rchitectural Forum the magazine of building December 1960 FORUM



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Designed by an erstwhile museum director, Philip Johnson, sumptuous art institute in Utica, N. Y., is a blunt windowless box hung from four great girders.

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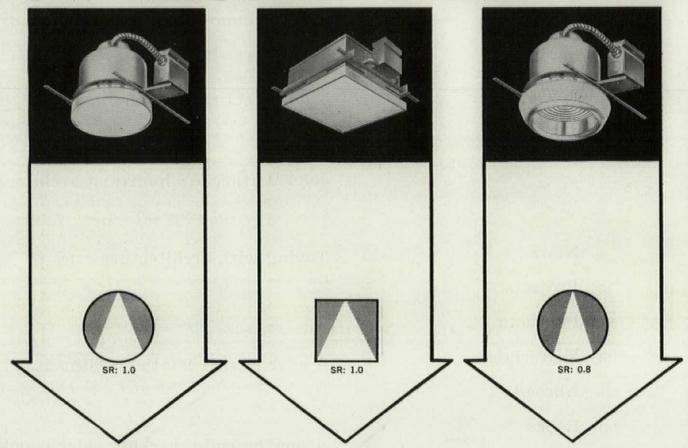
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Published monthly by TIME, INC., Time and Life Building, Rockefeller Center, New York 20, N.Y.
This issue is published in a national and western edition.
Entered as second-class matter at New York, N.Y. and at additional mailing offices.
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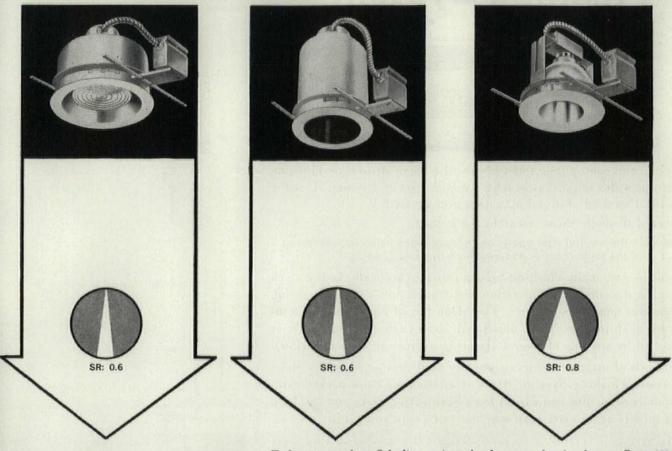
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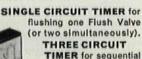
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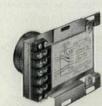
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Building money more available, cheaper as total construction activity declines in last quarter

Campaign oratory could no longer obscure some hard facts about construction and the economy that emerged in the wake of last month's presidential election. Call it rolling readjustment, recession, or whatever, there is little doubt that the economy had declined at least moderately. In the third quarter, gross national product ran about \$2 billion below the record rate of the previous three months, and some economic seers were predicting further slight declines for the final period. Unlike the previous tailing off of economic activity in 1958, this year's slump is not being ameliorated by a record level of construction activity such as kept that year from becoming one of serious difficulty. Through the first ten months of 1960, construction had declined 2 per cent from the same period of 1959, due almost entirely to a 5 per cent drop in residential building.

The steep decline in home building was emphasized by September figures showing an average annual rate of only 1.2 million units, some 17 per cent below the rate a year earlier. But there is a real possibility that this most disappointing area of construction may yet be turned around by use of the same instrument that has puffed home building totals before—easier credit.

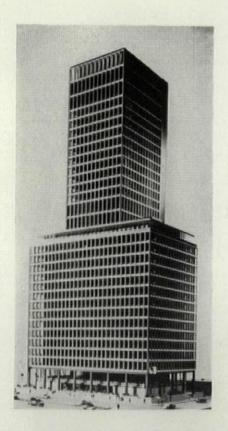
There is no doubt that mortgage money is both more available and cheaper now than it has been for some time. The latest surveys of the National Association of Real Estate Boards show that mortgage money was considered ample by realtors in 77 per cent of the nation. Just six months ago, only 50 per cent of the nation's realtors polled called the supply of mortgage funds ample, and 8 per cent said money was tight. In the latest survey, only 4 per cent of those areas surveyed reported tight money conditions for new home mortgages with conventional terms. And interest rates on conventional loans were 6 per cent in 58 per cent of the areas surveyed, whereas only half of those surveyed reported rates that low six months ago, and 44 per cent reported rates of 61/4 per cent to 61/2 per cent then. The latest survey shows only 27 per cent of the reporting areas with rates that high. Behind the bare statistics, mortgage bankers and realtors report that home buyers with required down payments can actually do much better than the figures indicate in many

areas. Another sign of easier mortgage market conditions is the evaporation of discounts on government-insured mortgages. (Such discounts on the prices of mortgages in effect boost the rates.) The NAREB survey showed that discounts of 4.5 points or more prevailed in only 11 per cent of the nation in September, whereas such discounts were common in 47 per cent of the nation last March.

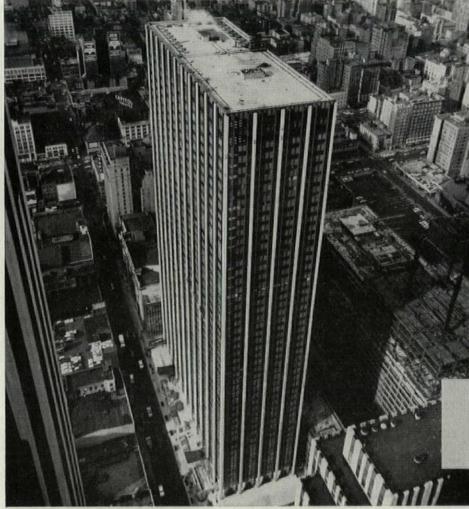
To boost further the supply of loanable funds, the Federal Reserve Board several weeks ago announced two steps: 1) it will allow member banks to count their vault cash as part of their required reserves against loans, and thereby create new lending capacity totaling at least \$1.3 billion for those banks, and 2) it will begin to purchase U.S. Treasury bonds and notes as well as bills in coming months. This will mark the first time in over two years that the Fed has bought Treasury bonds and notes. In the first week following the announcement, the Fed bought nearly \$530 million of U.S. securities, the highest weekly total in seven years. Such purchases have the effect of pumping up further the lending capacity of the member banks.

Mortgage money for commercial and industrial building has increased considerably in the past six months, according to NAREB, and is now in greater supply than at any time in more than a year, particularly for borrowers with top credit ratings seeking funds for prime locations. Interest rates for such loans are 6 to $6\frac{1}{2}$ per cent in over 70 per cent of the nation.

The nonresidential building sector hardly needs further stimulation, although it should benefit from moves of the Federal Reserve to pump more lending power into the banks. This area of construction has been the bellwether so far this year. In the first ten months of the year, private nonresidential building rose 13 per cent above the same period of 1959, and is heading for a record. Industrial building, which began turning up last year, has continued its strong comeback, and is already 38 per cent higher than in the first ten months of 1959. Office building is running 5 per cent higher in the first ten months than it was in the same period last year, and store building (including shopping centers) is up about 1 per cent. Other nonresidential buildcontinued on page 7



UNION CARBIDE'S PARK AVE. NEIGHBOR The Park Avenue building boom continues to pace all Manhattan. Last month, the newest entry was announced, this 30-story office building, to be built across the street from the sparkling new Union Carbide tower (FORUM, Nov. '60) and occupied by Bankers Trust Co. The building will stand on a raised terrace 3 feet above the sidewalk, with a colonnade and portico framing the lower two stories. The façade will feature floor-to-ceiling windows with frames of buff-colored precast masonry, The design was done by a coalition of Industrial Designer Henry Dreyfuss; Emery Roth & Sons, architects; and Shreve, Lamb & Harmon Associates, interior architects.



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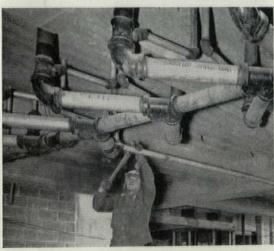
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ing is booming, too: church and private school building are both up 9 per cent; social and recreational building is up a whopping 24 per cent; and hospital building is up about 1 per cent.

Nonresidential building in the public sector has been strong, also, but has not been enough to offset big drops in highway and military construction. As a consequence of these declines, and a steep drop (29 per cent) in public housing, total public construction was off 3 per cent in the first ten months of the year.

The outlook for future building is only slightly more encouraging. Building contract awards, beefed up by heavy construction and nonresidential building, rose in September from a year earlier, although some of the gain was attributable to the effects of the 1959 steel strike on that year's building level.

The brightest spot in the whole construction picture as 1960 draws to a close is the one that perversely arises when total activity declines-building costs are not rising so fast as they have in most of the postwar years. In fact, 1960 may become the first year since 1954, and only the fourth in two decades, when total building costs, as measured by the Department of Commerce's composite index, will not rise at all. The widely used Boeckh indexes for apartment and hotel building and for commercial building are all showing slimmer percentage increases so far in 1960 than they did in recession-ridden 1958. The prices of building materials may actually show a decline this year; they were off 2.7 per cent through the first nine months. This would mark the first drop since 1952, when there was an important slump in lumber prices, even as is the case today. However, unlike 1952, structural steel prices have been steady this year, and glass prices have also declined. With building money getting cheaper, too, it appears that the total building cost picture is as bright as it has been in the whole postwar period.

Kennedy victory indicates liberal urban programs

One of the most trenchant facts about Senator John F. Kennedy's narrow victory in last month's election is that he simply could not have won at all without overwhelming support from solid blocs of Democratic voters in big cities throughout the nation. One big reason advanced by many postelection analysts for this support is the feeling that the Eisenhower Administration did not take enough notice of urban problems.

Now the question is, how will Kennedy reflect this groundswell of city support in his own programs?

Perhaps the best clue to the answer can be found in the special conference on urban affairs called by Kennedy and his advisers in Pittsburgh just a month before the election. Although obviously politically inspired, the recommendations growing out of that conference indicate the direction the new Administration will move. In the first place, it asked a long-term (at least ten-year) federal urban renewal program, with the federal government firmly committed to pay two-thirds of the cost, localities one-third, (Eisenhower long advocated a fifty-fifty break on redevelopment costs.) While no amounts for annual federal reservations were specified, it is reasonable to assume they would be at least \$600 million per year. On public housing, the recommendations called for "a shift from large to small projects which blend into existing neighborhoods, as well as rehabilitation of existing substandard private units," and possibly the sale of units to long-term tenants. The optimum annual volume of public housing was not set, but it will presumably be more than 35,000 units. Kennedy has endorsed an over-all public-private housing program that would build or stimulate at least 2 million units of housing per year, well above the 1.2 million to 1.4 million that has prevailed over the past few years.

Kennedy's urban program also calls for federal aid to stimulate the development of "unified transportation systems, meshing commuter and transit service with expressways and parking facilities" and federal aid programs to

continued on page 9







THREE WEST COAST OFFICE TOWERS While skyscrapers may not scrape quite so high, they seem to be proliferating nearly as fast on the West Coast as on the East. These three, all finished in recent months, illustrate a trend to solid, medium-height curtain wall structures, frequently with rather jazzy facades. The 22-story Tishman Wilshire-Flower office tower in Los Angeles (top left), designed by Victor Gruen Associates and Daniel, Mann, Johnson & Mendenhall, has a prefabricated curtain wall with built-in window panels covered in blue mosaic tile. Between aluminum ribs, the exterior is finished in sky blue. Bethlehem Steel's new 15-story West Coast headquarters (top right), by Welton Becket & Associates, has exposed columns sheathed in white marble and black granite. Like the Bethlehem building, the 16-story Signal Oil & Gas Co. building (left) in Los Angeles is hung on exterior columns. It was designed by Charles Luckman Associates.

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combat air and water pollution and to insure adequate recreational areas in urban centers. By way of indicating its organizational thinking on urban matters, the conference recommended "the coordination of all these activities into an integrated program of development," as the ultimate "key to success in urban renewal." This would mean a cabinet level Department of Urban Affairs, presumably built around the present Housing & Home Finance Agency. Eventually all programs bearing on urban construction and development would be consolidated, such as the hospital and sewage treatment plant building programs now under the Department of Health, Education, and Welfare, and fiscal agencies such as the Home Loan Bank Board, The two names most prominently mentioned as possibilities to head such a department are Representative Chester Bowles (D, Conn.), one of Kennedy's top advisers, and Mayor Richard C. Lee of New Haven, who headed the Pittsburgh conference.

Pennsylvania calls for modular schools

In the first state action of its kind, the Pennsylvania State Council of Education has ruled that, beginning this month, all new school construction must be designed according to "the principles of modular coordination." Based on the recommendation of a Governor's Advisory Committee with five architect members, the ruling specifies "the use of repetitive components such as doors and frames, windows and frames, wall panels, ceiling construction, mechanical components, storage units, locker assemblies, teacher's closets, structural components, etc."

This ruling reflects the hard work of an organization just two years old, The Modular Building Standards Assn. Sponsored by the A.I.A., the Producers' Council, the AGC, and the National Association of Home Builders, it is a voluntary service association organized to promote use of the modular standards set up by the American Standards Assn.

The Army's Corps of Engineers and the Veterans Administration have specified modular dimension for new construction for several years and last year 16 per cent of all new hospitals, public and private, were designed with modular techniques. More hospitals, according to Byron Bloomfield, executive director of the Modular Building Standards Assn., have used modular design than any other building type.

Voters approve over 90 per cent of bond issues

Voters throughout 50 states supported over 90 per cent of a record \$3.3 billion in bond issues put to them in last month's elections. This was the heaviest approval record since 1956, and well above the 58 per cent in off-year 1959. The biggest issue was the mammoth \$1.8 billion California water bond proposal, one of the largest issues ever approved for a single state. The funds would be used over a 20-year period to finance construction of a great dam and aqueduct system to store and transport water to arid areas of central and southern California. When finished, the Feather River project, as it is called, will be more costly than the Tennessee Valley project.

Among other large issues, \$195 million for the construction of state university facilities and \$150 million for welfare institutions were approved by Illinois voters. In New York state, voters overwhelmingly authorized a \$5 million addition to the annual \$39 million subsidy for state-sponsored public housing and a \$75 million fund for the purchase of open land for state recreation areas. Oregon voters passed a \$135 million issue to expand the state's veterans housing program and a \$47.5 million proposal for construction of

college dormitories. College building programs also received voter support in Rhode Island (\$6 million) and New Mexico (\$8 million).

Urban renewal bond issues were supported in Cleveland, where a \$3 million redevelopment issue passed along with a \$4 million program for port and lake-front development and a \$10 million issue for a new public auditorium. Hartford's \$1.9 million renewal program (see page 72) passed, as did a \$6 million renewal program in Youngstown, Ohio.

Among the casualties in November balloting were a proposed \$3.9 million civic auditorium in Dearborn, Mich.; \$40 million of state buildings in Oregon, and a \$15 million sports arena in King County, Wash. Tacoma, in the same state, vetoed a \$6.5 million civic auditorium.

Broad renewal plan for downtown Minneapolis

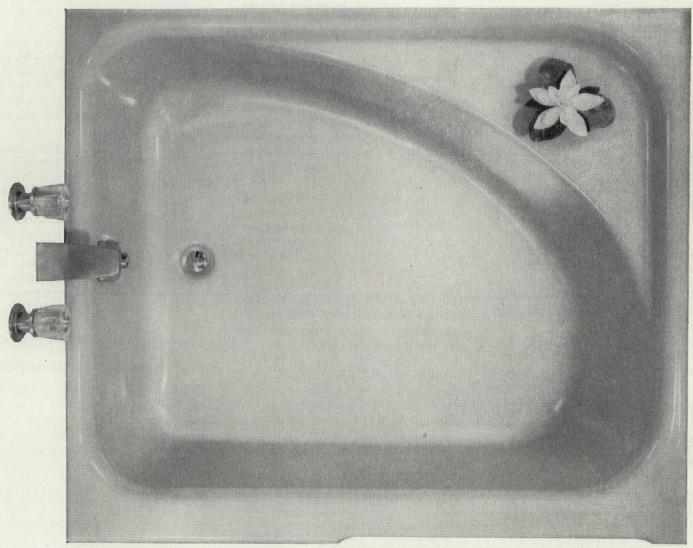
The Minneapolis Housing and Redevelopment Authority had under study last month a comprehensive plan for redeveloping a 17-block section of its deteriorated downtown area with five major projects to cost a total \$42 million. Sponsor of the so-called Gateway continued on page 11

AUXILIARY SPORTS ARENA RESTAURANTS MAIN SPORTS ARENA

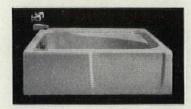
NEW \$38 MILLION SPORTS ARENA PLANNED FOR MANHATTAN

The owners of New York City's famed Madison Square Garden last month announced that they plan to build a new "garden" on Manhattan's West Side. The projected sports center will cost at least \$38 million and will feature the largest indoor arena in the world, with a seating capacity of 25,000 compared to 14,500 for the present Garden. Designed by Charles Luckman Associates, the center will also have a theater, an auxiliary sports arena much smaller than the major one, several restaurants, an outdoor skating rink, and a swimming pool. Two-level parking will accommodate 3,000 cars. The main arena will also

be convertible into a convention hall. Although financing for the huge project has already been arranged (it will be privately backed), Graham-Paige Corp., which owns Madison Square Garden and will build its successor, has not picked the site. It reportedly will select one of three sites on Manhattan's West Side, however. A spokesman for Graham-Paige said the corporation hoped to have the new sports center finished by the time the World's Fair got under way, in 1964. Architect Luckman plans to use a "compression ring" of steel cables embedded in concrete to form the huge oval-shaped arena.



Clean, modern styling. 48" long, 42" wide, 14" high. Six pastel colors and snowy white.



Straight apron floor line minimizes tile cutting and installation costs—back and ends flanged for wall tiling.

Distinctive beauty—generous bathing area—integral corner seat and wide rim seat . . . these are just some of the *preferred* features found in the new *Delray* square recess bath by Eljer. Nationally advertised to help *presell* your customers, the new *Delray* is currently featured in full-page, four-color ads in *House Beautiful* and *Living for Young Homemakers* magazines.



Three Gateway Center Pittsburgh 22, Pa.



Estate de luxe siphon jet toilet is styled and color-matched to complement other fine Eljer Fixtures



APARTMENT BUILDING SECTION of Minneapolis redevelopment project with 1,500 individual units will overlook Mississippi River (background). Architect: John A. Pruyn, of New York.

Center plan is the Knutson Co., headed by developer Donald T. Knutson. To be set in a series of parks and concourses, the five main elements of the project, covering almost 40 per cent of the city's downtown business district, are:

▶ A \$22 million group of high-rise apartment buildings containing 1,500 units overlooking the Mississippi River (see photo).

The new 17-story \$9.5 million Sheraton Center Hotel designed by Minneapolis Architects Cerny Associates (FORUM, Aug. '59).

▶ A five-story, \$6 million home office building for Northwestern National Life Insurance Co., for which architects have not yet been selected.

▶ A six-story \$2 million office building and training school for IBM, which has yet to name its architect.

▶ A \$2 million central plaza area of stores, restaurants, recreation, and entertainment structures for downtown shoppers and visitors.

Knutson Co. plans to build the apartments, the IBM building, and the plaza facilities.

New York elevator strike stifles high-rise building

Construction work on high-rise buildings in New York City has been cut back by as much as 70 per cent due to a strike of elevator mechanics and maintenance men belonging to Local 1 of the International Union of Elevator Constructors. The strike entered its fourth month in November, and leading builders saw little chance of quick settlement. Most severely hurt are those buildings well along their schedules, where construction workers have to walk up 20 flights or more. Most of this walking is being done on the builder's time, if indeed his employees or those of his subcontractors will walk above the 12th floor at all. And some laborers are asking bonuses for the extra hiking. While no one will say precisely what the strike is costing, one informed guess is that some buildings are losing \$1 million per month.

Technically, the strike is against the Elevator Manufacturers Association of New York, which is really only the Big Three (Westinghouse Electric's elevator division, Otis Elevator, and Haughton

Elevator Co.) who do nearly 90 per cent of all the elevator work in the most elevatored city in the nation. Nearly 20 per cent of the IUEC's total membership of 9,855 is in Local 1, which indicates the importance of the New York market for the elevator manufacturers. The basic issues are those that have plagued much of industry generally in recent years: should the manufacturers be allowed to prefabricate more of their products, thereby cutting down the labor needed in installation, and should a hiring hall system be used for parceling out available jobs. The manufacturers are most adamant about the first issue, declaring that they must be allowed to determine the fabrication of their own product. The union at least wants indemnification for any worker who loses his job because of prefabrication or automation. Actually, the prefabrication issue seems premature, for none of the major manufacturers is yet ready to prefabricate elevators and equipment on a large scale, and won't be for at least three years.

People

Planner Edward J. Logue left his job as director of New Haven, Conn.'s fastmoving urban renewal effort nearly a year ago, to take over Boston's stagnating redevelopment program. At the time, Logue realized there would be many difficulties, not least of which would be a redevelopment authority basically inimical to Mayor John F. Collins, who hired Logue (FORUM, Mar. '60). But Logue could not have foreseen that it would be almost a year before he could officially start to function as boss of the Boston program, even though he did in that time develop a huge \$90 million program which should finally get the venerable metropolis off dead center. In that period, Logue has had to work for Collins on a per-diem basis (his salary of \$30,000 is the highest paid to any government official in the state, including the governor and the mayor himself), while Collins has wrangled with the five-man redevelopment authority over just what role Logue would play.

By last month, Collins had finally won out over the Authority's adamant opposition to Logue's appointment as its administrator. But he was not successful until leading civic and business interests in the city were pressed into the fight. Most significantly, the Prudential Insurance Co., backers of the huge \$150 million Prudential Center in Back Bay, finally used its influence to convince the authority to accept Logue. The Pru Center had been stalled throughout the squabble over who would run what and, as a spokesman said: "It was costing us thousands of dollars a month, and we were frankly getting a little tired of it."

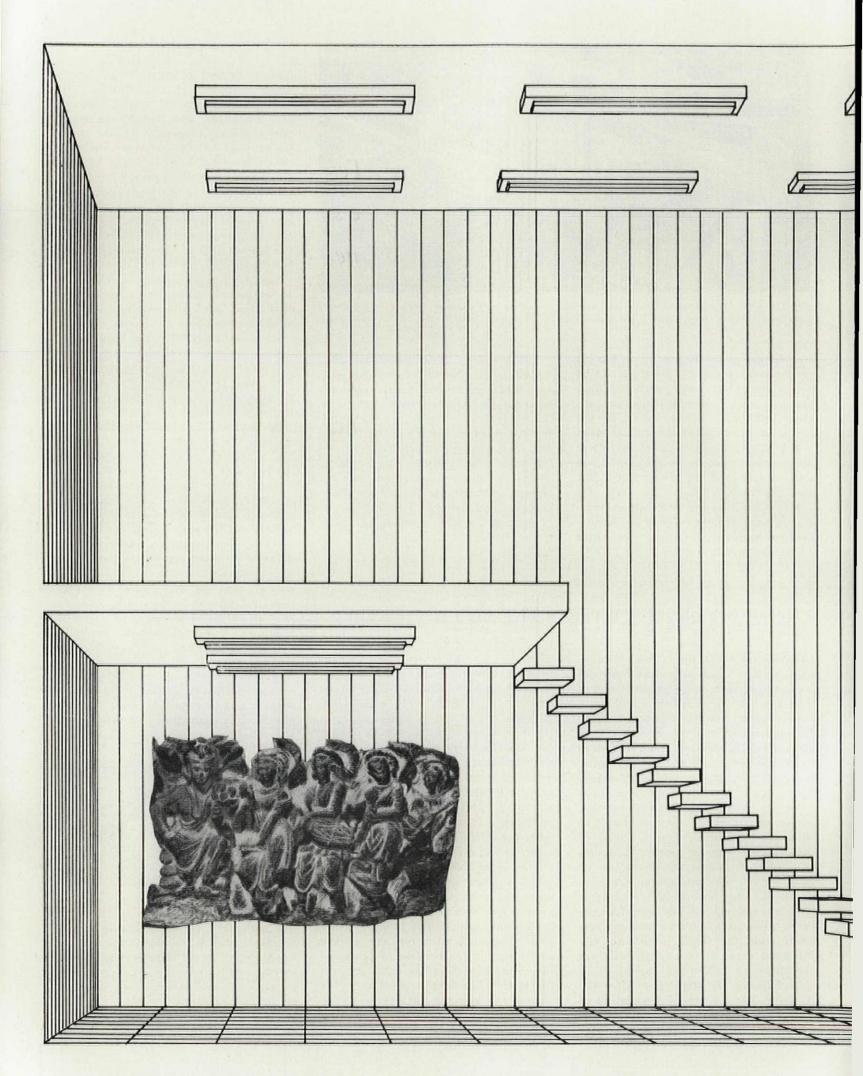
Logue will still not have a completely free hand, but at least he will be spearheading the Boston operation. As administrator he will handle planning surveys, processing of applications for federal aid, and rehabilitation and renewal planning.

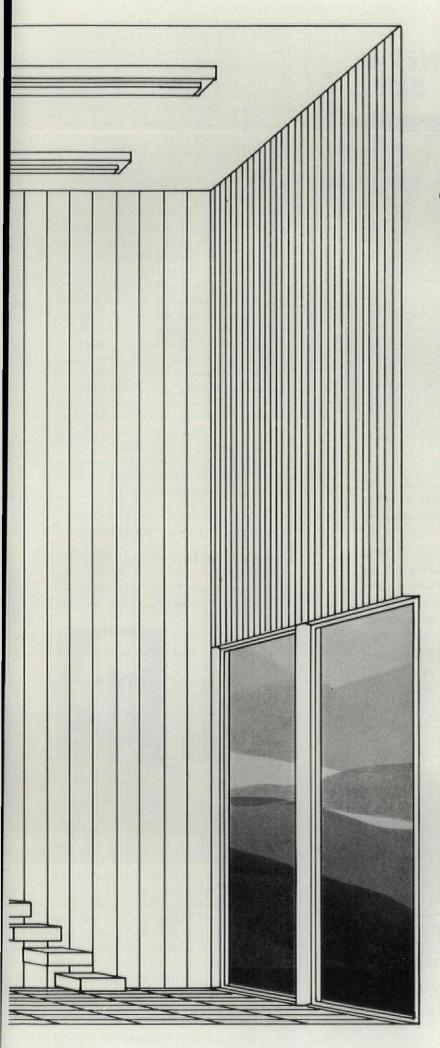


LOGUE

The authority's executive director, Kane Simonian, who at one time threatened to sue Mayor Collins if Logue was appointed over him, will handle land acquisitions and relocation. Logue indicated that he would be in full command, however, when he announced that he would triple the staff and move its offices to city hall.

continued on page 14



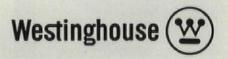


Textures change a surface and the surface gains in interest. The interest turns to excitement with the play of light.

Westinghouse fixtures are the source of that light. They're part of the surface, part of the feeling of quiet excitement.

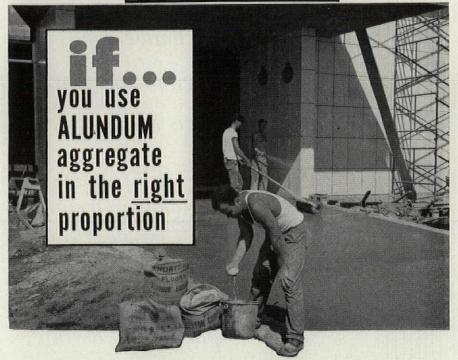
For more information on the Westinghouse SF, write for AIA File No. 31-F-23-W2, Westinghouse Electric Corporation, Lighting Division, Edgewater Park, Cleveland, Ohio. You can be sure . . . if it's Westinghouse.

J-04480



The room: a large mountainside living area. The fixture: new Westinghouse SF luminaire.

terrazzo Can be Can be



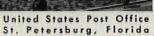
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Logue's most pressing problems will be connected with his own new redevelopment program, which focuses largely on spot clearance and rehabilitation in almost all of the city's most rundown areas. But he will also have to shepherd projects, such as Pru Center, which were not initiated by the authority, although it has certain jurisdiction over them. One of the key criticisms of the authority has been its inability to initiate and develop its own projects. The two that it did propose have never got off the ground. However, Logue, with a solid record of achievement in New Haven, has already shown Boston what he can do. The new redevelopment program was called "the most significant document ever presented as a guide for Boston's future growth" by Charles Coolidge, president of the Chamber of Commerce. And Mayor Collins, who won last November's election against a tough political combination, is evidently determined to make renewal as much a part of his over-all program as has Mayor Richard C. Lee in New Haven. In dressing down the redevelopment authority, which is a state-controlled body, Collins said firmly: "No small group of people can stand in the way of all that the city wants. In every city where redevelopment is successful the mayor is committed to the program, and initiative and responsibility rests with him."

LINCOLN CENTER JOB SWITCHES

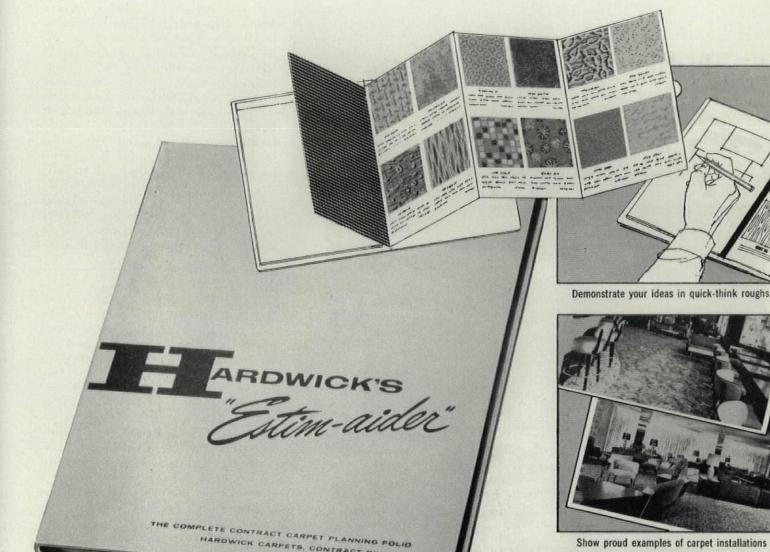
Next month, General Maxwell D. Taylor, retired Army Chief of Staff, will take over as president of the Lincoln Center for the Performing Arts. Taylor will





become chief executive officer for the mammoth \$131 million cultural arts project under construction on Manhattan's West Side. John D. Rockefeller 3rd, who had been president, will become chairman of the board and will have responsibility for over-all policy and general supervision of the Center. "While basic planning and fund raising are not by any means complete," Mr. Rockefeller said last month, "the moment has come when it is essential that all matters relating to construction, operations, and financial planning be concentrated in the hands of a chief executive officer." But while Lincoln Center gained one general, it also

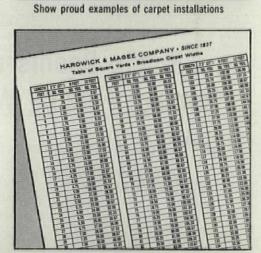
continued on page 16



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lost the services of another, General Otto L. Nelson Jr., who had been executive director for construction of the Center. Nelson, who is also vice president of New York Life Insurance Co., will continue on a consulting basis for the Center, but the responsibility for construction will now rest with Colonel William F. Powers, who has been Nelson's assistant for the past year and a half. Powers was for 26 years with the Corps of Engineers before joining Lincoln Center. While with the Corps, Colonel Powers directed military and civil works programs totaling more than one billion dollars, including the first Bomarc ground-to-air missile installation at McGuire Air Force Base.

HAROLD SLEEPER DIES

Harold R. Sleeper, 67, who had been a commissioner of New York City's Board of Standards and Appeals, as well as one of the nation's leading architect-experts on construction detailing died in New York last month. 'A quiet, thorough, well-liked man, Harold Sleeper led as full a life as any architect. At various points in his broad career he graduated from Cornell, lectured at Princeton, worked for Trowbridge & Ackerman in New York, conducted his own architectural practice, served as a consultant and contributor to FORUM, and co-authored one of the architectural profession's most widely used books, Architectural Graphic Standards and was the author of Building Planning and Design Standards. In 1958 Mayor Robert Wagner honored Sleeper by appointing him to the newly organized Board of Standards and Appeals which rules on applications for zoning variances and hears appeals of property owners concerning building and fire regulations.

Architectural Forum is published monthly by time Inc., Time & Life Building, Rockefeller Center, New York 20, N. Y.

Subscription Service: Address all subscriptions and correspondence concerning them to: Architectural Forum Subscription Dept., 540 N. Michigan Ave., Chicago 11, Ill. Subscription rates: in U.S., U.S., Possessions and Canada, one year \$6.50; elsewhere, one year, \$10. Single copies, if available, \$1.

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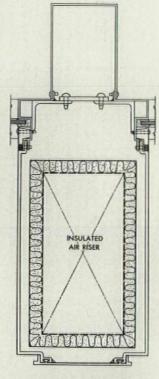
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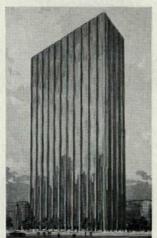


Tuscaloosa, Ala., Y.M.C.A. Tile Description: Back Wall: 63 Flax Blue. Right Wall: 63 Flax Blue, 64 Lobelia, 345 Cr. Cobalt. Pool Deck: 11/16" sqs., c.e.; Golden Range Varitone. Gutter: 11/16" sqs., c.e.: Sand Gray, Pool Rim & Lettering: Azure. Lining & Markers: 14" sqs., White, Deep Blue and Black. Architect: Wilmot C. Douglas & Carl M. Moseley. Tile Contractor: Sealy & Jehle Tile Company. Color Plate 440.

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report to architects:

In the December issue of Fortune, the Alcoa advertisement opposite once more reminds business leaders of aluminum's sweeping versatility. Detail above shows how aluminum finds another modern, functional use in concealing air-conditioning risers, even while it emphasizes the traditional by complementing the classic lines of neighboring structures. Alcoa Architectural Gray (Anoclad® Type 2140) colors both mullions and the expanded aluminum mesh that gives texture to the glass spandrels.

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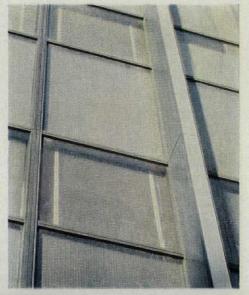
Building: Time & Life Building, Rockefeller Center, New York

Architect: Harrison & Abramovitz & Harris, New York General Contractors: George A. Fuller Company and John Lowry, Inc., New York

Aluminum Fabricator: General Bronze Corporation, Garden City, New York

Aluminum pylon at right, below, houses air-conditioning duct, adds vertical emphasis to the facade. Dark gray color is permanently anodized into the aluminum; faceplate is natural Alumilite* finish.

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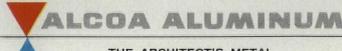


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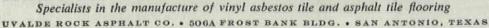
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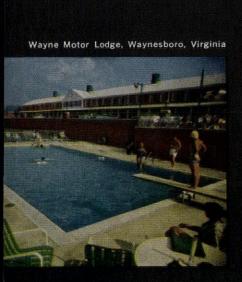
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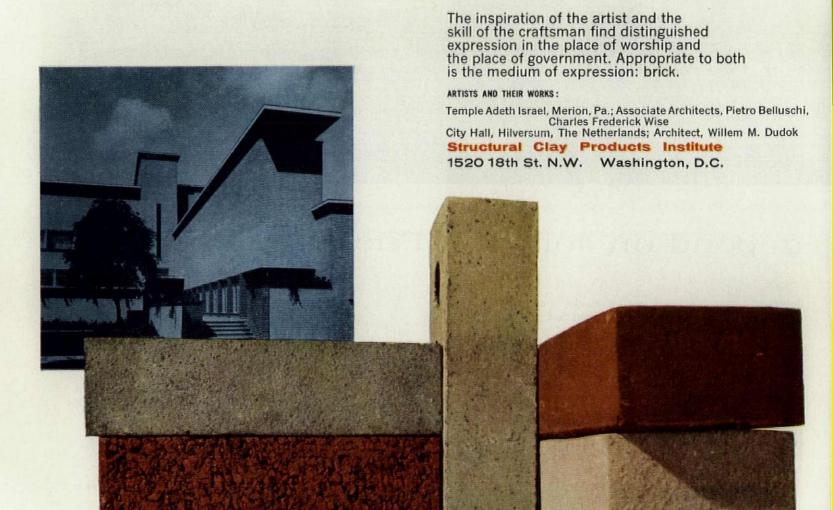
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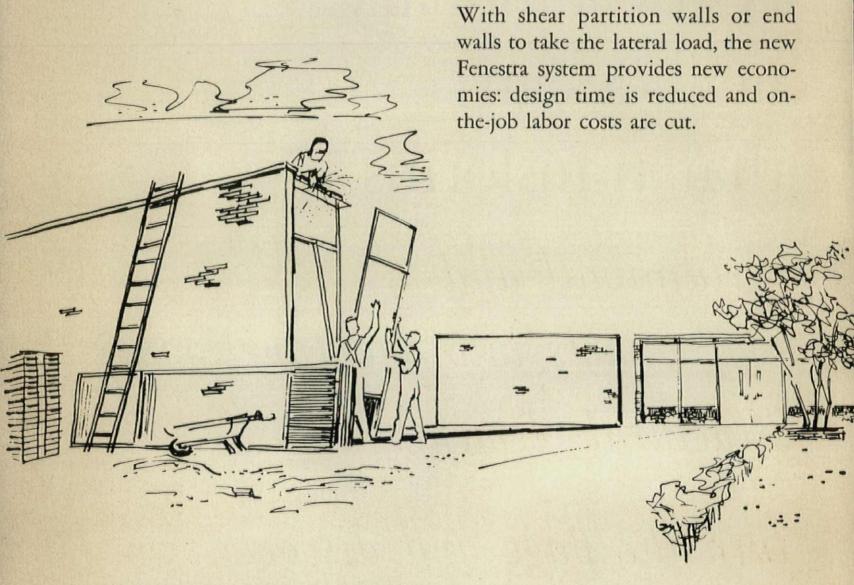
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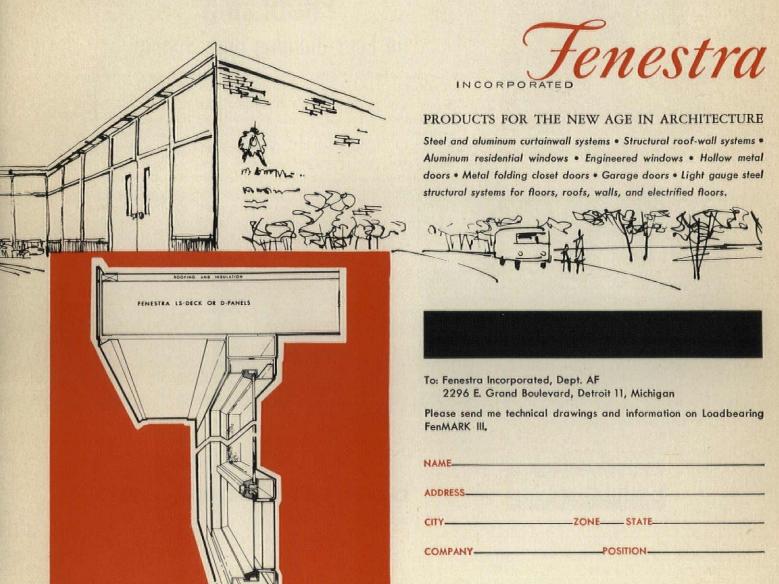
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A new edition of our book, "Architectural Metals by Anaconda," is just off the press. In its 64 pages are practical information and data on the architectural applications of copper, brass, bronze, and nickel silver — plus many new outstanding examples, with fabricators' detail drawings. Send for your copy today. Write: Anaconda American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ontario.

Architects: Belli and Belli, Chicago. Fabricator of grille: Greco Manufacturing Co., Chicago.





▲ St. Williams Church, Chicago. Pastor, Rt. Rev. Msgr, Paul F. Loeffel. A close-up view of the grille of circular design which provides a background for the altar screen. It is 46′ wide by 35′ high and made entirely of bronze. The circles are 3″, 6″, 9″, and 12″ in diameter, riveted together. The 3″ circles were cut from bronze tube. The larger diameters were roll-formed from standard rectangular bronze rod, ¼″ thick by 1″, 2″ and 3″ wide. After the circles were formed, the ends were joined by silver-alloy brazing. The outside of each circle was bright-finished and the inside painted with one of the five liturgical colors in pastel shades.

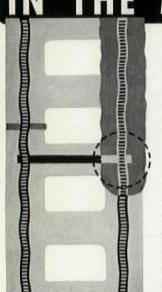
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Other reinforcing may be heavier but, Grade for Grade and dollar for dollar, WAL-LOK puts more steel in the mortar where it counts – 19.2% more than competitive products. SUPERSTANDARD Grade has 8 ga. Siderods rather than the 9 ga. used by others and it's the Siderods that end up in the mortar. Ladder type construction means no wasted steel to get in the way of insulation, pipe or conduit in the walls • No extra freight on steel that serves no useful purpose. PLUS—many other features at no extra cost.

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New Reznor Venter lets you put low-cost space heaters almost anywhere. Now, with the Venter, Reznor's motorized vent exhauster, you can save big money by putting Reznor direct-fired heaters where you couldn't before—in multi-story buildings or structures without chimneys.

For complete data, call your Reznor representative (under "Heaters-Unit" in the Yellow Pages) or write for Catalog SA-5900, Dept. 95-N, Reznor Manufacturing Co., Mercer, Pennsylvania.



REZNOR HEATERS

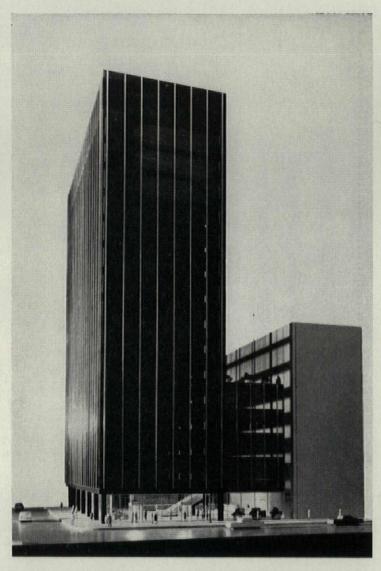
"WORLD'S LARGEST SELLING DIRECT-FIRED HEATERS"

For PEPSI-COLA... better offices by design with DORIC **newest office furniture by CORRY JAMESTOWN**

Consider the enduring quality of clean, contemporary styling in the exciting new DORIC desks which grace the offices of Pepsi-Cola's new world headquarters in New York City. Then send for our colorful new DORIC catalog to discover how beautifully the graceful line of DORIC can be used to enhance

the appearance and working utility of your own offices. For a free copy, write to: Corry Jamestown Corporation, Department A-12, Corry, Pennsylvania. The American Institute of Decorators presented DORIC with a 1960 Award of Merit for design achievement.

A roundup of recent and significant proposals



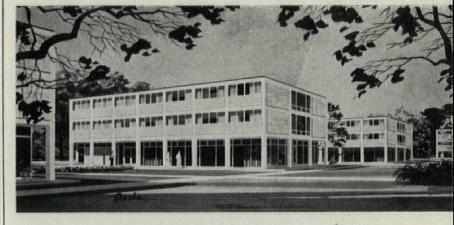
SAVINGS AND LOAN BUILDING FOR CHICAGO

Instead of remodeling the 19story Republic building on the corner of State and Adams Streets in Chicago, the Home Federal Savings & Loan Assn. decided to tear it down and erect the 16-story office building above. Home Federal plans to spread out over the first five floors and rent the narrower floors above to other tenants. On the exterior, vertical mullions of brightly anodized aluminum will contrast with black spandrels and gray glare-reducing glass. Exposed columns around the first floor will have jackets of dull black anodized aluminum. Architects: Skidmore, Owings & Merrill.



NEW YORK STATE UNIVERSITY MARITIME COLLEGE

In their design for the New York State Maritime College at Fort Schuyler, Architects Ballard, Todd & Snibbe put the mess hall in the center of a courtyard the size of a football field and grouped dormitories around it. Red brick, slate, and limestone are to be the exterior materials, the slate for spandrels and the limestone for mess-hall columns and window trim. Light filtering through slots punched along the flat roofs' outer edges is intended to shadow the walls in interesting patterns, Cost: \$3.1 million.



FIVE FRATERNITY HOUSES AT IIT

On the campus of the Illinois Institute of Technology in Chicago, five small dormitories are taking shape, four of them shown above. Though IIT is building them, they will be leased to fraternities, who will decorate the interiors themselves. In every other respect they will be identical: outside, an exposed reinforced concrete frame combined with brick; inside, a living room, a dining room, 24 bedrooms, and several studies. Architects: Mittelbusher & Tourtelot.

TERMINAL AT TULSA MUNICIPAL AIRPORT

Double glazing and dense walls are two noise barriers that the architectural firm of Murray-Jones-Murray is designing into the terminal at the Tulsa municipal airport (right). The terminal walls will be of precast concrete—the aggregate, dark green granite—over a steel frame. Landscaped areas,

pools, and fountains separate the terminal from the passenger parking lot. Initially, there will be gates for 15 aircraft, but these may be expanded later to 23. According to contracts awarded, the terminal building, part of a \$9 million airport program, will cost \$4.3 million.

continued on page 41



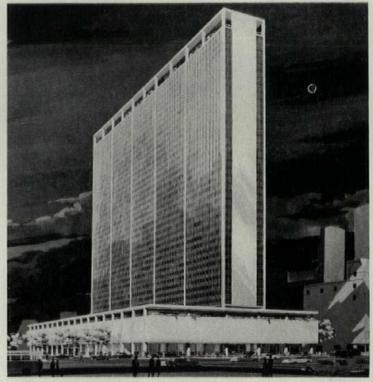


ROCKEFELLER CENTER OFFICE BUILDING

On the block next to Radio City Music Hall, where William Zeckendorf once hoped to build a hotel, Rockefeller Center will add another to its cluster of office buildings, this one a joint venture by Rockefeller Center, Inc., and Uris Buildings Corp. To blend in a

neighborly way with the original Center towers and the new Time-Life building across Sixth Ave., the exterior materials will be glass, aluminum, and for the vertical piers, precast concrete. The central shaft will be 43 stories. Architects: Emery Roth & Sons.





ROCKEFELLER CENTER HOTEL

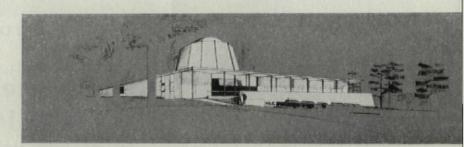
Another venture in which Rockefeller Center and Uris are joining is the 45-story hotel above; in this one, Hilton Hotels Corp. will be a third partner. Like the office building, it will be on Sixth Ave., but the hotel site is to be two blocks north and on the Avenue's west side. Architect William B. Tabler's

tower, freestanding above a four-story base, will be long and narrow (392 feet on 53rd and 54th Streets, 60 feet facing the Avenue) so that all 2,200 rooms can claim to be "outside." Harrison & Abramovitz are consulting architects for both projects. Estimated value of the two new towers: \$75 million each.

SYNAGOGUE IN MARIN COUNTY, CALIF.

The small Jewish community in Marin County, Calif. plans to build this synagogue and school (right) in stages, starting with the sanctuary and offices. Although the roof is flat, except for the 12-sided sanctuary, the site varies

enough so that some of the larger spaces will have floors on several levels. In their plan, Architects Marquis & Stoller emphasize flexibility: movable partitions open from the sanctuary into a large hall, and others open on a courtyard.



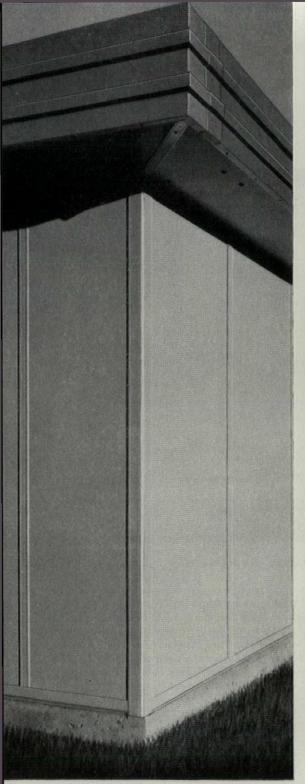
CIRCULAR SYNAGOGUE IN MARYLAND

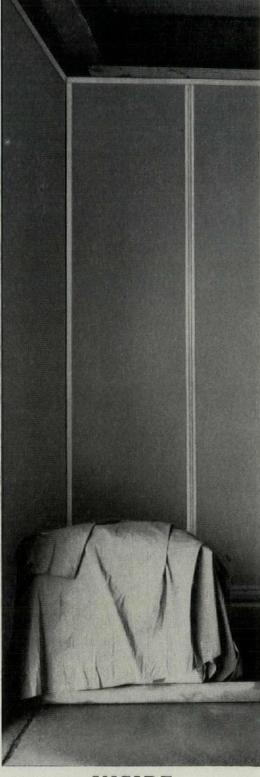
Curving around a memorial shaft and a reflecting pool, this synagogue in Silver Spring, Md. will enclose two meeting rooms with a combined seating capacity of 1,000, and offices, gardens, and kitchens. The sanctuary's center is a circle surmounted by a

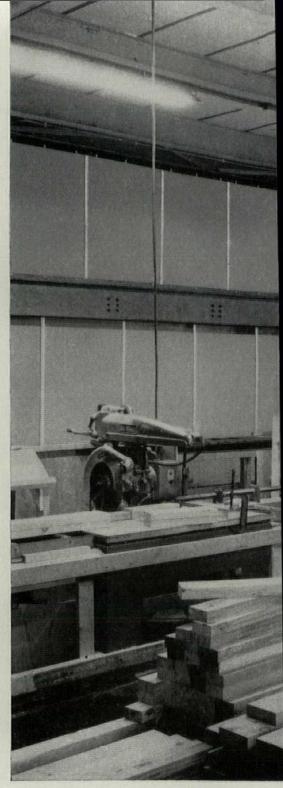
shallow dome. Directly beneath it, an ark, mounted on rollers, will ordinarily face those seated in the sanctuary, but on high holy days it may be swung around to be visible from both sanctuary and social hall. Architects: Cohen, Haft & Associates.

continued on page 43









OUTSIDE

Iowa-cold winters won't bother

office workers at Inland Homes'

outside curtain walls of Gold Bond Asbes-

INSIDE

FIREWALL

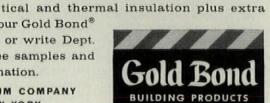
Asbestone Panels do three jobs for

Inland Homes new Clinton, Iowa plant. They're snugly that resist fire, rot, moisture and chemical Corporation insulated from the weather by insidefumes. The insulation core gives acous-

tone Panels in the H & B System. This handsome wall has the insulating power of five feet of concrete! It needs no further finishing, goes up fast, and costs less than most comparable walls. It's almost maintenance-free. The same system was also used as a fireproof sound deadening wall between office and factory

strength. Ask your Gold Bond® Representative, or write Dept. AF-1260 for free samples and technical information.

NATIONAL GYPSUM COMPANY BUFFALO 13, NEW YORK

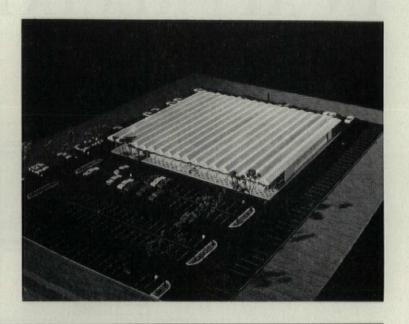


Asbestone Sandwich Panels have

facing sheets of Asbestos-Cement

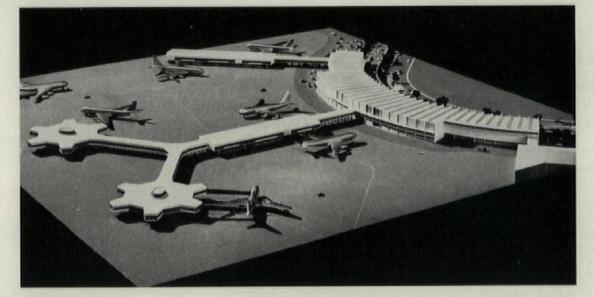
BOWLING ALLEYS IN MICHIGAN

Under a folded roof supported by double cantilever trusses, Westlanes Bowling Center in Dearborn, Mich. will offer customers 32 lanes, a restaurant, a snack bar, and a cocktail lounge. A metal deck over closely spaced steel bridging will form the roof; acoustical plaster will finish the ceiling. Running through the diamondshaped plenums between ceiling and roof, air-conditioning ducts will push air through slots next to the lighting fixtures. Architects Hawthorne & Schmiedeke plan to have the roof extend over a walk paved in bright-colored tiles. Estimated cost: \$250,000.



SAN FRANCISCO AIRPORT

The first segment of Welton Becket & Associates' master plan for San Francisco International Airport to go ahead is the sweeping arc of the south terminal (left). Its roof and curved facades will be boldly marked by steel ribs 8 feet wide spanning up to 130 feet. Between these ribs, a staggered arrangement of precast concrete panels and narrow strips of colored glass will be set off by wider clear glass bands. Dark squares in the façade represent huge panes of clear glass lighting the three main passenger lobbies. Cost: \$8 million.



OFFICES AND LABORATORY IN SUBURBAN CONNECTICUT

The design of two buildings for the Perkin-Elmer Corp. (right) shows the determination of the client and his architects, Caproni Associates, to maintain the residential character of the community, Wilton, Conn. Both structures will be small in scale, and the trees

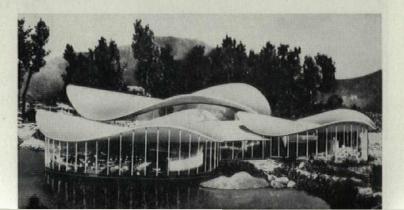
and shrubs found there, left behind by a nursery, will be preserved. The office building in the foreground will be of clear-span prestressed concrete construction, the wall set back 10 feet. Behind the offices, the laboratory will be concrete block and gray glass.



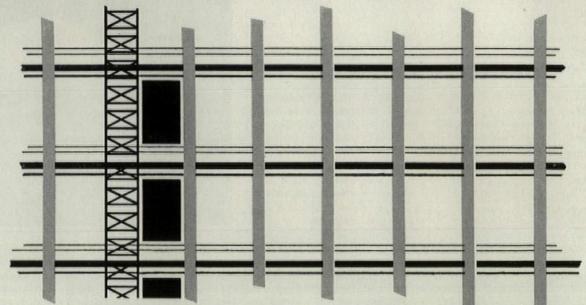
GARDEN RESTAURANT NEAR NEW YORK CITY

Reminding diners that they sit in the midst of flowers and plants, the Sterling Forest Gardens restaurant in Tuxedo, N.Y. will be roofed by three metal-and-wood frames contoured to look like seed pods. Under the largest pod, 80 feet in diameter, the dining room

will seat 400; the kitchen and cocktail lounge will be underneath the other pods. A central entrance which the designers, Arthur Wagner Associates, call the "stem" leads to the dining pod. Large windows between load-bearing mullions will face the gardens.



IN APPRECIATION; TO THE ARCHITECTS OF AMERICA



THE DECISIONS TO COME

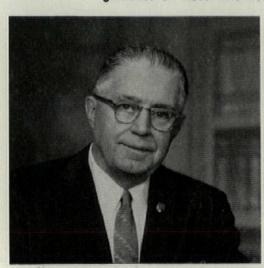
The 1960 inventory reveals many political and ideological upheavals throughout the world. It was clearly a year of revolution, especially in those pseudodemocracies, where dictators were overthrown for the abuse of their powers.

As the curtain rises on the fateful year ahead, man prayerfully awaits the "Decisions to Come" . . . by a handful of men who hold the fate of mankind in their hands. These men possess far more power for good or evil than has ever before been given to so few.

May a kind Providence guide their decisions in the direction of His divine design for essential co-existence: "On earth peace, good will toward men".

On behalf of the International Association of Bridge, Structural and Ornamental Iron Workers, I proudly present our 1961 calendar. Its pages display a graphic record of the functional beauty of metal "Curtain Wall" construction . . . structures of progress that distinguish their owners, their fine architects, and the member craftsmen of our own organization who built them.

With every good wish to you in the New Year . . . and a prayer for the guidance of those who hold the fate of our destiny in their hands.



J.H. Lyons

General President International Association of Bridge, Structural and Ornamental Iron Workers

Movable partitions . . . lighted ceilings . . . insulated mullions



Movable Pabcowall panel being jacked into position between ceiling and floor strips.

LOW-COST FLEXIBILITY

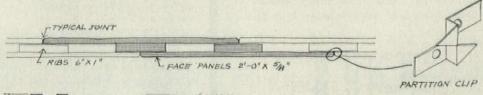
Like the fixed dry-wall system introduced by Pabco last year (FORUM, Sept. '59), Movable Pabcowall is a partition formed by two %-inch bevel-edge gypsum sheets stiffened by 1-inch-thick gypsum spacer ribs, the whole forming a sandwich panel 21/4 inches thick. As shown in the crosssection below, the rib laminated to the center of one sheet holds the edges of the two sheets opposite. In the movable version, the panel's top and bottom fit snugly into steel floor and ceiling runners. The ridge in the floor runner keys into the base of the panel, the ceiling strip extends across the top and down the panel faces far enough to hold the panel rigid, and tempered steel clips pin the panels together. When finished, the wall may be painted or covered with vinyl cloth.

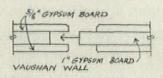
Priced well below the more mechanical types of partitions, Movable Pabcowall costs \$10 to \$12 per linear foot for 9-foothigh partitions installed in the San Francisco area. It has a noise-reduction coefficient of 37.7 decibels, a one-hour fire-resistance rating, and weighs under 60

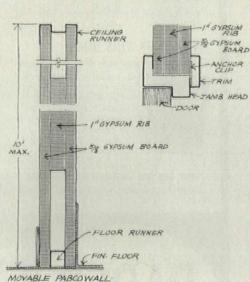
pounds per linear foot in 8-foot heights. Another movable gypsum partition, the Vaughan Wall, has been modified since its introduction was reported three years ago (FORUM, Jan. '58). Instead of four gypsum board layers, the revised version, though still a solid wall, consists of three layers: two outer sheets of %-inch gypsum laminated to either side of 1-inch coreboard. The panels interlock, as shown below, with tongue-and-groove joints. Floor and ceiling runners, previously offered only in aluminum, are now available in steel, too. Vaughan Walls have a onehour fire rating and a sound-reduction loss of 37 decibels. In the New York area, they cost about \$17 a linear foot installed.

Manufacturer of Movable Pabcowall: Pabco Gypsum Div., Fibreboard Paper Products Corp., 475 Brannan St., San Francisco 19.

Manufacturers of Vaughan Walls: Vaughan Movable Interior Walls, Inc., 11681 San Vicente Blvd., Los Angeles 49; U. S. Gypsum Co., 300 West Adams St., Chicago 6.







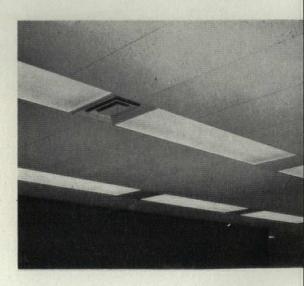
SMOOTH CEILINGS

For the Chase Manhattan Bank building, nearing completion in New York City's financial district, Architects Skidmore, Owings & Merrill specified a multipurpose ceiling and asked that everything visible in the ceiling lie in the ceiling plane. The finished design, worked out by the architects with the mechanical and electrical engineers, Meyer, Strong & Jones, and the lighting manufacturer, Lightolier, is a completely flush ceiling which integrates lighting, air conditioning, and public address systems.

To fit the building module, which is 58 by 58 inches, Lightolier designed extrawide lighting fixtures, 14½ by 48 inches, of aluminum alloy extrusions. These fixtures, which run in continuous rows across the ceiling, are separated by die-cast zinc spacer frames (10% by 14½ inches) which contain air-conditioning diffusers and speakers or, in areas where these are not needed, plain flush panels. If the partitions are rearranged later, the blanks may be removed and air-conditioning diffusers or sound equipment installed. To assure precise fit, the lighting fixture's

extruded aluminum side flanges are keyed mechanically to the spacer frame's diecast end flanges, and all are painted white to match the acoustic tile.

Probably the most interesting point about this lighting fixture is the injectioncontinued on page 46





Translucencies - 300-150-75 FC

2' x 4' x 1/2"

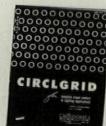
More than a Luminous Louver It's UL listed-20 (non-combustible)

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The moment you see and inspect a Circlgrid sample you'll think of many applications in modern lighting.



	C	Y	r	V	a	C	
p	1	a	s	t	i	C	s

Illuminating Engineers and Specialists in Vacuum Forming and Electronic Welding

molded acrylic lens, which carries its own reinforcement molded around the edge, eliminating the usual metal frame. Two pins on one side and a safety spring at each end permit easy cleaning and maintenance: for tube replacement, the lens pushes up and to one side, and then hangs down from pins; for cleaning, the whole lens drops out. Neither of these operations requires tools to free the lens.

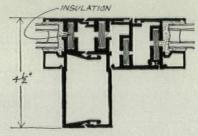
Though Lightolier designed these fixtures specifically for Chase, similar fixtures in standard sizes will be available. A two-lamp fixture 1 by 4 feet will cost \$25 to \$30.

Manufacturer: Lightolier, 346 Claremont Ave., Jersey City, N. J.

INSULATED MULLIONS

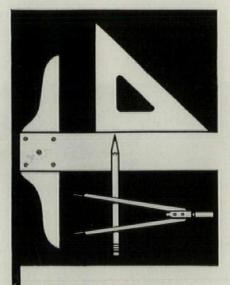
Insu-wall, a new aluminum curtain-wall system, reduces thermal conduction through metal to cut air-conditioning and heating costs and condensation damage. According to the manufacturer, the Marmet Corp., Insu-wall has the same structural qualities as uninsulated aluminum curtain walls, and it can be erected just as fast. This insulated framing combines with insulated panels from other manufacturers.

The insulating material, a melamine plastic, is glued in place with an epoxy resin and then pinned against shearing stresses. It separates exterior and interior metal, so that there is no direct metalto-metal bond (see mullion detail below).



This insulator, especially formulated for the purpose, has the same coefficient of expansion and contraction as the aluminum extrusions. According to a consulting engineer's tests, quoted by the manufacturer, the thermal transfer or U factor of the mullions is reduced to 0.406, which cuts the U factor of the whole curtain wall to 0.408, compared with 0.58 for 1inch insulated glass. Marmet's engineering department estimates that Insu-wall cuts heat loss from thermal conduction by as much as 63 per cent. In northern cities like Minneapolis, for example, where the temperature remains low from October through March, cutting the heat loss by 63 per cent could mean a substantial fuel saving. On the other hand, in warm cities like Dallas these mullions could save on air-conditioning operating costs.

Insu-wall is offered in two grid systems, one 41/2 inches deep, the other 6 inches, which match two of the company's uninsulated systems. If Insu-wall is not needed for an entire building, one portion, such as a swimming pool or a cafeteria in a



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OFFICES IN ALL PRINCIPAL CITIES

high school, could be Insu-wall and the remainder of matching uninsulated curtain wall. In general, Insu-wall adds about 40 per cent to the cost of the aluminum frame and increases the whole curtain wall's costs about 15 per cent, costs which Marmet claims are amortized quickly in fuel savings.

Manufacturer: Marmet Corp., Wausau, Wis.

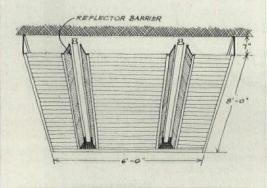
BRIGHT AND QUIET CEILING

A low-cost ceiling system based on an 8 by 6-foot module, Sonolume may be hung in individual units or joined in multiples as an over-all ceiling. It provides a high level of illumination, up to 200 footcandles, for supermarkets, stores, drafting rooms, and offices.

Sonolume uses corrugated Contrex Soundsheet, a plastic laminate, as a light diffuser and sound absorber in one. Mounted between wide expanses of Soundsheet, the lamps beam partly through the diffuser and partly directly down to give a combination of direct and diffused light. Reflector-barriers on either side of the lamps are so engineered that they partially shield the lamp at close range but step up the light intensity gradually as the distance from the light source increases. Smithcraft has patented this method of obtaining even illumination over a wide plastic ceiling surface.

The Sonolume system requires a depth of only 7 inches to install; it may be mounted directly on the ceiling or pendant-mounted in several ways, suspended from brackets at the intersection of four module corners. Sonolume's open design simplifies replacement of burned-out lamps. Air-conditioning installation is simpler, too, because intake and return air circulate freely between lamps and diffusers. This ceiling costs about \$2.50 per square foot installed.

Manufacturer: Smithcraft Corp., Chelsea 50, Mass.



ELECTRIC WALL

The first new building to use the Continental curtain wall, a thin sandwich panel with an electrical heating unit sealed inside, is an office annex to a cement block plant (photo, page 48) in Monsey, N. Y. This panel is a refinement of one introcontinued on page 48

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FASTER-FOR LESS
With a
LAMSON
TRAYVEYOR



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Tall, shimmering, modern structures complicate hospital food service and substantially increase its already staggering cost.

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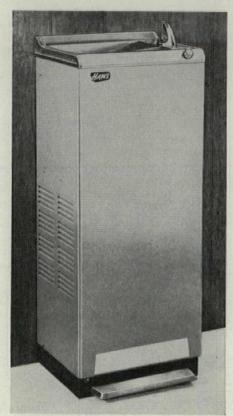


LAMSON CORPORATION

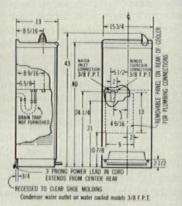
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OFFICES IN ALL PRINCIPAL CITIES

THE NEATEST WATER COOLER OF THEM ALL!...IT'S HAWS NEW "WALL-FLUSH" MODEL!



Smart styling? Surely! But more than that, you can now streamline interiors with this trim floor model cooler that fits snug to the wall. That's right: no waste space. Just like a "built-in"—neat, trim, clean; this HAWS design has you (the Architect) in mind. Cool, refreshing water dispensed through a perfectly styled cooler. And it's by HAWS!



HAWS HWF Series: available in varying capacities to meet your traffic needs.

Neater, cleaner! No waste space! FLUSH-TO-WALL!

Send for detailed spec sheets on these HAWS "HWF Series" models. They can be another plus-feature for your next project. And see the complete water cooler line in HAWS comprehensive catalog.





ELECTRIC WATER COOLERS

Products of HAWS DRINKING FAUCET COMPANY

1441 Fourth Street, Berkeley 10, California

Export Dept: 19 Columbus Ave., San Francisco 11, California

duced by the Bettinger Corp. (FORUM, May '58), for which Continental made the heating element. From the outside in, the sandwich consists of an outer skin, which may be of any conventional curtain-wall material, an insulating core, an aluminum reflector pan, and an inner skin containing the heating element. This inner skin is a steel alloy designed not to scale when heated, and its reverse side, which becomes the room's interior finish, may be



painted any color. The improved panel reaches the temperature desired in 72 seconds and emits infra-red rays that are 83 per cent longer than those in the earlier panel.

These units are made to specification and to the desired wattage, which may be as high as 20 watts per square inch. Prices depend on the skin but generally run \$5 to \$10 per square foot for the complete panel.

Manufacturer: Continental Radiant Glass Heating Corp., 4 W. 40th St., New York 18

PREFAB CANOPIES

Armco is prefabricating a series of inexpensive steel canopies for shopping centers, banks, motels, and service stations. All four models have interlocking Steelox panel roofs and are delivered to the site ready for erection by Armco dealers. Shown below is one basic model, a double cantilever 30 feet wide supported by single V columns 20 feet apart. Two other models have cantilevered roofs, one single and one double, but they have different supporting columns. Box beams resting on pipe columns support the fourth model, offered in widths up to 40 feet and a variety of post spacings and heights.

Prices for these range from \$2.40 per square foot for the one shown to \$2 for the least expensive, the box-beam canopy. Erection costs about 30 cents per square foot excluding foundation.

Manufacturer: Armco Drainage & Metal Products, Inc., Middletown, Ohio.



THIN TERRAZZO

Based on Thiokol polysulfide liquid polymer, Terrabond adhesive bonds poured-inplace terrazzo to new or old concrete. The advantages the manufacturer claims for Terrabond terrazzo floors are these: fast installation, eliminating the scratch coat; low cost, 25 to 35 per cent less than the highest grade resilient flooring; light weight, reducing the thickness of the installed floor to as little as 3/8-inch, light enough for above-grade slab floors.

Terrabond application is simple: the adhesive is brushed, sprayed, or broomed on the concrete slab and a conventional Portland cement terrazzo mix poured on top while the adhesive is still tacky. If metal dividing strips are used, they are attached to the slab first with Terrabond strip adhesive, a more viscous and faster curing form, and allowed to cure for several hours before the terrazzo is poured.

Thiokol licenses the Terrabond process to terrazzo contractors. Depending on the floor area, Terrabond terrazzo costs from 55 cents to \$1 per square foot installed.

Manufacturer: Thiokol Chemical Corp., Trenton 7, N. J.

BRIEFS

A glass fiber 50 per cent more rigid than conventional glass fibers, yet just as strong, has been developed for the U. S. Air Force by Owens-Corning Fiberglas Corp. The first *High Modulus Glass* will probably go into rocket motor cases, with reinforced plastics for the building industry coming along later.

▶ U. S. Steel forecasts average savings of 4 to 6 per cent in the total weight of steel structures, based on a new and higher yield point structural carbon steel. The American Society for Testing Materials has given the new steel the number A 36-60T.

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Next September, when its new plant in Claymont, Del. is finished, Allied Chemical's Barrett Division will manufacture gypsum board from chemicals instead of gypsum rock. The new gypsum board, 96 per cent pure gypsum, is made from a byproduct of phosphoric acid.

The new *Hinac Process* marketed by Pennsalt Chemicals Corp. is a chemical surface treatment which colors all types of metals in a single coat. It comes in several grades, clear and colored, all of which are resistant to corrosion and weathering.

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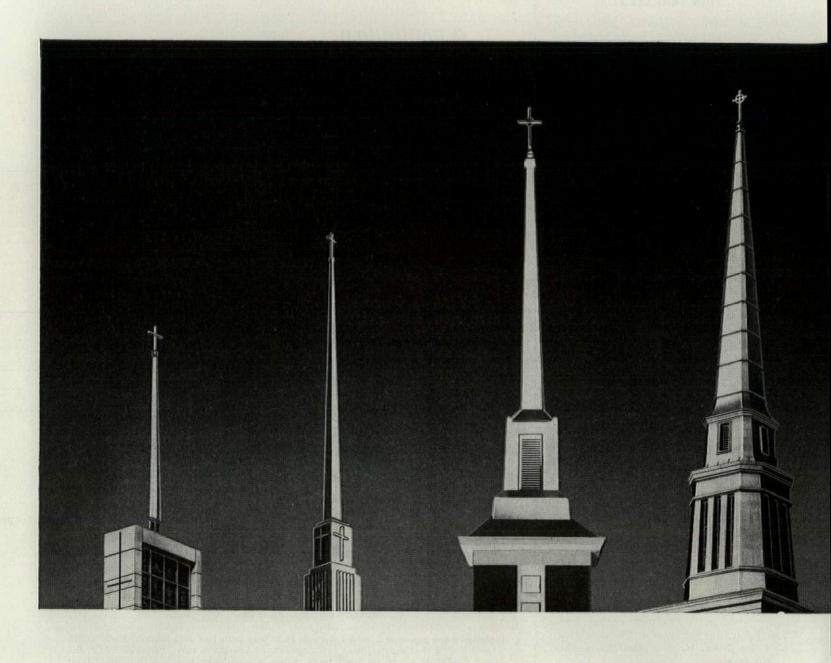
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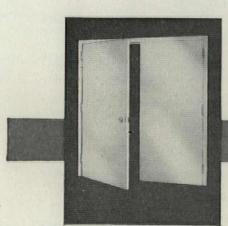
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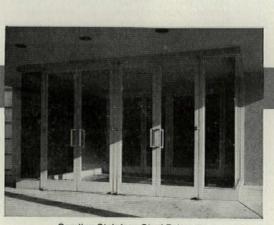


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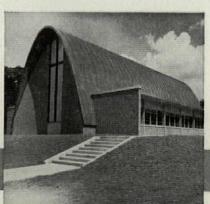




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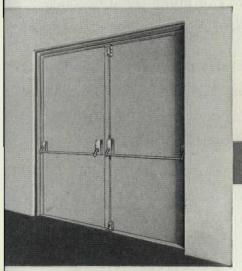


Overline Stainless Steel Entrances



Overly Pre-fabricated Roofs





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Spires to inspire crafted by Overly

Probably no architectural form has been the subject of more devoted effort through the ages than has the design of churches—the greatest minds of architecture and the most talented craftsmen used their skills to design and construct church edifices, appropriate for their day. Part of this design was the spire, standing proudly as a welcome to worship for the entire community.

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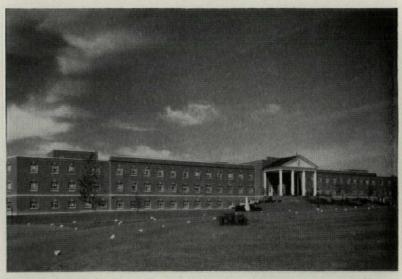
*Outstanding examples of Overly craftsmanship in church spires may be seen at the following churches, illustrated, left to right above: St. Mark's Lutheran Church, Williamsport, Penna.; Messiah Evangelical Lutheran Church, Larchmont, Penna.; Christ Methodist Church, Dayton, Ohio; Park Place Church of God, Anderson, Indiana; and Second Presbyterian Church, Indianapolis, Indiana.

The Architect's Craftsman

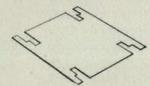


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Architect: Polak & Sullivan, New Haven, Connecticut.



7¢ clip protects \$200,000 plaster job at new Mercy Knoll Convent

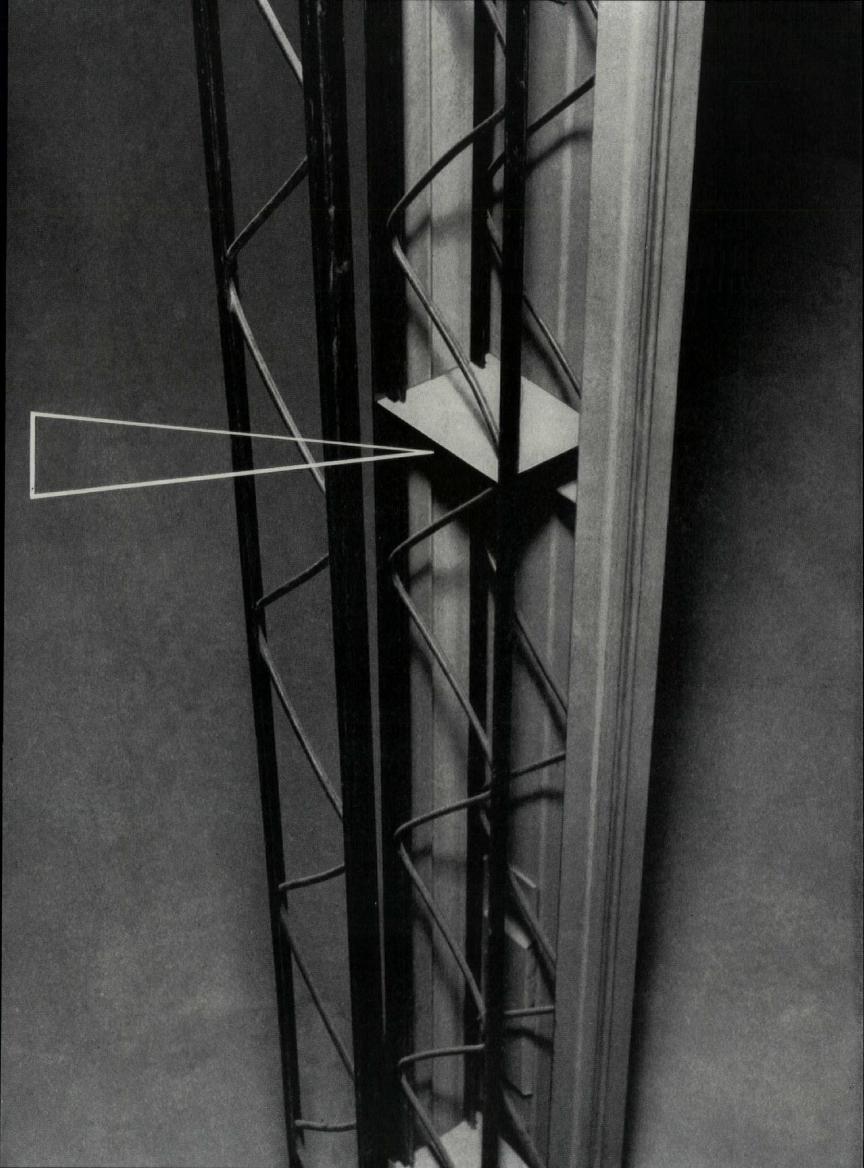
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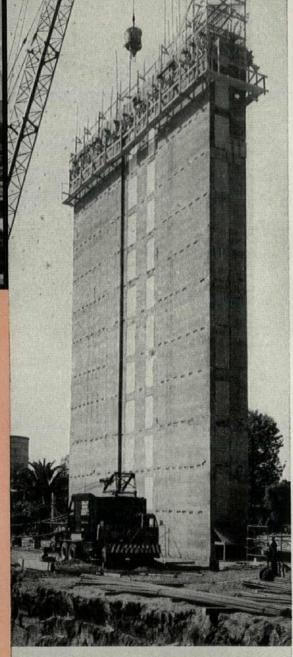
NEWS FROM PALO ALTO, CALIFORNIA

MUELLER BRASS CO. Streamline COPPER TUBE IN THE NEW TYPE "CENTRAL CORE" 15 STORY LUXURY



The first application of "slip-form" central core construction in the United States has been employed in the erection of the new 101 unit Palo Alto apartment building. With this method, the form in which the concrete is poured rides on high strength steel rods equipped with hydraulic jacks. The slip form is progressively lifted to each elevation after the concrete has been poured and allowed to set. By using this system, the 15 story core of the building was completed in 5 working days at an estimated saving of 8% on labor costs. Pre-stressed slabs, poured in place, serve as both floors and ceilings in the core. This Swedish-originated method has been used extensively in this country for bridge piers and storage silos, but is completely new in the construction of buildings.

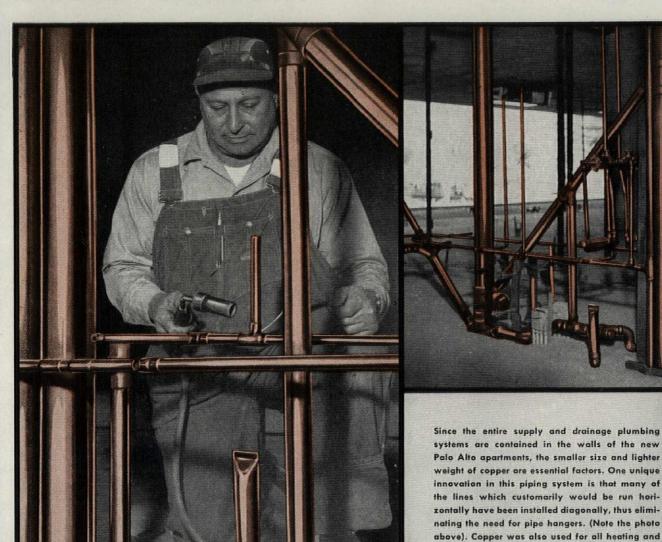
Architect for the new Palo Alto apartments is William F. Hempel, AIA. The North State Builders Ltd. own and are constructing the 15 story building; engineering was by R. B. Welty of Modesto with H. B. Brewster, Fresno, consulting. The plumbing is being installed by the Herman Lawson Company of San Francisco. According to Mr. Hempel, the location of the utilities in the central core of a building sometimes creates problems in relation to local codes. But, in the case of the Palo Alto apartments, the city of Palo Alto changed code requirements so all plumbing in the building could be copper.





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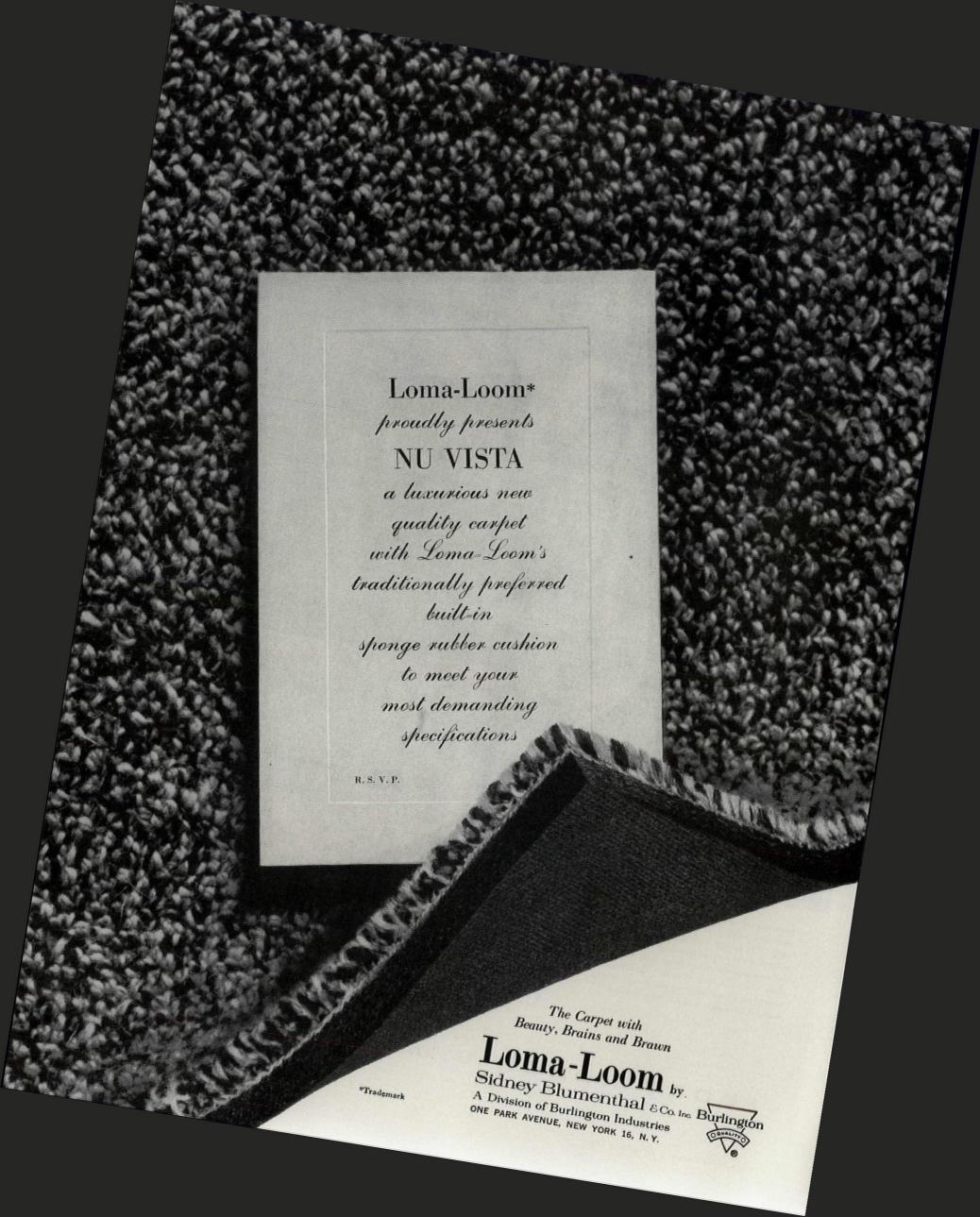
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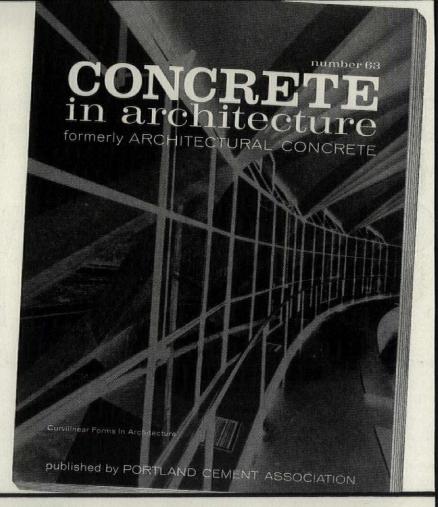
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A second article shows some of the elementary principles that govern shell action. A third illustrates the versatility of shells with examples of hyperbolic paraboloid, folded plate and barrel shells as used in recent American shell roof projects. Fill out the coupon for your copy today! (U.S. and Canada only.)



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Editorial

New role for the C. of C.

Six weeks ago some 450 civic and business leaders from around the country gathered in Connecticut's capital city to hear a remarkable story of rebuilding, as part of a symposium called "The Responsibility of Private Industry in Urban Renewal." As the maps and models unfolded and a variety of high-caliber executives spoke on, visitors began to realize that Hartford had a lot more than its 32 insurance companies and its nice old churches: it has, in fact, one of the most farsighted chambers of commerce and one of the most comprehensive renewal programs in the U.S. (see page 72).

Unlike some of its counterparts, which have degenerated into secondechelon marching and chowder societies, the Greater Hartford Chamber of Commerce has risen over the past few years to become the power plant of its city's, and its region's, rebirth. Part of the secret is that all of Hartford's diverse business interests have managed to unite in using the chamber as their agency. Under the bustling administration of its professional manager, Arthur J. Lumsden, an impressive array of corporation vice presidents, presidents, and board chairmen give a good deal more than lip service to central-city problems, despite the fact that most of them actually live in the suburbs.

Redevelopment of the key east-side area downtown, for example, had been studied and stalled until the chamber persuaded the mayor to activate a broad-gauge citizens' committee to sponsor an expert economic analysis of downtown. The chamber arranged meetings with city, state, and federal officials, worked out acquisition and clearance details, supported necessary legislation, and promoted successful bond-issue referendums. It encouraged large companies planning to move to the suburbs to cast their lot with downtown instead. The result (with a major financial assist from Hartford's big Travelers Group): the \$35 million Constitution Plaza project, a "Rockefeller Center" now growing in the place of a river-front slum.

In a second, 70-acre redevelopment project nearby, the chamber conducted a re-use survey, is helping both businesses and families relocate (the latter through a nonprofit corporation and housing projects stimulated by the chamber's housing committee), and is seeking new commercial users for cleared land. In still another project, a walk-to-work apartment tower on a slum site overlooking Bushnell Park, the chamber has helped line up half a dozen experienced developers willing to handle the job, and is publicizing the need so the bond issue will not fail. Elsewhere, the chamber has commissioned a study of a new municipal convention-exhibits hall, sponsored five neighborhood improvement groups, staged urban renewal exhibits to

continued on page 63

BRIXMENT

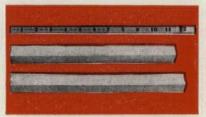
provides the ideal balance of 9 essential characteristics

SOME mortars may be very strong, but lack other important properties such as workability, etc. Other mortars may be very plastic, yet lack necessary qualities such as durability, etc. For good masonry construction at lowest cost, mortar must have a proper balance of ALL the essential characteristics shown below.

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brick with Brixment mortar, and another with cement-and-lime mortar. Let cure, then place in pan of shallow water. After a few days you will see that Brixment helps prevent efflorescence.



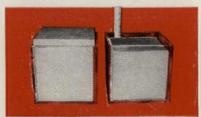
BOND. Brixment mortar's great plasticity and high water retaining capacity permit a more complete bedding of the brick, with greater area of contact between brick and mortar—hence tighter bond.



water retention. Place a dab of Brixment mortar and a dab of 50-50 cement-and-lime mortar on a brick or concrete block. Wait a minute, then feel each mortar. High water retention makes Brixment mortar stay plastic longer.



DURABILITY. Make a cylinder of Brixment mortar and a cylinder of 50-50 cement-and-lime mortar – cure for 30 days—place cylinders in pan with '4" of water and freeze and thaw. After a number of cycles, you will see that Brixment mortar is far more durable.



YIELD. Measure out 1 cu. ft. of sand (80 lbs.) and ½ bag of Brixment (23½ lbs.). Also measure out the same amount of sand and ½ bag of hydrated lime (8½ lbs.) and ½ bag of portland cement (15% lbs.). Make a workable mortar from each batch, then place each batch into a box holding 1 cu. ft. You will find that Brixment mortar gives from 5% to 15% greater yield.



IMPERMEABILITY. Prepare a slab of Brixment mortar, and one with ordinary cement-and lime mortar. After they have hardened, wax-seal a lamp chimney to each slab, and fill with water. After 24 hours you will see that much less water has gone into or through the Brixment slab.

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keep the public abreast of what is going on. In addition, chamber sub-committees are working with government on highway and parking problems, and with a new 23-town regional planning agency (which the chamber helped set up) toward area transportation and development goals.

In Hartford, the chamber has overcome a hostility to government traditional in C. of C. thinking, and has quietly accepted the aid of the federal program (and of a Democratic city administration) in the land-acquisition clearance, and write-down stage. In fact, it has enthusiastically demonstrated that a redevelopment program conceived along sound business lines will create enough new taxables to offset the city's cost in a few years, and make the federal investment remunerative as well. Hartford is showing the imaginative new uses to which a city's oldest and most universal commercial organization can be put. Over the door and on the table of the chamber's conference room is Daniel Webster's exhortation: "In this, our day and generation, let us perform something worthy to be remembered." In the vital job of rebuilding their city, Hartford's good citizens are doing just that.

The arrested development of the New York fair.

The New York World's Fair for 1964 seems to be going forward now on the quaint theory that world's fairs are the one kind of amusement that requires no artistry in the planning. Stages get set most artfully for plays, circuses have a strict kind of order to them, even the old-fashioned vaudeville bill used to have organized routines before the still better organized and more sophisticated musical killed it; jazz has its forms, and Mack Sennett improvisations scarcely get a laugh any more, even out of five-year-olds. Yet the great stage for the World's Fair is proceeding with no art either in the grand plan or in the correlation. It is steering without advice from architects. It is the first fair to depend entirely on what it can get cheaply out of a shabby old ground plan that was already obsolete in 1939 when it was first put into operation.

More than two months ago all the architects who had consented to serve on a "design board" resigned when they found that the fair would not let them do anything worth wasting their time on, and since then the fair layout has been done virtually by lawyers who have told lessors what could be built and where, by interpreting mechanical rules concerning building lines and free space between structures. Moreover, this is happening in a fair that will be built more densely than any previous one, with less air to remove the curse between things that do not fit harmoniously next to one another.

When the architects resigned—Gordon Bunshaft and Wallace Harrison and Edward Durell Stone, with Industrial Designer Henry Dreyfuss—they left it to the management to make the announcement; the management has not bothered.

To be sure there have been some callow magazine discussions that could mislead fair managements into thinking that fairs at best are just happy configurations of accidents arising in confusion. On the contrary, there was usually a real point concealed in the carefree art of the early fairs. Where there has been no point or purpose except to make money the outcome has been like that of the recent fair in Brussels. In its failure to establish anything but chaos out of the scheme as a whole, despite brilliant individual efforts, this fair made the country that organized it look disorganized.

Fairs are slightly more important than children's amusement parks or adults' swimming beaches in what they seek to do, and unexpected revelations come out of the way they do it. In a world looking for new ways of organizing big environment, even big play spaces, the New York World's Fair threatens to convey an impression of immaturity and arrested cultural development that many foreign observers will ascribe to the U.S. as a whole.



Boston bucks a trend

No slick curtain-wall structure, the Blue Cross office building is a basket-weave of concrete that enriches the urban scene.

Boston's new Blue Cross/Blue Shield building is one of the most controversial office structures put up in the U.S. in some time. Ever since it was extensively previewed in FORUM (Aug. '58), architects and critics have raised these questions: first, why does the building have a precast concrete façade instead of the familiar glass-and-metal curtain wall? Second, why did the architects express the building's air-conditioning ducts on the outside, and why are these ducts made to look like structural columns? Third, what is the reason for the "soft corners" on this square-planned, 13-story-high shaft?

Architect Paul Rudolph (who designed the building in association with Anderson, Beckwith & Haible) has met these critical questions head-on: The reason this building is faced with precast concrete elements, Rudolph says, is that it stands on a masonry street in a masonry city, where a glass-and-metal curtain wall might look out of place. Moreover, Rudolph admits that he prefers buildings that respond to light and shade to buildings that are "all reflection." (Actually, the building façade is 50 per cent glass.)

The reason the air-conditioning ducts are expressed on the face of the building (photo, right) is that, according to Rudolph, the mechanical equipment nowadays eats up some 40 per cent of the building budget, and deserves to be expressed just as prominently as the structure. To the further question of why ducts and columns seem to be similarly expressed on the façade, Rudolph answers that, to him, they appear sufficiently different—the columns grow out of Y-shaped stilts, and the big return ducts are cut off at the third-floor level. He adds that what he and his associates tried to achieve was a rich, many-faceted building texture, and that the means are of secondary importance.

Finally, Rudolph points out that the "soft corners" are intended to "carry the eye around the building," which is freestanding.

These answers do not answer every criticism; for example, with at least two stories added the over-all proportions would have been much better; and this heightening might also have helped overcome an air of inhibited restlessness which is a consequence of so broad a building resting on those narrow Vs. But in its boldness the Blue Cross constitutes to architecture's venturesome good health.

(For the financial story, see page 69)

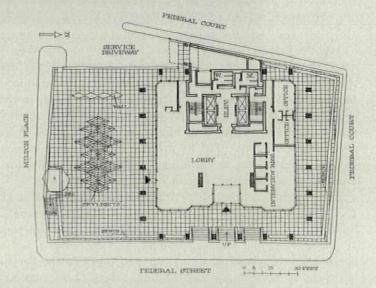
Looking up Federal Street from the direction of South Station, visitors to Boston can see the near-white building freed from its crowded surroundings by a paved plaza to the south that occupies more than half of the 20,000-square-foot site. Precast concrete facade is carried on Y-shaped stilts that form double columns all around the perimeter of the building. The double columns also incorporate high-velocity supply ducts of the air-conditioning system. Intermediate mullions are return ducts.





At plaza level, the building is arcaded on all four sides. The paved plaza itself is an elevated podium on which the office block is placed like a graceful, abstract sculpture. The night view (above) shows the formal main entrance into a glass-enclosed, multiuse lobby and reception area. The second-floor level, which appears almost like a mezzanine hung between the 27-foot-high concrete Y's, houses the tabulating dept. and its office machines. The lobby with the long information desk (below) is paved with a herring-

bone pattern similar to that of the plaza, and has a polka-dot pattern of ceiling lights similar to that in the entrance arcade. The squared-off, very "architectural" furniture in this lobby and elsewhere was specially designed at the architects' suggestion to match the scale of the public spaces. The two freestanding slabs in the 16-foot-high lobby are reinforced concrete columns; these, together with the exterior column system and the structural elevator core, support the 13story building.









Below plaza level, and occupying almost the entire 20,000square-foot site, are utility and service areas, and a cafeteria seating some 270 employees (below). Although this cafeteria is, in effect, a basement room, its lighting is so successful as to make this one of the most spectacular spaces in the building: the ceiling is a grid of structural ribs set in a diamond pattern; 16 of these diamond shapes pierce the floor of the plaza to form a cluster of pyramidal skylights (above); the remaining diamonds

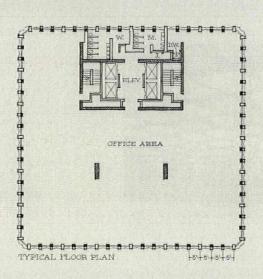
in the cafeteria ceiling are painted in brilliant shades of red; they are used to reflect light directed upward by small, gilded fixtures which are suspended below each diamond. The result is a ceiling reminiscent of a Persian tapestry, and capable of many variations and combinations of natural and artificial light. The small picture at left shows both types of light in use simultaneously. The herringbone pattern of the plaza's bluestone paving is closely related to the supporting diamond grid.





Typical office floor has about 7,400 net square feet of work space. Much of this space is used for secretarial pools similar to the one above. Although the exterior walls of the building are heavily textured, the interior surfaces of the same walls are flush to permit flexible use of partitions and office equipment. All windows measure about 4 by 7 feet, a proportion similar to that of older windows along the street, and they are fixed and equipped with vertical blinds. The office-

planning module is 5 feet—the center-to-center dimensions of exterior columns and ducts. In the office areas, as elsewhere in the building, the pattern made by coiling lights has been carefully considered: the square grid in the secretarial pool and the polka-dot pattern in other offices add further decorative textures to the interior surfaces of this handsome building. Below is the reception area on an executive floor. The building will accommodate 1,000 employees.

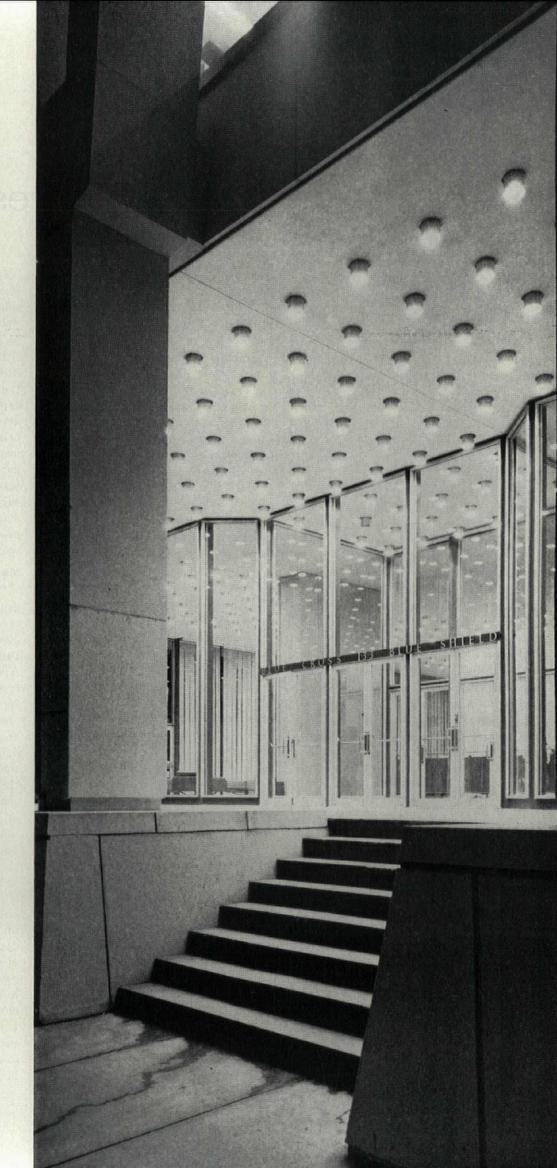




Approach to the lobby reveals meticulous detailing of building in every surface, fixture, and structural element. Here, also, is further proof that designers now recognize the great importance of night lighting in glassy structures, for this building looks almost better lit up at night than it does during the day.

To pay for the building, Blue Cross drew upon the reserves which the organization is required by law to maintain (40 per cent of the annually incurred claim expense). The building, without furnishings, cost \$4.6 million, or \$29.60 per square foot; figuring the usual depreciation, maintenance costs, etc. (but not the cost of using its own money), Blue Cross found that the new, air-conditioned, and custom-tailored space would cost only \$3.70 per square foot annually. (Since the organization's investments are conservative and the estimated return on its statutory reserve is only 3 per cent, the annual square-foot cost would not be greatly affected by charging interest against it as well.) The space that Blue Cross occupied in its old quarters cost \$3.50 per square foot, although it was not air conditioned. Moreover, it would have cost a great deal to alter the old space to accommodate new electronic-data processing equipment. This latter fact, alone, urgently suggested a move; but prime, air-conditioned office space in Boston rents for \$6 to \$7 per square foot, and Blue Cross was unwilling to pay that. In short, the new building is not only a fine piece of architecture and an impressive corporate image; it is also dirt-cheap to own.

BLUE CROSS/BLUE SHIELD BUILD-ING, Boston, Mass. ARCHITECTS: Anderson, Beckwith & Haible, and Paul Rudolph, GENERAL CON-TRACTOR: George A. Fuller Co. STRUCTURAL ENGINEERS: Goldberg, LeMessurier & Associates. STRUCTURAL CONSULTANT: Paul Weidlinger. MECHANICAL & ELEC-TRICAL ENGINEERS: Stressenger, Adams, Maguire & Reidy. INTE-RIOB DESIGNERS: Contract Interiors, Inc. KITCHEN CONSULTANT: William Wall (of Crotty Bros.). LIGHTING CONSULTANT: John Maguire.



A spur to real estate investment

By granting them "conduit" tax treatment, the summer session of Congress placed real estate trusts in competition with other investment funds. Result: more money for building.

By MILES L. COLEAN

New means of investment in real estate equities and mortgages are now to be available through real estate investment trusts. From the building industry's point of view, this is the most significant action of the lackluster Congressional session last summer and it was taken without debate, and almost after all hope for it had been given up, just before the legislative curtain was rung down for the year.

Thus ended a struggle, going back to 1954, to give to trusts invested in real estate interests the privilege of passing trust income and capital gains, untaxed, to the beneficiaries of the trust. This privilege has long been available to trusts or regulated investment companies that are invested in stocks and bonds. Before adoption of the new amendment to the Internal Revenue Code, a real estate investment trust was taxed on both its income and capital gains before distribution to the shareholders. This situation obviously placed the real estate trust at such a competitive disadvantage in the financial market as to render its use generally impracticable.

The reasons for the long-standing inequity in treatment between the two types of trusts go back to changes in the tax laws in the mid-thirties and need no longer concern us. Nor is there any need to review the Treasury's more recent objections to changing the law, which were finally overcome early this

year (see "A Remedy for Rental Housing," FORUM, Dec. '57). The important thing is that the deed has been done, and the new medium is now at hand.

In order to be eligible for the "pass-through" or "conduit" tax treatment, a real estate investment trust must: 1) be organized under state law as an unincorporated trust or association managed by trustees (corporations are not eligible); 2) have transferable shares or certificates of beneficial interest; 3) be a type of organization which would be taxed as an ordinary domestic corporation in the absence of the provisions of the act; 4) distribute at least 90 per cent of its income to its beneficiaries.

Further requirements are that the beneficial ownership of the trust must be held by at least 100 persons, no five—or fewer than five—of whom may directly or indirectly own more than 50 per cent of the trust. The trust must elect to be treated as such and must forego activities (such as holding property primarily for sale) which involve being engaged in trade or business.

At least 75 per cent of the value of the trust's investments must be in real estate assets (that is, equities, leaseholds, mortgages), cash, and government securities. Similarly, 75 per cent of the trust's income must be derived from real property (rents, gains from sale of property, mortgage interest, dividends of other real estate trusts); 15 per cent of the income may be derived from sources from which security investment funds obtain 90 per cent of their income; and the remaining 10 per cent is unrestricted. A final income limitation is that not more than 30 per cent of the trust's gross income in any one year may be obtained from sales of securities (probably including mortgages) held for less than six months or real property held for less

than four years. (Gains from assets sold in less than the periods stated would not be given the special tax treatment.)

If all these requirements are met, the distributed income is taxable only in the hands of the beneficiary. Moreover, capital gains, to the extent that they are distributed, are taxed at the beneficiary level as long-term capital gains and not as ordinary income. Earned depreciation may be distributed untaxed or reinvested without penalty. Income and capital gains that are not distributed are taxed to the trust. The provisions of the act apply to taxable years beginning after December 31.

Management limitations

Real estate investment trusts will generally fall into two categories: those invested mainly in equities and those invested mainly in mortgages, although there is no prohibition against any mixture of the two in the same trust if the basic trust agreement provides for it. There are, however, some differences in the federal statute between the handling of equity investment and the handling of mortgage investment; and there may also be some differences in the extent to which the issuance of shares based on one type of investment or the other may be subject to the requirements and the procedures of the Securities and Exchange Commission.

A mortgage investment trust appears to have a minimum of restriction under the new law. Such a trust may originate, service, buy, and sell mortgages, or it may contract with a mortgage company for origination and servicing. It may deal in insured, guaranteed, and conventional mortgages or confine itself to FHA and VA paper as it may choose, or as its underlying indenture may authorize. It may, in short, carry on with greater freedom all the activities contemplated for the federal mortgage investment companies which were under

discussion last spring, except that the trust presumably would depend heavily for its resources on the issuance of trust shares rather than on fixedincome obligations as would the investment companies.

A trust invested in real estate equities must meet several requirements not applicable to mortgage trusts. The purpose of these requirements is to assure the "passivity" of the trust income (which is the justification for conduit treatment) and to guard against profit by the trust from active business enterprise (which should be taxed on the ordinary basis).

These objectives are to be accomplished by requiring that, in case of equity holdings, where the property is not leased on a strictly net basis, the trust must enter into a contract for the provision of managerial, custodial, and maintenance services. The theory is that the operation of a multitenancy property is a form of business enterprise, and the profit directly attributable to this should be taxed. By separating what is strictly management of the trust from mangement of the property, the technical purity of the trust concept is preserved without any undue restraint on the range of the trust investments.

Following this principle, the relationship between the trust and the contractor for property management is specifically set out in the statute. Thus the trust may not receive any income from the contractor. The contractor may not own more than a 35 per cent interest in the trust. In turn, not more than a 35 per cent interest in the contractor may be held by anyone having an interest of 35 per cent or more in the trust.

There are also restrictions on the relationships between a trust and the tenants in its properties. For example, any income received from a tenant where the trust has an interest of 10 per cent or more in the assets or profits of the tenant is excluded from the conduit tax treatment. Nor is it possible to have rents based on a profit-sharing arrangement with a tenant. At the same time rents based on a percentage of gross sales are permissible.

The complexity of some of these requirements will make it necessary for the Internal Revenue Service to prepare special regulations in respect to them. The same is true of the Securities and Exchange Commission to the extent that it may exercise jurisdiction over the character and operations of a real estate investment trust and the securities that it issues. At this stage, the extent of that jurisdiction is not known beyond the fact that a trust will be required to provide complete information to the Commission. There is a possibility that real estate trusts may be exempt from some of the detailed requirements and reporting procedures to which regulated investment companies are subject, but this will have to be developed later. Obviously, this whole unexplored area is not one in which it is wise for anyone to try to be his own lawyer.

FHA relationship

One of the principal reasons for the Treasury's change in attitude toward the application of conduit tax treatment to real estate trusts was the possibility the trusts offered for increasing the availability of equity funds for rental property. It was especially hoped that trusts might in this way provide stimulus for urban renewal enterprises. On this basis, the proposal was also endorsed by the HHFA Administrator and the FHA Commissioner.

At the same time, it must be recognized that, so far as its insurance of rental housing mortgages is concerned, FHA has found serious difficulty in

dealing with trusts as ownership entities. As is well known, FHA is required by law to regulate the owner of a rental housing property as to rents, dividends, maintenance, reserve requirements, and other matters.

The ordinary method of enforcing this regulatory authority, by issuing a special class of stock to FHA which becomes controlling in case of default, is not applicable to a trust. The same objective could be accomplished, however, through a regulatory agreement with the trust embodying the FHA stipulations which the trust would then impose on the contractor for property management. There is one important proviso: that the trustees have the authority to enter into such an agreement and, in the name of the trust, be accountable for its requirements.

In some states, it is not customary to give trustees sufficient authority to act to the extent that FHA considers satisfactory, and it may be necessary in some situations to obtain a modification of a state law. FHA is now giving this matter special attention, and there is good reason to believe that it will soon make known the circumstances under which trusts will be acceptable as project owners. In all likelihood, the type of land trust common in Massachusetts will provide the model.

Growth prospects

In view of the limited amount of attention which the legislation attracted during the long period of its consideration, the quickness with which the idea has been seized upon after enactment is surprising. Yet, in a way it should not be. Conduit tax treatment through the instrumentality of a trust gives real estate the kind of financing medium it has long needed. In many cases, the trust will serve the equity side much better than does the syndicate and almost always much better

continued on page 170



Hartford: renewal in the round

Spurred by its business community, Connecticut's old capital is launched on a remarkably well-balanced rebuilding plan. A study for cities large and small.

Hartford (population 165,000; metropolitan area, 500,000) spreads back from the majestic Connecticut River, halfway between Boston and New York via the Charter Oak Bridge (foreground). Redevelopment areas are described in text.

PHOTO (OPP.): FAIRCHILD AERIAL SURVEYS, INC.

While some cities are staring uncomprehendingly at their new master plans, or raising ragweed on cleared, still-idle land, Connecticut's 325-year-old hub of government, finance, and industry is quietly moving ahead, project by project, on one of the most rounded renewal programs yet attempted in the U.S.

Construction is already under way on Constitution Plaza, Hartford's own 15-acre, \$35 million "Rockefeller Center," an all-commercial Title I project of office, retail, and parking space replacing the city's worst river-front slum (1 in map left, details overleaf). Land is being acquired for a 70-acre industrial - commercial redevelopment just to the north (2). Last month a bond issue was approved by the voters to clear the way for a new walk-to-work apartment tower of 300 units overlooking Bushnell Park (3). Within the tight new expressway loop, now one-third complete, Hartford's big G. Fox department store is finishing a \$9 million expansion program, and studies are being made to unite it and other stores into a trafficfree regional shopping mall (4), linked to parking garages and a new 6,500-seat convention-exhibits hall (5). By the late sixties, 1,300 needed middle-income apartments may rise toward a river-front park, above their own playgrounds and stores (6).

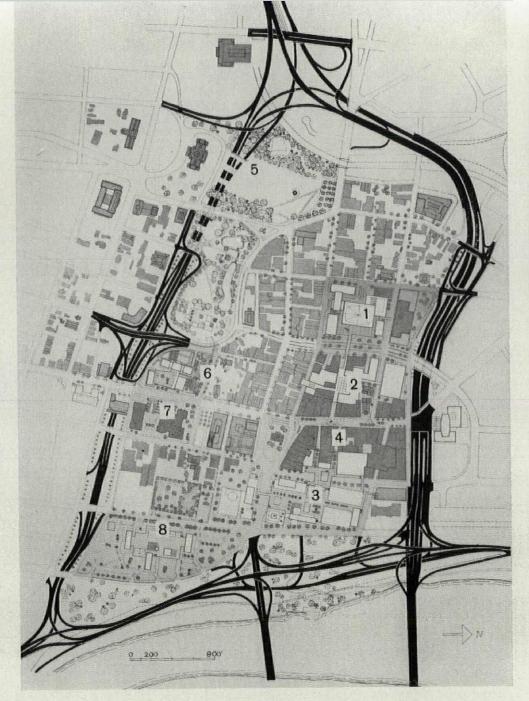
Downtown renewal has sparked ample activity outside the loop as well. Trinity College, Hartford Hospital, and the Institute of Living have combined as Neighborhood Planning Associates, Inc. to upgrade their own surroundings in a wide area on the south side (7), and the city hopes to wrap new residential areas around a projected federal building and a University of Connecticut Law School site (8). On the north, other neighborhood groups have been formed, and pilot rehabilitation and spot clearance will begin next year (9, 10). To relocate old industries and attract new ones, the city is assembling land in the North Meadows, and a private industrial park has signed up its first tenants alongside the city's old Brainard Field.

Pulling downtown together

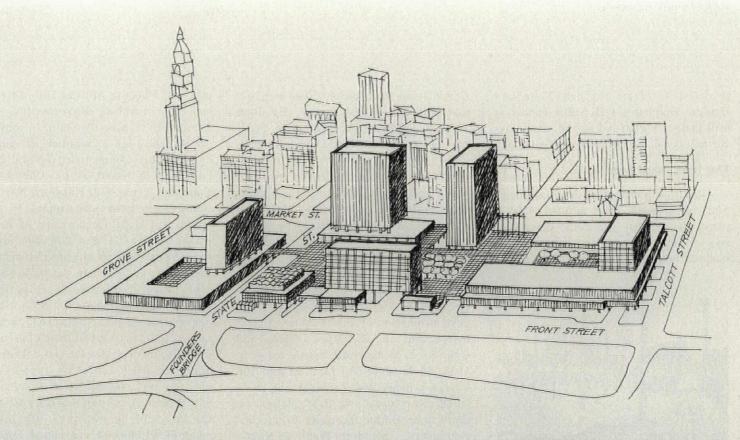
Just how much of Hartford's ambitious program will be realized in its present form, and how much changed, remains to be seen. As visualized now, the downtown plan makes an unusually

sharp study in linking a city's sound existing elements with new ones to create larger, more cohesive units. Along the north edge of the core (plan, this page), Architect-Planners Rogers, Taliaferro & Lamb have placed the proposed convention-exhibits hall (1) just below the hotel district and right beside an existing municipal garage, supplementing it with underground parking and surrounding retail and office space as a revitalizing influence on a declining area, and as a counterweight to Constitution Plaza on the river side. In front of the hall, Trumbull Street is to be widened into a 150-foot cross-artery, taking much of the traffic off Main Street below. This would allow the city's unusually compact retail core of 28 acres to be knitted gradually together as a pedestrian island: existing Pratt Street specialty stores would be grouped together in a two-level, air-conditioned mall with truck tunnels beneath (2); extensions of Constitution Plaza (3) would reach up to join this new center at a larger Main Street mall (4).

Across town on the south from this long, interconnected commercial core, which could pep up Hartford's night life as well as day life, the pleasant open space of Bushnell Park (itself a redevelopment project of 100 years ago) would begin to filter down from the gold-domed, exuberant capitol building (to the left of 5), around the proud old Center Church and the new open space of the Bushnell apartment project (6), then across Main Street to open landscape and sculpture courts between the Travelers' tower, Wadsworth Atheneum, and city hall (7). This band of park-apartment-institutional space, rich in architecture and greenery, would terminate at the grand old façades of the Hartford Club and the Hartford Times. (In back of these buildings, however, the plan seems a little less sure, a large surface parking area being the only indicated use until the river-view housing project, 8, is reached.) Following "Fort Worth" principles of current planning practice, parking is kept everywhere toward the outside of the core, convenient to expressway ramps and a short walk to offices and stores, leaving the center relatively free for pedestrians, buses, and service traffic. In the middle of it all, at the head of the ap-



Hartford's heart (above) is a relatively compact and richly endowed area of some 250 acres, girdled by an arterial loop now open to traffic on the east and south. Immediately within the loop, plans call for a chain of new projects (light tone, described in text, left). The first of these to get under construction is Constitution Plaza, a 15-acre, \$35 million commercial center carved out of a riverfront slum (sketch and photo opposite). It is being sponsored by the Travelers Insurance Co., whose 527foot tower, tallest in New England, rises solidly behind it at the left. (At the center of the photo is the charming Old State House; at the far right, the new construction of G. Fox's department store. The dome of the state capitol is in the background, beyond Bushnell Park.) The new building group will include (left to right) a separate but linked headquarters built and owned by Phoenix Mutual Life (Harrison & Abramovitz, architects); a low studio building for the Travelers Broadcasting Co. (Fulmer & Bowers, architects); a 250-room motor hotel for the Hotel Corporation of America (Curtis & Davis and Charles DuBose, architects); a 20-story office tower leased mainly to Connecticut Bank & Trust (Kahn & Jacobs, architects with Carson & Lundin); an 18story rental office building containing a major branch of the Hartford National Bank & Trust (Charles DuBose and Emery Roth & Sons, architects); a lower office building and shopping court (by the center's over-all architect, Charles DuBose; Sasaki, Walker & Associates are over-all landscape architects). Beneath the elevated, richly patterned plaza will be five levels of parking for 1,800 cars. General contractor is F. H. McGraw & Co. The site, at the juncture of two interstate expressways, is described by local rooters as "the most valuable piece of real estate in New England." The attempt to maintain architectural unity among the project's diverse buildings will be interesting to watch.





proach street from the new Founder's Bridge, Bulfinch's Old State House is still jealously guarded as the city's historical, if not esthetically perfect, gem.

The long, hard road

Almost as interesting as Hartford's plan is the long, even painful, way it came about. Ten years ago downtown renewal, expressways, and bridges were clouded in dispute, and outlying towns

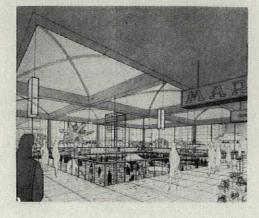


Lift slabs rise for Broadcast House

were not about to be roped into rescuing the city from its rather gleefully observed decline. The city council, however, had gone about setting up a redevelopment agency and the City Plan



Two views of the Pratt Street shopping mall.



Commission had picked the decaying east side as its first target. By June 1952, federal advance planning funds had been secured, but almost immediately the city's right to certify redevelopment bonds was challenged in a test case, and not upheld in the highest court until March of 1954. Hearings, property owners' objections, back-andforth revisions between Hartford and Washington consumed time until late 1956, when an initial \$800,000 bond issue was approved by the happy margin of 4 to 1 (thanks largely to energetic promotion by the chamber of commerce and the Hartford Times and Courant). Demolition began early in 1958, while some 330 families and 106 business firms were successfully relocated. Hartford's own F. H. McGraw & Co. was appointed developer over other contenders (including Webb & Knapp and Hegeman-Harris of New York) and had lined up major tenants by mid-1959 when a tight money market helped scotch its long-range financial leads. With a final deadline approaching, Hart-



Hartford's proposed convention hall.

ford's big Travelers Insurance Companies offered to step in and finance a new \$4 million corporation, Constitution Plaza, Inc. which would control the project, with McGraw retaining a minor share (for its \$650,000 development costs) and acting as general contractor. A \$2,850,000 check for the land was turned over to the city and ground was broken for the first building, Broadcast House, early this year. Guiding the venture as chairman is Gladden W. Baker, chairman of Travelers' finance committee: day-to-day operations are handled by the corporation's president, Roger Wilkins, Travelers vice president in charge of mortgage loans.

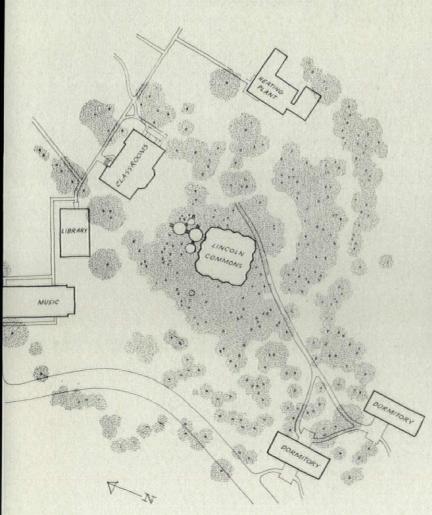
With the help of Hartford's revitalized chamber of commerce (see "Editorial," page 61), new tenants were sought out, and Phoenix Mutual Life, in addition to Travelers Broadcasting, was persuaded to give up plans to move to the suburbs, as a number of companies, notably Connecticut General Life, had done in recent years. Connecticut Bank and Trust, and Hartford National Bank, were also encouraged to take space, and Hotel Corporation of America agreed to build a 250-room motor hotel. Travelers went ahead on its venture with far less than the 60 to 65 per cent tenant commitments it normally requires for mortgage loans to others, demonstrating a faith in back-vard renewal that has given heart to other projects on Hartford's list. There is ample evidence the city's support will also pay out: Constitution Plaza alone will return \$1 million more a year than the area did before, on a city investment of \$1,350,000. If voters approve another \$11 million over the next few years for the proposed convention hall, retail, and apartment projects, they will have stimulated close to \$90 million in private construction for the public good.

Hartford's plans merit particular study by other cities in the 200,000 population range. They would seem to have a good chance of realization-if concepts and implementation are constantly reanalyzed, and dramatized to voters. Planners Archibald Rogers, George Kostritsky, Charles Lamb, and Harry Cooper have based their scheme on traffic and economic surveys, on interviews with close to 100 community leaders, on questionnaires directed at civic organizations and the public at large. The mechanism to carry out the plans is actively maintained not only by the city's own planning and redevelopment officials, but by an unusually concentrated business leadership, including insurance men and bankers sophisticated in building finance. Located at what it likes to call the "crossroads of New England," spurred by its considerable industry, and stabilized by its government and insurance core, Hartford has long stood near the top in family income in the U.S. It can afford to save its fine old architecture, to replace that which is not so fine, and to capitalize on its lovely valley and rolling parks and river views. Indeed, like so many other cities faced with the need for renewal, it cannot afford not to.



PHOTOS: ROBERT STAHMAN

An uncommon college commons



The glassy social hall for Lake Erie College reflects the collaboration of a gifted architect, a demanding client, and a compliant federal official.

BY WALTER MOQUADE

The president of Lake Erie College, Dr. Paul Weaver, is an unusually challenging client. A black-moustached, fiercely mental, eminently worldly ex-professor of philosophy (other academic specialties: religion and psychology), he heads a century-old college for girls which, in the past eight years, he has transformed from a genteel suburban seminary to a very lively place, stressing the smallness of the world and the widening of women's horizons in it. He has added a compulsory term at a European University for every student, and, at home, a farm full of horses in the riding country outside Cleveland. He has also, with great determination, brought new architecture to the 57 quiet suburbsurrounded acres of his central campus. To get it, he acted with typical thrust. He picked an unknown young architect eight years ago (one who had not yet even obtained his architectural license) and made severe demands on him.

The architect, Victor Christ-Janer (rhymes with list-tamer) has just justified his client's trust in a striking way by lighting a gracious lamp amid the trees in the center of the old campus, a beautiful building which is the social center of the school. In this new "Lincoln Commons," from top to bottom, are a dining hall high among the tree trunks (which also has a dance floor better than most cabarets), an

intermediate floor of reception space, snack bar, etc., and a more secluded ground floor where the big space is broken up into sitting rooms designed like luxurious caves. A glass wall faceted at gigantic scale encloses most of the building, and out front is a set of three lily-pad porches on different levels. These have two functions: as stages for the outdoor singing pageantry peculiar to college girls, and, more practically,



as simple direct outdoor entrances and exits on all floor levels of the structure, which made interior fire stairs unnecessary.

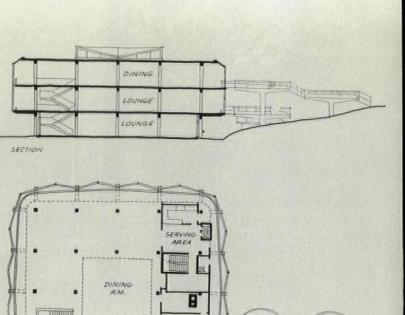
This blend of pleasure and practicality holds throughout all the architectural approach to Lake Erie, where Christ-Janer has also designed several dormitories and a small infirmary. The commons is the most ambitious building architecturally because Weaver wanted a focal point among the other campus buildings, and a gracious dining space, as well as complete social facilities which would encourage his 500 charges to entertain

their beaux on campus rather than to race around in cars.

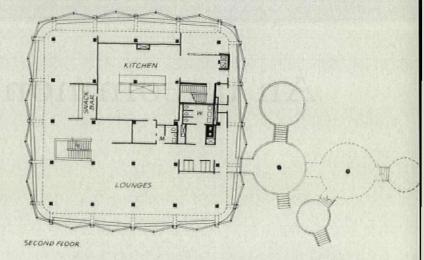
Weaver is a demanding man, a hard man to dispute; he not only has a reason for everything he does, but, as frequently as not, can tell the reason imperatively in classical Greek. On the first Lake Erie dormitory (FORUM, Sept. '57), a 15,000-square-foot building, he gave Christ-Janer 88 days from preliminary design to occupancy. One day last February the dynamic college president, who lunches every day in the week on steak tatare, telephoned the architect at his office in New Canaan, Conn. and told him he needed an infirmary design in three weeks. He got it, as he gets most things.

Weaver's persuasiveness also accounts for one of the most surprising ingredients of all in this delightful commons building, the mortgage. The building was put up on a 2% per cent mortgage granted by the HHFA in Washington, a government agency which has long been accused of being wedded to safe, cheap mediocrity in design—dullness, not delight. The Chicago District HHFA office, when applied to, knitted its brows on the design and would not grant the mortgage, instead bucking the application on to Washington. So Weaver flew to the nation's capitol to argue for architecture.

Christ-Janer, who went with him, holds that Weaver enjoyed it almost as much as he did himself. They entered the usual atmosphere of polite reluctance, and Weaver began scenting after the precise objection to the design. He had no trouble in getting agreement that he was the master of his college's architectural fate, and that he should trust his young architect's ideas of what is most appropriate for young women. The faceted glass walls raised HHFA's eyebrows, but Weaver pointed out that most women do not like straight lines, and always arrange furniture on the bias. Then the official explained that his agency did not think itself entitled to encourage, or at least, to finance, any "elaborate" structure, and Weaver pounced. He is truly formidable when aroused (text continued on page 83)



THIRD FLOOR



READING KIT. STOR PREPAR S

LOUNGE W S SITTING RM.

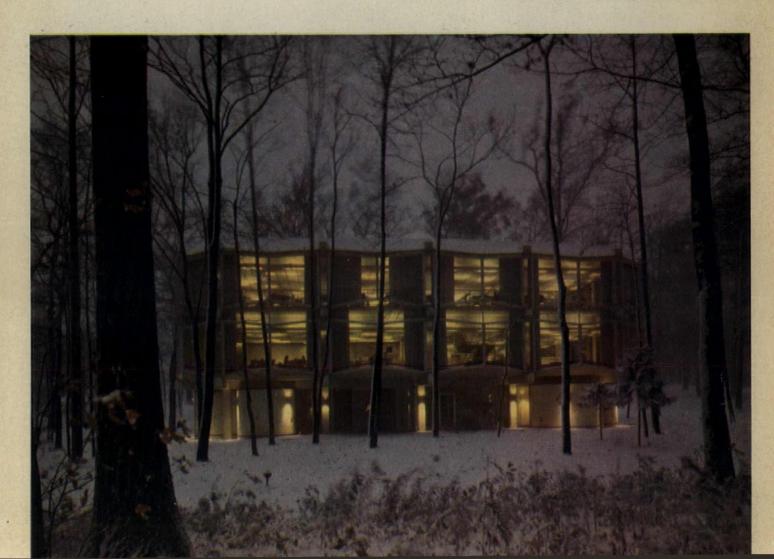
TV LOUNGE SITTING RM.

FIRST FLOOR

All floors of the three-story building can be entered directly from outdoors. Two electrically operated dumb-waiters, 5 feet high, transport food from the kitchen floor to the dining floor. The academic buildings are toward the higher side of the campus and most of the dormitories are farther down the slope.



Social building was planned deliberately to be lighted up as a lantern in the center of the campus in the evening. The south facade faces a dormitory group 250 feet away through the trees.



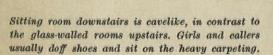


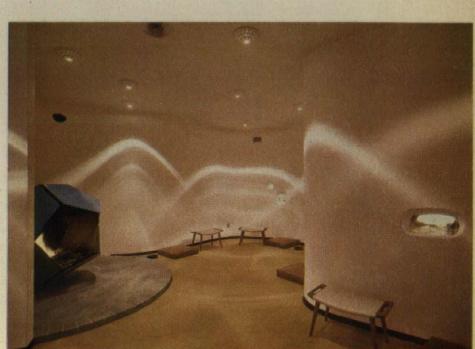


East wall of the dining level shows the leisurely, spacious feeling sought and attained in this unusual college facility.



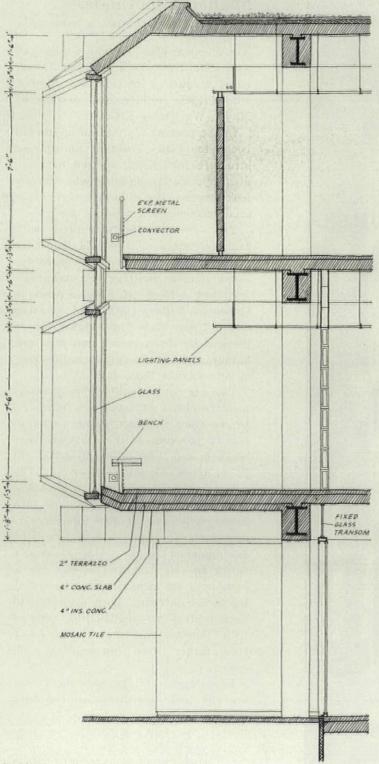
Dining room has a dance floor in its center, where the ceiling rises over the clerestories. Circulation is around the periphery, creating a "club atmosphere."







Exterior folded plane of tubular steel and glass is fastened only to the cantilevered ends of the fireproofed steel beams which support the second floor. Some sections of this curtain wall open, but the main ventilation of the buildings is forced, through ducts. The duct returns for the two upper floors are in the hung ceiling.



by resistance; it is then that his eyes glint brightest and his trim moustache churns. "Elaborate? Does that mean expensive?" he asked. The answer was, well, yes. Before departing Weaver asked what had been the highest per-square-foot costs on other HHFA college buildings. The highest was in New York City and the next highest, fortunately, was in Cleveland. Weaver instructed Christ-Janer to put his building out for bids, which came in at \$27.26 per square foot—about \$2 below the limiting "elaborateness" set by the New York and Cleveland figures. And that was that. John C. Hazeltine, director of HHFA, later came to the dedication, and congratulated Weaver warmly on the commons.

The building is steel. Christ-Janer's central architectural tenet is to express the structure, so he carried his steel beams (clad in concrete for fireproofing) out to the façade and put what he calls hubcaps on them—sheet metal ends. The frames for the faceted glass walls were made in a shop, then snaked through the trees and welded on the façades. The edges of the second-floor slab bend up, and the edges of the top slab are folded down (see detail, left) to fit the metal frames. The intervening floor slab with its hung luminous ceiling is set back from the glass wall. Lighting was taken seriously in the design; above the fine-textured aluminum grille ceiling are both fluorescent and incandescent lamps, with a battery of switches and dimmers for complete control.

The building is a vigorous modern design, but Christ-Janer was able to give it the appropriate character to its users, a gently feminine feeling, very rare in the modern technique. It is set intimately into its slanting site-welcoming, homelike, yet very serviceable. Says Christ-Janer about his client: "He trusted me. I think you could call him a professional client. His program was explicit, even in the intangibles, but he never questioned my right to execute it as a building." The two men actually are quite close in age; Christ-Janer, a very youthful 45, came to architecture late, by way of sculpture; Weaver, 53, came to a college presidency much earlier than most. At Christ-Janer's insistence, Weaver let him and his staff* pick all the furniture and other accessories, down to the place mats on the dining tables. Weaver has since taken possession of this idea himself. When a temporary fence goes up around the corner of a hockey field, a call goes to Connecticut for the design. And, several weeks ago, Christ-Janer got a letter asking for a description of the architectural spirit behind the new commons, for purposes of indoctrinating the new waitresses.

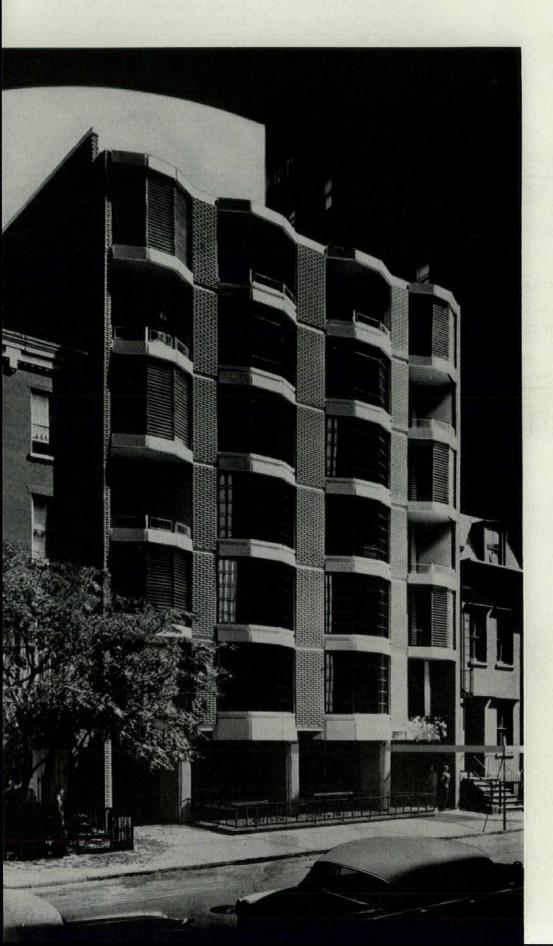
Financial program: financed under the College Building Program of the Housing and Home Finance Agency of the federal government. Total mortgage, \$540,000 nonnegotiable 30-year bond, at 2% per cent interest; \$223,032 college funds.

Cost breakdown: site development, \$17,624; kitchen equipment, \$60,867; professional fees, \$44,597; general construction, \$523,362; plumbing, heating, \$75,750; electrical, \$89,132; furniture, rugs, dishes, \$49,820; painting, draperies, \$18,104; total, \$879,256; total square feet, 26,045; number of students, 500.

LINCOLN COMMONS, LAKE ERIE COLLEGE, Painesville, Ohio. ARCHITECT: Victor F. Christ-Janer & Associates. STRUCTURAL ENGINEER: Henry A. Pfisterer. MECHANICAL AND ELECTRICAL ENGINEERS: Fred S. Dubin Associates. GENERAL CONTRACTOR: George E. Payne Construction Co.

^{*} Thomas Bates, Bruce Falconer, John Hcuk, Vello Kampman, Ed Marcus, Lawrence Michaels, and Zane Yost.

Fiscal designs for two apartments



By the same architects for the same city, these two superior buildings are based on entirely different financing methods.

BY STEPHEN G. THOMPSON

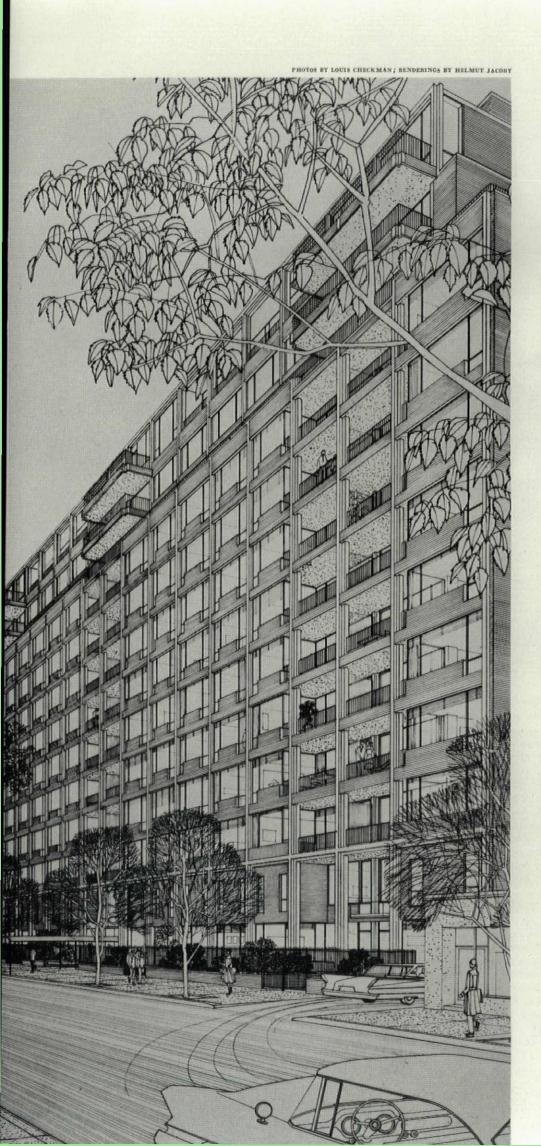
The financial plans on which these two attractive New York apartments are based are just as interesting and different as their architectural designs by Mayer, Whittlesey & Glass.

In the present Manhattan apartment boom, too many ordinary uninspiring structures are being erected by expedient speculative builders who scarcely look beyond the current market for small efficiency apartments.

Too few are the structures with family-living amenities and long-term market appeal like these two buildings—one under construction downtown less than a block off Fifth Avenue in Greenwich Village (left), and the other on the Upper East Side (right), where there is hardly a street that does not harbor at least one giant mobile construction crane these days.

There is not a single efficiency apartment in either of these two buildings. In the more spacious downtown building, 88 per cent of the units are twobedroom and three-bedroom suites, and in the uptown building 66 per cent. The downtown project, which will extend from 12th through the block to 13th Street, will have its own interior garden court. The uptown project will be distinguished by a series of duplex suites on the first and second floors, each with its own miniature court at the street entrance. Both projects will have central air-conditioning systems with thermostatic controls in every room rather than independent room coolers.

In both projects, the investment owners and their architects started with

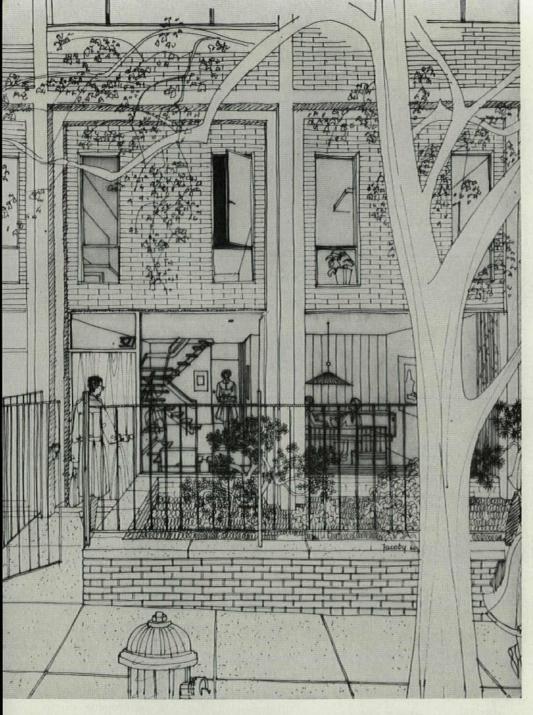


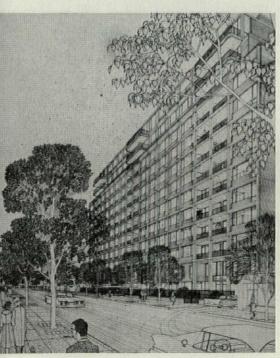
the same objectives: to erect buildings of quality design that would be appropriate for their sites, that would contribute to the development of their neighborhoods, that would serve the true long-term housing market, and would thereby be assured of financial success long after the crest of the city's current housing surge recedes. In both cases the owners then devised financing plans that would enable them to build to the architect's good designs. (They eschewed the more common course taken by many owners, who request the architect to draft an "anything goes" plan, or modify or distort his design to suit some predetermined or expedient financing pattern.) Equally important, the financing plans were devised to make the projects competitive with lesser-quality accommodations in each area. (For different situations, financing plans can be as varied as architectural plans or structural systems.)

To keep a step ahead of a primarily rental market, the 102 apartments in the 12th Street project will be sold as co-ops.

To offset coming competition on what is now the periphery of a luxury-apartment area but is in the path of more upper-income housing improvement, the Upper East Side apartment will be an early example financed with a "Section 207" FHA-insured mortgage, FHA assistance will require that rents be considerably below those in other conventionally financed luxury-type apartments closer to the Park Avenue and Fifth Avenue luxury core. However, FHA assistance will also make possible a somewhat smaller cash equity and less risk-and will produce commensurately smaller profits—as long as the FHA remains in the picture.

A fuller discussion of the economics and the architecture of these two projects appears on the following pages.





Duplex apartments opening onto their own "front yards" distinguish the design of this uptown New York project. Occupying most of the building's two lower floors, these 16 apartments will be occupied by larger families which can use the outdoor living space at front and rear. A low brick wall, iron fences, and landscaping will screen the glass walls of the ground floor from the street. Other noteworthy design details which help set this project apart from the typical FHA-insured apartment house: 1) the recessing of sizable balconies within the structure of the building, giving relief to the main façade and shading the glass walls of the living rooms, 2) the incorporation of the air-conditioning-heating units within the window wall, allowing maximum window size and creating an interesting fenestration, 3) the discontinuous treatment of the brick spandrels to emphasize the building's reinforced concrete structure, exterior surfaces of which will be finished in rubbed white cement.

Uptown rental apartments: profits deferred

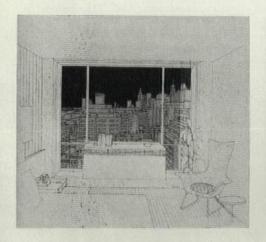
On Manhattan's Upper East Side, the postwar apartment boom has gradually spread eastward from Park, to Lexington, to Third, to Second Avenues. In most cases prestige, prices, and rents are progressively lower the farther the location from Park Avenue.

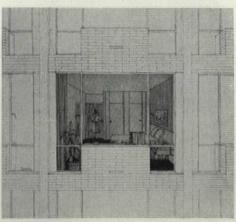
Nevertheless, there has been considerable new building on Second Avenue and beyond and there is little doubt that the rebuilding of this entire area will continue many years. This trend was taken into account when the 333 Corporation acquired and cleared a 100 by 200-foot site on 69th Street between First and Second Avenues, on the periphery of current activity, and engaged Mayer, Whittlesey & Glass to design the building. Sensing the long-term improvement of the area, the architects proposed an apartment that would leap far ahead of this block's present market and capitalize on its ultimate potential.

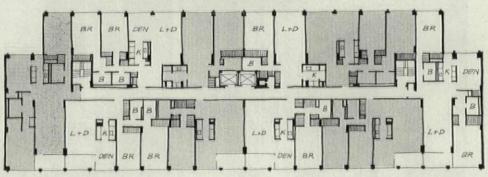
The building's designers recognized this neighborhood's need for two-bedroom family apartments rather than the small efficiency units prevailing in most of the area's other new buildings—a view also espoused by New York district FHA officials for several years past. Thus, this building will provide 73 two-bedroom apartments (63 per cent of the 117 total), 40 one-bedroom units (34 per cent), 4 three-bedroom units, and a 58-car garage.

But pioneering in design quality and in location poses market problems. Rents would have to be set at \$80 to \$85 per room, on a conventional room-count basis, if this building were conventionally financed. This would have made it impossible to compete with other new conventional buildings of lesser quality, and renting for \$70 to \$75 per room.

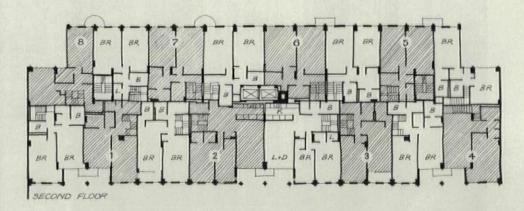
The answer was found in using some hidden advantages of the "Section 207" FHA-insured mortgage procedure. Because FHA has never approved rents in excess of \$55 per room in Manhattan, not all builders have fully explored the possibilities. But it so happens that FHA's method of counting rooms is far more liberal than conventional room counts; in effect this means that a rental of \$55 per room on the FHA room-count basis equals a rental of \$63

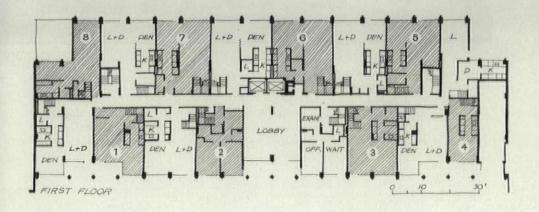






TYPICAL FLOOR





to \$65 per room on a conventional room-count basis. Accordingly, using the higher mortgage coverage afforded under FHA at lower than conventional interest rates, it became possible to provide good construction, advanced planning, and good equipment at very favorable competitive rentals. To be sure, in accepting FHA supervision and rent limitations, the building owners will realize smaller profits than a conventionally financed building might yield them. In due course, however, as the uptrend in this area accelerates and rents rise, the owners will probably be able to refinance the project conventionally and gradually increase the rents.

As it turns out, a close look at the key cost and mortgage data in this case indicates that the FHA insured mortgage on this building will not be on a much higher loan-to-value ratio than would a very liberal conventional mortgage, although it will be a much higher amount than a conservative lending institution would advance for this kind of a venture that is pioneering ahead of the market. The financial data:

Equity\$1,250,000

Measured against its total of 117 apartments (excluding the superintendent's), land cost for this building at \$45 per square foot averages just under \$7,700 per unit, or 21 per cent of gross costs. Including land, the basement garage, equipment, and all public spaces, total costs per unit will average \$36,300. Under FHA's recently revised roomcount system, this building will have a total of 741 rental rooms, and the mortgage per room will average \$4,050.

Not every owner can afford to build in this fashion and retain such a large equity in a building in its early years. Those who do, encouraging good design and neighborhood improvement, deserve support. Those who cannot may accomplish the same high purposes by following the different financial plan discussed on the following pages.

Downtown co-op apartments: profits realized

The financing plan for Butterfield House is the key factor that will let this apartment be built so as to compete effectively against higher prestige luxury apartments on one flank and against lower-rent but inferior design buildings on the other—and at the same time enhance prestige and value throughout the entire area.

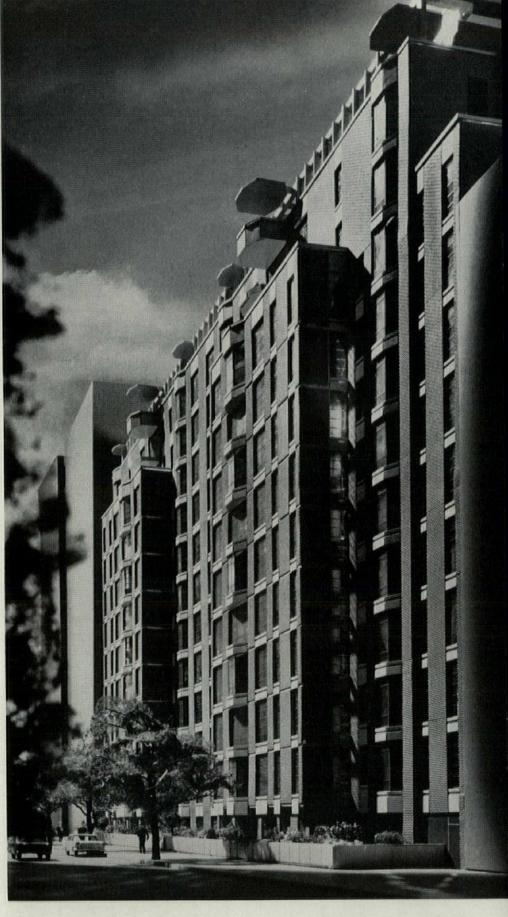
This building, now under construction in the Fifth Avenue section of the Village, will front 50 feet on 12th Street and 215 feet on 13th Street, on which it will be hardly more than 150 feet from Fifth Avenue.

The Dangray Construction Corp., having acquired the 29,037-square-foot site, accepted the recommendation of Mayer, Whittlesey & Glass that the building should serve this area's increasing need for family-size apartments and should anticipate the continued upgrading of the neighborhood radiating westward from Fifth Avenue. The plan calls for 25 three-bedroom units (25 per cent of the 103 total), 64 two-bedroom units (63 per cent), 13 one-bedroom units (12 per cent) and one superintendent's apartment.

Most new apartments in one direction are of lackluster design, are conventionally financed, and rent for \$90 to \$100 or more per room. In the other direction new apartments are less luxurious and rent for about \$75 per room.

If built to the design standards recommended by the architects, and financed conventionally, Butterfield House would have needed to charge \$90 to \$100 per room—too high for the inbetween location.

Studying this problem, the owner and the architects saw one method of handling a quality building so as to compete with both of the other markets. The builder-owner would have to sell the project as a co-op and give up annual profits as an investment-owner, in favor of a single one-time construction profit. But doing this would bring advantages to almost everyone, while enhancing the value and desirability of all properties in the block. The building will give the co-op buyers outstanding accommodations (with more amenities and better apartment layouts than some of the higher rent projects in the area), at net monthly costs lower than



Two-faced co-op in Greenwich Village section of New York will consist of two buildings joined by a garden court which will greatly increase the number of apartments enjoying an attractive outside exposure. Although it will contain 12 of the project's 102 dwelling units, the smaller building will serve mainly as the front door on the more desirable 12th Street; its ground floor will be entirely lobby. Other architec-

tural details which will help put this project several pegs above the competition include its variegated walls which not only add interest to the façades but also permit wide variations in apartment layouts and give many of the rooms long views up and down the streets instead of short views across the streets. These same indentations will be used at street level to create planting strips along the sidewalks.

any of the competition. Reason: the co-op buyers will not have to pay anyone any monthly or annual profit margin, and they will obtain important tax credits on the mortgage interest and realty tax portions of their carrying costs. It is estimated that carrying costs for Butterfield House suites will average \$70 per room per month, or, assuming that buyers are mainly in the 40 per cent income tax bracket, a net cost of only about \$55 a month after income tax credits. Their net savings over the rents they would have to pay for comparable apartments will average about 15 per cent each year of their cash investment.

Here, in brief, is the project's financial statement:

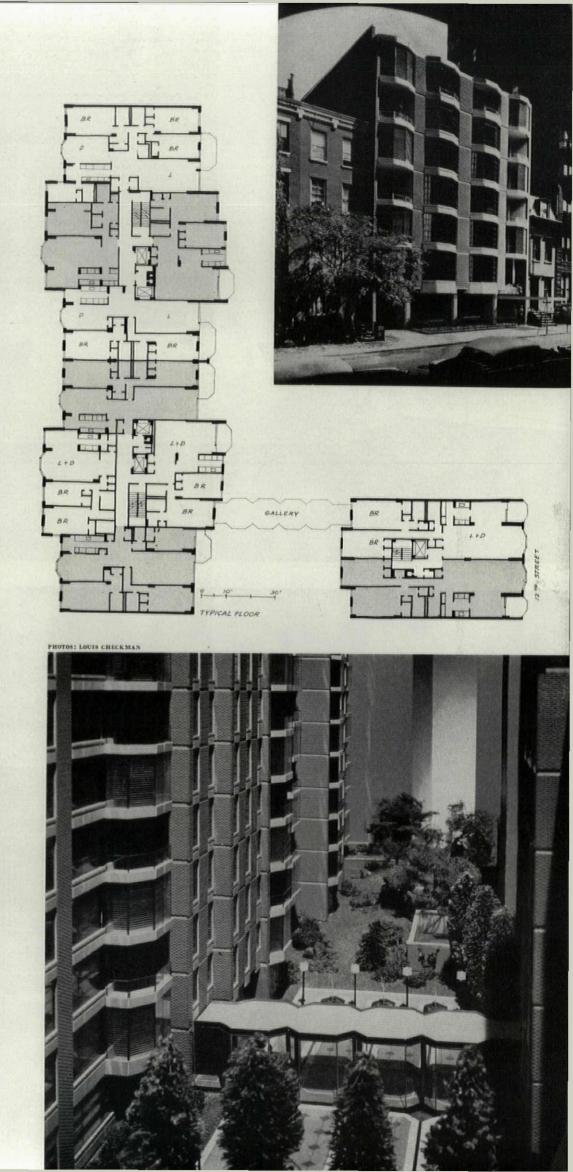
Land (30,000 square feet at owner's valuation of \$45 per square foot)\$1,350,000 Estimated construction costs (including all fees, sales, expenses, and builder-owner's construction profit)4,900,000

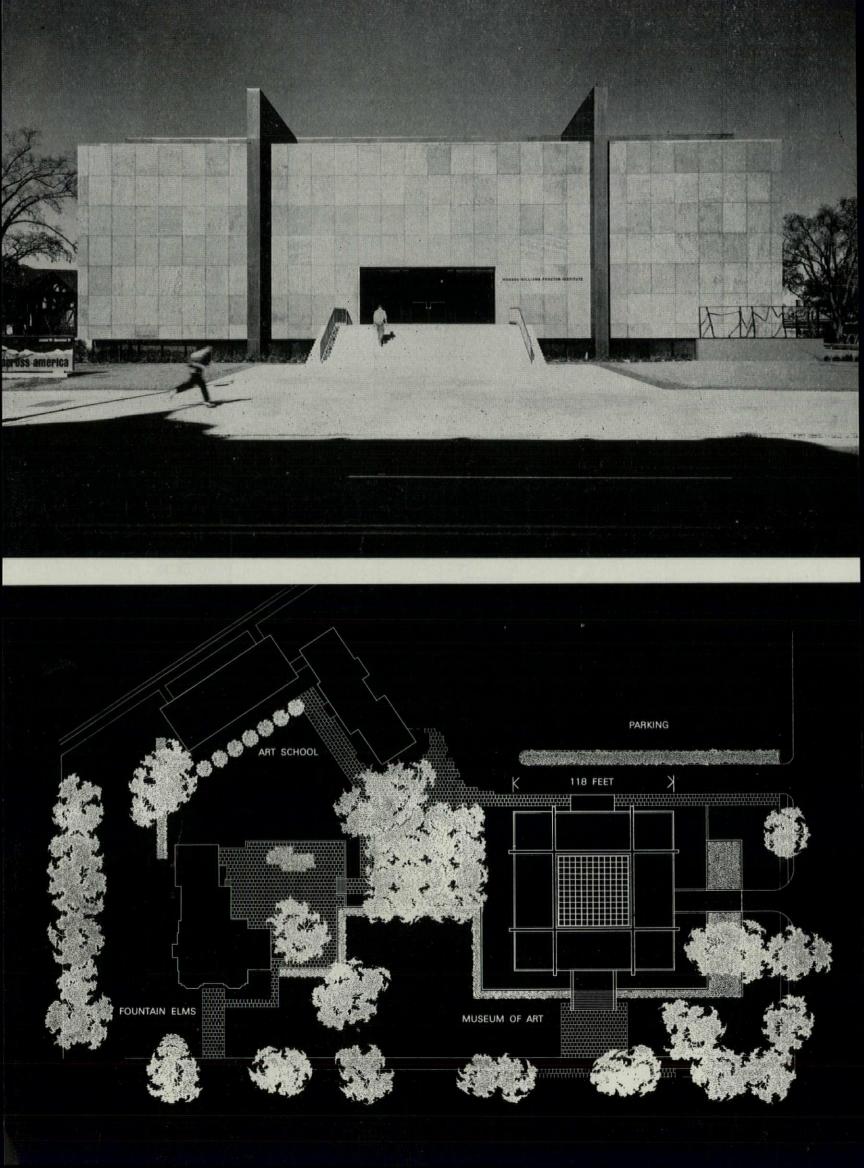
Total costs\$6,250,000

Total\$6,250,000

Clearly the land is a major factor in the economics of Butterfield House. Against the 102 units in the building (excluding the superintendent's apartment), land averages \$13,200 per unit, or 21 per cent of the total cost of \$61,300 per unit, including the shared costs of the lobby, garden court, elevators, corridors, and the 40-car basement garage.

In selling this building as a co-op, the builder will immediately realize whatever profit he will make as the contractor-owner-builder including whatever increment in value may be present in the land over the cost of assembling it. In this respect Butterfield House is a project with all of the capital profits from its construction realized upon its completion and sale—a completely different financial venture from the Upper East Side rental building (pages 86 and 87) in which all of the profits remain locked up in the structure.





The perfect, professional museum

Designed by an erstwhile museum director, Utica's sumptuous art institute is a blunt windowless box hung on four great girders.

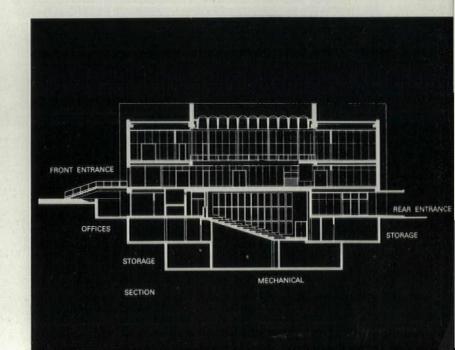
The new museum of art in upstate New York bearing the fusty family name, the Munson-Williams-Proctor Institute, is itself quite a formal sight from Genessee Street, where Utica's haughty old mansions try not to notice the creeping used-car lots. The museum's exterior is a rich blunt box of emphatic Canadian granite with elegantly exposed structural members: eight immense bronze-sheathed columns climb the walls and turn into deep exterior girders spanning the rooftop. This arrangement indicates clearly that there are no major interior supporting elements to break up the inside of the box. But what is not visible until a close approach is made is that the ground floor (sunk below the entrance-photo, right) is walled with a ribbon of glass, in effective contrast to the blank façades of the windowless galleries which hover above.

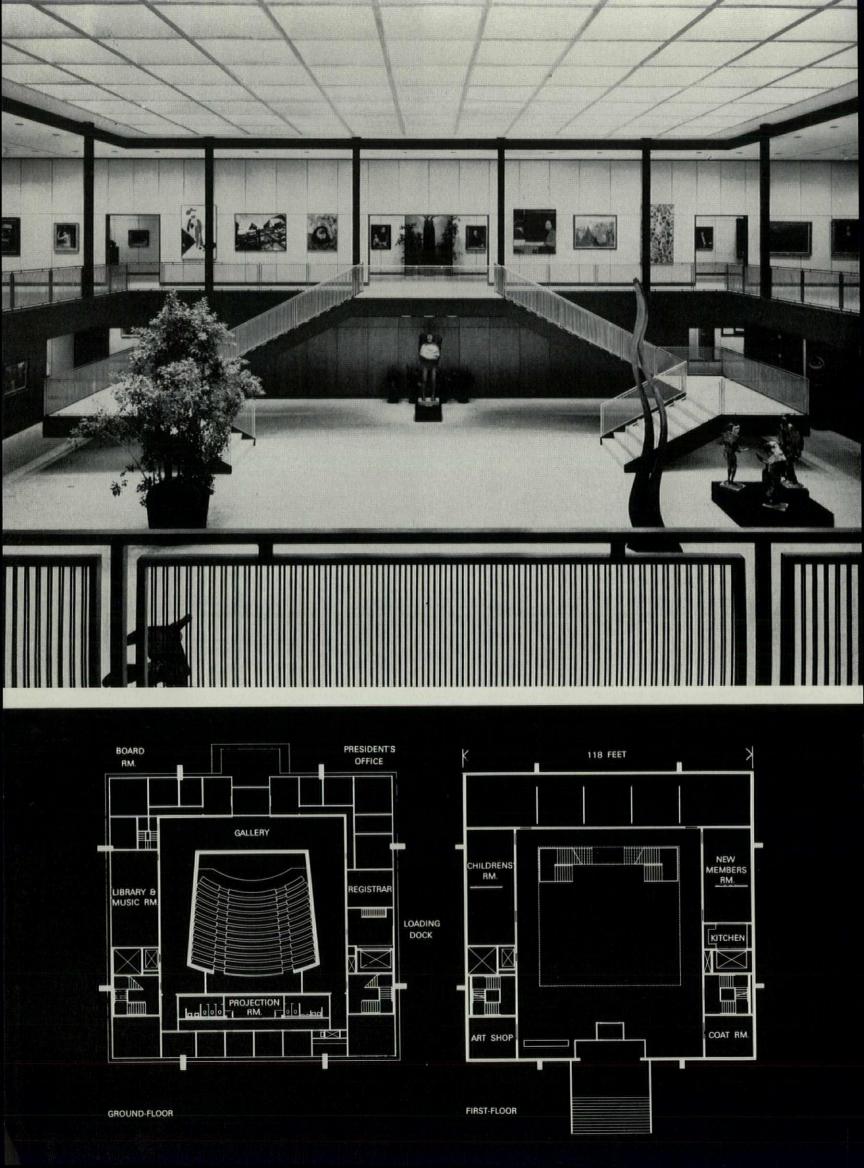
It is not the function of the institute that is unique, but its home and equipment. Like other small community institutions, it is intended not just to display artworks but to perform the mesmeric task of widening an interest in visible culture. Utica is a grim, tough, small city, a part of the world where art has been, until now, for the few, not the many. The environment provided here cost an astonishing \$5 million, it is estimated, but it is already working: in the first three weeks the institute was open the many turned out; a total of more than 43,000 people in this city of 100,000 thronged in to see the building and its contents.

Most of the people who entered were astonished, which is not surprising, for the architectural heritage of Utica,



Dry moat at the front of the museum permits the ground floor to be glass-walled for day-lighting. This level, one floor below the entrance level, sits atop two still lower floors containing ample storage and service spaces and the downward slope of the theater's scating. In the site plan on the facing page are shown the other buildings of the group: Fountain Elms, a beautifully restored old mansion (see also page 94), dating from 1850, and its immense stables, remodeled into a thriving community art school.



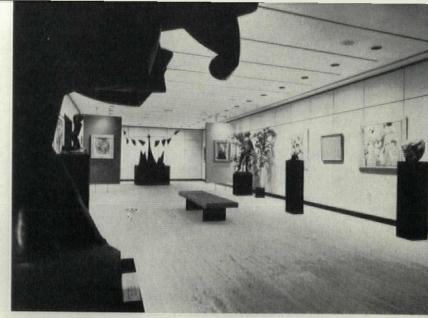


Great central hall with its skylit ceiling is the hub of the first- and second-floor galleries which surround it. As they wander from gallery to gallery, visitors use the hall as a reference point and never get lost.

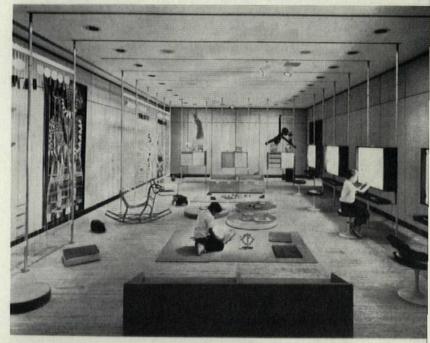
such as it is, is far softer than this sharp building. It was the Erie Canal, the original New York Thruway, that created the town's prosperity, long before the Civil War, and architecturally this solvency was expressed mostly in flossy houses with vague European accents. But the museum trustees brought one of the world's most sophisticated architects, Philip Johnson, to the scene.

An old museum-hand himself, director for 22 years of the department of architecture and design at the Museum of Modern Art in New York City, Johnson was asked to provide this structure with unrivaled facilities not only for pondering art silently, but for participating. For instance, a visitor to this museum will shortly be able to take a transistor radio in his hand, and, as he walks from gallery to gallery, hear the meaning and message of the paintings murmured to him by the persuasive voice of the museum's young director, Richard B. K. McLanathan. What is probably the best small theater and concert space in upstate N. Y. is another part of the museum. There is a completely equipped children's gallery, where the young can work at art on newly devised light racks (middle photo, right). The building's shops and storage space would make most museum directors gasp with envy-even the subbasement turned out to be available as a fine place for a banquet on opening night. (And small wonder, as they say upstate; if Johnson's new wing for the Museum of Modern Art in New York could command the per capita expenditure that was put into the institute for the people of Utica, the architect would have about a half billion dollars to build with on Manhattan's East 54th Street.) The building is better equipped for TV, in wiring and lighting, than some small TV stations. Most of all, the museum itself, in all its facilities, is a significant statement of Johnson's ideas of the right way to look at art.

Johnson has defined today's most popular kind of art environment, the Museum of Modern Art type, as basically loft space, in which the museum director constructs his show on walls he himself moves into place, within an amorphous off-white, bland atmosphere. But this architect no longer believes that art exists best in an



Gallery at the back of the museum on the main level is long and low. It is entered from the great central room (facing page).



Children's gallery is one of the new museum's most popular features, equipped to the hilt with artfully selected creative toys and games.

Auditorium, steeply seating 300, is used for talks, chamber music, and plays. The entire backstage wall is a motion-picture screen.



environment vacuum. In Utica he has designed an interior which is always with the visitor, tensely quiet in its symmetry and taut order. The gallery walls are measured, defined, marked in a module with a toothgritting insistence on preserving scale—instead of surrendering supinely to the imagery of the art. Johnson's discipline begins with the rhythm of panels which compose the permanent partitions; around each panel a dark line is etched into the plane. Canvases are controlled by these lines, powerfully if discreetly. Paintings can not be hung carelessly; they must either be properly on the pattern or defiantly off it—and if they are off it the dynamism had better be perfect.

Then there is the matter of the lighting. The galleries are windowless, artificially lighted. Appropriately, because the museum is used a great deal at night, this arrangement does impose a further discipline on the display layouts because the lights are arranged in very orderly and somewhat insistent patterns in the ceilings. But even beyond these two influences toward order there is the over-all characterization of the interior, which stands for no nonsense. Partitions, stairways, rails, and other building details are assertively perfect in their simplicity. It seems certain they too will silently shape the exhibition plans into a symmetry equally severe.

The dominant architectural feature of the interior, beyond this stressed skin of taste which prevails throughout, is an immense, exquisite entrance hall, flooded with daylight from a skylight overhead. The room performs what Johnson calls the locating function. No visitor to this museum can ever get lost, wandering on from one gallery to another, because he always has this immense space at his shoulder to refer to. The entrance hall's own sculptural feature is a suspended double stairway. Around it a mezzanine is suspended from the roof. The information desk is in this room; the museum store opens off it. The space is intended primarily for architectural effect but is also to be used for sculpture and, superbly, as a space for such varied functions as garden shows, theater in the round, and formal balls.

Both Johnson and McLanathan know the museum is a challenge to a director, but McLanathan is in Utica to accept several sets of challenges—he picked this post over more conventionally renowed directorships available to him. "If a museum is difficult," he points out, "making a show hard to hang, there are usually very bad architectural reasons: vulgar details, poor shapes, clumsy ostentation. But here we have nothing to contend with but quality."

MUNSON-WILLIAMS-PROCTOR INSTITUTE, Utica, N. Y. ARCHITECT: Philip Johnson Associates. Supervising architects: Bice & Baird. Structural Engineer: Lev Zetlin. MECHANICAL ENGINEER: Fred S. Dubin Associates. General contractor: George A. Fuller Co. Acoustical consultants: Bolt, Beranek & Newman. Lighting consultant: Richard Kelly. Interiors: Knoll Associates, Inc. Lettering and Design: Elaine Lustig. Landscaping: Charles Middeleer.

Upper gallery around the big central room is suspended from the large reinforced concrete trusses which stretch above the roof. The stiff hangers, sizable steel sections, are painted charcoal, as is the fascia of the balcony.



Fountain Elms, originally the home of one of the founding families of the Munson-Williams-Proctor Institute, was designed by Architect William W. Woollett Jr. of Albany, and completed in 1850. It has been restored impeccably, even to obtaining new rugs woven in England to century-old patterns.



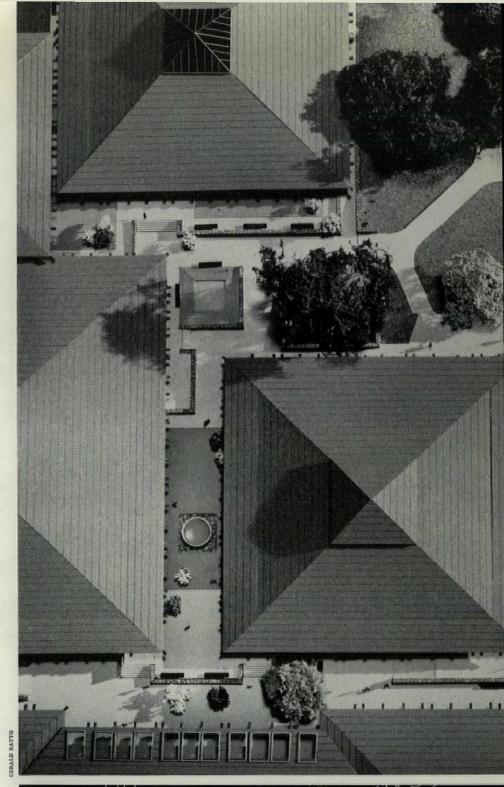


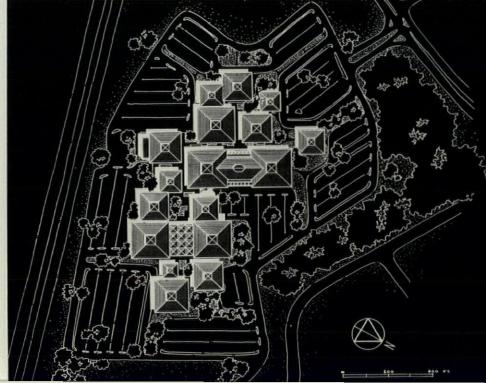


The humanist architecture of John Carl Warnecke

BY ALLAN TEMKO

Del Monte shopping center for Monterey is the latest, largest, and perhaps the most successful project to be based on Warnecke's clustered-square theme. The center will ultimately provide 450,000 square feet of rentable area. To help give this huge development human scale, it will be broken down into groups of shops arranged in a carefully studied "random" pattern and separated by intimately landscaped malls. The smallest building is 90 feet square; the big department store (barely visible at bottom of photo) consists of two 180-foot squares and a connecting link (for more details see page 99).





Although his practice is booming and his buildings are bigger, the emphasis remains on human scale and shelter.

When one of the choice commissions of the year—a wonderful challenge to design for exotic Hawaii the nation's first modern state capitol—was awarded last month to John Carl Warnecke & Associates, there may have been chagrin, but scarcely surprise, among the several prominent firms which also competed for the job. For it is no secret to leaders of the profession that the young San Francisco firm, headed by astute, vigorous, 41-year-old John Warnecke, has suddenly become a force to reckon with in U.S. architecture.

In less than a decade Warnecke's small Bay Region practice has been powerfully transformed into a broadly diversified national, and even international, architectural and planning operation. His staff has grown from six to 60—to as many as 90 during peak moments—as projects of exceptional variety, ranging from primary schools to large-scale civic design, have poured into the office from places as widely separated as Indiana and Bangkok, During the same week in which the commission for the \$10 million Hawaiian capitol was received, other work amounting to \$15 million in construction also came to the firm.

What makes the phenomenal rise of the office significant, however, is not mere bigness but rather Warnecke's pragmatic response to the esthetic problems caused by rapid growth. Throughout the period of prodigious expansion the quality of Warnecke's architecture has steadily improved until now it seems capable of making a substantial contribution to the contemporary movement.

Warnecke is pre-eminently a child of the Bay Region, who soon after the war established himself as one of the most gifted members of the local humanist "school." His informal redwood buildings carried on the tradition founded before the turn of the century by the late Bernard Maybeck and other pioneers, and then continued by a second generation of Bay modernists led by William Wurster who, understandably enough, regards Warnecke as a worthy defender of the indigenous heritage.

As a member of the third generation, Warnecke characteristically has never believed in the existence of a formal "Bay Region style." Rather, he considers the movement, if it is actually a movement, to represent only a common approach to architecture.

It is precisely this approach, loosely formulated as it is on the twofold premise of local truth and continuity, that Warnecke is trying to extend to the operations of a large office. How skillfully it can be used away from home Warnecke has already demonstrated in his celebrated design for the Bangkok embassy (page 103): a white, airy pavilion rising from the waters of a *klong*, much like an old Thai palace, in a graceful gesture of romance.

At home in California, he has used the approach even more convincingly, rarely resorting—as he did with some justice at Bangkok—to open structural decorativeness, but showing the same unmistakable respect for sun and site. First hitting his stride as a designer in the fine Mira Vista school of 1951 (page 98), which climbs the El Cerrito hills in tiers

of classrooms covered by broadly slanting roofs which open in great skylights, Warnecke exhibited a feeling for terrain and shelter so spontaneous and sound that he seems almost to have contended physically with the land. "Jack," remarked one of his associates, "is a visceral architect. It gets him deep inside; he simply *feels* a concept is right, and the thinking comes later."

Careful thought did follow. The Mira Vista parti contained themes which have preoccupied the office ever since: the quest for shelter expressed in big hovering roofs; the development of large, light, and often exhilarating interior spaces; imaginative use of native redwood with concrete and other industrial materials; and above all, emphasis on human scale, which Warnecke has usually sought by means of open galleries and long trellises, and little plazas and patios, which have been traditional in California architecture since Spanish times.

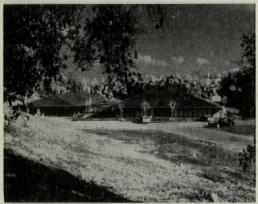
The great hipped roof

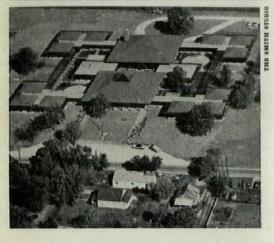
Throughout the fifties Warnecke and his young associates explored these themes in a whole series of big-roofed structures, most often in intimately joined complexes of such structures, linked together by low colonnades and gardens. They tried all kinds of roofs: pitched, hipped, and evenin the University of California dining halls-very unfortunate concrete shells whose turned-up corners gave them an Asiatic look. Site plans varied from the tactful informality of the Ladera shopping center (page 98) at the foot of a Palo Alto hill to the beautifully ordered cloistral symmetry of the East Side school in the prairie town of Columbus, Ind. (page 98). Each building usually has shown some improvement over the last; and the experiments of the fifties have now yielded-in the remarkable Del Monte shopping center which soon will be built at Monterey-a creation of unusual strength, serenity, and kindness which is one of the outstanding designs of the office to date (left and page 99).

Beneath their great hipped roofs, which will be "shingled" with large transite panels so that they will appear as subtle expanses of soft gray on the wooded slope, the six buildings of this shopping village should live in the landscape with the calm veracity of a little medieval market town. Here, as on every one of the lovely hillsides where he has had the good luck to build, Warnecke has reduced grading to a minimum, allowing the structures to find their spacious dimensions on the lifting terrain. Although the buildings are large—the main department-store structure particularly, with its long galleries flowing beneath the two tremendous roofs at either end, is vast—the scale is everywhere intimate and modest. For the pedestrian, strolling through the T-shaped mall which changes level continually in short flights of steps and terraces, enlivened by fountains and low masonry walls, and shaded by the generous eaves of overhanging roofs, it should be one of the most pleasant places to shop in the entire U.S.

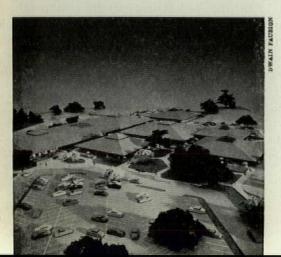
Del Monte achieves what is so rare in our commercial environment: the civilized combination of variety and order, richly at home in nature. Its deceptively rural-looking structures reveal how warmly industrial technology can be shaped







Del Monte shopping center at Monterey (below and opposite) with its pattern of square buildings and friendly courts springs from a long line of antecedents, including (above, top to bottom) the Mira Vista school at Richmond (1951), the Ladera shopping center (1957), and the recently dedicated East Side school in Columbus, Ind. Their intimate scale, broad sheltering roofs, and close integration with the terrain are all Warnecke trade marks.



to human needs. Few large complexes today have been so engagingly put together from both native and industrial materials. The redwood trusses which span the large interior spaces come to rest on precast, prestressed concrete beams, which in turn are supported by precast concrete columns.

The detailing of these concrete members, which will be sandblasted to expose the aggregate, is worth noticing. Like Maybeck in the famous neo-Romanesque concrete piers of his Christian Science Church of 1910-1912 in Berkeley (which also support heavy redwood timbers), Warnecke has allowed a gentle rhetoric to play over the structure. Yet the brilliant corner detail, in which the cantilevered ends of two beams join neatly beneath the broad overhang of the roof, is just one example of the essential sensitivity of that structure. Maybeck, too, used asbestos siding on his church, as Warnecke has half a century later on his roofs. In no sense, then, are these revolutionary structures. They represent only a thoughtful confrontation of the realities of a place and time, and this is one way of saying that a style, even one so vague as the Bay Region style, has come fully of age.

The shopping center may well prove to be one of the chief works of the movement, and yet-and yet-in some crucial respects it sacrifices objective structural clarity to subjective emotion. Although the lightweight exterior colonnade of the large department store, for instance, seems to be taking the full thrust of the roof, the roof is in fact supported largely by interior columns unexpressed on the outside.

Toward structural clarity

Happily, in another group of significant buildings, the Warnecke firm seems to be moving precisely toward such a clarification of means and ends that structure-the supreme resource of the architect-alone can provide. Although they have not worked much in steel, the excellent little clear-span pumping station they have done for the East Bay Municipal Utilities District in Walnut Creek (page 103) is admirably forthright in its display of interior space. And in reinforced concrete the proposed campus of the College of San Mateo (inside fold) will stand as an example of the firm's ability to develop a large complex around a formal structural concept, and yet take sensitive advantage of a remarkably beautiful, irregular site.

Just 15 miles south of San Francisco, the college has an emplacement of natural splendor of the kind fast vanishing in urban California: 153 acres of rolling terrain scored by deep ravines, dotted with oak and eucalyptus, and commanding a magnificent view of the Bay. Nevertheless the prevailing winds, for which Warnecke invariably shows healthy respect, can be chilling; and therefore the college turns inward for protection toward the spine of the hill, which serves as a tree-bordered mall along which the low buildings are laid out in colonnaded courts. A secondary mall, crossing the central axis about one-third of the way from the gymnasium which closes the vista, extends between the library and the arts center.

On these axes the buildings and grounds are laid out as formally as on ruled paper, according to a 16-foot module. But the effect is much freer than if the college stood on (text continued on page 103)

flat ground (as Mies's Illinois Institute of Technology does), for both axes have perceptible grades—the long one, in fact, is rather steep—and the buildings and courts come into view at slightly different levels as they are approached. Nevertheless, the modular discipline is there, and the resulting sense of order is welcome. It gives dignity and coherence to a junior college which otherwise might have the mood of a large high school.

The buildings, too, have been treated with deliberate monumentality; and for this effect Warnecke has once again relied on impressive roofs to provide unity and strength. These roofs, however, are an exercise in the potential elegance of concrete—not quite the jewel-like elegance of Minoru Yamasaki's MacGregor Hall at Wayne State University (which Warnecke apparently has given a long glance), but rather an elegance based on the light but persistent beat of the 16-foot structural module traveling through building after building in deftly organized perspectives.

The roofs, if they are executed with the same lightness as in the models, should be the most successful thin concrete coverings yet built in the Bay Region. Except for the basilican library, which will be roofed with 16-foot-square precast hyperbolic paraboloids, the buildings will be covered with long poured-in-place folded plates which terminate in hyperbolic-paraboloid shapes—a very neat cornice detail. The interior spaces, particularly beneath the two-story-high vaults of the library reading room, should be remarkably clear and direct.

Will these buildings be rather dry, rather cold, for all the plasticity of their flowing roof lines? Much depends on the final detailing: the delicacy, for example, of the precast concrete sun screens which will shield the glass sides of the library on the east, south, and west. The main distinction of these buildings is that they mark the development of a new fluency in the structural language of the twentieth century, which until now has been spoken competently in the Bay Region by too few of its leading architects.

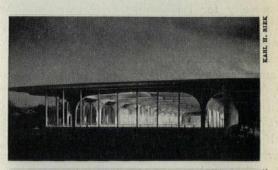
Truth and continuity

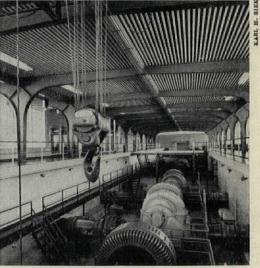
Yet Warnecke again and again prefers to return to the theme of continuity, and if the College of San Mateo occupies a virgin site, the old San Francisco theological seminary (left) on its round hill in Marin County, whose campus he is now expanding, is about as venerable as any institution in the Region. The burly Romanesque buildings, in heavy battered masonry of the late nineteenth century, have a stubborn residual strength which is exactly the kind of environmental stimulus Warnecke likes best. Here he quickly saw—felt—the crowded site as a little Mont-Saint-Michel, on which buildings are clustered to the side of the hill beneath a dominant church, as in an ancient monastic establishment.

In the first structure he has completed for the seminary, a long, slender, triple-decked dormitory for single and married students (not shown) which rises at the base of a hill (to which it is connected by bridges), Warnecke once more has keenly grasped the essence of a site. In the buildings which will follow in the long-range construction program, his appreciation of the need for continuity may become a



Bangkok embassy (1956) with its open structural decorativeness was a forerunner of the kind of buildings Warnecke is today proposing for the San Francisco theological seminary (left) and the San Mateo junior college (inside fold).





Utilitarian architecture: the pumping station at Walnut Creek, Calif. (above), and the state office building in Oakland (below) illustrate the care that the Warnecke office gives to the design of more ordinary buildings. The pumping station is notable for the forthright and economical display of its handsome steel structure; the office building for its dignity and low cost: \$16 per square foot.



KARL H. RIR

model for undertakings of this kind. For he has not been afraid to mount the airy reading room of the library on top of a fortresslike masonry block which will contain the stacks, and which will be pierced only by tall windows that admirably repeat those beneath the round Romanesque arches of the older structures nearby.

The flexibility of the Warnecke approach, his modest readiness to turn to traditional forms for the sake of harmony, his reluctance to embark on hazardous trails when a proven path will take him to the destination as swiftly, are all qualities which deserve the highest commendation when modern architecture seems increasingly eager to turn to novelty for its own sake. Equally praiseworthy is his quiet acceptance of jobs which most offices of national stature would disdain. Throughout the Region there are literally dozens of unprepossessing buildings for which Warnecke has been responsible, such as the new state offices in Oakland (page 103) that cost only \$16 per square foot. These Warnecke frankly concedes are far from masterpieces but "are better than if they were done by those who only half try." This is the great no-man's land of the present environment, and a crucial area which the profession would do well to explore.

In a sense, Warnecke has no choice but to accept such projects, and even to seek them, for he is the son of an architect who has given half a century of steady service to the community in exactly the same way. John Warnecke's father, Carl I. Warnecke (69), founder of the firm, is still actively collaborating with his son and associates on projects for clients which were formerly his. (This work is done under the signature of "Warnecke & Warnecke.") Young Warnecke appreciates the unassuming but solid foundation which his father's conservatism has prepared for his own tremendously ambitious practice. Commissions have come to him-particularly educational and governmental work-which might not ordinarily have come to a young architect. Many of these jobs continue to be executed with something less than daring, but the richly calibrated shell vaults of the new Oakland airport (right, below), bending gracefully above a spacious arrivals room which will be beautifully lighted by clerestory windows, show how great a swell is rising in American architecture as it moves from generation to generation.

The world is changing, and the Bay architects, Warnecke among them, are adventuring outward from their port of San Francisco. Far from home he is building a capitol for Hawaii* as well as an embassy in Thailand and, still another exotic commission, an office building for the American International insurance organization, which will stand opposite the moat of the Imperial Palace in Tokyo.

But it is at home that the main struggle continues—a struggle ever self-renewing, for, once it is over, modern architecture will have lost its raison d'être as a civilizing force. Whole new universities remain to be planned, such as a new 27,500-student campus for the University of California for which Warnecke (in association with City Planner Lawrence Livingston Jr.) is now engaged in finding a site

* Associated with Belt, Lemmon & Co., Island architects, planners, and engineers,

in the northern part of the state. Doughty Sacramento (FORUM, Oct. '60) must be made into a capital worthy of such a state; and Warnecke here, too, has been given the responsibility of developing a sane plan for its immense governmental building expansion program. In San Francisco itself Warnecke has had a hand—though not a free enough one, unfortunately—in designing the large federal office building which is going up in the civic center.

But other towers, much finer ones, are to come. Although Warnecke was only runner-up in the great Golden Gateway competition (his imaginative proposals, opposite, lost to a remarkably similar concept by Wurster, Bernardi & Emmons and DeMars & Reay), there now seems to be a good chance that his office will design one or more of the high-rise buildings after all. If his original scheme for the apartment towers revealed some unfamiliarity with the needs of a tall building (details of the floor plans, for example, were muddled because of a desire—laudable in itself—to give the apartments the informal pattern of a redwood house), there was no doubt of the strength of heart behind the proposals.

Organization for freedom

As its staff and its projects continue to grow in size, the Warnecke office may be showing the way to a new kind of design philosophy, permitting extraordinary freedom of expression to individual architects within the framework of a large organization.

The Warnecke approach differs considerably from both the "group practice" of large firms like Skidmore, Owings & Merrill and the essentially "one-man" creative brilliance which distinguishes the work of so passionate an individualist as Eero Saarinen, who in fact relies heavily on a staff larger than Warnecke's. Instead, although he of course exerts the final authority, Warnecke sits as chief peer in what might be called a democratic assembly of designers so youthful as to seem almost boyish. Yet each in his own right is an extremely able architect and already accustomed to responsibility. Neill Smith, although one of the youngest (32), is undoubtedly the most talented designer of the group. Next comes Lun Chan (33). Other gifted designers include Morton Rader (34), Rai Okamoto (33), and Eugene Wedell (30). Only Charles D. Wiley, a former S.O.M. associate partner with broad experience in urban renewal and other very large projects, at 44 is three years older than Warnecke himself.+

If anything unites these men, who come from strikingly dissimilar backgrounds, it is the over-all freedom from dogmatism which animates the Warnecke office. Yet in architecture, as in politics, certain obvious dangers reside in pure libertarianism. The absence of strong ideological control may mean the lack of any central ideological direction at all. But this risk, in a sense, is the historical American risk, which has never found more fervent advocates than on the easy hills overlooking San Francisco Bay.

[†] Associated with the designers on commissions are the project managers who are responsible to the clients for the execution of the jobs from beginning to end. Senior among them are Robert Hart, Robert Weber, Richard Armour, and Eric Essex. Administrator for the entire office is Albert Hoover, assisted by Morton Schaffran and Eric Nielson.

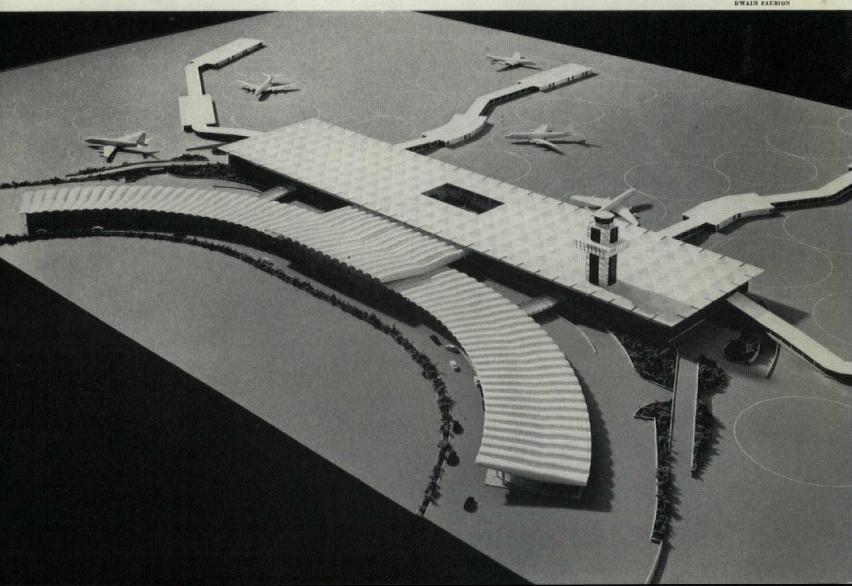


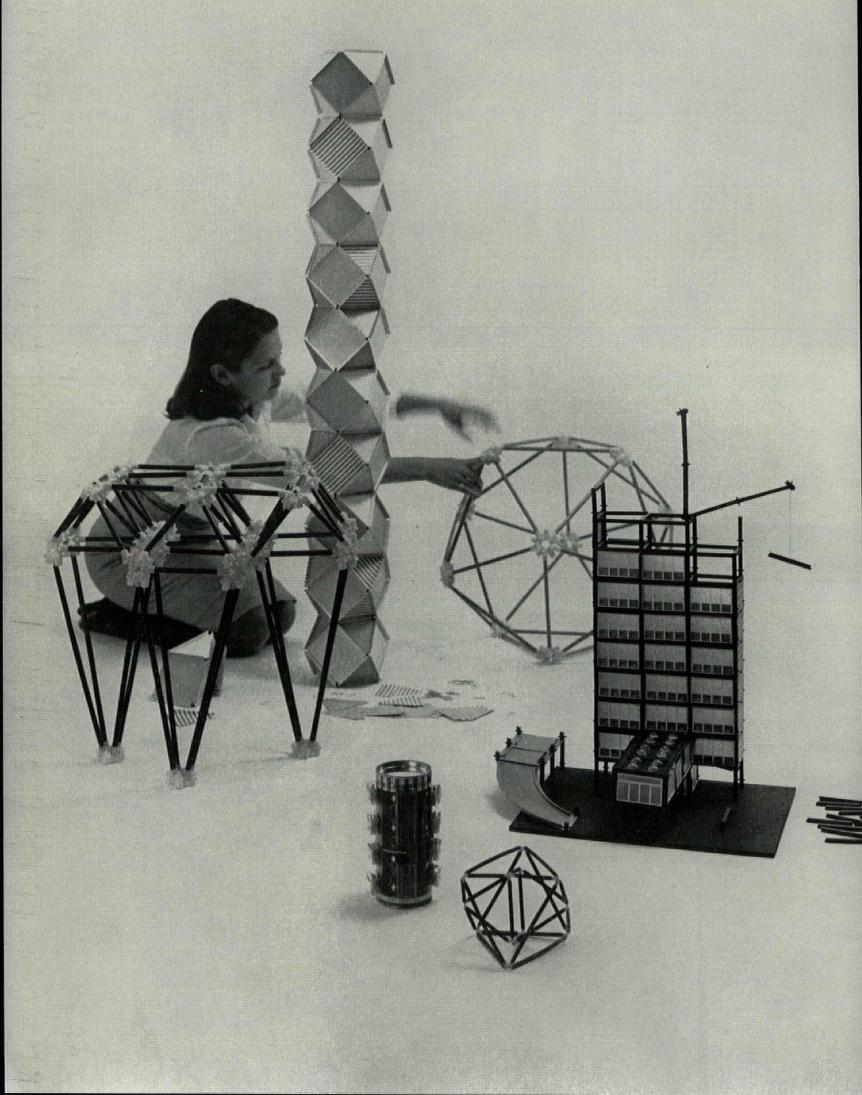
CORDON SOMMERS

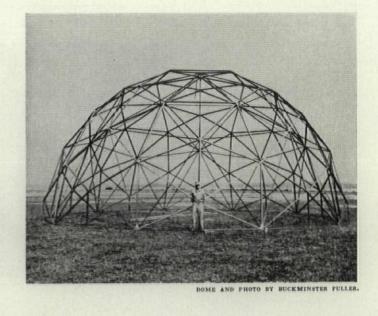
Golden Gateway project for San Francisco: although Warnecke's competition entry was finally rejected, he will probably be invited to team up with the winning architects.

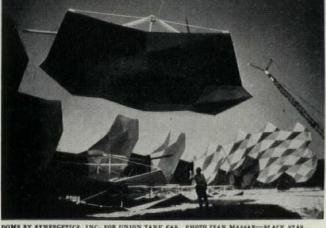
Oakland International Airport: as in all of Warnecke's buildings, the roof is the thing. In this case, a series of curved concrete shells over the ticketing building will be played against the huge waffle roof of precast concrete vaults over the terminal facilities.

DWAIN FAUBION









Toying with architecture

Construction kits for Christmas make fun of new ideas in building design.

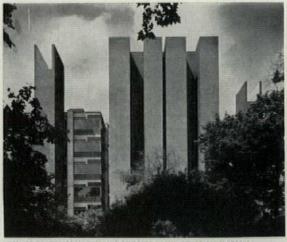


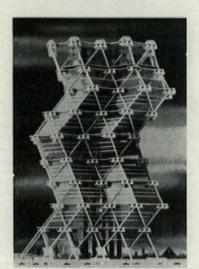
PHOTO EZRA STOLLER



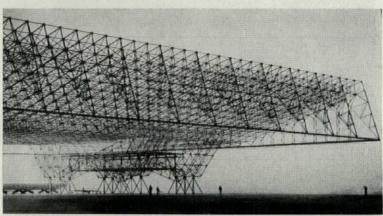
Modules for moppets (clockwise from left): a space frame of colored "Poly Rods" and plastic connectors (\$2.98 to \$9.98; Modular Fabrications, New York, N. Y.); a faceted tower of cardboard "Flexagons" joined with rubber bands (designed by Seattle Architect Fred Bassetti; \$2 to \$10; Forde Co., Tacoma); more "Poly Rods" forming a geodesic dome; Miesian office building and turnpike ramp made from plastic "Girder and Panel" kit* (\$2.50 to \$20; Kenner Products, Cincinnati); a bendable ball of plastic "Gismo" straws and connectors beside its exterior-display tube* (98¢; Wm. Knox Products, Cleveland).



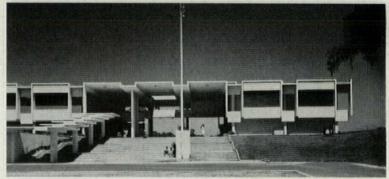




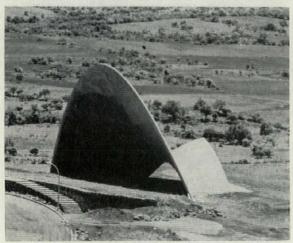
SKYSCRAPER PROJECT BY LOUIS KAHN. PHOTO UNIVERSAL ATLAS CEMENT.



MOBILAR" HANGAR BY KONRAD WACHSMANN.

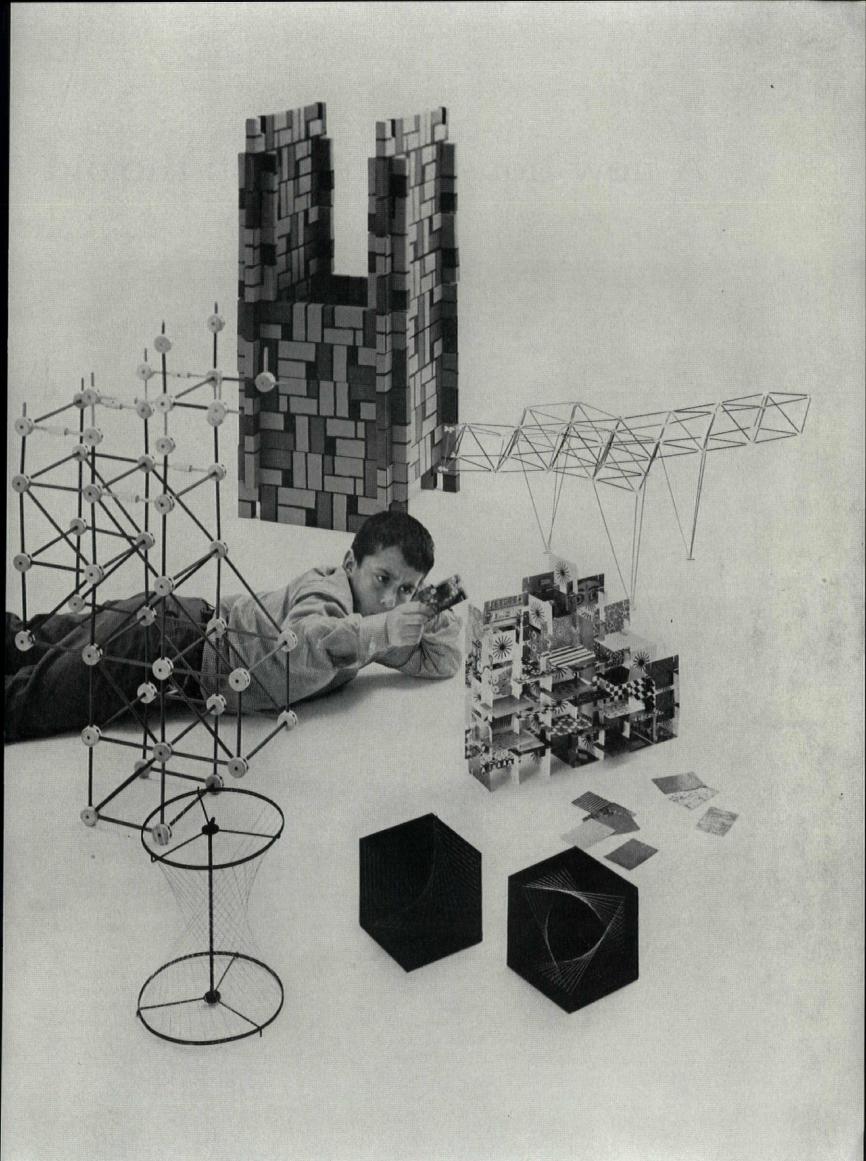


HIGH SCHOOL, SARASOTA, FLA. BY PAUL RUDOLPH. PHOTO EZRA STOLLER.



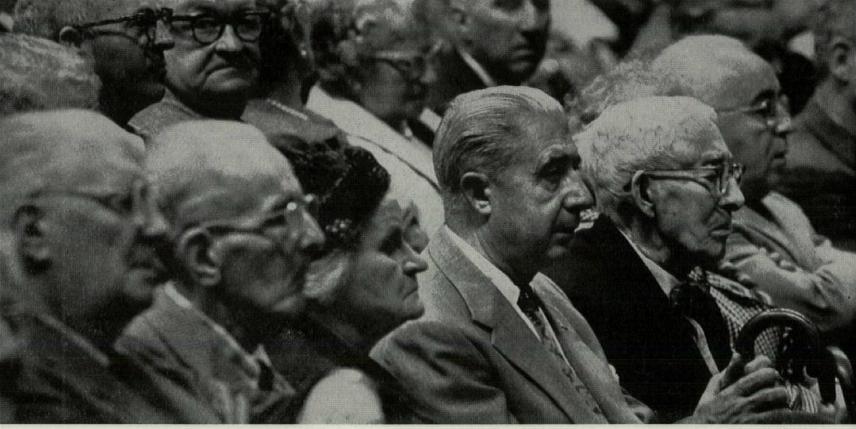
CHAPEL BY FELIX CANDELA, ROSELL, AND LAROSA. PHOTO GEORGE CSERNA.

More construction for kids (and parents): a "Tinker-toy" skyscraper* (59¢ to \$5; The Toy Tinkers, Evanston, Ill.); a sturdy cardboard structure of "Blockbuster" building boards (\$7.98; Brrr Products, Hasbrouck Heights, N. J.); a spaceframe hangar section of "Geo-D-Stix" (98¢ to \$6.98; Northwest Vocational Sales, Yardley, Wash.); Designer Charles Eames's brightly patterned, slotted "House of Cards" (98¢; Tigrett Industries, Jackson, Tenn.); three "Space Spider" and "Space Geometrics" designs of glowing elastic string, woven on perforated black boxes and rings (from \$2.95; Cooper Bros. Co., Port Washington, N. Y.).



A new housing market: the old

BY WILLIAM C. LORING



BOB COMEL-LIFE

America is belatedly awakening to the housing problems posed by the rapid aging of its population. Next month, Dwight D. Eisenhower, in one of his final functions as president, will convene the long-heralded White House Conference on the Aging, and housing will be high on the agenda.

Timely, therefore, is this article which explores the dimensions of the problem in terms of dwellings and dollars and suggests an approach to its solution. A second article, to be published in a subsequent issue, will detail and illustrate specific solutions.

William C. Loring is a highly com-

petent analyst and author in this field. As research and executive director of the Housing Association of Metropolitan Boston Inc., he proposed and helped obtain adoption of the Massachusetts program for housing the elderly. With Robert Woods Kennedy he coauthored the book Standards of Design: Housing for the Elderly. In 1952 he earned his doctorate in sociology at Harvard and later was visiting lecturer in city planning at the Harvard Graduate School of Design. Currently he is sociologist of the general planning and research department of the Prudential Insurance Company of America .- ED.

The market is big, but it will remain merely a potential market until the industry begins designing apartments and houses to meet its very special needs.

During the sixties and beyond, the housing market for citizens in their sixties and beyond will be big. Many architects, developers, and rental managers will switch from their present concentration upon housing for young growing families to the several types of quarters suited to the elderly.

In the last decade the number of people in the U.S. over 65 increased 30 per cent. The number today stands at 16 million and will approach 21 million in 1975. Although they account for slightly less than 9 per cent of the national population, the ratio ranges between 10 and 18 per cent in many older cities and suburbs. Six million of them are "heads of families" who are in the market for accommodations for two or more persons; 3 million more are in the market for single-person housing. Indeed, the elderly now constitute onethird and one-fourth respectively of all one- and two-person households, and these small households represent about 40 per cent of all the consumer units in the average metropolitan area. The importance of the elderly in the national residential market is brought into sharp focus by the realization that they make the market decision for every sixth dwelling unit rented or purchased.

Big as this market is, it is at present only a potential one. To cater to it and to capitalize on it, the building industry has several basic facts to learn:

- The elderly make up several markets, not one.
- They are as status conscious as any other element in the market.
- They are only the forerunners of a much larger group of leisure-oriented consumers for whom the industry must rethink its product.
- ▶ They require more persuasion to move and buy or rent—to a much greater extent than the younger, spacecrowding, growing families.
- Successful merchandising to this group will require architecture and site planning which reflects all these factors.

Traditionally in rural cultures throughout the world, upon reaching the years for retirement, land owners never relinquished management of it to their children until they had established for themselves some definite dwelling arrangement for their later years. Despite many interesting local variations, this reliance on earned, independent shelter, sometimes close to and sometimes separate from younger relatives, was to be found from China to Ireland and across the seas to this country.

The big demand

In today's mobile urban culture the same desire to continue independent living arrangements is found among the 69 per cent of the aged who now live independent of others. (About 44 per cent are married and living with their spouse; 11 per cent have other relatives living with them; 14 per cent live alone.) Another 25 per cent, mostly women, live in the households of other relatives or of unrelated persons. The remaining 6 per cent live in institutions, nursing homes, and the like.

According to the Federal Reserve's 1955 Survey of Consumer Finances, almost two-thirds of all "spending units" headed by someone 65 or older own their dwellings; almost a third pay rent; the small balance make other arrangements for their shelter. The cost to the elderly of home ownership ranges from 11 per cent of their income in small cities to 25 per cent in large cities; the cost to renters runs from 17 to 30 per cent. The housing that they occupy, compared to that of younger families, tends to be of lower value and to be less crowded. While their rented apartments and rooms are more centrally located, their owned houses are typically scattered like those of average owners and seem to have been purchased with their children's health and convenience in mind, not their own.

Over 3 million of the heads of senior families (30 per cent) have incomes and equities large enough to let them consider moving to other housing. Indeed, the upper fraction of elderly Americans appear statistically to be almost as gilded as the image of younger Americans. The median home owner among the elderly in 1953 had an equity of \$8,400—more than twice the equity possessed by the median of all spending units. The 6 million heads of fami-

lies were, it should be noted, much better off than the "unrelated" category of the aged, more than half having incomes ranging between \$2,500 and \$25,000. About 20 per cent of them are still full-time workers, and their median income is \$4,379.

If the older consumers' income is from some diminishing or fluctuating source, they are generally loath to make new commitments for monthly mortgage or rental charges. If, however, a fair proportion of their income comes from annuities, pensions, or life insurance endowments, and thus guarantees a minimum income level for life, they feel free to take on such obligations. Figures of the Institute of Life Insurance show that a growing proportion of those about to enter retirement will have such relatively secure incomes. Moreover, since the children of the elderly are independent, and since for most of them job-connected expenses no longer exist, the elderly can budget an abovenormal amount of income for shelter, especially if their dwellings are so located as to hold down costs of social and recreational activities. Thus, new housing skillfully designed and merchandised can be expected to compete with used housing for about one-third of the elderly market, i.e., about the same ratio as the demand for new versus used housing in the general market.

The small supply

Although new construction adds about 2 per cent to the nation's total housing supply each year, older persons do not share proportionately in it. Indeed, for an industry that can produce 1.5 million new units a year, the lack of enterprise with which it has treated potential customers in the postchildren age brackets has been shocking. The total amount of private housing for the elderly completed nationally under the special FHA programs between 1956 and March 1960 (2,146 units) was less than that produced by state-subsidized programs in Massachusetts (1,242 units) and New York (747 units) during the same years. Of course, other senior citizens were also served by new housing privately developed under conventional financing. The total, however, has been well under the annual quota of 250,000 units (one-sixth of the production) which might be expected to be designed for an elderly market consuming one-sixth of the total housing supply.

One reason why the building industry has concentrated on serving younger families in recent decades is that younger people change homes more often. In 1958 the Bureau of the Census found that 24 per cent of all people under 45 had moved in the year before. In contrast, 11.5 per cent of those 45 to 64 had moved, and only 10 per cent of the older people. These statistics indicate that the younger families (under 45) enter the market about two and one-half times as often in proportion to their number as older ones. Nonetheless, the opportunity is there for merchandizing new housing to the middle- and older-age groups in proportion to their percentage in the total number of spending units in any area.

The extent of this opportunity may be measured in terms of the change that has taken place in the typical family growth pattern. Today's elderly persons were born before the turn of the century, when life expectancy at birth was less than 50 years. At that time they expected that less than a fifth of their life would occur after their children had left home. It was customary therefore for them either to maintain three-generation households or to live out their days alone in the houses in which the children had been raised. In contrast, adults now approaching the later years not only have a greater life expectancy, but the men are likely to live 21 years and women 30 years after the last child is married. In other words, they must plan on living one-third of their married life after the children have gone-a long enough period to make special housing arrangements worth-while.

The needs defined

Up to now, however, the industry has been ineffective in enticing into the market those elderly people who can afford living arrangements more suited to their later years. This failure—or neglect—stems largely from the fact that until recently there has not been enough knowledge of the elderly market's preferences to permit the design of appealing new housing accommodations which would overcome a prospective customer's uncertainties and inertia. However, recent research results at least afford hunches on which such design can be based.

The types of housing needed for the elderly are customarily divided into two broad types: those for independent living and those for group living.

▶ Independent housing is further characterized as either dispersed or proximate; one kind disperses or scatters the elderly among younger households, the other kind brings them together in developments exclusively for the elderly.

▶ Group housing may be either institutional or noninstitutional. The former includes nursing and old-folk's homes which provide some degree of care; the latter consists of hotel or dormitory arrangements, which may allow a choice of cooking meals or eating in a common dining room, and may include some sharing of bath or kitchen facilities.

While the group housing may suit the needs of single people and some couples, the larger and certainly the more promotional area of the market will be found in independent housing.

There is no way at the moment of estimating the relative demand for the dispersed versus the proximate type of independent housing. Although the proximate type is widely needed, many people who enter the market in their early sixties are still energetic enough to want dwellings widely dispersed from any concentration of their age group. They prefer to be spotted here and there throughout a development of single-family houses on a ratio ranging from one unit in ten to one in six.

The size of dwellings

Recent research suggests that the design requirements of independent housing for the elderly (or for any other age group with an unusual amount of leisure time) are much the same whether the housing is dispersed or proximate. Therefore, for the sake of brevity, only proximate housing problems will be discussed here.

Size and distribution of dwelling units are basic elements in project design. Although single persons represent 37 per cent of the total number of elderly households, two-thirds to three-quarters of the applicants for housing built under Massachusetts' low-rent program for the elderly have been single persons. This high a ratio of demand for single-person dwellings is perhaps to be expected in subsidized projects, in view of the low incomes of

the unmarried and many of the widowed. On the other hand, among the elderly who have better incomes and some equity, and who might therefore be able financially to enter the private market for new apartment houses, couples may be expected to form the bulk of the prospects.

Another solution tried in proximate developments begs the question of the proportion of single and double units by creation of a 20 per cent supply of "one-and-a-half-person" units which can easily be adapted to either one- or twoperson use. This size unit has been found useful in the Massachusetts program for another reason: it easily accommodates a second person who may be called in to care for a single person who is ailing. Experience here and abroad indicates that about 20 per cent of the dwelling units should be designed to meet the needs of those who have some chronic incapacity which is not severe enough to require institutional care. They should provide extra space, including an additional, screenable sleeping area with its own window.

These in-between-size units also allow the management flexibility in catering to new residents. Either single persons or couples can be admitted from the waiting list, pending vacancies in the units to which they may be permanently assigned. Moreover, to the extent such one-and-a-half-person units can be permitted within the economic requirements of the plan, they allow the architect more chance to screen off the various activity areas within a dwelling unit and thus encourage the informal visiting which is welcomed by single occupants.

Although research results to date are not conclusive, it seems advisable that the distribution of the single, one-anda-half, and double units through a development should not be on a completely segregated pattern. Management experience in Florida and in the north indicates that couples prefer to be grouped close by other couples. Yet, it seems advisable to provide a certain mix of unit sizes to stimulate social activities, to reduce the sense of isolation, and to help the single person to experience informal contact with the broader range of interest which the couples often engender.

In a market motivation study which interviewed an 8 per cent random sample of the elderly in Wellesley, an upper-middle-income suburb of Boston, it was found that the widows and widowers among the home owners were less willing than the couples to consider moving to any type of new housing. The old place held for them special ties related to the missing mate, and they were disinclined to move away from such a network of memories as long as they were financially able to stay put.

Married couples were found to be more willing to move, if the new housing was within the same town. For them the old house offered no such emotional crutch. They were confident that they could jointly build new ties and symbols in the new neighborhood.

Location: no problem

To many of the aging, as to many of the middle- and upper-income people generally, the dwelling and its location are important symbols of their social and economic status. The developer of new apartments and houses too often considers only one of the three ingredients needed for successful marketing of his product to status-motivated prospects: location. (The other ingredients are design and merchandising—about which more later.)

The present distribution of the elderly and the results of preference surveys indicate a demand for proximate housing in a variety of locations. Some prefer the excitement and convenience of a city center. Others are willing to leave behind old scenes and friends and to move hundreds of miles in search of a new climate. Many of the latter group have demonstrated a taste for the seasonal shifting of location made possible by trailer parks. At present, however, most of those able to maintain an independent household express a desire to be near old friends or at least near people of like kind and interests. They do not need to be close to younger kin. Recent studies indicate that relatives keep in touch with one another and visit back and forth much more than social scientists predicted a few decades ago. Family ties in today's mobile, urban population have not been weakened so much as popularly believed. Therefore, choice of residence by the aged is not confined to neighborhoods selected by their grown children. Any site suitable for new housing investment can be merchandised to some segment of the elderly market, except one which is hilly or inaccessible from a community center.

In the same interviews there was also evidence that elderly home owners do not relish shifting to a rental status. In proximate housing, including apartments, when individual ownership is not feasible, some cooperative or mutual ownership arrangement is often acceptable to people who can arrange the equity payments through sale of their present properties. Alternatively, some lifetime guarantee may give the prospective renter an acceptable substitute for whatever sense of status or security can be wrung out of a fee simple complicated by tax, maintenance, and perhaps mortgage liabilities. The special FHA financing techinques permit considerable flexibility in the ownership and rental forms used in proximate housing. However, in any arrangement other than conventional fee simple or rent, to which the prospects have long been accustomed, the elderly need considerably more education and selling.

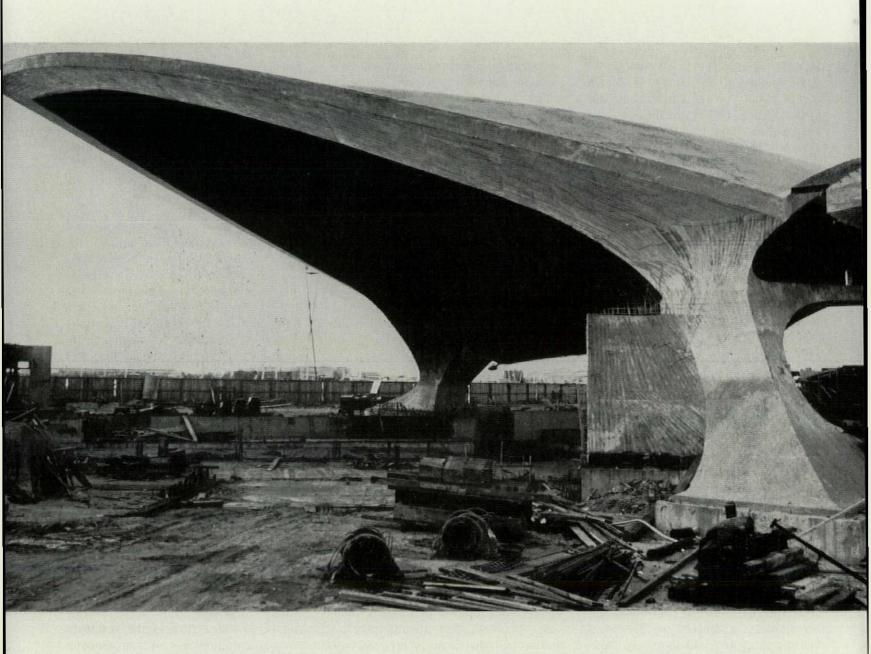
Design for status

Equally important as location and financing is the design ingredient in housing for the elderly. In the Wellesley study, a preponderance of the elderly home owners indicated a reluctance to move, even though they admitted that their houses were too large or poorly located. Further questioning showed this reluctance to be clearly associated with the fact that to them and their friends their present property was a symbol of status achieved during the working years. They had a mental image of smaller new dwelling units lost in an amorphous old-age project; but, when it was hinted the project design might permit separate houses or row dwellings with visible identity, their response shifted. Housing as a symbol communicates something about a person's status only if it can be pointed to and identified with its possessor. Because such status factors are important to induce buyers or renters to enter the market, the visible and tangible aspects of project and unit design become integral parts of the merchandising plan.

For the past two and a half decades consumers have sought status satisfaction in the purchase of standardized products which permitted up-grading of their living standards. Now there are indications in many consumer markets that an increasingly leisure-oriented culture tends to make consumers seek satisfaction through differentiation rather than standardization. Designing new housing for the elderly during the sixties will provide architects and site planners with a test of their ability to create the major and minor differentiations in project designs which will be needed to make them competitive. In other words, design in this new market must encompass not only the esthetic, economic, and functional, but also the meaningful. It must develop an ability to communicate meaningful differentiations that will help motivate prospects into the market.

Architects and project sponsors are not the only ones with responsibilities in providing a physical environment suited to the elderly and to other households having increasing spare time. Urban planners and city administrators must consider the neighborhood facilities in which the municipality may have to invest in order to complete an environmental design which blends project and community facilities. The social agencies of the community also have a responsibility, once a location has been selected by a sponsor and architect, to consider how social service can be provided to help the residents develop optimum use of the common spaces which the designers contemplate. Except for a relatively few in the middle- and upper-income brackets who have learned to be self-organizers and leaders, people of all ages tend to be poor group activity starters and need the stimulus which only a professional can provide. The cost of such service is not much, but it must be included in the budgets of community agencies. So, the development of a modern environment for residents with considerable leisure free time includes planning by several professions to assure that what is designed is well and continually put to use.

Part II of this article will present sociological findings pertinent to the planning and design of housing for residents who have a great deal of leisure time—especially the retired—and will show how they are being applied in some outstanding housing developments.



The concrete bird stands free

Saarinen's 2-acre terminal for TWA moves into its final phase.

In talking about Trans World Airlines' new terminal building at Idlewild, when the building was still in design, Architect Eero Saarinen said: "A strong conviction has gradually grown up with us that architecture is only worth doing if you can make all one thing out of a piece of architecture, so that every single detail supports the total." The flow of people through the terminal was

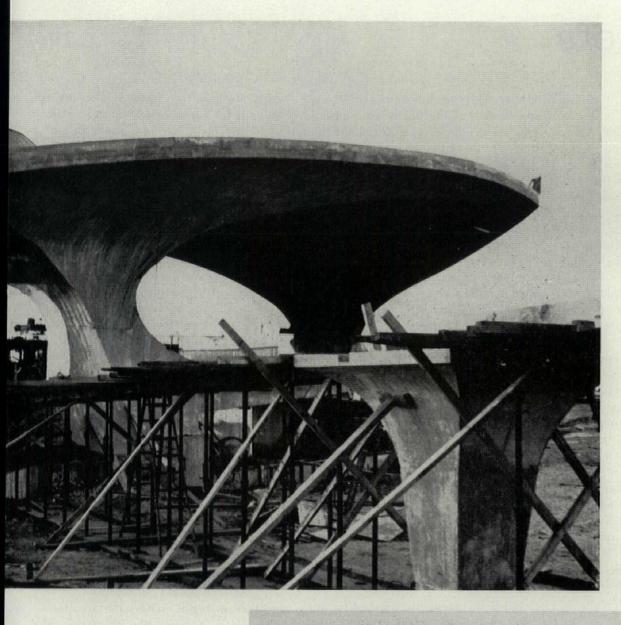
what he meant both to aid and to express with his flowing forms.

The last of the four roof shells was poured in early October. Weeks later, the extensive decentering operation began: removing the formwork from beneath the roof (FORUM, Aug. '60) and observing the deflection that would take place as this 5,500-ton structure shifted its weight to the buttresses.

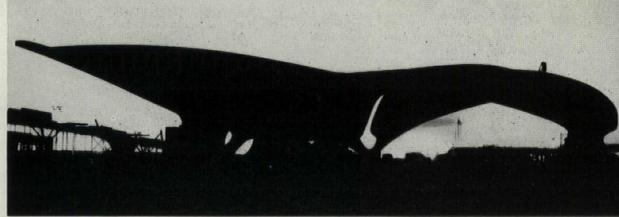
The engineers at Ammann & Whitney and the contractor, Grove Shephard Wilson & Kruge, had estimated that the tips of the cantilevers on the two side shells would show a net deflection of $1\frac{1}{2}$ to 3 inches. Actually, since re-

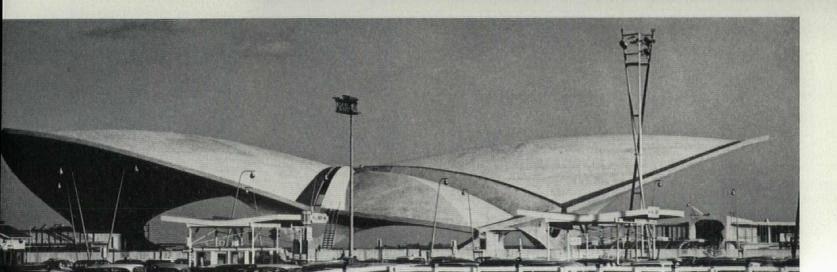
moval of the forms, neither of these great cantilevers (photo, above) has deflected more than an inch. And, indeed, in some areas of the roof, deflection has been as little as 1/32nd of an inch.

More work is to be done on this building: the sculpturing of stairways and other interior details, for example, and bridges which will extend out to the planes. But the difficult work is now over—the forming and placing of the concrete shells and buttresses. The great bird, with its 700 tons of steel and 4,000 cubic yards of concrete, will soon be ready to "fly": it will be ready for TWA by late 1961.



PHOTOS: GEORGE ADAMS JONES





Tech briefs

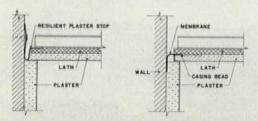
Crackless ceilings

For seven years, the Gypsum Assn. has been studying the performance of lath and plaster ceiling systems to develop plaster construction with improved crack resistance. From these studies have come what the association considers "the principal variables which affect resistance to cracking" and recommendations regarding design principles.

The study cites these variables affecting crack resistance: types of finish coats; basecoat aggregates; plaster-to-aggregate ratio; type of lath; and presence or absence of perimeter restraint. From observation of these variables under field conditions, the association has drawn recommendations which should permit the designer to predict ultimate performance of lathing and plastering systems with a much higher degree of accuracy:

▶ Proper selection of systems and materials must be supported by adequate construction details and definitive specifications: "The contractor and mechanic must know precisely what is wanted. Competent field inspection is highly important to assure the designer of compliance with his expressed intentions."

▶ Ceilings with unrestrained perimeters (see sketches) are more resistant



to cracking than those which are restrained. Designers should give serious consideration to the use of details that will eliminate continuity of lath and plaster, in perimeter ceiling angles where differential movement is anticipated.

▶ Large unbroken ceiling areas should be divided by relief joints. The maximum recommended distance between such joints is 60 feet, with a maximum undivided area of 2,400 square feet.

If good performance is to be expected of intermediate- or low-strength

plaster, extreme care must be directed to selection of the finish coat and lath, and to the possible need for elimination of restraint at the perimeter.

The following proportioning of aggregate to plaster should be followed: not more than 2 cubic feet of lightweight aggregate to 100 pounds of gypsum, except over masonry, where the proportioning should not exceed 3 cubic feet; not more than 2 cubic feet of sand for scratch coat and not more than 3 cubic feet for brown coat to 100 pounds of gypsum.

Thin shells, no forms

An inexpensive process for constructing thin-shell architectural shapes has been developed by a structures professor at Texas A & M. In the process, Inventor James H. Marsh III projects the architectural shapes onto a flat surface, so that steel reinforcing can be laid out on the ground for fabrication. With reinforcing in place and secure, steel mesh is attached to it. Then the projected shape is transformed into its three-dimensional shape by application of tensile forces at predetermined points.

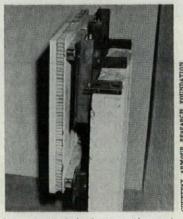
When the shape has reached its final form, it is attached to its foundation. Surfacing material — usually light-weight concrete or plastic—is sprayed onto the wire mesh, thus eliminating the need for conventional construction forms. This is one of the advantages of Marsh's system; another is that most of the work can be done on the ground, including the installation of conduit.

Marble curtain walls

Marble, for centuries a mark of prestige and affluence in building, has lately run afoul of rising costs and the curtain wall. Now a research effort at the Armour Research Foundation promises to restore marble's position of importance in building.

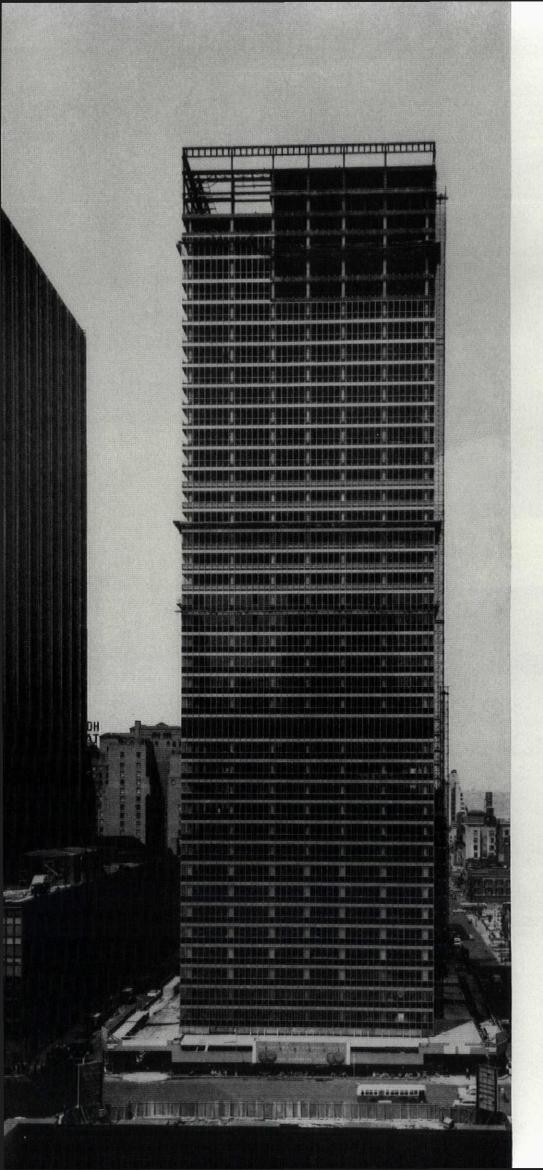
One of the products of this research program, now in its fourth year, is a method of using marble in very thin sheets and prefabricated assemblies so that it can meet demands of low initial cost. Methods have been developed for using it for curtain walls much as glass and sheet metal are now used. One of the first examples of this will be the National Library of Medicine, in Bethesda, Md., designed by O'Connor & Kilham, and now in construction, which will be covered with marble curtain-wall panels. Another building designed with these panels is the Blair building, in Chicago, by Naess & Murphy.

In the panels developed by Armour, a thin sheet of marble—5% inches thick—is bonded to an insulative core material, such as foamed glass, paper honeycomb, or wood fiberboard, then bonded in turn to the interior surface, which may be sheet metal, plywood, or



another material. Later, the scientists expect to reduce the thickness of marble to ¼ inch, but further development will be necessary before this will be feasible. (Earlier marble curtain walls, such as Detroit's Federal Reserve Bank annex, by Architects Smith, Hinchman & Grylls—FORUM, March '50—used thicker sheets of marble: 1½ inches in thickness.)

The mechanical properties of many sandwich systems were studied in the course of the research to establish their adaptability to both interior and exterior applications. In bonding the marble veneer to the core material, for example, it was found that only certain adhesives were workable; some produced unsightly discoloration under accelerated aging conditions. Others became too rigid and, thus, would not permit differential expansion; still others could not be used on vertical surfaces, because they were too slow in developing setting properties.



Insurance in steel

On April 20, 1960, as American Bridge structural ironworkers enjoyed momentary limelight in "topping out" the new Equitable Life Assurance Society home office building, other important work was being performed practically unnoticed just a few floors below by other trades. That's one reason why structural steel is the basic material in this 42-story tower. Steel not only goes up faster than anything else, it provides a safe working platform, permitting other trades to follow on the heels of the construction men.

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Architect: Skidmore, Owings & Merrill

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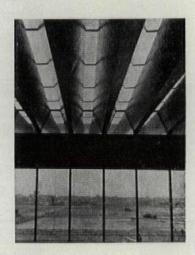


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Abroad

JETS OVER ROME

Rome's new Leonardo da Vinci jetport, which has been "inaugurated" three times and will actually be open sometime next year, covers 3,200-acres on the coast 20 miles south of the city. In the middle of its triangular-patterned runways are the airport's main buildings designed by Architects Amedeo Luccichenti and Vincenzo Monaco; the most nearly complete is the three-story passenger terminal (photo at left). Passengers arrive on the sweeping main esplanade (below), send their baggage off to the lower reaches on conveyor belts. They proceed through customs beneath the V-shaped steel beams that form the terminal's roof (and that are spaced far enough apart to admit light through translucent plastic sheetsphoto at right). They then either go up to the mezzanine lounges or down to the apron to find their baggage and clamber up again to the plane.







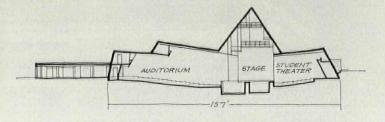


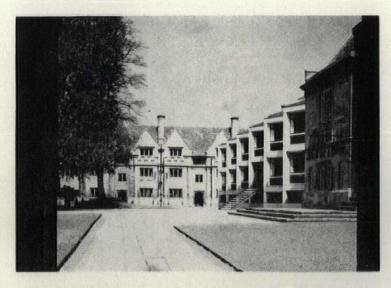


ARTS IN BERLIN

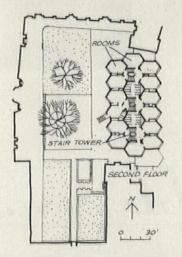
Near Berlin's Interbau apartments, the new Academy of the Arts seeks to combine in one institution schools for the visual, performing, and building arts as well as for poetry and music. Perhaps because of the number of functions that occur at once, the complex of buildings designed by Architect Werner Duetmann (photo at left) looks somewhat restless. Most unsettled is the

theater building (right background), which slants off on its own axis from the main cluster of workrooms and exhibition areas grouped around a square court. The zigzag roof shelters two separate auditoriums (section, below) which share the same stagehouse and mechanical facilities. However serious the academy's program may be, its architecture is lively.

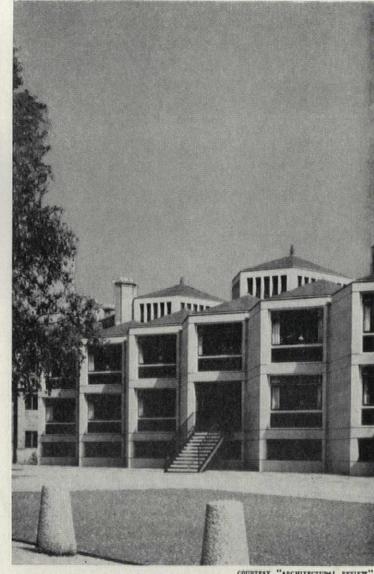




ANGLES AT OXFORD



At St. John's College, Oxford, the Architects' Co-partnership solved the familiar problem of providing continuity between a large new dormitory addition and its gabled older neighbors (some dating back to the seventeenth century) by devising a honeycomb plan that breaks up the addition into smaller segments and varied roof levels. The dormitory rooms are arranged on three split-level floors and grouped around three central stair towers that are connected by bathroom units. The architects proudly note that continuity was achieved without recourse to imitative decoration.

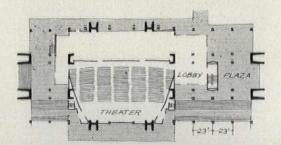


COURTESY "ARCHITECTURAL REVIEW"

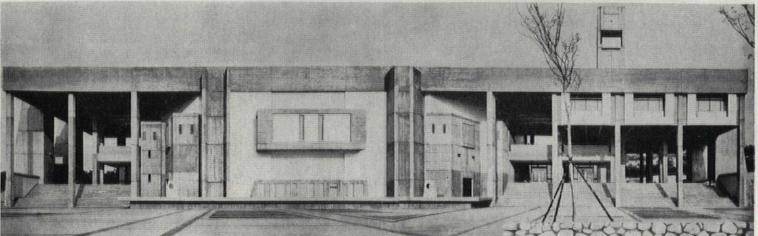
BUTTRESSES FOR NAGOYA

The new auditorium at Nagoya University, which was designed by Fumihiko Maki to stand at the head of a classic mall, is held together by two great buttresses at either end that accept the outward thrust of the theater's roof. Within, the regular system of small columns is supplemented by

larger columns that frame the theater proper (see plan). By leaving a considerable amount of open space between the auditorium's various elements, Maki sought to make the monumental building more inviting as a place for student gatherings. Only the clock seems out of scale.

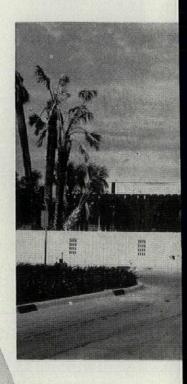


COURTESY "THE JAPAN ARCHITECT"





BRANIFF AIRWAYS BUILDING — Architect: Lane-Gamble; Mechanical Consulting Engineer: Wm. K. Hall; Mechanical Contractor: Sam P. Wallace & Co.

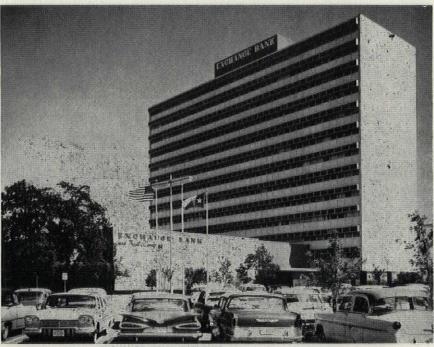


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EXCHANGE BANK BUILDING — Architect: Lane-Gamble; Mechanical Consulting Engineer: Blum & Guerrero; Mechanical Contractor: Sam P. Wallace & Co.

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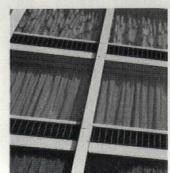
Aluminum's economies helped build Colonnade Park for less than conventional materials would have cost.



this investment yields a better return

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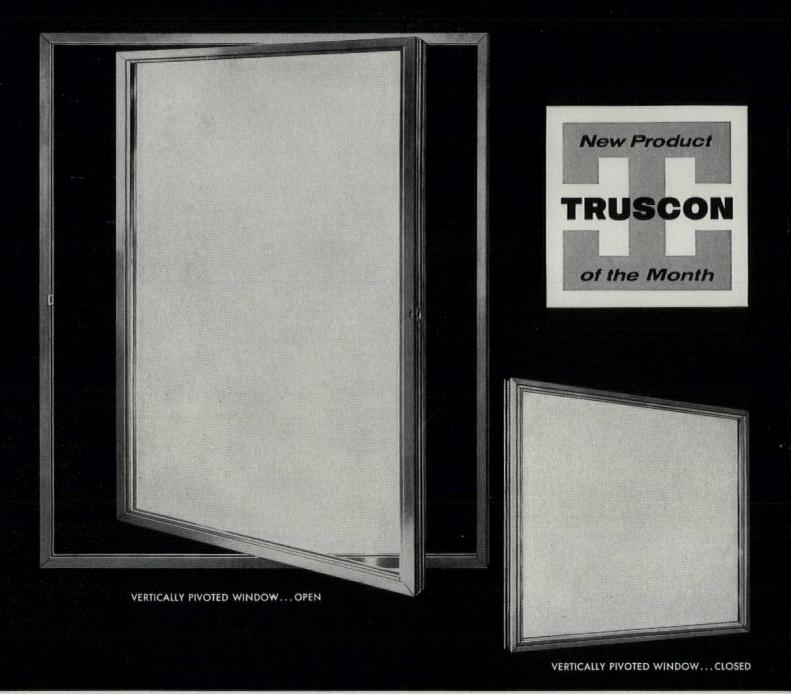
When you're planning a similar development, call in Alcoa early. Alcoa knows more than anyone else about aluminum in general, and building uses in particular. We'll sit in with your architect on planning, work with fabricators and your contractor. Phone your nearby Alcoa sales office, or write Aluminum Company of America, 1822-Z Alcoa Building, Pittsburgh 19, Pa. World-wide sales through Alcoa International, Inc., 230 Park Avenue, New York 17, N.Y.



BUILDINGS: Colonnade Park Apartments
OWNER: Colonnade Park Realty Co., Newark, N. J.
ARCHITECT: Mies van der Rohe, Chicago, III.
BUILDER AND DEVELOPER: Metropolitan Structures, Inc., Chicago, III.
ALUMINUM FABRICATOR: Cupples Products Co., St. Louis, Mo.

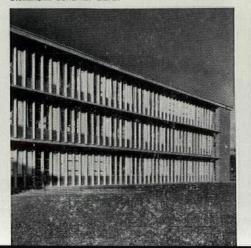


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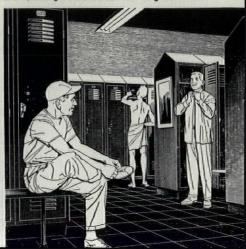


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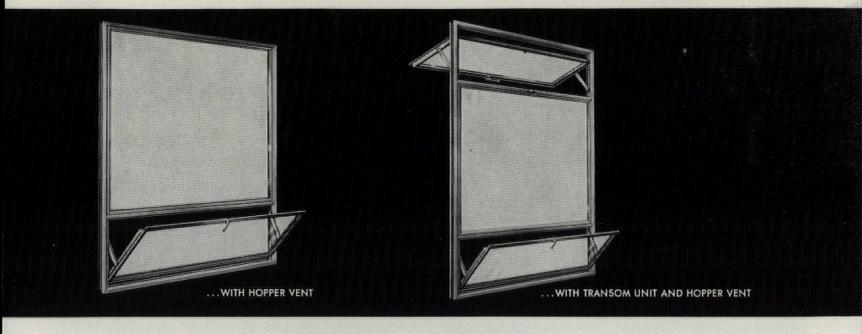
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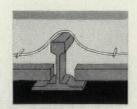
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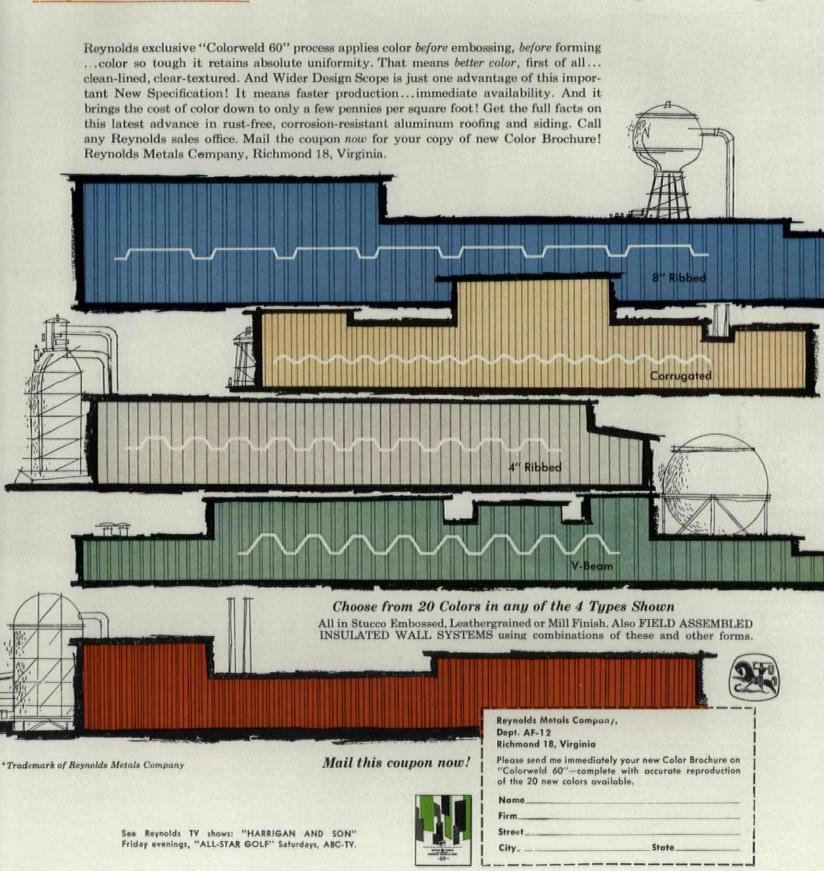


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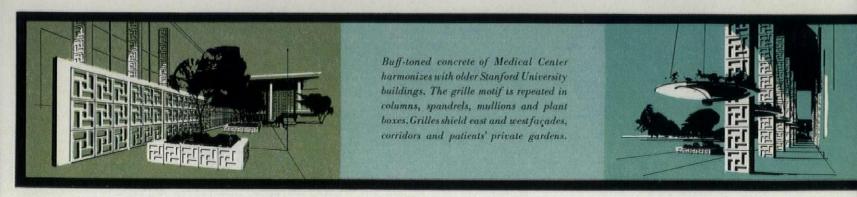


Decorative patterns in concrete give unity

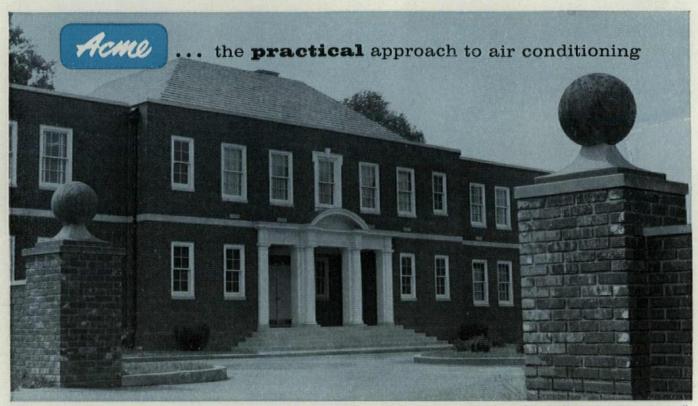
Hospital, clinic, school, research laboratory—the many activities of the new Stanford Medical Center require 7 separate buildings. To bring this complex into one harmonious whole, ingenious use has been made of modern concrete. Precast grilles provide a strong light-and-shadow pattern over large areas. They also set a design theme which is repeated in bold relief on other concrete surfaces throughout the Center. The elegant beauty achieved gives dramatic evidence of concrete's esthetic versatility and its structural advantages. Today, more than one architect is acquiring a reputation through the creative uses of modern concrete.



and beauty to new medical center!



Stanford University Medical Center, Palo Alto, California. Architect: Edward Durell Stone, New York, N.Y. Structural Engineers: Pregnoff & Matheu, San Francisco, California



Architects, Nevin & Morgan, Louisville

Acme... saves on installation ... cuts down on running costs

Resounding is the only word for the chorus of "ayes" in favor of the Acme air conditioning system now comfort cooling the Carver School of Missions & Social Work at the Southern Baptist Theological Seminary, Louisville, Kentucky.

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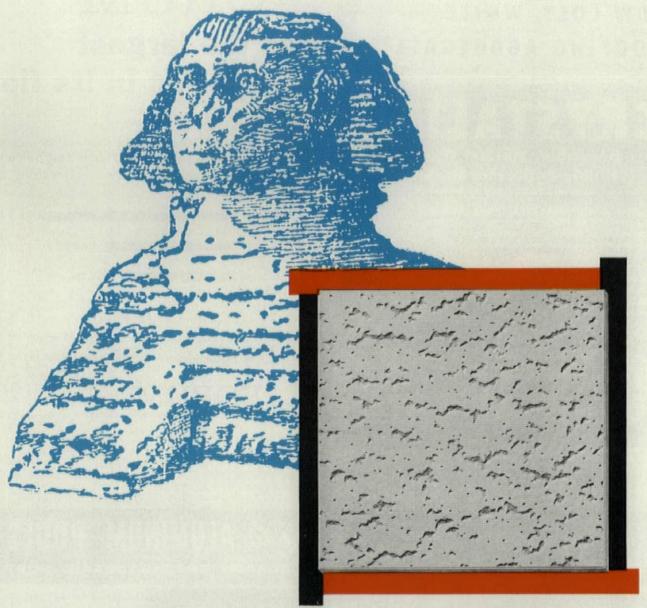
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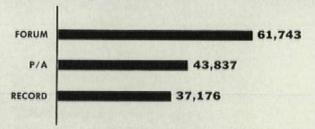
Whenever you're in a quiet room—look up. If there is a beautifully textured acoustical ceiling, chances are it's Forestone*. The sounds you never hear are absorbed by Forestone. This deep-etched woodfiber tile meets Class C requirements of Federal Specification SS-A-118b... exclusive Biotox processing protects it against termites, mildew and mold. Forestone is available in four distinctive textures for all types of installations including ceiling boards for grid systems. Refer to Sweet's File or call your Simpson Certified Acoustical Contractor (look under Acoustical Materials in the Yellow Pages) for full information. Write for folder: Simpson, 2009H Washington Bldg., Seattle 1, Washington.



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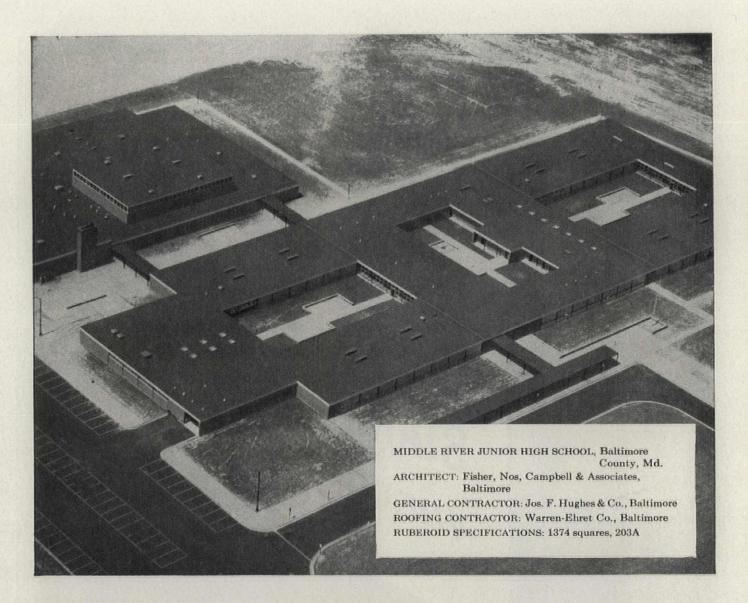
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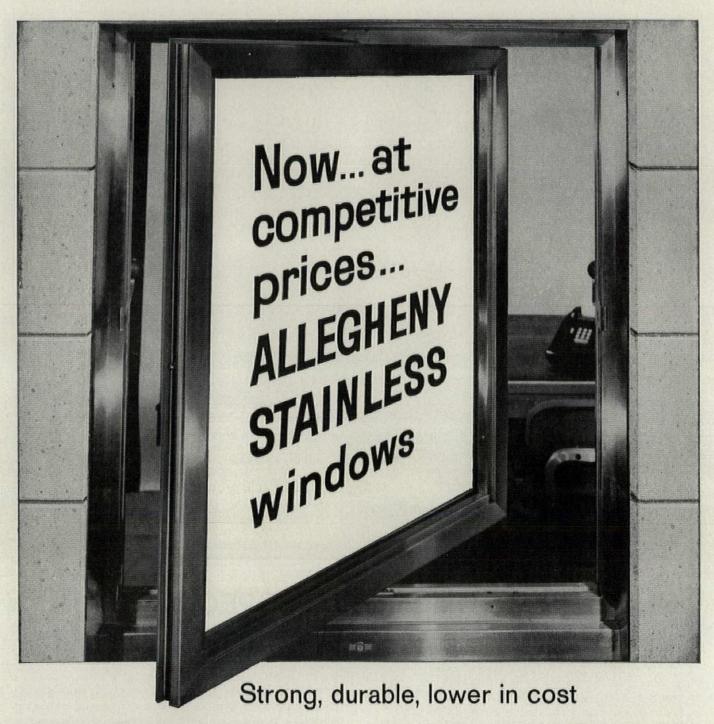
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Massachusetts Blue Cross-Blue Shield Office Building, Boston, Massachusetts Associated architects: Anderson, Beckwith & Haible and Paul Rudolph General Contractor: George A. Fuller Co.



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Explosion of pride •

Forgive FORUM one burst of vanity. After this, we will be modest once more.

The spark that set off our momentary explosion of ego was a recent preference survey among America's standout architects, the 492 whose work was important enough to be published in any of the three major architectural magazines during the past three years.

The preference? Better than 2 to 1 said "the magazine where I'd most like to see my

work in print is Architectural FORUM."

Another reason for our pride: among these 492 you'll find the architects of such great 1960 buildings as New York's Union Carbide Building, Denver's Hilton Hotel, San Francisco's John Hancock Building, and the Detroit headquarters for Reynolds Metals.

All of which are sparkling examples of the brilliant \$670 billion building boom coming in this decade—Coming? Already started.

Architectural Forum the magazine of building published by Time Inc.

Architectural masters . . . housing finance

MASTERS OF WORLD ARCHITECTURE: Louis Sullivan (by Albert Bush-Brown); Walter Gropius (by James Marston Fitch); Eric Mendelsohn (by Wolf Von Eckardt); Richard Neutra (by Esther McCoy); and Oscar Niemeyer (by Stamo Papadaki). Five volumes. Published by George Braziller, Inc., 215 Park Ave. S., New York, N.Y. 130 pp. each. 71/2" x 101/4". Illus. \$4.95 each.

George Braziller, the remarkable publisher of capsuled art, has been bringing out monographs on the "Masters of World Architecture" faster than the critics could review them: after a somewhat uneven, first series of biographies of Wright, Mies van der Rohe, Le Corbusier, Aalto, Nervi, and Gaudi (all of which appeared six months ago—Forum, Apr. '60), now comes a new batch on Sullivan, Gropius, Mendelsohn, Neutra, Niemeyer. It is all very impressive, and the literary quality of the monographs, at least, is definitely improving.

One reason that Braziller has been able to shoot these books out at such breakneck speed is that most of his authors have written on their subjects before: Stamo Papadaki is an old Niemeyer hand; James Fitch has tackled Gropius in the pastmost recently in FORUM (May '60), in an article which forms the basis of this book; Esther McCoy is thoroughly familiar with Neutra's work; and Albert Bush-Brown has long written and read about the modern movement. Only Wolf Von Eckardt, public information director for the A.I.A., is a relative newcomer to this field; but being a good writer, he produced the most readable monograph in this new crop-the one on Eric Mendelsohn.

All these biographical sketches are useful, handsome, and well-illustrated. Unlike the first series, which presented some authors who equated serious scholarship with total unintelligibility, most of these new books are unpretentious and clearly written. The sole exception, possibly, is Stamo Papadaki's monograph on Niemeyer: while not at all pretentious, it reads the way Papadaki talks-which is utterly delightful and, on the whole, incomprehensible. Sample: "The sculptural, variegated landscapes of Brazil, a climate which demands a minimum of technological assistance, a way of life which depends on a presence rather than on an ambiguous flux of becoming, and a people with a rich emotional capacity which in its outward form becomes lyric poetry while its inner form bends toward archetypes these may explain some facets of the flowering of the new Brazilian architecture." All these "may explain" things to Mr. Papadaki, but they leave the reader reeling in ambiguous flux.

So much for the literary quality of this series. What about these books as serious works of criticism? The trouble, here, is that each monograph is a separate book,

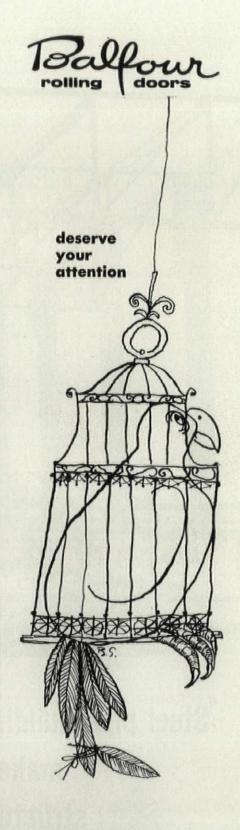
and each author is trying, in a sense, to make the case for "his boy." (This does not apply to Sullivan or Gaudi, who are running unopposed.) As a result, the series as a whole contains numerous contradictions: Bush-Brown says, for example, that Gropius "naïvely insisted that utilitarian expedience and economy . . . be declared in bald and mechanistic displays of raw technology"; whereas Fitch says that Gropius "was no blindly uncritical worshiper of technology" even in the early, revolutionary phase of the modern movement, and quotes him as saying that "mechanized work is lifeless, proper only to the lifeless machine"— which is just about what Sullivan said in his Kindergarten Chats. There is nothing whatever wrong with conflicting ideas and statements; the point is that such conflicts would have been made more interestingand might, indeed, have been resolvedif these had not been separate books but contributions to a single, great, critical debate. Still, now that the cases have been made for 11 of the great masters in George Braziller's attractive collection, such a critical debate might be easier to conduct in the future.

FEDERAL CREDIT AND PRIVATE HOUSING. The Mass Housing Financing Dilemma. By Charles M. Haar. Published by McGraw Hill Book Co., 330 W. 42nd St., New York 36, N.Y. 408 pp. $51/2'' \times 81/4''$. \$12.50.

This is the latest volume in ACTION's series of authoritative housing and community development studies made under a Ford Foundation grant. Author Haar is a Harvard law professor, and his approach to the FHA and VA credit guarantee programs is thorough, realistic, and dispassionate. Punctuating and peppering his text are many pointed questions, typical of an investigator's effort to ascertain the facts or calculated to compel a reader to consider which alternative position he would take on certain unresolved issues.

Haar calls mortgage insurance " a remarkable social invention . . . but insurance with a difference." Fire, life, and other forms of insurance can be based on reliable actuarial tables, appropriate premiums charged (and the amount of insurance coverage revised at any time to correspond to altered circumstances). But mortgage insurance, he notes, "has only comparatively crude means of making valid predictions; there is as yet insufficient experience for valid actuarial computation of premiums. For, what the FHA (as well as VA) is in fact undertaking is no less than to insure home lenders against the downward swing of the busi-

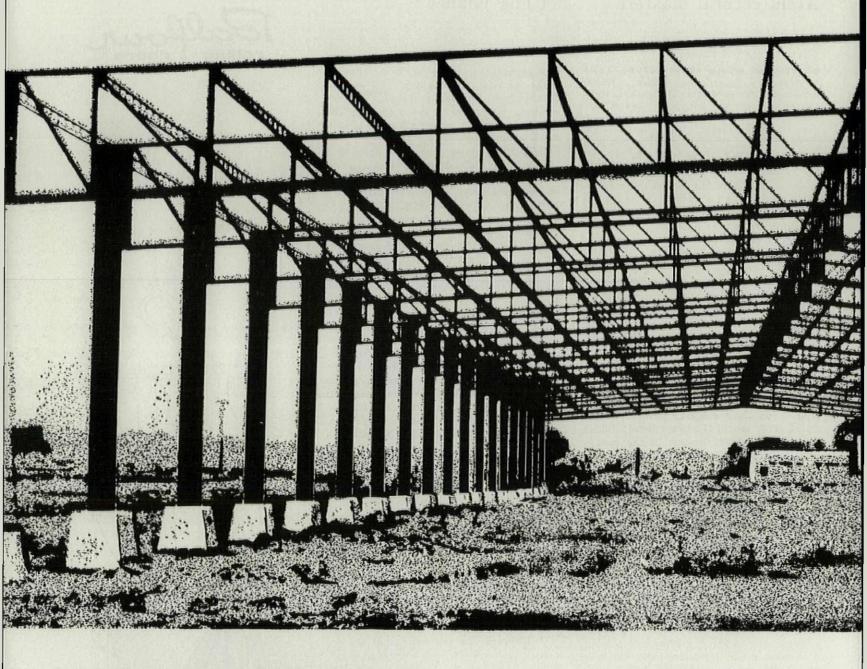
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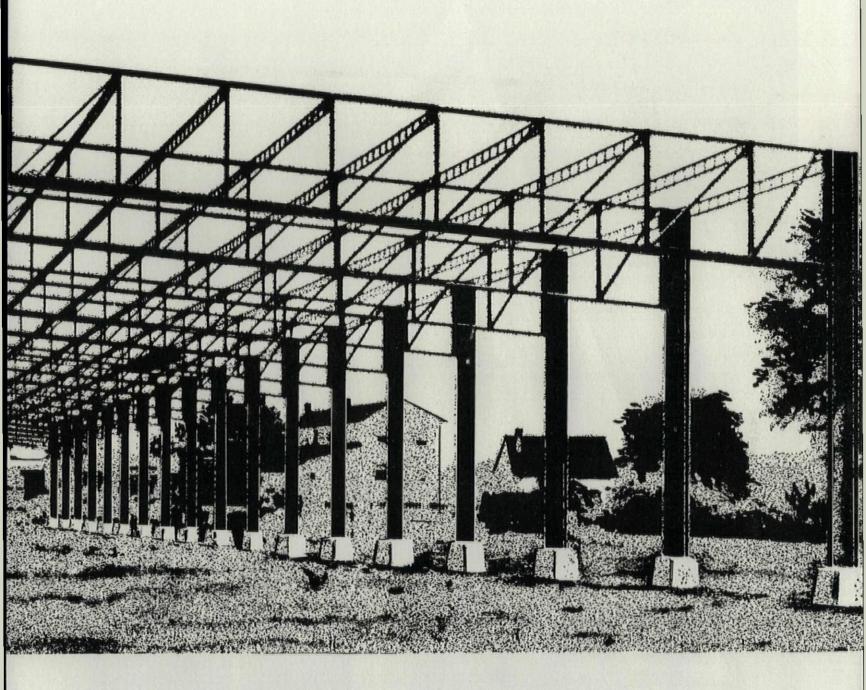
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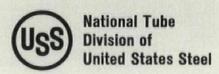
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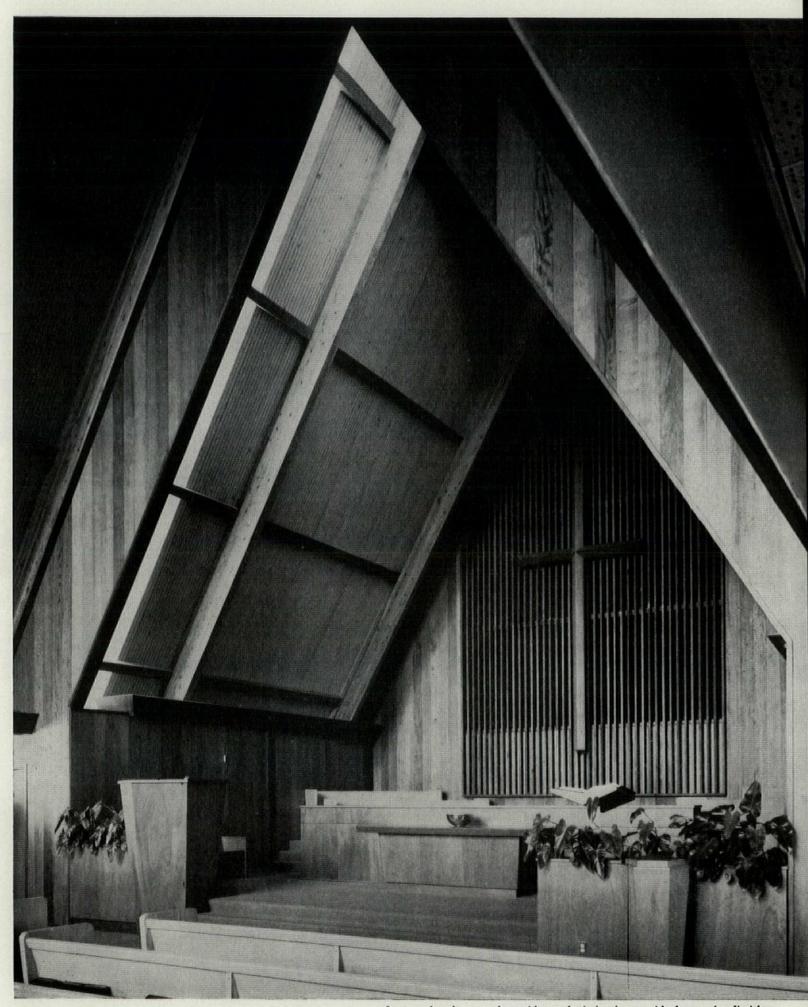
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Long-term economy is implicit in the durability of wood. Mellowing with age and exposure, wood gives homes and other structures lasting character for fewer dollars. Ratcliff & Ratcliff, architects.

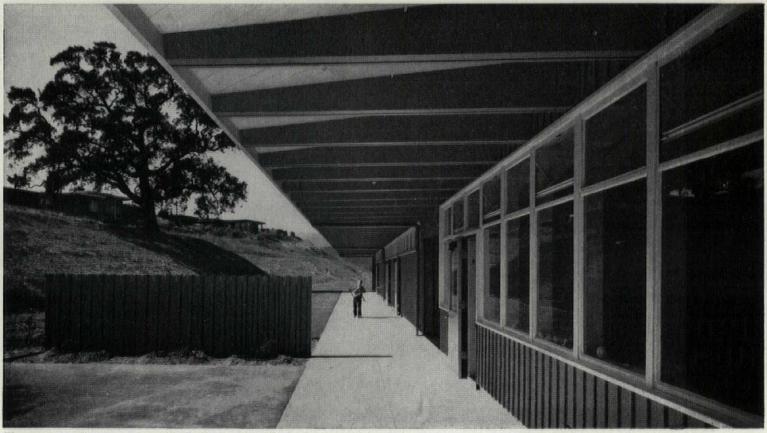
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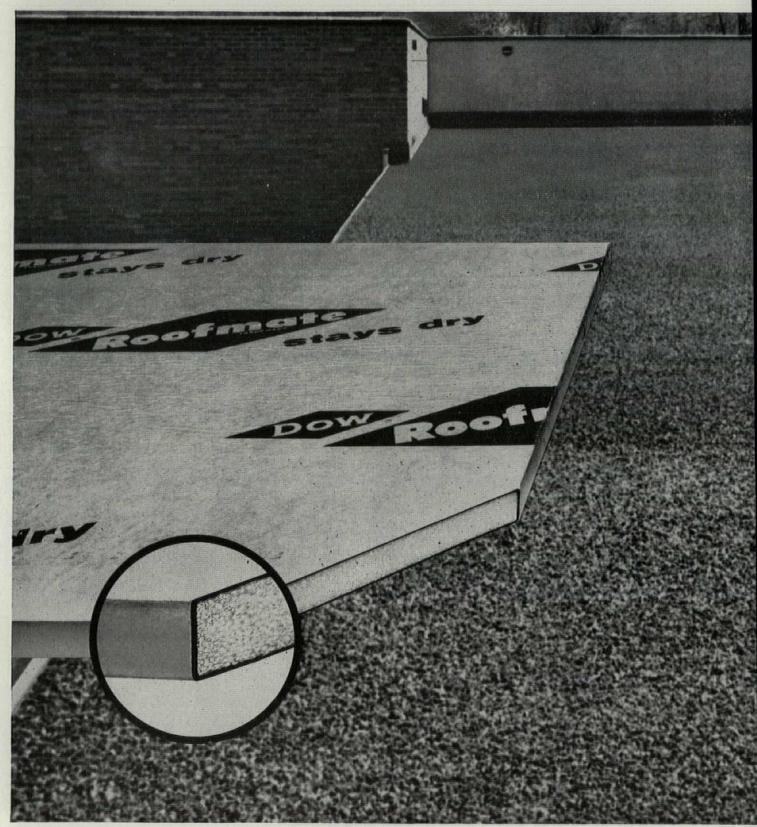
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The more wood you use in a school, the more good school you build for each tax dollar. Many of America's most successful new school designs have been inspired and made possible by wood construction. Peter Kump, architect.



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Roofmate has a rigid core of expanded polystyrene foam (Styrofoam®), enclosed in asphalt-laminated Kraft paper. The closed-cell structure of the foam core bars water and moisture vapor entry so effectively that foam of this type is used as unsinkable flotation material for floating docks! This same water resistance makes Roofmate a permanently effective insulating material.

Low "C" factor gives Roofmate maximum insulating efficiency with minimum thickness. This lightweight material is strong and rigid, too, spanning fluted steel decks without danger of cracking. In addition, the high moisture vapor resistance of Roofmate reduces the possibility of blistering.

Roofmate can be bonded to any conventional deck-poured concrete, pre-cast panels, poured gypsum, wood, steel-and the built-up

roof can be applied directly over it using any of the conventional hot-applied systems.

The advantages offered by Roofmate add up to quick, easy installation for the contractor, long, trouble-free service life for the owner, and dependable, economical performance which the architect can plan on with confidence. For more information about Roofmate, contact the nearest Dow sales office, or write THE DOW CHEMICAL COMPANY, Midland, Michigan, Plastics Sales Dept. 1702LH-12.

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ness cycle if, when, and to the extent that, it does come. . . ."

"If the power to tax is the power to destroy," Haar observes, "then conversely the power to grant credit involves the power to create and divert." But in shaping an intricate array of federal-housing credit programs, he notes, consideration must be given to precise aims or objectives and to the question of whose interests will be served most: "Those of government, the consumers, the producers, and financiers of housing and housing equipment? This is further complicated by the fact that these are not unitary groups. Which of their separate aims do we wish to achieve, which is the desired mix-and which goals, under existing institutions and pressures, are possible?"

Haar also debunks real estate and homebuilding industry efforts to dress the government's FHA and VA activities in a "free enterprise" cloak, while attacking its public-housing activities as socialistic. "If the implications of federal-credit programs are to be clearly understood, it is essential to accept that the housing program is not being provided by free enterprise in a free market. Indeed, its very success is due to the availability of mortgage funds which have not had to measure up to all the usual free-market considerations of risk and the competitive yields of other investments. To plead for a businesslike mortgage insurance system is a perfectly plausible position; but to go on to characterize existing FHA and VA programs as examples of private enterprise to be preserved against any extension to welfare programs is a Humpty Dumpty use of words. Government intervention through FHA and VA represents a facilitation subsidy, and it must be clearly recognized as such. The tendency to see in FHA a piece of private enterprise also leaves its mark on internal policy. It produces a resistance to special programs-for the elderly, minority, or low-income groups-on the ground that these 'social welfare' schemes distort the free-market pattern of operations. Such reasoning confuses both the purpose and functioning of the federal agencies. The essential issue is whether home mortgages need or deserve this tpye of subsidy-the diversion of capital from its natural free market channels-more than do other sectors of the economy. And any argument for the continuation or extension of these programs must be based on specific social goals and not on a misunderstanding of the economic issues."

Government programs facilitated a remarkable increase in suburban home ownership since the war, Haar notes, but simultaneously "endangered the future existence of the American city. . . . The great rise in home ownership, therefore, is not wholly due to the exercise of private-market consumer sovereignty . . . it is government intervention. . . . Hence, it does not seem to be 'undue' interposition of the government to bring about a

redress toward rental tenure through fresh government action or its withdrawal from the home-ownership sector."

In the closing chapter of this excellent and complete analysis of all the credit-guarantee aspects of FHA and VA, Haar refrains from making recommendations. In lawyerlike fashion, instead he offers a collection of conclusions, and he outlines various changes that could be instituted, depending on what aims or purposes Congress wants to achieve through these programs in the future, or which groups it wants to assist to the possible exclusion of other groups.

COORDINATED SCHOOL AND COMMUNITY PLANNING. Edited by John R. Boice, David Fromm & Don Kenny. Published by New School Planning Laboratory, School of Education, Stanford University, Stanford, Calif. 84 pp. 8½" x 11". Illus. \$2.50.

The 1959 School Building Institute held at Stanford University brought together a group of leading architects, educators, planners, and industry representatives, and asked them to share their thoughts on the problems of coordinating school and community planning. This book, a collection of 15 assorted essays, is the result of their confrontation. It is not, unfortunately, particularly well edited, but has the great virtue of existing as an illuminating research document in this shadowy corner of school building study.

FOOD SERVICE IN INDUSTRY AND INSTITUTIONS. By John W. Stokes. Published by Wm. C. Brown Co., Dubuque, Iowa. 261 pp. 834" x 111/4". Illus. \$8.

A compresentive and amply illustrated text on mass feeding in hospitals, schools, colleges, and industrial plants, from layout to cost control, by a recognized management consultant in the food-service field.

RESIDENTIAL RENEWAL IN THE URBAN CORE. By Chester Rapkin and William G. Grigsby. Published by the University of Pennsylvania Press, 3436 Walnut St., Philadelphia 4, Pa. 132 pp. 534" x 81/2". \$3.75.

More of an economic report than a book, this slender volume is an analysis of the 1957-1970 demand for housing in downtown Philadelphia, and more specifically in Washington Square East, the so-called Society Hill redevelopment project area. The local market information with which the report abounds—there are few places where it can be opened without being confronted with a statistical table—will serve no purpose outside of Philadelphia, except in so far as it may serve as a guide to other cities for conducting similar studies.



Centennial High School, Circle Pines, Minn. Architects: Ames-Crommett & Associa

Two years ago, Armstrong introduced the first time-design-rated acoustical ceiling tile—Acoustical Fire Guard. Today . . .

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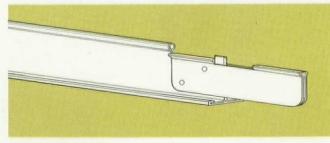
Now there is no more economical way to get rated fire protection plus excellent acoustical qualities. It also offers the advantages of complete accessibility, dry installation, insurance savings, and beauty.

Once or twice in every decade, a company will develop a really new building product—a product that completely overhauls the industry's thinking. Two years ago, Armstrong did it with Acoustical Fire Guard tile. Since then, millions of feet of this tile have been installed.

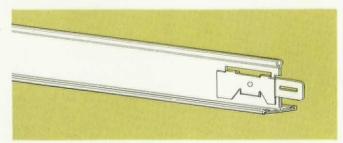
Acoustical Fire Guard meets the nation's strictest fire codes and eliminates the need for costly intermediate protection between a suspended acoustical ceiling and steel structural members. It has saved builders up to six weeks' construction time and up to 30 cents per square foot construction cost.

The new Acoustical Fire Guard lay-in ceiling system goes a giant step further. It combines the advantages of the exposed grid suspension system (economy, fast installation, complete accessibility) with those of a time-design-rated ceiling.

Hanger splice



Main tee



Cross tee

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The unique composition of the Fire Guard lay-in unit enables it to maintain spanning strength, even when exposed to flames and 2000-degree heat for many hours. Ordinary acoustical ceiling boards virtually disintegrate under such exposure.

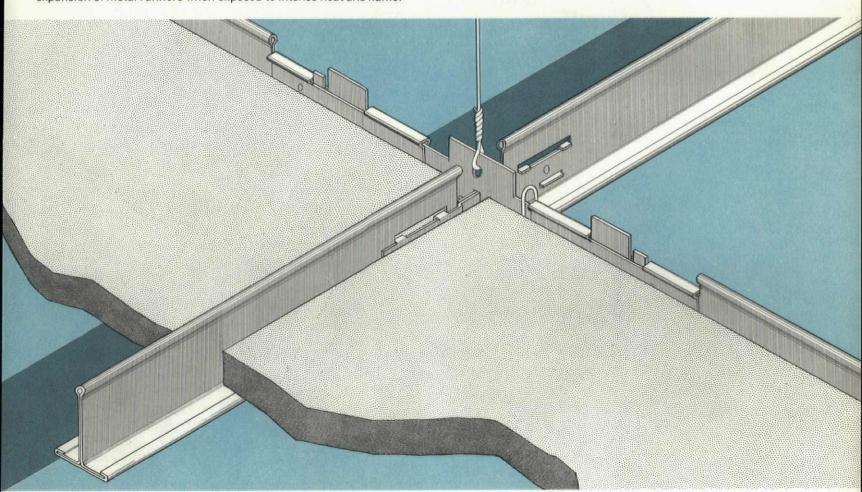
And the grid system is unique, too. Standard grid systems would buckle quickly in the heat of the test chamber. This buckling would drop the lay-in units, thus exposing the structural members to heat and flame. There is no buckling with the Acoustical Fire Guard exposed grid system. The reason: the expandable joints. (See diagrams.) Both the metal members and the lay-in units carry the U.L. Label.

Like the familiar Acoustical Fire Guard tile, the new lay-in system protects the structural components of a building. It combines with a floor structure to help check the spread of fire by resisting the dangerous transmission of heat from one area to another.

In official U.L. tests, the new system—utilizing nominal 24" x 48" x %" lay-in units—earned a beam protection rating of three hours. Assemblies using bar joist and slab as well as beam and steel floor construction earned official U.L. floor-ceiling ratings of two hours.

And in either the new lay-in system or in tiles, Acoustical Fire Guard may be used with a variety of construction forms to meet building code or insurance rating requirements. Variations from tested assemblies which maintain or improve the fire-retardant rating have been accepted by local code officials, building inspectors, and rating agencies.

Acoustical Fire Guard lay-in units can withstand 2000-degree heat for prolonged periods. The suspension system is designed to permit expansion of metal runners when exposed to intense heat and flame.



SAVE MONEY AND CONSTRUCTION TIME

Acoustical Fire Guard lay-in system reduces labor and material costs, insurance premiums, maintenance charges—and it speeds both new and remodeling projects.

Armstrong Acoustical Fire Guard lay-in ceilings are more economical than other finished ceilings that will provide two- or three-hour protection for structural steel. In most cases, they will cost even less than ordinary plaster ceilings on metal lath.

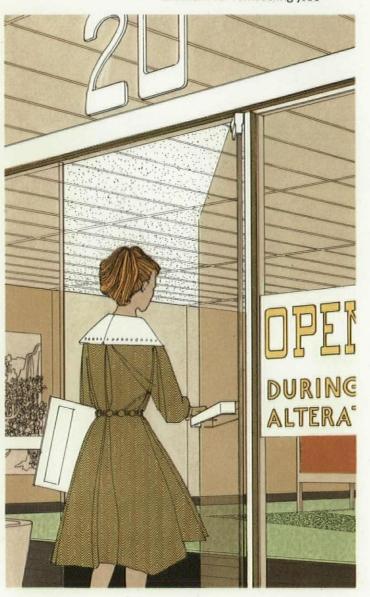
Not only is the cost of the units and the metal members low, but labor costs are lower because the large units are easy to handle and install.

Savings do not end with installation. Maintenance is minimized. Insurance companies recognize rated fire protection with lower premiums on a building and its contents.

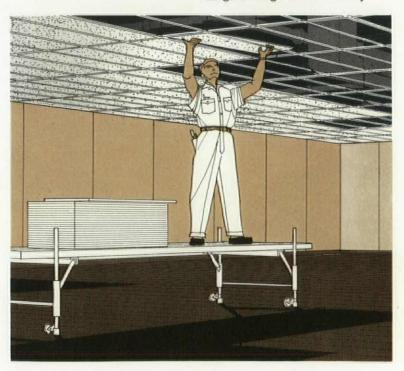
Because there is no messy wet operation which requires extensive cleanup, this product is ideal for remodeling jobs. Installation can be done during or after office or school hours. Stores continue to earn revenue during the installation.

Acoustical Fire Guard helps builders to meet deadlines in another way. Other trades (such as carpenters, flooring contractors, and painters) can be on the job at the same time as the acoustical contractor. There is no waiting for wet work to dry. This alone can save weeks. When combined with the other time-saving advantages of Armstrong Acoustical Fire Guard lay-in units, the saving can amount to two months or more.

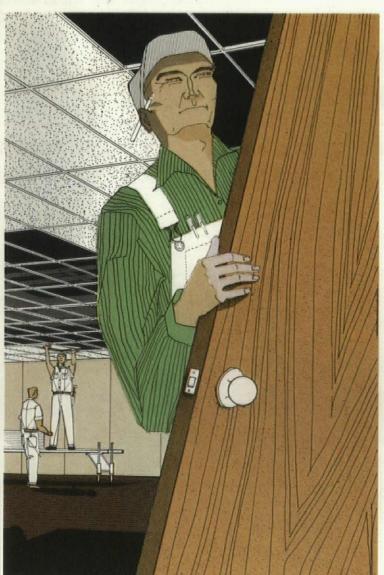
Excellent for remodeling jobs



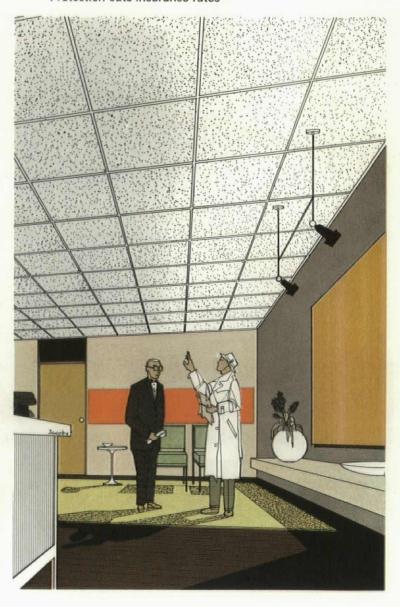
Large units go in fast and dry

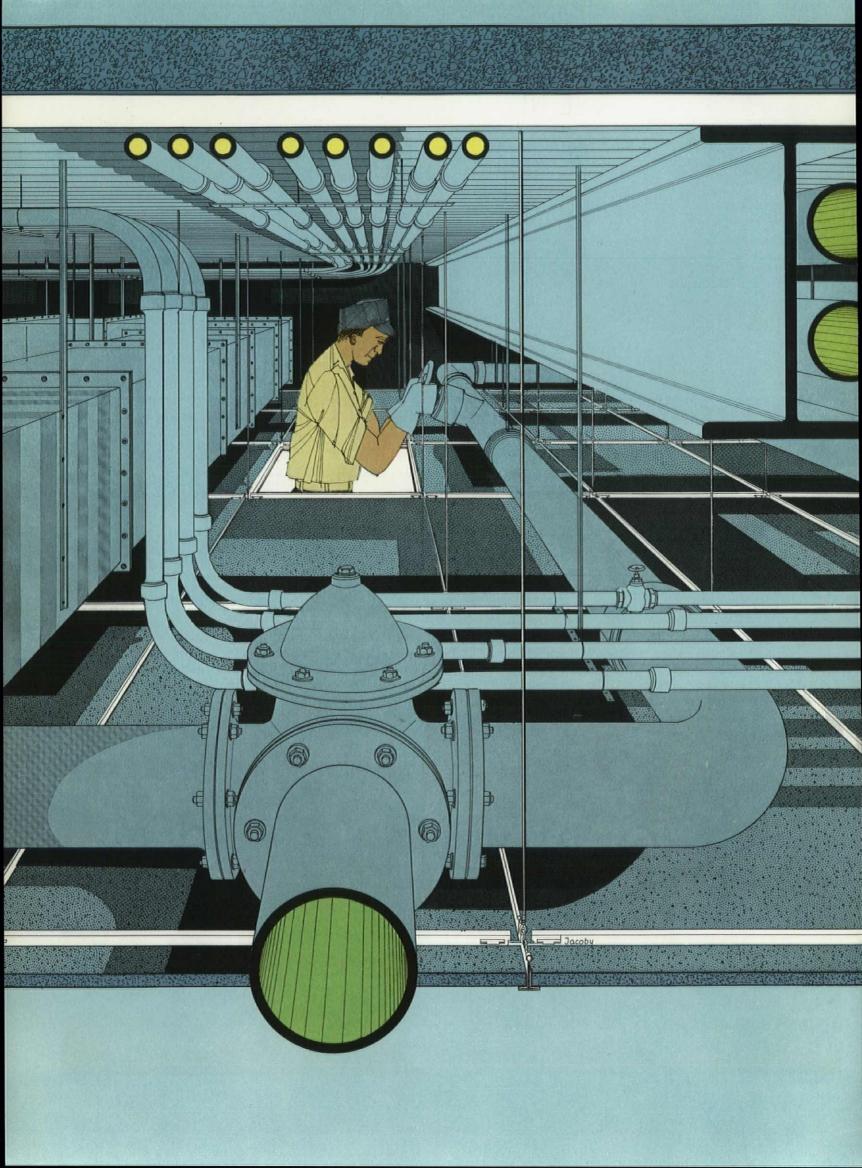


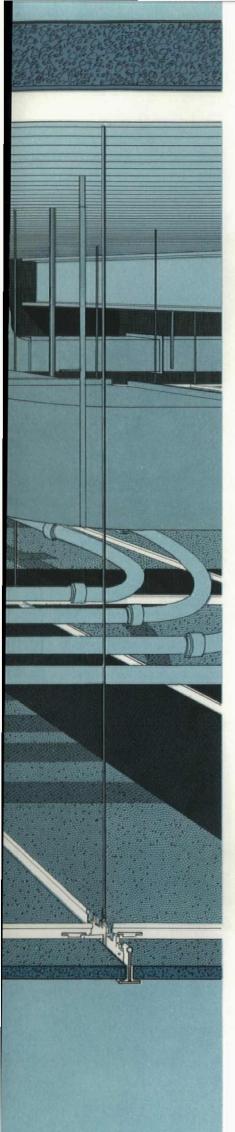
Other trades can be on the job



Protection cuts insurance rates







THE NEW ACOUSTICAL FIRE GUARD SYSTEM ALLOWS COMPLETE ACCESSIBILITY

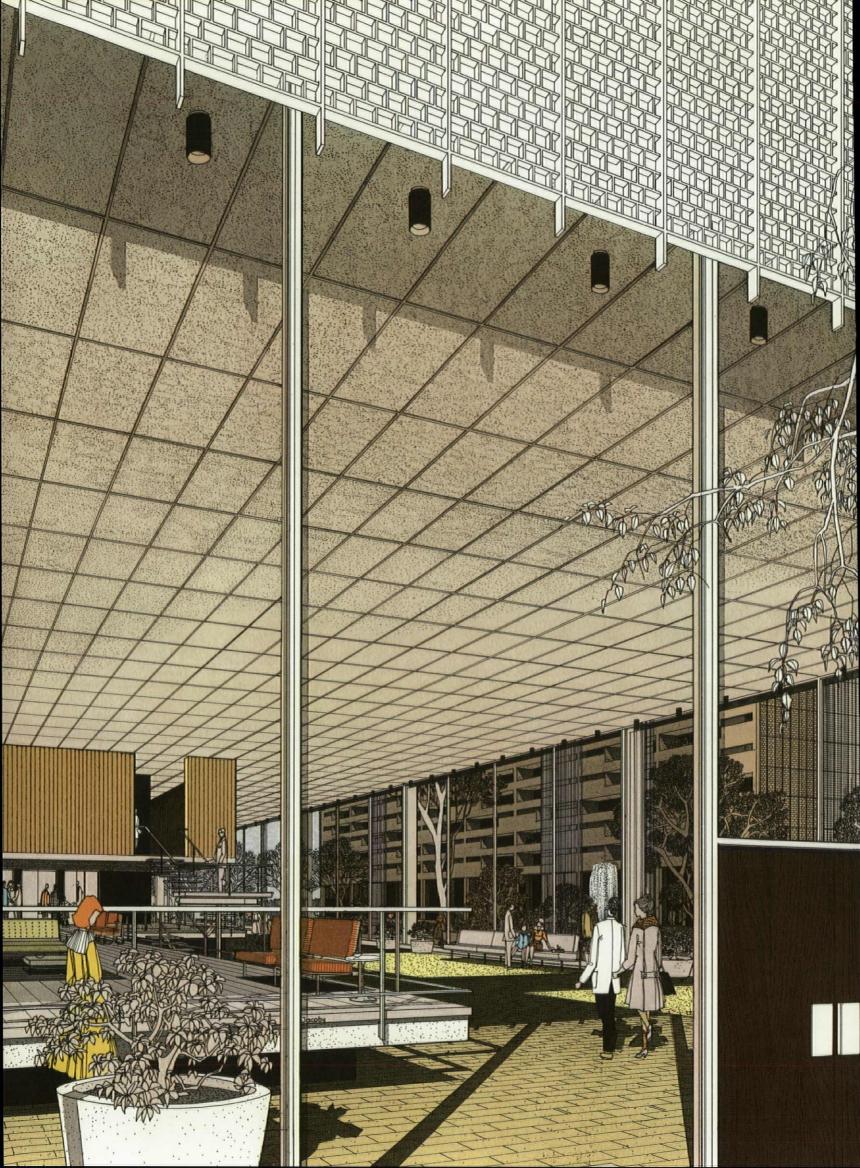
The Acoustical Fire Guard grid supports the panels on all four edges. The units can be lifted out for complete access to any part of the plenum chamber.

Because of the maze of pipes, ducts, and electrical equipment installed above the suspended ceilings of today's buildings, accessibility has become an important consideration in specifications. The only way to gain access through an old-fashioned plaster ceiling was by expensive access doors or by breaking through the ceiling when an emergency arose.

The Acoustical Fire Guard exposed grid system provides 100 per cent accessibility to the areas above the ceiling. Each panel is supported on all four edges. Every board can be lifted out in seconds.

The new Acoustical Fire Guard lay-in units are available in two nominal sizes: 24" x 24" and 24" x 48".

Lift out any units to afford immediate accessibility to the plenum chamber



BRINGS BEAUTY TO A BUILDING'S INTERIOR

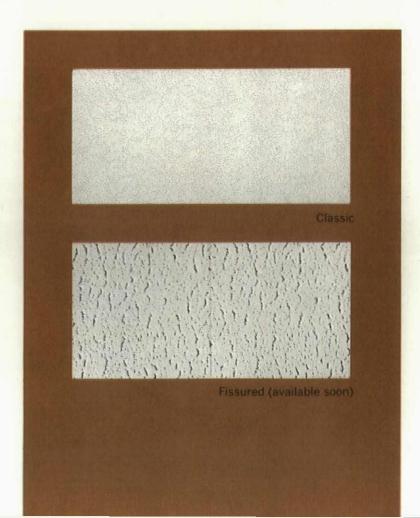
The room on the left has an Acoustical Fire Guard lay-in ceiling in the Classic design. The lace-like pattern of tiny perforations gives a smooth, free-flowing effect to the ceiling. Classic has been the most copied design in the history of the ceiling industry — ever since its introduction in 1958 by Armstrong.

Acoustical Fire Guard lay-in units will soon be available in the Fissured design. The attractive fissured surface is a traditional choice wherever ceiling appearance is a primary factor. The fissures resemble the look of travertine marble.

In addition to being an efficient sound absorber, Acoustical Fire Guard—because of its density and composition—can be used with ceiling-height partitions to minimize room-to-room sound transmission problems.

And Acoustical Fire Guard's white surface reflects light evenly, without glare. This ceiling has a light reflectance of "a" (over 75%). The exposed surface of the metal suspension members is available in two finishes—painted white, to match the ceiling boards, and anodized aluminum. Either finish contributes to a modern look for an interior.

Since the Classic and Fissured designs are identical in both the lay-in units and the tile, they can be combined in different areas of the same building.



Architectural designs and renderings by Helmut Jacoby

SPECIFICATIONS FOR Armstrong ACOUSTICAL FIRE GUARD CEILINGS

JOB CONDITIONS

Acoustical materials shall be installed under conditions as outlined in the current bulletin of the Acoustical Materials Association.

SPECIAL CONDITIONS

Armstrong Acoustical Fire Guard shall be installed only by an approved Armstrong acoustical contractor.

MATERIALS

- Acoustical ceilings shall provide (one, two, three) hours'protection for structural steel as rated by Underwriters' Laboratories. Inc.
- b. Acoustical contractor shall submit, as a part of his bid proposal, written substantiation of the rating from Underwriters' Laboratories, Inc.
- c. Acoustical lay-in units where specified shall be nominal (24" x 48", 24" x 24") x %" in size. Acoustical tile where specified shall be 12" x 12" x %" in size with interlocking and self-leveling tongue-and-groove edges on four sides. Acoustical units shall have a factory-applied washable white finish with a light reflectance of "a" (over 75%). Acoustical units shall be provided in the following surface detail:

Armstrong Fissured Acoustical Fire Guard—Federal Specifications SS-A-118b, Type III, Class A (Incombustible)—Carrying Underwriters' Laboratories, Inc., Label for Fire-Retardant Classification.

Armstrong Classic Acoustical Fire Guard-Federal Specifica-

tions SS-A-118b, Type IIB, Class A (Incombustible)—Carrying Underwriters' Laboratories, Inc., Label for Fire-Retardant Classification.

d. When acoustical lay-in units are specified, suspension system shall be Armstrong Acoustical Fire Guard exposed grid system as shown in the Underwriters' Laboratories listing of the time-design-rated ceilings. Suspension members shall be finished in (white, anodized aluminum) and shall be of the proper dimension to support the size of Fire Guard lay-in units specified. Suspension system shall carry U.L. Inc., Label for Fire Retardant Classification. Where acoustical tiles are specified, suspension system shall be concealed zee system.

INSTALLATION

- a. Installation of suspension system. The acoustical contractor shall furnish and install (Armstrong Acoustical Fire Guard exposed grid system, concealed zee system). The system shall be installed in the pattern as shown on the drawings. The system shall be installed in strict accord with the manufacturer's recommendation and in such a manner as to achieve the specified fire-retardant time-design rating. System shall be installed to permit border units of greatest possible size.
- b. Installation of acoustical material. The acoustical contractor shall install Armstrong Acoustical Fire Guard in the types, sizes, and surface designs specified above or in the drawings. The acoustical units shall be installed in strict accord with the manufacturer's recommendations and in such manner as to achieve the specified fire-retardant time-design rating.

NOTE:

Complete specifications and detailed working drawings are available from your Armstrong representative or your approved Armstrong acoustical contractor.

Armstrong District Offices

ATLANTA 8, GA. 727 West Peachtree St., N. E.

BOSTON, MASS. 200 First Avenue, New England Industrial Center, Needham Heights 94

CHARLOTTE 3, N.C. 1127 East Morehead Street

CHICAGO 34, ILL. 6535 West Irving Park Road

CINCINNATI 37, OHIO 1057 Meta Drive

CLEVELAND 14, OHIO 2975 Superior Avenue

DALLAS 19, TEXAS 2727 Oak Lawn Avenue

DENVER 4, COLO. 35 West Fifth Avenue

DETROIT 26, MICH. Free Press Building, 321 Lafayette Avenue, West

KANSAS CITY 8, MO. 500 West 26th Street

NEW YORK 16, N.Y. 295 Fifth Avenue

PHILADELPHIA 2, PA. Robinson Building, 15th and Chestnut Streets

ST. LOUIS 10, MO. 1919 Hampton Avenue

SAN FRANCISCO, CALIF. 1814 Ogden Drive, Burlingame, Calif.

SEATTLE 9, WASH. 221 Minor Avenue, North

CANADA 6911 Decarie Boulevard, Montreal 29, Quebec

City design . . . product research . . . planning philosophy

BETTER DESIGN FOR RENEWAL

To improve the quality of urban renewal projects, Webb & Knapp Vice President William Slayton suggests that developers' bidding be based on design rather than land price.

The successful bidder receives the winner's acclaim but soon discovers that his high land price imposes a penalty that precludes him from producing the kind of development that improves the status of the art and often in addition prohibits him from going ahead because of limited financial return. Although the value of the land is but 10 to 20 per cent of the value of the completed development, in most cases, the additional amount put into the land means additional cash; the return remains the same; the cash investment increases.

The solution? Public officials should establish a price on the land that represents a fair reuse value based upon the development proposed by the city and upon the factors of location, reputation, etc. With the land price permanently fixed, let the competing redevelopers submit proposals on how they would develop the project area. The city can then select from among the proposers on the basis of the design that produces the best development for the city. By this means we can assure the city of achieving the good design-an essential goal of the renewal programand at the same time not penalize the developer financially.

PRODUCT MAKERS CHALLENGED

In his talk before the annual meeting of the Producers' Council in Chicago, A.I.A. President Philip Will Jr. called on the building material manufacturers to take a broader view of their influence on the American scene.

As the leaders of our building-product manufacturers you also have a large part of the responsibility to lead us out of what has been called "the mess that is manmade America" to a more livable, more dignified, and more beautiful physical environment.

We desperately need more research. Not just product research and technical research. We also need environmental research and research about the behavior of the people we build for.

We will soon know how to shoot this creature into outer space. But we are far from knowing how to utilize efficiently the increasingly limited space available to him right here in Chicago.

The challenge is not only to make our cities and suburbs a little prettier and

to get rid of ugly billboards, wirescapes, and hot-dog stands. Or to get us around a little faster. It is not only a problem of eliminating the still remaining pockets of slums and all the social diseases they breed. The challenge is the challenge of America's position in the world.

The decision is largely ours. But we cannot drive faster than the capacity and the efficiency of the motor permits. The motor of building is the building industry. Increased performance and efficiency in building and rebuilding America is largely up to you producers of building materials and equipment. We need your support as responsible citizens.

The job is first a political and economic one. Politics and economics are the primary prerequisite for achieving orderly community growth. And if orderly community growth is our business, so is politics.

Nor should we consider politics a mere spectator sport. The political arena needs us—not only on planning, zoning, education and other municipal boards, commissions, and agencies, but also as political delegates, councilmen, mayors, state legislators, and in Congress and the national executive.

We may not have the votes to put our spokesmen and our viewpoint across. But we do, or should, have a respected voice in a field which is vital to the public welfare. Let it be heard loud and clear.

We also need your support as producers. You can render this support in three specific areas: 1) product engineering, 2) product performance, and 3) product design.

America's building-product manufacturers have done extremely well in engineering their products and publishing the results. On the negative side, however, is the indisputable fact that the convenience of your catalogues also produces catalogue architecture. Repetitive use in building after building of predesigned and premanufactured components produces regrettable monotony. It is no accident that for four successive years the annual R. S. Reynolds Award for the best building utilizing aluminum has gone to foreign architects. Their fresh designs are not inhibited by commonplace catalogue items.

The answer is largely research—more research into greater flexibility, greater variety, greater application, and improved engineering of your products.

The problem of product performance is even more serious. The courts are getting rougher on architects than ever before. We are held legally responsible not just for design and supervision, but apparently for the performance of all materials and products which go into our buildings. Liability insurance is small solace.

I speak for all architects, I believe, if I tell you it is time that your legal agents show the same enthusiasm for the quality of your products as your advertising agents.

Thirdly, design. The quality and the appearance of your products control, to a large extent, the quality and the appearance of our environment. The sum total of our industrial products constitutes the environment of an industrial society. If our environment has esthetic shortcomings—to put it mildly—it is largely because, as Kenneth Galbraith has put it, industry has excluded and alienated the artist.

We depend on your products. If your products are poorly designed, so will be our buildings, at least in their details.

The research, the teamwork, the political support of urban development, the improved product engineering, the assumption of liability for your products, and the improved design I have mentioned are problems and challenges not of the future but of this minute.

PHILOSOPHY VS. PLANNING

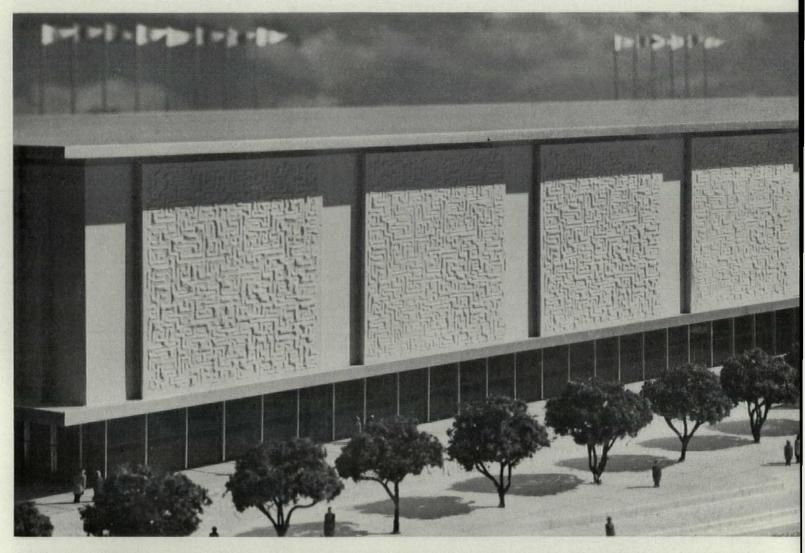
Dr. Mason W. Gross, president of Rutgers University, addressed the annual meeting of New York's Regional Plan Association on the subject of philosophy vs. planning. He found a powerful relationship between the two.

As I see this business of planning, it involves at least two elements: in the first place nothing can call itself a plan unless it is directed toward some definite end in view. A plan which isn't a plan for something, or which has no clear objective in mind, isn't a plan at all.

My second generalization is that most planning, consciously or unconsciously, operates within a framework of conditions, which may or may not be specified, but which are undoubtedly accepted by those who present the planners with the problem. Yet when we turn a problem over to our planners, we at once limit the range of their planning by laying down certain conditions which serve at least to curtail their thinking in terms of ideal arrangements

For example, a plan which resulted in providing a freer flow of traffic into and out of New York City would not be considered a plan with a clear end in view, unless it were clear that this freer flow of traffic were itself good. But obviously the mere movement of automobiles through a tunnel is not such an end in itself.

Now I would like to suggest that the great majority of the people who are filling up our roads today are people who are guided by negative motivations. They are continued on page 166



Steel Fabric reinforces sculptured precast concrete panels

Chicago's new Convention and Exposition Center gives you a lot to marvel at. For one thing, you could put Wrigley Field, Comiskey Park and Yankee Stadium under its roof. For another, it is spectacularly beautiful from any angle.

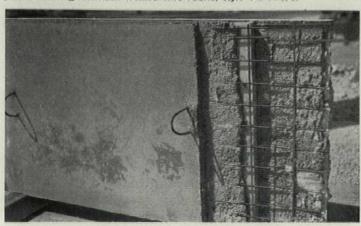
But only architects, engineers and contractors will fully appreciate how some of the ingenious structural and architectural effects were achieved. So, look closely at the photographs and don't forget the unusual sculptured panels are of precast concrete reinforced with USS American Welded Wire Fabric.

USS American Welded Wire Fabric was also used for

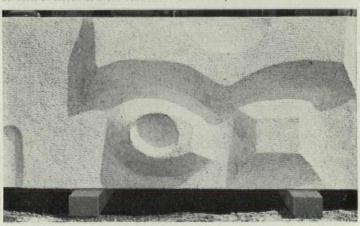
concrete reinforcement of the pan-type floor construction. The floor is designed for 400 psi live loads with columns at 60-ft. centers. The joists are 14" deep with the top $4\frac{1}{2}$ " slab reinforced with welded wire fabric sheets. Welded wire fabric reinforcement was also used in the construction of the ground floor slabs, terrazzo floors and gypsum roof decks.

USS American Welded Wire Fabric is readily available in a variety of styles, sizes, lengths, widths and finishes—in wire gauges from 7/0 to 16 and with longitudinal or transverse intervals of 2'' to 16''.

Rear view of a section of one of the precast reinforced concrete sculptured panels showing American Welded Wire Fabric, style 4 x 4–5/5.



This is front view of same section. Each 50 ft. high \times 15 to 20 ft. wide panel consists of eleven of these sections in a vertical position.





in Chicago's McCormick Place Lakefront Exposition Center—

For more information on the advantages and applications of USS American Welded Wire Fabric, get in touch with our nearest Sales Office or write American Steel & Wire, Dept. 0480, 614 Superior Ave., N. W., Cleveland 13, Ohio.

USS and American are registered trademarks

Credits: Chicago's McCormick Place Lakefront Exposition Center -23rd Street and the Lakefront. Chief Architect: Alfred Shaw. Consultants: Carl A. Metz, John Dolio, Edward D. Stone, John Root, Victor Hofer. General Contractor: Gust K. Newberg Con-

struction Co. Welded Wire Fabric Distributor: Joseph T. Ryerson & Son, Inc., Posttensioning Wire Tendons: Joseph T. Ryerson & Son, Inc. Precast Wall Panels: American-Marietta Co., Concrete Products Division.



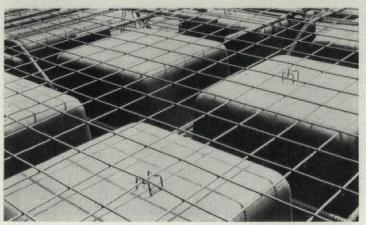
American Steel & Wire Division of United States Steel

Columbia-Geneva Steel Division, San Francisco, Pacific Coast Distributors Tennessee Coal & Iron Division, Fairfield, Ala., Southern Distributors United States Steel Export Company, Distributors Abroad

The large sheets of USS American Welded Wire Fabric, style 6 x 6–2/2 used to reinforce the $4\frac{1}{2}$ " thick concrete slabs are easily handled by two men.



The cast-in-place pan-type reinforced concrete floor is designed for a live load of 400 psi.



not going somewhere because they really want to get there, but rather because they want to get away from where they have just been.

I wish that it were possible for some psychologists to test this suggestion of mine that a tremendously large volume of our traffic is what I might call "desperation traffic"-people going from one place to another not because they have any positive hope of finding things any better in the new place, but rather because at least it will be a different place. This holds not only for the weekend holidaymaker, but for the weekday commuterthe man who has moved his family to the suburbs in the hope of finding better schools, better playgrounds, somehow a better life, which would mean that when he returned tired and unsatisfied from his day at work, his home in the suburbs would give him a lift that his home in the city was incapable of giving.

The question then before us is whether in planning our cities and our housing schemes we are thinking in terms only of a not-too-expensive roof over one's head, or whether we have taken into consideration the matter of friendship, community, and shared values.

When we think of communities in this country, our minds are apt to flash back to what we believe such communities as the New England villages of a century or more ago to have been like. Whatever else they may have been, they do seem to have carried out the notion of being a community. Is there, then, any major difference between those communities and the developments of today, with their individual homes and gardens, their schools, and of course their shops redesigned to meet contemporary needs? There seems to be one, in all the new developments with which I myself am familiar. I have yet to see any suburban development, or for that matter any major urban redevelopment, which included in its plans a church, a chapel, or a synagogue. In the older communities the churches were essential, and all the members of the community contributed to their construction. The church was the undeniable center of the town, even if it had only one straight street, while today as we wander dizzily around the inevitable whirling circles, we find no steeple to tell us where the center

Happiness, which Aristotle considered the supreme good for man and his ultimate end in view, is by no means the same thing as a continuous string of pleasures. It comes only when a man is deeply satisfied that he has actually fulfilled his potentialities, that he really is himself, living the life he can best live, and enjoying to the full the things for which he is best fitted.

When we talk of great rather than little plans, the distinction can only be one in terms of the values to be achieved, not of the dollars to be spent. But conversely, when one thinks of the number of dollars involved in any plan, then I believe that we are betraying our fellow citizens if we do not think in terms, not of putting out a few local fires, but rather of nothing short of the greatest happiness for the greatest possible number. We will fall short of utopia, no doubt, but none of our money will have been wasted.

TRANSIT VS. AUTOMOBILE

The case for rapid transit is documented by a study summarized in the publication of the Conference on Metropolitan Area Problems.

In July 1959, the Boston Metropolitan Transit Authority opened its Highland Branch, extending an existing transit line about 12 miles from the downtown area. After the line had been operating for some nine months, the Greater Boston Economic Study Committee undertook to determine the effects of the line on rider travel patterns, traffic congestion, and parking.

Six thousand rather lengthy questionnaires were distributed to passengers; over one-third were returned. Of these respondents 70 per cent indicated household incomes of over \$7,000; almost 50 per cent were in the over \$10,000 class; 55 per cent owned one car, and 36 per cent two or more.

The Study Committee concluded that use of the Highland Branch frees the equivalent of one traffic lane of the highway system during peak hours, reduces peak traffic congestion in downtown Boston by about 7 per cent, and frees about 1,000 downtown parking spaces.

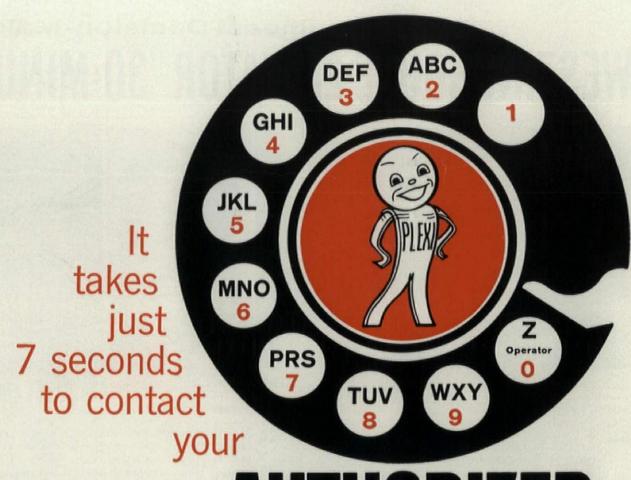
The Highland Branch makes it easier for residents of the western suburbs to reach downtown Boston. Some 69 per cent of the respondents indicated that their trips were made daily, 63 per cent traveling to work; about 75 per cent of those queried stated that they "almost always" use the line for trips into Boston. Ease and convenience, economy, and freedom from traffic and parking problems were cited advantages of the rapid transit line.

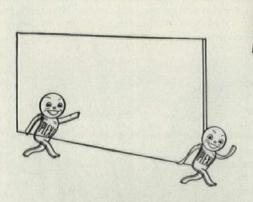
Half of the respondents said that they prefer the Highland line to the automobile and to the commuter railroad operating in the area because it is cheap and avoids driving through traffic and parking. Riders who indicated that they had been "converted" from cars and car pools totaled 37 per cent; a total of 46 per cent were previously accustomed to travel on the commuter railroads and busses, or on other Transit Authority facilities.

Responses to questions on off-hour use indicated that 45 per cent of the riders "almost always" use the Higland Branch, but that 35 per cent generally use alternative means of transportation. At these times, when mass transit riding is most comfortable, but when traffic arteries are less congested, transit seems to be at a greater competitive disadvantage with the automobile.

The phone number of your nearest Authorized PLEXIGLAS Distributor is in this list:

Atlanta, Ga	
Baltimore, Md	CE-3-3274 . WI-7-4900
Boston, Mass	.AN-8-1900
	WA-3-9800 NO-7-3500
Bridgeport, Conn	EL-4-3001
Bridgeport, Conn	.ED-3-3128
Buffalo, N.Y.	MA-1873
Charlotte, N.C.	.FR-6-8561
Ollicapo, III	. OL T TOOU
	FI-6-7900 CA-7-0300
Cincinnati, Ohio	ED-4-8115
Cincinnati, Onio	PA-1-7911
Cleveland, Ohio	.OL-1-1500
Columbus, Ohio	.CA-1-3098
	RI-7-7044
Dayton, Ohio	.BA-2-5891
Denver, Colo	
Detroit, Mich	.TO-9-9500
Des Moines, Iowa	.CH-3-8657
Ft. Worth, Texas Grand Prairie, Texas	CR-4-7337
Hanover, Pa	. MA-4-7241
Hartford, Conn	AD-3-9881
Houston, Texas	OR-4-7686
Indianapolis, Ind	ME-4-4521
Kansas City, Mo	. GR-1-0500 LO-1-3480
	GR-1-6390
Los Angeles, Calif	DU-5-3001
Louisville Kv	DU-1-3053 MF-5-2606
Louisville, Ky	.FA-7-7391
Miami, ria	PL-7-2477 NE-5-5339
Milwaukee, Wis	BR-6-9700
Minneapolis, Minn.	BR-3-7032
New Orleans La	FE-9-8917
New York, N.Y.	BE-3-7377
	WO-6-4900
	OR-5-1172 GR-7-5000
Newark, N.J.	. MI-2-7413
Philadelphia, Pa	GL-9-1000 LO-3-7038
	WA-2-6824
Discourts Auto	GA-6-4010
Phoenix, Ariz	
Richmond, Va	.EL-5-5324
Rochester, N.Y	
San Antonio, Texas	.CA-2-9351
San Diego, Calif	CY-5-8261
San Francisco, Calif	DO-2-6433
Seattle, Wash	.MA-3-2783
St. Louis, Mo	MA-1-7900
St. Paul, Minn	JE-1-6372 CA-7-7371
Syracuse, N.Y	.HA-2-9165
Tampa, Fla	DF-2-9000
Wilmington, Del	.OL-4-9937





AUTHORIZED PLEXIGLAS DISTRIBUTOR

In just the time it takes to dial the phone, you can obtain complete service on Plexiclas® acrylic plastic. Your Authorized Plexiclas Distributor can serve you with other plastics, too, and a wide range of accessories. He is also qualified to help you with technical and fabrication information. His stocks include almost any size and thickness of Plexiclas in clear, colored, patterned and corrugated sheets, plus rods and tubes. Call the number listed at the left, in your nearest city. You will be connected with your best source of service on plastics.



Chemicals for Industry

ROHM & HAAS COMPANY

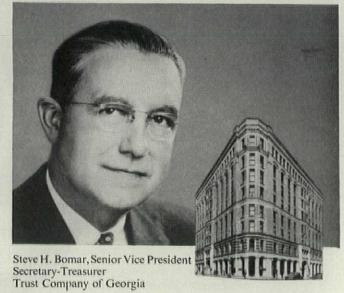
WASHINGTON SQUARE, PHILADELPHIA 5, PA.

In Canada: Rohm & Haas Co. of Canada, Ltd., West Hill, Ontario

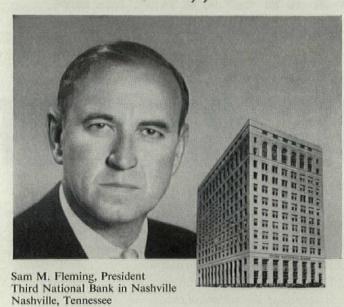
These Southeast Decision-Making WESTINGHOUSE ELEVATOR "30-MINUTE



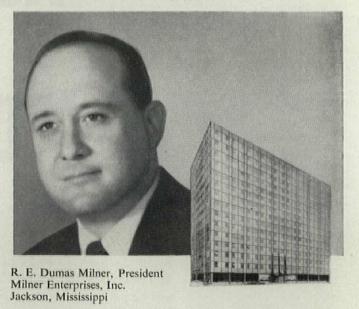
Our overriding consideration in selecting the elevator system for the Electric Building was future tenant satisfaction. My associate, Henry C. Beck, Jr., and I, made this our greatest single requisite. After experiencing demonstrations of operatorless elevators, Westinghouse won hands down. We are sure our major tenant, Georgia Power Company, will enjoy the most efficient elevator service available anywhere.



Our study of operatorless elevators proved to our complete satisfaction that Westinghouse Selectomatic Automatic equipment was a wise choice for our main bank building. We have obtained safe, efficient elevator service from our installation which handles our heavy traffic peaks smoothly and quickly. We can heartily recommend a demonstration of Westinghouse to anyone interested in automatic equipment.



At the time we were considering modernization of our elevators, we were given behind-the-scenes Westinghouse demonstrations. We were impressed with the smooth operations of the cars, efficient passenger handling and the courtesy of elevators without operators. The Westinghouse reputation for reliability of product and proof by demonstration influenced our decision.



We weren't guessing when we installed Westinghouse in the new Petroleum Building in Jackson, Mississippi. I had already experienced the advantages of its Automatic Traffic Pattern and other outstanding features when, in 1954, we installed Westinghouse elevators in the Milner Building, also in Jackson. This was my first commercial office structure, and it certainly made it easy to say 'Westinghouse' when we planned the Petroleum Building three years later.

Executives Experienced the

PRE-INVESTMENT EYE-OPENER"

WESTINGHOUSE DEMONSTRATION ANSWERS YOUR IMPORTANT QUESTIONS ABOUT BENEFITS OF MODERN OPERATORLESS ELEVATORS

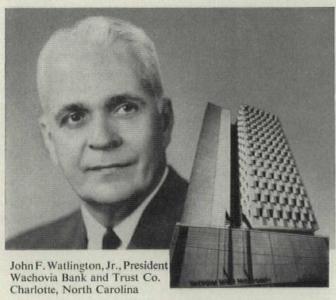
Westinghouse invites you to participate in a demonstration of the most advanced elevator system in the world. You must experience elevator performance to appreciate the remarkable results of Westinghouse engineering skills. Here are elevators that "think" for themselves electronically and automatically. They are as new as tomorrow—and more dependable than any elevator system previously devised. Tenants expect to find them in new buildings—and more and

more managements of existing buildings specify them at modernization time.

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. You can be <u>sure</u>...if it's Westinghouse.

ELEVATORS AND ELECTRIC STAIRWAYS

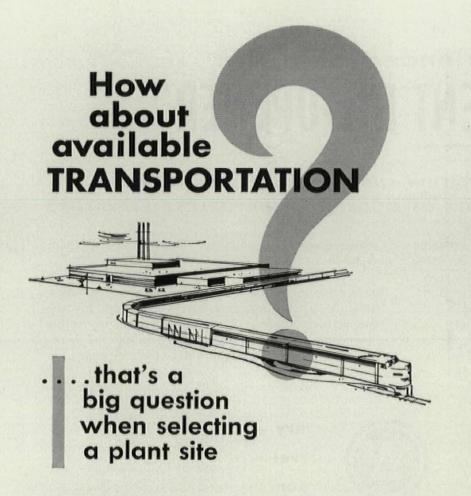




The elevators for our new Charlotte Building represented an important capital expenditure well worth our thorough investigation before any investment. Our study clearly demonstrated the technical quality and refinements necessary for efficient elevator service. We chose Westinghouse Selectomatic Elevators (and Electric Stairways) for this building. We are confident our decision was a wise one.

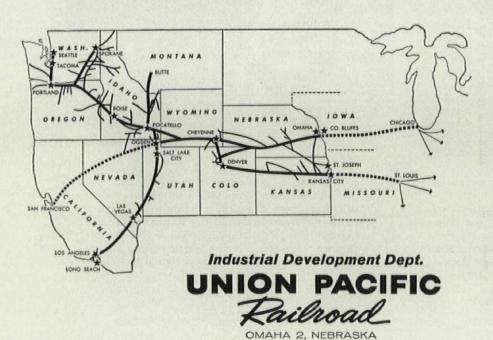


6 Our experience with Westinghouse elevator equipment in the past has been highly satisfactory. Witnessing an 'Eye-Opener' demonstration reconfirmed our high regard for the Westinghouse elevator system. We are more convinced than ever that our new Oil & Gas Building, with operatorless elevators by Westinghouse, will provide us with the finest vertical transportation possible.



And one big reason why so many nationally-known firms have selected a site in "U.P." territory is that they're assured of convenient and dependable freight and passenger service. No question about that.

For confidential and helpful information about our fully developed plant sites and many other choice industrial locations in the eleven western states we serve, call on your nearest U.P. office or get in touch with us direct. We'll be pleased to serve you.



REAL ESTATE INVESTMENT

continued from page 71

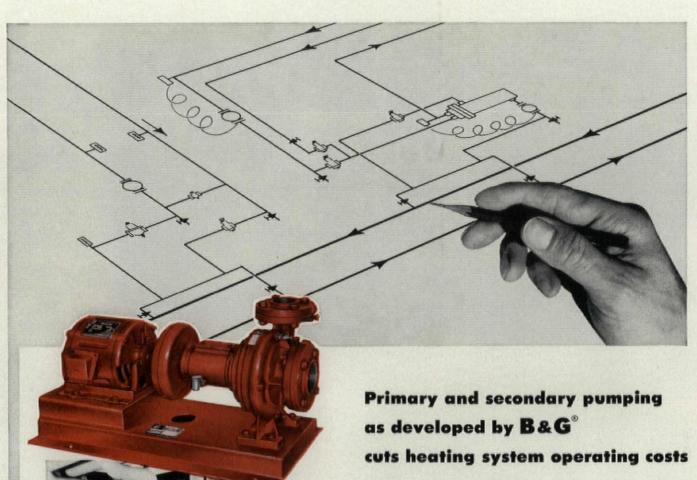
than does the corporation. On the mortgage side, it provides the means for pooling funds for mortgage investment which segments of the industry have been seeking for many years.

It may be assumed that the real estate investment trusts that were already in existence and struggling along under the disadvantage of double taxation will modify their structures so as to accommodate the recent law and enter into a phase of expansion. It may also be expected that many existing syndicates will be converted to and combined in real estate trusts, and, in some cases, real estate corporations may also find it profitable to do so, though such conversions involve many legal and tax questions that will take careful scrutiny.

For the future, it is likely that the trust will become the accepted method for providing the equity for large income-producing properties, unless the law should be later modified so as to allow corporations to be treated in the same way as trusts where they accept the same limitations as to income and methods of operation.

There is also a widespread interest in the formation of trusts for the purpose of mortgage investment, often with the idea that their shares will be especially suitable for pension funds and other types of funds and endowments that would like to have mortgages in their portfolios but want to avoid the detail of mortgage management and gain the diversification not possible in a small portfolio of mortgages. It may not be long before most of the larger mortgage companies will be operating trusts as partial outlets for their production.

As indicated, trusts may be confined to equity investment, or they may be confined to mortgage investment, or be limited to FHA and VA mortgages, or involve a mixture of various types of real estate interests. It is likely that this new investment medium will rapidly become a feature of the financing market: and, if the phenomenal progress of the mutual investment funds offers any basis of judgment, real estate trusts should add to the total supply of savings for investment purposes. And most important for the construction industry, this added supply will be available to virtually the whole range of private building activity. END



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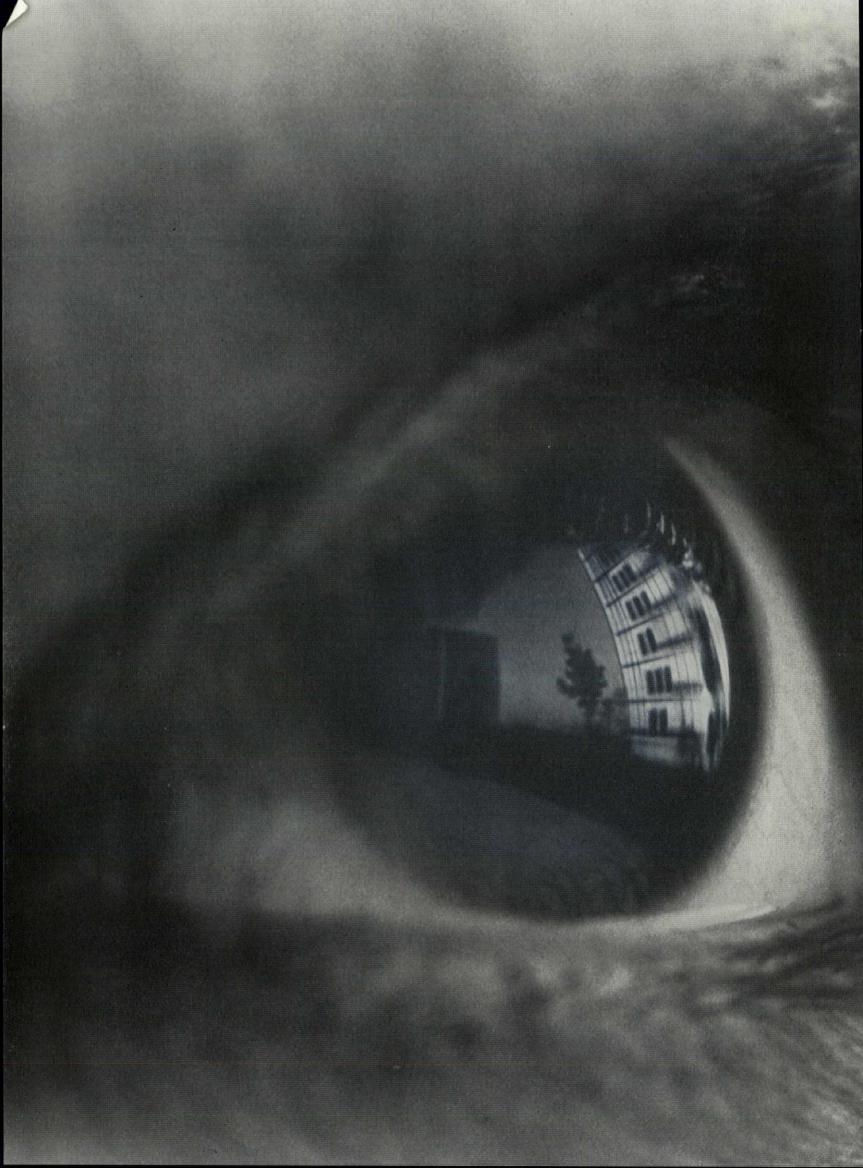
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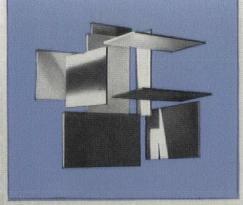


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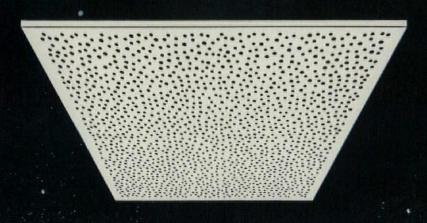
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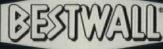
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TOTAL PLANNING

Forum:

In your November editorial you quote an M.I.T. source as follows:

"The theme of the approach to civil engineering education at M.I.T. shall be the fulfillment of human needs through the adaption and control of the landwater-air-environment."

And A.I.A. President Philip Will as saying:

"I hold that the architectural profession should assume responsibility for nothing less than the nation's total physical environment, including the land, the waters, and the air, an environment in which may be realized the aspirations of man."

May we suggest that the above concepts are an approximation of the planning philosophy. Neither engineering nor architecture can attain such broad objectives unless they take the total approach, i.e., planning.

LEWIS S. ROSCOE ROBERT TENNENBAUM Yale University New Haven

CODES DEFENDED

Forum:

Your article "New hotel vs. old code" (Forum, Nov. '60) refers to the "stifling hand of bureaucracy" forbidding private builders from using prestressed concrete. It is not the prerogative of an administrative official to tell an architect what materials he shall use, but it is definitely the obligation of the architect to justify the use of a material which cannot be determined by accepted engineering practice.

GEORGE L. RAMSEY, A.I.A. Commissioner of Buildings Chicago

ESTHETICS VS. ECONOMY

Forum:

I have read your account of the Cook County Superior Court's decision to refuse a demolition permit for the Garrick Theater building in Chicago (FORUM, Oct. '60) and I congratulate the court for the courage to make this important decision. It is about time America began to consider esthetic and cultural values above purely economic values.

Buildings like the Garrick Theater are as much a part of our American heritage as Williamsburg. I sincerely hope the people of Chicago will realize this and be able to find a practical way of preserving and using this masterpiece.

EDWARD DAVIS LEWIS Architect Lewis & Berghauser Scranton, Pa.

JOYLESS PLEASURE DOME

Forum:

As a second-nighter at the Loeb Drama Center's opening Troilus and Cressida, I feel the Harvard Theater Committee can rest content that their directive -"the building should not be so architecturally exciting and excited, as building, that the plays produced will be overshadowed by their frame" (FORUM, Oct. '60)—has been scrupulously followed. The exterior, even nightlit through functionless and inelegant hanging screens, is "modest" and self-effacing to the point of vapidity. Inside, a grim and stainless Puritanism pervades. The lobbies are comfortless and severe, lacking any taste of the joy of theater, the delight of illusion and art. The auditorium, apart from the admittedly immediate stage, is a prosaic pastiche of 1636 brick, matchstick acousticating, strange unpeopled concrete boxes, and a hectie wooden egg crate over-

I suspect a more effective performance—the *Troilus* was not a success—might render the spectator less susceptible to the joyless distractions of the architecture. But the best of casts in the best of plays, raised, lowered, and twirled about with all of Mr. Izenour's ingenuity, cannot altogether erase the disappointment of one who still enjoys having his pleasure domes look and feel, quite frankly, like pleasure domes.

DAVID LITTLEJOHN Harvard University Cambridge



MAGINOT ABBEY

Forum:

If an architect not so famed as Le Corbusier had created the "fortieth-century ruins" of Le Couvent Sainte Marie de la Tourette (photo above and FORUM, Oct. '60), it would never have earned a passing comment. Curious? Yes. Artistic? No! Possibly 20 centuries will permit St. Dominic's followers enough time to decorate their Maginotlike environment into a cloister that can direct the aspiring contemplative to more than the fascinating texture of cement and the advanced concrete technology of France and of Le Corbusier.

You had no call to roam so far to discover a notable twentieth-century achievement in monastic art and construction ingenuity. St. Joseph's Abbey (photo below) in Spencer, Mass., is a dynamo of faith without an architect's name.

There, Trappist brothers designed, toiled, and built with their own hands and minds a great monastery of surpassing beauty. It surpasses anything in liturgical community art produced since the missions of Fr. Serra and his brothers. Never has Georgian chant seemed more ethereal; acoustics and lighting are superb. Bro. Blase (formerly of Hilton Hotels), probably above all others, designed and guided the revolutionary conversion at Spencer.

WILLIAM T. STEVENS Stevens & Co. Charlottesville, Va.



SACRAMENTO'S RENEWAL

orum:

I was sorry to see your article on Sacramento (FORUM, Nov. '60) include criticism of the Scheuer Capitol Towers residential development on such short evidence. Your writer's on-thesite analysis was too early to adequately sense the spatial qualities of the site design or to get a real "feel" for the architecture. The walled-garden façades, the paved plaza, the fountains, the urban qualities of the spaces are just now beginning to become evident.

This development is turning out well—how well is yet to be determined. But it is quite clear even now that it will be a handsome and desirable place to live and a major step in the revitalization of urban Sacramento.

LAWRENCE HALPRIN Landscape architect, San Francisco

Forum:

Redevelopers, architects, the agency members, and the Sacramento business community, together with the historic landmarks group, have expressed chagrin, dismay, delight, and approval in varying degrees of the points made in your Sacramento story.

Personally, I believe the article pretty well sums up not only our past, but our present and future problems. We will continue to do our utmost with the opportunity we have.

JEROME F. LIPP Executive director Redevelopment Agency Sacramento

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