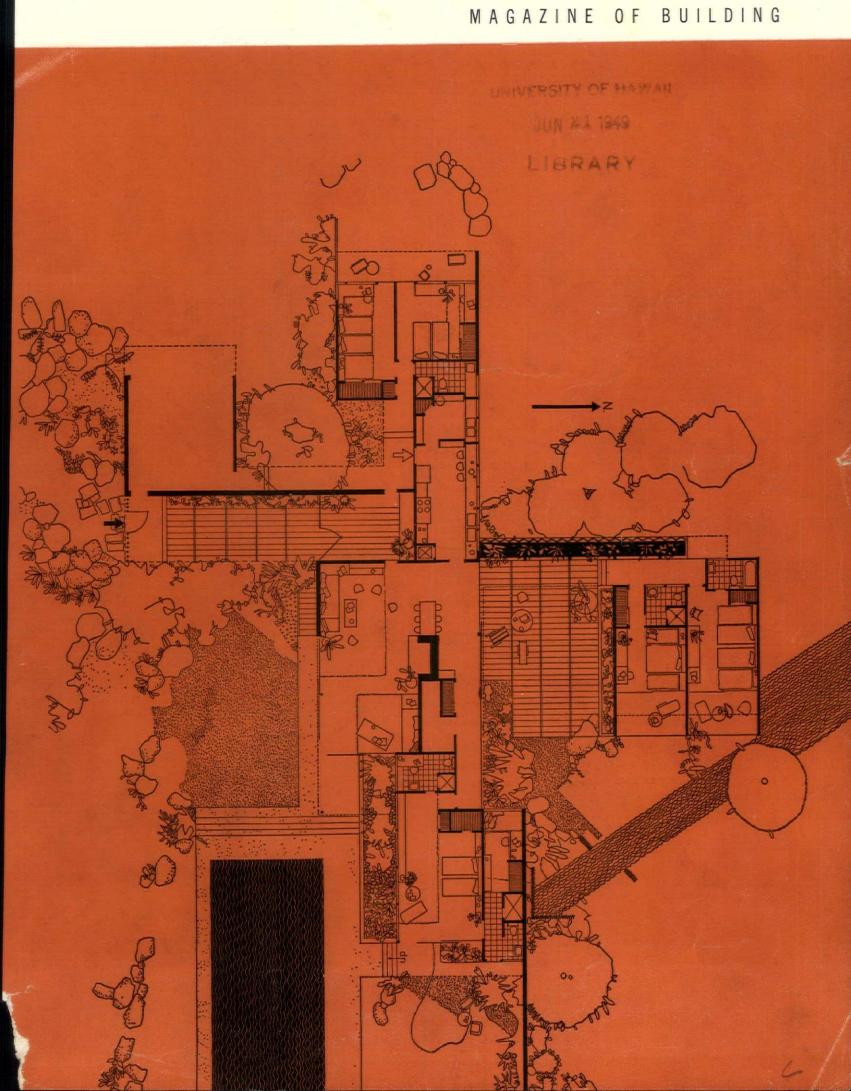
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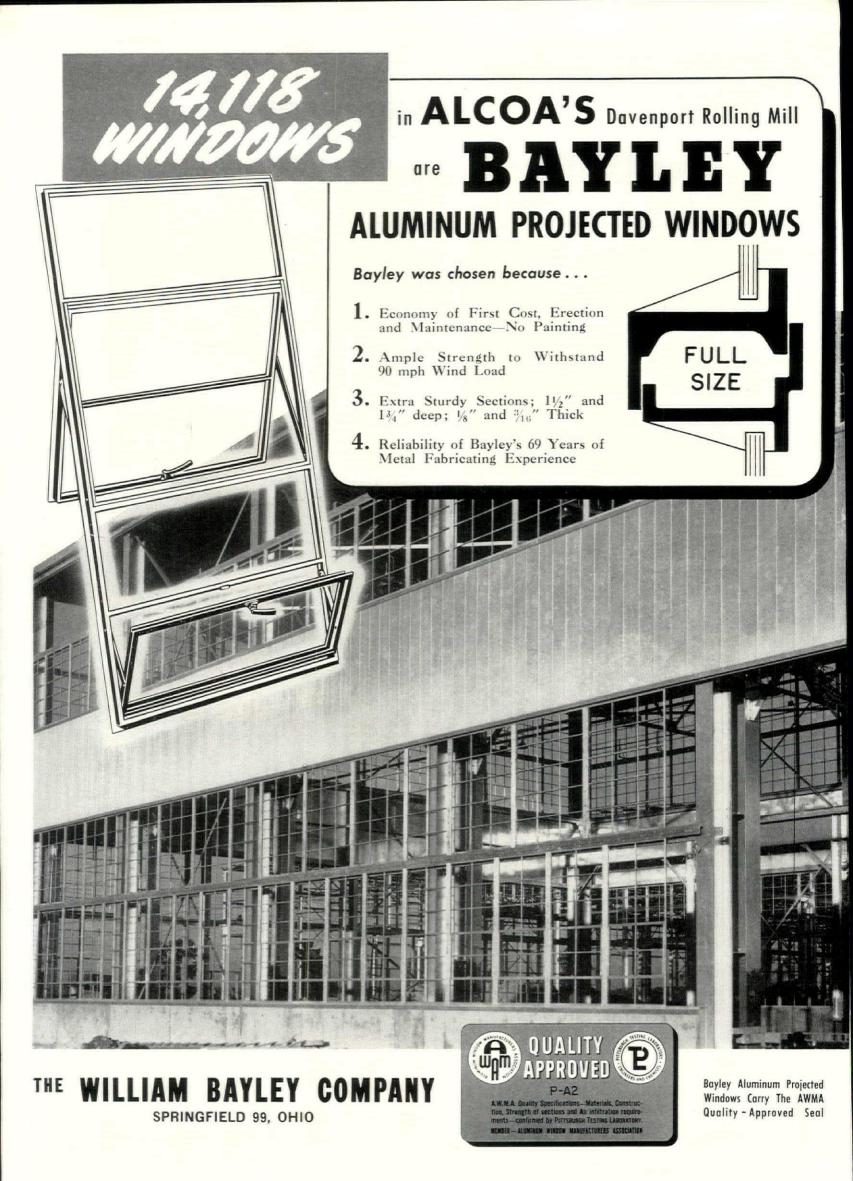
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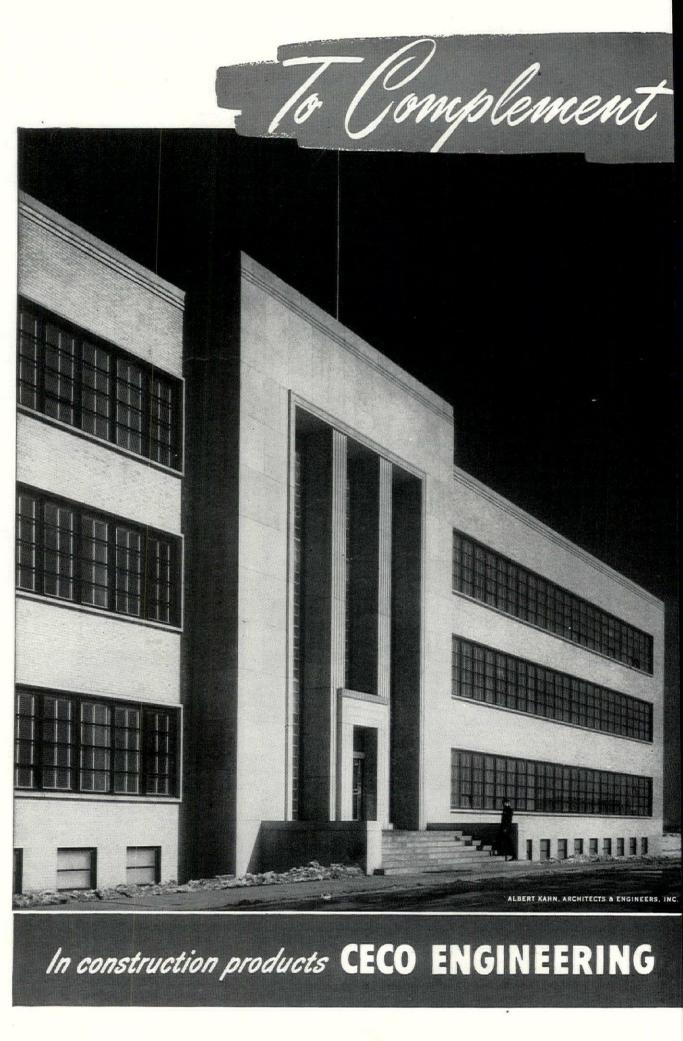
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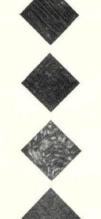
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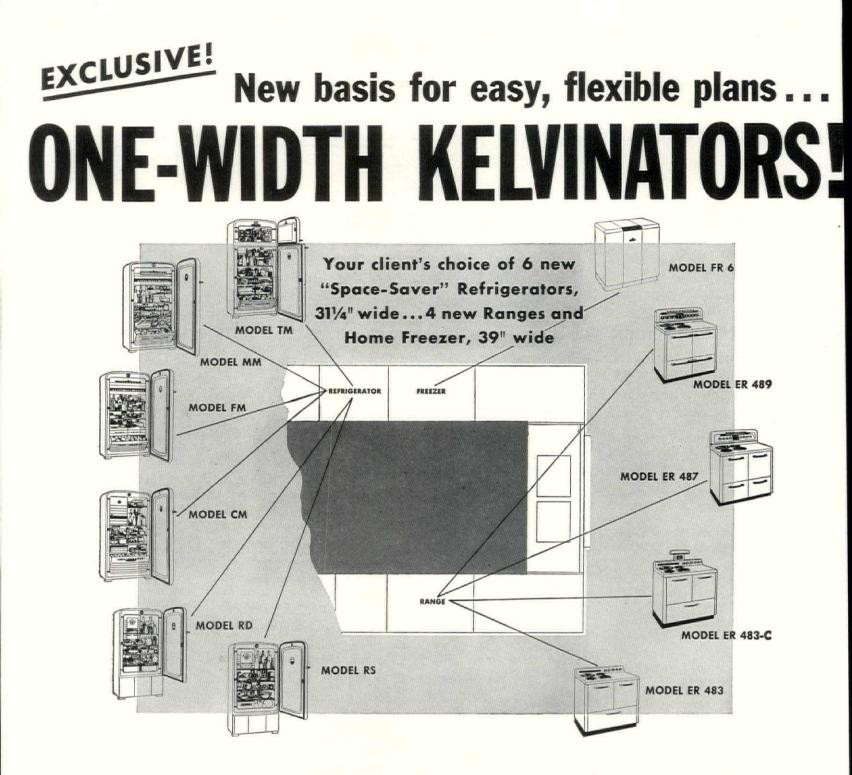
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#### BUILDING VOLUME, bolstered by public projects, runs close to 1948 record, will total \$18.7 billion by year's end. House starts will reach 825,000

As 1949 nears the mid-point, the outlook for construction is good. The *dollar volume* of activity probably will not surpass the \$18,775,000 of 1948, but neither is it likely to fall much below that record. Moreover, in view of the price decline that already has taken place and some still in prospect, the *physical volume* of work done this year may exceed that of 1948 and, aside from 1941 and 1942, of any year since the booming twenties. A considerable shifting is evident, however, in the composition of the construction total. Most outstanding is the growing importance of public construction in relation to private (see chart). During the last two years, the ratio was about 1 to 3.5. In 1949 it

promises to be 1 to 2.7, with the volume of public work reaching \$5.1 billion. This would be the largest peacetime volume of public construction in history—more than twice that of the depression years.

**Public up, private down.** This shift is mainly accounted for by increased highway building, and reclamation and flood control work and an array of public buildings of all kinds, among which schools and hospitals predominate. This vast job is mainly financed by state and local governments, which will account for about five-eighths of total public expenditures. Federal building construction is still being restrained, but will increase as the year proceeds.

As public construction increases about 21 per cent above the dollar volume of 1948, private work will drop about 6 per cent to \$13.6 billion. Declines will be most evident in residential and industrial construction, both of which have special problems of postwar adjustment to face.

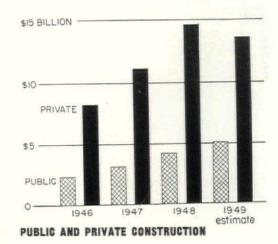
Residential building has proceeded for more than two years under a forced head of steam which resulted in steady high pressure on the supply of construction workers and materials and consequently on construction costs. This situation was not improved by the easy credit policy of the government, which encouraged buyers to enter the market when supplies were scarcest.

**Tapering demand.** The rise in cost has finally produced a retarding effect on demand. At the same time, some spectacular changes have been taking place in the character of demand. The end of the war brought about a rush of deferred marriages. The net number of new non-farm family formations is estimated to have been about 1,300,000 in 1947 (the peak postwar year) as compared with 725,000 from the middle of 1940 to the middle of 1941. From the peak, the volume has rapidly declined. In 1949 the net number of new non-farm families is likely to be only 700,000—800,000, and the decline will probably continue.

**Drop not drastic.** The indications, however, are that the drop during 1949 will be less drastic than the problem might indicate. The Bureau of Labor Statistics estimate of 244,000 dwelling units started during the first four months of this year, while about 13 per cent below the figure for the same period in 1948, was still 19 per cent ahead of the corresponding figure for 1947. It would still be possible without an unusual late season upturn such as occurred in 1947 to equal the 849,000 units started in that year. Probably, however, the 1949 total will be less—perhaps as low as 825,000.

Industrial building is in much the same situation as residential. Manufacturers during years of greatly enlarged demand and good profits engaged in enormous expansion programs. Private industrial construction rose rapidly from \$642 million in 1945 to a postwar high of \$1,702 million in 1947, not only to meet the new demand but to take care of important deferred work.

By 1948 many of the most urgent needs had been satisfied. A slackening of the abnormal postwar demand for many manufactured products became evident, while changing relationships between profits and building costs introduced a new caution in top management's decisions. The dollar volume of industrial construction during 1948 dropped 18 per cent from the year



before. Present indications are that the 1949 volume will total \$1.1 billion, 14 per cent below 1948.

**Strong Commercial.** Commercial building is strong, due mainly to advances in office building, warehouse, and loft construction. Private institutional construction—schools, hospitals, and churches—is still booming.

Through legislation and administrative action, government will exert a strong influence on the volume of work done. This is readily recognized in respect to public works. It plays a critical part also in residential construction. In 1948, about 40 per cent of the newly constructed dwellings were financed under the auspices of FHA or VA. It is possible that the mere raising at this time of the controlled interest rate on VA mortgages from 4 to 4.5 per cent could add as much as 20,000 to 40,000 units to the volume in the six months following such action. The speed with which public housing is started and the extent of its counterinfluence on private work are other imponderables. At this point, it seems unlikely that a federal public housing program inaugurated in June would result in more than 10,000 starts this year.

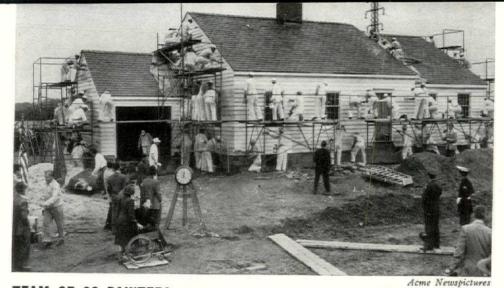
#### WASHINGTON

#### PUBLIC HOUSING bill moves unaltered from House committee to floor

After Public Housing's substantial victory on the Senate floor in April, its endorsement last month by the House Banking Committee was small-time stuff. The same tired voices of the opposition spoke out against it, but they had nothing new to say.

Public Housing's opponents on the committee, for their part, held their fire. They took their cue from Republican committee leader Jesse Wolcott, who had indicated that, instead of attacking the bill in committee, where the fight was hopeless, he would spear it with amendments when it hit the House floor. Another possibility: the opposition would offer a new, watereddown bill.

**Realistic most.** Even Wolcott, however, did not think that any attempt to amend the bill out of shape would succeed. (He told the press on several occasions that he didn't see how the bill could be stopped.) The



#### TEAM OF 96 PAINTERS does record-breaking job on wounded veteran's house

A  $2\frac{1}{2}$  minute paint job, applied by 96 AFL painters to wounded ex-Marine Bob Hoelzle's house in New Brunswick, N. J., last month, established a record (a little less than 4 man-hours, according to cold but unreasonable figures). The painters, each of whom covered 16 sq. ft. of space, donated their labor (ordinarily \$2.50 an hour). The \$22,000 house, equipped for a paraphlegic, is the town's gift to Hoelzle.



#### **VOICE OF BUILDING** beamed abroad

First voice of America broadcast from a construction site was beamed to German listeners from site of the Mutual Life Insurance Co.'s new home in New York City last month. Left, Producer Lew Danis and Roving Reporter David Berger interview Builder Godfrey Lutz. Other representatives of the Turner Construction Co. and the architectural firm (Shreve, Lamb & Harmon Associates) look on.

GARAGE DISGUISED as office building is constructed in Washington

Garage in office clothing, completed in Washington, D. C., last month, appears to be a five-story office building. Actually, from the second floor up, it is parking area for 200 cars. The building's 21,000 sq. ft. of office space is on the ground floor and underground, and is air-conditioned. The building, of reinforced concrete construction, was built by the Ring Engineering Co., Inc. Architect: F. Wallace Dixon. Designer: Francis L. Koenig.





realistic most which he, and the last stronghold of congressmen who want to keep the U. S. from playing landlord, can hope for is that the House will reduce the number of units to the Senate-approved 810,000 in six years—instead of the 1,050,000 in seven years which the Administration asked and which the House Banking Committee endorsed.

The committee hearings brought out one interesting sidelight in public housing opposition. The National Association of Security Dealers, who had endorsed public housing all along, appeared before the committee with blood in its eye. Its gripe: the commercial banks, which through their trade group (the American Bankers Association) had long expressed their opposition to public housing, had suddenly become aware of the attractiveness of the taxexempt local bonds through which public housing would be financed, and had persuaded the Senate to tack on an amendment permitting the commercial bankers to participate. That, maintained ASD (which would be permitted by existing law to underwrite public housing bonds), was not cricket.

Altering opposition. The committee listened politely, but decided not to tamper with the Senate action. Some committee members, however, wondered which would be the next industry group to alter its opposition to this new \$8 billion business.

#### RENT DECONTROL means more red tape, less red ink for landlords

Had Congress or had Congress not sanctioned a general rent increase? Almost nobody knew, except perhaps Housing Expediter Tighe Woods, whose "Fair Profit Formula" had started the question snowballing. (The formula would permit a net income boost to 30 per cent of the total yearly gross rent take for small landlords whose profit now is less than 25 per cent; a margin boost to 25 per cent for large owners who now realize less than 20 per cent of their total gross rental income.)

Apparently the 500,000 landlords who swarmed O.H.E. offices in the first week after Woods announced his formula thought there was a rent boost in sight. But most of the landlords' spokesmen thought otherwise. The National Association of Real Estate Boards, after a careful study of the formula, decided it would be of little or no help to the landlord.

**Painters, too.** There was, nonetheless, a possibility that, in some instances, both the

tenant and the landlord—and the paint manufacturer, as well—would profit. Although landlord groups solemnly held to their contention that a proper volume of repair and redecorating work could not be expected until the whole rent control program was ditched, some housing men thought that some landlords would find a new incentive for modernization. A property owner, for instance, who could increase his operating costs right to the point of the

International News Photos



LANDLORDS lining up in New York City for their new "fair profit formula" forms.

allowable maximum, would find it easier to get a rent boost. Robert Dowling, president of the City Investing Co. of New York was one of the first to discover that happy prospect. Said he: "In the new regulations, a premium has been put on good maintenance . . . better maintenance of properties will result in a higher rental allowance."

Amarillo, Tex., Independence, Kans., and University Park, Tex., were the first three cities to decontrol themselves under the Congress' local option plan. The American Municipal Association guessed that most cities of 100,000 population or more would retain controls.

#### FHA BUSINESS tied up by congressional penny-pinching

For the first time in its 14 operating years, FHA came close to experiencing a payless payday. Following congressional instruction, it had used up all its budget in the first nine months of the fiscal year. And even though self-supporting FHA had enough money to carry it through the rest of the year, congressional permission for it to do so was slow in coming.

A last minute emergency measure assured FHA's 15,000 employees of a paycheck, but it also slashed \$800,000 from the \$4,800,000 which FHA had asked, thus raising a considerably more serious issue: FHA, already impeded in the processing of its spring applications by the temporary shortage of funds, said flatly that the cut in expenses would hamper it still more.

**Penny-wise.** The U. S. housebuilder could applaud, as heartily as any other citizen, any attempt toward economy on Capitol Hill. But as he drummed his fingers on his desk last month and waited for his longdelayed applications to come back with the stamp of FHA commitment, he could also see the merit in FHA's contention that it was unable to do its job effectively as long as Congress kept it on short rations and insisted on approving its every expenditure. To the builder, whose resentment against any form of government interference which kept him from building houses was by now

#### white hot, it seemed ludicrous that Congress should hamstring the one business-like government agency which was actually helping the building industry—and doing it at a profit.

There was a plan afoot to make FHA less dependent on Congress, but it was tied up in the private-enterprise housing bill, which was in turn tied up in Senate committee, where it would probably stay tied up by congressional consideration of public housing. And if there were penny-wise, pound-foolish congressmen who couldn't see the unfortunate symbolism in that, there was many an exasperated private builder who was willing to point it out.

#### DESIGN

#### TREND TO MODERN slowed by public ignorance and architects' laxity

Why has the American citizen, who will spend all of his money and most of his time to modernize his car, his radio and his wife, resisted every attempt to modernize the house he lives in? Why has the U. S. housebuilding industry failed to conform with the needs of a changing society?

Eight architects and designers conducting a symposium on designing the modern home in Baltimore last month took time out to list a few of the answers:

A public lack of knowledge of the principles of modern architecture, and an unwillingness to learn.

The tendency of some architects to cater to public tastes rather than guide them.

▶ Fear of current social forces, from which the old-fashioned house is felt to offer protection.

Symposium members were Architects Charles M. Goodman, Marcel Breuer and Oscar Stonorov; Dorothy Liebes, textile designer; Ann Hatfield, decorator; Michelle Murphy, industrial design research consultant; Eliot Noyes, furniture and industrial designer; and Daniel Urban Kiley, landscape architect.

#### HOLLYWOOD'S FOUNTAINHEAD: all dynamite will be charged to clients

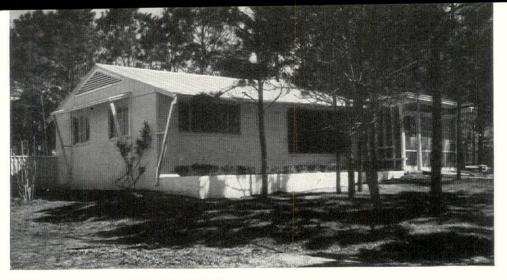
When, in 1943, Novelist Ayn Rand's tempestuous *The Fountainhead* was published to "do for the architects what *Arrowhead* did for the doctors," architects released a howl of anguish which was clearly heard by everyone but the Warner Brothers in Hollywood. Blithely that studio went ahead with its plans to preserve on celluloid the architectural gymnastics of one Howard Roark -a fabulous complex, as one reviewer put it, of "St. Francis, Frank Lloyd Wright and Mandrake the Magician." Warner Brothers decided to add something else to this trinity—Gary Cooper.

As the film neared its release date, the architects set up their howls again. George Nelson, who at the time of the book's publication found a disturbing similarity between the author's social views and those encompassed in *Mein Kampf* (FORUM, Aug. '43), took one look at the incredible stage sets and exploded again (this time in *Interiors*); "the silliest travesty of modern architecture that has yet hit the films."

Titters and temper. In Los Angeles last month, 250 California architects sat politely through a preview of the film, tittered only occasionally. But when the studio's publicity department told California newspapers that the preview audience had given wild approbation to the movie, architectural tempers boiled.

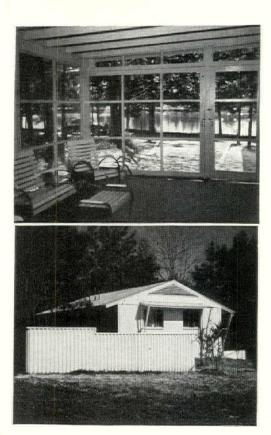
John Landon, secretary of the local A.I.A. chapter, called it "strictly a grade B production . . . a kind of Dr. Kildare picture." Architect Ted Criley, in the Southern California A.I.A. chapter's monthly *Bulletin*, lamented that "any resemblances between this muttonhead (Roark) and a real architect are not evident . . . Some scareeasys," he noted, "have wondered whether or not architecture can survive the release of *The Fountainhead*. Personally, I would venture that architecture's chances are a great deal better than those of the motion picture industry."

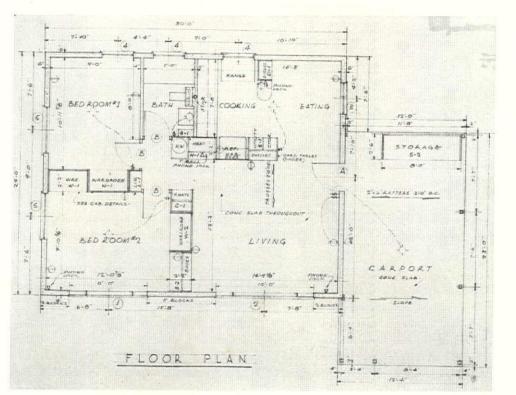
**Criminal neglect.** Architect Victor Gruen (see p. 64) penciled an indignant letter to *Arts and Architecture*. He was particularly incensed by the jury acquittal of the fictional Roark, who had bombed his own



L.S.U. DEMONSTRATION HOUSE offers two bedrooms, screened car port, aluminum roof for \$5,041

A well planned and designed house, with no wasted space, no waste of materials and a minimum of labor can be built more cheaply than anyone suspects, according to Louisiana State University's housing research section. To prove it, L.S.U.'s Research Director O. J. Baker, with only \$5,041 (and no general contractor's fees to pay), constructed a two-bedroom concrete house, with a screened car port which doubles for a porch. Cost included sub-contractor's profit and retail prices on all materials. Built of 6 in. concrete blocks (whose only finishing inside and out is waterproof paint), the house has aluminum windows, concrete floors, and an aluminum roof that reflects up to 90 per cent of the sun's rays. Without the carport, picture windows and two-thirds of its storage space, the house could be built for \$1,000 less, but, says Baker, "its owner would not be happy in it." Attached to the demonstration house, but not included in the cost, is a light-weight corrugated asbestos-board fence which could be put up for \$150. Baker notes that a contractor's fee would include overhead plus approximately 10 per cent of the cost of the house.





housing project because it had not been executed in accordance with his design. "Though believing that the creative artist has definite rights to his design," wrote Gruen, "I find Mr. Howard Roark . . . very guilty of criminal neglect . . . If I had been on that jury, I would have asked the district attorney to extend the case to include the lady who wrote the book and the screenplay and who neglected . . . to acquire the slightest knowledge of ... contemporary architecture, which she obviously is confusing with contemptuous architecture . . . I would propose to charge her with damaging the reputation and the business of the contemporary architect."

Other architects who viewed the film had their own way of expressing their attitude toward Roark's temperamental bombing. The day after the preview several architectural offices in Los Angeles sprouted this sign: "Dynamite for artistic integrity will be charged against the client."

#### LAW

#### STATE BUILDING CODE moves toward reality in New York

New York's Governor Thomas E. Dewey, who several months ago declared war on the many "Seventeenth century" building codes in his state (FORUM, Jan., '49), was gaining victories right along. Before he left on a European trip, he signed legislation granting him a commission to draw up a uniform state-wide building code (which would be offered to—but not enforced upon —local communities) and appointed a 132member State Committee on Housing and Construction to recommend appointees to the Code Commission.

The State Committee, composed of labor leaders, builders, architects, lenders and laymen (all unpaid), and headed by State Housing Commissioner Herman T. Stichman would investigate, as well, the entire problem of promoting low cost housing in New York State.

#### DISCRIMINATION and zoning impede Negro housing in Dallas

Thirty-six year old Dallas Builder Bill Cothrum has made a career of venturesome projects. Thirteen years ago, he got tired of working at a drafting board for \$25 a week, so he went into business on his own with \$125 of borrowed money. Today he owns and runs a \$10 million building and real estate management firm. His latest venture had him in hot water last month, but Cothrum insisted he wasn't worried.

Businessman's approach. Dallas, like most Southern cities, has a great need for

## NEWS

Negro housing. Several efforts have been nade to fill it, but not until Cothrum deided to tackle it had anyone approached it rom a businessman's point of view. Cothrum spent a year studying the Negro's nousing needs, discovered that the Negro in the market for lower cost housing in Dallas was economically stronger than the white man in the same category. (One reason is that practically everyone in the Negro family works.) Cothrum realized that it was a mistake to figure the Negro as a buyer of cheap shacks, as many other Southern builders had.

Keeping his plans to himself, he quietly began buying up a 22-acre tract partially adjoining a Negro neighborhood, but also adjoining white sections. He drew plans for a 408-unit development, which he would rent to Negro families for \$35-\$45 a unit. Then he went before a meeting of the city plan commission and asked for permission to build apartments in the area (which was zoned for single unit dwellings).

**Irate whites.** By that time, however, the news of what he intended to do had leaked out, and a group of irate whites from the neighborhood of Cothrum's project showed up at the meeting, shouting, praying in public, and threatening violence. The horrified commission (which had no authority to draw a color line) turned down his multi-unit request.

Builder Cothrum patiently made plans to take the matter up with the City Council, which has the power to over-rule the plan commission. Venturesome Cothrum was confident of the ultimate success of his plan. Said he: "It takes guts, but brother I've got them."

#### LABOR

#### HIGHER WAGES sought in preparation for upswing in public building

Almost all industry groups had been studying hard for many months the new ABC's of the building market: Alarm, Buyers' market, Concessions. And almost all groups had shown that they were serious about their studies: contractors were working hard with the firm bid, housebuilders were exhausting every method of building cheaper houses, everyone was cutting prices.

In some areas, Building Labor had shown that it was as adept at learning as anyone else—in New York City, for example, where bricklayers had said they would be able to get along for another year on their present earnings, (FORUM, May, '49) and in St. Louis, where the AFL Steamfitters became the tenth building union to announce that it would seek no wage increase.

Evidence not clear. But elsewhere, evidence of Labor's studying was not so clearly found. A state-wide steel workers strike (for a 25 cent hourly increase) in Colorado tied up more than \$15 million worth of construction in Denver alone. A Painters' Union strike in Cleveland idled 800 workers. In Houston, where building stood dead still for 88 days last year, union bricklayers stopped working for members of the contractors' association when they didn't get the 621/2 cent increase they demanded. Strike talk ran through construction jobs in Chicago, Cleveland and Minneapolis. It wasn't yet clear if the entire industry was to be shaken by another round of wage increases, but these signs were disquieting.

An industry harassed by the certain knowledge that it must stabilize itself—and soon—and a nation of strike-weary consumers might be permitted a suspicion that labor was a dull student.

**Obstinate student.** Labor, however, although often an obstinate student, was never a dull one. It knew the ABC's all right, but it knew arithmetic, too. It knew that whatever decline there would be in private construction would be countered by the large public works program ahead, in which Labor would have a protected position. More firmly and fully organized than ever before, Labor could certainly maintain its position during whatever lay ahead. It might even be able to improve it. At any rate, it looked as if it might be going to try.

#### MONEY

#### CREDIT TERMS relaxed to offset stockpiling of consumers' cash

As housebuilders turned the heat on sales for the first spring in nearly ten years, one portentous fact loomed: Americans are saving their money faster than they are spending it. The Department of Commerce said that U. S. customers have more money to spend than they had last year, but they are cagily socking it in the bank.

**Easier lending.** And while the money piled up in the banks, the government finally moved in these ways to make it easier for bankers to lend it out:

Belatedly agreeing with bankers that the current economic scene looks a little more like deflation than inflation, the Federal Reserve Board knocked down the bank reserve requirements it had hoisted up only six months ago. This means that the 7,000 banks who are members of the Federal Reserve System will have \$1.2 billion more money available for loans-or about double the funds they had one week before the Board's ruling. But back of the Board's move was a condition no amount of federal credit tinkering was likely to influence: business men have been cutting their borrowing at a record pace since the first of the year. To Building Money, the reserve relaxation meant that the banks would show bigger than ever as competition in the mortgate market. To builders it meant that any building customer who can be sold will have little trouble in finding financing.

The Federal Housing Administration announced that Title I short-term loans for home modernization and repair will no longer carry a requirement of 10 per cent cash down. Alert contractors and material dealers stepped up sales campaigns to see how many new customers this would float into the already brisk home modernization market.

The Federal Reserve Board also relaxed further its wartime "Regulation W" curb on installment credit. From now on, down payment on all items except automobiles will be cut to 10 per cent. For automobiles, the down payment requirement stays at onethird of purchase price. Time limit on credit is extended from 21 to 24 months, and items costing less than \$100 are exempted from regulation. To lenders interested in the "open-end mortgage" (see p. 102), who have hoped that Regulation W would be relaxed entirely, this was disappointing. It meant that equipment items still cannot be included for long-term credit under additional mortgage advances.

#### SAVINGS AND LOANS are beating the banks, but is the public confused?

Savings and loan associations have been increasing their share of the nation's savings faster than anybody else over the last ten years. Savings and loan accounts have recently been rising at an average of 14.3 per cent a year. Against this, life insurance companies can show an average gain in policy reserves of only 8.2 per cent. Savings bank deposits have been increasing by an average 6.3 per cent; commercial bank time-deposits by 4.6 per cent.

One reason why the savings and loans have been running away with the lion's share of savings is that they pay the public

## NEWS

more for its money (21/2 to 31/2 per cent as compared to the savings banks 11/2 to 2 per cent). Another reason is that the depression days, when many a "building and loan" shut its doors, are by now only a dim memory and the federal government stands back of every \$5,000 worth of shares in the 1,478 federally chartered associations. But, perhaps the biggest reason is the great postwar expansion of the housebuilding industry: the savings and loan men have had to campaign aggressively for funds to keep step with the emergence of large-scale housebuilding jobs. The appearance of housebuilding in a thousand new neighborhoods has also brought pressure for the establishment of savings and loan branch offices.

**First look.** The bankers have not liked the way things are going. They think that the federal government, now embroiled in many kinds of banking business, is putting too much of its weight back of savings and loan lenders. The trouble boiled over when the bankers took a look at the first draft of new regulations which the Federal Home Loan Bank Board is proposing to enact.

These regulations, the bankers charged, would do a great deal to confuse the public about the difference between shares in a savings and loan and demand deposits in a bank. They did not like the way the proposed regulations' mentioned "savings accounts." They were even more scandalized to find that the regulations airly referred to a savings and loan association as a "federal savings association." Furthermore, the bankers thought the savings and loans were being given too much headway to stake out branch offices.

"This is merely an attack on a competitive group which has been growing too fast for its rivals' comfort," savings and loan men calmly replied. "Do the bankers own the term 'savings account'? In a mutual savings bank the depositor is an owner just as he is in the savings and loan association."

**Detailed rebuttal.** A more detailed rebuttal came from FHLB board member O.K. LaRoque, chairman of the committee which had drafted the revised regulations: "The amendments proposed are nothing more nor less than a mere strengthening, streamlining and updating of existing regulations. They are in no sense intended to change either the type or method of operation. . . .

"The proposed regulations correctly define the term 'savings account' as meaning 'the monetary interest of the holder thereof in the *capital* of a federal savings association'....

"The use of the term 'federal savings

association' is descriptive only and is used throughout the regulations for brevity and clarity....

**Tough talk.** "Since 1934 the regulations have made provision for the establishment of branch offices under certain conditions." The only change made in this regulation is a strengthening of standards under which such branches may be established . . . When an application for a branch is filed . . . we (make) special reference to the needs of the community and whether or not such branches would be injurious to existing thrift institutions. No branch is authorized until after a full and complete notice has been given to the public and a public hearing held . . ."

But last month FHLBB still had not issued its revised rules and charter amendments. Savings and loan men were beginning to wonder if the tough talk of the big banks had been more intimidating than FHLBB would like to admit.

\* At the end of 1948, 44 federal savings and loans were operating 52 branches.

#### MATERIAL

#### PRICE DROP at lumber mills will soon hit the yards

Not until lumber dealers have cleaned out all the stocks on hand—which they bought at higher prices—will retail lumber sales reflect the 20 per cent decline since fall which lumber has felt at the mill level. But that day, the National Retail Lumber Dealers Association decided at its annual meeting last month, is not far away.

Before it adjourned, the Association's board had a joint session with the board of the National Lumber Manufacturers Association, which was meeting in Washington at the same time. Conscious of the nearness of the Justice Department, the two groups carefully avoided any such anti-trust talk as prices and production, safely discussed instead the need for good dry lumber and public relations.

#### RESEARCH CONTROL program delayed by lack of industry support

The newly-formed Building Research Advisory Board, which the industry had hailed as just the agency it needed to tie together all building research (FORUM, Apr. '49), was already having its troubles. At the end of its third month of existence, BRAB, which its founders had devoutly hoped would be fully supported and financed by the industry, had not yet enough money even to hire a director.

#### PEOPLE

Major General **Philip B. Fleming**, ace trouble shooter who has straightened out tangled government agencies since the early days of the New Deal and headed the Federal Works Agency since 1941, moved on to a much hotter spot. By presidential appointment he will head the U. S. Maritime Commission, one of the chief targets of the economyminded Hoover Commission. Replacing Fleming at FWA (which handles much of the government's construction activities) is 44-year old **Jess Larson**, erstwhile War Assets Administrator.

Harvard Economist **Sumner H. Slichter** looked into his usually reliable spy-glass and saw nothing depressing ahead—particularly not for construction. The housing and automobile industries, he said in Chicago, will be bolstering factors in the economy for several years. "I do not believe that a substantial drop in expenditures on housing or on industrial plant and equipment is likely in the near future...."

With Congress ready to authorize (as part of the public housing bill) a super research program, BRAB's first critical test would soon be thrust upon it. HHFA Administrator Raymond Foley (who will conduct the research) wants BRAB to let him know the kind of research it wants. And, many were suspicious that government research might be turned into a government witch hunt unless the industry could steer the program along constructive lines.

#### MANUFACTURERS' EARNINGS reflect change in building market

The net profits of 12 of the largest material and equipment manufacturers for the first quarter of this year, listed below, reflect the recent changes in the building economy.

Company	1949	1948
American Radiator-Stan-		
dard Sanitary Corp	\$3,742,000	\$4,911,386
Celotex Corp	455,631	1,791,056
Flintkote Co.*	725,871	1,560,708
General Electric Co	26,702,978	25,389,149
Johns-Manville Corp	2,883,431	2,307,052
Libbey-Owens-Ford Glass		
Co	3,895,761	3,156,533
National Gypsum Co	1,514,329	1,521,933
Owens-Illinois Glass Co.†	11,958,763	9,730,221
Pittsburgh Plate Glass		•
Co.***	7,813,756	6,667,895
U. S. Gypsum Corp	5,311,542	5,332,029
U. S. Plywood**	6,321,500	5,574,200
U. S. Steel***	49,928,670	27,857,341

\* 12 weeks to March 26. \*\* 9 months to Jan. 31. \*\*\* Net income. † 12 months to March 31.

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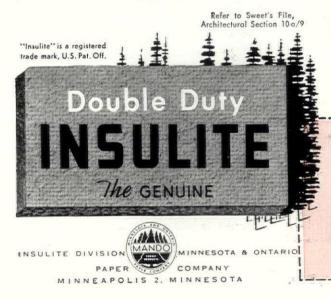
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#### INTERNATIONAL CONTEST, sponsored by Spanish go ernment, to spur building of 50,000 houses a year

NEWS

The Spanish government wants to build 50,000 homes a ye for its low income families. To get this construction progra started, it has announced an international competition, a will award 100,000 pesetas (about \$3,000) for the best proje submitted. Competitors, according to the conditions of t competition, may submit any system of construction a type of building which they consider most advantageous.

The houses are to be built anywhere in Spanish territo but always in groups of over 500, and must be of suitab design for Spanish urban districts. No limitation is place on the form, arrangement, or dimensions of the dwellingsonly that they satisfy the "need of the average Spanis family." Only materials and machinery of Spanish man facture will be used; however, if competitors deem it essentia they will be permitted to supplement Spanish machine with some imports, provided the cost of the imports does n exceed 5 per cent of the total cost.

Competitors must submit their projects, together with scheme describing the methods of work and organizatio labeled "For the Concurso Internacional 1949" to the Institut Tecnico de la Construction, at Ruiz de Alarcon, 25, Madri Spain, before November 15. The award (plus any addition prizes which the Institute wishes to grant) will be mad before March 31, 1950. Further information may be obtained from the Institute.

#### HAILE SELASSIE PALACE is another subject of world wide design competition

Inveterate competition winner Caleb Hornbostel was one of at least 14 U.S. architects to submit designs for a palace for Ethiopia's Haile Selassie. Architects entering the interna tional competition, which closed May 1, were not restricted to any architectural style, but asked to remember that the "ensemble shall be of a sober and majestic style." Judging of the designs will probably be in September. Prizes wil total \$20,000.

#### FIRST WOMAN WINNER of New York A.I.A. Chapter' traveling scholarship is Texas architect



For the first time in the 37-year history of the New York chapter of the Ameri can Institute of Architect' annual competition, its 1949 LeBrun Traveling Scholar ship of \$2,800 went to woman. The winner, Miss S. Agatha Turner, of Lubbock, Tex., submitted what the judges considered the best drawing for a subur ban department store building. The winner must now

study architecture for at least six months outside the U.S. and prepare a report for the institute.

#### SITE PLANNING BOARD is developed by Stanford University to help schools layout new plants

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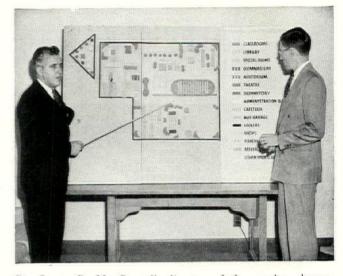
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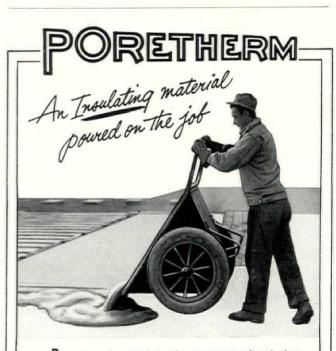
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Dr. James D. MacConnell, director of the service, demonstrates above to Education student William Woodworth. The metal board makes it possible to show an accurate miniature reproduction of any proposed school project on a vertical surface. The models, representing various facilities, are affixed to the board by small inset magnets, and can easily be moved anywhere on the board. Graduate students working under Dr. MacConnell, are trained in the technique of school plant planning in terms of curriculum and community needs. Says Dr. MacConnell: "We cannot overemphasize the fact that school plant planning is an educational function—one in which school administrators and teachers should participate."



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2. G-E FIBERDUCT RACEWAYS can give a shop like this complete flexibility of layout – permit the shopowner to move displays, freezers, desks, counters, and departments without elaborate electrical work. An over-all pattern of General Electric Fiberduct underfloor raceways can be installed in old buildings as well as new. With this system, new outlets are added easily and quickly by pulling wires through inserts and installing outlet fittings.

3.FLAMENOL\* TYPE TW WIRE — the small-diameter, Flamenol

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building wire that's made by General Electric — is right for commercial buildings of all sizes and types. For a store of this kind, Flamenol Type TW can speed installation, because it's small in diameter, smooth-finished. On remodelling jobs Type TW increases the number of wires that can be installed in existing raceways.

4. CONDUIT you can depend on for years of service life is, as always, General Electric white or black rigid conduit. Use either G-E "White," the hot-dipped galvanized, Glyptal\* lacquered conduit, or G-E "Black" – the conduit with the protective coat of tough enamel. Both give the kind of protection you need.

**5.** FLUORESCENT FIXTURES, too, do a dependable day-in, dayout job of store lighting when they're equipped with General Electric wiring materials. Although General Electric does not manufacture fixtures, you'll find that many fluorescent fixture manufacturers equip their units with General Electric materials. Check the fixtures you buy for heat-beating Deltabeston\* Type AF fixture wire and General Electric Turret\* lampholders. Make sure the fixture you buy has General Electric Watch Dog\* starters, and put Watch Dogs on your list as a replacement "must."

On any wiring job, see your General Electric construction materials distributor. He's a good source of advice and he can supply the materials you need to do your job best. For information on General Electric construction materials, write to Section K20-64, Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut.

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WESTBROOK PARK Warner West Corp., builders of 2,000 private homes in Upper Darby, Pa., selected Welbilt ranges for their kitchens.



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GLEN OAKS VILLAGE More than 1,000 families use Welbilt ranges in the Gross-Morton development, Bellerose, Long Island.

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On 2400 acres of suburban parkland adjoining Chicago Heights, a new city is taking shape . . . Park Forest . . . project of American Community Builders, Inc. . . . another Welbilt installation.

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## For new decorative appeal . more effective heating

Vulcan's new Type FS Front Cover not only contributes new decorative appeal but also adds new effectiveness to Vulcan Baseboard Radiation, engineered specifically for the utmost in heating comfort, ease of installation and minimum maintenance.

Combining both radiant and convection heat the FS Front provides a more effective radiant heating surface. Convection currents directed away from immediate contact with wall surfaces provides better circulation of warm air, preventing high concentration of dust particles where smudging conditions may exist. Entirely new damper feature, installed on request, provides for control of directional flow of convection heat.

For full details on this attractive new Cover for Vulcan Baseboard Radiation, write for Bulletin #52.

Complete information in Sweet's Architectural File.



THE VULCAN RADIATOR COMPANY **26 FRANCIS AVENUE** HARTFORD 6, CONN.

RADIATOR MANUFACTURERS FOR OVER TWO DECADES

#### (Continued on page 26)



One Change

## for this COMPLETE dependable shipping service!

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Whether you're the sender or the receiver, it's sound business judgment to say, "Ship it RAIL-WAY EXPRESS !"



#### LETTERS

#### THE BUILDER'S HOUSE-1949

#### Forum.

Are you only a trade sheet? Consumers' magazine? Speculative builder's guide and haven?

I guess we say goodby to the old FORUM which so ably presented all points of view -the architects, the builder, and the supply people....

.... I am dismayed to view the direction your magazine is going.

WILLIAM WILSON WURSTER, Dean

School of Architecture and Planning Mass. Institute of Technology

Cambridge, Mass.

#### Forum:

May I congratulate you on the April issue? You have capsuled so much valuable information that is useful to architects as well as builders that I, for one, feel that this one issue is worth a whole year's subscription.

Naturally, I could wish you had more on the excellent Gregory Ain development in Los Angeles and a little less emphasis on the pseudo-colonial, but what I feel that you have done better than anyone else could, is the reportage.

PHILIP C. JOHNSON, Director Department of Architecture The Museum of Modern Art New York, N. Y.

#### Forum:

I am really impressed with the outstanding work you are doing . . . Everyone that means anything in the building industry appears to have read the April issue and commented favorably.

FORUM is to be congratulated, no fooling! ALBERT BALCH, President Crawford & Conover, Inc. Real Estate and Building Seattle, Wash.

#### Forum:

. . . an education in itself for Home Builders. There is a wealth of construction information, as well as ideas and suggestions between the pages, which should be very helpful to the entire industry.

We have mentioned the issue in our weekly bulletin to our 400 members and feel sure you will have many interested readers in this area.

**GROVER GODFREY** Executive Vice President Home Builders Ass'n. of Dallas Dallas, Texas

#### Forum:

In the many years I have dealt with housing matters, I have seen hundreds of pieces on the subject. Few of them have Why I prefer to sell fixtures equipped with

ied Ballasts

As a contractor, I hear the complaints when fixtures prove unsatisfactory. I can't afford repeated customer gripes, so I handle only fixtures that are equipped with Certified Ballasts.

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Quiet operation Reliable performance

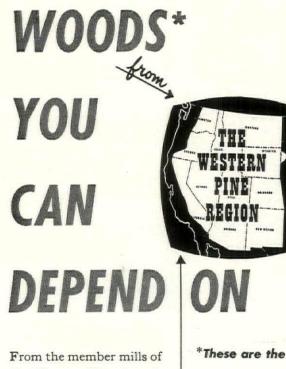
Certified Ballasts are made to rigid specifications—then tested and checked by impartial Electrical Testing Laboratories, Inc. That's why they're really reliable.

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All lumber from member mills is graded under the Association's published rules. Grading is constantly supervised and checked by the Association's Grading Bureau.

Copy of 1949 "Standard Grading Rules" available at 25 cents each.

Refer to 1949 Sweet's File, Architectural Section 5a-4.

#### WESTERN PINE ASSOCIATION

YEON BLDG., DEPT. 214-V, PORTLAND 4, OREGON

really ever understood the problem. The special FORUM issue is by far the best presentation of the evolution that has taken place in the home building business. I would like to see the section printed as a separate document and given wide circulation.

I was particularly interested in the Merchant Builder survey. As far as I am concerned it just about eliminates any reason for the NAHB to do one of its own. It is a good job.

WALTON ONSLOW Public Relations Counsel National Ass'n of Home Builders Washington, D. C.

Forum:

**LETTERS** 

Your April issue . . . a masterpiece. WILLIAM L. WRIGHT Real Estate & Mortgage Loans Washington, D. C.

#### Forum:

Western Pines

Idaho White Pine

Ponderosa Pine

Sugar Pine

\*These are the

Larch

Associated Woods

Douglas Fir

White Fir

Engelmann

Incense Cedar

Lodgepole Pine

and Red Cedar

Spruce

. . . extremely interesting and informative . . . FRANK W. CORTRICHT

Executive Vice President National Ass'n of Home Builders Washington, D. C.

#### Forum:

Congratulations upon a splendid job! F. STUART FITZPATRICK, Manager Construction & Civic Development Dept. Chamber of Commerce of the U.S.A. Washington, D. C.

#### Forum:

April 1949 FORUM just received and devoured. For years I've been hoping you'd have a down-to-earth issue devoted to the mass market—helpful to the small builder. You have done a worthwhile and constructive job.

> PETER LURCHON, President Homes, Inc.

Newton, Mass.

#### Forum:

I took the April issue of FORUM home with me and—as God is my witness—read every blessed word having to do with the building industry. I found it most informative. . . Your coverage of this important subject will be of great service to those of us who depend upon the building industry for a portion of our business.

Том Gibbons Assistant Advertising Mgr. American Stove Co.

St. Louis, Mo. (Continued on page 28)



#### ···· gives homes more buyor-rent appeal

Wall-Tex fabric wall coverings make a good selling impression on prospective buyers or tenants. Millions know Wall-Tex gives interiors more character and homes more value, making them easier to sell or rent faster. Your prospects see Wall-Tex nationally advertised, admire its smart styling and want its practical features — the plaster crack control and the safe washability of Wall-Tex with soap and water.

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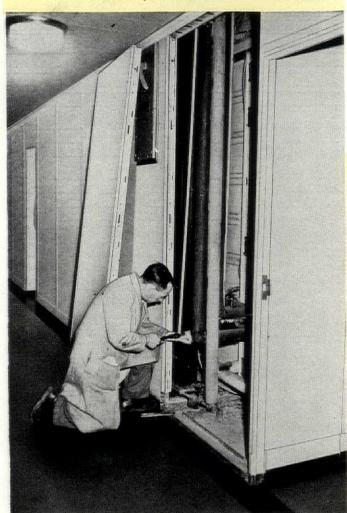
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UTILITY REPAIRS AND ADDITIONS are everyday drains . . . heating and air conditioning repairs . . . . clogged outlets . . . new telephone installations. BUT, these repairs and additions can be made easier, at less cost and without probing, digging, pounding or mess when you have Hauserman *All-Steel* Interiors. Hauserman's unit type construction permits easy removal of individual rigid panels for access to utilities. And all units are just as quickly replaced when work is completed.

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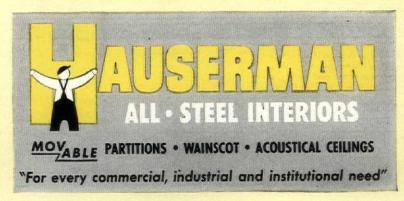
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You'll find interior walls and ceilings to meet your exact requirements in Hauserman Catalog 49. Write for it on your business letterhead today.



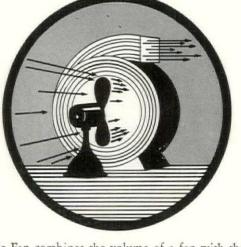
A Fan delivers volume but lacks power. Only the blade tips move any appreciable amount of air. The center is weak, per-

mitting re-circulation of

air when it meets resist-

ance.

A Blower has power but lacks volume. It works against a vacuum in the vortex and delivers a relatively small amount of air at high velocity.



WHY Blo-Fan

SUPERIOR

Blo-Fan combines the volume of a fan with the power of a blower. The fan blades supercharge the vortex of the blower so the vanes are fully loaded. That's why Blo-Fan delivers more air with more power.

SPOT VENTILATION AT THE POINT OF AIR POLLUTION. IN THE CEILING WHERE A FAN BELONGS.

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## LETTERS

Forum:

Very few times have I run across an article, to say nothing of an entire issue of a magazine, so packed full of honest reporting, ideas, and down-to-earth facts as your April issue.

Our firm is engaged exclusively in the design of one-family, detached residences. Our clients are the builders of approximately 50 developments. Our volume of business in 1948 was over \$42,000,000. With this background, plus personally knowing many of the builders whose houses were published, I was amazed at the complete, accurate coverage and understanding of the builders' problems. Usually the houses published by a magazine are for a particular client. The April issue stated thoroughly and in no uncertain terms the problems of producing dwelling units for purchase that satisfy the "imaginary" mass client. Covering everything from successful and unsuccessful developments . . . right down to labor's "no," it was a masterful round-up of the builders' problems.

It would be helpful to us to have the FORUM continue such coverage, possibly with one builder development in each issue.

> RUDOLPH A. MATERN Matern & York, Architects

New York City

#### Forum:

I have just received the April issue of the FORUM and note with interest the emphasis placed on the landscape planning for the Willis Foster subdivision in El Cerrito, Calif. The collaboration of builder, architect and landscape architect was highly successful in the development of this project and no one appreciates the value of this three way collaboration more than Willis Foster. We were very disappointed to note that we were not credited with being the landscape architects.

> THEODORE OSMUNDSON Osmundson & Staley

Oakland, Calif.

#### ENTER HASKELL

#### Forum:

Dallas, Tex.

Allow me the privilege of congratulating the FORUM in the acquisition of Douglas Haskell as the Architectural Editor for your great formidable magazine.

It is a pleasure to hear of his appointment and I know it will be mutually beneficial to us all, including the architectural profession.

GEORGE DAHL, Architect

(Continued on page 32)





Top: Channel back upholstered headboard with tilting back rests and four drop arms. Above: Caneback bed features softly molded frame. Below: A standard-size double bed headboard.

Send 25 cents for 28-page profusely illustrated booklet packed with Modern decorating ideas.

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#### Florida's Shelborne Hotel...Miami Beach

a Schlage installation of heavy duty cylindrical locks. Architects: Polevitzky and Russell.

The Schlage Lock illustrated is

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## Anteroom or auditorium ...

# There's a Frigidaire Air Conditioner to meet your specifications!

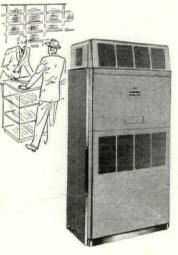


Frigidaire Room Air Conditioners

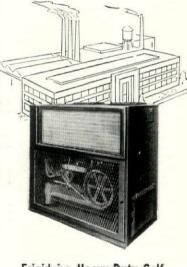
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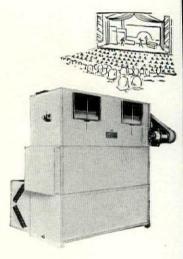


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\*E.C.: Electrical Conductor Aluminum

220/110-volt secondary feeders for a softball field lighting system. Maximum run, 375', maximum voltage drop, less than 2 per cent. 300 mcm aluminum, insulated, direct burial.





LETTERS

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ounty			State .		
	The second second				

A Great Name Since 1896

#### Forum:

You are to be congratulated on your selection of Doug Haskell as Architectural Editor.

Doug is the very best for the job; his abilities will do your magazine a lot of good. Please allow him free rein.

OLINDO GROSSI, Chairman Department of Architecture Pratt Institute

Brooklyn, N. Y.

#### Forum:

I take this opportunity to congratulate you upon the appointment of Douglas Haskell as Architectural Editor of the FORUM. His appointment should insure a continued high quality in the professional phases of the journal.

REXFORD NEWCOMB, Dean College of Fine and Applied Arts University of Illinois

Urbana, Ill.

#### Forum:

We were all delighted to hear that Douglas Haskell is going to work on the FORUM. The fact that he has joined the FORUM staff is about the best answer you could have given to people like myself who doubted some months ago whether the FORUM would still be interested in architecture.

PETER BLAKE, Curator

Department of Architecture & Design The Museum of Modern Art

New York, N. Y.

#### HELP FOR HORTA

#### Forum:

On Sunday March 4, 1917, the New York Times published pictures of the Hotel Aubecq and of its illustrious architect Baron Victor Horta, innovator and Master of Architecture, who died in 1947.

This building which was constructed in Brussels in the beginning of the century and which has no equal in all private modern European architecture, won world-wide acclaim. It is going to be demolished. The property, which is located at 520 Avenue Louise, has just been purchased by a financial group in order to erect an apartment building.

Everything has been done to save the work but Belgian officials and particularly the *Commission Royale des Monuments et des Sites* cannot oppose the destruction of a building which is not 100 years old.

Belgian artists are distressed by the fate which is reserved for this jewel of architecture, so we wondered, since our country (Continued on page 36)

#### MAKE LIFE EASIER for doors that work overtime



\*OILITE, a bronze metal containing free lubricant, was originated before World War II by a leading automobile manufacturer. Mc-Kinney, in 1938, after exhaustive research and experimental tests, developed the application of OILITE bearings to door hinges.

Doors that are kept on the "go," swinging open and shut, hour after hour, day and night, will operate more smoothly, quietly and last longer if they ride on McKinney OILITE Butt Hinges.

McKinney OILITE Butt Hinges are equipped with the remarkable \*OILITE Bearings—made of bronze metal with ability to hold about one-third of its volume in free lubricant... thus providing *self-lubrication* at all times to the bearing surfaces alone. Exterior weather conditions or moisture do not affect the bearings as they will not corrode.

All sizes, styles and finishes of McKinney OILITE Butt Hinges are available. All sizes are equipped with two or more bearings to carry the vertical load.

Specify McKinney OILITE Butt Hinges for long, satisfactory door life and service in hospitals, hotels, schools, office buildings, public buildings and institutions.

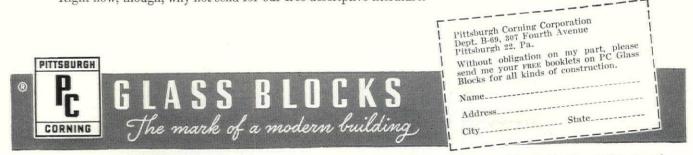
McKinney Butt Hinges with OILITE bearings have been approved for use on Veterans Administration Hospitals and Buildings by the Veterans Administration and by The Corps of Engineers, U. S. Army.





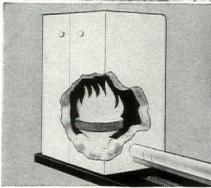
# How PC Glass Blocks heighten architectural appeal . . .

... is effectively shown in this church edifice at Tulsa, Oklahoma, designed by Architect J. Hale Smyth. But, in addition to their marked decorative value, PC Glass Blocks have inherent characteristics that bring actual savings to owners. PC Glass Blocks rarely need repairs or replacement... there is no painting involved ... they are easily cleaned. So maintenance costs are lowered. Their hollow construction (creating a partial vacuum) offers twice the insulating value of ordinary single-glazing. This reduces heating and air-conditioning costs. And they save on artificial lighting by admitting an abundance of daylight over wide areasdiffused and directed as you desire. We suggest you include PC Glass Blocks in *your* plans. Right now, though, why not send for our free descriptive literature.

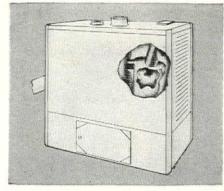


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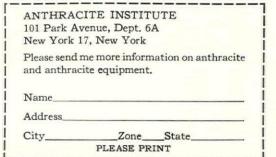
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From the moment of Reynolds entry into aluminum production, aluminum output has steadily increased...and with it architectural appreciation of its manifold utility. Aluminum roofing and siding in various forms, aluminum windows, and architectural shapes are among the Reynolds Building Products that offer inspiration to creative minds. For descriptive literature in A.I.A. File form, please write us.

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House O'Charm, Detroit, Michigan, Walter T. Anicka, Architect. Bain & Anderson, Builders. Specification for rain carrying equipment: Reynolds Lifetime Aluminum Stipple-Embossed Gutters and Downspouts, O. G. Style.

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AS BUILDING-PAPER, over sheathing of frame, brick veneer, stucco or stone-faced houses . . . under wood, tile and other flooring . . . as a vapor-barrier . . . FHA approved over sub-fill, under concrete slabs . . . under floors with radiant heating . . . For curing freshly laid concrete driveways, walks, basement and garage floors, etc.

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(SEE SWEET'S ARCHITECTS' FILE 9C-2)

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Pleas	se send s	amples and	l data on a	ll three SISALI	CRAFT produ	icts
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Addr	ess	<u>.</u>				
City,	Zone 8	State				

cannot make the financial effort necessary, whether the great American nation which is at the moment in the spiritual foreground of civilization could not help us to find the necessary funds for the reconstruction of this building either in Brussels (where the city would make a gift of the land) or in America.

Time is short, since the demolition is to begin in about two months. We therefore



Horta's Hotel

**IFTTFRS** 

do not have long to save a work which does or should belong to the heritage of humanity.

The cost of dismanteling the building and of reconstructing it is estimated at about 3,000,000 Belgian francs.

JEAN DELHAYE, Architect

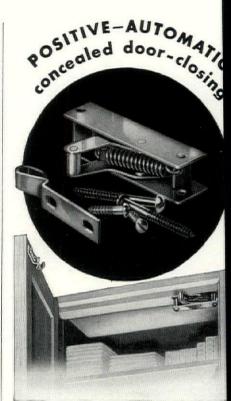
Pupil and Disciple of Baron Horta Secretary of the Horta Committee Brussels, Belgium

## MATHEW'S BABY

#### Forum:

A few months ago one of your assistants telephoned me to obtain information on the garage and office building now under study for the old Hippodrome site. I agreed to provide this information because the scheme, although tentative, appeared to me of possible interest to your readers as representing the type of limited development, with mixed occupancy that might prove economically feasible under revised zoning restrictions. Every effort was made to stress this aspect of the project and to emphasize its tentative character. . . .

The building has now appeared (FORUM, Mar. '49, p. 15). The captions give the architects as McKim, Mead & White, omitting my name as associate architect and making no reference to the highly tentative nature of the scheme. It has been my baby from the start, and no one in the firm has had anything to do with it besides myself. You also refer to McKim, Mead & White as an "old firm . . . who designed many of the City's genteel residences on Fifth Ave-(Continued on page 40)



Win-Dor Snuggers and Top-Closers work so well, are installed so easily and cost so little that you can detail them for all cabinet, cupboard and closet doors. These little automatic "hands" actually reach out, grab the door and close it without rebound. Surprising power closes even warped doors and keeps them closed. Surface installation at top, bottom or side. (For complete information see Win-Dor catalog 178 in

## Win-Dor



SERIES 47 This small Snugger has a four pound pull, is reversible and provides automatic closing.

Sweet's Arch. File).

## SERIES 48



For closing intermediate sizedoors this Snugger has no equal in convenience and economy.

SERIES 45 On large doors the Top-Closer eliminates time, labor and cost of mortising latch ...only pull knob is required.

WIN-DO



A PRODUCT OF The Casement Hardware Co. 406 N. WOOD ST., DEPT. H, CHICAGO 22, ILLINOIS Ask Your Builder's Hardware Dealer'





A successful builder always watches his competitors to see what they do to sell more houses, faster, at a greater profit. One thing these builders do is to install the kind of cooking equipment more people want-modern Electric Ranges. The trend to Electric Cooking is proved by the fact that another million American families switched to it last year. Conservative estimates indicate that the same thing will happen again this year.

So build houses that are modern today and will stay modern for years to come. During construction, include wiring for an Electric Range, leading to a range outlet in the kitchen. An Electric Range, like electricity itself, is now a "must" in every modern home!

ELECTRIC RANGE SECTION, National Electrical Manufacturers Association, 155 E. 44th Street, New York 17, N.Y. CROSLEY • FRIGIDAIRE • GENERAL ELECTRIC • GIBSON • HOTPOINT MONARCH • NORGE • QUALITY • UNIVERSAL • WESTINGHOUSE ADMIRAL . COOLERATOR . KELVINATOR . LEDO



Another 1,000,000 American families switched to Electric Cooking last year



## CONSTRUCTION AND BUILDING EQUIPMENT



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Flood Lighting





Wiring Devices

Freight Elevators





Passenger Elevators

## POWER DISTRIBUTION EQUIPMENT









Load Centers Meters and Instruments

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## HEATING AND VENTILATING EQUIPMENT





Forced Fans



Unitair

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9 9





\*Reg. U.S. Trademark

# SURE..IF IT's Westinghouse

## One reliable source for Everything Electrical . . . to distribute, control and utilize electric power

adly needed expansion of both government and rivate hospitals is now bringing construction prorams to an all-time peak.

For this type of construction, as well as all other ommercial and industrial buildings, Westinghouse fers architects and contractors a unique advantage. *verything electrical*—from distribution and control oparatus to highly specialized x-ray and lighting quipment—can be obtained through one reliable ource.

By centralizing responsibility with Westinghouse or power distribution equipment, construction and uilding equipment, heating and ventilating equipent and lighting units, you gain important advantages:

SPECIALIZED ENGINEERING ... to assist in selecting and applying equipment for maximum efficiency. 2. SIMPLIFIED ORDERING ... by providing a focal point of contact for all buying and specification data.

3. SPEEDIER INSTALLATION ... by centralizing responsibility for delivery and installation.

4. BETTER, MORE RELIABLE SERVICE... through the co-ordinated design and construction of Westinghouse equipment, plus broad experience in applying it for all types of buildings. Westinghouse also offers unmatched electrical maintenance service, through its nationwide chain of Renewal Parts Warehouses and Manufacturing and Repair Shops.

Call your nearest Westinghouse District Office or Distributor for full information on this co-ordinated service. When there's CONSTRUCTION AHEAD requiring electrical equipment of any kind . . . you can be *sure* if it's Westinghouse. J-94782



#### PRACTICAL, EASY-TO-USE BUYING INFORMATION

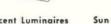
Architect's and Engineer's Data Book—B-2161-D This 362-page book contains data on all Westinghouse products for the building industry. Its format is adapted to the needs of the architect and engineer. Ask your nearest Westinghouse office for a copy.

MPS AND LIGHTING EQUIPMENT



ing Equipment Sterilamps





Light Bulbs



Heat Lamps



CLINICAL AND SERVICE EQUIPMENT





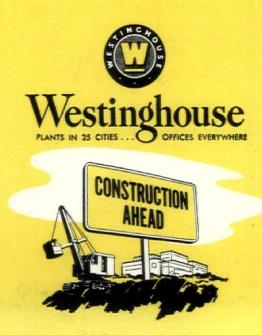
Refrigerators

Water Heaters









LETTERS

One of the products of The F. C. Russell Company . . . all of which are self-liquidating investments in comfort, convenience . . . and safety.



MOSEAT ALUMINUM wynow **Combination Screen and Storm Sash** 

... offer SELF-STORAGE .... YEAR 'ROUND, RAIN-PROOF, DRAFT-FREE, FILTERED SCREEN VENTILATION ... PATENTED THERMOLOK\* CLOSURE FRAME and many other year 'round benefits not possible with ordinary combination windows.

A nationwide network of competent, reliable distributors and a staff of experienced field engineers give assurance that The F. C. Russell Company products you specify will be installed in accordance with your specifications. These same distributors and field engineers are at your service to give you the benefit of their wide experience with problems of insulation and protection for all types of windows-for homes, commercial buildings, institutions.

Consult Sweet's Catalog, your local Russell Distributor, or write direct for complete details and specifications on all The F. C. Russell Company products.

#### **OTHER F. C. RUSSELL COMPANY PRODUCTS**

- RUSCO all metal, self-storing combination windows.
- THERMOSEAL three-in-one combination window.
- CINCO Sto-a-way aluminum combination windows.

The F. C. Russell Company line of combination windows offers a wide choice of designs to fit specific requirements . . . steel, aluminum, wood . . . all properly treated for weather resistance.

ALUMINUM CASEMENT STORM SASH . . . RUSCO ALL METAL VENETIAN-TYPE AWNINGS .... RUSCO ALL METAL JALOUSIES . . . RUSCO ALL METAL TERRACE AWNINGS ... RUSCO ALL METAL DOOR CANOPIES ... CINCINNATI CUSTOM-BUILT INSECT SCREENS ... DUO-GLAZE INSULATION . . . RUSCO THERMOPANE (for picture windows).

THE F. C. RUSSELL COMPANY DEPARTMENT 2-AFA69 CLEVELAND 1, OHIO

(C)TECRC

\*T. M. REG. APP. FOR

nue," but omit mention of Madison Square Garden, Municipal Building, Pennsylvania Station, The Morgan Library, Savoy Plaza Hotel or of hundreds of other public or academic buildings designed by the firm.

EDWARD J. MATHEWS, Architect New York, N.Y.

#### FHA VS. VA

#### Forum:

In your April Letters column I note an item headed "Seattle Appraisal," regarding the report in your March issue of a VA appraisal \$1,000 below the mortgage insured by FHA. Your editorial comment was to the effect that there was an error in printing, that the correct figure was \$100. You are mistaken on this figure.

On two homes that I constructed I had a FHA commitment of \$8,200 each. I then applied for a VA appraisal and was given \$8,200 (selling price). The FHA appraisal was \$9,500 on each home with a firm commitment for an \$8.200 insured loan. Thus you can readily see that there was over \$1,000 discrepancy between the FHA and the VA

These two homes were sold shortly after on regular FHA terms, each carrying a \$8,200 insured mortgage.

HAROLD ACHESON, Realtor Seattle, Wash.

· Reader Acheson's experience further proves that FORUM was wrong in the first place, when it said the VA appraisal was \$1,000 below the FHA mortgage. His figures indicate that the VA appraisal was exactly the same as the FHA mortgage. However, the fact that VA's and FHA's appraisals differed by \$1,300 is another - and a sad one.-ED. story -

### **BUSSES AND BYRNE'S BUST**

#### Forum:

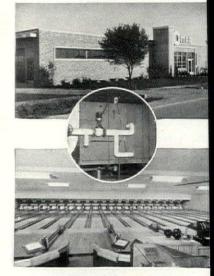
Your article on Builder Byrne's Harundale at Glen Burnie, Md. (FORUM, Apr. '49) overlooks one factor which may be quite important in the cessation of buying interest at that development: the uncertainty of public transit.

Harundale opened with expectation of rapid transit service into Baltimore, via the interurban railway of the Baltimore & Annapolis, at low cost commuter fares. Then came abandonment feelers, award of a franchise to a competitive bus operator, a strike, higher fares, deteriorated service. and the knowledge that the rail property would be allowed to wear itself out with no plans for renovation. To be sure, bus service remains; but that bus has to run over that same overcrowded Hanover St .- with its weekday commuting autos and weekend Shore-bound mobs.

(Continued on page 44)



Vital temperature and humidity control accomplishe for Omar Bakery, Racine, Wis., by four ''YAC'' A Conditioning Units and Colls. Engineers and Build ers: The Austin Company, Cleveland, O. *Heatin Contractor:* Smollen Heating Co., Racine, Wis.



## . OR PLEASURE

"YAC" Air Conditioning Units and Coils provide comfort for active indoor recreation at Luby's, Racine, Wis. Architect: John Topzant, Milwaukee, Wis. Heating Contractor: Smollen Heating Co., Racine. Wis.

• To meet the complexities of today's air conditioning installa-tions, specify "YAC" Units by Young. Young Air Condition-ing Units provide the following Heating, Filtering, Humidify-ing, Circulating, and Dehumidifying . . . in any combination! Eight vertical or horizontal type units have ratings from 450 to 15,750 cfm; custom installations with Young coils handle larger capacities. The sturdy "YAC" cabinets, of heavy gauge gal-vanized steel, are shipped in sections and quickly installed. Write for details.



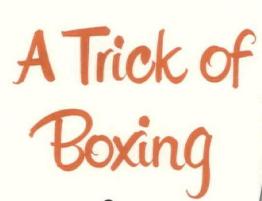
## HEAT TRANSFER PRODUCTS

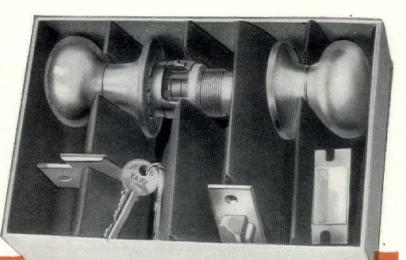
HEATING, COOLING AND AIR CONDITIONING PRODUCTS Unit heaters • Heating coils • Cooling units • Evaporative condensers colls . Air

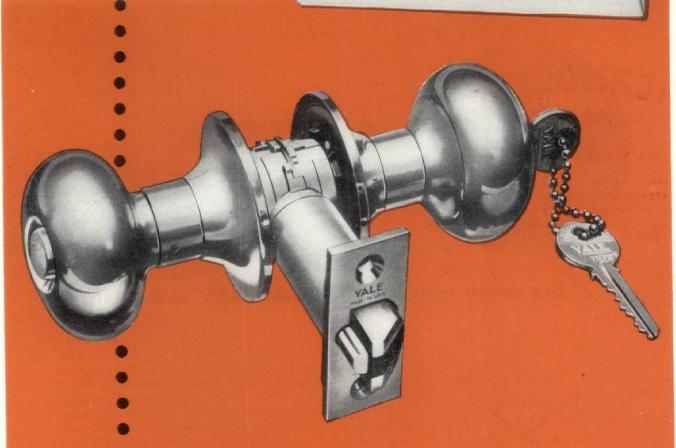
Convectors • Unit heaters • Heating coils • Cooling coils • conditioning units • Evaporative condensers AUTOMOTIVE PRODUCTS Gai, gosoline, Diesel engine cooling radiators • Heat exchang Intercoolers • Oil coolers • Supercharger intercoolers OIL FIELD, HEAVY INDUSTRIAL, MUNICIPAL & CHEMICAL PROCESS COOLING EQUIPMENT Engine jacket water coolers • Oil coolers • Steam and natu gas condensers • Natural gas coolers • Evaporative coolers to condensers • "VAD" Vertical air discharge cooling and conde ing units.

AERONAUTICAL PRODUCTS Oil coolers • Supercharger intercoolers • Radiat changers • Valves • Providence • Radiater









## that knocks out a lock installation job in 30 seconds

One safe way to cut corners is to short-cut lock assembly time with YALE'S new Heavy-Duty Tubular Lock.

The complete lock is packaged in four units, located in their proper relative positions—ready for quick four-step assembly in 30 seconds.

Only two holes to bore. Hole through door holds outside knob and locking mechanism, hole into the edge holds the bolt. Clamping nut compensates for dimensional changes in wood.

In a large building—apartment house, school or office building—the total time saving is tremendous. So specify YALE Heavy-Duty Tubular Locks for all standard lock operations—you can be sure, too, that your client will appreciate their clean classic beauty and well-known YALE security.

THE YALE & TOWNE MANUFACTURING CO. STAMFORD, CONN.





## ... fire safety costs little with FIBERGLAS\* acoustical tile



### FIBERGLAS ACOUSTICAL MATERIALS

- Plain Tile
- Perforated Tile
- Plain Board

(Available in standard sizes)

One of the most economical ways to give your client added fire safety for his building, its occupants and contents, is by specifying Fiberglas Acoustical Materials. Rated incombustible (Fed. Spec. SS-A-118a), these materials cost only a few pennies per square foot more than inflammable products.

Add to this the fact that noise reduction coefficients range as high as 85%, and that these materials will not swell, warp or buckle under high humidity . . . and you see why Fiberglas Acoustical Materials give greatest value per dollar.

In certain suspended ceiling applications, the installed cost of Fiberglas Tile is actually *less* than that of combustible materials.

Complete information is contained in our manual, "Fiberglas Acoustical Materials" . . . Standards AC6.C1. If you do not have a copy in your files, write for one today.

Owens-Corning Fiberglas Corporation, Dept. 830, Toledo 1, Ohio. In Canada: Fiberglas Canada Ltd., Toronto, Ontario.



\*FIBERGLAS is the trade-mark (Reg. U.S. Pat. Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with glass fibers.

# AGAIN! Silent Automatic is FIRST with the BEST! **Revolutionary** new **KITCHEN-TYPE OIL BOILER**

TIMKEN

-supplies automatic heat and hot water for four- and five-room homes and is so compact and quiet it may be installed IN THE KITCHEN!

Here's the most important small-home heating news in years -the new Timken Silent Automatic Kitchen-Type Oil Boiler!

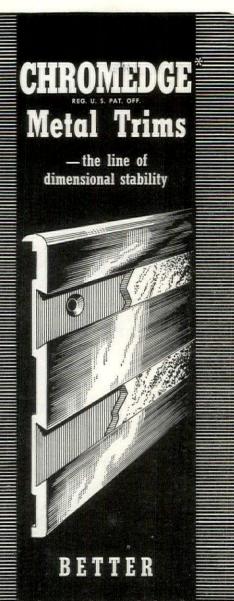
10

Finished in gleaming white-for kitchen installation-this extraordinary unit combines a house-heating boiler, fired by the famous Wall-Flame Oil Burner, an instantaneous water heater, an expansion tank, a motorized circulating pump, a tempering valve and complete automatic controls. It is completely enclosed in a beautiful counter-high cabinet topped by a stainless steel work surface. It covers a floor area of only 25 x 30 inches.

Think of the sales appeal this unique factory-assembled heating package will give your new small homes! Best of all, it's priced to help you cut costs and offer better houses at lower costs. Here's proof again that it pays to install Timken Silent Automatic!

Write today for complete information.





-because they are designed and extruded by specialists in the use and manufacture of metal trims exclusively.

More than 680 shapes and sizes.

COLUMBUS 16, OHIO

\*CHROMEDGE METAL TRIMS ARE

MADE ONLY OF ALUMINUM ALLOY OR OF STAINLESS STEEL

als Co.

Too many developers, there and elsewhere, feel that housebuyers have their own auto—forgetting that two cars are needed to take the place of public transit.

WILLIAM C. KESSEL

Buffalo, N.Y.

**IFTTFRS** 

## FIREPLACE VIDEO

## Forum:

I don't think you need be afraid of having the television set take the place of the fireplace as the focal point of the family gathering (FORUM, Sept. '48). I think the new invader brings the solution with him.

It would seem quite feasible to me to have the television set built into the back of the fireplace throwing its image onto a transparent screen at what is now the face of the fireplace opening. Then the family could sit around the fireplace and enjoy the television and when they are tired of that just tune in on a nice cozy fire televised from some central station complete with pops and crackles.

Or you could just light the damned set and relax!

Henry Van Loon Architect

Old Greenwich, Conn.

## JUNK

#### Forum:

I find that in the last few years there is absolutely nothing interesting to an architect in your monthly publication. Unless an architect is interested in designing buildings and houses that look like converted cowsheds or barns, the publication is of no good whatever to him. . . .

Why do you not put your publication on a little higher plane where it will interest architects in good commercial, residential and all other types of buildings, instead of the junk you have been printing? . . . There is not 5 per cent of the publication that represents architecture of any type. . . .

I would like very much to know whether or not you have had similar criticism and if you intend at any time to change the type of your publication. I may be a damn fool, but, if I am, damn fools still do not like the type of your publication at present. GEORGE MAHAN, JR.

Architect

## Memphis, Tenn.

• The criticism in the *Letters* column is a fair cross-section of the building industry's expressed opinion of the FORUM's contents. The criterion on which FORUM's contents are based is that they must add something to the industry's knowledge which it would not otherwise acquire.—ED.

(Continued on page 48)

## EASY TO INSTALL! EASY TO REGULATE

Two More Reasons W Building Profession Welcome the New EAG UNIVERSAL DOOR CLOSE



Installation is simplified by mounting template which shows exact positioning of closer for openings from  $90^{\circ}$  to  $120^{\circ}$  and for hold-open or nonhold-open operation.



Mounting plate is screwed into position indicated by template, eliminating need for holding closer during installation.



Closer is easily inserted into mounting plate and locked into position by one set screw. Adjustment of leverage can be made by sliding closer in mounting plate.

Never before . . . a door closer so eas

to regulate. The field swing is automatic and the latching speed is regulated through a single screw as illustrated. Turning the screw to the right decreases latch speed; turning to the left, increases latch speed.



Write for illustrated brochure describing these and other advantages of the Eagle Universal Hydraulic Door Closer.



The EAGLE LOCK Company Terryville, Connecticut





# Utterly Different, Because It Employs -LIKE Action to Achieve Weathertightness!



## WEDGE ACTION MAKES IT

Heathert

Key to the exceptional weathertightness... to the smooth, floating sash action... and to the sash removability feature of the Andersen Pressure Seal Window Unit... is in the invisible pressure strips located in the sash stiles and controlled by small thumb levers.

**Pressure strip, attached to sash stile** through diagonal slot, moves sideways when actuated by lever, thus exerting wedge-like pressure on the sash.

- 2 Lower sash with thumb lever up. Pressure strip pushes against inside stop and wedges sash firmly against parting stop.
- **beau solution** beaution beaution beaution beaution beaution is released, freeing sash completely.

## LOWER INSTALLATION COSTS Just 2 Easy Steps!

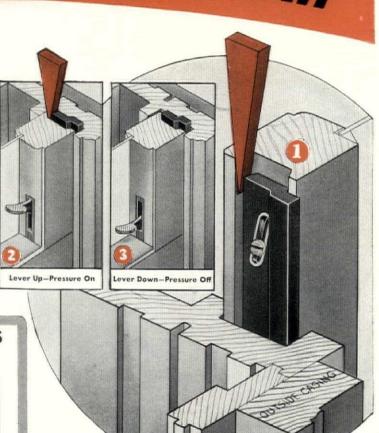


1. NAIL FRAME IN ROUGH OPENING 2. SLIP SASH INTO PLACE

Installation is remarkably simple—saving builders many valuable hours on a single house. Besides, sash can be painted outside the frame, allowed to dry, then slipped into place. This saves time—and trouble with paint bind.

Standard detail can be used on any type of wall. Moulded inside stop on side jamb simplifies trimming out. A special fitted stool is included. Only simple inside casing required.





## MAIL THIS TODAY!

## Andersen Corporation

Bayport, Minnesota, Dept. D

Please send me full details on your new Pressure Seal Double Hung Window Unit.

NAME.
ADDRESS.
CITYZONE.STATE





# Today's lowest price long-lasting floor

Shop ... compare – see for yourself if MA • TI • CO isn't your best buy! Factorywaxed and made to Federal specifications, MA • TI • CO must be right! And, it is proving its rugged endurance in close to 200 million sq. ft. of installations. MA • TI • CO is safe, sanitary, odorless. You save on low initial cost. Easy to clean – you save in maintenance. Easy to replace—you save in the event new tiles must be inserted or a floor expanded. 27 beautiful colors, plain and marbleized, offer limitless design possibilities.

> Write for full-color literature showing complete sample line and design patterns to: MASTIC TILE SALES CORP., Dept. No. O, 153 West 57th St., New York 19, N. Y.

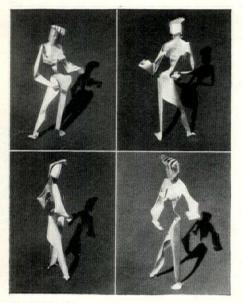


#### BEST FOOT FORWARD

#### Forum:

In answer to the "Bronze Figures" letter in the March 1949 FORUM, I offer these photographs (below). Perhaps this is the type of figure "name withheld" of Saint Louis would be looking for. ("Name withheld" inquired as to the availability of stock designs of female figures cast in bronze or aluminum for use in bars, taverns and cocktail lounges—ED.)

The four photographs are all of the same figure, the "Standing Lady" (copyrighted)



Standing Lady

which is one of a series of metal figures I have designed, approximately 18 in. high. It has also been made 5 ft. high.

This one has been nicknamed "best foot forward," but does have different aspects. Others are titled "after all . . .," "so what . . .," "well,!" "my, my," and "woman trying to remember where she put her clothes" —the latter is an upper torso version of the "Thinker."

Should "name withheld" be interested, the figures (approximately 12 to 18 in. high) are \$30 each and are all handmade.

Bar patrons would probably like the fact that the figures move with the slightest disturbance.

CALVIN COTTAM Decorative Designer-Consultant Los Angeles, Calif.

#### WHITE HOUSE QUESTIONS

#### Forum:

I have noticed recently that the Senate Appropriations Committee has favorably reported a \$5,400,000 appropriation for the structural renewal of the Executive Mansion. The Federal Works Agency recommendation that, "it was cheaper to let con-*(Continued on page 52)*. Control INDOOR CLIMA AUTOMATICALLY without Outside Current

C The tiny pilot flame generate the electrical current to operate the conte system. All three units scientifically de





## Free ... COLOR DYNAMICS Survey for buildings you plan

How does the use of cool, refreshing color upon walls reduce eye fatigue and stimulate energy among office workers?

Why does an office on one side of the building require one kind of color treatment to increase the efficiency of those who use it while rooms on the other side of the hall require different colors?

How can the right color arrangement more accurately reflect the character and integrity of a business or professional organization?

Pittsburgh's system of COLOR DYNAMICS answers these and many other painting questions. This new system of decoration is based upon the fundamental principles of of energy. It can help people to be cheerful and energetic or cause them to feel uncomfortable and depressed.

Pittsburgh technicians have used these principles as the basis of COLOR DYNAMICS which enables you to utilize color for functional as well as decorative purposes. Now you can specify color arrangements which are not only good to look at but which promote efficiency and better morale in an organization.

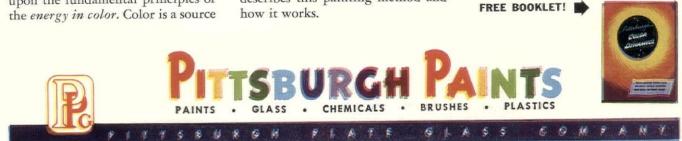
We'll be glad to make a scientific COLOR DYNAMICS engineering survey of the buildings you are now planning or erecting-free and without obligation on your part. Send for the interesting booklet which describes this painting method and how it works.

## There's a Pittsburgh Paint For Every Painting Need

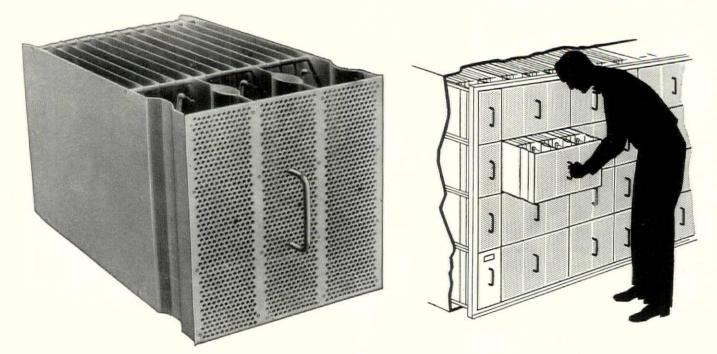
WALLHIDE — PBX, extra-durable; SEMI-GLOSS, for higher sheen; FLAT, for velvet-like finish; GLOSS, for severe service and frequent cleaning.

LAVAX PBX ENAMEL – durable finish for interior use. Dries quickly to an eggshell finish that elimi-nates glare. For wood, metal or other surfaces. FLORHIDE—for floor surfaces; can be scrubbed repeatedly with soap solutions.

	e Glass Co., Paint Div. ittsburgh 22, Pa.
Please send new revised and Dynamics."	I me a FREE copy of your d enlarged Booklet, ''Color
Please have for a Color I obligation on c	e your representative call Dynamics Survey without our part.
Name	
Street	
City	
County	State



## Now! New type of electric air filter with unique "desk drawer" construction



## "Electromaze" is easier to clean, more flexible in size

HERE'S the Air-Maze "Electromaze"—a new electrostatic dirt precipitator made up of individual cells that you can slide in and out like desk drawers. It's a revolutionary design feature that makes Electromaze easier to clean and service than any other electric air cleaner.

"Desk drawer" assembly also gives you greater flexibility in the size and capacity of your installation. Electromaze cells come in three different sizes and can be combined like building blocks to meet almost any space or capacity requirement. Installation work is simplified, time saved.

Check the box at the right for other important features of the new Electromaze. And, for further information about this latest advance in electrostatic air cleaners, see your nearby Air-Maze representative or write Air-Maze Corporation, Cleveland 5, Ohio.

## **Quick facts about Electromaze**

- 24% greater collector plate area! Despite smaller over-all size, Electromaze design permits greater dirt collecting capacity.
- No external high voltage wiring! Internally located power pack, plus same voltage for ionizer and collector sections, greatly simplifies electrical connections.
- 3. No moving parts! Nothing to wear out or require maintenance.
- 4. Dual ionization! Two ionizing wires instead of one insure more complete charging of air-borne material.
- 5. Ultra-efficiency! 25% greater voltage gradient between collector plates results in greater attraction for dirt particles.
- 6. "Desk drawer" design! Greatly simplifies servicing. Provides installation in any increment of  $4'' \ge 12'' \ge 26\frac{1}{2}''$ .
- Laminar flow! True air foil design of non-discharge electrodes provides non-turbulent air flow. Insures utilization of full collector plate area.
- **8.** Built-in current regulation! Insures peak performance and troublefree operation, regardless of normal line voltage fluctuation.





THE FILTER ENGINEERS

LIQUID FILTERS OIL SEPARATORS GREASE FILTERS



"With so versatile a background, design flows in infinite variety."

Universal-Rundle practical bathroom fixtures and kitchen equipment ... they sell themselves

into her pictured plans

Universal-Rundle Vitreous China and Vitreous Enameled Cast Iron wares work like magic into clients' plans. Customer reaction to carefully designed eye appeal sells U-R bathroom fixtures and kitchen equipment on sight. Quality is self-evident. Practical engineering assures lasting satisfaction.

Universal-Rundle wares adapt easily into your varied plans and lend a touch of sharpness that lifts presentations out of the ordinary. Compare Universal-Rundle quality and design with others, then specify U-R fixtures

for new construction or remodeling.

Tine Bathroom Tixtures and Kitchen Equipment

UNIVERSAL-RUNDLE CORPORATION NEW CASTLE, PENNSYLVANIA PLANTS IN New Castle, Pa.; Camden, N. J.; Milwaukee, Wis.; Redlands, Calif.

> UNIVERSAL-RUNDLE CORPORATION NEW CASTLE, PENNSYLVANIA Please send me a copy of your new booklet 249-C

Name	
Address	
City	State
Firm	

tracts on a cost-plus commission basis because of contingencies involved." This is astounding, especially now when we are entering into a buyer's market, and since the work involved is not an emergency.

The tremendous money appropriation, naturally brings up several questions. What work is so suddenly necessary to be done to the White House now? Why, with all the governmental departments, architects of the capital and grounds and public buildings officials, was this not checked, surveyed and discovered previously.

It would seem that for the money appropriated, the White House could be taken down, stone for stone (the same as is done with old world mansions, rooms, etc.) and rebuilt, or an exact replica of the mansion could be erected for this amount or less.

BENJAMIN H. WHINSTON, A.I.A. New York, N. Y.

#### NEW MONIKER

LETTERS

#### Forum:

Despite the fact that on February 24, 1949, Baker Ice Machine Co., Inc., changed its corporate name to Baker Refrigeration Corp., the Specification and Buying Index in your April and May issues still called us Baker Ice Machine Co., Inc.

BAKER REFRIGERATION CORP. S. Windham, Me. and Omaha, Nebr.

• FORUM regrets the oversight, promises henceforth to use Baker's new moniker (see p. 198). —ED.

## FURNITURE FACTS

## Forum:

We were very pleased to see the publicity given the Isamu Noguchi furniture in your April issue. We were equally dismayed, however, to see that no mention of the manufacturer was made . . . Noguchi designs furniture exclusively for the Herman Miller Furniture Co.

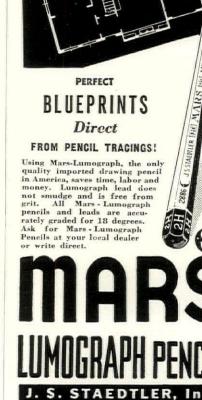
Albert M. Leach Alfred Auerbach Associates New York, N. Y.

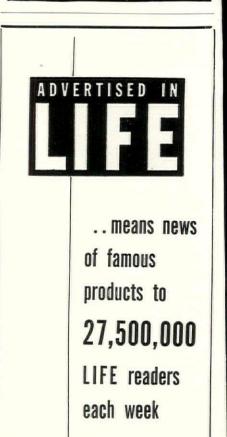
### Forum:

Portland, Ore.

In "Postwar Mathsson Furniture" (FORUM, Mar. '49), you stated that Bonnier's was the only U. S. agent for the new Mathsson furniture and that its showing was the first in the U. S. since the war. Crossroads has continuously shown the new Mathsson furniture since November 1947, and has been an agent since then.

> NORMAN L. YEON Crossroads, Inc.





FLEXIBLE MINDS ACCLAIM THESE

ntonino...

## "Movable Transite<sup>\*</sup> Walls answer the problem of our changing space needs," say executives and building owners who like the idea of "rooms when and where you want them."

Today many of the most modern buildings literally have *miles* of these movable asbestos-cement partitions. Their unique appeal to forward-looking architects lies in the fact that Transite Movable Walls are attractive, solid, and durable.

They are completely salvageable, and can be relocated with little or no interruption to business routine.

Architects often combine Transite Movable Walls with two other Johns-

JM

Manville products: noise-quieting Acoustical Ceilings, and resilient Decorative Floors. The combined use of these three materials is called J-M Unit Construction. It makes the *complete interior* available under *one* specification, *one* manufacturer's responsibility.

Write for the brochures describing these important steps forward in building design. They may help you on your next project. Address Johns-Manville, Box 290, New York 16, N. Y.

\*Transite is a registered Johns-Manville trade mark.

## 2 Types of Transite Walls

•

Shown above in process of erection is the Universal type of J-M Transite Wall. The finished wall consists of a sealed core faced on both sides with asbestos-cement sheets and is  $1\frac{3}{4}$ <sup>II</sup> in thickness. It is one of the easiest and most economical of all walls to erect and relocate.

A second type of Transite Wall is called <u>Imperial</u>. Here the asbestos-cement panels are hung on steel studs, forming a 4<sup>11</sup> doublefaced partition.

Both types are fire-resistant, rotproof, hard-to-mar, easy to maintain, and highly resistant to shock and abuse.



## Johns-Manville Unit Construction

MOVABLE TRANSITE WALLS . ACOUSTICAL CEILINGS . DECORATIVE FLOORS (ASPHALT TILE AND TERRAFLEX)

Here, two great ramps cross scissorlike on their way to a 200-car parking lot in the sky.

Here, 127,000 square feet of space are open for business. This is Milliron's Westchester Department Store in Los Angeles—Gruen and Krummeck-designed—said to be one of the most modern, functional, beautiful buildings in the world. It *is* those things. Even more than meets the eye.

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Just this: Here is a dramatic, exciting building-designed with vivid imagination-which achieves many of its special effects with low-cost, standard parts.

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17,500 sq. ft. of standardized Fenestra 20-gage Holorib in the Mezzanine floor and Fan Room floor and roof. Holorib is lightweight, smooth-surfaced roof sheathing of great strength . . . 18" wide . . . 18 or 20-gage. Each sheet is self-reinforced. Exclusive telescoping end-lap and interlocking side-lap features add rigidity to the installation. Economical and easy to erect . . . Holorib is welded directly to purlins. To get functionality, beauty, modernity in your buildings . . . to pay less for your design freedom . . . use standardized Fenestra Building Products. For full information on types and sizes of Fenestra Building Panels, see Section 3c/3 in Sweet's Architectural File. For Fenestra Steel Windows—Section 16a/13. For Metal Doors—Section 15a/7. Or write Detroit Steel Products Company, Dept. AF-6, 2251 E. Grand Boulevard, Detroit 11, Michigan.

Milliron's new, strikingly modern department store in Los Angeles . . . dramatic proof that standardized Fenestra Building Panels and Holorib Roof Deck give all the benefits of standardization without limiting design freedom. True of *all* Fenestra Building Products. Architects: Gruen and Krummeck: Contractor: McNeil Construction Company.



Mezzanine ceiling of Holorib Deck.

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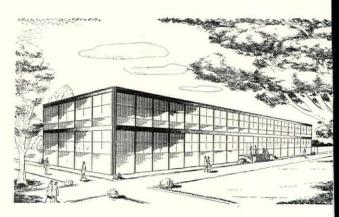
ARKANSAS SOFT PINE BUREAU 649 BOYLE BUILDING

RESEARCH LABORATORIES: Mayo Clinic, Illino Tech and Wayne University expand facilities

Kenneth M. Wright Stud



Facilities at the renowned MAYO CLINIC in Rochester, Minn. will be expanded by a new \$2,000,000 medical research labora tory. Partitions and services throughout its five stories and two basements are designed for easy removal and shifting Cabinet and work units are interchangeable. It has windows only on the east and west sides because so many of the re search doctors have requested "dark-room" laboratories. Windows on these two sides will be fitted with double-hung heat resistant glass. All rooms will be fully air-conditioned. Architects: Ellerbe & Co.



The Research Laboratory for the American Association of Railroads is now in the process of construction—ninth building of the 27 Mies van der Rohe has designed for the \$16,000,000 campus of Chicago's ILLINOIS INSTITUTE OF TECHNOLOCY. This two-story rectangle of glass, steel and concrete (50 x 218 ft.) will cost \$600,000. Located at the northwest corner of the campus it will have room alongside for a 600 ft. track to be used for "impact" testing. The laboratory will serve as headquarters for the Association of Railroads and will provide testing rooms for regulation railroad cars and equipment. It will also house special experiments in refrigeration and the problem of food-handling in freight cars.

WAYNE UNIVERSITY, Detroit, will soon be able to offer its 1,372 student engineers an improvement over the temporary buildings pressed into service for outsize postwar classes. The \$1,000,000 three-story structure by Detroit architects Pilafian & Montana (with another \$500,000 wing to be added as soon as this first section is built) will provide research facilities for the whole engineering (Continued on page 60)



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58 Architectural FORUM June 1949

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... specifically designed to meet industrial, institutional, or club requirements.



The Fiat Mariner shower cabinet combines the advantages of stainless steel construction with exclusive Fiat design features. The Mariner is unusually strong and will withstand extremely rugged use whether erected singly or in battery installation. Easy to keep clean, always attractive, an exceptionally high quality shower for a lifetime of service.



## SPECIFICATIONS Design No. 30

Size: 36" x 36" x 80" RECEPTOR: Deep type terrazzo with black and white marble chips and white cement is standard. Extended type receptor (as shown) is available at small extra cost.

WALLS: Heavy gauge 18-8 Stainless Steel, Types 301 and 302.

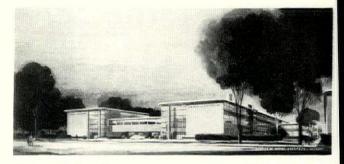
FINISH: Exposed surfaces can be finished in natural No. 2B cold rolled or in No. 4 finish. STANDARD TRIM: K-7000 chromium plated brass valves and

shower head, curtain, hooks and soap dish. EXTRA EQUIPMENT AVAIL-

ABLE: K-2601 Senior mixing valve with Anystream head, Dolphin or Zephyr shower door, extended type receptor.



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PREVIEWS

division during the next few years. Eventually it will be the sole property of the mechanical and industrial departments. A.C. and D.C. generators in its basement are designed to supply current not only for demands within its walls but also for other laboratories to be built nearby.

## DALLAS OFFICE BUILDING is planned for files first

The 11-story office building now being built in Dallas, Tex. for the EMPLOYERS CASUALTY INSURANCE Co. takes as premise the fact that an insurance company's stock in trade is its filing system. Storage and accessibility of files formed one of the chief layout considerations—the entire second floor was given over to permanent storage space. In addition to regular passenger and freight elevators, a special lift with an auto-

matic self-ejector on each floor was provided for file-cabinets. Location of air-conditioning shafts in exterior columns produces a heavy vertical design of the exterior. They are encased in unbroken aluminum channels which rise from the windowless second floor to roof level where the heating and cooling machinery is housed. As in the recently completed Petroleum Building (FORUM, May '48) these projecting fins will act as sun shades and reduce the load on air-conditioning equipment. Floors throughout are of light-weight concrete slab; the frame is of tubular steel. George Dahl Associates, architects for the building, count on its completion by January 1950.

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Adlake Windows last the life of the building because they're precision-built—down to the smallest detail. No painting or maintenance is required, so that eventually they pay for themselves. Drop us a post card today for complete data. Address: 1101 N. Michigan, Elkhart, Indiana.

## SUPERLATIVE VALUE! Adlake windows offer you

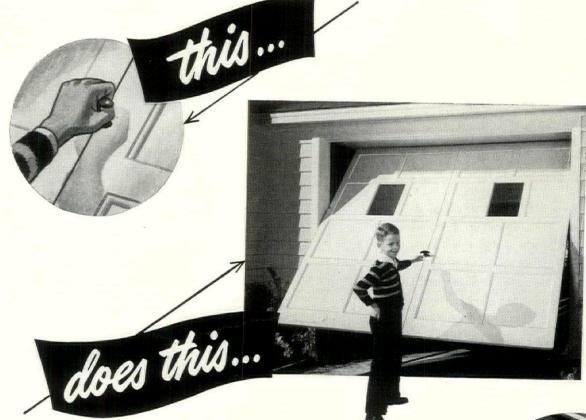
• No Maintenance Cost • Minimum Air Infiltration • Freedom from Warp, Rot, Rattle, Stick or Swell • Easy Installation • Sturdy, Lustrous Aluminum Construction





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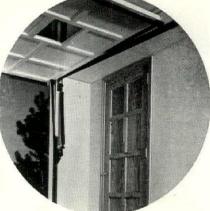
## when it's a CURTIS OVERMATIC!

No strong muscles needed to open a Curtis Overmatic garage door. One turn of the handle—and the door glides up and over. Anyone who can open a house or car door can open the Curtis Overmatic—and a slight pull closes it from outside or inside.

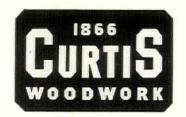
In the Overmatic, Curtis answers the problem of providing a truly modern overhead garage door at *moderate cost!* The Overmatic fits an opening 8'x7', providing ample clearance for any style car. It comes as a complete unit with all hardware, ready to install.

## **Greater Strength with the New Prespine Panels**

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Inside view of Overmatic garage door when "it's up and over." Only 2 inches of overhead clearance required—far less than needed by most overhead doors. Note simplicity of operating hardware. Overmatic can be installed within  $3\frac{1}{2}$  inches of house door in side wall.



When in New York: visit the Curtis Woodwork display at the Architects' Samples Corporation, 101 Park Avenue.

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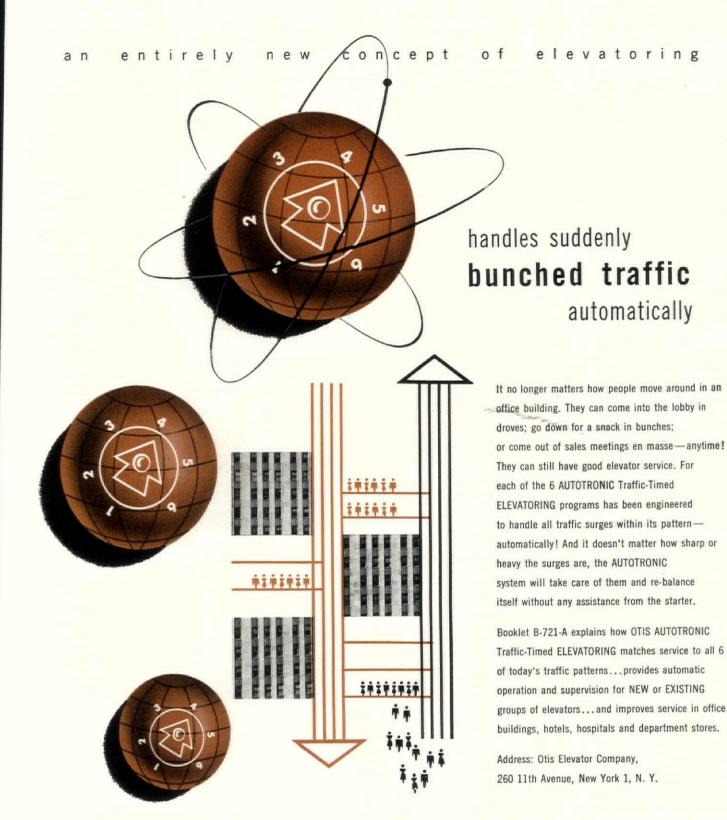
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Gentlemen:

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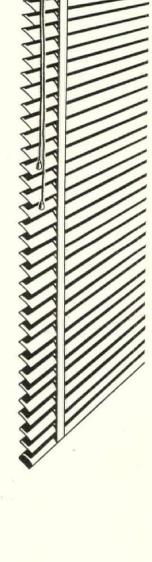






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WALLACE K. HARRISON and MAX ABRAMOVITZ, archit of the curtain-walled Alcoa Building (p. 76), are perl best-known as Director and Deputy Director of Plann United Nations Headquarters (p. 81). Harrison is all as well-remembered for his role of co-architect of Rocke ler Center, regarded by some as the outstanding architect achievement of the depression era. With his various p ners (Corbett & MacMurray, Andre Foulihoux, and 1 Abramovitz), Harrison has turned out scores of other m storied structures. Max Abramovitz has been his part for eight years and a professor of architecture to boot.

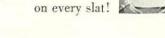
**RICHARD NEUTRA,** famed California architect, was born Austria and trained at the Universities of Vienna a Zurich. He practised architecture all over the Europe continent before migrating to America in 1923 and in 26 years here has designed mass housing and country how (p. 90), schools and factories in and out of this country. early crusader for prefabricated construction, "Neutra v talking prefabrication when others were talking gird Gothic" (FORTUNE, Oct. '35). One critic has said t "Neutra is among American architects second only to Wris in his international reputation. His executed buildings p mit him to rank as the leading architect of the West Coas

**CARROLL, GRISDALE and VAN ALEN** are partners in Philadelphia architectural practice devoted solely to mode design (p. 98). J. Roy Carroll, Jr., studied architecture the University of Pennsylvania, wound up his career the in 1945 as executive chairman of the design staff. John Grisdale breezed through the Universities of Minnesota an Pennsylvania, worked for Paul Cret before teaming up wi Carroll in 1945. William van Alen graduated from Car bridge and the University of Pennsylvania, joined Carro and Grisdale in 1946 after wartime service in the Navy an the OSS.

**DAVID FRIED**, architect of the Bevelander House 20 mil utes west of Boston (p. 95), is a 1933 graduate of the Corne University School of Architecture. After graduation, h roamed north and turned rustic, designing park structure in Vermont and New Hampshire for the Department of Interior's National Park Service. He hung out his ow shingle in New Hampshire in 1937, moved to Boston a yea later. After a wartime stint designing industrial building for Bethlehem Steel Co., he went south to be assistant pro fessor of architecture at the University of Florida. He taugh there for a year, then reopened his Boston office.

VICTOR GRUEN and Associate KARL VAN LEUVEN, JR headed the staff responsible for the design, down to the las bit of china, of Milliron's Department Store near Los Angele (p. 105). Victor Gruen, senior partner of Gruen & Krum meck, was born in Vienna where he practised architecture until the Anschluss in 1938 cut short his Austrian career He came to America and, in collaboration with Elsie Krum meck (now Mrs. Gruen), opened an office in New York moved it to Hollywood in 1940, and added another in Sar Francisco. Van Leuven, once a set designer for Universa Studios and an art director for Disney, joined Gruen in 1941.

**BROWN, LAWFORD & FORBES,** New York architects of the milk processing plant in Morristown, N. J. (p. 112) were collaborators before they were partners. They had pooled their talents on several New York City public housing projects before organizing the present firm in 1946. Archibald Manning Brown is a graduate of Harvard College and the Ecolé des Beaux Arts, and a former member of the New York City Art Commission. Geoffrey Noel Lawford is an alumnus of Cornell, while Edwin N. Forbes studied at the University of Pennsylvania.







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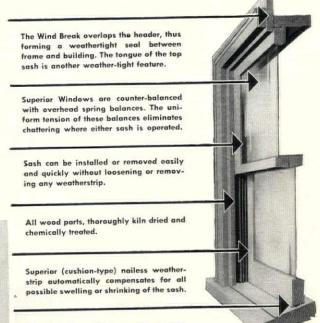
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Partitions, etc.

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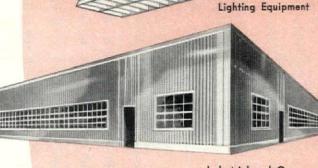
By using products of Galvanite you get the strength of steel, the resistance to atmospheric corrosion of zinc, and an ideal base for painting or baked enameling. And because Galvanite withstands severe forming without flaking, peeling, cracking or powdering, these products are able to render the utmost in serviceability. That's why, when it comes to beating the weather — you can't beat products made of Galvanite.

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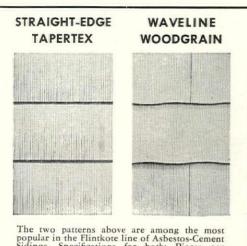
## HOW TO Pick a Winner WHEN YOU'RE CHOOSING SIDES

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So you see, with advantages like these, the odds are in your favor. Be sure you choose Flintkote Asbestos-Cement Sidings . . . either for new construction or for remodeling. It's championship material !



The two patterns above are among the most popular in the Flintkote line of Asbestos-Cement Sidings. Specifications for both: Pieces per Square, 57; Approximate weight per Square, 185 lbs.; Exposure, 10<sup>1</sup>/<sub>2</sub>" x 24"; Headlap, 1<sup>1</sup>/<sub>2</sub>".







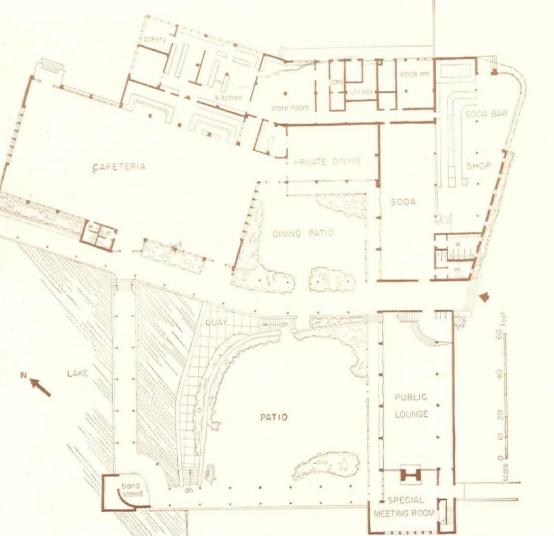
LATE NO

THEATRICAL OVER-WATER PATIO AND WALKS IN MIAMI UNIVERSITY'S NEW STUDENT BUILDING

> Ezra Stoller: Pictorial Services

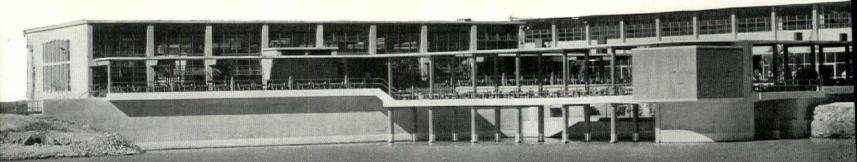


Main entrance at center opens on public lounge flanked by meeting rooms in left wing, soda bar at ground floor right.



1

1



MIA

ARCHITECTS: Robert Law Weed & Assoc ASSOCIATE: Marion I. Manle INTERIOR DESIGN: George Farkas Inc CONTRACTOR: Gust K. Newberg Const. Co

CAFETERIA

1

# **IVERSITY** adds two more building groups to its brand-new and growing campus

Last July the University of Miami surprised its staid and stationary academic peers with the only "completely new, completely contemporary" campus plan in the U. S. (FORUM, July, '48). A busy year later the two newest building groups in Miami's ambitious construction program—a student recreation hall and veterans' housing—bring to completion four of a projected 15 elements on the sprawling Coral Gables campus. Because, in 1945, the University was moving to a virgin site, uncorseted by yesterday's bi-axial symmetry, it was able to develop a site plan suitable to contemporary architectural treatment. Informal grouping is the rule, with administration and classroom buildings on one side of the campus, housing, athletic field and chapel on the other. Between is an artificial lake, dredging from which has been utilized for construction and landscaping.

The recently completed recreation building is placed at the edge of this lake, on the classroom side, but forming a natural transition between housing and the school buildings proper. The purpose of this building is to provide a background for official functions, coupled with informal areas for everyday student activity. In keeping with the warm Florida climate (and in order to accommodate the largest number of students at the lowest cost) much use is made of semienclosed outdoor areas. For instance, the cafeteria, which seats 500 in its indoor space, can be expanded to accommodate 2,000 by using adjoining terraces. An arresting and romantic feature is the huge, covered patio, equipped with an orchestra platform and surrounded by walkways, which extends out over the lake. (See page 69.)

The construction of the main part of the building is reinforced concrete rigid bents which span the building transversely and are tied together by concrete floor and roof slabs. Space between piers is glass, set in small movable panes for breeze control and protected from sun by the roof overhang. Designed for future expansion to twice its size, the present building was constructed on an FHA commitment of \$5 million, a cost of about \$7.50 per sq. ft.



0-0 SPECIAL EETING RM

READING ROOM

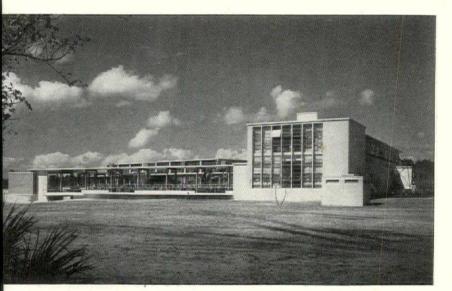
SECOND FLOOR

Indoor cafeteria viewed from outdoor dining terrace. Walk beyond windows at left leads to bandshell and dance patio (see cut below).

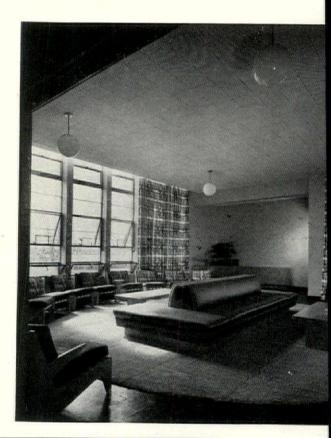
Photos: Ezra Stoller: Pictorial Services

CONSTRUCTION OUTLINE: STRUCTURE - reinforced concrete, Penn Dixie Cement Co. Waterproofing-Master Builders Co. Exterior wallscement stucco, Florida Portland Cement; inside-gypsum lath and plaster, U. S. Gypsum Co. Ceilings-acoustical tile Fibertone, Johns-Manville Corp. ROOFING—built-up, Koppers Co. INSULATION—Insulation Products Co. and Johns-Manville Corp. WINDOWS: Sash—projected, steel, William Bay-ley Co. Glass—double strength, quality B. FLOORS—cement and terrazzo. HARDWARE—Schlage Lock Co., Stanley Works and Russell & Erwin Mfg. Co. PAINTS—Pittsburgh Plate Class Co. Sharwin Williams Co. and Mg. Co. PAINTS-Pittsburgh Plate Glass Co., Sherwin-Williams Co. and Sec Mfg. Co. ELECTRICAL INSTALLATION: Wiring and switches-General Electric PLUMBING FIXTURES-American Radiator-Standard Sanitary Corp. HEATING: Boilers-Minneapolis-Honeywell Regulator Co.

## **RECREATION HALL** is center of student activities



In addition to the cafeteria and dance patio, the recreation building of tains student lounges, a spacious reading room on the second floor, t large conference rooms and offices for student publications and gro meetings. One of the most popular features is a combination snack h and sundry shop where quick lunches and classroom essentials can purchased. Interior furnishings are in a light, cheerful key, stressi sturdiness and ease of maintenance.



SPECIAL MEETING ROOM elev. 25.5	Harit U	-READING-	ROOM	

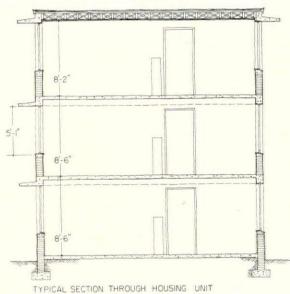


# Clossroom buildings

### STUDENT APARTMENTS are a postwar innovation for the veteran

Almost unique in college housing is the University of Miami's shift from dormitories to self-contained student apartments (FORUM, July '48). The postwar press of married veterans plus the need to interest investment capital by means of FHA backing were largely responsible for the choice. Consequently the 27 buildings in this 58-acre

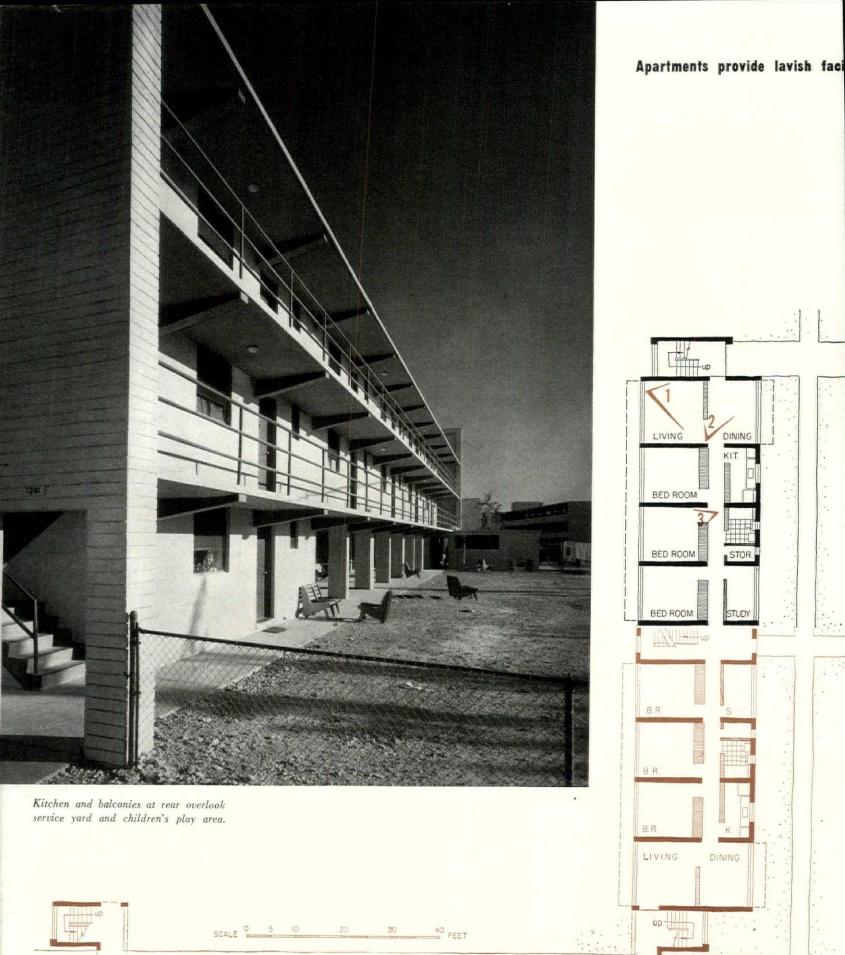


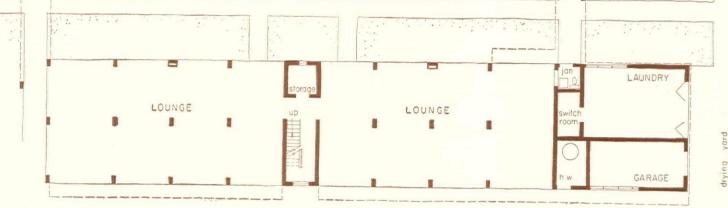


housing group have been broken into one, two and three-bedroom flats, each complete with a well-equipped kitchen. A management and maintenance building and a sewage disposal plant, part of the housing project, serve the entire campus, anticipating an enrollment of over 10,000.

As in the other University buildings, Florida's tropical weather and a prevailing southeast breeze ruled the apartment designs. Long, low structures of only two and three stories, they utilize wall-to-wall glass on the windward side, the exposure reserved for living rooms and bedrooms. Kitchens, baths and balconies are on the lee side adjacent to outside service elements, laundries, drying yards and garbage enclosures.

Construction has been simplified and standardized to the nth degree. Bearing walls of 18 in. concrete block run through the buildings, serving as room partitions and carrying floor and roof loads. Non-load-bearing partitions are storagewalls.





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### private and group outdoor living



2

Some apartments are entered through living room (above), others through dining room (right). Loggia provided under half a building by raising one wing off ground is common device (below).

1

Special provision for outdoor living includes shaded terraces at the ends of buildings and, in structures limited to family occupancy, large covered loggias. The latter are formed by elevating the entire building on columns. Since students must take care of their own apartments, furnishings throughout emphasize ease of maintenance. The majority of apartments, 342, are two-bedroom size with separate living room, dining room and study. These rent for \$150 per semester for each of four students. The 104 three-bedroom units accommodate six students at the same price per head. The 87 one-bedroom apartments without study or dining room are \$77.50'a month.

CONSTRUCTION OUTLINE: Waterproofing—Master Builders Co. Exterior walls—cement stucco, reinforced concrete beams and columns with concrete block panels, Penn Dixie Cement Co.; inside—gypsum lath and plaster, U. S. Gypsum Co. Floors—concrete slab. ROOFING—built-up, Koppers Co. INSU-LATION—Insulation Products Corp. WINDOWS: Sash—steel, William Bayley Co. Glass—double strength, quality B. FLOOR COVERINGS: Main rooms—asphalt tile, David E. Kennedy Co. Kitchen—linoleum, Armstrong Cork Co. Bathrooms—ceramic tile, Mosaic Tile Co. PAINTS—Sec Mfg. Co., Pittsburgh Paint Co. HARDWARE—Schlage Lock Co., Stanley Works, Russell & Erwin Mfg. Co. and American Cabinet Co. ELECTRICAL INSTALLA-TION—General Electric Co. BATHROOM EQUIPMENT—American Radiator-Standard Sanitary Corp. Cabinets—F. C. Lawson Co. HEATING: Hot water generators—Crane Co.



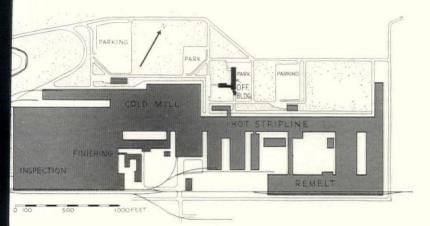


ALUMINUM New ALCOA administration building at the Davenport plant is a gleaming pac



### e many mature uses of this metal in building

Harrison & Abramovitz, Architects George A. Fuller Co., General Contractor

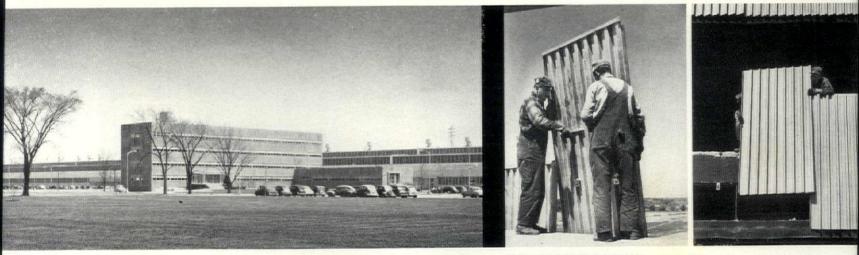


Here is a structure with aluminum window frames, doors and partition facings; aluminum wiring, flashing and paint; aluminum fixtures and hardware; aluminum ducts and acoustical ceiling panels . . . enclosed within walls of cast aluminum panels. Here are aluminum castings, extrusions, tubing, sheet and foil—a metal claims its place.

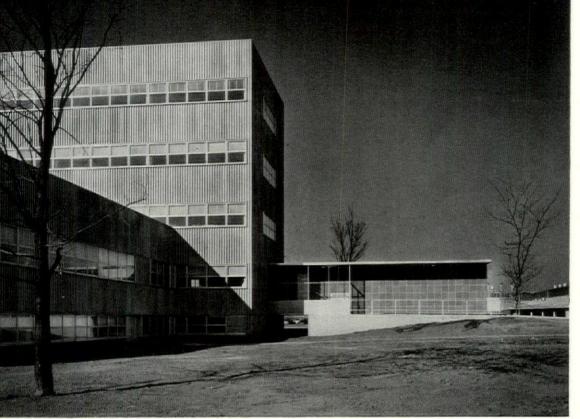
The fact that the Aluminum Company of America has covered 47 acres of flat Iowa land with a great mill devoted to rolling aluminum sheets and plates is evidence of the growing importance of this relatively new material in the nation's economy. More specifically, the plant's administration building, pictured here, has been used to demonstrate to the nation's builders the prominent place which aluminum already has attained in their large section of that economy. This is not an experimental building, although aluminum in a number of load bearing applications is still in the experimental stages (this building is held up by conventional steel). It is a study in today's uses of aluminum. The resulting tonnage of aluminum used may be amazing even to professionals who think they have been conscious of the increasing diversity of products fabricated for their use: the administration building and plant together contain more than seven million lbs.

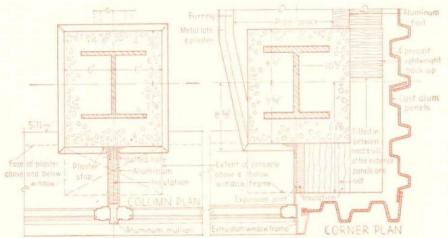
Most interesting of the uses is in the armor of aluminum spandrels which the building wears. Consisting of aluminum alloy cast in corrugated panels whose standard size is 4 ft. x 7 ft.  $3\frac{1}{4}$  in., weight 162 lbs., the spandrels are bolted to a steel frame which also supports the inner wall of 4 in. precast panels of light-weight concrete. Total thickness of the wall is  $9\frac{1}{2}$  in., including the interior furred finish and the air space between the aluminum and concrete. The wall was designed almost masochistically to conform with the tough building code of New York City, 1,414 miles away. Both the exterior metal skin and the backup flesh of doweled concrete panels were designed against a 60 lb. per sq. ft. wind load standard. Fire resistance of the concrete earned a 4-hour rating—another telling point in Alcoa's demonstration that here they have a practical city construction.

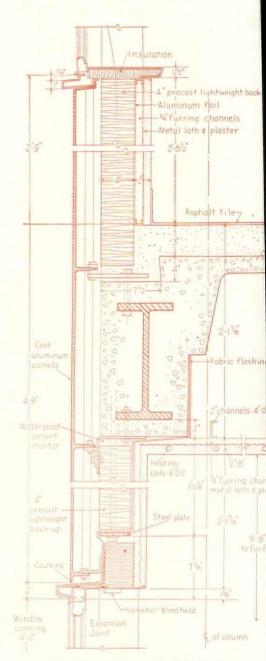
This wall is Harrison & Abramovitz's venture into prophecy. An impervious weather seal was not sought in the joints of the exterior aluminum panels; what water penetrates this shield drains off before it presents a real problem for the concrete slabs. This is a double wall, rather than a repetition of two similar thin walls; each of its materials is placed to best advantage, air included.



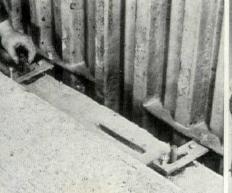
**ADMINISTRATION BUILDING** stands before the huge works of the plant. View on opposite page is from near low wing showing ramp up to the main entrance, which appears between two trees above. CAST ALUMINUM SPANDRELS which form skin of the building can be handled by two men, and fixed in place without scaffolding. Panels are designed for wind load of 60 lb. per sq. ft. Deep longitudinal corrugations increase strength. Lateral stiffness is obtained by incorporating cross fins on the back.







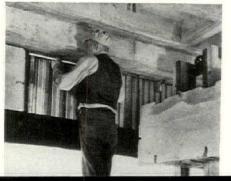
TYPICAL SPANDREL SECTION

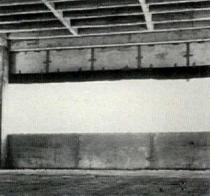


of building with lintel irons and bolts. No attempt is made to get entirely weatherproof joints here.



SPANDRELS are fixed to steel frame Backwalls of 962 precast concrete panels are put in place, doweled, and tightly jointed behind aluminum panel (above) and below floor level.

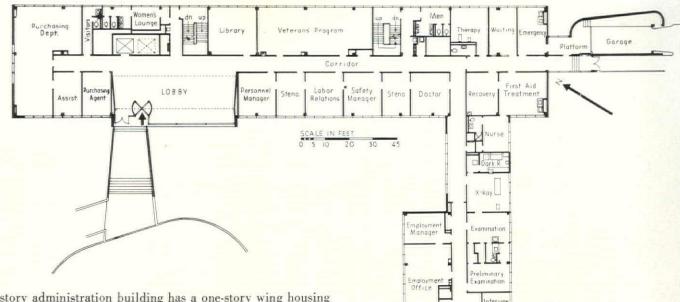




Spandrel from interior, with aluminum panel and diacrete in place before application of aluminum foil vapor barrier and interior finish.



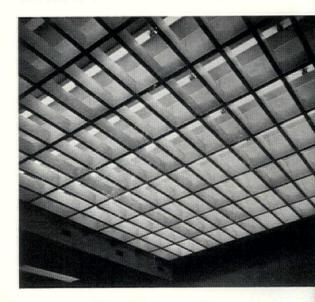
Aluminum windows are put in place, completing exterior of this 91/2 in. thick wall. Wall weighs 25 lb. per sq. ft., costs \$4.78.



The four-story administration building has a one-story wing housing employment and medical facilities. Severity of the vertically fluted facades is broken only by a small protruding garage (opposite page) and the inset glass panel fronting the main entrance lobby (page 76). Although aluminum is far superior to most ferrous metals in regard to corrosion, it will darken considerably in time. These cast panels were ball-burnished, then the protruding faces were highlighted on a polishing belt, so when the recessed portions do weather to a darker tone, the outstanding strips will be in some contrast. Window frames and sash are alumilited.

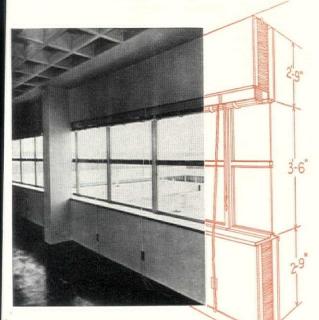
The short 4 ft. 6 in. windows used in these strips happened largely as a result of the external relation between spandrel and glass, but they furnish an example of a recent split in design opinion over the proper height for office windows in air-conditioned buildings. Lower windows bring less light deep into the office but also create less glare, and put less of a sun load on the cooling system in summer. With lighting and airing passing fast from the function of the window to the province of the building's mechanical equipment, the principal remaining purpose for windows is for looking out. Short windows perform this necessary psychological job as well as tall ones.

Alcoa's cost analysis of the wall construction was \$2.50 per sq. ft. for the aluminum panel. Erection cost for the metal panel was 65 cents per sq. ft. Cost analysis for fabricating the backup wall was \$1 per sq. ft. Erection cost was 38 cents per sq. ft. Furring and plastering costs were 25 cents per sq. ft. Mix for the backup panels was one part cement to six parts calcined diatomaceous earth, and water. ALUMINUM APPLICATIONS in the building included the combination lighting and acoustical ceiling, an egg crate of aluminum acoustic tile on an aluminum frame.



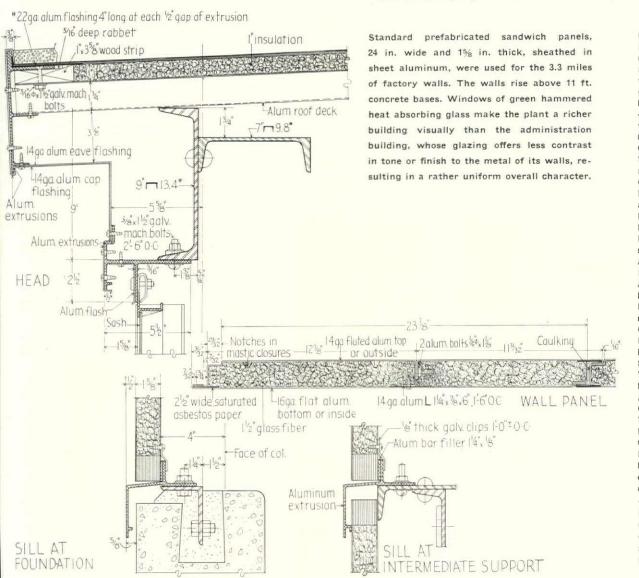
**ELEVATOR CAB AND FRAME** use aluminum sheets and extrusions. Aluminum vanes (left) form the lobby's back partition.











### Walls of the vast plant are of aluminum too, in different form

CONSTRUCTION OUTLINE (Administration Building): Exterior wallscast aluminum panels fastened to spandrel beams, backed with lightweight Diacrete panel. Diacrete aggregate, Great Lakes Carbon Corp.; panels by Geo. A. Fuller Co. Interior partitions -gypsum blocks, U. S. Gypsum Co.; terra cotta, Northwestern Terra Cotta Corp. Structural steel-Bethlehem Steel Corp. ROOFING-Johns-Manville Corp. WINDOWS: Sash-extruded aluminum, projected, General Bronze Corp. Glass-Pittsburgh Plate Glass Co... Mississippi Glass Co. Venetian blindsaluminum, Acme Venetian Blind Co. ELEVATORS-Otis Elevator Co. FIN-ISH FLOORING-Thomas Moulding Floor Co., Witt Flooring Co. and Mo-saic Tile Co. HARDWARE AND MET-AL TRIM-General Bronze Corp., C. E. Halback Co., Oscar C. Rixson Co., Aluminum Co. of America, Williamsburg Steel Products. ELECTRICAL INSTALLATION-Walker Bros., Aluminum Co. of America, Harvey Hubbell Co., Sylvania Electric Products Co., Federal Electric Co., Inc. PLUMBING FIXTURES - American Radiator-Standard Sanitary Corp. Valves-Sloan Valve Co. HEATING-copper coil panel heating, Revere Copper & Brass Co. Air Conditioning-American Air Filter Co., Pittsburgh Lectro Dryer Corp., Westinghouse Electric Corp. Controls-Minneapolis-Honeywell Regulator Co. Convectors-Trane Co. Valves-Jenkins Bros Co. and J. B. Clow Co. Water heaters-Patterson-Kelly Co. Sewage ejectors-Chicago Pump Co. Water coolers-Cordley & Hayes.

MANUFACTURING PLANT: Sandwich panels fabricated by H. H. Robertson Co.; aluminum factory type sash by William Bayley Co. (Details left.)

# UNITED NATIONS builds a vast marble frame for two enormous windows

As the steel went up, plans became final, so that pictures and drawings on these pages give the architectural world its first opportunity to appraise the year's most talked about building, the United Nations Secretariat.

In its effect, the 39-story slab will be a vast marble frame for the world's two most enormous windows. The north and south walls, only 72 ft. wide, will be completely blank and marble-faced, serving the east and west walls as a kind of picture frame, which is completed by carrying the marble across the top of the long sides as a thin cornice. Held in this frame as a Gothic window is held in tracery, the entire area of the east and west walls, 544 ft. high, 287 ft. wide, will be an enormous screen of blue-green glass, a mosaic reflecting the sky from a thousand facets. It will be composed of 5,400 windows and 5,400 glass spandrels set in a net of narrow-faced aluminum framing members, completely uninterrupted by any columns or visible masonry. To make it doubly clear that the glass membrane represents skin and not bones, that it has nothing to do with "expressing the steel frame," the architects have brought it out in front of the structural steel (by methods which are described on succeeding pages). Its effect is intended to be neither "vertical" nor "horizontal" in the traditional sense, but as nearly as possible weightless and hovering.

The success of the big slab building can be judged only on completion. No prophetic gift is required to foresee violent discussion. Commercial builders will copy the Secretariat at their peril. What it seeks to accomplish is related perhaps less to New York than to Washington. As part of a headquarters group, the Secretariat must harmonize with the forthcoming Assembly Building as the Treasury in Washington harmonizes with the Capitol. Functionally, Secretariat and Treasury are both buildings for useful work, but both share the duty of proclaiming the dignity, security, and power of states organized into a community. In Washington, a hundred years ago, monumentality was columns. On the East River, now, it is construed as serenely simple geometry, akin to the pyramids, but airy, expressing the century's skyward explorations.

Whether monumentality belongs to this age, whether work is expedited by the arrangements, whether the beautiful effect is also organic, will be questions of opinion. This preview seeks only to supply the facts.

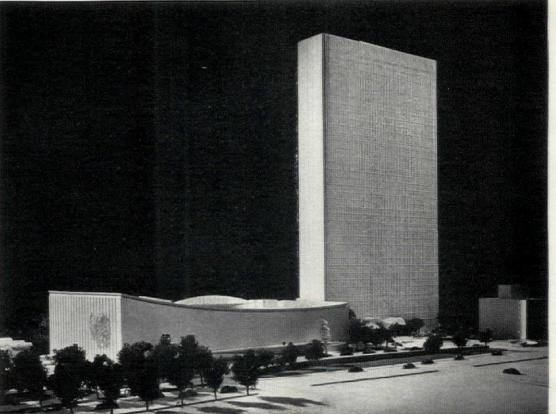
**Ben** Schnall

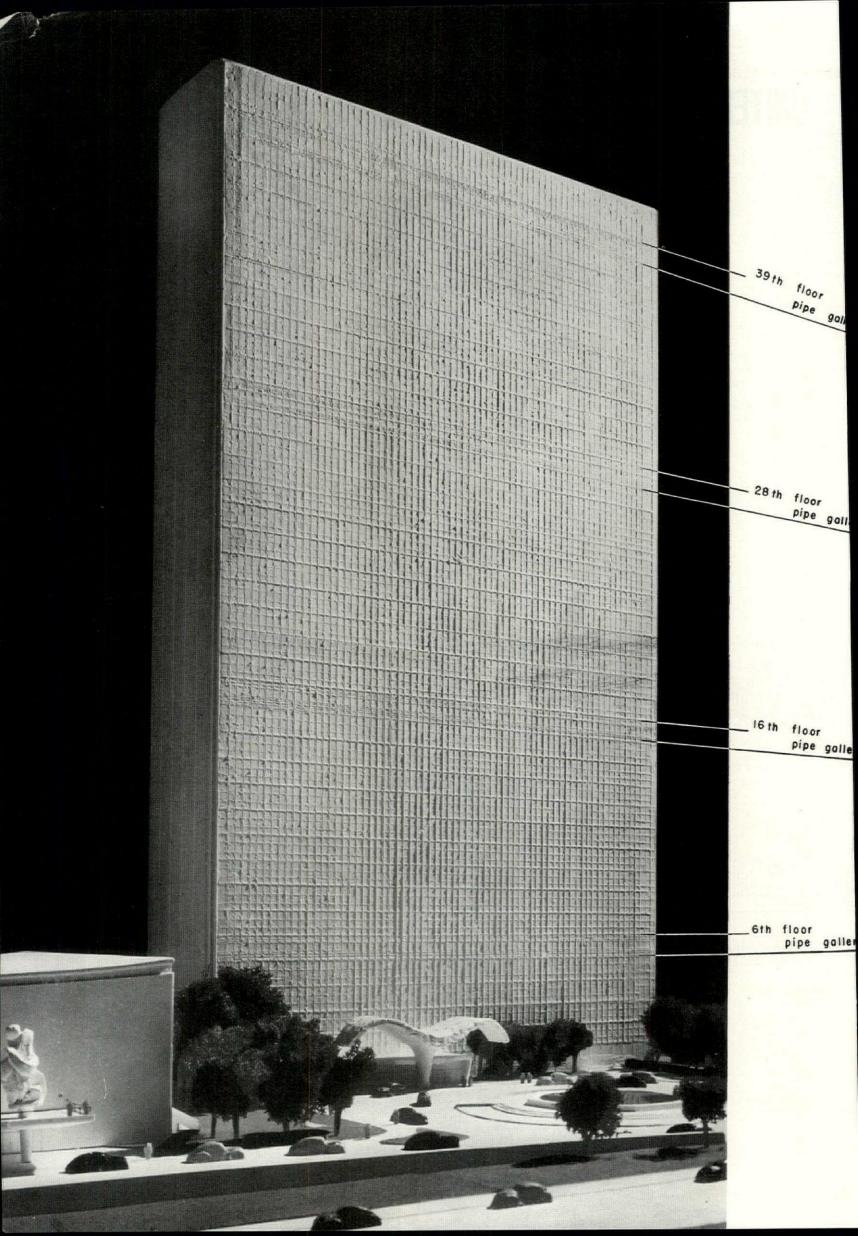


Capitol and Treasury in Washington are

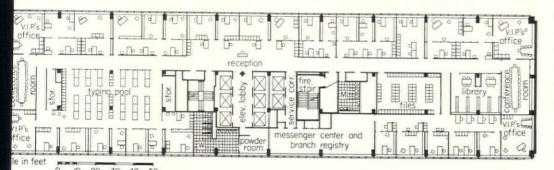
related in proclaiming dignity . . .

. . . United Nations Assembly Building and Secretariat share the same duty.



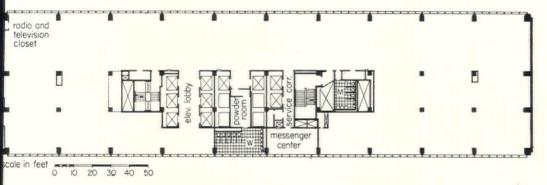


ANNING OF SECRETARIAT features 20 interior elevators, north-south orientation, irregular column spacing and four pipe galleries

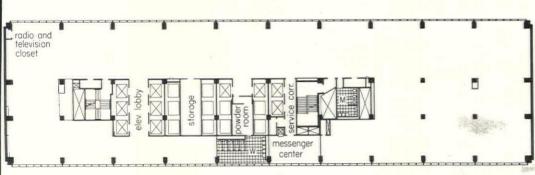


pical floor plan, above 28th floor, ows high proportion of small offices honorific exterior locations. Many n be tucked in small spaces.

> Elevatorage is by 18 high-speed passenger cars in three banks (high, medium, low rise), by two freight cars, by up-and-down pairs of escalators from the first level up four floors and down one floor to the concourse. Despite single occupancy, studies indicate little interfloor traffic. Mail and documents will be carried by a tray conveyor system through the building.



ypical floor plans, 16th to 28th floors above), and 6th to 16th floors (below), how variations in bay widths, with argest space facing the river.

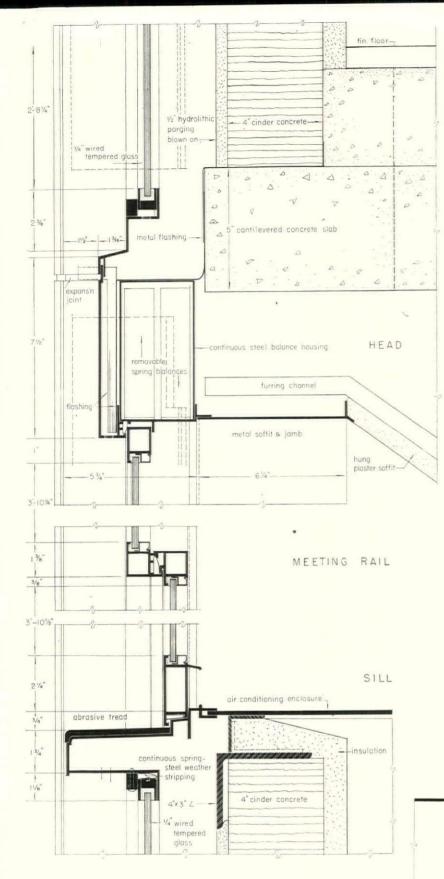


Elevators were one of the main troubles in keeping the geometry simple. To have allowed the elevator tree to show on the exterior, by placing elevators next the wall, would have destroyed the unity of the stunning glassscreen concept. After lengthy argument, the elevator shafts were swallowed up in the main mass without bulge or ripple. Practical heads wagged at the narrow 12 ft. space left between elevator core and west wall (top plan, left). In a dollar-bound commercial building such "waste" of periphery would have been tough. U. N. architects reply that the sacrifice is minimal, because of repeated need for message centers, because of a peculiarity of the Secretariat ("not an office building"). Many bigwigs rate peripheral locations but need only minor desk space, can be neatly tucked in, behind the elevator core. (See top plan.) Exterior location for women's toilets is admittedly elegant.

North-south orientation of the building, usually less favored, was adopted to avoid blocking off the narrow site from 42nd Street. The Secretariat, serving a 3,500 population, belongs closest to traffic arteries. The building faces Manhattan's west. Since Manhattan's north is about 30° east of true north, the air conditioning load due to sun is about 30° less than if the building faced due west, though still greater by 40° than it would be if the building faced south. Nevertheless the only vote against the present decision was Chinese. Reason: "We always build east-west in China."

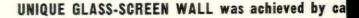
**Column spacing** is uniform at 28 ft. parallel with the long walls wide enough for (an elevator bank); window mullions at 4 ft. spacing divide bays into seven modules. Transversely there are three different bay widths: a 28 ft. 4 in. strip along the favored east wall facing the river; an 18 ft. 2 in. middle strip (adapted to two elevator enclosures); a 20 ft. 8 in. strip along the western wall. Greater total width would have been undesirable, the architects declare, because a very high proportion of tenancy is brass, rates exterior locations, requires less interior clerical areas. End rooms admittedly sacrifice daylight and view to monumentality for the building.

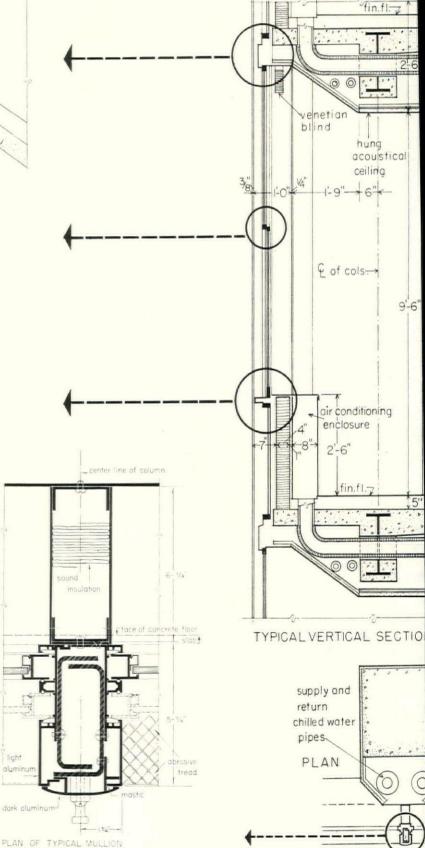
**Pipe gallery floors**, seen at 6, 16, 28 and 39th level, are an interesting innovation. All fan rooms and upstairs air-conditioning machinery are concentrated on these floors which are 13 ft. high, and add only 6 ft. per pipe floor to total building height, compared to the usual 7 ft. crawl space. Double use of this space for pipe cross-overs and air-conditioning frees all other floors of machine rooms. Pipe galleries are so spaced that each absorbs one overrun floor for a bank of elevators. All machinery is concentrated near the center of the floor, leaving office space at the ends.



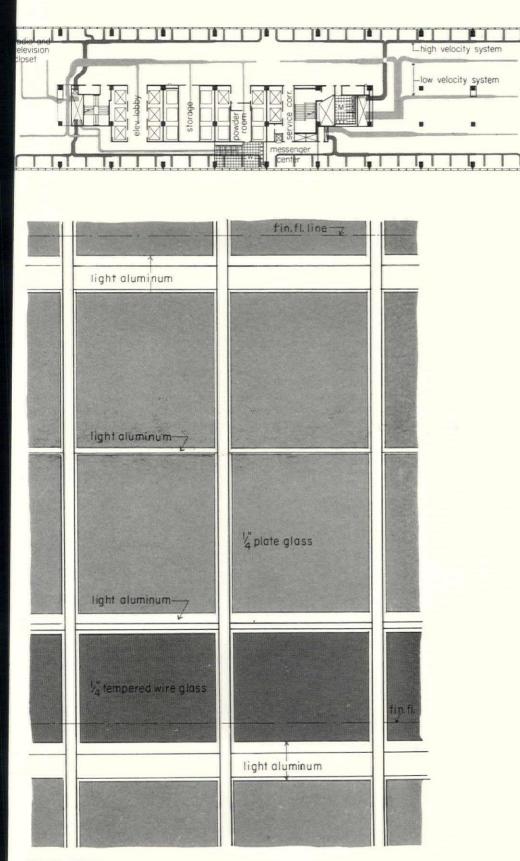
The steel frame is very simple. Floor slabs are cantilevered 2 ft. 9 in. beyond structural frame but cantilevered portion is supported only by its own reinforcement. Spandrel walls are lightweight, composed of 1 in. of asbestos insulation, 4 in. of cinder-block (hydrolithic parged 1/2 in. on exterior for waterproofing), 23/4 in. of circulating air (to avoid condensation), and the 1/4 in. wire glass spandrel. This wire glass is placed in a regular window frame to provide some "give." Total exterior wall thickness is 81/2 in. from inner to outer face. Weight is 18 lbs. per sq. ft. Mullions are structural in taking wind pressure against windows.

dark alu

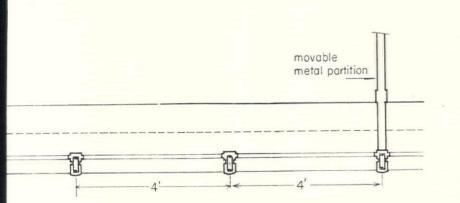




ration of structure and mechanical systems



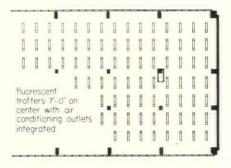
ELEVATION



**Air-conditioning** design calls for two systems: a conventional low velocity system in the ceiling for the interior space, plus a separate high-velocity system for the peripheral area. The latter, similar to systems being installed in all but one major new office building in New York, will require some 4,000 window units, each with its own fan and drain, under six of the seven windows in each bay. Such a luxurious standard, with individual controls at every second window unit, is enforced on U. N. by the contiguity of Icelanders and Abyssinians in the same building, each with his own idea of thermal comfort.

Water pipes for window units are run up the exterior of columns (see plan) and have simple connections, an advantage of the "wallscreen" system which was adopted, somewhat offseting the inconvenience in plan of inwardprojecting columns.

One interesting feature is that the main north and south ducts run through, rather than under, the deep windbracing girders, eliminating the usual addition of extra floor height and extra windbracing entailed by air conditioning. But east and west feeders run under the north and south beams. To let the feeders pass under the beams there is a 6 in. offset in the ceiling near the interior partition. wall. The hung ceiling acts as a return plenum, air-conditioning outlets being integrated with the lighting troffers (see bottom plan, this page). Floor-to-floor height is 12 ft.; floor-to-ceiling, 9 ft. 6 in.

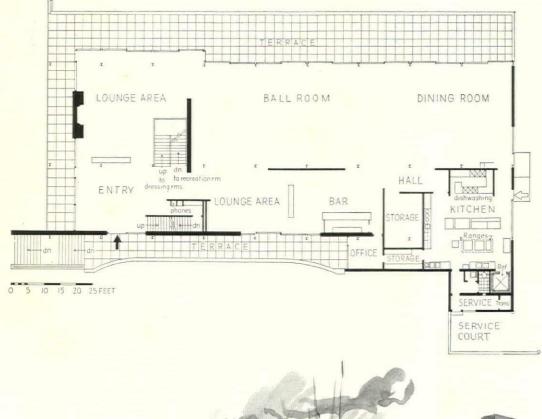


Fluorescent troffers, 4 ft. long, are spaced to provide 30 foot-candles on the desks below. The multiplicity of air-conditioning outlets, integrated with the lighting fixtures, is due to requirements of flexible subdivision. Acoustical absorption is by perforated metal ceiling pans.

**Costs.** Not all subcontracts are fully settled but round figure costs indicate \$21,000,000 as the total for the Secretariat. Steel adds up in round figures to 13,500 tons, at \$2,650,000.



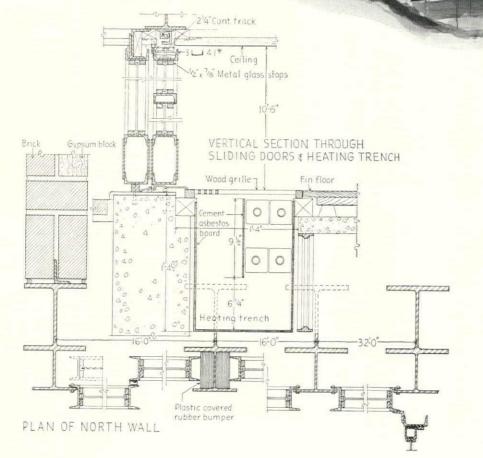
# COUNTRY CLUB in North Carolina aims to let in the count



#### WILLIAM DIETRICK, Architect

When a country club doesn't shy away from the country behind a protective barrage pillars and piazzas—that's news! In design ing this trim headquarters for the Caroli Country Club just outside Raleigh, N. Architect William Dietrick took a bold ste He set his low-slung masonry building or slight rise in the terrain where club me bers can look through two wide glass wa out over the golf course, tennis courts a swimming pool.

The sloping site allows use of two groun levels. In addition to first floor lounges an dining areas (see plan at left) a lar recreation room opens on the terrace the lower level. This is a special provin for junior members, and will be fitted u with indoor games, soda bar and a firepla of its own. Men and women's washroor are located on a third level, above the ma one.



The wing at the far left of the sketch wil not be completed this summer with the main building. It is part of a near-future expan sion program, providing showers, lockers golf pro quarters and a special "19th hole' refreshment bar. Also projected are root terraces and a large dining room. Cost of the present structure is \$167,000; expected additions, \$100,000.

Molitor



# PUBLIC HOUSING, anticipating new law, looks at New York's high-density planning innovations

The long-debated Federal housing bill HR-4009 is well on its way o becoming law as the Housing Act of 1949. To date it has been bassed by the Senate and approved by the House Banking and Curency Committee. If U. S. Congressmen follow through on their exbected vote, cities throughout the country will be given within the next month or so financing for at least 800,000 dwelling units a year, for the next four years—an annual housing budget of more than a billion dollars. Planners and housers who have long clamored for such a bill will in this event find themselves suddenly faced with the enormous job of carrying out its provisions.

In looking about for available ready plans they will undoubtedly light on what are perhaps the most advanced to date—those sponsored by New York City's Housing Authority under the recent "Non-Cash Subsidy Program" for self-sustaining ventures. Their drawback is an unequaled population density—ranging from 258 to 347 persons per acre—a density which puts them beyond the pale of that permitted even by such big cities as Philadelphia or Chicago. Their strong point is a concerted departure from the planning clichés which have hamstrung public housing progress for the last decade or so.

All four projects presented here—Parkside, Gun Hill, Sedgwick and Dyckman Houses—have adopted some form of the "in-line" plan. This adoption represents a major revolution in the housing field, for until the last few years the "cross" plan in all forms—3 to 5 prongs, with double and sometimes triple crosses—represented the peak achievement of housing design. The great selling point of the cross-plan was the fact that it reduced long public corridors by clustering apartments in wings around the elevator shaft (usually squeezing some livability out of them in the process).

Today's in-line plan frankly accepts the corridor instead of condemning it out of hand as before, and seeks to explore through its use new possibilities for better living. In boldly setting out its apartments in a long straight line on either side of the elevator, the in-line plan achieves a number of striking improvements in unit layouts. It even reaches that heretofore only dreamed-of goal—clear division of living and sleeping space from the entry. Added boons are the elimination of adjacent windows looking into one another, as well as the problem of shadow-casting wings. East-west orientation insures for all apartments the provision of either morning or afternoon sun. Moreover, in spite of the cost of additional hall space, all four of these plans fall under the maximum construction cost specified by the Federal Housing bill—\$2,500 per room.

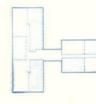
Still a headache, however, is the in-line plan's lack of cross-ventilation for non-end apartments—a headache for which these New York projects have tried various remedies, sometimes successful, sometimes not. Backward code restrictions have so far prevented as thorough probing of its possibilities as that done for Michael Reese Houses (FORUM, Sept. '46), a plan since restudied by the Chicago Housing Authority. This scheme actually achieves *through*-ventilation for all apartments, letting each stretch across to opposite sides of the building—a miracle accomplished by limiting elevator stops to every third floor. Economy is achieved as well, by eliminating intermediate corridors on two floors out of three, although some cost is added by auxiliary stairs. But that forms another chapter in public housing history.

The solutions shown on the next pages—Parkside, Gun Hill, Sedgwick and Dyckman Houses—spell out New York City's top contributions to the expanding field of the large-scale housing project.



#### PARKSIDE HOUSES

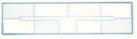
Architects: Walker & Po	or
Number of buildings: 3	14-story, 97-
story and 2 6-story uni	ts
Number of apartments	879
Site coverage	19.8%
Persons per acre	257.09
Gross area per room*	230.9 sq. ft.
Construction cost per	
room*	\$2,201



#### GUN HILL HOUSES

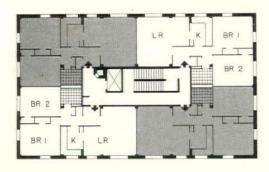
#### DYCKMAN HOUSES

Architect: William F. Ba	llard
Number of buildings: 7	14-story units
Number of apartments	1,167
Site coverage	13.1%
Persons per acre	290
Gross area per room*	230.8 sq. ft.
Construction cost per	
room*	\$2,166



#### SEDGWICK HOUSES

\* The word "room" refers to construction, not rental rooms. It includes laundry, storage space, etc.



PARKSIDE HOUSES (Walker & Poor, architects) combine two types of buildings (see cut at right). Most favored is the double-square plan which allows every apartment cross-ventilation. use of a standard plan gives this boon to the bedroom rather than living-room. Most of the buildings are comparatively low—six or seven stories—and because of their smaller population density, are used to accommodate larger family apartments. The single elevator specified for these small units is adequate, but inconvenient in case of breakdown.

The three 14-story buildings of Parkside do their in-line best to give some cross-ventilation to smaller central units by widening the basic rectangle. This larger group (used to gain needed density for the project) was placed on the uphill end of a rocky site to allow maximum air, light and view for the smaller buildings.

**GUN HILL HOUSES** by Alfred Hopkins & Associates, effect a brilliant solution of almost every gimmick otherwise found in the in-line plan and do it with only a small amount of extra corridor. Even the additional cost of this is offset by the fact that the plan allows full apartment space on first floor levels. The elevator shaft, linking two rectangular wings, allows a spread between them and avoids the cross-plan drawback of having adjacent windows face each other. It also serves to mark entrances dramatically—an important detail in large projects.

BRI

BR 2

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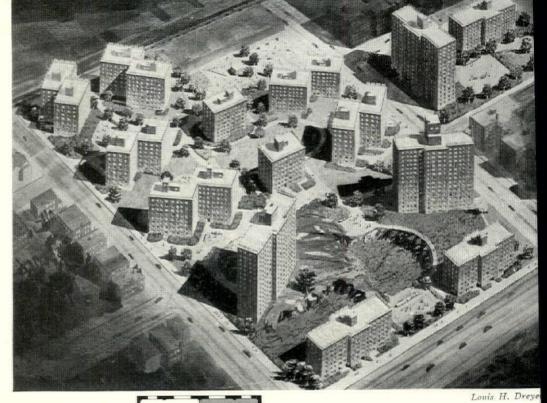
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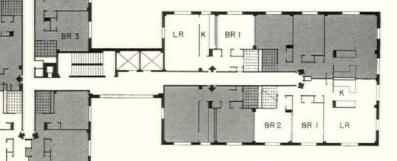
BR 2



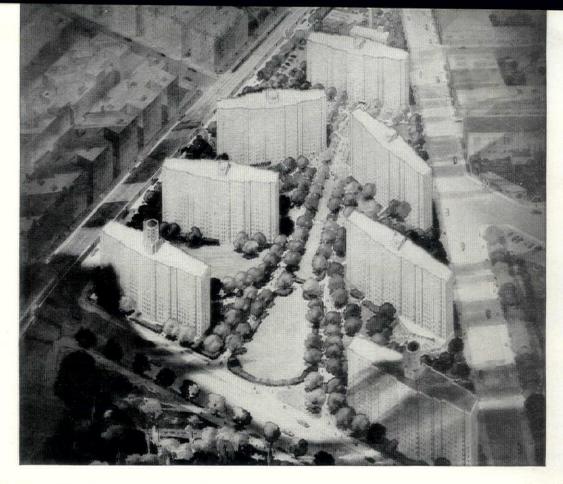
BR 2 H K LR LR K BR 1 BR 2 H K LR LR K BR 1 SCALE 32 '1'-0'

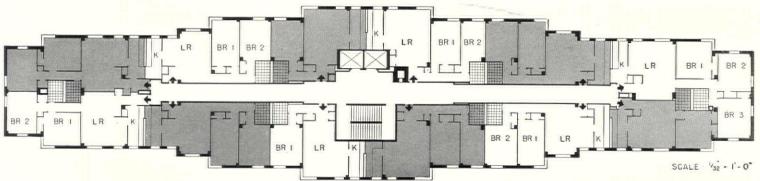
N. Y. City Housing Authority



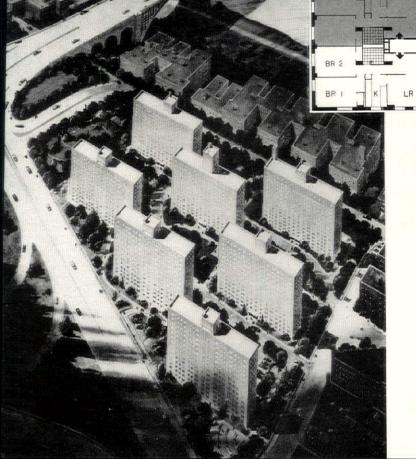


DYCKMAN HOUSES by Architect William F. Ballard, largest project of the four, pushes the in-line plan to its linear extreme with 12 apartments to a floor—certainly an expedient rather than a desirable solution. The gesture of providing slight jogs to induce cross-ventilation by corner windows really only underlines its basic failure to clear up this problem. Even the saving of \$324,000 (3.24 per cent of the total cost) which this scheme represents over the more usual plan (with eight apartments to a floor) hardly seems enough to justify such overcrowding Most of the buildings are well oriented for east-west exposure, with a slight twist to make the most of the prevailing wind. On this triangular lot, however, the large size of the units forces a compromise even in this last essential item of good planning-at least one building is set at an undesirable diagonal.





N. Y. City Housing Authority



**SEDGWICK HOUSES** by Skidmore, Owings & Merrill (the first unbroken in-line plan accepted by the NYCHA) is the one uncompromising rectangle of the four. Projections, say these architects, are not worth the expense of the extra exterior wall space needed to obtain them. Their plan, with eight apartments to a floor, provides 50 per cent of the total number (all corner units) with through ventilation—the only kind, they insist, that really works. These buildings, although undoubtedly too close together on the lot for optimum planning, achieve good orientation with adequate provision for light and air.

E I F

BR

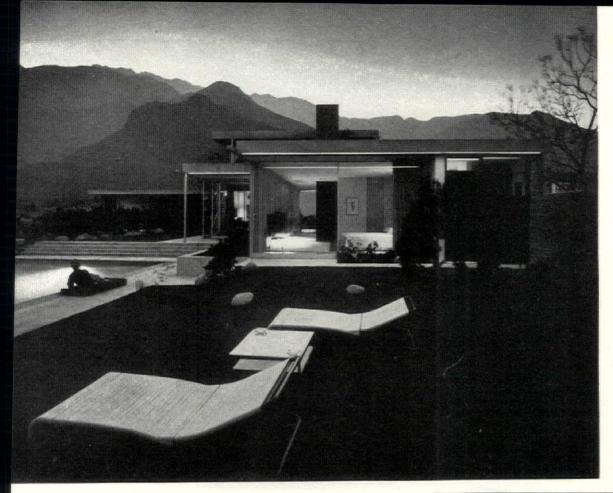
BR 2

Т

# HOUSE IN THE DESERT

RICHARD J. NEUTRA, Architect





"Starlight on sand dunes may tracelessly dissolve under the shrill glare of a single bulb"—therefore the soft light of cold cathode tubes continuous under overhangs.

One sixth of the earth's surface is desert, its rough and lonesome austerity a powerful magnet to modern man, but conquerable for pleasant habitation only by means of the slick and precise contrivances of urban industry. In his design, Neutra as architect made this contest felt. His desert house has been described as a ship riding on sand and rocks.

Water, primary desert requisite, is piped through an extension of a city system, into the swimming pool, also into copper coils buried in ceilings, in floors, and even in the pavement surrounding the pool. For cold desert nights, water circulating in these coils is heated to produce panel heating; for hot desert days (anticipated by numerous thermostats) the same water is switched into a 3-ton refrigerating machine, chilled and returned to the coils, thus converting ceiling, floor and pavement surfaces into cooling panels. Even a temperature of  $80^\circ$  can have a cooling effect on a human body which is losing heat to the panels by radiation.

The sun's own powerful radiation is meanwhile turned back by white mica-glazed pavements, white granulated-ceramic covered roofs, aluminum and aluminum-painted trim, not to mention heat-reflecting aluminum foil inside wall panels. Since eyes must be fully goggled in the desert anyway, there is no added visual hazard in the flashy brightness.

*Wind*, prevailing from north or west, is not only screened by the house orientation, but by those long rows of vertical adjustable aluminum vanes which, seen in photographs, give the house its characteristic and delicate vertical filigree.



Entrance path winds past yucca, oleanders, piles of glacial boulders giving privacy to the grounds.

Service side, to the west, shows "a ship riding on sand and rock."

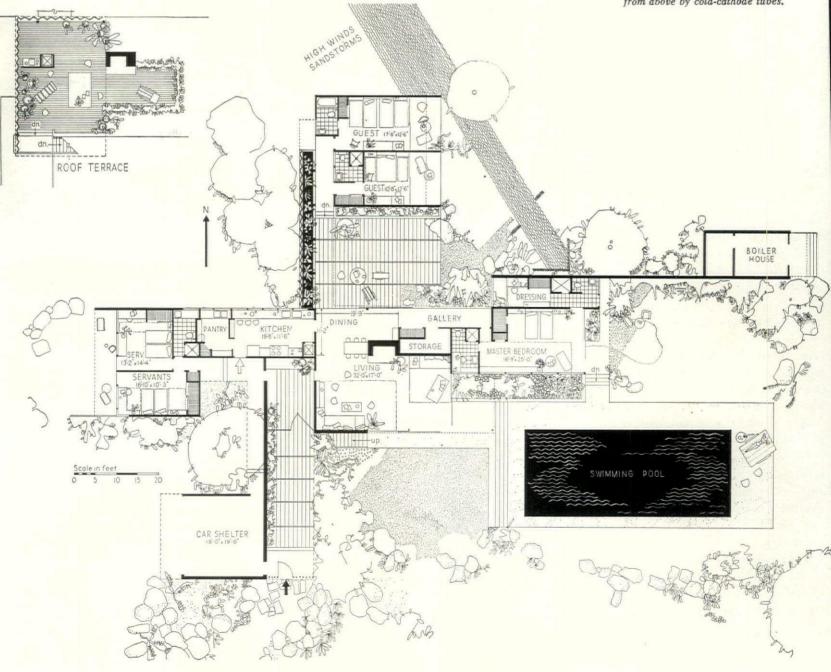


The house plan is one of Neutra's "four-courters," which put the social areas, open or enclosed, toward the center, and which leave each dwelling area open to its own private court. Entering from the open gallery to the south, the guest makes a right turn into the living room, which is the fulcrum of the entire plan. Although it is extraordinarily small in actual floor area  $(32 \times 17 \text{ ft.})$  for so large a house, the living room is big in impact because it is open on the south to the pool and lawn, and on the north to the dining alcove and internal patio. Sleeping quarters are out at the ends of the whirligig wings of the house: the owner's suite to the east, guest rooms to the north, servants' rooms to the west (so well furnished as to be convertible into extra guest rooms).

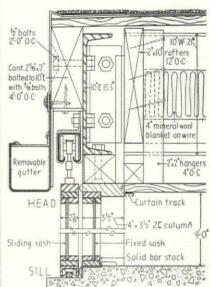
The metal-braced wooden structure is designed to withstand lateral stresses due to storms and earthquake, while still maintaining broad openings to the landscape. Where Utah stone walls are used, for example along the north-south wall of the approach gallery (a pleasing contrast of a hand-made and random texture as against machine finishes prevailing elsewhere), the stone is sandwiched over a steel core. Pavements, floors, and exterior concrete walls are all finished with lightreflecting white mica-glaze.



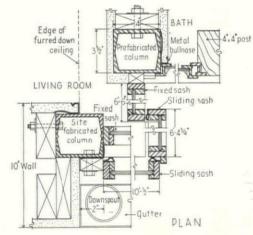
Entrance hall is glass-lined, has a dropped ceiling of glass illuminated from above by cold-cathode tubes.







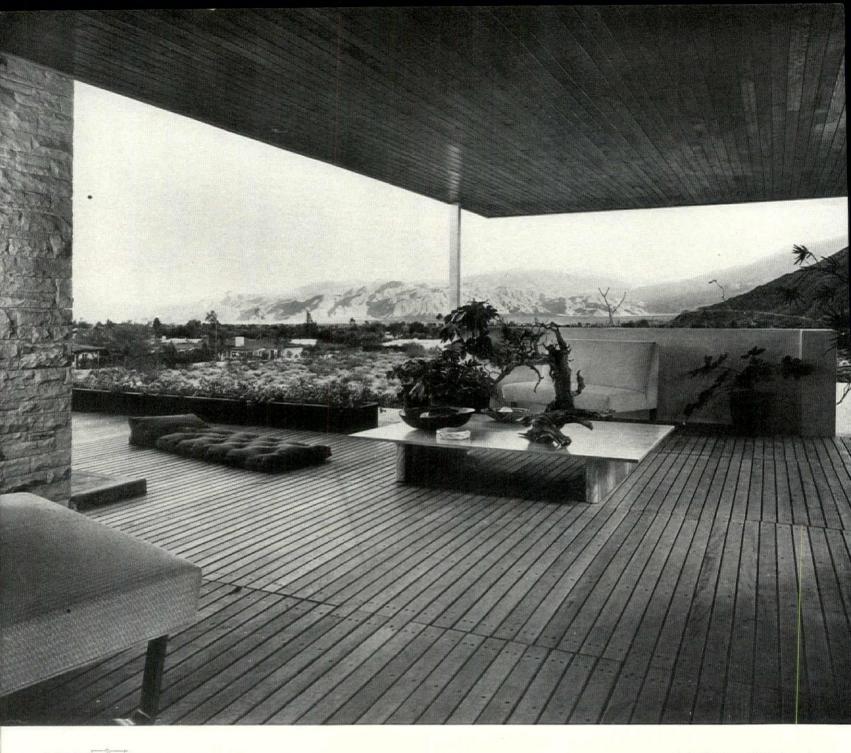
South side of living room opens uninterruptedly to the view, by virtue of sliding glass doors which are made unusually slender and ship-shape by clever detailing.

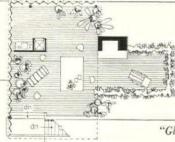




Fireplace is of Utah stone, creamy to rust colored; walls and ceilings offwhite plaster or wood; floors of ground white silica. Rugs are handwoven by Bloomfield.







ROOF TERRACE

"Gloriette," approached by a slender-profiled outside stair, is served by a concealed pantry with a dumb-waiter from the kitchen.



RICHARD J. NEUTRA, Architec

Social areas of the house, meant for much entertaining, are for the most part the sheltered open courts. Because local codes forbade structures of more than a single story, the sheltered roof porch seen on this page was called a "gloriette" to pass the inspectors. Yielding the magnificent view that it does across to mountains, it serves a good deal like an upper ship's deck, and also puts an additional umbrella over the main living room.

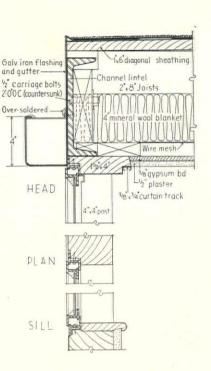
The main guest court (seen across-page) is shielded in similar fashion and with the same care by an aluminum windbreak. The crushed silica pavement seen in the photograph is adjoined by a lawn, smoothly clipped, strewn sparsely with those glacial boulders which, throughout the plot, create the natural counterpoint to the straight lines of the house.

The master's suite has special privacy and segregated access, and sumptuous bathroom and dressing accommodations, corkfloored, cork-walled even into shower stalls. Partitions are glass-lined head to foot, back-lighted by concealed cold-cathods. Medicine cabinets and make-up cabinets are let into these partitions, flush-face.

The cost of the house is said to have been in the neighborhood of \$325,000.

Master bedroom is plentifully provided with birch wall-hung drawers and cabinets, behind which concealed cold-cathode lights yield soft general illumination, supplemented by other sources. Detail shows how metal channels in framing aid alignment.





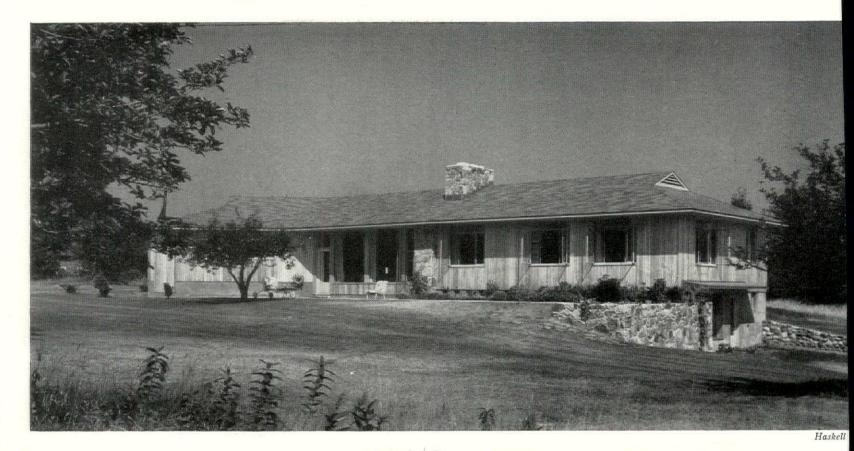
Each bedroom has its own private sheltered porch or terrace; the drawing shows a guest room in the north wing. Behind it is the general social court illustrated in the lower photograph. Water lilies along aluminum wind-break stand in a long pool.

View 2.



CONSTRUCTION OUTLINE: Waterproofing-Pabco, Paraffine Co.'s. Exterior walls-cement; inside-plaster. ROOFING-composition. Deck -redwood slat grills. INSULATION-Reynolds Metals Co. FIREPLACE: Damper - Superior Fireplace Co. SHEET METAL WORK-Armco Steel Co. WINDOWS: Sash-Truscon Steel Co. Glass — Libbey-Owens-Ford Glass Co. FLOOR AND WALL COVERINGS: Kitchen and bathrooms-cork, Armstrong Cork Co. PAINTS-National Lead Co. and Super Concrete Emul-sions, Ltd. HARDWARE — Schlage Lock Co. ELECTRICAL INSTALLATION: Switches — General Electric Co. Fixtures — C. W. Cole Lighting Fixture Co. KITCHEN EQUIPMENT: Range—Magic Chef, American Stove Co. Refrigerator and dishwasher-General Electric Co. Washing machine — Bendix Home Appliance, Inc. BATHROOM EQUIPMENT — American Radiator-Standard Sanitary Corp. PLUMBING: Water pipes-brass, Revere Copper & Brass Co. HEATING - radiant floor and ceiling system. Boiler and water heater-U. S. Water heater Corp. Valves, etc.-Barber-Colman Co. Compressor for radiant cooling-Copperland Refrigeration Co.

# HOUSES Conservative design combines interior spaciousne

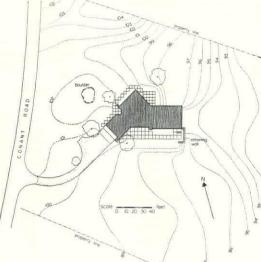


LOCATION: Weston, Mass. OWNER: Charles E. Bevelander ARCHITECT: David Fried INTERIOR DECORATOR: Lilian E. Kenrick CONTRACTOR: Nicolai Construction Co.

This unpretentious country house was designed according to the specification of the owner's wife, i.e. a modern home which would nevertheless present a conservative exterior appearance. Although not a compelling design, it probably has more appeal for the average home buyer than the radically modern house. A pitched roof, conservative window size and placement and natural cedar siding exterior are surefire attractions. In addition the house requires a minimum of maintenance and provides a maximum of space for the \$28,000 price tag.

Perhaps its best feature is the handling of different levels to take advantage of a sloping site. With only a small amount of excavation, a recreation, laundry and boiler room was provided beneath the bedroom wing with separate entrance at grade. This is particularly good as a means of keeping two growing boys out from under foot. However, some families might feel that a child's recreation room should be in view of the kitchen for housewifely supervision.

The step-down from dining room to living room permits a high living room ceiling, and the placement of the fireplace adjoining the bedroom wing allows the built-in woodbox to be filled from the basement below.



Exterior views show separate grade entrance to basement recreation room and (above) living room terrace. Masonry is used only for retaining walls, fireplace and entrance hall next to garage.

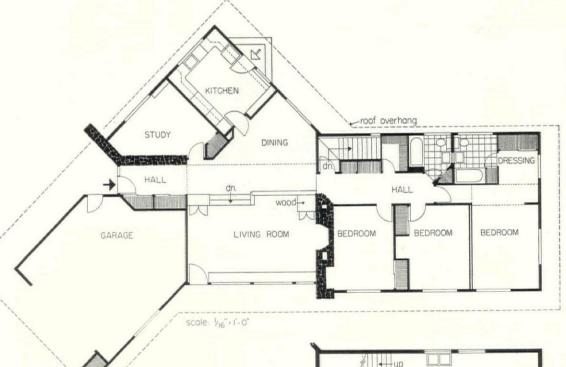


### d convenience with a modest exterior

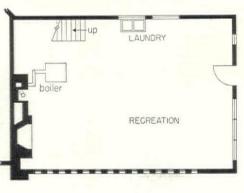




Hollow tile block in cherry red is used for the floors. Although not here an adjunct to radiant heating, it provides an insulated flooring with warm air constantly flowing into the open end panels from the cellar below.



CONSTRUCTION OUTLINE: Exterior walls-red cedar siding; Interior-Rocklath and plaster, U. S. Gypsum Co. ROOFING-Bird & Sons, Inc. INSULATION-Kimberly-Clark Corp. WINDOWS: Sash-steel casement, Hope's Windows, Inc. Glass-Pittsburgh Plate Glass Co. WALL COVERINGS: Main rooms-plywood, U. S. Plywood Corp. Kitchen-Formica counter tops, etc., The Formica Co. GARAGE DOORS-Overhead Door Co. HARDWARE-Schlage Lock Co. ELECTRICAL INSTALLATION-Westinghouse Electric Co., Bryant Electric Co., Kurt Versen and General Lighting Co. HEATING-forced hot water. Boiler-Bryant Heater Co. Radiators-Burnham Boiler Corp. Valves-Hammond Co. Water heater-A. O. Smith Corp.





View of dining area (above) and study (below). Plywood, plaster and masonry walls are alternated throughout the house, providing textural contrast.



### House of inexpensive materials is circled by high ribbon windows

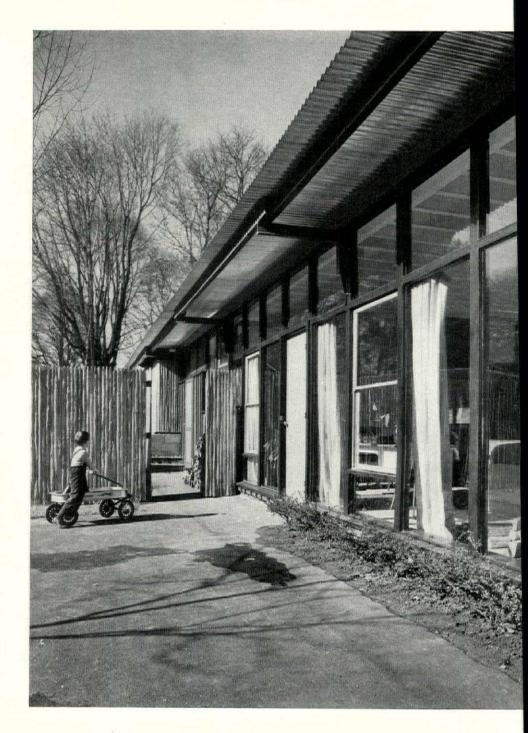
LOCATION: Ithan, Pa. ARCHITECTS: Carroll, Grisdale & Van Alen CONSULTING ENGINEER: A. E. D'Ambly BUILDER: E. Allen Reeves, Inc.

Inexpensive, rough-finished materials and simple construction were used in this large, comfortable house as a means of purchasing the luxury of plentiful light and space. Built of cinder block and unmilled lumber (saw marks are left showing), the house was actually designed by the limitations of these humble materials. Because cinder block walls absorb and hold moisture when exposed to weather. the usual construction method was reversed, block being used on the interior of the house and wood on the exterior. In keeping with the nature of the materials and for economy's sake, the house remains unfinished inside and out. No plaster is used and millwork is held to a minimum. Only paint, applied directly to both cinder block and lumber, provides a protective coating. Barn red walls and deep green trim contrast with the corrugated aluminum roof. Floors, in conjunction with radiant heating, are cement, dyed a yellow-green and waxed.

The plan of this informal home is a simple Tshape with bedrooms in the cross-bar and living quarters in the upright. The garage, placed at the bottom of the T directly adjoining the street, acts as a buffer against noise for the rest of the house. The proximity of house to street also allows the maximum area for lawn and gardens at rear.

The fenestration is particularly good. High ribbon windows, which combine light with privacy and need no curtaining, band the entire house except in the garage area. A further advantage of this high window placement is adequate wall space for furniture arrangement. A large guest bedroom with its own bath and separate outdoor entrance provides complete privacy for visitors. Cost: \$27,000 for 2,500 sq. ft. of floor area—\$10.80 per sq. ft.

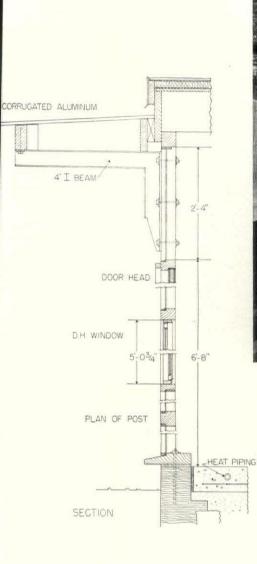
CONSTRUCTION OUTLINE: Exterior walls—Waylite Co. block furred outside and covered with boards and battens. Floors—reinforced concrete slab. INSULATION: Roof— 1½ in. Celotex, Celotex Corp. STOVE—Antique Franklin Stove Co. WINDOWS: Sash—aluminum, Cupples Product Corp. FINISH FLOORS: Main rooms—Dychrome, Master Builders Co. Kitchen and bathrooms—asphalt tile. WALL COVERINGS—Waylite block, The Waylite Co. PAINTS—National Lead Co. and Samuel Cabot, Inc. GARAGE DOORS—Stanley Works. HARDWARE— Schlage Lock Co. ELECTRICAL FIXTURES—Kurt Versen and Swivelier Co. KITCHEN EQUIPMENT: Range and refrigerator—Hotpoint, Inc. BATHROOM EQUIP-MENT—Hajoca Co. Cabinets—Charles Parker Co. HEAT-ING—radiant floor system. Boiler—Weil-McLain Co. Burner—Petroleum Heat & Power Co. Valves—Radiantrol, Homestead Valve Co. Regulator—Hotfman Specialty Co.



Living room terrace is protected from street view by fenced service court which adjoins the garage and utility room. Water from gutterless roof drips onto wide topwalk surrounding the entire house.

Cortlandt V. D. Hubbard





GARAGE

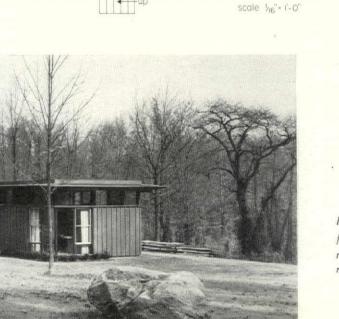


Living room ceiling beams are left exposed. providing a pleasant natural texture. Oldfashioned stove, used in preference to a fireplace, is focus for living room furniture group.



Master bedroom utilizes excellent lighting from the corner window wall for a work desk. Furnishings throughout house are an attractive combination of traditional and modern.





UTILITY



BEDROOM

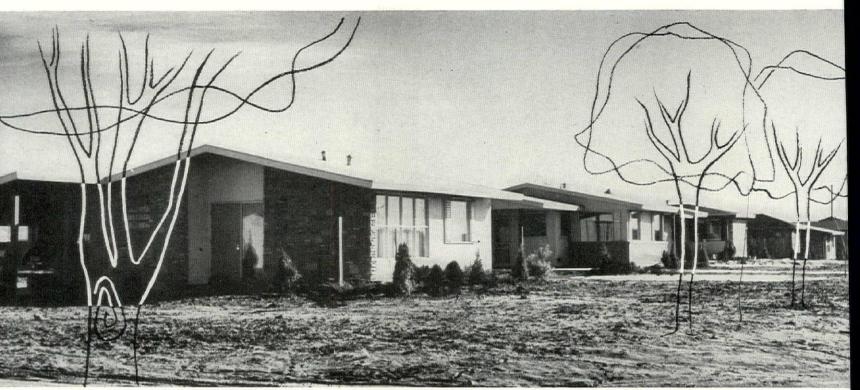
BEDROON

roof overhang

LIVING ROOM

DINING AREA

In plan, double-ruled window lines indicate full-size windows; single-ruled lines are high ribbon windows. Mullions are on 3 ft. 4 in. module.



Photos: Johnny Melton

## MODERN DETAILS help a merchant builder sell his \$9,500-\$11,800 houses

LOCATION: Oklahoma City, Okla. BUILDER: Warr Built Homes Co. ARCHITECTS: Caudill & Rowlett; Gordon McCutchan, Associate

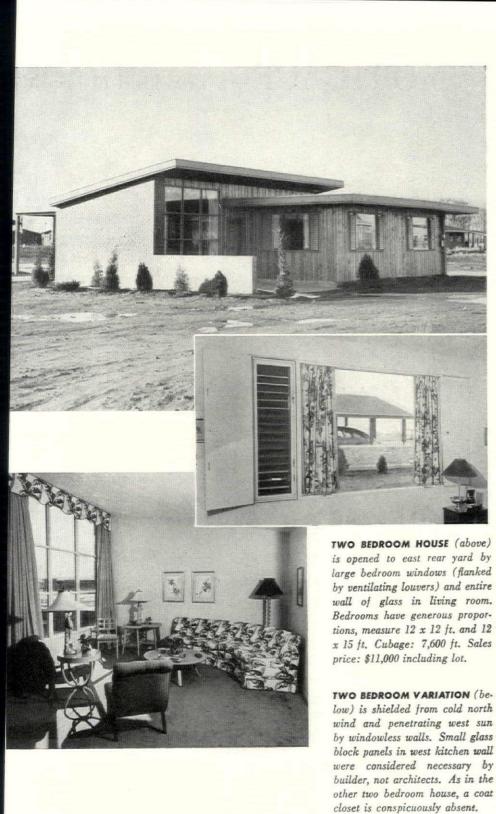
During the past 25 years Warr Built Homes Co. has built a very considerable part of Oklahoma City—some 4,000 houses of it. Not until last year, however, did President C. B. Warr and his associate, Clarke X. Pace, decide to offer houses which were more up-todate design-wise than the ones they built a quarter of a century ago. But, they are glad they did—the first new house attracted about 10,000 visitors (some from adjoining states); the first ten built to sample the demand were sold before completion; since then, construction and sales in an 80-unit development, called Warr Acres, have been moving apace.

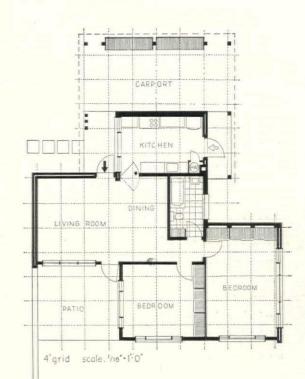
To design his new houses, Warr called upon Architects William W. Caudill, John M. Rowlett and associate Gordon McCutchan. After a thorough study of Warr's building methods, existing equipment, available materials and on-site labor costs, they came up with a dozen basic floor plans with variations in exterior materials and colors. While widely different in plan layout, all models display these design details: 1) open floor plans-living and dining areas are usually combined; 2) low-pitched, shed and flat roofs-frequently in combination with one another; 3) minimum fenestration in north and west walls as protection against cold winds and hot sun, respectively; 4) large fixed windows in the other walls protected by 3 to 6 ft. roof overhangs; 5) separate control of light and air: large windows are fixed sheets of plate glass, flanked by screened louvers; 6) nonbearing partitions, permitting a house to be plastered, floored and trimmed economically before the space is subdivided; 7) shop fabricated closets; 8) carports with storage walls, instead of garages, at a 60 per cent cost saving.

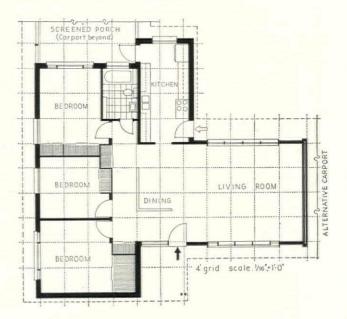
In addition to these modern design features, Warr Acres' new houses boast wall-to-wall carpeting in living and bedrooms, flush doors throughout, a 36 in. attic fan, an automatic clothes washer, and 90 x 200 ft. lots valued at \$1,500. Including these items, sales prices range from \$9,500 for two bedrooms to \$11,800 for three. Although the unusual character of Warr's has been viewed without enthusiasm by local FHA offices and mortgage companies, FHA approval and satisfactory financing terms have been obtained. Thus, the house illustrated on the opposite page was sold for \$11,000 with the aid of an \$8,000 FHA-insured mortgage held by Metropolitan Life Insurance Co. and a \$2,000 loan guaranteed by the Veterans Administration. Consumer reaction, according to Builder Pace, has been "very good." Never lukewarm in their comments, prospects are either extremely enthusiastic about the houses or definitely dislike them. The enthusiasts are invariably young people.

While Warr Acres represents a big forward step in the design of merchant builder houses, it is only a step. The architects agree: "Although we are still very far from an all-successful, livable and low cost house, the results are gratifying. We feel that we have made a definite contribution in this area for good builder houses."

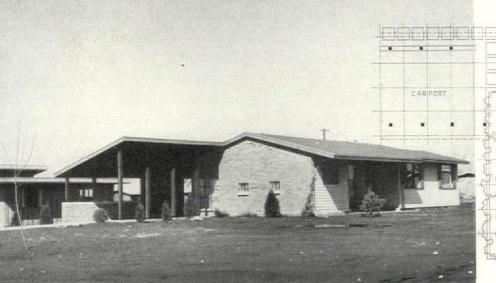
CONSTRUCTION OUTLINE: Foundation—concrete slab over 6 in. crushed rock over waterproofing membrane. STRUCTURE: Exterior walls—brick or rock veneer, pine sheathing, Sisalkraft Co. paper, studs, gypsum lath and plaster, National Gypsum Co. and U. S. Gypsum Co. ROOFING—Flintkote Co. INSULATION: Attic floor—rockwool, Johns-Manville Corp. FIRE-PLACE: Damper—Heatilator Corp. FLOOR COVERINGS: Main rooms —carpet, Alexander Smith & Sons. Kitchens—Kentile, David E. Kennedy, Inc. PAINTS—E. I. Du Pont de Nemours & Co. DOORS—hollow-core, flush, Mengel, U. S. Plywood Corp. HARDWARE—Slag & Dexter. ELECTRICAL INSTALLATION: Wiring—non-metallic sheath cable, Westinghouse Electric Corp. Switches—Frank Adam Electric Co. LAUNDRY EQUIPMENT: Washing machine—Bendix Home Appliances, Inc. BATHROOM FIXTURES— Crane Co. HEATING—ductless Jet flow furnace, Royal Heaters, Inc.



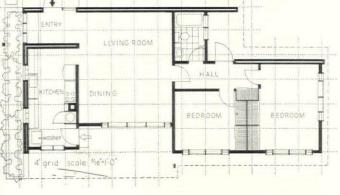




THREE BEDROOM PLAN (above) was designed with front entry to the north, no openings in west walls. L-shaped screen creates bedroom hallway and improves ventilation of all rooms, but fails to conceal bedroom doors.



screen creates bedroom hallway and improves ventilation of all rooms, but fails to conceal bedroom doors.



### THE "OPEN-END" MORTGAGE-a new kind of credit can double the home modernization market

For years the biggest sales hurdle facing quality equipment for homes has been that on short-term financing the higher first cost outweighed the lower maintenance and operating costs it made possible.

To help quality products jump this hurdle, FORUM eight years ago sponsored and put across the "packaged mortgage," under which home buyers in almost every state can now pay for their stoves, washing machines, refrigerators, many other appliances (even carpeting) over the 25-year period of their mortgage, instead of having to pay for them with short-term financing during the first costly months of home ownership.

For the past few years FORUM has sponsored a new type of financing which would offer the same kind of encouragement to the use of quality merchandise on remodeling projects that the packaged mortgage had offered on new homes. This proposal has come to be known as additional advance financing. Under this plan, home owners wishing to improve, modernize or remodel their homes can get the money to pay for their alterations from the holder of their original mortgage and can pay for the alterations, not over the three-year maximum provided under FHA Title I, but over the remaining term of their mortgage. Herewith a report on the progress of this new type of financing.

If installment credit is the magic wand that has opened a mass market to many an American mass producer, the manifold uses of credit are only beginning to be understood and exploited by that well-known industrial laggard, the housebuilding industry. Since credit is a means of stretching consumer buying power, it is not a subject of much interest to producers in periods when consumer buying power is high—as it conspicuously has been in the decade now drawing to a close. But this spring, as appliance sales dropped 40 per cent below last year's level, as housebuilding starts dropped 10 per cent below last year's record rate, producers in all fields looked to see what credit could do for their markets.

In this scrutiny, the housebuilding industry was more fortunate than some others. For it could discover a new credit tool ready-at-hand, put on a sound legal footing over the last five years but not much used while cash buying power was high and inflation the biggest economic threat. This is a credit tool which can open a new market to builders, lenders, material producers and dealers. It also promises to do more to improve the quality of U. S. housing than any other single step since the institution of FHA mortgage insurance.

The FHA system opened the opportunity of home ownership to millions of additional families by making long-term credit at a low interest rate widely available to house customers. Now lenders have a way to make long term, low-interest credit widely available to owners who need to modernize or repair their homes, who want to buy new equipment or even carpeting. This is the "open-end" mortgage—a mortgage agreement which permits the lender to advance additional funds to the home owner when he needs to repair a leaking roof or put in a new furnace. Last year lenders loaned about \$100 million in additional advances under such mortgage agreements.

### \$4 billion market

Some 75 per cent of U. S. homes are over 20 years old and the U. S. annually replaces less than 1 per cent of its total housing supply. Obviously the market for home repair and modernization is enormous. Lenders who have studied long-term modernization loans believe that an active program to make homeowners aware of the possibilities of such cheap credit could double or triple the \$2 billion spent for improvements last year.

The kind of credit now most widely used for home repair and improvement is the FHA Title I plan. These loans are made by banks and savings and loan associations under FHA insurance at a 5 per cent discount. Since the discount is based on the total amount of the loan and not, like simple interest, on the declining balance, it amounts to an effective interest rate of about 91/2per cent. The maximum term permitted is three years and 31 days. Thus \$1,000 borrowed for remodeling would have to be paid back at the rate of \$31.90 a month. A typical homeowner may already be paying \$57 a month on a \$7,100 mortgage. Adding an additional payment of \$31.90 would bring his monthly payment to over \$88. Since 80 per cent of all U.S. familities, according to the Federal Reserve Board, still live on incomes of less than \$5,000 a year, this size monthly expenditure is clearly out of the reach of most homeowners. Thus needed property repair and improvement is neglected or cut down to what is absolutely imperative, and the hard-pressed owner is obliged to settle for the cheapest materials available.

Contrast these short-term credit terms with the repayment plan possible if advances are made under the original mortgage and if the property is considered as a continuing security for whatever additional credit the owner needs! Suppose homeowner John Doe has paid off \$2,500 of the \$5,000 mortgage on his house. He has been living in this house for a good many years and he wants to install an oil burner, an electric water heater, maybe a new roof. So he goes to the local savings and loan which holds the mortgage on his house and talks over his plans.

Lender Smith has known borrower John Doe ever since he bought his house. He knows that John Doe is a responsible man in the community and an excellent credit risk. He has, therefore, two good reasons for making an additional loan to owner Doe: 1) the modernization means that the property on which he holds a mortgage will be increased in value; 2) since Doe now owns a large equity, an additional loan to him means that the lender can put more money to work in the safest possible way.

So lender Smith offers John Doe a \$1,000 loan and spreads repayment over the remaining term of his original mortgage. If this term amounts to ten years, John Doe will be able to pay off the \$1,000 advance at the rate of \$10.61 a month—or just one-third the monthly payment the same loan would have cost him under the Title I plan. Moreover, when Federal Reserve Board curbs on installment credit are removed, John Doe will be able to use this additional advance to buy such items as a range, a refrigerator or even wall-to-wall carpeting—which may not be purchased under Title I rules.

Now John Doe is in a position to consider realistically the price of the various types of equipment which he can select. If he is advised, for example, that one type of oil burner costing \$100 more than another model will reduce his monthly heating costs by \$10, he will quite naturally choose the better product and cheerfully pay the higher initial cost. Lender Smith will be glad to see him make this decision: he knows that the more the monthly cost of home maintenance is reduced, the easier it will be for John Doe to pay off his loan.

### Better credit risk

Savings and loan lenders who have been making these additional advances consider them an important part of their security. The First Federal Savings & Loan Association of New Haven, Conn., one of the first to offer this simple credit plan, says: "Our collateral is not safe if the owner is dissatisfied with his house. The owner who can borrow additional funds to keep his property in a good state of repair makes a much better credit risk."

If, then, the additional advance plan has obvious advantages for owners, borrowers—and can open a whole new market of John Does who could not otherwise afford modernization—why isn't it more widely used? Why do many lenders still propose—and many borrowers still accept—short-term Title I loans? One lenders' association answers this question bluntly: "Management in general has lacked the vigorous initiative and willingness to break away from hide-bound procedures and to move forward on the basis of a reasonable risk."

Perhaps a more basic reason is that not all lenders are adequately informed about this kind of credit. A recent FORUM survey of 3,000 lenders showed that many of them are making additional advances. But it is interesting that some lenders in Ohio said they cannot make additional advances because it is against state law, while other lenders in the same state said they have been making additional advances for years.

The majority of progressive lenders have over recent years been taking steps to make this kind of credit feasible. They have done this in three ways: 1) by introducing mortgage contracts which provide for additional advances in the future; 2) by using modification agreements to add an additional advance clause to existing mortgages which have not been so written; 3) by simplfying title search requirements.

### Mortgagee has first claim

The question of whether open-end mortgage credit will be economic for the borrower and safe for the lender is really a question of the lien status of the additional advances under state mortgage laws. More than 20 states have followed the precedent of English common law in recognizing open-end mortgage contracts as providing first lien status for additional advances. Such contracts have been standard practice in California for many years, and are now rapidly being introduced elsewhere. Massachusetts, New Jersey, Connecticut, New Hampshire and North Dakota recently passed laws according first lien status to the additional advance.

The New Hampshire law is typical: "Any sum or sums which shall be loaned by the mortgagee to the mortgagor at any time after the execution of any mortgage hereafter made, for making repairs, additions or improvements to the mortgaged premises, shall be equally secured with and have the same priority as the original indebtedness, to the extent that the aggregate amount outstanding at any one time when added to the balance due on the original indebtedness shall not exceed the amount originally secured by the mortgage."

Under an open-end mortgage contract, the borrower specifically offers his real property as security for any subsequent loan or advance. A number of state courts have ruled that, where the lender has had no actual notice of intervening liens, such an open-end clause in the original mortgage contract gives any future advance first lien status—that is, priority over any other lien or judgment which may be attached to the property in the period before the additional advance is made. The view of the court in many of these decisions has been that an openend mortgage agreement puts other lenders on notice that the original mortgagee has first claim on the property.

Horace Russell, counsel of the U. S. Savings & Loan League, has given this opinion: "A review of the general law indicates that a mortgage given to secure future advances is valid and, duly recorded, will prevail against subsequent purchasers and incumbrances if the mortgagee be without notice, actual or constructive, of such subsequent conveyance or incumbrance; and that in jurisdictions where the point is undecided, constructive notice of such subsequent conveyance or incumbrance might, and actual notice thereof probably would give to the subsequent purchaser or the junior lienor a prior claim as to advances made after such notice."

In states where first lien status is not accorded the additional advance, the lender, for complete legal safety, is obliged to make a title search before he advances the borrower any more money under the original contract. In cities where the title search or title insurance amounts to only \$5 or so, this will not add much to the cost of this kind of credit to the borrower. But in some cities a title search may cost as much as \$75 or \$100-an expense obviously putting the advance out of the class of cheap credit. In such cases, progressive lenders have made arrangements for a "feather search" at a greatly reduced cost, since it is necessary to check the records only as far back as the original mortgage, to make sure that no other liens or judgments have been attached to the property within this period. In Chicago, lenders have arranged for a quick search with the Chicago Title & Trust Co. In New York, some lenders have their own lawyers make a quick search of title at a greatly reduced cost.

### They know their borrowers

More and more lenders, however, are inclined to consider additional advances not on the basis of maximum legal security but as an ordinary business risk. This is particularly true of savings and loan lenders, most of whom know their borrowers personally. In many such cases, the lender will rely, less on the rules for complete legal safety, than on his own business judgment and may merely require the borrower to sign an affidavit stating that there are no intervening liens or judgments.

Although the additional advance plan has been pioneered by savings and loan lenders, it is by no means limited to them and has recently been made by all kinds of lenders, including practically all the big life insurance companies. The National Life Insurance Co. of Vermont, for example, has incorporated the additional advance in its loan plan for several years and reports that experience to date has been "eminently satisfactory." Says executive vice president L. Douglas Meredith: "The borrower finds himself in a position to maintain or to improve his property without incurring the expense of new loan papers or the heavy charges of installment financing. Should the borrower need money for other purposes, such as an emergency, this plan enables him to use his real estate equity quickly and effectively as collateral. The lender, who has final determination as to whether or not an advance should be made, benefits from improvement loans because prudent expenditure of the additional advance improves the property securing his loan." National, which makes mortgage loans in 48 states, requires only a partial title search when the additional advance is made.

One obstacle to wider use of the additional advance

plan is that the standard mortgage form accepted by FHA for mortgage insurance does not currently provide for it. (But some lenders offer long-term modernization credit under a mortgage junior to the original FHA-insured loan. The Home Federal Savings & Loan Association of Chicago reports that such a secondary mortgage costs the borrower no more than 1 per cent of the amount advanced.) FHA, however, is now studying the additional advance. On the other hand, the laws regulating Veterans' Administration guaranty of home loans specifically spell out the privilege of additional advances. Where the borrower has not used his maximum \$4,000 guaranty on the original loan, half of the additional advance could be covered by whatever guaranty remains.

In many cities, building supply dealers and lenders have over the last few months launched a cooperative program to inform homeowners about this kind of longterm modernization credit. One national manufacturer of roofing and insulation products has offered its dealers radio time to explain this credit plan to the public. Many a merchant builder is getting interested in revolving mortgage credit as a sales aid. The housebuilder can use the open-end mortgage to pull customers; then, as the years pass, the builder will find that he has built up a splendid modernization business already supplied with financing.

For the lender, the additional advance plan has obvious competitive advantages. One New York lender took \$75,000 worth of loans away from a competitor simply by offering additional advances for modernization to the mortgagors. The power of additional advance gives the amply funded institutional lender a big advantage over the individual investors who have in the past owned about one-third of all house mortgages but who can seldom afford to make additional advances. Lenders with limited capital who peddle their FHA loans will have no interest in the additional advance plan; thus institutional lenders offering revolving mortgage credit are likely to get the cream of the mortgage crop.

### Basic credit instrument

But perhaps the chief importance of revolving mortgage credit is the opportunity it holds for recognition of the mortgage as a social instrument of prime importance. Every lender knows that one of the chief reasons for mortgage foreclosure is the homeowner's tendency to overload himself with installment credit. Use of the mortgage as a basic credit instrument would establish the local mortgage lender as a permanent credit counselor to the individual family, while low cost mortgage credit, intelligently handled, could provide for practically all the homeowner's buying needs and could be extended even to the purchase of furniture. If credit is understood in its full importance to our whole economic system, there would seem no safer or more intelligent way to employ it than to relate it to the prime security owned by the majority of U.S. families: a house and land.

### SOMETHING NEW IN STORES:

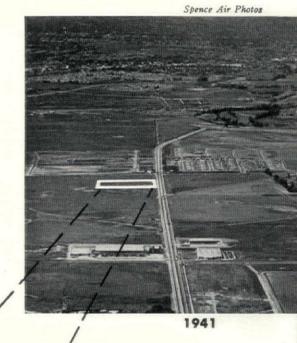
Grand entrance through the roof, five floors on one, restaurant and beauty parlor left outside, and costs cut 30 to 50 per cent

GRUEN & KRUMMECK, Architects; KARL VAN LEUVEN, Associate in charge McNEIL CONSTRUCTION CO., General Contractor

In the middle of Los Angeles' suburban expansion to the southwest is the eight-year-old community of Westchester—a product of the ocean-front development to the west, the city's war-boomed harbor to the southwest, the industrial mushroom to the south and the network of express highways which connects all these activities.

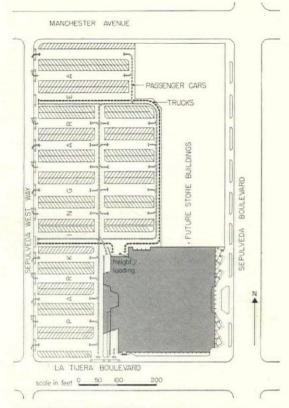
In the middle of residential Westchester is a 72-acre commercial area—strategically located athwart three main arteries and sensibly developed with off-street parking for some 3,600 cars by Realtors Frank H. Ayres & Son, common agents for the properties' three owners (Superior Oil Co., Security National Bank and Los Angeles Extension Co.).

In the middle of this big shopping center is Milliron's new department store—the equivalent of a five-story building on one 300 x300 ft. floor, roofed with a 220-car parking lot. Inside, it is designed to handle an annual business of \$15 million on a minimum capital investment and on a minimum operating budget. Outside, it is designed to attract this business from the million people who live within 30 automobile-minutes of Milliron's.

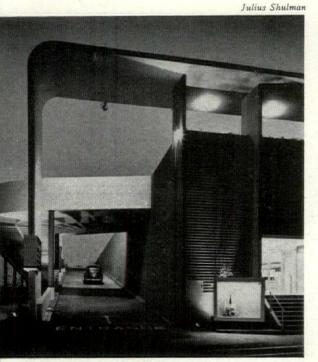


1949

### Milliron's one story is more economical than the three originally proposed



MILLIRON'S "BACKYARD" accommodates 150 cars, the adjacent lot, 444 more—supplementing the 220 spaces on Milliron's roof.



**RAMP ENTRANCE** is tied to store building by a vertical continuation of the concrete "cornice." Ramp grade varies from 8 to 11 per cent. At night (right) the building is dramatically illuminated by fixtures concealed in the "cornice" and the landscaping.

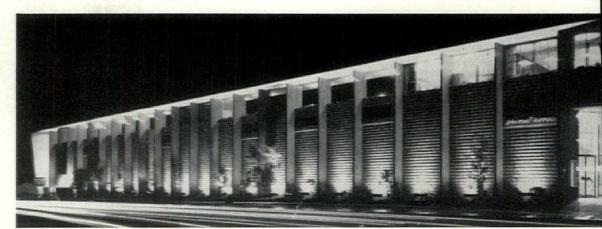
Milliron's ground lease originally called for a three-story building. Both tenant and landlord were satisfied with this proposal—but not the architects. They changed Milliron's mind by citing the economic advantages of a low, sprawling building. While a multi-story building would have made room for more ground-level parking, this sole advantage was more than offset by the greater number of cars that could be parked on the roof of a low building. The extra cost of reinforcing the roof (\$10,000) and building the ramps (\$40,800) was small compared with the \$300,000 cost of providing vertical transportation equipment in the three-story building originally planned. (As built, Milliron's two electric stairs and single service elevator cost only \$54,360.) And, the operating staff includes no elevator

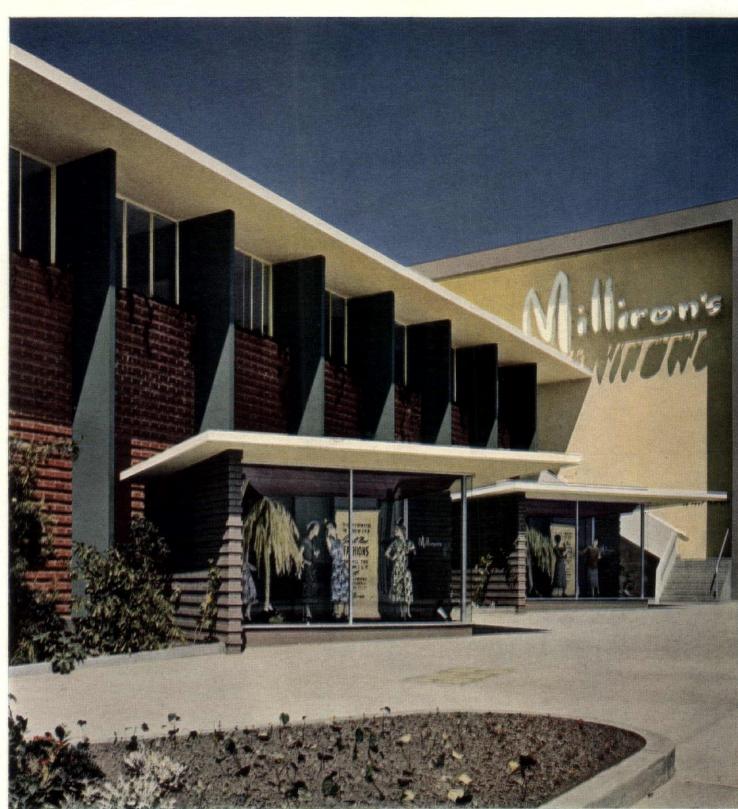


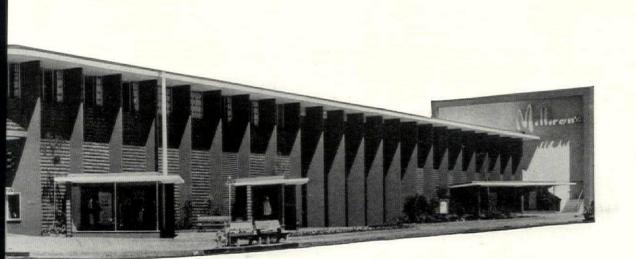
William Eccles, Los Angeles Airport Photography

operators, starters nor maintenance men. In a multi-floor department store, much of the heavily trafficked first floor is usually devoted to sample displays of merchandise sold on upper floors; in a onefloor building this duplication is unnecessary. Finally, a one-floor sales area requires a minimum of sales and supervising personnel; Milliron's staff includes only seven section managers.

Recognizing the major disadvantage of an ordinary one-story building to be its unimpressive height, the architects put Milliron's restaurant, beauty parlor and auditorium on the roof to elevate the main facade to a height of 30 ft. They then carried this elevation around the secondary facade to screen parked cars and stair towers on the roof from the view of passers-by. Thus, from all important angles, Milliron's appears to be a two-story building. And its apparen height is accentuated by the vertical concrete fins which constitute the building's principal design motif.



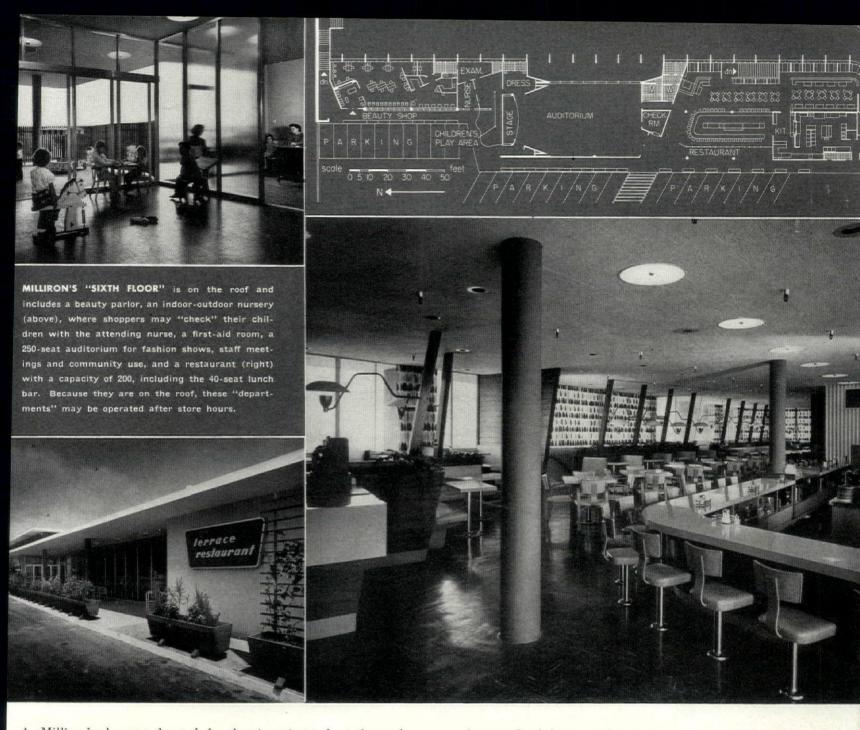




Photos: Julius Shulman

MAIN FACADE is set back 25 ft. from the curb, making room for a sidewalk planting area and four free-standing display buildings. Taking the place of show windows, the latter are angled at 30° to catch the eyes of passing motorists. Painted concrete fins support the roof overhang and frame the curtain wall panels of brick and the windows of the roof shops. Main purpose of glazed street entrance, three bays wide, is to give passers-by a view into the store and to provide an emergency exit. Since most Milliron shoppers are auto-borne, the building's main entrance is not the front door, but the little penthouse at the center of the roof-top parking lot.

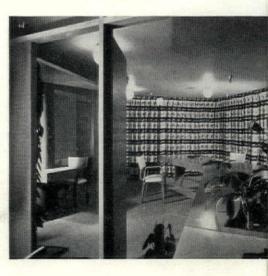
Milliron's one store is divided into five by pylons and color Millicos employees' lounge etc. manager's office MERTANINE YELLOW BLUE STORE ROSE STORE BRSENENT GREEN STORE EIRST ELOOR Photos: Julius Shulman

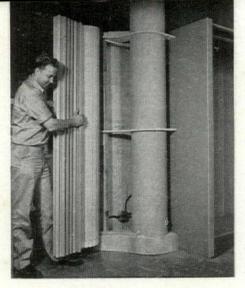


As Milliron's shoppers descend the electric stairway from the roof parking lot, they view one big 90,000 sq. ft. floor organized as five distinct areas. These sales areas are separated by six big "pylons" and designated by five colors. Taking the place of the usual department store's main floor, the Center Circle, decorated predominantly in gray, displays shopper or "pick-up" merchandise. Radiating out from the circle, are the other "floors"—or "stores," as Milliron calls them: the Rose Store, displaying women's apparel; the Green Store, containing men's, boys' and children's wear; the Blue Store, featuring major appliances and furniture; and the Yellow Store, where household goods are sold. (Milliron's ads refer to the "stores" by color.)

The separating "pylons" are actually small, two-floor buildings which accommodate fitting, alteration and forward stock rooms and buying, credit and management offices. From his lofty perch in one o these "pylons," the store manager enjoys a view of the entire sales area. The "pylons" also hide much of the building's mechanical equipment, such as sprinkler risers and valves, panel boards, ducts and unit heaters. Other service functions are tucked out of the way in space-saving locations. Electrical rooms are beneath the up-ramp to the roof. Employees' washrooms and lockers occupy a long, shallow mezzanine, which creates beneath it intimate shop-like departments along one side of the building—and without the expense of hung ceilings. The receiving area is at the rear of the main floor, with the main stock rooms in a basement and mezzanine directly below and above. As a result of this unusual space arrangement, Milliron's net selling area at 77,800 sq. ft. is 66.5 per cent of 117,400 sq. ft. gross compared with the 50 per cent average of conventional department stores. Service areas occupy 24,700 sq. ft., or 21 per cent; non-productive areas amount to 14,900 sq. ft., or only 12.5 per cent of gross. The entire design job (including even the selection of restaurant linen and chinaware) was entrusted to the architects. They took great care to integrate their building design with their layout of mechanical equipment and with their design and arrangement of the store fixtures.

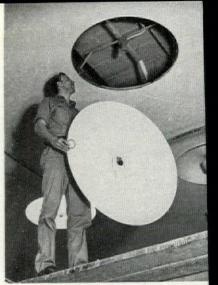
MANAGER'S OFFICE is located on the mezzanine level of a "pylon." Windows around his desk (covered with drapes in this picture) permit him to observe activity on the big sales floor below.





FLEXIBLE SCREEN, comprised of vertical wood strips on canvas, is

**CEILING LIGHTS** in the main sales area consist of spun aluminum domes, 24 in, in diameter, screwed to a threaded pipe set in the concrete slab. Numbering 650, they are lamped with 300-watt silver bowl bulbs, and are easily relamped from the floor with the aid of a long stick with a bulb clamp affixed to one end. Most noteworthy feature of these fixtures is their cost: only \$18 each. Fluorescent fixtures are recessed into the ceilings beneath mezzanine floors.



Photos: Julius Shulman



wrapped around columns to conceal electrical outlets, to tie display fixtures and columns together, to provide interesting display backgrounds and to mark separation of one department from another.

BASIC WALL CASE, equipped with varied inserts and hardware, is used throughout the store for merchandise as different as lingerie and linoleum. Designed by the building's architects, it fits snugly beneath mezzanine floors and projecting wall ducts, is also used in the open (right). Each case is equipped to receive fluorescent fixtures at three different levels. (Photo at left shows light fixtures in top position; at right, in center position. Note addition of hang rods in cases shown at the right.)

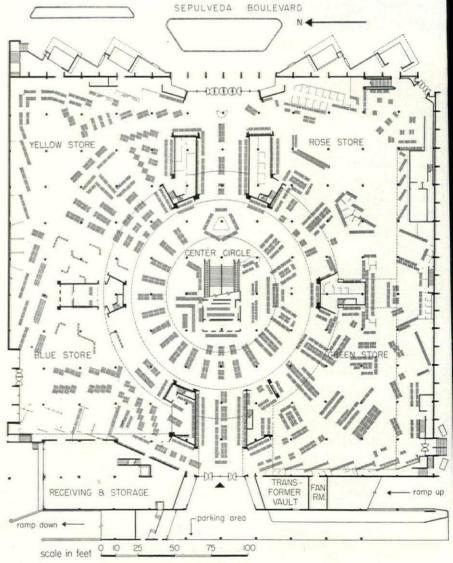
DRAWER UNITS, which also serve as display counters (p. 108), may be Inserted in the lower portion of the basic wall case.





SHELVES and sliding glass doors may be fitted into the same standard wall case.





### Milliron's simple design and construction pay dividends to landlord and tenant alike

Comprised principally of reinforced concrete slabs and columns and reinforced brick curtain walls, Milliron's construction was easy and economical. Columns regularly spaced 24 ft. on center permitted repetitive building methods in which forms could be used over and over again. (The building was erected in six sections.)

This planned economy held Milliron's construction cost down to \$1,112,000, excluding about \$40,800 for the ramps. Providing 117,397 sq. ft. of floor area (exclusive of the 10,200 sq. ft. ramps and the 60,200 sq. ft. parking area). the building's unit cost was thus only about \$9.50 per sq. ft., compared with the \$18 going rate for multi-floor department stores in California. The cost of interior finishes and fixtures at \$4.10 per sq. ft. was about half of the usual figure.

Cost of the building was borne by the landlords; cost of the fixtures by Milliron's. Although President C. J. Milliron closely guards the details of his lease, it is known to be on a percentage-of-gross basis with a minimum annual guarantee. After the store's sales volume for any year reaches the point where the rent supports the landlord's plant investment, the percentage is graduated downward, thus encouraging Milliron's to do a maximum of business. If sales should fall below the point where the percentage rent begins (probably close to \$2,750,000), the minimum guarantee may be demanded by the landlord. In this case, however, the lease gives Milliron two alternatives: 1) to surrender the lease and fixtures, or 2) to surrender the lease and withdraw the fixtures upon payment of \$100,000. But, President Milliron is not worrying about these gloomy and remote possibilities. Said he last month: "Based upon the operation of the store for the eight weeks' period to date, we can safely state that we are going to derive substantially more gross business than our expectations. So far, we have paid the owners of the building a higher rental than the minimum." (For more of President Milliron's observations, see supplement, p. 120.)

#### CONSTRUCTION COST BREAKDOWN

Excavation & backfill Concrete & formwork Reinforcing steel Structural steel	\$19,591 308,206 62,255
Concrete & formwork Reinforcing steel Structural steel	308,206
Structural steel	
structural steel	
Masonry	19,506
Masonry	15,541
Rough carpentry	5,924
wetal deck & roofing	30.818
waterproofing	4.942
Lathing & plastering	119,100
Terrazzo	5,176
Marble & tile	8 022
Metal partitions	3,164
Metal windows and doors	6,743
Glass & glazing	7.670
Millwork	12,389
Hardware	11,756
Plumbing	56,200
Heating & ventilating	33,455
Sheet metal work	7,108
Wiring & fixtures	104,830
Ironwork (miscellaneous)	19,166
Ornamental metal	51,238
Sprinklers	28,695
Elevator	4,900
Electric stairways	49,460
Temporary construction	
Scaffolds-hoists	17,391
Insurance	10,789
Miscellaneous	37,670 90,751

#### FIXTURES & FINISHES

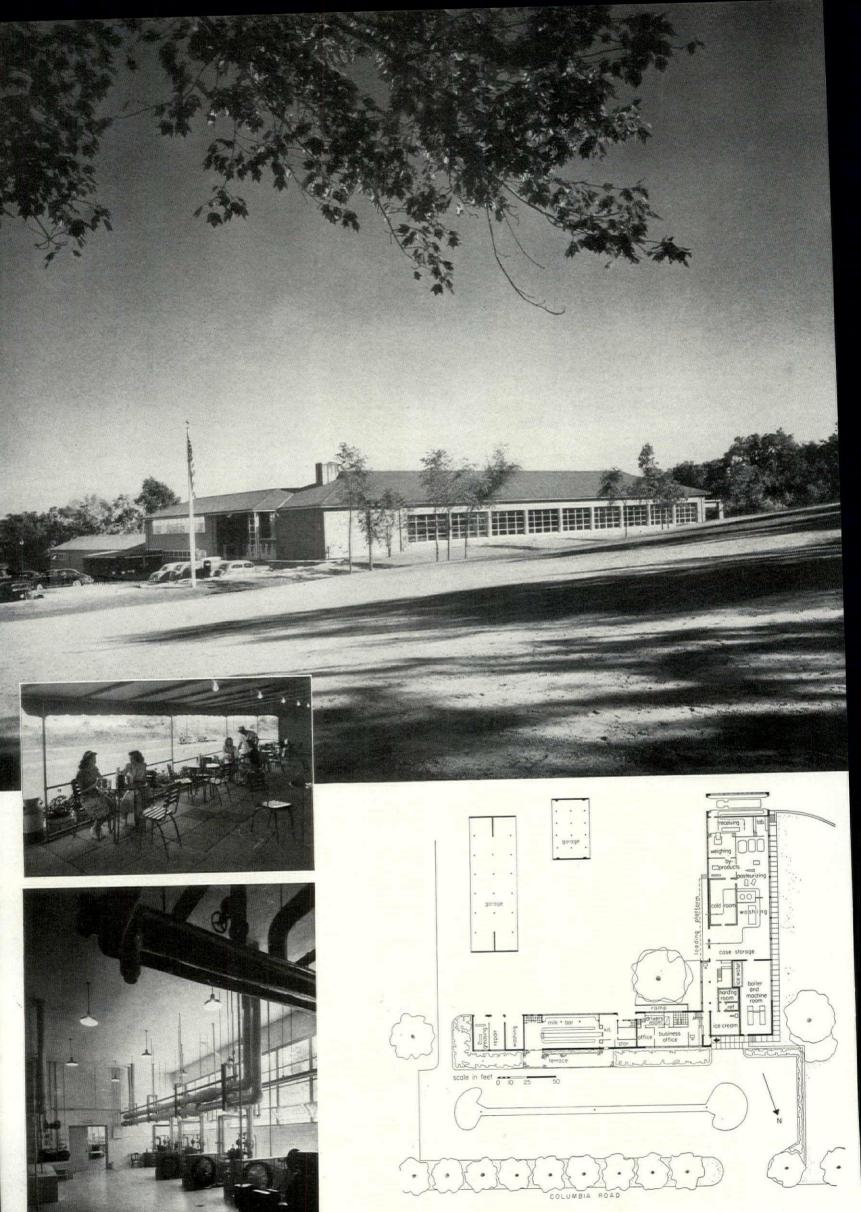
Paint & wallpaper	\$17,000
Floor covering (carpet & asphalt	\$17,000
tile	36,000
Draperies	6.200
Store fixtures	350,000
Merchandizing racks	2,200
Merchandizing fixture lighting	2,700
Furniture	6,300
Office furniture & fixtures	7.000
Auditorium equipment	2,000
Beauty parlor fixtures	10,000
Restaurant fixtures & equipment	28,000
Exterior and interior signs	15,000
Total\$	482,400
1 Sudanautur 1	\$33.000

\$1,152,456

CONSTRUCTION OUTLINE: Foundations reinforced concrete. Waterproofing-membrane, Pioneer Flintkote Co. STRUC. TURE: Exterior walls-reinforced concrete fins; reinforced brick filler panels, Davidson Brick Co. Interior-steel studs, Bethlehem Steel Co. and plaster on metal furring, U. S. Gypsum Co. Floors-reinforced concrete. Mezzanine and fan room floors-Hollo-Rib and Fenestra D panel, Detroit Steel Products Co. ROOFING-Pioneer Flintkote Co. INSULATION Ceilings-rockwool, Johns-Manville Corp Auditorium-acoustical plaster, U. S. Gypsum Co. Restaurant-Muffletone, Celotex Corp. WINDOWS: Sash-projected, Detroit Steel Products Co.; sliding steel, Steelbilt, Inc. Glass-Libbey-Owens-Ford Co. and Mississippi Glass Glass Co STAIRS: (electric)-Westinghouse Electric Corp.; (steel)-Styer-Wesibrod, Inc. Freight elevator-electric, oil hydraulic. Beckwith Co. FLOOR COVERINGS: As-phalt tile—Tiletex Co. Carpets—Alexander Smith & Sons. Terrazzo-Venetian Terrazzo Co. WALL COVERINGS: Wallpaper-Katzenbach & Warren. Drapes-Goodall Fabrics. FURNISHINGS-Weber Showcase & Fixture Co., Peterson Show-case & Fixture Co. and H. D. Cowan Co. DOORS-Metalco, Kinnear Mfg. Co. and Probert Mfg. Co. HARDWARE-Schlage Lock Co. and Stanley Works, PAINTS-W. P. Fuller & Co. and Dunn Edwards. ELECTRICAL INSTALLATION: Switches -Bryant Electric Co. Breakers-I.T.E. Circuit Breaker Co. Fixtures-American Lighting Co. and Century Lighting Co. PLUMBING FIXTURES - Kohler Co. Valves-Sloan Valve Co. Pipe and fittings -Crane Co. and Bethlehem Steel Co. Water cooler — Halsey W. Taylor Co. Kitchen equipment — Dohrmann Hotel Supply Co. Toilet compartments-Henry Weiss Mfg. Co. Drains-Josam Mfg. Co. HEATING AND VENTILATING: Gas fired unit heaters-Janitrol Surface Combustion Co. Registers-Tuttle & Bailey Mfg. Co. Fans-Davidson Fan Co. and Gayley Blower Co. Regulator-Minneapolis-Honeywell Regulator Co.

Julius Shulman

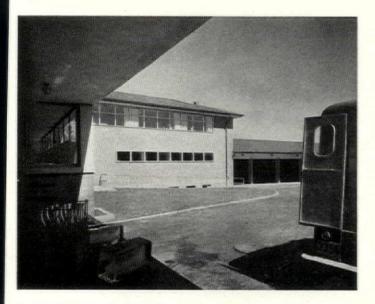




## MILK PROCESSING PLANT combines assembly-line efficiency with

pleasant appearance that fits well into residential neighborhood

ARCHITECTS: Brown, Lawford & Forbes ENGINEER CONSULTANT: Amos J. Vroman



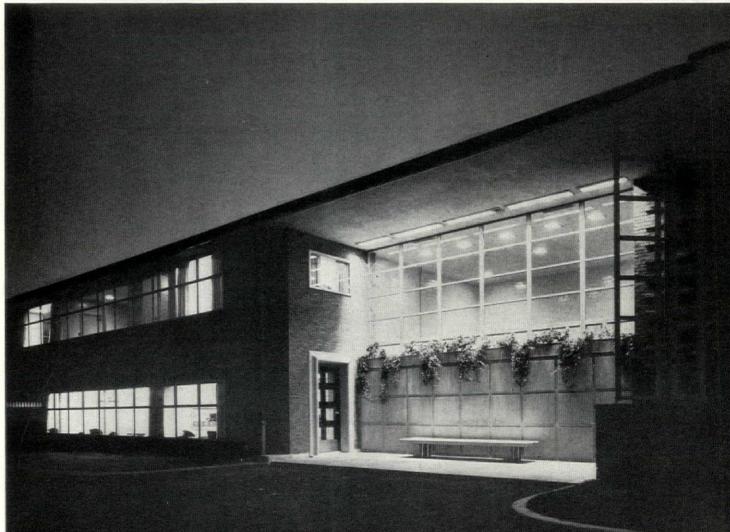
**BOTTLE LOADING PLATFORM** and incoming milk shed are in rear court (above). Glassed front entrance is used by employees of both plant and office departments. Milk bar for customers (opposite page) has its own entrance.

Part of the trend toward incorporating light industry in residential areas is this suburban milk processing plant which New Jersey motorists have mistaken for a country club and a California ranch house. Large windows, long low lines, a warm red brick finish and a concealed truck delivery court seem to be the deceiving factors. But the plant is in no sense a factory in fancy dress. Its attractive exterior is largely the result of interior efficiency.

The standard assembly-line handling of both incoming milk cans and outgoing bottles forms the basis for the building plan. At the southeast end of the delivery court cans of raw milk travel into the building and empty cans out by conveyer belts. Simultaneously, at the center loading platform, cases of empty bottles travel in and bottled milk out, also by conveyor. Weighing machines, pasteurization room, testing laboratory etc. are grouped in an L-shape between these two entrances. To guard against the deteriorating action of milk's lactic acid and the steam generated by processing, non-corrosive materials are used throughout.

CONSTRUCTION OUTLINE: Exterior walls—face brick, terra cotta back-up, inside—glazed facing tile or metal lath and plaster. Floors—reinforced concrete slab, Ceilings (plant)—reinforced concrete slab finished with cement or asbestos board, (office)—metal lath and furring and acoustic tile. ROOFING —slate. WINDOWS: Sash—aluminum projected, Albert Storms Co. DOORS: Interior—hollow metal. Office—flush wood. Exterior (plant)—metal roll-up, Kinnear Co. Garage—wood overhead, Overhead Door Co. HARDWARE— P. & F. Corbin and Chicago Springs Hinge Co. ELECTRICAL FIXTURES— Art Metal Co., Simplex Electric Co., Silvray Lighting, Inc., Hub Co. and Wheeler Reflector Co. PLUMBING FIXTURES—Crane Co. HEATING AND AIR CONDITIONING: Office—complete summer and winter system, filtered, cooled, heated and humidified. Plant—combined heating and ventilating, York Corp. Boiler—Cleaver-Brooks Co.

Lionel Freeman: Pictorial Services



## BEAUTY SALON



#### provides head-to-toe service near home

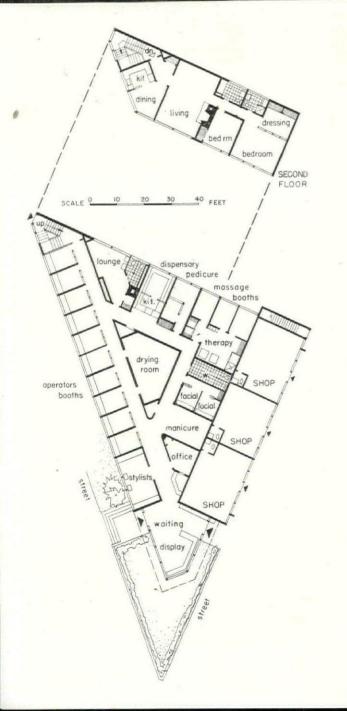
LOCATION: Seattle, Wash. ARCHITECT: Bain, Overturf, Turner & Associates

An experiment in neighborhood beauty salons, this trim, detached building in a suburban residential district offers complete beauty care under one roof. In addition to the usual hair styling and waving, manicures, facial treatments, pedicures, chiropody, massage and therapy are provided. The operator of the salon owns the building and he has therefore included a second story at the north for his own living quarters. The basement contains storage rooms, heating plant and men's lounge. Space is also provided on the ground floor for three shops: one for the salon, two for independent tenants.

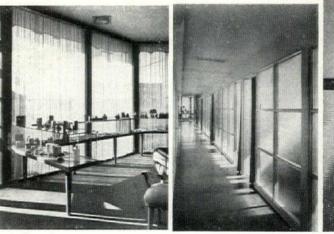
Liberal use of glass gives the building its distinctive and delicate character. However, entire walls of glass are sensibly used only in the reception room and rental shops. Even here thin curtains are usually drawn to effect translucence rather than transparence. Windows in work booths are limited to clerestories which provide excellent lighting but maintain privacy. Building cost: \$14 per sq. ft.

CONSTRUCTION OUTLINE: Structure—mill type, post and beams. Exterior walls—combed cedar siding and stucco. Interior walls—wood lath and plaster. Ceilings—Rocklath and plaster, U. S. Gypsum Co. ROOFING—built-up composition. ELECTRICAL INSTALLATION: Wiring—knob and tube. Fixtures —direct and indirect. HEATING—hot water system. First floor recessed convector type radiators. Second floor ceiling hung radiant panels.

Dearborn-Massar



**CLEAR GLASS SHOW CASES** and frosted glass booth fronts add to an atmosphere of feminine luxury. Lighting is a flattering combination of direct and indirect.







## **PRODUCTS AND PRACTICE**

## STEAM FOR COOLING—New heavy duty refrigerating machine operates on absorption principle, with steam the source of energy

With the announcement last month of Carrier Corp.'s chilled water Absorption Refrigerating Machine, the use of heat for cooling was put on a new large scale. The heat used in this cooling machine, which is similar in principal to a much smaller unit which Servel Inc. developed just before the war, is steam, and its use offers a number of im**po**rtant advantages in many cooling applications.

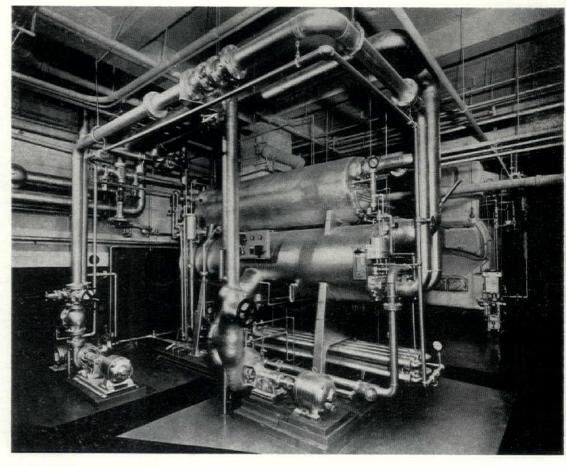
Most important advantage of the new machine for air-conditioning is the source of energy. With the use of steam for summer conditioning as well as winter heating, offpeak steam production can be utilized in many situations, and a more nearly balanced load obtained in all seasons. The new unit is an absorption machine which uses plain water as a refrigerant and a simple salt as an absorbent. In locations with large municipal steam plants where steam is available at moderate cost, the system offers operational savings over electrically operated refrigeration machines. The unit will operate on either low or high pressure steam, or even low-pressure waste steam, using less than 20 lbs, of steam per hour per ton of refrigeration, no matter what the steam pressure. Models are being produced in 115, 150, and 200-t ·n capacities, to serve areas of from 34,500 to 60,00 sq. ft.

#### Less vibration

The machines are particularly suited to the cooling of already finished buildings or floors of buildings, since the only moving part is a small solution pump. In many cases this means that structural reinforcing against vibration, which might have been necessary with centrifugal or reciprocating type machines, would not be needed with the absorption type. Net operating weight of the intermediate size, 150 tons cooling capacity, is 13,300 lbs., and its size compares favorably with other heavy-duty refrigerating machines: 175 in. long, 59 in. wide, and 109 in, high.

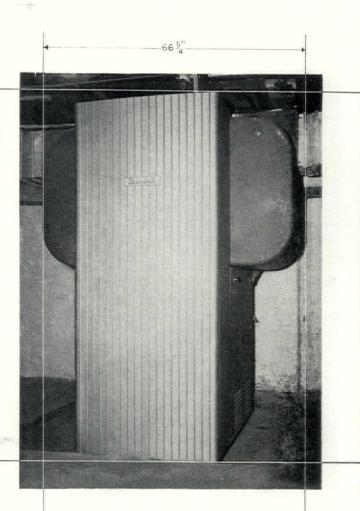
The Carrier machine lowers temperature of the refrigerant, water, through flash evaporation of a spray in partial vacuum. The evaporation is induced by a highly absorbent brine solution, which is used repeatedly without loss of salt by boiling off the water with steam and pumping it back into the absorber chamber. A continuous, closed cycle is established, which functions with the addition of the steam and the piping through the system of a flow of condensing water. Output is controlled by regulating the amount of strong brine solution circulating. The chilled water which the machine produces emerges at about 45° F., and may be used in various types of air-cooling units.

Servel's unit is similar, but smaller, and is manufactured as part of a complete gas-fired



**HEAVY DUTY** refrigerating machine produced by Carrier uses steam to produce cooling effect equivalent to melting of 300,000 lbs. of ice each 24 hrs., operating on absorption principle.

SMALLER MACHINE made by Servel is for both heating and cooling by warm air. Steam, generated by gas flame or introduced from other source, cools by same principle as the bigger machine.



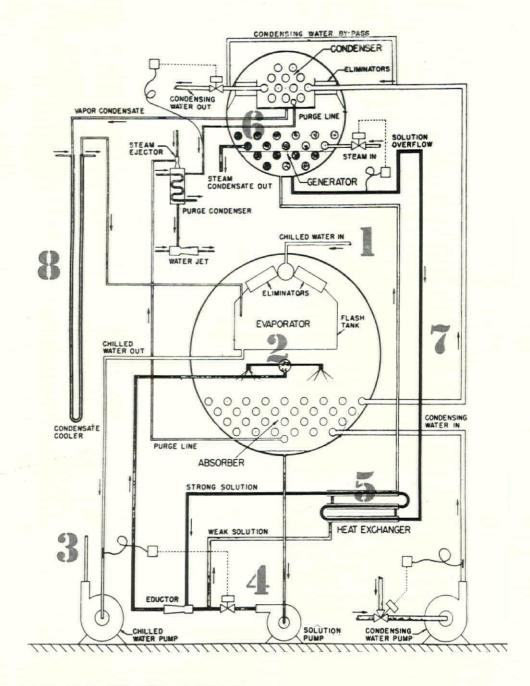
steam-operated heater and cooler of air. Two models are produced, whose cooling capacities are 3 and 5 tons. Recent changes in the units have been a general repackaging of the operating parts in a trim new shell, and provision for the use of outside steam when available at a rate economical enough to effect a saving over the machine's production of its own low pressure steam by gas. Principal components of the all-year conditioner are steam controls, a blast-type nonferrous heating coil, the absorption refrigeration and dehumidification system, a filter section, and a centrifugal blower for distributing heated or cooled air. In winter steam at atmospheric pressure is used in the heating coil to warm air. In summer it is delivered to the absorption unit, which produces refrigeration effect in the cooling coil over which air is drawn by the blower. The air is cooled and dehumidified as it passes through the cold coil. The refrigeration unit is hermetically sealed and contains substantially the same water and lithium bromide solution as Carrier's heavy duty machines. The salt is the absorbent, again, and the water the refrigerant. Circulation of fluids in this system is achieved without the solution pump of the larger machines, being accomplished by differences in temperature and height of liquid columns. The unit operates under a high vacuum, with a flow of condensing water piped through the system. The units measure 661/4 in. x 391/2 in., 841/2 in. high; the heaviest weighs under 2,500 lbs.

#### No toxic danger

Principle disadvantage of the absorption principle in refrigeration, especially heavy duty refrigeration, has been in the refrigerantabsorbent combinations used before the simple salt and water. Machines of the same type using ammonia are more costly, less efficient, and not suitable for air-conditioning because of the toxic qualities of ammonia. The new machines use nothing with toxic qualities, and there is also no need for rectifiers to purify the refrigerant, which saves money. Initial cost of the Carriers is about the same as centrifugal or reciprocating refrigerating machines. Operating costs, with the New York rate of 70 cents per 1,000 for steam as an example, are advantageous in many cities, and a further advantage of the system's use is that in many localities it might perform a municipal service by helping shift the increasingly heavy summer burden of air-conditioning from electric generators.

#### **Multi-unit installations**

Both the small Servel units and the larger Carriers are suitable for multi-unit installations, on a widely different scale of operation. Homes, stores, and areas of comparable size use the Servels; the Carriers fit larger commercial and industrial installations. If the Carrier machine is located in the basement of a building in which the internal volume of water is so large as to overflow the evaporator when the system is off, as during the night, an external exchanger must be used, with some loss in temperature head and capacity; but most buildings large enough to need one of



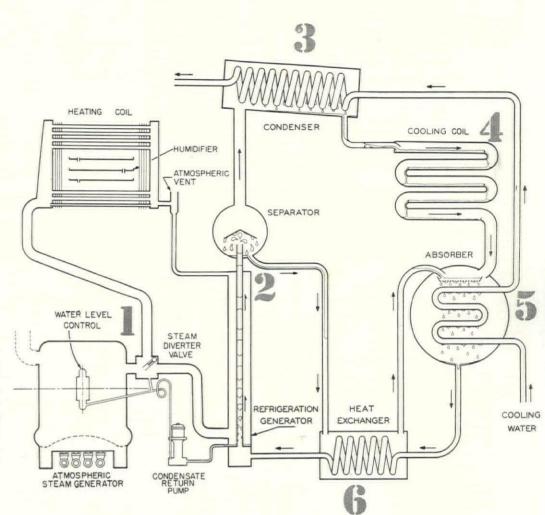
IN CARRIER MACHINE water returning from system at about  $55^{\circ}$  F. goes into evaporator (1) and flashes; strong salt solution spray absorbs water vapor while rest of chilled water at about  $45^{\circ}$  F. is circulated (3) to airconditioning system. Weakened salt solution travels (4) gaining heat in heat exchanger (5) to condenser (6), where water vapor is boiled off by steam and returned (2) to evaporator. Strengthened salt solution is returned (7) losing heat in exchanger (5) to evaporator tank (2) to repeat cycle.

> **CONTROL** of big absorption machine is a matter of regulating the amount of brine solution which circulates in the closed system. To right is 150-ton model in Consolidated Edison Building, New York City.

these units will be strong enough to support it on the roof or an upper floor without elaborate new structural changes, and the overflow problem will not exist in that situation.

Servel's unit usually is installed in the basement of the building being conditioned, but it also can and has been installed on ground floors and even in attics. The control is a Selectrol thermostat, which automatically regulates the temperature on either the heating or cooling cycle, with manually operated toggle switches, built into the thermostat, to switch the air-conditioner from summer cooling and dehumidification to winter heating and humidification, or to independent air filtering and circulation in intermediate seasons. When the Carrier unit operates on low pressure steam, a licensed operator is not necessary; and since the system automatically adjusts itself to partial loads down to 15 per cent of total capacity no great amount of operative supervision is required.

> IN SERVEL MACHINE flow of steam is regulated (1) by steam diverter valve. If cooling is required steam goes to refrigeration generator (2) where it is used to separate brine solution and cooling vapor. Cooling vapor goes through condenser (3) to cooling coils (4) then to absorber (5) where spray of salt solution separated at (2) rejoins. Solution flows through heat exchanger (6) taking heat, then to generator (2) to repeat process.



#### WEST COAST PREFAB construction system uses stressed skin panels

One of the neater wood prefabs put in production to beat the housing shortage has been this panel system by the West Coast firm, Modular Structures Inc., Tacoma, Wash. Wartime housing projects in San Diego and Valleejo, Calif., were built on a 48 in. module, and about 100 individual houses around Tacoma and Los Angeles since the war, have been put up with a new 32 in. design.

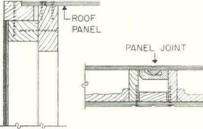
Wall panels are of the stressed skin type with  $\frac{3}{8}$  in. Douglas fir plywood pressure glued on each side to light studs. Radio frequency heating of the glue line is used, both faces being set at the same time. Blanket insulation is used in exterior walls, the treated cotton blanket with an integral moisture barrier varying from a thickness of  $1\frac{1}{2}$  in. to 2 in. depending on locality. Notable in the wall panel is the combination of the open channel at the vertical joints and patented run at the top of the panels to receive wiring. The house shown was put up in Tacoma at the approximate cost of \$10,000. SHOP ASSEMBLY of sections for walls of prefab goes rapidly, with panels pallet-stacked for easy handling in background. Below, a completed house.

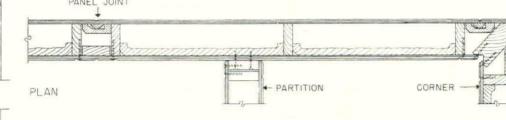


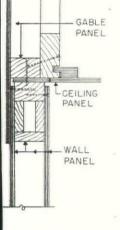


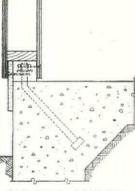
LIGHT PANEL fits easily into place, with locking joint (see detail). Plywood skin is strong but thin, with ample room within panel for insertion of insulation.









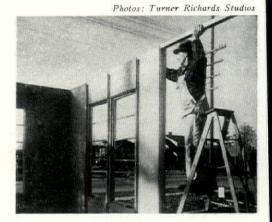


END WALL SECTION scale 11/2" = 1'-0"



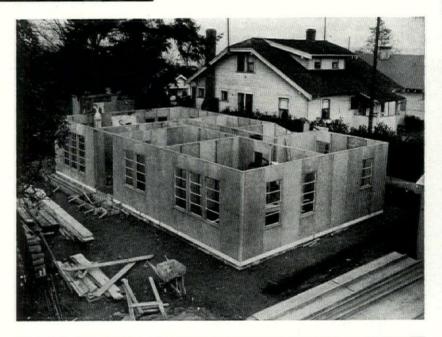
**STRIP OF INSULATION** is inserted in connecting recess between sections of wall before locking strip is set in to cover the Joint, insulation, and wiring.

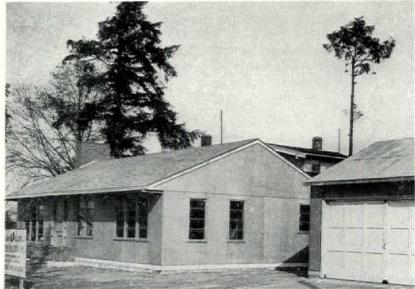


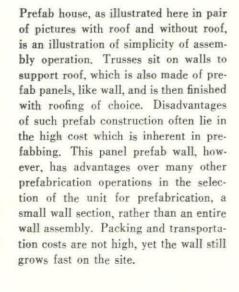


NO VERTICAL FRAMING is used in this system, with function of studs built into the panels. Alignment is governed bottom and top (above).

WIRING is run in groove between panels, leading horizontally through patented slot along the top. This eliminates much drilling and boring.









## \* The Last Word

—in Dependable Performance and Lasting Good Looks

## \*The Last Word

—in Painstaking Nationwide Installation Service





## \* The Last Word

—in Fine Garage Doors of the Overhead Type

Standard sizes available for prompt shipment. Good delivery on special sizes for commercial and industrial use.

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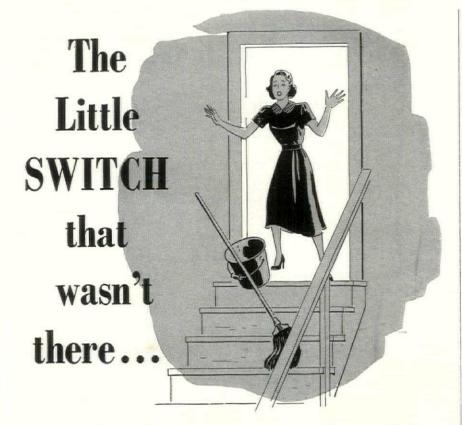


There's a Rollay for every Doorway!



OVERHEAD TYPE DOORS

#### SUPPLEMENT-DEPARTMENT STORE



#### can break a leg...or break a sale!

Enough switches, properly located—always ready to throw paths of light at the flick of a finger—can prevent many a broken leg—and will help to prevent many a broken sale! Customers know that adequately wired homes have plenty of switches.

An adequately wired home sells readily at a good price, because home buyers nowadays have learned to look for Adequate Wiring.

An Adequate Wiring Certificate is your proof that each house you design and build has:

- Enough outlets, fixed lights and switches.
- Adequate electric service entrance equipment, fed by three ample size wires.
- Enough branch circuits and spares for present and future electrical needs.

The Sign of the Times Use the services of the local Adequate Wiring Bureau in preparing a complete Adequate Wiring layout and specification, *before* you put the electrical job out for hids. Get the wiring into the plans for better appraisal —a better loan!

If there is no Adequate Wiring Bureau in your community, write us or your local electric utility for information on how to take advantage of Adequate Wiring in the homes you build.



	USE THIS COUPON if there is no Adequate Wiring Bureau in your area
	NATIONAL ADEQUATE WIRING BUREAU, Dept. AF-6 155 E. 44th Street, New York 17, N. Y.
	Please send me, without charge, information on how to take advantage of Adequate Wiring as a sales feature.
	NAME
****	TITLE
	STREET ADDRESS

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#### THE CLIENT APPROVES OF THE NEW STORE —a statement by President C. J. Milliron,

#### Milliron's Department Store

As a new approach to merchandising, our five-stories-on-onefloor has been a complete success. Our one-story design permits the finest inter-association of merchandise for display and selling afforded by any store in the U. S. This design and association permits a much higher degree of departmental inter-selling without employees having to be removed from their own departmental assignments.

The pylon construction permits an exceptionally fine ratio of front selling space to total floor area. The same structure permits a high degree of floor forward stock immediately adjacent to selling areas.

The functional design permits maximum supervision of selling area with a minimum of supervisory personnel. The credit office is immediately available to all departments, and is strategically placed for easy access by departments with high credit requirements.

The center entrance from the roof has proved immediately popular with our customers. This is apparent from the fact that our primary parking is the roof area. The location of the auditorium, restaurant and beauty salon on the roof where they are accessible at times when the store is closed, has enabled us to render a customer service never before possible to a department store.

The advantages of fixed lighting combined with mogul type ceiling lighting fixtures provide maximum ease for speed in departmental changes. The uniform unit fixtures permits relocation of selling space or complete change in departmental arrangement by a simple move of fixtures. The specially designed fixtures are a happy compromise between specialization and standardization. Their design permits economies of mass production without sacrificing selling efficiency.

Even in the short period of operation, we have nevertheless demonstrated that the design is satisfactory and has met with instant public approval. The architect was permitted not only to design the building but also the fixtures and to coordinate the layout of the building and fixtures. He was also allowed to design the neighborhood arrangement, creating set-backs, closing alleys, and developing the exterior as well as the interior. This has undoubtedly been the most important element in creating an exceptional and satisfactory new approach to public relations.

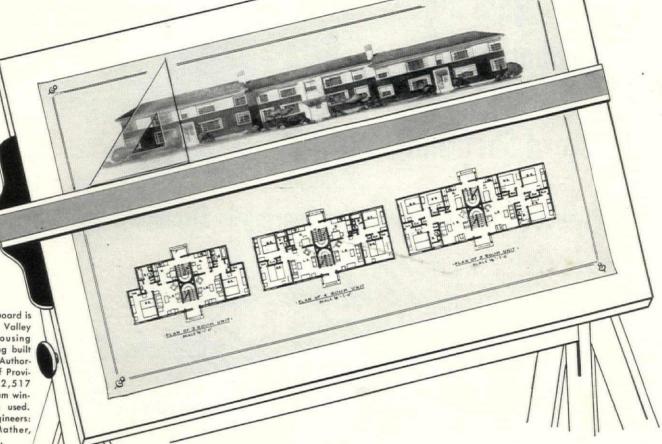
#### 

#### Los Angeles Planning Commission

We are well aware that city planning devices merely provide an opportunity for the developer, a framework within which the objectives of planning may be won or lost in the actual execution of individual buildings. We are particularly gratified, therefore, to see our objectives enhanced and supplemented in the design of Milliron's.

The roof parking and resulting customer entrance at the center of the store is a notable contribution to good planning. The set-back from the main highway and the unusual solution of show windows is an advance in the treatment of commercial property along a heavily traveled boulevard. The introduction of planting areas in the set-back areas will help to create desirable environment which is as rare as it is needed in our commercial areas. The simplicity and restfulness of the exterior design provides relief which is welcome in the appearance of our urban commercial boulevard.

# another housing project planned for low-cost maintenance



Pictured on the board is one unit of the Valley View Rental Housing Project now being built by the Housing Authority of the City of Providence, R. 1. 2,517 Alwintite aluminum windows are being used. Architects & Engineers: Creer, Kent, Mather, Cruise & Aldrich.



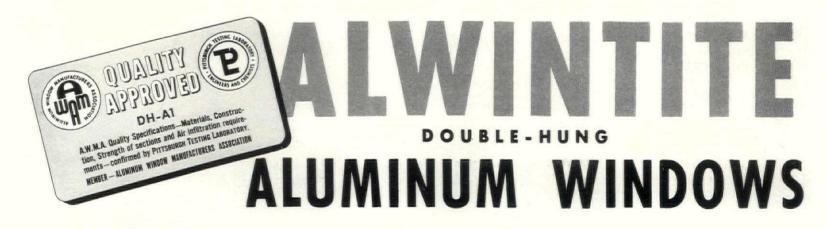
Real maintenance economy doesn't just happen. It's planned!

And that's one big reason why you'll see ALWINTITE aluminum windows in the Valley View Housing Project in Providence, Rhode Island, and in scores of other projects the country over.

ALWINTITE windows start cutting costs almost from the moment you order them!

ALWINTITE is delivered *complete*—ready to install, quickly and easily. Stainless steel weatherstripping is built in all around. There are no "extras" to buy or apply. And the savings have just begun! For the lifetime of the buildings there'll be no window painting bills – a minimum of maintenance. Figure this economy for thousands, or even hundreds, of windows. You'll see why rugged, good-looking, easy-operating ALWINTITE is *part of the plan* in project after project.

You can get ALWINTITE in 25 stock sizes, four styles, with screens and storm sash to fit. Picture and basement windows, as well as mullions for multiple window arrangements, are also available. For complete information, see Sweet's Section 16a/2b or write for catalog, Dept. AF-6. The Aluminum Window Corporation (A subsidiary of General Bronze Corp.), 1006 Stewart Ave., Garden City, N.Y.



**Builder of 150 Homes Reports:** 

## <sup>°°</sup>25% Labor Savings <sub>with</sub> Plyscord Sheathing"



"Plywood Sheathing and Subflooring is Stronger," says Fred P. Tosch, Buffalo, New York

Above: Workmen placing PlyScord sheathing into place on one of the Tosch houses built in Buffalo. Below: A group of the completed homes—stronger, more rigid, more durable because of PlyScord sheathing and subflooring.

"It helps meet the demand for better homes at lower prices!"



PLYSCORD—the sheathing grade of Douglas fir plywood—is easily identified by this "gradetrademark" stamped on the back of every panel. For a handy pocket folder, "PlyScord for Better Construction," write the Douglas Fir Plywood Association office nearest you: Tacoma Bldg., Tacoma 2, Wash.; 848 Daily News Bldg., Chicago 6; 1232 Shoreham Bldg., New York City 18.

#### BUILDERS:

Cut costs and speed construction with PlyScord sheathing and subflooring.

#### ARCHITECTS:

Specify PlyScord for stronger, more rigid construction.

#### DEALERS:

Be sure you have adequate stocks of PlyScord—the sheathing grade of Douglas fir plywood. "WE HAVE USED Douglas fir plywood PlyScord for wall and roof sheathing and for subflooring in about 150 houses built during the past two years," says Fred P. Tosch, housing developer of Buffalo, New York. "Cost records show that we have effected a 25% saving in labor. Construction has been speeded too, making it possible to eliminate many of the problems arising from a partially completed building being open to the weather.

"Plywood is stronger, it eliminates the need for corner bracing, further cutting costs. Our crews like plywood because it is real wood, easily worked.

"I am firmly convinced that the use of Douglas fir plywood results in a superior structure. When I built my own home, I used plywood for sheathing, roof decking and subfloors. It is one of the outstanding new homes in Buffalo."



LARGE, LIGHT, TRONG





## Main Entrance for Victor Carlson Prospects is Through **HOTPOINT** All-Electric Kitchens



CARL V. CARLSON President, Victor Carlson Sons Minneapolis, Minn.

"WE SHOW our Hotpoint Kitchens first. This puts prospects in a buying mood. The entire house seems to take on greater value out of all proportion to the extra cost when you add Hotpoint All-Electric Kitchens."

• THAT'S THE ENTHUSIASTIC report of Carl V. Carlson whose homebuilding firm has installed 160 Hotpoint All-Electric Kitchens and plans a substantial increase in these sales-clinchers for the future.

• MORE AND MORE builders and architects are finding that Hotpoint Kitchens add that magic touch of extra value needed to justify today's prices. Financing is easy because in most states the cost of kitchen and house can be combined in a "package mortgage."

• IT WILL PAY YOU to investigate the extra value Hotpoint Kitchens will give your houses. Consult your Hotpoint distributor or write to Hotpoint Inc. (A General Electric Affiliate) 5600 West Taylor Street, Chicago 44, Illinois.

OF VALUE!





## **BUILDING REPORTER**

PLASTIC SURFACED CORK FLOORING TILE combines

Combining vinyl plastic with cork, the Dodge Cork Co. has

come up with an interesting new flooring tile. The cork base provides warmth, quietness, softness and resilience to the

floor, while the plastic coating provides a tough surface and

permits a wide color range. The vinyl surface has another advantage—and a great one—it is extremely safe to walk on.

The coefficient of friction between leather and dry Dodge

Vinyl is .40 compared to .22 for leather against dry linoleum.

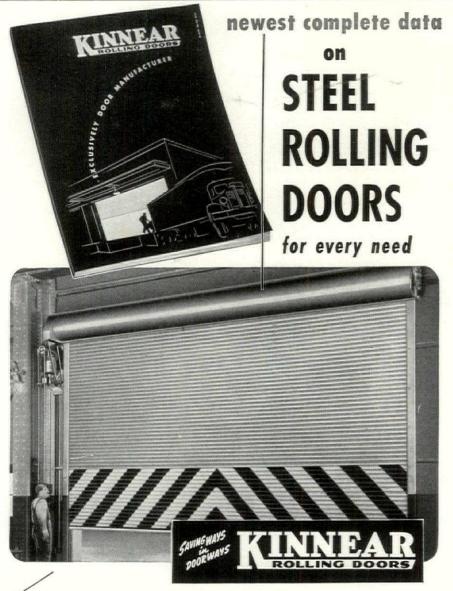
When wet, the coefficient increases to .61 compared to .37 for

linoleum. The new tile is available in various marbelized

combinations and in five solid colors: black, green, blue, brown and mahogany, with either satin or glossy finish. Standard sizes are 6 in., 9 in., and 12 in. squares. Dodge Vinyl

toughness of plastic with other advantages of cork.

F. M. Demarest



Complete information on smoothworking, space-saving doors for every need is at your fingertips in this new catalog. The easy upward action of Kinnear Rolling Doors brings time-saving efficiency to any doorway. The strong, all-metal, interlocking slat curtain opens completely out

of the way, safe from damage ... provides extra safety against fire, wind and intrusion when closed. Any size; motor or manual control. Full data on sectional-type upward acting doors is also included. If you haven't a Kinnear catalog for quick reference now, send for free copy of this latest issue.

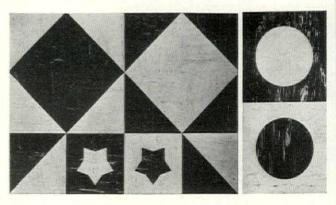
THE KINNEAR MANUFACTURING COMPANY
1640-60 Fields Ave. \_\_\_\_\_\_ Factories \_\_\_\_\_\_ 1742 Yosemite Avenue
Columbus 16, Ohio \_\_\_\_\_\_ Factories \_\_\_\_\_\_ San Francisco 24, Calif. .
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Cork flooring has many other advantages inherent in plastic flooring materials: it will not buckle or warp, expand or contract with changes in humidity and temperature, is resistant to acid and alkali, abrasion resistant, fire-resistant and water repellent. It is priced competitively with other deluxe resilient floor coverings.

Manufacturer: Dodge Cork Co., Inc., Lancaster, Pa.

#### SPECIALLY CUT RUBBER TILES widen floor design possibilities.

To permit greater flexibility in designing floor patterns, Fremont Rubber Co. has recently added two new specially cut rubber floor tiles to its line. These are known as diagonal



cut and polka-dot tiles. The diagonals, as their name implies, are conventional  $9 \ge 9$  in. tiles cut on the diagonal. Polka-dot tiles are also  $9 \ge 9$  in. rubber floor tiles which have a circle cut from the center to allow interchangeable center cuts of different colors.

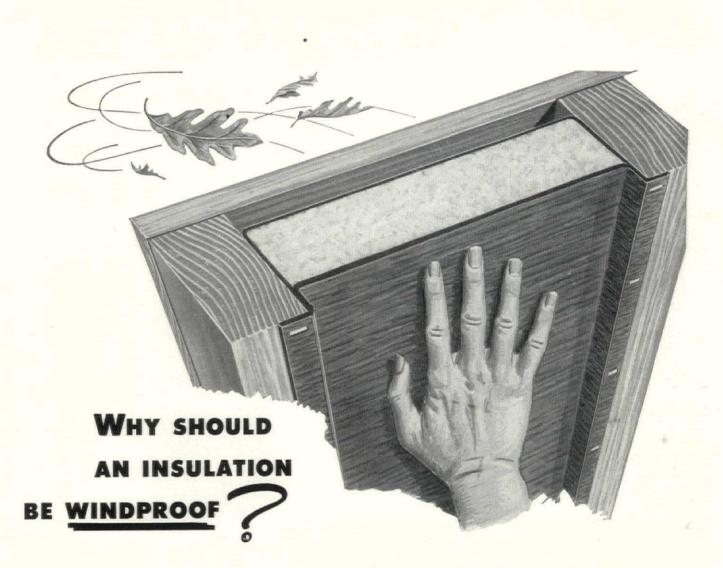
Manufacturer: Fremont Rubber Co., 123 McPherson Highway, Fremont, Ohio.

#### COLORED ACOUSTICAL MATERIAL, available with plain or perforated surfaces, is lightweight and fire-resistant.

Certile is a new colorful, incombustible acoustical ceiling material made of glass fibers. Supplied with both plain and perforated surfaces in either tile or board form, it comes in a wide variety of colors that may be repainted without affecting the acoustical properties of the material. Each tile is sanded and spray painted with two coats of a non-bridging acoustical paint. This leaves a porous surface through which



sound can pass readily to be absorbed in the body of the tile. According to the manufacturer, Certile functions as an excellent insulating material as well as a sound absorber. It will not warp, buckle, expand or contract. Because it is exceptionally lightweight, easy to work and apply, it is reported to be economical. Certile can be applied readily by the adhesive method, by clips nailed to furring strips or by any of the accepted mechanical suspension systems. It is supplied in 9 x 9 in., 9 x 12 in., 12 x 12 in., and 12 x 24 in. tiles and in 24 x 24 in., 24 x 48 in.,  $25\frac{1}{2}$  x 48 in. size boards. Both forms are available in white, turquoise, blue, chrome-green, raw (Continued on page 128)



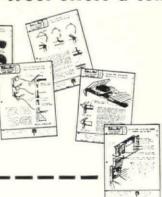
A 15-mile wind penetrates a 13-inch plain brick wall at the rate of 7 cubic feet per square foot per hour. It penetrates a conventional frame wall at .13 cubic feet per square foot per hour. If occupants of the house are to be comfortable, an efficient insulation must guard against such air infiltration.

The Balsam-Wool insulating mat is completely enclosed in a tough covering with special flanges for adequate windproof application of the insulating blanket. This *completely sealed* feature of Balsam-Wool reduces wind infiltration through a frame sidewall to .000242 cubic feet per square foot per hour—an almost irreducible minimum. Practically no cold air gets through to increase the fuel consumption and add to the heating costs.

No wonder, Balsam-Wool is windproof in its design!

#### In addition, Balsam-Wool offers a combination of advantages found in no

You'll want a set of Balsam-Wool application data sheets—a valuable library of data on insulation application problems. A complete set of these sheets is yours for the asking, mail the coupon!





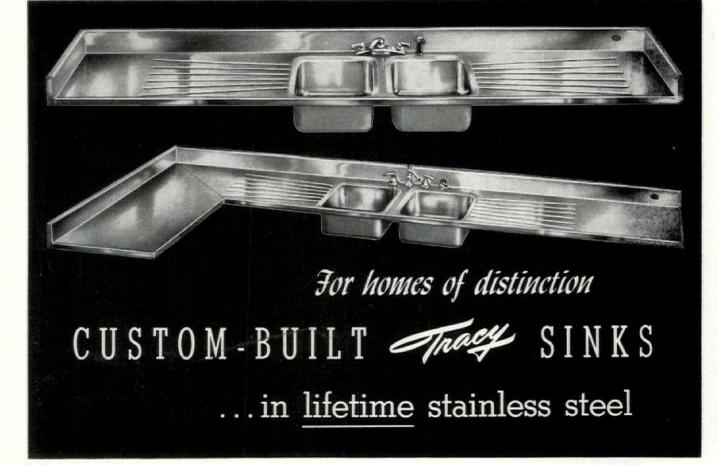
SEALED INSULATION BALSAM-WOOL • Products of Weyerhaeuser • NU-WOOD\* \*REG. U. S. PAT. OFF.

#### other insulation-

- Integral continuous vapor barrier
- Sturdy wind barrier
- Double air spaces
- Special spacer flanges
- Double bonding of mat to liners
- Rot and termite treatment
- Highly fire retardant
- Rigid quality control

Wood Conversion Company Dept. 147-69, First National Bank Building St. Paul 1, Minnesota

Please send me a set of Balsam-Woo	ol Application Data Sheets
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Cir.	Zone State

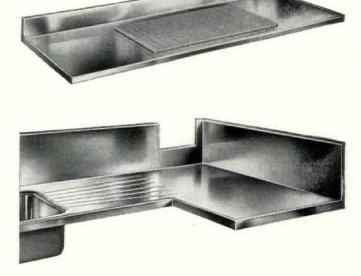


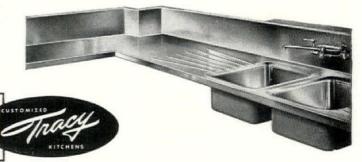
Design the appeal and beauty of America's most famous sink into the kitchens of your better modern homes. Whatever your plan, we'll build a Tracy sink to fit it perfectly, flatteringly.

You know how a whole house takes on new glamour through the wear-defying beauty of these famous Tracy sinks and counter tops. And you know Tracy quality. They are fashioned with the painstaking craftsmanship that has distinguished Tracy sinks for over 20 years. Tracy sinks cannot crack, chip or warp. They are impervious to heat, food acids and hard usage. They never stain or discolor.

No wonder a recent survey shows that over 60% of American home owners have a definite preference for stainless steel equipment in their kitchens.

Tracy custom-built sinks offer you complete design flexibility. L and U shapes; special height back and end splashers; bowls and faucet holes located in various positions; special cut-outs provided. 30 day delivery from receipt of order. Send sketches and dimensions for complete information and prices.





Tracy manufactures a complete line of enameled steel kitchen cabinets and sink tops in stainless steel and deluxe porcelain.

TRACY MANUFACTURING COMPANY • PITTSBURGH 12, PENNSYLVANIA World's Largest Manufacturer of Stainless Steel Kitchen Sinks

# marble

#### satisfies the desire for beauty ...

Marble is beautiful, inherently and permanently beautiful! It is the one material which is by nature perfectly adaptable to modern design. Marble adds beauty to structure, good taste to better living.

Yet because Marble requires so little maintenance and retains its beauty and lustre year after year, it is among the most economical of all interior finishing materials.









Marble enhances equally well the most elaborate decor, and the simplest. It is as perfectly adapted to modern, functional design as it is to conventional period design. But wherever used, Marble is *always* beautiful, always in good taste.

Write Managing Director for latest list of foreign and domestic Marbles. Dept. 29-E.



#### Marble Institute of America, inc.

108 FORSTER AVENUE, MOUNT VERNON, N Y.

#### **BUILDING REPORTER**



umber, raw sienna, lemon yellow and scarlet. Pastel variations of the basic colors are also available on special order. *Manufacturer:* Certain-Teed Products Corp., Ardmore, Pa.

#### NEW GLASS BLOCK for decorative purposes is put on market.

American Structural Products' new "Random Clear" or Insulux Glass Block No. 331, is a decorative block for use in homes, theaters, stores and other locations where compelling appearance is paramount. Machine-made yet having the irregular characteristics of a hand finished block, the product has a non-geometric face design which gives the cool appearance of melting ice. The unit is made by using several slightly dissimilar molds to form the two block faces and

Packs Both HUSBAND and WIFE APPEAL

#### A HOME SALESMAN IN ITSELF

A Gordon Winter Air Conditioning Unit not only sells itself but helps to sell the home it's in. Its trim, modern appearance...the fuel economy of its famous Gordon Spreader-Flame Burner...the assured safety of the Gordon Pilot...the welcome efficiency with which it provides complete temperature control, proper humidity and filtered circulated air are sales points that any builder will find profitable to stress. At slight extra cost the clothes dryer cabinet is a feature that wins instant feminine approval. The coupon will bring you details on this reasonably priced unit that's suitable for Manufactured, Mixed or L.P. Gases... that's built in sizes from 65,000 to 125,000 BTU hourly output.

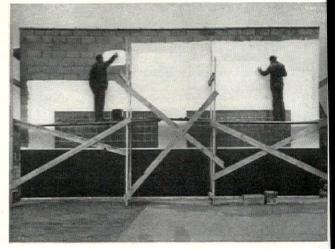
	ROBERTS-GORDON APPLIANCE CORP., Dept. AF-6 137 Arthur St., Buffalo 7, N. Y.
MAIL THE	Send details on the Gordon Winter Air Conditioning Ur
COUPON FOR	NAME
DETAILS	ADDRESS
	I CITY ZONE STATE

then combining halves of different contours. A large number of face designs are possible, since the manufacturer report that panels of approximately 100 blocks can be built without duplicating a block face. No. 331 is available in  $73_4 \times 73_4$  in Both  $53_4 \times 53_4$  in. and  $113_4 \times 113_4$  in. blocks will be manufactured shortly.

Manufacturer: American Structural Products Co., Ohio Bldg Toledo I, Ohio.

#### ALUMINUM EXTERIOR TILES provide durable, attractiv facades at low cost.

Colorful, economical and easily installed, Alumitile Exterio Wall Tile is the large-size edition of the familiar interior wal tile used in kitchens and bathrooms. Made of aircraft alumi num and finished with a permanently bonded enamel tha



withstands weather, the new 5 x 10 in. and 10 x 10 in. tiles are finding wide application in the store modernization field. Advantages of the new tiles for finishing store fronts, service stations, theater exteriors, etc. are numerous. Non-cracking, peeling or crazing, according to the manufacturer, the material can be easily applied to any smooth surface with a durable, waterproof mastic. Once applied, it becomes as rigid as the wall itself. The tiles are waterproof, fireproof and highly resistant to commercial acids and they will not bulge or shrink. Tests also have proved them to be unaffected by temperature or atmospheric changes. Other Alumitile advantages, particularly in remodeling work, include lightweight, low original per yd. cost and economical installation. Cost of Alumitile is reportedly much less than that of conventional materials. Should any section of tiles be damaged, it can be removed and replaced without great expense. The new tile has been tested and approved by the Bureau of Standards. It also meets the requirements of the building codes. Supplied in white, ivory, light green, dubonnet, black, Chinese red and dark blue, cap, corner and accessory tiles are also available.

Manufacturer: Metal Tile Products, Inc., Hastings, Mich.

#### STEEL DOOR FRAMES are planned for ixterior and exterior use in residential and commercial buildings.

Steelcraft's new interior-exterior steel door frame, designed for 1<sup>3</sup>/<sub>4</sub> in. and 1<sup>3</sup>/<sub>8</sub> in. doors, is a complete, economical, allwelded unit. Durable, non-warping and fire-resistant, it provides a neat appearance without the need of additional trim. It is made with extra reinforcement in all four corners of the mitred joints and has a universal adjustable brass strike plate, enclosed deep dust box and factory-applied hinges. Finished *(Continued on page 132)* 

## ANNOUNCING

## slimline luminaires

miller

for commercial and industrial interiors

series-louver

New flexibility of application of the 96 in. slimline fluorescent lamp. New simplified installation, operation and maintenance. Write for miller slimline catalog 2G.

a
new
high
in
lighting

THE **miller** COMPANY

ILLUMINATING DIVISION: Fluorescent, incandescent, Mercury Lighting Equipment: HEATING PRODUCTS DIVISION: Domestie Dil Burners and Liquid Fuel Devices: ROLLING MILL DIVISION: Phespher Brazz and Brazs in Sheets, Strips and Rolls

By Tomorrow Morning ...

#### Dismantled - Moved - Rearranged

• A quick change in office layout is a simple matter when walls are Mills Movable Metal Partitions. The entire job can often be done overnight without interrupting business routine . . . and at very low cost. Mills Partitions combine this efficient movability with structural solidity and beauty of appearance. Exclusive features such as all-welded panel construction, sound-dead surfaces, baked-on finishes that eliminate harsh light reflection, scientific insulation and soundproofing, make Mills "the demonstrably superior system for flexible division of interior space." For full information see Sweet's Architectural File or write for Mills Catalog 49-0.

#### THE MILLS COMPANY 969 Wayside Road • Cleveland 10, Ohio

Colgate Palmolive Peet Co., Berkeley, Calif. Engineers and Builders: The Austin Co.

Copyright 1949, The Mills Co.

TAL PARTITIONS

MILLS Movable

, Hir onditioning ...

#### YORK OFFERS THE AUTHORITATIVE ASSISTANCE YOU NEED...

York is headquarters for mechanical cooling ... your most dependable source for the assistance you need in your air conditioning planning.

#### LOOK TO YORK FOR EQUIPMENT PLUS

York has a complete line of engineered products – a system to meet every specialized need. And this full range of equipment is backed by:

- Dependable, competitive prices
- Accurate and dependable product ratings
- Case histories for assistance in planning
- Long experience in Architect, Engineer and Contractor cooperation
- Practical and technical help from York-trained engineers
- A National Organization to call on
- A continuous program of product research and development
- Certified maintenance contracts

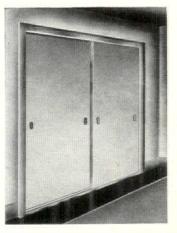
Here is an air conditioning program that fits the industry today. It is designed to produce the best results for the architect, the engineer, the contractor and the user. Call "York" in the planning stage, in order to benefit by York's full program of assistance. York Corporation, York, Pa.



frigeration and Air Conditioning

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

#### **BUILDING REPORTER**

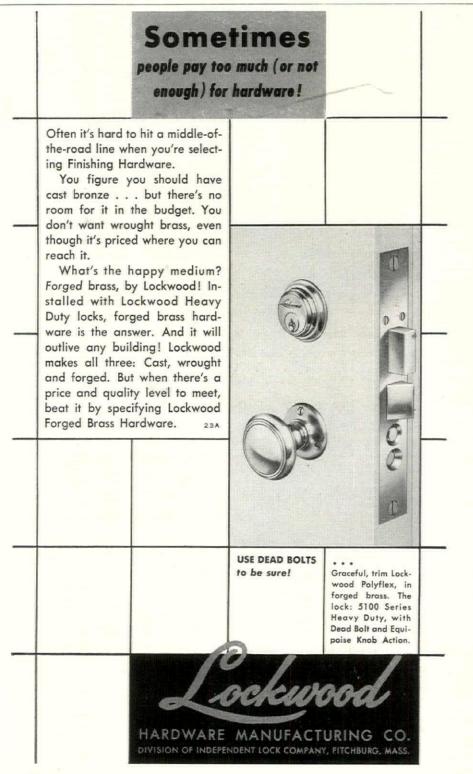


with aluminum paint which is baked-on in infra-red ovens, the new frames can be economically installed in most any type of construction. Each frame comes clearly marked as to size, jamb depth and swing. When required, exterior frames can be provided with screen door hinges.

Manufacturer: The Steelcraft Mfg. Co., Rossmoyne, Ohio.

#### SLIDING METAL CLOSET DOORS save room area, and money—up to \$15 per opening.

Supplied complete and ready-to-install, the improved Orange Metal Bi-Passing Door saves time, space and cost in closet construction. The prime-coated steel door and frame unit fits perfectly; the buck, track and panels are precision built and fitted at the factory. Installation requires only about

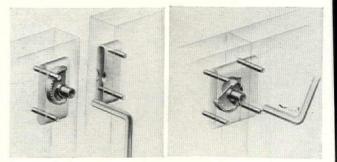


a half hour. Feather touch control slides the passing doors smoothly back and forth on ball bearing rollers, and metal channels inside the top of the frame allow doors to by-pass without interference. Rubber bumpers cushion sliding panels at door jambs and each panel has two felt sound-deadening pads at top. One of the improvements in the new Orange Metal Bi-Passing Door, according to the manufacturer, is that for small additional cost the door can be Fendixed, coated with a sound deadening substance. Another feature is a recess in the jamb which insures complete closing, eliminating gaps. With the new door, from 4 to 6 sq. ft. of room space is saved because door swing is eliminated. No studs, plaster or hardware are required, so approximately \$15 saving in construction cost can be realized. Doors are available in 3 ft., 4 ft., 5 ft., and 6 ft. widths and are of standard 6 ft. 8 in. height. The 6 ft. unit comes with a fixed center panel.

Manufacturer: Virginia Metal Products Corp., Orange, Va.

#### PANEL FASTENERS permit air-tight and water-tight assembly of shelters, tool sheds and partitions.

Roto-Lock is a new butt-joint panel fastener designed for rapid, foolproof assembly of shelters, movable and permanent partitions and all panel construction work. Featuring a tapered cam design, the fastener's male and female components are installed in the separate panels. The panels are then placed together and the cam is turned by means of an "allen wrench," screwdriver, or similar tool to lock them.



Roto-Lock draws the panels together at sufficient pressure to establish an air and water tight seal. Tension loads up to 1,400 lbs. can be carried. Design of the male and female components enable the fastener to be used to attach vertical to horizontal panels, such as roof panels to wall panels, or wall to floor panels. The cam incorporates no spring or other mechanical parts and is resistant to corrosion, wear and severe temperature conditions. Removable inserts can be supplied, incorporating a head suitable for the use of any hand tool required. Operating inserts may be omitted and rubber or cork plugs used to insure watertight seals where necessary. In most instances, the fastener can be operated from the interior of the structure, eliminating the necessity of plugs. Roto-Lock is presently being used with Honeycomb and other sandwich type panels as well as with plywood and other sheet materials. When used with thin sheets, it is sidemounted rather than recessed.

Manufacturer: Simmons Fastener Corp., 1750 N. Broadway, Albany 1, N. Y.

#### COMPLETELY AUTOMATIC ELECTRIC WALL HEATER maintains desired room temperature.

By incorporating a self-contained thermostat in the "Bilt-In-Wall Down-Flo" Electromode heater, this unit now provides completely automatic control of room temperature. The (Continued on page 136)



## Protection can be Beautiful

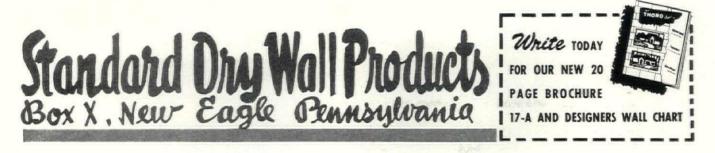
Today, we supply the architectural profession and construction industry with nationally-known and favorablyaccepted THORO System products; THOROSEAL and QUICKSEAL Wall Coatings, to keep water out of masonry walls and with which substantial structures can be designed and protected at reasonable cost.

EIGHTEEN SOUTHERN COLLEGE DORMITORIES PROTECTED AND BEAUTIFIED WITH THOROSEAL. MOST ECONOMICAL AND WEATHER RESISTING PROTECTION KNOWN FOR STRUCTURAL CONCRETE AND MANUFACTURED BLOCK CURTAIN WALLS AND PARTITIONS.



#### SHARP, ANGULAR ARCHITECTURAL LINES COMPRISE THE BEAUTIFUL BUILDING DESIGNS at FLORIDA SOUTHERN COLLEGE, LAKELAND, FLORIDA ARCHITECT, ROBERT LAW WEED, MIAMI, FLORIDA.

John Templin's, Inc. contractor for buildings shown above, states, "We used THOROSEAL for sealing and finishing of all masonry surfaces of the eighteen buildings of this two-million-dollar program, and we have found, through the long use of this material for the beautifying and protection of masonry surfaces, it is the best on the market today." Florida Southern College, one of the country's largest Methodist Institutions of higher learning, overlooking Lakeland's most beautiful body of water, Lake Hollingsworth, is noted for striking and unique architecture. A second multi-million dollar building program designed by world-famous architect, Frank Lloyd Wright, is now underway on the campus and THOROSEAL will form an important part of this building program.



PITTSBURGH PERMAFLECTOR LIGHTING EQUIPMENT..... "INTERNATIONAL" Tavoute



More discriminating users selected Pittsburgh Permaflector Lighting Equipment for their Gold Seal and Merit Awards than that equipment of any other manufacturer.

Over 20% of the Gold Seals awarded at the 3rd International Lighting Exposition for outstanding lighting installations, incorporated Pittsburgh Permaflector Equipment.

This record of achievement is evidence that creatively and practically "Pittsburgh Perma-flector" is preferred by men who know lighting best.

If you too want to achieve superior lighting results, our Engineering Department will gladly assist you. Write today. GOLD SEAL AWARD to: J. L. Phillips, Electrical Engineer for EXCHANGE NATIONAL BANK Warren, Knight & Davis, Architects

Pittsburgh 22, Pa.

GOLD SEAL AWARD to: Paul E. Keys, Duquesne Light Co. for S. H. DEROY, Jeweters Myman Rosenberg, Architect

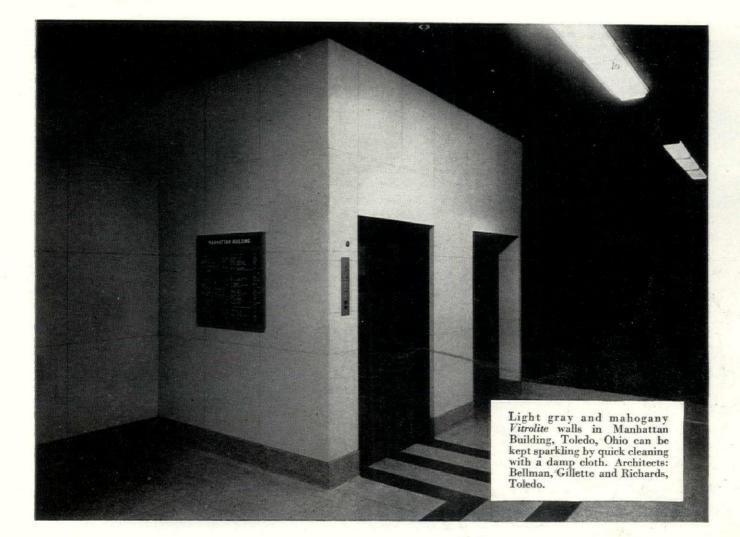


PITTSBURGH REFLECTOR COMPANY

Permaflector Lighting Engineers in All Principal Cities

PITTSBURGH PERMAFLECTOR LIGHTING EQUIPMENT IS DISTRIBUTED BY BETTER ELECTRICAL WHOLESALERS EVERYWHERE

401 Oliver Bldg.



#### a long life and a brilliant future

... for all

ral

#### **ITROLITE WALLS**

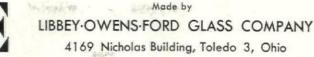
#### Correlated Colors Suggest Stunning Decorative Themes

SKY BLUE CADET BLUE LIGHT GRAY DARK GRAY JADE CACTUS GREEN ALAMO TAN PEACH MAHOGANY RED WHITE AND BLACK With *Vitrolite*<sup>\*</sup> walls, decorating and maintenance worries are over. For *Vitrolite* keeps its jewel-like sparkle . . . without refinishing.

Vitrolite is glass paneling. It won't fade, craze, rust or warp. It can't absorb dirt, germs, odors, moisture. Quick cleaning with a damp cloth will remove even pencil, crayon and ink marks...keep Vitrolite walls sparkling for years.

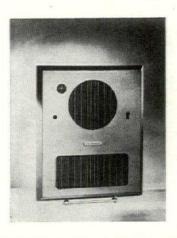
Never-fading beauty ... economical upkeep! Two practical reasons why architects specify *Vitrolite* walls for lobbies, corridors, washrooms, kitchens... in buildings where it's important to make a good impression on customers, tenants, and employes. For details, write for our *Vitrolite* book.





\*10

#### **BUILDING REPORTER**



thermostat dial may be set to any desired temperature from 55° to 85° and without further setting, the manufacturer claims, the heater maintains a constant, even room temperature by spreading clean, warmed air at floor level. The new Electromode thermostat, an integral part of the heater, is placed at the bottom of the heater so that the bulb is influenced only by changes in room temperature. This thermostat is made up of a heavy duty switch combined with a sensitive bulb. The switch is operated automatically by hydraulic pressure changes in the bulb. The new heater, with its down-flo principle, draws air in at the top and down over 480 to 680 sq. in. of heating element. Warmed air is then forced out at the bottom at a rate of 125 to 160 cu. ft. per minute. Like other Electromode heaters, the unit features the patented sealed-in heating element which cannot cause fire, shock or burn.



Model WA-12 Bilt-In Wall heater with self-contained the mostat is available in all popular sizes with the followin specifications: 1,500 to 4,000 w., 115 to 230 v., 5,122 to 13,66 Btu. Prices range from approximately \$79 to \$99. All unit fit the same wall opening: 14<sup>1</sup>/<sub>4</sub> in. wide, 18<sup>1</sup>/<sub>4</sub> in. high.

Manufacturer: Electromode Corp., 45 Crouch St., Rochester N. Y.

#### OIL HEATING EQUIPMENT LINE is topped by new burne which is 20 per cent more efficient.

Williams Oil-O-Matic recently announced a complete new line of residential oil heating equipment headed by the model "Fifty-Ten" low pressure oil burner. This unit, the manufacturer claims, provides as much as 20 per cent greater efficiency and 20 per cent greater economy over other burners. With 154 fewer



parts than were used in previous models, it is designed to meet exact heating requirements and is said to give maximum economy with long, trouble-free operation. Among the new features of the "Fifty-Ten" are a "Sealed Thrift Unit," a "Vair-O-Meter," a hydraulic shut-off valve, oil-air nozzle, capacitor-start motor and a cushion coupling. The "Sealed Thrift Unit" combines in one assembly every moving part except the motor and fan. The "Vair-O-Meter" adjustable fan provides exact air volume for all firing rates without changing static efficiency. Power from the new capacitor-start motor, which operates at 3,450 r.p.m., is transmitted through the silencing cushion-coupling to the "Sealed Thrift Unit." The metering pump is of the opposed piston type and delivers oil to the nozzle at the rate of 6,900 impulses per minute. To facilitate servicing the "Sealed Thrift Unit," motor, burner assembly and transformer are all removable units.

In the high pressure field, Williams is offering a new Model A burner. This unit includes an improved fan housing which increases air supply efficiency, a new built-in anti-hum device on the fuel unit for quieter operation, a split-phase motor with overload protection and a built-in radio interference filter. Other equipment in the line includes a series of cast-iron boiler-burner units, a compact, factory-assembled Utility Model 1 Winter Air Conditioner with 70,000 Btu output, and a Utility Model 1-S for ceiling suspension.

Manufacturer: Williams Oil-O-Matic Div., Eureka Williams Corp., Bloomington, Ill.

#### ELECTRIC LIGHT SWITCH with neon light in toggle glows in the dark.

Glo-Switch is a new inexpensive electric light switch that glows in the dark. Built with a special circuit and a transparent nylon toggle containing a tiny neon light, it turns on automatically whenever room lights are off, to provide a soft glow. The new switch functions as a night light for children's rooms, hallways and other rooms of the house and helps eliminate stumbling into furniture and smudging the walls. It fits any standard wall switch receptacle and can be easily installed in a few minutes with an ordinary screwdriver. According to the manufacturer, Glo-Switch operates on the *(Continued on page 140)* 



YOUR BUILDING IS BURNED and there have been major casualties. Put yourself in this picture and answer to your conscience.

#### How will you answer your conscience here?

QUESTION: Beyond that door, gravely injured, lies a man for whose safety you were responsible. Is it your fault he may never recover?

YOU: Don't blame me! The fire was the fault of someone who carelessly dropped a match.

QUESTION: Be honest. Was that fault as great as your own in not providing sure protection while there was time?

YOU: But the building was "fireproof". It was constructed of steel, brick and concrete.

QUESTION: But you knew that its contents were not fireproof. While you were trusting to fate, you were putting lives as well as property in jeopardy ... needlessly. Isn't it strange that so many people never realize the true cost of fire until the time is too late?

#### FACTS YOU SHOULD KNOW BEFORE IT IS TOO LATE!

Aside from the all-importance of protecting human life, consider these facts: (1) two out of five burned-out businesses never come back and (2) insurance alone seldom suffices to replace property at today's high prices. Doesn't it make better sense —far better sense—to be completely *safeguarded* against fire rather than *partly insured* against it?

The one way you can successfully control fire, whenever and wherever it strikes, night or day, without fail, is by a Grinnell Automatic Sprinkler System. A record of almost 100% infallibility throughout the years attests that Grinnell Protection by automatic sprinklers is the surest way. In addition, Grinnell Protection usually pays for itself in a few years through reduced insurance premiums. So, if your property is insured, you're paying for Grinnell Protection . . . why not have it? Grinnell Company, Inc., Providence, R.I. Branch Offices in principal cities.



# Specify with CONFIDENCE!

#### Unconditionally guaranteed against defective materials or workmanship! Over 4,000,000 now in use!

Handsome in design, beautifully lustrous in hand-finished brass, bronze or chrome, Kwikset Locks are a credit to any residence. And for economy, they're tops. New low prices and fast 2-hole installation produce savings up to 20 percent!

NIKSEL

But that's not the whole story on Kwikset! For *underneath*, where quality counts, these rugged locks have what it takes, too! Working parts are of brass stampings or pressure-cast Zamak No. 5, the modern high-test alloy that stands up under years of heavy service.\* The more than 4 million Kwikset Locks now in use have proved it!

There's a complete line of Kwikset residential locksets -available for all standard installations and in all popular U.S. finishes, with or without deadlatches.

\*Tensile strength, 45,400 lbs./sq. in.; compression strength, 87,000 lbs./sq. in.; impact strength, 18 ft. lb.

Manufactured by KWIKSET LOCKS, INC., Anaheim, California

Distributed by PETKO INDUSTRIES, INC., 1107 East Eighth Street, Los Angeles 21, California



Hampton Village Medical Center, St. Louis, Mo., equipped with beautiful, low-cost Fenestra Steel Residence Casements. Builder Vollmar writes that Fenestra Casements solved a special problem—sash installation after brickwork had been completed. He added that maintenance of this sturdy sash is practically nil and that the owners were very pleased with the ease of operation, Architect: Preston J. Brodshow, St. Louis, Contractor: Theodore M. Vollmor, St. Louis.

## No Wonder Fenestra Casements win the approval of architect, builder and owner.

Slender muntins help carry out the flowing horizontal lines of today's architecture. Perhaps that's why so many architects are specifying Fenestra\* Steel Residence Casements for distinctive new buildings.

Add to that the ease with which Fenestra Casements are installed—as single units or as whole walls of combined units—and you have one of the reasons for Fenestra's popularity with builders.

Owners like the ease of operation . . . the simple twirl of a Roto-Adjuster that swings casement leaves out to sweep in passing breezes. Fenestra Casements never stick or warp or swell, because they're steel. They are washed, screened, storm-sashed from *inside*.

Precision manufacturing methods and Bonderizing and prime painting for rust prevention cut maintenance to a minimum.

But perhaps even *more* important—to architect, builder and owner alike—is Fenestra's lower cost. Standardization of types and sizes streamlines production . . . actually gives you higher quality for less money. Yet production volume permits plenty of variety.

Take advantage of these benefits. For window types and sizes, see Sweet's Architectural File—Section 16a/13. Better yet, call or write us, Detroit Steel Products Company, Dept. AF-6, 2251 E. Grand Blvd., Detroit 11, Mich.



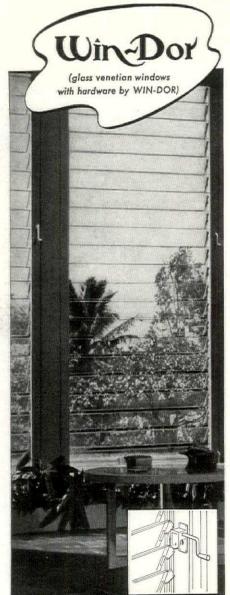


current leakage normal to any switch for a cost of about 3 cents a year. Safe and U/L approved, it retails for \$1.25. Though toggles last for years, replacements are available.

Manufacturer: Glo-Switch Corp., 30 Church St., New York 7, N. Y.

#### SAFE ELECTRICAL RECEPTACLE reduces possibility of accidental shock and burns.

Harvey Hubbell's new safety receptacle, the SP-49, is a U/L approved, "safety-first" device for homes with children. Operating in the conventional manner, the unit makes contact only when standard or polarized caps are inserted. Thus it reduces the possibility of accidental shock and burns caused by inserting small metal parts into electric wall receptacles. The heart of the SP-49 is four insulated rollers, two



#### FOR friendly weather and functional interiors...

Only the imagination of the designer limits the adaptation of the Win-Dor System of Jalousie Hardware in an infinite number of beautiful and practical plans for living areas.

New Use For Glass Here is the modern method of handling light and air...broadening the architect's scope...a practical solution for the protected outdoor living room with clear or obscure glass slats. Glass louvres are easily and conveniently operated and have integral weatherstripping.

Indoor Jalousie Benefits In temperate climates where summer is most keenly enjoyed, Win-Dor Jalousies and Jalousie doors supplant solid partitioning with ventilated walls and doors. Positive operating control. The same superior mechanical system also available for Jalousie windows and doors with wood slats.

See the WIN-DOR Catalog in Sweet's  $\frac{18F}{1}$  and write us

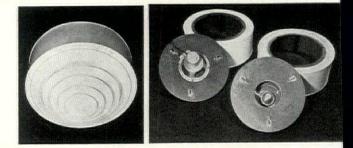


CASEMENT HARDWARE CO. • 406 N. Wood St., Chicage 22, III. Dept. H Gentlemen: I would be interested in receiving detailed information on the following:

of which have to be engaged simultaneously in order to energize the unit. These rollers are located within the unit in such a manner as to prevent activation with metal objects other than the standard cap. Another feature of the new device is the inclusion of two additional back wiring holes for the attachment of wires to extend the circuit if desired. *Manufacturer:* Harvey Hubbell, Inc., Bridgeport, Conn.

#### LOUD SPEAKER BAFFLE improves sound systems, providing good tonal quality and radiation of sound.

The B. B. Butler Mfg. Co. states that its new Drum Type Speaker Baffle can improve both industrial and commercial sound systems by providing the best in tonal quality and radiation of sound, plus smart appearance. Because of the carefully designed baffling shapes, there is no blasting, fading or directional blare in the unit. Sound, whether music or



voice, flows evenly in all directions. Designed for ceiling installation, the 201/4 in. diameter, 61/2 in. deep, drum housing proper can be flush or surface mounted. It is designed for an 8 in. speaker and is usually mounted on 20 ft. centers to give the best results in sound distribution. The unit is constructed of compressed wood fiber and is finished with a prime white lacquer. The back and sides are covered in a sound absorption material. Speaker plate and deflector assembly are attached to the drum with heavy spring clips. (The deflector bell distributes high notes.) Several BBB Drum Type Baffles are available including units with and without high fidelity matching loud speaker and transformer installed. Some units include dispersion ring assemblies, other are designed for 6 in. speakers. Illustrated is drum type housing for 8 in. speaker with dispersion ring assembly. This unit measures 201/4 in. in diameter, 101/2 in. deep; lists for \$26.75. Manufacturer: B. B. Butler Mfg. Co., Inc., 3432 No. Avondale Ave., Chicago, Ill.

#### VITREOUS CHINA LAVATORY LINE incorporates new design features.

Briggs Manufacturing Co. is now offering a complete new line of low priced vitreous china lavatories in colors as well as white. Designed to harmonize with other Briggs fixtures, the line features several models and five different sizes. Three of the new lavatories have a modern, convenient shelf back, while two have a ledge on which the supply fitting is mounted. Highlighting the new line are the "Whittier" and the "Whitman." A shelf back model, the "Whittier" is available in either 19 x 17 in. or 22 x 18 in. sizes, for wall or leg mounting. The "Whitman," a ledge back model, comes in 20 x 18 in. and 24 x 20 in. sizes in both mounting types. All lavatories in the line boast deep bowls with greater water capacity and double front corner concealed overflows with smooth under bowl front. They also have extra wide anti-splash rims and additional room in the back for connecting to hot and cold water supply. Other features of the line include: no-slip (Continued on page 144)





## Rooms must get along with people!



They must take hard use, abuse, cleaning—and stay beautiful! That is why VINYLITE Brand Plastic in the form of sheeting covers the walls and furniture of the inviting cafeteria and office shown here—spreads its colorful welcome to resident and visitor alike.

VINVLITE Brand Plastics are highly fade-resistant, as well as spot-, stain-, alkali-, alcohol-, and chemicalresistant. They come in a rainbow range of colors which can be lighter and "cleaner" than ever before. The sheeting is readily adaptable to virtually all types of furniture, to walls, bar fronts, cabinets and a host of other locations where appearance is an attribute.

Whether for upholstery, or walls, or for floors as shown above (tile or continuous type), VINVLITE Brand Plastics offer architects a new opportunity for rich blends of color and design—plus serviceability. If you are planning or redesigning offices, cafeterias, hotel lounges, play rooms, kitchens—and would be sure they'll get along with people—specify VINVLITE Brand Plastic materials. For suppliers' names, and technical data, write Dept. GD-14. Upholstery Material by United States Plywood Corporation

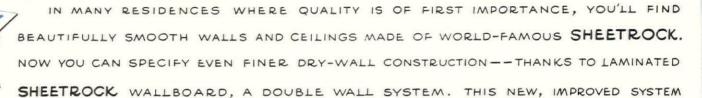


BAKELITE CORPORATION Unit of Union Carbide and Carbon Corporation 30 East 42nd Street, New York 17, N.Y.

## SHEETROCK is at home in the Finest Residences



Roy Jacobs Residence. Architects, Wilson, Morris and Crain



BUILDS FOR UNUSUAL RIGIDITY AND STRENGTH...OFFERS EXCEPTIONAL FIRE-PROTECTION. AND, IT MAKES POSSIBLE THE COMPLETE INSTALLATION AND DECORATION OF OUTSTANDING INTERIORS IN DAYS INSTEAD OF WEEKS ! WRITE FOR DETAILS, CHICAGO, 6.



THE FIREPROOF GYPSUM WALLBOARD



United States Gypsum For Building • For Industry

Gypsum · Lime · Steel · Insulation · Roofing · Paint





In this modern bathroom, clay tile sets the stage with a wall of sparkling color and an imaginative patterr. of complementary colors on the floor. This is but one of countless ways in which tile is used today to enhance any decorative theme.

Yes, there's limitless flexibility of design with tile-plus all the other advantages that today's homemakers look for:

**Easy to clean** and keep clean because clay tile never needs waxing, polishing or refinishing.

**Colors won't fade** or darken because clay tile's beauty is *fired in* to resist water, acid and stains.

The Tile Council of America was formed in January, 1945 to provide a central source of information about floor and wall tile, and to sponsor research and development projects designed to increase the usefulness of tile in all types of private and public building, **Efficient** because tile keeps its spic-and-span appearance despite hard wear. Water rolls off without leaving stubborn, streaky blemishes.

**Long-range economy** because there are no recurring charges for maintenance or replacement. Only clay tile can insure this lifetime of loveliness.

For specific information regarding available types, sizes and colors, see *Sweets Architectural or A-E-C* File. THE TILE COUNCIL OF AMERICA, *Room 3401*: 10 East 40th Street, New York 16, New York. *Room 433*: 727 West Seventh Street, Los Angeles, California.

PARTICIPATING COMPANIES: American Encaustic Tiling Company • Architectural Tiling Company, Inc. • Atlantic Tile Manufacturing Company • B. Mifflin Hood Company • Cambridge Tile Manufacturing Company • Carlyle Tile Company • General Tile Corp. • Gladding, McBean & Company • Mosaic Tile Co. • Murray Tile Company, Inc. • National Tile & Manufacturing Company • Olean Tile Company • Pacific Clay Products • Pacific Tile and Porcelain Co. • Pomona Tile Manufacturing Company • Robertson Manufacturing Company • Sparta Ceramic Company • Summitville Face Brick Company • United States Quarry Tile Company

### **BUILDING REPORTER**



hexagonal towel bars, black index supply handles, quick opening valves. In addition to white, the new fixtures are available in sandstone, blue, sea green and ivory. According to Briggs, the colored lavatories, as well as other matching Briggs fixtures, are the lowest priced colored plumbing fixtures on the market today.

Manufacturer: Briggs Mfg. Co., 3001 Miller Ave., Detroit, Mich.

#### COMPACT CHINA LAVATORY is designed for small home and powder room installations.

A recent addition to Richmond Radiator's line of vitreous chinaware is the Richledge, a compact, wall hung lavatory for small home and powder room installations. Made in two sizes, 18 x 15 in, and 19 x 17 in., this economy size unit has all the features of larger lavatories. These include: integral front overflow, anti-splash rim, two recessed soap dishes, raised shelf back and Richmond's high - gloss finish. The Richledge is also punched for center set fittings and has



chrome plate legs and towel bars available if desired. Manufacturer: Richmond Radiator Co., 19 East 47th St., New York 17, N. Y.

#### ENAMELED IRON LAVATORY is rigid, enduring.

Designed to harmonize with other Kohler fixtures, the Westchester is a durable enameled iron lavatory for use in home bathrooms, as well as in batteries in public buildings. With a smooth, glass-like, easily cleaned surface, the unit is cast for rigidity and long life. It has chromium legs and twin towel racks, and a wall hung model is also availa-



ble. Among the Westchester's many features are a convenient broad rim, a depressed soap dish, central mixer fittings with pop-up drain and a new round overflow. The new lavatory stands 31 in. from the floor. It comes in 24 x 20 in. and 20 x 18 in. sizes with basins  $16\frac{1}{2}$  x 12 in. and  $14\frac{1}{2}$  x 10 in. respectively.

Manufacturer: Kohler Co., Kohler, Wis.

#### CORNER LAVATORY saves room space.

Crane Co.'s new corner lavatory, the Vivian, is a vitreous china fixture for use in rooms where space is at a premium. Supplied in colors as well as in white, it measures  $18 \times 18$  in. overall, and has a basin  $16 \times 11$ in., 6 in. deep at the outlet. The spout of the new lavatory is an integral part of the body of the fixture and



is placed on a bevel panel at the back. Chromium-plated handles, which operate Dial-ese controls, are mounted on either side of the spout. A positive action waste fitting is another feature of the fixture.

Manufacturer: Crane Co., 836 S. Michigan Ave., Chicago, III.

#### CONVERTIBLE 42 in. UNDERSINK CABINET is four cabinets in one.

Midwest's new 42 in. Kitchen-Kraft floor cabinet functions as either a right or left hand undersink cabinet, or as a right or left hand corner cabinet. Built of heavy gauge steel. (Continued on page 143)

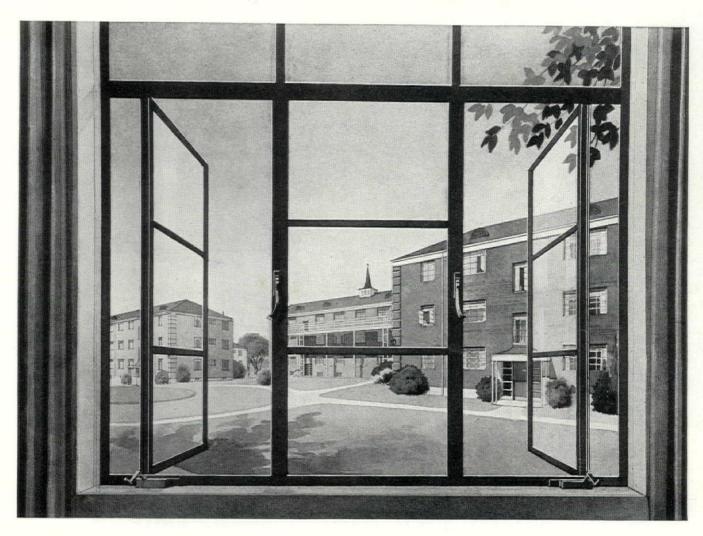


From any angle — inside or out — potential buyers appreciate the finished look that quality window shades give. That's why so many architects and builders now depend on harmonizing shades to add the extra interest value that means sales. For the homes you design or build, specify Hartshorn FYRBAN — the only shade with the Vinylite film that seals in beauty, seals out hard wear. You'll notice the difference and the buyer will like the way FYRBAN washes like china, stays smooth ... even passes the strictest fire resistance tests. Let FYRBAN Shades help your prestige — they cost no more!

For full information about Hartshorn FYRBAN Shades and Hartshorn's new adjustable all-metal roller, see our catalog in Sweet's. Sample book showing the complete line of decorator-approved FYRBAN colors on request.

STEWART HARTSHORN CO. . Since 1860 . 250 Fifth Ave., New York 1, N.Y.





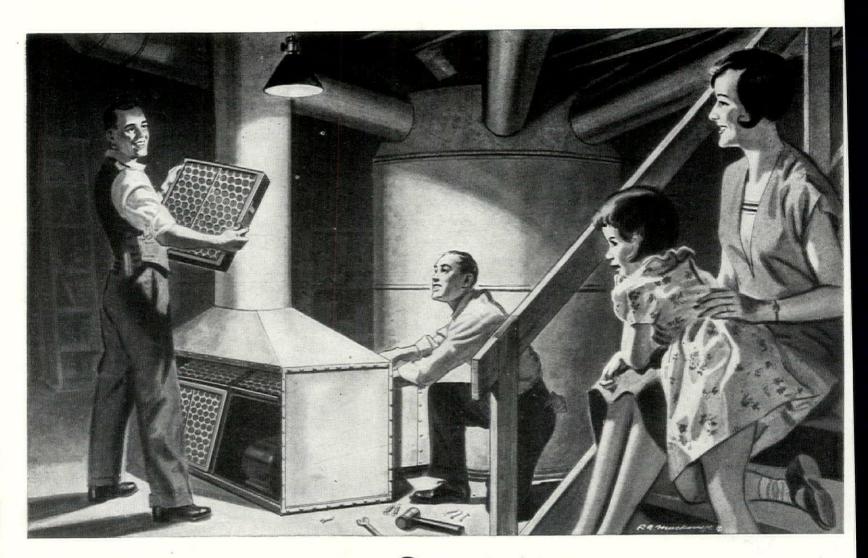
Teaneck Gardens, Teaneck, N. J. Architect: M. Simon, New York, N. Y. Contractor: Sarner and Solov Construction Co., Inc., Teaneck, N. J.

Plans for Teaneck Gardens called for bright, cheerful rooms, always comfortably ventilated . . . spacious-looking windows to take full advantage of a picturesque countryside. That is why large, sun-inviting Lupton Metal Windows were installed in each unit of this garden-type apartment. With Lupton Residence Casements, air flow is easily controlled. Slender metal frames increase glass area . . . harmonize with every interior. The beautifully designed Lupton operating hardware is an added feature. Bronze wire screens with narrow metal frames attach on inside.

There is a Lupton Metal Window for every type of building. Write for our catalog, or see it in Sweet's.

MICHAEL FLYNN MANUFACTURING CO. 700 East Godfrey Avenue, Philadelphia 24, Penna. Member of the Metal Window Institute

# LUPTON METAL WINDOWS



# How a Simple Idea

## revolutionized Home Heating Twill since 1930

Forced-warm-air heating had its start in a simple idea—to circulate the air mechanically, for greater comfort, for increased efficiency and economy. By adding a blower and dust-catching filters to a gravity system, pioneers proved their idea right. Millions of families today enjoy the benefits of this type of heating.

But a second big development was to come, perfected this past year. By slowing down the blower so it operates almost continuously, engineers found they could prevent stratification, could eliminate cold areas near the floor . . . could provide, for the first time with any heating system, floor-toceiling comfort at all times, in every room. Equally outstanding is the substantial saving in fuel and increased economy of operation. Available for your new homes through all manufacturers of forced-warm-air heating equipment, this new and superior type of heating can also be provided, at nominal cost, in existing forced-warm-air installations. Get complete details from your warm-air furnace dealer or heating contractor. OWENS-CORNING FIBERGLAS CORPORATION, Dept. 830, Toledo 1, Ohio (makers of DUST-STOP\* Air Filters, standard equipment in most modern warm-air furnaces).

In Canada, address Fiberglas Canada Ltd., Toronto, Ontario.

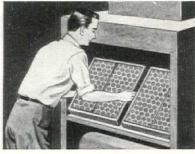
DUSTOP AIR FILTERS



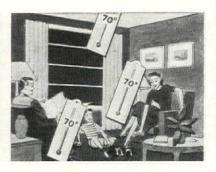
Forced-warm-air heat is *thrifty* heat ... quickly responsive and automatically controlled.



Proper humidity protects family health; compactness of furnace and ducts saves valuable space.



Inexpensive replacement of efficient DUST-STOP filters saves fuel, housework and costly redecorating.



Continuous air circulation makes possible floor-to-ceiling comfort, at all times, in every room.

THIS ADVERTISEMENT ALSO APPEARS, FULL COLOR, IN BETTER HOMES & GARDENS, JUNE-HOUSE & GARDEN, AUGUST.

# now take it Point

Specify Columbia Window Shades — and you get everything you could ask of a shade, plus a name that's known and trusted by millions of users.

Specify COLUMBIA PYROXYLIN — and you get more of everything you want! It's a super shade, Columbia's best! Check it point by point!

Columbia Window Shades and Venetian Blinds are sold only through Columbia Authorized Dealers leading department and furniture stores and shade shops. May we send you samples of PYROXYLIN Window Shades and the name of the Columbia Authorized Dealer nearest you? Write today.

WINDOW SHADES AND VENETIAN BLINDS

Ask a Columbia Huthorized

ACTUALLY PAY A PROFIT! Pyroxylin shades, because they're top quality, wear longer than the usual shade life expectancy . . . allow low maintenance costs...actually make a profit for you, as one large user puts it.

CUT REPLACEMENTS – PYROXYLIN IS WASHABLE! Takes to actual scrubbing – repeated washings—fabric remains firm and sturdy, colors stay fresh. It's waterproof, too, to rain, steam, dampness.

**FORGET PINHOLES OR CRACKS!** Pyroxylin shades are made on such a closely-woven base, without filler, that they're impervious to cracks and pinholes. Better, *longer* wear!

**COLOR SCHEMING – TAKE YOUR CHOICE!** Match or harmonize Pyroxylin with any color plans...14 solid colors, including highfashion pastels and decorator darks. Duplex combinations, also. Popular PRINTED shades.

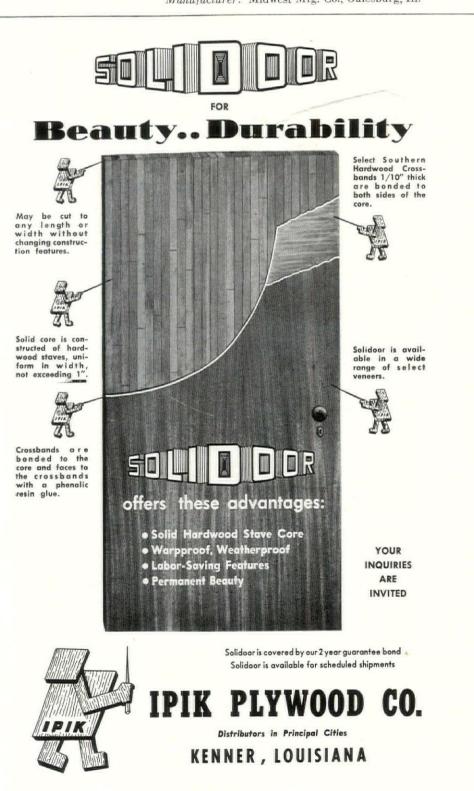
**VELVET-SMOOTH TO OPERATE!** Columbia's shade rollers, made in Columbia's own plant, take care of that! Dependable, silent service throughout Pyroxylin's career.

**PIGMY TO GIANT SIZES!** Your Columbia Authorized Dealer will make these fine shades to your exact window sizes.

## **BUILDING REPORTER**



the unit measures 42 in. wide,  $34\frac{1}{2}$  in. high and  $24\frac{3}{8}$  in. deep. It matches other cabinets in the Kitchen-Kraft line and is shipped as a left hand undersink unit with a 6 in. deep drawer on the left and an 18 x 6 in. blank front panel on the right. When the units are transferred, the cabinet is converted from a left to a right hand unit. Slots for the drawer runner channels are provided on both sides. When the unit is used as a corner cabinet, a second cabinet is placed against the blank panel side. A filler is supplied to join the cabinets together and to allow clearance for doors and drawers to open and close. The new enamel finished unit is supplied with chromeplated hardware. Counter tops with sink cutouts are available for right or left hand use. Sink bowls with fixtures, retractable spray and crumb cup strainer are supplied with tops. *Manufacturer:* Midwest Mfg. Co., Galesburg, Ill.



#### NEW GAS RANGE features "no-turn" convertible broiler.

To mark its entry into the gas range field, Perfection Stove Co. is offering a new kitchen range with several distinctive features. One of these advancements is a flavor - lock no-turn broiler which broils meat on both sides at the same time. This not only seals natural juices into the meat but reduces shrinkage during cooking. Another feature of the broiler is its easy conversion into an economy bake oven.



When a panel is slid over the broiler burner, broiling is halted and baking is begun. Both the broiler and oven have high visibility "Televue" windows and interior lighting with alternate automatic and manual control. Oven rack and rack guides are quickly removable for cleaning. Other features of the heavy-guage steel range include a divided top burner arrangement and stainless steel surface burners. Weighing approximately 11 oz. each, these burners are designed for efficient operation and quick, easy removal and replacement. They are available in three sizes: 12,000, 9,000 and 6,000 Btu's, and they can be placed where desired at the time of range installation. The range top measures 40 in. wide by 23 in. deep. The stove is adaptable to natural, manufactured or bottled gas by simply changing the orifices.

Manufacturer: Perfection Stove Co., 7609 Platt Ave., Cleveland, Ohio.

#### KITCHEN VENTILATING HOOD eliminates cooking vapors before they can condense.

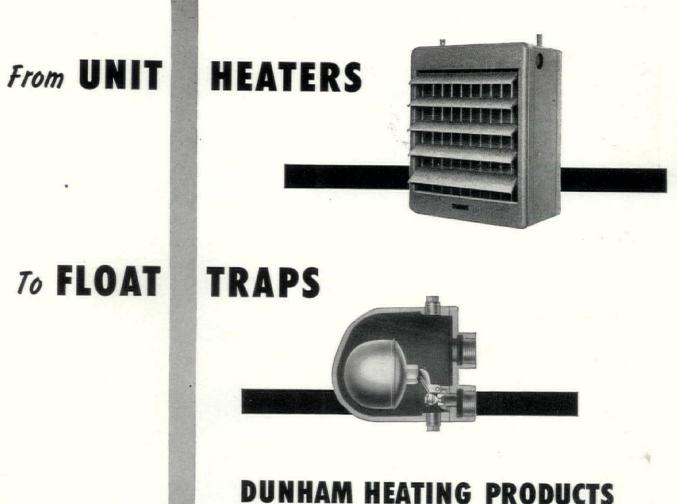
Vent-A-Hood is designed to capture greasy cooking vapors directly from the kitchen range and force them to the outside before they can spread and condense on walls or furnishings. Made of 24 gauge, rustproof steel, finished in nonporous baked on white enamel, the pyramid-shaped ventilator comes in two styles, complete



with motor, blower and light fixture. Vent-A-Hood exhausts 300 cu. ft. of air per minute, or provides 18 air changes over the stove per minute. As hot air bearing vaporized grease rises from the cooking top, the unit's centrifugal blower-fan forces it to the outside through ducts. The fan separates the grease from the cooking vapors before venting the fumes. The grease is collected in a pan below the fan. All parts of the unit, including the blower-fan, can be easily cleaned and kitchen walls are protected against spattering grease by the unit's rear panel, which extends well below the stove top level. Vent-A-Hood is equipped with a standard 110 v., 60 cycle motor which is fully enclosed and protected from heat and grease. Two models, to suit kitchen design and taste, are available in several sizes. Supplied knocked down without ducts, units range in price from \$84 to \$92 f.o.b. Dallas.

Manufacturer: Vent-A-Hood Co., Plantation Drive and Harry Hines Blvd., Dallas 9, Tex.

(Technical Literature, page 152)



## DUNHAM HEATING PRODUCTS pay off in PERFORMANCE

#### Increase operating efficiency . . . cut operating costs

One outstanding quality of all Dunham heating products . . . a quality upon which Dunham customers unanimously agree . . . is their superior construction.

For example, the attractive casings of Dunham Type V Unit Heaters have rounded corners and folded edges for extra eye-appeal. Their simplicity of design and sturdy steel construction give them maximum strength and rigidity. A cushion-bonded motor, operating at moderate speed, insures quiet performance. While outlet air temperatures are carefully balanced with air velocities to provide healthful comfort at minimum cost.

This skill in engineering and manufacture means better performance on the job... longer trouble-free service... greater client satisfaction.

Products like these made the Dunham Differential System famous. It is upon such precision-built and job-proved products that the Dunham Vari-Vac\* heating system is based and it is their dependable operation that has made possible the sensational fuel savings for which this system is nationally famous.

So, regardless of your heating need—whether it's for a single trap or all the elements that go into a complete heating installation, it will pay you well to look first at the Dunham line.

#### SEND FOR THIS CONDENSED CATALOG

Write today for your free copy of Bulletin 634B. Contains complete information on Dunham steam specialties, unit heaters, pumps, cabinet and baseboard convectors.



C. A. Dunham Co., 400 W. Madison St., Chicago 6, Ill.

\*Variable vacuum

AND JOBBERS IN ALL PRINCIPAL CITIES

SALES ENGINEERS



# One-Piece Pipe Line

make it a



Make it a "one-piece pipe line" with Walseal



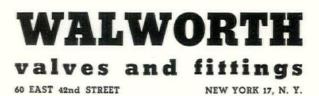
### with SILBRAZ\* joints

Silbraz joints, made with Walseal\* valves, fittings and flanges, actually make a "one-piece pipe line" of brass, copper, or copper-nickel I.P.S. pipe or tubing ... leaky joints are completely eliminated, and maintenance costs are reduced to the minimum.

A Silbraz joint is *silver-brazed* – not soldered. This modern pipe joint will not **cr**eep or pull apart under any condition which the pipe itself can withstand ... vibration or corrosion will not affect it. A Silbraz joint is designed to have a tensile strength equal to about three times standard weight brass pipe, and the pipe will fail before the joint will pull apart.

For full information about Silbraz joints made with Walseal valves, fittings and flanges, see your nearby Walworth distributor, or write for Circular 84.

\*Patented - Reg. U. S. Patent Office





Shirlington, Virginia, shop of Frank R. Jelleff, Inc., Washington, D. C.

## WOOD... Designed for Selling



The use of beautifully formed and finished wood to display merchandise attractively and to impart a pleasant shopping atmosphere is one of the traditional principles of store design. Almost equally traditional is the dependence of leading architects and designers upon the craftsmen of Woodwork Corporation to render their ideas skillfully and faithfully in wood. In addition to many distinguished retail establishments, a long list of hotels, clubs, dining rooms, office suites and churches noted for their beautiful wood interiors provide impressive proof of the effectiveness with which creative men and Woodwork craftsmen have worked together for two generations. Whether your plans involve a complete wood interior or a single display case, here at Woodwork Corporation are the skill and facilities you need. Your inquiry will receive immediate attention and a prompt reply.

STREET . CHICAGO 8, ILLINOIS



OODWORK CORPORATION OF AMERICA

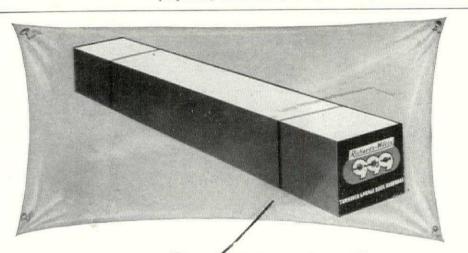
TWEN

### TECHNICAL LITERATURE

TIMBER ENGINEERING. Modern Timber Engineering. Third Edition by W. Fleming Scofield and W. H. O'Brien. Southern Pine Assoc., Canal Building, New Orleans, La. 147 pp. 61/4 x 91/8 in. Price \$1.50.

Modern Timber Engineering presents practical, basic information on timber design in a clear and interesting manner. Written to serve not only as a college textbook but to provide practicing engineers and architects with information for solving design problems, it contains latest technical data on timber design as set forth in National Design Specifications.

This recent edition is the third of a publication originally released in 1942 under the title, "A Course in Modern Timber Engineering" and revised in 1946. Its 11 chapters cover such subjects as: structure and characteristics of wood, strength properties, loads and stresses, fastenings, beams, columns,



#### Best Seller this Summer <u>New</u> Richards-Wilcox 999 GARAGE DOOR HARDWARE

Get started now! Check your garage door prospects and start selling them the advantages of converting out-dated swinging doors to modern overhead doors with Richards-Wilcox Garage Door Hardware. Comes complete. Packed in one convenient carton. Easy to handle. Includes all hardware needed for installation and operation. Can be easily and quickly installed by the customer.

Backed by over 69 years of experience and engineering skill in the design and manufacture of all kinds of door hardware, Richards-Wilcox 999 Garage Door Hardware is one of your best bets for a profitable summer.

For further information, please telephone, write or wire our nearest office, today.







trusses, decks and bridge floor systems, glued lamination, round timber piles, wood preservation and fire resistance of wood construction. There are 55 pages of examples in addition to a complete appendix of design data covering various species of wood.

PAINTING-PAPER HANGING. Painting and Paper Hanging For The Home Owner by Charles B. Moore. Garden City Publishing Co., Inc., Garden City, N. Y. 188 pp. 53/4 x 81/2 in. Price \$2.

Painting and Paper Hanging is intended primarily to guide the average homeowner in accomplishing almost any home painting, varnishing or paper hanging job successfully. And there is no doubt that this book will greatly aid the homeowner, or even the architect, with any residential painting problem. Dealing with ready-mixed paints, the work gives step-by-step directions for all types of finishing. The novice will also find helpful the illustrations which amplify the text.

Practically every type of finish for every type of surface is discussed. How paints, enamels, varnishes, shellacs, stains, and waxes differ, which is the best to use and what results each will give are carefully explained. Individual sections discuss treatments for walls, ceilings, floors, furniture, masonry and other surfaces, both interior and exterior. These emphasize appearance as well as protection. Special problems such as painting boats are handled in separate chapters, as are spray painting and paper hanging. In addition to a wealth of helpful how-to-do-it information this book includes several other noteworthy features: lists of materials and accessories needed to do the job, a detailed table of contents and a complete cross reference index of 1,800 items.

**CONCRETE FORMS.** Uni-Forms The Concrete Forming System. Universal Form Clamp Co., 1238 N. Kostner Ave., Chicago, III. 34 pp.  $8!_2 \times 11$  in.

The Uni-Form system of forming concrete is explained simply and clearly in this brochure. The basic components of the system and the advantages of the forming method—flexibility, time, material and labor savings—are emphasized. Numerous illustrations show how Uni-Forms can be used to accomplish various different jobs.

DRY WALL CONSTRUCTION. How Much Does Dry Wall Save? Wesco Waterpaints, Inc., 343 S. Dearborn St., Chicago, III. 4 pp.  $8l/_2 \times 11$  in.

Comparative cost data on dry wall construction as opposed to conventional plastering are set forth in this folder. The study, prepared by Pace & Associates, Architects, illustrates in dollars and cents how dry wall construction saves over 50 per cent on both labor and material costs. The last page of the pamphlet briefly describes the Wesco joint treatments and finishes available for use with major types of wallboard.

**ROOFS.** Putting Nature's Colors to Work With Roofs That Are Daylight Engineered. The Flintkote Co., 30 Rockefeller Plaza, New York, N. Y. 20 pp. 11 x 8½ in.

Written primarily for the prospective homeowner, this booklet discusses the importance of exterior decoration and offers suggestions for selecting the right color asphalt shingle roof for any specific situation. Printed in four colors, the opening pages are devoted to such subjects as primary, secondary, tertiary, blending, complementary and contrasting colors; hues, intensity, color values, etc. (Continued on page 156)

# RESULTS GUARANTEED BY GOLD BOND!

THE architect hasn't got a single worry about the walls and ceilings in these two new 8-story apartments. And neither has the builder or the owner. The entire responsibility for the performance of all Gold Bond Products used on this job is centered on one dependable manufacturer, the National Gypsum Company.

If several different brands had been specified, the responsibility would be shared by many different concerns. But National Gypsum Company stands behind every one of its products—now over 150, all trademarked under the famous Gold Bond label. With only one supplier, there's no "passing the buck"!

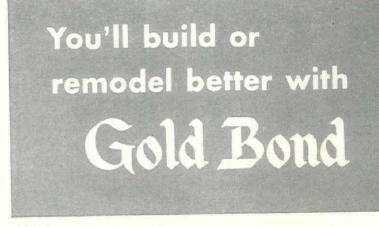
In addition to *fireproof* Gold Bond Metal Lath materials, Plaster, and Insulation, this up-to-the-minute apartment building uses the spacesaving Gold Bond 2-Inch Solid Partition System. Made of *fireproof* metal lath and plaster, this system saves about 4 inches per wall, providing an average of about 7% more rentable space.

National Gypsum manufactures a full line of related Gold Bond Building Products. Specify Gold Bond Products exclusively, and *eliminate* that troublesome factor, *divided responsibility*!

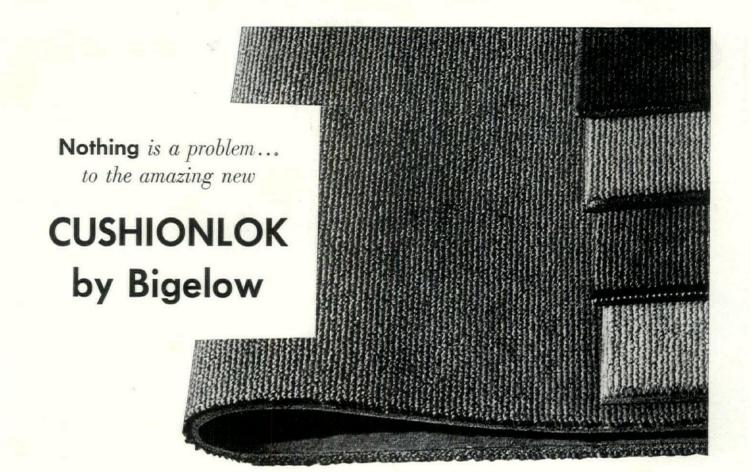
#### NATIONAL GYPSUM COMPANY . BUFFALO 2, NEW YORK

### THE FOREST HILLS PARK APARTMENTS

13995 SUPERIOR RD. EAST CLEVELAND, OHIO



Over 150 Gold Bond Products, including gypsum lath, plaster, lime, wallboards, gypsum sheathing, rock wool insulation, metal lath products and partition systems, wall paint and acoustical materials.



#### Time is no problem



This revolutionary new commercial carpet, with its built-in rubber cushion, requires no time-taking workroom preparation.

Cushionlok cements directly to concrete, wood, or plywood floors. (Seams are almost invisible.) Can be walked on immediately!



Disruption is no problem

Your *Cushionlok* installation can be accomplished neatly as well as speedily.

Because Cushionlok is made in 27" width, only one section of floor is tied up at a time. Fixtures and furniture need only be shifted aside; business can go on as usual!

### Even Cigarette Burns are no problem

Cushionlok's springy wool surface is so handsome you hate to think of the inevitable cigarette scars.

But when you do get a cigarette burn, you needn't worry.

Because here's another *Cushionlok* miracle that will make the scar disappear like magic:



**1. Dropped cigarette** smolders unsightly mark in Cushionlok installation. (With ordinary carpet this would be a real tragedy.)

**Plan your Cushionlok installation now!** You'll find Cushionlok's special features—its smart looped surface, its built-in rubber base—ideal for your commercial installation. Adds luxury underfoot; adds years'of wear, yet costs very little more than ordinary carpeting.

Inquire of your architect or decorator, or call Bigelow's Carpet Counsel direct. One of the 25 offices is near you.



**2.** Simple cutting operation removes marred section. (Experts can complete repair in 5 minutes.)



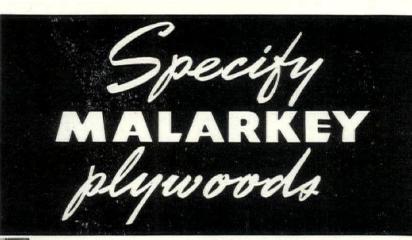
**3. New, small patch** of *Cushionlok* is cemented into place; only an expert could spot the substitution; installation looks flawless.





Beauty you can see ... quality you can trust ... since 1825

# No interior finish can equal REAL WOOD





The color and texture of fine wood in its most usable and durable form

Wherever they are used, Malarkey plywoods provide additional good taste and continuing attraction to commercial and home interiors. Better than wood itself, Malarkey plywoods combine the distinctive appearance of wood paneling with the versatility

and ease of application of plywood.

Available in the favorite hardwoods: Birch, Oak, African Mahogany, Maple, and the new softwood plywoods: Redwood and Vertical Grain Fir, Malarkey plywoods have proved an excellent means of creating new beauty and restoring older rooms to fresh beauty. Another plus value is the minimum of maintenance required of plywood walls.

Malarkey plywoods are sold by leading distributors and building material dealers; are edge-branded for easy identification.

Architect's file on uses and advantages of Malarkey plywoods sent free on request. M and M Wood Working Company, Portland 3, Oregon.



plywoods

© 1949 M and M Wood Working Company

MAHOGANY REDWOOD VERTICAL GRAIN FIR MAPLE OAK BIRCH

> MATCHING FLUSH DOORS AND FLUSH CUPBOARD DOORS

Now available

Specify Malarkey flush doors and flush cupboard doors to match paneling or exteriors. Malarkey flush doors are made with either solid or hollow core and are available in the same woods as Malarkey plywoods. Malarkey flush cupboard doors have patented solid stile inserts on both sides which hold regular hinges like a solid door. Permits smooth lipping. Standard widths 12 to 24 inches.



Solid stile insert bonded into both sides of cupboard door holds screws tightly, permits use of butt hinges, allows smooth lipping and rabbeting.

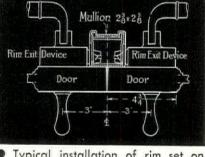
## TECHNICAL LITERATURE





• Approved over a period of years by installation in places of public assembly. Cast brass or bronze. Rim Set #2586 designed for surface application where low labor cost is a factor. Mortise rim and vertical rod types for single or double doors are also available.





 Typical installation of rim set on double doors with removable mullion.

• Side elevation showing outside handle and cylinder collar. Door can be opened instantly at all times from inside.



Following sections then discuss location of the home, the influence of climatic effects and the architectural aspects of the house in relation to the choice of the appropriate roof color. Concluding sections review the available green, red, gray, blue and brown families of roof colors, propose color recommendations and illustrate each color group with different types of homes roofed with appropriate asphalt shingles.

**HOME INSULATION.** Foamglas For Home Insulation. Pittsburgh Corning Corp., 307 Fourth Ave., Pittsburgh, Pa. 12 pp.  $81/_2 \times 11$  in.

This new brochure introduces PC Foamglas, Pittsburgh Corning's cellular glass insulation, to the residential field. Featuring informative data, technical specifications, photographs, charts and diagrams, the booklet explains why residences need insulating, and why PC Foamglas is suitable for use. Text discusses the application of Foamglas for insulating concrete floors, masonry walls, roofs, sidewalks and driveways. Specifications are then offered for the installation of Foamglas around the perimeter of and under a concrete floor slab, on the interior and exterior surface of the foundation wall, in wall construction where masonry blocks, bricks and tiles are used exclusively, over wood roof decks, both flat and sloped, and under radiant heated sidewalks and driveways.

INSULATION. Rock Cork Insulation. Rock Cork Felt Sided Roof Insulation. Johns-Manville, 22 East 40th St., New York, N. Y. 4 pp. 81/2 x 11 In.

The first of these two pamphlets dealing with Rock Cork insulation lists the properties and sizes of this insulation which is used primarily in the refrigeration field. It also offers suggested uses for Rock Cork in the form of sheets, lagging and pipe insulation. (Continued on page 160)



# You can't beat 100%!



ALFRED S. LEVITT

Vice-president of Levitt and Sons, who designed all buildings in Levittown.

Combine the genius of Alfred S. Levitt, and the dreams of 10,000 home owners-and you have

dreams of 10,000 home owners—and you have Levittown, a Long Island dream city that's no longer a dream—it's a reality. Mr. Levitt believes in 'dream homes''... but they've got to be prac-tical. That's one reason why every home in Levittown is roofed with asphalt shingles. "You can't beat 100%!"

WRITE FOR THIS NEW FREE BOOKLET

"Good Application Makes a Good Roof Better" contains 24

### 10,000 roofs in Levittown... and every one is ASPHALT!

There's simple logic in the fact that Levitt and Sons chose asphalt shingles, 100%, for their homes in Levittown, Long Island. "If asphalt shingles are the best buy for one house, why not for a thousand?"

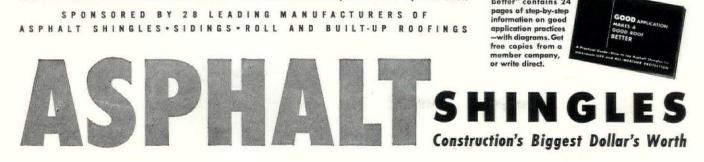
The advantages of asphalt shingles are basic, one house or a thousand. Asphalt shingles are economical-low in first cost, low in cost per year. They're easy to apply, easy to maintain. They're colorful -available in a variety of tasteful colors that complement the colors of each individual house and contrast pleasingly with

its neighbors. Asphalt shingles are attractive-with clean lines and patterns, at home with any style, any size home. They're weather resistant-built to take the punishment of sun, wind, rain, and sleet. They're fire-resistant-coated with mineral granules that will resist sparks and flying embers.

Make a chart of the qualities you want in a roof. You'll find that asphalt shingles score high on all counts. That's why developers like Levitt and Sons prefer asphalt shingles-100%!

#### ASPHALT ROOFING INDUSTRY BUREAU • 2 West 45th Street, New York 19, New York

SPONSORED BY 28 LEADING MANUFACTURERS OF ASPHALT SHINGLES • SIDINGS • ROLL AND BUILT-UP ROOFINGS



Olients are pleased (and pay no more)

• If you could draw a graph of your clients' degree of interest on inspection tours, you'd see what happens when they come to a Case bathroom. Wandering eyes snap into focus. Attention shoots up fast...they've come to the *Interest Peak* that re-affirms their approval of your work.

when you add this

Whether you are pioneering along new lines or interpreting traditional ones, Case quality plumbing fixtures impart this *Interest Peak* to your bathrooms. There is refinement in their design, excellence in their construction—and no premium to pay in first cost or maintenance. The delivery situation and the variety of available designs are more good reasons for specifying Case vitreous china today. W. A. Case & Son Mfg. Co., Buffalo 3, N. Y. Founded 1853.

of your clients' degree of interest

**THE COSMETTE**, shown here in a two-in-one Case Twin-Duty layout, offers generous bowl area in space as small as 20" x 13" overall. Handy shelf, concealed front overflow, novel slanted control panel. Available with legs or wall hung.

\*PATENTED



Case plumbing fixtures are distributed nationally by leading wholesalers whose names are listed in classified telephone directories



Jammed shipping platforms are costly, wasteful. Prompt action now...can save you money for years to come!

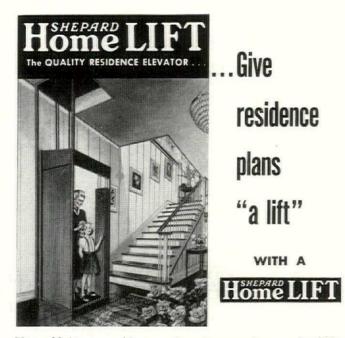
The prime reason why so many traffic managers today are finding it difficult to move goods in and out of plants quickly, *efficiently* —is because the shipping facilities weren't planned for future expansion. Slow up goods on loading platforms, and what happens? An artificial bottleneck is created. Costs mount. The savings you're making in internal operation are being slowly drained away by idle man and truck hours. That's true of the trucks you own or bire.

Trucks need adequate platforms – room to move around in. The smart thing to do is call in your traffic manager, architect or engineer and *let them* 

show you how they can save you money — 5, 10, 20 years from today!







You add immeasurably to a home's convenience and utility, now and for many years to come, when a Shepard HomeLIFT appears in your plans. The HomeLIFT is designed exclusively for residence use, priced within the *average* purse, for the *average* home.

The Top Quality Residence Elevator, HomeLIFT, has been installed in hundreds of new and remodeled homes throughout the nation and is a favorite with homeowners and architects alike. Write today for a HomeLIFT catalog which gives you operational, installation and dimensional details.



#### BY THE MAGIC OF PHOTOMURALS

When you check in at Delta's Windy City office you can almost feel the soft balmy breezes and brilliant sunshine of the deep South...beautiful Photomurals portray so invitingly the scenes of the Southland that even Delta's super-speed equipment seems slow to the eager passenger! That's the power of the Photomural... and it can be applied to a multitude of purposes... one of which will serve your needs amazingly well.

WRITE FOR FULLY DESCRIPTIVE BROCHURE



TECHNICAL LITERATURE

The second folder, *Rock Cork Felt Sided Roof Insulation*, outlines advantages of this insulation for built-up roofs and illustrates its application. Text also contains conductivity data and similar information of interest to roofing and maintenance men.

**ENTRANCES.** Standard Aluminum Entrances. American Art Metals Co., Atlanta, Ga., 34 pp. 81/2 x 11 in.

Numerous aluminum products, ranging from standard entrances through glass door frames to architectural letters are detailed and specified in this brochure. In the opening pages, devoted to entrances, the booklet states "a new freedom in the use of aluminum entrances for all types of commercial, industrial and institutional buildings is made possible by standard and semi-standard aluminum entrances offered by American Art Metals Co. . . . Standard entrances offer maximum economy and earliest delivery." Various elevations and sizes of standard aluminum entrances offered by the company are detailed. Specifications are also included. Other sections of the booklet cover standard aluminum frames and door pulls for tempered glass doors, aluminum push bars, extruded shapes, aluminum wall coping, formed sheet aluminum, window sills and stools, awning hoods and architectural letters.

**PANELING.** Architectural Report on Wattled Walnut. American Walnut Manufacturers Association, 666 Lake Shore Drive, Chicago, III. 4 pp.  $8!_2 \times 11$  in.

Wattled Walnut, a special type of solid walnut board that is used for architectural paneling, fixtures and built-in cabinet work, is described in this folder. Photographs illustrate applications in libraries, dens, bars, recreation rooms, etc. A separate sheet includes technical information.



Just one page

Time)

# from the Crane bathroom story!

The Crane bathroom story is the story of a complete line-a style for every taste, a price for every budget. For instance, there's the *Neuday* Group above, just right for the home-owner who has to watch his costs. Then for the man who goes "all out,"

there are such Crane style leaders as the Criterion group below. But whatever their price, all Crane bath-rooms have the high quality and the lasting beauty that make Crane the best-known name in plumbing. That's true in Crane kitchens,

too, where Crane has the right sink for every possible requirement. And in home heating, Crane supplies everything needed for any system, any fuel. See Crane Service for Archi-

U

tects and Sweet's Builders' File for selections from the Crane line-or get the complete story from your Crane Branch or Crane Wholesaler. For moderate budgets, the Crane Neuday Group

the Crane Neuday Group For the best in bathrooms—the Criterion Group—leader in the Crane style parade. Here is the very latest in design, the most careful craftsmanship—a bathroom group with elegance in every line. (For those who prefer a countertop lavatory, Crane offers the Marcia, styled to blend with the Criterion bath and closet.) Controls are finger-tip Dial-ese, as in all Crane bathrooms.

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO 5 PLUMBING AND HEATING VALVES • FITTINGS • PIPE

NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS



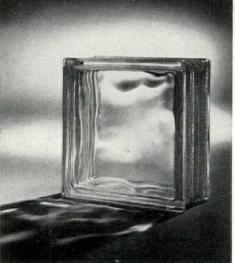
The new "Random Clear" Insulux Glass Block

PHOTOGRAPH BY SUTER, HEDRICH-BLESSING, LTD.

**New beauty with Insulux:** Handsome new Insulux Glass Block No. 331 has remarkable variation in design, and is called "Random Clear" because each succeeding block differs from the last.

Its appearance is of a character usually associated with fine handmade glass.

Through ingenious use of automatic equipment, more than 80 different face designs are made. Yet, all are similar. For complete information, write American Structural Products Company, Dept. F-167, P. O. Box 1035, Toledo 1, Ohio.



# NEW IDEA in fenestration

Now the advantages of glass block and conventional window framing are combined into a single unit!

For architects, this new window opens many new design possibilities, especially for office buildings. Because it is a *complete* unit, it can be specified as freely as conventional windows . . . in single, multiple or continuous groupings.

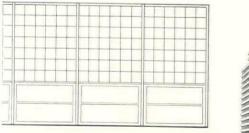
Better interior lighting is assured through Insulux lightdirectional, prismatic glass block panels. At the same time, the clear glass section affords unobstructed vision and can be raised for ventilation. Shades or blinds are not usually required.

Particularly important for office buildings is this advantage: The entire outside surface of the complete unit can be cleaned as readily as any double-hung window.

Send the coupon today for complete details.

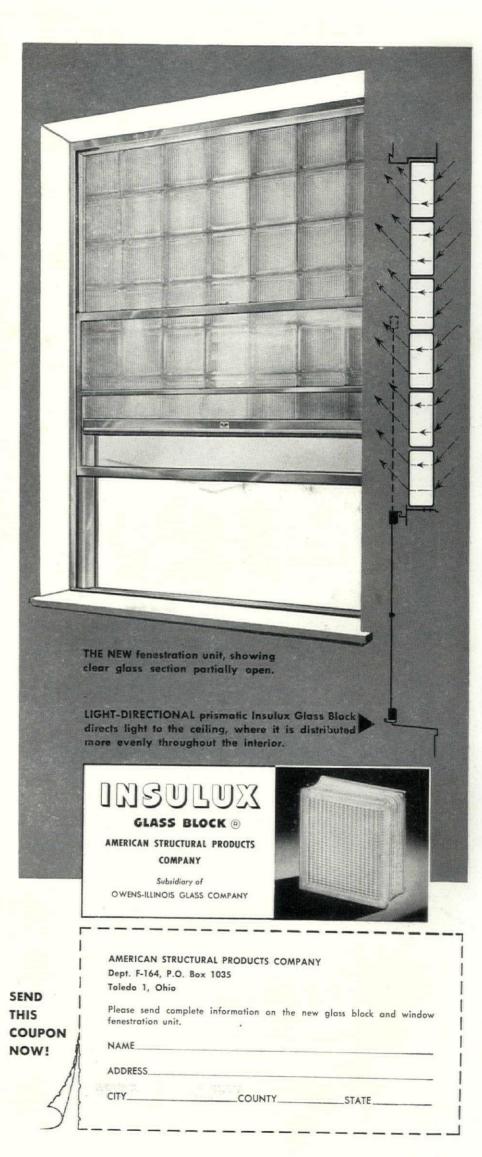
<b>1</b> Single unit in standard mensions, can be used in construction or for sash rep ment. Set in building walls ordinary double-hung wind	new place-		
	Inter		

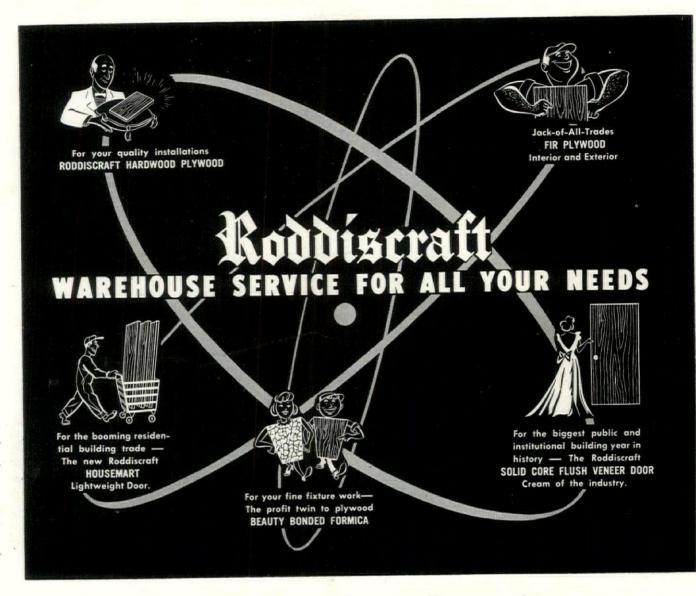
**2** Multiple unit showing how width and height of glass block panel can be varied as desired. Addition of a plate forms mullions from the jambs.





3 **Continuous** units complete the picture . . . this new window is suitable for any type and size building. Individual units set side by side form continuous fenestration. Cover plates only are needed to form complete mullion.





Roddiscraft warehouse service-centers offer you complete on-hand stocks of plywood, doors, Formica and allied items.

Now that quality is again important, it will pay you more than ever to

identify yourself with Roddiscraft quality products. Roddiscraft quality

will sell your customers-Roddiscraft warehouse service will sell you.

It's a profit combination proved for over half a century.

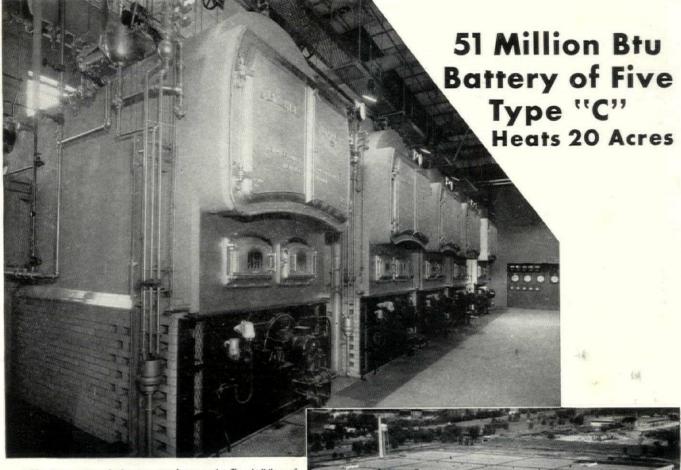


RODDIS PLYWOOD CORPORATION formerly Roddis Lumber & Veneer Co. MARSHFIELD, WISCONSIN

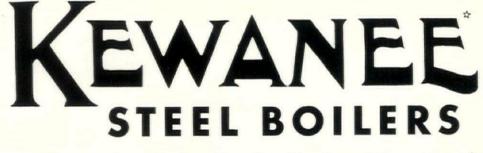
#### RODDISCRAFT WAREHOUSES

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Louisville 10, Ky.	
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Port Newark 5, N. J.	
St Louis, Mo.	
San Antonio, Texas	



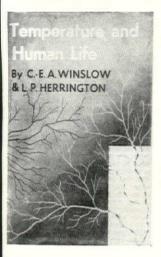
This ultra-modern single-story warehouse and office building of Hibbard, Spencer, Bartlett & Co, at Evanston, Ill., offers fitting testimony of this firm's 93 years service to the hardware trade. 1060 by 800 feet—20 acres under roof—set in 35 landscaped acres, it has 3 built-in switch tracks which permit unloading 40 freight cars at one time... all within 75 feet of the merchandise bins. A drag-line truck hauling system helps fill orders in 40 minutes.



So huge is this modern warehouse that it could house 12 full sized football gridirons, spectators and all! Yet the heating job is easy with the flexible battery of five Type "C" Oil-Fired Kewanee Boilers. They can be cut in and out singly or used all at one time to meet every heating load always with maximum efficiency. Capable of supplying a tremendous quantity of heat . . . 51 million Btu's . . . these mechanically-fired, low pressure Kewanee's provide steam at low first cost and then continue to show big savings in operating and maintenance costs for the lifetime of the building.



## REVIEWS



**TEMPERATURE AND HUMAN LIFE** by C.—E. A. Winslow and L. P. Herrington. Princeton University Press, Princeton, N. J. 272 pp. Illus. 5% x 8%. \$3.50.

The work of the John B. Pierce Laboratory of Hygiene is well-known to all those familiar with the problems of heating research. For them this book, a full summary of its findings and methods, will need no further praise or introduction. Drs. Winslow and Herrington, who have supervised the laboratory's studies on the human body and its thermal environment, furnish an admirable example of many sciences converging on their ultimate reference-point—man. Around their chosen focus—human comfort—such various subjects as work rates, clothing, appetite, building orientation and epidemics, all fit into a single pattern.

Temperature and Human Life is, however, more than a summary of a particular series of experiments. It is a history of the man's growing awareness of the existence of metabolism and its functions. The action of this automatic human heat regulator was recognized as far back as Hippocrates, father of medicine. "Consider the seasons," he warned doctors. "For with the seasons, the digestive organs of men undergo a change." This account of man's millenial struggle to understand and come to terms with external temperature supplies an excellent background for the appreciation of present-day discoveries—both their value and their limitation. That the problem is of great importance is shown by the fact that not until the advent of adequate heating of house interiors did any outstanding civilization exist outside the band of the  $70^{\circ}$  isotherm.

Scientists had known for some years that the body used sweat and the resultant evaporation as a defense against overheating, and that it both lost and drew in heat from its surroundings by convection and radiation. Obviously the most desirable set of circumstances was one which preserved a balance between creation of body heat by metabolism and its loss by the three means. Not until the Pierce experiments, however, did an authoritative array of facts become available to show at what rates and in what proportion the body made use of these means. Earlier measurements of heat gain and loss were only over-all figures covering a period of several hours. Star contribution of the Pierce studies is its minuteby-minute account of each of the three means at work—an account provided by "partitional calorimetry."

Chief tool in this new branch of physiology is an eightsided chamber with copper walls, in the center of which is set a reclining chair and an exercise bicycle (to test the body both at rest and in action). Both are fitted to recording scales and thermocouples for the measurement of over-all changes in weight and temperature. In addition the subject is fitted with a "skin temperature harness" which makes simultaneous records of skin temperature at hands and feet as well as several levels on the trunk.

Air enters the chamber from a weighed container, leaves it through a series of testing devices which not only weigh but analyzes its contents. Wall temperature, air temperature, humidity and air movement—all are completely controlled and tell the entire story of heat interchange. The results furnish a far more accurate account of thermal comfort requirements than even the most alert conscious effort. As the authors comment, "persons exposed to an atmosphere which is too cold or too hot are frequently too preoccupied to notice the condition until considerable chilling or overheating has occurred."

The practical applications of the Pierce findings are almost unlimited. During the war they supplied the War Department

with hundreds of reports on the necessary, preferential and desirable qualities of clothing for armed forces in various climatic conditions. In postwar heating and air-conditioning such statistics provide an invaluable reference point for setting standards and defining the combinations of heat, humidity and air movement needed for maximum comfort during all types of activity. Moreover, these studies have shown in some cases, that less instead of more mechanization is desiraable. The number of air changes thought necessary in a room, for instance, was found excessive as was the proposed ideal of eliminating of minor gaseous impurities. In addition to avoiding such deadends of over-mechanization, Drs. Winslow and Herrington indicate some of the lines along which profitable research may be done in the future-"studies at different age periods, of specific individual differences . . . the thermal adjustments of individuals suffering from various diseases . . . the physiological processes in seasonal adaptation."

Both as a history of past efforts in heating and as a groundbreaking record of new ones, *Temperature and Human Life* is an invaluable book in its field.—S.K.

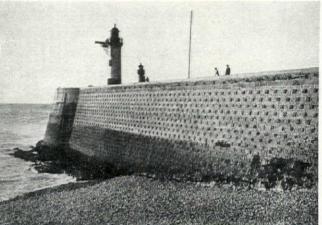
**BUILDINGS AND PROSPECTS** by John Piper. The Architectural Press, 13 Queen Anne's Gate, S. W. 1, London. 146 pp. Illus.  $7\frac{1}{2} \times 10$ . 18s.

John Piper has something to say to anyone who has ever found himself pondering the design question—"After function, what?" An English artist with a wide knowledge of architecture, ancient and modern, he also possesses a keen understanding of human nature. This combination makes him a unique interpreter of the whys and wherefores of popular architecture. Among the dozen or so illustrated essays in this book, the two most complete and fascinating concern those almost opposite poles of everyday practicality and pleasure—the maritime structure and the pub.

The appeal of maritime design, says Piper, lies in its frank adoption of that exhilirating element in coastal scenery contrast. Yet this bold use of form and color in no way interferes with primal efficiency—"The lighthouse, the lifeboat house with its slipway, the customs house, the boat building shed are all functional buildings, but the builders never thought of attempting to banish personal taste from them. They are functional, but they are something else as well. They have strength, gaiety of design and color (even if it is only the gaiety of black and white)." The sea wall pictured below expresses in a strong geometric pattern the seaman's knowledge that such projections break the force of the waves.

"Fully Licensed," an essay about places of public refreshment demonstrates the Britain's richness of vocabulary in (Continued on page 170)

John Piper





# USG' METAL EDGE GYPSUM PLANK FOR MODERN ROOF DECKS

Once framing is completed, USG Metal Edge Gypsum Plank goes on. No preliminary work is required—no special equipment, no scaffolding.

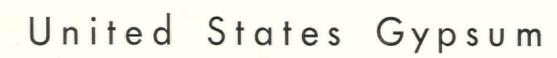
Units are made of gypsum with steel-bound edges and ends alternately tongued and grooved. Galvanized steel clips secure units to supports. End joints can come where they will. After plank is laid, built-up roof covering is applied according to standard practice.

To economy of erection, add gypsum's advantages of incombustibility, light weight and clean, white appearance.

For name of your local USG sales engineer, write United States Gypsum Company, Industrial Sales, Chicago 6, Illinois.

(Shown) USG Metal Edge Plank roof deck of Texlite, Inc., Metal Fabricators, Dallas, Texas. Grayson Gill, Dallas, architect. O'Rourke Construction Co., Dallas, general contractor. Macatee, Inc., Dallas, roof deck contractor.

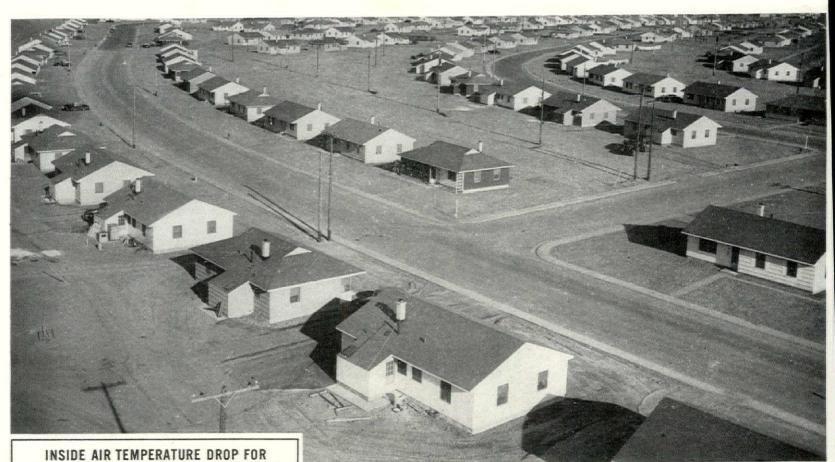
\*T. M. Reg. U. S. Pat. Off.





#### For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint



#### DUCTS WITH VARIOUS OUTER SURFACES 175 NEW ALUMINUM, BARE 100 160 COVERED " CORRUGATED INSIDE ASBESTOS INSULATION 150 AGED ALUMINUM, BARE 140 TEMPERATURE AGED GALVANIZED, BARE 130 ASBESTOS PAPER COVERED 120 110 DUCT SIZE = 231/2" x 231/2" W 100 AIR VELOCITY - 500 F.P.M. 50 75 100 AMBIENT TEMP. = 70° F. 0 25 LENGTH OF DUCT-INITIAL AIR TEMP. = 175°F. -FT.

EACH OF THE 1000 HOMES in the Richland, Washington, Housing Project has aluminum heating ducts throughout. Central Service Company, Seattle, Washington, is the builder, J. Fletcher Lankton-John N. Ziegele, Peoria, Illinois, Architects and Engineers.

# Aluminum ducts cut installation and fuel costs in 1000 home project!

THIS COMPARISON of duct materials proves why you should choose Kaiser Aluminum for all heating system ductwork!

HERE'S HOW: Thanks mainly to reduced surface radiation loss, 5 to 30 per cent more heat is delivered through ducts of Kaiser Aluminum than through ducts of other materials-even though initial air temperatures are identical!

Result: Installation savings are possible through elimination of insulation. And fuel consumption is cut because of lower required B.T.U. input.

These facts were proved in tests made by Alad-

din Heating Corporation, Oakland, under the direction of a Professor of Mechanical Engineering and a Research Engineer, widely known faculty members of a major U.S. university. (Name of school on request.)

On the left, above, is a graph showing results of their tests. Note that new, bare Kaiser Aluminum is even more efficient than a far more costly material! And that aged, bare Kaiser Aluminum

delivers only slightly less heat than the costlier material!

What's more, ducts made of Kaiser Aluminum are light, easy to handle, yet tough. During installation they mean less worker fatigue, less wear on shop equipment, fewer steps in handling, trucking and storing. On your next job, specify ducts made of Kaiser Aluminum!

Copr. 1949, Permanente Metals Corp.

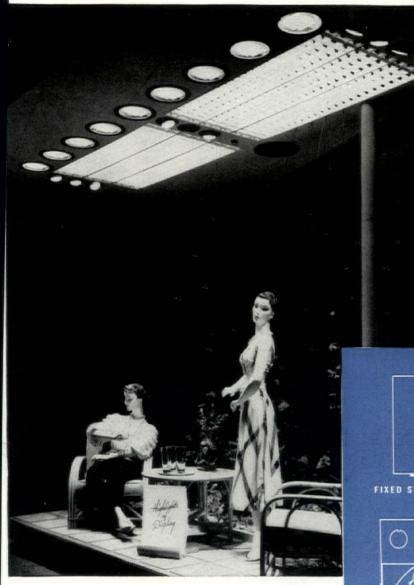
Perm	anente N	letais	
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Koiser	Alu	minu	<u>I</u> M

Permanente Products Company, Kaiser Building, Oakland 12, California • Sales Offices and Warehouse Distributors in principal cities.

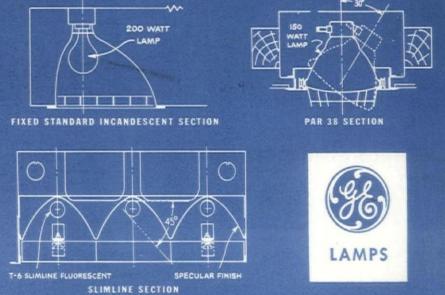
NEW! FREE BOOKLET with complete specifications to show you how you can cut duct installation labor costs and offer clients lower fuel costs with Kaiser Aluminum. Write for "New Conceptions in Duct-work." Consumer Service Dept. AF-6, Permanente Products Com-pany, Kaiser Building, Oakland 12, California.

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ADDRESS			
CITY	STATE		

168 Architectural FORUM June 1949

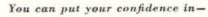


# HOW TO MAKE A WINDOW SHINE



 $T^0$  catch a customer's eye and show him the merchandise at its best, a show window needs a complete, flexible lighting system — like the one above.

General Electric slimline fluorescent lamps in parabolic reflectors bring out color, texture and details of the display. They have high efficiency and provide cool lighting. The G-E incandescent lamps raise the over-all brightness of the window to draw more attention. And the G-E PAR-38 projector spot and flood lamps in movable fixtures put highlights right where the display man wants them. Whether you're designing a show window or a complete store, an office, factory or home, be sure to specify General Electric lamps. That's the easy, sure way to specify quality. General Electric makes a lamp for every lighting need, all constantly improved by research to STAY BRIGHTER LONGER.





#### CHOOSE THE BEST FOR YOUR DESIGN FROM THE MOST COMPLETE LAMP LINE





REFLECTOR FLOOD lamps. Built-in reflector directs light where needed.



PROJECTOR Spot or flood. Rugged moulded glass permits attachment of accessory



SILVERED BOWL Indirect lighting at low cost. 60 to 1000 W.



REFLECTOR SPOT lamps. Narrow eam, high intensity lighting.



## Squeeze discomfort right out of the air with UniTrane

UniTrane air conditioning removes excess *moisture* from the air as well as excess *heat*.

On a hot, rainy day, UniTrane clears the air of extra moisture in a hurry. The Type MC UniTrane unit illustrated below will remove as much as *ten gallons* of water from the room air during a 24-hour period.

UniTrane is not just a new system. It is a new kind of air conditioning. Each room has its own compact, under-the-window unit. Units are designed for temperature control, moisture control, ventilation control. All air is filtered.

No ducts are needed. Just simple piping, like a hot water system. You circulate hot water in winter, chilled water in summer. It's as simple as that.

With UniTrane you can *budget* your installation. A zone, a floor, or even just a room at a time can be conditioned, after the basic source of hot water and chilled water has been established.

Read "Merely a Matter of Air" for non-technical information about Uni-Trane. For professional data, see DS-420. These bulletins may be secured through the Trane sales office in your area, or direct from the factory.

THE TRANE COMPANY...LA CROSSE, WIS. Manufacturing Engineers of Heating, Ventilating and Air Conditioning Equipment—Unit Heaters, Convector-radiators, Heating and Cooling Coils, Fans, Compressors, Air Conditioners, Unit Ventilators, Special Heat Exchange Equipment, Steam and Hot Water Heating Specialties. IN CANADA, TRANE COMPANY OF CANADA, LTD., TORONTO.

The revolutionary Type MC UniTrane unit shown here has two circuits in one compact cabinet. One circuit controls ventilation and moisture. The other controls room temperature. Now you can have perfect year-around air conditioning in multiroom buildings without using ducts.



### REVIEWS

comparison with the monosyllabic American. In our omnipresent "bar," John Piper can distinguish the gin palace, the public house, the inn, the beer house and the road house -each with its distinct personality. Here is an item for any designer or real-estate man in the field-"There is in all good bars a mass of interest, colorful and textural . . . If a bar is too bare it is so uninviting that either one does not want to drink in it at all, or else one feels like drinking very much in earnest-neither of which moods is it profitable for a publican to encourage." His prescription for the exterior is just as good-"Modern architects," he says, "are frightened of the prominent public-house facade. But they should not be . . . The desirable appearance of slight drunkenness may be obtained in many ways (he notes some local means) ... by the simple juxtaposition of bright colors; white squared John Piber





Piper's desirable public house combines: "the prominent facade" (above) with an interior "mass of interest . . . colorful and textural" (typical glass decoration at left).

#### Marcus Whiffen

stucco corners on an orange brick gable, or black or Venetian red or pink corners on a white or pale yellow gable."

Some essays will—it is only fair to warn—have remote interest for American readers unfamiliar with their history and location. On the other hand, they may find themselves hypnotized by the musical unfamiliarity, which sometimes sounds as incomprehensibly lucid as Gertrude Stein. "The river that waters this valley is the Greta"—he explains typically in one place, "not Cotman's Greta by Barnard Castle, but a westward-flowing tributary of the Lune."—S.K.

**PLANNING THE UNIVERSITY LIBRARY BUILDING,** a summary of discussions by librarians, architects and engineers. Edited by John E. Burchard, Charles W. David and Julian P. Boyd. Princeton University Press, New Jersey. Illus. by floor plans.  $51/_2 \times 83/_4$ . \$2.50.

Dr. Vannevar Bush a few years ago\* summed up the greatest problem which faces the modern library. "The difficulty seems to be," he wrote, "not so much that we publish unduly in view of the extent and variety of present day interests, but rather that publication has been extended far beyond our present ability to make real use of the record." *Planning the University Library* presents the results of an extended series of conferences attended by an outstanding group of \* (*Atlantic Monthly, July 1945*) (Continued on page 174)

# Park Avenue Building on the banks of the Mississippi

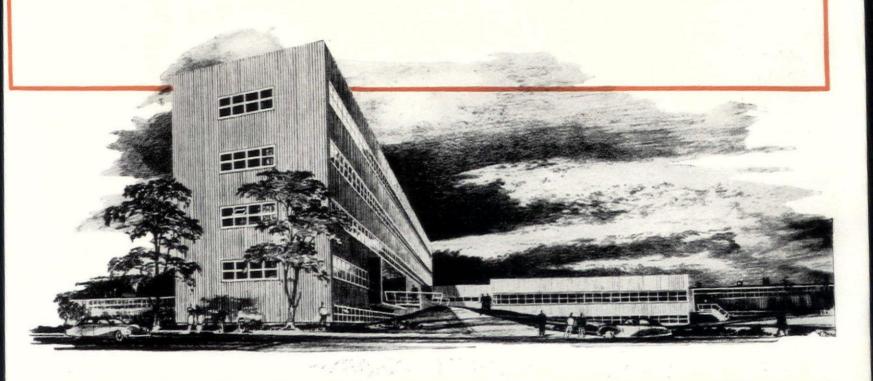
A few miles north of Davenport, Iowa, stands this newly erected, four-story, aluminum-clad office building.

"Why," we have been asked, "build a multiple-story building in the midst of unused acres?" "Why, use construction that matches the building requirements for congested areas, when the location doesn't demand it?"

Although serving as the administration building for Alcoa's newest rolling mill, this building was designed for Park Avenue, for Michigan Boulevard, for every other metropolitan area where factors of strength and fire resistance are necessary; where economics require permanence combined with low construction and upkeep costs.

Several types of materials and construction have been used in the same building. Here we hope to prove out our estimates on the feasibility of aluminum curtain wall construction for commercial buildings. Already an analysis of costs has shown that large cast aluminum panels, backed by four inches of lightweight concrete, permit curtain wall construction at lower cost than with traditional materials of equal strength, fire resistance and permanence.

This is one of many Alcoa research projects now under way to provide practical tests of new uses for aluminum in architecture. As we find the answers, good or bad, we will tell you about them. Our engineers are always at your service to help you plan better, more economical buildings for the future. For information on any application of aluminum, call your nearby Alcoa Sales Office, or write ALUMINUM COMPANY OF AMERICA, 1866 Gulf Building, Pittsburgh 19, Pennsylvania.





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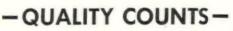
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In a Western Electric sound system, the amplifiers have the wide frequency range necessary for realism, the low distortion needed for clarity—and they're available in several power ranges to meet any requirement. They give a sound system the quality amplification required for really fine sound reproduction.

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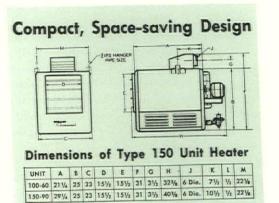


172 Architectural FORUM June 1949



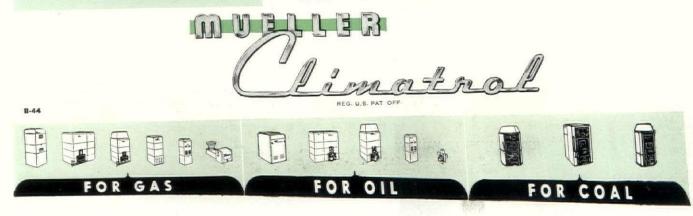
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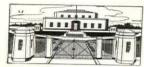


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#### REVIEWS

librarians, architects and engineers. Through all their of cussions of library size, placement, layout, specialization a a million-and-one other details, the one question was p vasive. How can the library building extend our "press ability to make real use of the record?"

In considering the various suggestions, these technic experts applied a yardstick of four cardinal virtues—si plicity, efficiency, economy and flexibility. The last of the virtues has become more important than ever, for any libra built in the next five years must prepare to face possib changes on an unprecedented number of levels.

In the first place, should libraries go on trying indefinite to expand their collections? The expense of such a procedu is a great problem since the rate of publishing seems to i crease with the years. And even were it possible for even university library to have every useful book, would it h desirable? Analyses of library procedure show that it would not. Collections of over approximately a million and a ha books start to show diminishing efficiency rates. The distance between book and reader becomes too great; cataloging an indexing become entangled in their own systems.

Several alternatives are already being tried—all tendin towards library specialization. The traditional central librar for all departments is breaking down into broad divisional groups scattered about the campus. Collections are bein, separated into active and inactive—one estimate found tha 90 per cent of book calls were for about one-third of the books. The less-needed two-thirds may be filed in a storage library where space is less valuable and books are still easily if less quickly, obtainable. Even more drastic action is con sidered possible in the future where it may be considered necessary for libraries in various regions of the country to pool their collections of specialized books—each maintaining complete collections in only one or two important fields.

In addition to these makeshifts, however, there is the librarian's dream—that the magic of science will make books miraculously less bulky and more adaptable. Microphotography, which, as Bush estimates "can reduce the Encyclopedia Britannica to the size of a matchbox." and individual foolproof projectors and recorders would all brighten the picture immensely. But unfortunately they are not yet here.

In the meantime, the planner must try to make allowance for all or any of these possibilities. The flexibility long demanded for the warehouse and office building is at last finding its place in the library—not without difficulty. Specialized requirements for lighting, storage and ventilation often demand changes in ceiling heights as well as wall locations—a demand not easily fulfilled. The mature judgment this book brings to its complicated problems make it an obvious blessing for all in the field. The problems of window versus no-window, open or separated stacks, air-conditioning or not on a limited budget—all are thoughtfully treated.

The determination of the authors to "maintain tolerance" and "to avoid the arbitrary" is admirable—although it sometimes lends a tone of tongue-in-cheek demureness. Thus about style in library buildings, we read—"Facade architecture, archaeology and nostalgia will not necessarily produce window sizes and spacings which defeat or limit flexibility, but they do have that potential." The overtones of many interprofessional disputes echo in this mild admonition—"The librarian should not call the architect emotional nor should the architect call the librarian stodgy."

But if this book, and the fact-facing spirit which produced it. don't bring sense into library design, power is gone out of the written word.—S.K. (Continued on page 178) Now at low cost you can get durable Colored Concrete Floors and Colored Sidewalks

Also Available in: Red • Green • Black

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Typical automobile showroom floor of Colorundum provides fine car setting.

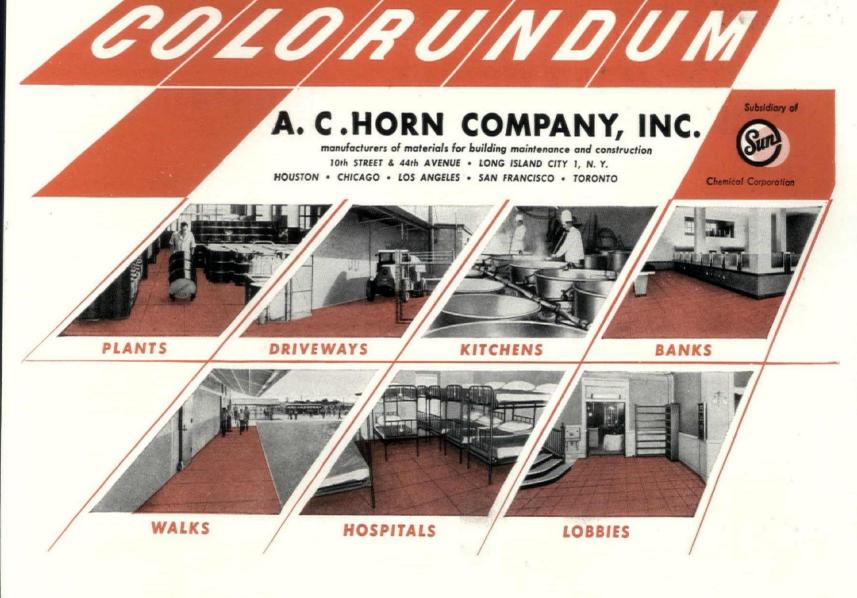
Indoors and outdoors on new work or when replacing old floors

> Colorundum Black non-glare sidewalks heighten beauty of Art Gallery facade.



For colored concrete floors and colored sidewalks use Colorundum. For hotels, stores, hospitals, service stations and factories you get bright, colorful floors with an armor plate surface. Colorundum is a dry powder floated and trowelled into the floor topping. It is composed of powerful coloring agents, fused aggregates, water-proofing and hardening elements and cementitious binders. The colorful non-slip, dense surface is an ideal flooring for indoors or outdoors . . . on new work or when replacing old floors. Write for further information.

FOR COLORED CONCRETE FLOORS & SIDEWALKS





# ... yes, TWO for the space of <u>one</u>

Architecturally speaking, when you can't expand horizontally, you go up.

Bryant engineers did, twelve years ago, when they were called upon to provide gas-fired equipment in a limited space for the world's first apartment building designed to include individual suite heating.

They created the vertical winter air conditioner, and called its installation *Personalized Heating*. It was one of the few really new developments in heating in several decades, and it set a new standard for heating comfort in all types of multi-family construction.

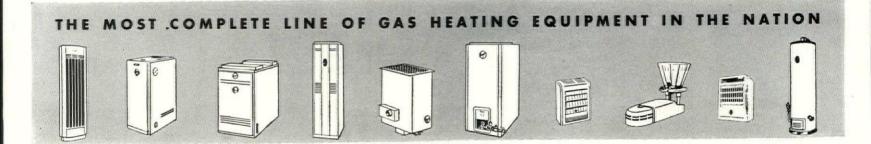
Later, designers carried the theme a step further . . . paired gleaming white Bryant automatic water heaters with these vertical winter air conditioners; another space-saving device that was received enthusiastically by planners of multi-family and individual family dwellings alike.

It is a matter of record that these Bryant *Personalized Heating* systems have been all that they were meant to be, from the standpoint of both cost and comfort. In less space than is normally required for conventional space heating equipment alone, these slim Bryant quality units provide a complete automatic heating and water heating service, economically and surely.

They are an aid to design and construction—and your Bryant Distributor stands ready to lend his aid in helping you to incorporate this efficient, spacesaving equipment into your new plans.



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## Solve roof drainage problems permanently

# with U·S·S STAINLESS STEEL

You know of some roof drainage materials that require a lot of maintenance. You know of others that require very little. Here are the facts about one material that requires none whatever!

Stainless Steel is so resistant to corrosion that gutters, downspouts and flashings made of  $U \cdot S \cdot S$ Stainless after ten years' exposure in the highly corrosive atmosphere of a Pittsburgh suburb today look as good as the day they were installed. During that time they've required absolutely no maintenance. From all indications they will last as long as the building.

With roof drainage systems built of Stainless Steel, first cost is last cost. No painting is required. No cleaning is needed. Adjacent walls are never discolored by "bleeding." Repairs and maintenance worries are things of the past.

Would your clients be interested in Stainless Steel construction? They certainly would, especially when you can tell them that despite its superior qualities  $U \cdot S \cdot S$  Stainless construction costs no more.

It's a fact. Actually the *material* cost of U-S-S Stainless Steel for drainage may even be slightly lower than that of other metals. That's because Stainless Steel weighs about 10% less per square foot than the non-ferrous material used for quality jobs in the past. Thus, gage for gage, you get 10% more usable material with Stainless.

Cost is further reduced because  $U \cdot S \cdot S$  Stainless Steel, when formed, has twice the strength of most other metals used for roofing purposes. Thus  $U \cdot S \cdot S$  Stainless can be used with perfect safety in *lighter* gages, not only for residential use, but also for commercial and industrial applications that call for heavy thickness in other metals.



#### U·S·S STAINLESS STEEL HANDLES EASILY BOTH IN FABRICATION AND INSTALLATION

Because the 26-gage U·S·S Stainless recommended for the most applications is so light yet so strong, gutters and downspouts can be fabricated in extremely long lengths which are so rigid that they handle easily and thus greatly simplify and speed up installation. Fabrication of these comparatively simple forms presents no special problems, requires neither special shop procedures nor special equipment.

<sup>10</sup> Special proteins, requires and strip are readily available now. The proper grade-U·S·S Stainless Steel sheet and strip are readily available now. The proper grade-U·S·S 18-8, Type 302-is stocked by most warehouse suppliers and by United States Steel Subsidiaries. JJ you want *intrher information*, write to Carnegie-Illinois Steel Corp., 2085 Carnegie Bldg., Pittsburgh 30, Pa., for our catalog "Rooting Products of Stainless Steel."

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Middle American art is set against appropriate backdrop in University of Pennsylvania gallery.

REVIEWS



SAVE TIME, eliminate guesswork, get better results on all types of interior color schemes. Use handy, pocket-size O'Brien Decorators and Architects Color Manual. Over 100 up-to-the-minute colors — 8 deep colors, 15 keyed tints, more than 80 easy-to-make intermixes with exact specifications for mixing. Developed by O'Brien Color Stylists — in tune with latest trends. Easy to visualize — full page 6" x 3" swatches. For your copy see the O'Brien dealer nearest you or send \$1.50 to The O'Brien Corporation, Dept. A-6, South Bend 21, Indiana.

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#### MODERN DESIGN DRAMATIZES ANCIENT MAYA

Too often universities have supplied Hollywood with advice on the reconstruction of historic ages, while their own collections jogged along as little more than rows of dusty ornaments. The new gallery of Middle American Arts at the University of Pennsylvania is an elegant exception to this rule. Its archaeology department had made several successful expeditions to the ancient cities of Middle America and wished its findings to interest a larger audience. Their creation of a setting which would not only illustrate but bring to life this civilization was a cooperative venture. Drs. J. Alden Mason and Linton Satterthwaite, who discovered much of the material, served as technical experts for supplying details of background and local color. David Marder, industrial designer and staff adviser, was asked to coordinate the varied treasures-gold Aztec ornaments, Honduran vases, Mexican instruments. Richard Shoemaker and Willard Beardsley of the museum staff worked under him-painted backdrops and pictorial symbols, installed cases and individual pieces. Richard Kelly, lighting engineer of New York was called in for advice on special effects. The result is a small but striking panorama of native art and architecture.

The visitor is introduced to Middle American life by a colored mural which brings before him the geography of the region—with its important centers of ancient and modern civilization. Life-size figures dressed in colorful Guatemalan costume illustrate everyday life, and serve to give human scale to the dramatic central display. This is a recreation of the great Mayan temple-acropolis of Piedras Negras, before which is spotlighted the sculptured tombstone, (known to archaeologists as Stele 14) the finest shaft of its kind ever uncovered. Groups of native plants give the scene an almost uncanny reality.

On the other side of the group a bentwood panel graphically depicts the resources and famous historical incidents of Middle America. A time-line shows how they parallel the more familiar historic events of Europe. A wall of rich native mahogany contains three shadow boxes holding smaller works of art—and the use of tilted glass eliminates glare and distortion. Behind the exhibit proper, a daylight study area is located where scholars can examine at close range documents and additional items in the Museum's collection.

A few more exciting exhibits like this may do a great deal to make popular education really popular!—S. K. (Continued on page 182)

### Modular Exposures for Roofs and Sidewalls with Stained Cedar Shingles and Shakes

Roof and sidewall designs are never limited by fixed exposures when stained shingles or stained cedar shakes are employed. These products offer perhaps the greatest exposure variables of any home-building material available. Note from the table below how application is adapted to scale and proportion.

Stained cedar shingles permit modular roof exposures from 3¼ inches to 7½ inches, scaled to pitch. Handsplit shakes extend this freedom of scale to 10 inches for roofs rising 5½ inches or more in 12 inches.

Exposure

18" Shingles

41/4"

51/2"

Exposure

24" Shingles

5%"

71/2"

Exposure

16" Shingles

33/4"

5"

Roof

Pitch

1/s to 1/6

1/4 to 3/4

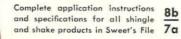
Length	WALL EXPO	SURE RANGE
Shake	Single-Course	Double-Course
16"	6" to 71/2"	8" to 12"
18″	6" to 81/2"	9" to 14"
24"	8" to 11"	12" to 16"

Pre-staining impregnates all surfaces with preservative oils . . . adds surface "seal" to the excellent weather resistance of cedar shingles.

Double-coursing extends exposure maximums. Economical use of second grade shingles, covered by exterior courses of stained cedar shakes, permits 12-inch exposure of 16" shake length. 18" shakes are similarly applied on 14-inch exposures.

Shake edges are machined parallel and vertical to butts, insuring straight horizontal course-lines. Parallel edges permit tight joints which blend with processed grooves, eliminating the "shingled" vertical breaks.

Edge view illustrates double-coursing application. First course is tripled, eliminating costly drip-cap. Corners are mitered. Application is simple, rapid, economical. Rabeted shiplap strip guides both under and outer courses for butt-nailing.



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STAINED SHINGLE &

### Architectural Concrete

theater resists severe weathering

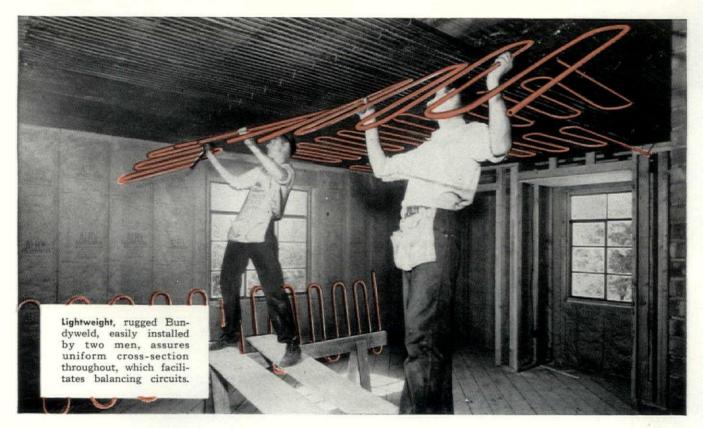
 $S_{\rm exposed}$  to frequent freezing and thawing cycles and extremes of temperature that range from -30°F. to 108°F. Yet this severe weathering has had no effect on the architectural concrete. Arrises remain as sharp as when the forms were stripped.

Architectural concrete buildings like this that are designed and constructed to resist any weather conditions maintain their original good appearance and remain structurally sound indefinitely. Such durability is the result of applying the well-defined principles and procedures of quality concrete construction.

The beauty and durability of architectural concrete also make it ideal for apartments, hospitals, schools, factories, office and commercial buildings. Having long life and requiring little or no maintenance, architectural concrete renders *low-annual-cost* service, the true measure of construction economy. That's important to owners, investors and public officials. Illustrations above show a general view of the Fox Theater, Spokane, with (inset) a close-up of large ornamental bas-relief butterfly panel cast integrally with the wall against a plaster mold built into the forms. R. C. Reamer and Frank Wynkoop were the architects. Alloway & George were the contractors.



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Bundyweld can be supplied with one end expanded, and

WHY BUNDYWELD IS BETTER TUBING

is readily soft-soldered or silver-brazed. Total installation costs are considerably reduced through the use of this unique tubing.

Available immediately, low-cost Bundyweld comes in 20-foot lengths in sizes up to  $\frac{5}{8}$ " O.D. and wall thicknesses up to .049". For information, write to: Bundy Tubing Company, Detroit 14, Michigan.

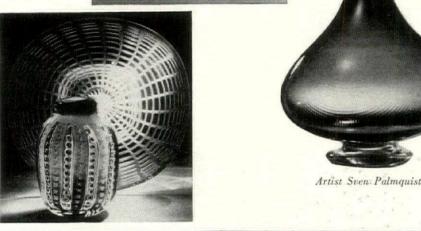




Bundyweld Tubing, made by a patented process, is entirely different from any other tubing. It starts as a single strip of basic metal, coated with a bonding metal. 2 This strip is continuously rolled twice laterally into tubular form. Walls of uniform thickness and concentricity are assured by closetolerance, cold-rolled strip. 3 Next, a heating process fuses bonding metal to basic metal. Cooled, the double walls have become a strong ductile tube, free from scale, held to close dimensions. 4 Bundyweld comes in standard sizes up to 5%" O.D., in steel (copper or tin coated), Monel or nickel. For tubing of other sizes or metals, call or write Bundy. Artist Edvin Ohrström

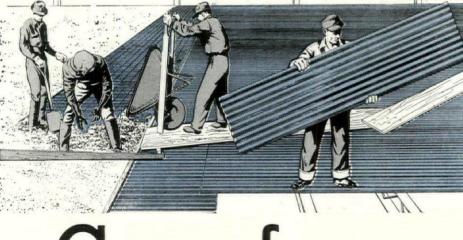


### REVIEWS





## the concrete you save pays for...



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Corruform pays for itself with the concrete it saves. That's because Corruform is tough-tempered to spring back under construction abuse and carries concrete over joists without sag, stretch, bend or leakage. Tough-temper, high strength Corruform, made by processes patented by Granite City Steel Company, is nearly twice as strong as conventional steel of the same shape and weight.

Furnished uncoated, mill-primed for painted exposed joists, or galvanized...with clips to fit all standard joist construction. Send for AIA file today.

### GRANITE CITY STEEL COMPANY (GRANITE CITY STEEL)

Granite City, Illinois

#### ORREFORS GLASS IS HANDSOMER THAN EVER

During the past half-century Orrefors, Sweden, has been noted for the richness and grace of its clear and engraved glass pieces. In allowing beauty of shape and texture to speak for themselves, its work has become synonymous with the best qualities of the modern movement in art. Some observers have noticed during the last decade or so, however, a tendency of the Orrefors firm to rely on past successes in design and technique rather than initiate new ones. But last year, at an exhibit celebrating its 50th birthday, Orrefors confounded the critics with the originality and life of its new work. It is now on view at George Jensen's in New York City, and American viewers will no doubt agree with earlier Swedish ones that the Orrefors glass now shows enough diversity and drama to keep glass-blowers profitably busy for another 50 years.

In two techniques particularly, the new glass is unusual. The first is one which uses several vitreous layers blown one over the other. This Graal glass, as it is called, has a design or color applied to the outside of its under layer; in the finished piece the design literally floats between the two. Although the technique itself is not new, the recent designs are remarkable for the dramatic shape and color of these central forms; also for the unbelievable delicacy and fineness of some of the pieces (see above right). These seem composed of only a single layer—and a fragile one at that.

The other distinctive method is called "Ariel"—after the god of the air. It is a technique by which air bubbles are used to create patterns within the body of the glass. In creating these, the artist often works alongside the blower. His design-pattern has been prepared before, and the blower proceeds to turn the glass following it. The unpredictability of glass, however, often introduces variations—some of them





Artists: Edvin Ohrström

Nils Landberg

more beautiful than the artist had anticipated. In this way he can take advantage of accidental variations and adapt the rest of his design to incorporate them. Some seemingly impossible feats of craftsmanship have resulted in this way. Into Ariel glass too, by a secret process, color has been introduced—blue, purple, crimson and green—accentuating and shading the basic designs.

The exhibit also presents a new heavy opalescent glass (Moonstone, it is called) which is used for tableware. Other experiments have been done in sgraffito—a method in which decoration is produced by scratching through a surface layer of glazing to show a contrasting colored layer beneath. Most successful of these is a handsome abstract design in gold showing through glass of dark green. Ravenna glass is still another innovation—with a brilliance similar to early mosaics.

All in all, it seems that the second 50 years of Orrefors is well on its way to outdistance the first.—S. K.

(Continued on page 186)

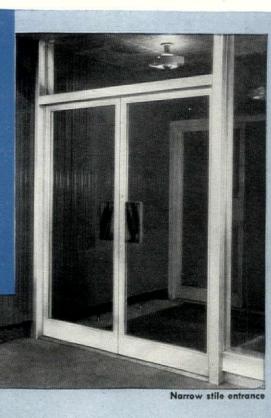
### Kawneer

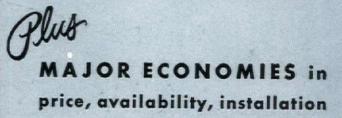
Full vision

entrance

# STOCK ENTRANCES

offer handsome styling and expert workmanship





You save money for your client and yourself when you specify Kawneer Stock Entrances, Doors, and Glass-Door Frames.

Kawneer Stock units cost far less than custom-made entrances—they reduce the expenses of drafting and detailing—they eliminate costly delays.

Your local Kawneer distributor stocks these units and they are immediately available as complete packaged units with all hardware and accessories included. Installation is quick and simple.

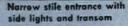
The clean lines, smooth surfaces, and narrow silhouettes of a Kawneer Entrance reflect the highest standards of modern architecture.

Careful engineering and workmanship insures smooth, trouble-free operation year after year. All doors and frames are inside welded for long-service rigidity and uniform finish.

Kawneer metal-glass construction protects interiors against drafts, dust, soot, and rain—it also helps prevent the escape of warmed air in the winter and cooled air in the summer. Write for construction details. 217 North Front Street., Niles, Michigan; 2517 8th St., Berkeley, Calif.; 817 East Third St., Lexington, Ky.

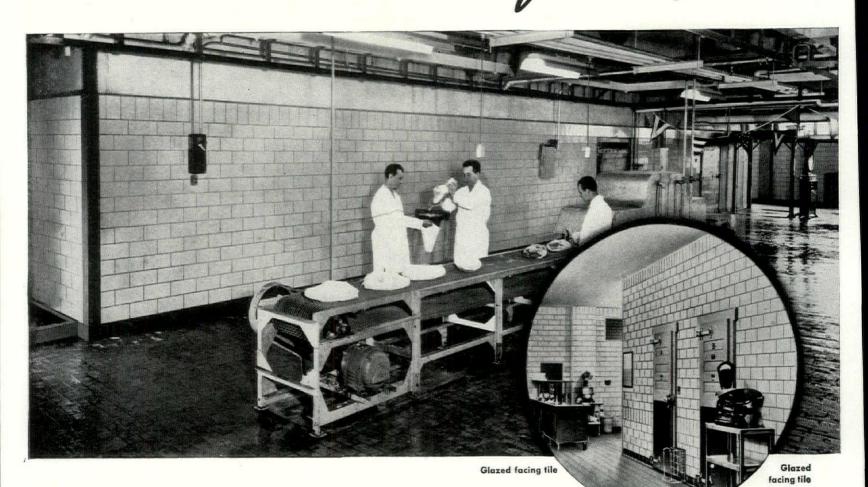


Store Front Metals • Modern Entrances Facing Materials • Aluminum Louvered Ceilings Aluminum Roll-Type Awnings



Free standing entrance

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The new Facing Tile Catalog, 49-C, is available on request to architects and engineers who write on their letterhead. Get this helpful information for your files today. Address: Facing Tile Institute, Dept. AF-6, 1756 K Street, N.W., Washington 6, D. C.

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Facing Tile is impervious to dirt, grease, steam, brine, most acids, and even bacteria! Every one of these trouble makers is kept on the surface where it can be washed away—quickly, easily, *thoroughly*.

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# New television station signs up stellar performer VODDFRS!



There's no doubt that Station WAAM-TV, at Baltimore, Maryland, has "a stellar performer" in the Koppers Roof pictured above. Case Histories prove that it's common for Koppers Roofs of this type to give more than 20 years' cost-free service.

The remarkable service records, which go hand-in-hand with Koppers Roofs, stem from that unbeatable roofing combination —Koppers Coal Tar Pitch and Tarred Felt. When roofs are builtup with Koppers Pitch and Felt, they are impervious to water. They have unusual tensile strength, and are "self-sealing" when small breaks occur. And when gravel or slag is embedded in a heavy pouring of Koppers Pitch, the roof surface is actually armored against the elements.

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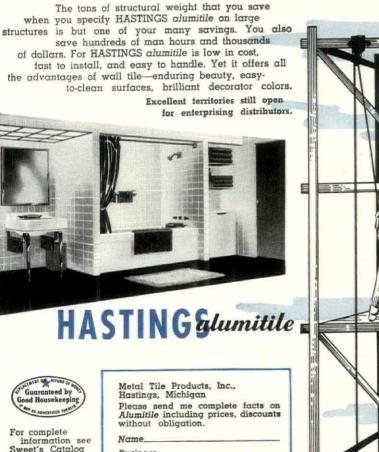


### REVIEWS



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### VESTAVIA IS REVIVIFIED IN ALABAMA

Vestavia-Birmingham, Ala.'s "center of art and culture" and "shrine of beauty"-is the refurbished dream-child of George A. Ward, governor of the state in the nineteentwenties. Originally it served as what must have been the most uncomfortable dwelling on record. Now, after several decades of oblivion, an active group headed by Charles Byrd have revived it to serve as a center for garden clubs, local civic groups and curious shrine visitors. The main attraction is expected to be the building itself-and no wonder! Its architectural mixture of Augustan Rome and corn pone is undoubtedly eye-catching.

The interior of Vestavia is bedecked not only by statues of Greek goddesses but of Roman generals. These stand in niches on the first floor surrounding a large circular flower stand of stainless steel. Here hungry visitors can have dinner in the Pompeian Room, the Julius Caesar Room or the George A. Ward Room. Luckily for the reputation of South-



ern cooking, antiquity has not laid its hand on the modern kitchen which has forced the circular basement into a square at the back.

On the highest floor of Vestavia, above the portico, the Temple room is located. Here the renovators have played their trump card-a mural of six Atlanta belles in the guise of vestal virgins at their official duties. This painting need not rely for its distinction on any minor consideration of technique-it takes its place in history as the largest mural in the world painted by a woman (13 x 88 ft.). Purists might be inclined to cavil even at the claim that Vestavia is a copy of the famous temple of Vesta which shows up so regularly in architectural histories. They might accept the substitution of crushed sandstone in shades ranging from "old rose to Pompeian red" for the less colorful Italian marble. But the delicate fluted columns of the original, set discreetly close to the core, bear little relation to the spider-like effect of the Alabama tower.

Oh well-it certainly belongs on America's long list of architectural curiosities!-S. K.

(Continued on page 190)



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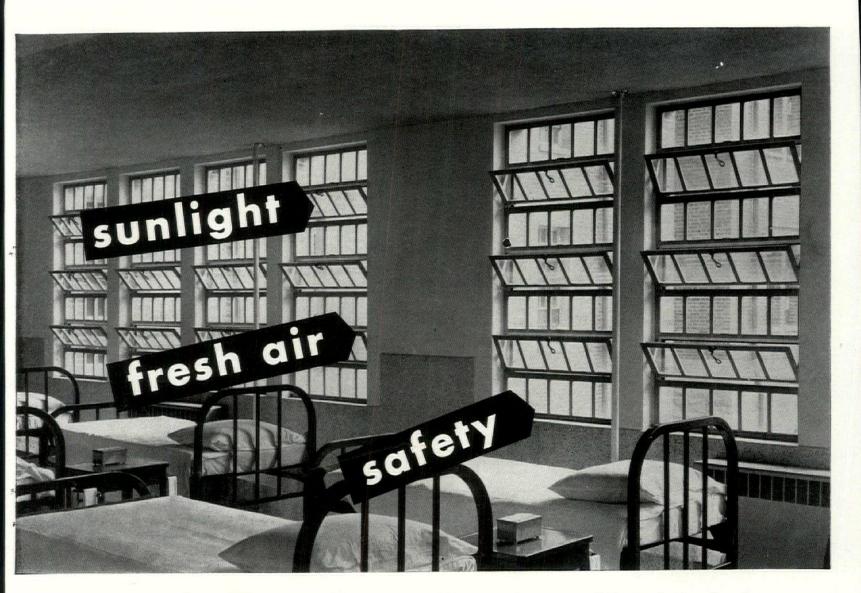
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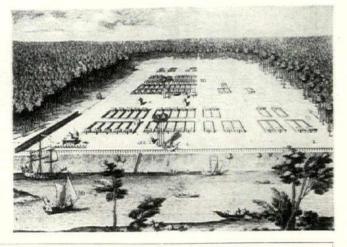
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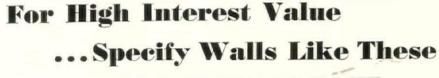
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### REVIEWS







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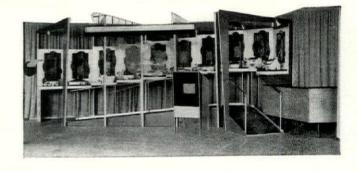
### CHICAGO EXHIBITS COLONIAL CULTURE

The Art Institute of Chicago has chosen an exciting subject for its Spring exhibit (April 21-June 19)-the growth of American culture from 1650 to 1815. From Colony to Nation presents an impressive collection of early American paintings, sculpture and silverware, as well as photographs of typical buildings and a sampling of city plans. The culture of the first colonies (alert, ambitious, naive) comes to life in these works of art; it is at its best when, as in some of the silverware, it focuses energy and attention on a particular job at hand and forgets the need to impress an outside world. Anonymous paintings like the one at the upper left express the spirit of the young nation even better than do the works of more skillful artists like Stuart, Copley and West. These latter, too, are generously presented in the show, and rightly, since their less ingenuous desire to rival European contemporaries was another important facet of the American character.

Unfortunately after collecting so much very valuable material, the Institute did little to correlate the various expressions of art it had assembled. Painting, architecture and sculpture are set in water-tight compartments. The exciting task of reconstructing the personality of the early nation is left largely to the intuition of the visitor. Luckily, some of the feeling cannot help but come through. The town plan of Savannah (shown above) seems to sum its excitement up in a glance—"The forest gives way—we have made a city."— S. K.

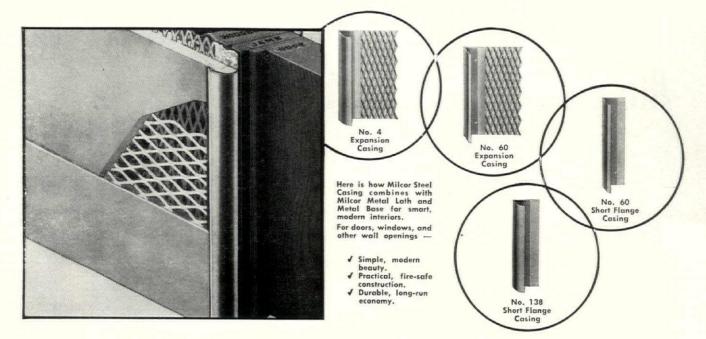
### TRAVELING SHOW STIRS HOUSING INTEREST IN CANADA

The Central Mortgage & Housing Corp. of Canada has prepared a compact traveling exhibit to assist in its work of stimulating house construction throughout the country and maintaining a fair standard of quality. Since its formation in 1941 this government agency corresponding to our FHA has financed 38.126 dwelling units—not a bad showing, population-wise.



Its small exhibit is designed for quick assembly and demounting. Aluminum tubing, ramp sections, models and flat panels fit into easily-handled cases as do draperies, spotlight, wires and projector. The ten house models which make up the body of the show are colorful and clean-cut. Floor plans and landscaping for each are shown on the panel in back of each model. Tying the group into a single unit is a map of Canada in translucent plastic which gives the location of all regional, board and rental offices of the corporation. At any of these offices, working drawings for the houses can be obtained at a nominal fee.

The new exhibit has already started on its country-wide journey and before fall will have completed a swing around Canada from Quebec to Vancouver.—S. K.



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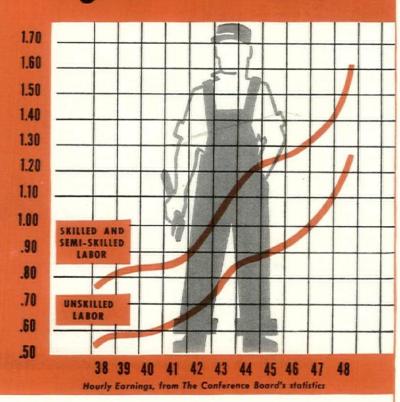
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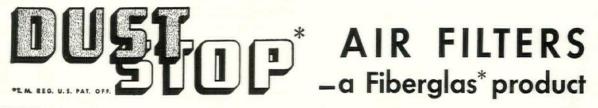
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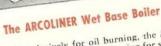
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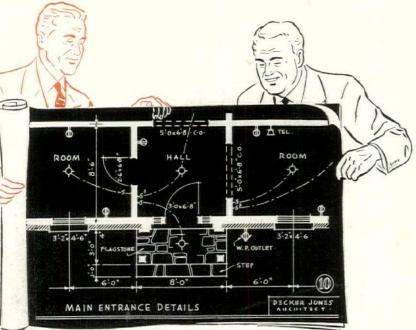
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Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Shepard Elevator Company         Signal Electric Mfg. Co.         Signal Flectric Mfg. Co.         Signal Flectric Mfg. Co.         Staedtler, J. S., Inc.	$164 \\ 119 \\ 173 \\ 40 \\ 29 \\ 57 \\ 67 \\ 160 \\ 160 \\ 36 \\ $
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Sisalkraft Co., The         Spencer Heater Division, The (The Aviation Corporation).         Stacitler, J. S., Inc.         Stained Shingle & Shake Association	$164 \\ 119 \\ 173 \\ 40 \\ 29 \\ 57 \\ 67 \\ 160 \\ 160 \\ 36 \\ 22 \\ 36 \\ 22 \\ 36 \\ 36 \\ 22 \\ 36 \\ 36$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Shepard Elevator Company         Signal Electric Mfg. Co.         Sisalkraft Co., The         Spencer Heater Division, The (The Aviation Corporation)         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.	$164 \\ 119 \\ 173 \\ 40 \\ 29 \\ 57 \\ 67 \\ 160 \\ 160 \\ 36 \\ 22 \\ 52 \\ 179 \\ 133 \\ 133 \\ 164 \\ 100 \\$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Staron Steel Corporation         Shapon Steel Corporation         Signal Elevator Company         Stacdtler, J. S., Inc.         Standard Dry Wall Products, Inc.         Stewart Hartshorn Co.	$164 \\ 119 \\ 173 \\ 40 \\ 29 \\ 57 \\ 67 \\ 160 \\ 160 \\ 36 \\ 22 \\ 52 \\ 179 \\ 133 \\ 144 \\ 144 \\ 164 \\ 164 \\ 164 \\ 178 \\ 184 \\$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Shepard Elevator Company         Signal Electric Mfg. Co.         Sisalkraft Co., The         Spencer Heater Division, The (The Aviation Corporation)         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.	$164 \\ 119 \\ 173 \\ 40 \\ 29 \\ 57 \\ 67 \\ 160 \\ 160 \\ 36 \\ 22 \\ 52 \\ 179 \\ 133 \\ 133 \\ 164 \\ 100 \\$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Shepard Elevator Company         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Staedtler, J. S., Inc.         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute	$164 \\ 119 \\ 173 \\ 40 \\ 29 \\ 57 \\ , 67 \\ 160 \\ 160 \\ 36 \\ 22 \\ 52 \\ 179 \\ 133 \\ 144 \\ 51 \\ $
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Sisalkraft Co., The         Spencer Heater Division, The (The Aviation Corporation).         Stacitler, J. S., Inc.         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America	$164 \\ 119 \\ 173 \\ 40 \\ 29 \\ 57 \\ 67 \\ 160 \\ 160 \\ 36 \\ 22 \\ 52 \\ 179 \\ 133 \\ 144 \\ 144 \\ 164 \\ 164 \\ 164 \\ 178 \\ 184 \\$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Sisalkraft Co., The         Spencer Heater Division, The (The Aviation Corporation).         Staedtler, J. S., Inc.         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America         Timken Silent Automatic Division (The Timken-Detroit	$164 \\ 119 \\ 173 \\ 40 \\ 29 \\ 57 \\ , 67 \\ 160 \\ 160 \\ 36 \\ 22 \\ 52 \\ 179 \\ 133 \\ 144 \\ 51 \\ $
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company.         Servel, Inc.         Sharon Steel Corporation         Shepard Elevator Company         Signal Electric Mfg. Co.         Sisalkraft Co., The         Spencer Heater Division, The (The Aviation Corporation)         Staedtler, J. S. Inc.         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.         Structural Clay Products Institute         Tile Council of America         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ \\ \\ 29\\ 57\\ 67\\ 160\\ 160\\ 36\\ 22\\ 52\\ 179\\ 133\\ 144\\ 51\\ \\ 143\\ \\ 43\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Shepard Elevator Company         Signal Electric Mfg. Co.         Sisalkraft Co., The         Spencer Heater Division, The (The Aviation Corporation)         Staedtler, J. S., Inc.         Stamdard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America.         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)         Tracy Manufacturing Company	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ \\ 29\\ 57\\ 67\\ 160\\ 160\\ 36\\ 22\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Shepard Elevator Company         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Staedtler, J. S., Inc.         Standard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America.         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)         Tracy Manufacturing Company         Trace Company, The	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ \\ 29\\ 57\\ 67\\ 160\\ 160\\ 36\\ 22\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 126\\ 174\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Staedtler, J. S., Inc.         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.         Structural Clay Products Institute         Tile Council of America         Timken Silent Automatic Division (The Timken-Detroit         Axie Co.)         Tracy Manufacturing Company         Trace Company, The	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ \\ 29\\ 57\\ 67\\ 160\\ 160\\ 36\\ 22\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Shepard Elevator Company         Signal Electric Mfg. Co.         Sisalkraft Co., The         Spencer Heater Division, The (The Aviation Corporation).         Staedtler, J. S., Inc.         Stamdard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America.         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)         Tracy Manufacturing Company         Trane Company, The         Truscon Steel Company	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ 67\\ 160\\ 160\\ 36\\ 22\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Shepard Elevator Company         Signal Electric Mfg. Co.         Sisalkraft Co., The         Spencer Heater Division, The (The Aviation Corporation).         Staedtler, J. S., Inc.         Standard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America.         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)         Tracy Manufacturing Company         Trane Company, The         Truscon Steel Company         Trane Company, The         Truscon Steel Company         United States Gypsum Co.	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ ,67\\ 160\\ 160\\ 36\\ 22\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ 167\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Staedtler, J. S., Inc.         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.         Structural Clay Products Institute         Tile Council of America         Timken Silent Automatic Division (The Timken-Detroit         Axie Co.)         Tracy Manufacturing Company         Trane Company, The         Truscon Steel Company         United States Gypsum Co.         142,         United States Plywood Corporation	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ \\ \\ 29\\ 57\\ , 67\\ 160\\ 36\\ 22\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ \\ 167\\ 190\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Staedtler, J. S., Inc.         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America.         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)         Tracy Manufacturing Company         Trane Company, The         Truscon Steel Company         United States Gypsum Co.         United States Plywood Corporation         9, United States Steel Corporation	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ 67\\ 160\\ 36\\ 22\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ 167\\ 190\\ 177\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Staedtler, J. S., Inc.         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.         Structural Clay Products Institute         Tile Council of America         Timken Silent Automatic Division (The Timken-Detroit         Axie Co.)         Tracy Manufacturing Company         Trane Company, The         Truscon Steel Company         United States Gypsum Co.         142,         United States Plywood Corporation	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ \\ \\ 29\\ 57\\ , 67\\ 160\\ 36\\ 22\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ \\ 167\\ 190\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Stacatter, J. S., Inc.         Standard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America.         Timken Silent Automatic Division (The Timken-Detroit Axie Co.)         Tracy Manufacturing Company         Trace Company, The         Truscon Steel Company         Truscon Steel Company         United States Gypsum Co.         142, United States Plywood Corporation         9, United States Steel Corporation	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ ,67\\ 160\\ 160\\ 160\\ 36\\ 22\\ 179\\ 133\\ 144\\ 51\\ 143\\ 126\\ 125\\ 174\\ 188\\ 167\\ 190\\ 177\\ 52\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Stacdtler, J. S., Inc.         Staddler, J. S., Inc.         Standard Dry Wall Products, Inc.         Stawart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America.         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)         Tracy Manufacturing Company         Trace Company, The         Truscon Steel Company         United States Gypsum Co.       142,         United States Plywood Corporation       9,         United States Steel Corporation       9,         Universal-Rundle Corporation       9,         Universal-Rundle Corporation       9,         Valley Metal Products Co.       142,	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ \\ \\ 29\\ 57\\ , 67\\ 160\\ 160\\ 160\\ 36\\ 222\\ 522\\ 179\\ 133\\ 144\\ 51\\ 143\\ 126\\ 174\\ 188\\ 167\\ 190\\ 177\\ 52\\ 58\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.         Structural Clay Products Institute         Tile Council of America         Timken Silent Automatic Division (The Timken-Detroit Axie Co.)         Tracy Manufacturing Company         Trane Company, The         Truscon Steel Company         United States Gypsum Co.         United States Steel Corporation         9, United States Steel Corporation </td <td><math display="block">\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ 67\\ 160\\ 36\\ 222\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ 167\\ 190\\ 177\\ 52\\ 58\\ 1\\ \end{array}</math></td>	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ 67\\ 160\\ 36\\ 222\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ 167\\ 190\\ 177\\ 52\\ 58\\ 1\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Stacdtler, J. S., Inc.         Staddler, J. S., Inc.         Standard Dry Wall Products, Inc.         Stawart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America.         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)         Tracy Manufacturing Company         Trace Company, The         Truscon Steel Company         United States Gypsum Co.       142,         United States Plywood Corporation       9,         United States Steel Corporation       9,         Universal-Rundle Corporation       9,         Universal-Rundle Corporation       9,         Valley Metal Products Co.       142,	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ \\ \\ 29\\ 57\\ , 67\\ 160\\ 160\\ 160\\ 36\\ 222\\ 522\\ 179\\ 133\\ 144\\ 51\\ 143\\ 126\\ 174\\ 188\\ 167\\ 190\\ 177\\ 52\\ 58\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Stacdter, J. S., Inc.         Standard Dry Wall Products, Inc.         Stawart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America         Timken Silent Automatic Division ( <i>The Timken-Detroit Axle Co.</i> )         Tracy Manufacturing Company         Trauscon Steel Company         United States Gypsum Co.       142,         United States Steel Corporation       9,         United States Plywood Corporation       9,         United States Plycon Corporation       9,         Universal-Rundle Corporation       9,         Valley Metal Products Co.       Viking Corporation, The         Vulcan Radiator Company, The       The	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ ,67\\ 160\\ 160\\ 160\\ 160\\ 160\\ 36\\ 22\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ 167\\ 190\\ 52\\ 58\\ 1\\ 24\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Stackler, J. S., Inc.         Standard Dry Wall Products, Inc.         Standard Dry Wall Products, Inc.         Stawart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America         Timken Silent Automatic Division (The Timken-Detroit Axie Co.)         Tracy Manufacturing Company         Trace Company, The         Truscon Steel Company         United States Gypsum Co.         United States Steel Corporation         9, United States Steel Corporation         Universal-Rundle Corporation         Valley Metal Products Co.         Viking Corporation, The         Vulcan Radiator Company, The         Walworth Company	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ , 67\\ 160\\ 160\\ 160\\ 160\\ 122\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ 167\\ 190\\ 177\\ 52\\ 58\\ 1\\ 24\\ 150\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Shapard Elevator Company         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Statedtler, J. S., Inc.         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)         Tracy Manufacturing Company         Trane Company, The         Truscon Steel Company         United States Gypsum Co.         United States Steel Corporation         Universal-Rundle Corporation         Universal-Rundle Corporation         Valley Metal Products Co.         Viking Corporation, The         Vulcan Radiator Company, The         Walworth Company         Waterfilm Boilers, Inc.	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ 67\\ 160\\ 36\\ 22\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ 167\\ 174\\ 188\\ 167\\ 190\\ 177\\ 52\\ 58\\ 1\\ 24\\ 150\\ 20\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Staedtler, J. S., Inc.         Standard Dry Wall Products, Inc.         Staudard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America.         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)         Tracy Manufacturing Company         Trane Company, The         Truscon Steel Corporation         United States Gypsum Co.         United States Steel Corporation         Universal-Rundle Corporation         Universal-Rundle Corporation         Valley Metal Products Co.         Viking Corporation, The         Vulcan Radiator Company, The         Walworth Company         Walworth Company, The	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ 67\\ 160\\ 36\\ 22\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ 167\\ 190\\ 177\\ 52\\ 58\\ 1\\ 24\\ 150\\ 20\\ 23\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Staedtler, J. S., Inc.         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America.         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)         Tracy Manufacturing Company         Trane Company, The         Truscon Steel Company         United States Gypsum Co.         United States Steel Corporation         Universal-Rundle Corporation         Universal-Rundle Corporation         Valley Metal Products Co.         Viking Corporation, The         Vulcan Radiator Company, The         Walworth Company         Waterfilm Boilers, Inc.         Welbilt Stove Company, Inc.	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ ,67\\ 160\\ 160\\ 160\\ 160\\ 160\\ 160\\ 140\\ 122\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ 167\\ 190\\ 177\\ 52\\ 58\\ 1\\ 24\\ 150\\ 20\\ 23\\ 172\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Shaper Leevator Company         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Stacketter, J. S., Inc.         Standard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America.         Timken Silent Automatic Division (The Timken-Detroit Axie Co.)         Tracy Manufacturing Company         Trace Company, The         Truscon Steel Company         United States Gypsum Co.       142,         United States Steel Corporation       9,         United States Steel Corporation       9,         Universal-Rundle Corporation       9,         Universal-Rundle Corporation       9,         Valley Metal Products Co.       Viking Corporation, The         Vulcan Radiator Company, The       142,         Walworth Company       Western Electric         Western Pine Association       Western Pine Association	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ 67\\ 160\\ 36\\ 22\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ 167\\ 174\\ 188\\ 167\\ 190\\ 177\\ 52\\ 58\\ 1\\ 24\\ 150\\ 20\\ 23\\ 172\\ 26\\ 26\\ 26\\ 26\\ 26\\ 26\\ 26\\ 26\\ 26\\ 2$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.         Staudard Dry Wall Products Institute         Tile Council of America         Timken Silent Automatic Division (The Timken-Detroit Axie Co.)         Tracy Manufacturing Company         Trane Company, The         Truscon Steel Corporation         United States Gypsum Co.         United States Steel Corporation         Universal-Rundle Corporation         Universal-Rundle Corporation         Universal-Rundle Company, The         Walworth Company         Waterfilm Boilers, Inc.         Western Electric         Western Pine Association	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ , 67\\ 160\\ 160\\ 160\\ 36\\ 22\\ 52\\ 179\\ 133\\ 144\\ 51\\ 143\\ 126\\ 174\\ 188\\ 167\\ 174\\ 188\\ 167\\ 190\\ 23\\ 1\\ 24\\ 150\\ 20\\ 23\\ 172\\ 26\\ 39\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C. Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Stacetter, J. S., Inc.         Standard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)         Tracy Manufacturing Company         Trane Company, The         Truscon Steel Company         United States Gypsum Co.         United States Steel Corporation         Universal-Rundle Corporation         Universal-Rundle Corporation         Valley Metal Products Co.         Viking Corporation, The         Vulcan Radiator Company, The         Walworth Company         Waterfilm Boilers, Inc.         Western Electric         Western Pine Association         Western Pine Association         Western Pine Association         Westinghouse Electric Corporation	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ ,67\\ 160\\ 160\\ 160\\ 160\\ 160\\ 151\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ 167\\ 190\\ 177\\ 52\\ 58\\ 1\\ 24\\ 150\\ 20\\ 22\\ 172\\ 26\\ 150\\ 20\\ 23\\ 172\\ 26\\ 39\\ 125\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Sharon Steel Corporation         Signal Electric Mfg. Co.         Sisalkraft Co., The         Spencer Heater Division, The (The Aviation Corporation).         Staedtler, J. S., Inc.         Stained Shingle & Shake Association         Standard Dry Wall Products, Inc.         Stawart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)         Tracy Manufacturing Company         Trane Company, The         Truscon Steel Company         United States Gypsum Co.         United States Plywood Corporation         Universal-Rundle Corporation         Universal-Rundle Corporation         Valley Metal Products Co.         Viking Corporation, The         Vulcan Radiator Company, The         Walworth Company         Waterfilm Boilers, Inc.         Western Pine Association         Westinghouse Electric         Wood Conversion Company, Inc.	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ , 67\\ 160\\ 160\\ 160\\ 160\\ 160\\ 160\\ 151\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ 167\\ 190\\ 177\\ 52\\ 58\\ 1\\ 24\\ 150\\ 20\\ 23\\ 172\\ 26\\ 150\\ 23\\ 172\\ 26\\ 125\\ 151\\ \end{array}$
Roddis Plywood Corp.         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Signal Flow         Spencer Heater Division, The (The Aviation Corporation).         Stacdtler, J. S., Inc.         Standed Shingle & Shake Association         Standard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America.         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)         Tracy Manufacturing Company         Trane Company, The         Truscon Steel Company         United States Gypsum Co.         Inited States Steel Corporation         United States Steel Corporation         Universal-Rundle Corporation         Valley Metal Products Co.         Viking Corporation, The         Vulcan Radiator Company, The         Walworth Company         Waterfilm Boilers, Inc.         Western Pine Association         Weaterfilm Boilers, Inc.         <	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ ,67\\ 160\\ 160\\ 160\\ 160\\ 160\\ 151\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ 167\\ 190\\ 177\\ 52\\ 58\\ 1\\ 24\\ 150\\ 20\\ 22\\ 172\\ 26\\ 150\\ 20\\ 23\\ 172\\ 26\\ 39\\ 125\\ \end{array}$
Roddis Plywood Corp,         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         66         Shepard Elevator Company         Signal Electric Mfg. Co.         Sisalkraft Co., The         Spencer Heater Division, The (The Aviation Corporation).         Staaddard Dry Wall Products, Inc.         Stewart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America         Timken Silent Automatic Division (The Timken-Detroit Axle Co.)         Tracy Manufacturing Company         Trace Ompany, The         Truscon Steel Company         United States Gypsum Co.         United States Plywood Corporation         Universal-Rundle Corporation         Universal-Rundle Corporation         Universal-Rundle Corporation         Valley Metal Products Co.         Viking Corporation, The         Vulcan Radiator Company, The         Walworth Company         Waterfilm Boilers, Inc.         Western Electric         Western Pine Association         Westinghouse Electric Corporation         Westinghouse Elec	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ ,67\\ 160\\ 160\\ 160\\ 36\\ 222\\ 579\\ 133\\ 144\\ 51\\ 143\\ 126\\ 174\\ 188\\ 167\\ 190\\ 23\\ 174\\ 188\\ 167\\ 190\\ 23\\ 1172\\ 26\\ 39\\ 125\\ 151\\ 199\\ \end{array}$
Roddis Plywood Corp,         Rowe Manufacturing Company         Ruberoid Company, The         Russell, F. C., Company, The         Schlage Lock Company         Servel, Inc.         Sharon Steel Corporation         Signal Electric Mfg. Co.         Signal Electric Mfg. Co.         Statedtler, J. S., Inc.         Standard Dry Wall Products, Inc.         Standard Dry Wall Products, Inc.         Stawart Hartshorn Co.         Structural Clay Products Institute         Tile Council of America         Timken Silent Automatic Division (The Timken-Detroit Axie Co.)         Tracy Manufacturing Company         Trace Company, The         Truscon Steel Company         United States Gypsum Co.       142,         United States Steel Corporation       9,         United States Steel Corporation       9,         United States Steel Corporation       9,         Universal-Rundle Corporation       9,         Universal-Rundle Corporation       9,         Walworth Company, The       142,         Waleworth Company, The       142,         Waleworth Company, The       142,         Wulcan Radiator Company, The       142,         Waleworth Company       144,	$\begin{array}{c} 164\\ 119\\ 173\\ 40\\ 29\\ 57\\ , 67\\ 160\\ 160\\ 160\\ 160\\ 160\\ 160\\ 151\\ 144\\ 51\\ 143\\ 43\\ 126\\ 174\\ 188\\ 167\\ 190\\ 177\\ 52\\ 58\\ 1\\ 24\\ 150\\ 20\\ 23\\ 172\\ 26\\ 150\\ 23\\ 172\\ 26\\ 125\\ 151\\ \end{array}$

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### WRIGHTEX Soft Rubber Tile

The longest-lasting, easiest-to-clean soft rubber tile for homes, hospitals, churches and other installations preferring extremely quiet floors. It is available in many gay, bright or soft-toned colors.

WRIGHTEX is the *only* soft rubber tile with a permanent, naturally glossy surface. Installations made in heavy traffic areas over 27 years ago still look as good as new and when measured for wear, show a potential lifetime of over 100 years.



WRIGHTFLOR Hard Surface Rubber Tile

There is no other floor covering material that compares with WRIGHT-FLOR in long life, permanent beauty, ease of maintenance and low overall cost.

Harder than WRIGHTEX, WRIGHTFLOR is the ideal floor covering for stores, restaurants, public buildings and other installations where hard wear is encountered and low maintenance cost is important. One of the world's largest retailers have over 7 million feet of WRIGHTFLOR in their own stores.

WRIGHTFLOR is available in a wide range of sizes and colors, making possible an infinite variety of strikingly beautiful designs.

HERE'S BIG NEWS! WRIGHT - ON - TOP Compression Cove Base is now available in color, as well as black. Write for full information.

Ask for free samples of WRIGHTEX and WRIGHTFLOR, together with details on characteristics, standard tile sizes and shapes. A note on your letterhead will get prompt action. WRIGHT MANUFACTURING CO., 5205 Post Oak Road, Houston 5, Texas.

## WRIGHT RUBBER TILE

FLOORS OF DISTINCTION



Kaymond

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Of United States and Latin America

140 CEDAR STREET . NEW YORK 6, N. Y.



**JOBS** that call for a permanent pile foundation call for Raymond equipment, Raymond experience and Raymond skill. From preliminary soil investigation to completed foundation, you can be sure that the Raymond organization will work swiftly, accurately and at minimum cost.  $\otimes$ 

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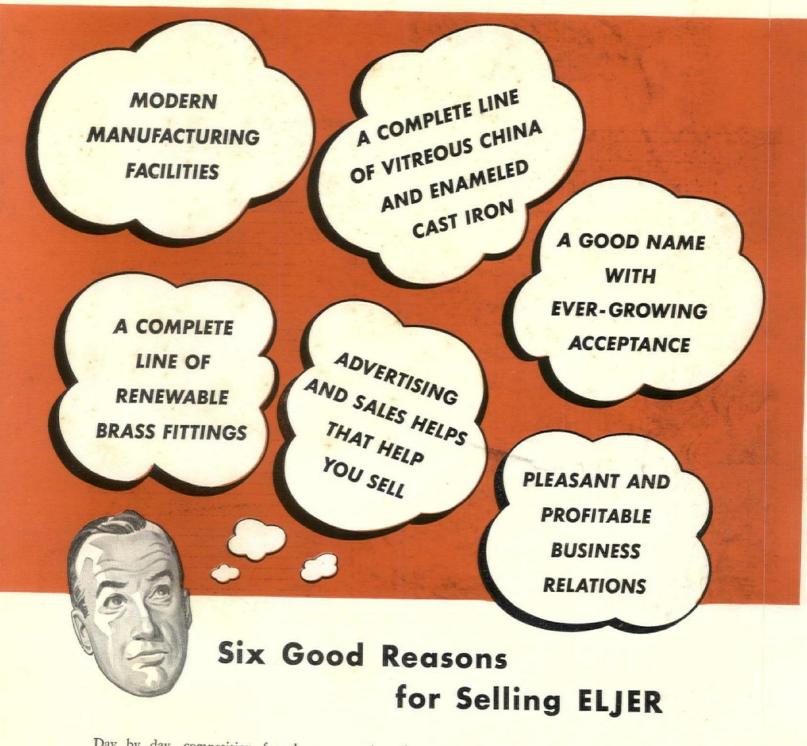
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Raymond cast-in-place concrete piles cannot be excelled for permanence and carrying capacity. Many types are available to meet any subsoil condition. With Raymond on the job, full compliance with job requirements is assured.

Pictured above is Raymond's 1300-pile foundation for the new Caterpillar Tractor Company Building LL at Peoria, III.

THE SCOPE OF RAYMOND'S ACTIVITIES includes every recognized type of foundation construction-concrete, composite, precast, steel, pipe and wood piles. Also caissons, underpinning, construction involving shore protection, shipbuilding facilities, harbor and river improvements and borings for soil investigation.



Day by day, competition for the consumer's dollar is becoming stiffer. More and more, your merchandising and sales problems require right answers to assure profitable and progressive business operations.

Only a source of fine plumbing fixture supply that is aggressive in its methods and thoroughly experienced, can give you the service you desire in a manner that is profitable.

You'll find Eljer's policies are helpful and popular because they are carefully organized to ease your sales problems. You'll find Eljer Fixtures are sold by leading Distributors, actively interested in helping you make your business grow and prosper. You'll find now is a good time to see your Eljer Distributor . . . or write Eljer Co., Ford City, Pa.

It pays you, it pays us - because we specialize in Plumbing Fixtures and Brass



**Built for** 

• Any business requiring a building with one or more large openings gains increased efficiency with installation of The "OVERHEAD DOOR." This door with the Miracle Wedge gives uninterrupted service without costly maintenance and is as valuable to a small commercial or residential structure as it is to the sprawling factory, warehouse or terminal. Tracks and hardware, so important to perfect performance, are precision-made and withstand hard wear and corrosion. Rugged durability is built into every part of the door. Any "OVERHEAD DOOR" may be manually or electrically operated.

### TRACKS AND HARDWARE OF SALT SPRAY STEEL

KEE Service

WITH THE INSTALLATION MIRACLE WEDGE SERVICE

GLENDALE, CALIFORNIA OKLAHOMA CITY, OKLAHOMA

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