m/the magazine of building/December 1958

Library of the Minneapolis School of Ar

FORUM





Selection as a component of New York's new Washington Square Village is an honor, indeed. Here is an imaginative new interpretation of "country living in the city". On the project's 12½ acres, three magnificent 600-foot-long buildings rise 17 stories amid lavish landscaped and recreation areas. Their advanced architecture features colored glaze brick exterior panels...outdoor terraces running the length of most living rooms...and, of course, the most modern interior equipment, including Rheem-Richmond Plumbing Fixtures. Whatever your next project...commercial, industrial, institutional or residential...your selection of Rheem-Richmond assures highest quality and enduring beauty with minimum maintenance.





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WASHINGTON SQUARE VILLAGE NEW YORK

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OWNER-MANAGMENT-Washington Square Village Corp. ARCHITECTS AND ENGINEERS-S. J. Kessler & Sons BUILDER IN CHARGE OF DESIGN AND CONSTRUCTION-Paul Tishman General Contractor, Inc. CONSULTANT FOR SITE PLANNING AND DESIGN-Paul Lester Weiner PLUMBING CONTRACTOR-Jarcho Brothers, Inc. PLUMBING WHOLESALER-Smolka Company, Inc. nitectural Forum / the magazine of building / December 1958

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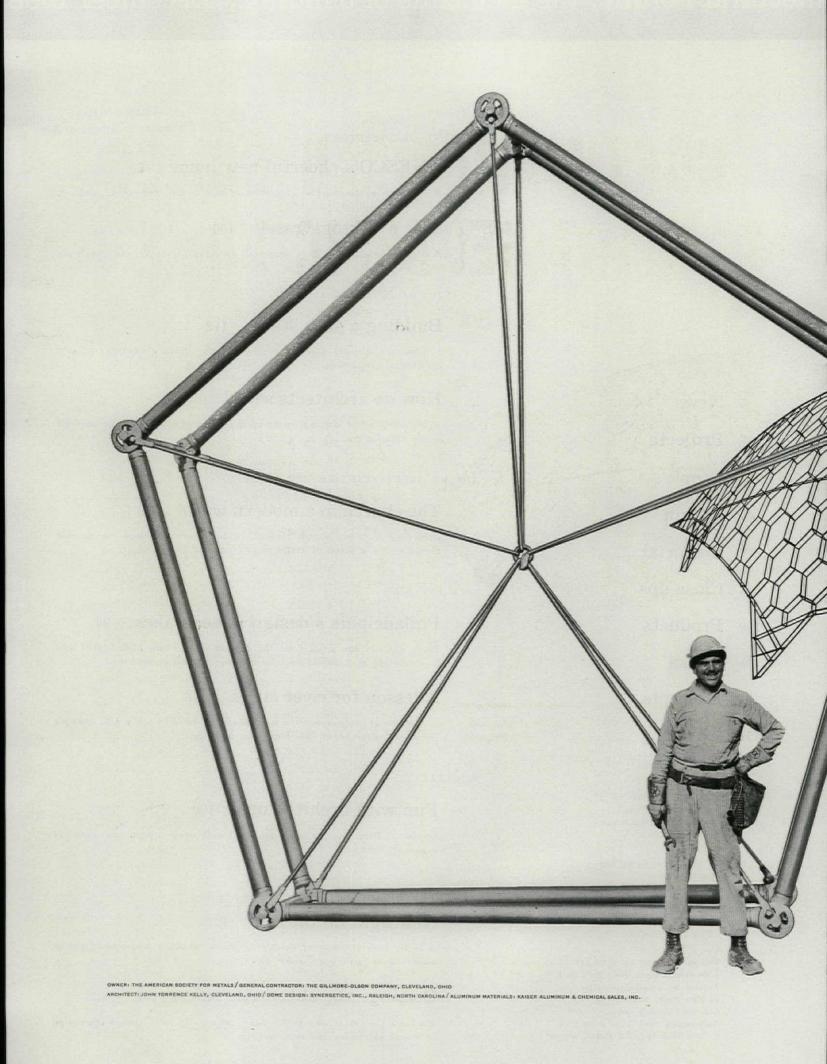
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NORTH AMERICAN BUILDS GIANT GEODESIC DOME

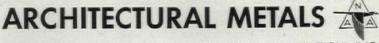
for American Society for Metals' new headquarters

From the aircraft industry comes the bright new name in Architectural Metals—North American Aviation—bringing new production-line techniques for forming and fabricating aluminum, stainless steel, and mild steel —including anodizing and surfacing with porcelain or plastic.

The American Society for Metals designed its new headquarters building 35 miles east of Cleveland to be a dramatic demonstration of metal's versatility. The Columbus Division of North American was chosen to build the geodesic space-lattice dome that is the major architectural highlight.

The dome-250 feet in diameter and 103 feet high-looks like an enormous open-end honeycomb. The Columbus Division built it of 11-foot aluminum pentagon and hexagon sections-strong, lightweight, durable.

Architectural Metals is now a full-fledged enterprise at North American's centrally located Columbus plant, ready to handle every phase of this type of work in your next structure—research, engineering, manufacturing, erection. For complete information about this new service, please write to: Architectural Metals Division, North American Aviation, Inc., Columbus 16, Ohio.



NAA-Columbus Builds Curtain Wall to

Specifications of Leading Architects

for many of the new "landmark" buildings, such as: the United Airlines Terminal at Idlewild,

N. Y.; the America Fore Loyalty Insurance Group

Building in Brooklyn; the College of Arts Build-

North American-drawing on its vast expe-

rience in designing and manufacturing in metals to the exacting standards of the aircraft

industry-has found workable answers to the

four major problems of curtain wall construction: laminating ... expansion and contraction

ing, Ohio State University.

. fastening . . . sealing.

NAA Metal Curtain Wall has been selected

THE COLUMBUS DIVISION OF NORTH AMERICAN AVIATION, INC.

3

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



Spacious atrium on lushly planted above . lower floor where employees dine right · Bridged entry over a long fountain pool dotted with planted islands

EDWARD D. STONE, architect

- STOCKLY & BAMFORD, mechanical engineers
- MYERS BROS.: BRUMMETT & DEMBLON, INC. general contractors
- HICKMAN BROTHERS, INC., plumbing contractor
- AMSTAN SUPPLY DIVISION. AMERICAN RADIATOR & STANDARD SANITARY CORP. plumbing wholesaler
- AMERICAN RADIATOR & STANDARD SANITARY CORP. fixture manufacture





FACTORY COMBINES BEAUTY AND EFFICIENCY

• The Stuart Company's new pharmaceutical plant a planted atrium for lounging and dining. Outside and office, Pasadena, California, combines high efficiency and dramatic splendor. Built on a downward sloping site beyond a boulevard-bordered lawn, the building is one story in front, two in back. The facade on the street level is a Persian design screen of milk-white concrete. Entry into the reception area is across a foot bridge over a plant and fountain dotted pool. On this floor are offices, laboratories and storage space. From the reception area stairs lead down into

and directly accessible from the atrium is a garden containing a swimming pool and pavilion. The manufacturing is done on this lower level, which was organized for highest production efficiency. The entire building is air conditioned and the lighting is from fluorescent fixtures. This notable building, which adds distinction to the community and recently won an A. I. A. First Honor Award, is completely equipped with SLOAN Flush VALVES, most favored of all.



News

Congressional elections a dubious mandate for "spending"; construction volume nears a record



EISENHOWER A vote for the "spenders."

BOX SCORE OF CONSTRUCTION (Expenditures in millions of dollars)

Jan.-Oct. Nonresidential 754 7,243 7,915 -8 Industrial 175 2,089 2,993 -30 Commercial 323 2,934 2,926 -Office buildings, warehouses 169 1,661 1,532 +8 Stores; restaurants; garages 154 1,273 1,394 -9 Religious 81 704 716 -2 Educational 53 432 +8 465 Hospital: institutions 51 511 422 +21 Residential (nonfarm) 1,724 14,484 14,130 +3 Public utilities 566 4,999 4,777 +5 Total Private* 3,196 28,281 28,368 0.0 PUBLIC BUILDING Nonresidential 420 3,836 3,777 +2 Industrial 32 317 406 -22 Educational 259 2,419 2,364 +2 Hospital: institutions 34 290 284 +2 Residential 76 654 396 +65 Military 130 980 1,117 -12 Highways 660 4,875 4,440 +10 Sewer; water 125 1,161 1,138 +2 Total Public* 1,567 12,849 12,125 +6 *GRAND TOTAL ... 4,763 41,130 40,493 +2 * Minor components not shown, so total exceeds sum of parts. ** Less than 1 per cent.

A disappointed Dwight Eisenhower declared that the American electorate "obviously voted" for "spenders" in the Congressional elections last month. Many Congressmen and ordinary citizens jumped to the same conclusion. But the outcome of the voting on various state and local bond issues suggests otherwise.

Over-all, the voters rejected a higher percentage (27 per cent) of the dollar volume of bond issues up for approval (\$2.3 billion) than in any year since 1956. All state bond issues for public housing measures were approved, and 82 per cent of the school construction bonds were passed. The category that fared most poorly was public building: excluding schools, only 50 per cent of the public building bonds were approved. Thus, it appears that the voters, while they may have wanted a change in representation, certainly were not writing any blank checks for new public spending.

Building industry volume nears record in 1958

Although the official construction figures for November and December are not yet in, it is apparent that 1958 will go down as a precedent-setting year for construction in several respects. First of all, despite the business slump in the first half, the dollar volume of building will certainly hit a new all-time peak in 1958 (the ten-month construction total of \$41.1 billion was 2 per cent higher than construction in the same ten-month period in 1957). And this new record is being set despite a 30 per cent drop in industrial building. There has, moreover, been a remarkably vigorous revival in home building. despite uncertain mortgage market conditions, particularly earlier in the year. Perhaps most important, however, building costs, as indicated by figures for the first three quarters of the year, have probably been more stable in 1958 than in almost any postwar year, which means that the physical volume of construction in 1958 should equal or perhaps even top the record set in the boom year, 1955.

Almost all building cost indicators have risen less this year than in any previous postwar year. Some prices have almost leveled out. The Boeckh index of construction costs for apartments, hotels, and office buildings, for example, rose only about 2.0 per cent in the first ten months of 1958, compared to an average postwar annual rise of over 5 per cent. The cost index of the Associated General Contractors (for heavy construction) has risen 2.6 per cent so far this year, compared with a 5 per cent rise last year.

The Department of Labor's index of wholesale prices for building materials, meanwhile, rose less than 1 per cent in the first three quarters of this year, as price rises in structural steel shapes (up 3.8 per cent) and lumber (up 2.2 per cent) were largely offset by drops in prices of plumbing equipment (down 4.1 per cent), heating equipment (off almost 1 per cent) and metal doors and sash (off nearly 2 per cent). Last month, several leading cement producers announced that they were going to hold prices steady through all of next year.

Topping off the various reports of more stable prices was the Bureau of Public Roads' announcement last month that highway construction costs dropped 1.7 per cent in the third quarter of 1958 to the lowest quarterly level in two years.

Barring a dramatic increase in construction costs in the fourth quarter, therefore, the dollar rise in construction spending this year should also produce a record physical volume of construction, eclipsing the \$35.7 billion mark (in constant dollars) set in 1955. Last year, inflation more than offset all of the rise in dollar spending.

Spending continues strong

Spending for new construction in October totaled \$4.8 billion, about 3 per cent more than in October 1957. Spending for private building continued to trail last year, but by less than 1 per cent. Main reason: the 3 per cent gain in spending for new dwelling units-the biggest single category of private construction-almost made up for the big drops in industrial construction and the building of stores, restaurants, and garages. The predicted slackening in the volume of new office building construction became more apparent in October: office construction dropped 6 per cent in the month.

Experts call for free mortgage rates

Among the realtors who gathered in San Francisco (page 7) and the mortgage bankers who convened in Chicago last month, there was great and growing puzzlement about the same two questions: Is money really tight? Is it going to get tighter?

The assembled experts could not seem to agree on either question and government pronouncements only compounded the confusion. For instance, the Federal National Mortgage Association released its quarterly financial roundup with the flat statement that "Mortgage funds for home buyers are becoming tighter." Fannie Mae based this conclusion on the fact that builders and others had more than doubled their offerings of mortgages to FNMA in September (\$23 million compared to August's \$9 million) in an effort to get funds to lend for new building. Secondary offerings to FNMA are usually a basic indicator of mortgage money trends. However, at about the same time, Federal Housing Commissioner Norman Mason announced that "It doesn't take a crystal ball to see that in another month the market will not be as tight as it has been in the last few weeks."

Out of the welter of opinions and figures, a certain consensus emerged. Most observers agreed that money has become, if not scarcer, at least somewhat more expensive. Some were inclined to agree with Senator John Sparkman (D, Alabama), who told the Mortgage Bankers Association that "much of this apparent money shortage may be psychological . . . many investors are withholding commitments in anticipation of more favorable yields in the future."

Commissioner Mason made a similar observation, that big lenders were feeling out the market before making commitments.

Both the MBA and the National Association of Real Estate Boards (NAREB) took note of some stiffening of mortgage rates for commercial and industrial properties. NAREB found that interest rates on prime commercial properties had edged up-from around 51/4 per cent to about 51/2 per cent in many areas-but said that nearly threequarters of the areas surveyed reported an "ample" supply of investment funds. Industrial properties were evidently not so attractive, as rates ranged slightly higher, and money was ample in only about half the areas, with supplies only "moderate" in another 40 per cent of them. Mortgage bankers reported privately that rates on shopping centers in good, soundly proved locations had edged up somewhat in recent weeks from the lows of last summer-rates of from 51/2 per cent to 53/4 per cent were cited.

Money is not so readily available, however, for mortgages guaranteed by the Veterans' Administration or insured by the Federal Housing Administration. These guaranteed mortgages have fixed interest rate ceilings, set by Congress. The VA reported that money was completely unavailable at its top rate of $4\frac{3}{4}$ per cent in 41 per cent of its areas. FHA mortgages have less trouble attracting money, but a growing number of realtors and builders are currently complaining that FHA's top rate of $5\frac{1}{2}$ per cent is not enough to compete with other investments offer-



"Violent distortions in home building."

ing higher yields. (Last month discounts on FHA mortgages varied from 95 to 98 per cent of par, depending on the section of the country). MBA's new president, Walter C. Nelson, president of the Eberhardt Company of Minneapolis, Minnesota, cited the "control placed on interest rates of insured and guaranteed mortgages" as the "main cause of violent distortions in home building." In order to eliminate these distortions, Nelson, and the MBA, advocate freeing the market for FHA and VA mortgage rates - something which Congress, particularly with a newly elected heavy Democratic majority, is unlikely to do.

Despite the known disinclination of Congress to unfetter FHA and VA rates, there is a good chance that the Administration will ask at least for higher interest rate ceilings. And the vigorous statement of Dr. Raymond J. Saulnier, chairman of the Council of Economic Advisers, at the MBA convention, urging completely uncontrolled VA and FHA rates, was taken by many to indicate that perhaps the Administration would even press for a complete decontrol of FHA and VA rates.

Democrats expected to expand housing program

In the wake of the sweeping Democratic victory last month, which established lopsided majorities for the Democrats in both houses of Congress, the biggest question for the construction industry is: will a radically expanded program of housing and other federally backed building be passed when the 86th Congress convenes next month?

The answer is not so obvious as it might first seem (see page 5). There certainly will be an expansion of some existing housing programs (urban renewal and the special assistance functions of the Federal National Mortgage Association are two likely prospects), and a concerted push to institute new ones (particularly a program of grants for airport construction, and for construction projects in depressed areas). However, the vital committees that originate and shape new construction legislation will continue to be chaired by conservative Democrats (such as Representative Howard W. Smith of Virginia, who successfully bottled up the omnibus housing bill in his House Rules Committee last summer), and so there may well be some brake on ultraliberal spending in Congress. And there is also the possibility of Presidential vetoes-President Eisenhower minced no words in his postelection attack on the "spender-wing" of the Democratic party, and vowed to fight "as hard as I know how" against excessive federal spending.

The keynote for the Democrats' next session was initially sounded by Senate Majority Leader Lyndon Johnson, of Texas, who announced a 12-point legislative program just after the elections. So far as building is concerned, Johnson called for a program of aid to depressed areas (which the President vetoed last session), a federal airport building program (likewise vetoed), lower interest rates, "a bold housing

News

program," and "a courageous urban renewal program." Johnson also called for more community facilities construction with federal funds. While he did not mention possible federal school construction programs, other party leaders put school aid near the top of their lists of "must" legislation.

The key to how successful the Democrats may be in developing broader federal programs for housing and other construction lies in the composition of committee assignments in the new Congress. In the Senate Banking Committee, which writes housing legislation, the parties were pretty evenly split before the elections, with an eightto-seven Democratic majority being frequently offset by the conservative voting of Senator Willis Robertson (D. Virginia). But in the new session, the Democrats will have at least a nine-tosix edge, and perhaps even a ten-tofive majority. On the House side, the Banking Committee, which previously had a Democratic majority of 17 to 13, will probably line up with at least a 19-to-11 Democratic majority.

The first clue to the new Congress' line-up on housing and building programs will probably come soon after the opening of the new session next month, when the Administration is expected to ask for new insuring authority for the Federal Housing Administration, which has almost exhausted the \$4 billion authorization it got last spring (FORUM, November 1958), and an emergency appropriation of \$100 million for urban renewal. If the Democrats attempt to increase the emergency appropriation for urban renewal, or to vote an extra \$1 billion or so to the Federal National Mortgage Association for its special support programs, as has been rumored, the housing issue will probably provoke the first test of relative strength in the new Congress - and may also result in the first Presidential veto of the session.

Realtors see good business despite inflation fears

Real estate business has been good this year, and will be still better in 1959. That was the almost unanimous view expressed at the 51st annual convention of the National Association of Real Estate Boards in San Francisco last month. On many other subjects, however—such as inflation, omnibus housing legislation, slum elimination progress, and federal funds for urban redevelopment — the various experts expressed contrasting and often conflicting opinions.

Chief optimist, NAREB President H. Walter Graves, of Philadelphia, told a press conference that there had been "no basic reason" for the economic dip in 1958, which, he declared, eventually will be recorded historically as the nation's "shortest" postwar recession. NAREB membership surveys, he added, predict better business in 1959.

The effects of inflation on the real estate business occupied a large portion of the realtors' discussions. Declaring that "inflation is here to stay," San Francisco realty owner and developer Ben Swig advised investors to put their money into real estate to protect their capital. But the next day, Senator Wallace F. Bennett (R, Utah) called for a "moral crusade" against inflation, and disputed Swig and other realtors

who contend that real estate is a safe hedge against inflation. Said Bennett: "Since true real estate values properly increase only through more effective use, it is easy for inflation in real estate to hide under that guise and push prices up further and fastermore inflated money invested in inflated land. . . . In the end pressure for credit expansion and low interest rates accompanying inflation will destroy all the capital in real estate, because the savers and lenders will not be so stupid as to keep lending on real estate. There is no ultimate hedge aganst inflation-including real estate."

NAREB's policy statement urged the new Congress to expedite an expansion of the gross volume of home mortgages FHA is authorized to insure, as soon at it convenes next month. *continued on page 9*



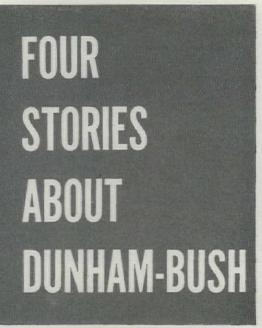
GRUEN DESIGNS COMMERCIAL DEVELOPMENTS FOR TWO CITIES

The architectural firm of Victor Gruen & Associates is best known for its mammoth suburban shopping centers and its celebrated Fort Worth plan, which was a broad-gauge redevelopment scheme for a whole downtown (FORUM, May 1956). Lately, however, Gruen has been devoting his efforts to smaller-scale commercial projects deep in the downtown areas of two large cities. In Rochester, New York, Gruen has designed a \$15 million project covering about four city blocks, and consisting of two new department stores, an 18-story office building-hotel, a bus terminal, and a 2,000-car parking garage (picture above). The project is being backed by owners of the city's two leading department stores, B. Forman and McCurdy & Company, Inc., who originally came to Gruen to get a design for a parking garage. Gruen intrigued them with a vision of a downtown shopping plaza. featuring not only the garage, but two large stores, and some 30 smaller shops. Now all that is needed for the project to proceed is city approval for certain street relocations and extensions. The redevelopers have already bought most of the property on the 7-acre site, and hope to get under way soon.

In Milwaukee (picture below) Gruen has teamed up with local Architect Robert Rasche on a two-block project for the Marine National Exchange Bank. Only three new buildings are involved in the project—a five-story bank building, a 28-story office building, and a garage for 500 to 700 cars. Although the Milwaukee project has no shopping area, Gruen has managed to work in what has by now become a. Gruen trademark—a small landscaped plaza.

OSTER C. STANFIELD







ADJUSTING CONTROL OF

ARCHITECT: Damon, Worley, Samuels and Associates CONSULTING ENGINEER: Superior Engineering Co. CONTRACTOR: Reliance Heating and Air Conditioning Co.

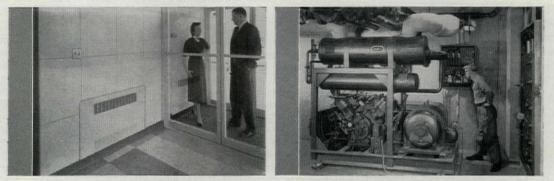
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1DUNHAM-BUSH COOLING2DUNHAM-BUSH HEATING3BRUNNER COMPRESSORS4HEAT-X PACKAGE CHILLER

The high quality heating and cooling equipment which services all four stories of the handsome new Suburban West office building, Cleveland, Ohio, is a physical expression of the Dunham-Bush 'one source-one responsibility' reputation.

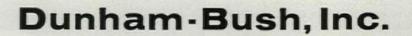
'one source-one responsibility' reputation. A 75 Ton Heat-X Package Chiller, efficiently assisted by a rugged Brunner Compressor, supplies chilled water to the air conditioning system. 130 Dunham-Bush CRV Remote Air Conditioning units provide quiet, year 'round air conditioning of the building. 20 Dunham-Bush Recessed Convectors satisfy the heating demands.

A complete climatic network of heating, cooling, air conditioning, and air dehumidification by Dunham-Bush, the name that means "the best".



RECESSED CONVECTORS FOR HEATING

HEAT-X PACKAGED CHILLER WITH BRUNNER COMPRESSOR



WEST HARTFORD 10 . CONNECTICUT . U. S. A.



Because the periodic need for increasing FHA's gross insurance authorization has often been used as a "hostage" to assure the acceptance of public housing and other provisions in omnibus housing bills, the association also urged Congress in the future to consider and enact each major item of housing legislation as a separate bill. Politically, this recommendation is impractical, however, as Congress has long been accustomed to using FHA authorizations as a convenient lever with which to pry other housing measures into law.

Renewal differences

In the urban renewal section of its policy statement, the convention recommended: gradual reduction in federal grants for redevelopment projects and concurrent surrender of certain tax sources to state and local governments so the latter can increase their redevelopment expenditures; more rigid enforcement of local slum prevention codes as a prerequisite for receipt of federal renewal funds; priority for renewal projects that concentrate on rehabilitation and conservation, rather than redevelopment; and tax exemption as an "expense" for the cost of "additions" to substandard dwellings to correct sanitation or safety deficiencies.

Surveying the total national urban renewal effort, President Graves expressed the opinion that slums are now being eradicated or rehabilitated faster than new blight is developing. On this point HHFAdministrator Cole differed with Graves and said he felt slums are still spreading faster than they are being eliminated.

Carpenters threaten to pull out of AFL-CIO

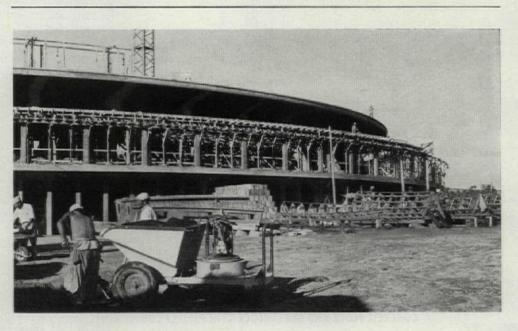
Joel Hazewinkel, a carpenter from Cedar Rapids, Iowa, and an unidentified friend last month cast the only two votes against a resolution empowering the executive board of the 800,000member United Brotherhood of Carpenters to pull the union out of the AFL-CIO whenever the board decides. The two dissenting votes prevented Carpenters' President Maurice A. Hutcheson from winning a completely united front in his continuing struggle with the AFL-CIO's top leadership. But the AFL-CIO's executive council was unimpressed-its attitude was revealed in a letter, written the day of the Carpenters' vote, from President George Meany, asking Hutcheson to appear at a special council meeting in February, when Hutcheson will have to explain "a number of things" that might constitute violations of the union's ethical code. Hutcheson will probably have to answer for an Indiana indictment for an alleged bribe, and his citation for contempt of Congress after refusing to answer questions about his financial affairs before the McClellan Committee (FORUM, October 1958).

Nevertheless, the resolution voted by 2,000 special delegates may give Hutcheson some bargaining power when he meets the AFL-CIO council in February. The AFL-CIO has been going slower with Hutcheson than it did with James Hoffa of the Teamsters, and undoubtedly would like to keep the Carpenters in the fold. On the other hand, it cannot afford to relax its campaign against suspected corruption in unions. Best bet: the AFL-CIO will hold off final action on Hutcheson until the completion of his court trials. Meanwhile, Maurice Hutcheson can rest secure in the knowledge of the

full support of his union's membersexcept for Joel Hazewinkel and friend.

HHFA blasts New York renewal efforts

After nine years of paying some rather hefty subsidies for slum clearance (\$144 million already disbursed and another \$1.1 billion in reservations). the federal government is beginning to cast a rather cold eye on some of the results. Two months ago the Housing & Home Finance Administration expressed disappointment at the pace of urban renewal in San Francisco, and its criticism precipitated a shake-up in that city's administrative apparatus. Last month, HHFA turned its criticism on the biggest recipient of federal renewal funds of all. New York City. which has received about 25 per cent of all federal renewal funds disbursed. continued on page 11

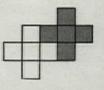




NERVI'S OLYMPIC STADIUM

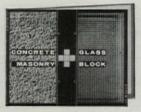
All around Rome new hotels, housing and sports facilities are mushrooming in preparation for the 1960 summer Olympics. Busiest designer of all is Pier Luigi Nervi, whose Palazzetto dello Sport (FORUM, March 1958) is already finished. Now Nervi has also designed a larger Palazzo dello Sport (pictures), to seat 16,000 basketball and boxing fans. It is springing up on a hill site just south of Rome amid some relics of a grandiose world's fair, planned by Mussolini, that never came off. Like his earlier sports palace, Nervi's new stadium is built of prestressed concrete pieces, precast at the site. Supporting piers web out to form the dome.

New kind of wall with two kinds of block



CONCRETE BLOCK AND GLASS BLOCK - THE PERFECT COMPLEMENTS

Limitless designs in light, in shadow, in substance are yours when you combine the beauty and practicality of concrete masonry and glass block. Both materials are modular allowing simple and economical construction of unusual patterns of intriguing



style. When you combine glass block with concrete block you create a wall of textured beauty, adding the utility of light.

Ask your local NCMA member for a copy of "Ideas Unlimited" in color with new ideas for combining concrete block and glass block the perfect complements. NATIONAL CONCRETE MASONRY ASSOCIATION

38 SOUTH DEARBORN . CHICAGO



New York, said HHFA Regional Administrator Walter S. Fried, "needs an over-all approach to the problem of an adequate housing supply." He added ominously, "Unless there is marked improvement in the conservation efforts of the city to protect satisfactory housing, the federal government shall be compelled to review the entire Title I program in New York City with a view to necessary changes." What particularly stirred Fried's ire was the continuing deterioration of existing housing near newly built urban renewal housing. Fried feels that the city has been too lax in its enforcement of housing codes, particularly on New York's West Side, where the federal government has made contributions totaling over \$60 million for six urban renewal projects. "Despite the magnitude of this activity and this huge investment in a limited area," Fried said, "we are making only a slight dent in the blight. Meanwhile, other parts of the neighborhood are continuing to deteriorate."

Fried was joined in his criticism by Herman Hillman, regional director of the Public Housing Administration, who complained that the city was promoting overcrowding and poor conditions in areas near public housing projects, again largely because of poor enforcement of codes.

Mayor Robert F. Wagner responded quickly to the federal criticism. He assigned Deputy Mayor Paul O'Keefe, former senior vice president of the real estate company of James Felt & Company, to work with the federal agencies in ironing out the wrinkles in the city's renewal efforts.

Many renewal experts interpreted the latest federal attack on New York's renewal efforts as a warning to other cities, some of which are even more backward in their coordination of renewal programs than New York.

Ford Fund report hits segregation in housing

The housing industry was severely criticized last month in a hard-hitting report on discrimination in housing issued by a group of eminent private citizens. The report, which vigorously lambastes every segment of the housing industry for promoting discriminatory housing practices, is the work of 17 private citizens and a small staff, operating under a grant from the Ford

the Commission on Race and Housing^{*}. Although not totally unexpected, the report caught many of the industry's leaders off balance, particularly the real estate men and federal officials meeting at the National Association of Real Estate Board's convention in San Francisco. But the industry's initial response to this important report indicates that it would rather forget the whole thing than face up to its responsibilities in providing something more than lip service to the ideal of equal opportunities for all home seekers.

Foundation's Fund for the Republic, as

Heading the committee's staff was Davis McEntire, professor of social welfare at the University of California. McEntire has pulled no punches in the report. In the first sentence he declares flatly that, "Housing is the one commodity on the American market that Negroes and persons belonging to certain other ethnic minorities cannot purchase freely: . . . In quality, space, and value, the homes of minority families rank far below the general standard of housing in the U.S."

A familiar homily perhaps, but in this instance backed by an impressive amount of statistical data. And it is certainly no homily when the report observes that, "The group prejudices of the white population provide a basis and support for the segregation of minority groups, but the actual controls and sanctions are administered largely by the housing industry."

The report spares no one connected with home building in its apportioning of the responsibility for the abridgement of the rights of over 10 per cent of the U.S. population. Realtors, and specifically the National Association of Real Estate Boards, come under heavy fire for maintaining white neighborhoods inviolate on the grounds of preserving property values, the "homo-

*The group is headed by Earl B. Schwulst, president of the Bowery Savings Bank. Other members: Gordon Allport, professor of psychology at Harvard: Elliott Bell, of Business Week; Laird Bell, a Chicago attorney: Reverend John Cavanaugh, director of the University of Notre Dame Foundation: Peter Grimm, chairman of William A. White & Sons, York; Charles Johnson, president of Fisk New University; Charles Keller Jr., president, Keller Construction Corporation, New Orleans: Clark Kerr, president, University of California; Philip Klutznick, chairman of American Community Builders: Henry Luce, editor-in-chief of TIME INC.; Stanley Marcus, president, Neiman-Marcus, Dallas; Harold McClellan, president, Old Colony Paint & Chemical Corporation, Los Angeles; Ward Melville, president, Melville Shoe Corporation; Francis Plimpton, New York attorney; R. Stewart Rauch Jr., president, The Philadelphia Saving Fund Society: Robert Taylor, executive director. Illinois Federal Savings & Loan Association.

geneity" of the area, or simply protecting their own profits.

The builders are accused of propagating segregation by building allwhite developments, or all nonwhite developments, but doing next to nothing in the way of providing a truly free market for housing. Mostly the builders plead "business necessity," and claim that even if they wanted to build integrated developments, they could not get financing. Most builders believe that whites simply will not live with nonwhites.

Banks, insurance companies, and other lenders provide "major support" to segregation in housing by their "common policy of lending to nonwhites only in certain areas and refusing to finance the purchase of housing by nonwhites in white neighborhoods." Possi-



MCENTIRE "Nonwhites cannot purchase freely."

ble damage to property values is one reason for the money-lenders' encouragement of segregation, but the report notes that a new reason has evolved lenders are afraid that if they lend to nonwhites to live in white neighborhoods, they will incur the wrath of brokers, depositors, or policy holders. They are worried about their public relations.

One of the most surprising observations of the report is that the "policies and actions of government agencies and public officials must be counted among the principal influences sustaining racial segregation in housing." The Federal Housing Administration's early support of restrictive covenants, and its recommendations to use these to insure "racial stability," is a prime example of government-sponsored discrimination. Since such convenants were declared unconstitutional by the Supreme Court in 1948, FHA has given lip service to open occupancy but has done nothing "to control the discrimicontinued on page 13

3 Buildings_3 Specifications ALL USE TECTUM ROOF DECKS





FURNACE BROOK SCHOOL, QUINCY, MASS.

Engineers: Anderson-Nichols & Company, Boston, Mass. Architect: Earl M. Harvey, A.I.A., Boston, Mass. General Contractor: L. C. Blake Construction Co., Boston, Mass.

Keeping costs in line to meet the needs of a growing school age population is a challenge met perfectly when Tectum decks are installed. Structural, noncombustible, insulating and acoustical panels go down fast. Deck and interior ceiling are completed in one operation. Costs are reduced when Tectum is laid over joist or beam. Hundreds of schools in all climates are utilizing this new concept with marked success. Write for complete information.

BILL ADOLPHSON'S BOWLING CENTER, GREENSBURG, PENNSYLVANIA

Architect: Gordon C. Pierce, Greensburg, Pennsylvania General Contractor: L. P. Wineman, Greensburg, Pennsylvania

The roof deck of this bowling alley—as well as the sidewall material—become important assets to the success of this new building. The continual thunder of rolling balls and flying pins is considerably lessened with Tectum sound-absorbing roof decks and sidewall material. Tectum insulates, too, and is noncombustible, termite proof and workable as wood. Here's functional good looks at work—a single material responsibility for good construction, durability, appearance and effective noise reduction.

BEULAH PRESBYTERIAN CHURCH, PITTSBURGH, PENNSYLVANIA

Architects: Hoffman & Crumpton, Pittsburgh, Pa. General Contractor: Ferraro Construction Co., Pittsburgh, Pa.

Good acoustics go hand in hand with good appearance in this modern house of worship. Tectum decks play an important part in holding costs to appropriated funds, as these economical panels are laid directly over secondary framing members without need for further insulation, acoustical treatment or sheathing. Textured Tectum decks are warm and inviting, and audience appreciation of the services is greatly improved.





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News

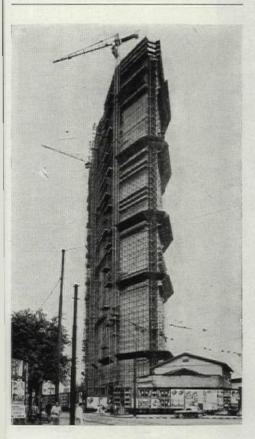
natory practices of private builders or lenders."

Only public housing is cited for being "far in advance of the field" in initiating open occupancy in its housing developments in the northern and western parts of the U.S. In the South, of course, public housing is still segregated.

Among the steps that should be taken to provide all citizens access to a free housing market, the report recommends:

▶ Federal agencies should give, "without delay, the fullest support to state and municipal legislation for equal treatment in housing."

In urban renewal programs, adequate relocation should be "a responsibility" of government, and renewal



ITALIAN SKYSCRAPER

Italian Architect Gio Ponti has long felt that the height of a city building "is and must be primarily determined by traffic." To stack skyscrapers cheek-to-jowl, as in New York, is a mistake, Ponti says, because it simply worsens traffic congestion. Buildings must be more widely separated, allowing for wider streets and parking areas, making up for loss of horizontal building space in building height. Ponti's new 28-story Pirelli rubber company skyscraper in Milan is his latest test of this theory. It is a tower set on a platform, with traffic flowing through and around its lower level, and includes several parking plazas. Because structural steel is expensive in Italy, Ponti designed the building of prestressed concrete, and has sheathed it with a sparkling glass façade.

should place "increased emphasis on conservation and rehabilitation projects in areas undergoing racial transition."

▶ Low-income housing on scattered sites should be encouraged, getting away from the mammoth projects which too frequently become "racial ghettos."

▶ Federal and local agencies should "intensify their efforts to increase the total housing supply."

A presidential commission on "the elimination of discrimination in federal housing and urban renewal programs" should be established forthwith.

The report may place the Democratic majority in an uncomfortable position when Congress reconvenes, for while it undoubtedly dovetails nicely with the views of many of the newly electedand incumbent - liberal Congressmen, it could widen the North-South breach in the Democratic party. Republicans are sure to take advantage of this fact, and may press for some early action on the report (see story that follows). Congressional leaders Johnson and Rayburn, therefore, are expected to ignore the report's recommendations, at least at the start of the session, and pass only that housing legislation which seems to meet momentary needs. But it is unlikely that they can ignore the report for long-and the housing industry cannot afford to ignore it at all.

Cole disclaims federal role in integration

The initial reaction of the housing industry to the Ford Foundation report on discrimination in housing (see above) was to shrug off the findings by saying "It's interesting, but it's somebody else's problem." Housing & Home Finance Administrator Albert M. Cole was in San Francisco when the report was released, and when asked to comment, he replied that federal housing agencies "take cognizance" of state and local laws regarding discriminatory housing practices. However, Cole stated that the federal government has no responsibility for "enforcing racial integration in housing."

This not only seemed to miss the point of whether or not the federal government has an obligation to insure just treatment for all homeownercitizens, but Cole also may have missed a political opening. The Republicans will undoubtedly use the report to exploit the North-South split in the Democratic party. Senator John Sparkman (D, Alabama), the Senate's leading housing figure, quickly warned that for the federal government to fight segregation in its housing programs "would jeopardize the whole program." But the liberal Democratic majority may not agree with him.

The National Association of Real Estate Boards, which will undoubtedly make a policy statement on the report soon, was caught off guard. President Walter Graves could only reply that NAREB had "no policy in this field," and that it was a local matter.

Briefs

Federal statistics shuffle: The longsmoldering battle between the Departments of Commerce and Labor over who will handle construction statistics (FORUM, February 1958) was near its end last month. Although all the details have not been worked out. Commerce is slated to handle all building statistics, with Commerce's Census Bureau collecting figures on housing starts (heretofore a function of the Bureau of Labor Statistics) and its Construction Division taking over BLS' job of gathering public construction figures. In return, BLS will take over all of Commerce's manpower statistics.

One step forward: At their annual convention, the Bricklayers, Masons & Plasterers International Union, a few weeks ago, voted overwhelmingly for the use of "any instruments" that would increase their productivity. At the annual convention locals were given carte blanche to use any type of mechanism, but they may also elect to stick to present methods.

Two votes for renewal: State urban renewal laws have been upheld by courts in Texas and California. The U.S. Supreme Court upheld California's renewal act in a case involving three San Francisco slum property owners who questioned the city's right to condemn property and deny them participation in its later development. In Texas, a federal district judge upheld the state's renewal law, but the decision will be appealed.

Pereira & Luckman split rumored: In Los Angeles, last month, an unconfirmed but apparently reliable theme was that William Pereira and Charles Luckman, who formed a partnership in 1950, will next year go their separate ways.

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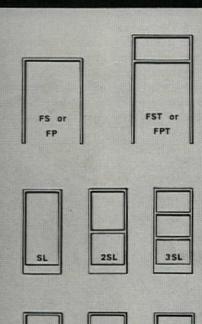
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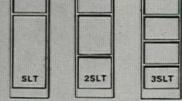


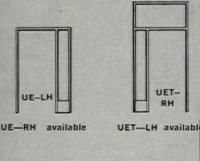
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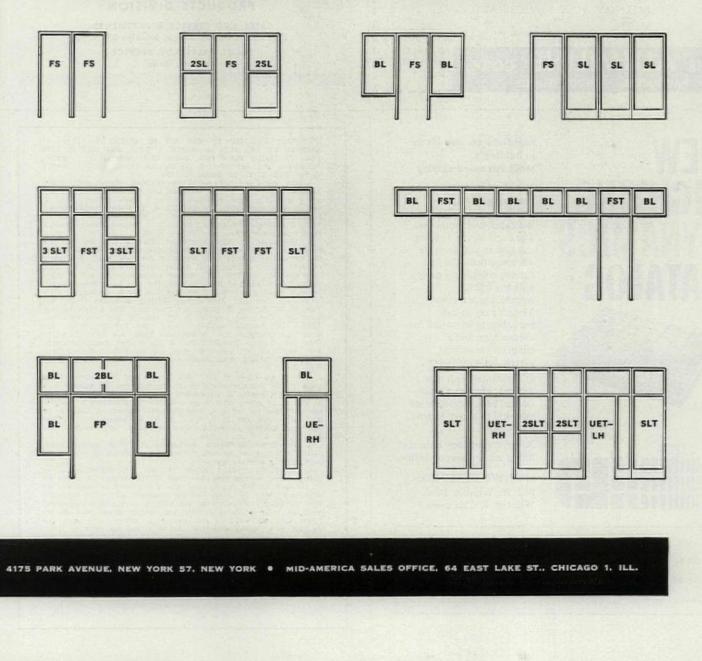
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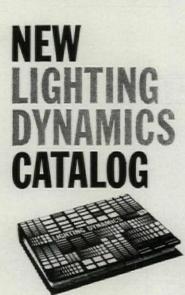
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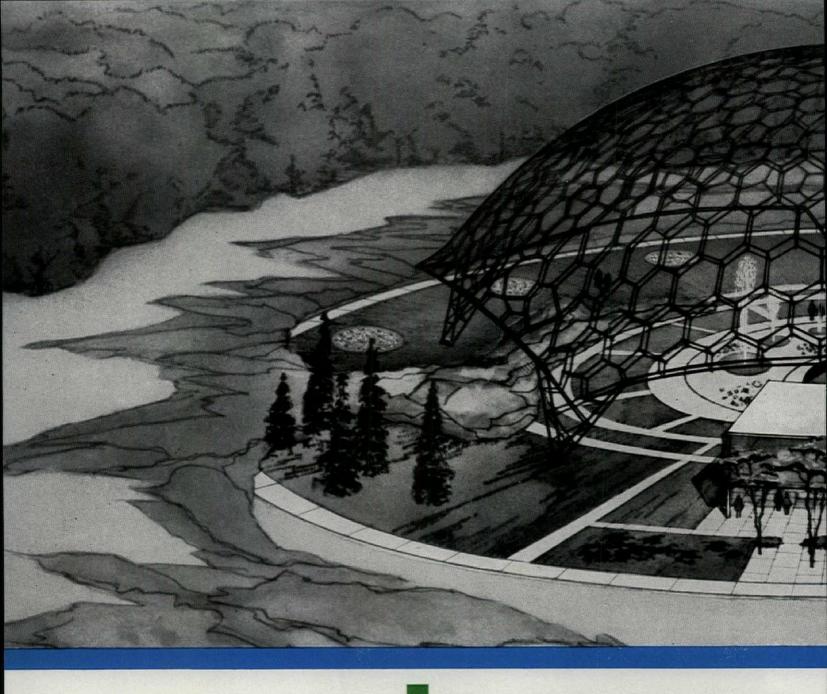
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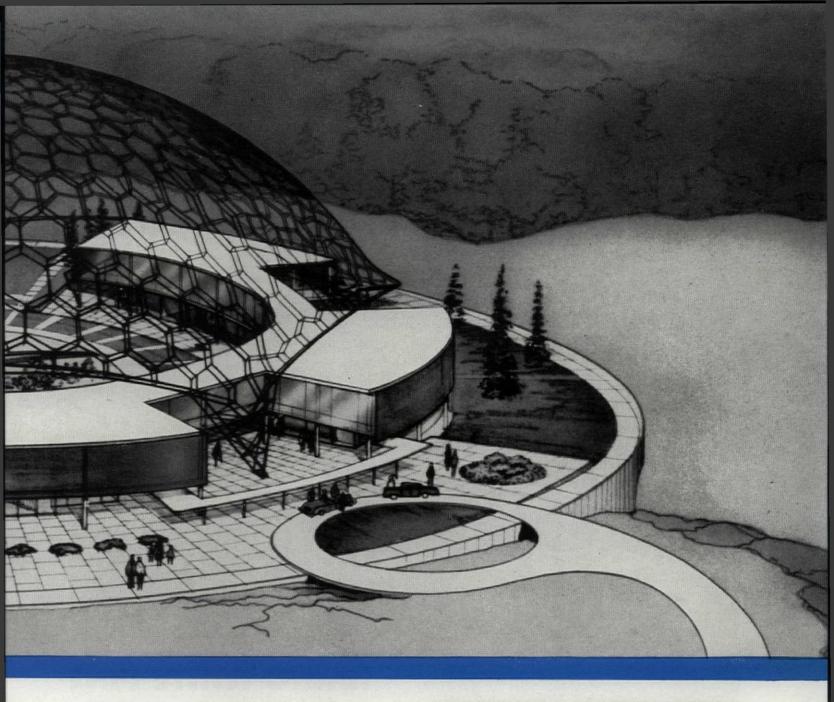
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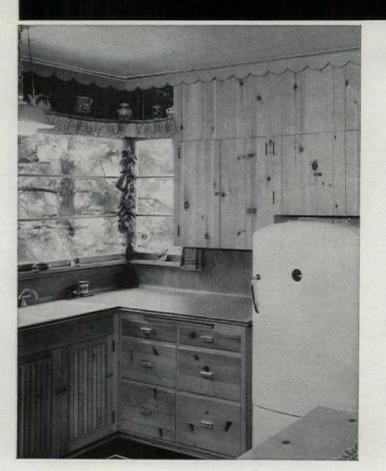
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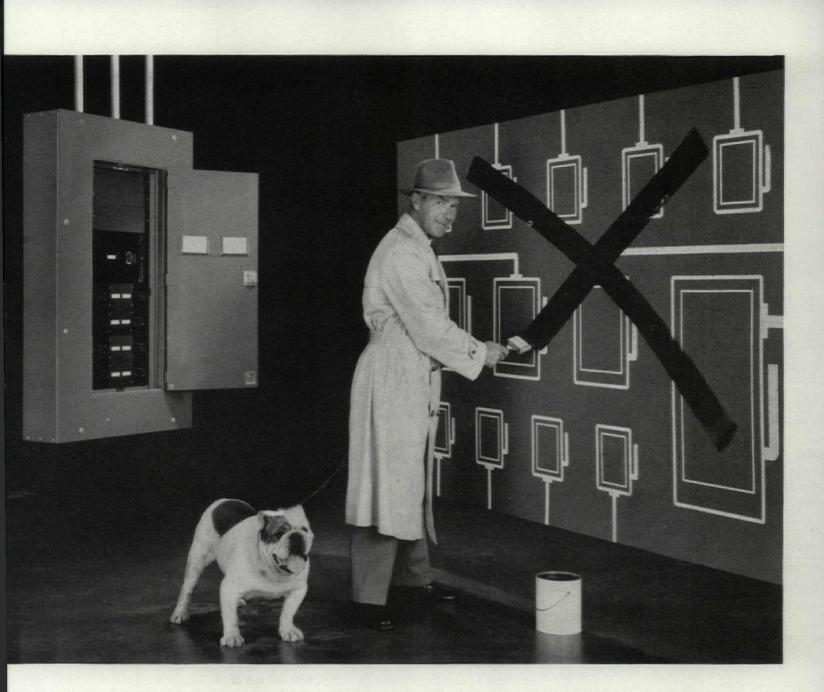
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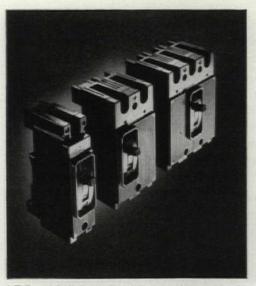


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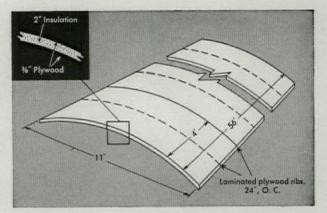
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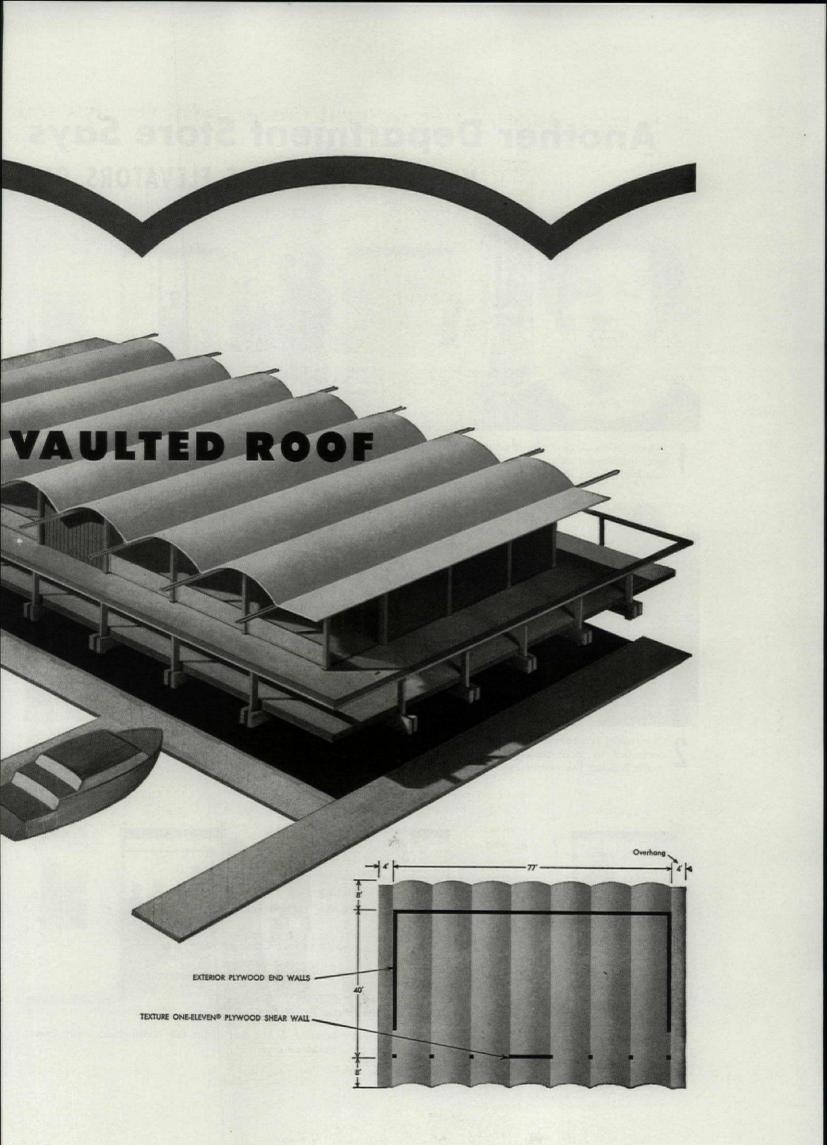
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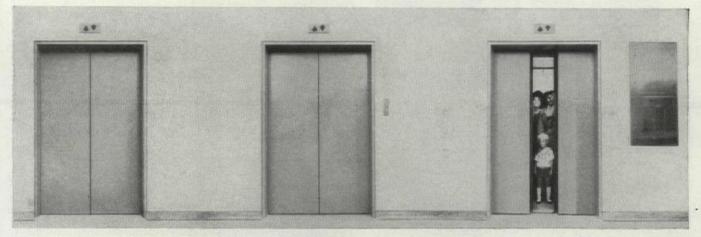


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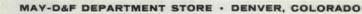


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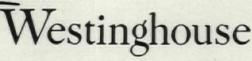
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Associate Architect: Ketchum & Sharp General Contractor: Webb & Knapp Construction Corp.

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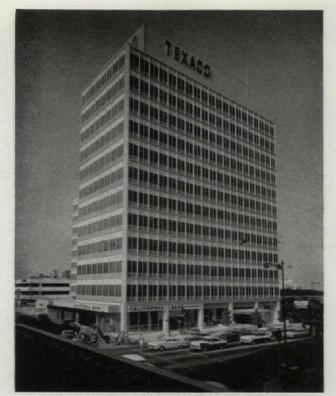
As this magazine goes to press, we proudly announce that the new and colorful 1959 Iron Workers "Calendar of Progress" will be on its way to you long before the holidays.

Based on your wonderful reception of the Iron Workers Curtain Wall Calendar-97.3% of American architects requested the 1959 calendar-now in its third year of publication, we believe that you'll be as proud to receive the new addition as we are to send it to you...the colorful and magnificent new display of "Metal Curtain Wall" structures born of our mutual efforts.

We are grateful to you for your recognition, and wish you a Happy New Year on the road to greater progress

John H. Lyons, General President

INTERNATIONAL ASSOCIATION OF BRIDGE, STRUCTURAL AND ORNAMENTAL IRON WORKERS CONTINENTAL BUILDING - 3615 OLIVE STREET, ST. LOUIS 8, MISSOURI



TEXACO BUILDING • LOS ANGELES, CALIF. • Owners, The Texas Company • Contractor, Del E. Webb Construction Company, Los Angeles, Calif. • Architect, Welton Becket and Associates • Fabricated and Erected by Ador Corp. of Fullerton, California • Fabricated by Ironworkers Local No. 509 of Los Angeles • Erected by Ironworkers Local No. 433 of Los Angeles.





Contractor, R. P. Farnsworth & Co., Inc., New Orleans, La. • Architects, Goldstein, Parham & Labouisse; Favrot, Reed, Mathes & Bergen • Sub-Contractors, Steel Sash Service, Inc. • Erected by Ironworkers Local Union No. 58, New Orleans.



750 THIRD AVENUE • NEW YORK CITY • Owners and Builders, Uris Brothers, New York, N. Y. • Architect, Emery Roth & Sons, New York, N. Y. • Erected by Local Union 580, New York, N. Y. • Fabricated by Local Union 502, Philadelphia, Pa.



NEW OFFICE BUILDING FOR COLUMBUS AND SOUTHERN OHIO ELECTRIC COMPANY • COLUMBUS, OHIO • Manager of Construction, Ebasco Services, Inc., New York, N. Y. • Architect, Edgar I. Williams, Columbus, Ohio • Fabricated and Erected by Universal Corporation, Dallas, Texas • Erected by Local Union No. 172, Columbus, Ohio • Fabricated by Local Union No. 536, Dallas, Texas

How would you answer this challenge?

Sk da Cu I bec out i t ge

Design a 19-story office for a famous metropolitan area that hasn't seen a major new building in 20 years. Make every floor column-free so that interior walls will be movable. Build it big . . . build it economically . . . and build it *beautiful*.

Skidmore, Owings & Merrill had that challenge in the design of the Inland Steel Building in Chicago's Loop. Their answer: Curtain walls and glass—Pitrsburgh Glass.

Each floor is a 177 by 58-foot clear span because the building's main supports are *outside*—14 graceful columns that rise along the east and west walls. All mechanical service chutes are housed in a separate shaft joined to the east side of the building.

The beauty is obvious. This curtain wall gleams with floor-to-ceiling TWINDOW®

units of SOLEX[®] heat-absorbing glass. PPG polished plate glass encloses the main lobby. HERCULITE[®] glass doors and panels form handsome reception areas. Offices are partitioned with movable walls of rough plate glass. Beautiful, practical . . . with glass.

In your next architectural challenge, consult the Pittsburgh Plate Glass Company representative nearest you. He'll be glad to help in any way, and, of course, there's no obligation on your part. Why not make the contact now?



Inner offices glow with movable partitions of PPG rough plate glass. They give privacy, but not at the sacrifice of light.

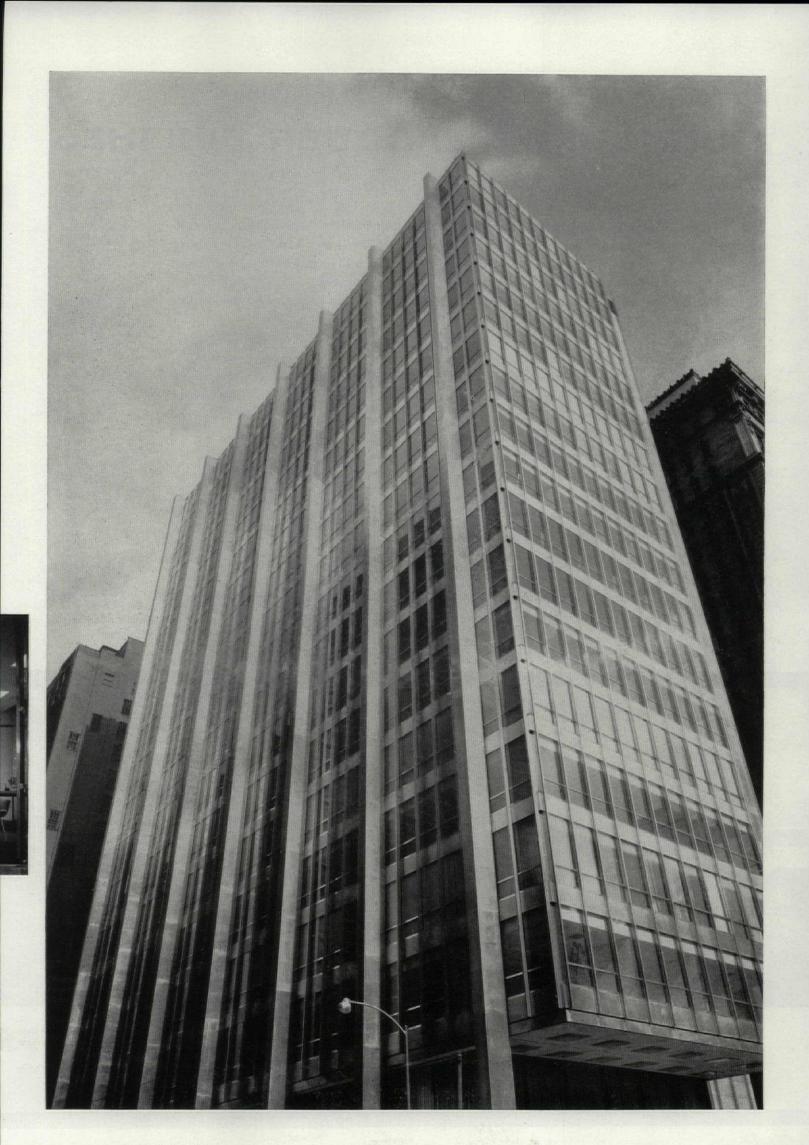


The curtain wall has floor-to-ceiling units of TWINDOW-Pittsburgh's twin-pane insulating window-glazed with SOLEX to keep interiors comfortable. Each reception area has its own handsome entrance with departmental listings mounted in the center of suspended HERCULITE panels.

Architects: Skidmore, Owings & Merrill General Contractor: Turner Construction Company



ON TV ... WATCH THE GARRY MOORE SHOW EVERY TUESDAY EVENING



Underground corridors* are brighter with **MULTICOLOR LACQUER FINISHES**

*In Gillette State Hospital, St. Paul, Minn.

Here, in this efficient hospital for crippled children, a multicolor finish has succeeded on concrete although all previous applications failed. This long, rambling institution is connected by a series of basement corridors where both soil moisture from the outside and humid air from the inside combined to deteriorate previous coatings applied. Four years ago institution authorities turned to a multicolor finish based on nitrocellulose. Only one covering coat was applied. Today the finish still retains its colorful, "like new" appearance.

The experience of this institution is by no means unique. From coast to coast . . . in hotels, motels, public buildings, private homes . . . architects and builders everywhere have been turning to multicolor finishes for both exteriors and interiors. Requiring only normal techniques and equipment, multicolor lacquer finishes permit the simultaneous spraying of two or more colors as a single finishing coat. Even unlike surfaces can be merged into a single unit with this eye-appealing yet economical coating.

Hercules Powder Company does not make finished lacquers or coatings of any kind. If, however, you have difficulty securing adequate information on multicolor lacquer finishes, write us and we will be glad to assist.

Multicolor lacquer is manufactured under license from Coloramic Coatings, Inc., Los Angeles (U. S. Patent No. 2,591,904)

HERCULES POWDER COMPANY

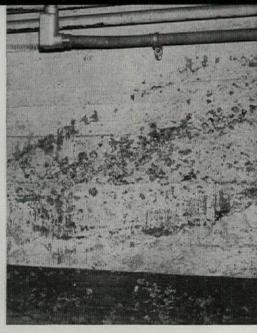
Cellulose Products Department • 900 Market Street, Wilmington 99, Del. CHEMICAL MATERIALS FOR INDUSTRY



This advertisement is one of a series prepared to explain the suitability of multicolor lacquer enamels for a wide variety of architectural applications.



HOSPITAL AND SCHOOL. The Gillette State Hospital was established in 1897 as the first of its kind in the United States. Here more than 140 crippled children are helped to overcome their handicap, and schooling is conducted from kindergarten through high school.

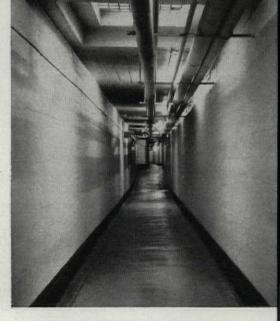


THE PROBLEM. Peeling paint, caused by moist conditions, made the basement corridors of the hospital unsightly and depressing. The multicolor finish eliminated this problem.







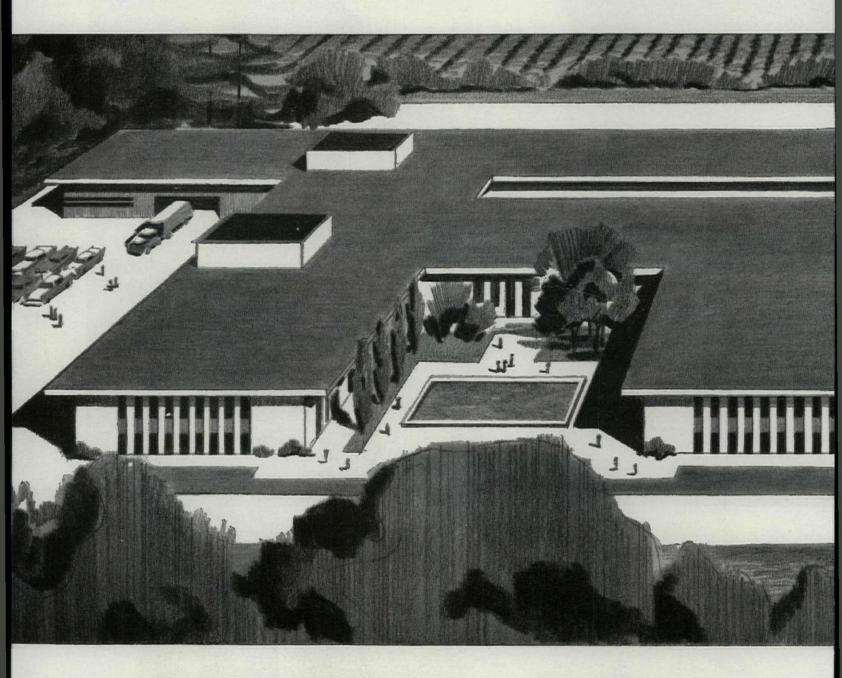


FIRST STEP. Only preparation needed for the application of a multicolor lacquer finish was scraping off old paint. Ease of application is another reason for the popularity of multicolor.

BRIGHT FINISH. A semi-gloss white finish with black flecks, applied in a single spray, provided this attractive wall. Multicolor finish used was Cook Paint & Varnish Company's "Coroflek."

WITHSTANDS WEAR. If a multicolor finish should be scratched or otherwise damaged, its unique speckled effect makes it easy to touch up. New spots immediately blend with the old.

...NOW WE'RE



Specify Arkla-Servel Gas Air Conditioning and you specify years of trouble-free comfort

With the new Arkla-Servel Gas Absorptive Cooler, your clients will get extra—even exclusive—advantages that they'll get *only* with a gas cooling system.

Only gas gives these important advantages:

... High efficiency at *all* times—even during the light loads.

- ... Constant temperature control.
- ... Modular adjustment of capacity (instant automatic adjustment to match actual coolingrequirements).
- ... Dependability of fuel service at all times.

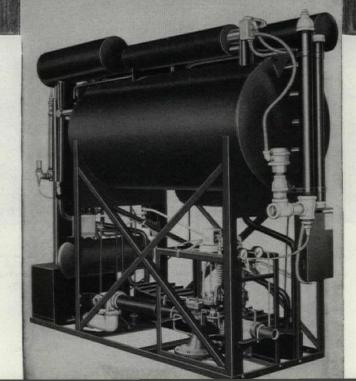
The 25-Ton Arkla-Servel Cooler

- ... A compact unit, easy to install and light enough for rooftop installation.
- ... Costs are low for installation, operation and maintenance. No specially trained operating or maintenance personnel are required.
- ... Can be installed singly or in banks to fit any size installation.

COOLING WITH GAS

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

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



"KEYCORNER LATH makes LATH and PLASTER an even better buy"

says A.BERNARD OLSON, president, The Olson Lathing Co., Chicago, Illinois

"Nobody questions the superiority of lath and plaster where greater fire resistance, lower maintenance costs and lasting beauty are concerned," declares A. Bernard Olson, one of the country's leading lathing contractors.

"Keycorner helps make lath and plaster even better. Our job experience proves what tests* show—that Keycorner almost doubles crack resistance over other corner reinforcements," he explains. "We know the Keycorner ability to fight cracks." "And Keycorner is easier to use. The preformed 4-foot lengths fit into place with no effort at all. There's no time lost, no waste. The open mesh of Keycorner makes it easy to plaster over —assures full bond with plaster and a better job.

"Keycorner gives this extra protection, yet at a saving. That's why we use Keycorner exclusively!" Olson exclaims. "It lets us give greater satisfaction on every job."

*Tests with Keycorner, as well as other corner reinforcements, conducted by the Research Foundation, University of Toledo. Complete test reports FREE from Keystone Steel & Wire Company.

KEYSTONE STEEL & WIRE COMPANY Peoria 7, Illinois

Keywall . Keycorner . Keybead® . Keydeck . Keymesh® . Welded Wire Fabric . Non-Climbable Fence



A typical quality Olson Lathing job goes into this 17-flat apartment building in Chicago. Many builders are switching back to lath and plaster because of the increased fire resistance, lower maintenance and permanent beauty that plaster walls provide.

Keycorner is simple to handle and use. This fact assures better workmanship, which adds still further to the superior job you get with Keycorner. Keycorner gives a better plaster job. The open mesh assures full bond with plaster and gives the strong reinforcement that provides maximum crack resistance. Keycorner is also galvanized to prevent rust.

Exterior Color That Cannot Fade ... CERAMIC GLAZED BRICK

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Why design an interesting colorful exterior only to have it lose the full beauty of its color within a few years? Ceramic Glazed Brick, with its burned-in color glaze gives you rich, permanent color that never, never fades . . . that retains its true, colorful beauty forever. Economical. Durable. Lasting. Initial costs are far less than for comparable metal and glass construction. What's more there's no expensive cleaning, no periodic recaulking or other costly maintenance. Glazed Brick, with the flexibility of many colors to choose from, enables the architect to give full expression to his creative talents.

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2556 Clearview Avenue, N. W., Glendale 5-5329, Canton 8, Obio 1520 Grand Central Terminal, Murray Hill 9-0270, N.Y. 17, N.Y. 228 N. LaSalle Street, Randolph 6-0578, Chicago 1, Ill.



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These companies contribute to Facing Tile research and development: ARKETEX CERAMIC CORPORATION, Brazil, Ind. • CHARLESTON CLAY PRODUCTS CO., Charleston 22, W. Va. • THE CLAYCRAFT CO., Columbus 16, Ohio • HANLEY COMPANY, INC., Pittsburgh, Pa. • MAPLETON CLAY PRODUCTS CO., Canton, Ohio • METROPOLITAN BRICK, INC., Canton 2, Ohio • MCNEES-KITTANNING CO., Kittanning, Pa. • NATCO CORPORATION, Pittsburgh 22, Pa. • STARK CERAMICS, INC., Canton 1, Ohio • WEST VIRGINIA BRICK CO., Charleston 24, W. Va.



Johns-Manville Aquadam Built-Up Roofs pay off in longer roof life and maximum protection

Aquaddam roofs take their name from a superior cementing agent developed by Johns-Manville. This unique bitumen, Aquadam, possesses the best features of coal tar pitch and of asphalt without their weaknesses. It is the best bitumen on the market for roofs with inclines from dead-level to $\frac{1}{2}$ inch per foot. It is used for both smooth-surfaced asbestos roofs and gravel- or slag-surfaced roofs.

The picture above shows how Aqua-

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

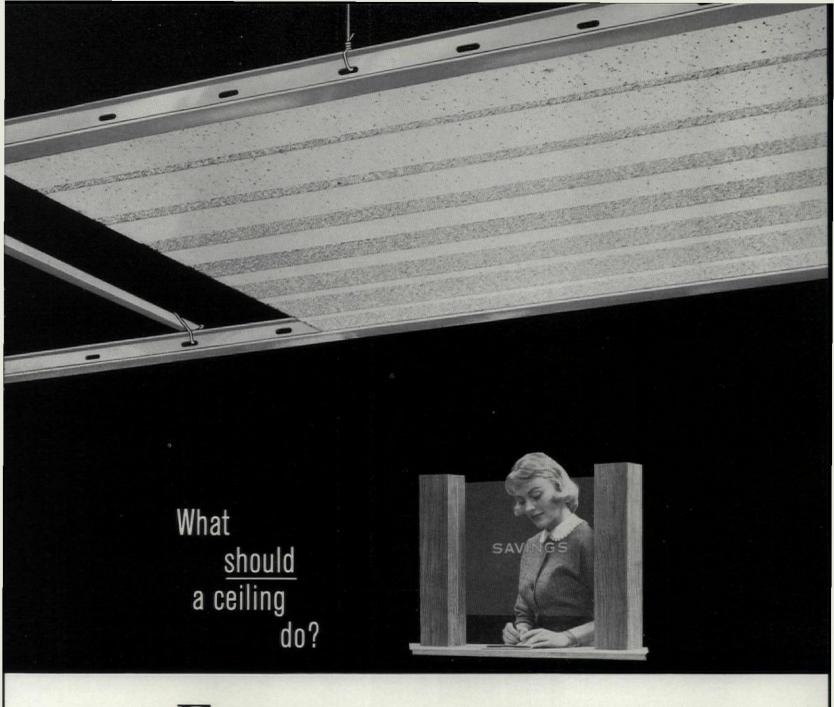
Besides this "superior bond," an Aquadam roof provides these other advantages: excellent self-healing properties; exceptional ability to expand and contract with normal deck movement; ability to withstand water

JOHNS-MANVILLE

when a downpour floods the roof; and proven weather resistance under wide-ranging climatic conditions.

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





Economy is one of the 7 functions

True economy, achieved by careful choice of methods, materials and construction, is a vital function of a modern ceiling.

You're sure of this kind of economy when you specify an ACOUSTONE Ceiling System, such as the U.S.G. Direct Suspension System shown above with LINEA MOTIF'D* ACOUSTONE tile. This is one of several specially designed ceiling constructions which can eliminate separate outlays for fire protection, sound-conditioning and other vital room services. What's more, savings from ACOUSTONE usually increase over the years by reducing the cost of ceiling maintenance.

For full information, or a free showing of the 16 mm. color and sound film, "More than Meets the Eye," contact your nearby ACOUSTONE Tile Contractor, or write Dept. AF-87, 300 W. Adams St., Chicago 6, Ill. Additional information is in Sweet's Catalog, section 11a/Uni.





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of a modern ceiling



SOUND CONTROL IS A JOB FOR EXPERTS

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

UNITED STATES GYPSUM The greatest name in building



CURTAIN WALL PANELS OF CERAMIC TILE

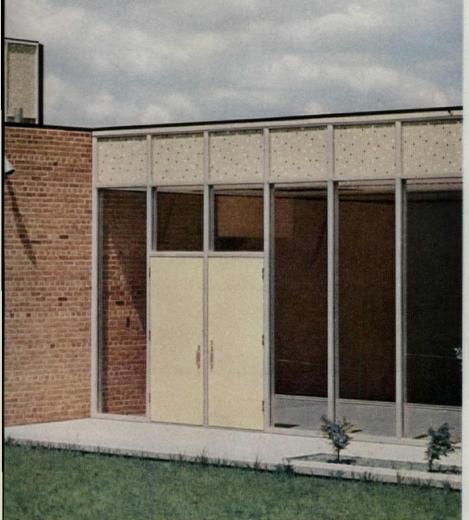


Plate No. 1075

UTICA HIGH SCHOOL, Utica, Mich. Architects: SMITH & SMITH, Royal Oak, Mich. Panel installation: MOYNAHAN BRONZE CO., Flatrock, Mich. EMIL VANSILE CO., Detroit, Mich.



enhance beauty of new Utica High School

Today's buildings are taking on a crisp, new look. Why? Because in tile-faced RS Panels, designers have discovered unlimited freedom in selection of color, texture and pattern which can be harmoniously combined with all conventional exterior finishes. Weatherproof RS Panels are available in thicknesses from 13%" to 4", with or without insulation, and in a complete range of sizes and edge conditions to meet your specific requirements. For complete information on RS Panels, including "U" values, weights and short form specifications, write for Bulletin RSP-201. Ceramic Tile Panels, Inc., Department A-24, Canton 2, Ohio.





CERAMIC TILE PANELS, INC. MEMBER: THE PRODUCERS' COUNCIL, INC.

MODERN DESIGNAs CALLS FOR VERSATILITY

 As a Decorative, Structural and Functional material, Irving Grating offers

 a wide variety of architectural applications in all types of structures.



Curtis Hall, Temple University, Philadelphia

Nolen & Swinburne, Architects An unusually light and transparent appearance is achieved in this new 4-story classroom building by the extensive use of IRVICO type CC pressure-locked aluminum grating as sunshades. These help reduce air-conditioning costs and help control sky glare. They also serve as window cleaning walkways.

Angell Hall, University of Michigan Kahn Associated Architects and Engineers, Inc.

Vestibule mats of Irving grating prevent excessive grit, mud and wetness from being tracked into corridors of public structures, office buildings, schools and the like.

Grit, rain, snow and slush drop through the open-mesh grating to receptacles below which can then be flushed into sewers. Thus a clean entrance is always assured, and the cleanliness of the interior is in turn preserved.





Capital Building, Waikiki, Oahu, Hawaii Wimberley and Cook, Architects

Beauty and utility are combined in the balcony railing around the second floor of this new office and retail store building through the use of IRVICO type AA.

"A FITTING GRATING FOR EVERY PURPOSE"

Consult local classified telephone directory in principal cities for nearest Irving Sales Engineer (or request AIA No. 14P20 directly).

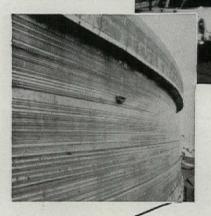


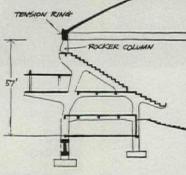
IRVING SUBWAY GRATING CO., Inc. ORIGINATORS OF THE GRATING INDUSTRY

Offices and Plants at: 5061 27th St., LONG ISLAND CITY 1, N. Y. 1861 10th St., OAKLAND 20, CALIFORNIA Representatives in Canada, and Mexico



1,146 WRAPS of prestressing wire on tension ring induced a compressive force of 14,000 lbs. per circumferential foot. Ring rests on rocker columns which absorb internal stresses and force of high velocity winds.





CROSS SECTION shows how monolithic dome and tension ring rest on hinged rocker columns, supported by stadium wall Outer foundation is a 10' deep continuous ring girder.

Versatile Concrete Scores Victory in Cuba's Magnificent Sports Palace

E E E E

• Five miles from the heart of Havana, in 65-acre Sports City, stands a monument to Progress as well as Athletics -Cuba's magnificent new Sports Palace.

Boasting the largest concrete dome in the Western Hemisphere—with 286' interior diameter—the building accommodates 18,000 spectators without a single pillar or post to block vision.

To absorb the stresses inherent in the flat shape of the dome (which rises only 40', or a 1:7 height-to-diameter ratio), and to withstand winds of hurricane force, the dome's perimeter connects with a prestressed concrete ring 3' thick and 5' high. This tension ring rests in turn on 24 reinforced concrete rocker columns, hinged top and bottom to absorb both internal and external stresses.

Ranking as one of the world's finest arenas, this project required 32,500 barrels of El Morro Cement, made by Lone Star's Cuban subsidiary, La Compañia Cubana de Cemento Portland. 28-day strength of dome concrete was 4,500 psi.

Owner: COMISIÓN NACIONAL de DEPORTES Architects: ARROYO y MENÉNDEZ, Havana

General Contractors CONSTRUCCIONES CODECO, S. A.; Havana

Structural Frame and Dome Design, Dome Construction, and Prestressing by THE PRELOAD COMPANY; INC.; New York, N. Y.

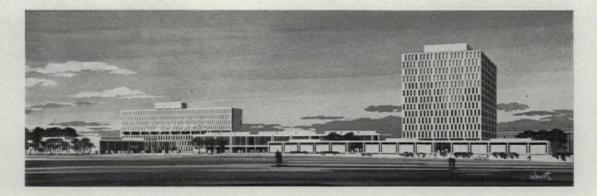


CORPORATION

Offices: ABILENE, TEX. • ALBANY, N.Y. • BETHLEHEM, PA. BIRMINGHAM • BOSTON • CHICAGO • DALLAS • HOUSTON INDIANAPOLIS • KANSAS CITY, MO. • LAKE CHARLES LA. • NEW ORLEANS NEW YORK • NORFOLK • RICHMOND • SEATTLE • WASHINGTON, D. C. LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 21 MODERN MILLS, 48,900,000 BARRELS ANNUAL CAPACITY

Projects

A roundup of recent and significant proposals



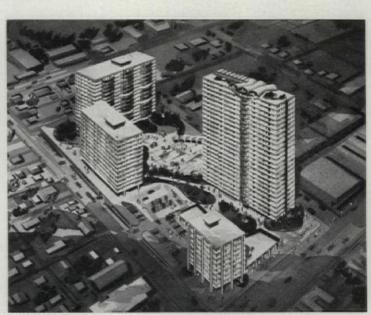


PARK AVENUE SKYSCRAPER

New York City's Park Avenue will soon have another tall, glass tower fronted by a streetside plaza: this one (shown above) a 50-story general office building which will contain more than 1.5 million square feet of rentable floor space. To be known as 277 Park, it will occupy a full block just north of Grand Central Station. Stahl Equities Corporation, the owner, has leased the property from the New York Central and New Haven Railroads. Architects for the project are Emery Roth & Sons of Manhattan. No date has been set for start of construction. Cost: \$45 million.

BIG CIVIC CENTER FOR NORFOLK, VIRGINIA

On a 22-acre site in Norfolk, Virginia, a \$12-million Civic Center (rendering above) will be built from designs by Architects Vincent G. Kling and Oliver & Smith. The two major buildings in the project are the eight-story Public Safety Building (left) and the 13story Municipal Office Building (right) which will be set beside a landscaped plaza and connected by a Corporate Courts building. The first phase of the project, the Public Safety Building and its two-story Police Courts wing (far left), will be started this spring and is expected to cost approximately \$4 million.



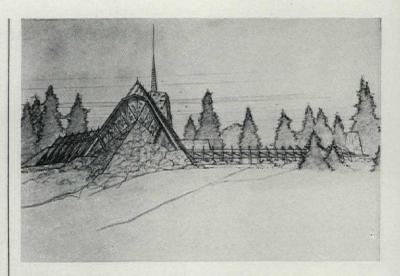
HUGE APARTMENT PROJECT FOR WEST LOS ANGELES

The rendering above is of Barrington Plaza, to be built in West Los Angeles by the B. C. Deane Company, builders and developers. The project will consist of one nine-story office building (lower center), a three-level, underground parking garage for 798 cars, and three apartment towers—one of which (upper center) will be the tallest building in the Los Angeles area—height: 25 stories. The three apartment buildings will have a total of 704 units. Designed by Los Angeles Architects Daniel, Mann, Johnson & Mendenhall, the project will be started in February and is scheduled for completion by May 1960. Cost: \$14 million.



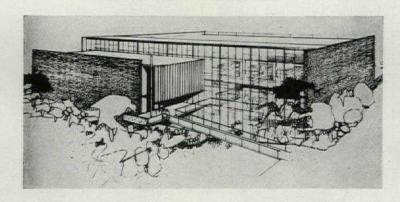
LOS ANGELES OFFICE TOWER

The 20-story, \$10-million skyscraper above will be one of the largest office buildings built in downtown Los Angeles since the end of World War II. Financed by Builder Norman Tishman, it will occupy a block front on Wilshire Boulevard, and will contain 335,000 square feet of rentable floor space. Architects: Victor Gruen & Associates and Daniel, Mann, Johnson & Mendenhall. Completion is due for late 1959.



WRIGHT CHURCH FOR NORTHERN CALIFORNIA

The tiny (150-member) congregation of Redding, California's Pilgrim Congregational Church will spend between \$300,000 and \$500 000 to build a new church by Frank Lloyd Wright. Described by the architect as "pole and boulder gothic," the Y-shaped building will be started next spring and built in installments during the next 10 to 20 years. Included in the plan: a 300-seat sanctuary and 14 classrooms.



SPACE-AGE LIBRARY FOR ADELPHI COLLEGE

Television and radio studios, wire service teletypes, and a massive, walk-in globe wired to illuminate cities in the news, are among the many space-age facilities Architect Richard Neutra has incorporated into the Institute of Communicating Arts, a \$2-million building which will serve, primarily, as a library for Adelphi College on Long Island. The threestory project (left) will be the first phase of a \$10-million expansion plan, which will allow the college to double its present enrollment (5,300) within the next ten years. Over-all floor space for the new library will be about 64,000 square feet. Completion is scheduled for 1960.



SUN-LIT HOME FOR RETARDED CHILDREN

The sketch above is of a nonambulatory patients building to be built at the Fairview home for retarded children at Salem, Oregon. The largest part of a state-financed, \$1½-million construction program, the building has been designed in a circle to simplify care of about 190 patients. Natural lighting will be provided by skylights and clerestories formed by glassed gable ends. Architects Wilmsen & Endicott designed the building which will cost about \$700,000.

HONEYCOMBED CHAPEL FOR LONG ISLAND

The grille-wrapped model below is of a chapel. Like a huge cylindrical beehive it will soon dominate the Temple Emanuel Jewish community center at East Meadow, Long Island. Its load - bearing concrete walls, composed of precast half-hexagonal units laid up in a running bond, will be 32 feet high, filled with bright-colored glass, and topped with steel roof. Seating capacity: about 350. A glass lobby (not shown) will connect the chapel to the existing buildings. Davis, Brody & Wisniewski are the architects. Cost: about \$100,000.

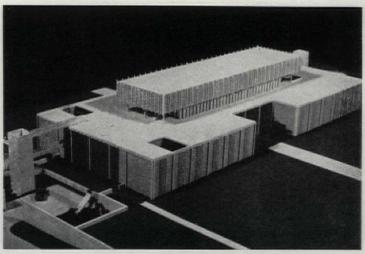


Projects



TEAK-SCREENED CONSULATE BUILDING FOR SINGAPORE

Government personnel working in the upper three floors of the new U.S. Consulate General Building, to be built in Singapore, will be shielded from the sun by a louvered screen made of teak—the most common local lumber. Four stories tall, the reinforced concrete building (above) is the design of Los Angeles Architects A. Quincy Jones and Frederick E. Emmons. Completion is scheduled for 1960.



CLASSROOM BUILDING FOR NEW UNIVERSITY IN FLORIDA

One of the five buildings to constitute the new University of South Florida, in Tampa, will be the classroom and cafeteria building above. Three stories tall, faced with a glassfilled masonry grille, the building is the design of Miami Architect Robert Little, chairman of the five-firm group planning for the complete \$7.6million project. This building is expected to be finished in 1959. Cost: \$1.6 million.

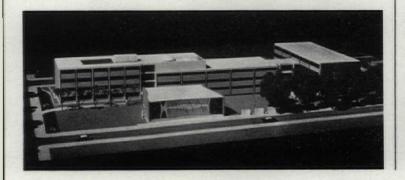


BIOLOGY CENTER FOR RUTGERS UNIVERSITY

A \$3.5-million biology center, financed by federal, state, and private funds, will be started this spring at New Jersey's Rutgers University. The threebuilding center (photo left), with a total of 350 rooms, will consolidate the university's botany, physiology, bacteriology and zoology activities, now scattered about the campus in six other buildings. Perry, Shaw, Hepburn & Dean of Boston are architects for the project, which is set for completion by February 1961.

SCIENCE BUILDING FOR TEMPLE UNIVERSITY

A block of Philadelphia slums has been demolished to provide space for Temple University's new \$4-million science building (below). Part of Temple's downtown redevelopment program, a \$50-million plan backed by federal, state, and city funds, the four-story building will contain 35 laboratories, 24 faculty offices, and 32 classrooms. Construction: reinforced concrete with an exterior of stone, glass, and colored ceramic brick. Nolen & Swinburne are the architects. The project will be ready for occupancy by September 1960.



KANSAS CITY LEGAL TOWER

In Kansas City, at the southeast corner of Eleventh and Locust Streets, Jacob Gershon & Associates will erect an \$8million project (photo right) composed of an office building and a garage. The 20-story glass tower will be the first high-rise office building to be built downtown in the last 20 years, and the 12-level 500car garage (far right) will be Missouri's first automatic parking facility. Roughly half of the tower's 200,000 square feet of floor space will be occupied by law firms; the rest will be open for general leasing. Due for completion by late 1960, the project is the design of Kansas City Architects Geis, Hunter & Ramos. END



A. Elementary School Facilities

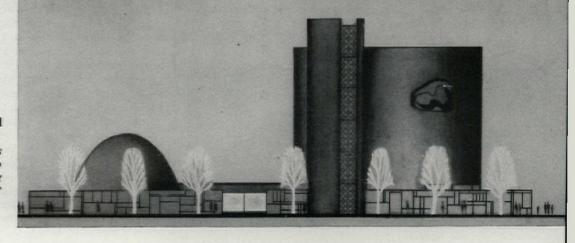
Jury comment: "... particularly impressed with friendly, informal, humane quality ... growth and development of youngsters prime factor in design ... site plan excellent ... ingenious hub plan is a most unusual aspect ..."

B. Civic Center

Jury comment: "..., winning submission was marked with boldness of concept, solved imaginatively, in answer to the conditions which present site difficulties and complexity of elements."

C. Community Civic and Cultural Center (Art Gallery)

Jury comment: ". . . Mr. Pederson's overall performance was considered to be the best in the class and on that basis, the Award was made to him."



Flat Roof Designs from Tomorrow's Architects

In its inaugural year, the Koppers Architectural Student Design Awards Program was offered to fourth-year students at five architectural colleges. The winning designs shown here were chosen by juries of architects at each school from the work of these students on class projects involving flat-roof buildings. The winners received a fifth-year tuition scholarship... are completing their undergraduate study now under these grants.

This program supporting architectural education was initiated by Koppers in the belief that tomorrow's architects should early be acquainted with the flat, built-up roof, a construction method popular today but with promise of even greater future use. On introduction of the class project, each participating school held a seminar on flat-roof design and coal-tar pitch construction with the cooperation of a technical representative from Koppers.

Koppers Architectural Student Design Awards will be offered again in 1959 at selected schools. Those



interested in a more complete discussion of the winning designs may obtain a descriptive booklet by writing to: TAR PRODUCTS DIVISION, Koppers Company, Inc., Pittsburgh, Pa.



A. ROBERT F. DANNENBRINK Washington University of St. Louis.

- B. JOHN G. FOTI University of California
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ALLISON C. BAILEY, JR. Georgia Institute of Technology

E. City Hall

Jury comment: "The blocking of major departments is clear and circulation adequate without complication . . . the elevations show strength, unity and a character reasonable and attractive for a small city in the Tennessee mountain lake area."



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Jury comment: "... choice of building location and placement on site major criteria ... outstanding organization of operatingdelivery-emergency-ancillary services as a unit... excellent treatment of like elements and development of the overall complex."

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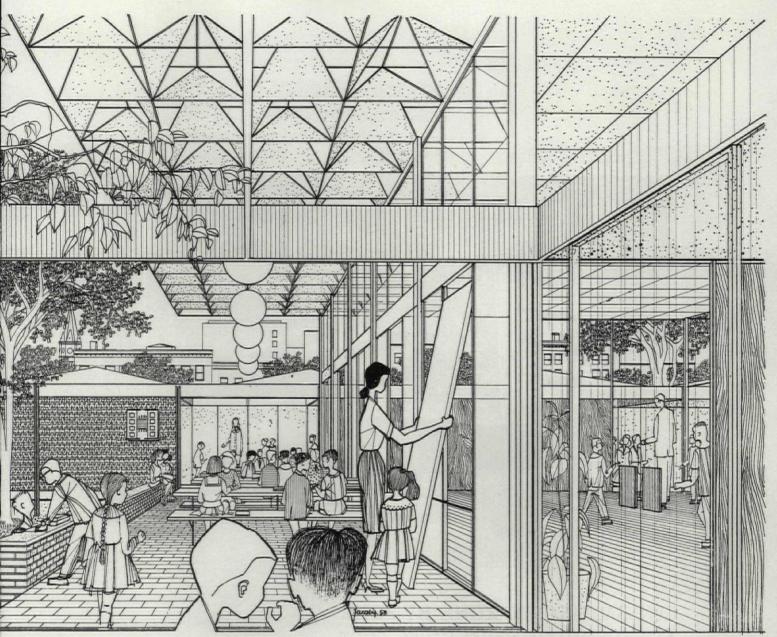
Aluminum permits full use of economical shop-fabrication of the building components you design . . . readily lends itself to newer, better, altogether-different applications.

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HERE'S how one architect uses aluminum to help him provide more room for study and play in attractive, friendly surroundings.





Designs and rendering by Helmut Jacoby

Working with hypothetical school requirements, our architect shows, in the rendering and plan, some ways he would use aluminum to attain his effect, with very special reference to color and the metal's economy in the repetition of shop-fabricated elements.

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CASE #101—Another case where General Electric Factory-Assembled Air Conditioning Units proved more economical than field-assembled systems.



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When the beautiful new Galt Ocean Mile Hotel, Fort Lauderdale, Fla., chose General Electric Zone-by-Zone Air Conditioning over a field-assembled central station system—it scored three ways in economy.

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General Electric's complete line is flexible enough to meet every air conditioning need for all buildings —large or small—old or new. Ceilingmounted units water-cooled up to 7½ tons—air-cooled up to 10 tons. Floormounted units — water-cooled up to 30 tons — air-cooled up to 20 tons. Steam and hot water coils available for all models. Discover how General Electric Factory-Assembled Units can simplify your planning. For full details write: General Electric Company, Air Conditioning Department, Troup Highway, Tyler, Texas.



People

Flanagan, figure in Civil Service controversy, gets HHFA job; architects quit in Georgetown dispute



FLANAGAN A trail of "honest mistakes."



ENGINEER CHATTERTON "They're getting used to a woman boss."

In Washington, D.C. the ball takes many strange bounces. Take, for example, the case of Bernard L. Flanagan, recently appointed as special assistant to Housing & Home Finance Administrator Albert M. Cole. Flanagan, 39, is a native Vermonter who came to Washington following World War II, and a few years later got a job in the Office of Price Stabilization. When he applied for the job, he noted, among other things, that he had a degree from Norwich University. He later went to work as an assistant on the staff of Vermont's Senator George D. Aiken, and following that held fairly important staff positions in both the Veterans' Administration and the General Services Administration. Last January, Flanagan was appointed as an interim Civil Service Commissioner, and shortly after that he ran into trouble.

The difficulties started because of some growls that Flanagan had been little more than a patronage dispenser in VA and GSA, and that this hardly qualified him for a job on the CSC. The Senate Post Office and Civil Service Committee held a brief investigation last summer, and discovered that, whether or not the complaint was true, it certainly was not true that Flanagan was a college graduate. And it turned out that a number of other misstatements had been made on Flanagan's applications as he progressed through the government service, notably the length of his service as a Capitol police lieutenant, and his actual title in Aiken's office. All in all, 15 errors were revealed on Flanagan's various job applications. Flanagan himself maintained that these were "honest mistakes."

The Flanagan fracas boiled up just at the time that Sherman Adams was being roasted for his friendship with Bernard Goldfine, and the White House accepted Flanagan's offer to give up his nomination to the Civil Service Commission shortly after the Senate hearings ended. But Flanagan's progress evidently has not been slowed too drastically by his "honest mistakes." At HHFA he will be handling the critical area of congressional liaison and drawing a salary of \$13,970.

GEORGETOWN ARCHITECTS QUIT

The quaint federal atmosphere of Washington's Georgetown section was rocked recently by the resignation of the three architects who oversee the Old Georgetown Act of 1950—an act of Congress that lets the Commission of Fine Arts appoint a three-man board of architects to review all proposed building changes in the Georgetown area. The mass resignation came as a result of an opinion by the District Corporation Counsel, Chester H. Gray, that the act applies only to buildings proper, and not to signs, walls, fences, and "other structures not coming within the definition of the word building."

Henry Saylor, who with Walter Macomber and John B. Coughlin made up the three-man board of architects, says that "under this interpretation it is no longer possible for the board of architects to function." Gray says he was afraid that the "vague and indefinite" language of the act might have drawn lawsuits that could have killed Georgetown controls altogether. The protest resignation of the architects leaves all matters in the area directly up to the District Commissioners and the Fine Arts Commission, which will no longer have the benefit of the architects' counsel.

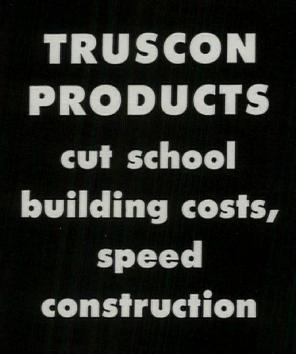
AFRICA'S LADY ENGINEER

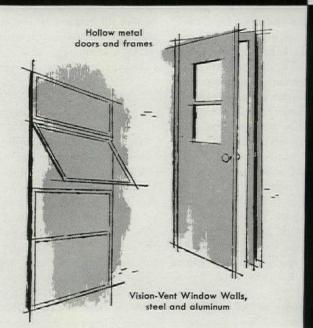
The most remarkable thing about Africa's second tallest skyscraper (Africa's tallest: The South African Mutual Building in Cape Town) is not its 23-story height but its builder. The supervising engineer for this colossus of Salisbury, capital of the Federation of Rhodesia and Nyasaland, is a petite (5 feet), fortyish, housewife and mother (two daughters, aged nine and 16) who journeys daily to the excavation site only after the breakfast dishes are done. She is Mrs. Marion Chatterton, Polishborn wife of an Englishman, and a leading member of one of Salisbury's top architectural-engineering firms.

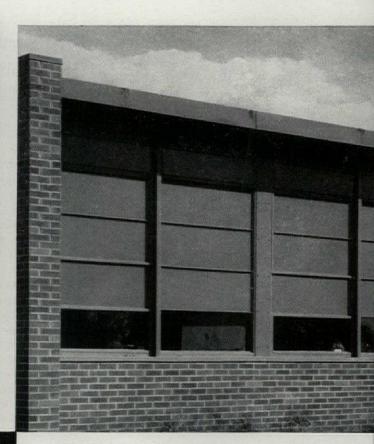
Mrs. Chatterton came to Southern Rhodesia in 1947, after finishing her work for a graduate degree in structural engineering in Great Britain. She started her engineering studies in her native Poland, which she left in 1939.

When Mrs. Chatterton is on the site of the new building, to be called Livingstone House after the well-known explorer-missionary, she looks more like a curious housewife than the guiding hand behind a massive building operation. She says: "I think they are getting used to having a woman as the boss."

One of her biggest problems came early continued on page 58







Otter Creek Elementary School, North Terre Haute, Ind. Yeager Architects, I Architects. Glen W. North Construction Co., Contractor.

Elementary school designed around standard Truscon products costs \$11.17 per square foot, is erected in six months

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They proved it at North Terre Haute. Otter Creek Township School is a 14 room structure with cafeteria which doubles as a multi-purpose room. The building includes general office administrative space and usual washroom facilities with glazed tile full height. Interior partitions are painted concrete block, main entrance lobby is plaster. Each classroom has an exterior entrance door, each has individual unit heater. Floor covering is asphalt tile, ceilings are acoustical tile with recessed lighting. Classrooms are designed to accommodate 30 pupils. Square foot cost, \$11.17!

The architect designed Otter Creek Township School around these standard Truscon products—Vision-Vent® Window Walls, "O-T"® Steel Joists, Ferrobord® Roofdeck, Hollow Metal Doors and Frames, Reinforcing Products. Modular design, plus the purchase of all these materials from one source, are responsible for the low per square foot cost. Similar design of three more Indiana schools resulted in per square foot costs of \$12.25, \$11.40, and \$12.60. This is substantially lower than average costs for conventionally designed schools.

Truscon will be happy to work with school officials, architects and builders in varying this basic concept to meet local traditions and customs.

This type of construction has been detailed in Truscon's booklet, "Metal Building Products for Low Cost School Construction". Send coupon for your copy.



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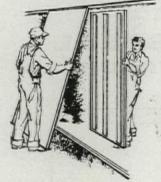


Mel Larsen and his staff on the site of the Clair-Mel City development.

More floor area -lower costs with



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In Clair-Mel City, newest and biggest housing development of Clair-Mel Builders, Inc., Tampa, Florida, the Bestwall Hummer "B" modified system of gypsum wallboard construction is being used exclusively.

Mel Larsen, owner of the firm, cited gains of up to 5% in square footage and appreciable savings in cost as prime reasons for using this Bestwall Hummer System.

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in the project, when it was discovered that the foundation would be resting on an old river bed, with soft soil down to a depth of 60 feet. Mrs. Chatterton decided to set the building on a concrete-steel raft, riding over the soft subsoil. This problem, she says, gave her "a sleepless night or two," but it was the sort of challenge on which the dainty engineer evidently thrives. Building, she says, "gives one almost as great a sense of achievement as raising a family. I am proud and happy to be able to do both."

People

ROUSE HEADS ACTION

James W. Rouse, 44, was named to succeed Roy W. Johnson as president of the American Council to Improve Our Neighborhoods (ACTION). Johnson, formerly



ROUSE

a General Electric executive, resigned last February to become director of the federal Advanced Research Projects Agency. Rouse, a familiar figure in urban renewal since he headed an advisory committee which drew up the 1954 Housing Act establishing the Urban Renewal Administration, is a Baltimore, Maryland mortgage banker, president of Community Research & Development, Incorporated and of James W. Rouse & Company. One of Rouse's first tasks, as part-time head of ACTION, will be to use a recent Ford Foundation grant of \$25,000 to conduct seminars on urban renewal in selected metropolitan areas, starting next spring.

THOMAS HOLDEN DIES AT 72

Thomas Steele Holden, vice chairman of the F. W. Dodge Corporation and a familiar figure throughout the construction industry for more than a quarter century, died of a heart attack November 3 at the Engineers Club in New York City at the age of 72. Born in Dallas and graduated from the University of Texas and MIT, Holden practiced as an architect in Boston and Akron, Ohio, from 1916 to 1918. He joined the Dodge organization in 1919, was president from 1941 to 1953, and vice chairman since then.



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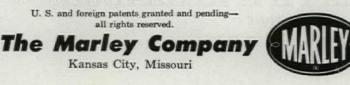
AQUATOWER

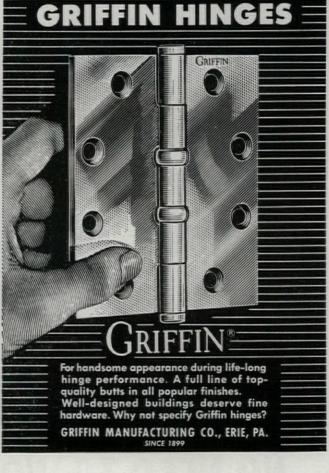
Cooling tower location often poses special problems for architects and engineers. In many cases, there is little choice — and when the tower must be placed in the midst of a group of hospital buildings, sound level is of paramount importance.

The successful solution to this problem for a midwestern hospital was the installation of Marley's new UNDERFLOW — the *completely enclosed*, low-silhouette cooling tower for intermediate-capacity requirements. "This tower just whispers," says the operating engineer, "and there is no disturbing noise in operating or patient rooms — just several feet from the tower."

In UNDERFLOW design, the fan and mechanical equipment are located *beneath* the tower and force air upward into a plenum chamber from which it is diverted horizontally into dual cooling chambers, then discharged vertically at two sides of the tower. This design innovation baffles fan noise and still permits use of gravity distribution of water, cross-flow air-water contact, close-packed fill, and other features that have made Marley intermediate-capacity cooling towers the world's most popular.

Completely enclosed, UNDERFLOW, more than any other tower, blends inconspicuously with architecture. It is the only tower that conceals fan, mechanical equipment, air intake and piping. For information the tower itself conceals, contact your Marley engineer or write for Bulletin UF-58.

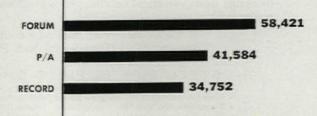




FORUM has the largest circulation in its field

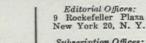
Here are the facts.

Latest available figures—Publisher's statements to the Audit Bureau of Circulations show the following paid circulation averages for the first six months of 1958:



FORUM's circulation leadership isn't new; it has led the architectural magazines in circulation ever since 1935.

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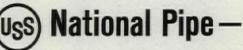


DURACO



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The Forum

Letters from readers: Criticism . . . Christopher Wren . . . professional duds

REACTION TO CRITICISM

Forum:

My first reaction on seeing the article on the Guaranty Mutual Building at Omaha, Nebraska, in your October issue was one of amazement and a feeling that the criticism was rather unfair to the architect. However, by the time I had completed reading the criticism, I was convinced that the criticism was justified and probably deserved.

You are to be congratulated upon the courageous course you have undertaken.

> ROSS H. BRYAN, engineer Nashville, Tennessee

Forum:

I am shocked and disgusted that your magazine would attempt to set itself up as a supreme critic on what is good architecture and what is poor architecture.

This type of article serves no useful purpose and in my opinion hurts the architectural profession.

C. W. DURHAM Henningson, Durham & Richardson, engineers & architects Omaha, Nebraska

Forum:

FORUM's publication of this criticism is one of the best things that has happened in architectural journalism-and a very good thing for architecture. I hope it happens often. I hope it does not happen to me, but, if it does, I will not complain.

LAWRENCE B. PERKINS, architect Perkins & Will Chicago, Illinois

Forum:

I welcome the FORUM's attempt to build up a column of criticism on current architecture. This may help to consolidate the set of values which the profession has to establish for our industrial age in order to reach the desirable "unity-in-diversity" of our visual surroundings.

> WALTER GROPIUS, architect The Architects Collaborative Cambridge, Massachusetts

Forum:

Many of us have clamored for good architectural criticism in America. Finally, the FORUM has attempted this.

After reading the lofty, blue-type introduction to the article, I was shocked by the FORUM's comprehension of the word criticism. Literary criticism does not expend its effort picking out a little schoolgirl in, say, Ashtabula, and pointing out to the world the faults she has made in sentence structure and spelling.

To be valuable, architectural criticism must be of the right thing at the right time, seen from the largest vantage point possible, with truths beyond the single building. Please try again.

> EERO SAARINEN, architect Bloomfield Hills, Michigan

Forum:

... fair ... constructive ... and helpful. . . .

We would welcome more such articles, and we would be glad to submit to such criticism ourselves.

> JOHN C. B. MOORE Moore & Hutchins, architects New York, New York

Forum:

Your criticism of the Guarantee Mutual in Omaha is a great first act of courage which I hope will be followed up in the future.

The real test will come when the same kind of criticism will be directed at less obviously weak examples, particularly if done by stronger protagonists of our architectural scene. By then the sacrificial lamb (or lion) must be given the chance to defend himself before he is eaten, or, if a lion, before he eats the critic.

More power to you.

PIETRO BELLUSCHI, architect Cambridge, Massachusetts

Forum:

The example could not have been better chosen.

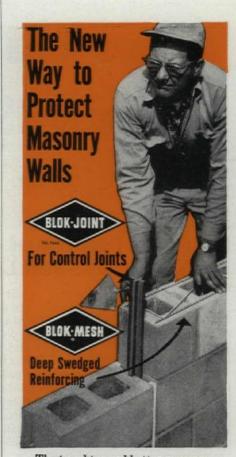
If there are enough laymen among your readers, then the underlining of that which is bad and the attendant embarrassment of its creator may be justified by the gains for good architecture.

> TALBOTT WILSON, architect Wilson, Morris, Crain & Anderson Houston, Texas

FORUM has 38,000 readers who engineer, construct, own, and operate buildings, in addition to 20,000 readers who design them.-ED.

Forum:

Architecture is a difficult art only when it is necessary to compromise with cost continued on page 64



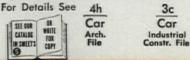
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1/4 "	2402 1	21/22"	2020
3/8"	2402 1	22/32"	3040
3/8"	2402 1	21/32"	3100
3/8"	3441 2	1%2″	3000
3/8"	3441 2	1%2"	3080
1/2"	2402 1	20/12"	2400
1/2"	2402 1	20/22"	2120
1/2"	3441 2	1%2"	5230
1/2"	3441 2	1 1/2"	5490
5/8"	2402 1	17/22"	1680
5/8"	2402 1	17/22"	1470
5/8"	3441 2	17/22"	7080
5/8"	3441 2	17/22"	7100

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factors. The results obtained by Daly & Co. can be compared to Mies van der Dough and Spendmore, Owings & Merrill only after dollar analysis. Why not be fair? CHARLES A SPEARS, president

Grayson County State Bank Sherman, Texas

■ Economy was not to blame. As the article stated: "The insurance company sought a fine trade-mark and a good place for its employees to work, and it did not stint in the search."—ED.

Forum:

Since the beginning of the fight for modern architecture, much of what has passed for architectural criticism has been nothing more than propaganda. Architecture now needs competent critics more than partisan enthusiasts. May FORUM's perceptiveness equal its responsibility.

HARWELL HAMILTON HARRIS, architect Dallas, Texas

Forum:

It is unfortunate, but so true, that most architects' work and ideas are not criticized openly. The last judgment generally occurs when the architect passes his registration exam or when his university hands him his sheepskin.

> T. J. MOORE, architect Denver, Colorado

Forum:

Your straightforward criticism was excellent.

If there were more helpful articles like yours, there should be more significant new work appearing throughout the country.

> WARREN H. ASHLEY, architect West Hartford, Connecticut

ROBIE INTERVIEW

Forum:

I have read with great interest your interview with Frank Lloyd Wright's early client, Fred Robie (FORUM, October 1958). I appreciate your getting this kind of historical information which in its full value will only be appreciated in years to come. Just imagine what historians would give for a similar interview with a client of Sir Christopher Wren, for example.

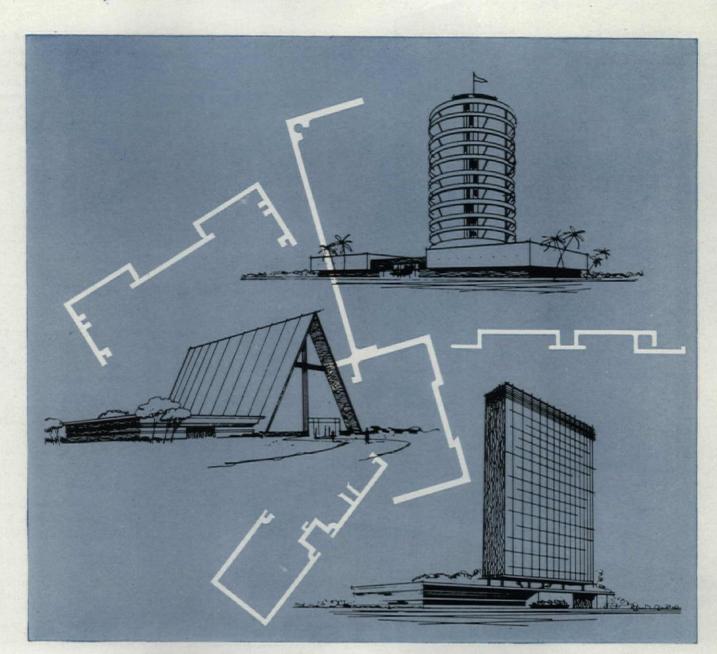
> EDWARD F. SEKLER, associate professor of architecture Harvard Graduate School of Design Cambridge, Massachusetts

ARCHITECTURE WORTH SAVING

Forum:

I had the pleasure of attending the reopening of the Museum of Modern Art in October and was especially impressed by *continued on page 66*

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The Forum cont'd

the exhibit "Architecture Worth Saving." I was pleased to learn that this exhibit is based on an article in the June 1958 issue of FORUM. Although the article doesn't show any churches, I do feel that it speaks to church-building committees of today. We would like 150 reprints to be distributed throughout the Episcopal Church.

GORDON R. PLOWE

National Council, Protestant Episcopal Church New York, New York

For another article that speaks to church-building committees, see page 89. -ED.

THE BIG AND THE DUDS

Forum:

In the article "Architecture's biggest firms," in your September 1958 issue, you say "the genius architect gets no higher fee than his fellow professionals, including the duds."

Reference to professionals as duds is especially bad for a magazine representing the profession.

WILFRED J. GREGSON, national president American Registered Architects, Inc. Atlanta, Georgia

Unfortunately, the profession does have its duds, as the countless architectural monstrosities produced each year bear witness. -ED.

ERRATUM: New information received requires a change in the list of Building's Biggest Contractors (FORUM, November 1958): Charles H. Tompkins of Washington, D.C., should be in 45th place, with a volume of \$19 million.-ED. END

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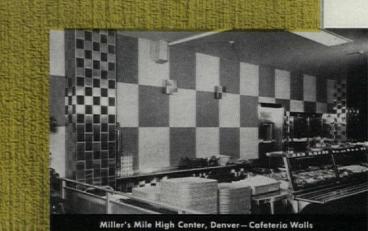


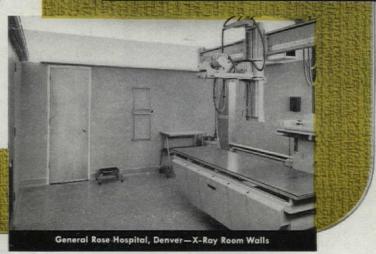


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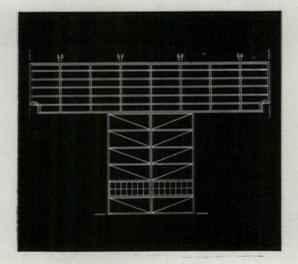
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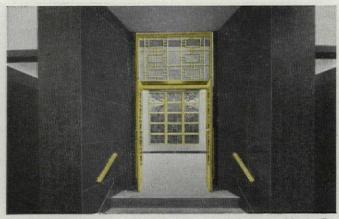
This graceful spiral stairway was used by Architect James S. Sudler of Denver to integrate several floor levels in a bank. The design and the color of the architectural metal help establish an air of friendliness-yet contribute dignity and a feeling of stability. The column is enwrapped with woven bronze wires that have been partially colored to give a pleasing black-and-gold effect.

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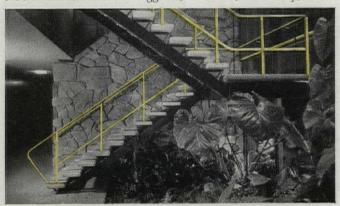
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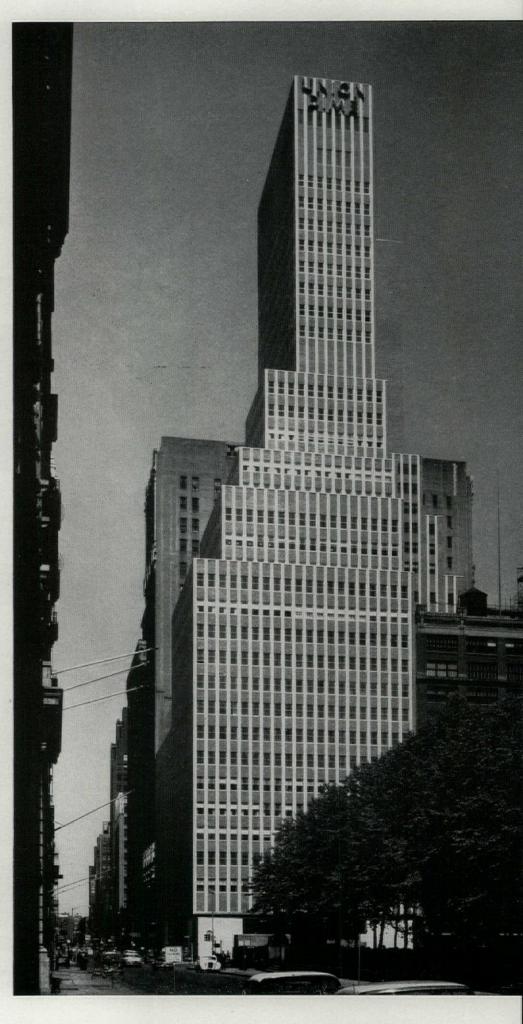
Architectural bronze, in bright finish, and dark marble walls combine beautifully in this entrance. Note interesting design in the transom. Hansen and Waggoner, Architects, Mason City, Iowa.



The warm color of an extruded architectural bronze shape for the handrail, combined with drawn red brass rectangular tubes for the railing of this open stairway, was used by Architects Albert C. Martin & Associates, Los Angeles, to provide a pleasing contrast with the surrounding masonry, wood paneling and living plants of the indoor tropical garden.



novel and decorative arrangement of indirect lighting, utilizing a channel-shaped ring of bronze, provides uniform light on the tables this dining room designed by Architect J. Gordon Carr, N. Y. The reflected light has a softening influence on all colors of materials, luding the bronze. The antique bronze flying geese on far wall are modern welded sculpture by Barbara Lekberg, N. Y.



- Architects: Carson & Lundin (Bank portion only) Sydney Goldstone, & Kahn & Jacobs (rest of building) Structural Engineer: Charles Mayer General Contractor: George A. Fuller Company Concrete Contractor: Rizzi Con-struction Corporation Distributor: Firegroof Products

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In the new Textile Building ...

Short-span floor slabs reinforced with (Uss) American Welded Wire Fabric

 $T_{\rm HE}$ Textile Building, at 111 West 40th Street in Manhattan, was completed early this year. This office building reflects progressive design and construction techniques. As in so many other new buildings, a key construction feature is the shortspan floors and roofs, reinforced with USS American Welded Wire Fabric.

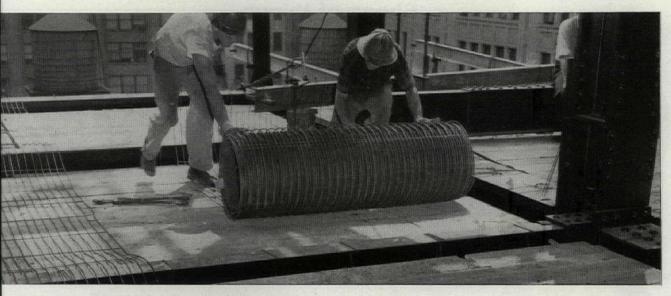
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slaps, reinforced with USS American Short-span Welded Wire Fabric, are an important construction feature of the Textile Building. USS American Welded Wire Fabric is prefabricated for quick, easy, economical installation in any permanent concrete work.

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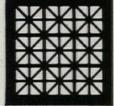


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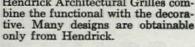
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Editorial

Renewal on the rocks

When Congress failed to enact a housing act before adjournment last August, and the administration failed to fight for a continued urbanrenewal program, the urban-renewal train came to a grinding halt, and those cities which had come aboard were rudely jolted. The train is not going anywhere now.

Today there are virtually no federal funds available for new urban renewal despite all the important recommendations of President Eisenhower's Advisory Committee on Housing Policies and Programs of 1953, which he so enthusiastically endorsed in his message to Congress in January 1954. Cities, newly entering into essential renewal activities with enthusiasm, find they have no program to work with. Cities making applications for capital grant reservations, which they thought they had successfully placed in some sort of a pipe line of priority, find themselves now faced with an extraordinary new concept of renewal aid not authorized by any act of Congress. This concept involves a weird formula for rationing the remaining \$154 million of renewal funds by checking a city's population figures against land-acquisition costs. This emergency formula, apparently pulled out of thin air by harassed administrators, bears no relation to the human use of the areas in question, the condition of these areas, or their possibilities for future development. The result is that the planning objectives of the Housing Act of 1949 are discarded. The stimulus engendered to city rebuilding by the Housing Act of 1954 is discarded. Postage-stamp projects based on financial eligibility remain, and cities find themselves back where they were before 1949.

The housing bill that was lost in maneuvers in the House of Representatives last August would have provided U.S. cities with some \$500 million of urban-renewal aid each year for the next ten years. Its blocking at the hands of a coalition of Republicans and Southern Democrats can be attributed in part to politics, but, in part, too, to a laudable desire to hold down federal spending. With the economy rapidly recovering from the recession under its own steam, the Eisenhower Administration was opposed to the \$2.5 billion tag on the housing bill, which would have doubled the Administration's proposed rate of spending for urban renewal and increased the possibility of inflation.

But, turning off the spigot of federal aid completely, simply because there was disagreement about the rate at which the urban renewal funds should be allowed to flow, would seem to make as much sense as a man's starving to death in order to avoid overeating. Nor is the question of federal vs. local responsibility a suitable excuse for the action-or lack of action-taken. Of course there should be a gradual diminution of federal responsibility and spending in the field of urban renewal. Of course the cities and states should contribute a larger share of the cost of their own rehabilitation and rebuilding. But this will require changes in the tax structure; and, the rebuilding and preservation of American cities is a national concern, too, and a stated continued on page 79



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aspiration of national policy. And for the present, at least, the seed money of federal aid is badly needed. The federally supported highway program, still going forward unabated, creates increasing relocation problems and the federally insured program of home building still draws strength away from cities so that the problem of inflation is not the only one to be considered.

After years of talk and inactivity, big renewal programs initiated years ago are finally getting under way in hundreds of U.S. cities. The next few months may well be crucial to the success or failure of these programs.

It is impossible at this moment to calculate the damage which has been done to the whole cause of urban renewal. Clearly, confidence in the program on the part of local government is shaken. Of a certainty those entrepreneurs who have taken an interest in this kind of activity are compelled to guess again whether they dare venture into heavy preparatory investments under rules which the government feels free at any time to abandon. It would seem highly advisable that a new national, nonpartisan urban-development policy be established as fast as possible, and at the highest possible levels, to stabilize objectives, to increase the effectiveness of programs already started, and to insure continuing support of urban renewal and slum clearance by government as a condition for participation by private enterprise.

Immediately after it convenes next month, Congress has an obligation to pass an emergency money bill for urban renewal which will redeem the good faith of the federal government and make possible the resumption of the renewal program where it left off last summer. Such a bill must repudiate the silly formula on which allocations are now made by HHFA, and at the same time must provide that projects which were ejected from the pipe line must be returned to it in the same magnitude and for the same purpose for which they were originally submitted. After that, it is to be hoped that the administration and the Congress can work up a bipartisan housing act of 1959.



A human victory

Artists are proverbially not practical people, and are of small consequence politically. Yet New York's artist community, Greenwich Village, has just saved a favorite treasure-the famous park of old Washington Square-from being cut apart by needless through-traffic, and has done so by political pressure maintained steadily and skilfully. The Village leaders accepted with thanks the aid of political boss Carmine De Sapio when it turned out that he was more aware of human desire in the area than were officials of more resounding reputation, and moreover the highbrows struck up an effective alliance with the small storekeepers of the area.

The Square is now having a "trial period" with no vehicular traffic permitted except for fire fighting and similar emergencies, and if the trial is fairly run the traffic ban seems

almost certain to be made permanent. Then perhaps the deliberate neglect of the park by the Park Department may be ended and today's shabby maintenance repaired. Washington Square is a great pleasure to behold, even as it stands; for every day, and especially on Saturdays and Sundays, it swarms with people, mostly teen-agers. "Gangs" and juvenile delinquents are, however, conspicuously missing. Mostly, the young people come to the park to do group singing, and to play in musical ensembles sometimes improvised, and to dance and have a genuine "village" good time, while the older folk sit dispersed all through the park reading, or join others in the famous checkers corner. All this is heartening to see in a great modern city. It proves that city neighborhoods too can be human, and it deserves its victory. END



The new Paris headquarters of this big U.N. agency are a \$9-million venture in the integration of architecture, technology, and art.

UNESCO's cheerful new home

Paris, long the center of western culture — and, more recently, the source of much new thinking in architecture—has had almost no modern buildings of her own. Now, with the completion of the new headquarters for the United Nations Educational, Scientific and Cultural Organization (UNESCO), Paris has one of the important groups of modern buildings in the world.

This is so for three reasons: First, because the UNESCO structures make a strikingly handsome composition of modern forms—without being impolite to the beautiful city which is their host. Second, because the technical skill that went into the planning of UNESCO produced major contributions to the science of building — from concrete technology to climate control. And, finally, UNESCO is important because it represents the most energetic effort to date to integrate modern painting and sculpture with architecture.

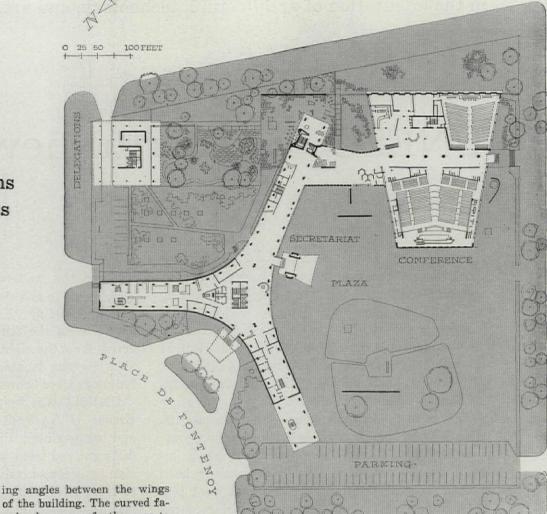
The UNESCO headquarters consist of three structures in all-the Y-shaped Secretariat (right, below); the wedge-shaped Conference Building (left, below); and the square, five-story-high Delegations Building. These buildings occupy a $7\frac{1}{2}$ acre site on the semicircular Place de Fontenoy, across from the eighteenth-century Ecole Militaire. This site was donated by the City of Paris, and the buildings were financed by the French Government.

UNESCO was designed by two architects, Marcel Breuer (U.S.) and Bernard Zehrfuss (France), and one engineer, Pier Luigi Nervi (Italy). This distinguished team was chosen after an earlier design by a conservative French architect had failed to meet UNESCO's high expectations. Nevertheless, the planning and building of UNESCO was not without problems. Budgets and building sites were changed in mid-stream, and construction was repeatedly delayed; still, the final result, now unveiled, was worth waiting for. The new UNESCO headquarters offer a cheerful and optimistic home to those who hope to achieve world peace through education and cultural exchange.

UNESCO Conference Building and Y-shaped Secretariat are centered on main plaza. Place de Fontenoy is at far right.



The Secretariat's varied façade patterns and sculptural accents make this a building of many contrasts.



ETIENNE HUBERT

The rounded Y-plan of the UNESCO Secretariat was influenced by the curve of the eighteenth-century Place de Fontenoy on which the building faces. This plan produced an office floor layout with several noteworthy advantages: elevators, stairs, and toilets are centrally located at the thickest point in the plan; the short, radiating corridors get narrower as traffic thins out; there are no sharp, constrict-

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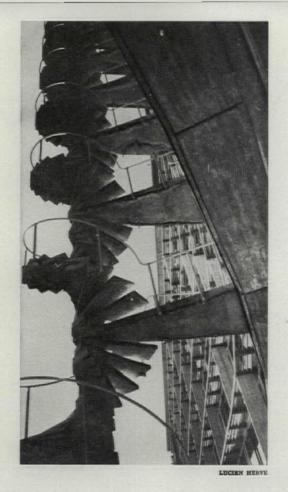
ing angles between the wings of the building. The curved facades have one further asset: since the angle of the sun on each facade varies from one end of the building to the other, there is a gradation of light and shade on the exterior walls which adds interest to the repetitive surface patterns. Below is a view from the west, showing the secretariat and, at the right, the pleated end wall of the Conference Building.

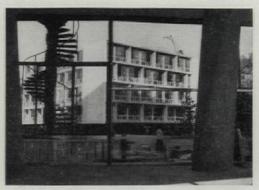
 Spiral fire escape, jutting out from the east façade of the Secretariat, consists of a series of identical, wedgeshaped, precast concrete steps that fan out from a central mast eight stories high.

Sculptured concrete stilts support the Secretariat, keep much of the ground floor open for pedestrian through-traffic. At left in photo is a section of the spiral fire escape seen also above, and visible in the distance is the five-story Delegations Building, also on stilts. All three main UNESCO buildings are connected below grade by elaborate passages, work spaces, and parking facilities.

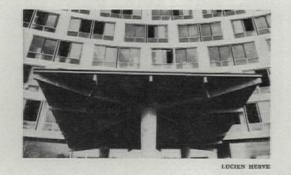
Main entrance canopy facing Place de Fontenoy is one of several delicate reinforced concrete designs that enrich the buildings. A veinlike pattern of light beams extends from a central support to reinforce the slab. The façade pattern above shows frameless sliding glass windows, no sun controls since the wall faces north.

Saddle-shaped structure at the entrance from the main UNESCO plaza is a thin-shell concrete sculpture of great verve. Two massive foundation blocks carry a widened concrete arch from which there flare outward and upward two hyperbolic-paraboloid "visors" —a larger one toward the plaza, a smaller one toward the lobby.



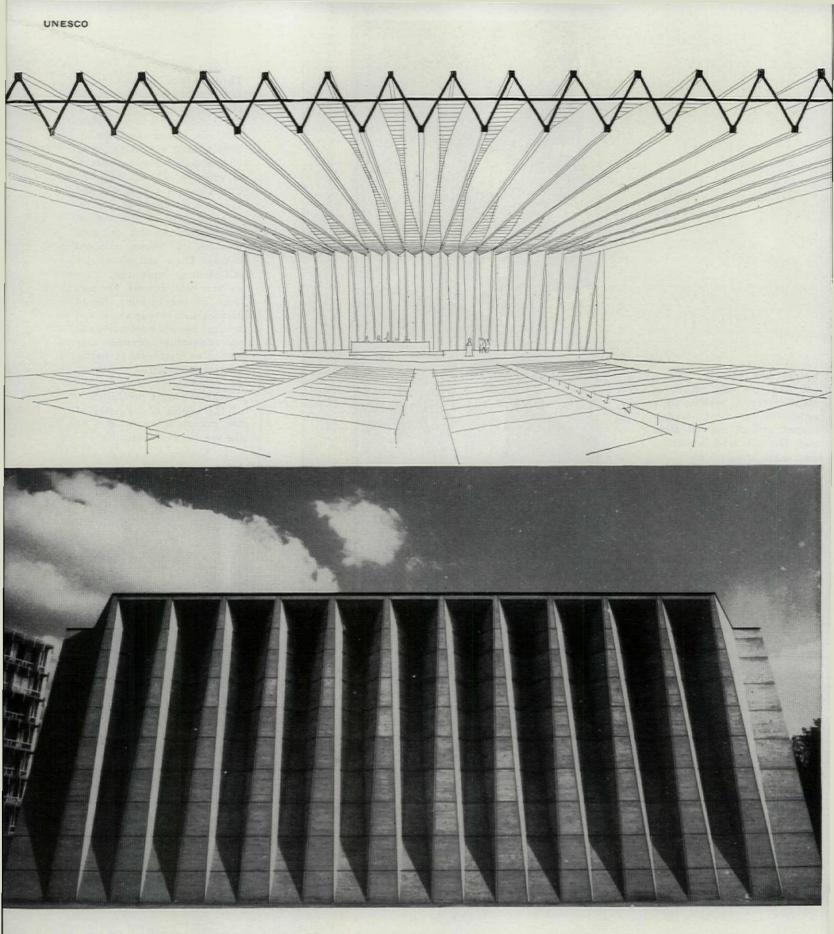






Three kinds of sun-control device were used to protect the office spaces: on portions of the building that face from southeast to southwest, the architects used a combination of 32-inch-deep horizontal louvers of concrete, 32-inch-deep vertical slabs of travertine, and 32-inch-high bands of sun filters of gray, heat-absorbent glass projected out on steel brackets (all shown in photo below). These sun filters are self-cleaning since they have no horizontal frames. On portions of the building facing northeast, only horizontal and vertical louvers were used, and no sun-control devices were needed on northeast to northwest exposures. This "curtain" of sun-control elements was developed after a careful study of the angles of incidence of the sun at different times of the year in Paris' latitude.





Conference Building is a folded concrete structure as ingenious as a paper hat. The Conference Building, whose end wall is shown above, has a butterfly roof which consists of a series of triangular corrugations that run the long way of the structure. The corrugations are intersected by an undulating slab that follows the curve of the bending moment (see picture opposite). The roof is supported on a transverse concrete girder along the valley of the butterfly and at the ends on two pleated walls of exposed reinforced concrete. The roof consists of two, unequal spans: a 90-foot span over the committee rooms and a 135-foot span over the Plenary Session Hall.



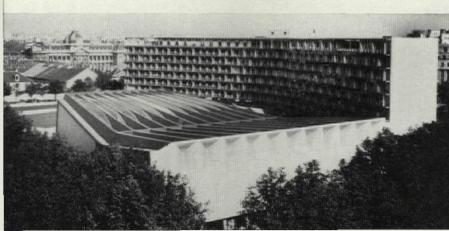
Ceiling of Plenary Session Hall shows the triangular corrugations of the roof and the undulating slab that intersects this triangular space-frame. The concrete ceilings and the columns in the Delegates' Lounge were left in natural finish. Press, radio, TV, newsreel and simultaneous translation facilities are recessed in the paneled side walls of the Hall.

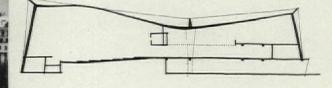
The Plenary Session Hall (right) seats about 1,000 persons. Its principal lighting is reflected from the pleated ceiling and end walls. Other committee rooms in the Conference Building were contributed by member countries, including the U.S., whose Executive Board Room was designed by Philip Johnson.

Air view of the butterfly roof reveals the handsome pattern made by the corrugations and undulating slab. This pattern is visible from the upper floors of the Secretariat. The roof is sheathed with a copper skin weighing 20 tons. The sectional drawing at far right shows the curve of the roof slab.



PHOTOS: (ABOVE) ETIENNE HUBERT; (BELOW & OPP. P.) LUCIEN HERVE







1

ETIENNE HUBERT

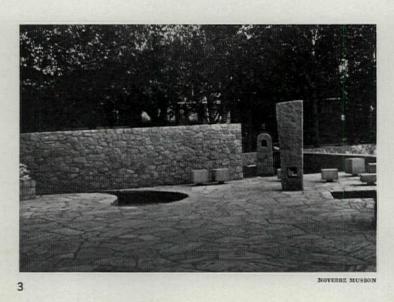


Famous painters and sculptors

to integrate all the arts.

worked with UNESCO's architects

SABINE WEISS-TIME



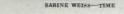
\$191,000 worth of art was commissioned by UNESCO on the theory that no cultural center would be complete without paintings and sculpture. The money was well spent, and critics have applauded most of the work contributed. All artists commissioned were selected by a panel of art experts, in consultation with the architects.

On this page are shown two contributions by leading sculptors. One is a reclining figure (1) by Britain's Henry Moore, made of marble from Michelangelo's erstwhile quarry at Carrara, Italy. This figure is located in the main UNESCO plaza. The other is a sculpture garden (2, 3) by Isamu Noguchi (U.S.), which occupies the area between the Delegations and the Conference Buildings. All the stones in the garden were selected and shaped by Noguchi in Japan, then shipped to Paris. Not shown here or overleaf: a bronze relief by Arp (France); paintings by Appel (Holland), Matta (Chile); photo mural by Brassai (France).

Interiors on this page show three murals: a fresco by Mexico's Rufino Tamayo (4), based upon the theme of Prometheus bringing fire to man, which is located in the main commission room of the Conference Building; an abstraction by Italy's Afro (5), located on a passage wall on the seventh floor of the Secretaseventh floor of the Secreta-riat; and a huge mural by Pablo Picasso (6), located in the Delegates' lounge. It is 32 feet wide by 29 feet high, was painted on 40 panels. Shaped column to its right supports girder of butterfly roof.

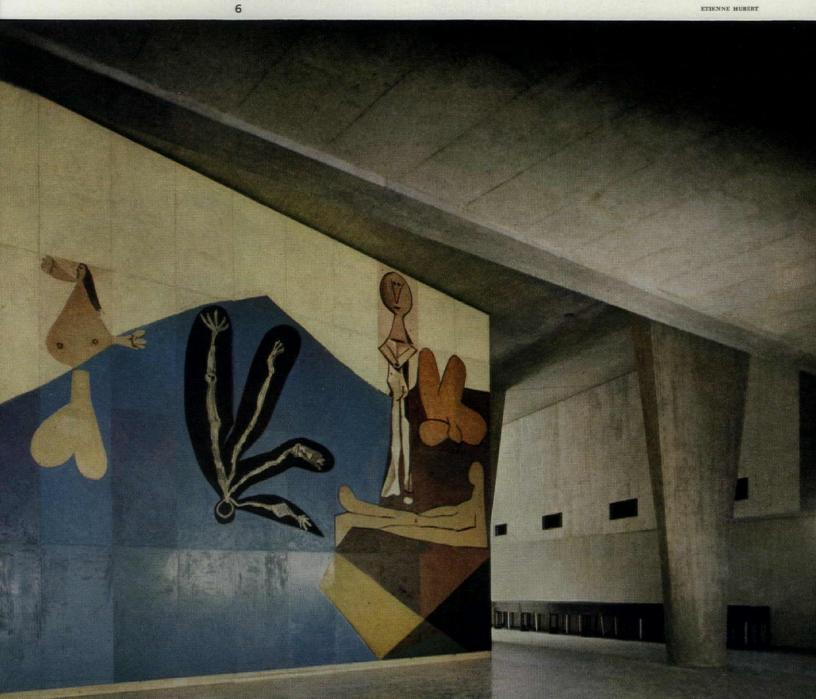


4



LUCIEN HERVE 5

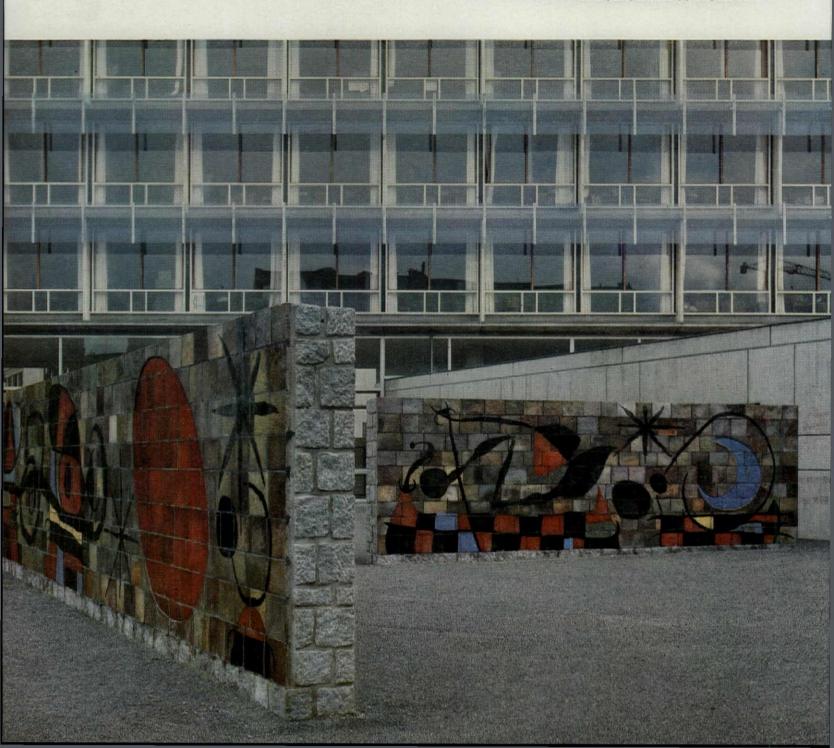






Murals by the Spanish Surrealist painter, Joan Miro (below), in October received the Guggenheim International Award for 1958, a \$10,000 prize which is the art world's most valuable accolade. The murals were rendered in ceramic tiles by his collaborator, Artigas. The murals are entitled "Day" (left) and "Night" (right). The 30-foothigh steel mobile (right) by Alexander Calder (U.S.) stands off to one side of the Conference Building. END

PHOTOS : (ABOVE) LENI ISELIN ; (BELOW) ETIENNE HUBERT



The church in a modern world

BY JOSEPH HUDNUT*

The modern Christian church, says this critic, should reflect a blend of three values: ethics, mysticism, and romance.

In that distant era when modern architecture shall have taken its place among the historical styles, forever fixed in time and event, historians may say of it that it failed -at least until the present day-to meet the acid test of excellence in architecture. It did not realize in great churches (they will say) an expression of those values in which lie the true greatness of civilizations and the most eloquent themes of art. Magnificent of scale and heroic of power, profound in social and cultural relevance, our architecture leaves uncelebrated in churches the Christian conviction which, deep and true, pervades our time.

For many years modern architects have wished to bring the church within the expressive range of their art; and the church has not been wholly indifferent to their solicitations [see Bishop Oxnam's gracious statement of the capabilities of modern architecture, overleaf]. It would have been strange indeed if our architects did not hope to give our present Christianity a grandeur of appearance not unlike that which ennobled past architectures, always born of a religion. But we come to this task somewhat belatedly. And we have developed only a limited means of expression in fields so distant-so seemingly distant-from that transcendental

tradition. Our secular art, denied, until recently, all access to the faith -its active and fertile thought a deadly danger to orthodoxy-brings to this enlargement of its role precedents, conventions, and experiences adapted from a realm outside the faith. Untried in this ministry, we must now try to adapt a tangible and concrete architecture to the expression of the church's ethereal values, which are ethical, mystical, and romantic - and, alas, are frequently all of these at the same time! What hope, then, have we of success?

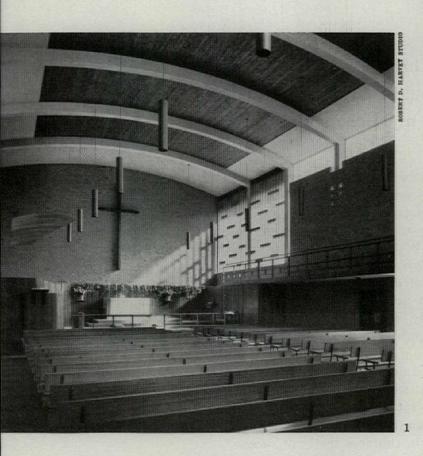
An ethical art

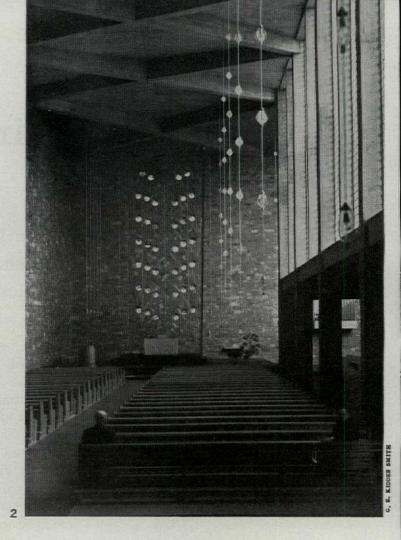
Modern architecture is, certainly, an ethical art. From its beginning its practioners and its philosophers have waged a valiant warfare against sham and every form of cant. First in its range of expressiveness is the expression of truth; but it is ethical also in its exposing of imitation and slavery, its identification of good design with the good life of society; modern architecture is ethical in that it makes practicability a virtue; ethical in its concept of beauty as the outward clothing of an inward good. Henri Van de Velde described modern architecture as a "moral revolt" and the words honesty, integrity, and truth are star-sprinkled on the pages of Frank Lloyd Wright.

This ethical intention should awaken many resonances in the design of churches. Christianity should

^{*}Dean of Harvard's Graduate School of Design from 1936 to 1953, Mr. Hudnut was the first U.S. architectural educator to recognize the lasting contribution modern architecture could make to our culture, Now retired, he is writing and lecturing on architectural subjects.

Ethics, mysticism, and romance as expressed in three churches.





"... mysteries without compromise."

"... as forthright as a parable from the Old Testament."

rediscover itself in these reticences in which simplicity is grace and truth is beauty.

These considerations are especially pertinent to those communions which, following the Puritan and the Lutheran traditions, give a first importance to the ethical content of Christianity. A church compounded of the beautiful primary forms of the cube, the cylinder, and the sphere—as in those basilicas quaintly called "Early Christian"with plain wall surfaces, crystalclear windows, and the quiet rhythms, not too solemn, which draw a congregation toward the sanctuary: these are enframements wholly consonant with an art of teaching as ancient as Christianity and as integral to its mission.

There is such a church in Boston, recently built by Pietro Belluschi. Shaped of intelligible forms, framed in unpretentious materials, filled with quietude and light, the First Lutheran Church [photo left, above] exists in a climate of rationality and health. There exists a subtle harmony between its spirit, forthright and pure as a parable from the New Testament, and the spirit of that gentle Teacher who suffered so brutal a death in distant Judea.

Yet, ethical values are not integral to buildings. Buildings do not hate cant and fraud, do not speak the truth or die for their country. When they embody ethical values, it is because we placed them there or because they were placed there by all the saints of modern architecture. Buildings sometimes express moralities—make them known—but in doing this they are only the passive agencies in a psychological process. They are the organs through which the mind compares and remembers. And yet, strange to say, we often find in buildings guides to behavior more persuasive, because unmediated by argument, than are the precepts and admonitions of those who are skilled in the use of words. We find sermons in stones, having placed them there.

Mystical resurgences

Without, then, implying an identity of architectural and ecclesiastical morals, it seems obvious that modern architecture will be more



"... a romantic declaration of independence."

successful in the expression of an ethical Christianity than in the expression of those *mustical* values which inhere in a church not from our own disobedience but from the more cosmic disobedience of our first parents. We go to church not only to learn what conduct God expects of us on earth but also to participate in those observances which are believed to be parts of His eternal plan for the redemption of man. These Christian mysteries are almost as ancient as the religion itself, having been formulated early in the third century in the Oriental-Greek cities of Antioch and Alexandria. We know how these mysteries and the great argument of which they are parts speedily conquered Greece, already weary of her philosophies; how they cast their spell over the politically minded Constantine and the German invader, neither of whom seems to have been passionately devoted to moral law: and we know how in the eighteenth century they lent holiness to the mercantile empires of Spain, France, and England. And, of course, we know that the observance of these rites is today the essential purpose of many churches. Since this is true, and since architecture is an expressive art, we cannot hope to serve the church in modern dress unless we can capture in our constructed forms some adumbrations of that vast and beautiful tradition.

The expression of mystical values in architecture is quite as dependent upon processes of association as is 1. First Lutheran Church, Boston, by Pietro Belluschi.

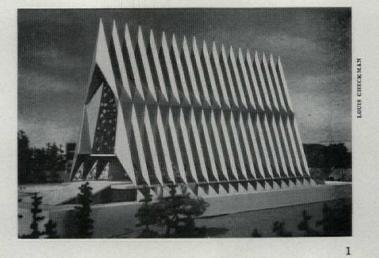
 Notre Dame du Haut Chapel at Ronchamp, France, by Le Corbusier.

the expression of ethical values-a fact which in part explains the persistence of neo-Gothic forms. Religious architecture is one great metaphor, a transference of material realities into immaterial likenesses. We understand such transmutations in music and in poetry, already built of ethereal substances, but he is a sorcerer who can render mysterious the concrete shapes of buildings: actual, familiar, occupying space and revealed by light. And what architecture could be more recalcitrant to that sorcery than an architecture of precision and clarityand sanctioned by a philosophy of naturalism?

Perhaps, it is in despair of that miracle that modern architects so often throw their modernism to the

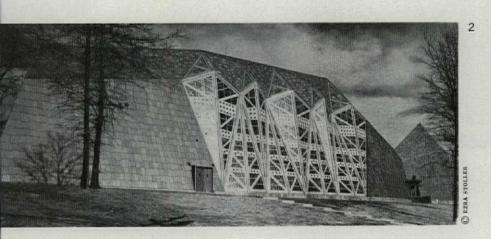
Church of Saint Anna, Duren, Germany, by Rudolf Schwarz.

THE CHURCH

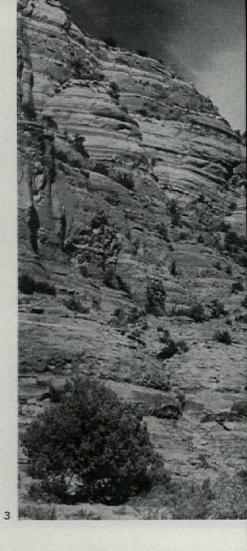


"... Gothic revival in sheet aluminum."

Three churches of uncertain conviction.



"... fanaticisms of colored glass."



1. Air Force Academy Chapel, Colorado Springs, Colorado, by Skidmore, Owings & Merrill.

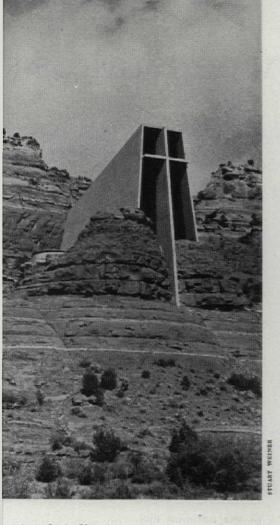
 First Presbyterian Church, Stamford, Connecticut, by Harrison & Abramovitz.

 Chapel of the Holy Cross, Sedona, Arizona. by Anshen & Allen.

winds when they undertake the design of a church. The restraint and good sense which were hitherto their ideals, the reasoned and naked ordinance, the ethical naturalism, are at once overcome by resurgences of medievalism. The materials and techniques remain modern-are indeed exploited in invention and a new resourcefulness-but these are clothed with the obscurantisms, made somewhat more obscure, of the Gothic centuries. Neither fanaticisms of colored glass and pointed gable nor the dim religious light or parabolic arches can make a church modern (see above); and we have been shown in the plans for the Air Force Academy how a chapel can strain to be medieval, and even Gothic Revival, although built of sheet aluminum—and with the True Church in the crypt!

Recently, German architects have been more successful than the Americans in such appositions of modern technologies and medieval pattern. These two forces, technology and design, seem to attain a more virile mutuality where both announce without compromise the Catholic mysteries. Nevertheless, steel and cast concrete seldom bring into these churches a true modernity of spirit. The materials are brought there as converts to medievalism, having left their own creed outside the temple.

The Church of Saint Anna, near Aachen, built by Rudolf Schwarz (page 90), is a characteristic and fine example of this masculine art. Asserting in uncontrovertible symbol the doctrine which fills all of its fabric and charged with the militant spirit of the Gothic centuries, the building admits many devices drawn from modern architecture. Its disdain of comeliness is almost feudal; nor is there any humanization of its legend. Within a vast and somber nave, the weight and mass of an unbroken wall of masonry is answered on the opposite side by a clean rigidity of steel columns framing wide areas of glass blocks. Thus, the great hall of a Westphalian castle is made hospitable to the advent of steel. It was in such a hall that the Emperor Otto assembled his barons to plan the conquest of Italy, a sword laid upon the altar. He would be a bold knight who in that company should



a façade indicating a lack of confidence."

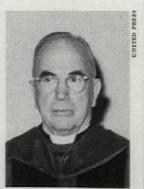
plead the freedom of the mind.

Civilizations, even our own, owe their lives to symbols. If our symbols have lost their magic, we must invent new symbols and learn to give them new meanings.

Yet, architects must exercise care in using symbols. Symbols are more powerful than words; more powerful than architecture. This is especially true of religious symbols when they appear in contemporary buildings. The spire is an apparition out of the past, seldom harmonious to the spirit of modernity. even when built of naked iron. The cruel crucifix shatters a quiet nave like a sudden explosion. The altar. to those who have not forgotten, may be steeped in the discordant echoes of history; is this not the continued on page 156

"The right of private judgment" BY BISHOP G. BROMLEY OXNAM

At the heart of the Protestant proclamation is the principle of "the right of private judgment." Thus it is not the apparent confusion of denominational diversity that characterizes Protestantism; rather it is the underlying *unity* of spiritual diversity, for every Protestant knows that nothing stands between him and the Eternal, neither church, nor clergy, nor creed.



This means for me that the creative artist who expresses himself in architecture need only review fundamental Christian precepts. For example, Jesus said: "I am the Light of the world." Does this not suggest that the architect should use the glass that is now available, the glass that admits light, diffused perhaps, but nonetheless light? The gloomy naves and dark aisles of yesterday must pass. In a day when modern man cries for clarity, demands simplicity, searches for certainty as blind men search for light, surely there must be a new use of light as made possible by modern engineering, physics, and chemistry.

Our Lord also said: "He who would be greatest among you must become a servant." Is it then necessary to install in our churches massive decorative effects? Do we need statuary and pierced stone for a soul that comes seeking God? Once, perhaps, but not now! We should not seek to erect monuments to events long since gone nor structures that will dominate the community and overpower it. There must be a warmth that is associated with fellowship, the color that brings us joy. It must not be forgotten that we worship together.

The Christian church is not a society of serf and of noble. It is a democratic society, and thus fellowship takes on new significance in the planning of the church. There must be the Communion table, but there must also be the tables for the church suppers which take on spiritual significance as they reveal the fellowship that Christian love creates. When the free mind is brought to bear upon the religious problem, the whole educational process becomes a fact of fundamental importance. Thus the planning of the teaching rooms of a church must take its place as of equal importance with the planning of the chancel.

ARCHITECTS ARE OFTEN SHACKLED

But, practically, we face serious problems. There are, for instance, problems of poor taste, of dominating ignorance, and of architects who want prestige won by eccentricity. Creative architects are often shackled by unimaginative committees in the local churches who cannot apprehend what is meant by contemporary architecture. There is a tendency to transform the environment in which we were reared as children into fixed canons for the structures that must be erected in adult life. A center pulpit in childhood often means objection to an open chancel and a pulpit placed at the side. Children who are now sitting in well-designed well-lighted public schools must wonder why they must worship in shadows far from the altar, in echoing rooms apparently planned to contribute to mystery rather than to understanding. Happily, these children will soon be the adults making the decisions in the churches.

Church leaders must strive to understand what contemporary architecture seeks to do. There must be a full recognition of the fact that when we admit the majesty of God we are ruling out all other absolutes. There is no absolute style, either Gothic or Colonial or Baroque. We must reach out for the expression that carries the faith to our own generation and recognize that the faith itself is being made more vital by the free mind that seeks further truth.

Philadelphia's design sweepstakes

How one city utilized an unusual competition to obtain the best architecture for a historic redevelopment area.

BY STEPHEN G. THOMPSON

How can urban redevelopers be induced to build to the highest standards of city beauty and planning instead of trying to underbid one another by skimping on design? Philadelphia found one promising solution last month. Four major redeveloper teams all staked their chances of winning a competition for a large parcel of redevelopment land on the factor of design, not price.* Architecture thus gained a wholly new and important official status in the field of urban renewal.

Philadelphia, acting through its Redevelopment Authority, undertook to award the contracts for its 56-acre "Society Hill" redevelopment site to the contender whose ideas would promise the most agreeable pattern of city living and the most attractive cityscape. All contenders agreed in advance to pay whatever official value is set for the land next. spring, so price was eliminated as a competitive factor, though business terms, such as financing, will no doubt play a part. Political considerations, too, may enter in, but the city, in effect, surrendered whatever

premium price it might have obtained for the land for the sake of the quality it is seeking.

Three of the redeveloper teams who earnestly besought this redevelopment opportunity bid for the full plot; two other redevelopment organizations accepted the option of pairing up with another team, each to do one half of the total area (either west or east) but coordinating their independent schemes. Altogether, seven architectural firms were employed by the various redevelopers.

And, all in all, the redevelopers spent some \$260,000 for preliminary site and architectural plans—a sum the city itself would never have spent for such professional service. Their plans are shown on the following pages.

Not only did Philadelphia's emphasis on design draw some excellent proposals, but the submissions served to clarify some unresolved issues. Everybody was obliged by the terms of the competition to stick to the "living city" concept: to mingle new buildings with old, high rise with low. Two of the submissions, in fact, constituted a direct debate -in three-dimensional form-of the hot issue of "beauty" vs. "amenity." That is, in the submission of Webb & Knapp for the eastern area, by Ieoh Ming Pei (page 96), there was a masterly achievement of harmony and serenity, a pulling together of the complicated and often discordant elements of the city picture; if built, the Pei plan would produce lovely spaces and a restful, coherent "sky line." In the so-called Stonorov scheme for the Thomas Jefferson Square Corporation (page 99), by contrast, the attraction was the lively excitement that would

accrue to the area through inclusion of a concert hall, playgrounds, an outdoor swimming pool, outdoor murals, sculpture—all the "brouhaha" that makes up the rich experience of city living.

Just before FORUM went to press the Redevelopment Authority announced acceptance of the Webb & Knapp proposal for the eastern half of the project, and for the western area half of the Jefferson Square Corporation plans.

In the national eye

Philadelphia had a special reason for seeking distinction in this \$50 to \$60 million project: it will be viewed by visitors from the entire nation. For the site is hard by Independence Hall in the city's so-called Washington Square and Society Hill section (a hilltop in the area belonged in William Penn's day to the Free Society of Traders). It overlooks the Delaware River to the east and is bordered on the north by the four-block Independence National Historical Park (see aerial view, right).

This area was one of Philadelphia's finest residential sections through most of the nineteenth century but it is now a neighborhood of aging, obsolete two-, three-, and four-story structures of mixed residential, industrial, and commercial use. The projected removal of the produce market in the eastern half to a modern new food distribution center in south Philadelphia is what opens the possibility of re-establishing the original fine residential character of Society Hill and thus attracting middle- and upper-income families back to the city. The new program includes the preservation

^{*}The four teams whose plans are shown on the following pages: 1. New York Redevelopers Roger Stevens and James Scheuer engaged Philadelphia Architect Vincent Kling to develop plans for the western half of the project to complement plans for the eastern half prepared for William Zeckendorf's Webb & Knapp by I. M. Pei & Associates. 2. Bernard Weinberg and Harry Madway, Philadelphia area apartment builders, engaged Philadelphia Architect Milton Schwartz.

^{3.} The Turner Construction Company of Philadelphia and John W. Galbreath Company of Columbus, Ohio, as equal partners, engaged different architects for each half of the project: Vincent Kling, to design the eastern half, and John Diehl Associates, of Princeton, New Jersey, the western half.

^{4.} The Thomas Jefferson Square Corporation, headed by New Yorker T. Roland Berner, and including Boston and New Haven Redevelopers Jerome Rappaport and Seon Pierre Bonan, and the George A. Fuller Company of New York, engaged Architects Harrison & Abramovitz, of New York. with Stonorov & Haws of Philadelphia as associate architects.

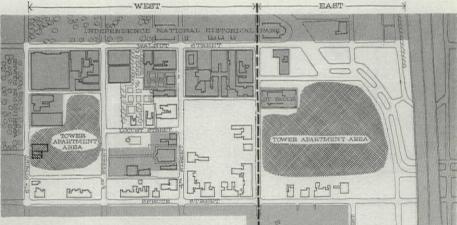
of several buildings of historical and architectural significance plus the rehabilitation and modernization of the many sound old houses of the area so they can be lived in again (see page 164).

To launch the "competition," the City Planning Commission, directed by Executive Director Edmund N. Bacon, engaged Philadelphia Architects Vincent Kling, Oskar Stonorov, and Wright, Andrade & Amenta, as consultants. Based on their studies, the Redevelopment Authority gave prospective redevelopers a schematic master plan for the area that delineated the section in which highrise apartments, garden apartments, and new single-family houses should be erected, and indicated which existing buildings would have to be rehabilitated. This master plan or guide also set population densities and parking requirements, and required a system of tree-lined pedestrian "greenways" throughout the area.

One-architect jury

The Society Hill "competition" has effectively demonstrated that a redevelopment agency can issue a liberally detailed but primarily schematic redevelopment plan for an area without unduly inhibiting builders and architects in developing their own plans. Judging the plans on an architectural or esthetic basis, however, posed a difficult problem. For Philadelphia's redevelopment officials had to take into account far more than just the exterior appearance of structures. landscaping, and floor plans. Equally important were the subtleties inherent in the massing, orientation, and site location of buildings in relation to river views and land-



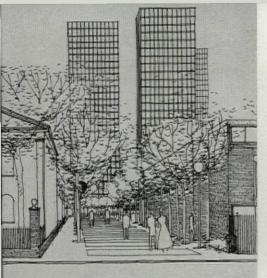


"Society Hill," a 56-acre Philadelphia redevelopment area near famed Independence Hall (extreme left in aerial view above), stretches from downtown (upper left) to the Delaware River (upper right). The master plan given bidders (above) shows blocks where high buildings must go in each of the two half-segments and also shows old buildings that must be retained while providing 1,476 new dwelling units.

(Gray areas not included in project.)

continued on page 164

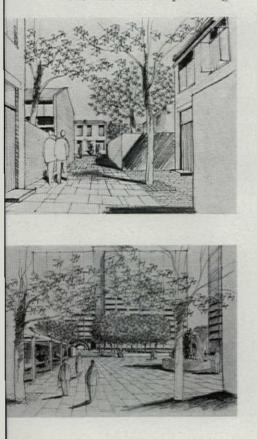
Architectural Forum / December 1958

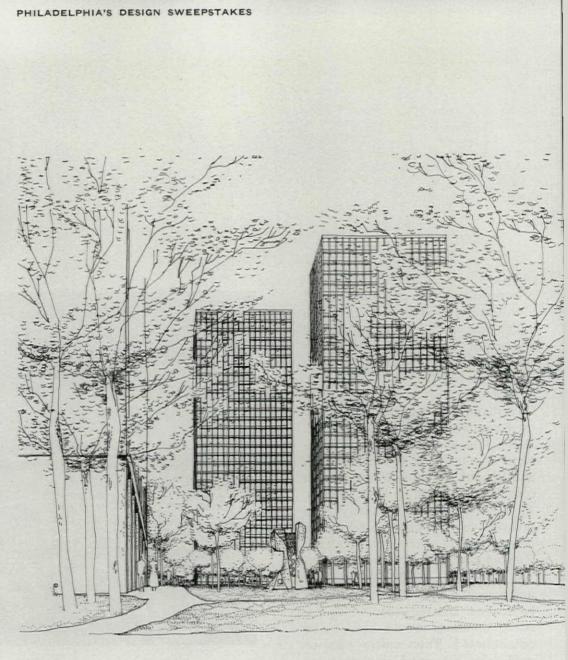


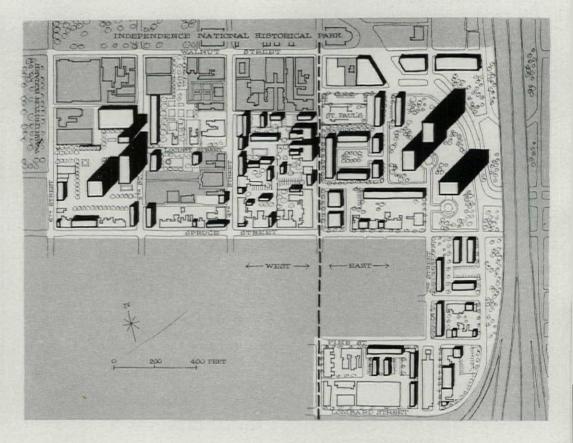
Greenway view in Webb & Knapp plan harmonizes old Saint Paul's Church, erected in 1761, with modern two-story "town house" apartments and tower buildings.

Park setting for towers is provided in Pei's Webb & Knapp plan, in which more than onethird of the garden apartments would front on broad high-rise area greenswards.

Broad walkways leading past seeluded private yards and linked to a larger greenway system (below) are included in Kling's plan for the central blocks which will be limited to two- and three-story buildings.





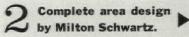


1 The complementary plans of Pei and Kling.

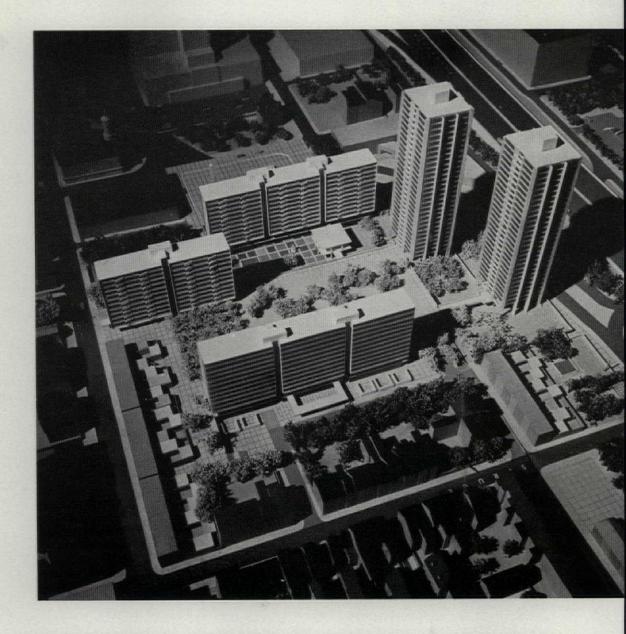
The Webb & Knapp plan for the eastern half of Philadelphia's Society Hill redevelopment project was designed by Architect Ieoh Ming Pei. Pei dropped the uneconomical eight-story apartment slabs suggested in the master plan in favor of three 30-story towers contrasting with twostory row houses on courts. Space left between the towers nevertheless yields the desired river views from apartments further west; and ingenious circular ramps, strategically placed among the towers, make underground parking easy to find and reach.

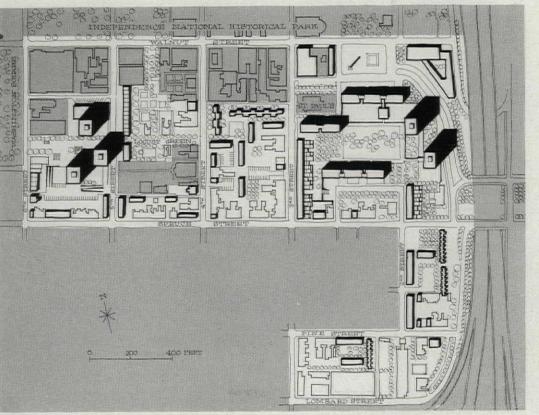
Pei's simple, quiet towers and his equally simple house rows would be set at exceptionally well studied space intervals into a natural surrounding composed mainly of greensward and trees. This helps explain the serene effect of this project, as does also the fact that from many different vantage points the silhouettes of various important buildings show very nicely.

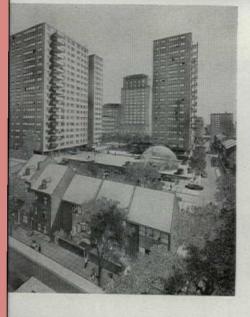
The associated plans for the western half of the tract, designed by Vincent Kling for Developers Scheuer & Stevens, create an informal apartment court next to Washington Square (far left in plan) including a 19-story apartment slab, running north-south, and a 22-story square tower. The slab building has a passageway cut through it as part of a Locust Street pedestrian "greenway" (lower sketch).

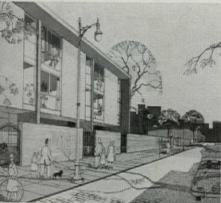


A surprisingly happy scheme for the whole project by Milton Schwartz for Philadelphia Builders Harry Madway and Bernard Weinberg, skillfully uses three standard building forms. There are five square apartment towers (two, 29 stories high, in the eastern group; three, 23 stories high, in the western); three slab apartments, 11 and 12 stories high, situated on an east-west line to avoid blocking the river view; and row houses, forming charmingly staggered patterns.

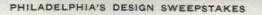




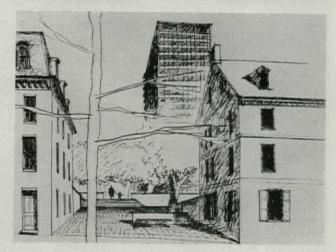




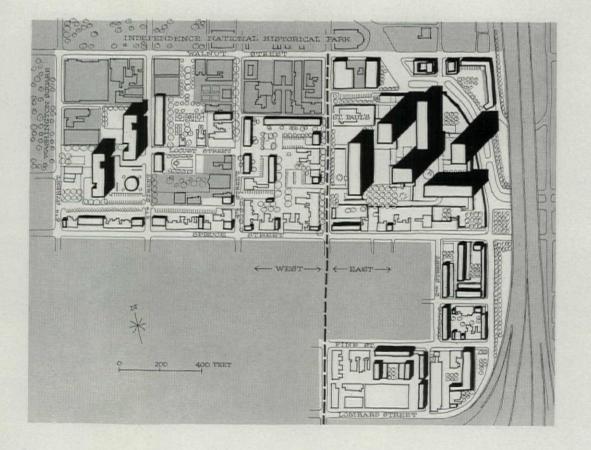
Blend of new and old row houses (top) in Diehl sketch serves as a setting for contemporary towers. Bottom sketch shows wall of three-story garden apartment that would continue churchyard wall.







Rehabilitation of significant old buildings would restore cornices, doorways, and other architectural details, as illustrated in this sketch from Kling's plan for Turner-Galbreath. At top: model of Kling high-rise apartments.



1 3 Joint designs by Kling and Diehl.

For the eastern half of the project as it would be redeveloped by the Turner-Galbreath partnership, Vincent Kling planned three 25-story towers interspersed with one ten-story and two nine-story structures.

For the western half, as planned for the same sponsors by John Diehl Associates, of Princeton, New Jersey, the westerly high-rise block would be improved with two 18-story slabs on a north-south axis. Professor Robert W. McLaughlin, director of the School of Architecture at Princeton, served as consulting architect in the preparation of the Diehl Associates plans.

Harrison & Abramovitz' "Stonorov scheme."

The lively and romantic plan for the entire area prepared for the Thomas Jefferson Square Corporation by Harrison & Abramovitz largely reflects the ideas of Associate Oskar Stonorov of Philadelphia. In it the large river-front block would be improved with five high-rise apartments: the tallest a square 29-story tower; two 26-story modified slabs, and two elongated 13-story buildings. The two 26-story buildings and one of 13 stories would be repeated on the western high-rise block (see plan, right).

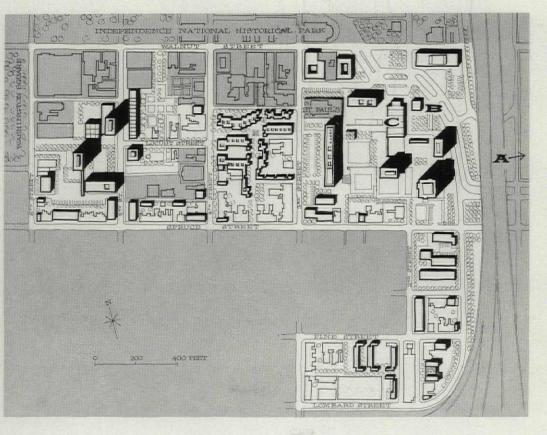
Exceeding official require-ments, this plan also shows an apartment tower fronting on a marina, across the expressway, as a later, secondphase addition (A). It also shows a small studio building (B) and a concert hall (C) which were not required, but for which the Thomas Jefferson Square Corporation has formally declared it proposes to donate the site. Including land for this concert hall or theater, this sponsor pledged that it would allocate 1 per cent of the construction cost (approximately \$300,000 to \$400,000) to cultural and artistic resources for the new residential area, in the form of sculpture, murals, fountains, and other decorative expressions. Consequently the main appeal of this plan is the great liveliness it offers by exploiting urban culture.

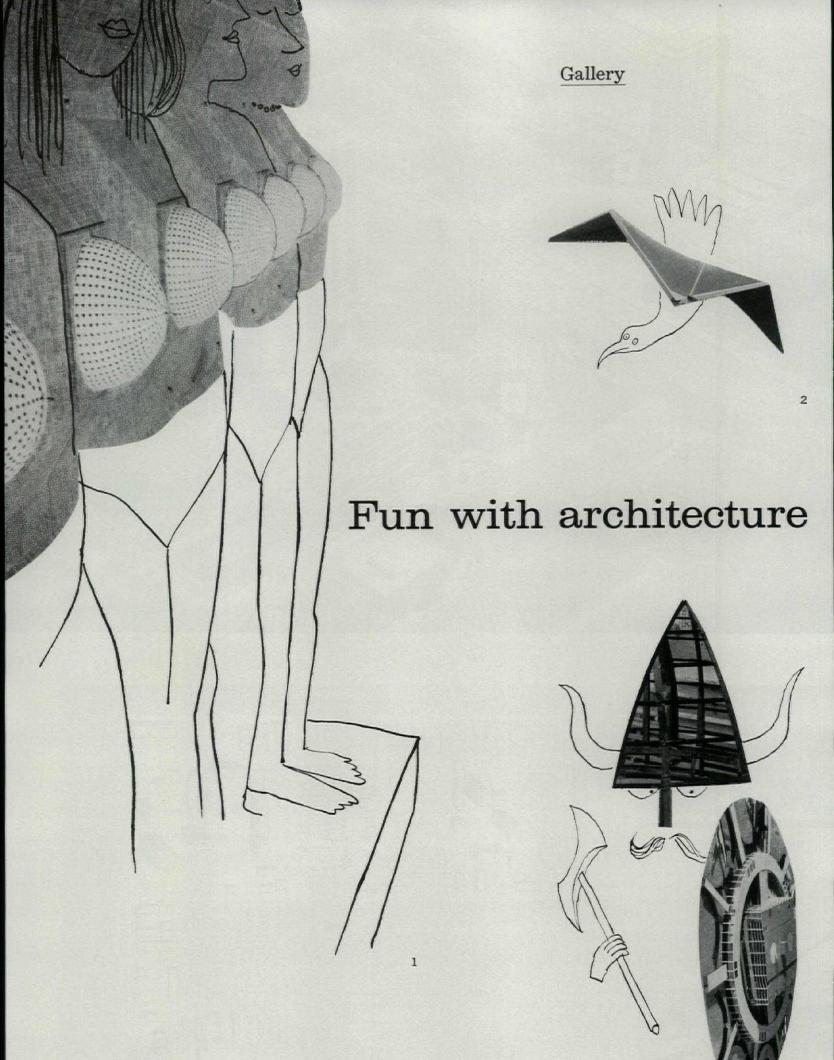




Old and new buildings in juxtaposition: in sketch above the 1752 Shippen-Wistar house is at the left; below, the Orianna Street "greenway" focused on Saint Peter's spire.







Montages by Tomi Ungerer

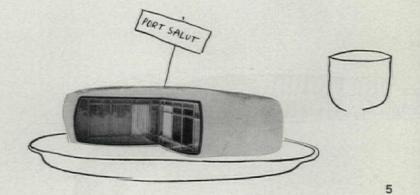
It is a well known fact that readers of architectural magazines are given to cutting up old copies, filing them, or simply sticking them in the middle desk drawer for future reference. For these readers, Cartoonist Tomi Ungerer has devised a pastime that is guaranteed to at least clean out those files. Several weeks ago he sat down with a stack of FORUMS. With a pair of sharp scissors and an equally sharp eye he then selected a dozen or so building photographs from the magazine and personalized them. Do you recognize any old friends in the crowd? For a key to the photographs see page 103.

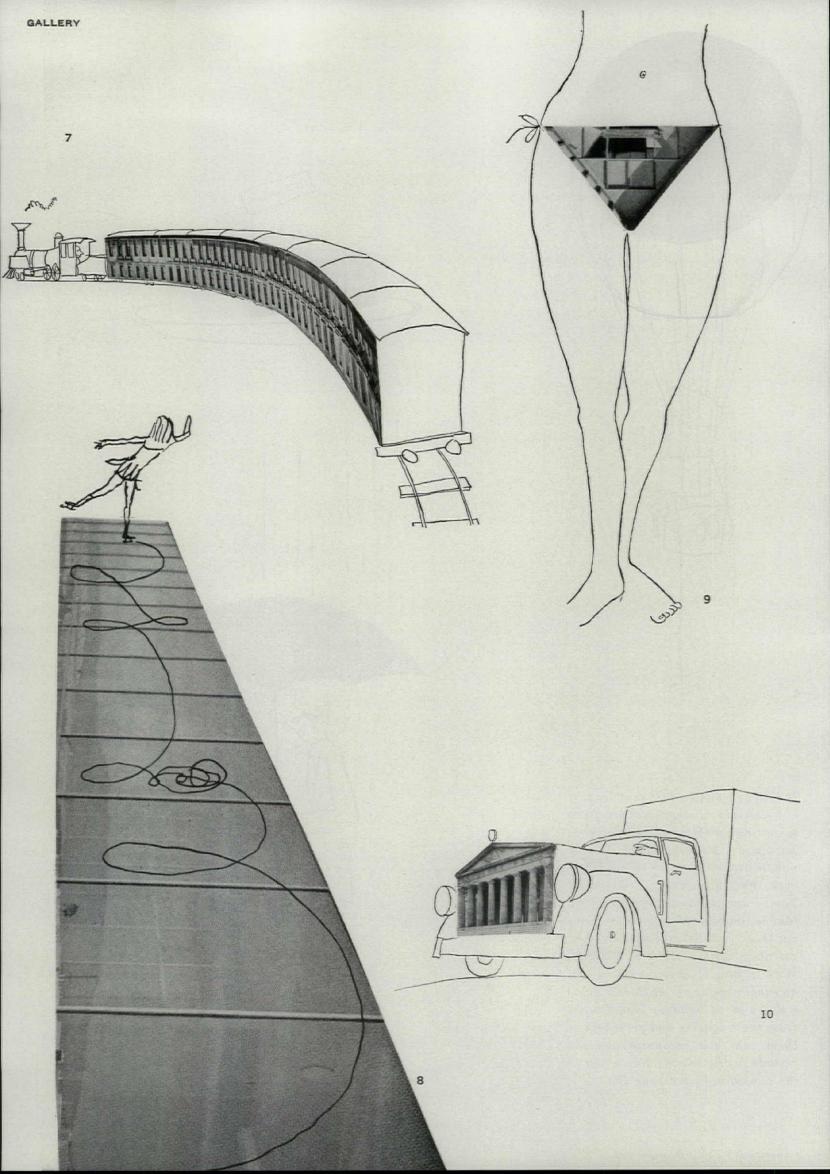
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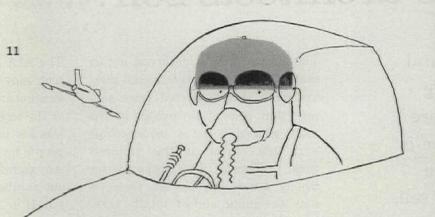
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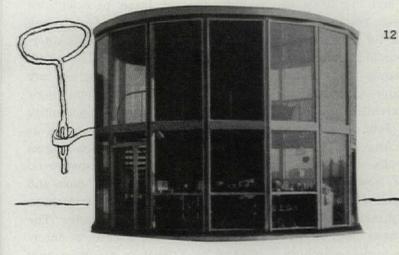
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JICIL











From 1958 issues of FORUM.

- Engineering Laboratory, Mexico University (March)
 May-D & F Department
- Store, Denver (July) 3. Toronto Airport model
- (July)
 Dome of St. Peter's, Rome (March)
 Monsanto plastic house
- (July) 6. Geodesic dome (March)
- 7. Street in London (April)
- Street in London (Apr.)
 High school, Daly City, California (May)
 House near Yokohama (July)
- 10. Old Patent Office,
- Washington, D.C. (June)
 Synagogue, University of Jerusalem (July)
 Filling station, Kent, England (May)
- 13. Factory, Horgen, Switzerland (March)

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How do architects sell?

Some architectural firms are making their pitches more direct. But there is still a lot of love for the old soft sell.

There is a fairly widespread notion that architects, as professional men, are more or less barred from selling; that promotion, except of the most genteel sort, is incompatible with the ethics of the architectural profession. This notion, never wholly borne out by the facts, is now becoming almost totally obsolete. For the fact is, organized salesmanship has been getting increasing attention in architecture over the past decade, and big firms in particular have been veering away from the idea, held for generations, that an architect should confine his selling efforts mainly to making friends and building a reputation.

Such king-sized architectural firms as Daniel, Mann, Johnson & Mendenhall of Los Angeles; Smith, Hinchman & Grylls of Detroit; Kelly & Gruzen of New York, and others have not only been putting new emphasis on direct solicitation of business, they have been resorting more and more to the techniques of modern selling-market analysis, the establishment of sales goals, systematized contact procedures. While these sales-minded firms are still a small minority, they have already begun to alter the whole character of architectural selling. And they have given to the profession of architecture a far more businesslike look than it has ever had before.

Architectural selling, or as architects call it, client development, will, of course, always differ considerably from the conventional selling of goods and ordinary services. Architecture is an ethical profession, as well as a business, and while the strictures of architecture's ethics may be somewhat less severe than those of law or medicine, they nevertheless do limit what an architect can do to drum up clients. "An architect shall not use paid advertising," intone the Mandatory Standards of Professional Practice of the American Institute of Architects.

BY FRANK FOGARTY

The AIA also decrees that an architect may not use "self-laudatory, exaggerated, misleading publicity," or the techniques of direct mail (unless his mailing list is composed of people he has contacted personally). An architect must not try to edge out another architect for a building job if a client has already taken step to retain the other man. And, finally, he is forbidden to sell by offering to cut his fee.

But, beyond these proscriptions the architect is largely free to sell as he chooses, and he has considerable room for maneuver. The standards of practice themselves are hardly models of consistent logic and they offer ample opportunity for architects to solicit business as aggressively as they like—as long as they do so on a person-to-person basis. To be sure, in the past and even now, relatively few firms have chosen to sell aggressively. The great majority of architects interviewed by FORUM in a survey only last month made it clear that most firms still believe the best way to get a client is with cultivated friendship, a good reputation, and a minimum of direct solicitation. The majority are still not sold on beating the bushes hard. As Los Angeles Architect Albert C. Martin said: "We don't think this is dignified and it doesn't do you any good anyway."

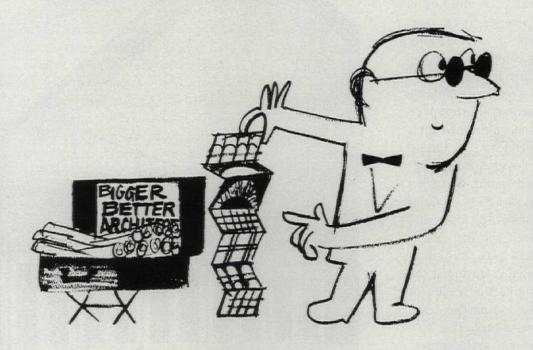
Thus, while the advent of modern selling among the larger firms is highly significant, it probably does not signal a quick revolution. What it does suggest, however, is that a gradual change may be under way in architectural selling which, in time, may produce a closer balance between the old-fashioned indirect approach to luring a client and the more aggressive direct selling.

How do most architects sell today? The emphasis, as already mentioned, is still on roundabout devices, and subtle gambits: Yale's Vilding vessel

Joining. Most architects, and particularly those outside the very largest cities, belong to several business, civic, and social organizations -the Rotary, the Chamber of Commerce, civic improvement groups, university clubs, etc. While the architects' motives in joining these fraternities may be primarily altruistic - architects, more than most men, have a genuine interest in civic improvement-there is general agreement in the profession that rubbing shoulders with a city's influential citizens is also one of the best ways possible to make people think

I belong to a lot of organizations, and it brings in business. For instance, I'm a member of the board of a local hospital. There are 25 men on the board, and I have obtained work from about half of them."

Conventioneering. Meetings of school and hospital officials, both at the local and national level, are worked hard by architects looking for institutional jobs. If an architect can address a convention, or appear on a panel, so much the better. If not, he will be around to shake hands, to



of you when they decide to build. "Being part of the community is desirable from every standpoint," says the public relations counsel for Pereira & Luckman, and Charles Luckman himself apparently believes fully in this. Among other things, he is on the board of the Los Angeles Community Chest, a member of the boards of the Hollywood Bowl and the Symphony Association, a committeeman on the Redevelopment Committee of the Downtown Businessmen's Association. Chicago Architect Abraham Epstein says that "my two sons and

chat, and, if the convention has an architectural exhibit, he perhaps will rent a booth to show some of his work in models and photographs. "We used to pass out some pamphlets, too," admits one Midwest architect somewhat shamefacedly, "but the school administrators finally asked everyone to stop. Just didn't seem professional to them, I guess."

Politicking. Nearly all architects agree that getting public work depends overwhelmingly on whom you know (e.g., George Hellmuth of

Hellmuth, Obata & Kassanbaum concedes that his first job, a public housing project in 1949, traced from the city contacts he had made during the 7 years that he was an architect for the city of St. Louis). Buying tables at \$100-a-plate and charity dinners; entertaining public works officials and their wives; gift giving; courting congressmen who can see to it that federal work in the district "gets spread around"; and hiring Washington lawyers or public relations specialists who have good lines into the various federal construction agencies, is no lessand no more-common in architecture than in any other line of endeavor. Nor are architects any more sensitive than other citizens about making campaign contributions and otherwise supporting candidates.

Back-scratching. Little talked about but highly important in bringing in architectural work is the sort of reciprocity that is practiced among architects, contractors, realtors, and mortgage brokers. The contractor, realtor, or even mortgage man, is often the first person talked to by a client, and he is thus frequently in a position to recommend a particular architect. By the same token, an architect, if he is first in, will certainly have some say on the choice of the contractor, and may even suggest a realtor or mortgage source, if one is needed. Consequently, most architects make an effort to keep in touch with the other members of the building industry (e.g., Robert Jacobs of Kahn & Jacobs says that during the recent recession when jobs were tight he made it a point to have lunches with his real estate friends regularly in order to get a line on what construction jobs might be in the works).

Publicity. Next to making the rounds personally, the most effective selling device that architects have is pub-

Criticism Yale's Viking vessel

Architect Eero Saarinen's hockey rink is an exotic piece of architecture, as well as an uninhibited essay in adventurous engineering.

BY WALTER MCQUADE

If you walk a block north from the carefully curried antiquity of Yale College in New Haven, down Prospect Street, you come all at once upon one of the most surprising new buildings in the world. Among its genteel neighbors it is a sudden and sweeping shape, so unlike conventional structures that, at first, you think it might be a grounded boat, perhaps the longest Norse war boat that ever ventured down the Skagerrak. The building is four-fifths roof, a flexible surface draped over steel suspension cables, with other strands of steel rigging stretched crosswise tying the soaring concrete backbone to the low heavy side walls. An adventure in engineering, the David S. Ingalls Hockey Rink is even more notable as Architect Eero Saarinen's most successful attempt to mix visual flavor into the recipe of modern architecture.

For the curvilinear engineering concept, a limpid hammock of suspension cables slung over a single immense arch, actually was just the beginning. Saarinen and his associates then dramatized the structure, making the entire project a voluptuous statement in slopes and curves, even to the way they bulldozed the flat site.

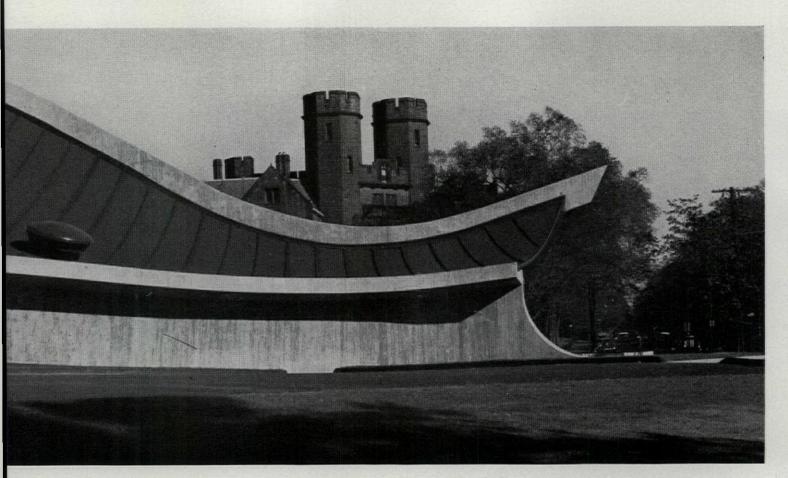
The cast concrete side walls swell in plan, and slant upward and outward in elevation. Down from them, the lawns and parking spaces slide away like the trough of a long slow wave, leaving the building riding the crest, a graceful, exciting, almost baroque structure. The Yale rink is anything but "polite" modern architecture; Saarinen, going far beyond the quiet, inscrutable style of most good modern designs, has shaped a structure loaded with personality, a building to continue in a long tradition of odd-shaped structures fond to history.

This new arena also has precision, and delicacy. Functionally, say its users, the rink is superb. Spectators walk in and around the upper edge of the long bowl of seats—all of which are close to the game. Sight lines will seldom be blocked even by late arrivals. Suspended fluorescent lamps throw 60 foot-candles of illumination on the ice—virtually the same kind of shadowless light under which the game of hockey evolved outdoors—and the white plane of ice bounces light back up to illuminate pleasant variations in the color of the roofing boards.

The interior is vast, but stylish. Under the outer part of the roof is a crisp white plaster apron (required by







Black plastic roof is made of neoprene laid vertically over the flexible wood decking, which is anchored to suspension cables. The big button on the roof is a fresh air intake.

fire codes to separate the wood roof and the concrete steps to which the seats are fastened). The pale putty color of the concrete with plank marks left showing is one of the beauties of this rink. For the spectator, the over-all impression indoors is of concrete bulk and heaviness under him, and exhilarating lightness above. The outside of the building has already spawned a number of affectionate nicknames; its users liken it to everything from a great whale to an oriental barn.

But is this hearty approach to architecture not disturbing? Should a building curve so freely? Is this not too rash and undignified to be serious modern design?

Many people think so. The design has so much flavor that some critics refuse to swallow it; like other architects who have stepped out of the "straight line" tradition of modern architecture, Saarinen is being accused by some displeased members of his profession of having shaped a gigantic piece of whimsy, a tour de force. Here are typical points scored by the dissenting minority:

▶ The location of one of the bases of the enormous arch smack in the middle of the principle bank of doors has been called clumsy.

▶ The steel strands which tie the upper arch to the exterior walls are accused of looking like an insecure afterthought to the engineering.

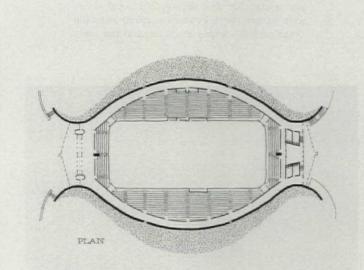
▶ The suspended lighting fixtures (see page 110), say some critics, give the impression of being a false, hung ceiling which obscures or defrauds the shape of the roof above.

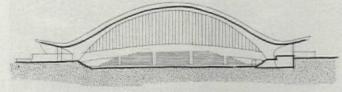
▶ The heating and ventilating equipment dropped into the four rounded corners of the rink is ugly and awkward.

There may be something to this final objection, but the other details mentioned above attack such basic elements in the design that they really ask for another building, not this one. The critics, for instance, say that their first two objections could have been met by splitting the bases of the arch, so it would rest, more stably, on four feet, not just two. But would they really like that, either? We suspect they wouldn't. What the professionals who object to the design of the Yale hockey rink may really be doing is asking a shocked question: "What has happened to Saarinen," they are saying, "is he designing for the *public*?"

This, of course, is a question that will take time to answer. Laymen develop affection for buildings slowly. So far the hockey players are delighted with the building, although some of the sponsors have been disappointed by its price tag. Budgeted under \$1 million when construction began, it will end up costing a great







LONGITUDINAL SECTION



Web of steel cables is stretched not only between the spine and side walls, but also runs parallel with the spine, to prevent flutter. The building's ends are braced with steel trusses.

deal more-close to \$1.4 million, including all fees and equipment. (Actual construction, excluding such items as ice machines and lighting, came to a little over \$1.1 million.) In all pioneering design done under the pressure of haste, it is difficult to sort out precise reasons why budgets are not met, except for such mishaps as foundation trouble, which did happen here. A more important question which many people at Yale have already asked is, was it worth it? The answer seems to be, yes.

For, like other venturesome clients, Yale got a great deal more in the Ingalls rink than it expected. A minimal barrel-roofed structure could undoubtedly have been put up for \$750,000, but it would certainly have been relegated to the far reaches of the campus with other utilitarian athletic structures. And imitating the historically elaborate buildings of the central campus in their false but charming antiquity would have been extremely expensive. As a result of declining to be merely imitative, Yale has acquired a building it can be proud to have on its campus, one which has as much flavor as any of the hoary old types which surround it, one whose vigor is particularly appropriate to its informal purpose. The rink is also handy enough to be used not only for competitive sports, but also for evening



YALE'S VIKING VESSEL

ARCHITECTS: Eero Saarinen & Associates; ASSOCIATE ARCHITECT: Douglas W. Orr; STRUCTURAL ENGINEERS: Severud-Elstad-Krueger Associates; MECHANICAL AND ELECTRICAL ENGINEERS: Jaros, Baum & Bolles; GENERAL CONTRACTOR: George B. H. Macomber Company.

Skating surface is sunk below grade, increasing the height of the vast column-free interior. Dressing rooms for the teams are under the stepped seats, but public toilets are on the upper level behind the seating at one end of the rink (shown in the photograph to the left). A scoreboard and clock is suspended over the ice in the center of the rink (see below); its cable hangs from a motor which raises it out of the way when the building is not used for hockey. Roofing boards were fireproofed with a copper compound for fire safety, but local codes also called for the plaster apron between them and the upper seats around the rink.

skating by students and faculty members.

There is another practical point which makes Yale officials happy. Planned to seat a hockey crowd of 2,800, the rink can accommodate as many as 5,600 for other purposes. For example, Yale, rained out on graduation day last summer, finally has a splendid space to shelter that kind of crowd.

And beyond engineering, beyond cost, beyond function, beyond even the client's conception, the Ingalls rink should reassure some of those people who are worried about the waning of vitality and visual excitement in modern architecture. Except in the hands of the imaginative artists of the profession, architectural expression has been narrowing for years, decreasing tamely into a series of techniques, such as the jewel-like detailing of exquisite curtain walls. Usually, it is only the vulgar American buildings that are spectacular.

The Yale rink, however, is both spectacular and fine. Great sensitivity and daring are combined in this building. When the stem of a lunging concrete arch is brought down to the ground in the center of a stretch of doors it is done deliberately, beautifully, as a statement of structure. It is done to please the architect, and this is what eventually pleases everyone, even if it surprises them at first. END





Building a 49th state



"If the Finns owned Alaska," President Warren G. Harding opined in 1923, "they would in three generations make it one of the foremost states of modern times." Neither Harding nor his immediate successors, however, expected the U.S., itself, to do much with this forbidding "icebox," more than twice the size of Texas. Yet today, with two of the three generations still to go, Alaska is well on the way to fulfilling Harding's prediction, and within the next decade the 49th state may well become, if not "one of the foremost" states in the Union, at least one of the fastest growing both in wealth and civilized amenities. One of the prime reasons for this bright prospect: the outlook for building.

Since 1946, the federal government has poured nearly \$2 billion into air force bases, missile launching stations, the DEW line radar

Alaskan statehood was welcomed in a flag-raising ceremony by the youngsters at a modern school near Fairbanks (left), while their elders downtown poured across the bridge over the Chena River in a spontaneous parade (right). Ahead for young and old alike: a chance to build a modern state on America's last frontier. Construction, already Alaska's premier industry, is now confronted with a challenge of subcontinental proportions.

BY RICHARD A. MILLER

warning network, and an elaborate communication and supply network in Alaska. Largely because of this upsurge in military spending, construction, in 1957, contributed \$125 million to Alaska's economy and replaced fishing (\$93 million) as Alaska's biggest industry.

And nonmilitary building is rising, too. In the major cities, tall apartment towers have been built in the midst of old blocks of "sourdough" cabins left from gold-rush days. Even in the more remote settlements, handsome school buildings are replacing one-room shanties. In most cities, streets are being paved, modern store fronts are dressing up the old commercial buildings, and colonies of the ubiquitous California ranch houses are springing up.

With some 68 general contracting firms and 12 architectural firms already located in the four major cities of Anchorage, Fairbanks, Juneau, and Ketchikan, construction is a major "growth" industry.

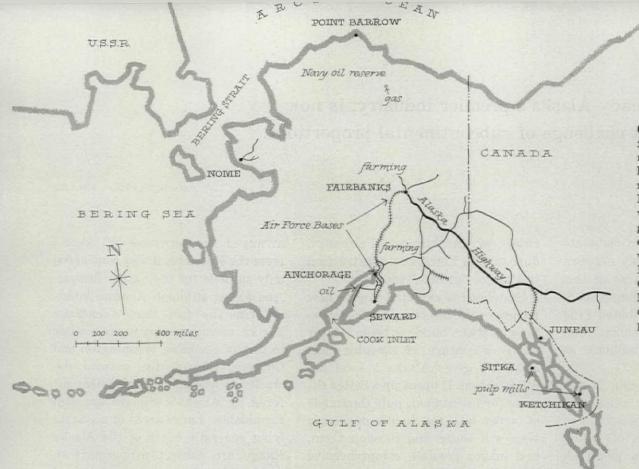
Statehood is expected to give new purpose and direction to the energetic postwar building boom. After nearly a century of absentee rule, statehood gives Alaska a local administration. It opens up a better climate for investment, puts thousands of acres into the hands of people who will settle and develop them, and makes possible comprehensive area plannning on a hitherto inconceivable scale. For perhaps the last time in U.S. history here is an opportunity to build an economy and a society, almost from scratch.

The harder facts

Less than a century ago this prospect was inconceivable—when Secretary of State William Seward arranged the purchase of Alaska from the Russians, it was considered only suitable for the native Eskimo. And today, although Alaskan boosters cite the fact that Anchorage has an average temperature similar to that of Spokane, Washington and Chicago, Illinois, the natural obstacles to economic development offered by Alaska's climate are still formidable. Large areas of the state lying generally north of the Alaska Range are subject to permafrost, making foundations expensive, and roads and utilities nearly impossible to install. In Fairbanks, interiorexterior temperature differences of 120 degrees are common design conditions. In the southern panhandle cities rain is almost incessant, while some localities on the Aleutian peninsula are beset by 100mile-per-hour winds.

These conditions, coupled with a





Cities and people are few and far between on the vast land mass of Alaska. If the map at left were superimposed on a map of the rest of the U.S., Ketchikan in the panhandle would replace Savannah, Georgia, while Attu Island at the end of the Aleutian peninsula would cover Los Angeles, and Point Barrow on the Arctic Ocean would fall near Duluth, The population Minnesota. density is less than 2.6 persons per square mile.

lack of a local supply of building materials and higher-than-average wage rates (common labor in construction gets 4 dollars an hour) makes building expensive in Alaska (nearly 50 per cent above the highest costs elsewhere in the U.S.). Thus while the climate forces people to spend a great deal of time indoors and suggests a need for a spacious indoor environment, the high cost of building makes such an environment economically impossible to achieve. Claustrophobic "cabin fever" has been an Alaskan malady since the gold-rush days.

The weather has shaped another problem for Alaska which the growth of the construction industry can do relatively little to alleviate. The big five industries, construction, fishing, timber, tourism, and minerals, are all seasonal in nature. The new pulp mills in Sitka and Ketchikan provide the only yearround employment. Last spring, for example, while the rest of the U.S. was rapidly recovering from the recession, Anchorage had nearly 9,400 unemployed, many of them construction workers.

Nevertheless, Anchorage is the city where the largest volume of building is likely to occur in the

years immediately ahead. Ideally situated on Cook Inlet off the Gulf of Alaska, it is more adequately served by highways and rail facilities than any city in the state. Bracketed by the successful dairy and truck gardening agricultural colony in the Matanuska Valley and the oil-rich Kenai Peninsula, the city has also been the site of a large share of the military building. This situation brought Anchorage from a population of 1,800 people in 1920 to a metropolitan area population of just under 20,000 in 1950. Today. Anchorage has a seam-busting population of almost 95,000 (only 26,000 of whom are military personnel and their families), a 425-per-cent increase in 8 years. As for the future, the city's master plan estimates a population of 290,000 by 1980.

Big plans and ten-gallon hats

Anchorage, in short, is a comer. Since the Kenai oil strike by Richfield Oil last year, the major oil companies and the independent drillers have moved into the city in force, and today ten-gallon hats and expansive plans are as common in Anchorage as in Dallas. One visiting oilman, for example, recently predicted to the Chamber of Commerce that the city will have 290,000 people within 5 years instead of 22. Since statehood, two hotel projects involving some 900 rooms have been announced, and work is under way on an \$8.7-million port facility in Cook Inlet, which will be built some 400 feet offshore to minimize the effects of the 35-foot tides which sweep the Inlet. With these new port facilities, shipments consigned to Anchorage can avoid the expensive 114-mile transshipment by rail or truck from Seward, now Alaska's largest port.

Fairbanks, Alaska's second city, is not only the northern terminus of the vitally important Alaska railroad from Seward and Anchorage but the western terminus of the Alaska Highway, the new state's only overland link with the rest of the U.S. As the jumping-off point for further development of the resource-rich area above the Arctic Circle, Fairbanks, in the opinion of many experts, has an even greater potential for long-term growth than Anchorage.

Certainly, the 350 - mile - long stretch of land athwart the Anchorage-Fairbanks axis, already the most populous section of the state, is the most likely area for future development, despite the fact that the panAlaska's surprisingly modern architecture





Elementary school in Anchorage is equal in amenities and in handsome appearance to its best counterparts elsewhere in the more settled states. Architects: Edwin Crittenden & Associates.

High school in Fairbanks stands behind a long curtainwalled façade. Architects: Alaska Architectural & Engineering Company.

handle cities of Juneau, Sitka, and Ketchikan are much older. These cities, perched precariously on the rough terrain that borders the ocean, are only connected to the "outside"—or, in fact, to each other —by sea or air. At Juneau, the state capitol and financial center, for example, the main road ends 26 miles out of town. In fact, in view of Juneau's isolation, both Fairbanks and Anchorage are talking up the advantages of relocating the state capitol nearer the geographical and population center of the state.

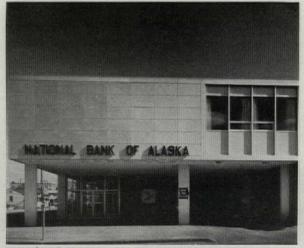
The urban frontier

While the vast land area of Alaska has been touched only lightly by settlement, where development has occurred there is already a need for urban redevelopment. Compared to Alaskan cities, the maze of Boston or the grid of Chicago is a gem of planning. For unlike these older U.S. cities, few Alaskan cities have as yet any planning at all. Some cities like Fairbanks still have the chaotic maze of the old mining camp in their midst. Other cities have war-built shantytowns of trailers and quonsets on their edges.

Of the major cities, only Anchor-

continued on page 168





PHOTOS (ABOVE) : PHIL FEIN & ASSOCIATES

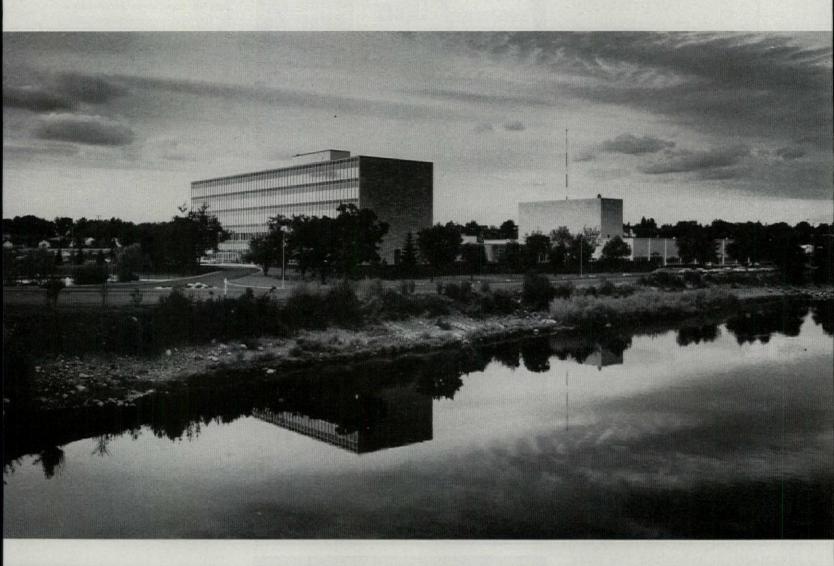


Constitution Hall at the University of Alaska near Fairbanks was the scene of the 1956 state constitutional convention. Architects: Foss, Olsen & Sands.

National Bank of Alaska in Anchorage is one of the bestdesigned new commercial buildings in the city. Architects: Manley & Mayer.

The Sitka Hospital contains 26 beds in its reinforced concrete structure. Architects: Linn A. Forrest, Sr. and Jr.

A lesson

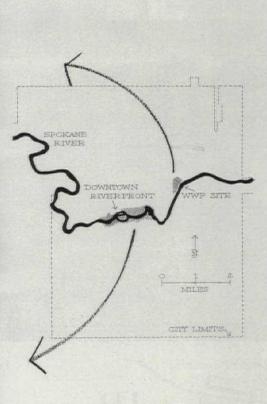




for river cities

BY OGDEN TANNER

A Spokane utility company's handsome new headquarters sets a bold example for river-front renewal.



Contrast: the Spokane River flows past the Washington Water Power Company's handsome, neatly landscaped new headquarters (top, left), then cascades through the city, where the banks are littered with trash, weeds, and the unsightly backsides of stores and factories (left). But Spokane may follow WWP's lead. The Washington Water Power Company, the Pacific Northwest's largest and most aggressive private electric utility, demonstrated its smartest brand of community relations this fall when it opened its new headquarters just upriver from downtown Spokane. Smartly turned out in buff brick and blue glass, the company's \$7.6 million Central Service Facility (opposite page. top) presented the city with its biggest, and most distinguished, postwar building project: a five-story company office building, a lower auditorium and cafeteria unit, and a collection of neat, simple service structures-all set down in a skillfully landscaped, 28-acre park.

The contrast with most of Spokane's river front (opposite page, bottom) was a striking one indeed. Like many another U.S. city, Spokane (population 189,000) has allowed its greatest natural asset to become a littered mess. The Spokane River, a tributary of the mighty Columbia, rolls through the surrounding farmland and suburbs. then tumbles in a spectacular roar of white water right through the middle of town. Above this gorge Spokane was born; here the city harnessed the falls for power, and grew. But as it grew, it repaid the river with little more than its sewage, its trash piles, and the backsides of its breweries and laundries.

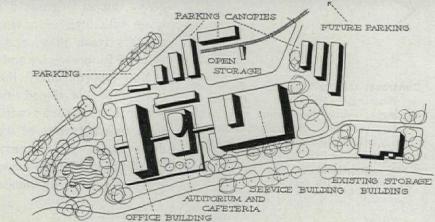
Now, appropriately, the company that first developed the river's power has come up with the first solid demonstration of what can be done about its appearance. The Washington Water Power Company was not entirely influenced by civic virtue, of course. By replacing its aging facilities scattered around town with one efficient and attractive headquarters, the company expects to save no less than \$4.5 million in operating costs over the next 35 years. Meanwhile, the pleasant riverside site is already proving to be an asset to the company's public relations. Spokaneites use the grounds as a little public park, strolling among the trees and fountains, sitting down to watch children sail toy boats in the informally landscaped pool that marks the entrance. Community groups ranging from Spokane's Mental Health Board to its Camera Club have been welcomed into the company's modern auditorium for their meetings. At night, buildings and landscaping are imaginatively lighted as an advertisement that puts the usual neon signs to shame.

Since completing its new buildings, the company has watched other ripples of renewal downstream. The local YMCA and the Great Northern Railroad have picked out new sites near the river. The city has completed a sewage disposal system that does not contaminate the river. There is talk of a new waterfront city hall. Meanwhile, Kenneth Brooks and Bruce Walker, the architects who designed the utility company's headquarters (see page 121), continue to promote their vision of a whole river greenbelt, with civic and cultural facilities fronting pedestrian shopping malls. Thanks to the big step taken by Washington Water Power, the spirit of civic planning, at last, seems to be gaining in Spokane.

The WWP office building: efficiency with a river view.



ARCHITECTS: Kenneth W. Brooks and Bruce M. Walker; FACILITIES PLANNING: Ebasco Services Incorporated; LANDSCAPE ARCHITECT: Lawrence Halprin; ENGINEERS: William W. Wilson and Jack M. Lyerla (structural), Joseph M. Doyle (electrical), Kendal M. Wood Associates (mechanical); CONTRACTOR: Johnson-Busboom-Rauh.



Washington Water Power's new office building (cost: \$3 million) turns a cleanly detailed face downriver toward Spokane. The offices, enclosed by double glazing and glass spandrels in two shades of blue. look out on a big free-form entrance pool (left) which Landscape Architect Lawrence Halprin has set off with groups of boulders, shrubbery, and a row of black locust trees saved during construction. The pool. fed by discharge water from the headquarters' 815-ton heat pump, serves as a reservoir for the automatic sprinkling of the grounds.

The new headquarters, located close to the center of the company's ten scattered power dams and 145,-000 electricity users in Washington and Idaho, was permitted in a residential area by special city ordinance. The final plot plan (opposite page, bottom), the outcome of some 30 design studies by Architects Brooks and Walker, arranges the three main buildings along the river. (Interestingly, the office building is sited to enjoy long views up and down the river-not the usual short view across.) At the rear, an open storage area is hidden from neighboring houses by truck and car parking sheds.



Nerve center of the company's electricity network is this fourth-floor room, where diagrams of power lines are displayed on a 60-foot board. From this room, under a circular ceiling of light, engineers regulate the region's power supply.

Board room on the fifth floor enjoys outside light and view through movable fabric blinds. Panels in the background open to an executive lunchroom. **Glassed-in corridor** gives employees views of landscaped areas outdoors as they move between the office building and the cafeteria-auditorium, shown overleaf.







Main lobby (left) is flanked by conveniently located ground-floor areas used by the Spokane Division's customer sales and service departments.

The community building: outdoor dining, indoor shows.

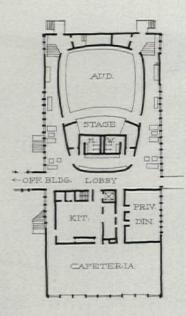


Between the main office building and the long, low service shop, the company's communal-use building enjoys a formally landscaped setting on the river front. A 300-seat cafeteria, served by an all-electric kitchen, opens onto a partially covered outdoor terrace (left), where special electric radiant heating panels in the canopy, and coils in the floor slab, permit comfortable dining on chilly spring and autumn days. Behind the kitchen and private dining rooms seating 50 (plan below) is an auditorium equipped with 300 theater-style seats and complete projection and stage facilities. The auditorium, popular with outside clubs and associations as well as employee and sales groups, is flanked by long lounge areas (right), which serve as circulation and sitting space before and after meals and shows.

Dining terrace outside the cafeteria (left) faces across a fountain pool to the river (below, left).

PHOTOS : MORLEY BAER







A radiant-heated canopy shelters diners.



A pleasant indoor cafeteria seats 300.



Comfortable lounges flank the auditorium.

Water, trees, lights enliven the terrace.



The men behind WWP's headquarters:



Architects Kenneth W. Brooks and Bruce M. Walker, who maintain separate practices in Spokane, joined forces to handle the Washington Water Power job. Strong believers in the proposition that architecture and planning must be "sold," they share leadership in Spokane's Municipal League, a citizens' civic-improvement group of which Brooks is past president, Walker the present planning-committee chairman (see "How architects sell," page 104).

Brooks, 41, a Kansan and ex-Marine, earned his master's degree in architecture at Illinois University and moved to Spokane in 1950. Walker, 34, was born in Spokane, saw duty in the Navy, graduated from the University of Washington in 1947. While at Harvard's Graduate School of Design, he won a first prize of \$7,500 in the 1951 NAHB-FORUM Small Home Design Competition.

Client Kinsey M. Robinson (right), president and board chairman of Washington Water Power, is the Northwest's No. 1 champion of private power-and a somewhat unlikely client for high-style architecture. A roughand-tumble utility man for 47 of his 63 years, Robinson worked up from a teamster with Idaho-Oregon Light & Power to become Washington Water Power's president in 1938. Aided by Vice President W. L. ("Lou") Thrailkill, Robinson gave the architects a free hand to develop a design that is already paying off in improved corporate operations-and good will. END



CLIENT ROBINSON

New machines that can make change for paper money may radically alter the future shape of stores, cafeterias, and even barrooms.

Coming: the automatic salesroom

That little monster of the industrial age, the vending machine, is about to undergo a metamorphosis that may have some strange repercussions in architecture. Thus far the machine's gangling growth, which this year will reach well over \$2 billion in goods vended, has been inhibited by only one thing: its inability to accept anything but coins. Now, however, two types of bill-changing machines are undergoing successful tests and may well raise automatic vending to a new level of merchandising within five years.

This development, plus others, is likely to put vending machines for the first time into the design of stores, supermarkets, service stations, apartment houses, office and factory cafeterias, and other as yet unconceived structures. Since the new machines introduce full-scale automation in the venerable area of retail sales, they may well set off some radical changes in traditional store structures. They make possible, for instance, the completely automatic cafeteria and the completely self-service market.

Beating the customer

A similar technical gimmick launched the coin-operated vending machine on its phenomenal growth less than 30 years ago. This was the development of devices for rejecting slugs and other foreign matter that would have put vending-machine entrepreneurs into quick bankruptcy. Oddly enough, solutions were arrived at separately and

almost simultaneously in the early Thirties by two immigrant German engineers who went on to become rival presidents of the largest coin-mechanism companies in the field. The first was John Gottfried, now president of National Rejectors, Incorporated, of St. Louis, who invented a magnetic-mechanical device that measured, weighed, and analyzed the metallic content of a coin in seconds, instantly rejecting anything that did not meet specifications. The second was William A. Patzer, now president of A.B.T. Division of Atwood Vacuum Machine Company in Chicago, who devised a somewhat different mechanism.

Before this, vending had been limited to penny gum-ball machines and the like. With the advent of a foolproof slug rejector, automatic vending took off, starting with cigarette machines (still the major item, accounting for about 40 per cent of the \$2 billion yearly take) and rapidly spreading in a flash of jukebox hues to purveyors of candy, soft drinks, popsicles, milk, sandwiches, hot soup, coffee, and other small comestibles. Altogether the business now embraces close to 3.7 million goods vending machines serviced by nearly 6,000 small-business operators.

But the industry has long felt that lack of a bill-changing mechanism for a ready source of change has been losing sales and preventing expansion into higher priced lines. The main problem has been not so much mechanical as in getting a device that would outwit customers' tricks and pilfering. "Many people," says Bill Patzer, "think of a coin machine as a challenge. They'll pound it, abuse it, and stay up nights trying to figure out a way to beat it. In some ways it's easier to build an atomic reactor than a coin or bill machine."

gill

After years of work, Patzer and Gottfried are again almost neck-andneck in developing a reliable machine to handle paper money. Patzer's A.B.T. seems to be slightly ahead with three model Bill Changers out on tests for the last six months at spots around Chicago and in New York at the new Seagram Building's employee snack bar. This machine, presented with a dollar bill, delivers two quarters, three dimes, and four nickels in change, simply to expedite cashier operations. But Gottfried's National Rejectors are not far behind with a more versatile bill-detecting unit built right into vending machines and demonstrated last month at the National Automatic Merchandisers Association convention in three versions: a telegram vending machine; a ticket vending machine with up to 30 selections for commuter trips by railroad or bus; and a multiproduct

machine which, presented with \$1, can deliver any one of eight grocery items, say, plus change.

Neither company is willing to expose exact details of its mechanism to public view. The A.B.T. device, however, is understood to operate by holding a bill in a perforated screen under a photoflood lamp, then electronically "reading" the amount of light passing through key perforations. It can "read" crumpled or dirty bills presented any which way, as long as flat. It can be adjusted to accept other denominations than \$1 and deliver any combination of change. The National Rejectors' device works on the principle of electronic scanning, directly "reading" the face of the bill. As presently designed, it will accept \$1 and \$5 bills, or any combination of these with coins. It will accept legal tender in any condition, but promptly rejects foreign bills or counterfeits, "without comment," as the company gently puts it.

Automatic cafeteria

The biggest area the new mechanisms are expected to invade first is that of office and in-plant feeding, already the fastest-growing field for vending machines. Company cafeterias have been a growing and costly headache to managements unversed in the food business. Banks of vending machines, spotted around a plant or office floors, can cut costs, reduce labor, and save time by expediting coffee breaks and eliminating midday crushes at central cafeterias, while providing around-theclock service.

More and more elaborate vending machine snack bars and cafeterias have been going in. One of the biggest is G.E.'s Lynn, Massachusetts, plant, employing 12,000, where the main cafeteria has been converted entirely to vending operation, and 11 vending stations have been added for light snacks, from hot soup to sandwiches and coffee. Another is American Motors' plant at Kenosha, Wisconsin, where ten batteries of vending machines feed 10,000. And the 32-story Federal Building in Kansas City, Missouri, like many others. has snack vending-machines scattered throughout the building for 1,500 office workers. All are serviced by outside vendor operators.

But, despite the industry's ebullience, not all has been happy or clear sailing. One plant had a designer do a tasteful, all-vending-machine cafeteria for 1,000 workers, two years later had to convert it back to regular cafeteria service. Psychologically, office or plant workers, after a stint at their machines, did not like to face another batch of machines at lunch. Other complaints were the lack of freshness in vended foods, unattractive prepacking, and inability to see what they were getting. And, while coffee machines are available, it is no secret that none yet makes a good cup of coffee. "It would help," says the designer, "if the packaging were more imaginative so the food didn't lookand taste-like an IBM card."

The bill-changing machines should be a big help by making available more varied and better foods. Nearly all installations thus far have been made up of standard coin machines, either naked or tricked up in banks behind panelling. A number of big vending-machine manufacturers, such as Automatic Canteen Company, are working on machines that will hold a choice of simple meals in a frozen state, electronically cook them to order in 20 to 60 seconds. And the coffee problem is being licked by machines that automatically brew a fresh can of coffee every 15 to 30 minutes.

These developments, plus the wider price range made possible by billchangers, make imminent the fully automatic cafeteria. Designers of office and industrial buildings will have to take account in the future of how best to integrate and disperse such installations in their structures. And by design they may be made to look less forbiddingly mechanical, more gracefully fitted to the human scene.

The vending-machine industry is even more bullish about its future in retail sales of staples in department stores, supermarkets, and the like. Some small beginnings have been made, such as machine sales of nylon stockings. And quart sales of milk have been a vending machine item for some time. But the bill-changer should open out the possible lines of merchandise. First move will probably be a simple extension of vending machines in present stores, such as a line in department-store basements vending hose, socks, underwear, or a section in supermarkets for staples, candy, and other small items subject to pilfering.

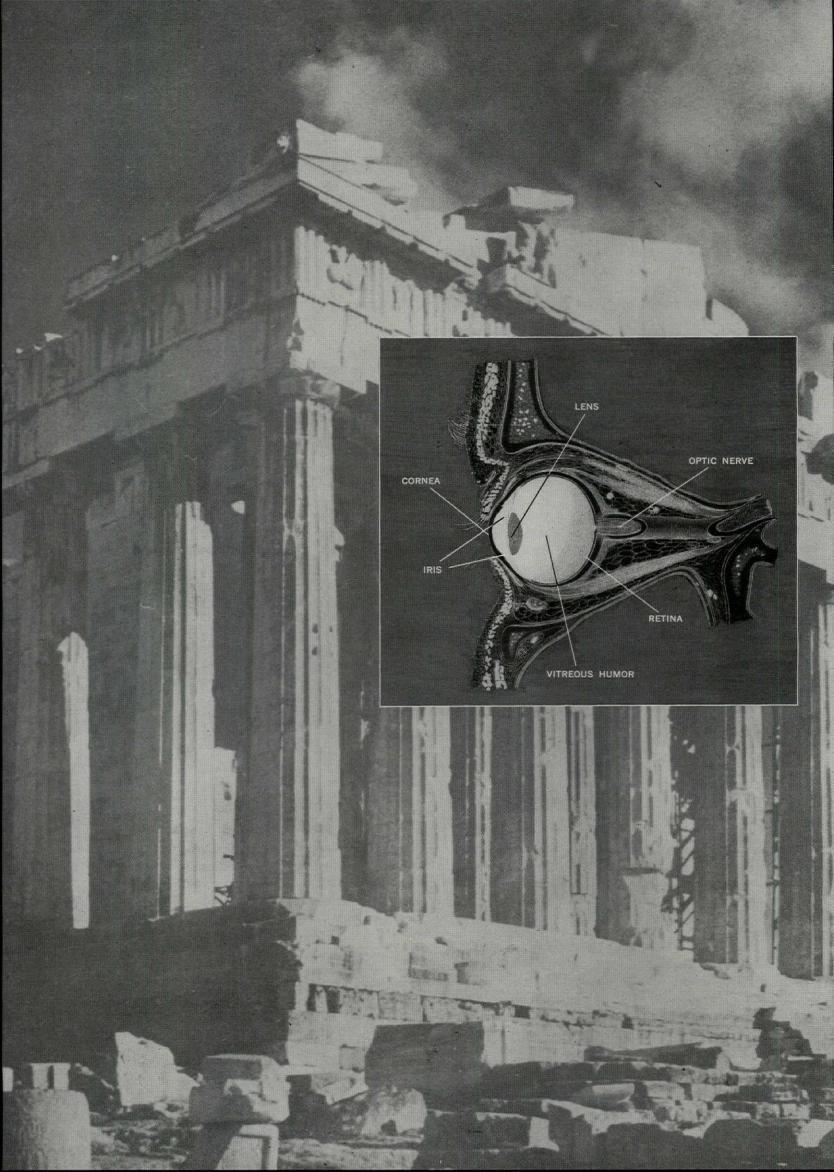
Eventually, however, the completely automatic store or supermarket becomes a possibility, presenting some entirely new opportunities for design. In mild climates, for instance, a supermarket might consist of nothing more than a roofed, serpentine wall of vending machines in the open air, serviced from the rear by mobile grocery-chain units, and vending goods to automobile shoppers who never see a clerk or a checkout counter. Even more orthodox markets made up almost entirely of vending machines will pose new architectural arrangements.

Vending-machine merchants do not lack for imagination, and the possible combinations and permutations grow fantastically. One vendor dreams of the day when every sizable apartment house will have an automatic canteen and sundries-dispenser purveying anything from a light meal to diapers. Another sees small, unattended "shoperettes" dotted around the suburbs for dispensing a similar line of household staples. A probably more immediate possibility is a chain of automatic roadside stands for superhighway travelers. (The problem of restaurant spacing and service help is now eating up conventional thruway restaurant profits.)



If this is combined with self-service gasand-oil dispensers, extensively tried in California, the wholly automatic service station and roadstand is just around the corner. A few "radicals" are even talking of an automatic barroom with cocktail vending machines delivering any of a dozen popular mixed drinks at the flap of a bill.

It is too early to say what all this will do to the ranks of service workers, currently the most sharply rising sector of U.S. employment, thus far almost untouched by automation. It may someday pose a social problem of no mean dimensions. But more immediately, the rise of bill-handling machines is certain to effect changes not only in the manner but in the structure of sales. END



To the vision that underlies architecture, science is adding refinements in understanding the mechanical and mental processes of seeing. This may have profound effects on future form, space, color, and lighting.

New light on the eye

The eye is the prime instrument and appraiser of architecture, as well as the avenue through which we draw an estimated 80 to 90 per cent of our knowledge. No other human sensory organ has wider significance. Until recently, the comparatively young science of seeing had uncovered few truths that the older arts and architecture had not known intuitively for centuries. Now, however, some of the mysteries of the eye are beginning to unfold, and the steadily broader understanding of the visual system should enable architecture to make more effective use of such things as color, lighting, spatial differences, and much else.

To be sure, the ancient Greeks, who knew so little of the visual mechanism that they believed that the eye sent out rays or signals to perceive objects, still created that architectural masterpiece, the Parthenon. They noted that a long, straight horizontal line appeared to cave at the center (due, according to one present-day theory, to the curvature of the retina of the eye), so they delicately arched the lines of the Parthenon in order to compensate for this optical illusion of concavity.

Most of the new science of seeing thus far seems to be just a laborious reworking and rewinning of many principles imperfectly understood for centuries, much of it seemingly impractical or without visible application to anything. But there is also a growing practical application of vision research. Physiopsychologist H. Richard Blackwell of Ohio State University, for instance, has made a new master-study of lighting requirements for specific tasks which is in the process of revising all lighting standards. And Robert Boynton of the University of Rochester and many others are studying the complex problem of glare and practical means of reducing the eye-fatiguing, impairing effects of this phenomenon. But such fragmentary, severely practical bits of applied research are not within the scope of this article, which is occupied with the basic science of vision.

The growing knowledge of vision, falling on fertile minds, may lead to developments beyond the always limited view of merely practical men. The first requisite for the cultivated man, as well as the professional, is to understand how the eye sees, how knowledge is advancing, and what implications or rumors of implications this may have for increasing the delights and effectiveness of architecture.

"If we can understand the nature of what we see and the way we perceive it," says that wise teacher and architect, Walter Gropius, "then we will know more about the potential influence of man-made design on human feeling and thinking."

The receptive eye

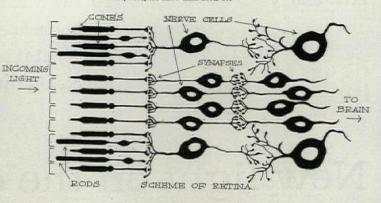
For a century or more the generally well-informed have had a good idea of the gross functioning of the eye. It is something like a camera. Light waves reflecting from objects bounce into the aperture of the eye through a shutter (iris) and lens mechanism, delicately muscled to regulate automatically the size of the opening. This mechanism controls the amount of light entering, and the curvature of the lens, which adjusts focus for near or far vision. Without light there is no vision. The light rays, bent by the lens, fall upon banks of light-sensitive receptor cells, called the retina, at the back of the

GREAT ARCHITECTURE, like the Parthenon (left), is achieved only by architects who comprehend, however intuitively, the human visual process. Thus, the Parthenon's Architects, lktinos and Kallikrates, compensated for the optical illusion of concavity by inclining the columns slightly toward the building's center axis and arching its horizontal lines, thus making all lines appear to the eye to be straight. "Here," says Walter Gropius, "intuition and intellect joined to triumph over the natural deficiencies of human vision."

How the retina works

ADAPTED FROM "HUMAN PHYSIOLOGY," EDITED BY BERNADO A. HOUSSAY, M.D., MC GRAW-HILL BOOK CO.





PERCEPTION BEGINS at the retina, made up of millions of tightly clustered receptors. Photo (at left) shows how these receptors "appear" to incoming light. (Magnified more than 500 times.) Sketch (above) shows linkage of receptors and nerve fibers which send information from the eye to the brain.

eye, and there, as on a photographic film, print an image pattern of the reflected object which is instantly sent by electrical nerve impulses through the optic nerve and on to the back of the brain, where the object is seen.

In the past quarter of a century the most exciting additions to knowledge have come from research concentrated on the retina and linkages with the brain, where all the central mysteries of vision take place. The retina, it is found, is made up of more than 130 million receptors, called rods and cones from their shapes, tightly packed like the deep pile of a rug. Each is made up of pigments composed of protein and vitamin A, and linked with a nerve cell. These cells lead back through a total of about half-a-million nerve fibers to the brain. The rods, most numerous toward the retina's outer rim, are the instruments of vision in dim light. The cones, clustered in and around an allcone spot (fovea) at the center of the retina, are the receptors for bright light and color vision.

In dim light, such as starlight, only the rods, tied together in large bundles to single nerve fibers, respond with a coarse, neutral gray image of the world, which explains why the eye sees best at night through side-glancing or peripheral vision. As light intensifies, the cones come into operation with dilute sensations of color, until in bright sunlight they completely dominate vision, focusing objects directly on the center spot, the area of acutest vision. Due to the composition of the single lens, most light near the ultraviolet or blue end of the color spectrum is screened out and acutest vision is found in the yellows.

In 1934, Harvard's famed biologist, George Wald, determined the exact chemical composition of the pigment rhodopsin, or visual purple, which is responsible for night vision in the rods. And this work began to uncover some of the marvelous interior mechanisms of sight. When sufficient light quanta fall on a rod, they immediately initiate a photochemical reaction in which molecules of visual purple are bleached out to another substance, triggering a nerve impulse. In the next instant, in a reverse reaction taking place in a blinking moment of darkness, the bleached substance is regenerated back to visual purple. A tonal mosaic of such bleachings imprints images on the eye. Since all chemical reactions take a certain amount of time, vision is not one of the human body's fastest reactions. It is much faster than pain, whose impulses travel as slowly as five miles per hour, but only about a third as fast as the 300-mile-per-hour speed of involuntary muscle reflexes.

From all this it may be seen that the eye, a watery globule weighing only about half an ounce and fitting in one cubic inch of space, is an extraordinary instrument. The eye pigments are bleached out by light and reconstituted in the dark hundreds of times per second. Thus an intricate cycle of physicalchemical changes provides the eye with a constantly renewed photographic film on which is impressed all the salient form, color, and movement of the world. Moreover, due to the binocular vision of two eyes, linked to the brain by a cross-switch of the optic nerves that merges two images into one, the eye sees in depth, texture, and contour on a three-dimensional film. But this is a film and camera unlike any known in commerce. It is exposed, developed, and projected in the infinitesimal twinkling of an eye.

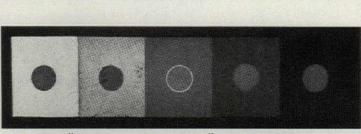
The roving eye

Allowance for the cyclic time factor in eye chemistry, plus time for the intricate network of nerve fibers and brain centers to coordinate all phases of vision, has led to other discoveries. In the late thirties and early forties, H. K. Hartline, of the Rockefeller Institute, and others discovered that when light strikes the eye, two kinds of nerve action take place: the predominant one is excitory, the other inhibitory. Those receptors receiving the most light are excited, those receiving less light are inhibited. This is one of the mechanisms by which the eye is believed to see sharp contrasts and contours and spatial differences, explaining, for instance, why deep windows in shadow appear in darkest contrast to a light wall around them.

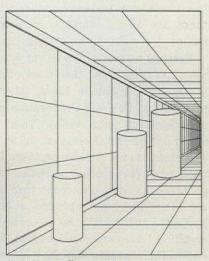
In addition to this, it appears that the retina is in constant small movement, shifting the image to and fro across a number of receptors, thus allowing the cells time for alternate

How the eye deceives

THREE ILLUSIONS show eye's fallibility. Left: squares striped by parallel lines appear elongated in the opposite direction from that of the lines. Below: dot is identical shade in all five blocks; surroundings make it seem different. Right: cylinders are same size; apparent size depends upon apparent distance.







JAMES J. GIBSON, "THE PERCEPTION OF THE VISUAL WORLD," HOUGHTON MIFFLIN CO.

stimulation and inaction. Indeed, Lorrin Riggs and his group at Brown University recently have demonstrated that if the eye is held forcibly fixed on an object for a short time, it can no longer see the object. With the aid of small mirrors and a contact lens, Riggs arranged an experiment in which an object-a thin line-moved exactly in coincidence with the motion of the eye, so that it remained on the same set of receptors at all times. Within five seconds, the line disappeared and did not reappear until eye movements allowed the cones to regenerate themselves. Using a thicker line, the image took much longer to fade out completely and would reappear from time to time. Even more striking are the experiments performed on monkeys, removing that part of the cortex governing eye movement. Though all the rest of the visual system is left intact, the monkeys can no longer see, thus proving that the eye must keep moving to allow time for regeneration of the receptors.

To further aid the alternate rest and action required by receptors, some sections of the retina, it now appears, may respond to stimuli going on in other sectors, in which they are not involved and do not "see." Using electronic instruments recently developed for probing the retina, it has been shown that while all rods are bundled together in "party lines" on single nerve fibers, many cones have "private lines" to the brain. These cones are interconnected in a complex network so that a cone in one area may be affected by activity going on in another area, thus keeping vision constant for critical performance.

The significance of all this is that, to meet its physical requirements, the eye must have movement, contrast, and rest stops. For architecture, this may explain the pleasing effects of such things as a canopy over a doorway, enhancing the doorway's appearance, and of deep overhangs, porticos, and plastic features on older buildings, giving the eve contrast and rest. It may also explain why good lighting in buildings often employs slow continual variations such as occur in daylight with moving clouds, and makes extensive auxiliary use of natural lighting which is constantly changing. The physiology of vision would suggest that in architecture and lighting completely satisfying effects cannot be attained by static arrangements of brightness patterns or flat planes.

The tricolor eye

Color vision is perhaps the most complex function of the human eye, with the largest number of unknowns, though it has been well established that the cones are the receptors involved in this phenomenon, and a favorite theory of color vision has been generally accepted for over a century. This is the trichromatic theory, first advanced in 1801, which holds that the eye reacts in specific cones to three color wave lengths of light—red, green, and blue—blending these three to produce the full palette of color vision. Important practical applications based on three basic colors, including color printing, photography, and color television, seem to bear out this theory. But the theory has not yet been proved, and until recently none of the colors had been traced to specific cone pigments.

Only last year, the British physiologist W. A. H. Rushton succeeded in proving the existence of two color pigments in the cones, the red and green, extremely complex compounds, which accounts for their long elusiveness. The blue pigment, although it is believed to exist, remains undetected. The isolation of the red and green pigments, however, is one of the greatest advances in basic vision science in this century, for it should now be possible to isolate and study in detail the actual working of these pigments in the eye, understand more clearly the real mechanism of color vision, with eventual consequences in all the graphic arts, chemistry, electronics, lighting, and architecture.

But many problems and difficulties remain. One of the most persistent is that the sensations associated with color vision are more easily explained in terms of four colors (adding yellow) than three. The evidence seems to indicate that this four-color sensation is a function of the brain. Tests have repeatedly shown that people with normal vision distinguish four psychologically unique hues—pure unitary colors in which no admixture of another color can be seen no matter how the intensity is varied. In consequence, there are also a number of theories calling for eight or nine basic colors.

Perhaps no more interesting development has come along than a set of demonstrations by Edwin Land, inventive president of Polaroid Corporation, who, investigating color vision from the viewpoint of total images, bases his experiments on a two-color system. Land takes two synchronized black-and-white photographs of a scene, one through a red filter, the other through a green. Projected individually on a screen, the resulting transparencies look like blackand-white photographs. But when he projects them through any of a variety of paired color filters in such a way as to superimpose both images on the screen, the viewer sees a full color picture. The paired filters may be essentially the same color, i.e., different by as little as 10 millimicrons in wave length, which is so close that the eye cannot distinguish any difference. This seems to upset the long-held three-color theory of vision.

The Innocent eye

Oddly enough, none of this decisively overthrows as yet the present theory of color vision: The eye may react at the retina to three or even only two basic colors, yet still see, through the intricate nerve network, in full color in the brain, for color vision is a process that combines intimately both the eye and the brain. Many experiments attest to this duality. The eye presented with a lump of coal removed from all other context pronounces it dull gray; only against familiar surroundings is it seen as jet black (see sketches, page 127). Another experiment involves the still mysterious phenomena of color memory and eye adaptation. A familiar object, such as a favorite suit or party dress, is seen under a light of unnatural wave length that turns grays to gray-green and pink to off-heliotrope. If the fabric is looked at long enough, however, it will almost return to its remembered color. All this implies that memory, accumulated experience, and adaptation play a large role in color vision.

This interplay between eye and brain has large significance for the development and appreciation of the arts and architecture. For it is becoming more and more clear with advancing research that not only color vision but also depth perception and other visual functions as well are, above a certain basic physiology, learned functions that the human eye literally teaches itself to see. Indeed, the eye is in the forefront of the developing human organism, for the retina is in fact an integral part, the only visible part, of the total nervous system and brain, and of all the motor and emotional processes controlled by the brain.

The learning process of the eye begins very early in childhood when, as the great child psychologist Arnold Gesell has observed, a two-year-old "may sometimes look with such overpowering intensity that his legs collapse under him." It is in this intensity of early vision that eye and brain are learning to see form, color, depth, and space, and their relationships. The reality of this process has been dramatically shown in studies of people blind from birth who gain sight later in life and who, contrary to romantic notions of a sudden bursting vision of the world, have to spend many painful weeks and months in learning to see. It usually requires many days, for instance, for the once blind to distinguish without touch between an egg and a cube of sugar, for eye and brain initially have no coordinated visual image of these objects to draw on.

At a later stage in learning the eye performs such mysterious operations as abstraction (e.g., recognizing threesided figures as triangles, no matter what they are made of-pencil lines, sticks, cords of string) and discrimination (e.g., seeing only selected parts of an image). Experience builds up the latter to such an extent that as time goes on the eye and brain ignore, and in fact do not see, parts of a stimulus pattern not immediately useful or interesting to them. The eye selects and sees more easily what it has been led by experience to expect. This has been most notably demonstrated in the late Adelbert Ames's famous distorted room illusions, in which the eye, cut off from all normal references by a peephole, sees in the test room's askew dimensions a normal room, or in another demonstration, loses all ability to gage accurately the height or depth placement of objects in the room. Thus, in conservative individuals, the expected image pattern becomes so set that anything unusual or unexpected presented to the eye is physically disturbing and may even make them angry or ill.

The mind's eye

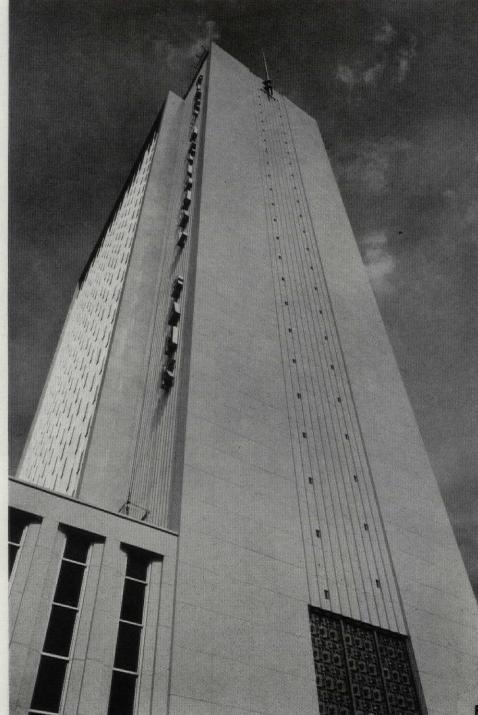
The linkages of such mental states or processes to the eye is the most difficult part of vision research, in which, as in the functioning of the eye itself, scientists must first learn to crawl before they can run. One study, for instance, is attempting to find out how the eye focuses for depth, whether it finds the right depth immediately or adjusts and readjusts repeatedly, implying a mental controlling process in depth perception and the apprehension of space. Another study, in the Bell Telephone Laboratories, is trying to find out something about the complex problem of pattern abstraction. These, and many more, are still elementary and inconclusive studies so far as producing a detailed understanding of how the eye perceives space and shape.

The immense importance of this mental aspect of vision to art and architecture is simply that seeing is demonstrably a learning and developing process in which, by all the evidence so far, the race is still in the course of developing its visual system. When the Fauvists, for instance, splashed their wild colors into modern art in the last century, they were at first met by cries of violent outrage and later by acceptance. It is wholly probable that the human eye, through the teachings of modern art, now sees nuances of color that it never saw before. The same process of the eye's education may be noted in the long and hard-fought battle for modern architecture. Hence it follows that in the development of new architectural forms there must be persistence, patience, and some linkings with past experience until the eye learns to discriminate at a new level.

The problem of vision will not be solved until the relation between mind and matter has been worked out, an intricate problem but not an insoluble one, as the development of electronic brains and information theory bears out. In that solution science will aid the development of art in the vital area of vision as art has aided the development of science in the past. END Denver's First National Bank ...

precast concrete panels give these curtain walls their clean, modern look

WHEN AMERICA BUILDS FOR BEAUTY... IT BUILDS WITH CONCRETE



With its tower rising 28 stories, the new First National Bank building, Denver, Colorado, is one more example of concrete's importance as a modern curtain wall material.

Large precast concrete panels, both ribbed and flat, are combined to give the tower its strong and dramatically simple vertical lines. White quartz aggregate, ground smooth, was used to face the panels.

Panels, most of which are $5'6'' \ge 6' \ge 2''$, were fastened directly to the structural frame with no back-up needed. The walls are weather-tight, noise-and fire-resistant.

Architects everywhere are finding that concrete is the one completely versatile building material for structures of every size and kind.

Architect: Raymond Harry Erwin & Associates, Denver, Colorado

Consulting and Structural Engineers: Phillips-Carter-Osborn, Inc. and Rhuel A. Andersen. Denver, Colorado Contractor: Mead & Mount Construction Company, Denver, Colorado



PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of concrete





ALL HAVE RECENTLY BEEN EQUIPPED WITH BRADLEY WASHFOUNTAINS AND/OR GROUP SHOWERS

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Fannin Jr. High School, Amarillo, Tex. Valley Forge, Pa.
Bau Gallie, Fla.
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Maynard School, Salten, Ind.
Maynard School, Salt Lake City
E, Grand Rapids, Mich. Jr. H. S.

Economical and more sanitary washing facilities have received increased attention during the past 10 years, as witness the wide use of *Bradley Washfountains* all over the country.

Bradley Washfountains save space, serve groups, and guard against spread of infectious diseases because there are no faucets to touch. The spray of clean running water is turned on or off by means of the foot-ring.

Economical Shower Columns without partitions are widely used in boys' shower rooms; while for girls and women, partitions and curtains are available to separate the stalls. Bradley Group Showers provide maximum shower facilities in less space and at lower installation cost.

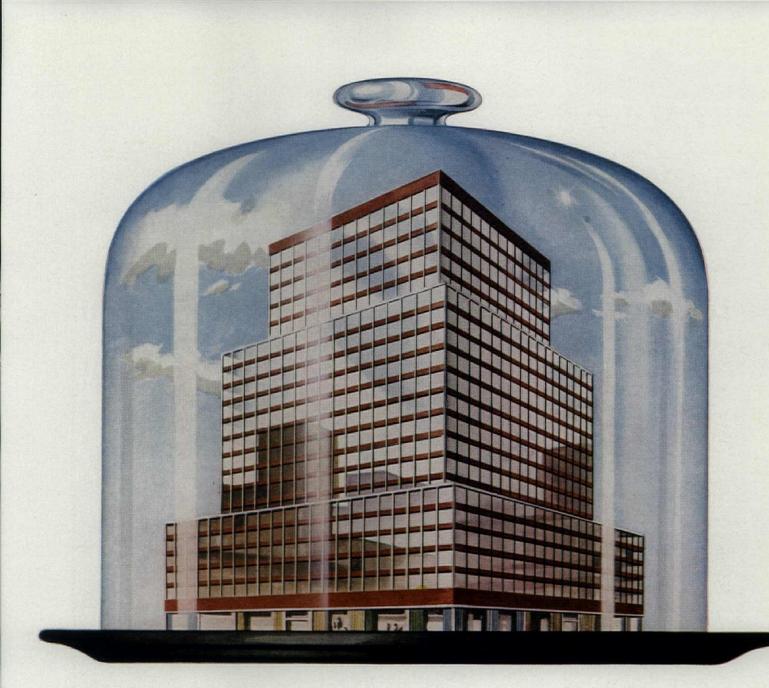
Write for a copy of Catalog 5601. BRADLEY WASHFOUN-TAIN CO., 2235 W. Michigan Street, Milwaukee 1, Wisconsin.





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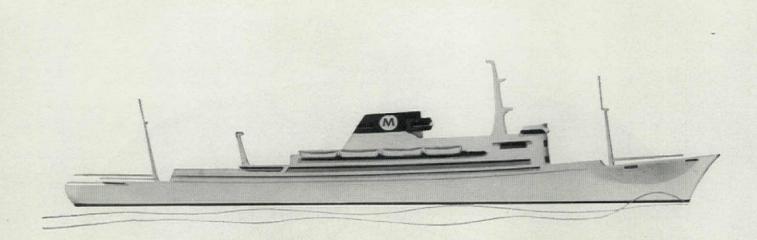
Vitrolux is heat-strengthened polished plate glass for spandrels. Ceramic color is fire-fused to the back surface. It won't fade or deteriorate – ever. Your choice of 16 standard colors, black, white, or matched to your color sample.

Drive down any city street and look at the buildings completed only one or two years ago. Soot and grime are already soiling them. Air-borne acids are leaving scars and mottled blemishes. Expensive to remove... and the "face lifting" never lasts.

Don't let time tarnish the building you're now designing. Put your building "under glass" . . . facades of lustrous, color-fast Vitrolux[®] glass spandrels and windows of Parallel-O-Plate[®]. Grime can't penetrate glass. Glass won't corrode, or craze, or deteriorate. It's the most ageless building material you can use.

Ask your L·O·F Glass Distributor about the virtues of Vitrolux and Parallel-O-Plate Glass. See how much you can save your clients on maintenance alone. For more complete information, write Department 48128, Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.

Curtain walls of Parallel·O·Plate and Vitrolux by LIBBEY·OWENS·FORD a Great Name in Glass TOLEDO 3. OHIO



Luxury underfoot—on the newest luxury liners afloat!

The S.S. Brasil and the S.S. Argentina are the fastest, most luxurious liners ever built for the South American run. And every square inch of the carpeting is wall-to-wall Gulistan. Every single pattern created specially for these sister ships! Designs by Raymond Loewy Associates. Custom Carpet supplied by Hopeman Brothers, N. Y., for the Moore-McCormack Lines.





GULISTAN CARPET Gulistan Carpet is made in the U.S.A. by American craftsmen It takes magnificent carpeting to give a liner the luxury of a great hotel. And like so many great hotels, restaurants, theatres, banks, the S.S. Brasil and the S.S. Argentina are carpeted with Gulistan. On ship or ashore, the luxury lasts under the heaviest traffic. And with its long, long wear, its easy care, Gulistan cuts costs of floor maintenance up to 50% over any other floor. Along with all this, you get the well-known advantages of Gulistan soundproofing properties—and complete mothproofing, too! Gulistan carpet is available in limitless colors and original designs. Ask your Gulistan dealer about them. Or let's discuss a one-of-a-kind carpet for you. Write: Commercial Department, AF-12, A. & M. Karagheusian, Inc., 295 Fifth Avenue, New York 16, N. Y.

Close-ups

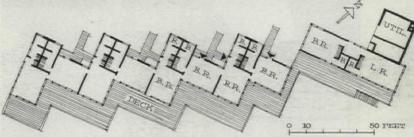
A focus on current architecture



MOTEL FOR GOLFERS

Guests at the new \$100,000 "Golfotel" in Southern Pines, North Carolina, can saunter in off the fairway, wash up in their own comfortable quarters, and step out for cocktails on a broad deck overlooking a woodland lake. Designed and built in less than four months to accommodate overflow crowds at the Mid-Pines Country Club, the new motel's eight double bedrooms (15 feet by 20 feet) and baths are laid out in a zigzag pattern. This arrangement gives each unit a little entrance court in front and a semiprivate section of deck at the rear (right), and allows a minimum of noise transfer through common walls between rooms (see plan). For large families and convention groups, the interconnecting rooms and decks can be rented and used in combination (at an average \$40 per day per room, with meals).

In a typical room (bottom, right), a glass wall facing the lake opens along the bottom for ventilation, and a door with adjustable glass louvers opens onto the deck. Interior walls are finished in walnut plywood paneling and ceilings in textured insulation board. Contractor: W. L. Jewell & Son.



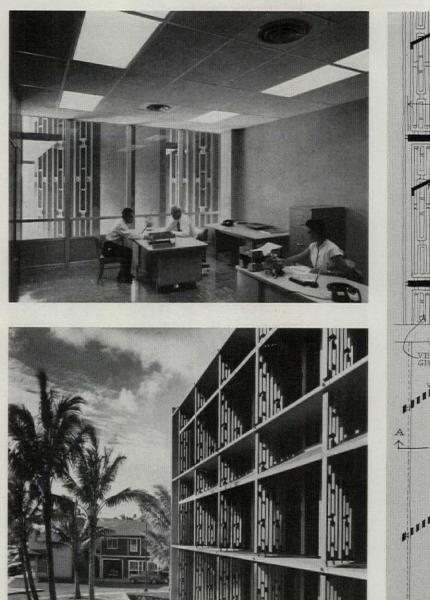
ARCHITECT: Thomas T. Hayes Jr.

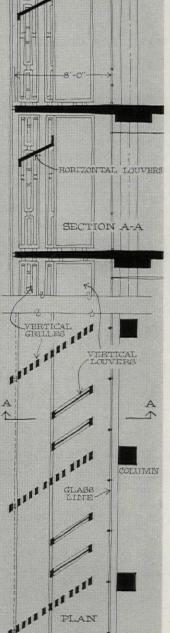






PHOTOS: R. WENKAM





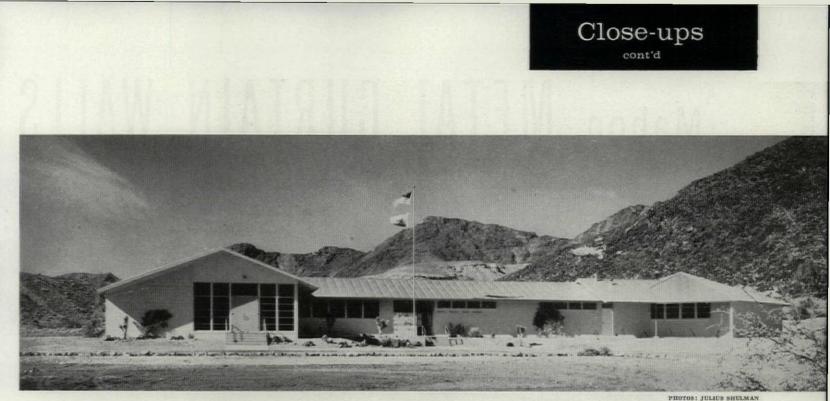
ARCHITECTS: Wood, Weed & Associates

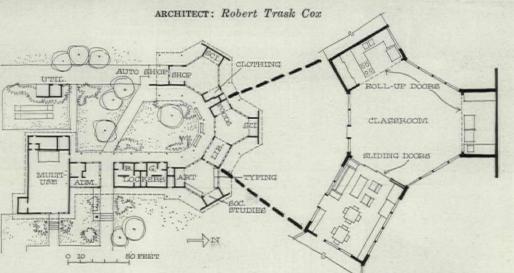
RICH SUNSHADES

The unusual grille-patterns across the west-facing front of Honolulu's new \$1.2-million Board of Water Supply building were inspired by a decorative design in Peking's Royal Palace, but they also serve a useful purpose: sun control.

After making a tour of new sun-louvered buildings in the U.S. and finding that few actually kept the sun out as intended, Project Architect Howard Wallace made some 50 design studies of his own. A mockup of his final design, a system of vertical panels set at an angle of 60 degrees, showed sun "leakage" in the critical days of late December, so Wallace added sloping horizontal louvers (sketch, left). To break up the big vertical panels and give office workers a better view, Wallace designed them as grilles, each member of which acts as a small louver to intercept the sun. The grilles, which look like marble from a distance, are actually formed of ¹/₈-inch sheet aluminum, welded and painted dark green, black and white.

The shading system, the architects figure, enabled them to reduce the building's airconditioning capacity by 72 tons (down to 150 tons)—saving \$43,200 in installation costs. and \$54 per ton, or \$3,888 a year in operation, depreciation, and maintenance. Thus the sunshades, which added \$85,000 to the cost of construction, should pay for themselves in about ten years. Contractor: United Construction Company.





TRIPLE-DUTY CLASSROOMS

Many high schools today are faced with the problem of squeezing a big-city range of subjects into a small-town budget. Few, however, have experienced the problem as acutely as Death Valley High School in Shoshone, California (population 150), where a mere 21 students and three teachers come in across the desert from 65 miles around, and where the weather includes 130-degree heat and 70mile-per-hour sandstorms.

Death Valley's solution, fresh and direct in approach (if slightly bumpy in execution), centers on a chain of three small, six-sided classrooms, each equipped with three storage alcoves for special teaching aids. Instead ot moving to separate and costly special-purpose rooms for each class, students simply turn their chairs toward a particular alcove, where blackboard panels slide up or sideways to reveal a miniature stage tailored to the subject being taught. By closing one alcove and opening another, teachers can easily convert classrooms from general science to library work (photo upper right) or from dress design to cooking (lower right).

Crooked in the curve of the classrooms, out of the wind, is a central patio equipped with benches for outdoor teaching, assembly, or just sitting around. Walls are simple concrete block; corridors are outdoor passageways shielded by the deep 10-foot overhang of heat-reflecting aluminum a roof. Beyond the entrance breezeway, a multipurpose room (left in photo above) serves the school for music, drama, and bring-your-own lunches, also serves the community for everything from town meetings to Saturdaynight dances. Associate architects: Robert W. Hagman and Kurt W. Meyer. Contractor: William A. Drennan. END





Mahon METAL CURTAIN WALLS

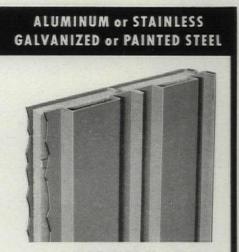


New Metals Service Center for Copper & Brass Sales, Inc., Detroit, Michigan. Mahon Aluminum Curtain Walls were effectively employed in the design of this attractive structure. Giffels and Rossetti, Architects-Engineers. Perron Construction Company, General Contractors.

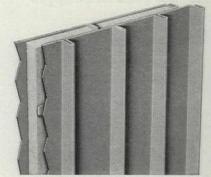
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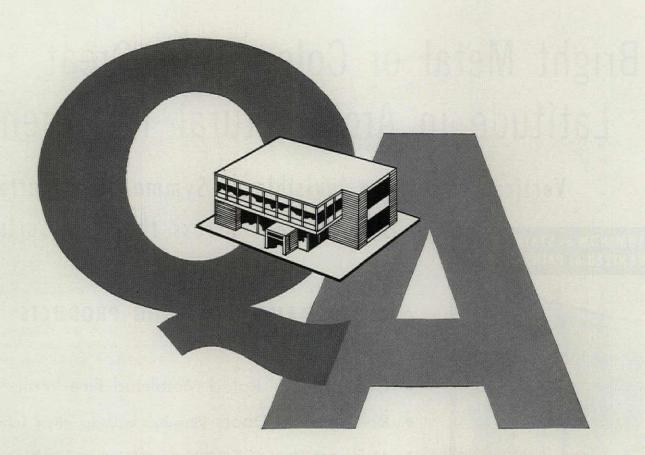
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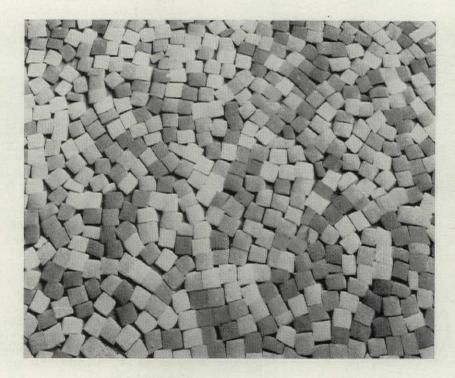
Just call your local Johnson branch or write Johnson Service Company, Milwaukee 1, Wisconsin. Better still, on your next project, let a Johnson engineer plan the control system and submit an estimate. No obligation, of course.



DESIGN . MANUFACTURE . INSTALLATION . SINCE 1885

Products

Vinyl mosaic flooring . . . insecticide sprinkler system . . . colorful shatterproof glass . . . plastic ladder



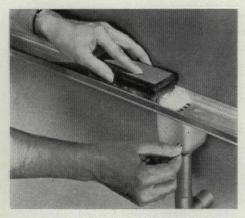
PLASTIC MOSAIC FLOORING made of vinyl-embedded vinyl tiles

A heavy-duty plastic floor sheeting recently put on sale by the Armstrong Cork Company has a wear surface composed of tiny, colored vinyl blocks or tiles set in clear vinyl and surrounded by a clear vinyl "grout." The slightly embossed finish of the material helps conceal scratches, reduces the high gloss of the plastic, and gives floors a handsome, nubbly look unlike any other floor material on the market. Called Tessera Vinyl Corlon, the product is only 0.09 inches thick, but said to be as durable as 1/8-inch-thick linoleum. In addition, a specially formulated, moisture-and-mold-resistant backing (Armstrong's Hydrocord) makes the new material suitable for below-grade installations. Seven tone-on-tone colors are available. Sheet width: 6 feet. Cost: about 65 to 80 cents a square foot, installed.

Manufacturer: Armstrong Cork Co., 709 Rock St., Lancaster, Pa.

CHALKBOARD VACUUM SYSTEM dry-cleans trays and erasers

Trayvac, a novel vacuum system being marketed for schools, cleans chalkboard trays and erasers rapidly and dustlessly thereby reducing custodial labor and the discomfort of air-borne chalk dust and, perhaps to a child's regret, outmoding



eraser cleaning outdoors. Chalk dust along the trays is disposed of by simply sweeping it with an eraser to the *Trayvac* inlet, and pushing the vacuum switch. Erasers are cleaned by gliding them back and forth over the inlet. Inlets are designed for installation in new or existing buildings equipped with a central vacuum system. Cost for one inlet and accompanying materials: about \$15, excluding installation. *Manufacturer:* H-P Products Inc., 514

W. Gorgas St., Louisville, Ohio.

LIFETIME TERMITE CONTROL uses underslab insecticide sprinklers

An ingenious and inexpensive system of built-in termite control has been developed by a Louisiana exterminator.

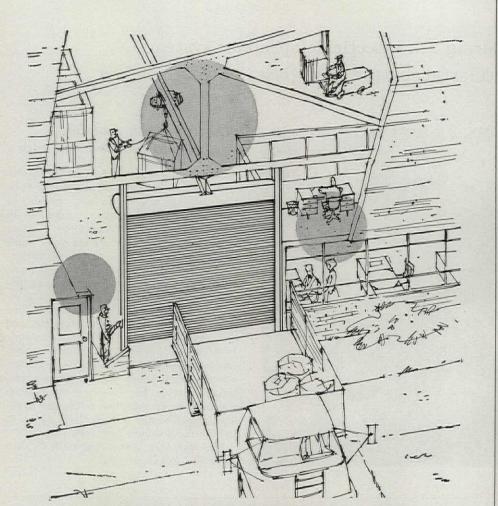
The system, which is called *Sure-Tox*, works this way: horseshoe-shaped sections of ½-inch polyethylene tubing are inserted into the gravel bed over which the building's foundation is poured. This tubing is slotted at regular intervals (every 6 inches) much like an ordinary sprinkler hose and connected to polyvinylchloride pipes that extend beyond the foundation walls.

Once the building is complete, and at any time during its life, termite-control treatments are made by simply pumping an insecticide into the outside pipes until the tiny slits in the buried tubing are forced open and the solution flows out, evenly saturating the entire gravel base.

With conventional methods the gravel base is treated once before the slab is poured, providing protection that lasts, at most, about six years. Installation costs for the new system, according to its developer, Paul S. Foster, are about 10 cents per square foot, including the initial treatment—or roughly 6 cents per square foot more than the conventional method.

Manufacturer: Louisiana Termite Control Co., 8260 Florida Blvd., Baton Rouge, La.

continued on page 140



Balfour rolling steel doors "add" all this usable space

... and insure complete security

Only rolling steel doors combine all these features

• Space Saving — Balfour rolling steel doors coil into a single compact unit above the opening . . . valuable adjacent and overhead areas remain unobstructed.

• Extra Security — Balfour's all steel construction assures positive protection against theft and vandalism, fire and wind.

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• Ease of Application — Balfour doors are simple to install and adaptable to all types of construction. They are custom manufactured to any size requirements.

See Balfour's new catalog in Sweet's Files. You'll find it one of the most comprehensive and easy-to-use guides to service, fire and counter door specifications ever presented. For your personal copy write to Balfour today.



Walter Balfour & Co. Inc. Brooklyn 22, New York

PORTABLE CLASSROOM provides low-cost auxiliary space

A steel-frame, aluminum-sheathed portable classroom that can be set up or dismantled in about $1\frac{1}{2}$ days has been developed by a Maryland trailer manufacturer as a fast, low-cost way to solve, temporarily, overcrowding in schools. Measuring 20 feet wide, 40 feet long, and $10\frac{1}{2}$ feet high, the



new unit is designed to accommodate 30 to 40 students. It is formed of two half-sections—each 40 feet long and 10 feet wide —which are simply bolted together. All wiring is installed and can be attached to the existing power source or to a portable generator. An oil-burning furnace mounted on the outside of the building (not shown in photo) supplies the heat. Cost: about \$16,000, or roughly half as much as a permanent, masonry room of the same size.

Manufacturer: Thompson Trailer Corp., 2 Old Court Rd., Pikesville, Md.

FAST PRINTER FOR FILMED PLANS makes a dry blow-up in 15 seconds

Dry, black and white copy prints of microfilmed plans or drawings can be produced in just 15 seconds with the new *Copyton* machine (photo below). The machine enlarges microfilm 14 to 16 times and prints

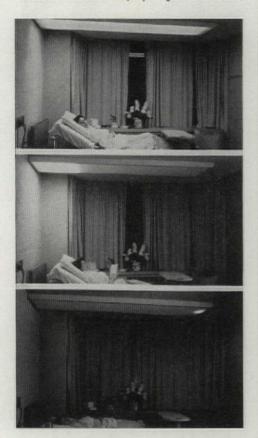


the enlargement electrostatically on standard sheets in sizes from 8½ inches by 11 inches to 18 inches by 24 inches. It can also be used to make plates for offset printing. Price: \$9,750—or about \$280 per month, when leased.

Manufacturer: Charles Bruning Co., Inc., 1800 W. Central Rd., Mt. Prospect, Ill.

TRIPLE-PURPOSE FIXTURE simplifies hospital room lighting

A single-unit, ceiling-mounted light fixture developed especially for hospital patient rooms is composed of three separately controlled sections, each providing a different type of illumination: 1) an even light over the entire bed area to aid the doctor's examination; 2) a patient's read-



ing light directed at the head of the bed; and 3) a night light at the foot (photos above). Known as the Palco 3-in-1, the new fixture is bed-length (72 inches) and 18 inches wide. It is trimmed in aluminum and faced with a white plastic, egg-crate diffuser panel. For full room light all three sections can be turned on at the same time. Cost for the complete fixture: about \$155.

Manufacturer: Pacific-Associated Lighting & Manufacturing Co., 1260 Pennsylvania Ave., San Francisco, Calif.

ROTATING-DISK COMPASS designed for fast, accurate drafting

With the Speed Compass, said to be the first drafting compass or template to incorporate a flat disk that rotates on ball bearings inside a metal frame, a draftsman can draw 69 different size circles in diameters up to 2 inches without adjusting the compass or punching a hole in the drawing surface. Twelve holes along the base of the instrument are used to draw circles from 1/16- to 15/54-inch diameters. Quarter-inch to 2-inch circles are drawn

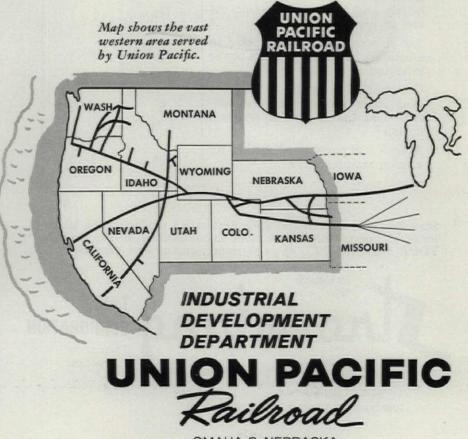
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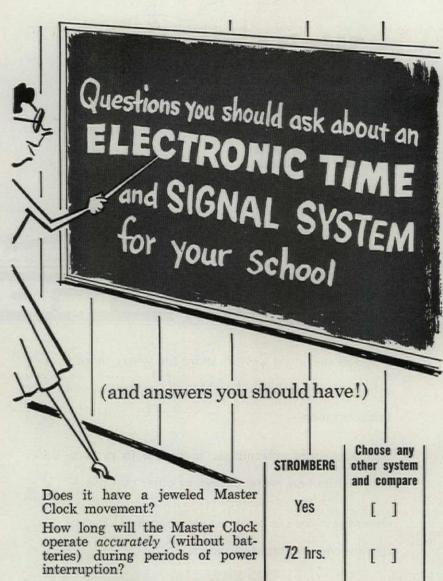
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Are classroom signals corrected to schedule immediately after a power interruption?

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Are all components pluggable for ease of maintenance?

Stromberg's new Electronic Time System is a product of the laboratories of one of the largest clock manufacturers in the world — YOUR GUARANTEE of performance, quality and dependability.

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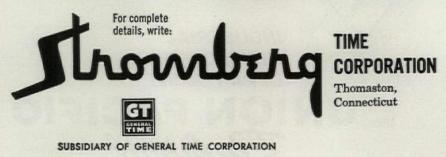
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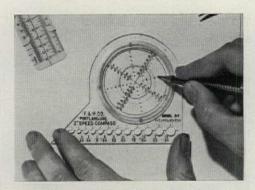
Yes

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by placing the center hole of the disk over the drawing guide point and rotating the disc with a pencil inserted in the appropriate diameter-numbered hole. Retail price: \$2.25.

Manufacturer: F & H Manufacturing Co., Portland, Ore.

DECORATIVE SAFETY GLASS has colorful sealed-in patterns

Patterns of colored fabrics and metal, as well as such natural materials as ferns, bamboo, leaves, even dehydrated butterflies, have been laminated between two

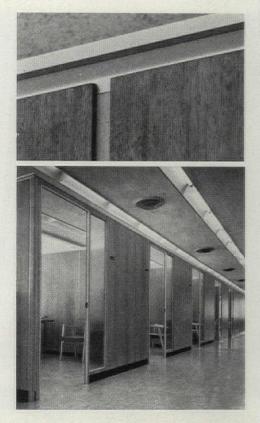


sheets of glass to form *Glas-Wich*—a new decorative safety glass designed for wall paneling, partitions, shower doors, tabletops, etc. Available in a wide variety of stock designs or with custom inserts, *Glas-Wich* sells for about \$5 a square foot. *Manufacturer*: Dearborn Glass Co., 6600

S. Harlem Ave., Bedford Park, Ill.

MOVABLE PARTITIONS have neatly detailed recessed frames

This movable, hardboard partition system features a newly designed 78-inch recessed aluminum post cap, a recessed aluminum cornice, and continuous recessed base and shoe of black Micarta. Developed first by Skidmore, Owings & Merrill for the Greyhound Building in Niles, Illinois, the sys-

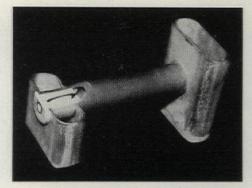


tem with its neatly detailed framing is available now from U.S. plywood in standard modular sizes up to 6 feet by 12 feet. Costs vary with the woods selected and the installation; the job pictured cost \$3.80 per square foot installed and finished.

Manufacturer: U.S. Plywood Corp., 55 W. 44th St., New York 36, N.Y.

RUGGED PLASTIC LADDER safeguards against electrocution

Since it is made entirely of resin-impregnated glass fiber, a nonconductor, the new *Allsafe* ladder offers sure protection against electrocution; for the same reason



it is also impervious to rot and corrosion, does not warp or splinter, and is unaffected by insects. Rung-joints (see cutaaway section above) are designed to prevent turning or pulling loose from the side-rails and hollow construction reduces weight. Both single and extension types are available. Retail price for single sections: \$5.20 per foot; for extension sections: \$5.95 per foot.

Manufacturer: Hooker Chemical Corp., Box 344, Niagara Falls, N. Y. END



Do you know that the square-foot cost of

stainless steel sheet for curtain wall panels is usually <u>equal to or lower than</u> aluminum when compared in thicknesses of equal indentation resistance? For example, Type 302 stainless steel, .022" thick is equal to .051" aluminum and costs only 62¢ per sq. ft., as compared to 67¢ per sq. ft. for 3003-H14 anodized aluminum.

Washington Steel Corporation

WASHINGTON, PENNSYLVANIA

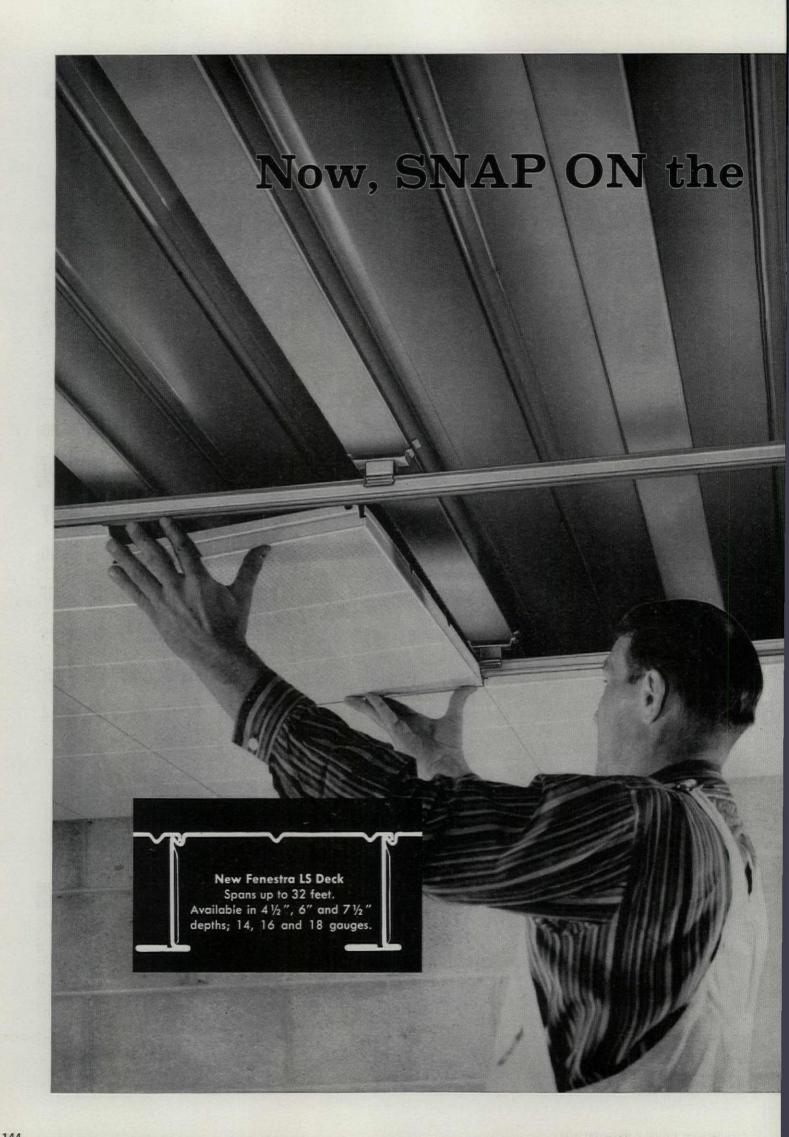
City.

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Architectural Forum / December 1958



acoustical ceiling with New Fentura Roof System

SNAP! SNAP! SNAP! Three simple operations give you a finished acoustical ceiling with major cost savings in time and labor . . . simply by combining the Fenestra[†] "Fentura" Roof System with the Kemp^{*} Suspension System. Gives you an all-metal design for strength, durability and performance.

Fenestra's new "Fentura" Roof System provides a long-span structural roof with unusual adaptability at lower-than-ever costs. It is based on Fenestra's new "LS" (Long Span) Deck which provides exceptional strength-weight economy. It spans up to 32 feet, with longer lengths available for overhangs, double-span conditions and other extension needs. "LS" Deck also provides lateral bracing for the structural frame.

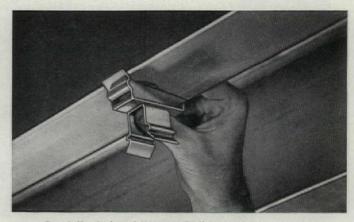
Kemp's Acoustical Metal Ceiling System snaps on to the "LS" units. Unique clips eliminate stud welding, attachment pins and tools, and facilitate layout and adjustment. Gives you a really uniformly flat ceiling with minimum of labor. And to further reduce costs, Kemp heavy-gauge pans are baked-enamel finished to eliminate field painting . . . are modularly larger to cut installation time by as much as 33%, allowing other trades to finish their jobs faster.

For details, call your Fenestra Representative, listed in Yellow Pages, or write Fenestra Inc., Dept. AF-12, 2296 East Grand Boulevard, Detroit 11, Michigan. ^{†Trademark}

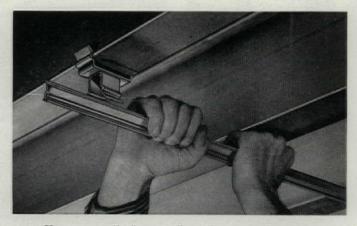
*Manufactured by Acoustics Manufacturing Corp., Detroit, Mich.



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Specially designed "snap-on" clip attaches to Fentura "LS" Deck. (Also available with extension rod to accommodate plenums.)



Kemp tee rails "snap on" to the suspension clips



Metal pan acoustical panels snap into place. No studwelding, no attachment pins necessary.

Uss Structural Steel for church



erected in 10 days





St. Catherine of Sienna Church, St. Louis, Mo. Architects: Carroll & Dean; Structural Engineer: John P. Nix; General Contractor: M. J. Lawlor; Structural Steel Fabricator: Mississippi Valley Structural Steel Co.

The use of USS* Structural Steel for the new St. Catherine of Sienna Church in St. Louis accomplished four purposes. First, it permitted a beautiful modern design unobstructed by columns and shaped for good acoustics. Second, it speeded up construction. The steel was fabricated in three weeks and erected in 10 days. Third, it assured maximum strength, safety and durability. Fourth, it kept costs low.

Structural steel is a versatile material that lends itself to modern construction. It can be easily fabricated for domes, arches and long roof spans. Where weight is a problem, the new high-strength steels such as USS TRI-TEN* brand permit lighter construction without sacrifice of strength. These steels can be formed, welded or riveted in much the same manner as regular structural carbon steel.

QUICK DELIVERIES! Recent expansion of production facilities assures quick deliveries and continuing availability of steel shapes and plates to accommodate the increasing demands of the construction industry. Just call the nearest office of United States Steel. The telephone number is listed in local directories.

For your copy of "Hot Rolled Carbon Steel Shapes and Plates," a handbook containing details, dimensions and weights—write to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.

Auditorium roof fabricated from USS Structural Steel in three weeks and erected in 10 days, using standard shapes and plates.

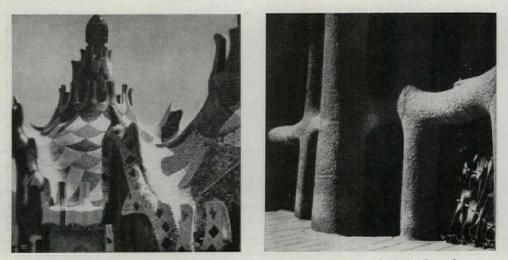
United States Steel Corporation – Pittsburgh Columbia-Geneva Steel – San Francisco Tennessee Coal & Iron – Fairfield, Alabama United States Steel Supply – Steel Service Conters United States Steel Export Company

United States Steel



Books

Gaudi . . . noise . . . modernists



Pinnacles of a park pavilion and columns of an apartment house, both in Barcelona.

GAUDI. In photographs by Joaquin Gomis. Published by George Wittenborn Inc., 1018 Madison Ave., New York 21, N. Y. 76 pp. 81/4" x 81/4". Illus. \$5.75.

This little book wastes few words. A summary of Antonio Gaudi's life is printed, but after that the book is devoted entirely to pictures of the shapes which the Spanish architect was able to put down on paper, and then, amazingly, to build.

ACOUSTICS, NOISE AND BUILDINGS. By P. H. Parkin and H. R. Humphreys. Published by Frederick A. Praeger, Inc., 15 W. 47th St., New York, N.Y. 331 pp. 6" x 10". Illus. \$15.00.

The authors of this volume are a good team to take on the problems of building acoustics and noise. P. H. Parkin is a scientist with the British government's Building Research Station and H. R. Humphreys is a British architect. However, their work is not directed solely at architects or at acoustics experts concerned with building problems; rather, the book has meat in it for almost anyone with an acoustical problem. For example, there are sections on studio design and insulation, on the design of highquality speech-reinforcement systems and on sound measurement. It is a book which should enable every specialist in this highly specialized field to understand better the problems of his associates.

MASTERS OF MODERN ARCHITECTURE. By John Peter. Published by George Braziller, Inc., 215 Fourth Ave., New York 3, N. Y. 230 pp. 10" x 13". Illus. \$15.00.

It is a little difficult to discover what the author of this flossy picture book was trying to achieve: obviously, the book is not addressed to professional architects or students, for most of the material is very The sequence of the mute photographs, mostly details, and a good many in color, is excellent; the architect's imagination flickers before you. Says Corbusier, in his preface: "Gaudi was a great artist. Only they remain and will endure who touch the sensitive hearts of men, but they will be badly treated on their way . . ." This publication, printed in Spain 32 years after Gaudi was run over by a Barcelona streetcar, treats him well.

familiar, and no drawings of plans or details appear anywhere. The book may have been intended for the layman, but its layout and organization would serve to confuse rather than enlighten the uninitiated. For example, descriptive captions appear not with the pictures themselves (where they would have been most helpful), but in an appendix that most readers will not find; moreover, similar buildings as well as the work of the same architects are frequently grouped together or split apart without any apparent method. And finally, the book is hardly a complete historical record of the modern movement-it suffers from serious omissions, and almost as many highly questionable inclusions. For example, Aalto's superb Tuberculosis Sanatorium at Paimio is not shown; Mendelsohn's most important later work in England and Israel is omitted; so are Markelius and many other leaders.

All this is too bad, for the talent was there (John Peter is an experienced author) and so was the budget (the book contains more than 225 large photographic plates on fine, glossy stock). But the result is a hodgepodge of old pictures, old writings, semi-accurate reporting—all packaged in a nice wrapper that will, undoubtedly, make this book a fine accessory on many a vacant, modern coffee table. END Excerpts

What other people are saying

AN ARCHITECT IN GERMANY

Last spring William Caudill made a tour of Germany with 20 other U.S. architects as guests of the West German Government. Here are passages from his diary:

Bonn: The big thing that has impressed me the most is the use of graphics to direct circulation of people. They have wonderful color enamel signs with arrows, symbols, silhouettes of cars, bicycles, children, etc. Very, very nice. Color is the thing. This concept extends to bathroom fittings, with red for hot water and green for cold.

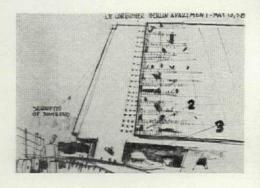
Hamburg: While we were visiting a school, instead of hearing a loud bell we heard this over a loud speaker in a nice quiet voice: "Children, this is the end of your hour. I hope you get safely home. Enjoy your afternoon."

... This school is a challenge, not only to us as architects, but to us parents who believe children should be surrounded with beautiful things. Imagine flower pots on stairs in American schools! Imagine putting in 2 per cent for art. Are we building palaces? Nuts! We build hen houses.

... One reason that German architects can get by with minimum drawing, perhaps, is the habit of using detailed materials quantity surveys. With this, it seems that a building might be built with only a good set of preliminary plans, plus a few details. This system bears additional study, particularly with our 30-hour week in the offing.

Brussels Fair: The Norwegian building is one of the best. My kind of architecture; but I have never thought this could be done. We have approached it in the U.S., but got barely within seeing distance. What it is, is this: a hybrid of Mies and Wright (early Mies, that is). Wonderful spatial quality-in and out, warm light and texture, crisp lines. Part of roofing looked like large parchment with large outside spot for night use. Enormous laminated beams which allowed the best of fluid space. Beautiful outside courts that look like inside space. Had Barcelona Pavilion flavor. Strange little clear plastic columns holding up huge wood beams.

... I learned a great lesson at the Brussels Fair. It is this. Art and architecture are important, very important. And in the cold war between the U.S. and Russia, particularly in Brussels, what do they do. They both fight with objects of culture. Both went heavy on art and architecture. So architecture is very important because a great nation has a great architecture—an artistic architecture, too. It is rather ridiculous to allow the loudmouthed taxpayer leaguer to scrape our public buildings of all of the really nice things that make beautiful surroundings flowers, trees, sculpture, murals, screens, terraces, walls. Hell, it is unpatriotic. *Berlin:* Corbusier's high rise apartment building is really some building. The guy knows how to sculpt in concrete. Disappointed in finish (Mexican flavor) but the exaggerated architectural form overshad-



ows poor workmanship. The scale is something I have never quite felt before—a sort of a bridge quality—big piers. And the building is mammoth, about 18 stories. Balconies are mostly two stories, except where Corbu wanted them to be one. Paint is limited just to the balconies, but he splashes it on the great façade as he would a small canvas. It is very alive and has a moving composition quality. The balcony landings of the outside stairs are very skillfully done. A good number of our group do not care for this building, but I think it is the most vigorous building I have ever seen.

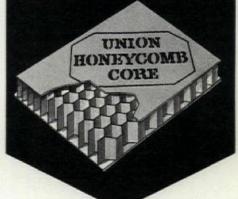
... But even the best architects must take criticism. Corbu was referred to by one of our group as an egotistical creator. Stubbin's Congress Hall is referred to by the natives as "the pregnant oyster." And one of these very fine churches is known as "Christ's Power Plant." You can't win! But it is sure fun just running. And we need the exercise.

OUR UNLOVELY BUILDINGS

In a talk before the National Conference of Editorial Writers, Michael von Moschzisker, chairman of the Philadelphia Redevelopment Authority, called for more recognition by FHA of the value of art in building.

The fine arts must be returned to American architecture; sterility and her handmaiden, monotony, must be banished from our avenues; and the artist must be recontinued on page 154

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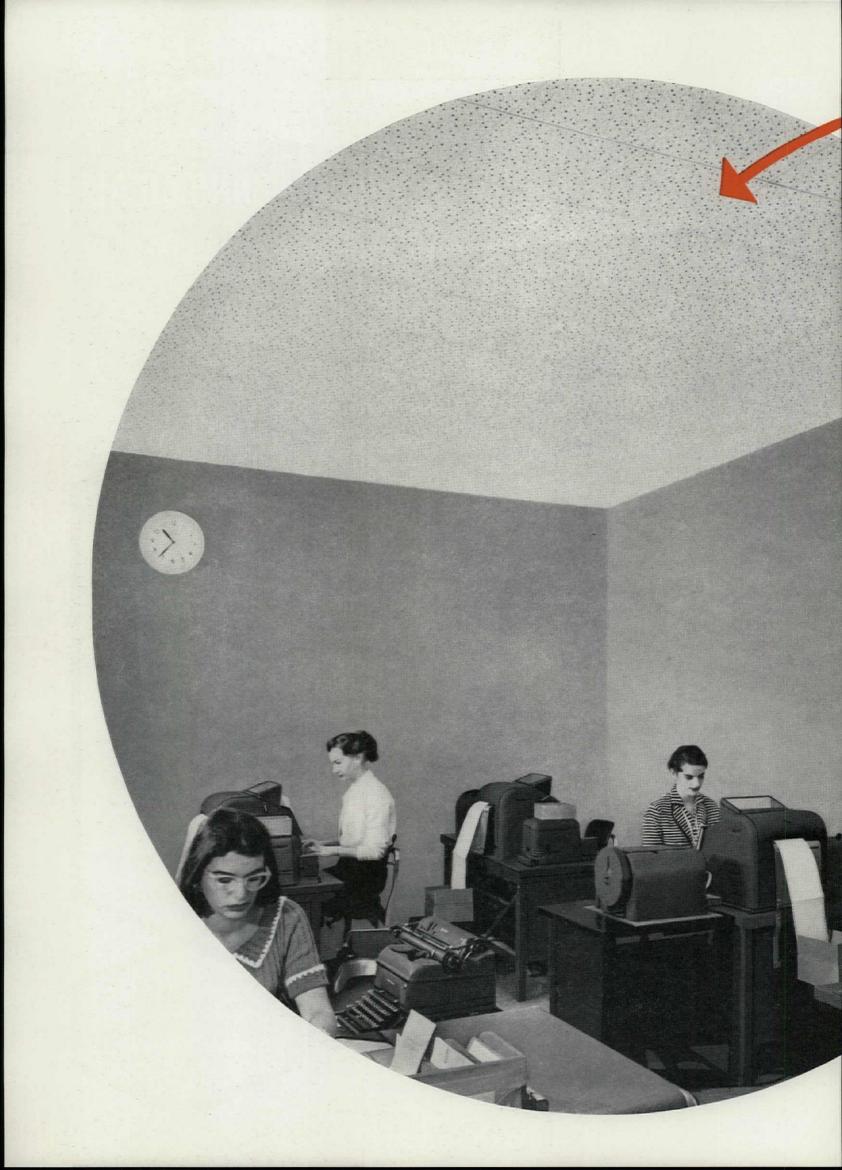
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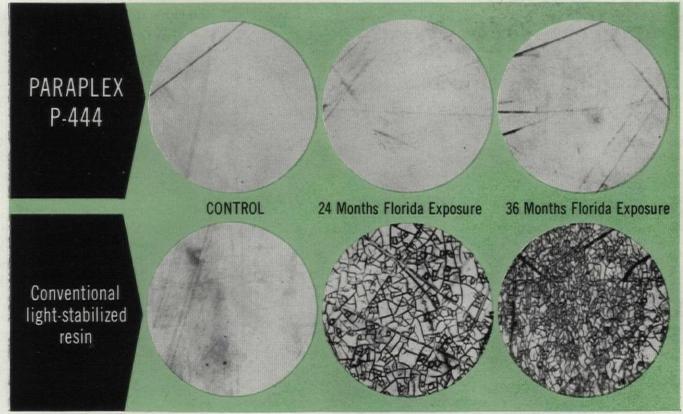
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36-MONTH FLORIDA EXPOSURE TEST

THE CHURCH continued from page 93

same stone upon which Agamemnon laid his delicate offering? And that architect who certifies the presence of God by a great cross built into his façade cannot be very confident of his architecture. If we feel the presence of God in a church, it is because we have so often met Him there.

Symbolic space is less hazardous.

The languages of space can be made harmonious to architecture since space is itself a material of architecture. Inside churches, space is almost always directional; it flows; and its directions can be meaningful. In the Church of Saint Anna, space flows from the side of the building through a low-ceilinged foyer, then rises abruptly into the



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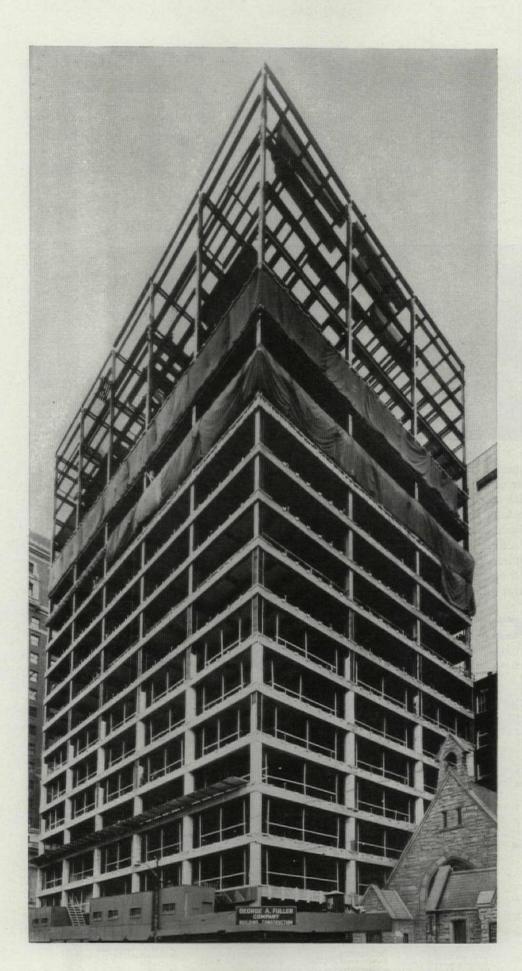
great height of the nave and immediately turns towards the altar. Thus, an architectural sequence, vigorous and evident, is charged with a spiritual affirmation. Such unisons may also happen when space is static: a circular space draws priest and people together. In our new architecture, space, which has participated in so many sermons, may take part in observances as well.

Romantic renewals

The concern of architects is, or should be, not exclusively with observances (mysticism) or sermons (ethics), but with the total expression. And in that expression romance must play a part, for all religion is charged with romance and popular religion is three-quarters romance.

It is not the moral law merely that holds the people to the church, still less the necessity of redemption, so much abated by our growing knowledge of man's place in the universe, but the enticing store of legend with which these are overlaid. Christianity constantly renews its life with story, parable, wonder, and the color of lands distant in time or space. If it did not do this we should take it less firmly to our hearts: if David had not sung his songs, if Saint Francis had not preached to the birds, if Christ had not intervened for the woman taken in adulterv, if a star had not been hung over Bethlehem. These narratives spread a glory, like that of a saint, over precept and doctrine.

In the streets of our American cities the church alone tells us the old stories. Our houses, our shops and factories, our public buildings speak only of commonplace things and of today; the church, charged with the moving remembrances of its history, looks backward to golden yesterdays. No matter how banal its architecture, a church is beautiful, filled not only with history but with the sweet essences of youth, of love, of hope and the shared devotions *continued on page 160*



Another Pittsburgh steel-framed skyscraper by American Bridge

American Bridge continues to play a major role in the rebuilding of Pittsburgh's Golden Triangle. Here's the latest addition... and another example of American Bridge handiwork with steel.

It is the new home of the H. K. Porter Company. Two-hundred and twenty feet high, it measures 92' 8" by 117' 6" long. American Bridge handled both fabrication and erection of the 2,330 tons of structural steel in this important new office building ... completed framework erection in December, 1957. All field connections were made with high strength bolts.

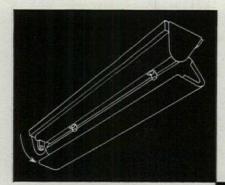
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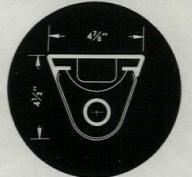




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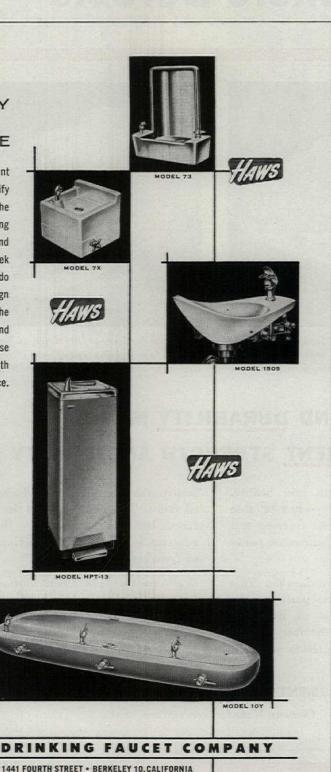
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THE CHURCH continued from page 156

of communities gathered there together and apart from the world. These are the overtones of experiences; they are stories, not always told explicitly or by symbol, but by the most subtle of associations. A hundred shadows attend the square stone tower set in the midst of its ancient headstones; and the white spire that rises above the New Eng-



land elms tells us more eloquently than words the story of the faith upon which it is founded.

Such stories may be told also in shapes that are newly invented and in such instances they may gain new meanings as they betray the heart and hand of the storyteller. There are accents, inflexions, emphasis and omissions, which are the very life of a tale well told. So it is in architecture. The church is at its best when its mission is apprehended through a radiant mind.

"Suppose," wrote Le Corbusier, addressing a hypothetical architect, "suppose that your walls rise toward heaven in such a way that I am moved. I perceive your intention. Your mood has been gentle, brutal, charming, or noble. The stones you have erected tell me so. ... That is architecture."

Le Corbusier's chapel at Ronchamp [page 91] is steeped in romance, undefeated by its many sophistications. A splinter of monastic France, of the days when men shut out the decadent city behind walls that were heavy with fatigue, invites the stranger to its hill, distantly seen above the village, and promises him peace. Deans come here on pilgrimages.

The chapel at Ronchamp is also a declaration of independence — of independence from the announced creed of its author. It pays no homage either to the rationale or the ideology of the modern movement; he too throws his modernism to the winds. He is a sculptor and guided only by his intuitions — and by a command of his materials so complete as to be almost subconscious. The result is a cup of fine clay, richly wrought, and overflowing with sentiment.

It is evident that, when given the opportunity, modern architects have expressed in church architecture Christianity's peculiar values, ethical, mystical, and romantic. And they have given each of these at times a special emphasis. It is right that this should be done. And yet the essential *spirit* of modern architecture — its peculiar excellence — has seldom been admitted to our sanctuaries. It may be, then, that the Christian conviction of our time will find expression in some other way than in the building of churches.

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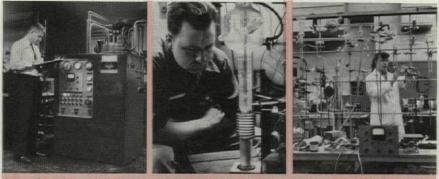
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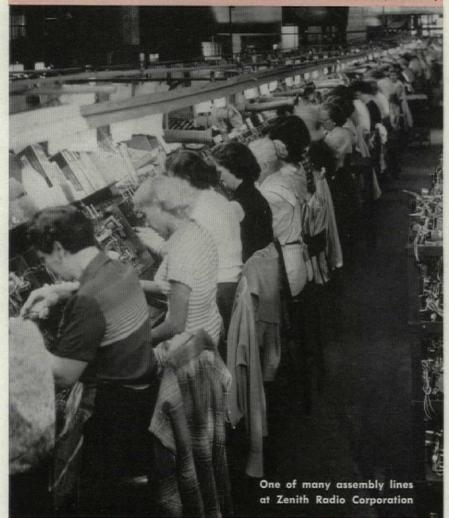
Wire glass is the only glazing medium that can successfully withstand the fury of the flames in this dramatic Underwriter's Laboratory test. To qualify as Fire Retardant No. 32, the glass is first subjected to temperatures up to 1600° F. and later to a 34'' stream from a fire hose at 35 to 40 lbs. pressure. Passing the test requires that the glass remain in the sash substantially unchanged except for cracking due to thermal shock.

Insist on GLASS for Glazing

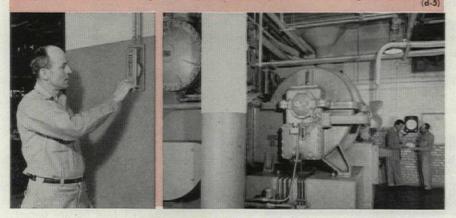




Research and engineering are important factors in ZENITH'S growth and industry leadership



"After 35 Years, one of our Powers temperature control systems is still giving dependable service"... reports Mr. Joseph Forster in charge of heating and air conditioning equipment. 1923 model thermostat is shown below. Photo at right shows refrigeration compressor regulated by Powers Temperature Recording Controller.



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By preventing overheating Powers temperature control reduces heating costs. Office and factory workers accomplish more and make fewer mistakes. Its many years of dependable operation makes Powers control a highly profitable investment.

Are You Planning a New Building, a school, factory, hospital, church or commercial building? If so, ask your architect or engineer to include a Powers QUALITY system of temperature and humidity control. If you have a temperature control problem phone our nearest office or write us direct . . . there's no obligation.



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SKOKIE, ILL. Offices in 85 cities in U.S.A. and Canada See your Phone Book Automatic Temperature and Humidity Control Since 1891

PHILADELPHIA'S DESIGN SWEEPSTAKES continued from page 95

marks, the pattern of open spaces, relationships between old and new buildings, and how the total plan would enhance and harmonize with the surrounding areas in scale and character. Nevertheless, Mayor Richardson Dilworth dismissed as "foolish" a suggestion that the redevelopment agency consider engaging a special jury of architects or architectural experts to recommend or select the best plan, and the City Planning Commission voted down (7 to 2) a proposal that it recommend to the Redevelopment Authority the use of an architectural jury.

Instead, the five-member Redevelopment Authority will shoulder the full responsibility of selecting the winner—guided, but not necessarily bound, by recommendations of Wright, Andrade & Amenta and the



new permaCushion* floor floats on resilient pads

That's right, this floor floats. It's entirely separated from the slab and all other structural members. It actually rests on air channeled GRS cushioned pads to assure permanent resiliency and to prevent moisture transmission from slab to sleepers. With these pads and the void between flooring and wall, the floor system expands and contracts without buckling or cupping and achieves a degree or dimensional stability unmatched by virtually any other floor!

PermaCushion floor systems offer other benefits, too: the natural beauty and durability of hard rock maple, dry, cross-ventilated subfloor and remarkable long-run economy. When planning a gymnasium or auditorium, consider the advantages of the PermaCushion free-floating floor system. For details, write Robbins Flooring Company, Reed City, Michigan. Attn: Dept. AF-1258.

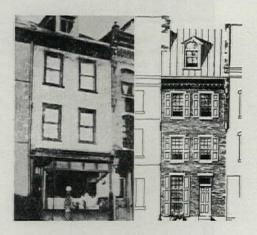
Available vacuum-treated with preservative by Dri-Vac method.

ROBBINS FLOORING COMPANY

Manufacturers of Ironbound* Continuous Strip* Maple Floors *PATENTED Reed City and Ishpeming, Michigan

Old Philadelphia Development Corporation, a nonprofit civic group that is also a consultant to the authority, and by any advice that may be offered by the Planning Commission. It scheduled no public hearings on the merits of the competing plans. The authority, besides Chairman Michael von Moschzisker, a lawyer, consists of a merchandising and real estate executive, a union official, a real estate broker, and only one architect: Walter Livingston Jr., of the architectural office of Harbeson, Hough, Livingston & Larson. By sticking to an inside jury. Philadelphia avoided the impractical choices that an outside jury might make, but increased the chances that in future contests the range of design might be narrowed to fit the local judges' tastes.

The one big question that this obvious gamble in judging procedure leaves unanswered is: how often will redevelopers who are unsuccessful in this kind of competition enter similar contests? The Society II ill competition cost each competitor about \$60,000 for preliminary plans. As one of the competitors guipped: "Only a very rich organization could afford to lose more than one or two competitions like this. But whoever loses, Philadelphia wins today, setting an example to other cities seeking a method of getting good design and amiable surroundings."



Before-and-after views of a 3½-story house at 223 Spruce Street show how Architects Harrison & Abramovitz-Stonorov and Haws plan to rehabilitate existing structures for the Thomas Jefferson Square Corporation.

END

Automatic Door Openings Rate Consideration of Store Planners

An important part of any store front is the door openings. Make them automatic and you get functional efficiency that is good for business. Where store doors are operated automatically by STANLEY MAGIC-DOOR controls, customers find shopping easier and more pleasant...so that's where they do business.

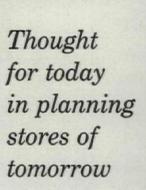


1.1 the complete MAGIC-DOOR line, the controls most suitable for the operation of store entrance doors are STANLEY MAGIC-DOOR carpet or photoelectric controls. Because of the growing trend toward more colorful store entrances, STANLEY MAGIC-DOOR carpets are available in a range of weather-fast, traffic-resistant colors.

MAGIC-DOOR operators may be visible or concealed overhead or in the floor. They meet every architectural requirement of space and appearance.



When planning automatic door openings for tomorrow's stores, remember that *MAGIC-DOOR* has been the leader in the field for a quarter of a century. Write for complete information and the address of your *MAGIC-DOOR* authorized representative.



. STANLEY MAGIC-DOOR Controls

Design functional efficiency into your store plans by including automatic door controls. And in making your selection *look to the leader in the field*...STANLEY *MAGIC-DOOR*. *MAGIC-DOOR* controls are products of a quarter-century of experience. In thousands of installations, they have proved dependable. Call on the authorized

STANLEY MAGIC-DOOR Representative for ideas and technical planning assistance at the planning stage.

For immediate information, see Sweet's Architectural File or write for A.I.A. File No. 16-D to Magic Door Sales,

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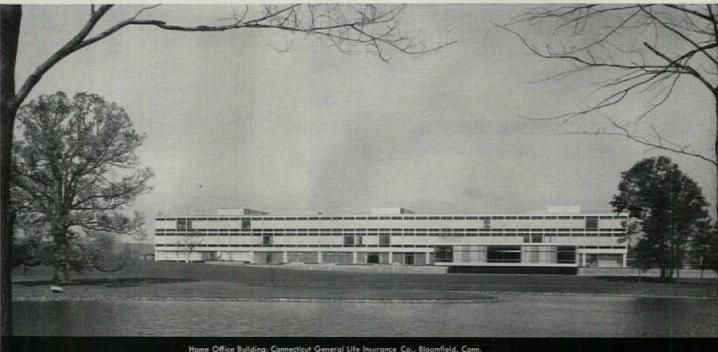
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WHY CONNECTICUT GENERAL CHOSE STAINLESS STEEL TO INSURE LIFE LONG BEAUTY AND DURABILITY



Home Office Building: Connecticut General Life Insurance Co., Bloomfield, Conn. Architects: Skidmore, Owings & Merrill Architectural Metal Fabricator: General Bronze Corporation General Contractor: Turner Construction Co. Engineers: Weiskopf & Pickworth (Structural); Syska & Hennessy, Inc. (Mechanical & Electrical) Consultant: Building Methods & Materials: Walter C. Voss

When the Connecticut General Life Insurance Company planned their ultra-modern office building in suburban Hartford, they carefully projected their needs into the future.

They wanted the nearest thing to "no maintenance" costs for 50 and preferably 75 years. Where initial investment in materials could cut down the yearly costs of cleaning, painting, and repairs they would make the investment.

That's why, throughout the building—both on the exterior and the interior—Republic's ENDURO Stainless Steel is used generously to protect, beautify, and reduce maintenance costs.

The main building—which contains some 400,000 square feet of floor space unbroken by a structural column—is penetrated by four garden courts, 72 feet square, making it possible for nearly all employees to be within 35 feet of a window. The cafeteria juts out from one end of the main building, cantilevered 15 feet over a pool. At the other end of the building, across a glass bridge, is a special department wing.

Once inside the metal and glass walls the stylish gleam of gracious architecture comes alive.

STAINLESS STEEL WINDOW FRAMES on all levels provide permanent beauty and low maintenance. ENDURO Stainless Steel was selected for the frames because of its high resistance to corrosion. It will not discolor with age. Will never need painting. The building's large window walls admit the outdoors and command scenic views of wide lawns, pools, and trees. Complete details and specifications on Republic ENDURO Stainless Steel for architectural applications are contained in Sweet's File, or can be obtained by sending the coupon below.



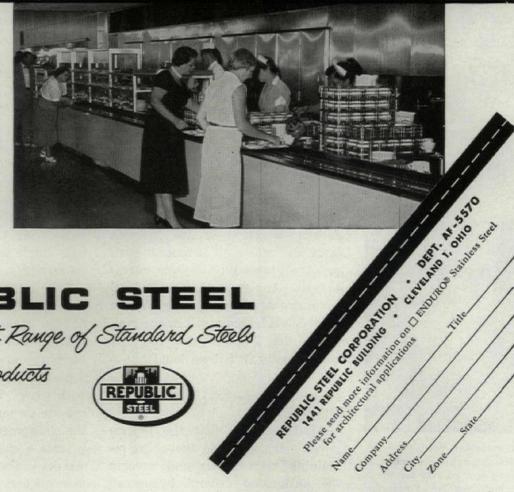


STAINLESS STEEL ADDS STYLE AND CHEER to the 800-seat dining room. Table and chair supports, column covers, and food-handling equipment of stainless steel assure attractive clean surroundings. All food-preparation and food-service equipment in the kitchen and counter pick-up areas are fabricated of stainless steel for peak sanitation and attractiveness. Dishwashing facilities are stainless steel, too. to resist corrosion and abrasion.

DOORS FRAMED IN STAINLESS STEEL open onto one of the four garden courts that penetrate the main build-ing. Although receiving heavy use, the doors resist scuff, scratches, and dents—thanks to the metal's strength and toughness. Like all the entrance doors, the first level and upper level fixed glass windows are framed in stainless steel to resist corrosion and weathering.



STAINLESS STEEL FOOD-SERV-ING COUNTER accommodates some 2,000 employees each day. The cafeteria is completely equipped with stainless steel -from refrigerator doors and back walls to steam tables, display cases, and working areas up forward. In the working areas, cleanliness is easy to maintain since everything with which food and dishes come in contact is made of easy-to-clean and keep-clean stainless steel. Republic offers architects competent metallurgical and engineering help in obtaining the best possible results with ENDURO Stainless Steel.



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BUILDING A 49TH STATE continued from page 115

age has done any master planning of its own as yet. So far, all the other cities have relied on the state-wide Alaska Housing Authority. Set up to build and operate some 420 units of public housing in the territory, the Authority has been expanded as the state's planning and renewal agency. Under its aegis, seven projects, involving nearly \$5 million in federal aid, have been initiated. The first of these, which went into the execution stage in June 1957, involves the clearance of 13 acres in downtown Fairbanks, a four-squareblock site which was beset with a typical Alaska slum: log cabins and shanties first occupied by a goldrush red-light district.

Indeed, for a pioneer land, Alaska is a peculiarly urban place. In part, this is because settlers came to Alaska not across the land but by

Urban renewal needs are illconcealed behind an overlay of neon signs applied over the woodframe buildings of Fairbanks' famed Fourth Avenue.

sea or air and settled in concentrated pockets. The airplane is Alaska's equivalent of the Conestoga wagon. Even today, Eskimos, who think nothing of hiring a bush pilot and small plane to visit relatives in other north country settlements, have never seen an automobile. The concentration of population in a few cities is sure to be alleviated by statehood. For under the statehood act, vast areas of federal land ("a national park of subcontinental dimensions," according to some critics) will be turned over to the state government, thus opening them to settlers. In the next 25 years, 103.5 million acres of land-roughly equal to all the land in California-will be selected from the federal domain. However, only 400,000 acres can be selected from Alaska's National Forest reserves and another 400.000 acres can be taken from other federal reserve land, which are now reserved for everything from moose to minerals. Since nearly 30 per cent of Alaska's land is now subject to some kind of federal reserve-and since less than 1 per cent of the new state's land can be selected from these 98 million acres of reserve land - Alaska's choice is obviously limited.

Despite this careful limitation, some congressional critics labeled the statehood bill the "greatest giveaway in history." Taken by themselves, the statehood grants are indeed generous. But when compared to the amount of land in Alaska (which is, in size, twice as large as Texas with Indiana thrown in), the grants do not seem unreasonable. Any fears that the federal government will run out of Alaska land should be tempered by the realization that 70 per cent of the total land remains in federal hands.

99-per-cent chaos

Alaskans hope that the federal government will soon survey its remaining reservations and revamp the antiquated federal homestead laws which now limit each homesteader to 160 acres-hardly enough for an economic farming operation today. With less than 3.2 million potential agricultural acres, the state needs optimum development. To aid this development, as well as to stimulate the process of getting the right land into the right hands for private development, the federal government must first step up its surveying. Although two-thirds of Alaska has been mapped from the air, only 1 per cent of the land (4,100 square miles) has been surveyed into sections and townships on the ground. The result, as anyone who has tried to obtain title to Alaskan land will testify, is a complete chaos in land titles.

While Alaska needs to be divided into townships to clear up the title mess, townships will not be needed as the local units of government. Because Alaska's constitutional convention recognized the limitations of the township-county type of government for today's needs, the new state will have the benefit of a unique form of local government. Alaska's local unit of government will be called the "borough." The boroughs, considerably larger in extent than the average counties in other states, will be shaped to the state's evolving regional pattern by the state legislature.

The unique provisions of the borough plan are two: that municipalities within the borough will have representation in the borough legislature and the legislature itself will have wide powers to establish or consolidate service districts within its territory.

The establishment of boroughs over the state's territory is but one of the tasks facing the state of Alaska. But with a locally responsible government, Alaska is finally in a position to attack all its problems with vigor. With the door open for private ownership and development, the construction—both public and private — that will take place in Alaska in the proximate future may astound everyone — including Warren Harding, if he could see it. END



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Include Allegheny Stainless in your design-thinking now. Learn how you can get the quality of stainless steel windows for much less than you think. For additional facts, and manufacturers' names, write to Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pa. Dept. B-12.

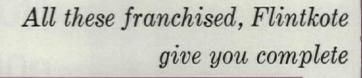


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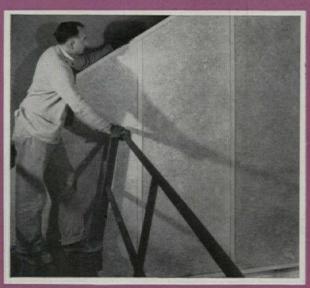


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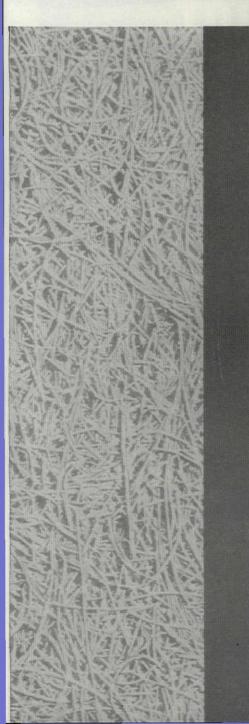
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WISCONSIN Green Bay-Edward T. Ver Halen, Inc. Madison-Edward T. Ver Halen, Inc. Milwaukee-Edward T. Ver Halen, Inc. (Duluth, Minnesota)-Northwest Roofing & Heating Co. (Minneapolis, Minnesota)-Curran V. Nielsen Co.

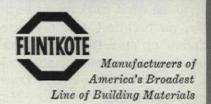
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HOW DO ARCHITECTS SELL? continued from page 105

licity. The display of their new buildings in newspapers and magazines is something that almost all architects strive for, and in the last few years they have been making increasing use of professional public relations people to help them get it. Firms such as Perkins & Will; Daniel, Mann, Johnson & Mendenhall; Welton Becket; Pereira & Luckman, and Kelly & Gruzen all either have publicity people on their own staffs or retain outside counsel to get press coverage. There is little agreement, however, on the value of professional public relations help—Kahn & Jacobs, for instance, hired outside counsel, then dropped it as not worth the cost. But there seems little question that the over-all trend is toward more use of publicity men.

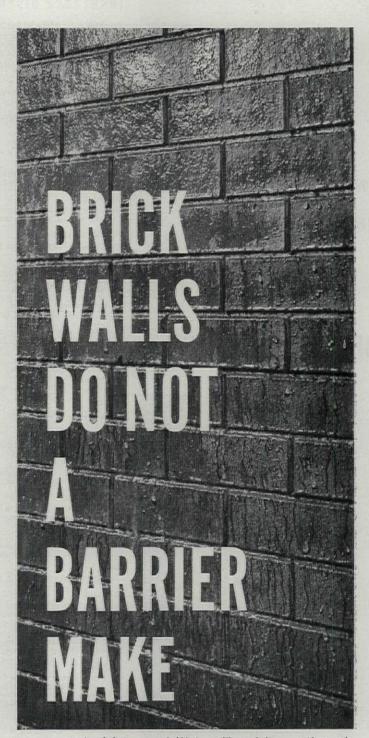
Paid advertising, of course, is not allowed. However, architects can have their work shown in advertisements run by building materials manufacturers, say, provided that the architects themselves are not pictured, and that there is no direct endorsement by the architect of the product. Few architects condone the practice of suggesting that material suppliers run such ads, but they concede, sadly, that some of their colleagues have probably done so.

The architect, if he is artful, can also do a great deal with direct mail. Technically, he is confined to sending mailing pieces to people he has personally contacted, and this is widely done, e.g., Voorhees, Walker, Smith, Smith & Haines regularly sends selected prospects a brochure called *Perspectives* which show the firm's recent work, and A. Epstein & Sons mails two publications: a monthly pamphlet on its new projects (circulation: 500) and a more expensive (cost to print: \$5 a copy) irregular presentation that goes to a selected group of potential clients.

The pitch direct

Except for the growing use of public relations, the changes that are taking place in architectural selling are not in the heavily emphasized area of indirect persuasion but in the field of direct solicitations. Most architects use the direct pitch infrequently, but when they do resort to it they, once again, use a fairly standard set of techniques.

Normally, most firms keep some sort of list of the companies and institutions in their area which do a fairly consistent amount of building. And they do contact these firms now and then (as they do public agencies) to see what work might be available. More frequently, an architect will use direct solicitation only to follow up on a tip that he has had from the grapevine that a certain company is considering building. Thus when Skidmore, Owings & Merrill picked up rumors that the Chase Manhattan Bank was going to build a new headquarters, Nathaniel



... nor mortar joints a seal. Water will work its way through any type of wall, unless proper flashing is installed.

Proper flashing means using the right material in the right places. Only Wasco offers a complete line of flexible flashing materials for all through-wall and spandrel applications... copper-fabric, copper-asphalt, copper-lead, fabric, plastic, aluminum.

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See Sweet's Architectural File Wa WASCO PRODUCTS, INC. CAMBRIDGE 38, MASS. TORONTO, CANADA

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Magnifique! That's the new Royal Embassy Hotel in Montreal. And its beautiful interiors are designed to endure, thanks to Panelyte, the decorative melamine laminate, so widely used throughout the lobby, lounges and guest suites.

From floor to ceiling, panels of rich Red Mahogany Panelyte provide a setting of grandeur as guests check in. Matching surfaces enhance the reception desks, too. In the adjoining bar and lounges, table tops and counter tops are beautifully protected with Panelyte. Look in any room or penthouse apartment; you'll find furniture, vanities and kitchenettes all surfaced the modern way-with Panelyte.

Here, then, is lasting elegance, for Panelyte resists heat, liquids, scuffs, stains, scratches and impact. Keeps its bright, new look over the years with just a damp cloth for maintenance. Never needs repainting or refinishing, since colors are *sealed in.* What a practical luxury!

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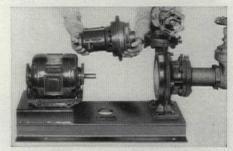
For both protection and beauty, the furniture in each luxurious suite is also topped with Panelyte.



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Send for descriptive literature and engineering data.



HOW DO ARCHITECTS SELL? continued from page 172

Owings flew in quickly from San Francisco, put out feelers, and finally asked David Rockefeller to arrange an informal meeting for him with John J. McCloy, the bank's board chairman. The meeting led directly to SOM's commission for the building.

As a rule, architects always try to get an introduction to someone near the top of a company. ("We never go after a job," says Stanton & Stockwell of Los Angeles, "unless we have a good friend pushing for us at the top.") Once an architect gets an introduction, he can usually count on at least one interview and a session at which he will make his pitch—show slides of his work, discreetly call attention to the awards his firm has won, present charts of his services, cost data on previous jobs, sample time schedules, and in general try his hardest to convince the client that he is the man for the job (that a presentation can clinch a job is often unfortunate, for the best salesman is not necessarily the best architect).

One of the principal reasons for the trend toward direct solicitation has been to step up the amount of periodic contact with clients and to establish routines for calls by partners and salesmen so that there is less chance of the firm missing a commission that it wants. Daniel, Mann, Johnson & Mendenhall, for instance, now has a special division for business development whose whole job is to systematize contacts made by the partners and technical men. Kelly & Gruzen has just set up a department of sales coordination to direct and tie together the selling activity of its associates. In Chicago, Perkins & Will uses a sales department not only to supervise field work but to set sales targets and make market analyses. Giffels & Rosetti makes active use of "new business activity men" to scout clients that look as if they might have a need for new buildings.

How far the current trend toward direct, aggressive, businesslike selling will carry is uncertain. However, there is no question that those firms seeking growth will continue to exploit direct selling as hard as they are able. They will undoubtedly be criticized for this, but they will be able to draw some solace from the now-classic statement of Architect Howard Shaw, a winner of the AIA gold medal, who in 1918 took a rather dim view of the AIA's ponderous procedures for determining what was or what was not becoming professional conduct. Said Shaw, who had a very realistic view of the need for survival: "I would like to have the canons of ethics graved on old lichen-covered marble-[but] they would be very brief-about like this: 'Be a gentleman if you can, but for God's sake be an architect." END





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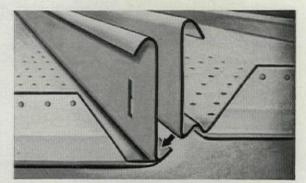
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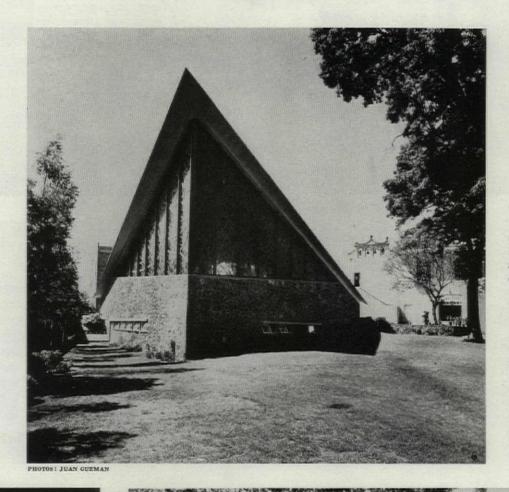


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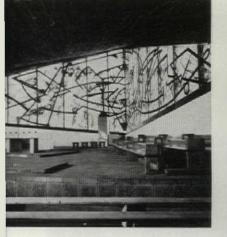
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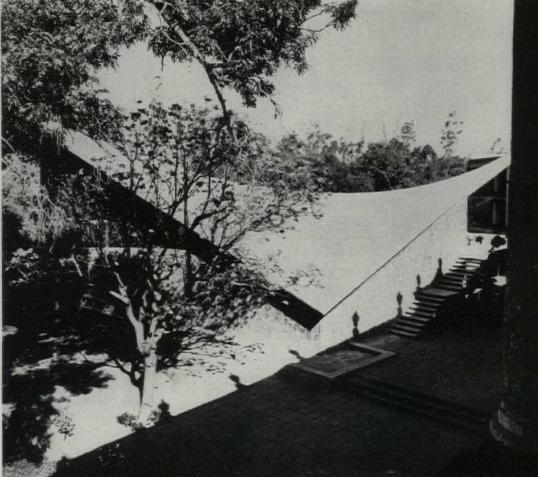
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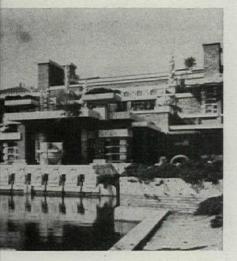
Mexico's great shell-maker, Felix Candela, engineered this striking hyperbolic paraboloid chapel for a seminary on the outskirts of Mexico City. Called Capella de Nuestra Señora de la Soledad, the concrete-shelled structure has a clear span of 120 feet. The two glass walls that come together at an acute angle above the altar (seen from inside in photo at left, below) compose a glowing red and yellow mural. Architect for the upswept chapel was Enrique de la Mora y Palomar.





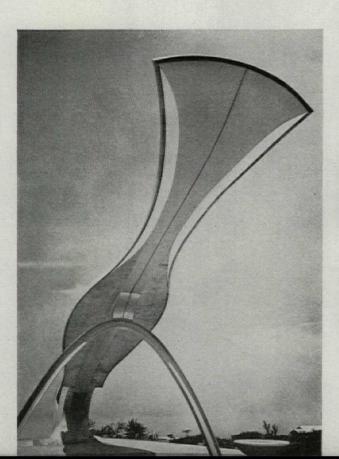


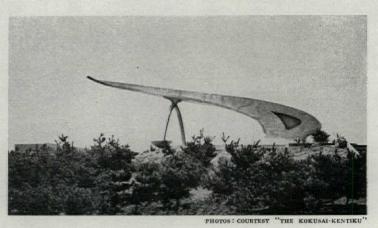




One of the less fortunate architectural milestones of 1958 was the addition of an annex (right and above) to Frank Lloyd Wright's venerable (1923), tremorproof Imperial Hotel (left). Whereas Wright's original hotel is long and low and ruggedly oriental, Architect Teitaro Takahashi's \$9 million annex appears to some observers to be just another slick product of the new international style. However, it has been criticized by Wright as being "neither international nor style."







JAPANESE LAUNCHING PAD

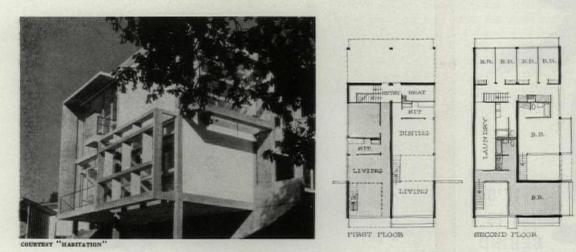
Poised as if to take off in a southeasterly direction from the Japanese coast is this graceful new monument to Philippine-Japanese friendship. Some 43 feet long, the concrete and steel structure is aimed directly at Manila. The monument resulted from the initial efforts of Prime Minister Kishi and the response of 5,000 Filipinos and Japanese contributors to his diplomatic idea. As a launching platform for mutual good wishes, the monument is effective indeed.

Abroad

HONG KONG ECONOMY

For an astonishingly low construction cost of \$51/2 million, this Hong Kong version of public housing was built to shelter some 12,500 of the colony's homeless refugees. Room rents range from \$10 to \$23 monthly. Fully as surprising as the economics of the development is Architect Eric Cumine's design, which is clean and orderly without being antiseptic. The panels between the concrete cantlivered balconies are painted in brilliant yellows, oranges, and blues; the shops located on the ground level between the stilts of the Ushaped building are the colorful, family-managed bazaars that have traditionally given Hong Kong its variegated character.



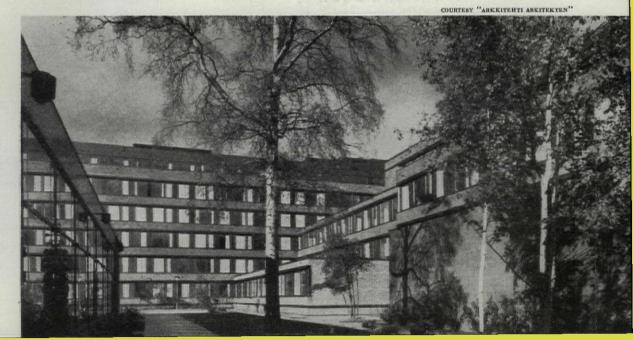


SWISS FAMILY

Swiss Architects Pierre Bussat and Jean-Marc Lamunière came up with a new solution for an old problem in Cologny, a suburb of Geneva. The problem: impecunious young couples were forced to live with their inlaws. The architect's solution: duplex villas like this one with ample accommodations for the young couple and children (including five bedrooms—see plan), a separate apartment for grand-mère, and a communal laundry.

FINNISH INSTITUTE

The National Pensions Institute in downtown Helsinki is one of Alvar Aalto's most recent works. On a cramped, triangular site, Aalto created a gigantic, institutional building that, because of its warm materials, carefully stepped masses, and constant focus on the garden courtyard (right), appears almost benevolent. The façade is made of especially manufactured bricks. The garden wall is of Finnish black granite. END



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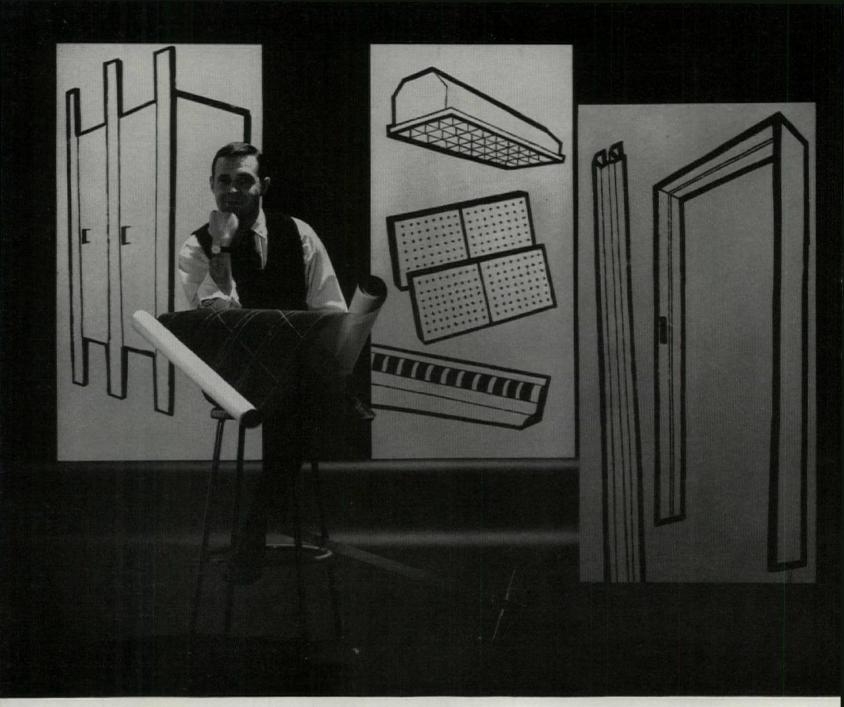
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