Color Balanced Suntile puts VALUE in the Home!

Choose Suntile for the free reign it gives your ingenuity!
Use Suntile for carefree permanence of the beauty you create!
Specify Suntile to give home owners the continuing values of low cost luxury and maintenance-free convenience . . . in Color Balanced beauty that endures!

THE CAMBRIDGE TILE MFG. CO., CINCINNATI 15, OHIO
RCA Victor proudly presents The Clubman

A custom television receiver tailored to the needs of the better clubs, hotels, restaurants, conference rooms and private homes or offices.

The answer to television presented with good taste, exactly the decorative requirements of hotels, clubs and private homes where a stock cabinet would not be exactly appropriate. Clubman, RCA Victor's finest television chassis is built-in specifications, flush with the wall, completely out of the way, decorative treatment in exact harmony with any type of setting. Even the controls are out of sight behind the hinged back of the screen.

Finest television reception available. The large, clear picture from within the set measures 15 by 20 inches—a full-size newspaper page. An audience of one hundred or view it in complete comfort. The Clubman operates on 115 cycle, AC current and occupies a space approximately 44 1/2, 23 inches deep and a minimum of 48 inches high.

The price is reasonable. Despite its great flexibility, and the opportunity afforded for individual decorative treatment, the cost of The Clubman compares with stock-cabinet television receivers of similar screen size. In some cases the cost may even be less than for a comparable receiver in a standard cabinet.

PROMPT DELIVERY.
WRITE FOR ILLUSTRATED FOLDER.

Consumer Custom Products Department
RCA Victor Division
745 Fifth Avenue
New York, New York

Gentlemen:
Please send me illustrated folder showing prices and other information on The Clubman Custom Television Receiver.
Name.
Firm.
Position.
Address.
For fast, low-cost construction of insulated buildings ... specify CEMESTO

Shown here are only a few of the many commercial and industrial buildings built better and faster with Celotex Cemesto Board.

Cemesto is perfect for speedy, low-cost construction of insulated buildings. It offers thermal insulation, weather resistance inside and out, structural strength and siding ... all at one low cost. In addition, Cemesto core is Ferox-treated to resist dry rot, fungus growth and termites.

Cemesto comes in standard size sheets in 1⅛”, 1-9/16” and 2” thicknesses; can be easily cut to fit job conditions; can be attached by nailing to wood, by bolts or clips to steel.

Thus Cemesto is an ideal material for use in exterior walls, roof decks or interior partitions. It does not require painting, so maintenance costs are low.

Write the Architectural Sales Service Department for complete details illustrating several methods for applying Cemesto for roof decks, exterior walls or interior partitions.

If you wish to furnish plans to us, we will be glad to prepare shop erection drawings showing the exact size of Cemesto panels required, together with estimate on cost of material pre-cut to fit.

CEMESTO A PRODUCT OF CELOTEX

THE CELOTEX CORPORATION • CHICAGO 3, ILLINOIS
Recommend Anystream Shower Heads is smart business, because they always please the bather with exactly the type of shower he likes. An easy turn of the lever gives him any degree of spray—regular, needle, or flood.

Anystream is a water saver, too. In the needle spray position, the Anystream requires less than half as much water as ordinary showers. In addition, since the Anystream Shower Head is self-cleaning, this major source of trouble and maintenance is eliminated.

Speakman Showers and Fixtures are distributed nationally through plumbing supply dealers and plumbing contractors.

"Established in 1869"
HERE'S ONE PRICE CHART THAT MAKES GOOD READING!

TODAY'S ASPHALT SHINGLE PRICES ARE 3% UNDER THOSE OF 1926!

In the face of much higher prices for nearly everything, the record of Asphalt Shingles is an amazing one. Asphalt Strip Shingles are wholesaling right now at prices actually below those of 1926... 96.8 compared with 100 for 1926.* Steadily growing popularity, enthusiastic dealer merchandising, increased plant efficiency, and materially stepped-up production have combined to make this low price possible.

But the price tag is not the only measure of Asphalt's big dollar's worth, in today's market. Never has the industry produced a better product. Many important improvements have been made since 1926... improvements in raw materials, in processing, in granules, in color... even in the technique of application.

From every point of view, fire resistant Asphalt Shingles are construction's biggest dollar's worth! Choose weight, pattern, and color to fit the job... but make it Asphalt!


Ask for booklet, "Choose Your Roof for Rain — AND SHINE." 24 pages in full color. Filled with hints on choosing and combining colors for exterior styling. Talks good sense, good taste, in roofing. Copies are available from members or write direct to us for free sample.

CONSTRUCTION'S BIGGEST DOLLAR'S WORTH

ASPHALT SHINGLES

ASPHALT ROOFING INDUSTRY BUREAU

2 West 43rd Street • New York 19, New York

Sponsored by 28 leading manufacturers of asphalt shingles • roll roofings • sidings • and built-up roofings
Yes, the same ARMCO Stainless Steel that worked so well during the war is ready again for your roof drainage specifications. Architects and builders who have inspected installations say there is no finer, more durable metal for gutters, downspouts, leaders and flashing. Stainless hangers and nails complete the job and make it as permanent as the structure.

ARMCO Stainless has the extra strength to withstand wide swings in temperature and heavy loads of snow and ice. When properly installed, gutters won't buckle or sag. The hard surface laughs at abrasion. Elbow wear is much slower. And Stainless, of course, resists rust by atmosphere or corrosive debris. There is no unsightly discoloration of metal or adjoining building areas. The soft, satiny finish of Stainless blends with any color scheme or type of construction.

This is Important: the cost of ARMCO Stainless is actually less per square foot than other quality metals commonly used for roof drainage. Job costs are no more either, because 28-gage ARMCO Stainless can be worked and soldered as readily by the sheet metal contractor as 26-gage galvanized iron.

ARMCO Stainless is also quickly available for countless architectural uses . . . window frames, kick and push plates, modern kitchens, interior and exterior trim. See the Armco catalog in Sweet's File or write for specific information about your needs. The American Rolling Mill Company, 372 Curtis Street, Middletown, Ohio. Export: The Armco International Corporation.

**The American Rolling Mill Company**

*SPECIAL-PURPOSE SHEET STEELS  STAINLESS STEEL SHEETS STRIP BARS AND WIRE*

THE AMERICAN ROLLING MILL COMPANY

SEE SWEET'S CATALOG for uses, advantages and specifications of these other Armco special-purpose steels:

Galvanized ARMCO Ingot Iron

ARMCO Galvanized PAINT-GRIP (also available with ARMCO Ingot Iron or Copper Steel base)

ARMCO Enameling Iron (for porcelain enamel).
Presenting...with pride, another great addition to the most complete line of gas-heating equipment in the nation.

You have waited for this great new gas-fired winter air conditioner. In its design and operation are the features you require for heating equipment in housing designed for forced warm air. In a single or multiple installation, the Modernaire provides the kind of fully-automatic, trouble-free operation that pays off all down the line... from sales appeal to economy to customer or tenant satisfaction.

Amazingly compact, this Bryant-engineered beauty is a long-lived space saver that can be installed almost anywhere. The smallest of its six sizes, adequate for apartments or small homes, can actually be installed in a small closet. Efficiently and surely, the Modernaire does the four big winter air conditioning jobs... providing warm, filtered, smoothly-circulated air with the right amount of humidity.

Take your cue from the owners of the soon-to-be-constructed Tremont Apartments at Allentown, Pa., who have already specified the Modernaire for individual heating in its 126 modern suites. Sell—install—specify the Bryant Modernaire! For details, contact your Bryant representative or write direct to Bryant Heater Co., 17825 St. Clair Ave., Cleveland 10, Ohio... One of the Dresser Industries.

...with the HEVIGAGE STEEL HEAT EXCHANGER!

Made by the industry’s most advanced machine welding process, this rugged heat exchanger is fabricated from 12-gauge steel, approximately three times as thick as minimum A.G.A. requirements. Designed for straight-line flow, both horizontal and vertical, there is no complicated travel of warm air or hot gases. There is no dead metal... every inch of the HEVIGAGE works at its job. It will outlast ordinary heat exchangers by many years.
"Look... small kitchens turned into big ones... like magic!"

Kelvinator's "SPACE-SAVER" PACKAGE

New Electric Range only 21" wide—New "Space-Saver" Refrigerator only 24" wide... big kitchen utility in small kitchen space!

It's here! The neatest solution to the need for small kitchens with modern family-size facilities!

Here's the New Compact Electric Range!

Only 21 inches wide—new design permits installation flush against wall. A full-sized 2-unit oven for baking and broiling. Automatic oven temperature control, one 8" and two 6" 7-heat surface units for electric-fast, safe, cooler cooking. Beautiful exterior of one-piece wrap-around porcelain, porcelain acid-resistant top, recessed sloping switch panel, oven signal light and handy appliance outlet. Kelvinator quality throughout!

Add Kelvinator's "Space-Saver" Refrigerator!

Here's the refrigerator with 50% more storage—6 cu. ft. compared to the previous 4 cu. ft. models, but takes no greater floor space. Big, stainless steel freezer... ample room for tall bottles, and shelf space galore for daily food storage.

This is today's answer to the builder's problem of utilizing small space to full advantage. Use Kelvinator's new "SPACE-SAVER" PACKAGE!

For further information write Nash-Kelvinator, Detroit 32, Mich.
BUILDING MONTH. By now, the housebuilding business lay like a pallid, exhausted patient at the bottom of some vast medical amphitheater. It had been probed and analyzed (some of the specialists considered the body already a corpse and proposed dissection) until there was no secret of its circulation, digestion or excretion that had not been laid painfully bare for all to see.

Having nothing left to hide, housebuilding could only ask weakly that the specialists come to an agreement on the diagnosis. By the month's end, the spectacular news was that they actually seemed to be doing so.

The probe had begun with the TNEC investigations of the Building industry way back in 1939. It had continued with Thurman Arnold's pursuit of monopoly among both materials producers and building labor (Arnold quit in disgust when the Supreme Court ruled labor beyond the reach of the anti-trust laws). It had, directly and indirectly, loomed at many a wartime Congressional committee meeting, where the legislators decided who should do what about war housing. It had most recently been resumed by the press (there was scarcely a periodical which had not been impelled to give its readers the low-down on the Great Housing Shortage) and by a handsome new brace of Congressional committees.

A great deal of the decade-long probe had, necessarily, been a catalog of symptoms. And, as always happens, now one and now another of the symptoms had been held to be causing all the others. This tendency was apparent last month in Representative Gwinn's committee, which set out to pin the whole blame for today's troubles on the encrusted restrictions of building labor and got some unexpected straight talk from old trust-buster Corwin Edwards. It was equally apparent in Senator McCarthy's tour of investigation, now turning into an unenlightening attack on public housing.

But, above and beyond the confusion, an insistent area of agreement seemed to be forming about what was, after all, the matter with the patient (see FORUM, July '32, et al.). Fortune had said it as well as anybody last August: "Every important disorder in the housebuilding industry is directly traceable to its picayune scale." This diagnosis was decisively confirmed by Edwards for the benefit of the Gwinn committee, and by Bill Levitt, an impressively non-picayune housebuilder, for the benefit of the Producer's Council (See page 10).

But if price-hosting restrictions thrive in housebuilding because the small housebuilder is too weak to fight them, what can help the small housebuilder get bigger? Bill Levitt said that changes in the distribution system to open wholesale buying economies to the big house manufacturer would help a lot. Fortune proposed RFC loans to finance promising merchant housebuilders as well as promising ventures in industrialized housing. (How reluctant private capital is to back the industrialized house can be gauged from the failure of the majority of factory-producers to mobilize the one-fifth private capital required to get an RFC loan under the new-dead Wyatt program.)

There was no doubt that the housebuilder could use plenty of help in getting bigger. But there were promising signs that the big housebuilder was doing plenty to help himself. In the first place, there was the spectacular current rate of housing production (see below). If the men who were building these houses were not yet all on the scale of Levitt, Gross-Morton, Byrne, Trousdale, Burns, Bohannon, etc., they were showing an accelerated trend in that direction, FORUM sampling indicated that the bigger housebuilders are now accounting for three-fourths of all houses built, as compared with their fifty per cent slice of the market before the war.

LABOR PROBE

Congressmen hear about who shakes hands with labor on a shakedown.

"People are asking us how the Taft-Hartley law affects housing," said Representative Ralph Gwinn (Rep., N. Y.) setting out on the latest Congressional tour of the housing question. "We are going to show them. We will show them that it was written to open up the building trades to apprentices and non-union workers and to cut out the prohibitive dues and fees."

(Continued on page 10)
Representative Gwinn chairmen a sub-committee of the House Labor Committee, which is currently appearing, unannounced, in various cities to put the finger on restrictions imposed by the ten major building trades unions.

But the committee's first hearing, held in Washington, showed that Chairman Gwinn will have to point to more than labor if he tracks down all the villains in the piece. The star witness was a professor from Northwestern University, Corwin D. Edwards, an economist who had been chief-of-staff in Thurman Arnold's campaign to apply anti-trust laws to building labor.

Edwards immediately agreed that building is a high-cost industry because of the restrictions which rigidify the cost of manufacturing a house. "It is the only industry where the manufacturer buys retail and works out his design case by case."

Then Edwards began to move somewhat beyond the committee's program. Labor, he said flatly, "merely gets the headlines" as the agent of building restrictions. Actually, restrictions are a "vertical pattern, involving producers, wholesalers, contractors, retailers and labor." He said that in his work for the Department of Justice he had observed that usually all parties involved in restrictive practices have a stake in keeping building small and localized. Case in point: jobber-union-contractor combines to enforce the sale of plumbing fixtures on an installed basis only.

I CAN'T GET IT WHOLESALE

Let's squeeze out the extra profits, says big housebuilder Levitt.

Bill Levitt, who built $12 million worth of houses last year and expects to build $24 million more this year, wore the grin of a man who enjoys a fight. He eyed the Producers Council, assembled in New York for their annual meeting, like a champ waltzing easily toward a nervous opponent. Then he let go with a powerhouse wallop:

"The only real reason why the house manufacturer is in a primitive condition compared to every other manufacturer is the system of distribution of raw materials adopted by the companies largely represented in this room this morning."

There is nothing wrong with the housebuilding business, Levitt continued, that could not be cured if building were in the hands of large companies, instead of picture operators who bumble along, unable to fight restrictions, outmoded building codes, predatory unions. But, Levitt said, housebuilders will not get bigger until they are granted the economies of mass purchase of the materials. He illustrated:

"Joe Smith and Tom Brown come all the way from Indiana to convince me to install automatic washing machines as standard equipment in all houses we build. The program for 1947 is, let us say, 3,000 houses. That's a lot of washing machines. All during the discussion a couple of other fellows have been present in the room, and every now and then one of them interjects a remark or so."

"Finally the deal is closed. Price, delivery, everything is all agreed upon. A short time later a proposal comes in—not from the manufacturer, not from the distributor, but from another fellow who goes under the name of 'Authorized Dealer.'"

"Well, the first thing you know a carload of washing machines arrives on our railroad siding. That car was loaded in Indiana. and no human hand touched the contents until we, at Levitt, unloaded. The nicest thing about the washing machine people, however, is that no matter how long you do business with them, no matter how many carloads of washing machines they send you, they never send invoices to you—just washing machines."

Profit, Profit, Profit. "One day, however, we do get an invoice from this authorized dealer chap and we pay it. Naturally, he expects a profit. He then gets an invoice from the metropolitan distributor and he pays it. Naturally, they expect a profit. The distributor gets an invoice from the washing machine manufacturer and he pays it. Naturally, the manufacturer expects a profit. So far that makes three profits. But that's not all! As long as everyone else is making a profit, we here at Levitt feel that we should make one too, so when we tack up that washing machine into the house package, we charge a profit, which makes just four profits that Mrs. Owner is paying for her automatic machine."

"That same situation obtains if you minus a profit here or there in every item of equipment or material used in construction of a house."

Levitt asked: "Why should capital—invest its money in a business that starts off with two strikes against it?"

Oh, Mr. Petrillo. Levitt said he had nobody the jobber or dealer where performs his economic function—investment, stockmanship, and display of material for the benefit of the small customer. "But where the jobber's usefulness is ceased to exist, where his very existence contributes to the high cost of housing, he unwittingly becomes a parasite."

"We at Levitt & Sons—and there are many more like us if you will let the jobber—can perform the distributor's functions even more efficiently than he can, since we coordinate them with overall manufacture. We don't need him any more—so he occupies pretty much the same position as Mr. Petrillo's standby musicians in the recorded broadcast."

"The solution to better values in housing lies in your hands, but it will take industrial detachment from the statesmanship and guts to achieve it."

BIG & GETTING BIGGER

First check of how big housebuilders have grown during war years.

How far has housebuilding, conspicuous in a nation of industrial giants, grown up over the war years? Quite a lot, according to The Forum's Research Department, that first look at the size of the professional housebuilder, since the Bureau of Labor Statistics made its study of residential builders in 72 cities in 1938.

What The Forum saw was cheering those who believe that housebuilders get bigger before housebuilding's profits get smaller. The bigger housebuilders are now building three-fourths of all new houses. Nine years ago, they were building slightly less than half.

The smaller housebuilders are now coping with only 15.1 per cent of the housing market—as against their 32.2 per cent in 1938. The rest of the houses—50.9 per cent—are being built, for the most part, by home owners acting as their own general contractors.

Forum researchers made their calculations on the basis of an analysis of building permits for 1946-47 in 16 cities, geographically spotted over the U. S. and ranging in size from metropolitan Cleveland with its million-plus population to Gardena, California, with 5,909 inhabitants.

* Defined by BLS as a builder of two-or-more houses a year.
COST HOUSES

Virginia builder creates 181-house development from surplus barracks. 

Norfolk, Va., 181 Negro war veterans, who are paying at the rate of $26 a month. This is due to the enterprise of George T. McLean, a building contractor who dexterously related the problem of disposal of surplus war barracks to the largely unsolved problem of low-cost housing. It didn't, therefore, take him long to discard the usual demolition-and-operation-in-favor-of-a-plan-to-turn-barracks-into-single-family-houses-for-vets. 

Joining the Navy for a 30-day stay in Norfolk, McLean and architect Fred A. Fay, went to work on architectural engineering studies, started hunting for a site. Before the end of the 30-day period, McLean emerged from his studies with: 1) a new housebuilding operation in favor of a plan to turn barracks into multiple-family houses for the veterans.

Two H-shaped naval barracks, McLean's firm, Construction Associates, bought up as high bidder ($2,650). Under McLean is a builder who also serves as chairman of the Portsmouth Redevelopment and Housing Authority, he is aware of his city's need for low-cost housing. It didn't, therefore, take him long to discard the usual demolition-and-operation-in-favor-of-a-plan-to-turn-barracks-into-single-family-houses-for-vets.

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payment is less than the rents paid by the new home owners in the slums where most of them lived before.

McLean thinks that what he has done ought to be done in a lot of cities. He says there are still plenty of barracks to be taken down, and he thinks he has demonstrated one way private builders can produce low-cost housing at a moderate profit.

WASHINGTON

CONTROLS BACK?

Special session on Marshall Plan may bring renewal of basic material curbs.

When Congress assembles for its special session in November, President Truman may ask for consideration of two measures important to Building: 1) Government allocation of steel among industrial users; 2) "Selective" price control.

Some government economists said that approval of the Marshall Plan (see p. 13) would make allocation of steel necessary. Failing this, they said, producers with the biggest pocketbooks—like the automobile industry—would take a lion’s share. Producers of building materials would have to go on reduced rations. Other economists argued that an expanded foreign aid program would not cut into domestic steel supply much. When the foundry workers of France, England and Germany get enough to eat, these men said, they will be able to turn out more steel and iron products in their own plants.

Some thought President Truman might try to slay the inflation giant by asking Congress for "selective" price control. This would mean limiting the prices of major commodities at the first processing level. Although such a plan was being discussed by the President’s advisers, there was general doubt that it would work. Wouldn’t those further down the distribution line, the doubters asked, simply take up the slack, boost their own prices?

RENT BOOST

Flat increase in ceilings is likely.

Last month President Truman had the dubious satisfaction of being able to say I-told-you-so about the present rent control law. When the President was asked what he thought about Housing Expediter Creedon’s approval of a flat 5 per cent rent increase in Louisville, he curtly observed that no other course had been possible. He pointed out that the present rent act sets up local advisory boards and makes their recommendations mandatory if properly documented.

So far, Louisville is the only city where a local advisory board has successfully petitioned an increase. The board based its recommendation on a new sewer rental ordinance, claimed to run between 2 and 4 per cent of the gross return from most rental properties.

Labor and tenant groups howled at the Louisville rent boost. (Said the machinists’ union: “Creedon should be fired.”) They claimed the Louisville board was stacked with landlords. In New York, the American Labor Party promptly said it would challenge any recommendations for rent increases made by Dewey-appointed boards. The boards, ALP charged, are not representative citizens as required by law.

Not many boards seemed to share Louisville’s opinion. (Creedon has asked all boards to report on how things are going, even if they don’t seek a rent increase.) Of the 14 boards reporting so far, 12 said they thought housing is still so tight that rent control must be retained.

If this trend continues in the rent boards’ reports, it will be hard for Congress to resist the demand for continued rent control. Best Washington guess: Congress will vote to extend rent control beyond its present expiration date of February 29, 1948; Republican leaders will tack on a provision calling for a flat increase in rent ceilings.

NEW JOBS

Creedon will boss atomic construction.

HOLC’s Dyke may move up.

Last month one housing chief left Washington and another was reported about to do so.

Housing Expediter Frank Creedon said he had been asked to do a job which he thought would be more useful to the nation than his present one (supervision of the remaining rent control program is all that is left for the Housing Expediter to do). Creedon’s new job is to take charge of a “large construction project in connection with atomic energy.” Before he became Housing Expediter, Creedon worked for Stone & Webster in construction of the Oak Ridge plant.

Federal Home Loan Bank Board Chairman John H. Fahey would, according to insiders, hand in his resignation shortly after Congress reconvenes for its special session. A fearless, unapproachable administrator, old John Fahey had steered the HOLC, the rescue agency of depression years, to a completely unexpected success for the government. Although savings and loan men had smarted under what they called Fahey’s high-handed methods, all agreed that they had known no government boss less susceptible to “influence.”

Washington gave Home Loan Bank Board member Nathaniel Dyke, Jr., the best chance of succeeding Fahey as chairman. Dyke has had operating experience in the field, as head of the United Building & Loan Association, Fort Smith, Ark. He has also operated a string of lumber yards in Arkansas and Texas and now owns a millwork plant in Memphis. During war he earned the gratitude of the House by serving on the advisory board of the Office of War Mobilization & EMF.

OLD FIGHT

Senator McCarthy attacks house building.

The Joint Congressional Committee on what’s-holding-up-housebuilding last month turned into the old cat-dog war between advocates of public and private housing. Holding hearings in Pittsburgh, Cleveland, Detroit and Indianapolis, Senator McCarthy (Rep., Wis.) showed more anxious as any lobbyist (see p. 16) to credit advocates of the W-E-T housing program—Alpern because she insisted on speaking for public housing, Calmer heads of the committee intervened, avoiding an explosive issue.

In Detroit, the director of the City Building Commission, Charles F. Edge, refused to appear. He gave the newspapermen a blistering statement: “I saw no reason for climbing on Senator McCarthy’s bandwagon. I sent him a note. All the information available is on the record. I am too busy doing something constructive, while the town is doing more than they are doing on their side of the street.”

By month’s end, the much-touted senator’s committee seemed to be doing little more than adding to the already dense confusion of the public vs. private issue in housing. More direct light on what’s really the matter with housebuilding was coming within the industry itself (see p. 10).

MATERIAL

NAILS

Builders ask tighter export controls.

Lack of nails may bring housebuilding to a dead stop in some areas within 30 days. So the National Committee on Housing said, after a nationwide survey of new- and old-tenant building shortages.

The Committee found the northeast quarter of the U. S. hardest hit by shortages. Nails were unobtainable on the regular market at the regular price of $5.00 a keg. But a new gray market selling new nails to have plenty at from $9.75 to $12 a keg. Some builders were using aluminum nails at 60 cents a pound.

Millwork is also extremely scarce in the survey showed. Midwest manufacturers of doors, windows, etc. can’t get freight to move lumber from the Great lakes to the plants. Gypsum products, plumbing and soil pipe are also scarce in many areas within the industry itself (see p. 10).
American buyers because domestic consumers were not prepared to bid for large amounts in a single order.

**SHALL PLAN**

Europe needs four times as much softwood as prewar export, less hardwood. Every other domestic consumer, build-shocked anxiously at the Marshall Plan how much belt-tightening would be needed. Figuring out how much of can output Marshall Plan exports take is no easy job. Government departmental committees are now working the preliminary requests made by European nations, and a representative Housing and Home Finance Agency participating where building products or materials going into such products are.

Information is as yet available to how specific products would be supplied by increased export. But government experts say that the Marshall Plan's net impact on domestic building materials would be far greater than its direct impact. They mention these items:

- **Building product requests for 1948** over $400 million. This compares total U. S. exports of such products in of $235 million (about $330 millions current prices). Requests include $60 on worth of sheet steel, probably the shortage item in the U. S.

- **Truck cars** requested amount to $168 million for 1948 and $367 million for the entire period, 1948-51. The 1948 figure is equivalent to about 16,000 new cars, compared to total U. S. exports of less than 1,100 in 1939 and about 34,000 cars (new and used) in the first half of 1947. Current deliveries of freight cars are about 10 percent below the railroads' goal of 170 per month.

- **Aircraft equipment** worth $150 million is forecast for 1948, and a total of $500 million for the four-year period. Most of this is believed to be for heavy generating and other construction.

- **Other requests** exceed prewar exports to 16 countries in both softwood and plywood. Hardwood requirements are below prewar exports. Softwood requirements (excluding railroad ties) are estimated at 1,800,000 bd. ft. yearly for 1948 and 1949, 700,000,000 bd. ft. for each of the next years. This is four to five times the average volume of 1934-38 exports to the nations. Plywood requests amount to $90 million yearly in 1948 and 1949, and $250 million in 1950 and 1951. Pre-war plywood exports were negligible. Hardwood requirements amount to 272,000,000 bd. ft. each of the first two years, and to 400,000,000 bd. ft. for the next two. A substantial amount of equipment for logging, mill operations, and veneer and plywood manufacturing is also requested.

**AALTO PLAN FOR M.I.T. DORMITORY:** an undisguised expression of function.

Construction of a new senior dormitory at the Massachusetts Institute of Technology started last month. The model shows Finnish architect Alvar Aalto's plan for a six-story building to accommodate 353 students. Aalto is now professor of architecture at M. I. T. Perry, Shaw & Hepburn, Boston, are supervising architects. The Aberthaw Co., Boston, is the contractor.

The building is planned for a site overlooking the Charles River basin from Memorial Drive. In order to give a maximum number of rooms the river view (bottom cut), Aalto gave the building mass its combination zig-zag and serpentine form. Service facilities are concentrated on the north side of the building (above), where Aalto has hung a cantilevered stair for easy-grade floor-to-floor access.
VETERANS REPAIR LOANS

VA unwraps new low-interest plan.

The Veterans Administration has not talked about it much yet, but it has an insurance plan for improvement and repair loans for veteran-owned homes that is considerably more attractive than FHA's Title I improvement loan plan. For the veteran, the VA repair loan mean lower interest than he would pay on the FHA loan. For the lender, the VA plan means more latitude on the equipment items that may be included in the loan. While FHA, which once burned its fingers on ranges and refrigerators, has refused to consider any item not physically attached to the house for improvement loan financing, VA has specifically extended its improvement program to include such items as washing machines, dish washers, refrigerators.

New Bank Competition. As the VA repair and improvement plan goes into action, savings and loan associations can be expected to give banks some stiff competition in this rich small loan field. This is because the federally chartered savings and loan associations are now empowered to make unsecured repair or improvement loans up to $1,500, under an act passed by Congress just before it adjourned last summer. This new authorization covers not only the VA repair loan, but also the FHA Title I loan and even repair loans not backed by government insurance. Heretofore, the federally chartered associations have been required to execute a real estate mortgage before extending such credit, placing them at a disadvantage with banks who make repair loans on the borrower's credit rating.

VA has not been beating the drums for its repair and improvement loan program for two good reasons: 1) it wanted to get the regular home loan program underway to take care of the veterans lacking any kind of housing; 2) it wanted to avoid any extra drain on short materials and equipment items urgently needed in new housing. With shortages eased and the major home loan program operating smoothly, VA thinks it is time to take the improvement program out of wraps.

Character Loans. The VA repair or improvement loan (Section 508, Veterans' Readjustment Act) works like the FHA Title I plan. That is, the lender puts all his loans in one basket and the government insures them all against loss amounting to not more than 15 per cent of the total amount. Thus a lender who builds up a $100,000 volume of such loans could recover the total amount of any sour loan—up to the point where total claims reach $15,000.

VA asks no security but borrower's good credit on improvement loans of not more than $1,000. Loans of this amount are made at a 3 per cent discount, compared to the 5 per cent discount under FHA Title I. The 3 per cent VA discount works out to a true interest of 5.7 per cent, and compares to the FHA Title I true interest of slightly over 9.7 per cent.

For repair or improvement loans over $1,000, VA requires the security of a mortgage and limits interest rate to 4 per cent.

Although few veterans are aware of it, VA's Section 508 loan insurance plan can apply to loans covering the purchase of a house as well as to improvement and repair loans. The lender would simply lump such a mortgage loan into his whole basket of Section 508 insured loans.

Credit Stretch. For the veteran, a home loan handled under insurance instead of under the main VA-guaranty plan has the advantage of conserving his borrowing power. The government is permitted to assume a total liability for each veteran of not more than $4,000. If the veteran buys a house under the guaranty plan, most lenders would want the government to back at least half the note. This means that if the veteran buys an $8,000 house—and most houses cost that much nowadays—he would use up all of his government-backed borrowing power in a single stroke. But if the lender processes the $8,000 home loan under the 15 per cent insurance section, it would use up only 15 per cent of the veteran's reserve credit—or $1,200. Since this method has no special advantages to lenders over the regular $4,000-guaranty home loan plan, only a negligible percentage of home loans has been handled under the insurance plan.

OPENING DAY tape-cutting by C. of C. president C. E. Naylor, Federated's Fred Lazarus, Mayor Oscar Holcombe, Foley's Max Levine. Building facade suggests some architectural embarrassment at absence of windows.

MECHANIZED STORE

Windowless Foley's opens in Houston

The first big department store built in the Twenties opened last month in Houston, Texas. Foley's, an old Houston retailer which moved up Main Street, is Federal Department Stores' experiment in mechanization to boost sales volume. It is the first department store to be built with no windows, thereby salvaging considerable peripheral storage space and eliminating confused lighting effects, soot (a big expense to merchandise), and the yearly expense of window washing. (For complete presentation of plan, see FORUM, April '47.)

The stores, mechanical devices for handling stock are based on technical studies conducted by William T. Smith of Raymond Loewy Associates. They are intended to increase sales turnover per cent. The most spectacular is the parcel conveyor and conveyor system which routes packages and cases dropped at all parts of the store to a central building. Cases are either picked up in one bunch and stowed in his parked car, or loaded into drive-in delivery trucks.

Since horizontal expansion is particularly expensive for city stores, Foley's has provided for vertical expansion by building foundations that can carry stories as its present six and by all available space now for later elevators, escalators.
the International Congress of Modern Architecture assembled in Bridgewater, chewy little English riverport, it could have been in any other city. The congress was held in a large building designed especially for the occasion, and its participants were among the most distinguished architects in the world. The congress was an attempt to bring together architects from all over the world to discuss the problems of modern architecture and to exchange ideas and information. The congress was a great success, and its participants were eager to share their knowledge with each other. They discussed a wide range of topics, from the design of individual buildings to the planning of entire cities. The congress was a great opportunity for architects to meet and learn from each other, and it was a valuable resource for the development of modern architecture. (Continued on page 16)
BRITISH VIEW: the private builder who laid one brick too many.

AVERAGE HOUSE

The average man can't afford it.

What is the average buyer paying for his new house today? Nobody knows for certain, but last month the Bureau of Labor Statistics figured out the basis for an estimate.

Not counting land, architectural design, sales profit, the average cost of the house itself—the structure alone—was $8,632. In September of last year, when the average industrial worker's wage was $4,502 a week, the average house was listed at $8,420. But in September of this year the figure had climbed to $8,705, an increase of $273.

To estimate average selling price, the BLS figures the cost of the structure, adds a markup of 52.4 per cent, and then figures a $3,000 profit for the retailer. In the case of the average house, this means the average retailer is asking $14,003 for a house. The average housebuilder is asking $12,371 for a house.

The average man may not have the money to pay the average builder, but real estate experts say the market for houses is strong and that a house built for $12,371 will sell for $13,500 in the average housing market.

The average man can't afford it. The average woman can't afford it. The average student can't afford it. The average housewife can't afford it. The average man can't afford it. But the average man can't afford it.
HERE are three new Formica patterns, provided in many shades and colors. They are attractive, novel and serviceable and supplement the linen patterns which were introduced by Formica some twenty years ago. The new line of modern, well harmonized, solid colors are in production and again available.

The patterns and colors have all the usual Formica qualities. They do not stain with colored liquids; they are not spotted by solvents like alcohol or by mild acids or alkalies such as are present in fruit, or cleaning solutions; for horizontal surfaces they are available in the cigarette proof grade. And because of the wide range of colors and shades they will harmonize with any decorative scheme.

Reproductions of the entire range of colors are sent on request.

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Here are other reasons why Picture Windows of Steel are preferred over all: They are made from easy-to-install standard Ceco casements. Gone are annoying delays in waiting for special framework. Because these windows always fit they are easy to operate . . . no sticking, warping, or swelling . . . no fitting, planing, or weatherstripping. And here is something you will like, too. The cost is lowest of all installed. So, specify Ceco Picture Windows of Steel . . . handsome and then some. Write for free literature.

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Remove vertical muntins from Ceco stock casement 45-Fixed. Combine windows with standard mullions.

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LETTERS

IN MEMORIAM

Forum:

Howard's loss was a great shock to all of us—and his great charm, incisive mind and stimulating personality made that "us" include a very great many people.

Howard Myers did as much for the architectural profession as anyone in recent years. He was one of its greatest champions and his constructive criticisms and brilliant presentations stimulated it to its best efforts. His leadership in its progress towards new expressions and new ideas has had a major influence on the architecture of today.

Though you will certainly have a tougher job without him he has helped you all build up an organization that is able to carry forward forcefully the traditions that The FORUM has established under Howard Myers' leadership.

John W. Root, Architect

Chicago, Ill.

Forum:

... I am afraid there is little I can add to your splendid tribute. The world in general and the architectural profession in particular is the better because he lived. His talent and skills would have counted much in the perilous days ahead. Men of vision will be needed and he will be sorely missed.

Douglas William Orr, President

The American Institute of Architects

Washington, D. C.

Forum:

... His going leaves a great empty space at every gathering of our profession. We have lost one of our strongest and most constant advisers and our most steadfast friend.

Younger men will fill the gap, but they never will replace Howard. It can truly be said of him that every thing he touched in life he made better.

Wallace K. Harrison, Architect

Harrison & Abramovitz

New York, N. Y.

Forum:

Howard was a man of such proportions and such depth of wisdom that words—any words—sound a little trite in any description of his significance. Like everyone else, I was completely enchanted with his personality when I first met him. As I became better acquainted with him it became obvious to me, though he never used many words, that he was a man of profundity and impeccable integrity. The country has lost one of its great leaders in the field of housing and planning.

... Personally I have one comfort, and that is that you will carry on in Howard's spirit.

Bryn J. Hovde, President

New School for Social Research

New York, N. Y.

Forum:

... Howard Myers was one of the leaders of those in the architectural field who saw the need for a program of public housing to provide decent living quarters for low income American families.

He combined great gifts of vision and energy with unstinting determination to devote himself to the betterment of housing and living conditions in America. I am one of many, many who will miss him as a wise counselor, an energetic supporter, and a never failing friend.

Nathan Straus, President

WMCA, Inc.

New York, N. Y.

Forum:

I know of no one who could give the courage and inspiration to go ahead in this very difficult field that Howard was able to give. His encouragement lifted you when you felt completely mired down by general apathy, by the complex problems facing the industry and by seemingly solid fronts of reactionary antagonism.

Mrs. Samuel I. Rosenman

Chairman of the Board

National Committee on Housing, Inc.

New York, N. Y.

Forum:

His passing is a great loss to the publishing field and to all of us who valued him as a friend of courage, vision and great good humor.

Frank W. Cortright

Executive Vice President

National Association of Home Builders

Washington, D. C.

Forum:

Howard Myers stimulated so much thinking and inspired so much action that it will never be possible for anyone accurately to measure his beneficial influence on the present or future generations.

It is pleasant, at this time, just to think of him as a friend. He was the most genuine friend a person could have.

Foster Gunnison

Gunnison Homes

New Albany, Ind.

Forum:

... The tribute in the October issue is magnificent, and we can only add a heartfelt amen. Under the inspiration and influence of men like Howard, the c.q.—or civilization quotient—of a country is measurably enhanced.

M. Lincoln Schuster, Vice Pres.

Simon & Schuster

New York, N. Y.

Forum:

There are enough things to say about Howard to fill a volume, but in the brief space available it seems to me that you have said the essential in a very vivid way.

George Howe, Architect

St. Louis, Mo.

Forum:

I think your piece on Howard is fine as far as it goes, but it leaves out one whole side of his interests and activities—the side that was concerned with public policy and politics in housing. Perhaps you don't realize what a unique role he filled in that field. There have always been architects and architectural editors who were sincerely interested in housing and tried to do something about it. On the whole, however, their political sense and taste for the necessary organizational activity has been in inverse ratio to the progressiveness of their viewpoint. Howard was just about the only person from the architectural world who, throughout the past decade or more, played an active and effective part in the housing world too. He kept in touch with the people in Washington, knew what the rows and issues were all about, organized the Architects' Advisory Committee of USHA-FPHA, sat through endless board meetings of NPHA, and in general contributed time, energy, editorial space, ideas and responsible sympathetic leadership to the housing movement. Architects often complain that they have little say in the shaping or administration of housing policy. But they are much worse off in that respect today than they were when Howard was alive.

Catherine Bauer

Cambridge, Mass.

Forum:

Your understanding of Howard Myers as a personality, a citizen, and a leader who moved quietly through the profession encouraging, reassuring, and guiding the latent talents of the young and old without (Continued on page 24)
Wherever
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BENEKE PLASTIX

Illustrated at right: Style 523-B Beneke Plastic Seat

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thought of his own personal glory but to the end result, has my compliments.

It was my pleasure and good fortune to occasionally enjoy his companionship.

The loss is not only yours and mine but everyone's—those who knew him—those who did not.

MAX ABRAMOVITZ, Architect
Harrison & Abramovitz
New York, N. Y.

Forum:

I was very much moved by the tribute to Howard Myers. I think that it is a magnificent testimonial, admirably deserved and fittingly presented. In a full and rich resume highlighting his distinguished career, you have conveyed for posterity the quintessence of his generous spirit.

The memorial that you have conceived to this great, lovable figure, is exactly the kind of record that he would have liked to leave. All of us who knew and cherished Howard Myers owe you a debt of gratitude.

BENJAMIN SONNENBERG
New York, N. Y.

Forum:

Vicky and I have been deeply touched by your tribute to Howard Myers. It is beautifully written as only one could write who knew his greatness of spirit in daily companionship. We were particularly touched by the part which brought out his genius for friendship. In the hearts of everyone of us who received the great gift of his friendship, his spirit and integrity will always be an inspiration. He set a standard which we shall try to work toward as long as we practice.

You expressed so beautifully how he made each one of us feel "somebody" because he thought we were, and also how he made us "feel at home in the world of ideas," but even beyond that, his boundless friendship somehow spread through us all. A warm, happy spark attracted his friends to each other because his electric current ran through us all. We have felt again and again a comradeship, a simple acceptance and confidence in understanding with otherwise strangers, just because Howard is our mutual friend. I said "is" because we can't realize he has gone and also because this current among us all is still very strong and will endure. We are all different and finer people for having known him.

SAMUEL E. HOMSEY, Architect
Wilmington, Del.

(Continued on page 28)
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Forum:
...I wish I could adequately thank the person who wrote this appreciation of Howard for saying exactly what I felt about him in a much better way than I myself could have found words for.

It will be a long time before another Howard Myers comes along and as far as I am concerned, it will be never.

Roger Allen, Architect
Grand Rapids, Mich.

Forum:
...My own thoughts are merely that a vast void exists and that a very dear friend is gone.

Walter Sanders, Architect
New York, N.Y.

Forum:
...I almost feel as though I had written it.

William J. Levitt, President
Levitt & Sons, Inc.
Manhasset, N.Y.

Forum:
My closest contact with him occurred during the time that I occupied public office. He was truly a tower of strength; never had an axe to grind other than a good idea. From my experience of the man I am fearful that none of us could write the thoughts that we feel his memory is entitled to.

Philip M. Klutzerick
Chicago, Ill.

Forum:
THE ART OF ARCHITECTURE REBORN HAS LOST A POWERFUL DEFENDER. THE FORUM MUST KEEP ALIVE HIS GREAT LEGACY.

Eric Mendelsohn, Architect
San Francisco, Calif.

Forum:
...We owe as much as anybody to Howard's kindness and support. Many of our opportunities have been made possible by what Howard and The Forum did for us in our earliest days.

In my opinion, he has done more than any other man to make modern architecture accepted. Thousands of jobs could not have gone ahead if he had not created the atmosphere in which they could prosper.

The fact that he was generally loved by a profession not noted for a charitable viewpoint, is all the more remarkable when measured against his unquestioned effec-

(Continued on page 35)
Here are four modern lighting designs . . . four new ways G-E Lamps may be used to combine beauty with the functional use of light.

The scene is the stair leading from the registration center at General Electric's Lighting Institute at Nela Park, Cleveland.

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Three exclusive McQuay methods assure positive contact, high heat transfer efficiency in McQuay Ripple Fin Coils. Wide, spun fin collars put more metal on metal, provide a greater Area of Contact for fast, low-loss heat transfer. McQuay's hydraulic expansion method locks fin to tube in a permanent mechanical bond for Constant Contact under all operating temperatures. Fin surfaces smoothed by the spinning action of the collar-forming tool permit a more uniform metal-to-metal junction between collar and tube, assure high Quality of Contact for maximum heat transfer to the secondary surfaces.

Compact, shockproof McQuay Ripple Fin Coils together with McQuay elliptical copper headers have proved their durability over many years to a wide list of industrial users. Today there are McQuay coils to meet your specifications for steam, hot water, direct expansion, brine and special applications. Call your local McQuay representative or write McQuay, Inc., 1609 Broadway Street N.E., Minneapolis 13.

AIR CONDITIONING EQUIPMENT ESPECIALLY DESIGNED FOR INDUSTRY
Announcement

to those who sell, buy, specify or install

Douglas Fir Doors

**Effective** August 15, 1947, all doors manufactured by member factories of the Fir Door Institute were placed under official F.D.I. inspection — to assure the highest possible degree of product quality and uniformity.

At the same time, revised industry standards were adopted by Institute members, those changes including new dimension specifications.

With the start of inspection, based on F.D.I. standards, Douglas fir pre-fit stock doors are now manufactured:

- 1/8-inch less than net book height;
- 3/16-inch less than net book width.

These new sizes permit pre-fit stock doors to be installed without sawing, trimming, or planing — saving on-the-job time and reducing costs.

The official F.D.I. seal and grade-mark will be placed on every door coming under the Fir Door Institute inspection service — and only on officially inspected doors. Grades will continue to be indicated by the letters A, B, C and MR; and such grades will be maintained in strict accordance with the industry standard.

The official Fir Door Institute seal — reproduced in the heading of this advertisement — is a symbol of fine craftsmanship now backed for the first time by a rigid inspection. Specify Douglas fir doors by this "grade trade-mark" — your assurance of controlled quality and product uniformity.

**FIR DOOR INSTITUTE**

TACOMA 2, WASHINGTON

THE NATIONAL ASSOCIATION OF DOUGLAS FIR DOOR MANUFACTURERS
For safety plus light and air choose WHEELING EXPANDED METAL

Light and air enter freely through the “diamonds” of Wheeling Expanded Metal, but intruders keep out. That's because it's all one piece instead of woven or welded. And the process of making it gives it extra strength—it is actually stronger than sheet steel of the same weight.

So Wheeling ExM is the ideal material for partitions and enclosures, machine guards, lockers, bins, sanitary shelving, drying racks. It makes a good-looking job. Many mesh sizes and weights. Write for details.

Ideal for catwalks, stairways and platforms. Rain, snow and dirt drop through. Non-slip surface.

Easily fabricated into machine guards, window guards, ventilating grilles, racks, shelving.

WHEELING CORRUGATING COMPANY
WHEELING, WEST VIRGINIA

Atlanta • Boston • Buffalo • Chicago • Cleveland • Columbus • Detroit • Kansas City
Louisville • Minneapolis • New Orleans • New York • Philadelphia • Pittsburgh • Richmond • St. Louis
LETTERS

To me Howard Myers was an architect-builder extraordinary. He did much to make the world recognize the talents of men that might have remained hidden had it not been for him. The American scene was rendered more beautiful, more practical and more efficient as a result.

G. M. LOEB
E. F. Hutton & Co.
New York, N. Y.

Forum:
Howard Myers was a great comforter and friend to all that he suspected capable of contributing towards higher standards of design. One could open one’s heart and gail to him without fear of misunderstanding and his passing leaves a melancholy void in my life.

ANTONIN RAYMOND
Architect
New York, N. Y.

Forum:
Howard’s death is a great loss to everyone. He was the unseen, unheard benefactor of many who are trying to uphold the standards and inspirational qualities of our profession. Howard is sure going to be missed.

LOUIS I. KAHN

Forum:
... We will miss him as much as you. His wise, urbane and kindly influence in popularizing good architecture has been tremendous. I hope The FORUM will preserve that attitude.

TALBOT WESC
Architect
Seattle, Wash.

Forum:
My own grief is so poignant that I am sure that you, who were much closer to him and who had the rare opportunity of being with him daily, must feel it as an overwhelming loss.
Even in the shadow of death, his dynamic personality and broad vision were like a

(Continued on page 40)
Selectomatic

The only supervisory system that matches elevator service with demand...automatically!

Uniform average waiting time makes this graph a picture of satisfied elevator passengers. No long waits for service at any floor even during rush hours...uniformly fast service to every floor all through the day...maximum efficiency of service no matter what the demand may be...this is the ideal in modern elevator service.

And this is Westinghouse Selectomatic! By establishing fully automatic patterns of operation at the push of a button, Selectomatic solves the three major types of elevator demand...up peak, down peak, and off peak traffic...and maintains uniform service to all floors as graphically illustrated in the above chart of a typical Selectomatic installation. It gives "eyes" to each elevator car to see the demand for service and answer it promptly.

Selectomatic—another original Westinghouse development—assures faster, more efficient elevator service in office buildings, stores, hotels and hospitals.

Ask to see the new 16mm. sound motion picture "Speeding Vertical Transportation with Selectomatic"...17 minute story of Selectomatic in action.

Westinghouse

ELEVATOR DIVISION

Write to Westinghouse for your copy of "Selectomatic Makes Elevators Work As A Team," the story of elevator productivity. Address the Westinghouse Electric Corp., Elevator Division, 150 Pacific Avenue, Jersey City 4, N.J., on your letterhead please.
Choose AMERICAN-Standard
for Quality that's sure to please!

Quality of Construction

Beneath the smart jacket of the WESTMORELAND Oil Fired Winter Air Conditioner in this attractive basement recreation room is one of the sturdiest, most superbly engineered heating units money can buy! Available as a completely coordinated unit with American-Standard's own Arcoflame Burner, or for use with any other good burner. Made in sizes ranging from 105,000 to 330,000 Btu., the WESTMORELAND is ideal for homes of practically any size.

Quality of Styling

Center of interest in this bright, compact room is the beautiful NEO-ANGLE Bath, which though only about four feet square, provides roomier bathing space, greater comfort, convenience and safety than most baths. The harmonizing COMPANION Lavatory and MASTER ONE-PIECE Water Closet are of genuine vitreous china. All three fixtures available in white, and many attractive colors.

For well over a half century, American-Standard Heating Equipment and Plumbing Fixtures have been preferred by architects, builders, and home owners. Today, more American homes have heating and plumbing by American-Standard than by any other single company. Styled, designed and engineered to fit practically any type of building, American-Standard Products cost no more than others . . . and, for modernization, may be purchased on the Heating & Plumbing Finance Corporation convenient Time Payment Plan. For complete information, contact your Heating & Plumbing Contractor. American Radiator & Standard Sanitary Corporation, P. O. Box 1226, Pittsburgh 30, Pennsylvania.

LOOK FOR THIS MARK OF MERIT—it identifies the world's largest line of Heating and Plumbing Products for every use . . . including Boilers, Warm Air Furnaces, Winter Air Conditioners, for all fuels—Water Heaters—Radiators, Convectors, Enclosures—Gas and Oil Burners—Heating Accessories—Bathtubs, Water Closets, Lavatories, Kitchen Sinks, Laundry Trays, Brass Trim—and specialized products for Hospitals, Hotels, Schools, Ships and Railroads.
REVERE COPPER SELECTED
For Roofs of Modern Industrial Buildings

To assure the finest sheet copper construction, the architects and engineers took full advantage of new design data developed by the Revere Research Laboratories.

Every pitched roof on this group of modern industrial buildings is a batten seam roof of Revere Copper. Copper was selected for (1) longevity and freedom from maintenance, (2) color harmony of the green patina with the buff brick of the buildings, and (3) protection from lightning—all copper surfaces being thoroughly grounded.

COPPER and COMMON SENSE

*Revere's manual of sheet copper construction, "Research Solves Problems of Stress Failures in Sheet Copper Construction," contains 96 pages of important new facts which enable you to design or install copper roofs, gutter linings and flashings that give extra years of service. It has been widely distributed to architects and sheet metal contractors and should be in your office files. In all matters of sheet copper construction, it will pay to turn to this manual first.

Revere materials are available from leading distributors throughout the United States. A Revere Technical Advisor, Architectural, will always be glad to consult with you without obligation.

REVERE
COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801
230 Park Avenue, New York 17, New York

LETTERS

Eleven Million PresTile "Salesmen"!

To millions of homes all over America—11,674,703, to be exact—PresTile brings its message of beautiful, practical walls, quickly and inexpensively set up.

PresTile advertising appears in Better Homes & Gardens, American Home, House & Garden and Small Homes Guide. All of it is designed to make prospective home builders and remodelers familiar with PresTile advantages.

This means ready acceptance when you specify this tileboard of recognized quality!

PRODUCTION INCREASED! Additional quantities of genuine PresTile are now available. Specify PresTile. Write for literature.

PresTile Manufacturing Company
2860 Lincoln Avenue • Chicago 13, Illinois

breath of fresh air and will always be an inspiration to me. My associate, Raymond Schwab, joins with me in this expression of condolence. I am sure that his memory will be a life-long inspiration to each of you.

JAMES F. EPPENSTEIN, Architect
Chicago, Ill.

Forum:

It has been said that he was a great editor, a builder of ideas, a leader in the building field and a very human being—and that's why I will remember him—he was a very human being.

DON HATCH, Architect
New York, N.Y.

Forum:

... It will be hard to fill his place as a friend of architects.

THEODORE C. BERNARDI, Architect
Wurster, Bernardi & Emmons
San Francisco, Calif.

Forum:

... We have all lost a great friend.

HENRY L. BLATNER, Architect
Albany, N.Y.

Forum:

... He was a great guy.

GEORGE FRED KECK, Architect
Chicago, Ill.

AND LIFE GOES ON

Forum:

The seven houses published in your September issue are the finest examples of contemporary architecture I have had the pleasure of seeing recently. They are certainly the answer to the "chicken-coop" critics.

I could almost have predicted the results from a list of the architects. Another proof that "modern" is not a "style" to be copied by a draughtsman.

The interiors are especially attractive and worthy of the attention of your correspondent Fred Shallow, whose criticism is too often deserved.

Previously you've published many houses that deserved the epithet "cow shed" but more like these will certainly be a boost for "our" architecture.

JOHN GRASON STEFFEY
Hagerstown, Md.

Forum:

In the August 1947 issue of The Architectural Forum on page 69 there is reproduced an approved F.H.A. form of

(Continued on page 44)
You've always hated the door closer corner — for there has never been an attractive door closer. They've all had bulkitis — which means too big, too bulgy, too clumsy — ugly!

Now comes the Yale Compact Door Closer — the one that architects from coast to coast have voted the world's most beautiful door closer. A new operating structure — rotary piston checking — makes possible an equally powerful, yet 36% smaller door closer — without bulgy "hips". Closing is controlled over the full closing swing, two-speed adjustment at the latch. It's a door closer to make any door proud. Brackets, too, are handsome. Priced no higher than ordinary closers with bulkitis — it is your answer to the door closer problem.

FREE: Data Sheets and 4-Page Folder illustrating simple operating method, leakproof feature, famous Yale workmanship, "hold-open" device, etc. "Quality Checking Chart" proves Yale Compact Door Closer leads all other makes on 17 quality points. Mail coupon now.

THE YALE & TOWNE MANUFACTURING COMPANY
Stamford, Connecticut

Please Send Me Free 4-Page Folder and Data Sheets on Yale Compact Door Closer.

Name

Company

Address
For High Efficiency and easy maintenance... the YORK TURBO COMPRESSOR SYSTEM gives you "TROUGH TYPE" Cooler

York's famous "trough" cooler is constructed of non-ferrous tubes and tube sheets in a double shell of fusion-welded steel plate.

It's this inner shell or "trough" that makes all the difference, making the entire compressor system readily accessible for operation and maintenance. Tubes are submerged in a refrigerant bath. The open top of the "trough" is covered with a copper eliminator through which suction gas passes into the annular space between outer shell and tube, to be drawn off at the bottom for return to the compressor.

In providing this full-flooding effect, high heat transfer is secured without the use of a liquid circulating pump. Liberal passages for suction gas assure minimum pressure drops, low gas velocities and hence, minimum burden on the compressor. Bottom suction connection permits compressor location virtually at floor level. Complete accessibility and easy maintenance result as well as a low center of gravity for the complete system.

The "trough" cooler, and many other exclusive design features of the York Turbo Compressor, will reward your careful study. May we send you the whole story?

York Corporation, York, Penna.

For Competent, Authoritative Assistance...

QUICK!

CALL ON THE FACTORY-TRAINED EXPERIENCED YORK ENGINEER IN YOUR NEIGHBORHOOD

York-trained, seasoned specialists in refrigeration and air conditioning, located at district headquarters throughout the United States are assisting architects, consultants and contractors... in planning, purchasing, installing and maintenance.

In the North Atlantic area for example, District Manager Christensen, Headquarters, New York, and his staff of twenty one sales engineers devote their full time to the problem of York customers in this region.

For Competent, Authoritative Assistance...

YORK Refrigeration and Air Conditioning

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42 The Architectural FORUM November 1947
BYRNE'S BIG HARUNDALE PROJECT
FEATURES REYNOLDS Lifetime ALUMINUM CLAPBOARD SIDING

Most of 1,190 homes will also have Reynolds Lifetime Aluminum Weatherboard on Gable Ends...some have Reynolds Lifetime Aluminum Shingles!

Byrne is a byword in modern on-the-site mass fabrication. And the Byrne Organization has proved "on the site" the advantages of Reynolds Lifetime Aluminum Clapboard Siding...advantages both in application and in customer satisfaction.

Byrne has found that aluminum clapboard lends itself particularly to shop assembly of entire wall sections. And though other siding materials are represented in finished houses, the houses with aluminum clapboard outsell them all. So with about half of the 1190 houses completed as this is written, the plan is to build practically all the rest with Reynolds Lifetime Aluminum Clapboard Siding.

And that's not all! Most of the Harundale houses now built have Reynolds Lifetime Aluminum Weatherboard on the gable ends...all those to come will have it. Some have also been built with Reynolds Lifetime Aluminum Shingles (at an extra charge)...and the "SOLD" signs are up on these!

Whether you're designing, building or selling...you can do it better with Reynolds Lifetime Aluminum. See Sweet's Architectural and Builders Files...or write for A.I.A. file brochures, Reynolds Metals Co., Building Products Division, Louisville 1, Ky.

PRICES AGAIN REDUCED...through increased demand, improved production. Remember, the base price of aluminum is 30% below prewar.

LOADING COMPLETE ROOF ON SPECIAL TRUCK. Reynolds Lifetime Aluminum Weatherboard Siding on gable end. Louvre also of Reynolds Aluminum.

LOADING COMPLETE ROOF ON SPECIAL TRUCK. Reynolds Lifetime Aluminum Weatherboard Siding on gable end. Louvre also of Reynolds Aluminum.

REYNOLDS Lifetime ALUMINUM BUILDING PRODUCTS

SHINGLES • CLAPBOARD SIDING • SHEET ROOFING & SIDING • WINDOWS • CEILING PANEL • GARAGE DOORS • REFLECTIVE INSULATION • UTILITY BLDGS. • HOUSING ACCESSORIES
application for mortgage insurance. This form shows a total estimated requirement for the construction of a project of $706,429. It also shows in estimate of annual operating costs an estimated assessed value of $242,000. The disparity between the estimated cost and the estimated assessed value would seem to call for an explanation.

JOHN A. CARELL, President
City and Suburban Homes Co.
New York 17, N. Y.

The assessed valuation of new residential buildings for tax purposes is usually related to actual land and construction costs (exclusive of carrying and financial charges and legal and organizational expenses) which totaled $668,959 for Forum's hypothetical project of 94 dwelling units. In suburban communities where a project of this size and type would normally be built, assessed valuations range from 35 to 65 per cent of actual current costs. Thus, with a ratio of 36 per cent, Forum's illustrative project benefits from a relatively low assessed valuation.—En.

Forum:

The recent action, in the courts, of the Province of Quebec Association of Architects to restrict the activities of engineers in building design and construction, is of particular interest at this time, when frequently the professional approach of trained technicians to their work is maintained with difficulty.

Such friction between the architectural and engineering professions can only result in a loss of prestige to one or both of the contending parties.

It is a tribute to the modesty of the engineering profession, that the structures which have made the creative conceptions of celebrated architects possible, and which have made their reputations secure, have been designed structurally, mechanically, and electrically, by engineers who are anonymous, or generally unknown to the lay public.

There are license laws for engineers and architects designed for the public's protection in safety, health and sanitation, and in freedom from eyesores. There should be no facts at issue between the professions; if such friction between the architectural and engineering professions can only result in a loss of prestige to one or both of the contending parties.

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Will the **house**
you build today
be a "**dog**"
tomorrow?

- Your reputation is being established in the houses you build today!
  To be sure they are modern, and will **stay** modern for years to come,
  **wire them for modern Electric Ranges!**
  
  Survey after survey proves that Mr. & Mrs. America want homes
  that are up to date—homes with Electric Ranges!
  
  An Electric Range requires only: 3-wire service entrance no smaller
  than two #6 and one #8 wires from the point of termination of
  the power supply company's wires to the distribution panel; a
  60-amp. switch with overload protection and a three-wire circuit from the
  distribution panel to a range outlet in the kitchen.
  Make this your minimum wiring specification.

**TO KEEP THEM MODERN...**

**wire your houses**

**FOR ELECTRIC RANGES**
Sid was sick of shortages—so...

1. ... he finally decided to convert to aluminum.

2. His competitor, Carl, just laughed. "Aluminum can't be adapted to Sid's product," Carl chortled.

3. But Sid was off like a fireball—he'd learned that alloys of Kaiser aluminum could meet almost every aspect of operation. And it could be drawn, spun, brazed or joined.

4. "So alright, he did it," shrugged Carl, "but the cost will break him."

5. But foxy Sid found that though aluminum costs a little more to begin with, savings in handling, fabricating, finishing and shipping more than made up the difference.

6. Still, die-hard Carl wouldn't budge, he'd wait for the metal always used.


8. Now, would you rather be Carl?

9. ... or Sid?

MORAL: Alert manufacturers—making everything from general appliances to residential buildings, from garage doors to heating and ventilating ducts—are speeding production, nailing down new markets...by converting to Kaiser Aluminum. The problems solved by them can help you. So call in a Permanente engineer today!

Ready to serve you—today...

Kaiser Aluminum
a Permanente Metals product

DISTRIBUTED BY PERMANENTE PRODUCTS COMPANY, KAISER BLDG., OAKLAND, CALIFORNIA...WITH OFFICES
Seattle • Oakland • Los Angeles • Dallas • Wichita • Kansas City • St. Louis • Atlanta • Minneapolis • Milwaukee • Chicago • Cincinnati • Cleveland • Detroit • Hartford • Buffalo • New York City • Philadelphia • Washington, D.C.
The values in doing business with one of the hundreds of well-established, progressive Fairbanks-Morse pump dealers are many:

First, of course, you gain immediate advantages from the intensive research, skilled productive techniques and well-developed service organization that have long been identified with the Fairbanks-Morse name.

Too, you gain the long-term advantages of continued aid in keeping your pumps on the job—continued benefits from the widespread, quickly available Fairbanks-Morse dealer organization.

For a pump that’s to give high efficiency year after year, buy from the dealer who will stand by you, year after year. See your Fairbanks-Morse pump dealer for all your pumping requirements.

Famous Westco turbine-type pumps have exclusive advantages for service involving small capacities, high heads and low speeds.

FAMiRECKS-MORSE
A name worth remembering
No potentate's wife—just an average American homemaker—yet she's free as the wind!

The real emancipation of womankind began when some distant ancestor first diverted a stream of water to his cave through a hollow log.

Now—pure water flows like magic at the touch of a tap, for drinking, bathing, laundering. Now—uniform heat carries to every corner of the home. Now—modern sanitation helps to keep the family in good health. In every phase of Mrs. America's life, pipe has had a hand in reducing the drudgery of housework, in permitting more leisure hours, in assuring comfort and well-being.

Steel pipe made it possible—just as it has made possible many other advances toward a better life.

The interesting story of "Pipe in American Life" will be sent upon request.

COMMITTEE ON STEEL PIPE RESEARCH of American Iron and Steel Institute, 350 Fifth Avenue, New York 1, N.Y.

STEEL PIPE MAKES IT POSSIBLE!

...better living through pipes of steel for plumbing and heating purposes.
Look how ARKETEX CERAMIC GLAZED STRUCTURAL TILE fits into your picture!

Your picture will be “completed as planned” with versatile, beautiful Arketex Ceramic Glazed Structural Tile.

Arketex, with its wide range of sizes and textures, in your colors, is ideal for interior and exterior use... for partitions or load-bearing walls. The first cost is the only cost — Arketex is a permanent wall and finish all in one.

For Soil-free Industrial Interiors
For Modern Power Plants
For Sanitary Hospital Interiors
For Dramatic Theater Construction
For Durable School Interiors

ARKETEX CERAMIC CORPORATION • Brazil, Indiana
That picture is no mirage, madam! It's your summer furniture moved downstairs and put on a Kentile floor. And just look at that floor! Full of musical notes, games, ideas—gay in color—foyers, into things. Kentile, you see, is laid tile by tile (not sheets). You combine dark, light, plain or marbelized squares and strips into countless colorful combinations—creating your own design to suit your own need. For instance, both the interiors photographed are made of Fleecy Cerulean and Travertine tiles with White and Toledo Red strips. And with them you see some of the new ThemeTile, a wealth of new motifs you can add—notes, dots, petals, stars, clever silhouettes.

Moreover, Kentile has an unsurpassed service reputation—can last for decades. It's virtually proof against scars and stains—just swish it clean with soap and water—renew its luster with easy waxing. And, you'll like the "feel" of Kentile—its sense of sureness and ease. Remember, too, Kentile's so moisture and alkali resistant it's used even on concrete in contact with earth. Your dealer can help you create a colorful Kentile floor or, if he can't supply you, write David E. Kennedy, Inc., Brooklyn 15, N.Y.

*If you haven't yet received your full-color ThemeTile do-it-yourself folder, write for your copy now. The folder illustrates every ThemeTile in full color and describes the method of use.
Only Sloan can say this:

63% of all hotels* are Sloan equipped—
90% of these are exclusively Sloan!

There are several reasons for Sloan’s preeminence. For one thing, maintenance costs are reported as low as $\frac{1}{4}$ of 1¢ per valve per year. Then, too, Sloan Flush Valves save water; they protect public health by preventing back syphonage; they can now be whisper quiet; they have unlimited life—yet cost no more. That is why more Sloan Flush Valves are sold than all other makes combined.

Sloan Valve Company • 4300 W. Lake St., Chicago, Ill.

*Hotels of 100 rooms or more.
"IF YOU WANT TOP PERFORMANCE FROM THIS FLUORESCENT TUBE . . . .

YOU'LL GET IT WITH THIS CERTIFIED BALLAST!"

The word "CERTIFIED" on a fluorescent lamp ballast tells you instantly that here is a product that gives you the greatest possible efficiency in operation and performance of fluorescent lighting.

Leading ballast makers and lighting engineers put together a set of exacting specifications that assure quiet operation, proper ballast temperatures, most light and longer life from fluorescent lamps. Famous Electrical Testing Laboratories, Inc. test, check and re-check CERTIFIED BALLASTS against these specifications . . . give it the ETL mark of approval.

Insist on CERTIFIED BALLASTS in the fluorescent lighting equipment you sell . . . give your customers the protection they need and want.

CERTIFIED FLEUR-0-LIER MANUFACTURERS, RLM STANDARDS INSTITUTE and CERTIFIED LAMP MAKERS have solved their ballast problems by writing CERTIFIED BALLASTS into their specifications.

CERTIFIED BALLAST MANUFACTURERS

Makers of Certified Ballasts for Fluorescent Lighting Fixtures

Acme Electric Corporation
Cuban, New York
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3501 Addison St., Chicago, Illinois
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Specialty Transformer Division
Fort Wayne, Ind.
Jefferson Electric Co.
Bellwood, Illinois
Sola Electric Co.
2255 Clybourn Avenue
Chicago 14, Illinois
Starring and Company
Bridgeport, Conn.
Q. Is there an efficient and inexpensive method of insulating plumbing pipes in exterior walls to prevent freezing?
A. See Balsam-Wool Application Data Sheet - Sec. C, No. 2.

Q. How can the proper louver size be established for use in gable walls to ventilate attic spaces?
A. See Balsam-Wool Application Data Sheets - Sec. E, Nos. 1 and 2.

Q. What is the most practical method of insulating floor construction built above grade over an unexcavated area?
A. See Balsam-Wool Application Data Sheet - Sec. C, No. 3.

Get this File-Drawer "LIBRARY"

...Balsam-Wool Data Sheets

Years of experience in insulation application are "boiled down" in these factual, helpful Balsam-Wool Data Sheets. Packaged in an A.I.A. file folder, they form an authoritative source of information on application problems. Wood Conversion Company offers these data sheets without cost or obligation as a contribution to progress in providing better insulation for every type of dwelling. Mail the coupon for your set!

木樹脂シール セールド インサレーション

BALSAM-WOOL • Products of Weyerhaeuser • NU-WOOD
TRIMIX facilitates the mixing, pouring or laying of concrete at temperatures as low as 15° F. below zero. In addition to dispersing the cement and lowering the water-cement ratio, TRIMIX accelerates setting, thus shortening the time ordinarily required to protect concrete with covers and artificial heat.

**Result:** TRIMIX cuts construction costs by saving time between finishing operations. It allows concrete surfaces to be walked on and additional work done within a few hours after the concrete is poured — in winter as in other seasons.

Use TRIMIX in all concrete work to make good concrete not with TRIMIX the admixture that keeps winter concrete work on schedule

**TRIMIX facilitates the mixing, pouring or laying of concrete at temperatures as low as 15° F. below zero. In addition to dispersing the cement and lowering the water-cement ratio, TRIMIX accelerates setting, thus shortening the time ordinarily required to protect concrete with covers and artificial heat.**

Though not yet forty, Roberto Barle-Marx is already one of the world’s great landscape architects. A brilliant designer (p. 90), he is also an authority on tropical horticulture, has his own nursery near Rio’s famed Copacabana... Daniele Calabi, in his coolly elegant small house at Sao Paulo (p. 94) reflects the Italianate influence in that region... Olavo Redig de Campos practices in Rio where his Youth Center (p. 88) is located... One of Brazil’s best and best loved architect’s, Lucio Costa (p. 92) is famous among his colleagues for his extravagant modesty. As head of SPHAN—the National Service for the Preservation of the Historic and Artistic Patrimony—Costa has played a distinguished role in protecting the country’s fine old Colonial architecture... As a staff architect for one of the social service agencies, Carlos Frederico Ferreira has had a hand in designing several housing projects similar to huge Real (p. 104)...
Exclusive features of the new Honeywell Air Diffusion Register afford true, draft-free diffusion. The gently curving lines, which enhance the register's appearance, assure even air diffusion throughout the room.

Fixed angle adjustable turning vanes—an integral part of the register—prevent turbulence of the air stream. Simplified one-man balancing and elimination of quadrants drastically cut installation costs and effect a saving of labor.

Investigate the many advantages of this remarkable new register. Whether of the high or low wall type, you'll want to specify it for every forced-warm-air installation. Remember, your clients benefit through more efficient, draft-free performance plus installation economies.

The new Honeywell Air Conditioning Register is available now. Write today for complete information. Minneapolis-Honeywell, Minneapolis 8, Minn. In Canada: Toronto 12, Ontario. Branches and distributors in all principal cities.

Self-contained volume dampers accurately measure the air with an adjustable lever at the register itself. Locking feature guard against unbalancing system.
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this year came to New York to help design the UN Headquarters. His prize-winning design for an Aviation Center (p. 76) was the focus of an international scandal when the Dutra government suddenly “discovered” his well-known Communist affiliation, cancelled his contract . . .

Affonso Eduardo Reidy, co-designer with Mocedias of the office building on p. 111, is a native of Rio. In addition to his work with the well-run Housing Department of Rio, he finds time to do many jobs on his own (p. 108) . . . 

Jose de Souza Reis is the architect of a Methodist Church, another of the modest, yet very skilful modern buildings erected in the old SPHAN-controlled town of Ouro Preto . . .

Paulo Antunes Ribeiro, a native of the capital and a graduate of its School of Beaux Arts, has developed a new variation in the famous brise-soleil for his Foreigners’ Hospital (p. 85) . . .

The Brothers Roberto Marcelo, Milton and Mauricio are another of Brazil’s natural wonders. Aside from a striking apartment house in which they all live, (p. 100) these three young men have a credit some of Rio’s best and biggest buildings. Famous for their office buildings, they are currently completing a new terminal for the Rio airport (p. 78) . . .

F. F. Saldanha is the popular president of the Brazilian Society of Architects. Unlike many of his colleagues whose work is based largely on governmental jobs, Saldanha’s practice has mainly been for private clients (p. 101) . . .

Herminio de Andrade Silva is the architect of the seaside Restaurant and Bathhouse shown on p. 70 . . .

The country house on p. 95 is the collaborative work of Renato Soeiro, Renato Mesquita, Jorge Ferreira Thomaz Estrela. Among the youngest of the Brazilian professionals, their work shows many points in common with similar buildings in this country . . .

Aldary Henriquez Toledo is an architect in Rio whose Roosevelt Grammar School (p. 83), now under construction, promises to be a handsome addition to the city of Barra Mansa . . .

Commonly credited with the design of the first modern house in Sao Paulo, Gregori Warchavchik has lately done a big, showy beach house for Count Raoul Crespi at Guarujá, near Rio (p. 96).

Chloethiel Woodard Smith, American architect who was for a year the FORUM representative in South America, was of invaluable aid in the preparation of this issue, third in the FORUM’s series of studies on contemporary architecture in the Republics of South America.
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BRAZIL

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THE UNITED STATES OF BRAZIL is a land of immense and heartbreaking contrasts—easy to caricature but difficult to penetrate and understand. Brazilians themselves have a way of illustrating these paradoxes. In Rio, they will tell you how the steel doors of the modern jails are carefully painted to look like wood and jailers are warned not to slam them, lest prisoners be too rudely reminded of their confinement. Yet many back-country towns, the sick, poor and insane are kept in jails because there is no other place to house them. Brazil today shows many such contradictions and they spring from many sources—geographic, historical and cultural.

Brazil is a century the senior of the USA; in size, she is little smaller in area than the United States of America. Her territory extends from the Equator, where the Amazon holds in primeval captivity the largest and richest undeveloped area on the globe, to the cool uplands of the grain-raising south; from the Atlantic Ocean 2,600 miles westward to the Andes. In this vast area dwell 46,000,000 persons of Negro and European descent. They speak Portuguese—language of the tomb,” as they call it—and are thus separated from their neighbors by language as well as geography. The country is in many ways an island, which, even today, falls into three broad zones of development. First, there is the urban seacoast in which wealth, industry and population are concentrated. Behind this lies a wide belt of upland farm country, its great plantations and backward peasantry. North and of this lies the desert and beyond it all the jungle, with its untapped riches and frightened, malaria-ridden aborigines.

But these are, after all, merely statistics which neither explain nor describe Brazilian culture today. Four and a quarter centuries of struggle for democracy and independence have made Brazil what the travelogues call a “colorful” history (one of the principal colors being blood). But they have also produced a rich, complex culture which especially in recent years has attracted international attention. One of the most notable expressions of this cultural renaissance has been Brazil’s new architecture, since the Ministry of Education Building in Rio was first photographed, it has been apparent that a spectacular architectural development had occurred below the Equator. To North Americans, smug in their technological wealth, this phenomenon was especially intriguing. How does it happen that a “backwater country can suddenly produce so vibrant and up-to-date architecture?

Brazilian architects have a simple answer: Their work is an expression of cultural maturity, not technological wildness. They seem both surprised and unimpressed by the sense of sophistication which their recent work has created in this country and Europe. (Seen in the flesh, they are a modest, soft-spoken and surprisingly youthful set of men.) They are quick to point out that not all Brazil is built in this image and that—as yet—a small portion of their countrymen have access to such buildings. Nor do they claim any special credit as architects: on the contrary, they feel that the spade work was done by those intellectuals—writers, poets, painters and musicians—who braved a complete re-orientation of Brazilian culture in the years after World War I.

Their problem was two-fold: to overthrow a long tradition of meek submission to French and Italian influences (a spiritual colonialism which led Brazilian writers to write in French and boast that their French was as correct as that of the best Academician); and to replace it with standards rooted in the native culture—in the people, the climate and traditions of Brazil itself. But in this process, the Brazilian intelligentsia seem to have miraculously avoided two pitfalls. On the one hand, they never resorted to any nationalistic embargo as
Brazil is divided into three parts—an urbanized seacoast, an agricultural hinterland and a primeval wilderness.

just because they came from overseas. Nor did they, on the other hand, allow research into Brazil’s past to degenerate into barren archaeology. How cannily they have steered the craft between Scylla and Charybdis is well illustrated by the work of the Service for the Protection of the National Historic Artistic Patrimony. SPHAN, a government agency to which is entrusted the restoration and maintenance of fine colonial towns like Ouro Preto (center, right). But unlike similar anti-nostalgic societies in other countries, it has neither tried to turn the clock back nor to stop it. Individual old buildings are restored with archaeological precision: but if the town needs a building, SPHAN will not permit a copy. Rather it devises structures which—like Jose Reis’ little Methodist church in Ouro Preto (insert)—attempt not to look like but to harmonize with illustrious neighbors.

Ir from being an accident, this deliberate policy of fostering continuity instead of mere imitation has been the great contribution of SPHAN to contemporary Brazilian architecture. Costa, the director, is an almost perfect expression of this policy. The country’s leading archaeologist, he is also one of the most distinguished modern architects. Other governmental agencies, using the competition system, have followed Costa’s lead. And in such an environment a whole generation of architects has matured. If their work is intelligible to us of other countries, it is because these men have never made the mistake of locking their backs on international architecture. But if, at the same time, their work shows a special quality which makes it at home there and nowhere else, it is because they have rooted their land and their people. The result, as this issue will show, is an architecture of which any nation might be proud.
Travel inside Brazil is still extremely difficult by road or rail,* and travel between the big cities is largely by air. Because of this, travel by Brazilians inside Brazil has until recent years been negligible and is even now confined to a narrow strip along the coast. This has in turn given certain characteristics to sports and recreational facilities in the country. Today these are largely urban and upper-class affairs. Most of the tennis courts and soccer fields, the yacht and jockey clubs, are in or near the big cities; and most of these are accessible only to the wealthy.

In recent years, however, there has been an effort to distribute recreational facilities more evenly, both geographically and socially. In the cities there are beginning to appear public bathing beaches, swimming pools and yacht clubs. Niemeyer’s famous lakeside group at Pampulha is the most distinguished example of this trend—theater, restaurant, yacht club and dance pavilion designed as a unit. The

* Unlike Argentina, with her good roads and railroad network (Forum, Feb. '47).

new public housing projects and public schools make fairly elaborate provisions for sports of all sorts. There are new hotels such as those at Ouro Preto and Tijuca. Both of these are recreational projects. The first is designed to accommodate visitors to one of the historic Colonial towns now controlled by SPHAN. The second, a resort hotel owned and operated by one of the government agencies for its employees, is located in the mountains behind Rio. It is designed to offer pleasant, low-cost vacations to white collar city workers.

A hotel of a different type—designed primarily for foreign (as against local) travelers is the huge new project designed for Rio by Henrique Mindlin (p. 75). The appearance of structures of this type is related in the most intimate way to developments in travel, exemplified by the Roberto brother’s buildings for the new Rio airport (p. 78) and by Niemeyer’s prize-winning design for a huge new aeronautical research center (p. 76).

SULPHUR SPRINGS PAVILION

FRANCISCO BOLONHA, Architect
ROBERTO BURLE-MARX, Landscape Architect

The medicinal value of mineral springs and baths may today be open to some question but they still offer people the world over an excellent excuse for a pleasant outing. It is very much in this mood that Bolonha has developed this charming pavilion. Set in a park in the tropical town of Araxa, Minas Gerais, the structure is nothing more than a free-form shelter for some recently-discovered sulphur springs. It stands in the middle of a man-made pool in which, during the course of construction, some of Brazil’s first fossils were discovered. These skeletons furnished Burle-Marx with the motif for the tiles used around the springs proper as well as for a black and white design in the mosaic paving.

Built, like almost all new work, of reinforced concrete, the pavilion has a steel and glass wind screen to cut off an unpleasant winter wind. Only the lower two thirds, however, are glazed.
RECREATION CENTER
FRANCISCO BOLONHA, Architect

Barreiro do Araxa, where this club will be located, is a warm springs spa not far from the town of Araxa. In addition to the bathing facilities there will be a fully equipped sports field. The clubhouse itself is designed on two levels, commands a good view of the lake, and water sports are featured. The upper level contains a restaurant and kitchen, a ballroom and a terrace connected with the lower level by ramps. On the lower level are lounge, bar, cloakrooms and washrooms, while bathhouses occupy the arched wing at the rear.

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SUBURBAN SPORTS CLUB
HERMINIO DE ANDRADE SILVA, Architect

This municipal recreation center is located in a suburb of Rio de Janeiro. It is being constructed with the aid of the Federal government, and flanks the Avenida das Navegantes, the great arterial highway leading to the interior of the country along the shore of the Bay of Guanabara. At the date the photograph was taken, the restaurant and bathhouses shown here were the only completed buildings. The ultimate group of buildings will include a yacht club, athletic field, playground, first aid station, parking lot, garden and water supply.
TOURIST HOTEL
OSCAR NIEMEYER, Architect

Located in the 18th Century town of Ouro Preto, this modern hotel holds its own handsomely but, at the same time, blends pleasantly with its baroque surroundings—another instance of SPHAN’s adroit combination of the new and old. This photograph showing only half of the building was taken from a point directly in front of the central terrace. The ground floor is only partially enclosed and connects with the public rooms on the second floor above by means of ramps. The central corridor on the third floor is flanked to the north by a row of ordinary bedrooms. To the south are the two story living rooms of the duplex apartments, an arrangement which eliminates the fourth floor corridor.
Overlooking a stream and the garden city of Tijuca, 20 minutes from Rio de Janeiro, this small suburban hotel is part of a vacation colony built by the Institute of Reinsurance for its white collar workers. The three-story structure was built into the north side of a hill; hence the first floor, containing garages, nursery, laundry and other services, is accessible only from the north. Entered from the south, the second floor is a great open reception and recreation area with a dining room, bar and kitchen at one end and a projecting terrace at the other. Sliding shutters on the north may be opened to the view or closed to the direct sunlight. On the third floor private bedrooms and dormitories with a total capacity of 83 are protected from the sun by a covered north terrace extending the full length of the building (photos, left). Clerestory windows under the corrugated shed roof admit south light to the sleeping and dressing rooms (below).
LUXURY BEACH HOTEL

Occupying a five acre site at Praia Vermelha, a small strip between the bay and the ocean, this hotel project will develop the first beach in Rio de Janeiro located directly on the Atlantic. The property is near a huge rock that separates Praia Vermelha from Copacabana, is also convenient to the Sugar Leaf Mountain cable car station. Planned to accommodate 600 persons in the tall bedroom structure, the design places public rooms in two-story wings encircling a central patio. The north wing contains a 250 ft., banquet and ballroom. The bedroom structure, topped by a roof garden and night club, faces the Atlantic on one side, downtown Rio and Corcovado Mountain on the other. All rooms on the ocean side have balconies. On the other side the exterior wall of each room is canted for a better view of the city and protection against the afternoon sun.

HENRIQUE MINDLIN, Architect
BURLE-MARX, Landscape Architect

Still under study is an alternate scheme for the 14th to 18th floors. It is suggested that these be comprised of duplex apartments as well as standard hotel rooms. In order to obtain cross ventilation without departing from the central corridor scheme of the rest of the building, Architect Mindlin has devised an ingenious split level plan which leaves four stories on the side of the block facing the city, three on the ocean side as shown in the section at the left. This makes possible the elimination of two corridors. Single rooms on the duplex side are alternately at corridor level or dropped a half floor.
NEW TOWN FOR BRAZILIAN AERONAUTICAL CENTER

OSCAR NIEMEYER, Architect

In his designs for the government’s proposed Aeronautical Research Center, Niemeyer’s great talents are admirably displayed. At every level, the drawings show his confident yet unobtrusive mastery of plan and structure. As a site planning problem alone, the conditions were formidable: an undeveloped plateau, some 68 miles northeast of Sao Paulo, was to be developed into a complex of schools, laboratories, workshops and airport, together with all living and recreational facilities for a student body and faculty of 4,000. His sketches (right) show not only how the various elements were disposed for ease of circulation but also how these same elements were studied for visual relationships. Here a highly-developed set of esthetic criteria is evident. The individual buildings—all of them reinforced concrete in the plastic tradition of Freyssinet and Maillart—are so related that from any point of view they afford lyrical and daring compositions. Yet structural efficiency and honest plan are nowhere sacrificed for mere display. Instead a real integration of form and content is achieved.

* At present a center of controversy. Having won the competition, Niemeyer was given a contract to design the project. Last spring, the government suddenly cancelled the contract because of the architect’s political beliefs. However, it still prefers Niemeyer’s design, wants some other architect to develop it. So far no one has stepped forward to take the assignment.
GRILLWORK of precast reinforced concrete panels on west (above and below) will later be fitted with adjustable louver asbestos cement, which may be closed in the afternoon to the setting sun. Upper floors at north end of building (left) screened by permanently fixed louvers.
Five minutes from the City's center, Rio's air terminal building is a 115 x 640 ft. rectangle whose interior space arrangement closely follows the U. S. and European patterns, but whose exterior treatment is completely native.

On either side of a large waiting room, the first floor provides all the public services required of a terminal, including ticket counters for 12-15 airline companies. Below is a basement used primarily as a truck concourse for freight and mail deliveries. Above is a 1,000-seat mezzanine restaurant, two floors of offices and a richly landscaped roof garden. In its present stage of construction, the upper floors and garden are accessible only by interior stairs. However, two small buildings to be built on traffic islands and connected to the front of the terminal by bridges will contain elevators and stairs for the use of office workers and sightseers. Their addition will relieve congestion in the terminal proper.

Exterior walls of the building are completely glazed and, where needed, are protected by various types of sun-breakers. Since the north end receives the full strength of the sun most of the day, its upper floors are shielded by huge vertical louvers permanently set to screen out all direct sunlight. The western facade, containing the main entrance, is free of sun in the morning but is hit by bright sunlight during the late afternoon. Its upper floors will therefore be protected by adjustable louvers of cement asbestos set within the projecting concrete framework shown in the photographs, opposite. While the ground floor has no such vertical louvers, it enjoys the partial shade afforded by the protection of the second floor slab beyond the structural columns.
The present day structure of Brazil's social system reflects, more than anything else, her long centuries of Colonial status. A colony for 300 years, ruthlessly exploited by Portugal, Brazil won her independence only in 1822. And even after independence, the semi-feudal society of Dom Pedro, technically and economically backward, restricted the development of popular education. Only with the overthrow of human slavery (1888) and the rise of the Republic (1889) could the concept of universal free education and public welfare service begin to operate.

The nation has about 43,000 free primary schools in a system which is slowly being federalized; about 4,600 middle grade schools (secondary, industrial, normal, etc.) of which a large portion are private; four universities; and a number of separate institutes. Yet half the nation is still illiterate; and in this context, the most important educational instrument is still the army. Every year tens of thousands of conscripts from all over the country begin a two year term of military service. Their uniforms and equipment are the butt of affectionate jokes throughout the nation; but here all conscripts learn to read and write—for many the only education they will get.

In some respects, Brazil's public health system is more advanced than our own. The social insurance laws, for example, provide for sickness and disability insurance, medical care and hospitalization. In practice, however, many factors operate to restrict this service—especially in the rural areas. And in spite of great expansion in the past few years, the country is still sadly understaffed and under equipped. On the average, she has only 0.56 doctors and 1.8 hospital beds per 1,000 persons. (Comparable U. S. ratios: 1.2 doctors, 9 beds.) No one is more aware of this than the Brazilians themselves; and if the admirable buildings in this section are any index, they will before many years have schools and hospitals second to none in both quality and quantity.

NATIONAL HIGH SCHOOL

Located in an industrial section of Rio de Janeiro, this vocational high school is designed to accommodate 1,400 students in two daily shifts. In general facilities, it conforms quite closely to U. S. standards: architecturally it is, if anything, better. Using an awkward and restricted interior plot, the architects have organized the major elements for maximum effectiveness. Heavy machinery shops, an auditorium and gymnasium have been placed across the center of the plot in a north-south line. At right angles to this, but stilted off the ground, they have placed the classrooms and light machinery shops. All these elements are connected vertically with continuous ramps. This arrangement frees a large portion of the grounds for recess periods, and gives the majority of the classroom and shop area desirable (southern) orientation. The classrooms along the north are equipped with vertical brise-soleil. The building is of reinforced concrete throughout.
SCHOOL FOR INDUSTRIAL TRADES

CARLOS FREDERICO FERREIRA, A.M.A.C.T.

Planned for Santo Andre, the largest industrial center in the state of Sao Paulo, this primary school consists of two individual buildings connected by a covered way. The plan places administrative and athletic activities on the ground level, leaving the second story solely for classroom use. Ramps connect the two levels. Five scores of Crete tile comprise the spandrels, with two factory type windows used above. The primary school is planned as part of a housing project by Ferreira, who is a government staff architect responsible for some of the largest low-cost housing projects in Brazil.

SMALL PRIMARY SCHOOL ON A HILL

ALCIDES ROCHA MIRANDA, A.M.A.C.T.

This primary school projected for SPH, which Miranda is a staff architect, will be located in one of the Brazilian towns that has been entirely under the jurisdiction of this agency. The treatment represents a good blending of thought and Brazilian colonial architecture. The hillside site naturally suggested drop level planning. Access is provided from the front by means of a ramp—a design feature that seems to have established itself in the national architecture. The four classrooms at the upper level depend exclusively on the classroom windows for illumination.
To be known as the President Roosevelt School, this educational group in Barra Mansa was carefully planned to make full use of a flat, urban site. The architect, in an effort to avoid a forbidding appearance, has designed the grounds with a lake and an abundance of planting. The gymnasium-auditorium will be isolated at the rear of the lot but connected to the main building by a covered walk. The classroom building is placed at an angle to the street for maximum sunlight, with the intervening triangle treated as a walled playground. Museum, library and vocational classrooms occupy the ground floor for convenience sake. Two stairs, a study room and the washrooms are housed in the projecting portion at the rear of the school building. The classroom section of the structure has hinged arch framing which is expressed in the vertical, projecting ribs of the facade. A traffic bay at the side of the property makes possible off-street loading and unloading of passenger vehicles, with a porte cochere extension of the covered walk to provide weather protection.
It is expected that this handsome and imaginative hospital project in Rio de Janeiro will be largely supported by Rio's American colony. The design incorporates a small existing building located on the motor court. To tie in this structure with the main edifice, the architect plans to extend the facade of the five-story outpatients' wing to screen it. Main access for patients and visitors is from the motor court. The service entrance is in the center of the main building at ground level, feeds directly into the kitchen, laundry and utility rooms on the same floor, with a secondary pedestrian ramp located at the other end of the building. The first floor has generous public space, administrative offices and emergency facilities. Except for the central elevator and stair block and the out-patients wing, the floor above is a vast loggia open from front to back. The third floor of the main building is devoted exclusively to the treatment of tuberculosis, is served by a private elevator and stair from the main lobby. On the fourth, or treatment floor, a modified version of the loggia recurs, this time landscaped. The fifth floor accommodates the obstetrical and orthopedic departments and has, in addition, an interestingly planned surgical wing. Its round operating rooms and central sterilization area recall William L. Pereira's design for the Memorial Hospital in Los Angeles (Forum, Nov., '45). Floors above have typical central corridor planning. The building is topped by a pleasant roof garden and a series of individual sun traps for patients. Ribeiro has worked out a unique device for sun protection on the main facade. This consists of a building-wide screen of operable vertical baffles set far enough away from the structural wall to create a passage between. Rooms, however, are equipped with supplementary venetian blinds.
Located on a steeply sloping site in Sao Paulo, this prize winning design takes advantage of a 69 ft. drop in elevation to help solve the complex circulation problem encountered in the planning of any hospital. The fourth floor is the main floor, entered at four points along the elevated one-way drive. The first entry leads to the wedge-shaped, over-head lecture hall, the center of the hospital's teaching facilities. Beside it is the first-aid entry, wide enough for the parking of ambulances.

First three floors of the central wing consist of quarters for staff, students and nurses. Balance is occupied by a bedroom and nursery unit and a ward and nursery unit. These consist of one nursery floor sandwiched between two post-natal floors and two pre-natal floors, an arrangement which minimizes travel and simplifies administration. Wards room for 108 beds; private and semi-private rooms, a maximum of 112 beds; nursery 54 cradles each. In a pinch, the 68 beds on the quarters floors could be converted to patient accommodations.

Besides playing an important part in fitting the buildings to the site's irregularities, stilts on which they are built permit the surrounding gardens to extend without interruption under the buildings and drives, in conjunction with the generous use of glass, they give the whole project a pleasant feeling of lightness and transparency.
SOCIAL CENTER
OLAVO REDIG DE CAMPOS, Architect

Within easy reach of the commercial section of Rio de Janeiro's waterfront, this building group houses a service institution for the benefit of workers under 21 years. It offers low-priced meals, medical care and elementary school classes. Schoolrooms and medical offices occupy the two story building. The building connects with the one-story restaurant by means of a covered walk. The plaza between the two was planned for civic demonstrations. Like most of his other designs, this design by architect de Campos shows a marked Italian influence.
**FEDERAL OFFICE BUILDING**

**AFFONSO EDUARDO REIDY, Architect**

Planned for the Federal District of Rio de Janeiro (physically and governmentally comparable to our own District of Columbia), this office building will house all the agencies connected with the territory that can be efficiently centralized. The ten story building containing the general offices, is supported on stilts on an east-west axis. The southern facade, (in Brazil, the shady side), is entirely of glass while the northern exposure is protected by *brise-soleil*. The offices of the Prefect, occupying an individual wing, directly adjoin the auditorium and board meeting room in the two story southern portion of the building. A restaurant is located in the eleventh floor penthouse.

**TOWN HALL**

**ALCIDES ROCHA MIRANDA, Architect**

Another SPHAN project Congonhas do Campos, this excellent model illustrates an architectural idiom particularly compatible with the region. The checkerboard effect of the facade, achieved by placing columns outside the walls creates a handsome pattern.
ALMOST JAPANESE in its use of form and ture, the detail above is from the garden of a in Rio by Lucio Costa.

BUILT ON AN ISLAND in an artificial Niemeyer's lovely little cafe at Pampulha has sensitively landscaped by Burle-Marx. Detail left shows platform for dance orchestra, facing open-air dance floor across a curving moat.
SURENESS AND MATURITY OF MODERN BRAZILIAN ARCHITECTURE is nowhere better illustrated than in the works of Roberto Burle-Marx. As in the case of the best modern buildings which they frame, these gardens are the result of the painstaking re-examination—by the Brazilian professionals themselves—of their past as well as the actual conditions of the present. These conditions are obviously of the present day. They do not represent any vulgar, nationalistic excommunication of foreign influences: but neither do they represent that slavish following of European standards, which so corrupted Brazilian design during the early part of the century.

In one respect at least Burle-Marx's work closely resembles that of men like Church or Eckbo in this country. There is the same emphasis on native plant material, on simplicity of construction and upkeep. There is, finally, the same insistence that the design be useful—an integral extension of the building and merely a pretty picture frame for the street scene.

Burle-Marx, in addition to being the country's leading landscapist, is a painter of ability, a successful horticulturist and a plant explorer (he has brought many jungle plants under cultivation). He acted as landscape architect on practically all outstanding buildings in the Rio area.

A NEW DESIGN for an old square in front of the City Hall at Petropolis. Here an almost Baroque pattern is executed in red, yellow, silver and green foliage plants, densely bedded after the Victorian fashion.
Relic of the stormy days of the Conquistadores, the characteristic upper-class house plan of Central and South America always turned its back upon the outside world. Its blind exterior walls and open interior courtyard, its barred doors and few windows, were thus as much a measure against an unruly population as against a difficult climate. This fortress tradition is very persistent, even in contemporary Brazil. Thus, although petty pilferers are probably no more numerous in Rio than in Atlanta or Chicago, many Brazilian houses take extravagant precautions against them. These are all the more paradoxical when it is remembered that open planning, orientation to sun, breeze and view are quite as popular there as elsewhere.

In all upper-class residential work, Brazil's democratic architects have to combat another hangover from the past—the treatment of domestic servants. Like most Latin American countries, Brazil has no color bar. Unlike her neighbors, however, she had the institution of slavery, of which—60 years after its aboli-

tion—there are still unpleasant vestiges. This leads to demands for isolation of all types of service from the main circulation systems of the building. In a small house this may be merely awkward but in a large apartment it means a clumsy and expensive duplication of all sorts of facilities—stairs, corridors, elevators, etc. Thus the architects have economy as well as ethics on their side in their campaign against prejudice.

The influence of the U. S. A.—surprisingly small in most types of Brazilian buildings—is perhaps most clearly seen in their apartment and multi-family housing projects. Yet even here, the impact is more evident in plan than in any detail of construction or appearance. Indeed, their best buildings show standards which are, if anything, superior to ours. Few urban apartment houses in the U. S. A. show such careful attention to proper orientation and breeze. Their space standards are more generous than comparable units in U. S. A., their construction is good and their site planning is of very high order.

URBAN RESIDENCE

O COSTA, Architect

American architects who can scarcely imagine restoration of Colonial Williamsburg being turned to an outstanding modern architect should consider the career of Lucio Costa who has done just that in Brazil. As head of SPHAN, he has supervised restoration of many of the nation's historic towns. But as educator, he has played a decisive role in training of Brazil's most outstanding young architects. And as an architect himself he has designed such houses as this one in Rio (facing page). In all six spheres he has shown skill and energy and a rare ability to integrate the best of the past with the best of the present.

ALL HILLSIDE HOUSE

AR NIEMEYER, Architect

Currently under construction in the hills back of Rio de Janeiro, this house has been bodily raised one story above the garden level. Aside from providing an extended sitting area and carport, this permits the architect to achieve maximum glass areas towards the sea without the necessity for elaborate protective devices. The sloping steel frame will carry sunshades which roll down from the top. A curving concrete wall supports and partially encloses a stair landing.
COURTYARD HOUSE
DANIELE CALABI, Architect

Achieving utmost privacy, the living and bedrooms of this L-shaped Sao Paulo house open only to the yard which, in turn, opens onto a splendid valley view. The windows of the other rooms are protected from the sun by vertical louvers. Its eminently simple plan, the fresh air admittance of the house has a cool, classical character reminiscent of a Roman atrium, doubtless the architect's earlier experiences in Italy.

THREE-STOREY HOUSE
J. VILANOVA ARTIGAS, Architect

This Sao Paulo hillside house is supported by massive foundations of poured stone and concrete as a giant truss which carries the entire house. While the framed living floor is cantilevered and opened wide to the view, the bedroom wing of reinforced concrete and brick faces the street—both orientation and protection are for the prevailing night breeze. Design and construction are economical—note, for instance, the concentration of all plumbing around a single three-story stack—although the cost of $12,000 (1943) is expensive in Brazilian terms.
PRIZE-WINNING HOUSE
CARLOS FREDERICO FERREIRA, Architect

A competition prize winner, this compact house will be built to promote the sale of lots in the mountainous outskirts of Rio. It features a garage and main entry on the upper bedroom floor and a two-story indoor garden opened to the north sun through a wall of glass and a slatted roof. All living and sleeping rooms face the down-hill view and are oriented to escape the hot sun.

THIRTEEN-ROOM HOUSE
RENATO SOEIRO, RENATO MESQUITA, THOMAS ESTRELA and JORGE FERREIRA

This big house is raised on stilts to command the site's magnificent view of the Rio lagoon and to convert the "basement" into a large covered garden. Used as an open-air living area, this garden is accessible via a ramp from the two-story living room and via stairs from the projecting first-floor veranda. Other ramps at the back of the living room lead to the mezzanine study and bedrooms.
At Guarujá, on an island near this large resort house is built a small lot between street and beach, leaves much of the land open for free living. Indoor and outdoor areas of about equal size extend to the beach. Above them is a bat- six bedrooms enjoying the sun and southern exposure and the oriental light afforded by a northerly. The sleeping wing is accessed via the usual interior stairs and side staircase for bathers which can be retracted when not in use. All elements are concentrated in an a building around a small interior...
HOUSE FOR NARROW LOT
FORTE, RUCHTI, CIAMPAGLIA, Architects

On a long, narrow lot measuring about 26 x 94 ft., this small house in Sao Paulo employs storage partitions and built-in cabinets to conserve space. Unlike most Brazilian buildings, it uses horizontal and vertical projections, instead of louvers, to screen the northern exposures (front and right side) from the sun. The brick walls also contribute to its somewhat North American appearance.

TOWN HOUSE
HENRIQUE E. MINDLIN, Architect

Featuring a huge two-story glazed hall on its street front, this Sao Paulo residence is for a client with an obviously unlimited building budget. The 18 x 55 ft. living-dining room opens to a covered terrace and the enclosed courtyard. Similarly, the four second-floor bedrooms and dressing room are connected by a courtyard balcony. The architect describes the design as "an attempt to do a luxurious house as unobtrusively as possible."
Two factors strongly influenced the design of this small house: the irregular shape and small size of the corner lot and the need for protection from marauders. House and garden were set back the minimum allowed by the building code and reflect the shape of the lot. Windows are protected from sun and heavy louvers or grilles. Generally low and their protective screens are rated by large planting boxes.
make the most of a very expensive site

In two streets, this São Paulo building

is 131 small apartments and an office floor

its 10- and 18-story wings. Bowing to the

city's old slave tradition, the design pro-

poses separate circulation for tenants and

ants. This is accomplished by courtyard

galleries half way between the apart-

t floors. Delivered to alternate galleries

two private elevators, tenants walk up or

in a half flight of stairs to their apartments.

ants use two other elevators, stopping

at their intermediate galleries, and simi-

walk up or down a half flight to their

loyer's apartments. Unlike the enclosed

high galleries for tenants, servants' gal-

are 12 ft. high and entirely open to

it direct light to the kitchens and servants'

tories. Interior tenant bathrooms borrow

e of this light.

erreraces with balconies are alternately

ated in front of living rooms and bedrooms

meet the different space requirements of

ilies with and without children—childless

les preferring the bedroom terrace and

arger living room.
ARCHITECTS' APARTMENTS
CELO, MILTON and MAURICIO ROBERTO, Architects

This eight-story building in Rio is owned and partly occupied by the architects, it displays their unfettered notion of proper light control. Adjustable exterior blinds at the top and bottom thirds of the living-dining room windows—see photo below. At midday, the central third is shielded from the direct sun by permanent slats set in the precast concrete framework which project from the face of the building—see photo left. Later in the day, rigid shades may be dropped from the framework to block the sun's more horizontal rays, while the permanent slats continue to eliminate sky glare.
VARZEA DO CARMO HOUSING PROJECT

ALBERTO DE MELLO FLORES, Engineer
ATILIO CORREA LIMA (deceased), Architect
HEURO UCHOA CAVALCANTI, Architect
JOSE THEODULO DA SILVA, Architect

Located in a high outlying section of Paulo, this housing project will be convenient to the tremendous park of Pedro II. It is to be built by the Security Institute for Industrial Work. Since land in this section is expensive, special attention had to be given to orientation so that, despite a relatively high density, each unit would get its full share of sunlight. The site is exposed to strong winds and is often enveloped by fog necessitating more insulation than would have been required for building in the midst of town. All buildings will be of concrete, the taller ones will have elevators.

The average industrial worker's family in Paulo consists of five people, and the average unit will be a two bedroom apartm
A low-cost public housing project in São Paulo is another example of what the Social Security Institute for Industrial Workers is doing. It is located in an indus- trial section of the city proper. In spite of dense planning dictated by circum-
sances, an ample playground and com-
"ty center have been provided. Sun pro-
tection, which is less important in São
Paulo than in Rio, is taken care of by the
builders. The buildings consist of a rein-
cement concrete frame filled with brick.
A circular structure at the left is the
housing center.

For the middle-income bracket, the
project shown below will be built under the
auspices of Social Security Institute for
Industrial Workers in São Paulo. The
popular apartments are the one- and
two-bedroom units, with the smaller apart-
ments in the taller buildings. The project
describes a nursery and primary school, wel-
care center, maternity center, shopping
center, and garage, as well as plumbing,
medical, and carpentry services. Care was
taken in the plot plan to avoid placing
industrial and residential buildings near
traffic. Since they are apparently the
least expendable, bachelor's quarters are
located near the highway.

HC HOUSING PROJECT  EDUARDO KNEESE DE MELLO and HELIO QUEIROZ DUARTE, Architects
14,000-FAMILY PUBLIC HOUSING PROJECT

CARLOS FREDERICO FERREIRA, Architect
with WALDIR LEAL
and MARIO H. G. TORRES

Located on reclaimed swampland near Rio, this mammoth project was built by the government for the families of 14,000 industrial workers. Thanks to federal subsidies covering a share of the development costs, the average unit is "sold" for only $325 down plus $3 "rent" per month for 20 years.

Construction costs were minimized by the use of concrete block for the smaller structures and, in conjunction with reinforced concrete, for the multi-story buildings. Detached and two-family houses (small picture, above) cover a sizable part of the site and resemble U. S. solutions of the same problem. Larger pictures (top to bottom) illustrate a typical apartment building, the administration building, a nursery and a school.
Like the project shown on the opposite page, this smaller development is a public housing project. It will be built by Rio's counterpart of the District of Columbia's local housing authority.

Although the accompanying plans illustrate two stages in the development of the site, they have several common features which will probably appear in the final scheme. The long thin apartment buildings are laid out along the contours of the steeply sloping site (which has a drop of some 165 ft.). This is particularly true of the snake-like building which closely follows the irregular conformation of the hilltop. Entered by a bridge to the third floor, this unit accommodates two layers of duplex apartments above and two floors of bachelor flats below. The other hillside apartment buildings have four floors each devoted to duplexes, while the larger building at the foot of the hill accommodates five layers of duplexes.

All apartment buildings are raised on stilts to eliminate excavation, simplify foundation construction and give the living units a better view of the valley. Non-dwelling facilities are clustered in the center of the site.

LEGEND (site plan, left)
1—Apartment building. 2—Nursery school. 3—Primary school. 4—Gymnasium. 5—Club. 6—Laundry. 7—Stores. 8—Clinic. 9—Pool. 10—Ball court. 11—Playground. 12—Park. 13—Pedestrian underpass.
Despite the glittering competence of the factories and office buildings shown here, Brazil is still preponderantly an agricultural nation. Like the other South American countries she is rich only in potentials. Industrial production has risen sharply in recent years (56% in the period 1938-1943 alone), but Brazil is still far too dependent on the outside world for many basic commodities. Out of a potential hydro-electric power of 24,000,000 h.p., only some 7% have been developed. And while the Itabira iron mines are probably the world's largest and richest deposits (assaying from 62 to 72% pure iron) she produced only 206,000 tons of steel in 1945. Industrialization is thus the pivot on which her future turns.

Many factors have retarded the development of Brazilian industry, not least of which is her lack of an adequate, integrated railway and highway system. Until this problem is solved, her natural resources will never be properly exploited and her population will remain concentrated along the seaboard. It was to break this Gordian knot that the great Volta Redonda steel complex was begun during the war. Nearing completion now, this new city will have an annual capacity of 300,000 tons of steel and 50,000 tons of pig iron. Eventually, it is hoped to produce 1,000,000 tons of rolled steel a year.

Despite this fundamental weakness in her economic structure, Brazilian cities are full of new industrial and commercial buildings which, in competence if not in scale, might well cause the architects of more highly industrialized nations to look to their laurels. As in most countries of the southern continent, the lack of steel and iron has channelized modern construction into reinforced concrete. And since masonry was always the traditional material of the country, both architects and workmen have been able, for this reason, to maintain a rare sort of continuity between the old and the new.

LABORATORY FOR SNAKE-BITE SERUM
ALVARO VITAL BRAZIL, Architect

Brazil, with many types of poisonous snakes, has for many years taken the lead in research and production of snake bite serum. The laboratories of one of the most famous "snake farms," the Vital Brazil Institute, is now housed in this modern building across the bay from Rio. (The snakes themselves are kept on a separate farm, where they are periodically "milked" of their venom.) Main problem in its design was the need for absolute sterility in the laboratories where the serum is prepared, bottled and wrapped. Hence the building is completely sealed and air conditioned. To minimize the solar heat load, corridors are placed along the north wall, behind a perforated concrete wall, and all work spaces are lighted from the south. The laboratories in which serums are prepared and bottled are protected by a second ventilation system, where purity, temperature and air movement are rigidly controlled. The ground floor of the project is given over to employees, warehousing and shipping; the second floor is devoted to manufacturing; the third floor to laboratories. The fourth floor has executive offices and library in the west wing, pens for 4,000 small animals in the east wing.
Fitted to a triangular plot facing the between Rio and Petropolis to the north, the two-story manufacturing building curves at the south end to make room for two more office floors and a mezzanine restaurant for executives and office workers. Unlike the louvers of the building, the end of this portion is glazed. A long ramp paralleling the highway factory workers to the plant's mezzanine wash rooms and to the employees' restaurant and office spaces.
WAREHOUSES AND COFFEE PROCESSING PLANT

Jo Levi, Architect

Although it appears to be one large industrial plant, the Sao Paulo project actually comprises a coffee processing tower with its attendant offices and, in a separate building, three warehouses which are linked. Constructed of reinforced concrete, both buildings employ precast concrete sun breakers on the north (street) front for purposes of light diffusion and protection. Folding doors completely close off the front of the warehouses to facilitate shipping and receiving, and the saw-tooth roof opens up to the sunless south light. Neat in appearance, the roof framework is reinforced concrete, prefabricated in sections and joined on the job.

Processing of coffee involves raising the beans to the top of the tower by suction and feeding them by gravity into the roasting ovens, grinders and packing machines.
A competition prize winner, this design for the Rio Grande Do Sul Railway office building in Porto Alegre calls for a 22-story hexahedron of reinforced concrete and glass covering half the site. Set about 5 ft. outside the structural columns, a wall of unprotected glass opens all floors to the sunless south light (left). On the opposite facade (below), vertical louvers set between the floor slabs, shield the north glass walls from the sun. There is only a single row of interior columns, and floor space is easily subdivided and highly flexible.

Offices directly serving the public flank the ground floor lobby and, like the mezzanine exhibition area, are accessible from the building’s main entrance. Separate entrances leading to separate elevators are provided for employees and executives. This segregation of public and employees is maintained by the provision of separate elevator lobbies and stairs on all office floors—2 through 20. The 21st floor is occupied by a restaurant seating 176, a bar and a kitchen. On top is an auditorium, lounge and terrace open in all directions to views of city, sea and mountains.
OFFICE BUILDING WITH DOUBLE FACADE
EDUARDO KNEESE DE MELLO, Architect

From the emphasis placed on its reinforced concrete frame this five-story building (right) has much in common with Belluschi's American counterpart in Portland, Ore. (Forum, Apr. '47). Completely different, however, is its two-ply facade. The main elevation consists of glass brick with movable louvres backed by an interior wall of the same materials. Together, they provide adequate light and controlled ventilation for the individual rooms. Unfortunately, in the photograph the glass brick looks rather dark, belying the uniformity and lightness of the design.

The projected office building (below) revises conventional arrangement by allocating the upper floors to shops served by two express elevators. Also on the upper level are space for union activities and an employees' club. The gymnasium is on the roof. The Imobiliara Seguradoras, a real estate-insurance company, occupies the balance of building.
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ANNOUNCEMENTS

Photographs, plans, reference books and documents have been assembled by the War Department Civil Affairs Division to show recent developments in American house construction methods and city planning to architects and builders in Germany. Mr. Frederick Gutheim of New York directed assembly of the material which includes examples of individual home construction, private housing developments, low-rent projects and rural housing with technical cost data on each. More than 20 city planning commissions have contributed to the collections. The section on construction techniques stresses advances made in labor saving devices and prefabrication. Great interest in this exhibition has been expressed by other countries planning to build, and shows have already been scheduled for Finland, India and the International Architectural Congress in Lima, Peru.

MODERN PHYSICS FOR THE ENGINEER, a group of eight weekly lectures by leading specialists will be given at the University of California, Los Angeles, Calif. Fall I lectures will include: Nov. 17—Theory of Solids; Nov. 24—Nuclear Structure; Dec. 1—High Energy Particle Accelerators; Dec. 8—Physiological Dangers of Radioactive Contamination; and Dec. 15—Atomic Energy in Industry. Speakers will be Alfredo Banoa, Jr., David Saxon, Staff Warren F. A. Bryan and Leo Ohlinger.

YALE UNIVERSITY ART GALLERY is offering a series of lectures during October and November to promote better coordination among the arts. The architecture, furniture, literature and music of 18th Century France is being discussed to illustrate their close inter-relations. The final lecture on November 13th "Relations between Art and Music" will be given by Emanuel Winternitz.

BUILDING PREVIEWS

THE BURDINE DEPARTMENT STORE at Fort Lauderdale, Florida illustrates careful planning for a semi-tropical locale. The main facade of granite and terra cotta opens on a central formal garden around which the first floor departments are grouped. Eliminating the basement because of prevailing high water levels, Architects Abbott, Merkt & Co. and Associate E. L. Robertson located necessary air-conditioning equipment on the roof with storage space above the first floor. A marquee above all show windows prevents sun glare with its under-surface of steel plate doubles as a hinged "hurricane" panel to be lowered and bolted to the sidewalk during storm periods. Structurally, the building has not only a steel frame but floors of steel deck. 130,000 sq. ft. of floor space are provided on the three stories of the building now completed; construction of three stories more is planned for the near future. Eleanor LeMaire supervised the interior design.

A HEALTH SUB-STATION, first building in New York City's medical expansion program to get under way, will provide facilities for a dental and eye clinic. (Continued on page 118)
BRIXMENT Encourages BETTER WORKMANSHIP!

Really first-class brickwork calls for parging or tooling the inside surface of the face brick, as a final protection against the possibility of leakage. The photographs below give full details for both procedures.

No. 6 OF A SERIES—

PARGING OR TOOLING THE BACK OF FACE BRICK

PARGING

The face brick should be back-plastered with not less than ⅛" of mortar before the back-up units are laid.

If the back-up units are laid first, the front of the back-up units should be plastered in the same way.

TOOLING

As an alternate for back-plastering, the joints on the back of the face brick may be tooled to give a recessed finish.

This encourages the bricklayer to fill the head joints, since proper tooling cannot be done if mortar is left in head joints.

Because Brixment is more plastic and works easier, it actively encourages the bricklayer to do better work. The brick are bedded more quickly, with full joints, and without excessive tamping. Parging and tooling are done in minimum time, with minimum effort.

In addition to greater plasticity, Brixment also has higher water-retaining capacity and bonding quality, greater resistance to freezing and thawing, and freedom from efflorescence. Because of this combination of advantages, Brixment is the leading masonry cement on the market.

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY
You provide many satisfactions when you specify KOHLER PLUMBING

An arrangement of Kohler fixtures like the one in the bathroom above has lasting practical advantages that home owners want.

The Cosmopolitan Bench Bath is non-flexing because it is made of enameled cast iron. Cast iron is the time-tested base for the heavy coat of lustrous, pure white Kohler enamel which resists cracking and crazing. The Triton Shower Mixer is efficient and simple to operate. The Gramercy vitreous china lavatory has a roomy shelf. The Wellworth close-coupled closet works smoothly and quietly. All Kohler fixtures are attractive and matched in design, with surfaces that are easy to clean. The fittings are of chromium plated brass—durable, and built especially for the fixtures they serve. Your customers know the name "Kohler" means first quality in every detail.

Shipping crates have been carefully designed for each Kohler fixture, to assure delivery in perfect condition. Kohler products are made in one plant under one supervision. Write for further information.


KOHLER OF KOHLER
PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
Take a leaf from Macy's book...

...use Bigelow Lokweave Carpet
for heavy traffic areas

Here are some of the reasons why Bigelow's amazing Lokweave carpet is ideal for Macy's much-walked-on floors:

Sturdy loop pile Gropoint construction stands up for years under heavy traffic... special close weave resists dirt... tufts are locked in and cannot pull out... installation costs are low—no waste yardage, no binding or stitching... and, best of all, Lokweave comes with spare parts.

Because there are no sewn seams in a Lokweave carpet, worn or damaged areas can easily be replaced with pieces of carpet left over from the original installation. This is an economical carpet—ideal for large floor areas. Don't overlook Lokweave when you buy carpet.

BIGELOW-SANFORD CARPET CO., Inc.
140 MADISON AVENUE, NEW YORK 16, N. Y.
Fine rugs and carpets since 1825
Dolphin Door installed on Fiat Admiral Cabinet faced with structural glass.

**Construction Features**

**STANDARD SIZE**

24 x 72 INCHES

Solid brass one piece frame heavily chromium plated. One piece heavy extruded brass hinge jambs and specially constructed leak-proof continuous brass piano hinge make a smooth working, rigid door. Double friction catch, off-set handles, and water deflector to prevent dripping on floor are features that mark the finest in shower door construction.

Essentially the same high grade shower door as the former Fiat Senior, but redesigned along modern lines with improved construction features. Made of solid brass, heavily chromium plated, the Dolphin represents the best in a shower door; can be furnished on Fiat Shower Cabinets and for built-up showers of tile, marble, or structural glass walls. This Dolphin Door is now in production for prompt delivery.

In Canada — Fiat showers are made in Canada by The Porcelain and Metal Products, Ltd., Orillia, Ontario.

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**ANNOUNCEMENTS**

Separate entrances and waiting rooms for adult and patients reduce hazards of contagion. The first floor information and business center, as well as dental office, off north lights and children's waiting and play rooms south side. A special feature is provision of a protective area for baby carriages. Adult waiting and exam rooms are on the second floor, as are X-ray, sterilizing, scopy and laboratory areas. Salo and Magoon, New architects, designed the clinic, sketch below, which constructed of steel columns with outer walls of brick cinder block and split tile furring. The windows and structural parts are based on a 4-foot module.

**COMPETITIONS**

**THE AMERICAN INSTITUTE OF DECORATORS** announces second annual competition for designers of home furnaces, floor coverings, wall coverings and lighting, products have been put on the consumer market during current year. Designs selected for citation will be exhibited in New York before touring the country. Further information about rules of the competition, which closes December, may be obtained from the Institute at 41 E. 57th St., York 22, N. Y.

**THE BEAUX-ARTS INSTITUTE OF DESIGN,** 304 E. 44th St., York, N. Y., announces continuance of its 1947-8 schedule of problems for architectural students. A number of prizes will be offered in connection with individual designs and skylights submitted by enrolled students. Inquiries and requests for registration may be addressed to the Department of Architecture of the Beaux-Arts Institute.

**APPOINTMENTS**

**DR. JOHN CURTIS** has been named chief of the recently established National Applied Mathematics Laboratory of the National Bureau of Standards, Washington 25, D. C.

**E. MICHAEL SZAJA** has assumed the post of associate professor of architectural engineering at Washington College, Pullman, Wash.

**VIRGINIA POLYTECHNIC INSTITUTE,** Blacksburg, Va., announces the appointment of three Associate Professors of Design, Department of Architecture: Heinrich Waechter, R. E. Wiss and Charles Worley.

**JOHN HANS GRAHAM** has become a member of Frank & Sons, architects and engineers, Newark, N. J.

**HAROLD PAWLAN,** architect, is now associated with the office of Sidney Finck, architect, Chicago 2, Ill.

**NEW OFFICES**

**FRANK MONTANA** and **SUREN PILAFIAN** have consolidated their architectural practices at 112 Madison Ave., Detroit, Mich.
It IS an Amazing New Discovery!

Hot Water
"Packaged-in-Glass"

WE'RE TELLING EVERYONE who is planning, building, and buying a new home ... it means cleaner, purer hot water free of tank rust and corrosion dirt.

No Rusting—No Corroding

Permaglas WATER HEATERS

WHEN YOU SPECIFY clean hot water ... by specifying "Permaglas" ... your clients know you are recommending the water heater for the completely satisfactory house.

They know—because the most sustained national advertising program in water-heater history is repeatedly telling them—in the popular national magazines that all home-planners read and study.

They know—because leading public utilities, merchant plumbers, and better appliance dealers everywhere are showing them. Permaglas Water Heaters, with the tank of glass-fused-to-steel, CANNOT rust or corrode under any water condition.

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123
This Improved Construction Assures a **Permanent DRY WALL**
at Minimum Material and Labor Cost!

**VAPOR SEALS FROM THE INSIDE!**
Reflective Sisalation prevents passage through sidewalls of harmful moisture-vapor. Provides adequate insulation at no extra cost!

**WEATHER SEALS FROM THE OUTSIDE!**
Tough Sisalkraft building paper over sheathing prevents passage of wind-driven rain into walls.

*See for Yourself:* New wall construction, utilizing the prime features of Sisalkraft and Sisalation, now enables you to stop the passage of harmful moisture into walls easily and economically. This simple method provides a permanent DRYWALL in homes PLUS all the advantages of adequate INSULATION at no extra cost!

*Write today for further information about these two products.*

The SISALKRAFT Co., Dept. AF, 205 W. Wacker Drive, Chicago, Ill.
Here's the "MEADOWLARK" kitchen
... another reason why
"Everybody's pointing to Hotpoint!"

HOTPOINT's hard-hitting advertising of all-electric kitchens started a snowball that now pays big dividends to builders and architects. Public interest in, and desire for, the "Meadowlark" kitchen is proved by the thousands of inquiries received by the Hotpoint Kitchen Planning Service. This powerful trend for time and labor saving kitchens applies to every income bracket. And Hotpoint has a plan to fit every need, whether in building or remodeling.

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To help you do this, Hotpoint offers the Portfolio of Personalized Kitchen Plans. It's full of helpful suggestions and short cuts for planning and installing America's favorite kitchens. Send for this handy Portfolio today. Satisfied home owners with Hotpoint kitchens will be a decisive factor in adding to your prestige and reputation.

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Without obligation, please send me your Portfolio of Personalized Kitchen Plans. This offer available to architects, builders and contractors only — in the United States, Territories of Hawaii and Alaska.

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All the benefits of storm windows
All the benefits of screens
All the benefits of weatherstripping
in one permanently installed unit
with nothing to change...nothing to store...
year round, rainproof, draft-free, filtered-screen ventilation...patented Thermolok frame insures permanent, weatherproof fit.

Thousands upon thousands of prospective home, commercial and industrial building prospects know all about the many year 'round advantages of RUSCO ALL METAL, SELF-STORING COMBINATION SCREEN AND STORM SASH. Your recommendation will receive enthusiastic approval.

Specifications will be found in Sweets File or complete descriptive literature and specifications sent upon request.

THE F. C. RUSSELL COMPANY
6400 AF HERMAN AVENUE • CLEVELAND 2, OHIO

ALFRED SHAW, FAIA, CARL METZ, ASCE and JOHN DOLIO, ASME, announce the formation of a partnership for architecture and engineering with offices at 208 S. LaSalle St. and 80 E. Jackson Blvd., Chicago, Ill.

ELIOT NOYES, industrial designer, will practice at 438 E. 88th St., New York, N. Y., where he and MARCEL BREUER, architect, will cooperate as consultants in each other's fields.

L. A. FERRIS and GRAHAM ERSKINE announce their association in the practice of architecture and engineering at 577 Larue Ave., Reno, Nev.

ROY SCHOFNIBROD has opened an architectural office at 8 S. Dearborn St., Chicago, Ill.

GEORGE ARMSTRONG & Co., Inc., New York, has extended its service to cover airport planning in both general and specialized aspects. This branch will be under the direction of Walter Prokosch AIA, now a Vice President.

ALBERT LARSON has reopened his office for the general practice of architecture at 704 Graham Ave., Eau Claire, Wis.

CHANGES OF ADDRESS
CARL BREUER AIA announces the removal of his office to 120 E. 65th St., New York 21, N. Y.

IGOR POLEVITZKY AIA is now located at 250 NE 18th St., Miami 36, Fla.

FRANCIS HEUSEL and EDWARD FICKETT, architects, have moved to their new office at 5678 Wilshire Blvd., Los Angeles, Calif., while maintaining their office at 730 E. 3rd St., Long Beach.

SANFORD GOIN AIA announces that his new address is 634 E. Church St., Gainesville, Fla.

FRANTZ & ADKISON, architects, are now in offices at the State and City Office Bldg., Roanoke, Va.
Whenever you want beauty plus convenience and durability, use this modern surfacing material. But be sure to specify Decorative Micarta*. That way you'll get all 10 of these important advantages.

- **Won't scratch or mar** under ordinary service conditions. Finished surface is hard and durable.
- **Strong, dense material.** Guaranteed not to warp, chip or crack under ordinary service conditions.
- **Genuine wood veneers available.** Truwood Micarta combines the beauty of such woods as primavera, mahogany and walnut with all the practical features of Decorative Micarta.
- **Quickly and easily cleaned,** because of its permanently smooth surface.
- **Available in "cigarette-proof" grade at slight extra cost.** Even when cigarettes burn out on it, "cigarette-proof" Decorative Micarta remains unmarred.

- **Will not spot or stain** from spilled food, grease, alcohol, etc. Highly resistant to heat, moisture, mild acids and alkalies.
- **Color-fast, permanent finish.** Unusually clear, lustrous colors and patterns won't fade or darken.
- **Exclusive "Beauty Mask"** of tough Kraft paper protects surface during shipping, machining and installation. Strips off easily when ready for use.
- **Optional finishes.** Brilliant high-gloss or lustrous satin.
- **Large 4 ft. by 8 ft. sheets** of Decorative Micarta are available for covering large surfaces quickly, and with a minimum of joints. Smaller sizes also available for table tops and similar applications.

Sounds like almost an ideal surfacing material, doesn't it. Well, it is!

Don't fail to get complete information on Decorative Micarta now. Available in a variety of desirable colors and patterns. For samples and installation data, write:

UNITED STATES
PLYWOOD CORPORATION
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The Wonder Wood of 1000 Uses • Masonite Presdwood

Presdwood quickly and easily transforms dull, unattractive interiors — makes possible unique new streamlined effects.

Most useful for modernizing stores, theaters, showrooms . . . for remodeling hotels, hospitals, office buildings . . . for almost any job that challenges the skill and imagination of the architect and builder! That's Masonite* Presdwood — the time-tested hardboard with perhaps more valuable characteristics than any other basic material. Presdwood adds durability and beauty . . . provides quality construction. It makes possible unusual effects on curved surfaces, takes almost any kind of finish. Presdwood is made from natural wood refined to a better, stronger wonder wood. Progressive lumber dealers have it—Untempered, or Tempered to extra hardness. For full technical data, write Masonite Corp., Dept. AF-11, 111 W. Washington St., Chicago 2, Ill.

In planning and designing Cleveland’s beautiful new Shaker Club Apartments every effort was made to furnish tenants the very best in living accommodations.

For example, each kitchen has controlled ventilation and is completely equipped with the finest appliances and fixtures. And the outstanding feature of each beautifully appointed kitchen is a silvery Tracy sink . . . in lifetime stainless steel.

Tracy sinks were specified to eliminate costly maintenance and replacement problems . . . and to bring luxury and good taste into each of the building’s 159 kitchens. Tracy’s complete line of standard and custom built models answered all design requirements . . . provided the right size sink for every kitchen at a surprisingly low initial cost.

Write for the full color Tracy specification sheet describing a complete line of standard and custom built sinks and cabinet tops.

TRACY MANUFACTURING COMPANY, PITTSBURGH 12, PA.
WORLD’S LARGEST MANUFACTURER OF STAINLESS STEEL KITCHEN SINKS
SEE WHY ONLY THE GAS REFRIGERATOR

FROZEN FOODS-ICE CUBES

BIG FLEXIBLE INTERIOR

NO NOISE, NO WEAR

STAYS SILENT... LASTS LONGER

The GAS Refrigerator
LIQUIDS COOL ON EVAPORATION

When you pour alcohol on your skin and blow on it, it will feel cool. That’s because liquids draw heat from the surrounding area as they evaporate. You could test this for yourself with a thermometer. Both gas and electric refrigerators operate on this principle... but there’s a big difference in the application. Study the following illustrations and you’ll see why Gas Refrigeration’s method is superior.

YOU CAN MAKE A SIMPLE REFRIGERATOR

All you would have to do would be to pour continuous streams of ammonia or any other refrigerating liquid and air through a bent metal tube. As the ammonia evaporates on the inside, the outside of the tube cools... which causes refrigeration. The evaporated ammonia is then passed off in the form of vapor gas. However, in practical refrigeration, allowing this vapor gas to escape would be wasteful. It must be recovered and used again.

ONLY ONE HAS NO MACHINERY... A TINY FLAME DOES THE WORK

Here’s how

A tiny gas flame takes the place of machinery in the Gas Refrigerator. Here the vapor is changed back to a liquid by first being passed through water. The water absorbs the ammonia. The mixture is then heated by a tiny gas flame. The ammonia is driven off in the form of vapor. Cooled by passing through pipes, it condenses again into a liquid. Not a single moving part is needed.

• Shown above are the basic principles on which all refrigerators freeze ice and produce cold. Perhaps you’re ready to order refrigerators for new apartments or a housing development... or planning to buy replacements for your present apartments. Either way, it is important to know the difference between refrigerators.

As you’ll note, there are two types of automatic refrigerators. One uses machinery. The other—a different, simpler refrigerator—operates without moving parts. In their place a tiny gas flame does the work, silently, efficiently. This is the Servel Gas Refrigerator.

Because it freezes with no moving parts, you’ll never hear a sound from Servel. No hum of stopping and starting. And it won’t lose its efficiency or run up costly repair bills. More than two million families are enjoying this basically different refrigerator right now. Servel, Inc., Evansville 20, Ind.
When the architectural history of the first half of this century is written, two names will stand out as those of the great builders of the Western World: The first, of course, will be that of Frank Lloyd Wright; the second will probably be that of Ludwig Mies van der Rohe.

Wright's position is so clearly assured that there is no need further to discuss it. Even his most relentless critics will acknowledge in his work that passionate, romantic flamboyance that is so characteristic of all that is best in America: the great volume of his work, moreover, with its consistency at least of grandeur, will speak for Wright in years to come.

Mies van der Rohe’s work, currently on exhibition at the Museum of Modern Art in New York, has none of these factors to recommend it. Where Wright's work is emotional, the work of Mies appeals to an almost rarified type of intellect, in much the same manner as does a perfectly constructed, brilliantly luminous crystal developed by the soberest of research chemists. (Needless to say, such a crystal, in the end, has its own emotional appeal too.) Where Wright has innumerable houses built and many more designs on paper, Mies has to his credit only a handful of completed buildings: One in Czechoslovakia, a couple in Germany, a few in Chicago. Many of them were destroyed during the recent war, or before it. Where Wright's work is representative of a very definite cultural and historical era—the era, more or less, of Walt Whitman's America—the work of Mies is representative of no country—unless it be the timeless country known only to the minds of men, a country of perfection and infinite precision, of utmost simplicity and insurmountable logic. Yet such a country exists; it was known to the perfectionists of ancient Greece, to Michelangelo, and it is known in some way, to Mies van der Rohe.

Mies was born the son of a master mason. Today, at the age of 61, he is still essentially a master mason. Beginning with the simple dimensions of one brick, fitted to a simple piece of rolled steel, he will develop an entire structure, an entire campus, in much the same manner in which a mathematician will develop a multiplication table: 1 x 2 is his smallest unit, his brick; 100 x 100 is his largest—the complete design, as consequential as the elevations of the Parthenon, and designed with as delicate a hand and with as much sensitivity for detail.

In 1947, with many of the "third generation functionalists" in hot pursuit of the kidney shape, the slanted wall, the fieldstone hearth and the angular roof trellis, his stern adherence to the fundamental maxim of building through the ages—i.e. that

(Continued on page 136)
**Plywood fortified with Kmtpreg** ... means smoother, longer-lasting concrete forms

New Plastic-Armored Plywood Cuts Ultimate Form Costs.

Kmtepreg plastic surfacing is fused to exterior grade plywood in manufacture to produce durable KIMPREG + Plywood. When wet, KIMPREG-surfacened plywood is 33 times more abrasion resistant than ordinary plywood...15 to 25 times more water-resistant. Handled with reasonable care, KIMPREG + Plywood concrete forms can be re-used over 100 times. And they’re less costly than steel forms.

Maintenance Costs Cut 50%.

Plywood panels protected with KIMPREG strip easier, clean faster, demand little oil and oiling labor. Because they are highly resistant to water, they won’t swell ... require no separation to dry. Light in weight, they’re excellent for slab work. Greatly reduce overhead finishing time. Save labor—save money.

Surface Smoothness Equal to that of Steel Forms.

KIMPREG + Plywood forms provide a smooth, enduring concrete finish. Cut rubbing-down costs as much as 75%. Concrete won’t stick to glassy smooth KIMPREG.

Get Full Information Today.

KIMPREG + Plywood panels are available through local plywood jobbers, and are also sold by plywood manufacturers under the trade names Laminex, Inderton and Westboard Industrial Plastic. For further information write to:

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Plastics Division • Neenah, Wis.

**Compare**

A standard plywood form produced the rough-surfaced concrete on the left. Note how smooth the finish on the right looks—the work of a KIMPREG + Plywood form. Both panels have had many re-uses.

**Kimpreg**
REG. U.S. PAT. OFF.
PLASTIC SURFACING
LOS ANGELES ELEVATORS GET THEIR PACE LIFTED

Otis Modernization Results in Faster Service,
Greater Traffic Capacity and Fewer Elevators

When management of the Union Oil Building realized their elevator service was lagging behind the occupants' needs, they wasted no time in doing something about it.

FROM 6 ELEVATORS TO 5. First step was a careful study by Otis of the building's traffic patterns. Next, Otis engineers recommended that five of the six elevators be modernized and equipped with Otis Signal Control and Otis Automatic Dispatching. The sixth elevator hoistway was put to good use for air conditioning ducts.

TRAFFIC CAPACITY UPPED 30%. Today, five elevators are doing the job of six — and doing it much better. Thanks to scientific scheduling of trips, waiting time at all floors has been greatly reduced, while passenger handling capacity has been increased 30 per cent. What's more, during normal two-way traffic periods, only four elevators are needed, even though the building is fully occupied.

PROFIT BY EXPERIENCE. If the elevator efficiency of your client's building is hampered by inadequate dispatching methods or outdated equipment, why not let a trained Otis modernization expert help you, too? His experience and services are yours at no obligation . . . just call your nearby Otis office.

OTIS ELEVATOR COMPANY

Union Oil Building, Los Angeles, erected in 1923 and originally equipped with six car-switch elevators.

Lobby of the Union Oil Building combines simple dignity with modern utility. Note smart-looking cab interior of modernized elevator. (Right) Elevator entrances at typical office floor.
If you specify Gold Bond Rock Wool Batt... 

you can look forward to results like this...

NEXT time you plan commercial construction (office buildings, apartments, theatres) include Gold Bond Rock Wool batts in your ceiling specifications. Your client will be assured of insulation that is permanently fireproof—at no more cost than for merely "fire-retardant" materials. Insulation that will cut his heating costs in winter, and keep the top floor cool in summer. Insulation that both you and your client can depend on because it's backed by one of the country's largest manufacturer's of building materials. Detailed specifications on request.

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Over 150 Gold Bond Products including gypsum lath, plaster, lime, wallboard, gypsum sheathing, rock wool insulation, metal lath products and partition systems, wall paint and acoustical materials.
The Architectural FORUM November 1947

Modernization Without Stanley Magic Doors is Not Complete

STANLEY MAGIC DOORS speed traffic, improve service and save heating and air conditioning costs,—more than pay for themselves in any commercial building.

Controlled by a photo-electric "eye", Magic Doors open automatically on approach—stay open till traffic passes through—close promptly and silently. They will please your clients, their tenants, stores, theatres, hotels, office buildings, and restaurants—in fact, wherever traffic is heavy.

To aid you in preparing plans and specifications for Stanley Magic Doors, we have information that covers in detail every type of Magic Door control in a wide variety of applications. We have, in addition, an experienced staff who will cooperate with you from first draft to final installation to make sure that your particular requirements are met in full.

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STANLEY DOOR CONTROLS

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LAVATORY

- No. 3408 Easy-Action "Slant-Back" Fitting. A fully chrome-plated fixture with permanent non-splash device. Design provides for easy renewal of any wearing part or the entire unit.

- So attractive to the eye as well as the budget, so generous in usable area, so skillfully designed to fit limited bathroom space...this is the Cosmette! Produced by Case and distributed nationally—see your Classified Telephone Directory or write W. A. Case & Son Mfg. Co., Buffalo 3, N. Y. Founded 1853.

- Genuine acid-proof Vitreous China.
- Dry shelf space for toilet articles.
- Built-in soap dish.
- Concealed front overflow.
- Towel bars, if required, free from the wall.
- Wall hung or with legs.
- All exposed parts chromium-plated brass.
- 20" x 13" and (for production later) 24" x 16½".

Case
PLUMBING FIXTURES
plan a year-round air conditioning system

Today's office building tenants, hotel guests, hospital patients and others want year-round comfort—the kind of air conditioning they enjoy with a Carrier Weathermaster System.

The conduit type, as illustrated, is one of two Weathermaster Systems that provide comfortable, healthful air conditioning through the year in any multi-room building. In scores of leading office buildings, hotels and apartments here and abroad they supply cool, dehumidified air in summer, and cleaned warm, humidified air in winter.

Unlike conventional types, the Carrier Weathermaster Systems permit individual room control. Every room can have comfortable indoor weather regardless of exposure, the time of day or season of year. The systems are adaptable to either new or old structures.

The development of dependable, efficient air conditioning takes ceaseless research and years of experience. Carrier engineers work closely with architects and their consulting engineers to bring the greatest efficiency—and lowest operating cost—to the individual installation. Write for the 40-page booklet—"Air Conditioning for Multi-Room Buildings." Carrier Corporation, Syracuse, New York.
Little homes can be just as livable as big ones—if the same attention to detail goes into their plans. Among modern conveniences, a raceway for telephone wires gives a lot of value at little extra cost.

A few sections of pipe or electrical tubing, installed by the builder while the house is under construction, carry telephone wires into the house and within interior walls to pre-planned outlets.

In homes with finished basements, a telephone raceway avoids exposed wires in the basement as well as on the main floor. It also assures the convenience of built-in telephone outlets for the owner.

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FORUM will impartially and unemotionally publish the results.

4. Criticism: Mies is little more than any common, everyday American builder. Comment: Precisely—a little more. For those who were unable to see the beautiful exhibition of Mies’ work at the Museum of Modern Art, Mr. Johnson’s book will be a more than adequate substitute. For all those, in any case, who want to be assured that the traditions of great building—the Greek tradition, the Renaissance tradition, and so on—still continue in the Western World, this booklet on Mies van der Rohe will be invaluable.—P.B.


To those who read and were entertained by Goodbye, Mr. Chippendale, Robsjohn-Gibbings’ current book will come as a considerable shock since it is neither light, slick nor caustic—the Mary Petty jacket notwithstanding. Here, we have a new Gibbings, sober and fervent, busily grinding the already keen edge of an all too lethal axe.

The author terms his latest opus, “a dissection of Modern Art” a description which proves somewhat inaccurate since the venom as well as the historical sleuthing is directed at only one faction of this remarkable and controversial esthetic phenomenon.

Quite understandably, Gibbings, along with countless fellowmen, has been frustrated and infuriated by the studied double-talk and mystic aurae with which certain groups of recent and contemporary artists have chosen to veil themselves and their work. His resentment of the Museum of Modern Art’s self-appointed role as seer and impressario in these matters is well known and not without justification. The mystery of the artist-superman which had long been fermenting in Gibbings’ mind was forced into print by the everyday remark of an average woman who said of modern Art: “But you mean that I don’t have to like it?” Storms Gibbings: “It is the modern art authorities who are responsible for the cult of esthetics and art appreciation.” To start with the premise that art is sublime and beyond the understanding of the average man, who must therefore be taught to ‘appreciate’ it, is absolute nonsense. Before the coming of modern art and its spokesmen no one needed a course of ‘art appreciation’ to understand just what he was looking at. You looked and you

(Continued on page 144)

DO YOU KNOW . . . that there are approximately 250,000 “unknown cases” of tuberculosis?

. . . that TB still kills more Americans between 15 and 44 than any other disease?

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liked what you saw or you disliked it. But never did you look and then say 'Tell me what I am looking at.' Nor were you in any doubt about what the artist wanted you to feel when you looked at his picture"..."it is the German obscurantists who have maneuvered the artist out of his previous role of craftsman into the modern art role of quasi-religious mystic." As might be guessed, after this remark the leaders and exponent of the pre-Raphaelities, expressionists, futurists, cubists, dadaists, purists and surrealists are in turn led to the block and disposed of. Nor is the Bauhaus spared.

Looking back at the advent of the industrial revolution and the coming of age of the bourgeoisie, Gibbings, like many before him, finds the artist rebellious and disgruntled at no longer being an integral member of society. That the artist resorted to the ivory tower and assumed the guise of demi-god is equally well known. Gibbings is less preoccupied with their ultimate canonization than he is with their means of achieving it. After years of reading and research, Gibbings presents a rather startling theory. He maintains that most modern art is not at all a product of the scientific and mechanical advancement of the times, but, instead, is a revival of the techniques of magic practiced by primitive and medieval leaders to gain and maintain power over their subjects. Astoundingly, he weaves a thread from 1850 to the present day which implies that all the more radical movements of the art world were directly and intentionally patterned after the attention arresting methods of ancient cultures, shared the common element of intentional distortion. Even more sinister is his charge that such practice was not only carried out with full awareness of its ultimate undermining of bourgeois logic and scientific advance but that in more instances than one was

(Continued on page 148)
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shrewdly geared to the more unpleasant types of government we have recently witnessed. Woven into this unpleasant tapestry are the elements of occultism, spiritualism, theosophy and mysticism starring Madame Blavatsky, culminating in the present day surrealist movement.

Gibbings' argument is, at best, a difficult one to accept. To state baldly that with the exception of the impressionists, the majority of consequential modern artists since the time of the pre-Raphaelites have deliberately attempted to reverse scientific progress and rational thought through a variety of voodoo dreams a good deal of explanation and documentation. Mona Lisa's Moustache drips with authentic quotations but their fragmentary use leaves the reader with an uncomfortable feeling that he has only heard a tenth of the tale. And this is exactly the case. Mr. Gibbings' claim is, unfortunately, far too presumptuous and libelous to be covered in a single short volume of this type intended for wide readership. The la yman will be left in as much of a quandary about modern art as he was in the beginning. The initiate will squirm for lack of substantiation. This discomfort is further aggravated by the author's merciless hammering of a single point, page after page, chapter after chapter.

It is undoubtedly true that the prestige of unbiased reporting has suffered in the mind of the average reader. The more partisan the writing, the better. However, the art of convincing still requires considerably broader and more correlated documentation than Gibbings has seen fit to include. Nevertheless, he has an idea, and an intriguing one. Mona Lisa's Moustache may be but a fragmentary and biased analysis of the esoteric pervading our so-called "modern art" but if it does no more than to provoke further exposure of this painful mysticism, it will serve an excellent purpose.—M.S.
Burglass Furniture Company's store in New Orleans uses Insulux Glass Block panels to help block out dirt. Architect: Rathbone de Buys, New Orleans, La.

Second floor of Burglass Furniture store uses Insulux to flood interior display area with daylight. The No. 351 Insulux pattern used was designed specially to direct light upwards to the ceiling. From there it is redirected deeper into the room, thus giving better light with fewer shadows. Contractors: Perrelli-Rickey Construction Co., New Orleans, La.

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A system of multiple fire escapes for hotels and apartments has been proposed by O. A. Zimmerman, Dayton (O.) engineer, as a means of preventing reoccurrence of such disasters as the La Salle and Winecoff hotel fires (FORUM, July '46). Zimmerman's design calls for a double-walled vertical shaft extending from roof to sidewalk. This shaft differs in several important respects, however, from the conventional fire tower. Nested inside it, like strands in a cable, are a series of completely independent stairways. Each of these stairs serves only three floors, has no other entrances between that point and the ground, and each opens directly onto the sidewalk.

Thinking behind the Zimmerman design is based on analysis of recent disasters which shows that the hotel guest must be able to reach safety at his floor and not at some hypothetical level below. Conventional escape means, as Mr. Zimmerman points out, do not do this today. Service stairways with doors at each floor tend to act as draft tubes which spread smoke and flame. Elevator shafts are apt to act in much the same way, while outside steel fire escapes are hazardous and exposed to flame from top to bottom.

The plan below shows how Mr. Zimmerman's multiple-escape system could be adapted to a typical downtown hotel. Here space equivalent to two bedrooms in the center of each wing has been taken over for the shaft. (In existing structures, this could probably be done without disturbing the existing structural frame.) Double walls serve to insulate the interior of the shaft, while the plan at each floor is such that there is a lobby between the corridor and stair proper.

No inflammable materials would be permitted in the shaft, not even painted walls. Construction would be waterproof and well drained, so that a damping fog could be used to settle any smoke which might show up. The entire system would of course have independent water and light lines.

As a further precaution, Zimmerman suggests that revolving doors be used to compartmentalize the main corridors, especially at the elevator lobby, and that each guest room be equipped with an alarm bell, served from a central switch.

Although installation of the proposed system might prove fairly expensive—especially in existing buildings—the designer believes it will greatly raise the safety factor of structures. Besides, as he points out, with greatly stiffened city and state fire safety codes now being drafted everywhere, all owners must greatly increase their safety facilities.
One of the fascinating things about prefabrication is its ability—despite the small scale of its accomplishments to date—to hold the interest of people everywhere. (It is this very interest, incidentally, which buoys the indefatigable prefab enthusiasts: they feel that where there's so much smoke there's bound to be fire.) The house shown here is another proof of international interest—this time from Turin, Italy. Called ABC for its designers (Architects Astengo and Bianco and Engineer Ceratto) the Turin house is comparable in every way with its American competitors, including even the fact that it is not yet in production.

ABC uses a panel designed to a metric module of approximately 4 ft. 1 in. It is shop-fabricated except for exterior and interior finish (corrugated aluminum and fiber board in the house shown). And its parts are said to be readily interchangeable, so that expansion or contraction of a given structure is possible. The panels are of three types—floor, wall, roof—and all have modular dimensions. With characteristic European economy (where metals have always been dear) the panels are formed throughout of light (20-gauge) sheet metal, completely shop-welded. The floor panel is a sandwich of two steel plates welded to either side of a corrugated sheet: approximately 51⁄4 in. thick, it can span 4 modules. The wall panel, of standard width and height, comes in various combinations of solid wall, window and door. (When fully insulated with a wood-waste-and-asbestos mat, this wall panel weighs under 51 lbs. per sq. ft. and has a thermal resistance equal to three ft. of masonry.) The ceiling-and-roof panel is the same dimension as that for the surfacing is applied at the site after they are in place. Although in the Turin demonstration house this consisted of corrugated aluminum (exterior) and fiber board (interior) any appropriate sheet material is employed.

The ABC has many details which designers could well study, especially in regard to the use of light sheet metal in all the structures. American use of structural steel is notoriously heavy-harded, with extra factors of safety engineered into even the lightest structures. With their chronic shortage of steel, the Italians, like Europeans generally, have had to see to it that each piece does the greatest possible work. This usually leads to light gauges, with all bending, folding and corrugating done as stiffeners.

Interesting also in the ABC designers' handling of door and window details. The sash themselves are horizontally-sliding aluminum, similar to bus windows common in this country. The thickness of the wall panel permits balanced, vertically sliding louvered panels which slide up into the head. Also, metal, these are divided into panels which come in various combinations of size, have vertically-sliding louvered panels which disappear in window head. Exterior surfacing is corrugated aluminum.
BUILT IN A TURIN PLAZA, A BC demonstration house is neatly landscaped, shows how Italians might be rehoused by industrial methods.

LIVING ROOM FENESTRATION is skillfully handled. Each wall section is complete with metal doors, louvered panels which cover any portion and slide up into head when not in use. Apparently missing is an element Americans consider essential: flyscreens.
NEW TIMBER TRUSS uses 50 per cent less material than conventional design.

NEW TRUSSES span 48 ft., are placed 16 ft. on centers. Despite fact that they used 50 per cent less labor and material, load-carrying capacity was slightly higher than conventional design.

Proving itself more economical than comparable trusses in either timber or steel, the new truss shown here was recently used in a bowling alley in Bogalusa, La. While the Lank-Teco truss* represents no radical departure from conventional practice, it incorporates several advances which are said to save 50 per cent of the materials required in a Pratt-type timber truss, and to cost up to 35 per cent less than steel. Main innovations of the new truss are: use of ring connectors instead of bolts; chord members are lapped at splices instead of butt-spliced; old-fashioned steel tension rods are kept where joints in timber would have been unwieldy.

To confirm the engineer's theoretical design studies, the new truss was tested alongside a flat Pratt-type truss under identical conditions. Both were satisfactorily loaded. The Lank-Teco (using only half timber) carried more load with only much deflection as the Pratt. As used in the Bogalusa structure, the trusses have a span of 48 ft. 4 in. and are spaced 17 ft. on centers. Obviously adaptable to a wide range of story, medium-span buildings such as stores or schools, the Lank-Teco is most economical in spans of from 40 to 120. As used in this structure, the trusses span 48 ft. 4 in. and are spaced 17 ft. on centers.

* Named after the designer, Engineer S. Lank, and the developing company, Engineering Co., makers of timber trusses.

Open-web steel joists, site-welded wall panels, yield important savings.

An ingenious use of standard lattice-web steel studs and joists brought important savings in time and material to this office in Houston, Texas. Instead of using members as a mere substitute for wood, Matthews Construction Co. welded the joists and wall panels on the site. Lighter, easier to be handled by a crew of men, 10 ft. wall panels were then swung into place and into a continuous wall. Light open-web joists were then welded to a horizontal and the next story-high panels swung into place. The entire erection time for the two-story steel skeleton, including setting-up of story-high panels, was only 21 days.

In fabricating the virtually windproof panels, the horizontal stiffening and bracing was installed on a jig. Expanded metal on both sides will carry stucco and other surfacing.
BEHIND TRANE HEATING AND AIR CONDITIONING--

THE MOST COMPLETE LINE OF PRODUCTS IN THE INDUSTRY

ver the problem—whether heating treatment—dehumidifying the air in a furnace—attracting mid-summer business to a restaurant—preventing ether exhalations in a hospital operating room—Heating and Air Conditioning Systems offer the correct solution. To make versatility in heating and air conditioning possible, Trane furnishes the most complete line of products in the industry. Trane products are developed, tested, and built to the highest engineering standards... with the added advantage that every Trane product is designed to match every other Trane unit. Thus Trane systems give the performance that is only possible when every component is operating in complete harmony with every other.

The completeness of the Trane line makes it possible for the architect, engineer, and contractor to specify from one source in planning Trane Heating and Air Conditioning Systems. Trane field offices in 85 principal cities co-operate with them.
For today's small house needs . . .

New GE Oil-Fired Warm Air Furnace

BASED ON YEARS OF EXPERIENCE in the heating field, General Electric engineers have produced a new G-E Oil-fired Warm Air Furnace.

So compact is this handsomely designed unit that it fits easily into closet, alcove or utility room . . . with only two inch wall clearance necessary. To obtain flexibility, the unit is arranged so that the filter frame may be installed in either side or back of fan housing cabinet—enabling quick installations and minimum duct-work expense.

This new unit uses the time-tested G-E low-pressure oil impact method of atomization which has proved so economical of fuel. Like all General Electric heating units it is designed and built as a complete unit for efficient, trouble-free operation.

For installations where gas is preferred, the G-E Gas-fired Warm Air Furnace provides the same features of compactness and reliability for alcove or utility room installations.

For full information on gas or oil boiler or warm air units, call your General Electric dealer. He's listed in the Classified Telephone Directory. General Electric Co., Air Conditioning Dept., Section 71311, Bloomfield, N. J.

INSTALLED IN UTILITY ROOM. View of the new G-E unit installed in a neat compact utility room. Plenty of space is available to permit storage of vacuum cleaner, brooms, mops, etc. Closet-type installation saves time and expense for builders.

TWO-INCH WALL CLEARANCE. Underwriters' Laboratories have listed this unit for installation in small spaces with a clearance of two inches on both sides and back.

GENERAL ELECTRIC

Gas and Oil Heat
The BENDIX WASHER and the BENDIX DRYER, too!
Featured in 100 Ridgecrest homes

Bendix Home Appliances, Inc.
South Bend 24, Indiana

A double-barreled sales appeal will be built into the next 100 Ridgecrest Houses offered by Carroll, Hillman and Hedlund's famous Seattle housing development.

These progressive builders have found that the Bendix automatic Washer packs tremendous selling pull.

Their next offering of 100 homes will feature both the Bendix Washer and the Bendix automatic Dryer, package deal, as basic parts of the house.

Prices on these completely equipped homes range from $900 to $9300. With a down payment of only $250, monthly installments run as low as $54.53, including principal, taxes, interest and insurance.

No wonder these builders look for increased customer interest. For the Bendix Washer banishes the drudgery of the old-fashioned household chores. It washes super-clean, rinses three times, drains and cleans itself and shuts itself off. And the Bendix Dryer eliminates the clothes-line ordeal: no more trudging, hanging, waiting for a drying day. No fear of smoke and soot fouling the dry-cleaned clothes.

When you can offer a woman all that—a package mortgage—you've got something! See your Bendix Dealer. Get the "package mortgage" that includes the Bendix washer with the house.
ALUMINUM PREFAB for commercial, industrial and farm purposes.

Alumi-Drome, Reynold’s multi-purpose, all-aluminum prefab is a low cost, standard 36 x 60 ft., unit type, arch roof, self-supporting building. Of the familiar wartime hut design, it withstands high wind pressures and heavy snow loads, provides maximum accessibility and pleasing appearance. The entire floor area of 2,160 sq. ft. is available for use. Large double sliding doors, 11 ft. high by 16 ft. wide at each end afford easy accessibility to the interior and two windows at each end provide for light and air. When set on a 1 ft. concrete foundation, maximum interior height of the structure is 19 ft. Alumi-Drome employs standardized 6 ft. sections in all positions with an overhead spring balance guide for the life of the building. Other items in the line Nu-Style Kitchen Cabinets, Entrances, etc. are pre-transported to aid installation and come knocked-down in packages. Nu-Style Kitchen Cabinets are styled to size with modern ranges and refrigerators. Each is self-contained, but becomes an integral part of the overall assembly. Available in graduated stock sizes they space, need or taste. Entrance doorways are furnished several pediment designs which fit a standard base. They are adjustable to various size doors openings and to wall construction. Pilasters are reversible. The new line includes many other products among which are storm windows; storm sash; garage doors; china cabin Manufacturer: Carr, Adams & Collier Co., Dubuque.

SAFETY FLOORING combines safety and durability and is suitable for use in large or small buildings. All of the qualities of the aluminum sheathing, the structure is said to withstand high wind pressures and heavy snow loads, provide maximum accessibility and pleasing appearance. The entire floor area of 2,160 sq. ft. is available for use. Large double sliding doors, 11 ft. high by 16 ft. wide at each end afford easy accessibility to the interior and two windows at each end provide for light and air. When set on a 1 ft. concrete foundation, maximum interior height of the structure is 19 ft. Alumi-Drome employs standardized 6 ft. sections in all positions with an overhead spring balance guide for the life of the building. Other items in the line Nu-Style Kitchen Cabinets, Entrances, etc. are pre-transported to aid installation and come knocked-down in packages. Nu-Style Kitchen Cabinets are styled to size with modern ranges and refrigerators. Each is self-contained, but becomes an integral part of the overall assembly. Available in graduated stock sizes they space, need or taste. Entrance doorways are furnished several pediment designs which fit a standard base. They are adjustable to various size doors openings and to wall construction. Pilasters are reversible. The new line includes many other products among which are storm windows; storm sash; garage doors; china cabin Manufacturer: Carr, Adams & Collier Co., Dubuque.

COMPLETE LINE OF WOODWORK for large and small buildings features new designs and economies.

Carr, Adams & Collier’s new line of woodwork, trademarked Bilt-Well, features a wide variety of new designs, ease of handling, storage and assembly, and economical installation. A complete line from basement windows to attic louveres, it is designed in keeping with the present trend to modular sizes and is suitable for use in large or small buildings. All of the products are fabricated of Ponderosa Pine and all come packaged in cartons or bundles for easy handling. Certain items such as Superior Windows come as complete units. If both window and frame these units feature a patented inserted weather-strip, which allows the sash to be or removed any time during construction without in the weatherstrip. It automatically compensates for using or shrinking of the sash. Superior Windows are placed in all positions with an overhead spring balance guide for the life of the building. Complete Line of Woodwork, Entrances, etc. are pre-transported to aid installation and come knocked-down in units. Nu-Style Kitchen Cabinets are styled to size with modern ranges and refrigerators. Each is self-contained, but becomes an integral part of the overall assembly. Available in graduated stock sizes they space, need or taste. Entrance doorways are furnished several pediment designs which fit a standard base. They are adjustable to various size doors openings and to wall construction. Pilasters are reversible. The new line includes many other products among which are storm windows; storm sash; garage doors; china cabin Manufacturer: Carr, Adams & Collier Co., Dubuque.

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(Continued on next page)
Your Sales Instincts will Tingle and Your Pockets will Jingle

if you take advantage of the hottest selling story in the heating industry today. It's the story of Superfex "Round the Clock" heating . . . the only one of its kind.

**Check these features**

1. Exclusive "Homogen-Air" system. Has three-stage, non-stop fire, automatic variable speed blower.

2. Two furnaces in one . . .
   A. Peak (high fire) capacity for the coldest weather demand.
   B. Automatic cut-back to economical low fire operation and low blower speed for that "in between" mild weather.

3. Healthful "live air" action.

4. Avoids layer cake separation of heat, which means . . .
   A. Uniform temperature, floor to ceiling, all rooms.
   B. Warm floors. No "Cold leg zone".
   C. All-over comfort.

5. Gas or oil-fired models. (Designed for it . . . not conversion burners.)

6. Proved fuel economy.

7. Summer Fanning and Filtering facilities.

8. Heavy, long-life construction throughout.

9. Scratch and chip-proof finish. (Bonderized steel grips attractive baked enamel.)

10. A size and style for every type of home.

11. Companion line of "Thermawall" non-blower models also with three-stage fire.

12. Special units for popular basementless type homes.

13. Wide consumer acceptance based on long successful performance.

**Then Add...**

A profit-protected exclusive franchise,*

Sound national advertising support.

Effective Dealer Help materials.

Quality and performance leadership insured by the finest development laboratory ever owned by a heating manufacturer.

Unreserved backing of the big name company with 60 years of history and a sure future.

* Yes, there may still be one of these franchises available in a spot where you'd like to do business. All YOU need is Determination, Dependability, a bit of DO. Then check with the home office without delay.
RECTED during the war emergency period, and because of War Production Board restrictions, considerable ingenuity had to be exercised in planning in order to secure proper and adequate results. The same conditions prevailed in the recently-erected R. E. Lee Grammar School, Thomaston, Ga., and LaGrange High School, LaGrange, Ga., representative of the many schools designed by William J. J. Chase, of Atlanta.

Plans called for load-bearing masonry walls, with open web steel joist and concrete slab floor and roof construction; exterior of brick with limestone trim. Each school has a cafeteria, modern kitchen, automatically-controlled heating and ventilating system, program clock, public address and fire-alarm systems. Adequate natural and artificial lighting as well as acoustical control, are also provided.

Included in the Pratt & Lambert Paint and Varnish products used were: P&L House Paint, Lyt-all Flowing Flat, Cellu-Tone, "61" Floor Varnish and Oil Color.

Specifications for appropriate decoration for any type of structure will be promptly furnished on request to the P&L Architectural Service Department nearest you.
How can you make one low-cost housing unit seem different from another? By taking advantage of the 12 colors available in Bondex Cement Paint.

"Exterior decoration" with Bondex colors gives a prospective home owner the chance to express a preference — to feel that his house suits him personally.

**BONDEX adds beauty... checks wall dampness**

One Bondex treatment seals the wall surface against dampness — at the same time color and distinction are achieved.

For "mellowing" concrete and cinder block; for color-styling stucco, brick, masonry and asbestos siding, use Bondex Cement Paint — economical, easy to apply and known the world over for performance.

Basements, swimming pools and foundations also look their best when painted with Bondex.

**THE REARDON COMPANY • St. Louis 6**

Chicago 9 • New York 6 • Los Angeles 21 • Montreal 1

**THE Patented CEMENT PAINT**

That outsells all other cement paints combined
For Perfection Use
MEDUSA WHITE
the original WHITE Portland Cement

Architects who seek the highest degree of perfection in terrazzo, stucco, cast slab, white concrete, will do well to specify Medusa White—the original white portland cement.

In designing construction calling for the use of white cement to produce pure white or colored work and desired textures, you cannot afford to take chances. Consider this important fact: Medusa White has been used successfully for thirty-nine years. No other white cement has a use service record as long as this. Consequently when you specify Medusa White you know in advance that you are going to get a cement that is pure white in color, that can be tinted with pigments or colored aggregate to any color you desire and will lend itself to any surface textures. Time has proved it the most dependable of all white cements.

Medusa has literature available to you covering any use of Medusa White. Write today advising us of your requirements for white cement and let us send you complete information covering that construction.

MEDUSA PORTLAND CEMENT CO.
1004 Midland Building • Department "F" • Cleveland 15, Ohio
"FIFTY-FIVE YEARS OF CONCRETE PROGRESS"

LIQUID PLASTIC COATING applied like paint to practically any surface, provides a high-gloss, waterproof finish

Phenoplast is a 100% phenolic resin coating material that can be brushed or sprayed on practically any surface to provide an infusible, high gloss, transparent, waterproof, proof, solvent and chemical proof coating. Not a "plastic paint", but a 100% phenolic resin in liquid form, it sets within a few hours to produce the same ultra-high, hard gloss is found on cast phenolic resin plastics. Many applications are envisioned for the new material. In the construction trade, suggested uses include: impregnating soft wallboard to impart strength, waterproofing and glazing hard-finished pre-cast concrete, adhesion fabrics to wood surfaces, coating floor furniture to eliminate waxing and cleaning, etc.

Manufacturer: Lockrey Plastic Products Co., 40-16 1st St., Flushing, N. Y.

MODERN LAMPS in metal and wood.

This new line of handsome modern lamps, designed and produced by David Wurster, include both table and stand models in metal and wood. Most units have a flexible gooseneck arm which allows direct or indirect lighting. Many are available with either plastic or fabric shades. Typical of the line are the examples illustrated. The stand lamp shown with a 16 in. and 7 in. plastic shade, priced at $37 and $32 respectively, is available in oak or walnut. Table lamps come in brass and chrome, the upper model with 16 in. fabric or plastic shade retails for $22.50 and $25.50 respectively. Table lamp with 6 in. plastic shade sells for $21.

Distributor: Mary Ryan, 225 Fifth Ave., New York, N. Y.

PORTABLE FLUORESCENT WALL LAMP provides both direct and indirect light, has numerous applications

Providing both soft shadowless light directly downward and a generous amount of indirect light for general illumination, this supplementary lighting unit has a multitude of applications in the home. It is suitable for use over the kitchen sink, under pantry cabinets, in the sewing room or study, over a bed for reading or any place where light is required for a specific task. A simple, streamlined, portable fluorescent fixture, the Beverly contains two 20-w. fluorescent tubes shielded by a diffusing panel of frosted, ribbed glass. Metal end caps are finished in white or (Continued on page 166)
WHY are all these ads in Better Homes & Gardens?

It's because all these companies in your field have found out that BH&G's 100% service content gets the readers who are really interested in what advertisers have to say, and who are at the buying — not the dreaming — stage in homemaking. BH&G gives you over 3,000,000 such families with high incomes. In the November issue, Structural Glass (description and uses in homes), and If We Had It to Do Over Again (remodeling), November, are part of our program of putting across the best ideas in home planning and building.

These brands are advertised in the NOVEMBER issue of Better Homes & Gardens:

MAJOR APPLIANCES
Bendix Washer
Box Range
CP Gas Ranges
Cudllon Range
Colorier Washer
Dexter Washer
Easy Washer
Estate Range
Filter Queen Vacuum
Frigidaire Range
GE Dishwasher
GE Range
Grand Range
Hardten Refrigerator
Hoover Vacuum
Kaiser Stove
Kelvinator
Liebert Range
Majestic Incinerator
Monarch Range
Norge
Philco Refrigerator
Premier Vacuum
Royal Vacuum

MAJOR APPLIANCES (Cont'd)
Servel Refrigerator
Your Washer

PAINTS
Capral
DeVore
Flumax
Kynars
Lopoldith
Luminol
Sapolin
Trusson

METALS
Alcon
Anacona Copper

PLUMBING (Cont'd)
Thermal Portable Water Heater
White Water Heater

ROOFING & SIDING
Johns-Manville

STRUCTURAL MATERIALS
Portland Cement

WINDOWS
Alcoa
Borg-Flarer
Fenestra Steel Casements
Libby-Owens-Ford
Pella

MISCELLANEOUS
Arcar Portables
Brush-Striped Fireplace
Dan-Stow Air Filters
E lectrosteam Portables
Electrohome Portables
Eunor Portables

LUMBER
U.S. Plywood
West Coast Woods

HEATING, MISCELLANEOUS (Cont'd)
Gardner Radiator
Enclosures
HeatMaster
Manitowish-Honeywell Controls
Residential Filters
Sauveanure Portables
Vilroy Portables
White Portables

INSULATION
Beitman-Kill
Balcom Wall
Carey
Chamberlain
Gold Bond
Huntmore
Kemal
Mod-Way Weather-Shiping
Motile Weather-Shiping
Pre-Wall Weather-Shiping

KITCHENS
Kitchen-Kraft

LIGHTING & WIRING
Burgess Batteries
Carlin-Hamner Controls
Once-Power Plants
Sylvanis Lamps

FLOOR COVERINGS
Armstrong Linoleum
Nora Linoleum
Rubber Linoleum

HEATING
Airtemp
American-Standard
Bell & Gossett
Decarb
Deko
Hortonway
Hull
Johnstone
Klasmann
Maitler Kraft
Maitler
Norge
Palmore
Pothole Pailine
Petco
Power
Supertas
Williams OS-Q-Matic

HEATING, MISCELLANEOUS
Armor Portables
Benneth-Beeland Fireplace
Dan-Stow Air Filters
Electrosteam Portables
Electrohome Portables
Eunor Portables

CIRCULATION OVER 3,000,000

America's First Service Magazine
The years melt away
( as the years always do )

As your years dwindle down—as everybody's must—you'll need more than affection and companionship.

You'll need a place to live and food to eat. Which means you—not the family next door, but you—will need money.

There's only one way for most of us to get money—that's to save it. And for most of us, too, the best way to save money is through U. S. Savings Bonds.

Because U. S. Savings Bonds are the most widely and easily available investment to every citizen. Every bank sells them. Every post office sells them.

AND—most important—you can buy them regularly and automatically... which helps overcome human inertia and reluctance to save.

To do so, you just sign up for the Payroll Savings Plan where you work, or for the Bond-A-Month Plan at the bank where you have a checking account. Then they really pile up.

Of course, there are other reasons for buying U. S. Savings Bonds.

They're SAFE. Backed by the credit of the United States, that's all.

They're PROFITABLE. You get 4 dollars out for 3 put in, after 10 years.

They're LIQUID. Like water. You can get your cash out of them at any time... in a few minutes... without penalty.

Remember those words "melt away." They say better than a volume of statistics that you have less time than you think, to save.

Save the easy, automatic way... with U.S. Savings Bonds

Contributed by this magazine in co-operation with the Magazine Publishers of America as a public service.
The INGERSOLL
UTILITY UNIT...

A single engineered assembly of fixtures, appliances, controls and fittings of Kitchen, Bathroom and Heating Plant, plus all interior plumbing and electrical connections.

⭐ Adaptable and flexible to a wide variety of individual plans and needs.
⭐ Compact—requires less than 80 cubic feet of floor space, providing extra cubage without restricting design.
⭐ Convenient—install before, during or after construction of building framework.
⭐ Available for immediate delivery.

Connections with outside electrical lines and water and gas mains are convenient with the Ingersoll Utility Unit when adjustments or maintenance work is necessary. All connections are located in one place, readily accessible. This makes adjustments easy, simple and speedy.

INGERSOLL STEEL DIVISION

Please send me illustrated booklet showing details of the complete Ingersoll Utility Unit.

Name

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INGERSOLL STEEL DIVISION

Please send me illustrated booklet showing details of the complete Ingersoll Utility Unit.
if YOU worked over a
Hot Stove...

you'd remember to specify
EMERSON-ELECTRIC
Kitchen Ventilation

If you took time out on every designing or home construction job to sniff the odor of cooking cabbage, chances are you'd never fail to specify Emerson-Electric Kitchen Ventilation.

Fussy housewives become your biggest boosters when your plans provide for kitchen comfort. Again this year, Emerson-Electric is making your client-job easier by selling the idea of proper kitchen ventilation in more than a score of popular magazines reaching thousands of present and prospective home owners.

For detailed specifications on Emerson-Electric Kitchen Ventilating Fans, write for free Folder No. 214 today!

THE EMERSON ELECTRIC MANUFACTURING CO.
ST. LOUIS 21, MISSOURI

Breeze Condition
The Entire Home with an
EMERSON-ELECTRIC HOME COOLER FAN

Installed in attic, this sturdy fan forces out day's accumulation of hot air, draws in refreshing night air through open windows and doors.

EMERSON ELECTRIC
MOTORS FANS APPLIANCES

ivory enamel and the partially covered top is flat to permit the use of such decorative touches as plants or figurines placed on it or on the wall behind. Installation can be either direct to an outlet box or by means of an extension cord plugged into a convenient electrical outlet. Cord model is designated as Beverly RW-220, outlet box model as Beverly RW-220.

Manufacturer: Sylvania Electric Products, Inc., 500 Ave., New York, N. Y.

AIR ELIMINATOR eliminates air in radiators of hot water heating systems.

Reported to eliminate the accumulation of air in radiators of hot water heating systems, the B & G Airtrol System consists of two basic parts, a boiler fitting and tank fitting.

Together they function to trap air in the compression tank and prevent its return to the boiler, piping and heat distributing units. The Airtrol Boiler Fitting is actually a tube inserted in a T-shaped fitting. Extending the supply main down into the boiler water, it prevents accumulated air at the top of the boiler from rising into the piping and heating units. Air flows around the tube up into the leading to the tank fitting. The B & G Airtrol Tank Fitting provides separate passages for air to flow to the top of the compression tank and the water it displaces to flow into the pipe connections to the system.

Manufacturer: Bell & Gossett Co., 8200 No. Austin St., Morton Grove, Ill.

OIL BURNING, GRAVITY TYPE FURNACE employs a three-stage heating operation for efficiency and economy.

The new Superfex Model 74 "Thermaflow", an efficient burning, gravity-type furnace for small home heating, features a three-stage heating operation; pilot, coasting and booster fires. The pilot and booster fires constitute the equivalent of an ordinary "on and off" furnace. The coasting or intermediate fire maintains a steady flow of heat in the degree needed when temperature demands are too great for a pilot fire and too mild for a booster fire. The pilot fire burns only a minute quantity of oil, alternates with the coasting fire when relatively little heat is needed. The booster fire takes over when the heat demand is greater than the coasting fire can continue supply. With the new Thermaflow model, the flow of warm air is delivered uninterruptedly in the quantity needed to temperature demands. No heat is wasted in reheating furnace and ductwork, hence fuel economy is claimed. Special features of the new unit include: a large radiating surface; long flue travel; mechanical draft with its individual thermostatic control and constant level valve with its built-in three-stage oil delivery control. Superfex Model 74 "Thermaflow" has a heating capacity of...
LARGEST POST-WAR STORE IN DIXIE HAS Q-FLOORS

Because they reduce to a small fraction the unpredictable conditions prevalent in today's construction.
Because they speed up building time 20 to 30%.
Because they save a tremendous amount of drafting room time.
Because they provide dry, clean, quiet incombustible, weight-saving construction.

And this is why the largest post-war office buildings in the South, in New England and in Canada are also using Q-Floors.

The over-all electrical availability of Q-Floor enables you to locate partitions and electrical outlets after the building is occupied. Think of this in terms of drafting room expense saved! The steel cells of Q-Floor are crossed over by headers which carry the wiring for telephone, power, signals and every other electrical device. An electrician merely drills a small hole—on any six-inch area of the exposed floor—to establish an electrical outlet. The whole job takes only minutes, leaves no trenches or muss.

You can see Q-Floor fittings at any General Electric construction materials distributor's. Write for detailed information for your file.

H. H. ROBERTSON COMPANY
2403 Farmers Bank Building
Pittsburgh 22, Pennsylvania
Offices in 50 Principal Cities
World-Wide Building Service

Burdine's, Miami
Architects—E. L. Robertson,
Miami
J. R. Weber,
New York City
Contractor—Rodney Miller,
Miami

THIS IS 1 SQ. FT. OF Q-FLOOR

171
There's no simpler test of whether a man is "management" than to know whether he would help choose his company's new plant site. And there's no surer test of a management magazine than its results for plant site advertising.

Typically, in one campaign which drew 2,407 inquiries, FORTUNE produced 26.3% of the total response from 12 magazines.

And because of their unequaled interest in plant sites, FORTUNE readers are your best prospects for all the things that go into plant sites—for all the products offered under these headlines from the October FORTUNE—as well as for roofing, piping, concrete and steel; power plants, drill presses, ball bearings, and cable; typewriters, stationery, files, and furniture ... and a long, long list of etcetera.

WHERE INDUSTRY'S BEST BUYERS
MEET ADVERTISING'S BEST SELLERS
For luxurious winter comfort, there's nothing like the sunny warmth of radiant heat. And whether it is distributed by radiators, baseboards, convectors or radiant panels, a B & G Hydro-Flo Heating System assures you of its maximum benefits.

B & G Hydro-Flo Heating takes full advantage of the basic superiority of forced hot water as a heating medium. It establishes ideal comfort conditions because it measures out heat in the exact amounts required by the weather. As the outdoor temperature varies, the average temperature of the water in the system is varied also, providing exact compensation for changes in heat loss.

The result of this variable water temperature is a constant room temperature, regardless of weather changes. Operating economy is obvious since fuel is burned only in amounts sufficient to satisfy the heat demand.

Don't forget year 'round hot water
With a B & G Hydro-Flo Heating System installed, the same boiler that heats the house also heats water for kitchen, laundry and bath. The supply is virtually limitless . . . low in cost . . . furnished 24 hours a day, all year 'round.
BASEBOARD HEATING PANELS for use with forced hot water systems, provide comfortable radiant heat. American STANDARD's new Baseboard Radiant Panels install along one or more walls of a room to provide clean, efficient, comfortable radiant heat. Cast-iron units, 8 in. high by 2 in. thick, they replace the conventional wooden baseboard, fit snugly against or recess into the wall. The new panels come in two models. Type R is a hollow unit that circulates hot water from the regular boiler and provides radiant heat only. Type RC, for use where heating requirements are above average, supplies both radiant and convected heat. The unit incorporates a series of vertical fins on the back, an intake at the bottom and outlet near the top to achieve its efficiency. Both of the new units come in 12 in. and 24 in. lengths with cast-in supporting lugs on either right end and in center sections without end supports. Special enclosures and matching corner covers are furnished. All piping, valves and connections are readily accessible. Panel is finished with a regular wood molding at the bottom. Type RC with molding at the top only. Manufacturer: American Radiator & Standard Sanitary P.O. Box 1226, Pittsburgh, Pa.

AUTOMATIC HEAT CONTROL for apartments and buildings maintains desired temperatures within A completely flexible, automatic heat control for apartment and office buildings with centrally located systems, the Fuel Watchman can be installed on any boiler to provide efficient, year round control of the supply. Properly installed and regulated, it is said to maintain temperatures throughout the building within two degrees of the desired setting and at the same time to eliminate waste and servicing. The control consists of three parts: roof control, outside thermostat and main control panel. The roof control, preset at the factory, is located where the building receives direct sunshine. It determines the amount of radiation being absorbed by the building in order to prevent overheating on mild, sunny days. The outside thermometer, control, mounted away from direct sunshine, opens or closes the mechanism according to temperature settings, which range from 60° F to below freezing. The main control is mounted in the boiler room. Inside panel are two synchronous clocks on each of which are mounted 3 plastic schedule discs or dials. Each of these are notched to a corresponding outside control setting so that the outside control is 60° F or below there will be one schedule in operation and that schedule will depend on the outside temperature. Each disc has a different scale depending on the temperature and heating requirements of the building. At 60° F outside, one disc has the 55° setting at 55° another and so on down to 30° F or below. Each actuated by the discs to furnish the actual power output for the boilers, are well oversized. The control, operating a steam system only puts the burner on and off by the pressure switch on the boiler. For morning power the control operates the boiler continuously on pressure, and in a hot water system, the control operates the circulating pump. From there the control operates the boiler continuously on pressure, and in a hot water system, the control operates the circulating pump. Manufacturer: Fuel Watchman Co. 77-29 138th Ave., Flushing, N.Y.

KEYLESS DOOR LOCK combines security, convenience and easy installation. Preslok is a simply designed, push-button combination that is said to offer greater security (Continued on page 175)
HERCULITE DOOR-FRAME ASSEMBLY

Made of extra-heavy extruded aluminum, highly polished and anodized, the frame is heavily reinforced with steel channels and tie rods, as partially shown here.

Diagram of assembly, showing continuous steel channel under the floor, with hinge and mounting box as supplied by the factory.

...affords great simplicity of installation

A "PACKAGED" construction, in one unit, this handsome, rugged and easily installed Herculite Door-Frame Assembly by "Pittsburgh" entirely eliminates all problems of setting and fitting; does away with bothersome details of clearances and many other time- and labor-consuming matters. It replaces the complicated custom-made frames which required scores of different materials and the services of various trades to install.

"Pittsburgh's" Herculite Door-Frame Assembly is available in twelve standard styles to satisfy almost any requirement. It is built to accommodate standard Herculite Tempered Plate Glass doors. It is supplied complete with checking floor hinges and top pivots—ready to bolt into the rough building opening. All clearances on the frame and doors are controlled by accurate factory gauges. These features combine to make possible the greatest simplicity of installation. When the building is ready to receive the doors, they are simply set on the hinge pivot, the top pivot is dropped into the top channel, and the entire structure is complete. Nothing else is necessary.

Further detailed information will be supplied you without charge or obligation upon receipt of the coupon below. Why not send it today?
Alcoa Aluminum INDUSTRIAL

Get bids! They'll be LOW...and the roof, BETTER

Longer Lasting
No Painting
Faster Construction
Lighter Dead Load

Aluminum, a topflight roofing material that has been used on monumental buildings for many years, is now economical for industrial applications. Alcoa Industrial Roofing and Siding is made of a tough Alcoa Alloy that is unexcelled in resistance to atmospheric corrosion by any aluminum alloy now made. It is easy and inexpensive to put on...attractive in appearance.

Alcoa Industrial Roofing and Siding gives you, and your clients, that almost unbelievable combination...a better material at lower price. A material that withstand common industrial atmospheres...smoke fume...for years on end. A material that won't streak or stain.

Figure it in aluminum, any job on your boards can use sheet roofing or siding. Calculate not only savings but also the client satisfaction, which will be pl

Write for Prices
HERE ARE THE DETAILS
Thickness: .032 inches.
Lengths: 5, 6, 7, 8, 9, 10, 11 and 12 feet.
Widths: Roofing sheet, 35 inches; Siding sheet, 33 3/4 inches; Coverage, 32 inches.
Corrugation: 3/8 inch deep, 2.67 inches crown to crown.
Weight: 56 lbs. per 100 sq. ft.
LOAD CARRYING CAPACITY

QUICK APPLICATION
Illustrated here are two of the many ways of installing Alcoa Industrial Roofing Sheet.

WITHSTANDS INDUSTRIAL SMOKE AND FUME
Alcoa Aluminum has been used for many years on coal mines, railroad terminals, warehouses, factory buildings, and locomotive roundhouses. The protective qualities of Alcoa Roofing and Siding have been virtually unaffected by these severe conditions.

FOR SIDING THAT GOES UP FAST
Alcoa Industrial Siding has the same corrugation dimensions and lengths as Industrial Roofing. Overall width is 33 3/4 inches covering 32 inches and providing extra economy for siding applications. Properly applied and with girt spacings up to 7'9" it will withstand 20 p.s.f. wind load.

ASK FOR COMPLETE INFORMATION
Pick up your telephone now and call your local Alcoa sales office. Ask for a sample and complete information on Alcoa Industrial Roofing and Siding Sheet. Or write to Aluminum Company of America, 1450 Gulf Bldg., Pittsburgh 19, Pennsylvania.
than ordinary door locks. Operating without a key, it locks with the flick of a lever and opens only when the proper combination is tapped out on 4 small buttons placed under the knob. According to the manufacturer the number of combinations is virtually unlimited and the change from one to another can be easily and quickly accomplished. Preslok installs on standard 1 3/4 in. wooden doors and most other doors. Installation requires only a single, straight-through cut. Manufacturer: Security Lock Corp., Walden, N. Y.

TOILET SEAT COVER incorporates child's trainer seat. Resembling a modern toilet seat cover, the King Cole Infant Trainer is a compact folding unit that opens into a safe, comfortable training seat for the baby. It permanently installs in place of the regular seat cover, eliminates the fuss and bother of attaching and removing the training seat. When closed the unit functions as a cover to protect the adult.

CONVERTIBLE SOFA-BEDS styled to blend with modern interiors. Converta-Sofa Inc. has announced its entry into the popular priced market with the introduction of two new convertible sofa-beds designed to harmonize with modern interiors. Retaining the patented space-saving and quick conversion features of the original unit, they are attractive sofas by day, comfortable beds at night. One model, of modern conventional design, has its three back cushions securely attached to the back panel to save time, effort and space when converting. Bedding is housed in a compartment behind the hinged back panel which raises to provide use of the mattress width for sleeping. The other model, of Eng-Lawson design, has two oversize cushions supported by back panel. Seat is a comfortable divided inner-spring mattress. Both models have removable inner-spring mattresses, full length and approximate twin bed width mounted on a No-Sag base. Both come in a wide selection of coverings. Manufacturer: Converta-Sofa Inc., 14850 Linwood Ave., Detroit, Mich.

INSTRUMENT for drawing curves. Infinarc is a new, inexpensive curve drawing instrument which, according to the manufacturer, it is possible to produce almost any desired shape including reverse curves, based on a new principle and is composed of a 12 in. base with 4 interchangeable, preformed wire curves. The desired curve is obtained with these especially tempered wire forms as the shape is altered by moving either or both of two adjustment screws along slots in the base. Infinarc is made entirely of stainless steel, comes in a lacquered wood instrument case. Manufacturer: Cook Specialty Co., Green Lane, Pa.
No Place for Vermin

Koylon Foam Division, Mishawaka, Indiana

Koylon—The world's most comfortable material—makes life uncomfortable for vermin. For the very characteristics of Koylon Foam make it vermin-proof! Vermin just won't go near Koylon Foam—even if they could build a home in it.

Koylon Foam starts clean—stays clean! That's one of the many reasons why this amazing cushioning and mattress material is ideal wherever people sit or sleep. In every way it's best for the people you serve and best in the way it serves you. For the matchless comfort of Koylon can be provided easily, economically and permanently.

WHEREVER COMFORT COUNTS, PUT

U.S. Koylon Foam

Comfort Engineered

U. S. Koylon Foam Division, Mishawaka, Indiana
The new look for CLEVELAND

Shown on the air map are some of the great new structures which will change the skyline of Cleveland over the next decade.

From hillside suburbs to industrial bottom lands, new buildings are springing up—stores, apartments, schools, factories, homes, office buildings—every kind and size of structure.

And while Cuyahoga Valley rings with the sound of building, in cities and towns across the country architects, engineers, builders, contractors, bankers, suppliers and investors are forming building teams to plan and carry out a construction program without precedent.

The men who dominate this great nationwide program—some 60,000 of them—through long experience have come to rely on the Forum for a comprehensive picture of the building industry as it is today, as it plans for tomorrow.

Successful manufacturers of quality building products have come to rely on the Forum, too. Year after year, they make their greatest advertising investment in the Forum—the most powerful editorial and advertising force in Building.
Visible Value

In kitchens, Stainless KINTRIM imparts a distinctive beauty that owners and tenants can see... and appreciate... and value more highly. That’s visible value! Installed in corners and along edges of sink and counter-tops, walls and floors—graceful, lustrous KINTRIM gives lasting protection to linoleum and other coverings... guards them against costly wear and tear.

Indeed, you can plan a liberal use of beautiful, serviceable coverings—with KINTRIM. It’s precision-made to accent the beauty of your modern design—to give it more Visible Value!

A LITTLE KINTRIM ADDS A LOT MORE

Visible Value

See KINTRIM in Section 131-2 of Sweet’s 1947 Architects’ File—or write us, Dept 117, for reprint.
Presenting
THE SHOW-ROOM HOMES of the Nation

You're on the way to multiple sales when you advertise your materials and equipment in TIME—to the owners of homes like the one above and like thousands of others in which TIME families live.*

For the kind of people who subscribe to TIME are first to subscribe to new ideas for better living. They find the news of modern building products in TIME’s advertising pages—and with their more-than-double-the-average incomes, can afford to buy the best.

RESULT: the million homes TIME families own not only look like “model houses”, but are models. They are visited, admired, copied by millions of other families who respect the judgment of their TIME-reading friends. Start your sales in the TIME circle, and you'll find them expanding throughout the nation.

* TIME's circulation is massed in high income residential communities. For instance, recent studies in the New York, Chicago, and Philadelphia areas show that TIME subscribers concentrate in suburban high rental areas—are disproportionately few in low rental areas. (For the complete report write David Wallace, Research Director, TIME Inc., 9 Rockefeller Plaza, New York City.)

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America's Schools Need
7 Times their Present Light

Learning is first of all a job for eyes, and there are sixty million of them hard at work in our schools today. But, in the average school, there is an actual need for seven times the present light.

The Leader "Schoolmaster" fluorescent fixture has been especially designed and engineered for school room use. Every factor for correct lighting has been carefully incorporated. Added to its high lighting efficiency is the optional feature of a built-in germicidal lamp that successfully combats air-borne bacteria without fear of injury to students' eyes.

Only the best electrical wholesalers and contractors distribute and install Leader fixtures. Investigate the Leader "Schoolmaster" locally, or write
Is the wiring OK?

Absolutely. We use Post-advertised brands throughout.
This manual offers complete information on the selection and installation of Silent Breeze Ventilating Fans in homes, industrial and commercial buildings. Beginning with a full description of the ventilating fan and available accessories (automatic shutters, an automatic control, etc.) following sections cover residential and non-residential installations. These outline in detail the procedure for selecting the correct size fan and the best method of installation. Both sidewall and suction plenum installation methods are covered for residential installations. In "non-residential installations", suction ventilation and pressure ventilation systems are discussed. Concluding pages present installation diagrams, details, etc. Manual should be requested on business letterhead.

Beautiful kitchen in the home of George Leikert, Detroit, Michigan, illustrates the modern beauty and utility of Marlite panels and Marsh mouldings.

Appealing beauty and economical utility are characteristics of the "Building of Tomorrow," designed for better living. Versatile Marlite plastic-finished wall and ceiling panels, adaptable to every type of construction, provide colorful interiors that are at once pleasing and serviceable. Marlite seals in beauty, seals out dirt and grime, is quickly installed, easy to keep clean. Plan now to make the most of Marlite, designed for the "Building of Tomorrow." Marsh Wall Products, Inc., 1101 Main Street, Dover, Ohio.

Equipment. Dresser Industries, Inc., "All Along The Line", 364 pp. 8 1/2 in. x 11 1/4 in. This book is an elaborate presentation of typical manufactured by each of the members of Dresser Industries, Inc., a group of companies engaged in the production of equipment. Each product is well illustrated and briefly described. Many of them are of interest to the designing and construction field. Such products include: air conditioners, airport equipment, blowers, boilers, heat exchangers, compressors, dehumidifiers, derricks, radio masts and towers, water heaters, pumps, etc.

PARKING FACILITIES. An Economic Study of Interior Parking Facilities by Charles S. LeCraw, Bureau of Traffic, Yale University, Strathcona Hall, New Haven, Conn. 29 pp. 8 1/2 in. x 11 in. The contents cover: the parking study of separate interior-block land parcels, study of value of various portions of street-front land parcels, location of entrances and exits for interior-block parking and conclusions. Work is illustrated with figures and tables.

REQUESTS FOR INFORMATION

HARRY L. ALPER, architect, 565 Fifth Ave., New York, N. Y., requests literature and samples of new building products especially adaptable to store design.

WAYNE E. CHAMPION, designer for Aviation Facilities A-1, Box 1171, Arcata, Calif., requests information on airfield design, including hangar and aircraft maintenance service facilities, ticket and passenger facilities, etc.

DON E. KNOBLAUCH, engineer, 8022 West Dixon St., Milwaukee, Wis., requests information on products applicable to small, medium size houses.

RAPHAEL TING, consulting structural engineer, 1684 Sir John Road, Shanghai, China, requests information on reinforced design, electric arc welding and general building materials.
...completing the housing picture

George Nelson designs

Herman Miller

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COMMERCIAL BUILDINGS
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FOR Everything Electrical

CONSTRUCTION AHEAD
Electrical equipment requirements for different types of projects vary widely, of course. But whether it's a commercial building, industrial plant, residential or municipal projects... you can place undivided responsibility for everything electrical with Westinghouse and its distributor organization.

The advantages of this unit responsibility are obvious:

1. Specialized Engineering... to assist in selecting and applying equipment for maximum efficiency.
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3. Speedier Installation... by centralizing responsibility for delivery and installation.
4. Better, More Reliable Service... through the coordinated design and construction of Westinghouse equipment, plus broad experience in applying it for all types of industries. Westinghouse also offers unmatched electrical maintenance service, through its nationwide chain of Renewal Parts Warehouses and Manufacturing and Repair Shops.

No other electrical organization in the world can match the breadth of these facilities and products for the construction industry. Your near-by Westinghouse office or Westinghouse Distributor is headquarters for this service. Westinghouse Electric Corporation, P. O. Box 868A, Pittsburgh 30, Penna.

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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.

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MORE than pay the cost!

134,445,000 modern-minded people share her interest
Grand Rapids Invisible Sash Balances are sold monthly to the readers of these magazines...the bulk of the home-building market.

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SASH BALANCE

The practical SPIRAL sash balance
Of course she can afford them! They go in quick and easy...just three screws per balance... save hours of high-priced labor. Laboratory tests point to perfect lifetime performance...proved in thousands of homes. No tapes, no cables, no exposed tubes, no corrosion. The one practical installation for modern narrow trim. A few standard sizes fit 95% of all residential requirements...same size balance fits upper and lower sash.

For complete specifications and instructions
Write today for fully illustrated specification and installation data. See how Grand Rapids Invisibles fit into your next set of plans!

GRAND RAPIDS HARDWARE COMPANY
Grand Rapids, Michigan
Quality Leaders in Sash Hardware for 50 Years

Grand Rapids Sash Pulleys
No. 103 face plate, cone bearing type and Nos. 125, 129, 110 sawtooth drive type sash pulleys cover 95% of all sash pulley requirements.

SPECIFICATION A

The advertising pages of FORUM are the recognized market place for those entering the building. A house or any building could be built, completely of products advertised in THE FORUM. While it is not possible to certify building products, it is possible to open these pages only to those manufacturers whose reputation is recognized. This FORUM does.

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American Radiator & Standard Sanitary Corp.
American Rolling Mill Co., The
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Bell & Gossett Co.
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Bigelow-Sanford Carpet Co., Inc.
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Borg-Warner Corp. (Ingersoll Steel Division)
Bradley Washfountain Co.
Bryant Heater Co. (Member, Dresser Industries, Inc.)
Burnham Boiler Corp.

Cambridge Tile Manufacturing Co., The
Carbide and Carbon Chemicals Corp. (Pyrofax Gas Div.)
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Carrigan Corp.
Case, W. A. & Son Manufacturing Co.
Ceco Steel Products Corp.
Celotex Corp., The
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Chase Brass & Copper Co., Inc.
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InSink-Erator Manufacturing Co.
Insultile Co., The

Just Manufacturing Co.

Kelvinator
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with NEW LOW PRICES OF
REYNOLDS ALUMINUM
SHEETS for DUCTS!

Immediate deliveries let you go to work NOW!
Customer gets better duct work at no extra cost. Bid aluminum and bring immediate duct business into your shop. You have no material worries when you specify Reynolds Lifetime Aluminum. Approximately 100 strategically located jobbers are ready to serve you now.

What’s more, you can bid aluminum competitively. Remembering that aluminum offers three times the metal area of conventional materials, today’s low price of $0.214 per pound for Reynolds Aluminum Utility Sheet means it’s cheaper than other materials costing more than 7¢ per pound. And there are additional economies in fabricating and erecting ducts of this lightweight metal.

The customer gets more than a prompt job at no extra cost. It’s a better job because aluminum ducts require no painting; operate quieter; are non-rusting and corrosion-resistant.

For complete information on Reynolds Aluminum Utility Sheet for ducts contact your nearest jobber, Reynolds Sales Office or write direct to Reynolds Metals Company, Aluminum Division, 2528 South Third Street, Louisville 1, Kentucky.

IF YOU SEE RUST
YOU KNOW IT'S
NOT ALUMINUM

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ALUMINUM

Lifetime
Now you can build for permanence with treated lumber that’s clean lumber. Pentachlorophenol makes possible this greatest advance in wood preservation. It provides lasting, effective protection against both decay and termites—yet, properly applied, it leaves wood non-sticky, easy to handle, paintable!

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Get this new free booklet today. It shows you how Pentachlorophenol adds life to lumber—cuts costly losses. Send for booklet No. PE 21

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Here is a new, popular priced, *Vitreous China Urinal* by Eljer that will "open the door" for you on many jobs.

Easy to clean and keep clean, this well-designed piece appeals to architect and builder alike. The hard, glass-like surface resists stain and reduces janitor service to a minimum, an economy feature which appeals to every building manager.

Ask your Eljer Distributor about this fixture or write direct to Eljer Co., Box 192, Ford City, Pennsylvania.

*Fixture illustrated, New Bedfordshire No. B-8230*
Where doors are prominent in the design of a structure, the "OVERHEAD DOOR" is chosen with complete confidence, because this quality door blends with any style of architecture. For smooth operation and uninterrupted service, the "OVERHEAD DOOR" with Miracle Wedge is again a predominant choice because it is efficient in all weather and years of trouble-free service. Built as a complete unit for residential, commercial, and industrial structures, this door is strong, lightweight, and adaptable, and is preferred by millions of users.

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ANY "OVERHEAD DOOR" MAY BE MANUALLY OR ELECTRICALLY OPERATED. SOLD AND INSTALLED NATION-WIDE — SALES, INSTALLATION, SERVICE.

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