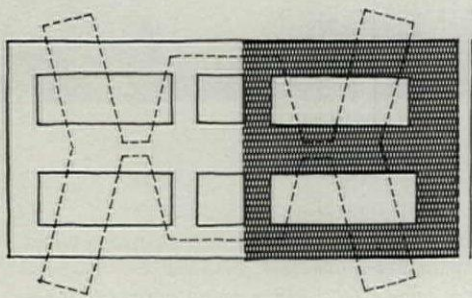
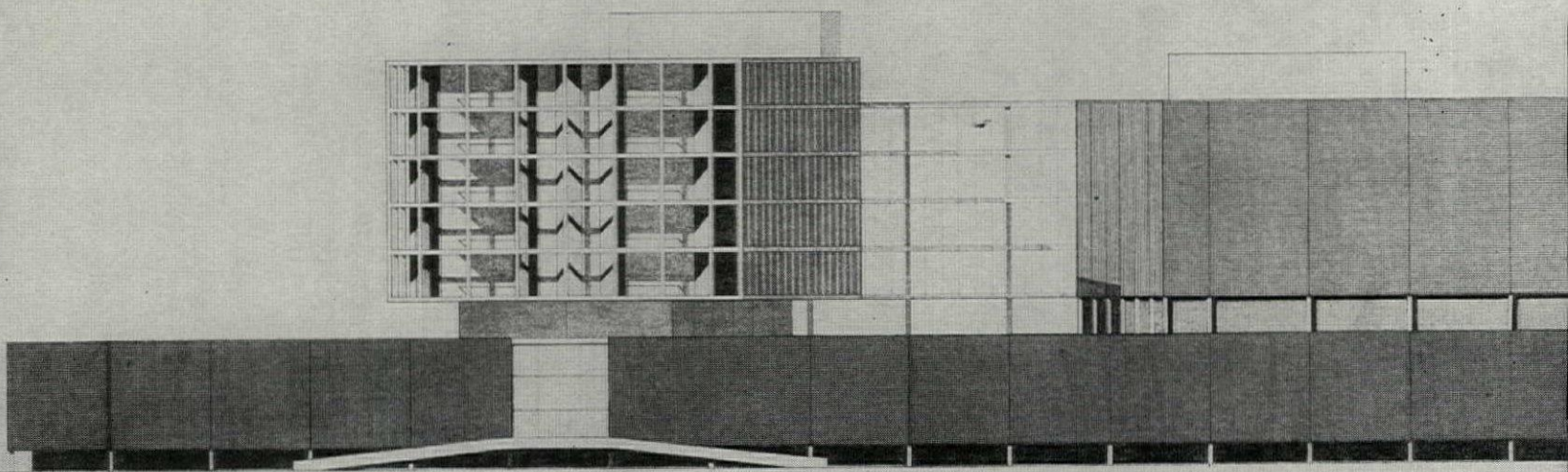


Medical center consists of an 800-foot-long main building (above) and smaller service structures. The main building has three parts: a three-story-high base containing outpatients' departments, teaching facilities, etc.; two V-

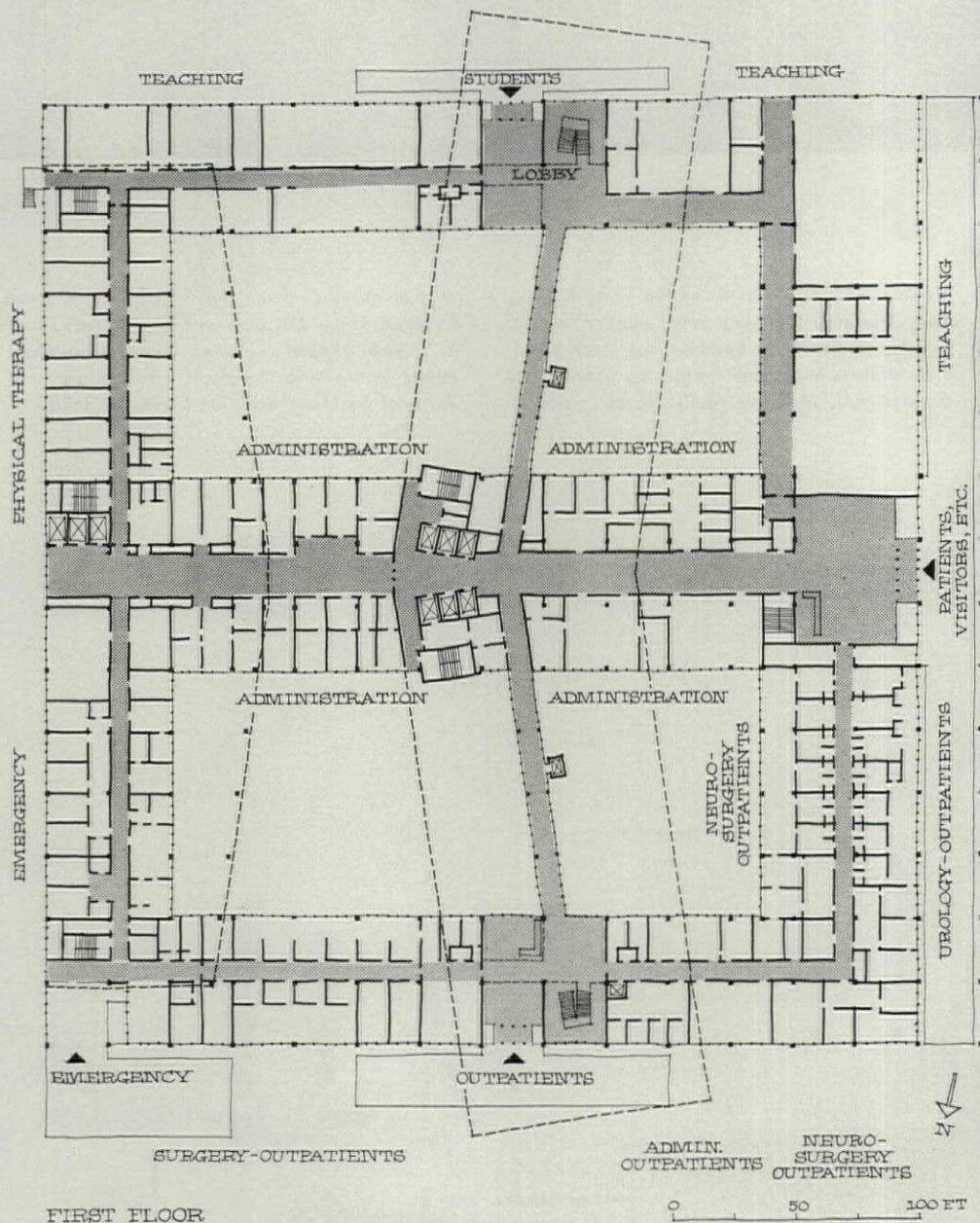
shaped nursing wings, back to back, that are elevated above the base on deep girders; and a lozenge-shaped element between nursing wings containing surgical areas. Base and surgical building are faced with a grille.

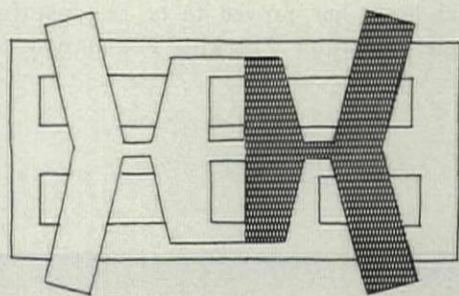
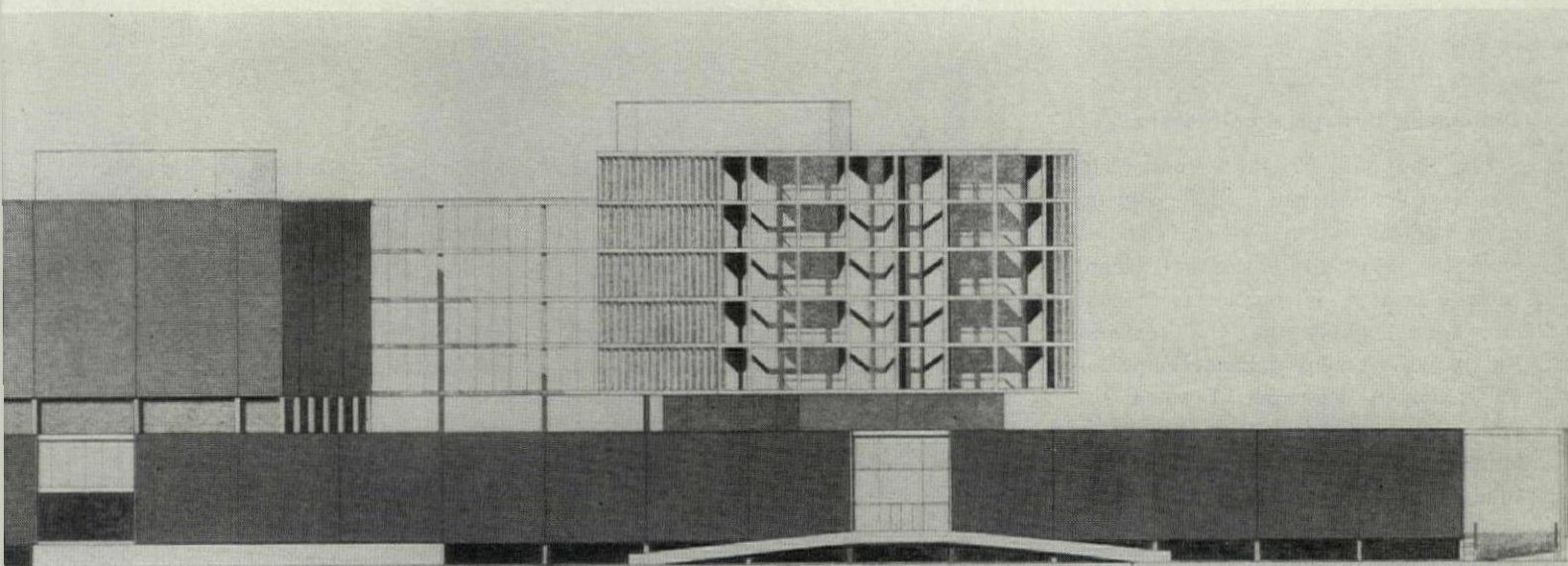
Site plan (below) shows big, central complex (1) and surrounding facilities for students (2), nurses (3), and medical staff (4). Construction on the nurses' home began last fall; the center will be completed in 1962.



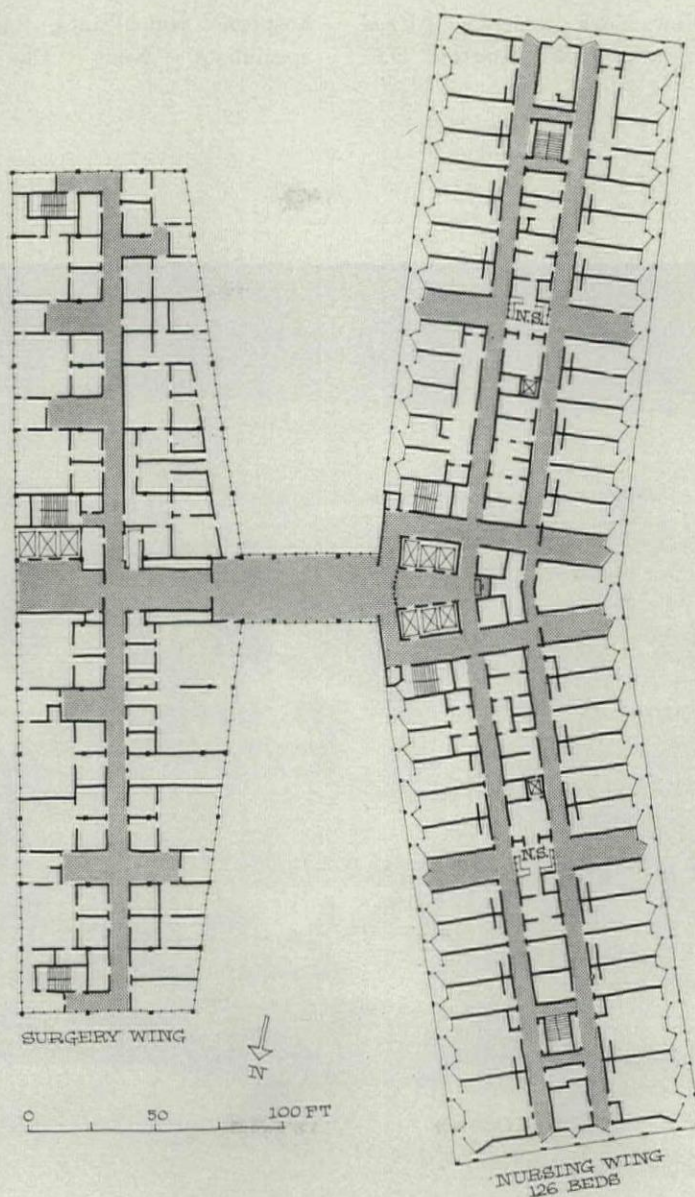


Three-story-high base of the medical center is a rectangular block about 800 feet long and 370 feet wide, with several landscaped interior courts to provide natural light. The base is sunk half a story below grade, and its entrance level (shown partly in plan at right) is consequently half a level above grade. The lowest level contains the kitchen, dining areas, laboratories, and storage spaces. The entrance and top levels have outpatients' and teaching departments, administrative offices and doctors' offices. The various entrances for outpatients, patients, students, visitors, give direct horizontal and vertical access to all relevant areas without undesirable cross-traffic. Interior courts satisfy German regulations that require daylight for all spaces occupied more than four hours a day. Although parts of each court are covered by elevated nursing wings (see opposite page), the shallowness and width of the courts assures good daylight. While traditional German hospital practice calls for autonomous departments for important surgeons, the Berlin hospital pooled most services in common labs, thus avoided much of the duplication of the older method.





Nursing and surgery wings are elevated above the base of the building. (The plan at right shows about half of a typical, upper floor.) German regulations demand that all bedrooms face south; to comply and still retain an efficient, double-loaded core plan, the architects gave each bedroom a sawtooth window that could be said to face partly south. The resulting building is much more compact than most recent European hospitals. Divided elevator stacks separate various kinds of traffic: the elevators at the center of the nursing wings carry patients, visitors, and doctors; the elevators in the lozenge-shaped surgery wing lead to laboratories and emergency wards; and individual elevators connect central kitchen and nursing wings. The distance between the nursing and surgery wings averages 80 feet. Below: over-all view of the main block.



Diplomacy through architecture

The Benjamin Franklin Foundation, which commissioned Free Berlin's new medical center, is an excellent example of the sort of mutual, technical aid which is bound to become more common as the U.S. expands its efforts to help underdeveloped or war-damaged countries. Formed several years ago for the purpose of building Berlin's Congress Hall, the foundation turned out to be so successful that it was decided to expand its activities further.

Half the members of the foundation are Americans, half are Germans. The original chairman was an American architect—Ralph Walker—and the present chairman is ex-AIA President Leon Chatelain Jr. The American contingent also has two more architects, Hugh Stubbins and Howard Eichenbaum, a New York attorney, Alfred I. Edelman, and a Washington, D.C.

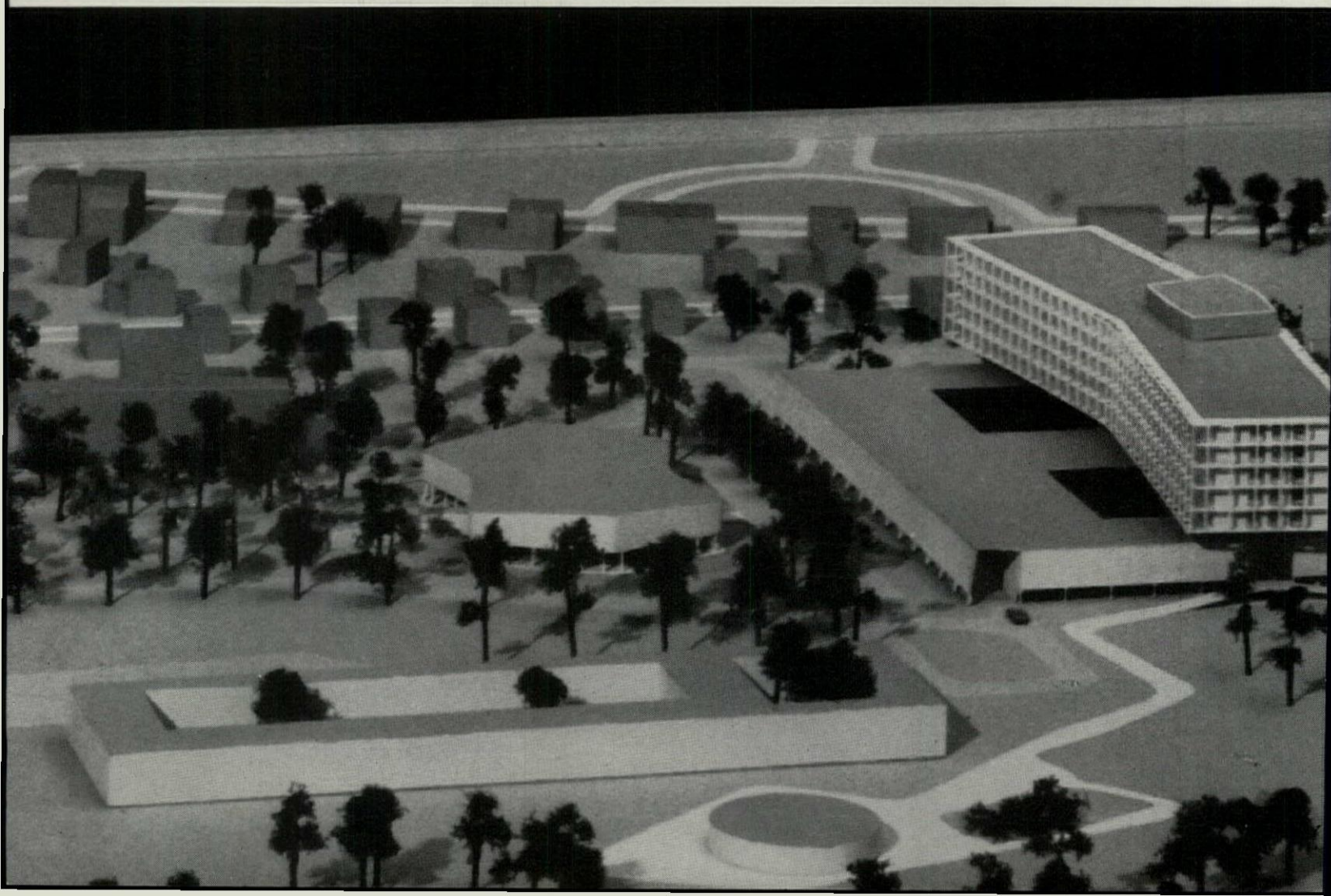
banker, Bruce Baird. The German membership is also made up largely of professionals and technicians.

Funds to finance the foundation's work have been raised in various ways, both in the U.S. and in Germany, both through private sources and governmental agencies. The most effective, behind-the-scenes friend of the foundation has been Mrs. Eleanor Lansing Dulles, sister of the late Secretary of State and a member of the State Department's Berlin desk. And, in Berlin itself, Mayor Willy Brandt has backed the foundation to the hilt.

The first phase of the foundation's work on the medical center was to write a comprehensive program. This, alone, was a major technical achievement, accomplished by working groups of American and German architects, hospital consultants, and medical specialists. Next, the foundation

selected the architects to translate the program into three dimensions (see list of architects opposite). Meanwhile, financial arrangements proceeded at such a rapid pace that construction schedules could be greatly accelerated: by 1962, the complete project as shown below should be completed.

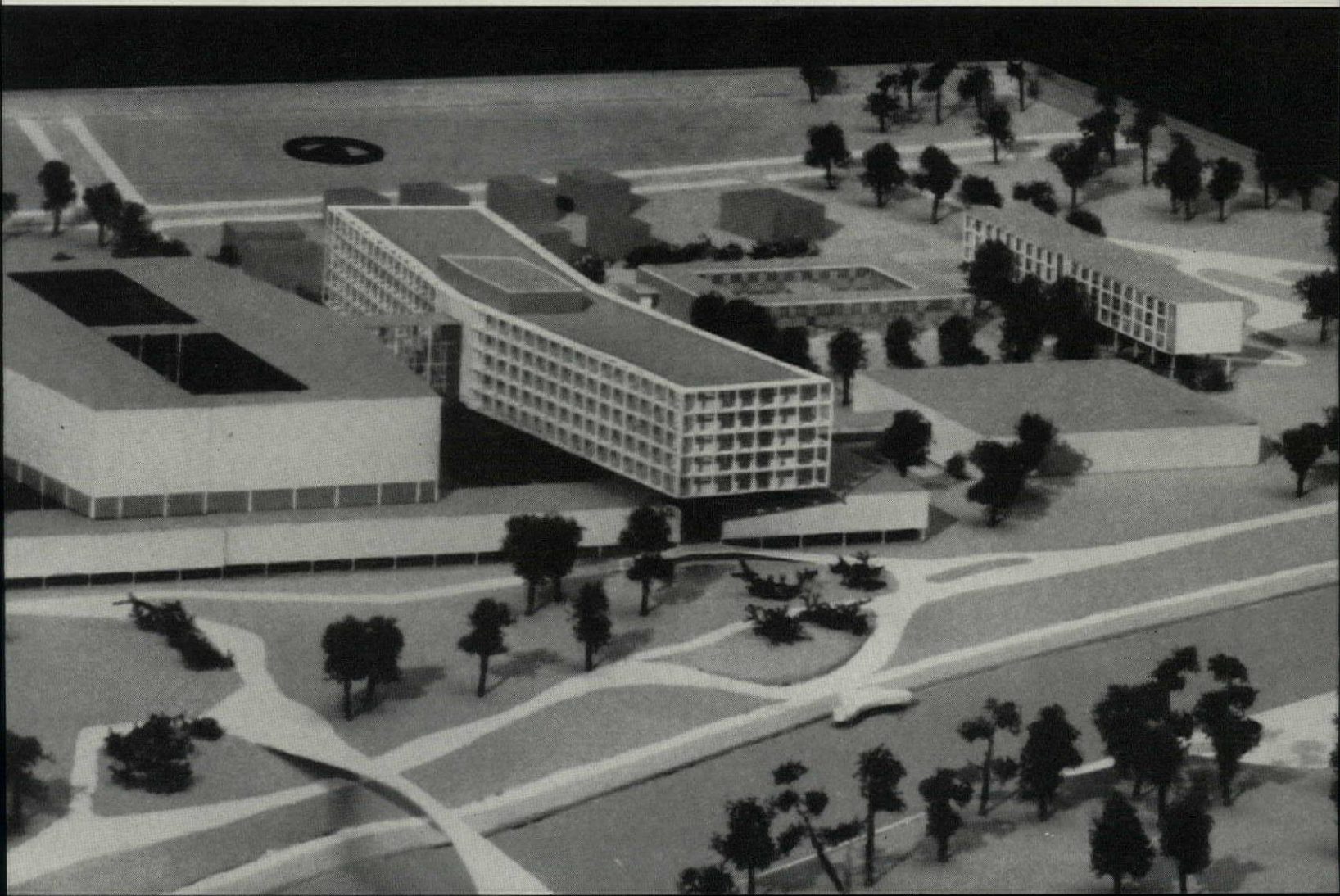
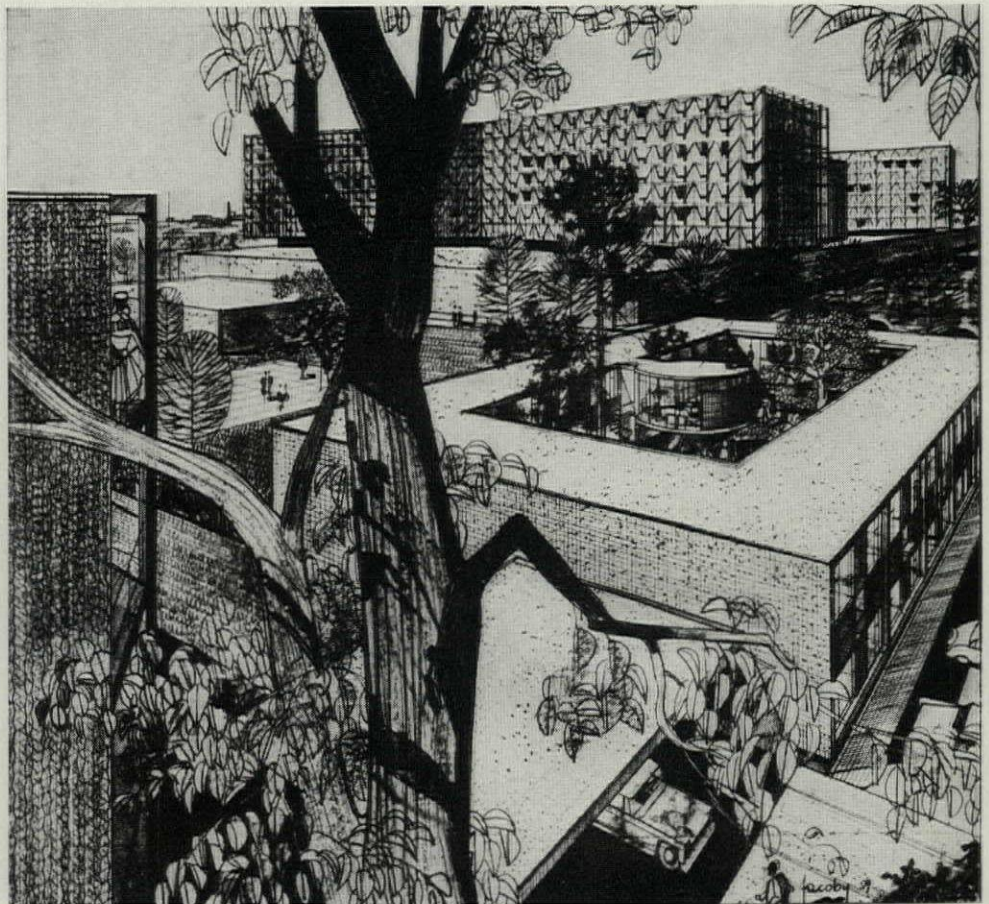
The success of the foundation to date holds important lessons for future international collaboration in similar areas. Technicians the world over—unlike diplomats—speak much the same language and seem to be able to accomplish a good deal if left to their own devices. And architects, whose profession requires them to be coordinators of many disciplines, are proving to be successful coordinators of conflicting viewpoints as well. That at least, has proved to be the case in the Benjamin Franklin Foundation.



ARCHITECTS: Curtis & Davis (Arthur Q. Davis, design coordinator), New Orleans, La.; Sherlock, Smith & Adams, Inc., Montgomery, Ala.; Franz Mocken, Berlin. MEDICAL CONSULTANTS: Dr. Russell A. Nelson, director, Johns Hopkins Hospital; Dr. Paul Roessing, director, Steglitz Hospital.

Two-story nurses' school is centered on an interior court (see sketch at right). Main buildings of medical center are seen in the distance. Structure in left foreground is nurses' home on which work was started four months ago.

Completed project (seen in model, below) has intern and student housing in low building at left, free-form student and faculty center building at the approach to the main structure. Nurses' facilities are at the far right. Site for center measures about 100 acres.







Technology

The grace of Rome's giant Sports Palace evolves from a devotion to simple geometry and sophisticated prefabrication.

BY CLOVIS B. HEIMSATH*

Nervi's methodology

The name Pier Luigi Nervi stands internationally today for "Grand Old Man" of engineering. His esthetic sense is admired as is his economy in construction. No "old master" can escape attack, however. Nervi is criticized for his classical, symmetrical building shapes, and for his use of concrete in small pieces and "pretty" patterns to create huge interiors. On these pages an American student of Nervi, interviewing the master, shows how compellingly these results of Nervi's derive from a central concept—a concept of master building. —ED.

The giant Sports Palace, the third and latest of Nervi's works in Rome for the summer Olympics, represents a culmination of his methodology and design philosophy. Nervi's early sketches and the photos of the building, shown on these pages, illustrate his

method of design and construction and the architecture it creates. The building's simple geometric form is at the heart of his design in concrete, for it gives scope to Nervi's principles of prefabrication. Before these principles can be used in more complicated forms—hyperbolic paraboloids, warped surfaces, and sculptural three-dimensional curved forms—yet with the economies now enjoyed in the concrete vault or dome, another Nervi may have to come along and teach the world how to build such structures with similar prefabrication and economy.

Nervi is a "master builder"—an architect, engineer, and contractor, all in one. Thus, he is as much involved in the forming of a structural rib on the site as he is with drawings in his office. To reach a good and economical solution to a problem, he must keep all aspects of a building in mind, with primary emphasis on the system of con-

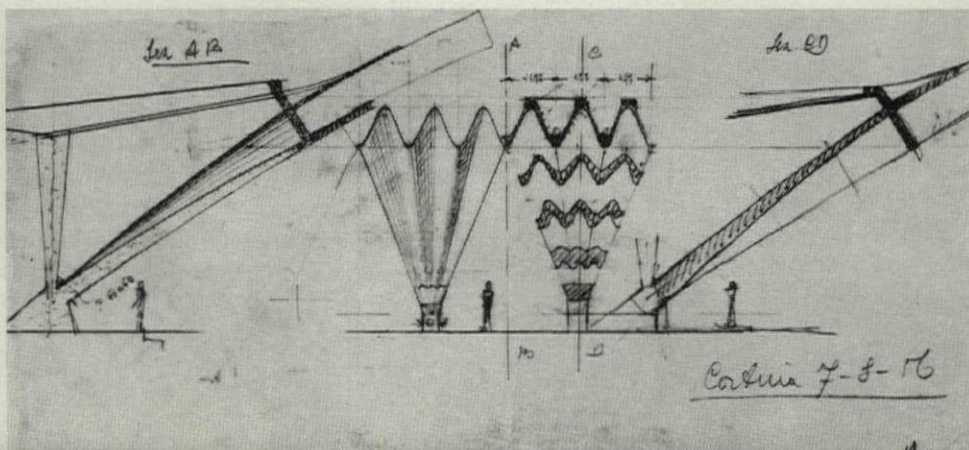
struction. This helps to explain his use of simple geometry: a hemispherical dome, like that of the Sports Palace, can be built in precast units, each equal to the next through 360 degrees.

Modular units have long been Nervi's stock in trade. As early as 1938, he built poured-in-place hangars with lamella-type framing, and in 1942, he developed a similar hangar of precast parts; prefabrication soon became a mainstay of his design. He won the commission for the Turin Exhibition Hall in 1953 by inventing ways to prefabricate most of the structure.

A simple geometric form, such as a hemispherical dome, offers the optimum in prefabrication, being symmetrical about both axes and displaying a con-

*Clovis B. Heimsath is a graduate of Yale, B.A. 1952, B. Arch. 1957. In 1958 and 1959, he was a Fulbright Scholar in Rome, where he attended the University of Rome and studied the work of contemporary Italian architects and engineers. He is now working with a New York architectural firm.

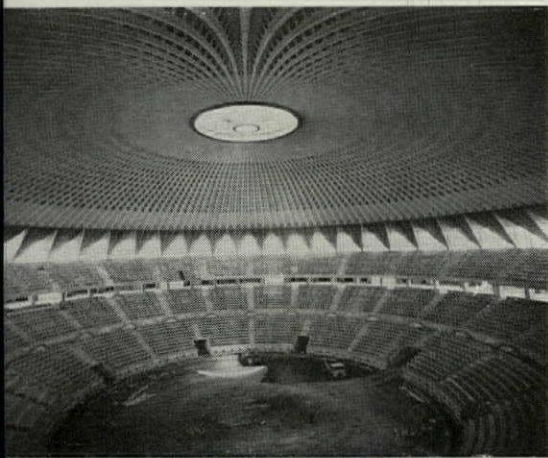
Nervi's sketches, shown on the following pages, are representative of dozens he made for the large Sports Palace over a two-year period. At right is a sketch which helped him to determine the point of connection between the cupola and the "pilaster," or strut. Three fan-shaped rib units are shown converging at one support; then, in rapid succession, the detail is defined by sketch elevations and sections. Left: a photo of the pilasters.



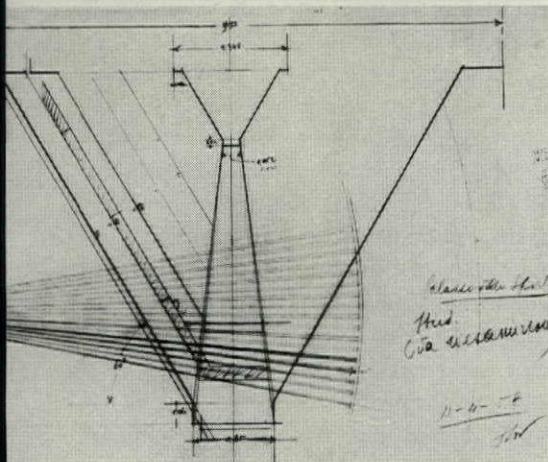


C. B. HEIMSATH

Two structures in one: The photo above shows the palace's two roofs: the cupola (foreground) and the surrounding gallery roof which is a separate structure. Below: the spacious interior.



OSCAR SAVIO



Cupola rib section is sketched (above) in its final stage of development. Photo (below) shows several of the roof's 144 ribs after they had been lifted into place by the crane, shown in the background. Superimposed on the rib sketch is a section of Nervi's roof-framing plan. A dimensioned sketch such as this one needs only to be drawn up and checked for final calculations.



C. B. HEIMSATH

stant change in curvature: one unit can be used again and again; one set of calculations is as good in one quadrant as the next.

Nervi the teacher

At the height of his career, Pier Luigi Nervi sees his role as both builder and teacher. His course at the University of Rome, "Technology of Materials and Technique of Construction," is attended each year by some 150 Italian students and 20 Americans. As participants in his 1959 class (Nervi has taught at the University of Rome since 1948), we had an opportunity to study three of his major works now being completed in Rome: the small Olympic Sports Palace (5,000 seats), the large Sports Palace (15,000 seats), and the Flaminia Stadium (50,000 seats). And through visits to his 13-man office, we were able to learn something of his methods of operation.

Nervi is cordial, informal, and anxious to have his techniques understood, as is exemplified in his remarks to his 1959 group of American students:

Question: What is your method of producing the first schemes of your designs? At what point are calculations made?

Mr. Nervi: At the outset, let me say that I intend to answer the questions from the point of view of statics and structure, a point of view to which I am principally dedicated.

The design begins with a general examination, I should say a presentation to myself, of the various statical and constructive possibilities in the particular case. For example, for covering a large space, I may consider beams in one direction or intersecting beams, a barrel vault or a cross vault, a structure primarily in tension or one in compression. This first mental examination is made almost always without the aid of drawings, and usually in an odd moment during the day or when awakening for a brief moment at night. Sometimes, I go to the point in this mental examination where I can evaluate—though very approximately—the complex of forces in play: loads, thrusts, etc.

Almost simultaneously, I try to envision for each possible solution a method of execution and a calculation of cost. I immediately discard solutions which are too difficult to execute or too

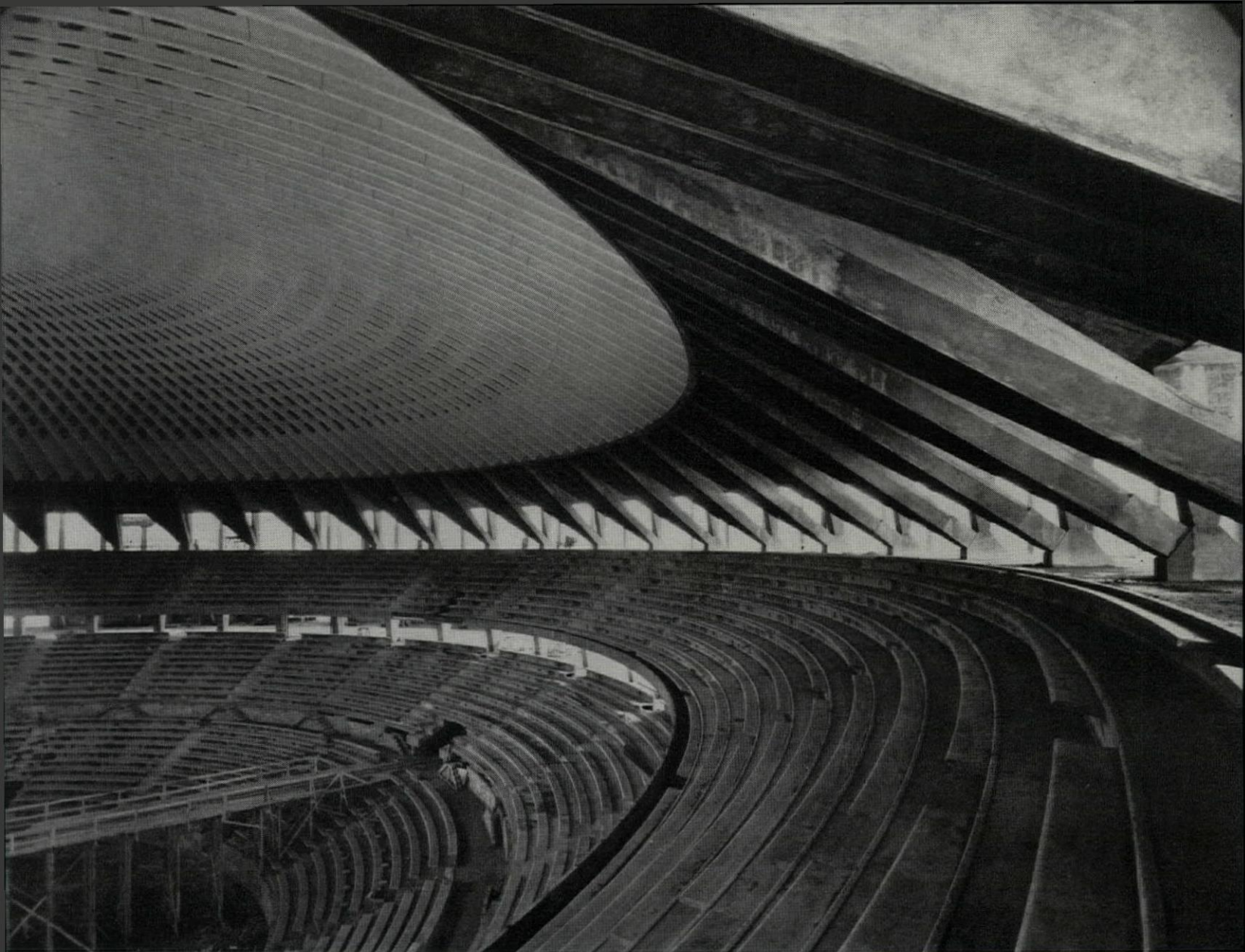
expensive. Then begins a more precise design state of the remaining possibilities; these, without exception, are made through geometric drawings to scale: plan, section, elevation, and so on. In this phase, considerations of an esthetic nature come into play, as do functional requirements, such as illumination, passage for air conditioning, heating, thermal protection, acoustics.

The study progresses through tentative stages, and successive modifications are made to determine which solution will best correspond to all the complex needs and which solution is the best compromise among the various alternatives. Because of my "contractor complex," I place great importance on problems of construction and economy. These elements go hand in hand. Moreover, I have never found such elements in conflict with esthetics or architectonics. Having at last arrived at a solution and its particulars, I go on to refine the form and proportions of the over-all composition and of the details. Finally, I make a definitive study of construction methods. Here I make statical calculations, again bringing them to the last approximation necessary for exact dimensioning. A third definitive calculation is made while working drawings are under way in the office.

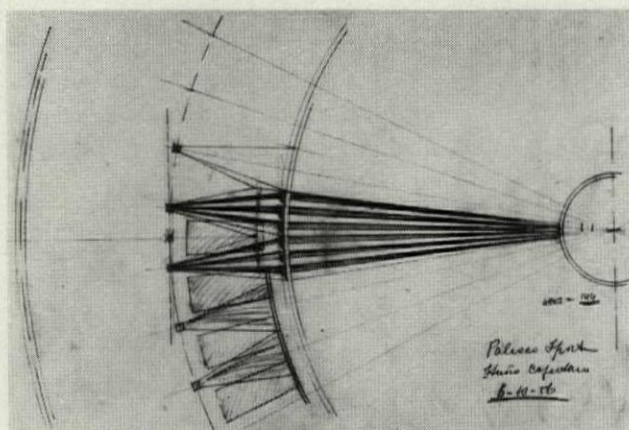
Question: Many of your works incorporate fine geometric patterns. To what extent are these forms good structure and to what extent are they merely good geometry?

Mr. Nervi: The layout of ribs of a cupola like the Sports Palace is first of all determined by economy in construction. In fact, a convenient weight of the prefabricated elements is determined relative to the capacity of the crane and the means of transportation. With the size of the members established, the geometric play of the ribs to be disposed along the parallels and meridians remains free, able to produce coffers or any other pattern so long as it is a system symmetrical to the meridians. Actually, the true statical substance of the cupola comes from the continuous shell; the ribs are important only as they meet the supports and as they impede the phenomena of elastic instability. It is very difficult, however, to separate the various factors that work together in the final solution.

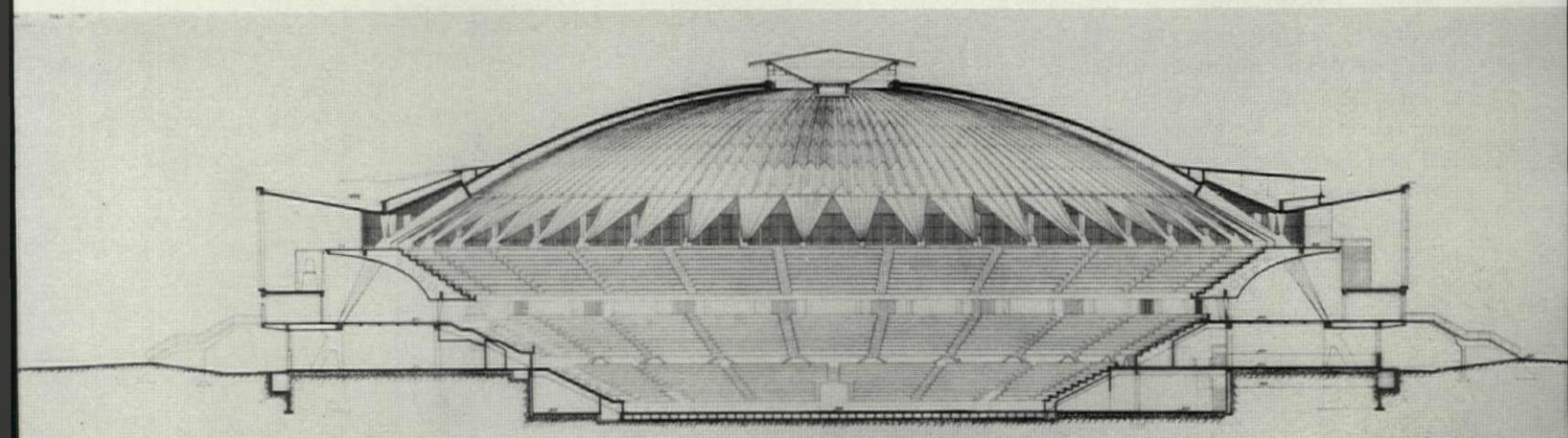
Question: What effect does the use



G. GHERARDI-A. FIORELLI



The sweep of an idea: In the sketch (left) Nervi has drawn the roof-framing plan showing six of the 144 rib units. These extend from the central ring to the inclined pilasters. Having arrived at this form, which was both structurally sound and feasible to construct, Nervi was able to create a large architectural idea, through the ready multiplicity of a single detail. The section (below) and the photo (above) illustrate how Nervi was able to allow light to penetrate between the 48 points of support; he does this by gathering three ribs at each support, and these loads, in turn, are transferred to the building's 48 inclined pilasters.



of prefabricated elements have in your final design?

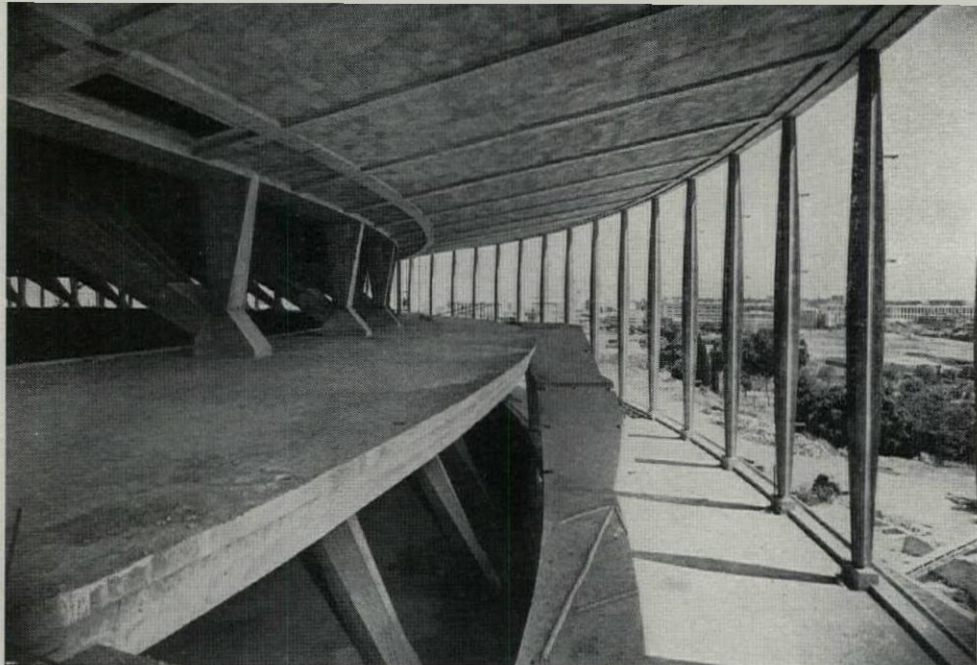
Mr. Nervi: Prefabrication permits a formal enrichment of structure, due—above all—to the repetition of a great number of equal elements and the perfection and exactness of the individual unit. Moreover, in the cupola of the Sports Palace, I have used a system of prefabricated radial ribs that, aside from creating a noticeable formal enrichment, takes care of the problems of lighting and the passage of air conditioning, and creates—I hope—good acoustics in the large locale.

Question: Does the role of the architect and engineer coincide?

Mr. Nervi: This is the most difficult question to clarify, because of a basic verbal misunderstanding. If we go back to the etymology of the words and assign to the architect the role of “master builder,” he becomes solely responsible for the technical and esthetic fields. The fact is, however, that over a period of time, particularly in the last century, the architect has become limited to designing the external decoration of buildings. In contrast, during the same period of time, the techniques of building have developed at a very rapid pace, due to new materials and more scientific methods of construction.

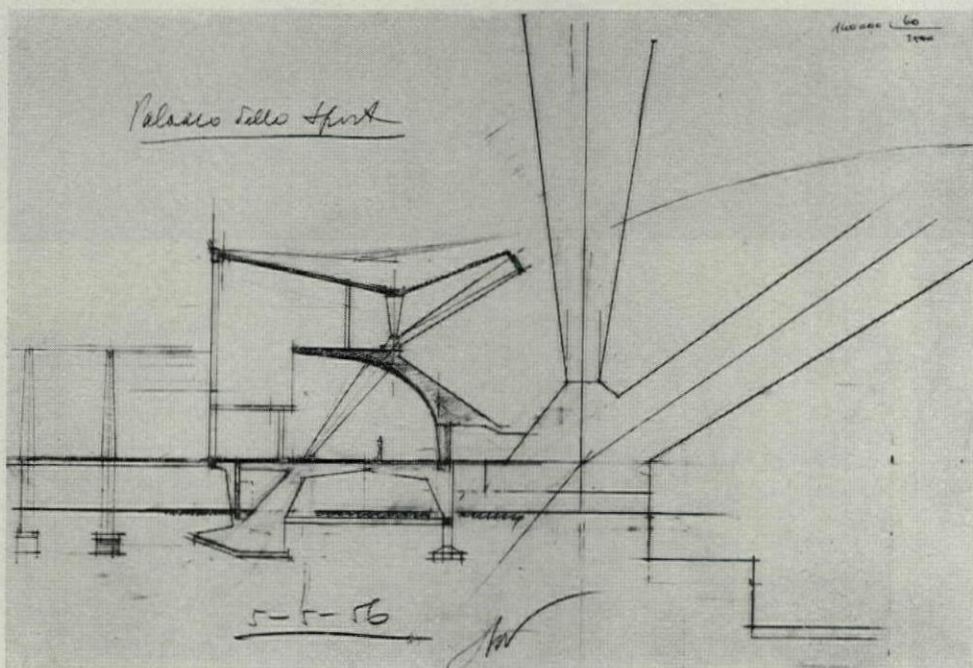
At the beginning of the century, there arrived a complete separation: on the one hand, the Beaux-Arts architect, with a formal and “drawing” preparation; on the other hand, the civil engineer, concerned almost exclusively with technical matters of construction. With the rebirth of mature architectural concepts in the first decades of this century, bringing to light the inseparable unity of the formal and technical aspects of a building, the incompleteness of the “architectural professor of architectonic drawings” and the engineer as pure technician became evident. As construction becomes ever more complex, this separation is daily more painful and damaging.

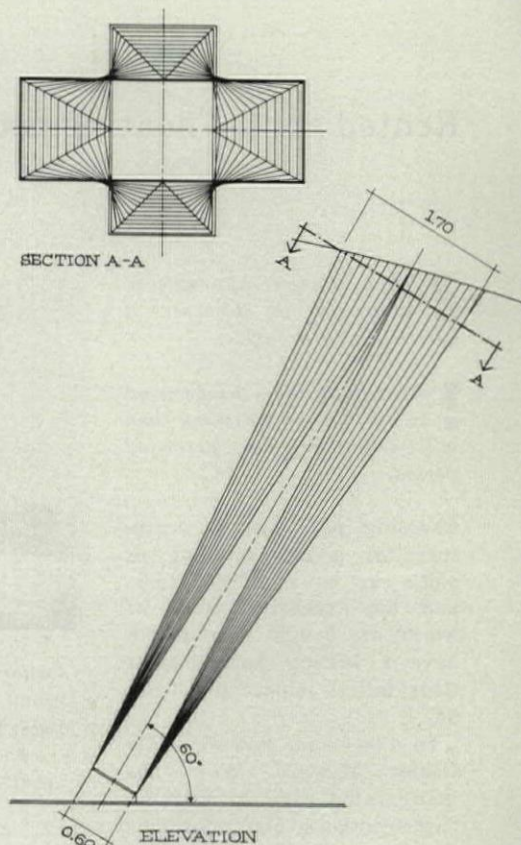
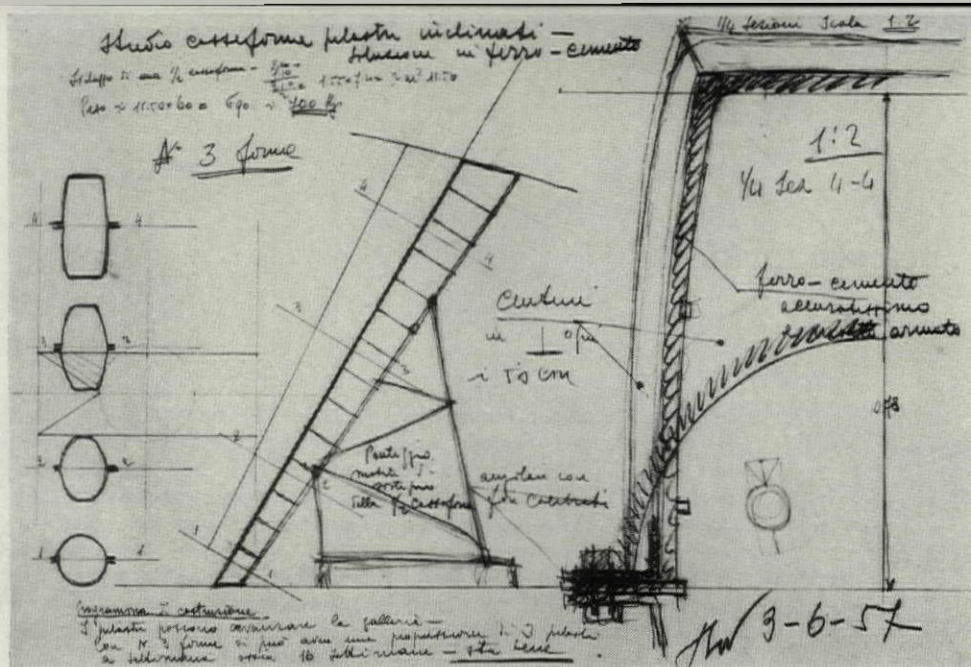
While waiting for an improved faculty of architecture, one teaching a unified technical-esthetic direction, I believe that the only possibility is a sincere collaboration between engineers and architects. Only such collaboration can reconstruct that unity which slowly was lost, beginning with the formalism of the Renaissance, after the splendor of the Ancient and Gothic periods.



PHOTOS: OSCAR SAVIO

Early design: As long ago as May 1956, Nervi clearly envisioned the arena's major elements (sketch, below): the seating shelf, buttressed by an inclined pilaster which follows the line of thrust from the cupola, and the circular covering for the gallery, also shown in the sketch as is an enlarged detail of the connection. Above: a photo of the gallery which encircles the arena.





Evolution of an idea: Nervi's original approach for forming the inclined pilaster is shown in this sketch (above). He was trying to evolve a four-stage, precast form to be used in the pouring of all pilasters. His scribbling to himself reads: "If we can quickly construct the pilaster, the gallery will go up fast. With three forms, we can build three pilasters a week: $16 \times 3 = 48$. Thus, 16

weeks in all. O.K." But he did not use this approach in the final design (the form turned out to be too expensive). Instead, he developed a more economical wood-framing system (right). Like many of Nervi's ideas, the discarded one will likely show up in another structure. Below: a finished pilaster with a staircase in background. Note how the wood forming adds texture in the concrete.



Rented art . . . floating pool . . . no-cash financing

? *How to select appropriate artworks to decorate a new building or office.*

! *Rent them for a trial period to see how satisfactory they will prove over an extended period.*

Choosing paintings or sculpture for a new building or office can be a difficult task, and an expensive affair if works are bought that do not have a lasting appeal after their initial impact has worn off.

In Cleveland, however, Art Dealer Howard Wise has inaugurated what he calls an "art lend-lease plan" designed to allow a company to "test" the suitability and attractiveness of paintings in their prospective final settings. The rent for a picture for each four months is 10 per cent of its price (a tax-deductible decorating expense), and, after it has been trial rented, the picture can be purchased for a 10 per cent discount. Otherwise the customer can continue to rent the picture (or pictures) as long as he likes (provided no one else buys it), or can have it replaced by another trial picture—in effect have a continually changing exhibition on his premises.

The first building for which the Wise Gallery provided a group of 12 paintings, having an aggregate price of approximately \$6,000, was the new headquarters, research, and engineering building of E. F. Hauserman Co., designed by the George S. Rider Co. Out of the first group of paintings it leased, Hauserman purchased two, for a total of \$750; one by Xavier Gonzalez, whose works are in the Metropolitan Museum of Art and the Whitney and Delgado Museums, and another by his wife, Ethel Edwards, whose work also has been exhibited in the Whitney. Two Cleveland stockbrokers' offices are among Wise's other renters. Next he plans to open a New York gallery and extend his picture-leasing activity there



—where he will be in competition with the Museum of Modern Art which has offered a somewhat similar picture-rental service for many years.

? *How to provide an outdoor swimming pool for a shore-front apartment building without sacrificing any of its limited, costly land.*

! *Build a floating pool on a large raft that in effect extends the lot over the water.*

In the most desirable spots around the shore of Lake Washington in Seattle, building lots sell for as high as \$1,000 per front foot. To recover their land costs, apartment builders erect as many units as legally possible on them and, in such instances as the new luxury Surf Apartments by Architect Ted LaCourse, cantilever part of the building over the lake itself. After this building was



finished, the owner found that he did not have enough land left for an outdoor swimming pool. To provide one, it was decided to create a floating swimming pool within a giant raft that would also offer mooring facilities for boats of the building's tenants (see photos). A rigid or fixed pool was not practical, because the level of the lake varies.

A special problem arose, however, because state public health regulations required that the water level of the pool be 3 inches above lake level. This was required to offset hydrostatic pressure that might cause the infiltration of lake water into the pool, which is filled with filtered and heated water. Water inside and outside of the floating pool would have equal weight, so Architect LaCourse and a local distributor of expanded polystyrene neatly solved this problem by calculating the dead load of the extra 3 inches of pool water and the superstructure of the raft plus the live loads anticipated on the entire installation, and then specifying the use of a carload of expanded polystyrene "logs" in the construction of the raft. The plastic "logs" will provide enough buoyancy to hold the water level of the pool the required 3 inches above lake level.

? *How to finance a \$3.5 million building addition without reducing cash reserves.*

! *Combine the proceeds of a sale-leaseback of the original building with a loan from the landlord-purchaser plus an increased mortgage on the enlarged property.*

When he decided to expand his swank Hotel Drake in uptown New York City, William Zeckendorf faced the usual problem of raising the necessary funds. The new 16-story air-conditioned wing would in-

clude 176 rooms, stores, and meeting rooms and would cost about \$3.5 million. Through a complex combination of financing techniques, Zeckendorf will solve his problem without dipping into cash reserves. Indeed, he will obtain all the funds he needs for the new construction, and a surplus to boot. Over a period of time, the money will come from three sources:

First, Zeckendorf's Webb & Knapp organization will sell the present property to a syndicate, the Drake Associates, for \$4.5 million cash over a \$4.5 million mortgage, but will simultaneously lease it back for a long term for operation by Zeckendorf Hotels Corp., which will agree to build the addition.

Second, Drake Associates will lend another \$1 million to Zeckendorf Hotels to help finance the addition, although this loan will be considered satisfied if the addition is completed within three years. This will give Zeckendorf a considerable incentive to proceed with construction without delay.

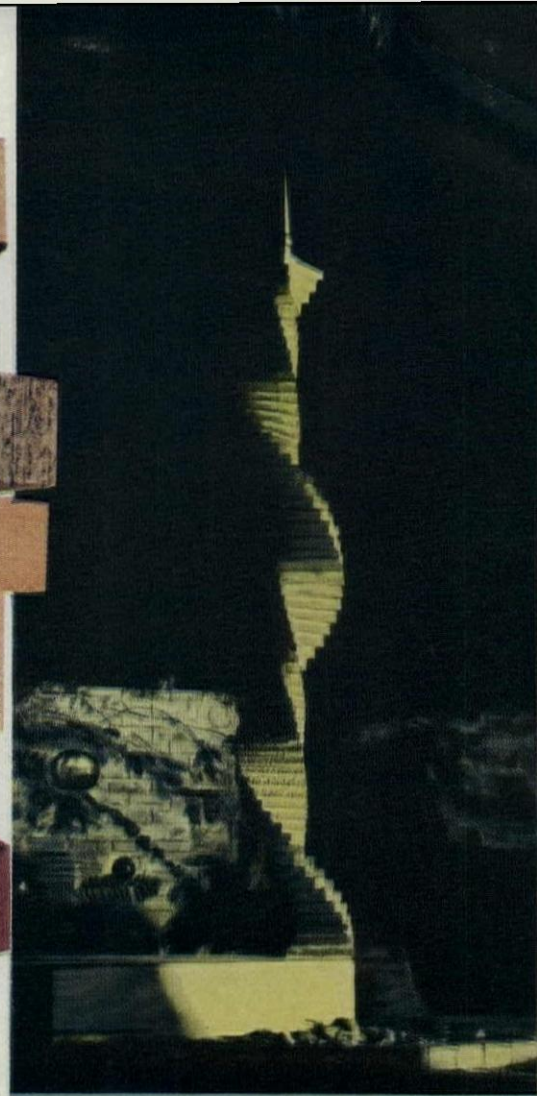
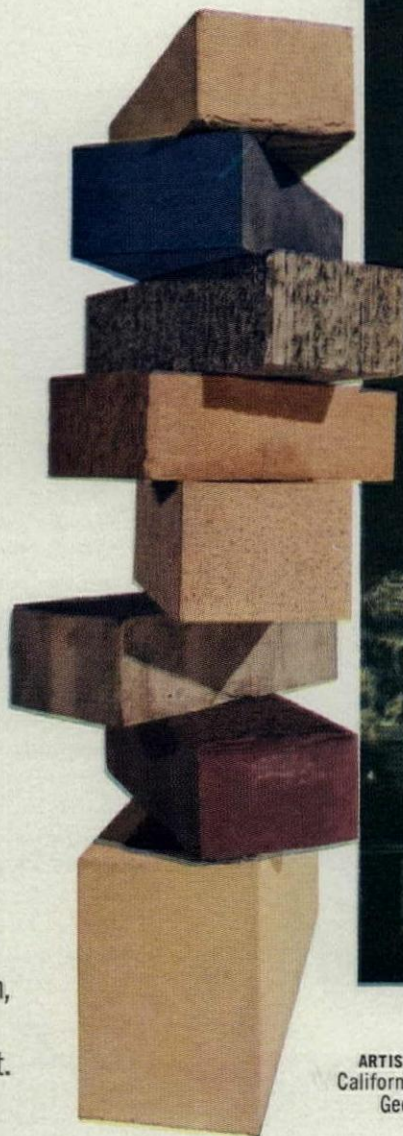
Third, Zeckendorf is authorized to negotiate a \$2 million increase in the \$4.5 million mortgage on the property to apply to the costs of the addition. (He may negotiate a greater increase if he wants, but in that event—or in the event of his "mortgaging out" for instance—only half of the loan proceeds in excess of \$6.5 million will go to Zeckendorf, and the other half to the landlord-syndicate.)

The return to the syndicate will be an annual net rent of \$715,000 (Zeckendorf Hotels will pay all taxes, insurance, and operating and maintenance expenses), plus mortgage interest and amortization. After the mortgage has been paid off, this rent will be reduced by 50 per cent. At the end of ten years, Webb & Knapp will have a six-month option to buy back the entire, enlarged property for \$8.5 million over any mortgages then outstanding. **END**

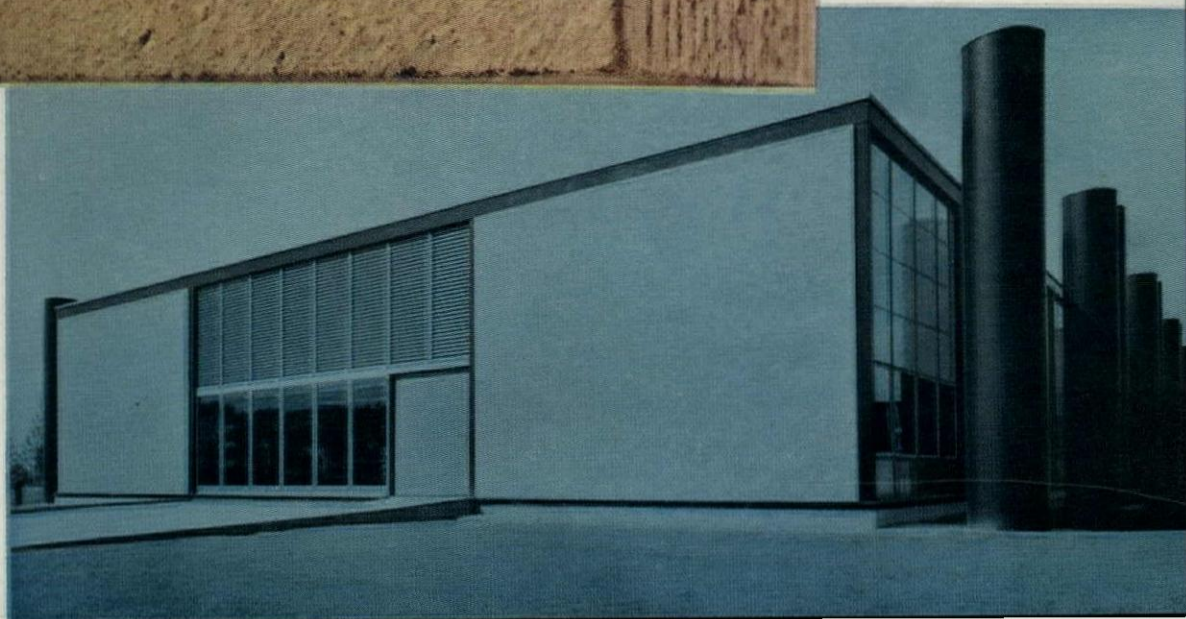
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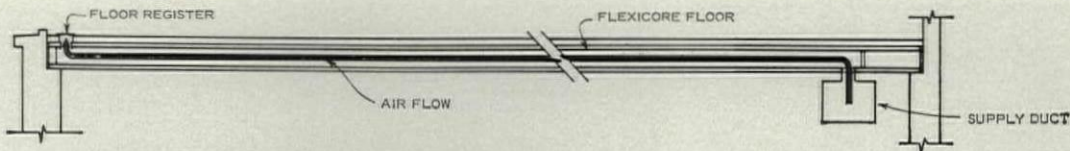
Rutgers University Library, New Brunswick, New Jersey

Architects — York and Sawyer, New York

Electrical Engineers — Fred L. Moesel, Moesel Associates, New York, N. Y.

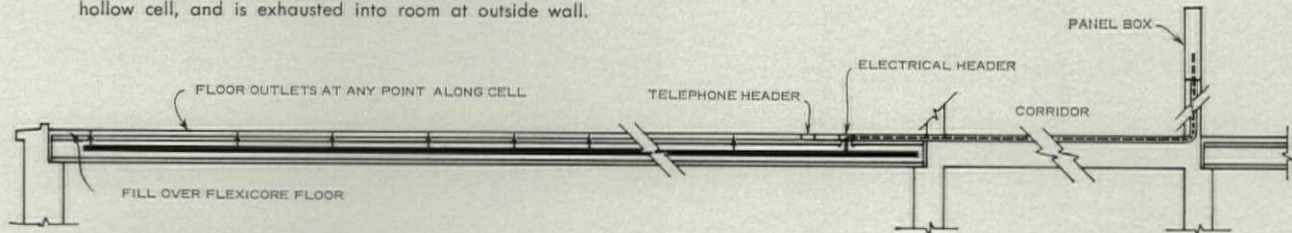
General Contractor — Calabro Construction Corp., Linden, N. J.

Electrical Contractor — James H. Delaplaine, DeLaplaine, Inc., Highland Park, N. J.

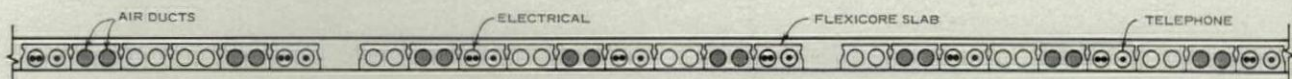


Ask for
Flexicore Facts
No. 82

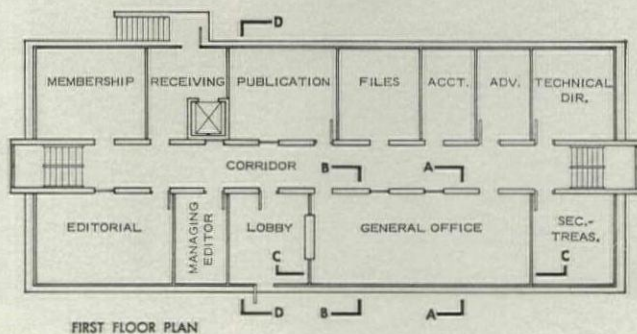
Section AA. At American Concrete Institute in Detroit, warm or cool air flows from supply duct, through Flexicore hollow cell, and is exhausted into room at outside wall.



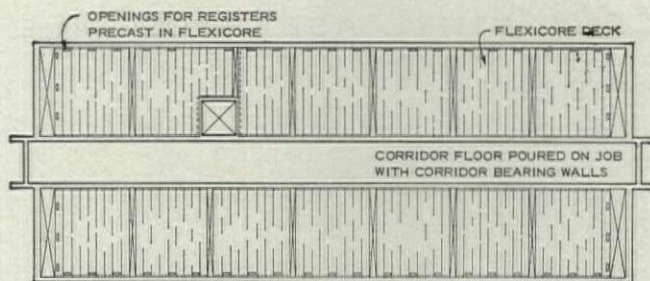
Section BB. Electrical wiring runs from panel box, through header, then through Flexicore hollow cell to floor outlet. Similar system is provided for telephone.



Section CC. Selected cells are used for electrical, telephone, and for air ducts. Electrical fittings by Conduflor Corp., Cleveland.

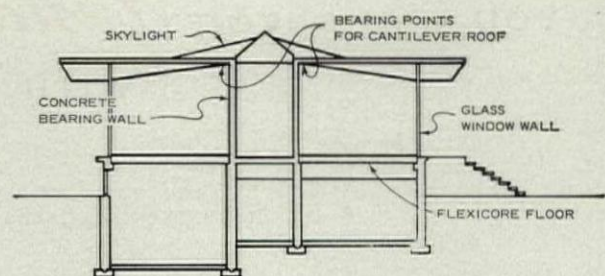


FIRST FLOOR PLAN



First Floor Framing. Corridor floor was cast in place with corridor bearing walls. Flexicore clear-spans from corridor walls to outside walls.

HOW TO USE CELLULAR CONCRETE DECKS FOR ELECTRICAL AND AIR DISTRIBUTION



Section DD. Corridor walls are sole support for roof.

Minoru Yamasaki & Associates, Architects, Birmingham, Michigan



Hollow cells in Flexicore precast, fireproof floors are used for electrical and telephone wiring, and as air ducts for warm air heating, air conditioning and ventilating at American Concrete Institute Headquarters, Detroit.

For more information on this project, ask for Flexicore Facts No. 82. Write The Flexicore Co., Inc., Dayton, Ohio, the Flexicore Manufacturers Association, 297 S. High St., Columbus 15, Ohio or look under "Flexicore" in the white pages of your telephone book.





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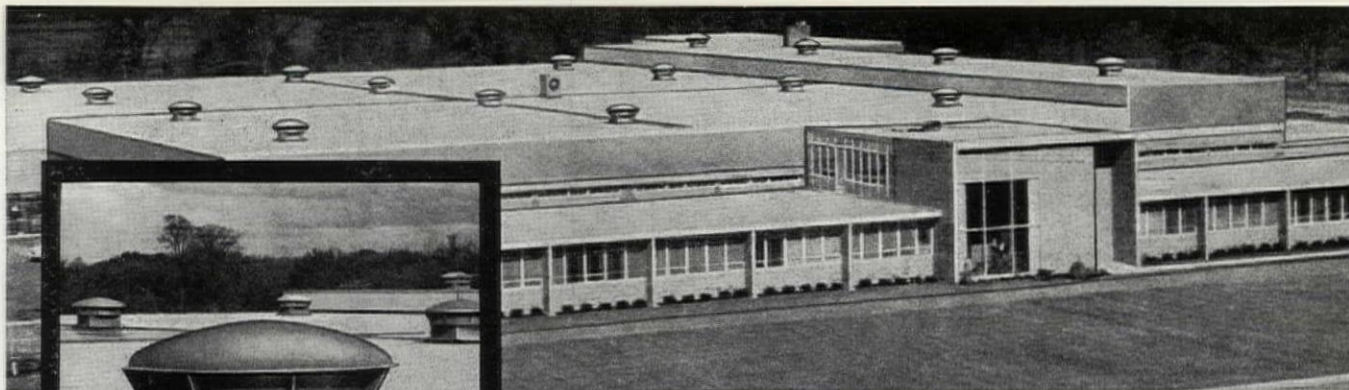
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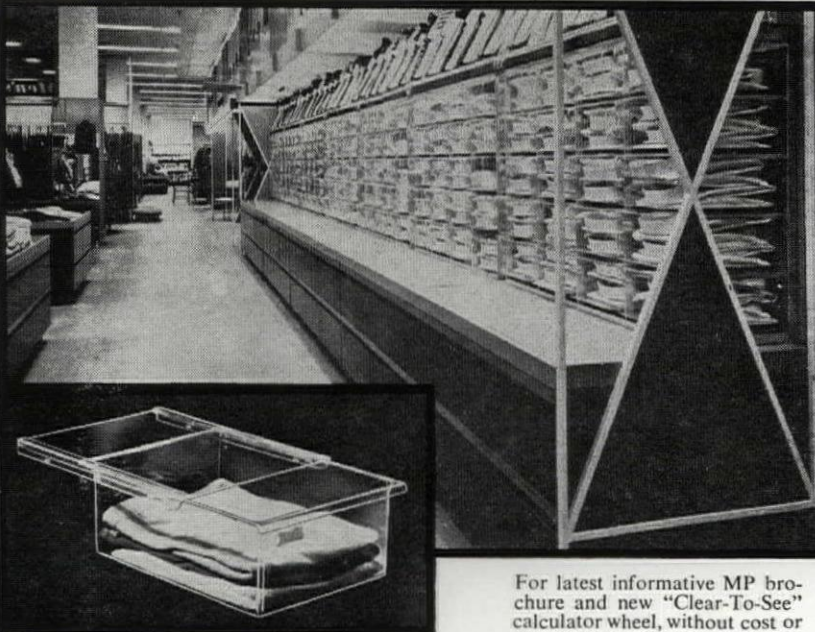
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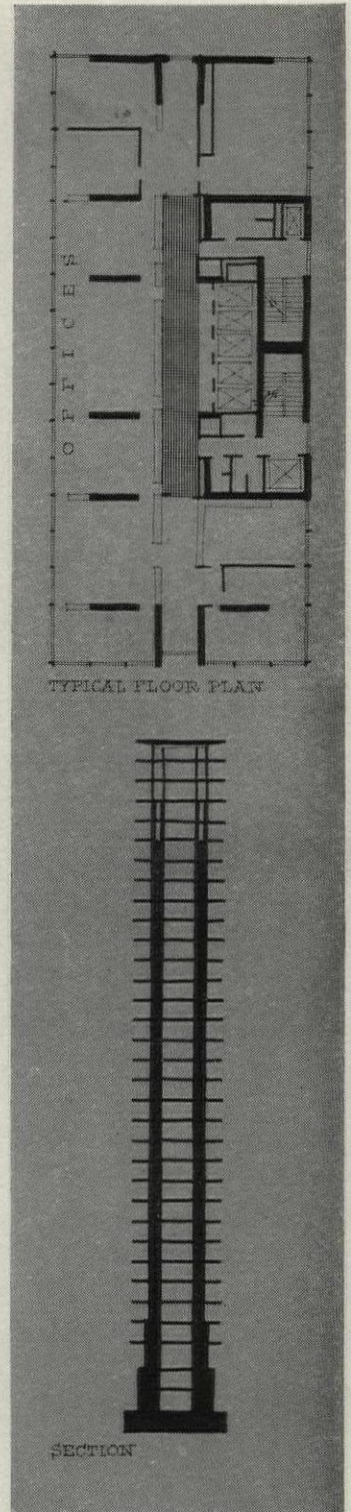
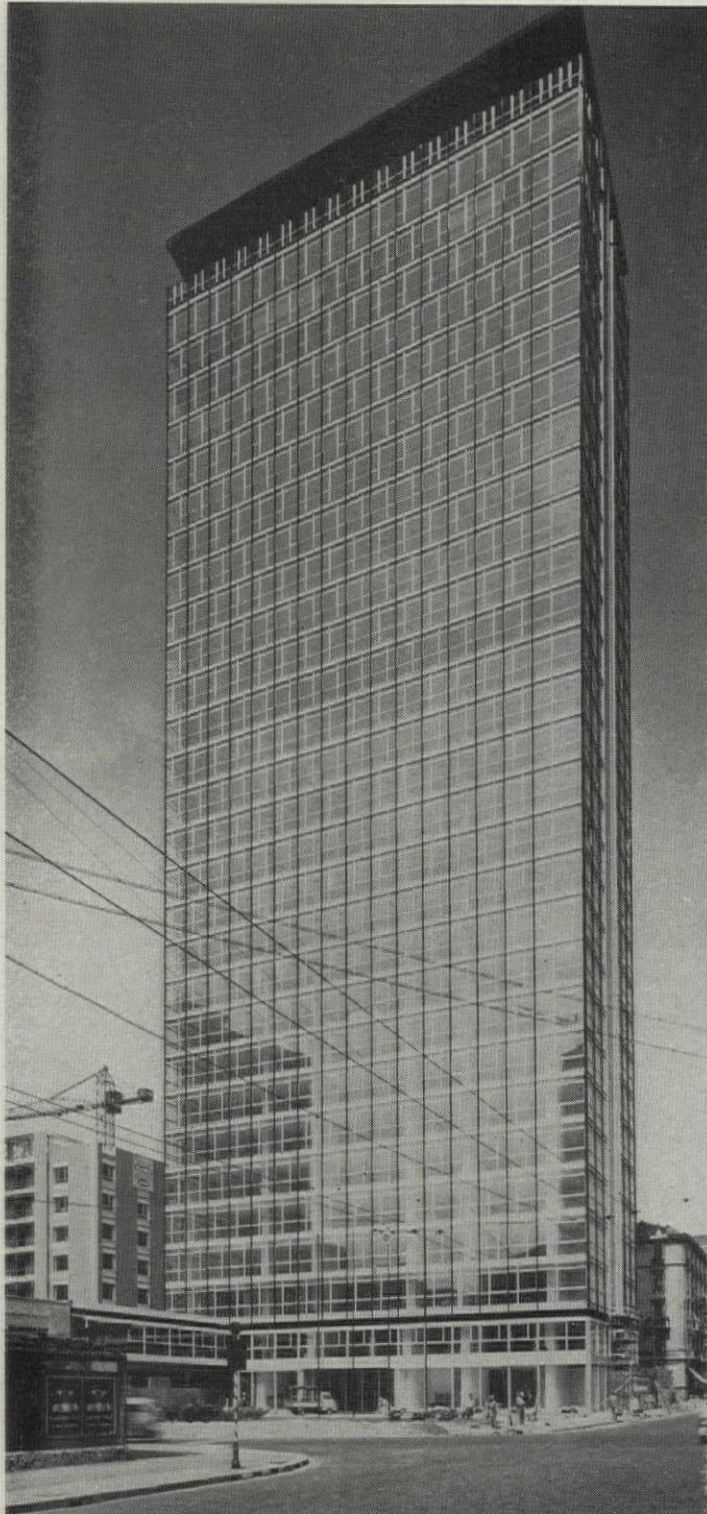
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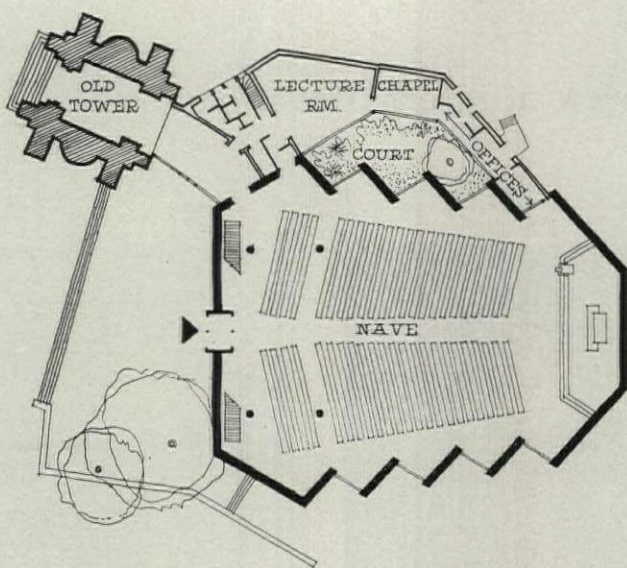


SLEEK IN MILAN

Milan's sleekest new office tower is the 30-story Galfa Building, designed by Melchiorre Bega. The exterior of the building is completely glass, with operable sash (which has given a few bad moments to upper-floor tenants). The struc-

ture of the building is composed of six pairs of reinforced concrete pylons which rise from massive, subsurface bases to support the branchlike floor slabs (see section). Typical office floors (above) are well planned, if somewhat crowded

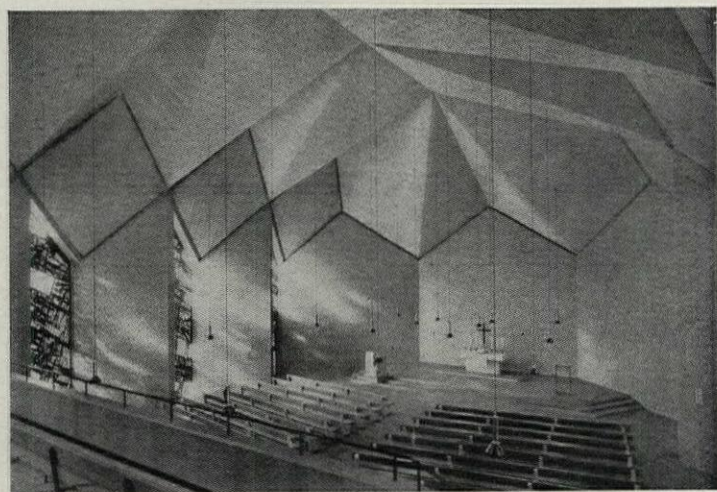
by the services necessary for a modern skyscraper. The tower covers only one quarter of its half-block site; it is flanked by large plazas which are paved and planted. A ground-floor bank opens on both the central lobby and the street.



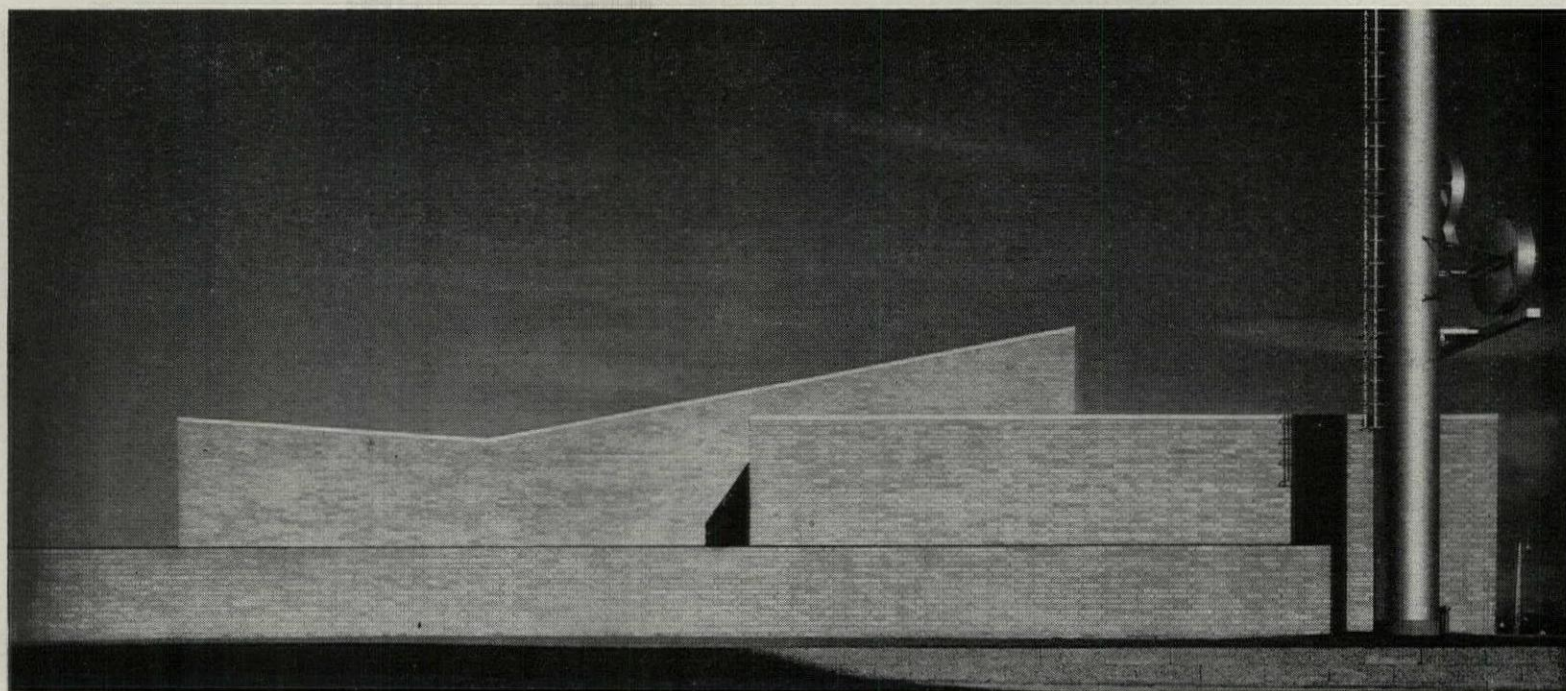
DIAMONDS IN GERMANY

When commissioned to build a major Protestant church in Bochum, German Architect Dieter Oesterlen accepted as the key to his design the neo-Gothic church tower that stood on the site, yet did not allow the tower to overshadow his own modern concepts. He found

that he could take the peaked, diamond shape of Gothic ornament and translate it into contemporary structural terms by using it for the steel web of the church's folded roof. Along the zigzag sides of the column-free interior are panels of glass and patterned brick.



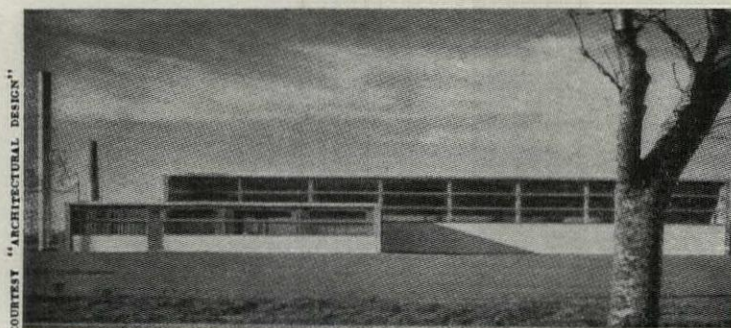
PHOTOS: COURTESY "BAUWELT"



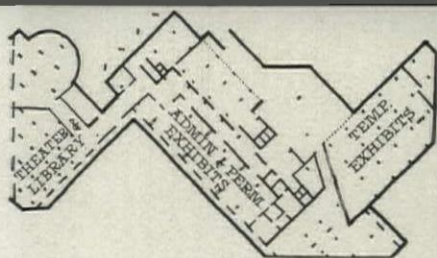
TILTED IN DENMARK

On the main road between Århus and Ålborg, Arne Jacobsen has given the Carl Christensen motor works a factory that is a better highway advertisement than any billboard. The main building of the crisply detailed factory is the factory hall (highest block in photo above), which is designed

to admit a great amount of light through large windows at either end. Hence the double-tilt roof. The west-facing windows of the hall (left) are 13 feet high. On their horizontal frames lighting fixtures are attached so that artificial light will come from the same direction as daylight.



COURTESY "ARCHITECTURAL DESIGN"



BIASED IN TURIN

Occupying an entire city square in Turin, the new Museum of Modern Art looks something like an incorrect solution to a building block puzzle. The explanation is that the largest of the museum's three buildings (left in photo), which has administrative offices on its ground floor, houses the museum's permanent exhibit on its upper two floors. This confusion of forms by mixed uses was further complicated by the fact that the architects, Carlo Bassi and Goffredo Boschetti, decided both gallery floors should be skylighted, and this necessitated raising the third floor well above the second and slanting in the exterior walls. Inside the museum, the staff avoided the challenge of putting paintings against a biased wall by suspending them from a ceiling beam.

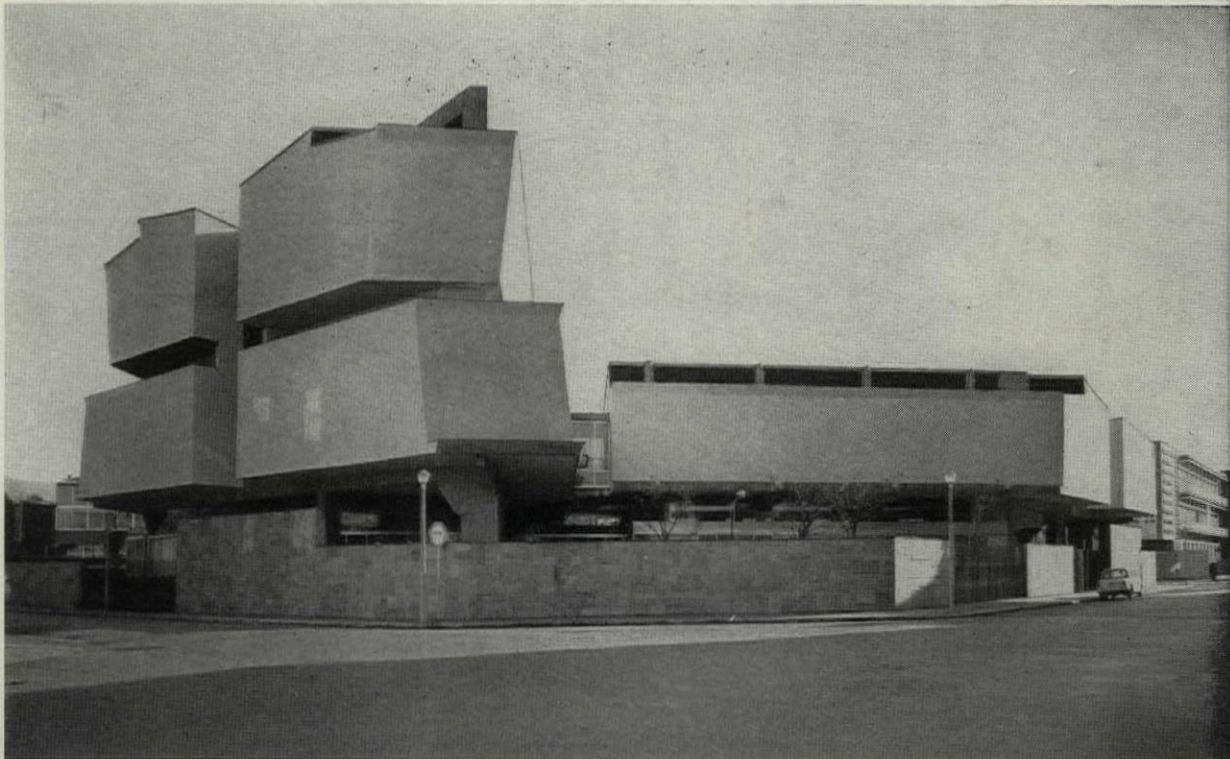
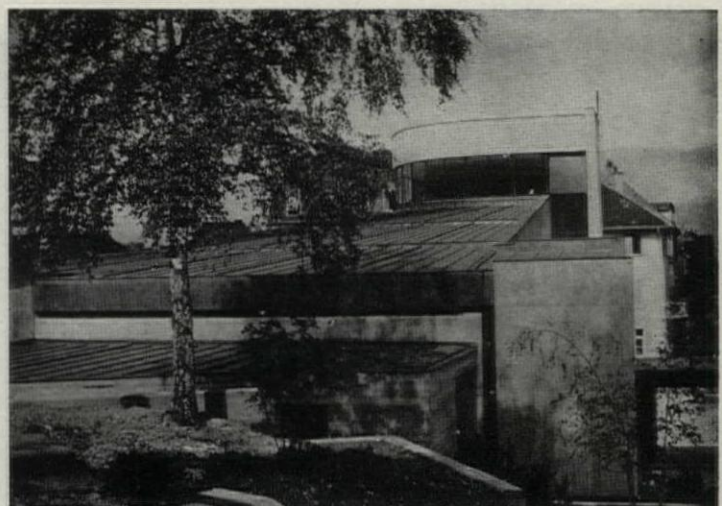
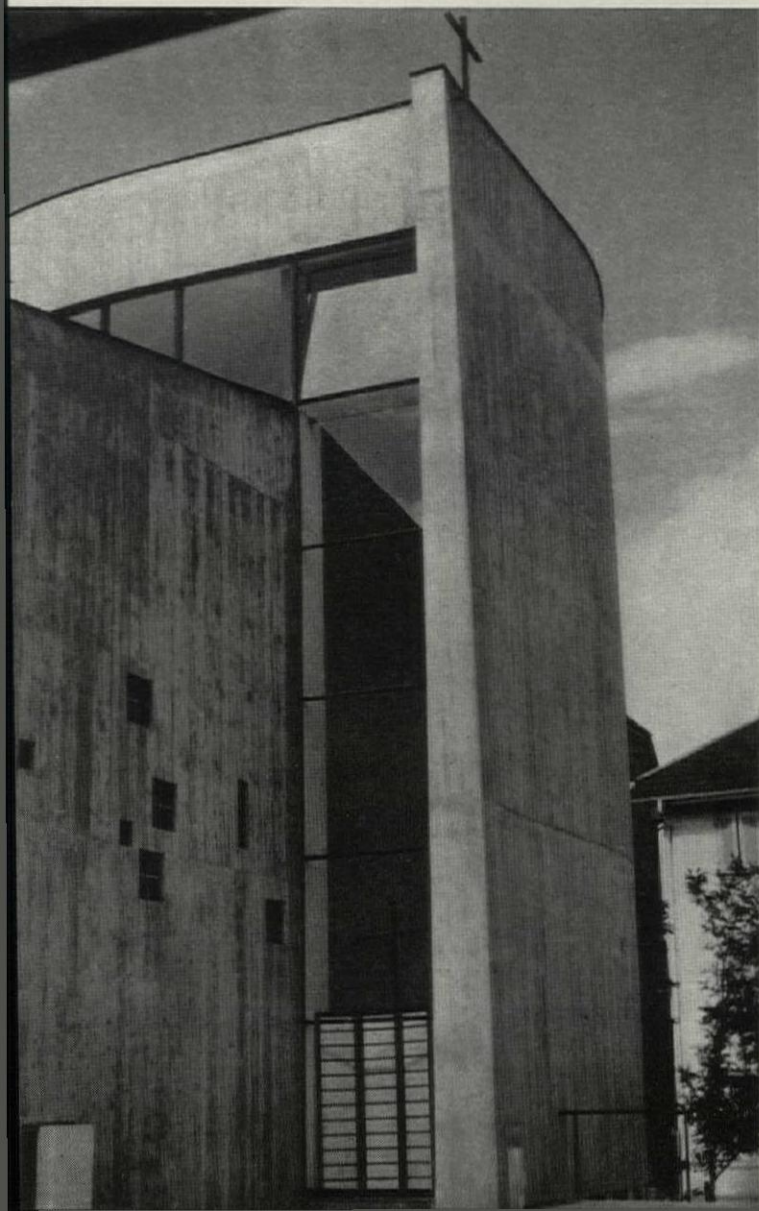


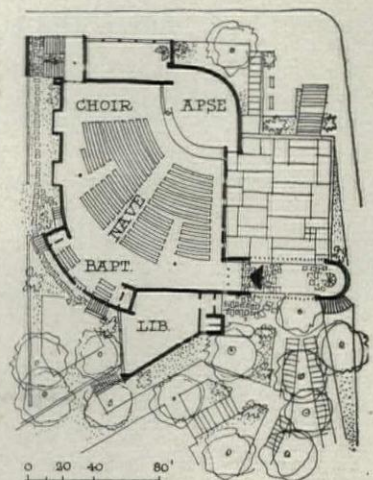
FOTO MOISIO

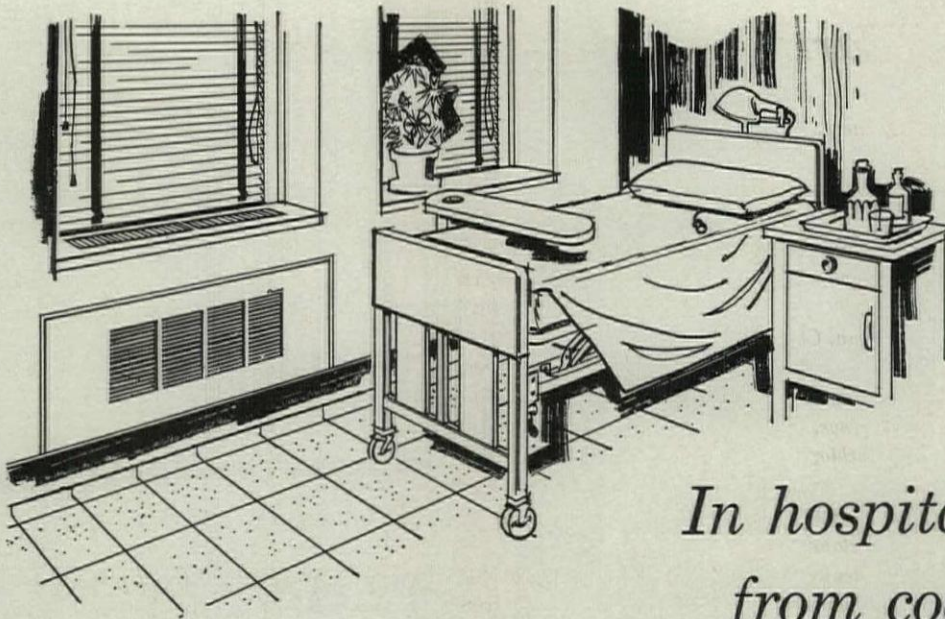


PHOTOS: RUDOLPH HOROWITZ

ASCENDANT IN BASLE

Swiss Architect Hermann Baur hoped to achieve a feeling of natural ascendancy in his Catholic church near Basle. Thus the various roof levels are organized in a definite, mounting rhythm up to the apse (at back of photo above), which is lighted like a pilot house by a band of clerestory windows. At the side of the church, the land falls away, permitting entrance at a lower level. From that point the full height of the concrete church, and its small, irregular windows, can be seen (photo left).





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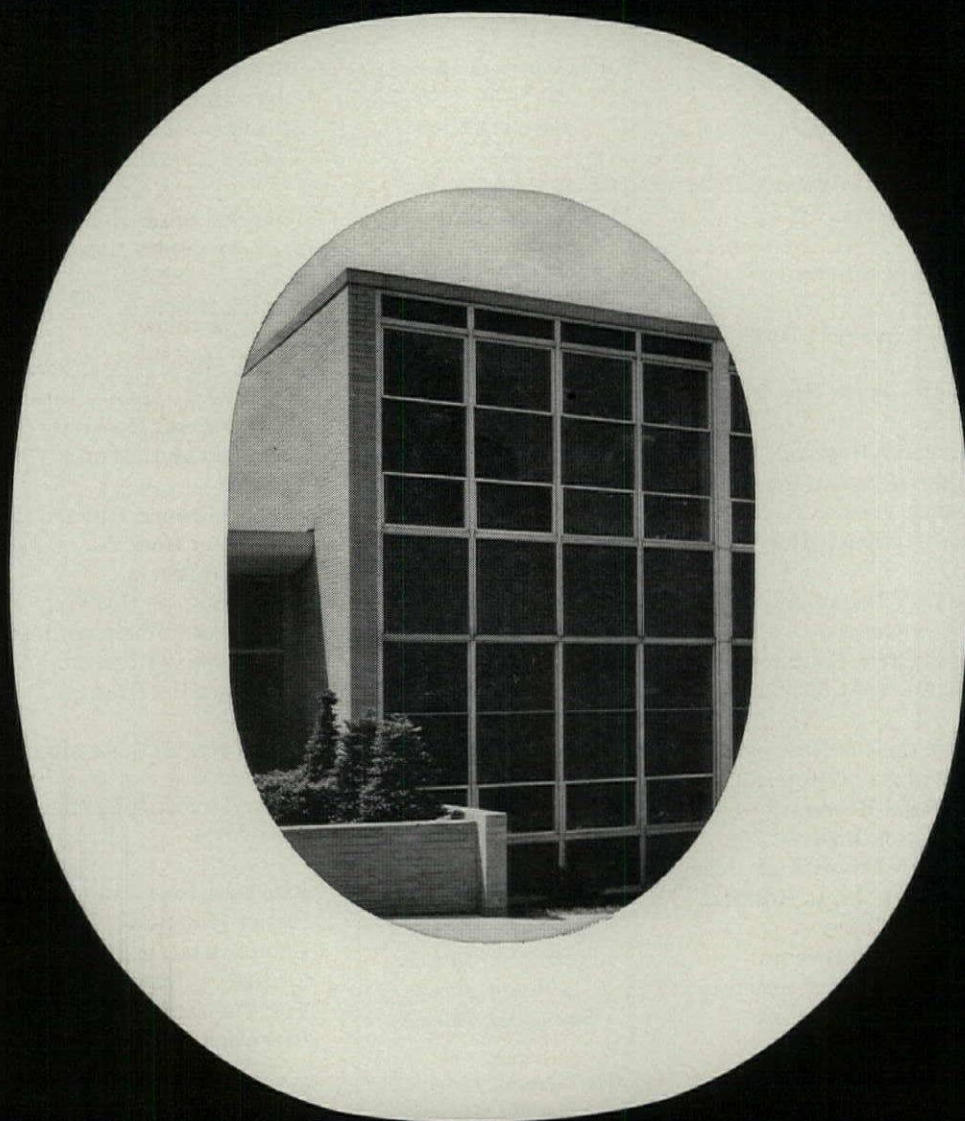
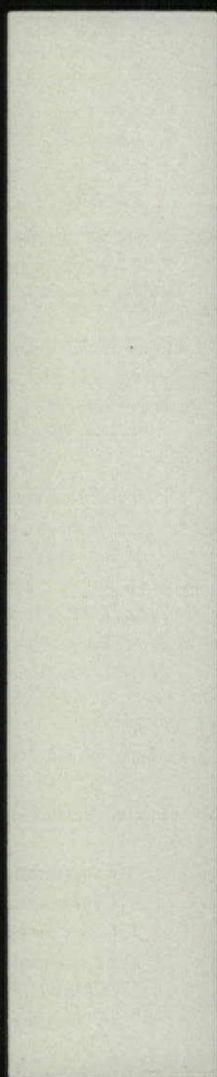
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HOSPITAL FOR CHILDREN	Emory University, Georgia	NEW YORK FOUNDLING HOSPITAL	New York, New York
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Squares . . . playgrounds . . . fires . . . houses

TOWN AND SQUARE. From the Agora to the Village Green. By Paul Zucker. Published by Columbia University Press, 2960 Broadway, New York 27, N.Y. 287 pp. 7½" x 10". Illus. \$15.

This is unquestionably the most valuable recent addition to the plaza buff's reading list and library. It is particularly valuable because Author Zucker, who is presently a professor at New York's Cooper Union Art School, looks at the voids as well as the solids when he regards urban open areas. He is similarly contemporary in his approach to the social and economic forces (as opposed to esthetic) that govern the shapes of squares.

Although many will, thus, be grateful for this well-researched volume, many others will share two regrets: first, that funds available for the book were not great enough to allow a wider and more original choice of illustrative material, and second, that the author felt compelled to cover so many aspects of his subject. Thus, the book is something of a historical dash from one piazza to the next, rather than an analysis in greater depth.

It is, withal, worth the price for anyone with a yen for open space in cities.

CREATIVE PLAYGROUNDS AND RECREATION CENTERS. By Alfred Ledermann and Alfred Trachsel. Published by Frederick A. Praeger, Inc., 15 W. 47th St., New York, N.Y. 175 pp. 9" x 11¼". Illus. \$12.50.

If American adults put half as much time and talent into planning playgrounds for their children as they do into solving traffic problems for themselves, this handsome book seems to suggest, our cities would be far finer, funnier, and more human places in which to live. The authors, a prominent youth leader and a prominent architect-planner in Switzerland, show how it can be done, with 56 examples from a dozen countries (mainly their own, Scandinavia, and the U.S.). Their formula: a master plan of neighborhood play areas, the setting aside of open space before it is too late, plus the absolute insistence that no new housing be built without proper provisions for recreation. The great charm of the book, however, lies in the variety and imagination of existing playgrounds that make the average urban "tot lot" with its swings and asphalt look pretty mean and poverty-stricken indeed. Here is a collection of gay spaces reclaimed from vacant lots and traffic islands; streets and alleys closed off permanently for kids; whole interiors of city blocks cleared of fenced back yards and made into sunny, land-

scaped parks. Here too is a wide range of equipment that makes play more fun, more active, and far more educational: climbing trees, play ships, concrete-pipe trains, real second-hand airplanes and trolley cars, "Wendy houses," jiggle-nets, swing-rings, play bowls, saddle slides, big abstract sculptures that change from whales to snails to caves depending on the child. And some special kinds of playgrounds: miniature mazes, little towns that teach the rules of grown-up traffic, Robinson Crusoe islands, Wild Indian preserves, water-spray and mud-pie precincts, and "construction parks" where children can "rent out" old boxes, boards, and bricks and become real architects and builders on their own.

OPERATION SCHOOL BURNING. Published by the National Fire Protection Assn., 60 Battery-march St., Boston 10, Mass. 272 pp. 6" x 9". \$4.75.

The operation described in this book was a series of experimental fires conducted in 1959 by the Los Angeles Fire Department in an abandoned school building. Major financial support for the project was provided by Educational Facilities Laboratories, Inc., a Ford Foundation affiliate.

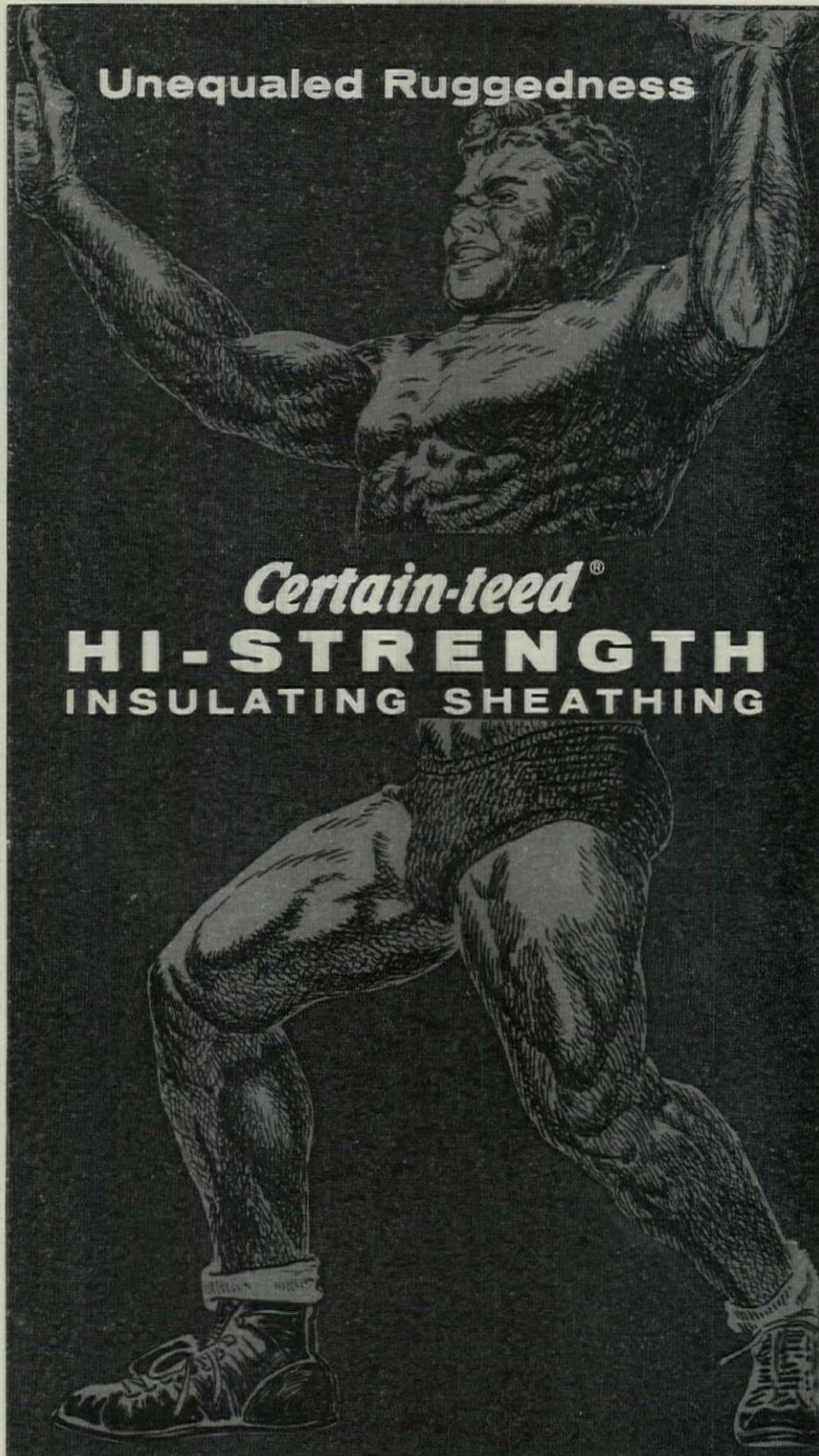
The fire department's tests were aimed at finding ways to protect children and teachers from fire and smoke hazards in open stairway schools. The book describes in detail each of the experimental fires, including photographs, drawings, tables of data. The results of the tests should have significant effects on fire safety codes as well as on school design.

THE SECOND TREASURY OF CONTEMPORARY HOUSES. Selected by the Editors of *Architectural Record*. Published by F. W. Dodge Corp., 119 W. 40th St., New York 18, N.Y. 232 pp. 8¾" x 11½". \$7.75.

This book reprints some of the best houses contained in the *Architectural Record's* annual selection of American residential architecture. Some of the best houses of the period covered—1956 to 1958—are contained in this selection; among these are buildings by Ulrich Franzen, John Johansen, Philip Johnson, Victor Lundy, Paul Rudolph, and others of the same generation. There are also some glaring omissions: nothing by Wright; no houses by Craig Ellwood, Raphael Soriano, Harwell Harris, or John Yeon. Still, by and large the selection is good and demonstrates an extremely high standard of custom-house design in every part of the country.

Because this volume is a collection of
continued on page 164





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reprints of earlier magazine articles, the sum of the many parts does not really add up to a coherent book. It does add up to a pleasant picture album, of interest especially to those whose work is represented in it—as well as to their friends, relatives, and staunch admirers.

PLANNING HOMES FOR THE AGED. Edited by Geneva Mathiasen and Edward H. Noakes. Published by F. W. Dodge Corp., 119 W. 40th St., New York 18, N.Y. 128 pp. 8 1/2" x 11". Illus. \$12.75.

The need for special design considerations in the problem of housing our growing mass of elderly unhomed people comes in for professional discussion in this new volume. Such details as the problem of long halls are touched upon (long halls "are actually more tiring to move about in than corridors of equal length that are visually broken") but only swiftly, for this book covers the field in a short space. Almost half the volume is devoted to prize-winning designs from an architectural competition for the design of a home for the aged, held in 1956, won by Joe J. Jordan and Hanford Yang.

A SYNOPSIS OF THE PLANNING LEGISLATION IN SEVEN COUNTRIES. By Stephan Ronart. Published by the International Federation for Housing and Planning, The Hague. 130 pp. 6" x 9". \$3.

URBAN RENEWAL. Report of the International Seminar on Urban Renewal at The Hague, 1958. Published by the International Federation for Housing and Planning, The Hague. 120 pp. 8" x 11". Illus. \$4.

Two books, both soft cover, that should be in the library of anyone seriously interested in the planning and renewal of livable cities. Among the papers delivered at the renewal seminar and summarized in this report are two of particular note: "Renewal within the Dynamics of Urbanis" and "Effectuation of Renewal Programs."

ENCYCLOPEDIA OF REAL ESTATE APPRAISING. Edited by Edith J. Friedman. Published by Prentice-Hall, Inc., 70 5th Ave., New York 11, N.Y. 890 pp. 7" x 10". \$22.50.

The comprehensive character of this appraising guide, written by 45 different experts, is indicated by the fact that its index alone covers 34 pages. The big tome has been subdivided into five parts, each one virtually a book in itself. The first section covers basic appraisal theory and practice, with papers by eight different specialists. The next two sections cover methods of appraising specific property types of a general nature (apartment buildings, industrial plants, office buildings, etc.), and another group of more specialized properties (country clubs, cemeteries,

continued on page 166



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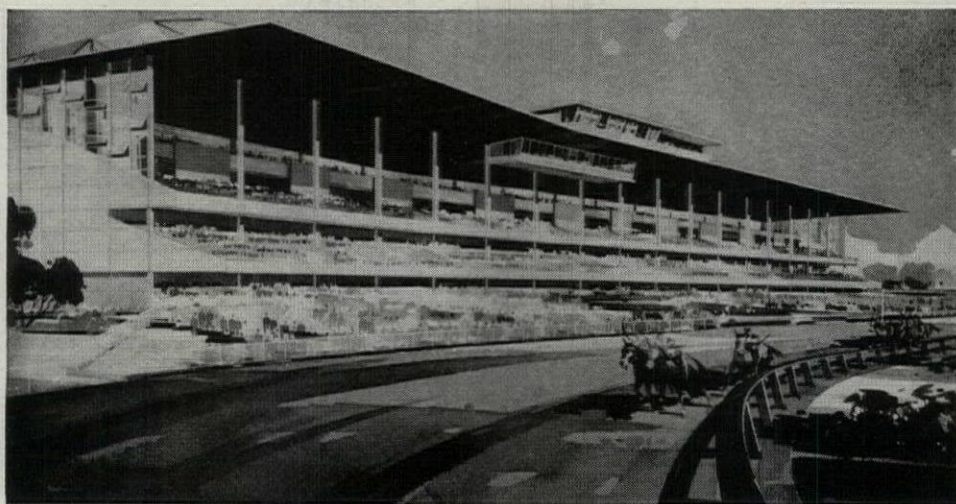
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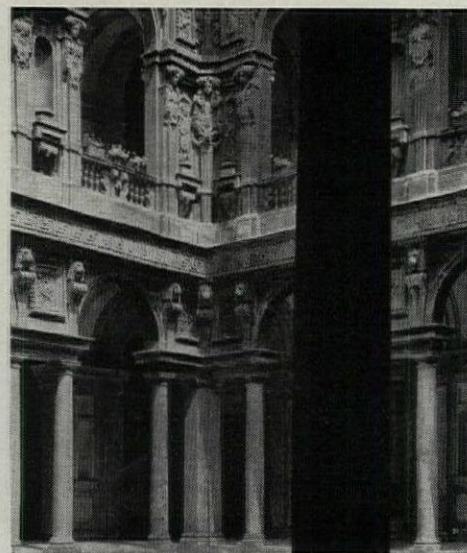
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hospitals, etc.). The last two sections consist of papers on special branches of appraisal practice (for mortgage loan purposes, condemnation, insurance, and tax purposes) and the methods of conducting an appraisal business. This is an authoritative book prepared not only for appraisers, but also for brokers, lenders, builders, developers, managers, accountants, attorneys, and others who must frequently concern themselves with real estate valuation problems.



ITALIAN VILLAS AND PALACES. By Georgina Masson. Published by Harry N. Abrams Inc., 6 W. 57th St., New York 19, N.Y. 244 pp. 11" x 12½". Illus. \$17.50.

Author Masson is the *Architectural Review's* Italian correspondent. Her book is the best substitute an architect will find for an actual trip through the Italian villas and palaces built in the period between the Renaissance and the nineteenth century. And, because of the intimate richness of some of the photographs (like that of the sixteenth-century Palazzo Marino, above), the book often reveals delights that the tired traveler might never locate.

TURKISH ISLAMIC ARCHITECTURE IN SELJUK AND OTTOMAN TIMES 1071-1923. By Behçet Unsal. Published by Transatlantic Arts, Inc., Hollywood-by-the-Sea, Fla. 248 pp. 6½" x 7½". Illus. \$7.75.

A reasonably complete and well-illustrated introduction to one of the most highly decorative branches of "anonymous" architecture.

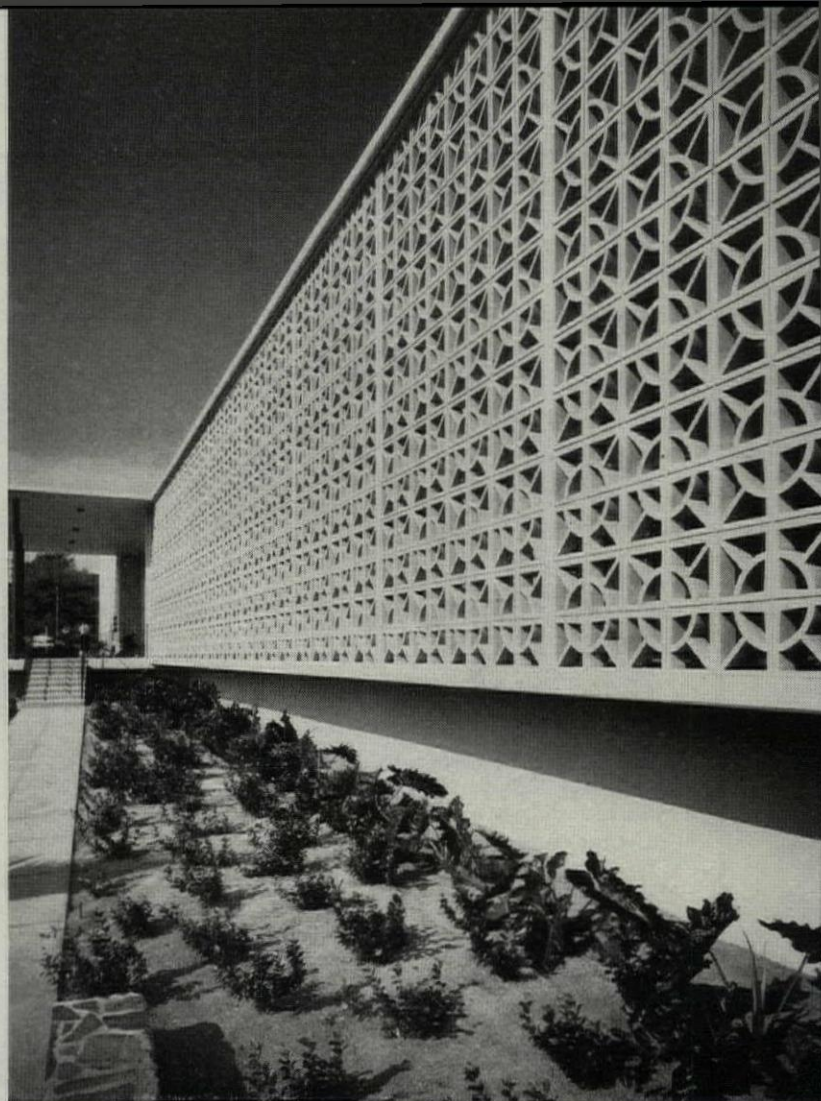
ELSEVIER'S DICTIONARY OF BUILDING CONSTRUCTION—in four languages. Compiled by C. J. Van Mansum. Published by D. Van Nostrand Co., Inc., 120 Alexander St., Princeton, N.J. 471 pp. 9" x 6". \$15.75.

A book of special value to those called upon to entertain one of the many groups of foreign architects currently visiting these shores.

END



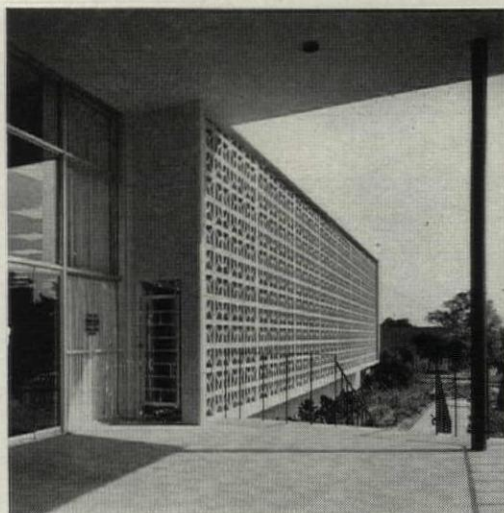
The solar screen softens bright sunlight to subdued serenity, just right for reading.



Exterior eloquence with practical purpose keynotes the horizontal sweep of the library.

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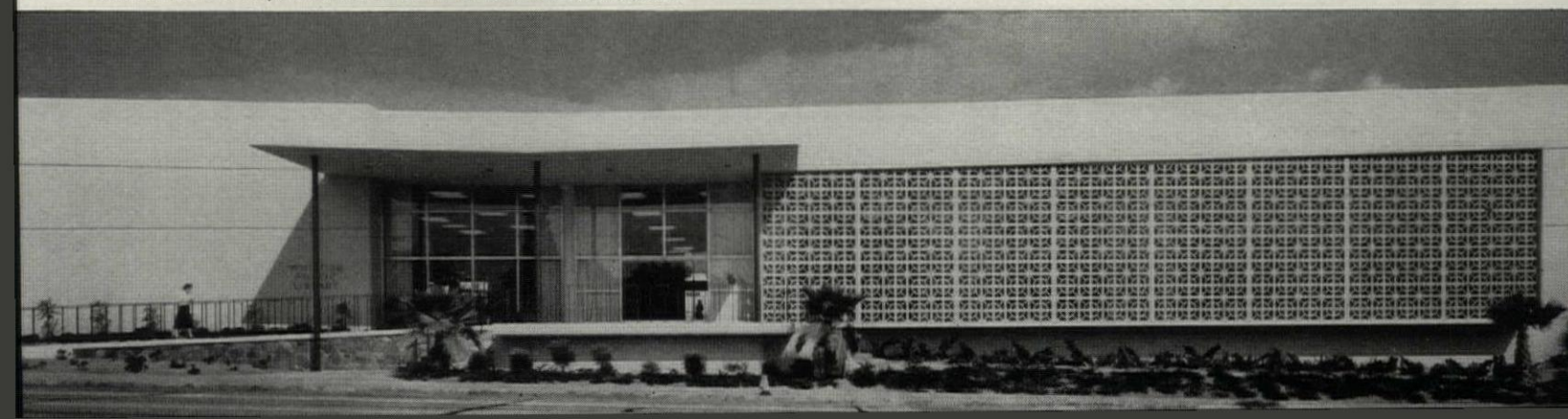


THE new face of concrete masonry can add mood and dimension to any structure. In this library, the solar screen of concrete block adds an accent of beauty to the handsome lines of the building, and diffuses the sunlight into soft patterns of interest in the interior. Your local NCMA member can bring you up to date on solar screens of concrete block. See him soon.



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Immune to settling and soil shifts, self-supporting. Engineered by specialists in aluminum and architectural fabrication for 15 years—tanks, weldments, crane booms, pedestrian bridges.

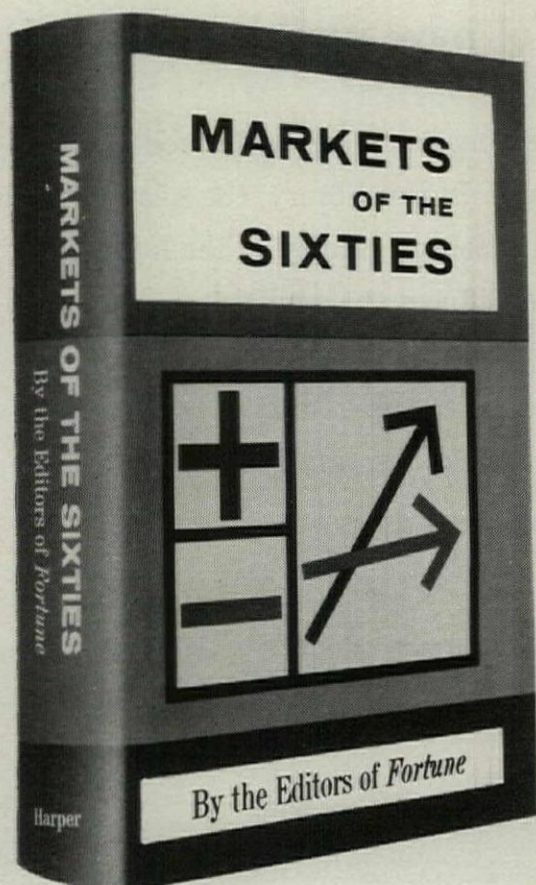
Small wonder that more architects, consulting engineers, and pool planning committees are now specifying the Chester All-Aluminum Pool after careful comparison of all types.

Write for literature and address of pool near you. Also Diavac Filters and Deck Equipment.

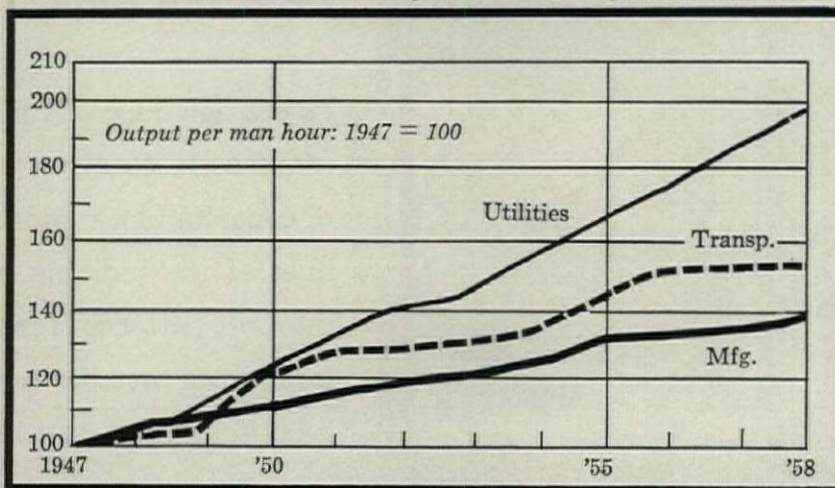


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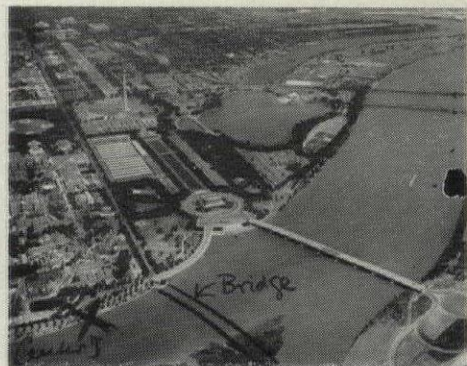
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FAIRCHILD AERIAL SURVEYS

MARCH ON WASHINGTON

U.S. Representative Frank Thompson Jr., one of the Capital's most articulate defenders, recently called for architectural support in his efforts to save Washington from highway blight. His plea was published in the December AIA Journal.

If present engineering schemes are realized, the famed Lincoln Memorial and the proposed National Cultural Center will be overshadowed by a bridge (photo, above) and its approaches. This will only add to the present traffic congestion and make the whole water-front area as unattractive as much of downtown New York and as impossible to drive in as the historic areas of Philadelphia. If the congestion in the area of the Lincoln Memorial continues to worsen, and it will if the new bridge and road plans are realized, then a pedestrian tunnel will have to be provided for those who want to visit this hallowed shrine.

A few tea parties, Boston style, by the outraged citizens, would be helpful in restoring some sanity to the road-building program. A number of Congressmen have introduced bills which, if enacted into law, would also be helpful in preventing road builders and the road lobbies (financed in part by men with road machinery to sell) from running hog wild over the prostrate forms of the American people.

TRAILER PARKS AS SCULPTURE

The prospect of treating trailer parks (FORUM, July '59) more romantically was outlined by British Architect Jane Drew, writing in Architectural Design. For "caravan," American readers should substitute "trailer."

Caravans don't add up, but they could if their sites did. If the landscape were

sculptured for them, planted for them, and thought of as caravanscape it could be so much more and the best of a situation.

If land for caravanscape were leveled and scooped so that each caravan had its private parking bay in a sculptured landscape which was laid out and planted, formed by earth-moving machines, something quite new by way of vanscape could appear. Special care and night lighting in trees would be needed, combined with permanent child-play areas.

Of course, it needs an artist with color and form who will give the scene a magic which the caravan alone cannot have. There must be a bold, sustained scheme.

The idea is not to treat these gypsylike dwellings (which combine high technique and wildness) as if they were solid respectable citizens. They must be laid as outlaws and individualists, as barge-dwellers ashore, and as fugitives and liberty lovers.

THE CITY CAN LIVE

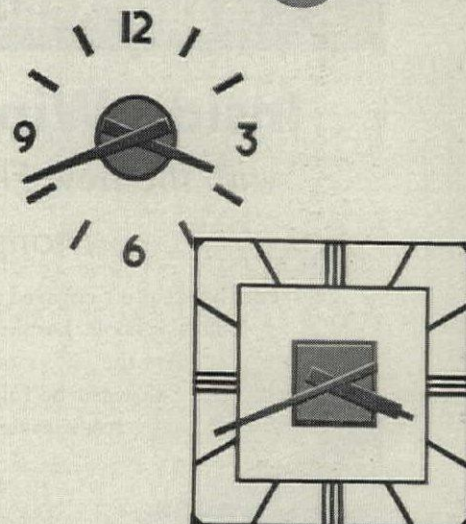
Architectural Critic Albert Bush-Brown, more optimistic than most commentators on the urban scene, predicted a new role for the city in a recent speech at Grinnell College.

The city needs less surgery and more chance for better growth, for it wants to change its character. Technology has removed from the city many of the reasons for concentrating populations in centers of production and consumption. But, in contrast to the various centrifugal process acting on the city, services (advertising, law, administration, research) have moved inward, reclaiming the sites of former urban uses (Lever House, Seagram's). These have proved to be magnets drawing additional urban inhabitants: convention restaurants and night clubs. Community services have developed: public housing, health, education, welfare, and recreation. Increased longevity and forced retirements have seen a geriatricized population return to urban apartments; decreased hours of work among laborers have brought increased leisure time and the problem of how that should be gainfully spent.

Thus the city, far from dying, has begun to establish a meaningful function as a center for cultural and commercial communication, as the civic nexus of a vast region. The question today is whether we shall understand this new city's role as a cultural focus in our society, whether we shall guide its growth so that it acquires a physical pattern no longer deformed and

continued on page 170

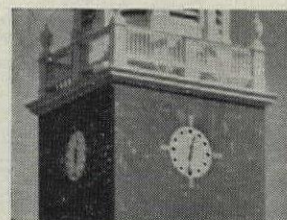
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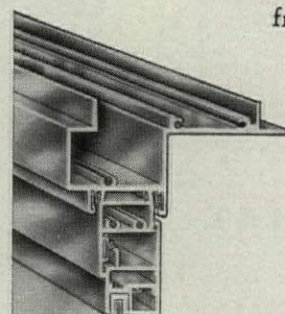
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SHORT SPECIFICATIONS

MATERIAL All frame and sash are extruded aluminum alloy 6063-T5 with a minimum tensile strength of 22,000 psi.

DESIGN FEATURES Upper and lower sash have extruded glass-frames hinged at the lower rail of each sash. For inside cleaning, glass-frames pivot "hopper style" when in the lower position. Jambs of adjoining windows fastened with male and female screws and splined for weather tightness. Continuous head and sill for mullioned units up to 20' wide.

HARDWARE Sash balanced with removable spiral type balances. Glass-frames lock into sash by concealed stainless steel cam locks. Installation anchors of heavy gauge steel cadmium plated.

WEATHERSTRIPPING Perimeter of sash double weatherstripped with wool pile. Glass-frames continuously weatherstripped to sash.

AIR INFILTRATION Shall not exceed .50 cubic feet per minute per foot of crack length under static air pressure equal to winds of 25 mph velocity.

GLAZING Glass and glazing up to and including 1/2" insulating glass under separate contract.

MAXIMUM SIZE 4'6" x 8'0" frame over-all dimensions.

SCREENS Fiberglass half or full length screens available.

FINISH Lustrous satin-like finish. Anodizing provided if specified.

Complete specifications and full size details available upon request.

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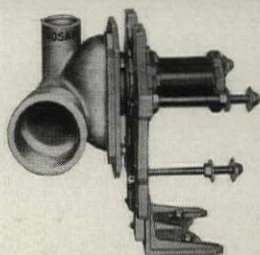
haphazard, but capable of releasing and nurturing the creative, humane energies of a people who desperately need a social ideal in which they can believe—a political goal that goes beyond any discount-house reason for survival.

All the means to build a city of flourishing urbanity are at hand. The political means for regional supervision of growth are known from successful actions of appointed authorities, such as the TVA, though the problem of surveying and controlling the malevolent authority festers in many cities today. There is ample experience in using the legislative tools—zoning, easement, preservation, and the right of eminent domain—so that our cities need not be victims of chance growth. Several university campuses indicate how a cultural center might develop within cities, entirely new, as at I.T.T. and the Institute for the Behavioral Sciences at Palo Alto, or combining the new with the old, as at Harvard, M.I.T., Wayne University, and Georgia Tech. All the components of a fine city are visible.

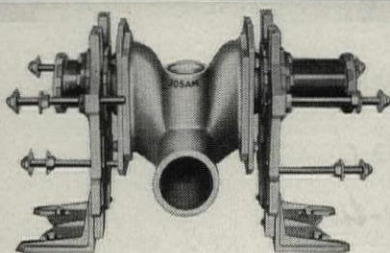
Yet glimpses into the new social and esthetic tool that is modern architecture can only be fragmentary until our cities achieve a right ordering of spaces and institutions, and become in themselves works of art.

In raising this issue, it is common to blame the businessman as being the conservative trustee of universities, churches, museums, and government for a lack of order. Yet that is partly a myth, as many progressive institutions prove daily by retaining progressive architects and artists. The corporate businessman has in this century furthered modern architecture at General Motors, Lever House, Seagram's, Inland Steel, and at universities. He frequently has a high regard for making his physical environment contribute to the welfare of the community. He is not often the one who perpetrates the crimes along our roadsides. Rather, they are the work of the jerry-builder working on risk capital and, more recently, of the retail distributor in chain-market goods, primarily food and gasoline. Often they appropriate the strongest structural forms or most blatant materials, and the use they make of them for completely minor purposes, in a hot-dog stand or a supermarket, casts a pall over what the public mistakenly regards as modern architecture. At his best, the businessman client has never succumbed to these tawdry, superficial advertisements. Yet even he has usually been neutral in his taste, seldom offending anyone by his boldness, seldom innovative. This suggests that innovation must come from clients with a revolutionary social program, but it has not done so; it comes from the stable elements in a society who support revolutionary esthetic forms. Later, after a socially revolutionary movement has become institutionalized, it may be done by encouraging artists to collaborate with clients who represent the important cultural institutions in our land.

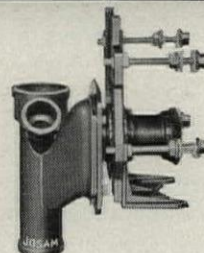
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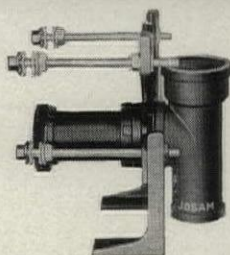
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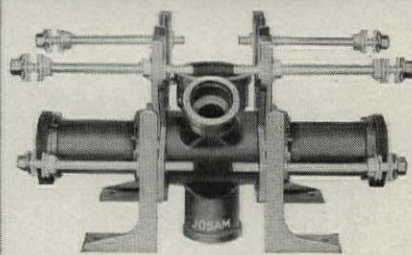
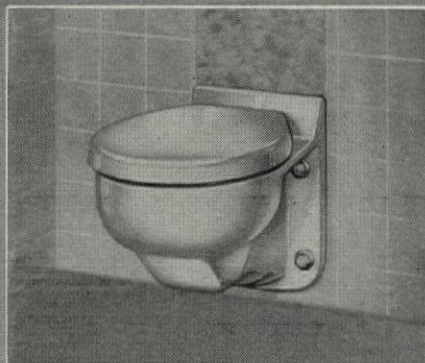
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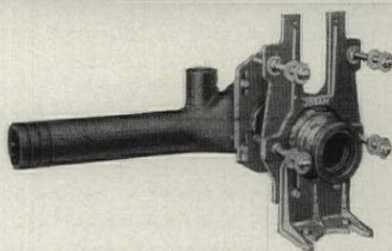
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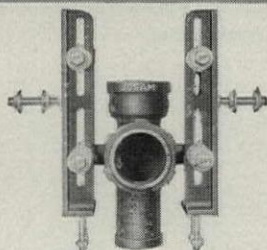
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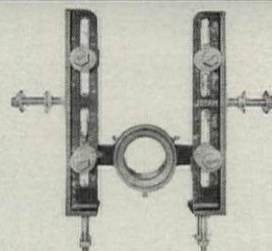
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HOW MUCH FOR SAFETY?

Some rather extraordinary claims for the economy of automatic security systems were made by John E. Haines, speaking at a New York safety conference.

Plant protection and security do not immediately catch the eye of a cost-conscious management, because they are lost in the general classification of operating overhead. A usual argument is, "It's a

necessity, it costs money, and it's non-productive, but there isn't much that can be done about it."

Companies that have attempted to get more for their security dollar have generally done so by assigning their protection forces additional duties far beyond those usually associated with the word "guard." This is false economy because it usually results in overextending an already understaffed group. Today, a guard in his rounds

is only about 10 per cent effective. Only by automating security functions can industrial management increase efficiency and actually save money.

The cost of maintaining a continuous 24-hour guard post over a year's time is about \$24,000. According to available estimates, industry annually spends more than \$250 million for plant protection. Automation can reduce this expenditure by at least 40 per cent and give better results.

A private study recently conducted by the Atomic Division of Westinghouse Corporation showed that in one plant the annual cost in guard salaries alone would be reduced by more than 50 per cent through the use of an integrated security system. Such figures are significant to any manager. They show that a centralized system can work—and more effectively—in the area of plant protection.

DEVELOPMENT BY SHOPPERS

In a recent talk before the HHFA, Leonard L. Farber, president of the International Council of Shopping Centers, told how urban renewal looks from the view of the store builder.

In a recent survey which I made among responsible and successful developer-investors, particularly in the field of shopping centers, I found that most of them avoid redevelopment work because they have had experiences where they did considerable preparatory work, only to find themselves bidding against impetuous amateurs.

Amateurs can outbid the professionals. If all you are interested in is getting the highest price for the land, amateurs will give it to you. However, I know that all communities will want a successful, well-designed project which can be proudly integrated into the existing business district. You, therefore, will undoubtedly look for the experienced developer who knows that, generally speaking, if he pays more than 30 cents a square foot for a *suburban* location or gets close to paying a dollar a square foot in a *downtown* location, he is courting trouble. You must remember that at a ratio of 3:1, three quarters of the land will never be built on.

In this field of endeavor I believe that the negotiated sale should be given most serious consideration.

I also believe that some thought should be given to leasing of land. The rental could be based upon a minimum against a percentage of gross business. At the end of the term, generally 99 years, the property would revert back to the community.

In so far as layout and design are concerned, a site planner and architectural consultant are of course important. However, in the final plans, the needs and desires of the tenants will prevail. They are the best judges of the relationship between design and retail business.

END

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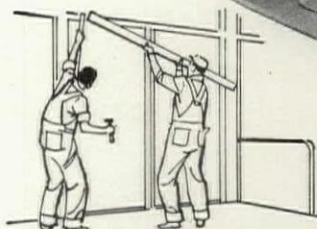
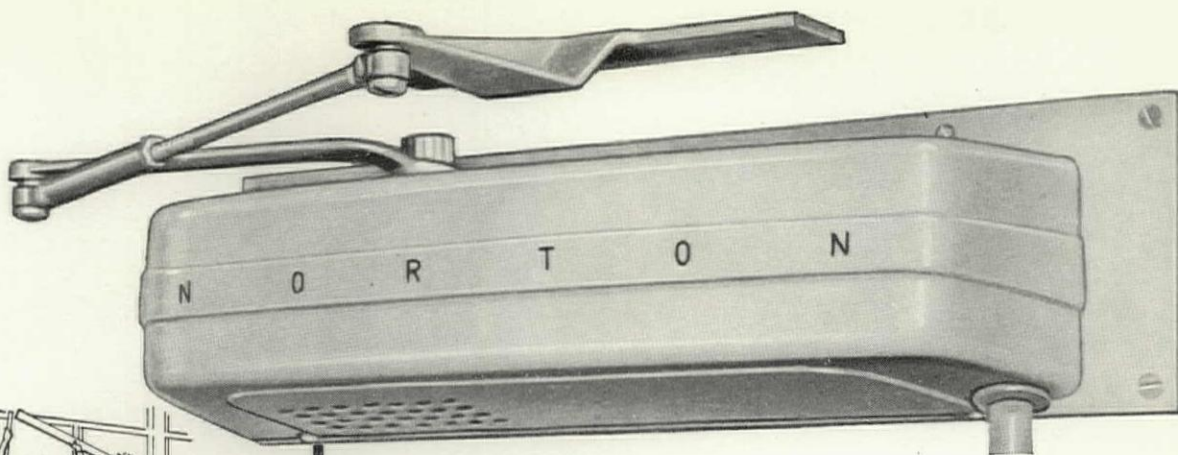
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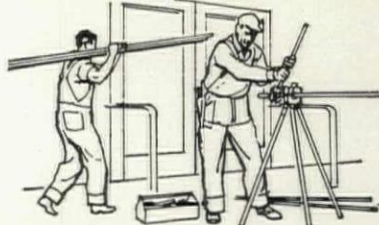
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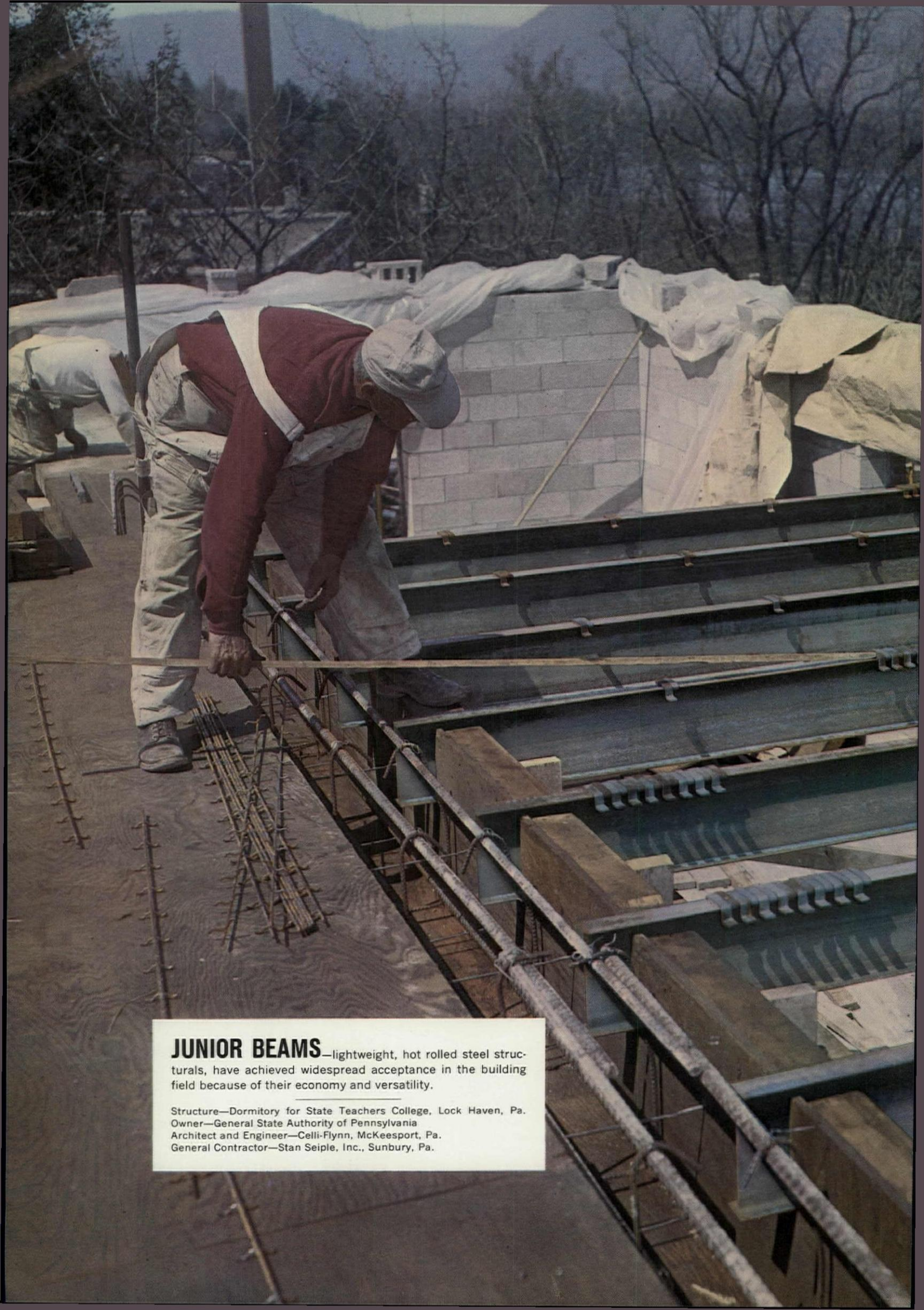
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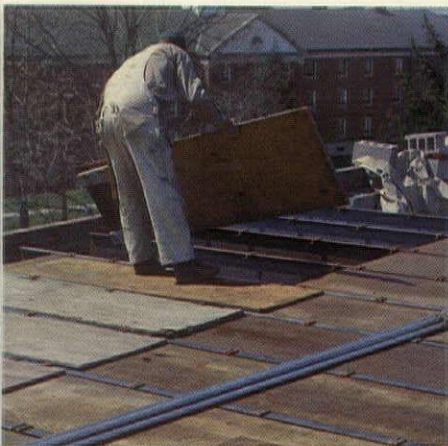
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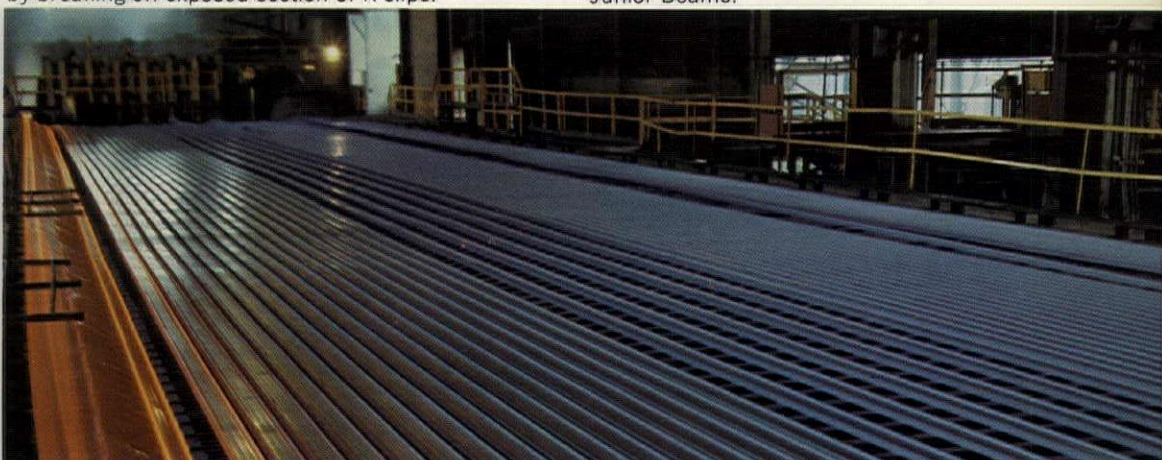
Junior Beams are fitted with special K-clips to support plywood forms for concrete forming.



Concrete floor gets the finishing touch. Plywood forms are removed from below by breaking off exposed section of K-clips.



All intermediate floor and roof members in the structure are J&L Junior Beams.



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"We attribute a major share of cost reduction to the Junior Beam floor framing system"

... reports Celli-Flynn, Architects and Engineers

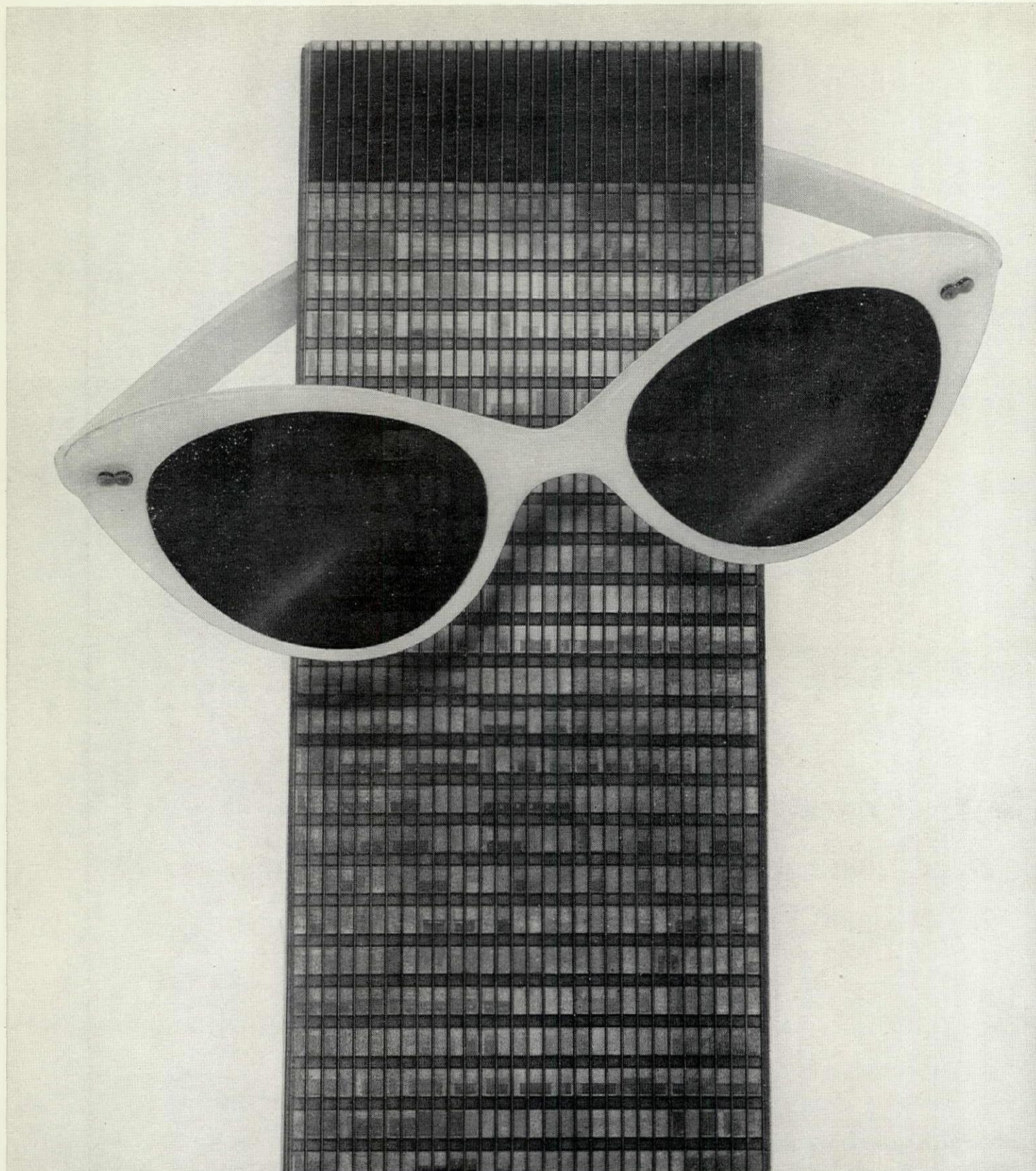
"This is the lowest cost-per-bed project of nine comparable dormitories built in recent years on the campuses of Pennsylvania State Teachers Colleges," says a partner in the firm. "This savings was accomplished despite increased material and construction costs and the low figure includes the extra expense of built-in furniture."

All intermediate floor and roof members in the structure are J&L Junior Beams, while the main structural frame is reinforced concrete. Here, significant labor savings were achieved because lightweight Junior Beams were raised and positioned rapidly, and were delivered to the job cut to length.

Additional time was saved through the use of an unusual method of forming the concrete floor. This method, known as the K-System, utilizes special cast iron K-clips which are fitted to the top flange of the Junior Beam. The clips support 24" x 96" plywood forms between the beams.

Investigate Junior Beam—K-System construction. Junior Beams are easily adapted to a wide range of architectural design. For further information consult your local steel service center, your nearest J&L district sales office, or write directly to Jones & Laughlin Steel Corporation, 3 Gateway Center, Pittsburgh 30, Pennsylvania.

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Famous Park Avenue beauty enjoys Flexalum light control

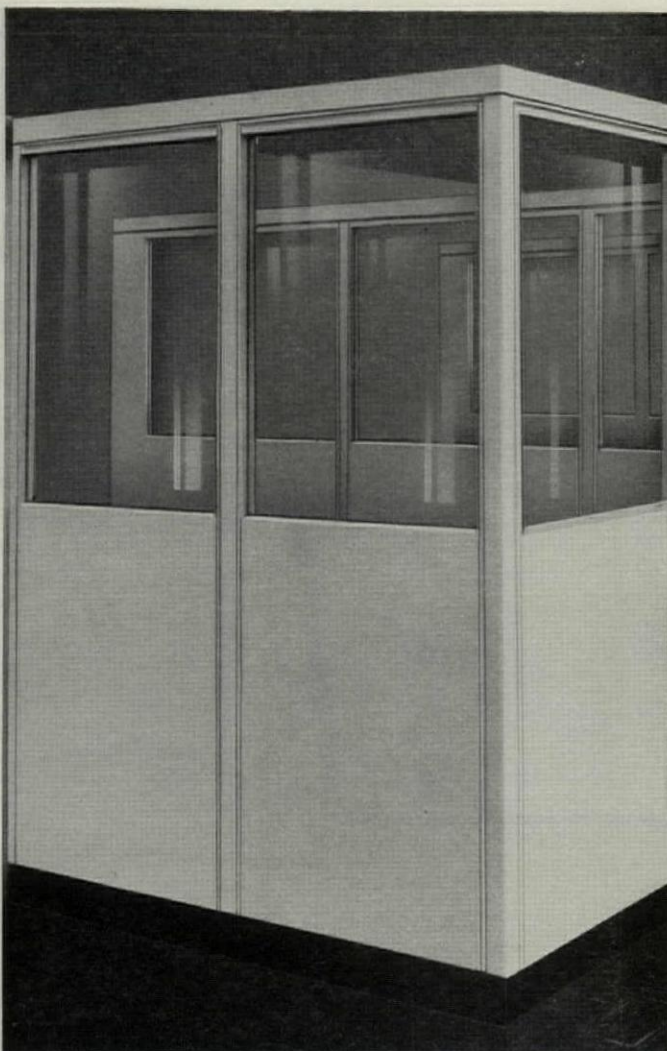
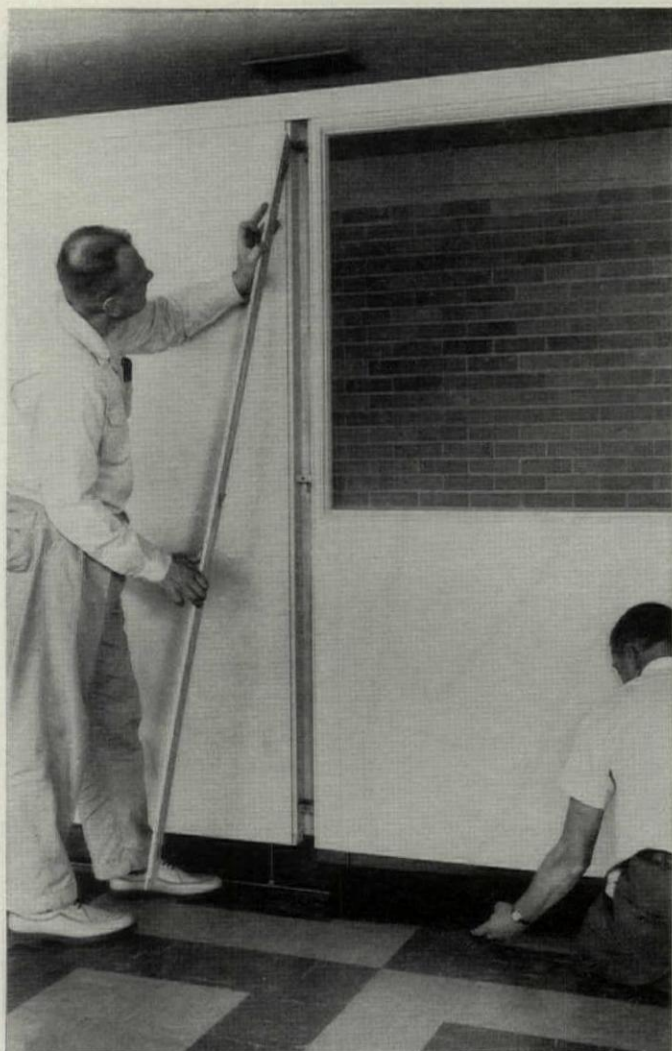
Regard the Seagram Building. What glamour it adds to Park Avenue! How shapely! How well-groomed! For its 3,676 windows, the architects naturally chose Flexalum Twi-Nighter venetians. What's more, Hunter Douglas engineered two custom features so that haphazard slat-tilts and blind heights wouldn't interrupt the symmetry of the building's facade. A special 3-stop action keeps the blinds fully raised, fully lowered, or set at one happy medium, while the unique tilt mechanism

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whose parts have been garnered from several sources. Flexalum venetians won't rust, chip, crack or peel. And they're guaranteed for 5 years. *See our latest specs in Sweet's Architectural File 19d/Br or write to: Dept. AF-10, Bridgeport Brass Co., Hunter Douglas Division, Bridgeport, Conn.*

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Panel height adjusters plus floating removable base compensate for uneven floors. Eliminate scribing at floor line.

The four illustrations above show the ease, speed and flexibility of GR Richland Wood Movable Wall installations. For GR Metal walls the application technique differs slightly but the end result... fast, reliable set-up or ease in dismantling to allow for office rearrangement... is equally effective.

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As the building market continues to grow, so, too, will the number of building clients grow. And Architectural FORUM is the *only* magazine that has clients. In fact, FORUM is the *only* magazine whose growth keeps pace with the building industry itself.

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*Source: The new FORUM Census, "Portrait of the Building Client." Write for a copy, Architectural FORUM, Time and Life Building, Rockefeller Center, New York 20, N. Y.

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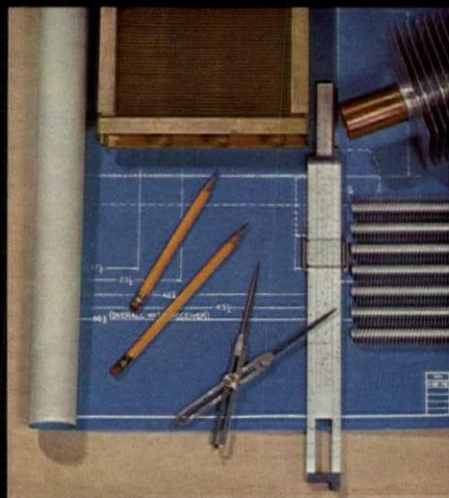


Cardinal Glennon Memorial Hospital for Children, St. Louis, Missouri, uses Dunham-Bush Vacuum and Condensation Pumps, Convectors, Radiator Traps, F & T Traps and Strainers, and Unit Heaters.



And at IBM's new Engineering Laboratory, Kingston, New York, the following Dunham-Bush equipment is installed: Finned Tube Radiation, Unit Heaters, F & T Traps and Strainers, Bucket Traps and Strainers, Air Handling units, Convectors, and Low and High Pressure steam specialties.

To specifiers, buyers, and users of Dunham-Bush equipment, the reassuring significance of the Picker installation is simply that whatever the demands for performance proficiency, this single source responsibility meets them with the same high-quality equipment... equipment that always ensures top-drawer efficiency and safety.



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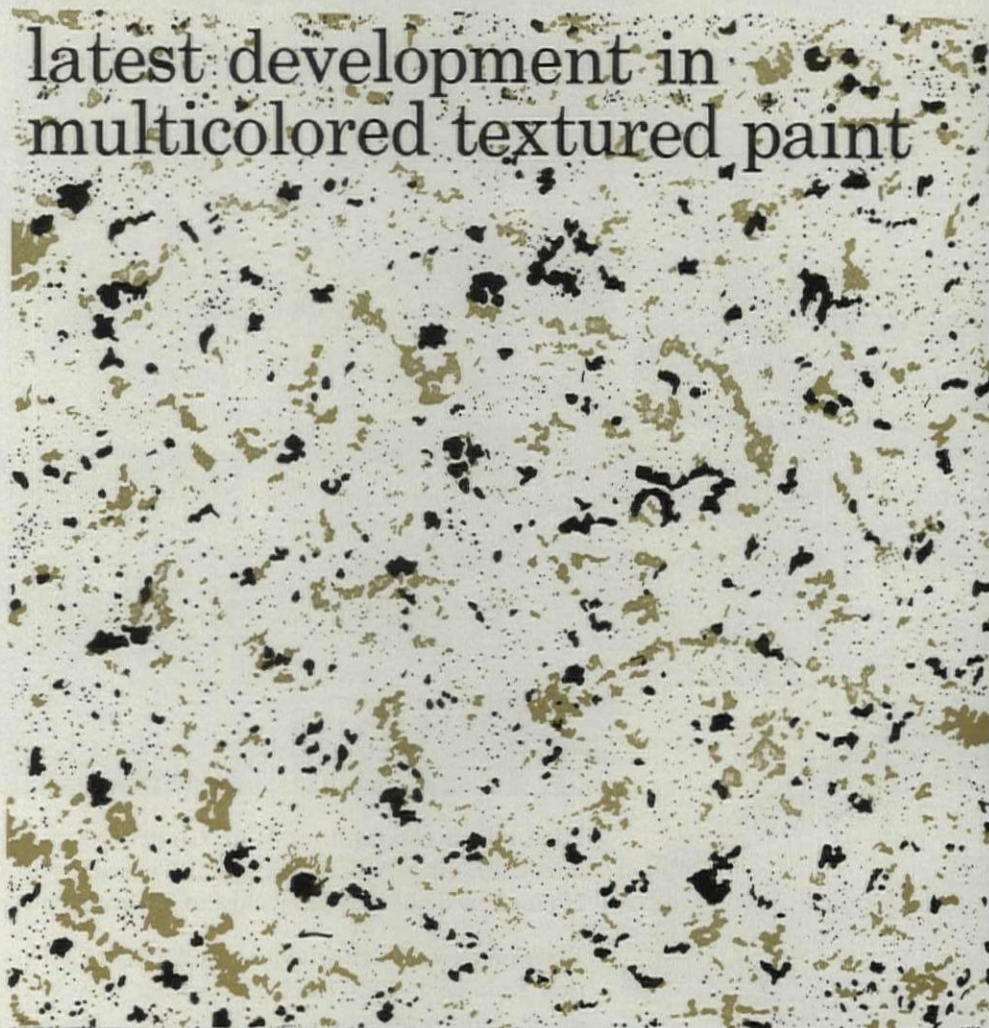
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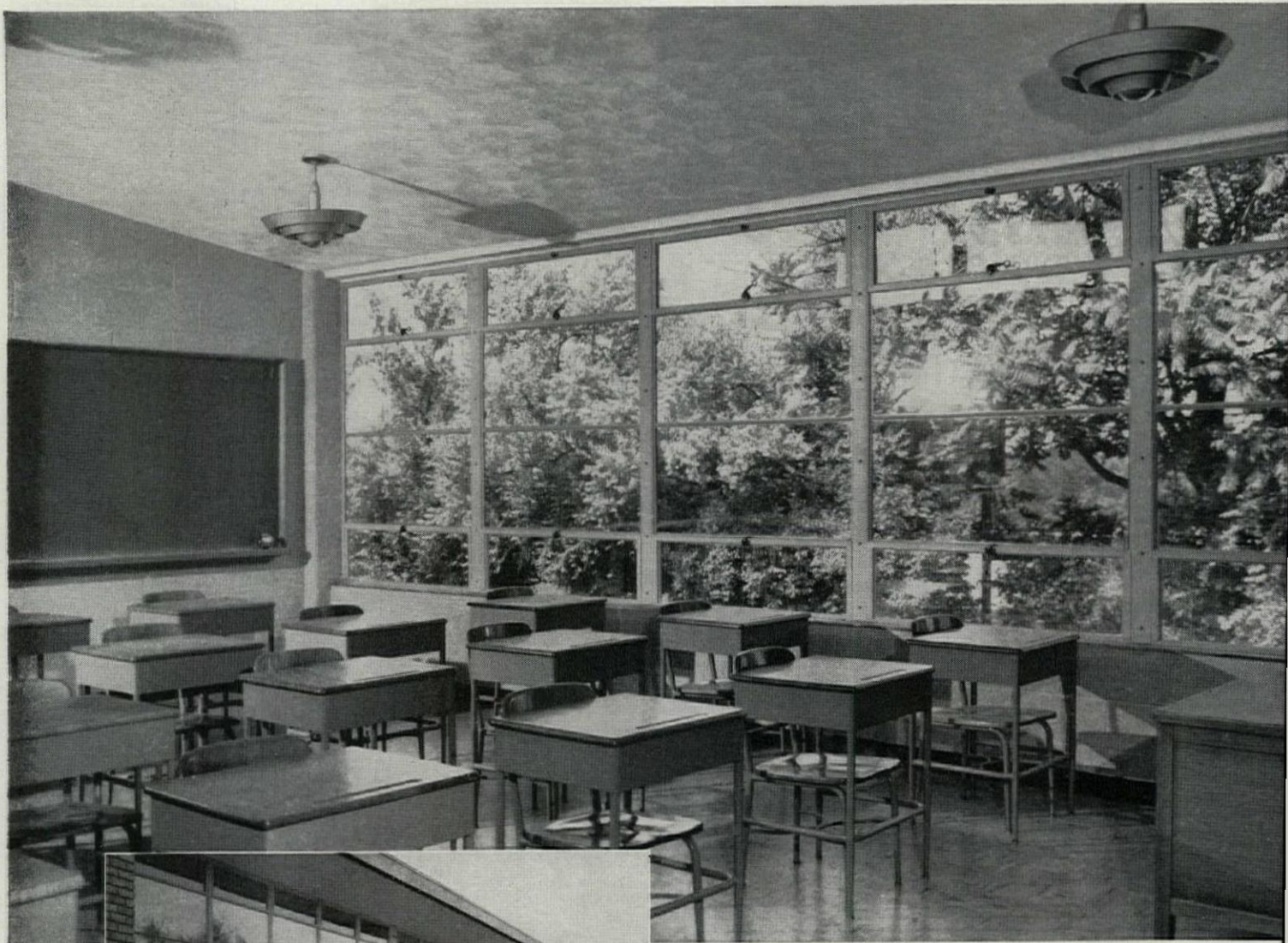
Now a brilliant metallic gold adds this dazzling effect to the Plextone line of fast drying, practically odorless, color-flecked paints. Superior alkali resistance and hiding power make new Plextone a perfect finish for even difficult surfaces. With unusual resistance to abrasion, chipping and scratching, it is completely scrubbable. Furthermore, Plextone stays cleaner longer due to unique anti-static properties that repel dirt and dust.

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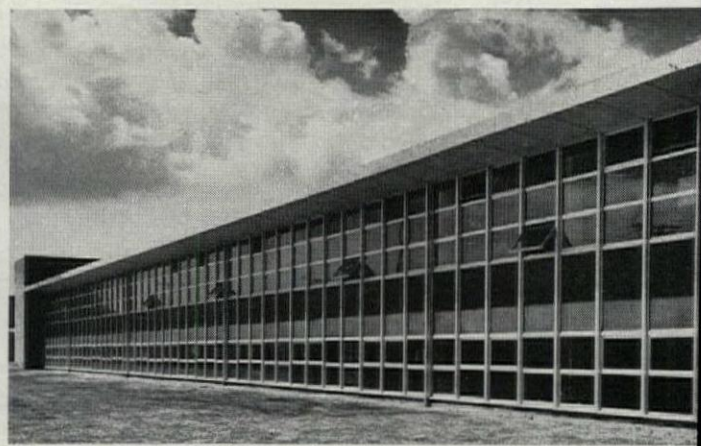
High school classroom at Holy Ghost Fathers Mission Seminary, Ann Arbor, Michigan. Completed in 1950. Notice how desks are placed close to *Thermopane* windows.



Exterior view of high school at Holy Ghost Fathers Mission Seminary. This 16-classroom unit cost \$16.46 per sq. ft. but construction cost included a heating plant designed to serve adjacent seminary building and chapel.

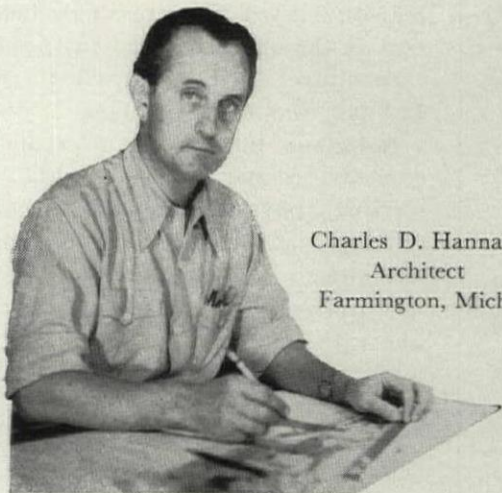


St. John the Baptist Elementary School and Convent Building, Ypsilanti, Mich. Completed in 1953. Construction cost \$10.68 per sq. ft. even with *Thermopane* in all windows.



Our Lady of Sorrows High School, Farmington, Mich., has *Thermopane* throughout. This 20-classroom unit was completed in 1956 at a cost of \$12.66 per sq. ft.

Thermopane[®] is a necessity... in low-cost schools!



Charles D. Hannan
Architect
Farmington, Mich.

Take the school buildings designed by Architect Charles Dominic Hannan. Twenty-five of them have large window areas glazed 100% with *Thermopane* insulating glass.

Construction cost for these schools averaged less than \$11.62 per sq. ft.

"Insulating glass has many advantages," says Architect Hannan. "It permits us to open up classroom walls to the view without discomfort to students . . . to flood classrooms with natural daylight . . . and to muffle distracting outside noise."

ECONOMIC NECESSITY

"Some people consider double-glazing a luxury. I don't. It's an economic necessity when you figure the fuel it saves. Take the St. John the Baptist Elementary School. It has eight classrooms. We figure that the *Thermopane* windows save 20,043,000 B.T.U. per classroom per season.

"If you show clients figures like that, they're happy to go along with you. When we were designing the high school for Our Lady of Sorrows Parish, heat savings computed for *Thermopane* were so impressive our client was glad to pay \$3,500 extra for it."

MORE USABLE FLOOR SPACE

"Here's another thing. Classroom population is growing so fast, we can't keep up with it. The classrooms we designed to accommodate 35 pupils are now holding as many as 50. That means shoving rows of desks next to the windows where students would feel chilly if it weren't for the double-glazing.

"I started using insulating glass in schools in 1946. I've been using it ever since — a total of about 7,500 units. In all those years, less than a dozen units have had to be replaced. School

children aren't as rough on glass as some people think they are."

Charles Hannan practices what he preaches. The windows in his own home, and in his offices, are glazed with *Thermopane*.

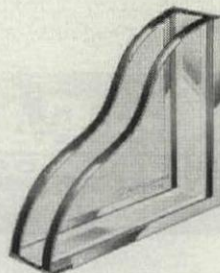
For technical information on *Thermopane*, consult Sweet's Architectural File 26-A, or call your L·O·F Distributor or Dealer (listed under "Glass" in the Yellow Pages). Or write to Libbey-Owens-Ford Glass Co., 608 Madison Avenue, Toledo 3, Ohio.

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Kinnear originated the interlocking slat door

Get full details on this complete line of time-saving, cost-slashing doors. They add highest efficiency to space-saving, coiling upward action. Kinnear offers a wide choice of flat and curved slats—fabricated of aluminum, zinc-coated steel, or other metals. They fit every need, from small counter openings to largest doorways. Slat sizes range up to the seven-inch "Goliath" slat at the extreme left, above — maximum protection against wind,

weather, intrusion or vandalism!

Zinc-Coated Dual Protection

Kinnear Steel Rolling Doors feature extra-heavy hot dip galvanizing! 11¼-ounces of pure zinc per square foot of metal (in accordance with ASTM standards). And Kinnear's special phosphate treatment makes this zinc surface ready *immediately* for thorough paint grip.

Make sure you get this complete door guide — check it *now!*

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Saving Ways in Doorways

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BUILDING IN THE SIXTIES

continued from page 115

tion there will be greater needs for facilities for postgraduate work, research facilities, libraries, and museums. Private expenditures, mainly at the secondary, college, graduate, and research levels, will increase 59.1 per cent to an annual rate of \$875 million by 1969. Government will carry the main load for primary and secondary schools, but will be increasingly important in the other areas as well; public expenditures in this field will increase 72.1 per cent to \$4.5 billion.

Religious building. An expanding economy cannot safely neglect the spiritual, physical, and mental health of its people. Religious building, which has already had a notable expansion, will continue to increase at least in line with population growth. The 1969 total is expected to be more than \$1 billion, up about 10 per cent.

Hospital building. Both private and public expenditures for hospitals and other institutional buildings will mount somewhat more rapidly in the future than has recently been the case as urbanization spreads, as health standards improve, and as research broadens the limits of treatment. The prospect is that, although the rate of increase will be somewhat greater for government (66.7 per cent) than for private expenditures (62.3 per cent), private outlays for institutional buildings will continue to exceed those of government throughout the decade—by 1969 they will total \$925 million and \$750 million, respectively.

Social and recreational building.

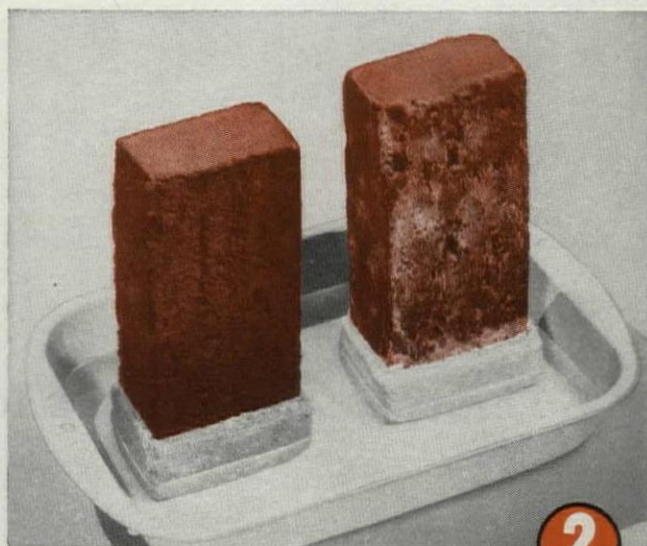
While the bowling-alley craze may not be able continuously to support an ever mounting volume of expenditures for buildings for entertainment and recreation, no slack need be contemplated for this general type of structure. It will hit the \$700 million level by 1969, up 27.3 per cent from the 1959 level.

Residential building. This, the largest of all building categories, will continue to account for about half the outlays for private construction and over a third of those for all construction. New dwelling units will, as they have in the recent past, be built at a faster rate than that of the increase in population, though the lead will be

continued on page 196



1 Cap one brick with Brixment mortar, about 1" thick—and one brick with ordinary cement-and-lime mortar. After the mortars have hardened, place both brick in a pan of shallow water.



2 Keep about 1/2" of water in the pan for at least one week. Even if soluble salts are present in the brick or sand, you will soon be convinced that Brixment mortar helps prevent efflorescence.

BRIXMENT mortar helps prevent EFFLORESCENCE!

Efflorescence is caused by the soluble salts which almost all masonry materials contain. If reached by water, these salts dissolve and are drawn to the surface of the wall.

The air-entraining and water-repelling agent in Brixment makes Brixment mortar almost impermeable. This helps prevent water from saturating the mortar and dissolving any small amount of salts which it may contain. It also helps prevent water from percolating down through the wall, dissolving salts which may be in the brick or the back-up, and carrying them to the surface.

Protection against efflorescence is only *one* of the characteristics in mortar necessary to produce top-quality masonry at lowest cost. Several others are listed below—and *no other mortar combines ALL these characteristics to such a high degree as Brixment mortar.*

It is this combination of advantages that makes Brixment superior to any mixture of portland cement and lime—and which also accounts for the fact that Brixment has been the leading masonry cement for over 40 years.

Louisville Cement Company, Louisville 2, Ky.

BRIXMENT MORTAR ALSO COMBINES THESE 8 OTHER ESSENTIAL CHARACTERISTICS



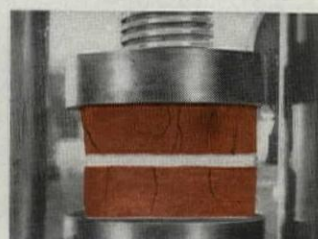
PLASTICITY



WATER RETENTION



BOND



STRENGTH



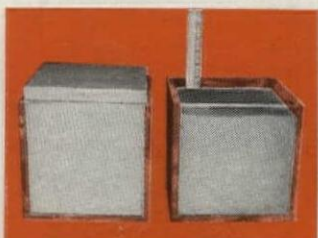
DURABILITY



IMPERMEABILITY

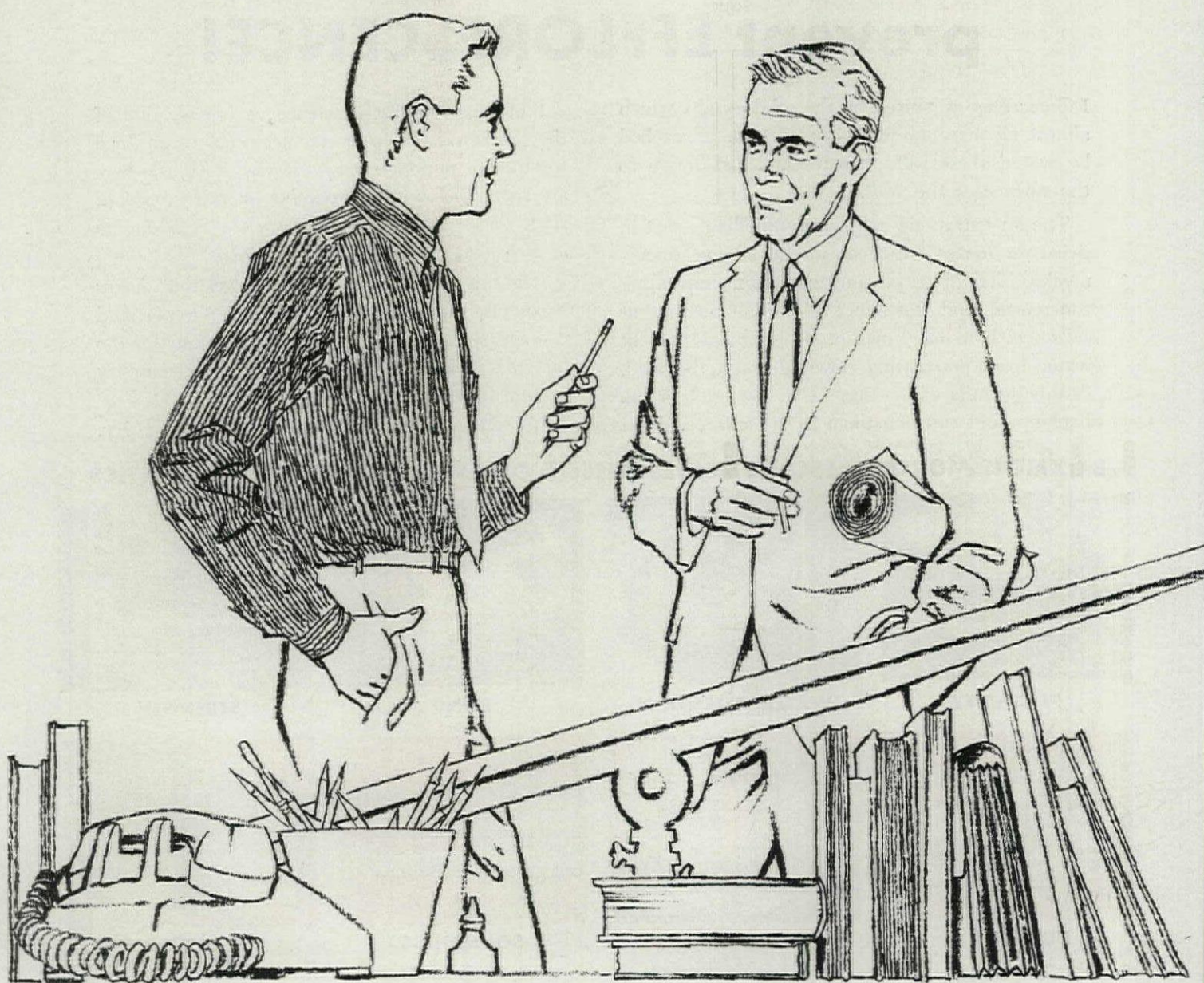


SOUNDNESS



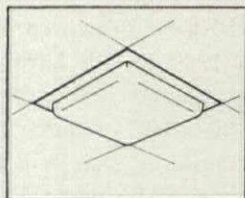
YIELD

Three sound reasons for specifying **CALCULITES**

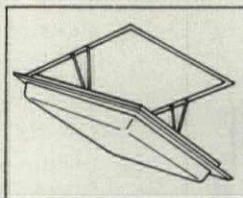


by LIGHTOLIER

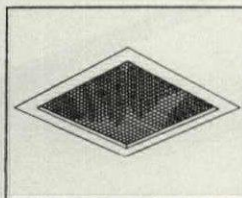
This new coordinated, quality group fits nearly any downlighting need and does it 1. attractively, 2. efficiently and 3. effectively. Example: the Calculite at left articulates the ceiling-fixture joint with an opaque metal skirt. The albalite diffuser sends a flood of illumination to the working surfaces. Available: seventeen other models, 96 sizes and finishes, round and square shapes, for wide, medium and narrow light distribution.



Calculites complement your precision detailing. Example: the new formed glass unit above exactly replaces a 12" x 12" ceiling tile, fits perfectly flush with the finished ceiling surfaces.



Calculites are efficient lighting instruments. Example: Torsionite spring above permits safe, easy relamping, pulls down from any side. Foam gaskets provide tight seal.



For a simple low-brightness unit exactly flush to the ceiling plane choose the Prismatex Calculite above. In baked white enamel or weatherproof anodized satin aluminum.

For a complete, 36-page portfolio of Lightolier recessed incandescent lighting, write today to Dept. AF-20.

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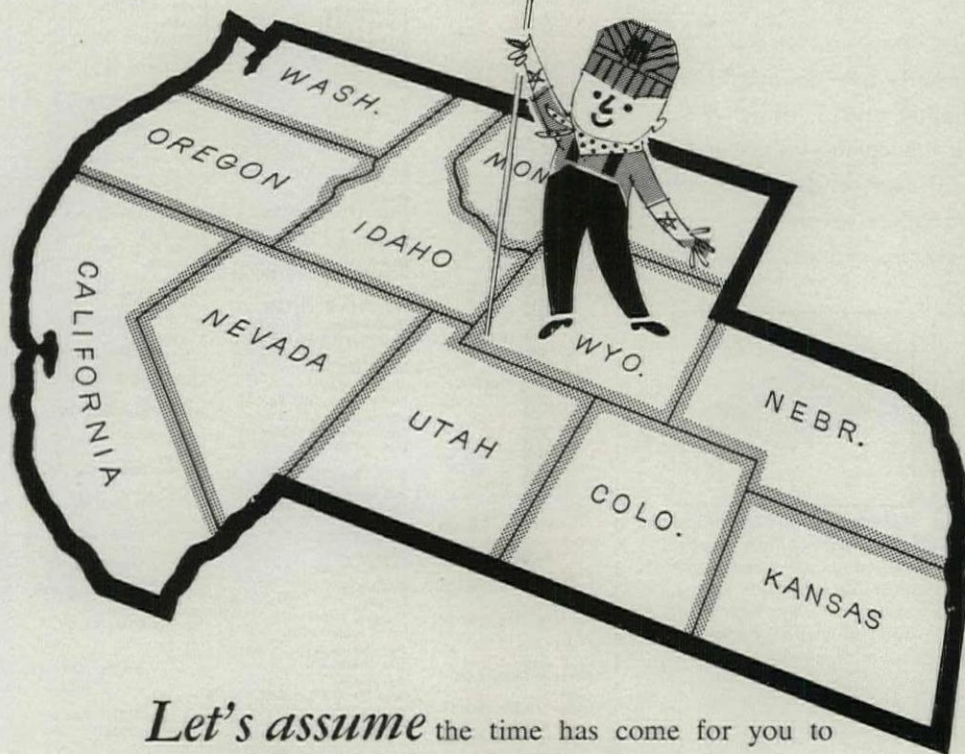
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So why not tell us what you have in mind? We, in turn, will advise what's available in the Union Pacific States. Simple!—and there's no obligation. Just get in touch with your nearest U.P. representative or address—

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BUILDING IN THE SIXTIES

continued from page 192

more difficult to maintain when, in the second half of the decade, the annual number of marriages will take another forward leap. Private expenditures for housing will rise about 27.3 per cent during the decade, reaching a level of \$28.2 billion per year by 1969. With the steady enlargement of the existing stock of housing, the volume of spending for alterations and additions will also steadily be enlarged.

Hotel and motel building will profit increasingly from changing modes of transportation and will probably hit an annual level of \$1 billion by 1969, an increase of 33.3 per cent during the decade.

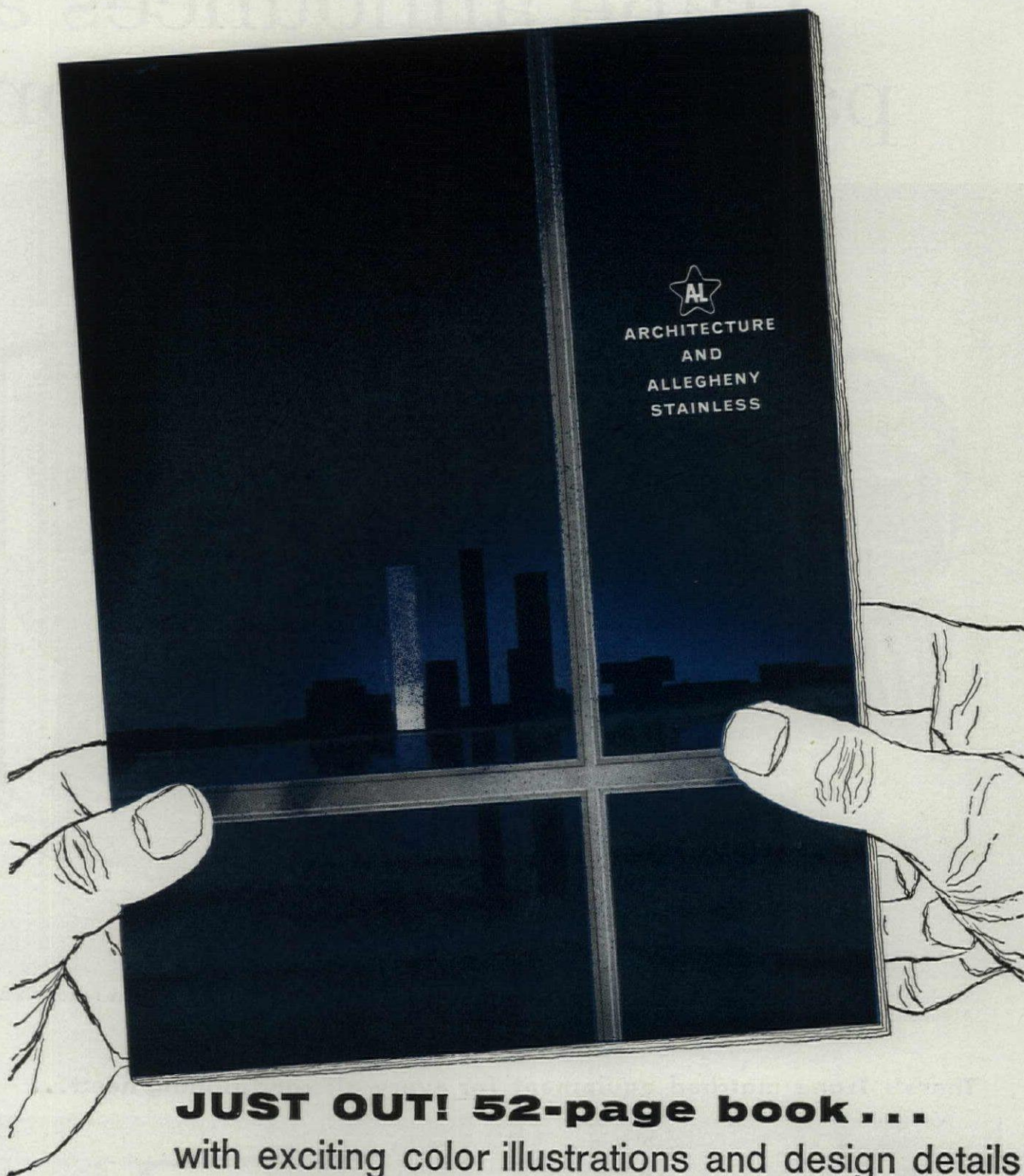
There is little question that the market for these vast volumes of construction will be found in the sixties. If the necessary men and materials can be found—and this problem is by no means insurmountable—the building industry will have grown so much in size that in 1969 it will hardly be recognizable by today's standards.

Below is a detailed breakdown of the amount of building that will have been produced along the way:

Forecast for the decade 1960-69

TOTAL NEW CONSTRUCTION	
Expenditures in millions of 1959 dollars	\$670,000
PRIVATE CONSTRUCTION	465,000
Nonresidential buildings	125,000
Industrial	39,500
Commercial	50,500
Offices, warehouses, lofts	25,000
Stores, restaurants, garages	25,500
Other nonresidential buildings	35,000
Religious	10,250
Educational	7,250
Hospital and institutional	7,875
Social and recreational	6,875
Miscellaneous	2,750
Residential buildings (nonfarm)	248,000
New dwelling units	183,000
Additions and alterations	56,000
Nonhousekeeping	9,000
Farm construction	17,000
Public utilities	72,500
All other private construction	2,500
PUBLIC CONSTRUCTION	205,000
Nonresidential buildings	60,250
Industrial	5,375
Educational	35,875
Hospital and institutional	6,125
Administrative and service	7,500
Other nonresidential buildings	5,375
Residential buildings	8,000
Military facilities	13,750
Highways	76,750
Sewer and water systems	21,250
Misc. public service enterprises	7,750
Conservation and development	14,750
All other public construction	2,500

END



JUST OUT! 52-page book . . .
with exciting color illustrations and design details

Here's a book that offers new design ideas, new uses for stainless steel in building. "Architecture and Allegheny Stainless" brings you up-to-date on the latest professional developments . . . with full-color illustrations of buildings just completed or still under construction.

Specific data, with pictures and design details, illustrate such stainless applications as curtain wall construction, store fronts and entrances, windows, hardware, roofing and others.

WGW-7513

Evidence enough that modern architecture's demands are more than matched by the strength, quiet beauty and corrosion-resistance of Allegheny Stainless.

"Architecture and Allegheny Stainless" is filled with facts vital to everyone concerned with architecture and buildings. Write today for your free copy. *Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa.*

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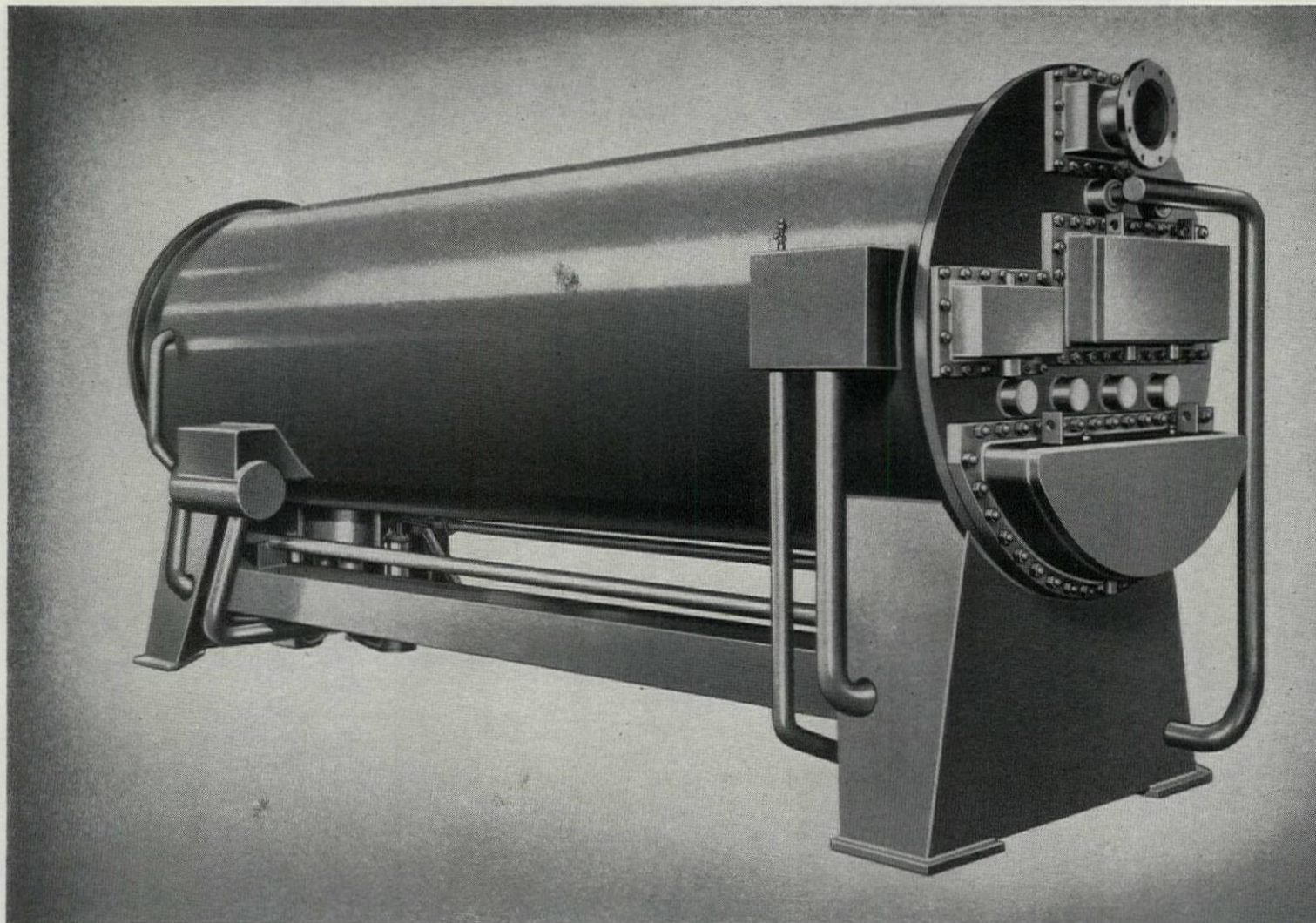
ALLEGHENY LUDLUM

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EVERY FORM OF STAINLESS . . . EVERY HELP IN USING IT



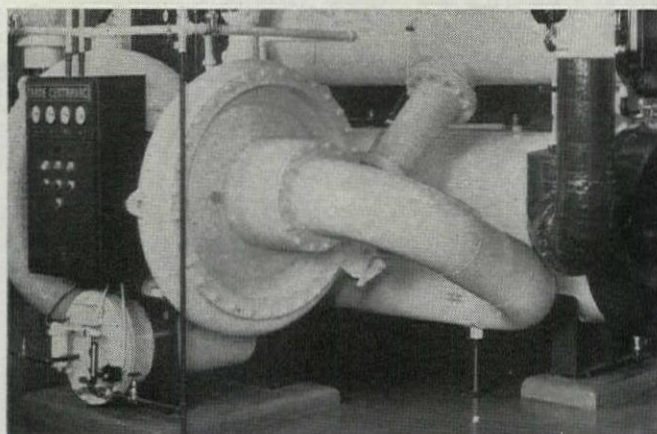
Trane announces a packaged absorption



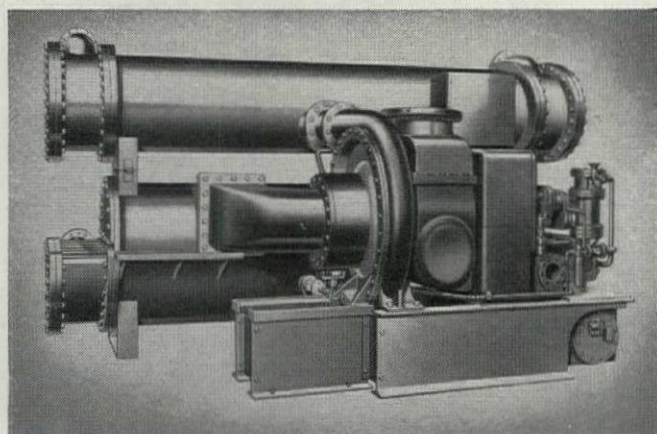
Smaller, more compact than other units, the TRANE Absorption Cold Generator permits more efficient

utilization of costly building space. May be installed in areas with low ceilings.

There's Trane matched equipment for every air conditioning need...



Hermetic CenTraVac with electric drive has been installed on more water chilling applications using hermetic compressors than all other makes combined! Compact, lightweight, lower silhouette design. Modulates to 10% of capacity, or lower, with power savings in almost direct proportion to load.



Turbine CenTraVac reduces refrigeration costs to a minimum in buildings or plants where high pressure steam is available. Prerotation vane capacity control improves performance at all part load conditions. Compressor and turbine factory-assembled on a common base. Capacities from 300 to 1600 tons.

fully hermetic water chiller!

*Advanced design, fully automatic operation, provide simplified
installation, minimum maintenance, economical operation
for big building air conditioning*

Here's a compact packaged hermetic absorption water chiller—the new TRANE Absorption Cold Generator. It's designed to provide a dependable, economical source of chilled water for air conditioning office buildings, hotels, apartments or industrial plants—wherever there is a supply of steam or hot water.

The exclusive hermetic design feature of this new refrigeration unit prevents air from entering the system. Air leakage is the chief cause of trouble with other absorption type water chillers. And the machine operates at conditions which avoid crystallization.

The TRANE Absorption Cold Generator has single-shell construction (all major components are in a single housing); this eliminates much on-the-job piping which simplifies installation; it also reduces overall dimensions, saving valuable space. Factory-assembled and wired, it has been specially designed to effect substantial savings in installation costs.

Compact, lightweight and vibration-free, this new unit may be installed wherever the building structure will support its weight. No special bases are needed . . . no special equipment room. Quiet operation means it will not disturb nearby occupants.

Fully automatic operation of the TRANE Absorption Cold Generator eliminates need of a full-time attendant. Its design provides maximum efficiency under full and partial load conditions; results in low power consumption, economical operation. Nine sizes from 100 to 350 tons make it easy to select a unit to match the exact cooling requirements.

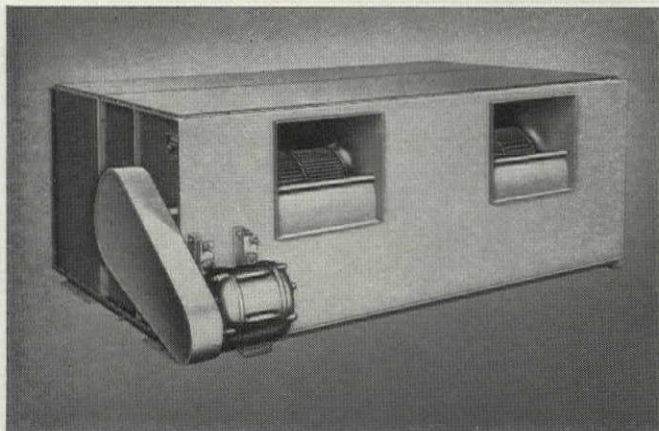
When you plan the water chilling equipment for any big building air conditioning system, ask your TRANE Sales Office about the advantages and economies of a steam or hot water-operated TRANE Absorption Cold Generator. Or write TRANE, La-Crosse, Wisconsin.

For any air condition, turn to

TRANE

MANUFACTURING ENGINEERS OF AIR CONDITIONING,
HEATING, VENTILATING AND HEAT TRANSFER EQUIPMENT

THE TRANE COMPANY, LA CROSSE, WIS. • SCRANTON MFG. DIV., SCRANTON, PA. • CLARKSVILLE MFG. DIV.,
CLARKSVILLE, TENN. • TRANE COMPANY OF CANADA, LIMITED, TORONTO • 100 U. S. AND 19 CANADIAN OFFICES



New Climate Changers heat, cool, ventilate, solve a wide variety of air handling problems. Single-zone models and multi-zone units that supply different air conditions for as many as 14 zones at the same time. New design features reduce overall size, provide efficient operation at low cost.



Individually controlled UniTrane units heat, cool and ventilate. Fan-coil and induction units for floor, ceiling or concealed installation. New "Wall-Line" system provides perimeter air conditioning—with one UniTrane unit and lateral duct extensions for one large bay or several adjoining rooms.



Here Is Double Protection For Masonry Walls

BLOK-JOINT For Control Joints
BLOK-MESH Deep Swedged Reinforcing

BLOK-JOINT is the cross shaped rubber extrusion for making fast, low cost control joints. It's used with ordinary metal sash blocks. There is no need for special blocks, building paper or mortar fill. It can be used in single block walls, with brick and block backup and at columns and pilasters. This time saving control joint forms a secure interlock that gives lateral stability and provides for *both* contraction and expansion in the wall.

BLOK-MESH is the "deep swedged" masonry reinforcing that gives additional strength and resistance to cracking. Its large, squared deformations allow the mortar to take a deep grip for maximum bond. Use both **BLOK-JOINT** and **BLOK-MESH** for maximum protection of masonry walls.

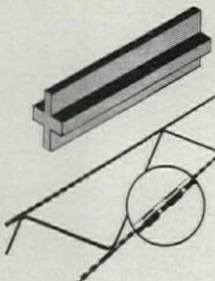


Pat. No. 2,869,356



BLOK-JOINT For Control Joints Made of "100 year life" rubber to meet ASTM and FEDERAL specifications. Comes in four lengths—8", 24", 48" and 50 foot rolls.

BLOK-MESH "Deep Swedged" Reinforcing. Large, well defined, squared notches to give a deeper, stronger mortar grip. No sharp edges to irritate hands. Butt welded to lay flat. Cuts and bends easily.



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Write for FREE Sample
and Specifications

Available in the U.S. through Concrete Block Manufacturers and Building Materials Dealers. Distributed in Canada by Consolidated Concrete Industries, Ltd., 9th Ave. & 24th St., East Calgary, Alberta, Canada.

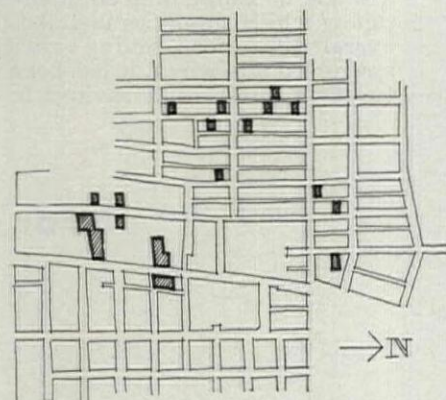
BLOK-JOINT and **BLOK-MESH** are products of the Carter-Waters Corp., 2440 Pennway, Kansas City 8, Missouri, Dept. AF

MOUNT CLEMENS HOUSING

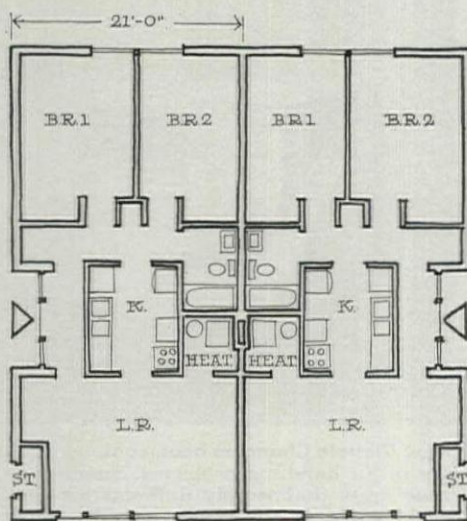
continued from page 128

Clemens and Architects Meathe and Kessler would have had enough. Not so. Mount Clemens hopes to build 100 additional units, and Meathe and Kessler are enthusiastically at work on the Wayne, Mich. project (below) which contains further important design innovations.

If this were the best of all possible worlds, Bill Kessler would allow the local authority to act as clients, have P.H.A. avoid the architect's function entirely, and stick to processing papers. Phil Meathe thinks that the P.H.A. manual should only be detailed enough to "prevent the poorest architect from making the stupidest mistakes." He also advocates a regular P.H.A. Board of Review for design conflicts. But even as things are, they both think the water is good enough for swimming—with some courage and persistence—and they invite other young firms to come on in.



Wayne, Mich. public housing, now being designed by Architects Meathe, Kessler & Associates, scatters one-story units on single lots throughout a neighborhood (site plan above). The most interesting of the several contemplated plans is a back-to-back two-unit building with an interior kitchen (plan below).



END

PREFABRICATION



289-A

... another way **STREAMLINE DWV COPPER TUBE AND FITTINGS** save time and money . . . prefabrication is just one more advantage in addition to all the well known qualities of copper for drainage, waste and vent lines.



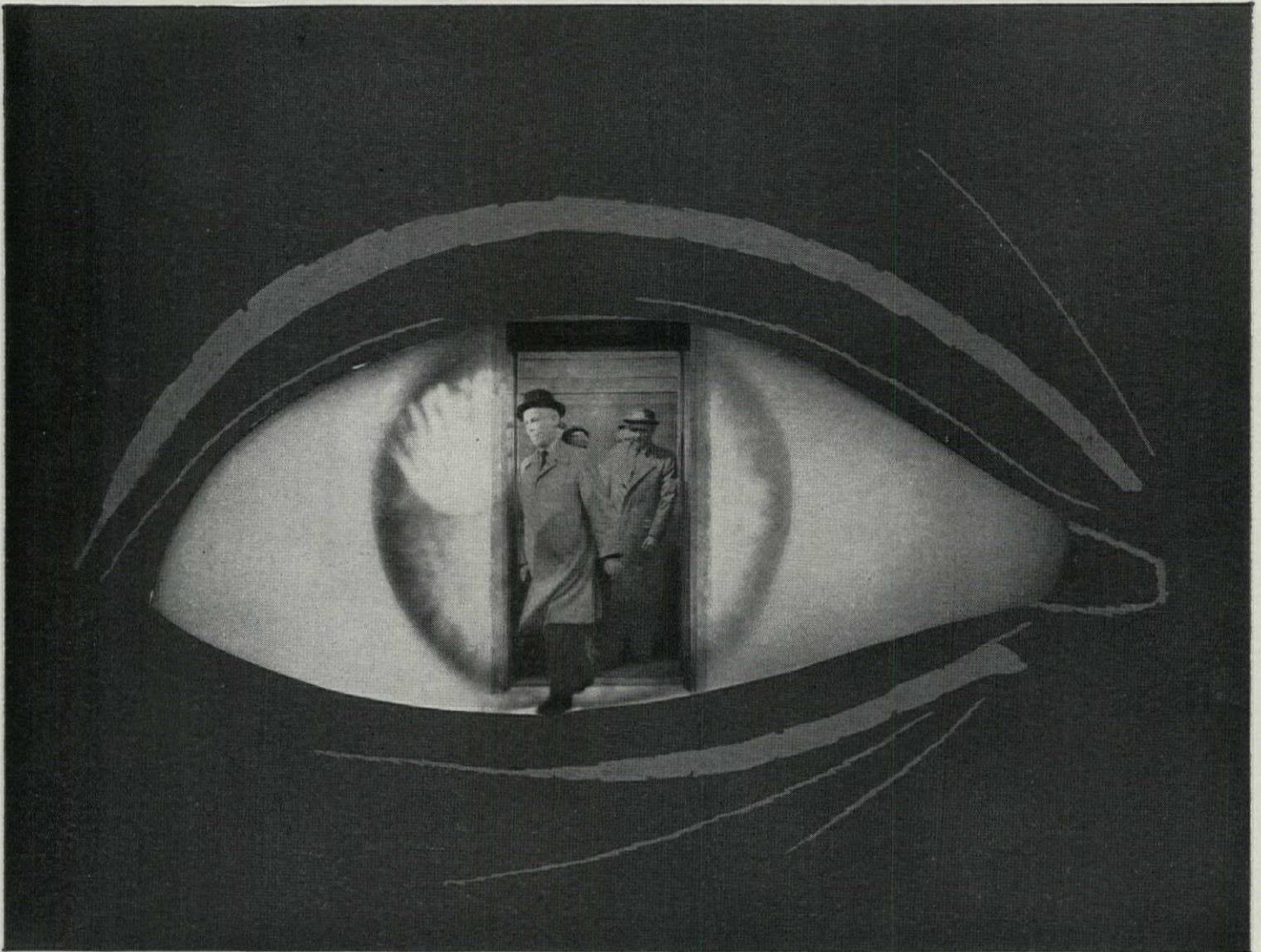
MUELLER BRASS CO. PORT HURON 9, MICHIGAN

HERE IT IS!

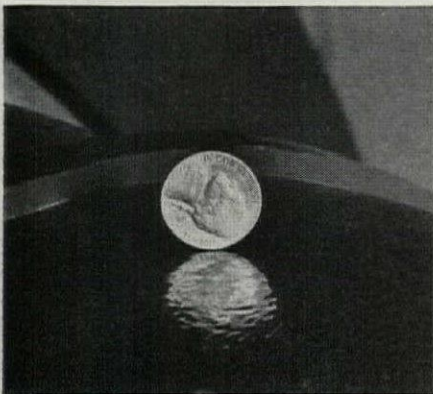
All the facts on DWV tube and fittings in one big, new 36-page Engineering Manual. Write for your copy today.



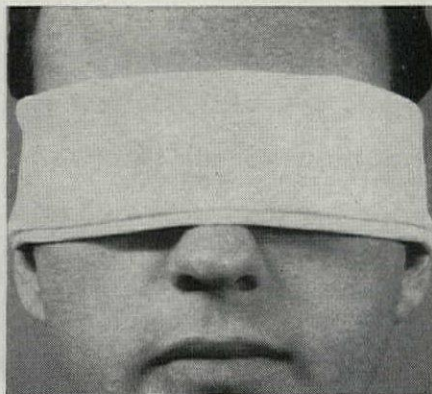
DOORS THAT SEE. You don't watch these Traffic Sentinel controlled doors—they watch *you*. Door movement is governed entirely by passenger traffic and *not* by fixed time intervals. You'll learn *how* in the "Eye-Opener" demonstration.



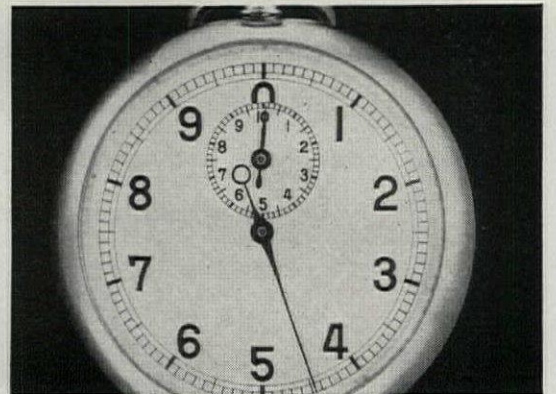
BALANCING ACT EXTRAORDINARY. Look behind the scenes in the machine room. Try the "balancing act" yourself that demonstrates vibration-free machinery—"standard equipment" in Westinghouse Operatorless Elevator Systems.



AH, SO SMOOTH. Make this unusual blindfold test right in the elevator as it goes through its incredible Synchro-Glide paces. It's a ride so smooth, it's hard to tell when the elevator stops!



SPLIT-SECOND TIMING. See for yourself how a Westinghouse system instantly dispatches a loaded car . . . varies door-open time for passengers leaving or entering an elevator. Watch how it provides just enough time to unload and load on the main floor. Finally, check floor-to-floor time and marvel!



Preview Highlights from the

Westinghouse Elevator

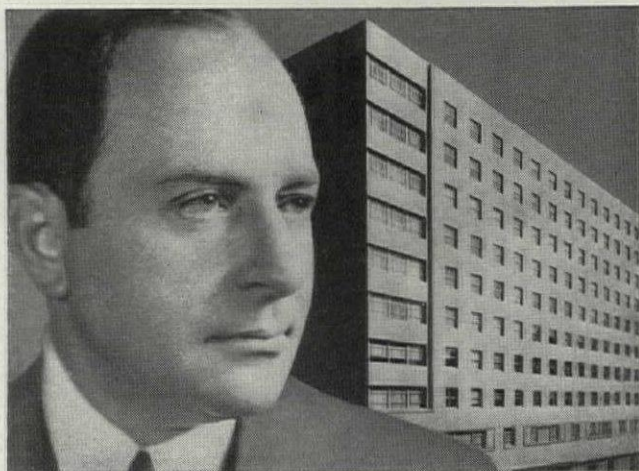
"30-Minute Pre-investment

Eye-Opener"

**WE EXTEND A PERSONAL INVITATION TO EXPERIENCE FOR YOURSELF THIS
REVEALING DEMONSTRATION OF OPERATORLESS ELEVATOR PERFORMANCE**

Here are a few preview highlights from the "30-Minute Pre-investment Eye-Opener"—a proof-of-performance elevator demonstration especially tailored for busy executives. It takes only thirty minutes of your time, and it is an experience you'll value because it not only concerns the efficient operation of your building, but also assures complete tenant satisfaction for the years to come.

Selecting an elevator system is a key decision which deserves your personal attention and approval. As a building owner or manager, it pays you well to investigate before you invest. Make arrangements to see this behind-the-scenes demonstration by calling the Westinghouse Elevator Division Sales Office in your city. Consult the Yellow Pages of your telephone directory.



WORTH DEVOTING 30 MINUTES... "No matter how busy you might be, it's worth devoting 30 minutes to see this demonstration. I admired the smooth operation of the cars and the timesaving features inherent in automatic elevators. Flexibility of the Selectomatic Automatic control system was the big 'clinch' in selecting Westinghouse to modernize our elevators in the Cafritz Building."

Morris Cafritz, President
Cafritz Company
Washington, D. C.

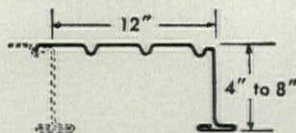
YOU CAN BE SURE...IF IT'S

Westinghouse

J-98778-AA

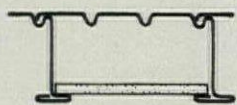
Watch Westinghouse Lucille Ball-Desi Arnaz Shows CBS-TV alternate Fridays

WESTINGHOUSE ELEVATORS AND ELECTRIC STAIRWAYS

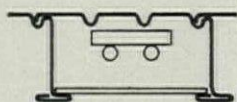


T-STEEL — New! Galvanized. For clear spans to 32'0". Adaptable to acoustical and flush, luminous ceiling treatments. Provides superior diaphragm to transmit seismic and wind loads.

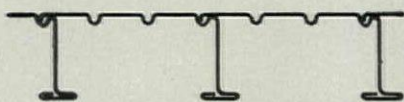
Ceiling Treatments with T-Steel Deck



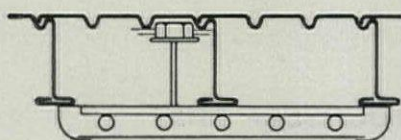
Standard Tile or Board



Corrugated Diffuser



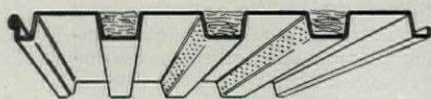
Exposed (Underside painted for increased reflection)



Surface-mounted Fixture

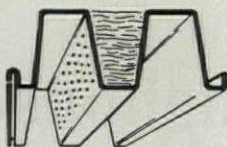


Lath-and-Plaster Fireproofing



TYPE B ACOUSTIDECK

For purlin spacings from 6' to 10'.
Uses minimum of 1" rigid insulation board.



TYPE C ACOUSTIDECK

For purlin spacings from 10' to 24'.
Uses minimum of 1½" rigid insulation board.

New roof systems

*Complete structural systems
that broaden your latitude in
planning ceilings, lighting,
acoustics—within realistic
budget boundaries*

1. Acoustideck for gymnasiums, other activity areas

Two-in-one panel combines steel roof deck and acoustical ceiling. Provides acoustical treatment that is considerably less subject to damage than other types — Noise Reduction Coefficient of .70. Installed by welding in the same manner as regular steel deck.

Acoustideck has all the additional advantages of steel-deck construction: It is erected fast — in any weather that a man can work. Its Bonderized baked-enamel prime finish cuts painting costs in half. The interesting ribbed underside can be left exposed as an attractive ceiling.

1

2

for schools ... by INLAND

2. New Inland T-Steel Roof Deck for clear-ceiling classrooms

... specially suitable over classrooms of 26' to 32' spans — or other areas where you want a large expanse of unbroken ceiling surface for a contemporary feeling.

You can provide practically any acoustical treatment — T-Steel permits installation of acoustical tile at an economy no other roof system can match. You can provide a flush, luminous ceiling — or you can leave the underside of T-Steel exposed and painted.

T-Steel deck provides a superior diaphragm to

resist seismic and wind thrusts ... as proved by full-scale shear tests conducted by independent engineering firms.

Write for catalogs 240, 241, and 246 or See Sweet's, sections 2c/Inl and 11a/In for full information on T-Steel and Acoustideck. Inland Steel Products Company has developed a force of trained sales engineers who are capable of giving you the benefit of their diversified experience on specific problems. Write or call your nearest Inland office.

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Now we're cooling
with **GAS**

A 22-foot wall of sheer glass...yet it's always cool inside!—thanks to **GAS**-operated Arkla-Servel air conditioning

The strikingly modern Hillside Church is one of four completely air-conditioned buildings in Rose Hills, Southern California's beautiful memorial park. Because of the liberal use of glass walls, and the desire for one central system, the air conditioning installation presented unique problems.

After a careful study, the Arkla-Servel gas absorptive cooling system was chosen. "And we're con-

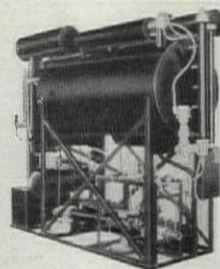


completely satisfied," says John D. Grigg, President. Our 25-ton gas unit produces 10,000 cubic feet of cool air per minute. And you can't beat it for economy. It requires practically no maintenance. Since it uses the same boiler, it makes use of our heating facilities on a year-'round savings basis."

Gas absorptive cooling can put your heating plant on a year-'round economical basis too. For specific information, call your local gas company, or write the Arkla Air Conditioning Corporation, General Sales Office, 812 Main Street, Little Rock, Ark. American Gas Association.

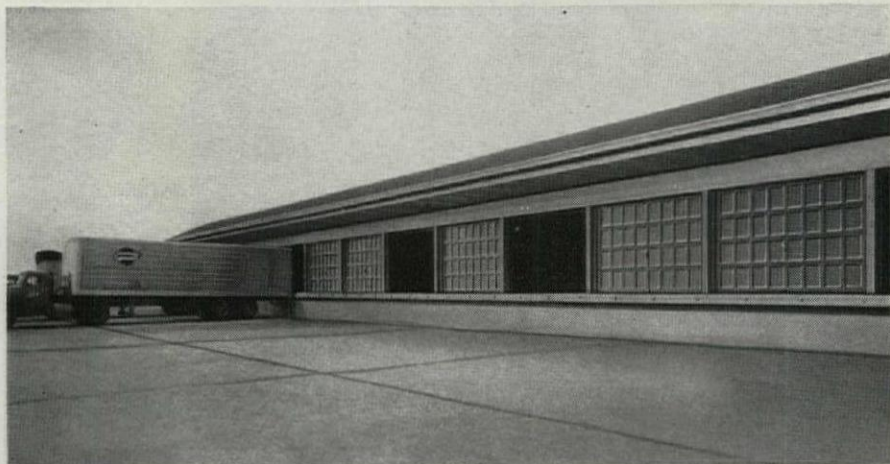
GAS OPERATED ARKLA-SERVEL ABSORPTION-TYPE WATER CHILLER

- lowest operating costs
- fully automatic operation
- long dependable service
- packaged construction
- compact size
- easy installation



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The fine quality of Ro-WAY overhead doors is designed, engineered and built into every detail. Such as—

Ro-WAY styling—simple, quiet, attractive, to complement your building designs.

Ro-WAY materials—selected kiln-dried woods, Dorlux® panels, heavy roll-galvanized hardware.

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So doesn't it make sense to specify Ro-WAY to be sure of fine quality in overhead doors?



Amplex 60" Egyptian Standard Letters in red Plexiglas. Installation by The Haire Sign Co., Columbus, Ohio.

A New Dimension in Sign Advertising!

AMPLEX 3-D PLEXIGLAS* LETTERS

Attention-Commanding! Precision formed from heavy gauge—(yet light in weight)—Plexiglas, ultra-modern Amplex letters add a distinctive touch which will make a store or place of business stand out and attract attention. Their permanent rich lustre and unusual 3-dimensional effect beautifies and adds prestige wherever they're used . . . outdoors or indoors.

Versatile! Durable, color-fast, weather resistant, Amplex letters are available in 14 different colors—6 styles—in sizes from 2" to 72"—with depths from 1" to 6".

Economical! Easy to install, they can be mounted on any type of background material—wood, brick, glass, marble, stainless steel, porcelain enamel, etc. Amplex letters never need painting or any other maintenance except for an occasional cleaning with soap and water.

• Even with all these high quality features, Amplex letters are comparatively inexpensive. Truly, they're your best value for your sign advertising dollars.

• Sold and installed exclusively by local sign companies throughout the United States and Canada.

• Upon request, we'll send you a colorful brochure along with name of sign company near you handling these letters.

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Philadelphia 30, Penna.

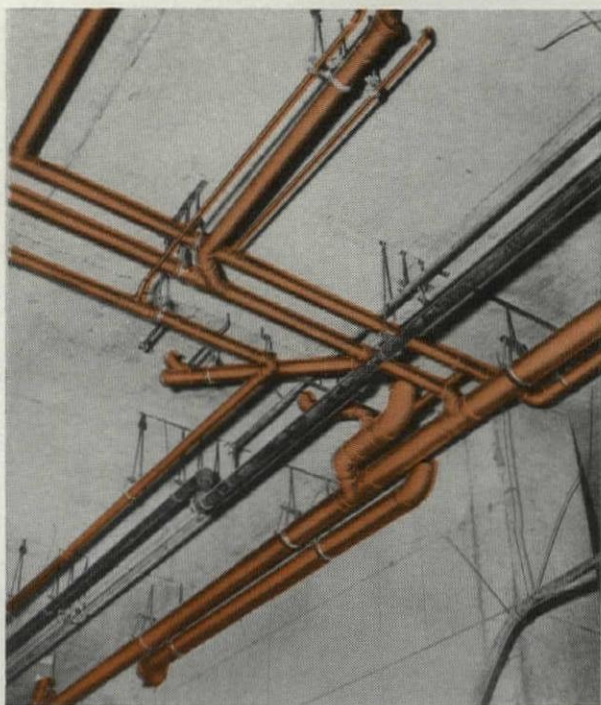
*Reg. T.M. Rohm and Haas Co.
©1960 Amplex Manufacturing Co.

WORLD'S LARGEST MANUFACTURER OF PLEXIGLAS LETTERS FOR SIGNS!



EASY TO HANDLE. Mechanic easily connects a length of 6-inch copper tube. More than 16,000 pounds of Anaconda Copper Tube, Type M, in sizes up to 8 inches, was used for the sanitary drainage systems. Architect and Engineer: California State Division of Architecture. Mechanical Engineer: Division of Architecture. General Contractor: Robert E. McKee, Inc., Los Angeles. Plumbing Contractor: E. O. Nay, Inc., Pasadena.

COMPACT COPPER SANITARY DRAINAGE SYSTEM GIVES NEW CALIFORNIA HOSPITAL MORE USABLE SPACE



CLOSE WORK LIKE THIS is possible only with copper tube. Water and drainage lines hug the ceiling, giving ample basement headroom. Even in tight quarters, connections are easy to make. Sizes in this photo range from $\frac{3}{4}$ " water lines to 4" for drain and vent lines.

Copper tube sanitary drainage lines in the hospital building and administration wing of the new Fairview State Hospital at Costa Mesa, California, eliminated wasted space in furred areas and allowed ample headroom in the basement. Equally important to the project owners, however, was the fact that copper tube drainage systems are easier to install, are long lasting, require less maintenance than other materials.

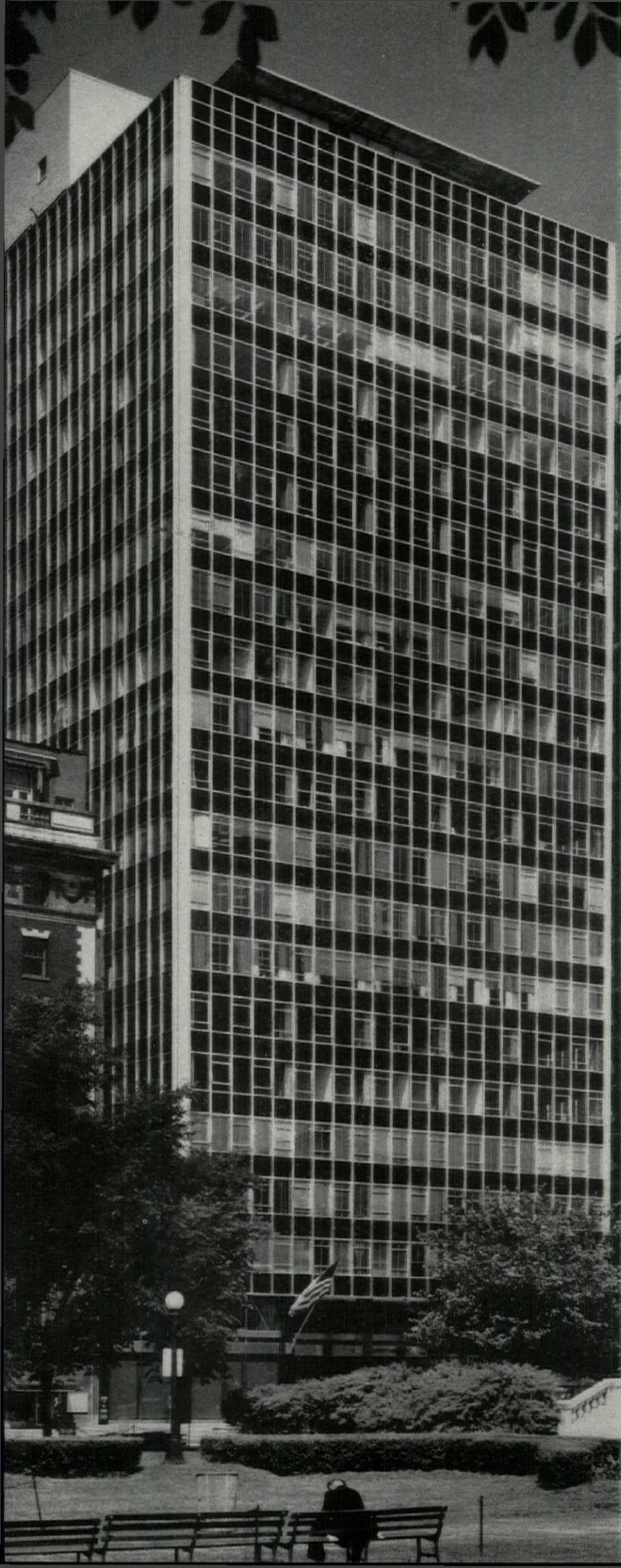
Copper tube was used also for the hot and cold water lines and for the radiant heating system.

TREND TO COPPER "The factors important to us as mechanical contractors are the work-saving features of copper tube. It has proved to be easier to handle, more adaptable to space problems, less trouble to test, and as a consequence, faster to install than other methods considered standard." B. J. Sabin, Manager, E. O. Nay, Inc., plumbing contractor on Fairview State Hospital.

Specify Anaconda Copper Tubes and Fittings — Types K and L for water supply and heating lines; Type M and the new lighter weight Type DWV for sanitary drainage systems. Anaconda wrought and cast solder-joint fittings for pressure and drainage applications. Write for Publication C-33. Address: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

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PRODUCTS OF THE AMERICAN BRASS COMPANY
Available through plumbing wholesalers



is For acoustical

Owner: National Properties, Inc.

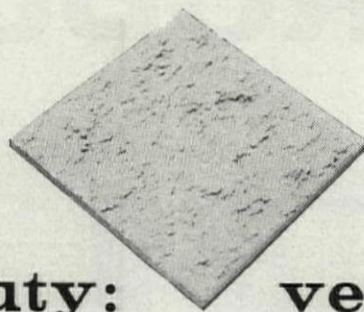
Building Architects: A. Epstein and Sons, Inc., Chicago, Ill.
Architects and Engineers.

Consultant: William Lescaze, F. A. I. A.

Tenant Architects for Borg-Warner Corp.: Cone and Dornbusch, Architects,
Chicago, Ill.



ceilings of classic beauty:



versatile
Travacoustic

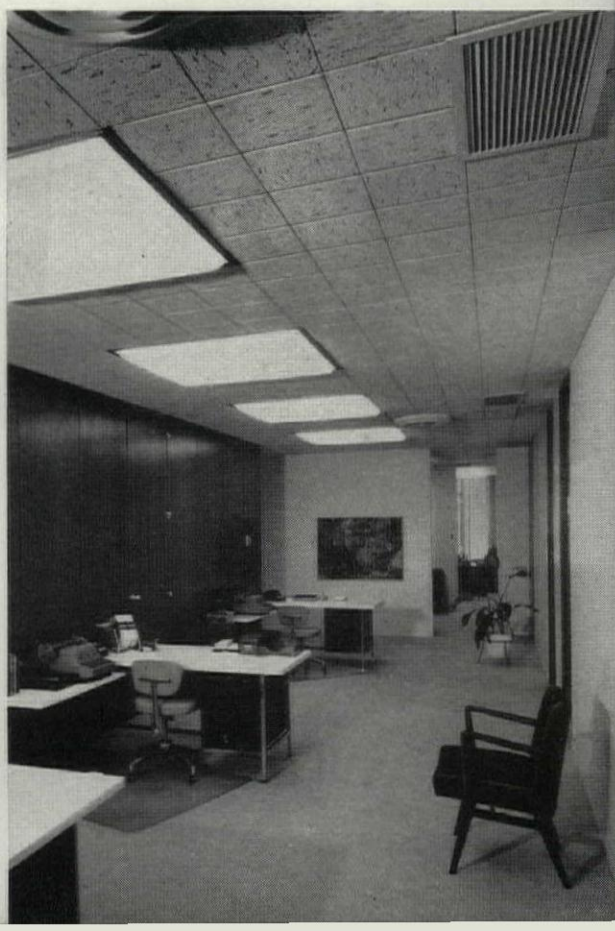
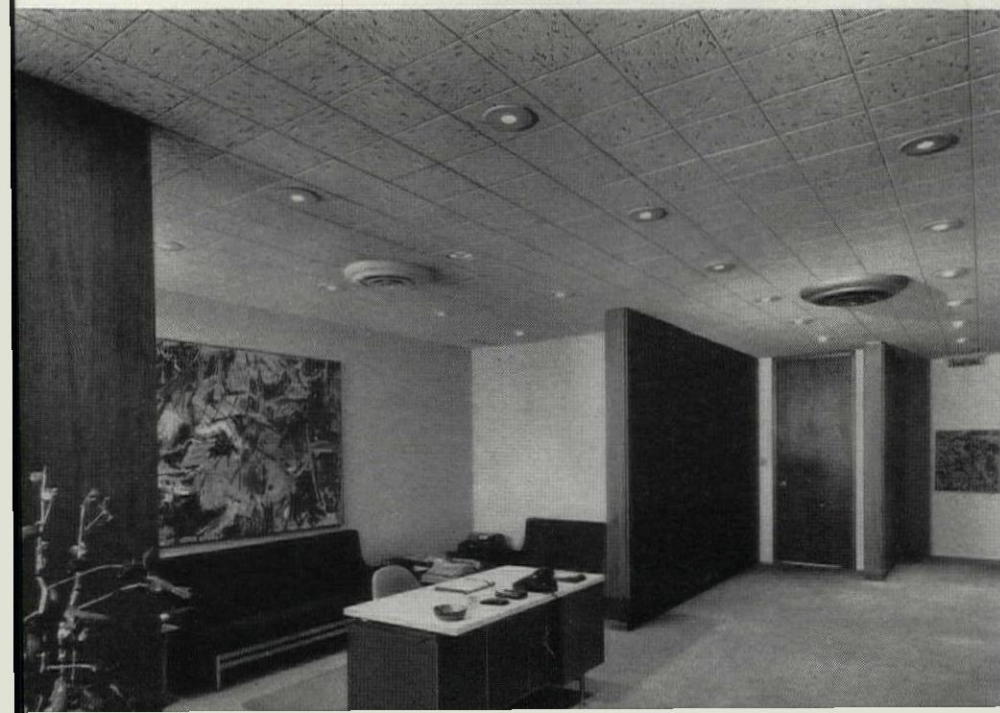
No other acoustical ceiling tile blends so beautifully with all styles of architectural design. Whether you're working on a new steel-and-glass office building or a red brick college library, the classic beauty of a Travacoustic ceiling fits right in. See, for instance, how Travacoustic's true, random fissuring lends warmth and serenity to these strikingly modern offices in Chicago's new Borg-Warner Building.

With all its beauty, Gold Bond Travacoustic is a very practical ceiling. Its mineral fibre tiles absorb up to 85% of the sound striking them. They're rated Class A non-combustible. And they can be repainted easily without loss of acoustical value.

Ask your Gold Bond® Representative for a sample of Travacoustic. Or write direct to Dept. AF-260 for free samples and technical bulletin.

NATIONAL GYPSUM COMPANY, BUFFALO 13, NEW YORK

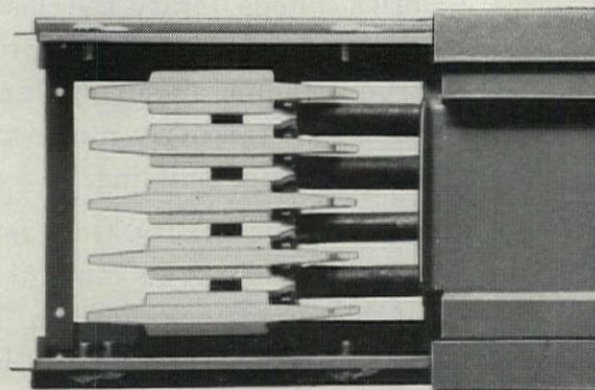
a step ahead of tomorrow



INTRODUCING NEW



The safest,
fastest-to-install
plug-in
duct ever
designed!



Now BullDog, the originators of Bus Duct systems, gives you new safety for plant personnel plus new installation speed and economy with new XL BUStribution duct! Completely Butyl covered aluminum bus bars give true dead-front construction. Crews can now install more duct in a day than ever before. Superior engineering provides low voltage drop . . . down to half that of other plug-in duct systems . . . plus unexcelled short circuit rating. BullDog gives you completely engineered fittings. You can get everything you need from a single source —your local BullDog distributor. Call him—he'll give you a demonstration of all the XL safety and installation features.

FAST INSTALLATION

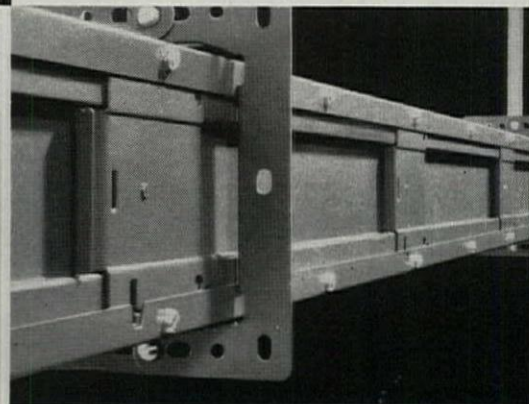
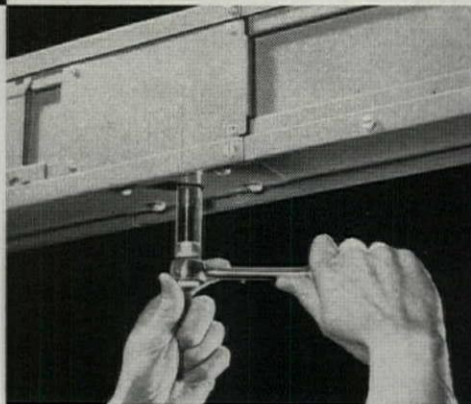
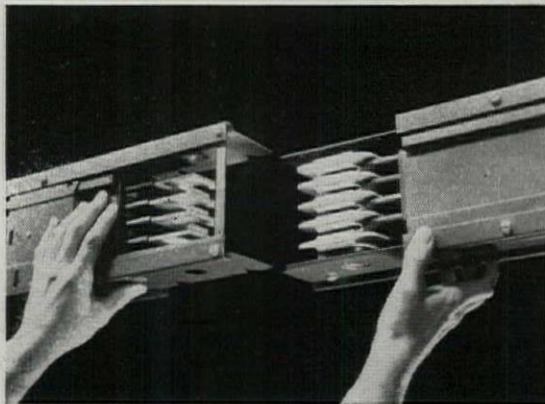
Keyed bus ends align themselves positively, instantly, without fumbling or wasted time. You can position sections as fast as you can handle them!

EASY INSTALLATION

This one integral bolt locks POSITIVELY . . . holds keyed bus ends under a ton of pressure. The fully insulated bolt spins tight fast. Joints stay locked!

ECONOMICAL INSTALLATION

You need only half as many hangers as usual. Ten-foot supporting spans cut number of hangers and the time needed to install them by 50%.

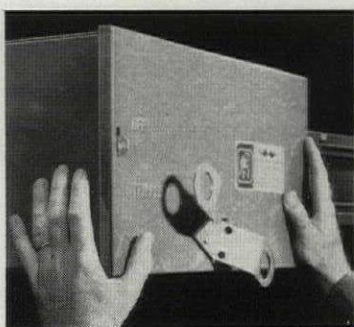
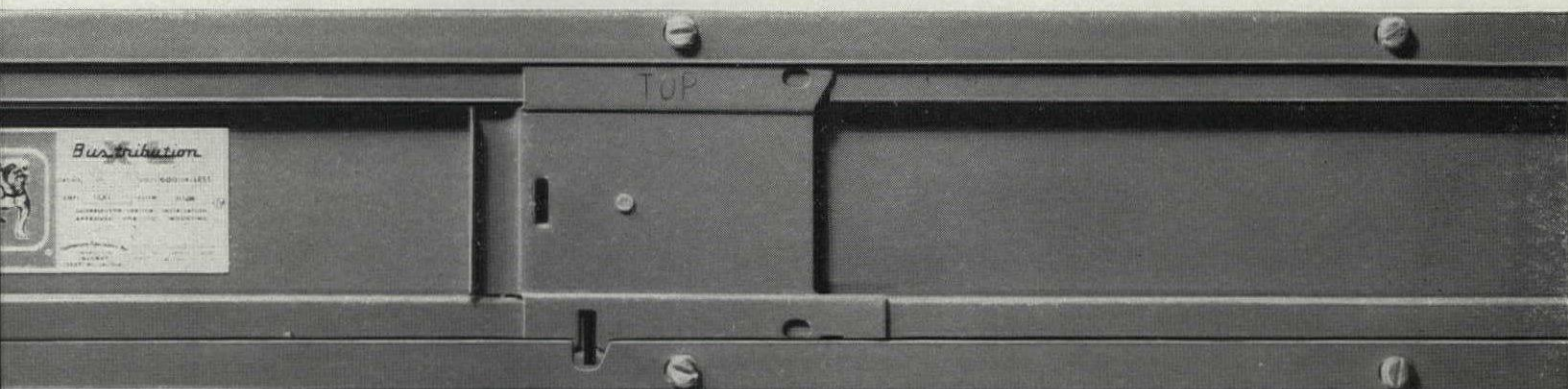


BULLDOG



XL

BUStrIbution[®] DUCT



The new **XL SAFETY-PLUG** is faster, safer to use than any other plug!

XL Safety-Plug has new, simplified design. You can plug-in on XL duct in seconds. It has safety features not found on any other plug. Plugs are available which prevent installation or removal when plug handle is in the "on" position. You can plug in from either side of the duct, in all duct sizes from 225 through 1000 amps. You can use all plug-in openings at the same time, if desired.

When you see your Bulldog distributor about XL duct, examine the Safety-Plug he has on display, too. Here's an electrical team you can depend on to do the job better in every way!

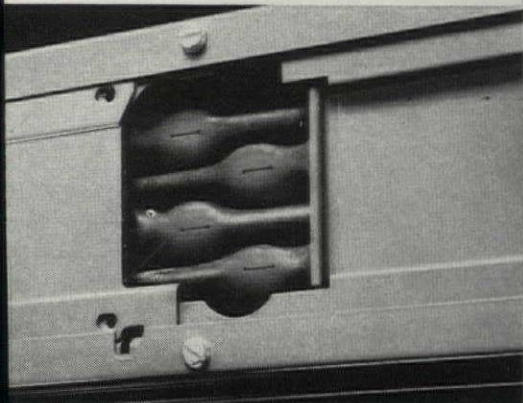


BULLDOG ELECTRIC PRODUCTS DIVISION
I-T-E CIRCUIT BREAKER COMPANY
BOX 177 • DETROIT 32, MICHIGAN

In Canada: 80 Clayson Rd., Toronto 15, Ont. Export Division: 13 East 40th St., New York 16, N.Y.

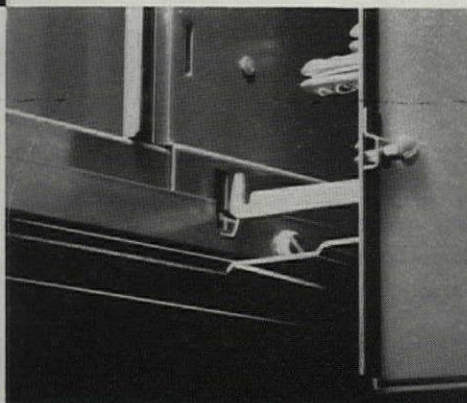
DEAD-FRONT SAFETY

Each bus bar has full-length Butyl insulation, even in bus plug openings. XL BUStrIbution Duct is the world's safest duct to plug into, to work around.



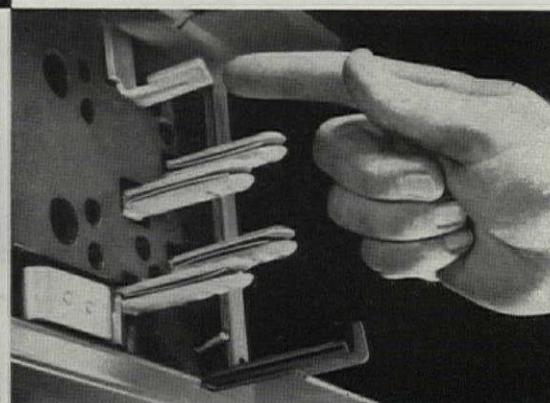
PERSONNEL SAFETY

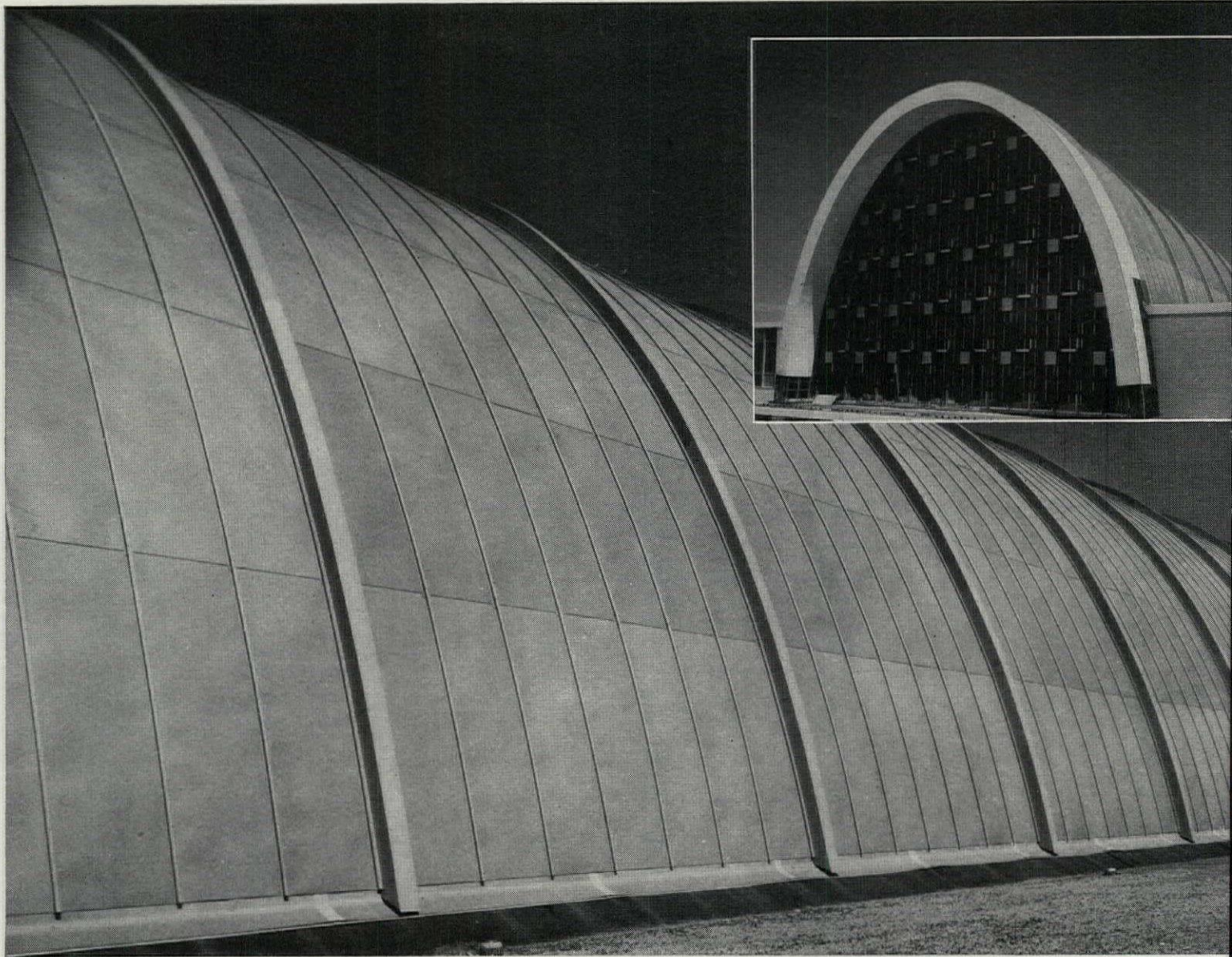
Safety door covers the opening... slides back when safety interlock finger is in position. Plug cannot be removed or installed when safety door is open.



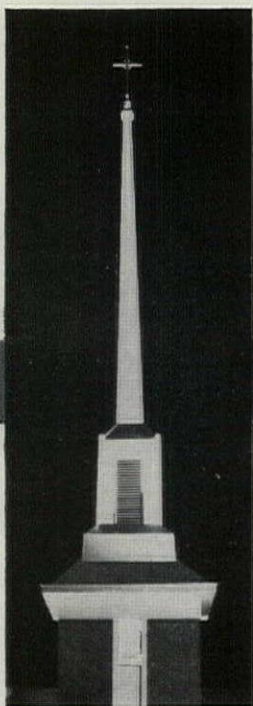
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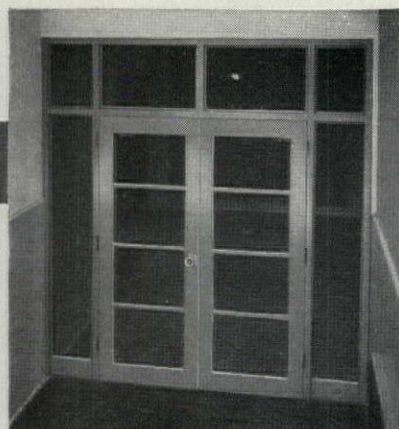




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Architects: Goldstein, Parham & Labouisse
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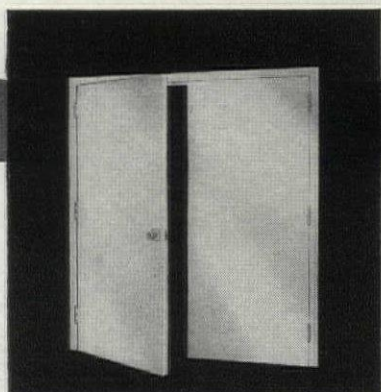
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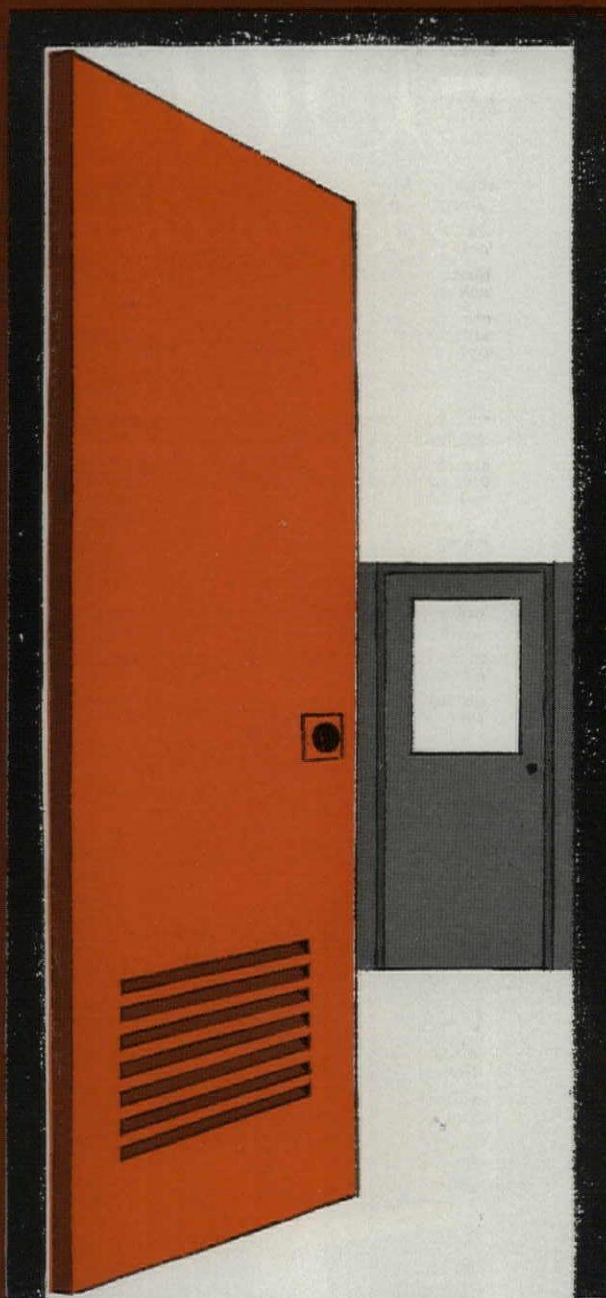
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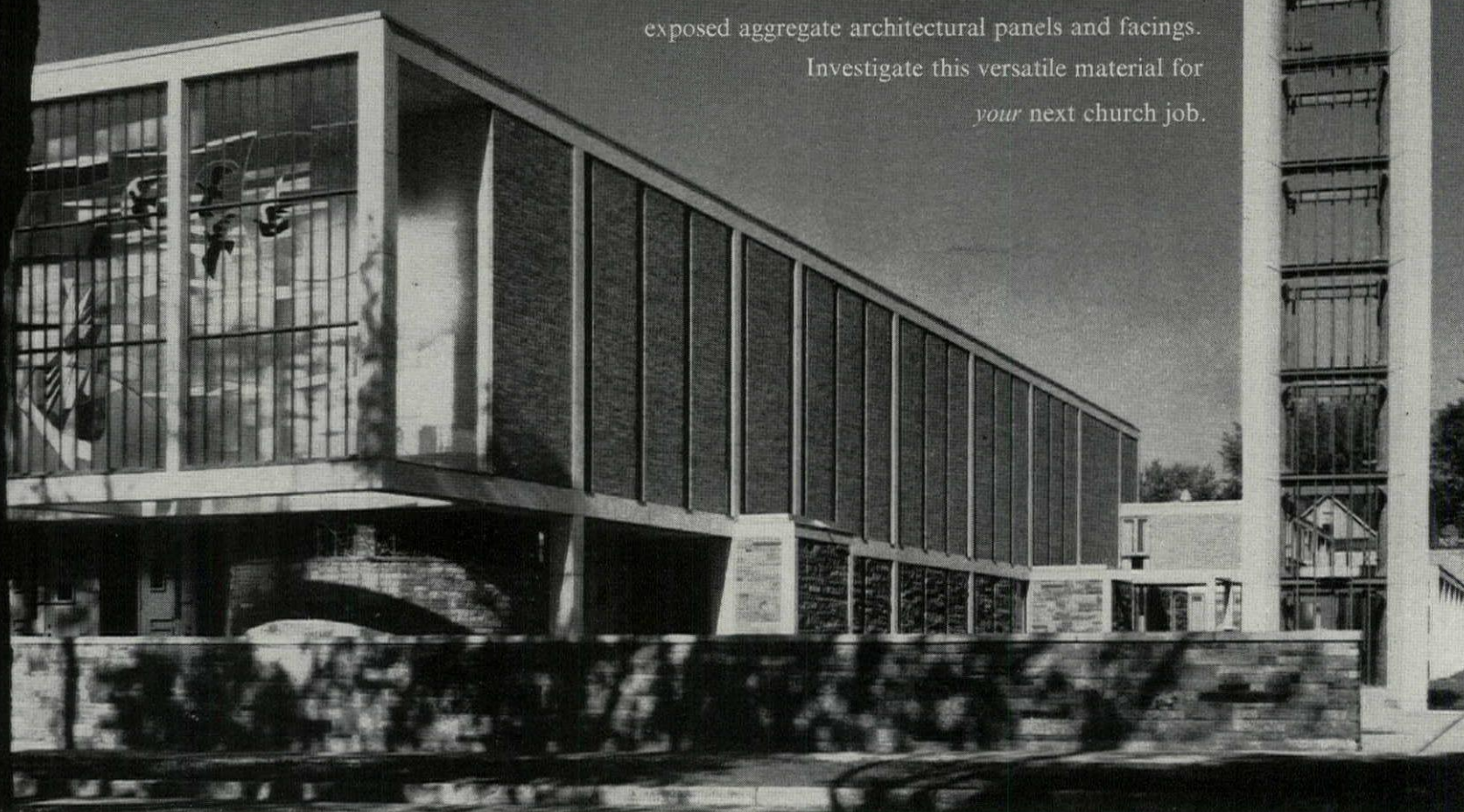
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Continuities . . . Congressmen . . . colossi



REBUILDING REVIEWED

Forum:

Your January issue, "America rebuilding," is an eloquent statement of a central problem, perhaps the central problem of contemporary architecture. An awareness of the values of the past that we want to save and a perception of the character of the future for which we are creating environment are a tremendous order for the contemporary architect. It is a responsibility that he can't escape, try as he might to avoid it through oblivion or opportunism.

ROBERT W. McLAUGHLIN, *director*
School of Architecture
Princeton University

Forum:

The editorial, "A problem in continuity," is excellent, stressing truths that have too long been ignored and stating them in diplomatic and readable language.

Everyone in this country likes to imagine that the frontier still beckons, that cowboys ride the range, that hunting and fishing can fill the deep-freeze locker, and that a building permit is a license to build something higher than any structure in the area. If, on the other hand, we can erect structures that are so well designed, so well located in respect to their urban function, so soundly built and so well served by transportation and parking facilities that their useful life may be extended from a minimum 25 years to a possible 50 years, the result will be to increase substantially our nation's architectural assets.

I do not know the history of European cities in detail but I have the impression that usually they started as random settlements and only very gradually achieved status as dignified architecture. At certain moments in history the citizens of these centers became interested in market squares or plazas, broad avenues, water-front improvements, public buildings such as cathedrals and palaces and town halls. A great deal of this city planning was rebuilding.

PHILIP N. YOUTZ, *dean*
College of Architecture and Design
University of Michigan
Ann Arbor

Forum:

. . . most timely, for we must learn to make the best use of our present land and to make the best use of our present good buildings. The "new start" must give way to "continuity." With such thought and

care, all should be made urbane and beautiful. Perhaps then there will be less need for escape by rushing about adding ever anew to the clogged road problem.

WILLIAM B. WURSTER, *dean*
College of Environmental Design
University of California
Berkeley

CONGRESSIONAL PRESCRIPTION

Forum:

It seems to me that Congressman Hays, the subject of your December editorial "Architecture by Congressmen," would question the advisability of having his physician selected by a Congressional Committee, particularly if he had the opportunity to have his physician picked by a selected group of doctors.

A. QUINCY JONES JR., *architect*
Los Angeles

GUGGENHEIM DISPUTED

Forum:

I disagree with your estimate of the quality of space in the Guggenheim Museum (FORUM, Dec. '59). I found the great spiraled gallery, despite all its size and sweep, to be a static, bottled-up, lifeless space.

I know Wright was a genius. I've seen his brilliance in space manipulation—but in other works where there were always changing relationships between his architecture and me as I moved in, around, through it; where his multifaceted buildings, planes, and spaces turned as I turned, moved one way as I moved another; where his forms in space were in ever changing juxtapositions; where the spaces themselves were constantly changing in height, lighting, direction, view, character, changing sometimes imperceptibly, changing sometimes with dramatic suddenness.

There's no change in the Guggenheim, no variation, no interest, no contrast, no spatial surprise; interest quickly flags; curiosity is never really piqued. Unaccountably, Wright's genius here lapsed, and he created an austere, confined, and monotonous space.

STEPHEN RAY AUERBACH
Brooklyn, N. Y.

Forum:

I had shared with others the usual hate and despise at the Guggenheim until I read

continued on page 220

the superb criticism in your December issue.

I find it one of the deepest and most perspicacious architectural themes I have ever read, and I thank you for calming me down and setting me straight on what, certainly, must be a great building.

HOWARD BARNSTONE, *architect*
Bolton & Barnstone
Houston

JUSTICE IN WASHINGTON

Forum:

Your story on the Capitol Park Apartments does justice to this beautiful building. This apartment house breaks the ice for private residential redevelopment in the National Capitol. The Land Agency is proud of it and of the architects, Satterlee & Smith, and the builders, Roger Stevens and James Scheuer, who brought it about.

However, your discussion of "The bitter lessons of Capitol Park" is generally inaccurate. A good many of Washington's regulations affecting building may be more applicable to less exciting developments and even a bit archaic in spots. The city officials worked with the architect for every exception and every ruling which would help bring about the best possible design. That so much was achieved is both a tribute to the architects and to the health and licensing officials.

There is no basis in fact that we know of for Mr. Scheuer's statement that his return will be 5 per cent. The apartment is not yet fully occupied nor have the costs been finally computed. Like any other FHA builder he will have to wait a little while to know just what his return will be.

JOHN R. SEARLES JR., *executive director*
District of Columbia Redevelopment Land Agency
Washington, D.C.

■ FORUM's discussion of the lessons was based on statements made by the developers and the architects who, apparently, do not always agree with the Land Agency. As for Mr. Scheuer's statement about a 5 per cent return, he seemed to be pretty sure of his figures. But, as reader Searles says, only time will tell. FORUM does regret, however, omission of credit to Developer Roger Stevens, who is a 50 per cent partner in the project.—ED.

VANISHING ENGINEERS

Forum:

I congratulate you on the article "The expanding engineer" in the December 1959 issue. It is most timely. It is very encouraging that architects are recognizing the problems which face the engineering profession in the building field.

Your article states "it is risky to assume that . . . building can continue to attract

the necessary brain power for an expanding technology." In my opinion, that time has passed as far as the mechanical and electrical engineering branches of the engineering profession are concerned. In the San Francisco Bay Area I do not know of a single office which is not looking for good men. Qualified men are leaving this field and are not being replaced.

A national survey of the engineers in building, including comments on the adequacy of personnel, would be most helpful and, I fear, most discouraging. It would show that the personnel situation has been bad for several years and is getting progressively worse. At the present time a committee of mechanical and electrical engineers is studying our problems in this area.

FREDERICK U. WEIR
Bayha, Weir & Finato, Inc.
San Francisco

WHY COLOSSI?

Forum:

I have read your article in the November issue on the "Light-weight colossus," the new Eastern Air Lines terminal at New York's International Airport. I wonder



why these tremendous, column-free colossi are built (photo above). If there are ten air lines operating at an airport, must each build one to maintain prestige? It seems to me that air terminals are transfer places for getting people from busses and cars into airplanes with minimum of wasted time and effort.

Should not the air terminal in reality be a series of tubes to provide weather protection from ground transport to airplane, with processing accomplished en route as the passengers move through the tube on moving floors? However, if poor scheduling requires the amusement of in-transit and waiting passengers, then, rather than these empty colossi with their cheap commercialism, why not provide the opportunity for real amusement in the form of short movies, stage shows, facilities for bowling, billiards and games, reading rooms, writing rooms, TV viewing?

ALBERT F. KERSS
c/o Pacific Architects & Engineers, Inc.
Tokyo

LUNDY'S SERMON

Forum:

"Lundy's personal architecture" (FORUM, Dec. '59) was more powerful than an ideal sermon given at the Wayfarers Chapel.

DENNIS A. MCELRATH
Manhattan Beach, Calif.

URBAN BUSINESSMEN

Forum:

The City of Annapolis, like many other cities throughout this country, is in the midst of a steady economic and physical decline. The Committee for Annapolis was formed by local business and civic leaders to stop this decline and sell the concept of a new, more attractive city.

I have read with great interest the article in the November FORUM, "The businessman's stake in urban renewal." Reprints of this article could be of great assistance in selling businessmen on our program. We would like 150 copies.

RONALD C. PAAPE, *executive director*
Committee for Annapolis, Inc.
Annapolis, Md.

Forum:

I would like 100 reprints to distribute to the members of our Downtown Task Force Committee, which was established this year.

Your magazine has done immeasurable service to the urban renewal programs of this country by its continuing interest and reporting in the field.

MILES W. WEAVER, *redevelopment director*
Sum Clearance and Redevelopment Authority
Portland, Me.

■ As long as the supply lasts, FORUM is happy to provide extra copies of its articles.

END

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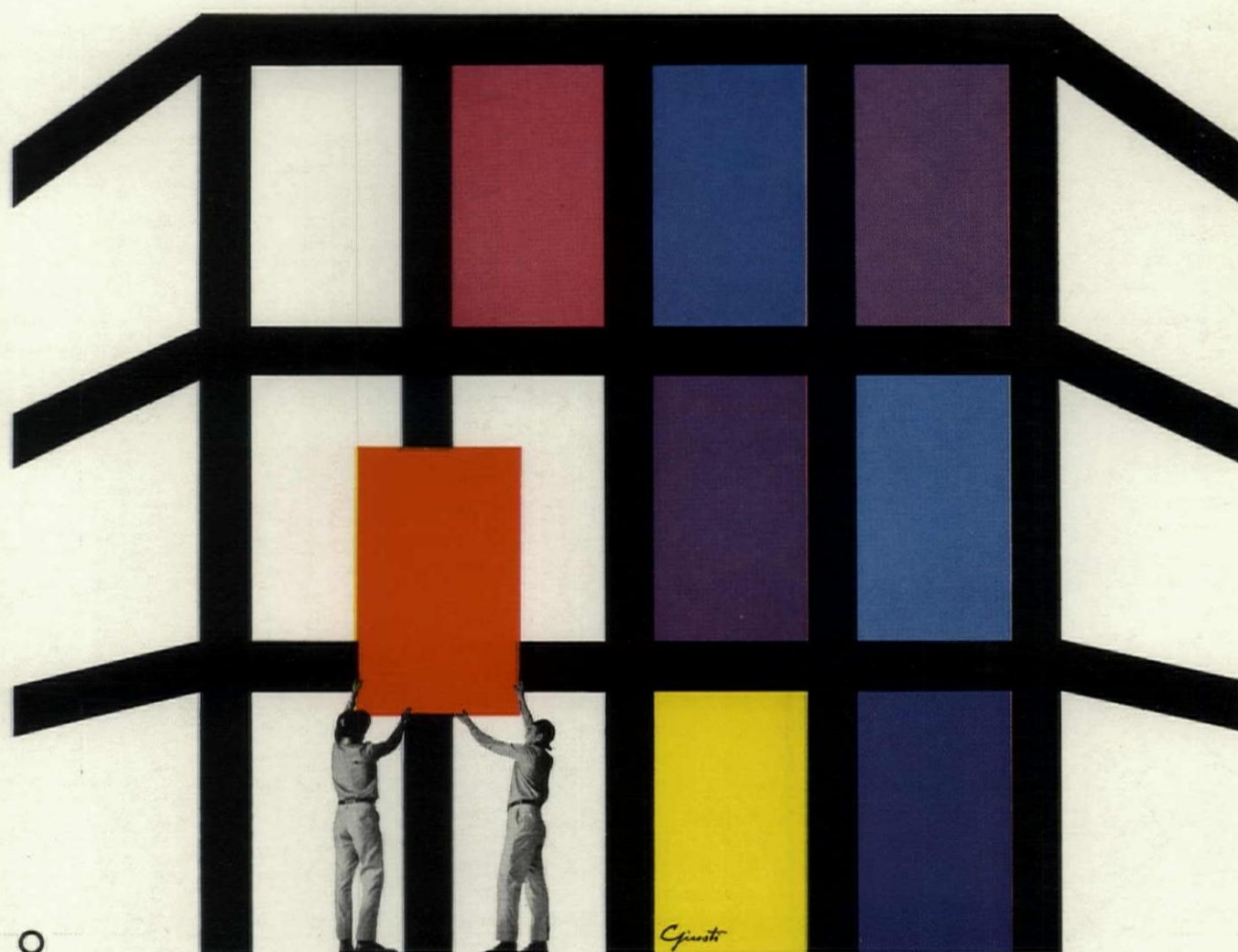
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