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THE ARCHITECTURAL FORUM

FEBRUARY 1940

Your Clients, Too, are Reading About "A Better Way to Build!"



George S. Hawes, architect, of Flint, Michigan, planned this delightful small home for Dr. Ryan of that city. Stone, brick, and wood siding are used, with Celotex Vapor-Seal Sheathing serving equally well with all three materials.



They Recognize the Economy of Using Celotex Insulation to Do 3 JOBS AT ONE COST!

AS AN ARCHITECT, you know the importance of insulation—not only at the top of a house, but in the side walls as well. And you have doubtless known many clients who said, "Leave out the side wall insulation," when they decided to cut costs. On that account, we believe you will be interested in the current Celotex advertising campaign, which emphasizes the importance of complete insulation.

This advertising is going directly into the homes of your clients, telling them about "a better way to build"—with the kind of construction which will produce lasting satisfaction and economy for them.

It tells them, briefly and convincingly,

the advantages of Celotex Insulation which you already know so well. How Celotex Vapor-seal Sheathing and Celotex Vapor-seal Lath replace other structural materials, increase structural strength, provide proved insulation and a scientifically correct vapor seal—all at one cost.

Permanently protected against termites and dry rot by the exclusive, patented Ferox Process, these Celotex products are guaranteed in writing for the life of the building.* Let us send specifications and samples to bring your files up to date!

*This guarantee, when issued, applies only within Continental United States.
The word Celotex is a brand name identifying a group of products marketed by The Celotex Corporation.

CELOTEX

REG. U. S. PAT. OFF.

VAPOR-SEAL INSULATING SHEATHING VAPOR-SEAL INSULATING LATH

Sales Distributors Throughout the World

THE CELOTEX CORPORATION • 919 N. Michigan Ave., Chicago, Illinois

FEBRUARY 1940

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Editor, Howard Myers; Managing Editor, Ruth Goodhue; Associates, Paul Grotz, Joseph C. Hazen, Jr., George Nelson, Henry H. Saylor, Henry Wright; Assistants, John Beinert, Anna De Cormis, Barbara Hunt, Richard E. Saunders, Madelaine Thatcher, Nadia Williams, Allan Woodie. THE ARCHITECTURAL FORUM is published by Time Inc., Henry R. Luce, Chairman; Roy E. Larsen, President; Allen Grover, Eric Hodgins, P. I. Prentice, Vice Presidents; Charles L. Stillman, Vice President and Treasurer; David W. Brumbaugh, Secretary. Publication and Subscription Office, Erie Ave., P & G Streets, Philadelphia, Pa. Subscriptions may also be sent to 330 East 22nd Street, Chicago, Illinois. Executive, Editorial and Advertising Offices, Time & Life Building, Rockefeller Center, New York. Business Manager, H. A. Richter. Advertising Manager, George P. Shutt. Address all editorial correspondence to Time & Life Building, Rockefeller Center, New York. Yearly subscription, Payable in advance, U. S. and Possessions, Canada, Cuba, Mexico, South America, \$4.00. Elsewhere \$6.00. Single issues, including Reference Numbers, \$1.00. All copies Mailed Flat. Copyright under International Copyright Convention. All rights reserved under Pan American Copyright Convention. Copyright, 1940, by Time Inc. Printed in U. S. A.

VOLUME 72—NUMBER TWO

THE MONTH IN BUILDING

BUILDING TRENDS. Pointing to a bumper crop of houses in the Spring, November residential building permits soared 14 per cent ahead of October, 43 per cent ahead of November 1938. (Other classifications of construction tapered off during the month—see tabulation, right). Another encouraging statistic in Building's background is the level of factory payrolls—101 per cent of the 1923-25 average and 17 per cent higher than the corresponding 1938 figure (see page 139). Less encouraging: the upward trend of wholesale and retail building costs; a dip in rents; drops in stock and bond prices.

PERMITS

(Source: U. S. Dept. of Labor)

	Monthly Data			First eleven months	
	Nov. 1939 (millions)	Comparison w.th Oct. '39	Nov. '38	1939 (millions)	Comparison with 1938
Residential	\$106.3	+14.4%	+43.1%	\$1,052.7	+32.3%
Non-residential	43.2	— 7.2%	—11.8	549.3	+10.4
Additions, repairs	23.0	—13.8%	+ 1.0	315.9	+ 8.6
TOTAL	172.5	— 2.1	+18.5	1,917.9	+21.1

BUDGETED BUILDING. In common with most other Government agencies, those which deal with Housing and Building took a financial trimming last month when Roosevelt II handed the 76th Congress the U. S. Government Budget for the fiscal year ending June 30, 1941:

► Chief exception was the U. S. Housing Authority whose administrative funds will be upped \$50,000 to \$4,550,000. (Actually, the increase is \$275,000, for \$225,000 of the current year's appropriations was placed in reserve.) During the 1941 fiscal year, USHA construction will reach its peak, and \$15 million will be required from the Treasury's general fund for annual contributions to local authorities. This year \$5 million will be required.

► The Federal Housing Administration's appropriations were cut from \$13.8 million to \$13.3—a change which, according to the Budget, "reflects the decreased volume of rental housing being performed under Section 207 of the Housing Act." Last spring, Congress tied several restrictive amendments on this Section. (ARCH. FORUM, June 1939, p. 2.)

► Home Owners Loan Corporation was docked \$2.5 million, will receive only \$22 million in 1941. Reason: "... reduction in the number of foreclosed properties held ... and improvement in the condition of the accounts outstanding."

► Federal Home Loan Bank Board will receive \$1,350,000, a paltry \$50,000 less than during the current year.

► Federal Saving and Loan Insurance Corporation got \$300,000 this year, will get the same next year.

► Public Buildings Administration, a little known Government agency (ARCH. FORUM, Dec. 1939, p. 4) will need \$16 million—most of the \$1.4 million increase to be used for maintenance and repair of Capitol buildings.

► Farm Security Administration will get \$1.5 million for liquidation and management of resettlement projects. This year it is receiving \$2 million.

These figures, of course, are only Presidential recommendations to Congress, but chances are they will be closely followed along with those of increased national defense appropriations. Without

these and other budget cuts all along the line, Congress will have to up the Nation's debt limit beyond the authorized \$45 billion limit. As it is, Congress may have to raise an additional \$460 million via new taxes—probably on personal incomes.

TRUST BUSTING. Not a Building agency, per se, the Anti-Trust Division of the Justice Department also bowed before the Presidential Budget-pruning (see above). Momentum which the building industry drive alone has gathered prompted Assistant Attorney General Thurman Arnold to ask for a Congressional appropriation of \$2 billion—\$700,000 more than was allotted for the 1940 fiscal year. Instead, Roosevelt II sliced a cool \$100,000 off the Anti-Trust Division's present housekeeping fund, recommended that only \$1.2 billion be devoted to trust-busting next year. Reasons for this drastic action are only rumors. One of them: Budget-cutting in the name of economy offered the New Deal a painless way to kill off its embarrassing effort to apply anti-trust laws to labor unions.

But, Trust-buster Arnold is undaunted. Shortly after the appropriation cut was recommended, he went before the House Appropriations Committee, stumped for a still larger sum than originally requested—\$3 million. And, chances are that the Committee men will consider well his pleas. Carefully counting both the brickbats and bouquets which Government programs receive, Congress has found that the building industry investigation rates high in public approval. (As much responsible as anything else is the trust-busters' refusal to treat Building's Labor as a sacred cow). So, fortnight ago, a movement was afoot in Washington to restore Arnold's budget cut—and then raise the ante in line with his request.

Even if this movement bogs down and the Presidentially recommended \$1.3 million appropriation goes through, the drive against Building's alleged restraints-of-trade will probably go on undiminished. It currently accounts for 27 per cent of the Anti-Trust Division's work, and much

of the balance (which enjoys considerably less public approval) can be shifted to this department in short order.

Meanwhile lower building costs in Pittsburgh (see below) gave Mr. Arnold another bouquet for Congressional Appropriation Committees to sniff.

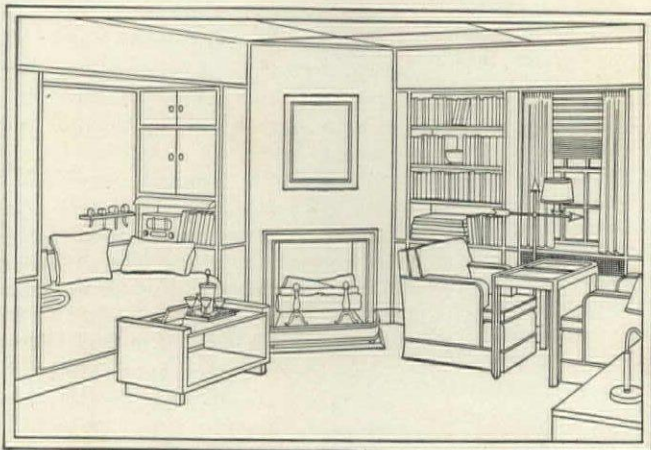
TRUST BUSTED. When Assistant Attorney General Thurman Arnold launched his ubiquitous investigation of the building industry last fall, his immediate job was to ferret out violations of the anti-trust laws, but his ultimate aim was to lower building costs. In one city at least there are already signs that this ultimate will be realized. Last October a Federal Grand Jury convened in Pittsburgh to sift the reasons for the high cost of construction in the city. A month later they indicted the Electrical Contractors Association and the Electrical Workers' Union on charges of conspiracy to defraud by collusive bidding on PWA projects. Shortly after, the Pittsburgh Housing Authority opened construction bids on a low rent housing project, could hardly believe their eyes; the lowest bid was \$1.3 million or 19 per cent under the architect's cost estimate.

That such a bid should be the cause of Pittsburgh wonder is best explained by the Housing Authority's previous experience. In April, 1939, it asked for bids on its first project, and the lowest figure received was 19 per cent too high. Bids on its second project, which happened to come in shortly after the first blast of anti-trust ballyhoo last summer, were much better. The winning bid was 8 per cent below estimates. It was the third project—as mentioned above—however, that produced the startling returns and prompted the theory that the investigations have frightened building costs down.

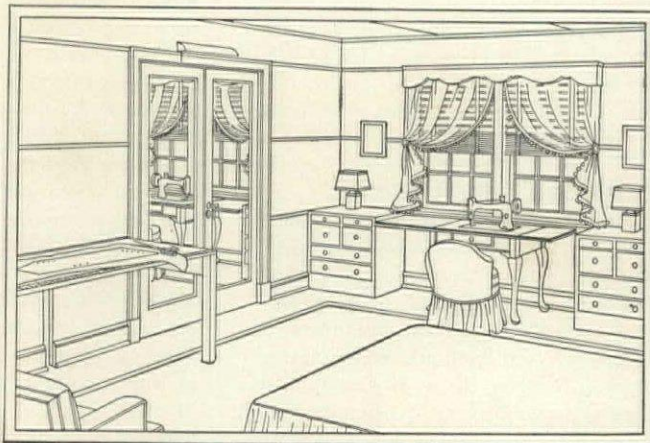
Although this sequence may well be no more than a coincidence, there is still a good chance that it is not. If the latter obtains, Thurman Arnold can boast concrete progress toward his goal of becoming Building's cost-buster as well as its trust-buster.

Another event which must have pleased Mr. Arnold was announcement at year-

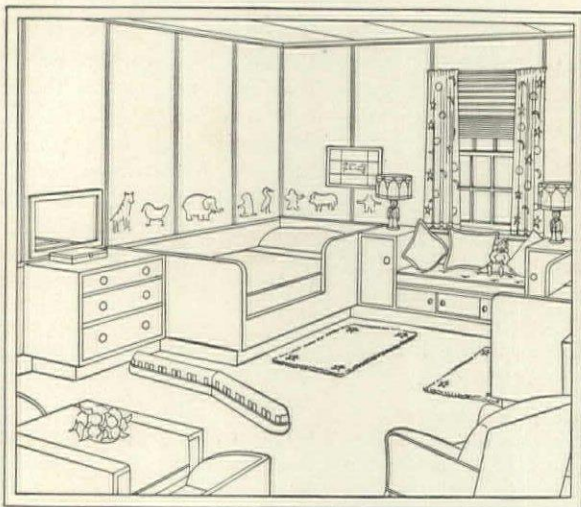
Note these modern applications of Masonite Tempered Presdwood



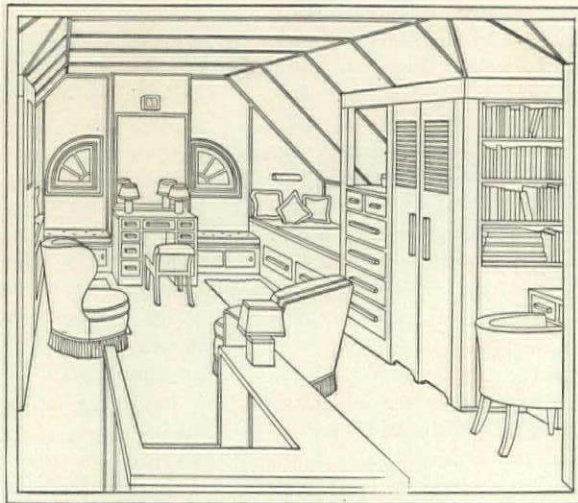
A cozy den can be executed at little cost when Masonite Tempered Presdwood is applied over structural insulation to form the walls and ceiling. Built-in sofa is an interesting feature of this layout . . . easy to include with Tempered Presdwood.



A dual-purpose room—sewing-room by day—guest-room by night. The Tempered Presdwood walls are grooved with a modern horizontal pattern and can be painted to suit the client's taste. The built-in cutting-table is Tempered Presdwood too.



"Babies' Heaven" is this nursery. Tempered Presdwood is used for the walls because it can stand hard usage and will not scuff. Built-in beds, dressing-tables, desk, sofa, cabinets are Tempered Presdwood—excellent for unusual devices, because it can be cut or sawed to any shape.



Converted attic makes an excellent boy's room. Masonite Tempered Presdwood is used for the built-in furnishings—bed, dressing-table, chest of drawers, bookshelves. Masonite Structural Insulation is nailed to studs and rafters to form durable, insulating walls and ceiling.



Millions of home-owners will see the new-home and remodeling ideas outlined on this page in Masonite's national advertising, which will appear during March. We will gladly send you a free sample of Masonite Tempered Presdwood so that you can examine it closely. The coupon is for your convenience.



MASONITE CORPORATION, Dept. AF-6
111 W. Washington St., Chicago, Illinois

Please send me free sample and more information about Masonite Tempered Presdwood.

MASONITE TEMPERED PRESDWOOD

THE WONDER WOOD
OF A THOUSAND USES
SOLD BY LUMBER
DEALERS EVERYWHERE

Name _____
Address _____
City _____ State _____

THE MONTH IN BUILDING

end that the electrical contractors of Greater New York have voluntarily set up a fair practice code which specifically guards against those things which Government trust-busters are investigating. Effective the first of the year, the code provides 1) that contractors be fined for collusive practices, 2) that public complaints be granted hearing and 3) that data be collected to show whether or not work is being provided at fair prices. In addition, it recommends that electrical contractors limit profits to 10 per cent.

SWEEPSTAKE HOUSING. Under construction in a South Philadelphia slum neighborhood is a 65-unit housing project for Negroes. The funds to build this project came not from the coffers of an alphabetical Government agency nor from a philanthropist's well-lined pocket, but from the sudden fortune of a Negro family whose memory is filled with their poverty-stricken past.

A year ago, the Masons—Mr. Benjamin, Mrs. Pearl, Daughter Frances (10) and Son Ben, Jr. (6)—were on relief. They lived in a leaky, unheated house without plumbing, had a desperate time making ends meet on \$11.40 a week. Then they won \$150,000 on an Irish Hospital Sweepstakes ticket picked by daughter Frances.

Many a family before them has come into that much money, but few have used their new wealth to such generous ends. The Masons returned to the county the \$2,134 they had received for relief, paid their neighborhood bills and redeemed the old clothes they had been forced to pawn. Then they bought the things they had long dreamed of having: Pearl, a \$3,000 row house in North Philadelphia and new furniture; Ben, a shiny \$1,095 car; the children, new clothes and toys. With these obligations, needs and luxuries out of the way, and with \$57,588 set aside for income tax, Pearl determinedly took what was left of their winnings into her own hands. Under the able guidance of Negro

Lawyer Raymond Pace Alexander she set out to help the Negro families they had left behind in the slums. And the best thing she could think of was to give them decent places in which to live.

For \$40,000 cash the Masons purchased a block of three-story brick tenements, hired Architect Frank V. Nichols (white) to replan the property. Since most of the old buildings were not beyond repair, they are being remodeled into an unpretentious group of dwellings around a court and playground. For them Nichols specified the latest in modern conveniences, including air conditioning.* In addition, he has planned a community center to house a gymnasium, chapel and bowling alley.

Construction is being handled by Negro Builder Homer H. Jefferson and will be completed by the middle of April. The Masons planned to invest only \$25,000 in this construction, but the estimate ran \$10,000 higher. To cover this extra sum, without digging further into their fast-dwindling funds, they borrowed on a 4½ per cent mortgage.

With a total expenditure of \$75,000, the average cost per dwelling unit will be only \$1,154. Rents will range from \$22.50 to \$37.50. Although the apartments vary in size from one to four rooms, most of them are two- and three-room units. On the basis of the largest unit, rent per room will average \$8 per month—\$4 more than the average rent in USHA subsidized public housing projects in the North, about \$7 less than average rents in FHA-insured private projects.

Even though the Masons have kept rents down to a low level, they will make money on their venture. Attorney Alexander estimates gross income at \$1,300 a month, net income at \$600, which will be an annual return of about 10 per cent on

* In remodeling Philadelphia's run down row houses, the Masons are following but are improving upon the successful lead of Realtor Arthur W. Binns (ARCH. FORUM, Sept. 1939, p. 149).

the \$75,000 of sweepstakes money to be invested in the project. Called "Frances Plaza" for the Mason's winning-ticket-picking daughter, the project is already rented, has a yard-long waiting list.

SESSION III. Gratified at having been treated generously in the President's 1941 Budget (see page 2), the U. S. Housing Authority is also happy over the prospects for passage of the long-sought USHA amendments by this, the third session of the 76th Congress. Capitol Hill observers are generally agreed that the bill will pass, but are also agreed that the Government housers may not get all that they want. Thus, the desired \$800 million boost in borrowing-lending power may be toned down, and efforts will be made to reduce the amount of annual Federal subsidies paid to each housing project (now averaging about 33 per cent of a project's economic rent).

Two facts have brightened the bill's prospects for passage: 1) with shrewd timing USHA Administrator Nathan Straus has earmarked the last of his dwindling funds for the development of five rural housing projects in the bailiwicks of several conservative Southern Democrats, and 2) the USHA bill is about the only new spending-lending legislation that will not crowd the Government's debt limit nor upset the budget. The additional lending funds would come from the sale of securities, which have nothing to do with the Government's debt limit. And, since annual Federal subsidies do not start till projects are completed, no new appropriations would be necessary for the time being.

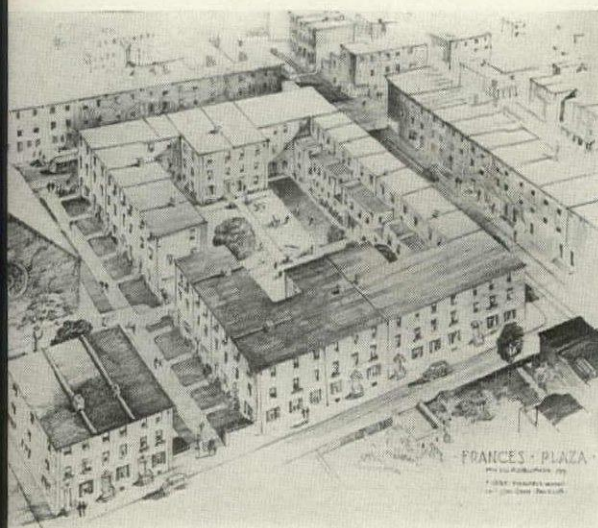
Of interest to Building are several other pieces of legislation to come before Session III:

► A measure expanding and liberalizing the powers of the Federal Home Loan Bank Board was reported out of the House Banking Committee too late for voting at the last general session. It would: 1) permit the FHLB System to discount loans on large scale rental housing projects, 2) authorize the U. S. Treasury to buy debentures issued by the System and 3) reduce the insurance premium charged by the Federal Savings and Loan Insurance Corporation from ⅛ to ⅟₁₂ per cent.

◄ Also hanging fire from last year but showing new life is the Lea Bill which would set up a \$350 million farm mortgage insurance program to be administered by the Department of Agriculture. While patterned in general after the FHA program, it would peg interest rates at 3 per cent and permit loans to be written for as much as 100 per cent of value.

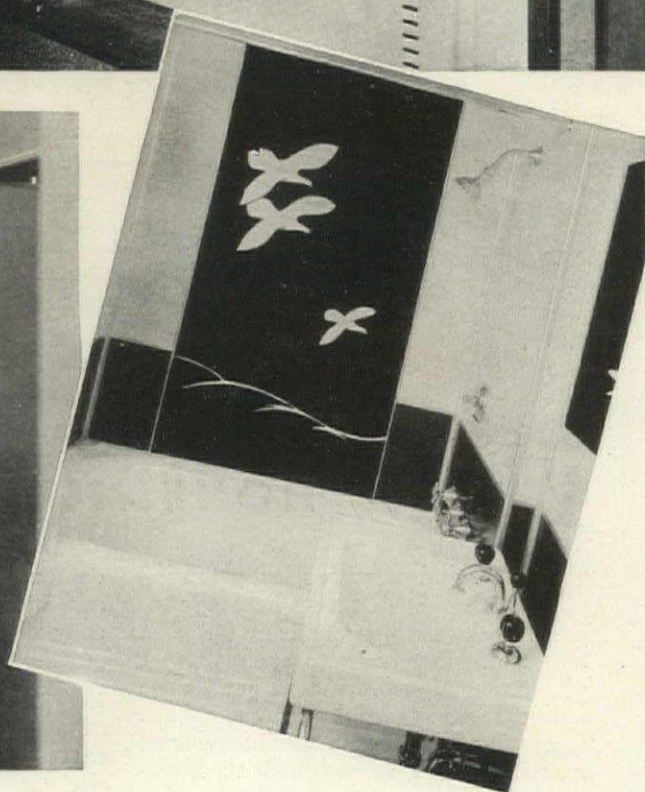
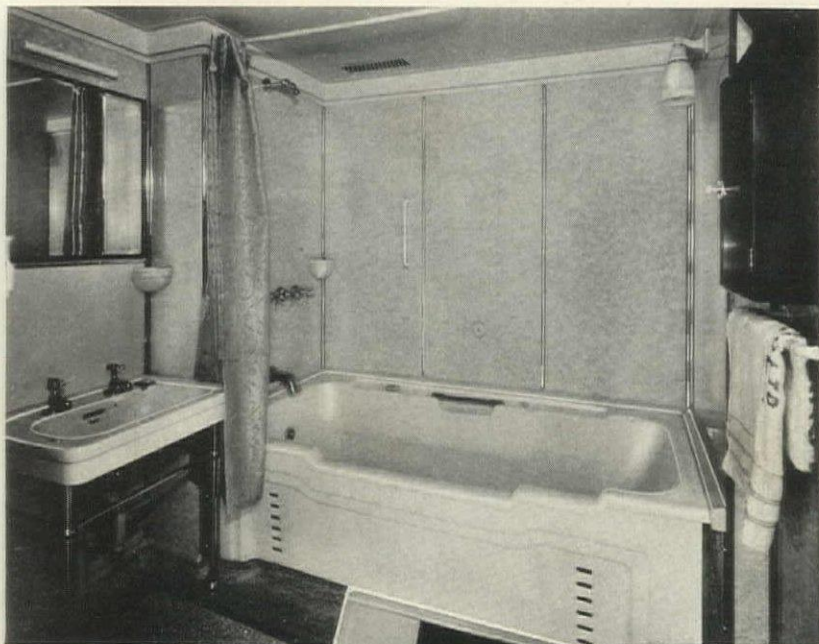
► As usual, a number of bills will prob-

(Continued on page 36)



Frances Plaza before the Masons became sweepstakes winners was a block of unkempt tenements with many a window and door boarded up (above). Next April, after remodeling, it will look like the sketch, left.

*Plain or Fancy
Formica Walls
are Always*
**DURABLE
and
PRACTICAL**



FORMICA walls for the bathroom and kitchen, whether they are plain and simple, or highly decorated with inlays in metal or color, are serviceable and easy to care for. They wash easily with soap and water; they are not spotted by ordinary liquids; they do not crack if the walls shift; they maintain their original color indefinitely. Therefore, after years of use

they look exactly as they did the day they were installed and that may be very good indeed. Such walls have been used in bathrooms of many of the world's finest ships, and for various purposes in fine trains and hotels. A reduction in price now makes them available for the modest residence or apartment. Complete details on request.

The Formica Insulation Co., 4620 Spring Grove Ave., Cincinnati, Ohio

FORMICA

F O R B U I L D I N G P U R P O S E S



STEEL WINDOWS SAVE \$996,629 IN 46 HOUSING PROJECTS

STEEL windows were selected for 66,153 rooms in 46 recent housing projects. Initial savings alone amounted to \$996,629. Why is there such a great preference for steel windows among the nation's leading building men? We wanted to find out so we interviewed many of those responsible for the selection. Here are a few of their answers.

"THEY COST LESS," answered the president of a large firm of building contractors. "We've used them consistently with excellent results. Corrosion is no problem with the new rust-proofing process. They are entirely satisfactory."

"THEY HARMONIZE," said a well-known New York architect. "Our experience with steel casement windows

demonstrates that they are not only acceptable but desirable with practically all styles of architecture."

"THEY COST PRACTICALLY NOTHING TO MAINTAIN," says the manager of a large group of houses. "The only expense we had in 4½ years' time was one coat of paint on the sills. That's why I have gone on record several times as favoring steel windows."

"THEY STAY TIGHT," says a heating contractor of wide experience. "In all my years of business, I've known only one instance of excessive heat losses and that was caused by a poor installation."

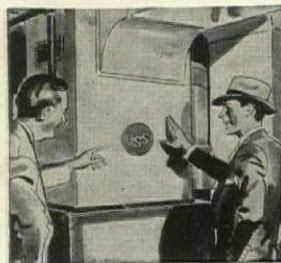
Write for further information on steel windows and other modern applications of steel in the home.

CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh and Chicago
COLUMBIA STEEL COMPANY, San Francisco
TENNESSEE COAL, IRON & RAILROAD COMPANY, Birmingham
Scully Steel Products Company, Chicago, Warehouse Distributors
United States Steel Export Company, New York

UNITED STATES STEEL



Steel Insulation. Compares in efficiency to best conventional insulation but costs less. Already proved satisfactory in more than a thousand homes.



Longer-lasting steel for heating systems. U-S-S Galvanized Copper Steel has double the rust resistance of plain steel—yet costs little more.



Steel takes the work out of mother's workshop. Steel cupboards, cabinets, sinks are so much easier to clean. Look new longer.



Steel closets. Complete units equipped with door, shelves, hooks, slip right into the wall. Easy to clean, never need refinishing.

LOOK FOR THE U-S-S MARK

The U-S-S symbol placed by the manufacturer on any finished steel product is your assurance that he has used the best steel he can buy for its purpose.



STREAMLINED BY A FAMOUS INDUSTRIAL DESIGNER...

CHROME-PLATED FOR ENDURING BEAUTY... AND...

HOFFMAN SPECIALTY CO.
WATERBURY, CONN.
MADE IN U.S.A.

RAYMOND LOEWY, AMERICA'S FOREMOST INDUSTRIAL DESIGNER, CONCEIVED THE SLIM, SLEEK LINES OF THE NEW HOFFMAN VALVES.

Featuring Two Sensational New Improvements

We knew the revolutionary features of the new Hoffman Valves were *good* . . . comparison told us that! But we didn't even *hope* for so enthusiastic a welcome as they actually received.

Hoffman Valves satisfy two long-felt wants . . . *at no greater cost!* New slender tube radiators and convectors, so much in demand today, require a different type of valve because of structural changes. The new Hoffman Valves

with their "short tongue" siphon meet these new standards exactly, ending previous installation and operating difficulties. *Any radiator, whether new or old style, can be properly fitted and vented with a Hoffman Valve!*

In addition, Hoffman Adaptors permit any Hoffman angle valve to be installed on convector radiators—formerly requiring special straight shank patterns. For full information, send for Hoffman's new Venting Valve Catalog.

HOFFMAN SPECIALTY CO., INC., DEPT. AF-2, WATERBURY, CONN.

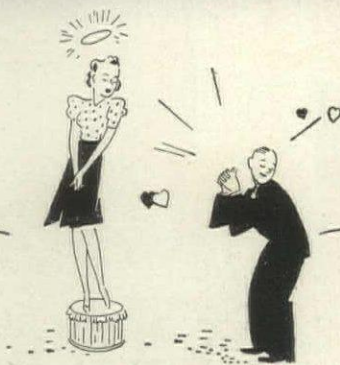
HOFFMAN VENTING VALVES

Sold everywhere by leading wholesalers of Heating and Plumbing Equipment



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4
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12
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3
6





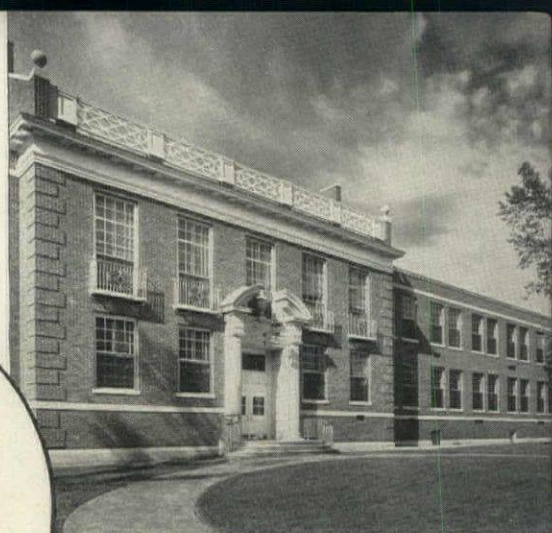
Once there was a man who thought so highly of a girl that he was afraid to pop the question. She had an awful time catching him!

WE'RE TOLD that some architects and builders think of Aluminum Windows as a luxury item, so they never ask the price. Actually, if you want to be real "Scotchy" about the money you're spending, you can't afford not to buy them. Here's why—

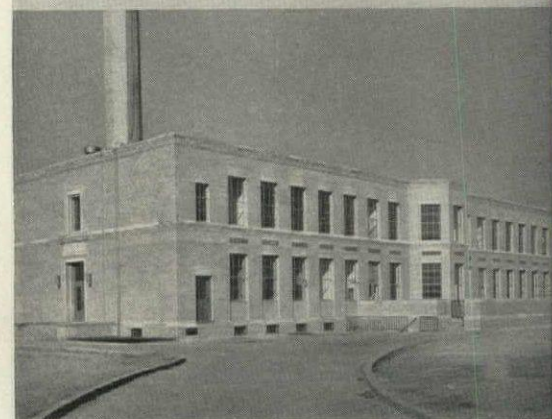
The first cost of an Aluminum Window compares quite favorably with the *completely installed cost* of other, less permanent windows. Remember, the Aluminum Window comes to you ready to set in place; no assembling of knocked-down parts, no weather-stripping to add, no fitting and refitting. It needs no protective coating of paint.

On maintenance, you show real savings with Aluminum Windows. There's no warping or swelling to interfere with their easy operation. No rusting or rotting to require expensive replacements of parts. You save the cost of periodic paintings.

Figure window costs on an annual basis. You'll be surprised at the savings you can make by buying Aluminum Windows. Let us send you the book on designs, "Windows of Alcoa Aluminum." Aluminum Company of America, 2166 Gulf Bldg., Pittsburgh, Pa.



Aluminum Windows in Central School, Glencoe, Illinois. Armstrong, Furst & Tilton of Chicago, were the architects.



Aluminum Windows in West Liberty School, Pittsburgh, Pennsylvania. Board of Public Education, architects.



Aluminum Windows in the Hall of Government, George Washington University, Washington, D. C. Mr. Waldron Faulkner was the architect.

ALCOA • ALUMINUM

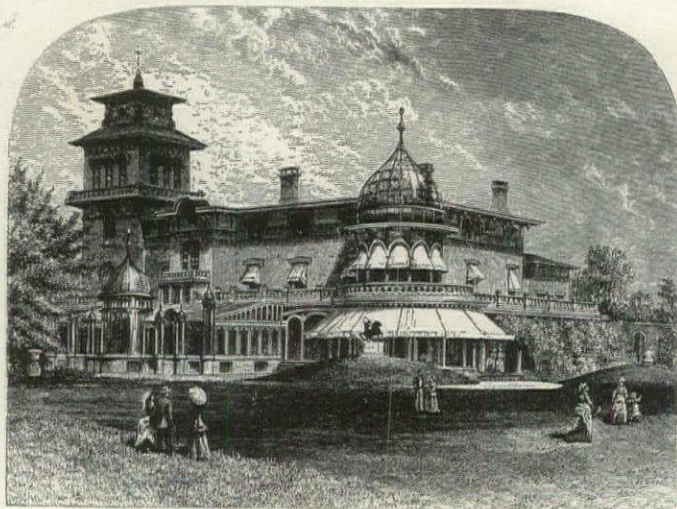
FORUM OF EVENTS



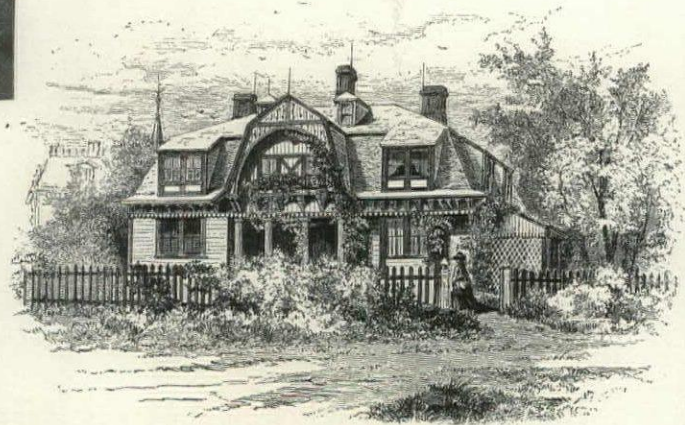
"The residence of Mr. John E. Williams at Irvington, on the Hudson . . . one of the prettiest which, though its architecture is somewhat erratic, suggesting parts of the Elizabethan cottage, the Gothic lodge and the Swiss chalet, has little pretense about it. . . ."



"The beautiful summer home of Miss Kellogg [Clara Louise, grand opera diva], on the Hudson. . . Properly harmonious in every detail, it is mostly piazza, which shows that, like all birds, its fair occupant loves the open air."



"A long, grand, impressive, contradicting, beautiful, strange thing—such is the first feeling on beholding Armsmear, the residence of Colonel Samuel Colt outside of Hartford. . . There is no doubt that it is a little Turkish, among other things, on this side—a compliment paid, perhaps by the great inventor to his distinguished friend the Viceroy of Egypt, to whom he sold, in 1854, five thousand revolvers!"

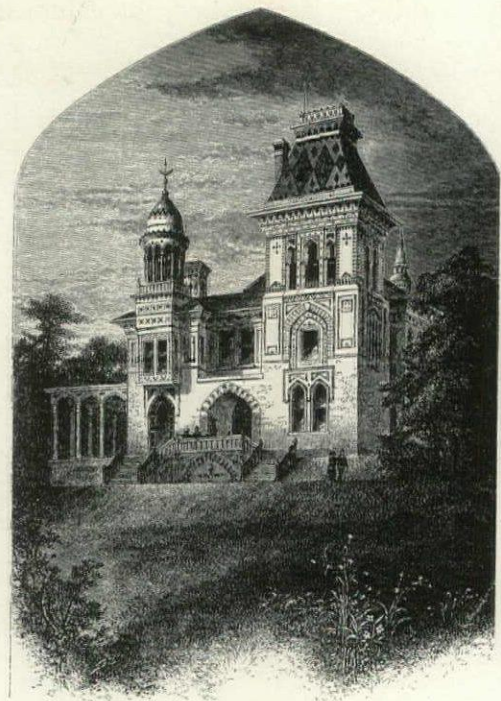


"Colonel G. G. Waring's cottage at Newport, which, with its clustering vines looks as if it might have wandered out of some rural district of England, Kent or Devonshire. . . The cottage is one of many happy adaptations of Mr. R. M. Hunt."

WHEN THE NINETEENTH CENTURY WENT CONTEMPORARY

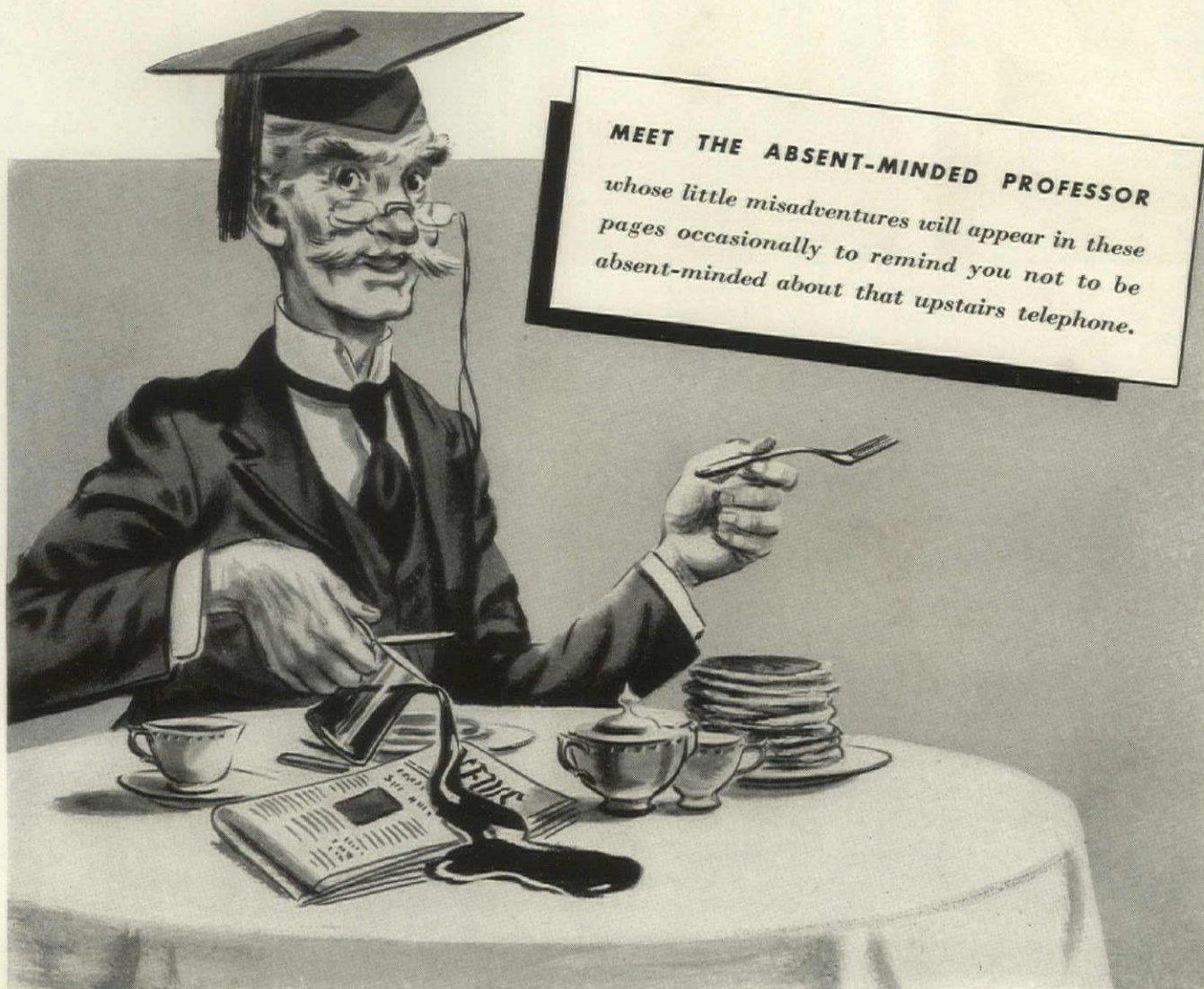
Some country houses of about 1875 with the proud words with which they were described by *The Art Journal* of that day

*Illustrations from
The T. F. Healy Collection*



"The new residence of the distinguished landscape painter, Mr. Frederick E. Church . . . built in the Persian style, so far as the climate and the requirements of Western civilization permitted. . . Mr. Church designed the house in all its details, consulting with Mr. Vaux, the eminent architect."

"Don't forget the upstairs telephone"



THE Professor is a bit mixed up in his breakfast this morning. Probably because he's thinking of the many steps that are saved in every home, no matter how small, that has an upstairs telephone.

It's a good idea for you to think about, too, and to make sure that telephone conduit and outlets are included while the house is under construction. This is the best way to avoid exposed wires and to provide a clear path through insulation, concrete, fire-stops and around duct-work. A few lengths of small pipe are usually sufficient for the average home.

Your telephone company will be glad to co-operate in planning efficient, economical conduit layouts. No cost or obligation. Just call the nearest Bell Telephone business office and ask for "Architects' and Builders' Service."

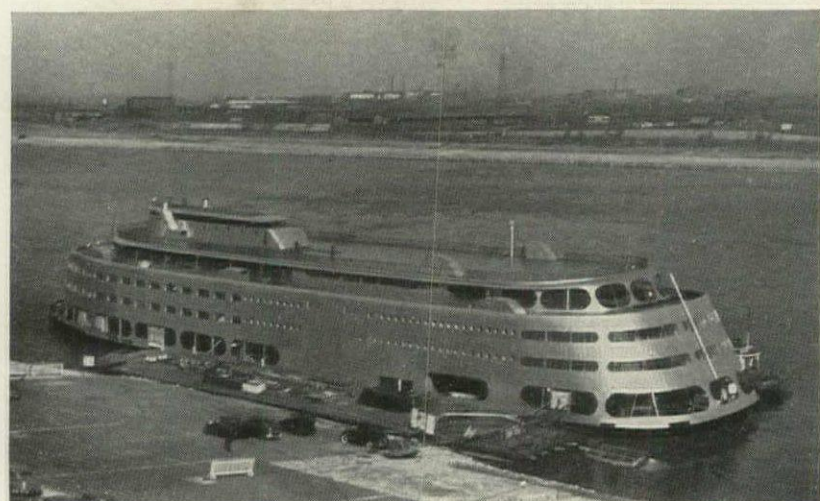


FORUM OF EVENTS

(Continued from page 10)

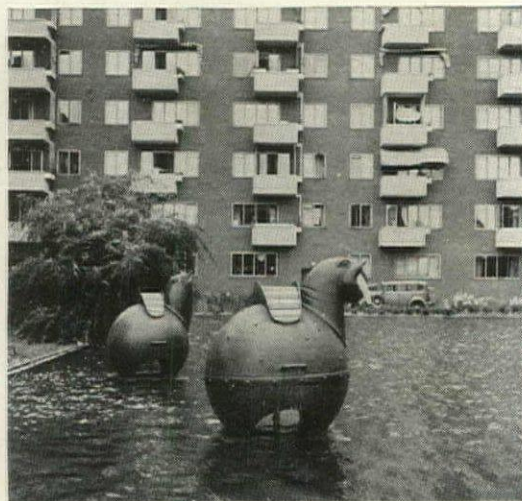


FINAL TEST of Alonzo Hauser's sculpture in limestone on Community Building of Greendale, the Government's greenbelt town near Milwaukee: The children appointed their own guards to protect it from defacement on Hallowe'en.



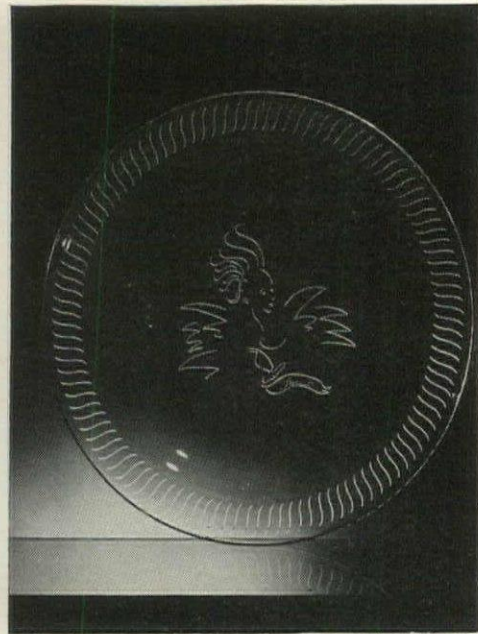
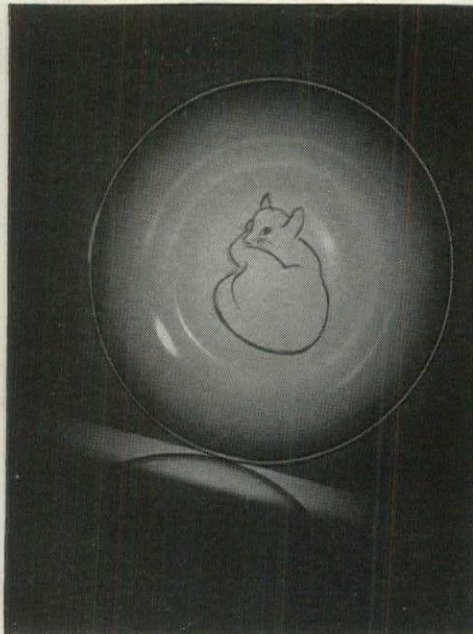
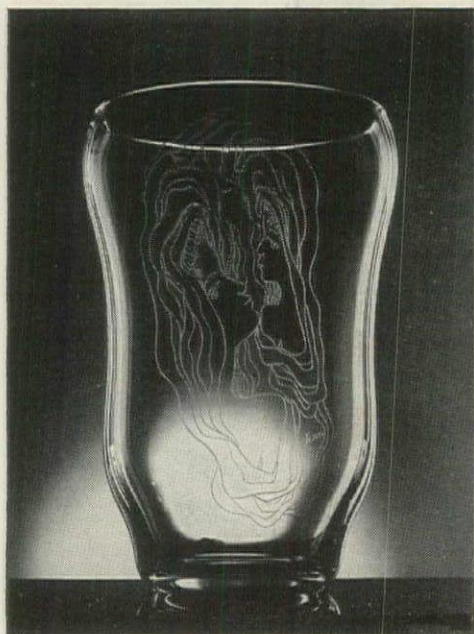
Charles Phelps Cushing

OL' MAN RIVER joins clocks and refrigerators in the streamline movement. This five-deck excursion boat will haughtily pass Mark Twain's old river packets on the Mississippi next summer.



Geraldine K. Scott

WORLD WAR MINES, unexploded and denatured, are pool toys for the children in a Copenhagen cooperative apartment block.



Underwood & Underwood

DESIGNING FOR GLASS was a new task set by Steuben for 27 artists famed in other media. Most failed to make the transition, paid small

heed to the qualities of glass. Best of those who succeeded (l. to r.) Jean Cocteau, Isamu Noguchi and Christian Berard.

(Forum of Events continued on page 14)

Covington's modern schools choose

COAL FOR EFFICIENCY AND ECONOMY!



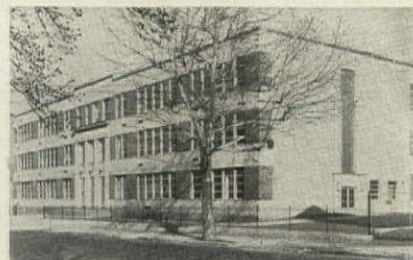
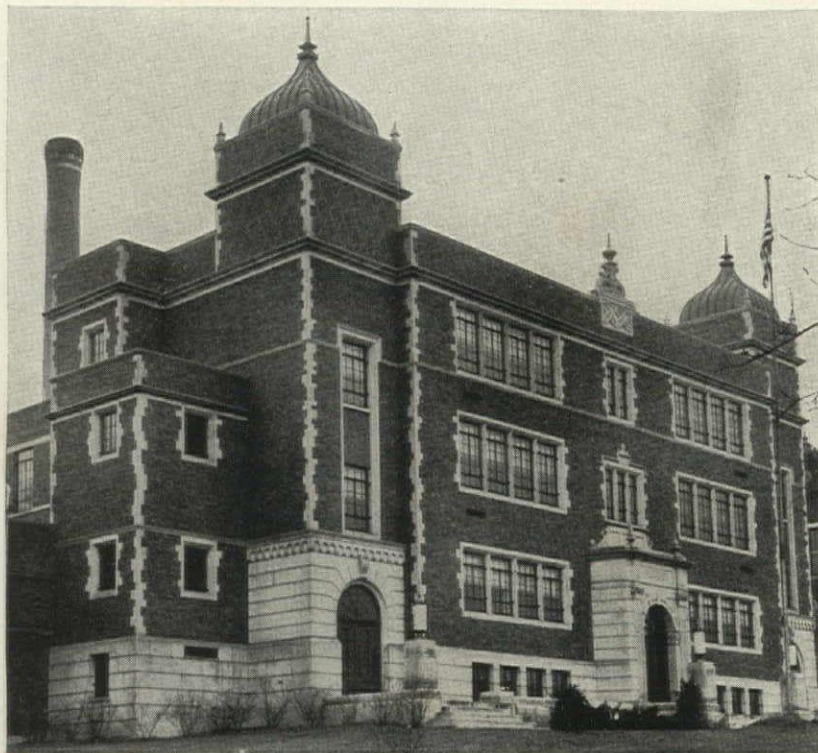
"For heating our four new school buildings," writes Mr. Glenn O. Swing, Superintendent of Covington, Ky., schools, "we specified coal. In our experience, coal provides most healthful and satisfactory heat at economical cost."

IN TODAY'S BATTLE of Economy Dollars, coal almost always wins! Yes, time after time, actual cost figures show that coal scores on *more heat for less money*.

At these big, modern schools in Covington, Ky., dependable, economical coal will keep 7,500 pupils and 300 teachers healthfully warm...and do it at an economy figure to warm the taxpayers' hearts.

Schools, hotels, apartments, institutions and other buildings—large and small—find that coal, prepared by up-to-date mines and burned by modern methods, can't be equaled for efficiency and economy. So we say, "Look before you heat!"—check the cost of *all* fuels before selecting yours.

Perhaps this railroad can help *you*. Our Fuel Service



Engineers will see that you get facts and figures on your specific heating problem. If you choose coal, they can help you again, for Chesapeake and Ohio serves mines operating in "The Coal Bin of America." From this region come the country's finest high and low volatile bituminous coals...cleaned and prepared by modern mechanical methods...uniform in size and quality...speedily and carefully delivered.

If you are planning on new heating equipment, or a change in your present setup, perhaps *you* can cut heating costs almost in half. Wouldn't you be wise to find out?

For information or assistance on your fuel problems, write **GEORGE H. REINBRECHT**, Coal Traffic Manager, 2909 Terminal Tower, Cleveland, O....Send for free copy of interesting brochure, "The Coal Bin of America."



CHESAPEAKE AND OHIO LINES

(Continued from page 12)

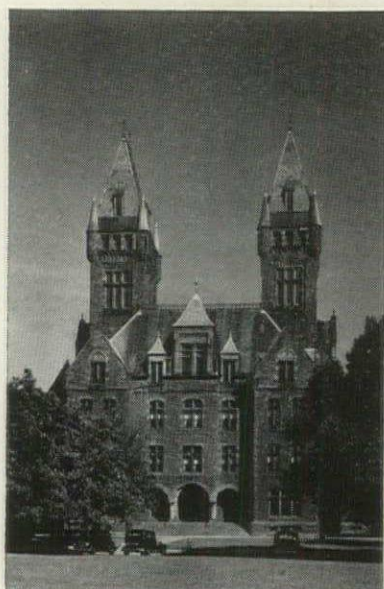


1863: Old Evans Grain Elevator, razed in 1939

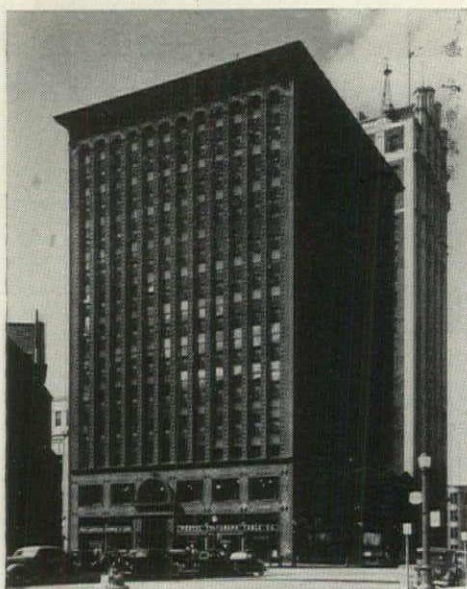
BUFFALO REVIEWS HER ARCHITECTURE

In the Albright Art Gallery, from January 19 through February 12, there is being shown a retrospective exhibition of the architecture of Buffalo from 1816 to 1940. It will be recalled (perhaps with the aid of Claudette Colbert and "Drums Along the Mohawk") that the village was burned in 1813 by the British and their Indian allies. Henry-Russell Hitchcock, Jr., author and architectural critic, selected the material to be shown, and arranged it—very much as he did in similar exhibitions of the architecture of Rhode Island (ARCH. FORUM, Aug. 1939, pp. 16-17) and of Worcester, Mass. Four periods encompass the history: 1) 1816-44, when Buffalo resembled contemporary cities of the eastern seaboard; 2) 1844-72, the coming of the elevators and a stylistic confusion; 3) 1870-1900, the development of parkways, Olmsted, Richardson, McKim, Sullivan; and 4) 1900-40, the city having become mid-Western, the residences suavely imitative.

Photos: Bastresser, Albright Art Gallery



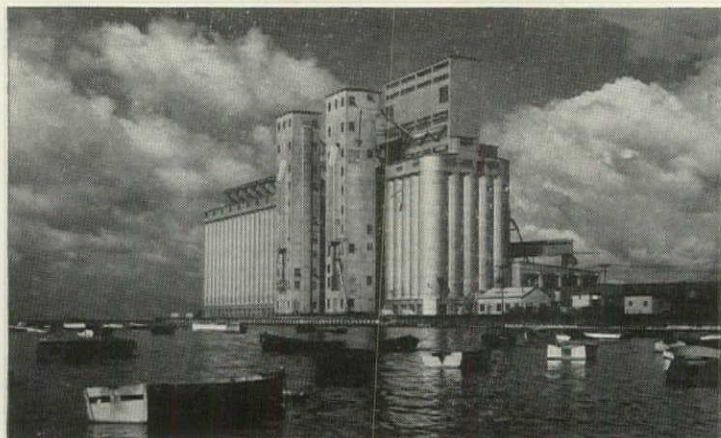
1870: H. H. Richardson's State Hospital for Insane



1896: Adler & Sullivan's Prudential Building



1904: Frank Lloyd Wright's Larkin Building



1925: Saskatchewan Pool Elevator, by C. D. Howe, Fort William, Ont.



1939: W. T. Grant Store, Alfred S. Alschuler, architect; Raymond Loewy, industrial designer

(Forum of Events continued on page 48)

You have ample time to enter
INSULUX GLASS BLOCK
COMPETITION No. 4
which closes March 18th

PRIZES: Eight, totaling \$2,500
and Grand Prizes awarded on
a point system totaling \$5,000

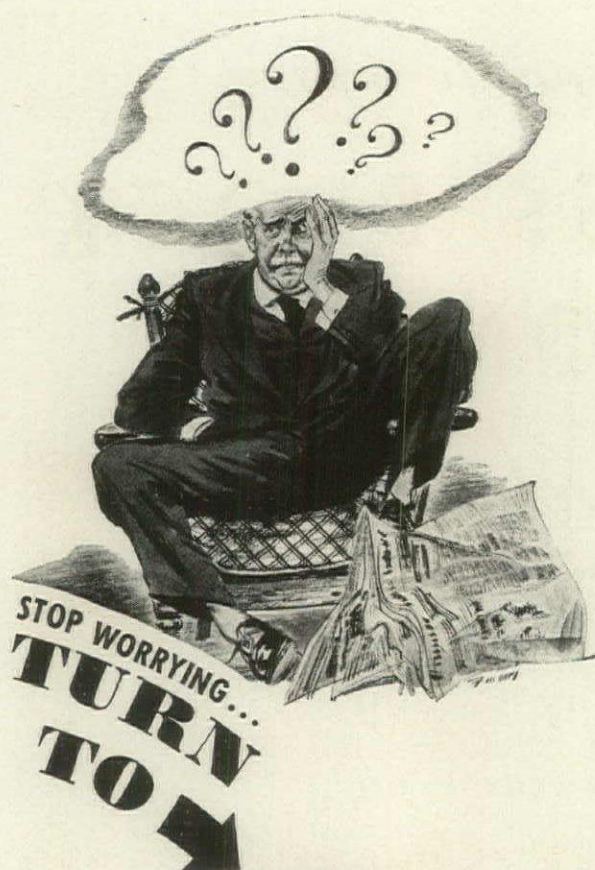
THE PROBLEM. A Newspaper Plant for a city of 100,000. It must have personality, must proclaim to all the importance of the paper in the life of the community, be attention-arresting by day and by night. Interdepartmental relationships and space requirements graphically furnished in the Program.

THE JUDGES. Eight eminent architects have agreed to act as the Jury: Frederick L. Ackerman, New York; Wallace K. Harrison, New York; George Howe, Philadelphia; Ely Jacques Kahn, New York; William F. Lamb, New York; Henry R. Shepley, Boston; Edward D. Stone, New York; and Ralph Walker, New York.

TO ENTER, one must be an architect, architectural designer, architectural draftsman (or student) whose home is in the Western Hemisphere, and must register with the Professional Adviser, Henry H. Saylor, A.I.A., 9 Rockefeller Plaza, New York. Acknowledgment will bring you Program, title strips and technical data.

APPROVED as a Secondary Competition by the Special Committee for Secondary Competitions for the territory of the N. Y. Chapter, A.I.A. Full participation is permitted to all A.I.A. members. The Prizes: \$1,000, \$750, \$250, and five of \$100 each. Grand Prizes (on the basis of points scored in the series): \$1,500, \$1,250, \$1,000, \$750 and \$500.

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OWENS-ILLINOIS GLASS COMPANY



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General Electric makes a complete line of heating equipment...and air conditioning and commercial refrigeration as well. You can rely on G-E—world-famous for its engineering and research—to give you and your client the soundest advice and equipment available anywhere.



Architects say—

"G-E SPECIFICATIONS ARE A REAL HELP!"

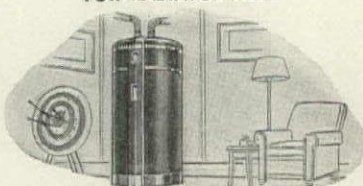
Refer to the G-E complete line in Sweet's Catalogue. Or get the correct, unbiased answers to your heating, air conditioning or commercial refrigeration problems direct from G-E. Just telephone or write to General Electric Company, Division 190-213, Bloomfield, New Jersey.



GENERAL  ELECTRIC

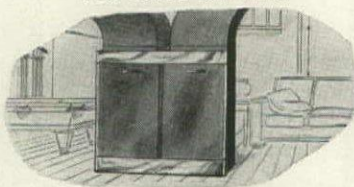
FOR HEATING, AIR CONDITIONING & COMMERCIAL REFRIGERATION

FOR RADIATOR HEAT



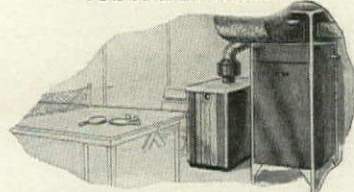
G-E FURNACE (oil or gas) for steam, hot water or vapor. Probably the most beautifully designed furnace you've ever seen. Compact—easy to install—economical to operate.

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AIR CIRCULATORS



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THE IMPORTANCE OF STRENGTH COMBINED WITH LIGHT WEIGHT for ROOF CONSTRUCTION



IMPACT TEST CONDUCTED BY THE SCHOOL OF FORESTRY UNIVERSITY OF WASHINGTON

A No. 1 16-inch Certigrade Cedar Shingle roof, laid five inches to the weather, was exposed to successive blows of a mechanical hammer weighing 7.33 pounds. These blows were increased a one-half foot at a time. At 66 foot-pounds (the capacity of the testing machine) there was NO discernible damage to roof section.

However, this same test applied to two non-wood types in general use punched through—one at 18.3 foot-pounds, the other at 29.3 foot-pounds.

One of the significant lessons learned from the New England hurricane of last September was the extraordinary resistance to storm damage of a genuine Cedar Shingle roof. Complete immunity from storm damage, from a practical point of view, can be obtained through the use of Certigrade Red Cedar Shingles when these are applied in the usual way, with the recommended weather exposures, or less, using hot-dipped zinc-coated nails.

To lift a shingle eight inches wide away from a roof covered with No. 1 16-inch shingles laid with a five-inch exposure requires a pull of 85 pounds—a force so much greater than a hurricane can exert that it can be conservatively stated that properly nailed genuine Cedar Shingles simply cannot be blown from a roof.

We will be glad to send you a copy of the Certigrade Handbook, mailed free on request. 100 pages detailing the uses, application and technical data on Certigrade Cedar Shingles. Write Red Cedar Shingle Bureau, Seattle, Wash., U.S.A., or Vancouver, B.C., Canada

FOR GUARANTEED GRADES AND QUALITY, SPECIFY—

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Red Cedar Shingles

Certigrades pass official inspection for grade and quality. U. S. Government Standards.



Sold only by established lumber dealers.



INSULITE ANNOUNCES A NEW STRONGER PLASTER

Sealed Lok-Joint Lath!

INSULITE engineers greet its twenty-sixth year with a new step in the progress of structural insulation as a plaster base.

Now improved Lok-Joint Lath is made with a stronger, integrally waterproofed board, *dry-sealed* at the back. The same safe, smooth tenacious plaster base but *stronger* and with a special dry-seal.

As everyone knows, the invention of INSULITE marked a great step forward in the elimination of moisture between the studding. At the very beginning it did away with plaster droppings and moisture resulting from exposed plaster inside of the walls.

Next came INSULITE'S patented Lok-Joint Lath which shut out wet plaster in the cracks between the boards and made an all 'round tight wall.

This was followed by the industry revolutionizing Bildrite Sheathing, a sheathing which tests prove gives four times the bracing strength of wood sheathing laid horizontally.

And Bildrite Sheathing is so integrally waterproofed with asphalt that it allows lower temperatures on the outside to draw out the last vestige of vapor.

Now comes the newest advance . . . the Dry-Sealed Lok-Joint Lath made of the same material as Bildrite Sheathing, but sealed on the back to insure lasting dryness in the inner wall.

DRY SEALED BASE

Write today for samples and make your own tests. We will be pleased to send you the booklet "Vapor Gets the Stop and Go with Insulite." Insulite, Dept. AF20, Minneapolis, Minnesota.

INSULITE PRODUCTS INCLUDE:

STRUCTURAL MATERIALS:

Sealed Lok-Joint Lath • Graylite Lok-Joint Lath • Ins-Lite Lok-Joint Lath • Bildrite Sheathing

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With INSULITE'S Sealed Lok-Joint Lath on the inside wall and Bildrite Sheathing on the outer wall, this builder is assured of a *dry* inner wall and the latest advancement in structural insulation.

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INSULITE

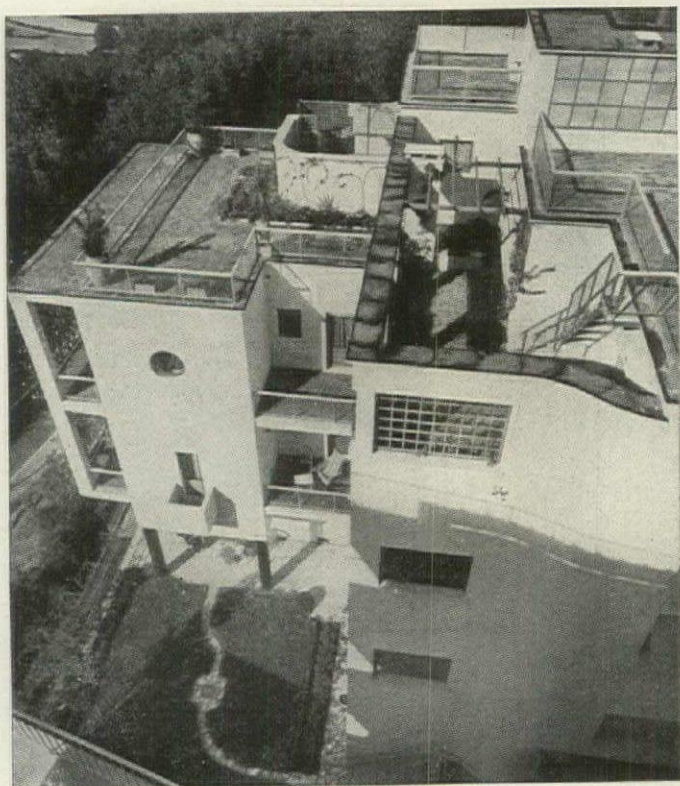


MINNEAPOLIS
MINNESOTA

THE ORIGINAL WOOD FIBRE STRUCTURAL INSULATING BOARD

BOOKS

Modern houses. . . . The museum in America. . . . Housing in Rotterdam. . . . Construction details for residences.



HOUSE IN ROME. PANICONI AND PEDICONI, ARCHITECTS

CHOOSING A MODERN HOUSE, by R. Myerscough-Walker. The Studio, Ltd., London. 80 examples, 228 illustrations. 7½ x 10. \$2.50.

During the past three or four years the number of books on modern domestic architecture has increased appreciably, and it is now possible for the architect to acquire a quite respectable collection covering the field. A major disadvantage, from the viewpoint of the American reader, is that most of these books and certainly the best ones, have been published abroad and consequently deal almost exclusively with European examples and practice. A point in favor of this book is that a considerable amount of American work has been included and examined in relation to houses elsewhere. It is the approach, however, which chiefly distinguishes the book from many of its predecessors. The author accepts the fact that "modern" is neither a precise term nor a developed style, and he has therefore included a little of everything. Frank Lloyd Wright's "Falling Water" is presented as a contemporary masterpiece, but there is also a German country house with a thatched roof. Similar contrasts are discovered throughout the book: Chicago Colonial, Corbusier's villa near Poissy, Hollywood modernistic, rural Scandinavian, free plans, formal plans, "functional" and picturesque designs, and an astonishing variety of other types. The result is a very truthful picture of contemporary architecture as it is, rather than the way a single architect might like to see it. It would be difficult to find a better book for the intelligent layman concerned with finding out something about present-day house design, or for the architect who is interested in studying contemporary trends.

HAVE WE AN AMERICAN ART? by Edward Alden Jewell. Longmans, Green and Company. 232 pp., 7½ x 9. \$2.75.

After some three hundred years it seems rather odd that we should still be asking ourselves this question, but the debate is apparently far from over. Mr. Jewell hangs his story on the American exhibitions in Paris and London in the summer of 1938, and on the judgments of the French and English critics, most of whom found that American art was still tied to the apron-strings of European precedent.

Mr. Jewell's answer disagrees: "I am prepared to affirm, not tentatively, not timidly, not apologetically, nor yet bump-tuously, but instead as a Categorical Imperative, that we have an American art because we are Americans."

Since nobody would be inclined to argue with the logic of this statement, but many might still agree with the verdict of the European critics, the book goes on to investigate some of the characteristics of art in general and American art in particular. To a great extent the theme is an elaboration of the statement quoted, with emphasis on the fact that flag-waving or painting farmyard silos will not suffice "to bring an artist into his patrimony." The discussion is frequently stimulating, although the highly embroidered prose serves more to impress the reader with the author's verbosity than to further the argument.

TERRACRETE, by Francis Macdonald. 46 pp., illustrated. 6 x 9. \$1.00.

Building with rammed earth is one of the oldest construction methods known. In this country it has been ignored in favor of wood, stone and brick for a variety of reasons, chief of which was perhaps the fear of the disintegrating action of water. Recent advances in knowledge of soils have tended to revive the method, and this booklet represents a very interesting study of the possibilities of rammed earth, strengthened by the admixture of small amounts of cement. The author gives complete information on the process, from the selection of soils to the sequence of building operations.

PUBLIC HOUSING IN AMERICA, compiled by M. B. Schnapper. H. W. Wilson Co. 369 pp., 5½ x 8. \$1.25.

An attempt to present an impartial book on the housing question by the simple expedient of collecting articles and excerpts which discuss the subject in general, and support or attack present housing policy. Material has been well selected, and many authoritative writers are represented. A good quick reference for the reader who wants to sample current opinion without going to the trouble of individual research.

PLYWOOD HANDBOOK of Residential Construction, by Oscar Fisher and L. H. Meyer. United States Plywood Corporation. 39 pp., illustrated. 8½ x 11.

This brief manual contains a remarkably concise listing of the uses of plywood in house construction, and is of special interest for the large number of detail drawings which show proper applications of the material. Included in the contents are a description of modular planning, illustrations of four house designs with plans and price estimates, and brief sections on farm buildings and simple storage units. Most valuable, probably, in view of the increasing interest in dry-wall construction, are the pages of details of joints, interior treatment, and siding.

(Continued on page 68)

LIKE GREAT SYMPHONIES

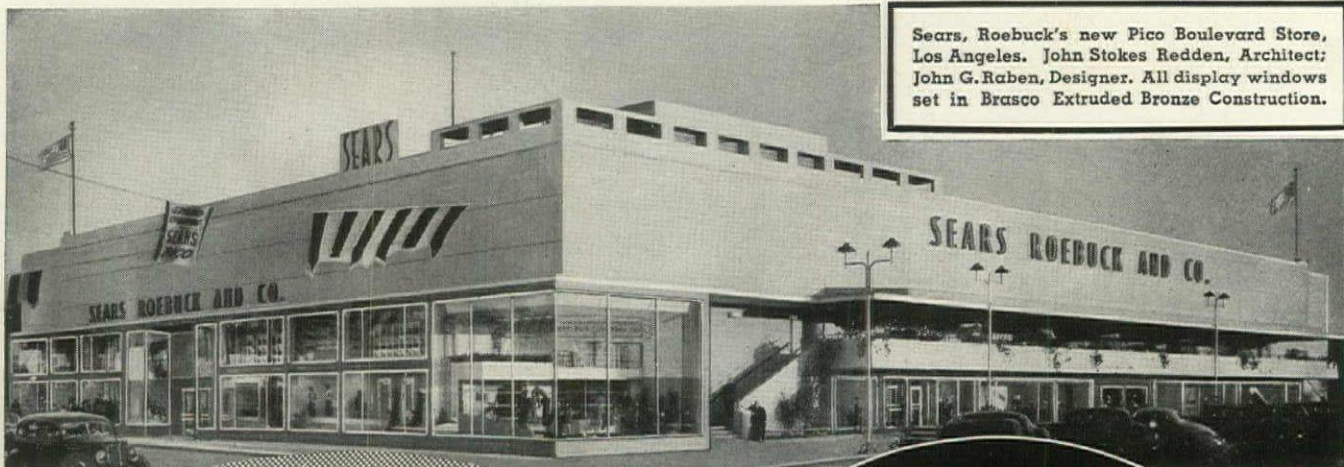


For Centuries...human emotions have been interpreted musically by the great symphonies. The priceless art of stirring the emotional response of an audience thru sound, lives on thru the ages in the great masterpieces of music. The architect has created masterpieces in homes that have lived on thru the centuries. The colonial homes built of Genuine White Pine are examples of enduring architectural creativeness interpreted by the world's most famous building material.



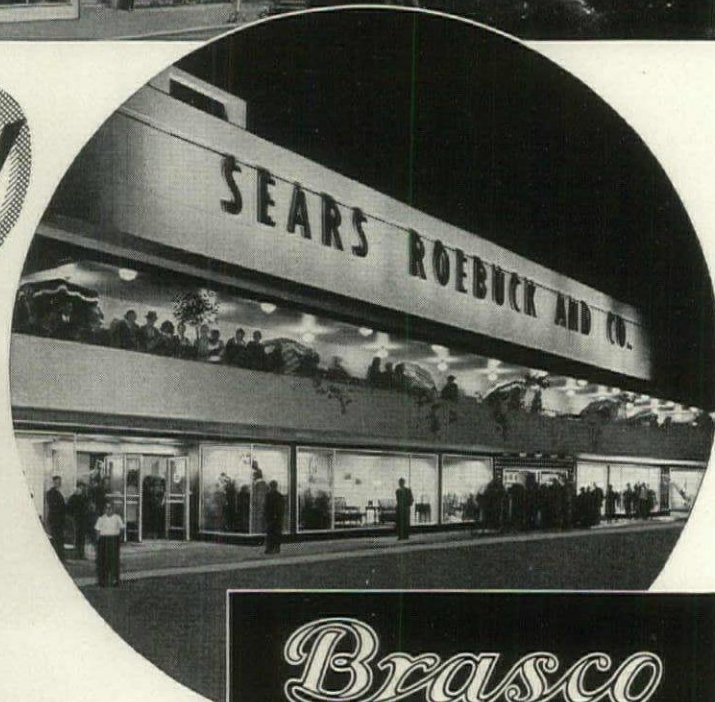
Genuine White Pine is neither scarce nor expensive. To safeguard the architect's specifications, we have double endmarked each board "Weyerhaeuser 4-SQUARE" and "Genuine White Pine."

WEYERHAEUSER SALES COMPANY • SAINT PAUL - MINNESOTA



Sears, Roebuck's new Pico Boulevard Store, Los Angeles. John Stokes Redden, Architect; John G. Raben, Designer. All display windows set in Brasco Extruded Bronze Construction.

IT'S A
★ *brilliant event!* ★



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● It's a brilliant event to the leaders in retail trade, when they throw open the doors through their modern, brilliant Brasco Store Fronts. They have learned to value these store fronts from the viewpoint of earning power.

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THE UTILITY GRADE OF DOUGLAS FIR PLYWOOD

PLYSCORD is ideal for wall and roof sheathing, sub-flooring and one-use concrete forms!

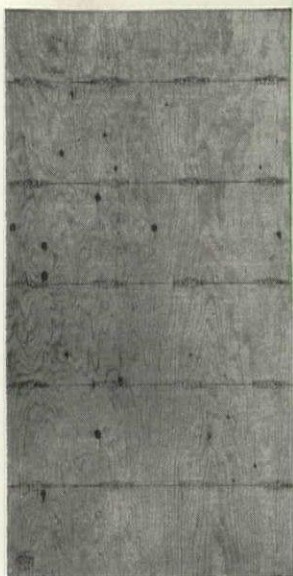
● Plyscord is the unsanded utility grade of Douglas Fir Plywood. Because it affords superior rigidity and strength; quick, economical application, air-tightness; and large size... it is unsurpassed for wall and roof sheathing, sub-flooring, one-use concrete forms and similar construction work. Progressive lumber dealers everywhere handle Plyscord in 5/16", 3/8", 1/2" and 5/8" thicknesses and in 32" x 96" and 48" x 96" sizes.

You will find Plyscord easy to specify and identify because every panel is manufactured in strict accordance with U. S. Commercial Standard CS45-38 and stamped with a distinctive "grade trade-mark."

For more information, consult Sweet's Catalog or write for these free booklets: Suggested Specifications for Douglas Fir Plywood, Commercial Standard CS45-38, Dri-Bilt Manual. Douglas Fir Plywood Association, Tacoma Bldg., Tacoma, Washington.

PROVED BETTER

At right: Tests at Forest Products Laboratory, Madison, Wisconsin, showed Plyscord 5.9 times as rigid as horizontal board sheathing—40% more rigid than diagonal board sheathing.



	1.0
HORIZONTAL LUMBER	
	3.0
25/32" FIBRE BOARDS	
	4.2
1" X 4" LET-IN BRACING	
	4.3
1" DIAGONAL SHEATHING	
	5.9
1/4" DOUGLAS FIR PLYWOOD	



WALL SHEATHING The Plyscord-sheathed walls of this residence in Seattle, Wash., are 40% more rigid than if diagonal board sheathing had been used. The big panels also save up to 60% on sawing, fitting and joining... 50% on nailing. Tenny Francis Bellamy was the architect on this residence.



SUB-FLOORING In this Stamford, Conn., home designed by Provost and Edwards, Plyscord provided a smooth base for finish flooring and linoleum—insulates and protects against drafts from below—gives a horizontal diaphragm to resist earthquakes and high winds. Recommended thicknesses are 1/2" and 5/8".



ROOF SHEATHING Plyscord is suitable for any type of roofing—shingles, composition roofing, asbestos tile or slate. Illustration shows Plyscord roof sheathing on a Portland, Ore., residence designed by Richard Sundeleaf.

GRADE-MARKED The face of every genuine Plyscord panel contains the circular stamp (left) and guide line 16" on center which speed nailing.

FHA has accepted Douglas Fir Plywood for home construction, and its use is approved in Uniform Building Code.



SPECIFY DOUGLAS FIR PLYWOOD BY THESE "GRADE TRADE-MARKS"

PLYPANEL D.F.P.A.

EXT.-D.F.P.A.





"I am very much pleased with the effect accomplished with Stainless Steel Gutters and Downspouts"

In every part of the country architects are discovering that ARMCO Stainless Steel — the newest of new metals — is without peer when put to an old use, roof drainage. This is especially true of better-than-average homes, where every care is taken to meet the demands of good taste and permanent structure.

The message quoted above comes from Arthur B. Rathert, architect for the modern home that is pictured. His satisfaction is typical. Typical, too, is his statement that he will "use stainless steel for roof drainage again, whenever it will be in harmony with the design."

Read below the list of interesting advantages that ARMCO Stainless Steel offers to architects and owners. For more information about this and other uses of stainless steel, write to The American Rolling Mill Company, 321 Curtis Street, Middletown, Ohio.



Home of W. P. Cole, St. Louis, Mo. Complete roof-drainage system of ARMCO Stainless Steel. Architect, Arthur B. Rathert, St. Louis.

1. Stainless steel is at least twice as strong as other roof-drainage metals.
2. It has excellent corrosion and abrasion resistance.
3. Its neutral tone blends well with rest of structure.
4. It forms readily. Any good sheet-metal man can work it.
5. The cost compares favorably with other high-grade metals.



ARMCO

STAINLESS STEEL

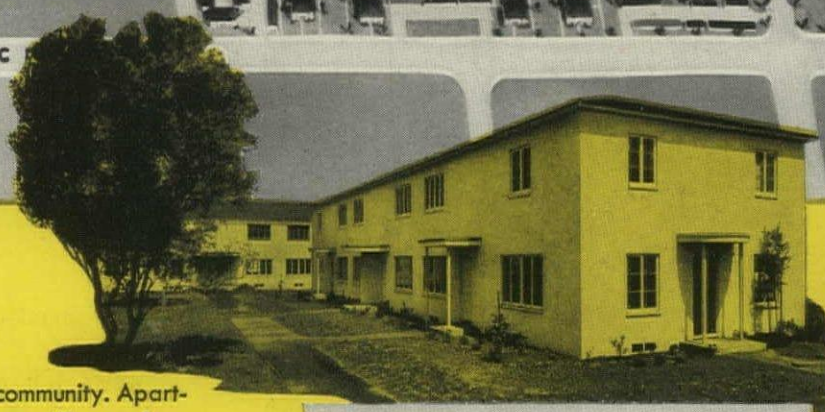
A MODERN METAL FOR AN OLD USE

SQUARE D

MULTI-BREAKERS IN AMERICA'S LARGEST PRIVATELY OWNED COMMUNITY OF LOW RENTAL HOMES ★★



Above: The Wyvernwood Community in Los Angeles is three-quarters of a mile wide. 148 buildings will accommodate 1102 families.



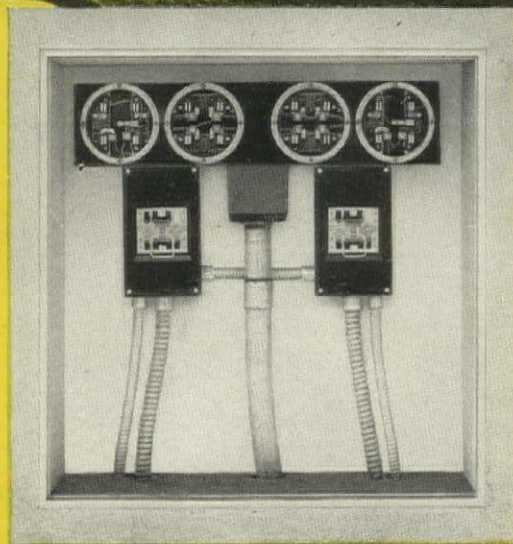
At Right: Typical building of this unusual community. Apartments, replete with modern conveniences, will rent from \$25 to \$45 per month, depending on location and size.

● Modern architecture contributes mightily to Wyvernwood Community. Plot layout provides large open areas for adequate natural light and air. Design accentuates simplicity, neatness and efficiency.

Here, too, is an outstanding example of architect and electrical contractor working hand in hand to create the ultimate in electrical convenience. Electric water heaters, electric refrigerators and electric bathroom heaters are "standard equipment" throughout. In addition, most of the apartments are equipped with electric ranges.

Significantly, a Square D Multi-breaker is the service entrance equipment for every apartment. Thus, Wyvernwood residents will enjoy modern protection against dangerous overloads—will be forever free of the inconvenience and annoyance of changing fuses.

Whether you're designing a modest cottage, costly home, or modern apartment—whether it's one, a dozen, or a hundred—it will pay you to offer your clients the "plus" value of Square D Multi-breakers. Ask any good electrical contractor for details.



Above: Each apartment is equipped with a Square D Multi-breaker with circuits for electric range, electric water heater, and lighting. Each installation has a master meter and a sub-meter for the water heater. Square D meter trough is used for a neat wiring job.

SQUARE D COMPANY

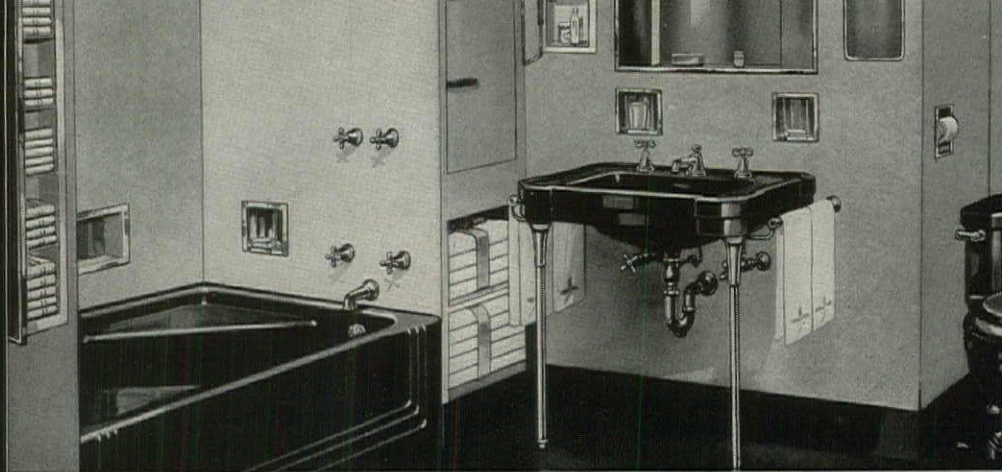
DETROIT-MILWAUKEE-LOS ANGELES

IN CANADA: SQUARE D COMPANY CANADA LIMITED, TORONTO, ONTARIO

CALL IN A SQUARE D MAN

Bathrooms with MIAMI

Cabinet Ensembles, Mirrors and Accessories



Bathroom by Standard.

By specifying MIAMI Cabinet Ensembles, Mirrors, and Accessories, you can give every bathroom an individual character so pleasing to the owner of a modern house and, without sacrificing the advantages of finer quality and lower costs made possible by MIAMI'S large scale production.

The practically unlimited combinations obtainable with MIAMI units will solve your problems of providing "made-to-order" bathroom effects at large savings over special order ensembles.

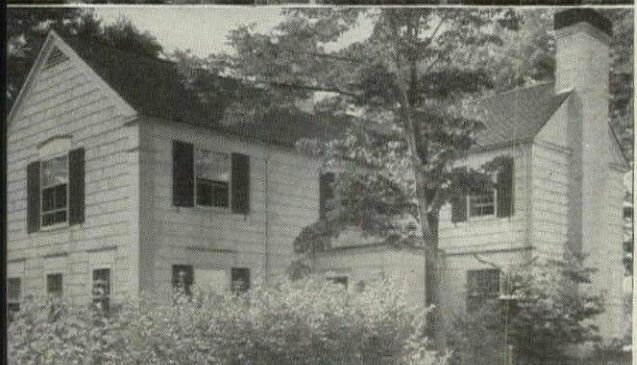
At your request, a representative will supply complete details. See the 1940 MIAMI Catalog in Sweet's, or write Dept. AF for a copy.

Bathrooms in These Houses Equipped With Miami Ensembles and Units

1. Home at Long Beach, Indiana
John Lloyd Wright, Architect, Michigan City, Ind.
2. Home at Grosse Pointe, Michigan
J. Ivan Dize, Architect, Detroit, Michigan
3. Home at Shaker Heights, Ohio
Maxwell A. Norcross, Architect, Cleveland, Ohio
4. Home at Charlottesville, Va.
Architect—Louie L. Scribner, Charlottesville, Va.



SEND FOR YOUR COPY
1940 MIAMI CATALOG



NEW Careystone STRIP SHINGLE

ARRIVED! FIRE TO ME OVER!

ASBESTOS - CEMENT

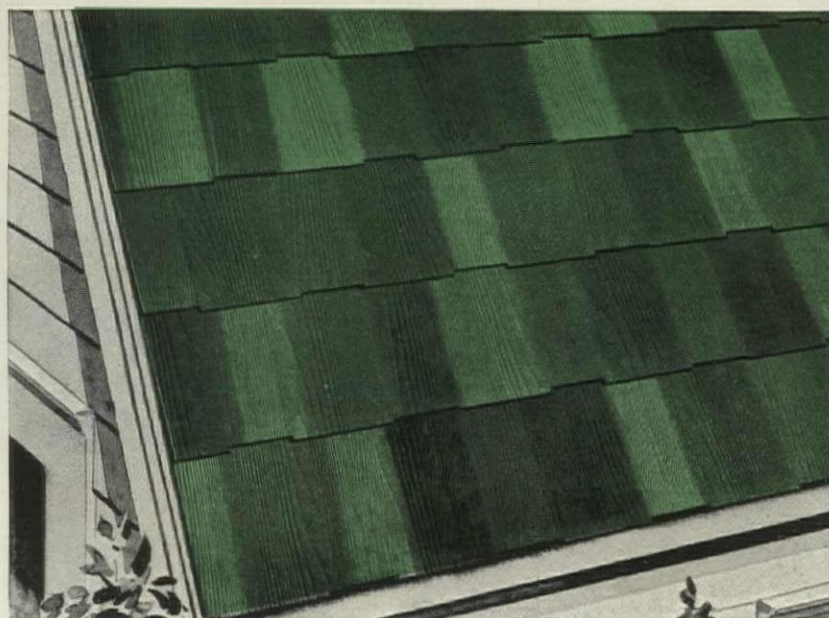


GIVES INDIVIDUAL SHINGLE EFFECT AND STRIP SHINGLE LOW COST

"TRI-TONE" BLENDS



- Individual Shingle Effect**—produced by texture, color-tone and staggered butts
- Harmonious Blends**—no patterning or bunching of tones, even without special supervision of application
- Full Weather Protection**—corners and butts lay flat—no warped corners, no infiltration, no chattering, because every corner is securely anchored down
- Architecturally Beautiful**—more shadow lines and more traditional coursing
- Simplified Application**—only 80 pieces per square, and only one storm anchor and two nails per piece
- New Low Cost**—an all time low for this type of shingle and this roof effect



THIS original, asbestos-cement, strip shingle provides new architectural beauty.

Lay these new strip shingles as you will, the result will be a roof with perfectly blended tones. More important, you also get the realistic shingle effect of random widths and staggered butts at a new low, applied cost.

This new effect is possible because these shingles are furnished in four types of five-panel strips. Each panel, on each strip, has its own individual, authentic wood grain texture, a separate color tone and a corresponding staggered butt. Each of the four types has a different combination of tones on its panels. Regardless of how the four strips are laid, even without special supervision or highly skilled mechanics, there can be neither bunching of tones or patterning. Write for samples and complete details. Address department 20.

This new shingle is now available in "Tri-Tone" Blends of Green, Gray and Autumn (red, brown and straw). It has a nine inch exposure and will produce excellent shadow lines and traditional coursing.



THE PHILIP CAREY COMPANY • LOCKLAND • CINCINNATI, OHIO

Wood Flooring

At Last...



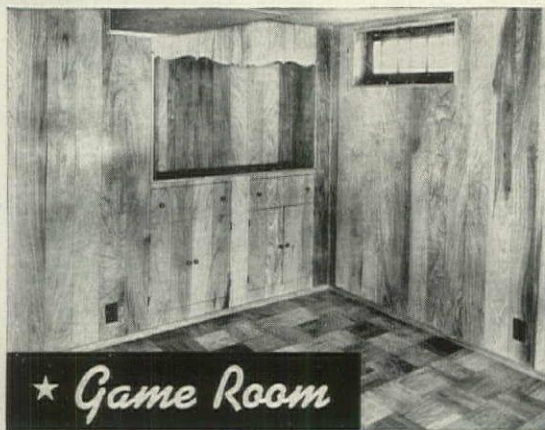
★ *Living Room*

Haskelite Plank Flooring is ideal for modern residence or apartment, providing perfect flat floors of great charm that can usually be laid in place at half the cost of other types of good plank floors.



★ *Office*

Low maintenance cost, great resistance to wear and distinctive beauty are "musts" in commercial interiors. Haskelite Flooring offers them all.



★ *Game Room*

No trouble with moisture, even over concrete directly in contact with the grade when Haskelite specifications are followed.



★ *Institution*

Haskelite Flooring, laid without expansion large gymnasium floor.

HASKELITE *Compound Lumber*

That Stays PERMANENTLY Flat and Beautiful *Regardless of Humidity*

Haskelite Block and Plank Flooring Is Made The Way YOU'D Build It—Tested Through Two Years' Actual Use —Backed By 20 Years' Experience

● Here is a wood floor that is practically inert—that is at the same time beautiful in appearance and inexpensive to maintain. It can be laid by any qualified flooring contractor.

All of the headaches caused by cupping, warping, or buckling of floors are banished with Haskelite Block and Plank. For this flooring, compounded of three selected veneers, practically eliminates the natural tendency of wood to expand and contract. It is, in a very real sense, the "successor to solid wood flooring," possessing all of the warmth and charm of natural wood graining, without being subject to damage resulting from varying humidities.

LOW FIRST COST LOW MAINTENANCE COST

Despite its many superior advantages, Haskelite costs no more. Installed costs of block floors compare favorably with other good block and parquet flooring. And Haskelite Plank Floor, indeed, shows a decided cost advantage—and can usually be laid in place at half the cost of any other type of plank flooring.

Because Haskelite floors stay permanently flat, there are no warped areas or raised edges. Therefore no parts of the floor are exposed to undue wear, and the expense of periodic re-sanding and re-finishing is kept to an absolute minimum.

Further, each piece of Haskelite flooring is dipped (not merely sprayed on the face). The finish penetrates below the surface fibers of the wood: face, back and all edges. Therefore, dirty or worn areas are easily cleaned and refinished without leaving unsightly spots or laps.

CAN BE LAID DIRECTLY OVER CONCRETE

Since it is inert to moisture changes,

Haskelite blocks and plank can be laid in mastic directly over concrete slabs. No furring is required. Even in the case of concrete floors in direct contact with or below grade, only a waterproof membrane is required between slab and flooring. What's more, Haskelite can be laid over concrete with safety long before any other wood floor can be installed.

Because of these, and other definite, proven advantages—elimination of unsightly expansion joints even on largest floor areas, its resistance to rats and other vermin, Haskelite Flooring deserves your consideration. We urge you to get the full facts—and proof of every point set forth here—at the earliest possible date.

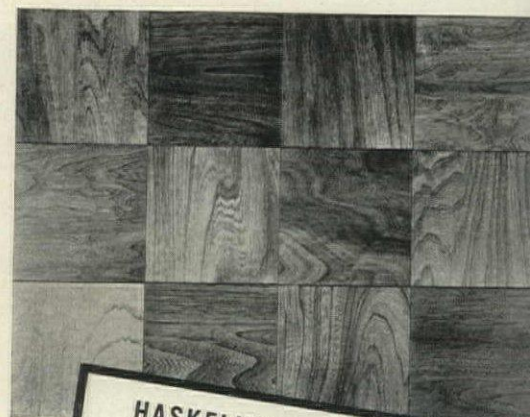
MAKE THIS "WATER TEST" YOURSELF

Experience personally the tremendous resistance to moisture only Haskelite Flooring provides. Immerse a block in water overnight—or longer. Let it dry thoroughly. No expansion when wet—no contraction when dry—no separation of plies will result.

SEND FOR SAMPLES AND DATA

Write today for samples of Haskelite Flooring. Full data and specifications will be supplied with samples.

FOR FURTHER DETAILS IMMEDIATELY,
CONSULT SWEET'S CATALOG: SECTION No. 11, CAT. No. 76

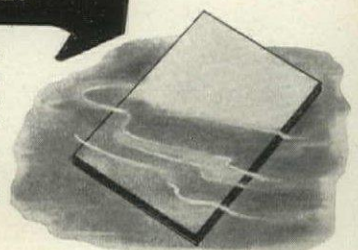


HASKELITE FLOORING IS *Guaranteed*

● "Haskelite guarantees that it will re-furnish any piece or pieces of Haskelite Compound Lumber Flooring showing separation due to glue failure caused by liquid or atmospheric moisture, hot or cold.

"Haskelite will re-furnish any piece or pieces of Haskelite Compound Lumber Flooring that shows an expansion in excess of three tenths (3/10) of an inch per one hundred (100) inches.

"This guarantee covers two complete annual cycles of weather conditions following date of completion of installation."



FLOORING

HASKELITE MANUFACTURING CORPORATION

208 W. Washington Street, Chicago, Illinois

LETTERS

Building Costs

Forum:

I have just read the article in the December issue on "War's effect on Building Costs," and find it exceedingly interesting.

The publication of building cost trends, which you have initiated in the current issue, will undoubtedly appeal to many of your readers. It so happens that I have been endeavoring to accumulate comparative costs, especially those prevailing in Florida cities. It has not been possible for us to attain a degree of success that would give us the desired information. We are therefore delighted to know that you expect to continue this survey indefinitely.

W. HARRY ROSSMAN, SECRETARY
Tampa Builders' Exchange, Tampa, Fla.

Secretary Rossman and other cost-conscious readers will find the Forum Cost Index a regular feature in the Building Money section—this month on page 134.

Going Up! (cont.)

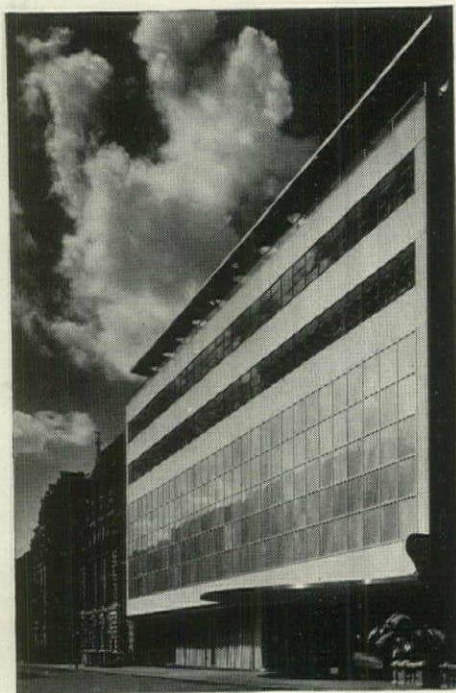
Forum:

Skyscrapers and their future would be of little popular interest were it not that a structure towering into the air has some dramatic appeal. For the most part they are built for investment and in that capacity have turned out to be pretty sour. Almost every big little city in the country has its once proud but now busted skyscraper. . . .

. . . But this will not signify that the ambition to make a 100 ft. lot do the work of a city block has not been one of the causes of economic chaos.

A skyscraper may house 5,000 employees where 200 worked before. Lower Fifth Avenue in New York was on the way out as a shopping street until the thousands of garment workers who filled the street during lunch time were moved to Eighth Avenue. But only a tyro would blame congestion in the streets upon skyscrapers.

The New York Height of Buildings Commission in 1913 reported on the lower Manhattan situation where buildings were squeezing each other up into the air to get light. Their stems are as pallid as celery stalks, but their tops burst forth in the sunlight and make a great skyline. But the whole business had to be stopped if any were to survive. Three years later an ordinance resulted, which seems to have confirmed a place in the sun for skyscrapers, with reduced bulk for the upper floors. It was a great job, the best that could be done by zoning, which after all is only a police power regulation of a negative sort. The new order is a vast improvement but, when it comes to light and air, Rockefeller Center is a dungeon as compared with the



MUSEUM OF MODERN ART

Robert M. Damora



COLUMBUS HOUSE, BERLIN

(see third column.)

Associated Press

Williamsburg houses for the underprivileged. There is little wonder that we have M. LeCorbusier's "Urbanisme" and other fantastic schemes poked at us.

But the case against skyscrapers in addition to their being poor investments is that the land owner who doesn't want one is stuck.

If this sort of *laissez faire* building operation of those to whom income is an annoyance is to go on, the day of far more rigid control over the load on the land is drawing closer.

It is not likely that there will be any more Rockefeller Centers in Manhattan because this one has skimmed all the cream that there will be for a generation. And any town large or small that would toy with the "Center" idea would do well to avoid the tragic error of erecting a building to vie with the 1925 skyscraper hotel in the nearby town.

The invention and continued improvement of the elevator made skyscrapers feasible. And commercial skyscrapers have contributed largely to the instability of urban land values. The elevator's successor for large scale production may be the escalator.

H. T. FROST

Chicago, Ill.

Random Notes

Forum:

Herewith are a few random observations on the architectural scene:

An advocate of "Biotechnique" has designed a bookcase for 500 books, for the home. People with 500 books are almost as scarce as Biotechnicians. If you found one he would probably be a humanist anyway.

A Landscape Architect wants to locate our airports in the country to provide the farmers with a "larger Social Concept." Whatever that means, let's give it to them.

Some of our modern architecture is depressing, but shake the dust off of "Paris Prize Designs 1904 to 1927."

In one respect the "International Style" goes well with the Communist. Both are hungry looking.

A friend of mine pointed out the striking similarity of character in the facade of New York's Museum of Modern Art (ARCH. FORUM, Aug. '39) and the Columbushaus in Berlin (see cuts). He suggested that some New York architects have one foot in Europe and the other foot in the grave.

SHELDON BRUMBAUGH

Oregon City, Ore.

Numerous are the examples of strip-tease fenestration both in the U. S. and Europe. A "striking similarity of character" is typical of the buildings in any period, including the present. If a certain consistency is the charm of Colonial or Cotswold, what makes it the weakness of modern?—Ed.

Bellowing Sheep

Forum:

I subscribed because the mag had a section called "PLUS," it seems that the reactionary element finally won out and had it illiminated so that the sheep-subscribers would quit bellowing. At the same time it illimnates people like me from subscribing to a magazine that lacks a little guts—by all means satisfy the sheep.

CHARLES BIEDERMAN

New York City

ERRATUM

Credit for glass, Castle Village (Nov. '39, p. 340), should read: Pennvernon—Pittsburgh Plate Glass Co.—Ed.



Outstanding Quality

**PENBERTHY
AUTOMATIC ELECTRIC
SUMP PUMPS**

MADE IN 6 SIZES

*Constructed of Copper and Bronze
Throughout*



PENBERTHY INJECTOR COMPANY

Manufacturers of Quality Products Since 1886

Canadian Plant: WINDSOR, ONTARIO

DETROIT, MICHIGAN



BEAUTIFUL AND PRACTICAL

—THIS MODERN LUSTROUS METAL—

STORE FRONT designers are depending more and more on standard Kawneer shapes and mouldings as well as on special metal work by Kawneer for rich decorative effects, at reasonable cost.

This modern lustrous aluminum (with the durable and appealing Alumilite Finish), or bronze, is available in a wide variety of interesting and useful shapes—fabricated to meet every store front requirement.

Illustrations show typical use of No. 7073 Fluted Mouldings to form an attractive bulkhead. Fully resilient No. 88 Kawneer Sash is employed for harmony and to keep chances of glass breakage at an absolute minimum. Note toe recess at bottom of bulkhead, and Kawneer Entrance Door in aluminum.

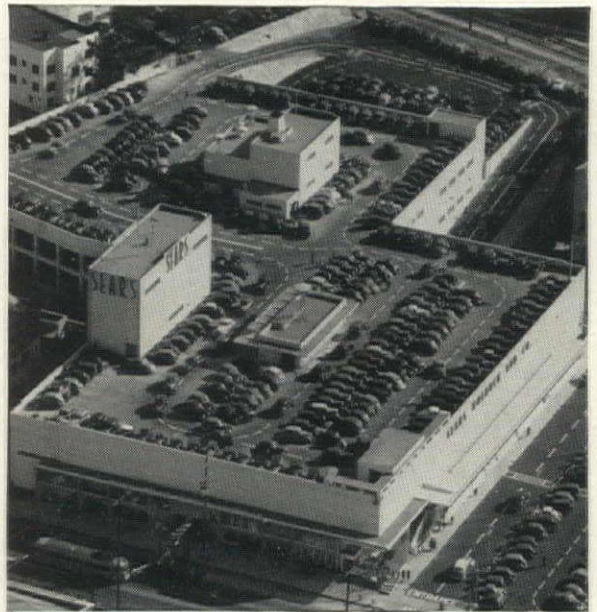
WRITE THE KAWNEER COMPANY, NILES, MICHIGAN, today for complete details covering Rustless Metal and Porcelain Enamel Store Front Construction.

Kawneer Sealair All-Aluminum Windows are now widely used in residences, schools, apartments, hotels, and all other types of buildings. Data on request.

ALUMINUM, BRONZE AND OTHER NON-FERROUS METAL—

Kawneer

STORE FRONTS • DOORS • WINDOWS • ARCHITECTURAL METAL WORK



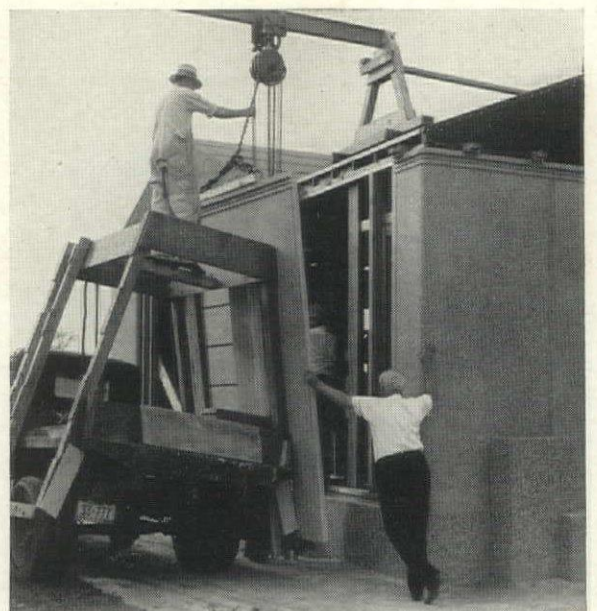
Western Airphoto Co.

BUILDING OF THE MONTH . . . store for a city that shops on wheels (page 70)



Thomas D. McAvoy

MAN OF THE MONTH . . . he makes little ones into big ones . . .



Rent

PRODUCT OF THE MONTH . . . and big ones into buildings (page 101)

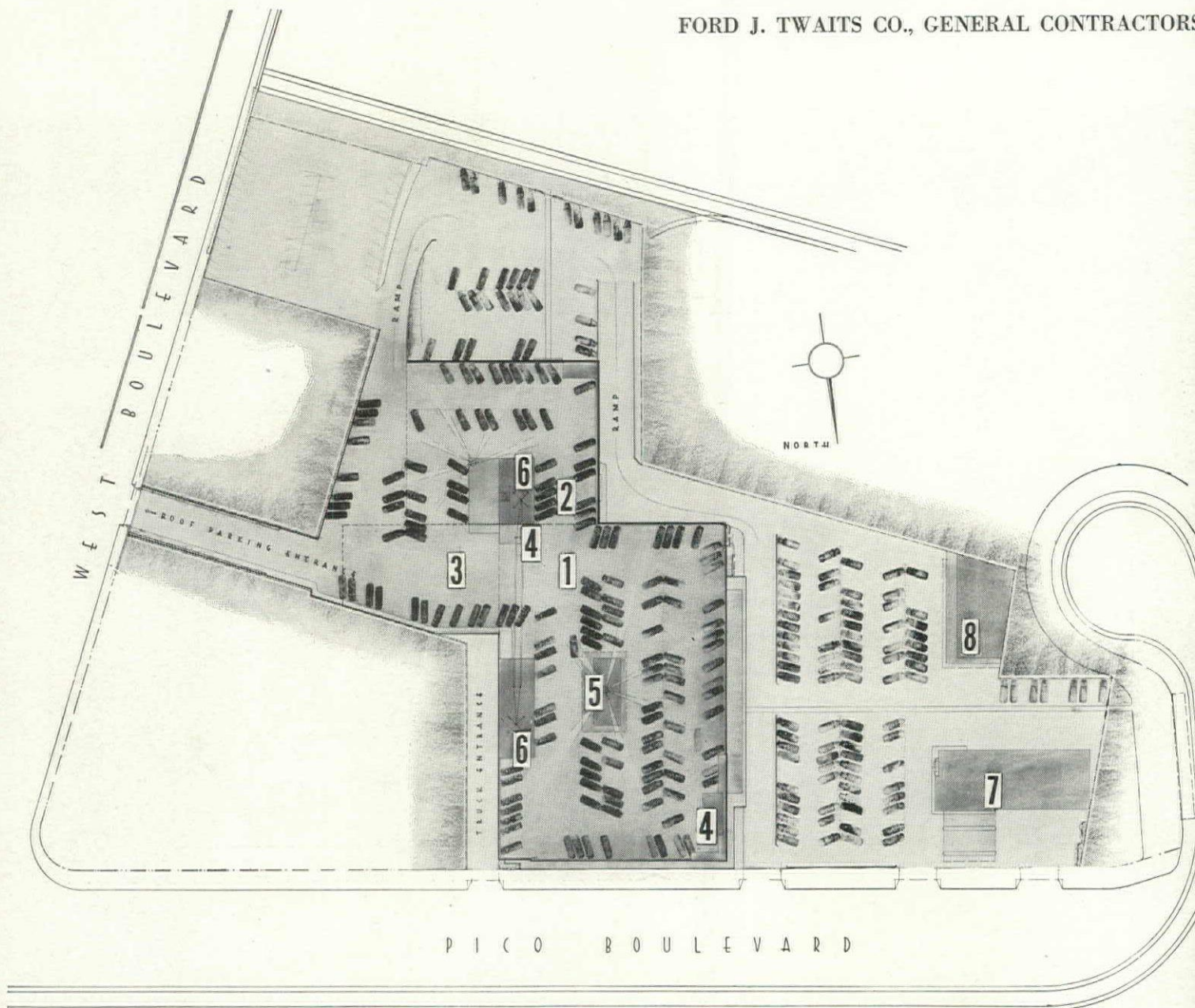
STORE BUILDING FOR SEARS ROEBUCK AND C

JOHN STOKES REDDEN, ARCHITECT

JOHN GERARD RABEN, DESIGNER

OLIVER G. BOWEN, STRUCTURAL ENGINEER

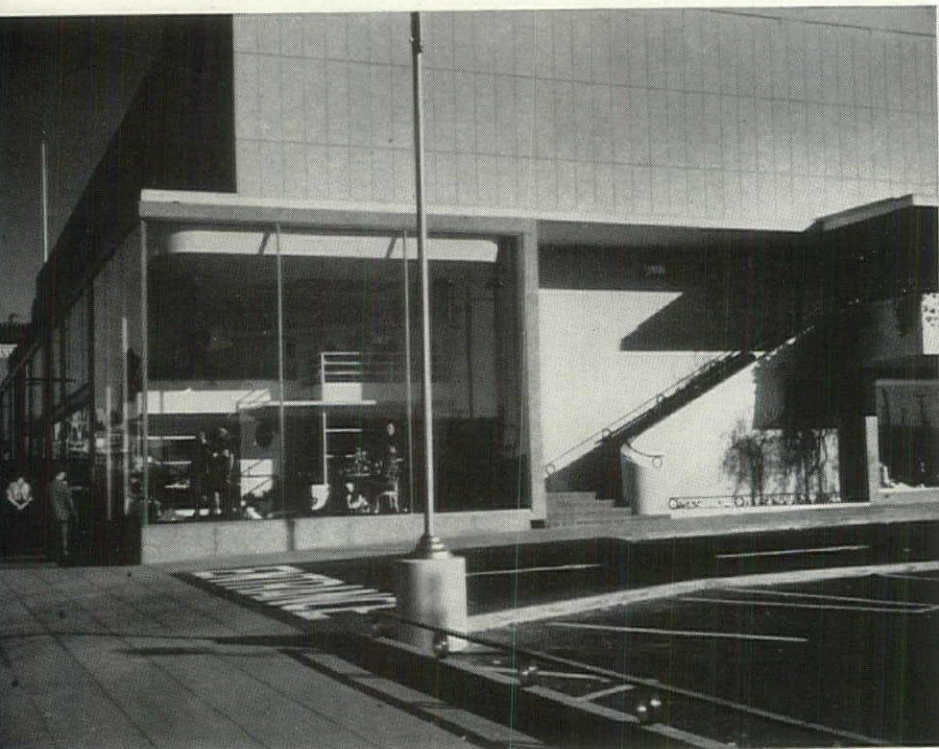
FORD J. TWAITTS CO., GENERAL CONTRACTORS



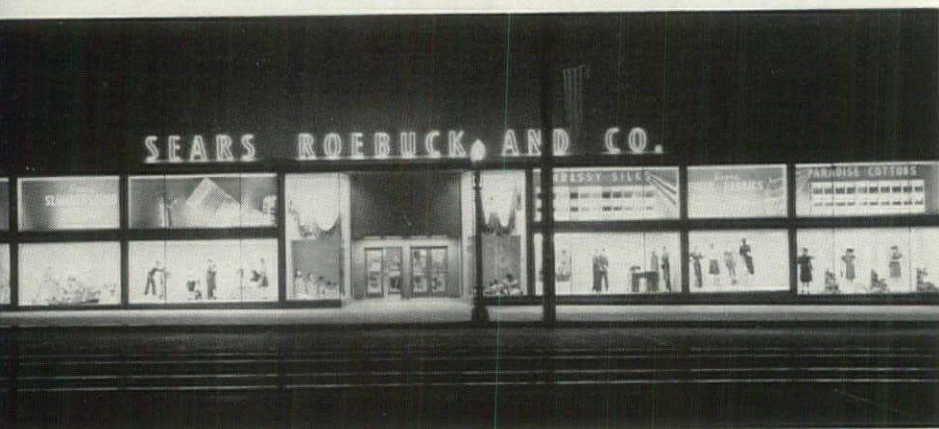
An important part of Sears Roebuck merchandising policy is the provision of parking space; and in the new store for Los Angeles this has been expressed in a highly dramatic fashion. Since the hillside site, with the ground dropping away from West Boulevard at a slope of twenty degrees, made the conventional parking arrangement impossible, three levels were developed one of which is the roof of the main building. The parking areas are accessible from the two main streets and accommodate 475 cars. Escalators in the center of the main roof lead down directly through the heart of the store, and there is also

an entrance at the second floor level. For the further convenience of customers there are points in each parking area where heavy articles can be picked up and transferred to the cars. Truck traffic, as shown on the plan, is routed through a separate driveway to a large court under one of the parking spaces. Emphasis has been laid on this elaborate provision for parking because it typifies the designers' approach throughout, with intense concentration on merchandising rather than "architecture." To judge from the distinguished example of commercial architecture which has resulted, the approach would seem a sound one.

SEARS ROEBUCK AND CO. STORE, LOS ANGELES, CALIF.



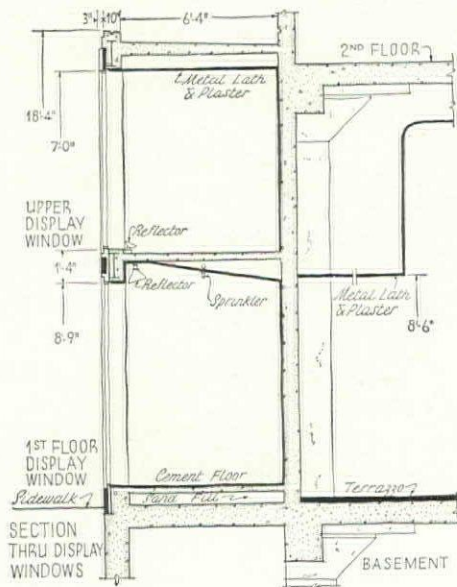
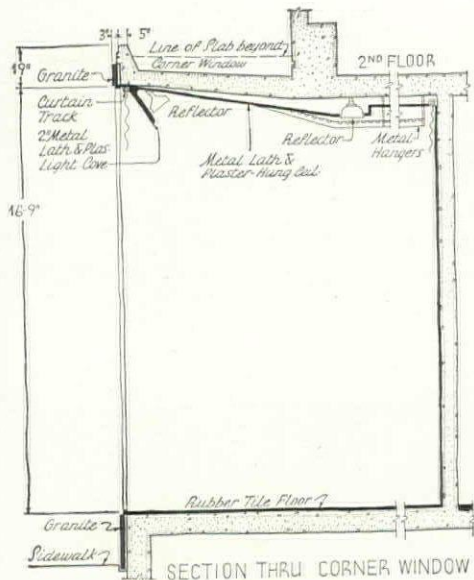
PICO BOULEVARD FRONT



BALCONY FOR OUTDOOR DISPLAYS



News Pictures, Ltd.

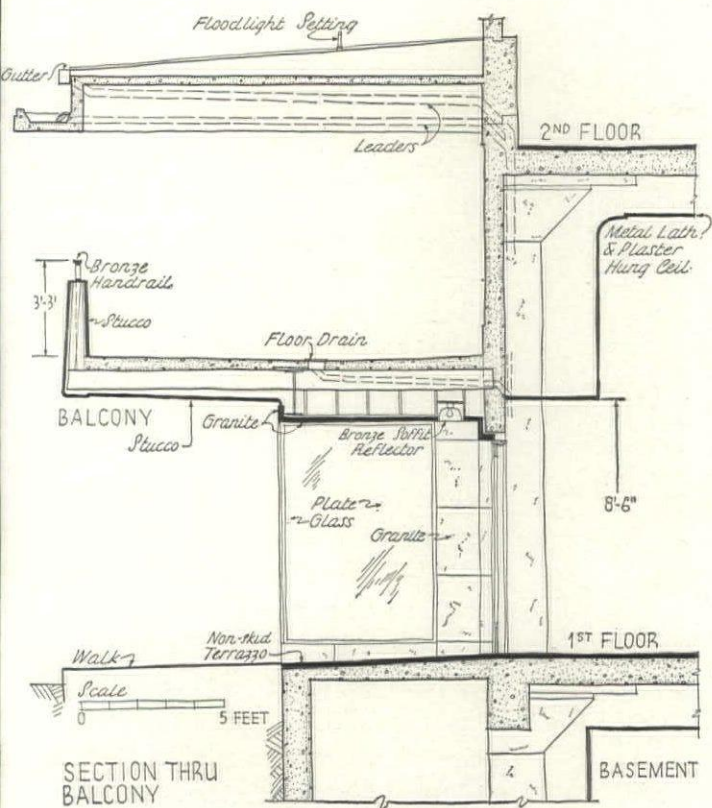




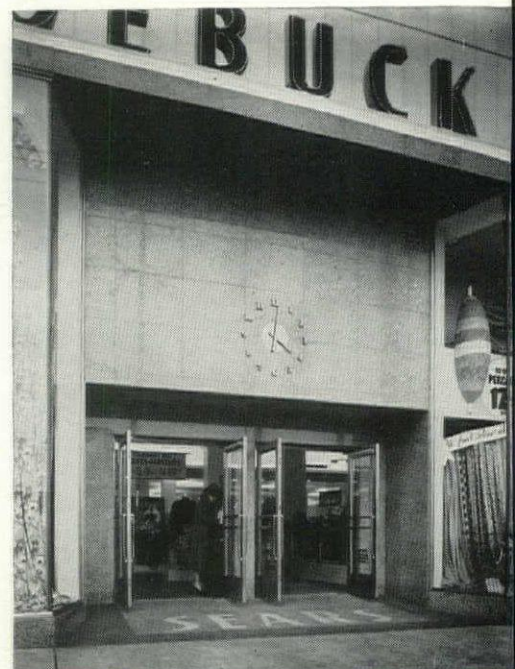
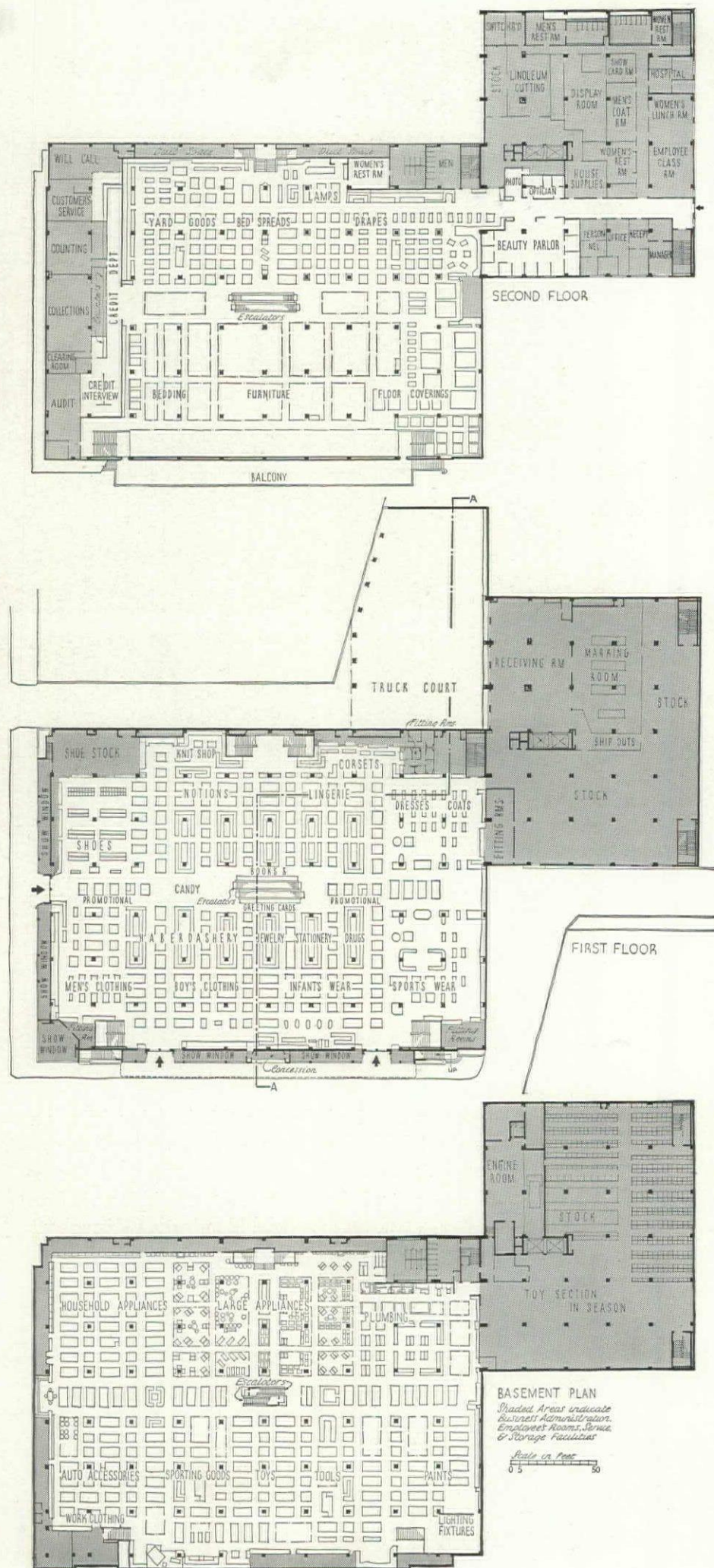
VIEW FROM SERVICE STATION

Fred R. Dapprich

JOHN STOKES REDDEN, ARCHITECT; JOHN GERARD RABEN, DESIGNER

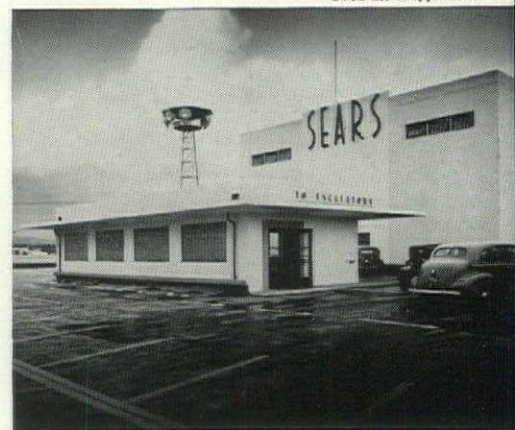


The omission of all windows in this building follows a precedent established by Sears Roebuck some years ago. It is the contention of the company's designers that only a negligible part of the merchandise on display receives any daylight, and that artificial illumination throughout is hence more satisfactory. Further advantages claimed are more satisfactory air conditioning and greater ease of display. Not the least important factor in the building's pleasing appearance is the absence of any attempt to pretend that it has windows. Exterior displays occupy two levels: the upper show windows, illustrated in the night view opposite, have a vigorous billboard quality, designed to attract the attention of passing motorists and bus passengers. The balcony is used for outdoor displays of garden furniture and similar merchandise; it also serves as an exit from the store. Details of these various units are shown on these pages.



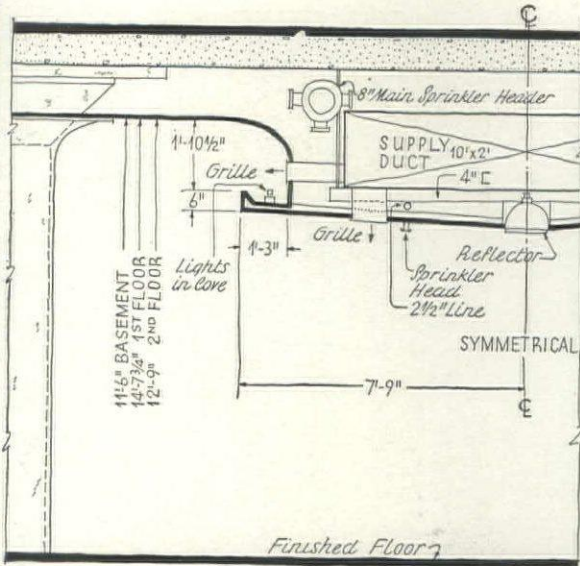
ENTRANCE—PICO BLVD.

Fred R. Dapprich Photo

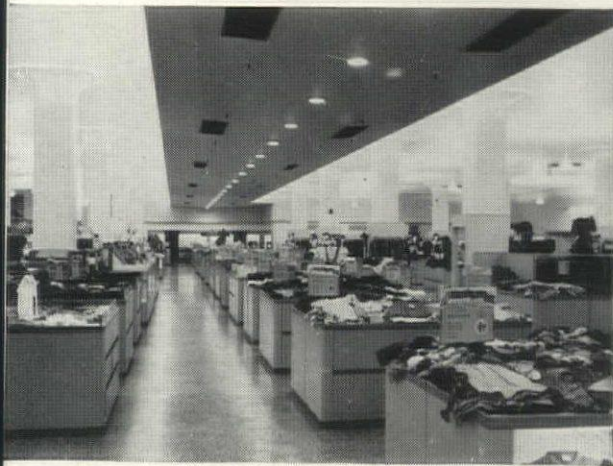


ESCALATOR ENTRANCE

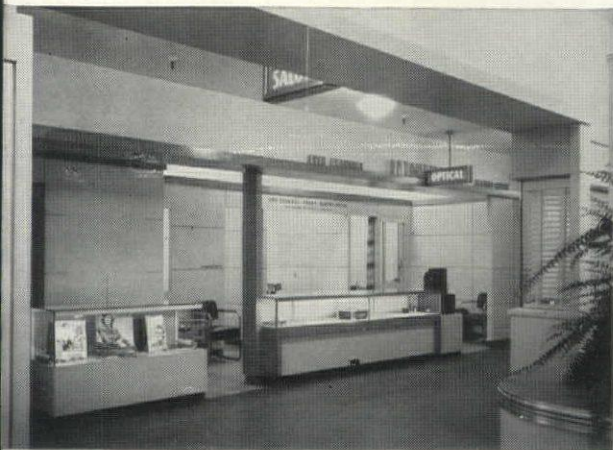
The main element of vertical circulation in the store is the bank of escalators, whose roof entrance is shown directly above. The functional approach has been rigorously adhered to within the store, the column spacing and other features of construction being determined by merchandising requirements. In a similar fashion the architectural treatment has been subordinated. Display and storage cases have been reduced to a few standard types, again for the purpose of concentrating attention upon the merchandise. In this connection the architect has made the following comment: "The focusing of all efforts on merchandise and none on the building would seem to sacrifice many a possibility, but such disappearance of 'architecture,' or rather its shifting to plain performance, is a sign of maturity in retailing." And one might add—in architecture.



SECTION THRU SUSPENDED DUCT FURRING



LIGHTING AND VENTILATING DUCT

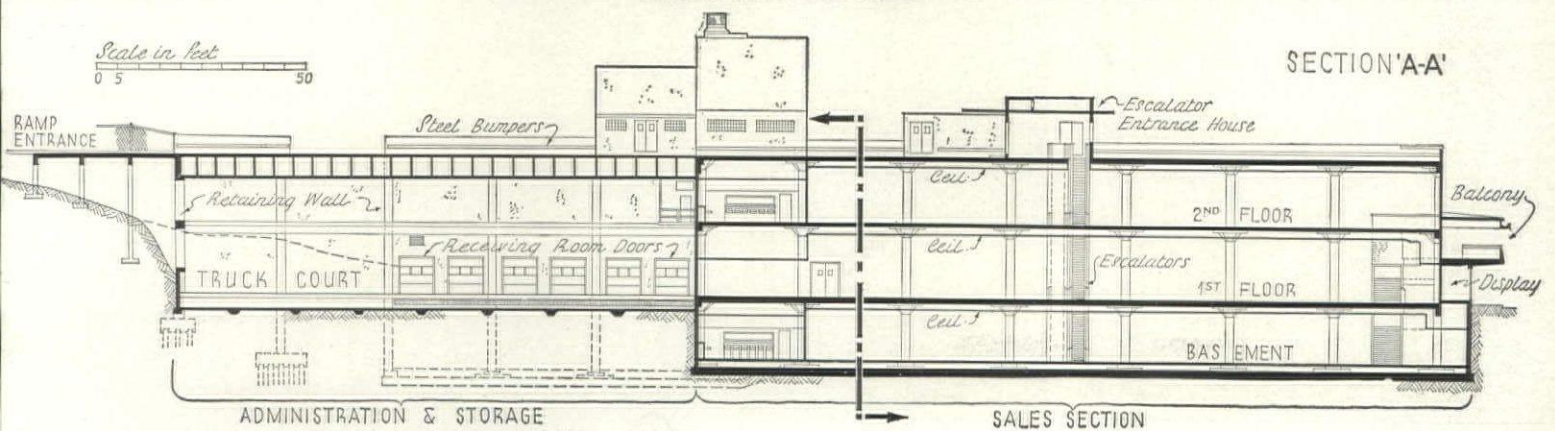


OPTICAL DEPARTMENT

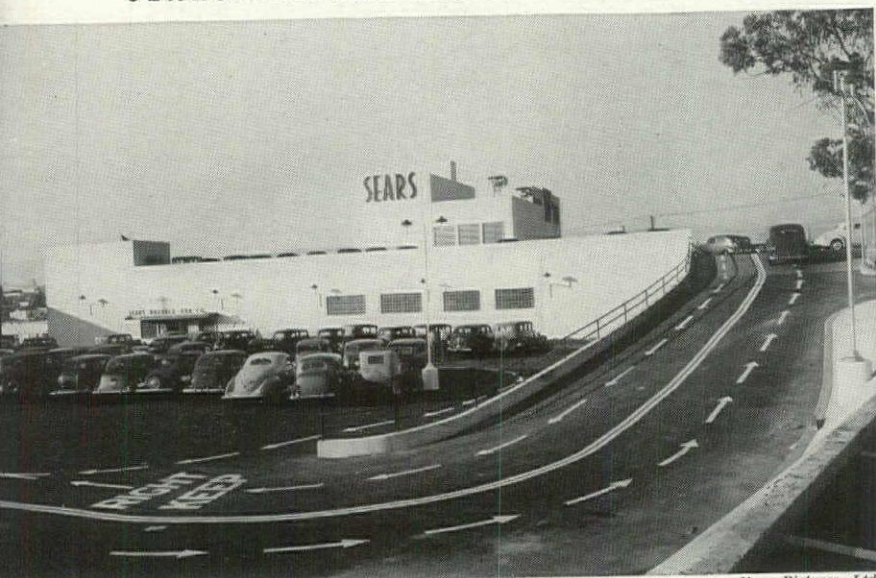


ESCALATORS—FIRST FLOOR

Fred R. Dapprich Photos

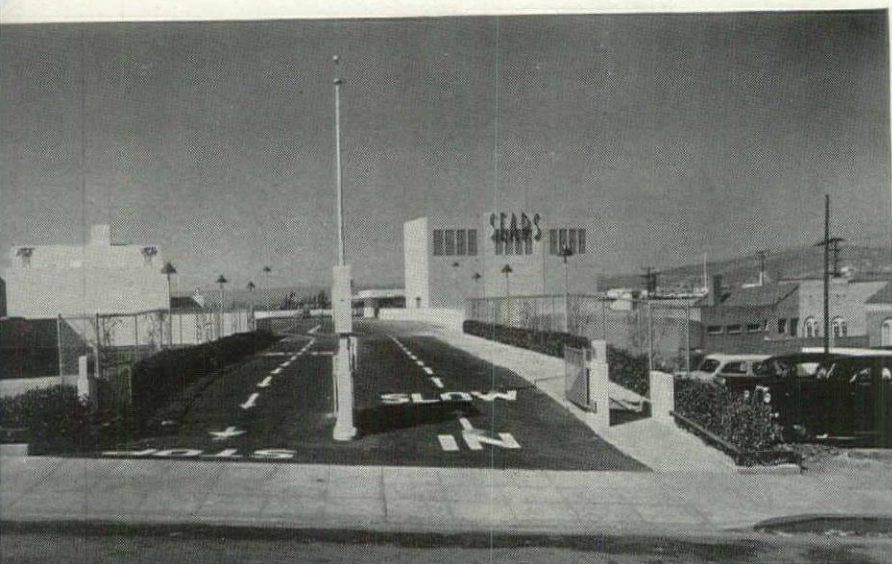


SEARS ROEBUCK AND CO. STORE, LOS ANGELES, CALIF.



News Pictures, Ltd.

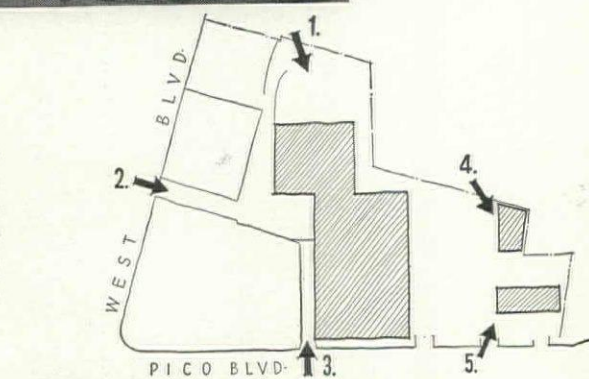
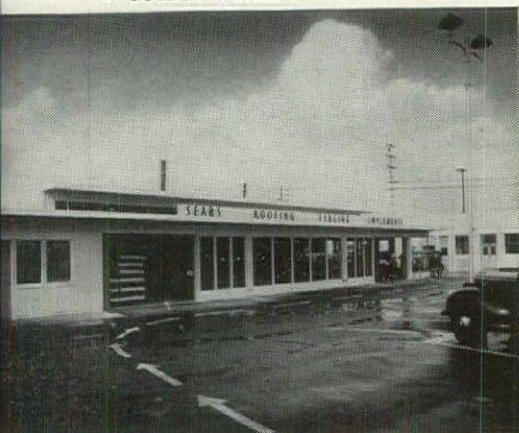
1. SOUTH PARKING FIELD



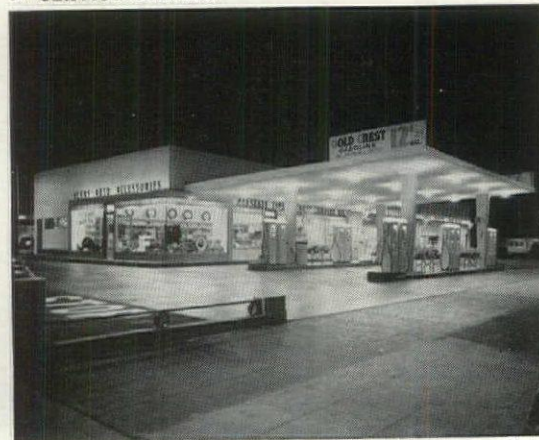
2. ROOF PARKING ENTRANCE

Illustrations on this page show the admirable handling of the parking areas, and a detail of the separate truck entrance. Two sales buildings have been placed in the parking space, one a service station where tires and auto accessories are sold, the other a unit for building materials and gardening tools.

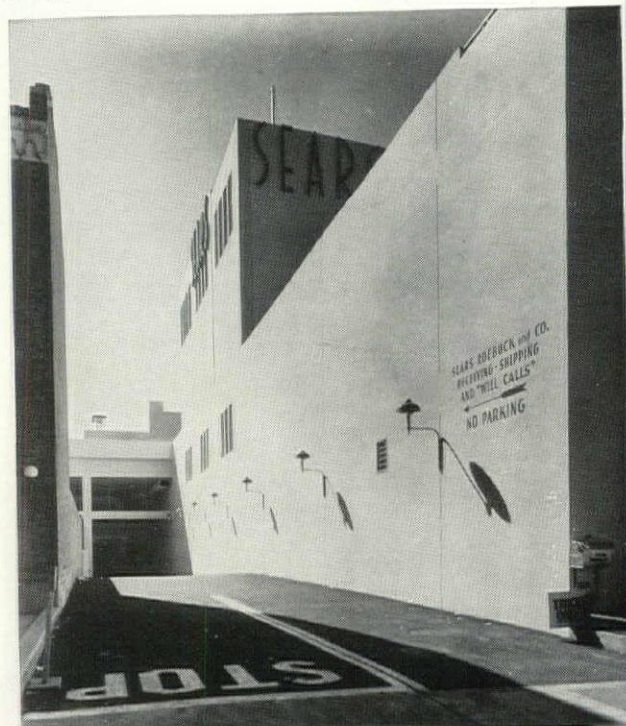
4. OUTDOOR SALES



5. SERVICE STATION



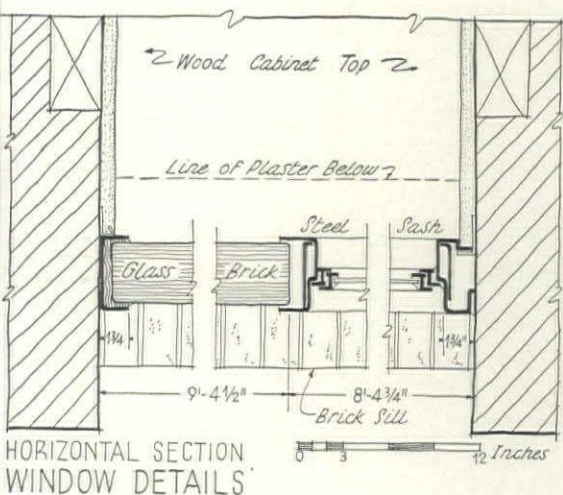
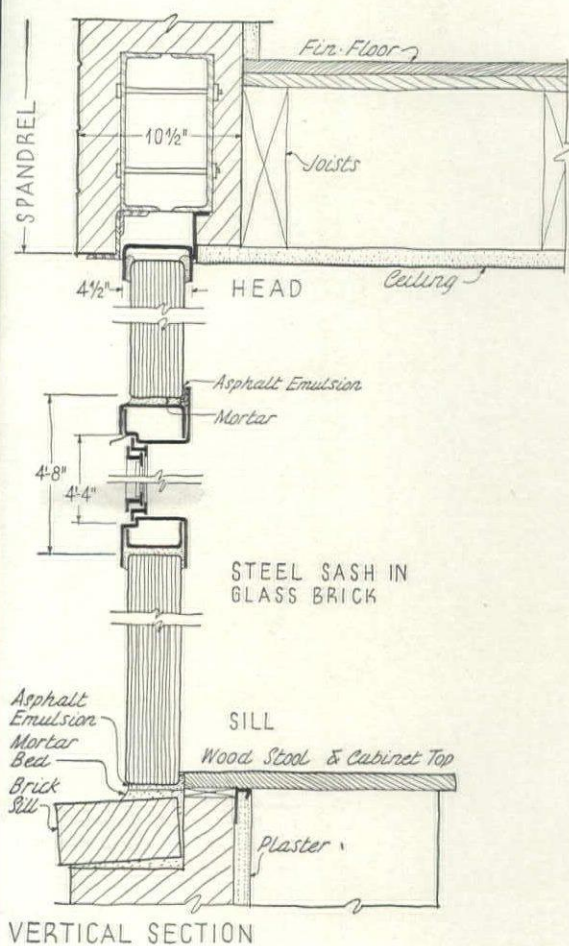
Fred R. Dapprich Photos



3. TRUCK ENTRANCE

CONSTRUCTION OUTLINE

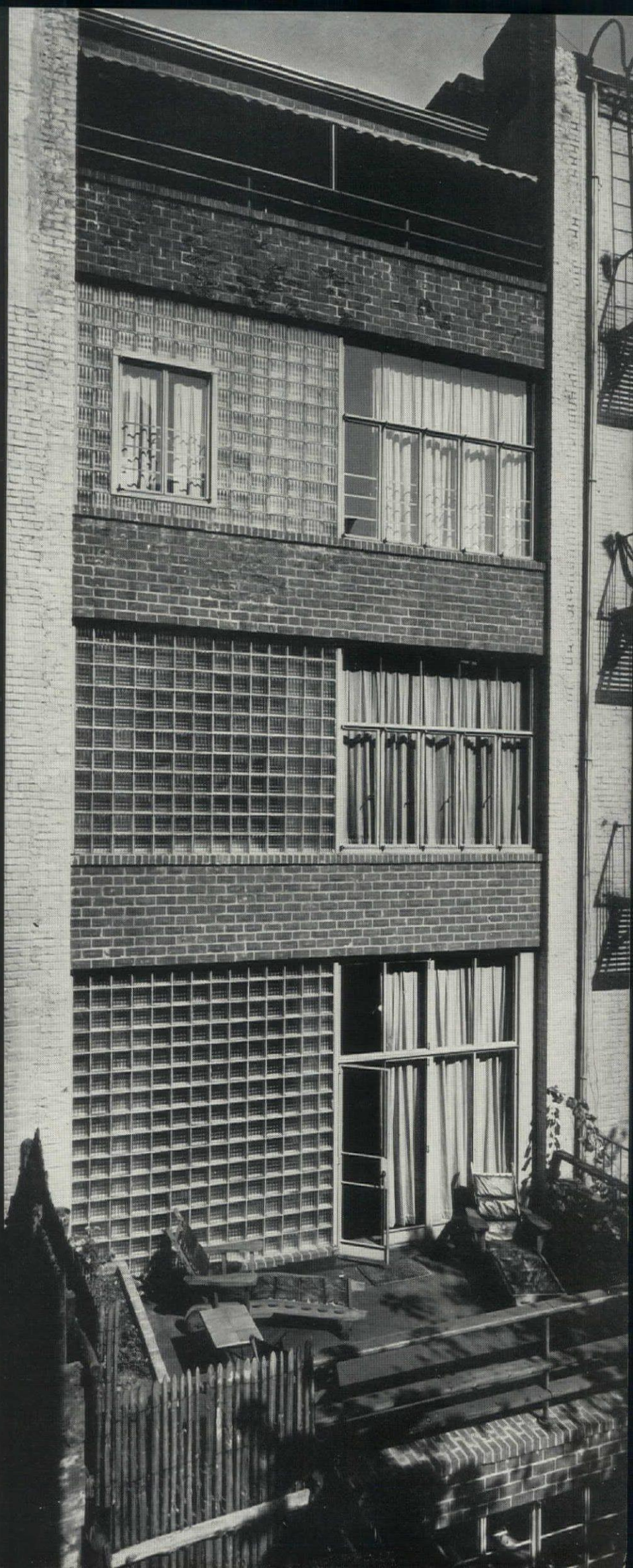
FOUNDATION: Reinforced concrete mat.
STRUCTURE: Exterior walls and columns—reinforced concrete. Floor construction—reinforced concrete slab. Floors—(1st) terrazzo, Consolidated Terrazzo Cos., Inc., (2nd)—Linotile, Armstrong Cork Co.
ROOF: Four ply built-up tar and felt, Woodworth & Turk. Surface for roof parking—Floor Crete, Turner Resilient Floor Co.
SHEET METAL WORK: Flashing, gutters and downspouts—copper, Chase Brass & Copper Co.
INSULATION: Roof—1 in. compressed cork board, Armstrong Cork Products Co.
WINDOWS: Sash—steel, Truscon Steel Co. Show windows—extruded bronze, Brasco Mfg. Co. Glass— $\frac{1}{4}$ in. plate, Libbey-Owens-Ford Glass Co. Glass blocks—Owens-Illinois Glass Co.
ESCALATORS: Otis Elevator Co.
FURNISHINGS: Steel tables and show cases—Morton Mfg. Co. Wall fixtures—American Store Equipment and Peterson Cabinet Works.
HARDWARE: By P. & F. Corbin and Union Hardware & Metal Co.
DOORS: Hollow metal, Metal Door & Trim Co. and Cochran-Izant Co. Garage doors—rolling steel, Kinnear Mfg. Co.
PAINTING: Interior—Pacific Paint & Varnish Co. Exterior—Luminal, National Chemical Co.
ELECTRICAL INSTALLATION: Fixtures—Goodrich Mfg. Co., Price Bros., Pittsburgh Reflector Co. Lighting panels and breakers—Westinghouse Electric & Mfg. Co. Conduit—Triangle Conduit Co. Outlet boxes and fittings—Steel City Electric & Mfg. Co.
PLUMBING: Soil pipes—Rich Mfg. Co. Cold water pipes—National Tube Co. Hot water pipes—American Brass Co. Pumps—Yeoman Bros. Co. Valves and fittings—Crane Co. Sprinklers—Viking Automatic Sprinkler Co.
HEATING AND AIR CONDITIONING: Vacuum steam system. Steam boilers—Brownell Co. Gas burners—National Gas Equipment Co. Vacuum pump—Jenning Nash Duplex, Nash Engineering Co. Water heater—Sims Co. Temperature control—Johnson Service Co. Vacuum specialties—Sarco Co., Inc. Fans—B. F. Sturtevant Co. Motors—U. S. Electrical Motors, Inc. Grilles—Barber-Colman Co. Radiators—American Radiator Co. Valves—Kennedy Valve Co. and Sarco Co. Unit heaters—McQuay Co.



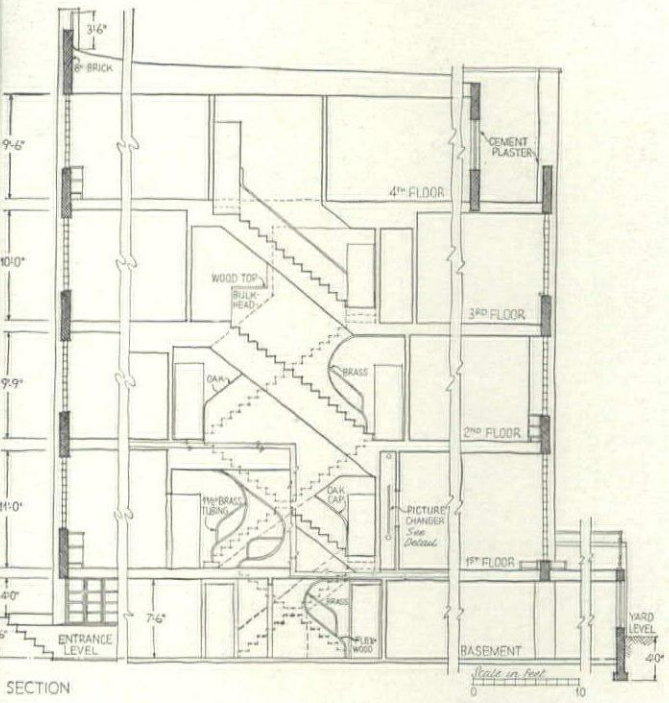
TOWN HOUSE FOR MICHAEL M. HARE NEW YORK CITY

MICHAEL M. HARE, DESIGNER
ASSOCIATES: LIVINGSTONE ELDER,
JOHN MANZER and CLEMENT HURD

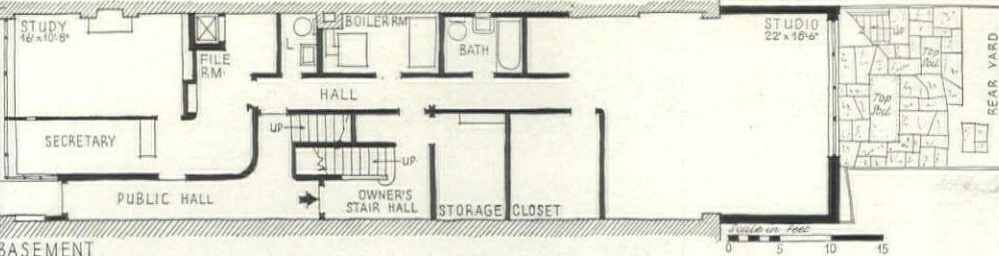
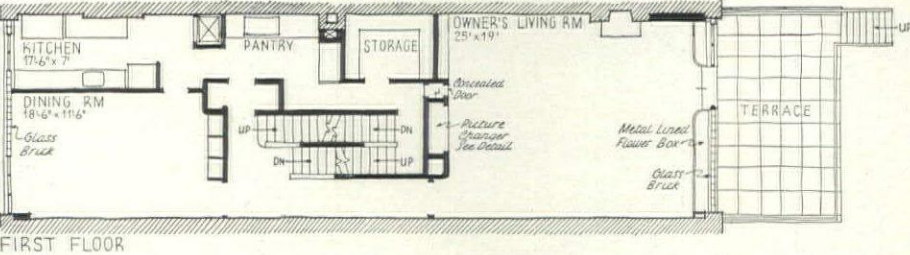
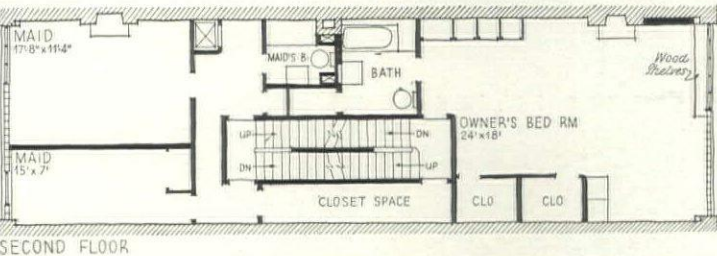
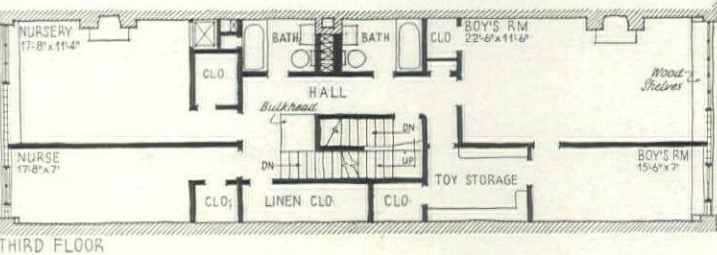
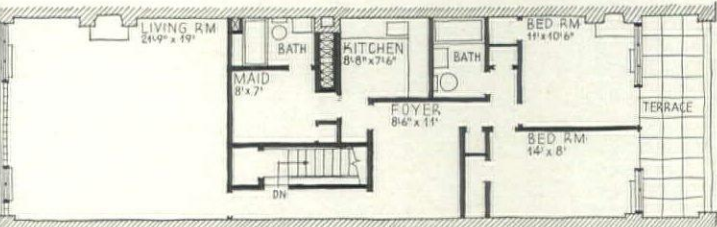
All photos, F. S. Lincoln



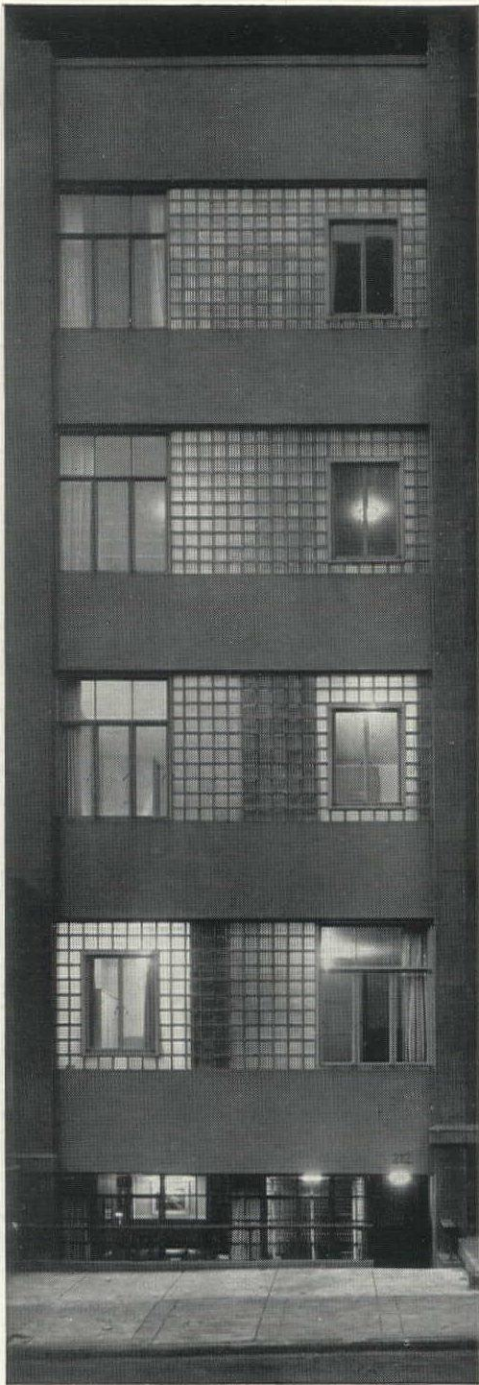




The plan for a typical city house, built on a deep and narrow lot, almost inevitably demands the concentration of stairs and services in the center. This plan follows the customary arrangement, but with one important and highly interesting exception: the use of a "scissors" stair, an interlocking system which makes it possible for the tenant on the fourth floor to go up through the whole house without ever entering the owner's quarters. This ingenious arrangement takes up no more space than a single stair, but would permit the division of the house into seven separate apartments or office units if such a change were desired. At present the building has an office at the ground level, the owner's residence on the three floors above, and a rented apartment on the fourth. The exterior is a conservative treatment in stucco and glass block, the former being colored to match the brownstone houses at either side. Cubage: 80,000. Cost: \$25,000.



STREET ELEVATION

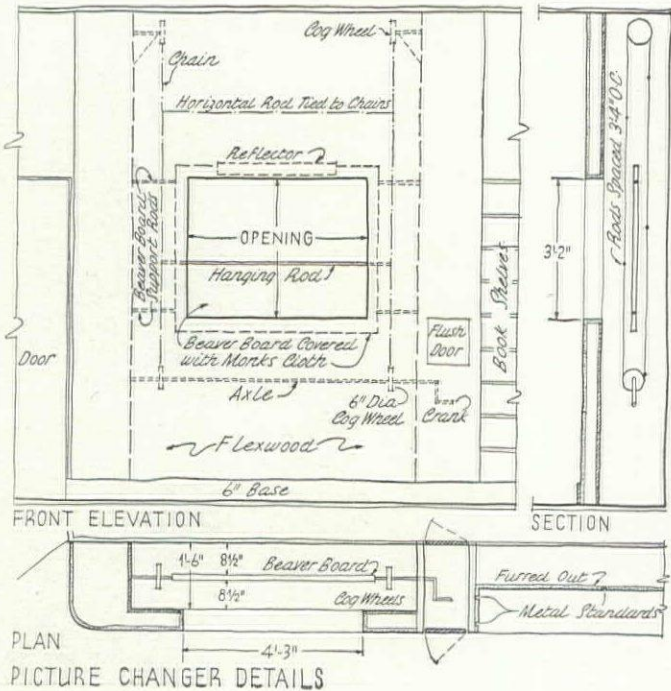


TOWN HOUSE
NEW YORK CITY

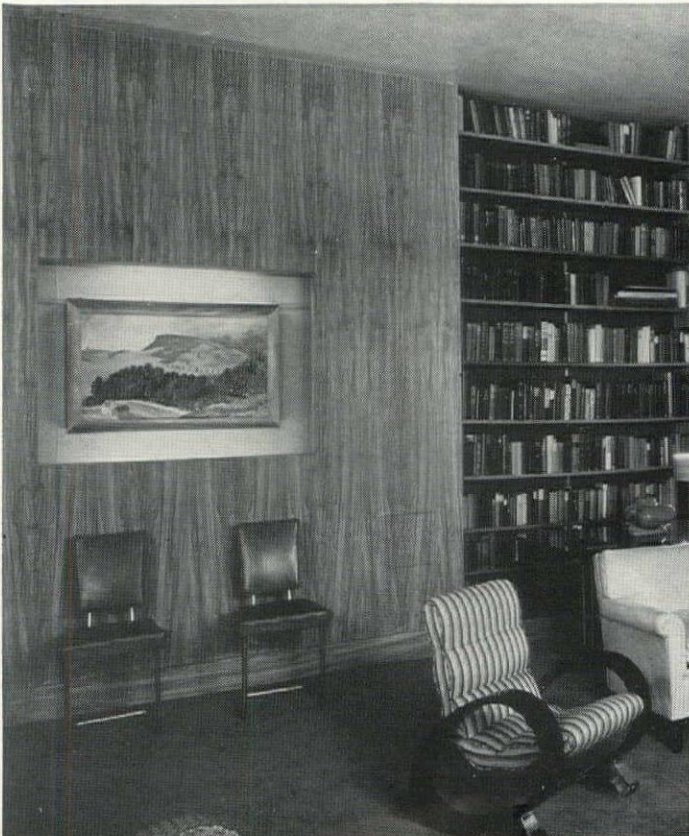
The living room has two walls in figured red gum, and the third in plaster. In one of the wood walls is installed a device, shown below, which permits a very convenient change of pictures in the lighted niche. A crank-operated mechanism has five pictures hung on it, any one of which can be brought into view by turning the handle. The rug in the dining room was made for the room, and designed by Clement Hurd.



DINING ROOM



CORNER LIVING ROOM





BEDROOM, SECOND FLOOR

LIVING ROOM, FIRST FLOOR



CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—steel beams, brick spandrels, covered with synthetic brownstone. Interior partitions—wood studs, U. S. Gypsum Co. rock lath and plaster.

ROOF: Covered with one-ply Walkover, Ruberoid Co. Deck—Traffic Top, Celotex Co.

INSULATION: Extension roof—aluminum foil, Alfol Insulation Co.

WINDOWS: Glass—double strength, quality A, Libbey-Owens-Ford Glass Co. Glass blocks—Owens-Illinois Glass Co.

FLOOR COVERINGS: Main rooms—red oak. Kitchen—linoleum, Armstrong Cork Co. Bathrooms—tile.

WALL COVERINGS: Living room and office—red gum veneer, U. S. Plywood Corp.

HARDWARE: Interior—Schlage Lock Co. Exterior—J. H. Judd & Son.

PAINTING: Material by Sherwin-Williams Co. and Keystone Varnish Co.

ELECTRICAL INSTALLATION: Wiring system—BX. Switches—Arrow, Hart & Hegeman Electric Co. Fixtures—Ruby Lamp & Lighting Distributors Co.

KITCHEN EQUIPMENT: Range—Standard Gas Equipment Corp. Refrigerator—Electrolux, Servel, Inc. Sink—American Radiator & Standard Sanitary Mfg. Co. Dumbwaiter—Murtha Dumbwaiter Co.

BATHROOM EQUIPMENT: All fixtures by American Radiator & Standard Sanitary Mfg. Co. Cabinets—Charles Parker Co.

HEATING: One pipe steam system; hot water in basement. Boiler—National Radiator Corp. Oil burner—Paragon Oil Co. Radiators—American Radiator & Standard Sanitary Corp. Grilles—Tuttle & Bailey Mfg. Co. Thermostats—Minneapolis-Honeywell Regulator Co. Water heater—Paracoil-Davis Engineering Co.

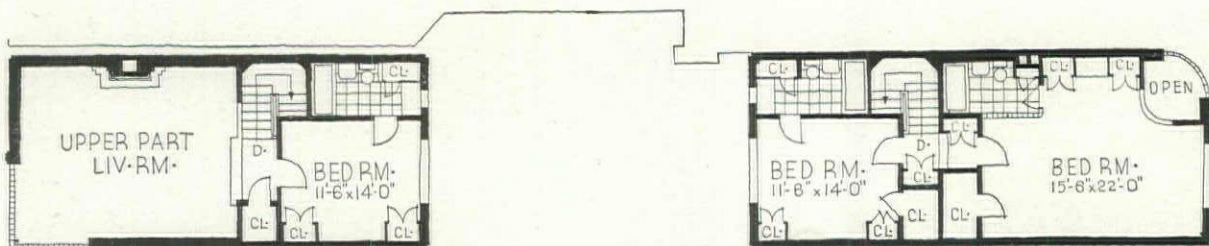
TWO GARDEN

Two city lots lying back to back are rarely acquired for development, but the arrangement has advantages in that houses of similar character face each other across a common garden. A two-story studio is the main feature of the smaller house, and the garage below has been planned for use by both houses. In the other unit an attempt has been made to create a similar impression of height in the studio by opening a well to the full height of the curved window. Glass block has been liberally used on both street and alley fronts since light rather than view was desired. The houses were put up as an investment, and the owner estimates a net income of 12 per cent at full occupancy on the basis of \$200 per month for the large dwelling and \$125 for the smaller. Cost (both houses): \$25,000.

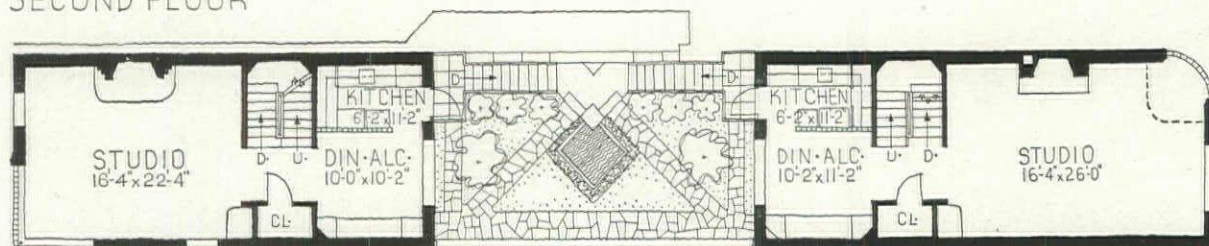


TWO-STORY STUDIO

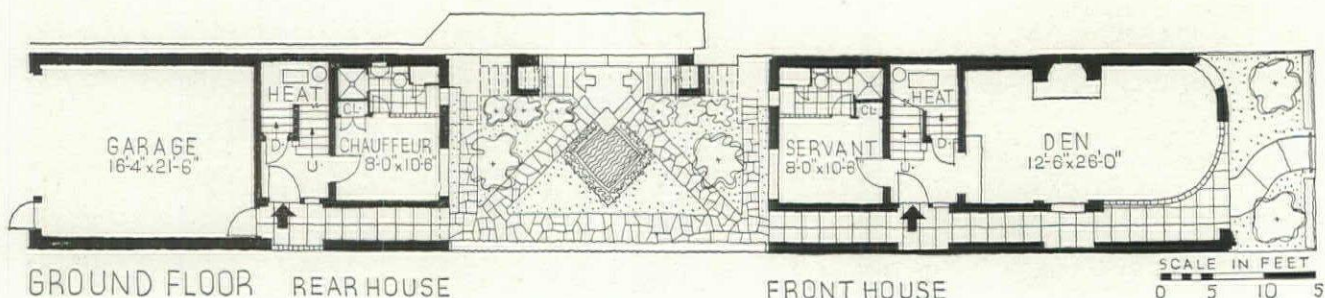
All photos, Chicago Architectural Photo. Co.



SECOND FLOOR



FIRST FLOOR



GROUND FLOOR REAR HOUSE

FRONT HOUSE

SCALE IN FEET
0 5 10 15

HOUSES, CHICAGO, ILL. A. N. REBORI, ARCHITECT



DEN ON GROUND FLOOR

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—Paving brick, wood furring, 1 in. insulation, metal lath and plaster. Structural steel—Jones & Laughlin Steel Corp. Floor construction (boiler room and rear garage) reenforced concrete slab; remainder—wood joists and finish flooring. **ROOF:** 4-ply roofing, Barrett Co.

INSULATION: Walls—1 in. mineral wool. Roofs—4 in. rock wool, Johns-Manville, Inc. **WINDOWS:** Sash—steel casements, Campbell Metal Window Co. Glass—double strength, quality A, Libbey-Owens-Ford Glass Co. Glass blocks—Owens-Illinois Glass Co.

FLOOR COVERINGS: Living room studio—wood laid in mastic over cement. Bathrooms—asphalt tile, Johns-Manville, Inc.

DOORS: Interior—"Sturdibilt," M. & M. Woodworking Co. Garage—Overhead Door Co.

HARDWARE: By L. W. Kent & Co.

ELECTRICAL INSTALLATION: Switches—General Electric Co. Circuit breakers—Square D. Co. Kitchen fans—Ilg Electric Ventilator Co.

PLUMBING: Hot and cold water pipes—wrought iron, galvanized. Toilet fixtures—Crane Co.

KITCHEN EQUIPMENT: Range, refrigerator, cabinet sink and disposal unit—General Electric Co.

HEATING AND AIR CONDITIONING: One pipe hot water system with hot water booster pump, gas fired boiler, General Electric Co. Radiators—Modine Mfg. Co. Valves—American Radiator & Standard Sanitary Mfg. Co. Water heater—Crane Co.

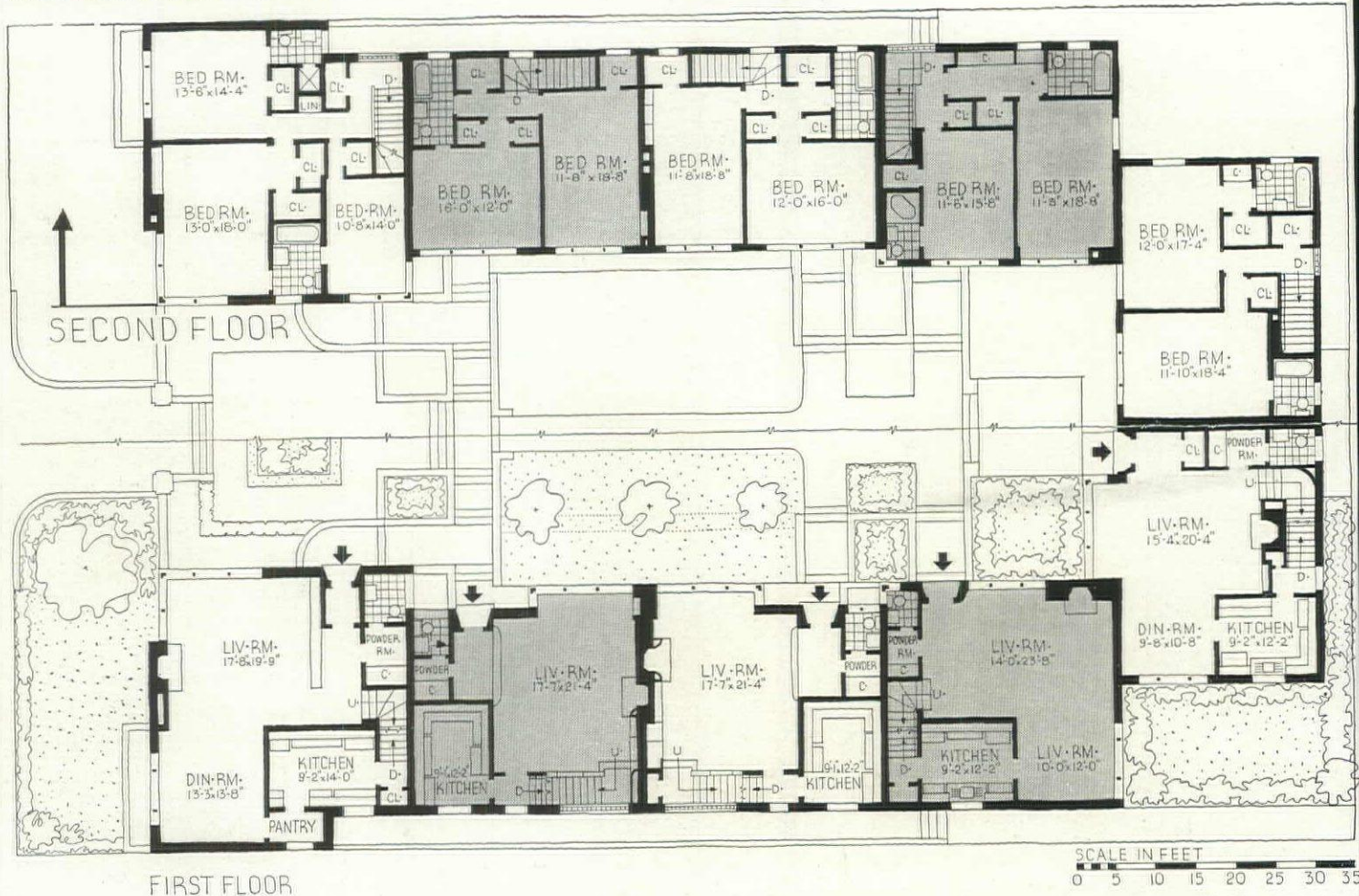
STREET ELEVATION



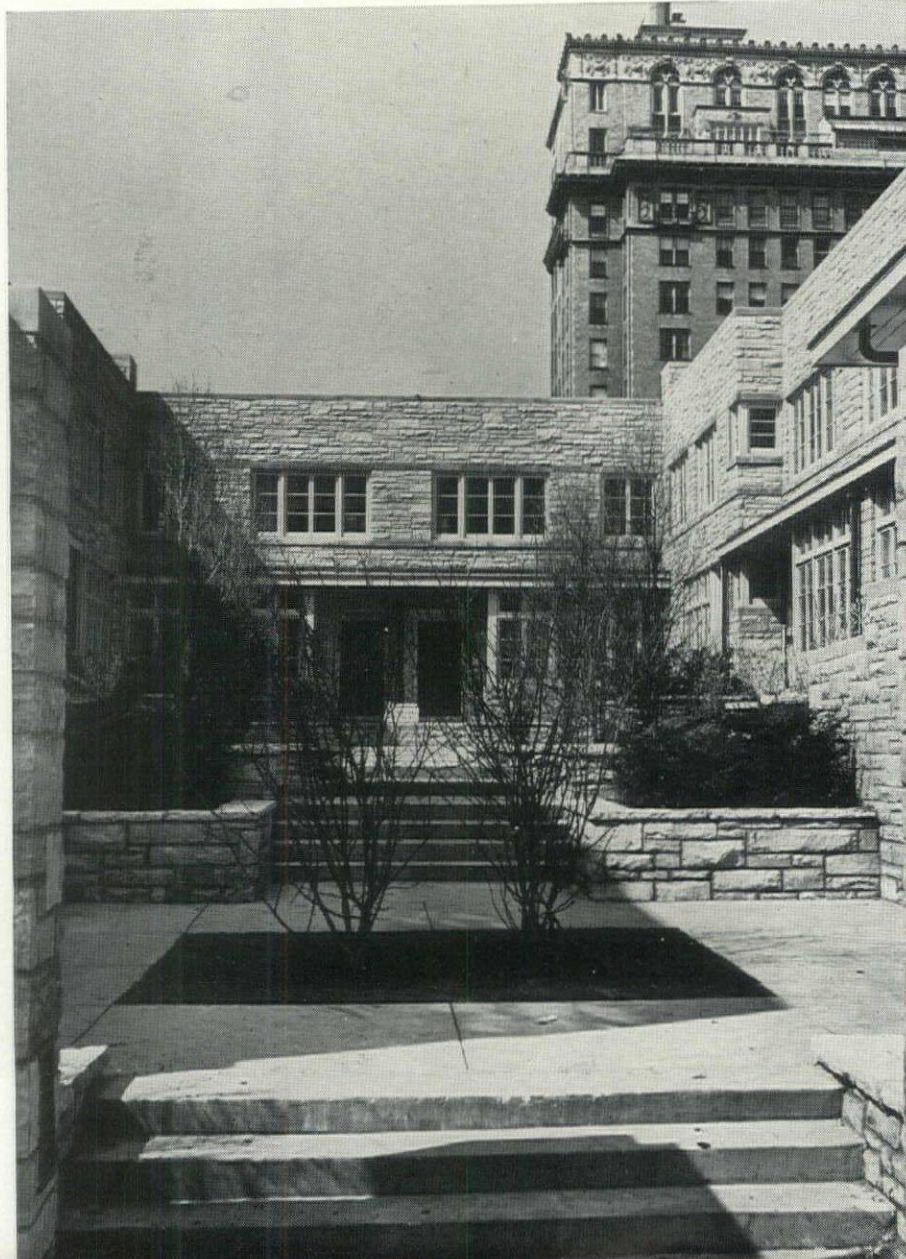
GARDEN COURT

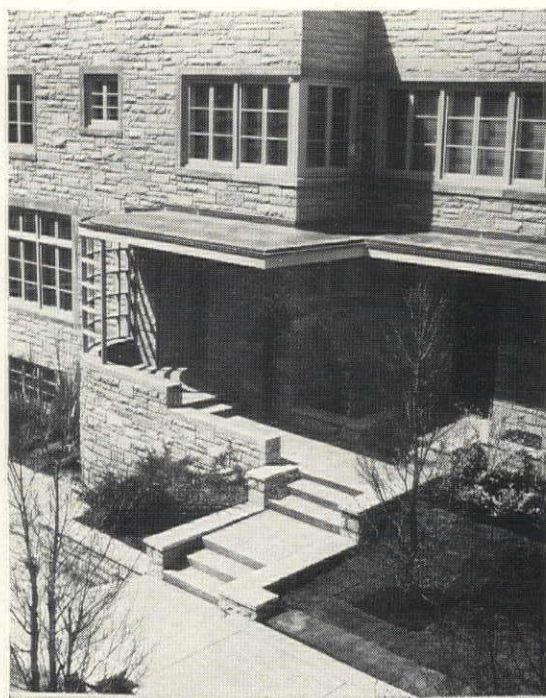


WELLINGTON TOWN HOUSES, CHICAGO, ILL.



The "town house" development is an English scheme which has received comparatively little attention in this country. Essentially it is a row house plan, with the row wrapped around three sides of a court. In this project there are ten houses, each with five to seven rooms, not counting the maid's room in the basement. As each house has its own heating plant, and the exterior finish is entirely of stone, maintenance costs are considerably under those of a conventional apartment. The plan seems excellent in many respects, notably in its shallowness; no house is more than one and a half rooms deep, with resulting good light and ventilation. Another practical feature is the placing of closets outside the bedrooms, which leaves a maximum of useful space in the rooms. Cost of the building with land was about \$125,000. Rentals range from \$145 to \$185.





CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—4 in. Wisconsin Lannon stone, concrete block backing, standard Bedford Indiana limestone trim, wood furring strips, shiplap insulating lath. Interior partitions—2 x 4 in. studs, gypsum lath and plaster. Ceilings—plaster. Floor construction—joists, sub-floor, roofers' felt and finish flooring.

ROOF: Covered with 3-ply asphalt roofing, Philip Carey Co.

SHEET METAL WORK: Court and street elevations—16 oz. copper; remainder—galvanized iron.

INSULATION: Roof—4 in. rock wool bats.

WINDOWS: Sash—wood casements. Glass—single strength, quality A. Glass blocks—Owens-Illinois Glass Co.

WOODWORK: Doors—"Sturdibilt," M. & M. Woodworking Co.

PAINTING: Interior woodwork—primed, 2 coats enamel. Floors—stain, fill, varnish and wax. Ceilings—calcimine.

ELECTRICAL INSTALLATION: Wiring system—rigid conduit. Fixtures—Edwin Cole & Co.

PLUMBING: All fixtures by Weil-McLain Co. Water pipes—wrought iron.

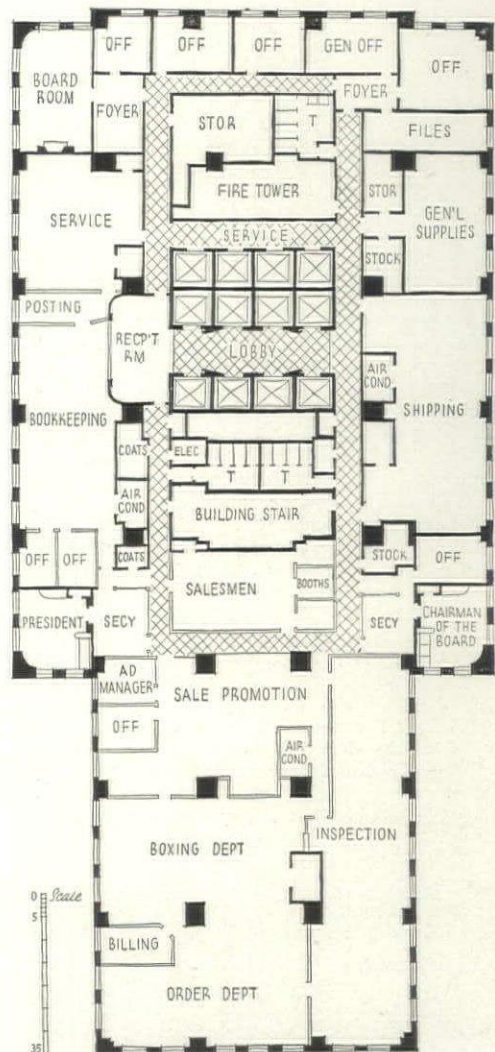
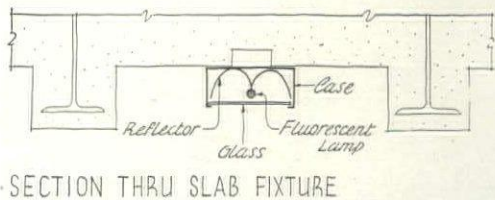
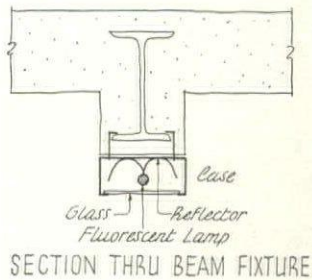
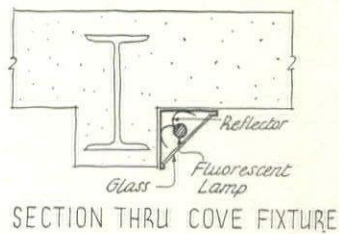
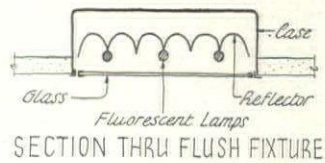
HEATING AND AIR CONDITIONING: Forced warm air system; Janitrol gas fired units, Surface Combustion Corp. Controls—Minneapolis-Honeywell Regulator Co.



CORRIDOR AND INSPECTION DEPARTMENT

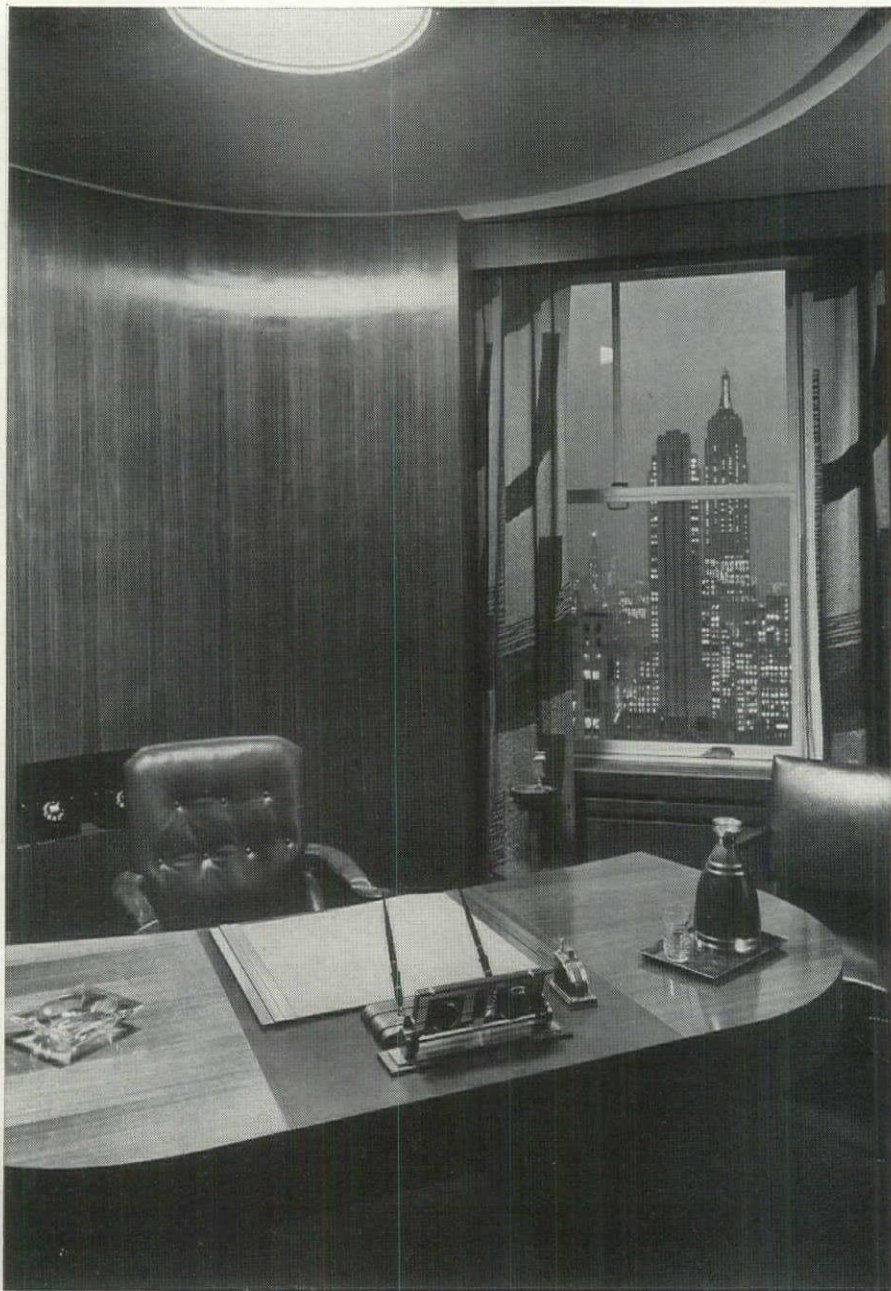
All photos, Samuel H. Gottscho

MORRIS LAPIDUS, ARCHITECT FOR ROSS-FRANKEL, INC.

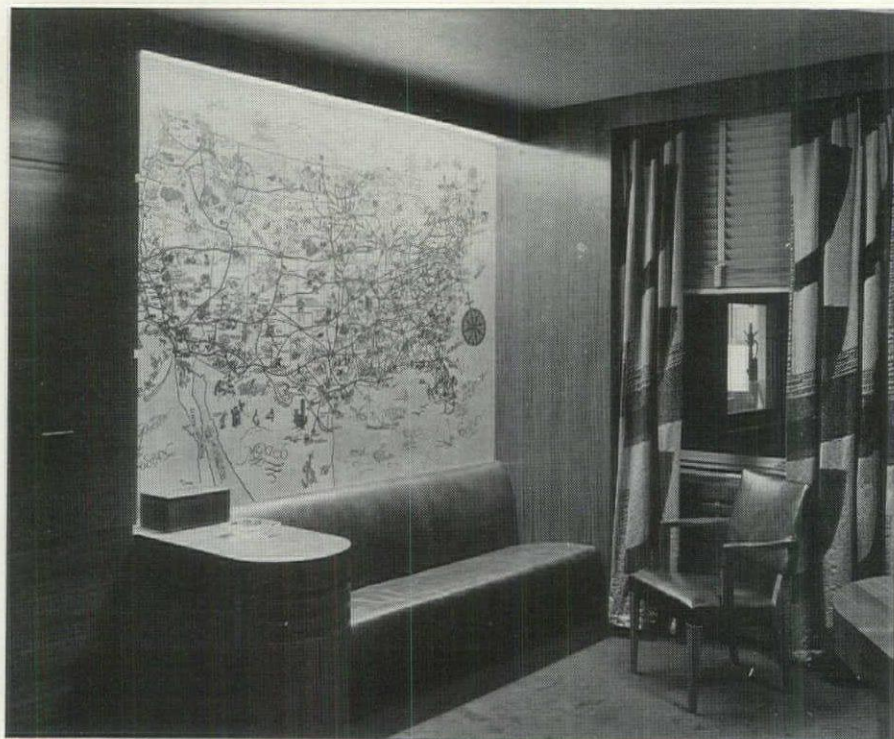


ENTRANCE LOBBY

The main office for the Bulova Watch Company contains the usual spaces for reception, clerical and executive staffs, and in addition, rooms for the inspection of watch movements, assembling, packaging and shipping. An important requirement was that the entire office layout be arranged so that the complete functioning of the organization might be seen by the visitor, but without loss of operating efficiency. In consequence the offices have been finished in fine wood veneers similar to those used in the elevator lobby and reception room. The lighting system, designed by Mr. Douglas Grieve, is the outstanding feature and consists entirely of daylight fluorescent tubes. One of the largest and most complete installations of this new type of illumination, it was arranged for uniform high intensity throughout, and makes use of four types of fixtures which are illustrated in the details at the left.



PRESIDENT'S OFFICE



MORRIS LAPIDUS, ARCHITECT
ARCHITECT FOR ROSS-FRANKEL, INC

FINISHES AND EQUIPMENT

PARTITIONS—solid or terra cotta block, plastered both sides. Interior partitions—fireproofed Walnut veneered panels, U. S. Plywood Corp. TRIM—alumilited aluminum, Aluminum Co. of America. FLOOR COVERINGS: Work spaces—linoleum, Armstrong Cork Co. Public spaces—rubber, American Tile Co. Offices, reception room, etc.—carpet, Bigelow-Sanford Carpet Co.

LOBBY: Walls—Flexwood paneling, U. S. Plywood Corp. Glass blocks—Pittsburgh-Corning Corp. Aluminum metal setting—Revecon, Revere Copper & Brass Co. Metal doors and trim—Aluminum Co. of America. Glass doors—Herculite, Pittsburgh Plate Glass Co.; Magnalite, Libbey-Owens-Ford Glass Co.

SOUNDPROOFING: U. S. Gypsum Co.

LIGHTING: Fluorescent Lamps—Hygrade-Sylvania Corp. Fixtures—Polarizing Instrument Co. and General Electric Co. Equipment designed by Douglas Grieve.

AIR CONDITIONING: Zephyr system, Apex Mfg. Co.

CANDY SHOP FOR ALTMAN & KUHNE, NEW YORK CITY

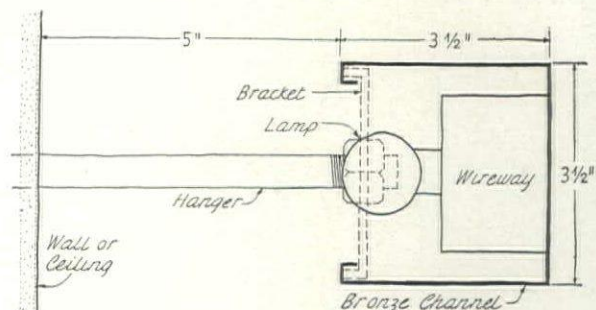
GRUENBAUM & KRUMMECK, DESIGNERS



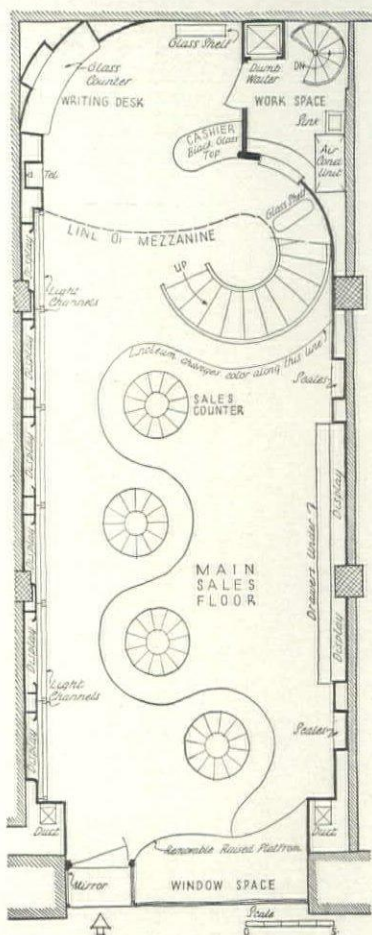
All photos, Robert M. Damora

A recent and distinguished example of the trend toward the use of an entire shop interior as the show window is this shop in New York. The firm formerly had stores in Vienna, and their established merchandising practice is to display their entire assortment in cases from which the customer makes his selection; the candies are then arranged in special boxes. Design of the cases and furniture is highly imaginative



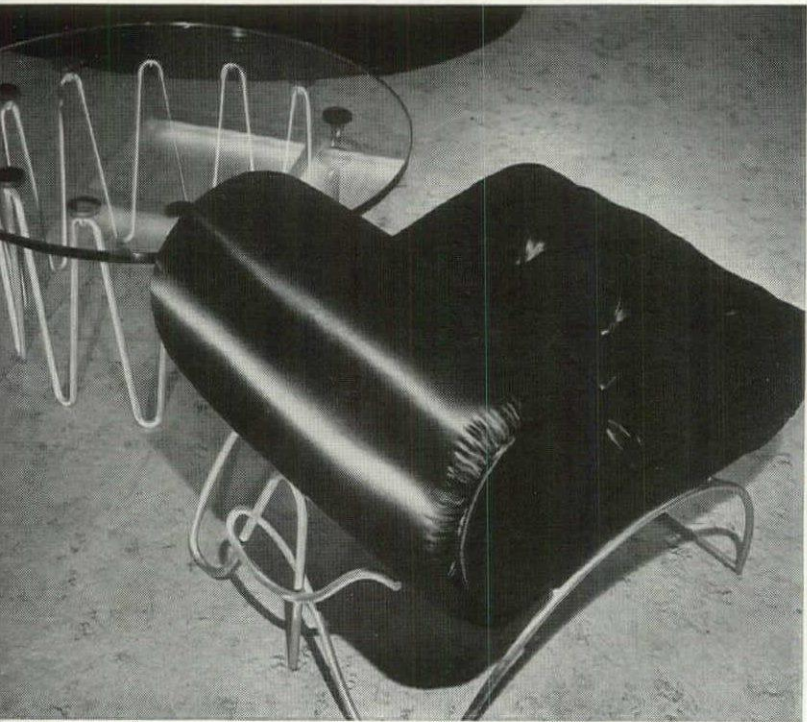


SECTION THRU LIGHT CHANNELS

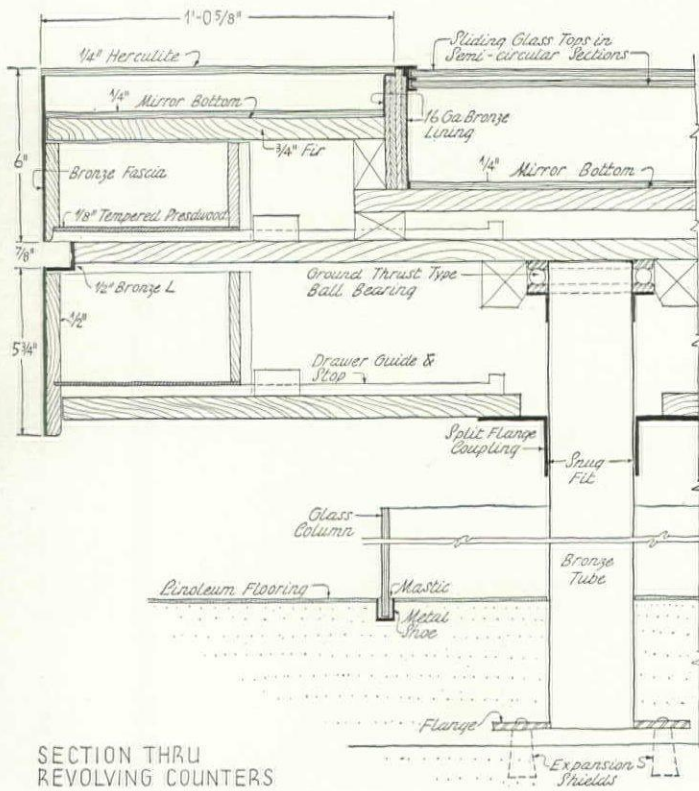
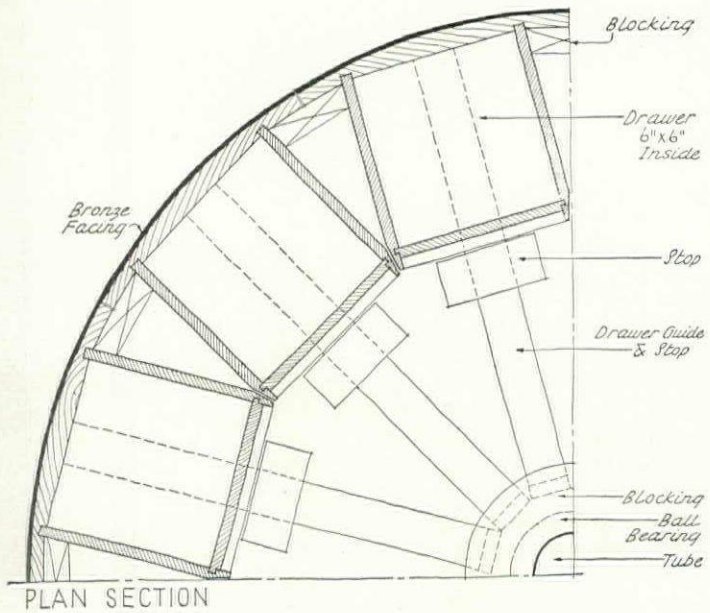


and thoroughly appropriate; these pieces are illustrated in greater detail on the following page. The scheme is simple and effective: a network of lighting troughs covers the ceiling and one wall; the other is faced with wood veneer. There is a small mezzanine with more display space and an office, reached by a curved stair in pink and white. Colors are very fresh and gay, and the use of such materials as satin for some of the walls and the furniture gives the shop an air of luxury and intimacy in perfect harmony with the merchandise. Cost: approximately \$20,000.

COLOR SCHEME: Illuminated walls and ceiling: white. Flexwood wall: grayish. Linoleum: black and marbled. Carpet (balcony): turquoise. Satin walls: pink. All metal work: bronze, gold finish. Chairs: black satin, pink buttons, frames gilt to match fixtures. Stair: white rubber, with pink stringer.

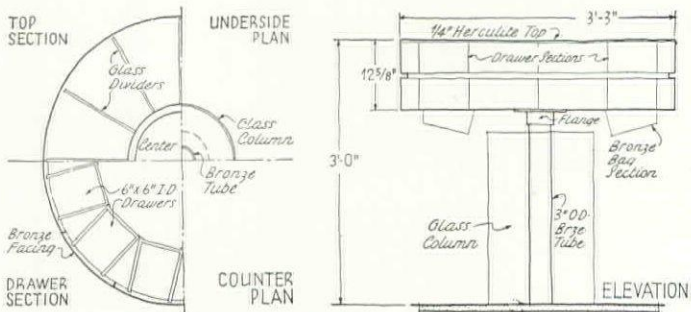


GRUENBAUM & KRUMMECK, DESIGNERS
ROSS-FRANKEL, INC., GENERAL CONTRACTORS



FINISHES AND EQUIPMENT

INTERIOR PARTITIONS—plaster on lath furring. STAIRS—steel, Sedgwick Machine Works; rubber covering, Armstrong Cork Co. RAILING—glass, Pittsburgh Plate Glass Co. FLOOR COVERINGS: First—linoleum, Armstrong Cork Co. Balcony—carpet, Mohawk Carpet Co. WALL COVERINGS: North wall—Flexwood, U. S. Plywood Corp. Rear—tufted satin, waterproof covering. Remainder—mirrors. FURNISHINGS: Chairs and glass tables—metal, gold finish, Aladdin Iron & Bronze Works. Upholstery—tufted satin, I. Stein. Counters—special metal turn tables, bronze, gold finish, surrounded by glass cylinder, Herculite glass tops, Pittsburgh Plate Glass Co. FIXTURES—Ross-Frankel, Inc. HARDWARE—bronze, gold finish, Capitol Bronze Corp. AIR CONDITIONING—Carrier Corp.



THE ARCHITECT'S WORLD

PLASTICS AND DESIGN

By Walter Dorwin Teague

Condensed from an address before the National Conference on Plastics, sponsored by *Interior Design and Decoration*, New York, December 12, 1939

This race of ours has gone through only two major revolutions. One was when we gave up gathering our meals off the trees and chasing them on the hoof, and settled down to raising them in one spot. That was the agricultural revolution. The second was the industrial revolution, when we substituted the machine and mass production for the ancient handicrafts. That began only 150 years ago, and it has been more drastic and more complete in its scope than even the agricultural revolution within those territories where it has been perfected.

It was a devastation worse than the devastation of the last World War. People suffered from the early stages of the industrial revolution more than any people have ever suffered from war at any time. There were generations that were wilted and practically wiped out. It was because we had new techniques to learn, we had to acquire new skills. And for a long time we were clumsy in the use of those skills.

As a result, we not only built ugly cities and ugly towns, impracticable dwelling places, but we devastated the country itself, wiped out beautiful green countryside and replaced them with slag heaps and ash dumps and those terrible scabs that cover the surface of most industrial countries today.

We are now beginning to emerge from that. We are beginning to feel again a mastery of our tools. And we begin a tremendous job of reconstruction. We are beginning to recover those things which the world designed for decent human living. We are doing that not only because of this command of our tools, but because of the enormously increased range of facilities which are at our command, which we have available for our work.

Plastics are only one of those materials, and yet an enormously important one. And the same design principles apply to plastics that apply to any other form of design. You apply exactly the same principles to the design of a plastic lamp, let us say, as to the design of a national capitol, or an ocean liner. And we feel, again, a deep interest, a profound analytical interest, in these methods that we must apply in the making of the things that we have to do. We have this world to build.

We see examples all around us of this new order emerging. We see magnificent achievements such as the Triborough Bridge and its approaches, such as the dams that have been built by the Tennessee Valley Authority, and its powerhouses, in Tennessee. We see achievements such as Boulder Dam.

And we wonder what it is that all these structures have in common. Well, so far as they are successful, they are all based on, first, a study of the function of the thing that is being done. And that, again, is just as true of a plastic inkwell as of a vast housing development.



We must ask ourselves, first, "What is this thing for? What use is it supposed to serve?" And we will find that our design gains distinction just in proportion as we adapt the product to that purpose that it is supposed to serve. You can see that in the development of airplanes which has taken place almost within the lifetime of practically everyone here, and in the development of motor cars you can see gradually this adaptation of functional form producing beauty and unity of simplicity in the products.

Then there is a second factor that must control us in all our design work, and that is the adaptation of the form to the materials that we expect to use. Our steel bridges take an entirely different form than our concrete bridges. Our plastic products take a different form than our wood products or our metal products. And it is only as we study the material itself that we find it has in it possibilities of beauty that we hadn't realized.

Plastics are not substitutes; they have virtues of their own. And those virtues must be realized and developed. It is rather difficult for us to take a completely new material and realize its possibilities. It must be subject to long and careful study before we begin to see the characteristics emerge which it possesses and which are not possessed by any other material.

Then, again, we must consider the techniques that are used in the fabrication of a product and of a material. The techniques are the marks of the tool which always must appear on anything well done. And there, again, we must know, if

we are going to deal with plastics, how they are molded or how they are laminated or how they are extruded, and what can be done with that particular kind of process that cannot be done with other processes. The more individual we make our work in adapting it to its functions, its materials, its techniques, the more distinguished and distinctive it becomes.

Then, of course, there are certain broad principles that apply to all design work. In creating anything, we seek to give it unity, we seek to make it all of a piece, so that you cannot damage any part or change any part without feeling that the whole has been harmed. And within that unity, we have to create a variety. A billiard ball has unity. It has a certain amount of common interest. But, esthetically, its interest is very soon exhausted. It is like a parade of policemen. They run very true to form, and after the first hour or so it becomes a bit tiresome—you begin to wish that they would ring in a few soldiers or street-cleaners by way of variety.

And, consequently, in the things we do, we must introduce a certain vitality and inspiration that gives a thing life and gives it that changing aspect that we require in anything that is wholly satisfying.

I think that by far the most beautiful things we make today, our greatest artistic masterpieces, are our transport planes. They are perfect examples of adaptation to function, to necessity. The materials and techniques are used correctly. A beautiful unity has been created within their forms—the rhythmic quality within the lines; the beautiful repetition of line and form throughout them. And yet, those planes have an endless variety of aspect. They present a thousand different appearances, and the play of line is never tiring.

In creating this unity today, we naturally achieve a high degree of simplicity, because we are a primitive people. We have reverted again to a primitive state of human development. We are primitives of this new machine age. We have no developed history behind us to use in our artistic creations. We have no theories, no vocabulary or ornament, to use in our work. We can deal only in elemental forms. That is why so much of our modern work today has a certain stark and

simple quality that relates it very closely to the primitive work of Greece and the primitive work of Egypt and the primitive work of most people who were discovering their techniques and their tools.

You know, we are more susceptible to rhythm than to almost any other emotional influence. Our hearts beat rhythmically, we are subject to rhythms of nature, the changing of the seasons, the alternation of night and day, the waxing and waning of the moon, the rising and falling of the tides.

And in our physical work, we have to create that sort of rhythmic relationship. In music, it is comparatively easy to do, because the sequential character of music lends itself to rhythmic structure; that is why music is perhaps a more highly developed and exact art than the art of design. In the art of design, your elements are discharged at you in one place, as it were, and you have to sort them out and appreciate their relationships by your own analysis of the design.

If a design is properly made, the designer has created certain accents which attract your attention, which give you the key, that is, the motive of the design. From that you will be led out through the relationship quite unconsciously, but you will begin to see the thing, if you look at it intelligently and analyze it, as a composition, as a collection of relationships which are significant.

That is what we mean by rhythm of design—very poorly expressed.

In achieving that kind of rhythmic relationship, we have of course resources of proportion, which is one of the most important factors. We must establish constant ratios of proportion in our work, and with it we also have the quality of line which we find most highly developed, let us say, in a Douglas transport plane, where you see the same type of form repeated in the engine and in the fuselage, in the wings and the tail—the same line recurring again and again; that long line with a sharp parabolic curve at the end, which we have come into the habit of calling “streamline.”

★

Now, one reason why we are streamlining so many things today, things which will never move and have no excuse for being streamlined in the sense that they need to be adapted to the flow of air currents, is simply because of the dynamic quality of this line which occurs in streamline forms, and it is characteristic of our age—this line that starts with a parabolic curve and ends in a long backward sweep.

We are a primitive age, a dynamic people, and we respond only to the expressions of tensions, of vigor, of energy. And this line occurs constantly throughout our bodies—a muscular male body or a beautifully formed female body.

We have these resources of proportion,

of line and color and form, but we have no ornament. And we should be very careful to deny ourselves the luxury of decoration in the things that we do, because we have no decoration today that is significant to us, that has a meaning. The Greeks, in their great day, in the design of the Parthenon, had at their command a vocabulary of ornament that they had inherited through years of work, that had become significant to them and was very useful in the creation of their internal rhythm.

But when we have taken care of this question of accent, to guide our eyes through the analysis of a design, when we have created a scale within that design, when we have given it balance and symmetry—and by symmetry, I don't mean that the left side should duplicate the right; I mean that it should be integrated and that there should be an analogy between all its parts—then we must go further and give it something else. We must breathe into it a breath of life that comes only from the designer. And the designer cannot acquire that by study.

MURAL CONCEPTUALISM

By Richard Neutra

Reprinted by permission from *Quarterly Bulletin*, Oct.-Dec., 1939, San Francisco Museum of Art

Art is answering, not merely speaking. This is what in past periods gave to it powers of demoniac intensity.

An answer can be strikingly convincing only when a cleancut question has been posed. If an artistic creative problem is undefined, not defined by a given set of environmental factors, its solution is as arbitrary as the call for it was vague. An equation with many unknowns has no definite solution, needs a great deal of endeavor, of processing, of preliminary research and clarification to make it ready for the last stroke of solution.

To grant success to his individual work, even the greatest artist-genius must be presented with a circumstantial constellation which will make his work seem a convincing, fitting answer to a problem.

As we are no longer living in a jungle of trees, 90 per cent of our physical environment is architecture in a broad sense of the word. In periods of the past, when the architectural environment had harmonious unity, it presented a defined frame of reference. Van Eyck, painting an altar piece, knew beforehand the space characteristics of a cathedral, its properties of illumination day and night, the focal distance from which his work would be viewed, the accompanying color scheme to surround it, the emotional and intellectual frame of mind of his audience facing the unfolded triptych on a holiday.

When a few hundred years later a man

He is born with it, or he never has it. He may have it at one time of his life and not at another. Without that, a design remains an inert—competent but inert—and uninspiring work.

If we succeed in doing those things—if we can create a simple, unified form, adapted to its use, to its materials, to its technique—we have given that thing inevitably a style that is characteristic of this time. We need never worry about style. We should never think about style. The minute we begin to think consciously about the style of what we are doing, we find that we will be diverted into digressions that have nothing to do with the case.

This last century has been far too conscious of style. And we are only beginning to recover from that consciousness. Authentic style is only found in a work that has been done seriously to serve its purpose, to express its materials, its techniques, and in which a high degree of unity has been achieved through the rhythm of proportion, uniformity of scale, proper use of accents, and a high degree of sympathy.

like Vermeer painted easel pictures not designed for a given spot in a particular building, he nevertheless was fully familiar with the genre character of a Dutch living room in the middle of the seventeenth century. His work would fit, whether Mr. van der Soandso or Mr. van der Suchandsuch purchased the picture for his home.

Contrast this favorable situation with the horrible uncertainty of a contemporary artist, however gifted, who composes a piece of art without any possible anticipation as to whether it will be placed in a mission type, an English cottage or a Georgian living room, with 'dobe imitation, jazz plaster, patterned wall paper or gypsum astragals as competitive details all around it; for a room with light, or dimmed down with velour drapes to mid-Victorian dignity.

He cannot anticipate anything. He thinks of the burlap hanging surface of a sales gallery as the happiest background for his picture. And there in the sales gallery the picture hangs, never bought, not tempting a purchaser who has no place to put it.

New architecture, in itself an art which does not imitate nature, which is a primary example of an abstract art—however most intimately fitted to human needs, practical and psychological needs—does and will provide more and more space for the planning and enjoyment of artistic

creation. It will furnish peaceful, even vacant backgrounds, non-competitive settings, breathing room, space for the explosion of an art object.

A contemporary style of building and living will furnish that harmonious and unified atmosphere into which the artist can compose his work with some degree of self-assurance and sound anticipation.

The technical media of art production have always borrowed from the game of building: *al fresco* from plaster, sumero-Babylonian sculpture from glazed terra cotta, Egyptian flat reliefs from hard porphyry. New architecture deals with spun glass, pressed wood pulp, blasted rock,

translucid colored plastics, metallurgical miracles of stainless metals, anodical plating, metal films, rolled and extruded metal sections, internally glowing vacuum tubes, hard and spongy rubber, and a thousand other items of inspiring material specification.

The movement of abstract design freely and enthusiastically helps itself from this treasure which the nature-imitating artist, working in a representational manner, by necessity must ignore.

The Mural Conceptualists, as they have demonstrated in their show at the San Francisco Museum of Art, exhibit the most affirmative attitude toward these

striking potentialities in new architectural spaces and materials. They realize the values of a thorough integration of contemporary art into architectural background. Abstract design, heretofore "free" art in the sense that it was unattached to any tasks of wider proportions, has found its functional expression in Mural Conceptualism.

The movement is young, and still, no doubt, in its experimental stage. But here is fruitful, creative experimentation. The objects displayed in the exhibition recently held at the Museum, have, in their originality, manifested an earnest willingness to propose new conceptions.

NIPPONESE IMPRESSIONS

By Ralph Walker

Excerpts from an address before The Architectural League of New York, November 30, 1939

Lysette Walker says I went to Japan to find out whether the Imperial Hotel should have fallen in that earthquake so strangely propitious to Wright's reputation. I said I wanted to see the Japanese house. Actually it was an escape from the Flushing Meadows, an escape into a civilization which had, in my mind, stood for beauty, and sensitive and orderly living. I wanted to see it before Westernization had completely destroyed it. This was coupled with a curiosity as to whether the Japanese are as bad as they are painted.

Of course I have no long acquaintance, but I found them charming and surprisingly frank, very polite and thoughtful.

The fundamental difference between the Japanese and the Occidental is, to make a safe generality, that one is sensitive to beauty and the other is not. Another is that standardization is for the Japanese no new ideology to be accepted blindly, but is now taken in its stride as a basis of further selection because of centuries of use.

There is another and strong difference between Japanese architecture and that of the Western World—it lacks the pretentious—or at least the pretension that exists is one of intellectual pleasure and not one based wholly on gross display of wealth.

At no time did I find anything we Occidentals would call simple. Always there is a subtle building up of refined complexity. It is, of course, quite a different kind, but in so many ways it is similar to the refinements seen in our late American Colonial and more especially in eighteenth century France. All these give an immediate response of simplicity but all are more truly a complex of a careful selection and thoughtful restraint.

The Japanese house is, as you know, a series of standardized units starting from the mats on the floor to the sliding doors

that are readily replaced after the short life which a rather flimsy but careful use of wood provides. The house and posts will last indefinitely, and do. We have little to learn from the Japanese houses except the appreciation of what not to do with standardization, a lesson the whole West needs to learn. No advocate of standardization ever seems to appreciate that it is a damper on invention, and it has so worked in the Japanese house.

The house, delightful in summer, must be terrific in winter. The inflowing of the outer world, which to us is so modern and which to them is so necessary when the temperature and the humidity are both 90, cannot be stopped when the snow flakes cover the evergreens in the always beautiful outside.

The interiors and the gardens are beautiful enough to make such self-sacrifice not too arduous to many Japanese. But we Americans believe too strongly that central heat is the background of a standard of living. To sacrifice comfort to the opportunity of viewing beauty is a funny Oriental idea, and merely proves that they are not progressive.



You sit on the mats in the quiet of evening and look through the wide openness of the view toward the garden, musing in contemplation of proportions carefully planned for just that garden. This opportunity for philosophic thought is something that the Japanese would be foolish to give up for the shallow benefits of a machine civilization or a world empire.

I have sat on the mat of a tea house in the twilight, hearing the splash of the carp, while the warmly lighted rooms offered contrast to the gray blue of the day and garden outside. Even the nearby twang, twang of the samisen and nasal

wail of a geisha could not disturb the enveloping sense of beauty and the peace that such beauty brings to the initiate. Did I hear the words "Lotus eater?"—a delicious vegetable, by the way.

The Japanese are poor in the world's goods, but it is quite evident that machine mass production will not give them much more. It may give them, as it has many other people, a tin oil can instead of a clay pot—a clay pot which even the poor appreciate as having proportionate form and sensitive decoration.

The first impression of Japanese cities is one of drabness, for the cities are low, far reaching and almost wholly of wood—wood unpainted and left to weather all tones of yellow into brown, into black. To New England eyes the unpainted wood resembles, at first, many a poor barn on stony acres. In a short time, however, the eyes become accustomed to the soft coloring, so much so that a return to Western civilization, as at Honolulu, brings an immediate revulsion against the faded and obsolete paint on even the best maintained houses. The Japanese city is an amazing answer to the idea that people can live only in six, nine, twelve, or more stories. It is interesting to remember in this respect that the number of Japanese on each usable acre is one of the highest of any country in the world, yet each one seems to have his own house.

Japan, although it may menace the cotton manufacturing of both old and New England, is still largely a handicraft nation, where most products are made in home workshops owned and operated by the craftsman himself. It is very easy to get individuality in Japan, for everywhere the many native craftsmen do an infinite number of different and delightful objects for household and personal use, and all for a few sen.

Away from the great cities life in Japan

is little changed from what it has been for many centuries. The farmer plants his rice paddy, irrigates it by hard manual labor, and lives in a farmhouse whose straw roof still resembles those on paintings centuries old. He wears the same clothes, and carries his produce on the same yoke pictured by Hiroshige and Hokusai. The cleanest looking man I ever remember seeing was an old Japanese farmer striding along with a bright new cone-shaped hat, scrubbed wooden clogs, with bright and shining white underdrawers, his black kimono tied up through his obi to permit free action, and finally standing, feet apart, looking at the famous sleeping cat at Nikko.

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The woodwork in the interiors of the farmhouses is almost ebon black with the smoke of the charcoal fires, but the wood in the city house is a gradual, mellow, honey toning of the natural wood—colors we never get with stain. The wood floors, never knowing the indignity of leather and spikes, are polished like no wax floor I ever saw.

Every morning the Japanese housewife goes over the woodwork with a soft cloth, not a polish but just a dusting, to remove the surface dirt, and the result is both a surface and a color that would drive the average American architect mad with envy.

You know the center of the Japanese room is the alcove called the tokonomo, where the kakemono and the flower arrangement are displayed. Strangely enough Japanese rooms do not look empty, perhaps because no two of them look exactly alike in spite of all the standardization. The differences are very minor, but to the trained eye they are very apparent. And further, a room occupied suddenly has cushions, a little table or two, and always a service of tea or a piece of work being done. But it is the thoughtful arrangement of flowers or evergreens that gives a decoration of life and form rarely found in our use of flowers. This seems to dominate the whole living space. Even the "thrown-in" style produces masterpieces, although only under the most severe self-discipline. This self-discipline and patience in creating beauty is interesting because the audience for each flower masterpiece is limited always to a very few. It is not like a painting on a scroll which can be put in its wooden box and stored away for a future viewing; it can only be held in the memory and satisfaction of creator and his immediate circle.

It comes very near to the "ivory tower" in art, except that the care and thoughtfulness are alike available for the large occasion as well as for the small. No one who has seen and appreciated the exquisite sense of relationship shown between picture and flower group in a Japanese toko can but echo the words of Lafcadio Hearn: "I have come to understand the unspeakable loveliness of a solitary spray

of blossoms arranged as only a Japanese expert knows how to arrange it—not simply poking the spray into a vase, but by perhaps one whole hour's labor of trimming and posing and daintiest manipulation—and therefore I cannot think now of what we Occidentals call a bouquet as anything but a vulgar murdering of flowers, an outrage upon the color sense, a brutality, an abomination."

We are apt to think that Japanese scale is very small, forgetting that the Japanese are very tiny in stature. Most of us, even the shortest, are Gullivers in Japan's Lilliputia. If we place ourselves in the position of being less than five feet in height instead of our normal, we sense immediately that Japanese scale is often heroic and now and then superb—the famous bronze Buddha at Kamakura for instance. Always the relation of house to garden, of house to compound, is a beautiful one in relative scale. Nowhere are gardens more carefully designed. The house is never left on an ash heap. It is always given a setting in nature. The nature may be ten square feet or, as in a garden I saw, a bamboo grove in a space some twenty by forty feet in dimension. Here the stones, always such a considered and beautiful part of a Japanese garden, are simply stepping stones above the mossy earth, and a connection path for the three rooms fronting on the garden. The bamboo, of many types and heights, is the only planting within the garden, and as you sit on the mats the surrounding fences and houses, not more than twenty to forty feet away, are lost in the gloom of the bamboo grove. It is the garden of a famous woman novelist, a classic design for a writer.

Nikko is the most beautiful shrine in

the world. Some 300 years ago the First Tokogawa, Ieyasu, the shogun who withdrew Japan from contact with the rest of the world, having the wealth of Japan at his command, rightfully thought he should be granted a proper opportunity to achieve immortality and so started the shrines and mausolea at Nikko. A most touching story is told of a poor baron who, wishing to make a present to this shrine, planted for 25 miles the famous cryptomeria which line the roads leading to Nikko.

These giant trees are very high, great columns rising from gray stones and rushing water, and finally to roof over a great cathedral within which are colorful temples gay with lacquer, gold leaf and rich carving.

To the Western eyes with a classical background these shrines, although in wood, recall a mental reconstruction of the Greek temples at Olympus and Delphi. The votive statues and lanterns line road and court; the color is rich and plentiful, and only acceptable because of the gray loveliness of the light that sifts down through the green branches a hundred or more feet overhead.

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Years ago I followed Walter Pater's Marius up into the hills of Etruria to the temple of Aesculapius, and recently as we slowly climbed up the worn gray steps into the compounds of the many shrines, listening, as we went, to the temple bells say "bong-g-g bong-g-g," we both had the same sense of healing that comes of retirement from the turmoil of life, even though it be but momentary. Here, as at the famous shrine of Ise, there is a divinity rare in this world.

WHY HASN'T THE R. I. B. A. . . ?

From an editorial in *The Architects' Journal*, London, December 21, 1939

Substitute for the letters R.I.B.A. our own A.I.A., or, for that matter, the name of any professional society here or abroad and the editorial will lose nothing in pertinence.—ED.

In last week's issue of the *Journal* there appeared a statement by the A.A.S.T.A. [Association of Architects, Surveyors and Technical Assistants] about the R.I.B.A.'s handling the wartime situation of the building industry and architects.

The A.A.S.T.A. statement charges the R.I.B.A. with lack of preparation for the war, with suspension of activity during the first weeks of war and with devoting its subsequent activities solely to the interests of the private practitioner. It asks for R.I.B.A. activities to be resumed and for reports on certain current problems to be prepared.

The chief fact about the A.A.S.T.A.'s criticisms of the R.I.B.A. and its handling

of the war emergency is the ease with which they can be explained away. Explaining away has now become almost the wholetime job of the heads of most organizations—from the Government downwards.

It can be shown that the A.A.S.T.A.'s charges are ill-timed, largely unjustified, and unfair. Indeed, the whole present situation of architects and the building industry can be explained very clearly—while those in office can also truthfully claim that any post-mortem held now will delay the action needed to escape from that distressing situation. This has happened before many times in the history of architectural practice.

Nothing is more obvious about the R.I.B.A. than that in bad times three quarters of its membership will ask bitterly, "What is the R.I.B.A. doing?", while in normal times that same three quarters not only take no interest what-

ever in the R.I.B.A., but are indignant if someone has been trying to help it do something while they are not looking.

This dreary repetition cannot be stopped unless a majority of members of the R.I.B.A. become fiercely convinced of three things. First, that the R.I.B.A. at present is a society designed for calm periods; second, that calms and crises will inevitably alternate in architectural practice; third, that preparing for crises needs something quite different in organization from anything required in calms. . . .

Bluntly, what they need is Foresight—they want someone or something which can foresee events or trends of consequence to the profession and make preparations to meet them or to utilize them on behalf of architects. . . .

Foresight requires a man, or men, who are able to foresee trends out of the sight of the ordinary practicing architect. And here the R.I.B.A. and other professional societies repeatedly break down. . . .

Nor is this all. Questions that need most careful foresight are usually controversial and often political. Really important matters always are.

Consider: the growth in the numbers of official architects is partly political. Hous-

ing is political. Town planning reeks of politics and so does Ribbon Development, A.R.P. and slumps. . . . Yet developments of these questions, taken together, may easily decide in the fairly near future whether architects have large incomes or no incomes at all.

All who think seriously about such problems must realize that foreseeing and handling their architectural implications is as different from staging an R.I.B.A. dinner or appointing an assessor as digging potatoes is different from brain surgery. Having realized this hard fact the members of the R.I.B.A. must make up their minds. They can have foresight if enough of them want it—but only if they are prepared to pay the price.



The price of being as prepared for future events as an influential and tolerably wealthy professional society can be, is the establishment of a foresight organization which will endure through calms as well as crises—and whose advice will be taken. This demands brains, whole time, half time and paid for. In it the two-hour labors of tired committee-men can have no useful place. . . .

THE CASE FOR THE INSTITUTE

Abridged from a document prepared for the A. I. A. at the direction of the Board of Directors by R. H. Shreve

In these days when nothing is accepted merely because of its age, dignity or previous achievements—in fact, when these attributes invite rather than preclude re-examination and appraisal, it may be proper to set down dispassionately the case for the one national organization of the American architectural profession, The American Institute of Architects.

Its objectives are entirely professional. They are to promote the practical, the scientific and the esthetic efficiency of the profession, to advance education in architecture, the allied arts and the sciences, and constantly to increase the service of the profession to society.

The Institute comprises 71 self-governing chapters and several affiliated State organizations, all working in their respective districts under broad national policies fixed annually by the delegates in convention.

Members of The Institute assigned to membership in local chapters find there and in regional meetings and conventions opportunity for meeting fellow professionals and for discussion of problems of common interest. Through these personal contacts are developed a broader knowledge of professional practice, the will to work together in a common cause, and a realization of the strength that a united membership makes possible.

It has established standards of ethical conduct which its members voluntarily agree to observe, and has led the way in securing laws in nearly every State for

the registration of architects, thereby preserving the status of the architect as a professional man and bringing to him the respect of the public.

It is waging a hard and constant battle for the recognition of the architect in public work. It is keeping the architect before the public, and before those Governmental agencies charged with the erection of public buildings or with the financing of housing operations.

It has done and is doing a vast amount of work which maintains and enhances the professional reputation and the individual practice of every architect, whether or not he is an Institute member.

That portion of the income of The Institute which is derived from dues paid by its members, from sales of published documents and from rents and interest, is used for operating purposes. The balance of income, that received from endowment funds and gifts, is used only for the purpose designated by the terms of each trust. There are more than a dozen such endowment funds having a combined capital of approximately \$400,000.

The Institute has developed, from years of experience, a recommended Schedule of Minimum Charges, which is not mandatory but is recognized by the profession, the public, and the courts as a measure of fair compensation.

The Institute issues the standard contract documents and other contract forms which are in widespread use throughout

the country. These documents cover all of the business relationships of the architect, the owner, the contractor and the subcontractor in building operations.

It issues also a series of ethical documents which state the position of The Institute with regard to principles of professional practice, to architectural competitions, and to other similar subjects.

The Institute has active committees, whose personnel is representative of all sections of the country, engaged upon subjects of general interest to the public and to the architectural profession, such as:

The Committee on Housing, which has brought about closer cooperation between practicing architects, Government agencies dealing with the housing problem, the construction industry, lending institutions and real estate interests.

The Committee on Education, in cooperation with leading architectural schools, is continually studying a program for improving the methods of architectural education throughout the country.

The Committee on Allied Arts has as its purpose the development of a program which is designed to bring about collaboration and mutual regard between the architect, the landscape architect, the painter, the sculptor, and the craftsman—to the end that the architecture of America may hold true to all of the arts in which good architecture has its being.

The Structural Service Department of The Institute, in collaboration with the Bureau of Standards, the American Standards Association, the American Society for Testing Materials, the National Fire Protection Association and similar organizations, gives to architects and others accurate data concerning materials and methods of construction. The Structural Service Department has developed an architectural index and filing system which is now in general use. As a result of collaboration with the national organization of producers—The Producers' Council—the national advertising documents of the makers of building materials and products have been improved, standardized in size, and indexed ready for the architect's files.

Through its Committee on Public Information The Institute acquaints the public with architects and architecture, presenting the value of an architect's service from the esthetic as well as the practical point of view. Thousands of releases have been published pointing attention to work of the profession throughout the U. S.

The Institute enjoys the friendly collaboration and support of many Statewide groups and is actively promoting the organization of others.

Membership in The American Institute of Architects has come to be recognized publicly, even in the courts of the land, as a certificate of merit in the professional field. It possesses and it confers prestige in the eyes of the public and in the minds of clients.

The Institute desires to be able to say

to the National Government, to the States, to city councils and commissions, and to the public, that when it speaks as a national society or through one of its Chapters, or in collaboration with an affiliated State Association, it speaks for the architects of the country or of the local community, as the case may be. This means that the architect who is qualified to render that full measure of professional service which the client is entitled to receive, and

who practices his profession honorably, should make that contribution to the general welfare and to the advancement of his profession which Institute membership implies.

In all of this The Institute needs the active support of all architects. It will welcome into its membership every architect who is willing to conform to its principles and participate in its program.

LE CORBUSIER CONSIDERS THE NEW YORK SKYSCRAPER

Excerpts from *Legion d'Honneur Magazine* for October 1939

More than thirty years ago, a little boy named Charles Edward Janneret, a boy with an eager spirit and clever, sensitive hands, became a pupil of the famous engraver, L'Eplattenier.

He was only a small boy, but he had revolutionary ideas. He dreamed of building cities, so constructed that they would be flooded with all the light in the world. He spoke of his dreams to his friends, who advised him to continue his study of engraving, in which he showed so much promise, but the visions which filled his mind and his heart made engraving an unsatisfactory profession. In 1905 he made his choice, once and for all—architecture. Charles Edward Janneret became Le Corbusier.

In 1936, he toured the U. S. and South America, and on his American visit he wrote an original and interesting book entitled "Quand les Cathédrales Etaient Blanches." In this volume, Le Corbusier analyzes America and its people, considering them from the point of view of a Frenchman. His reasoning and his opinions voice the logic of the Latin mind as he weighs the virtues and the defects of American character and life:

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Here are some interesting passages from his book:

... New York, the vertical city, the sign of the new age. It is a catastrophe, but a beautiful, dignified catastrophe in which a too hasty maturity overcame men of ability and of courage. But nothing is lost; New York struggles with its problems. Still wet with the perspiration of its labor, it pauses while sponging its brow, considers its work, and quickly declares: "I have made a mistake there. We must start all over again." New York has such courage and such vigor that all of it can be pulled down, carted back to the stone yard, and something else still greater put in its place! ...

The skyscrapers were not built with a serious and sober mind. They were a tribute to the work of an acrobat. The game was won—there stands the skyscraper! The skyscraper here is not a

component part of a city, but rather a banner streaming into the blue, a rocket roaring into the sky, the plume on a headdress.

From an office on the 56th floor, the immense night festival of New York unrolls. No one can imagine it who has not seen it. Gigantic structures, flashing, reflecting an infinity of light that pours up, then down, forming a silhouette as uneven and fearful as the fever chart on the foot of a patient's bed. Diamonds of light, diamonds, endless, incalculable in size and number. ...

New York is not a finished city. It is still growing, a city looking to the future. Today, it belongs to, has become a part of, the world. Without anyone expecting it, New York has become a living ornament in the crown of the eternal cities—those cities some of which are only ruins and memories of an exalted past and some of which are not yet dead, only suffering from confinement in the narrow pattern of a past civilization. Here is nobility, here is grandeur of outline, a landscape expressive, lively, exciting. Here are the old wisdoms accumulated from century to century, blended together in a harmony which has overcome the contrasts and contradictions of their varying origins. Here, for example, is Paris, all periods and yet in gracious harmony—Gothic, Renaissance, the Grand Siècle, solid Louis XV and elegant soft pearl, shining topaz, radiant lapis, and sombre amethyst. New York is a great diamond, sharp and hard, sparkling, triumphant.

New York entered into the family of world cities, not unobtrusively, quiet, but all at once. The American is a Janus—one head absorbed in the restlessness of adolescence, facing the problems of a youthful conscience, the other head the sure, victorious face of an Olympic hero, facing an ancient world that he will some day have strength to conquer. He is like an awkward young stranger in the elegance of a city salon, congenial, hard-working, but only amusing to the better established guests. Some day, however, his preparations completed, he will burst upon the world—to conquer. The future

is in his eyes—in the hard, steady flame of pride which burns in them.

New York is not a completed city. It bubbles and spurts. On my next visit, it will be different. When I visit it again, they will say to me, "When you were here in 1930 or 1926 or 1920, was this here? Ah, truly, you do not know what effect that produced!"

Architects go about with lowered heads. After having worked well, resolutely and with dignity, in the accepted styles, here they are hurled against the new demands of the modern spirit. Bad, very bad, and yet some success has been attained. The new style evolves without them, outside of them, shaped by events, by the strong inward force which carries on American enterprise. Happenings, debatable, curious, amusing, or thrilling, occur in full view of everyone. Three hundred meters high in the stone, iron, and glass reaching into the magnificent blue sky of New York there is such an event transpiring as is entirely new in human history—such an event as legend recalls only once before in the building of Babel. ...

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Neatness is an American virtue. No dust, no dirt. The sea wind sweeps incessantly across the clear ocean sky. The offices are clean. The bathrooms, the shops, the hotels sparkle with cleanliness. Restaurants, bars are resplendent. The employes and attendants are impeccable in gleaming white. Food is wrapped in shining cellophane. No dust—actual or symbolic—disturbs the neat newness even of universities whose buildings have patterned after ancient Gothic.

Oh, Paris wineshop, you have deceived me with your tarnished charm! You are too old, too old, saddening! Not even the cleanliness of the old!

There is a real pattern in American neatness.

Those who clean their clothes, scour their houses, and scrub their window panes have a different code from those who cultivate dirt and dust. To prove that they are the inheritors of an ancient culture, the latter preserve the cracks, the tarnish, and, even worse, they try to establish a taste for tarnish, a love for the old, and hammer out modern "wrought iron" and stain and darken the new woodwork of their apartments.

True culture shows itself in fresh linen and clean art. ...

The New York skyscrapers are too small and they are too numerous. They are a token of new dimensions, of new implements—a proof also that henceforth everything can be undertaken along entirely new lines, vast and high.

They are sublime, naïve, idiotic. I worship the enthusiasm which succeeded in projecting them into the heavens. At the Olympics, the pole vaulters broke worldwide records. Skyscraper records—

For the present the skyscrapers are greater than the architects.

THE DIARY

Henry W. Saylor

Saturday, December 16.—A two and a half million dollar drawing room is news, even though it is bequeathed rather than being created. It belonged to Mrs. A. Hamilton Rice, a daughter of William L. Elkins whose first husband was George D. Widener, had been in her New York home at 901 Fifth Avenue, and was opened to the public today in the Philadelphia Museum of Art. Considered one of the finest examples of the Louis XVI period, its paneling, Beauvais tapestries, furniture, sculpture, Savonnerie carpet, lusters and Sevres porcelains represent the discriminating collector's efforts covering many years.

Monday, December 18.—The competitive principle has in a few short years become firmly entrenched among the mural painters. So much so that their National Society of Mural Painters is up in arms against a conspicuous departure from the principle. Last spring Congress set aside \$30,000 for a painting of The Signing of the Constitution. It appointed a committee (Vice President Garner, Speaker Bankhead and Architect of the Capitol, David Lynn) to consult with the Commission of Fine Arts and select an artist. The Commission recommended five men (Henry Meyer, George Harding, James O'Mahoney, Reginald Marsh, John Stewart Curry) and the alternative of a national competition. Messrs. Garner, Bankhead and Lynn apparently were unconvinced by either suggestion and commissioned Howard Chandler Christy to paint the picture. And the National Society takes to the war path, emphasizing the fact that its protest is not against the artist but against the method by which he was chosen. A remarkably close parallel to the Jefferson Memorial.

Wednesday, December 20.—Every time I learn the answer to some troublesome question—such as "why is an isometric?"—another mystery rears its head. This time it is "Mural Conceptualism." One could label it a new art movement and be right, but I for one would never have suspected its origin as the California Bay Region. Alfred Frankenstein of the San Francisco Chronicle says that the name identifies "the making of panels and constructions and unclassifiable gadgets and doodads in highly abstract modern style, the decorative artist and the constructive architect collaborating to a common end." And *The Art Digest* lists among the col-

laborating architects, Gardner Dailey, Richard Neutra, Frank Lloyd Wright and William Wurster. On another page of this issue (page 94) Richard Neutra has a go at letting us all in on it.

Friday, December 22.—Two or three years ago The League inaugurated the custom of a pre-Christmas party which we celebrated again today at luncheon. The tradition seems to be strengthening mightily, for The League rooms were crowded as they have perhaps never been, with architects, sculptors, painters, decorators and their consorts. No speeches, no formality, but continuous incidental music and a singing of Christmas carols that must have made Pershing Square ring. As in past years, George Licht and his cohorts from the Delano & Aldrich offices specialized on loud and sustained Amens.

We at THE FORUM had our own open house during the afternoon in a décor of colored balloons—and again to an accompaniment of more or less successful choral singing.

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Saturday, December 23.—Daniel Paul Higgins, whose firm (Eggers & Higgins) is rumored to have more millions of dollars worth of architecture on the boards than any other office along the Eastern Seaboard, never has enough work to keep him busy. His latest diversion was the writing of a book. Not a particularly heavy tome, but still a book—"How to Build," published by the National Catholic Welfare Conference and sold for two bits. With the collaboration of Clyde R. Place, Elwyn Seelye, John P. H. Perry and C. J. Sullivan, the author explains for the layman and professional the aids, contractual relations and sequence of operations involved in a successful building venture.

Wednesday, December 27.—Julian Clarence Levi is well out in front as the most decorated architect. Just elected president of the American Group of the Société des Architectes Diplômés par le Gouvernement, he was recently made an Officier of the Legion of Honor of France. He holds the Medal of Honor of the French Ministry of Public Health, and is an Officier de L'Instruction Publique. Sweden has made him a Knight of the first class of the Royal Order of the North Star. When reproached at luncheon today for his mo-

nopoly of decorations, he insisted that while decorated he is still not decorative.

Friday, December 29.—Kenneth Black, who delivered an interesting lecture on Modern Architectural Theory at the Detroit Institute of Arts recently, said that "Washington is regarded by most modernists as a hotbed of archaic architecture." If he had really known his gardening he might have said coldframe.

Sunday, December 31.—After having heard about Ouspensky's *Tertium Organum* off and on ever since Claude Bragdon and Nicholas Bessaraboff translated it from the Russian twenty years ago, I borrowed Henry Shepley's copy and dug into it. Anyone needing some setting-up exercises for his brain will find them here. When Ouspensky leaves, for the moment, his discussion of the fourth dimension to explore the fifth, the stretching of one's brain cells becomes almost audible. Fortunately the chapters are short, and one of them is usually enough at a sitting if the old bean is not to be put to the risk of severe cramps.

If the subject and purpose of *Tertium Organum* happen to be still unknown to you, let me quote from Bragdon's introduction:

"Such a title says, in effect: 'Here is a book which will reorganize all knowledge. The *Organon* of Aristotle formulated the laws under which the subject thinks; the *Novum Organum* of Bacon, the laws under which the object may be known; but *The Third Canon of Thought* existed before these two, and ignorance of its laws does not justify their violation. *Tertium Organum* shall guide and govern human thought henceforth.'"

Tuesday, January 2.—Concrete having been used by man as a building material since the days of ancient Rome, one would think that we might have come to know pretty much all about it by now. Yet along comes Karl Billner with aerocrete, then with the vacuum concrete process; we discover the aid of vibration; waste molds; plywood forms; and now Professor Ernst A. Hauser of Massachusetts Tech goes microscopic and indicates that we haven't even a bowing acquaintance with the cement particle itself. He separates and grades cement particles by centrifugal whirling, regards them very much as we differentiate the fine, medium, and coarse aggregates. "Uniform size of cement par-

ticles results in weaker structures than if well graded sizes are used," he tells us. "Not only is mechanical packing influenced, but chemical reactivity will also depend on size and surface of the grains. The smaller particles will react faster with the added water and harden faster. This reaction evolves considerable heat which, if not checked by the presence of larger particles, can cause boiling off of water and result in cracks and air pockets."

Thursday, January 4.—Following along in a series started last year, Columbia's School of Architecture put on a good show of student work in the Architectural League's main gallery today. At an overflowing luncheon Dean Arnaud gave a clear presentation of the School's aims and teaching methods. Yale, Princeton, Pennsylvania and Syracuse have each told us their stories and have backed these stories up with evidence in the form of drawings and models. When the educators are not present, one frequently hears that "they are not teaching the boys the way we were taught"—which is undoubtedly true, for they are teaching them better. No one, however, has as yet had the conviction and temerity to challenge, at the time it was officially expressed, the philosophy and techniques of any of these schools.

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Saturday, January 6.—New York's Civil Service Commission has been trying for nearly three months to find a city planning director, salary \$6,000 per annum and upward. Sounds pretty good until you learn what you must have and be: "1) architectural or engineering degree; 2) at least 10 years recent satisfactory practical experience, of which at least 5 years must have been in a responsible position in a governmental, regional or other city planning agency involving direct supervision and full responsibility for coordination with other public agencies—or a satisfactory equivalent; 3) marked ability to organize, direct and coordinate work and to obtain cooperation from subordinates or affiliated organizations or agencies; 4) marked capacity for original research or for the administration of research and of the application of such research to city planning; 5) a thorough knowledge of statistical and economic research methods and procedure and skill in the graphic and written presentation of research data; 6) ability to analyze data, draw conclusions therefrom and prepare reports or monographs; 7) marked ability to recognize the possibilities for fruitful research and investigations along new lines and to plan, supervise and coordinate such investigations; 8) approved administrative leadership of a high order and demonstrated sound, critical judgment in the evaluation of economics, statistical and research data; a knowledge of basic con-

ditions affecting city planning in New York City and of city planning research methods and sources applicable to New York City is desired."

Gentlemen, had you thought of Bob Moses?

Tuesday, January 9.—New York's Museum of Modern Art moved into its new home on West 53rd Street last May. Today they are remodeling the first floor, tearing down most of a long wall to gain a twelve-foot corridor. No lack of foresight on the part of the architects—just an overwhelming insistence on the part of the public to have a look. The Picasso Exhibition, just closed drew an average of 1,864 per day for 54 days; on one Sunday, the high of 4,694. The previous Van Gogh Exhibition drew an average of 2,055 per day for 60 days, with a high for its last Sunday of 5,969.

Art seems to be on the wing—or is it showmanship?

Washington, Thursday, January 11.—They say the Smithsonian Institution has a George Washington in white marble tucked away, and that it may be brought out on the Capitol grounds to replace the bronze John Marshall, now moving over to the Supreme Court. My money says no. Why?—because G. W. wears no shirt under his Roman toga and his toes wriggle out through strap sandals.

Saturday, January 13.—America is doing a lot of looking at art these days but isn't buying much of it. If the artists can't sell some substantial part of what they paint the supply is going to dwindle—likewise the artists. The American Federation of Arts feels that a little sales pressure is needed. Two schemes are to be tried. Under the first, each exhibitor renting one of the circuit shows is free to choose one work for his collection. This he receives after the circuit is completed. Under the second scheme, if he rents a show and either buys or sells from it, his rental fee is refunded in proportion. To ease up the pressure somewhat, artist and dealer agree to exchange the work purchased, within a year and at the price paid, for another work by the same artist. The Federation feels that it is about time the public adds to its established habit of looking, the more fruitful habit of digging into its jeans.

Monday, January 15.—The case of "Eleanor Curran vs. the Board of Estimate, William Gehron et al." has held the attention of the profession in New York City for some months. Behind Eleanor Curran, plaintiff, stood the Civil Service Chapter of the F.A.E.C.T. Behind William Gehron stood the New York Chapter, A.I.A. The plaintiff contended that the City Charter limits the employment of private architects to consultive capacities (Subdivision 4, Section 683 of Chap-

ter 26: "The department [of Public Works] may employ qualified architects in private practice as consultants in connection with buildings the cost of which shall exceed \$100,000 and such consulting or advisory service shall be performed under the supervision of the department"). William Gehron had been employed by the Department for the preparation of contract plans, specifications and the supervision of construction of a building at Harlem Hospital. Thus the case hinged on the legal interpretation of "as consultants."

In the Court's decision, denying the plaintiff's motion, the history of the Charter provisions was cited. Originally Section 683 was mandatory in that it read: "It shall be the duty of the department to employ qualified architects in private practice for all architectural service in connection with structures or projects the cost of which shall exceed \$100,000, and such service shall be performed under the supervision of the department." Before the Charter went into effect, and following an emergency message from the Governor to the Legislature, sent at the request of the Mayor of New York City, Subdivision 4 was amended to read as in the paragraph above. The Mayor's request stated that "This act (the proposed amendment) is clearly for the purpose of clarifying a provision . . . which was intended to be permissive and not mandatory as now worded." In approving the bill after its passage the Governor also took occasion to point out that "this bill would remove the rigidity of the provisions and insert a flexible method." The Court ruled that the term "consultant," as defined by "an impressive array of architects," does not connote any specific limitation of such consultant's services and that these services may and often do extend to the preparation of complete plans and specifications and the superintendence and supervision of construction work.

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The case has not been appealed. F.A.E.C.T. disavows any intention of attempting a monopoly for Civil Service employees over New York's public works. The Federation does favor the method employed by the U. S. Public Buildings Administration—selecting architects in private practice through national competitions to serve as consultants in the preparation of drawings and specifications by the Office of the Supervising Architect. Such procedure, in F.A.E.C.T.'s opinion, insures selection of an architect on merit, the infusion of fresh ideas into permanent government staffs, adequate remuneration for the private practitioner and economies of production inherent in the preparation of working drawings by a permanent staff of experts.

It is a large question and one deserving of a wider and franker discussion than it has as yet received.



Color photo, Richard Averill Smith, Courtesy Universal Atlas Cement Co.

CEILING, constructed entirely from precast architectural concrete slabs, which also acted as a form for the structural concrete floor above, exposed to the weather in the Department of Justice Building, Washington, D. C. Zantzinger and Borie, Architects, slabs by Studio of John J. Earley, Washington.

PRODUCTS AND PRACTICE

ARCHITECTURAL CONCRETE SLABS

The introduction of a new exterior material of universal application comes as near as a construction development can to the man-bites-dog definition of news. Building has changed vastly in the past fifty years, but few rivals have appeared to challenge the age-old place of wood, brick, and stone as staple wall facings; outwardly, building technique has marked time.

Main reason for this is probably the severe conditions which exterior materials must withstand, and the conservatism which this engenders. Facing materials are the shock-troops in Building's perpetual battle with the elements, and must bear the brunt of the repeated assaults of sun, wind, and water, as well as extremes of temperature. For this reason, the tendency has been to hold to time-tested materials for general exterior use despite the progress of newly developed products elsewhere. But it is also the reason that the acceptance of a synthetic wall facing is long overdue. For, while natural and semi-natural substances may have a fortuitous combination of properties which in the main meet such stringent requirements, only a scientifically conceived synthesis of several substances can possess each desirable property to exactly the required extent. Architectural concrete slabs are such a synthesis: an intimate combination of cement, stone, and steel with the virtues of all

three. Factory fabricated, they combine the density, plasticity, and strength of reinforced concrete made under controlled conditions with the wearing properties and attractive appearance of crushed-stone aggregates. Shaped in the mold to any desired profile and the surprising thinness of a bare two inches, they may be used in almost any size without fear of weakness or excess weight. Midway in price between brick and stone, they have the former's versatility while bettering the latter's variety.

More than any other, the man responsible for the development of the slabs is Washington craftsman-in-concrete John Joseph Earley. Huge, soft-spoken, and prolific, Earley at 58 is well known to architects. His works include the colorful Church of the Sacred Heart (Washington), which won him the A.I.A. medal for craftsmanship in 1936.

Behind every important development is a basic concept, and behind Earley's development of the slab form is the conception of the ideal wall facing as a weather-resisting, decorative *covering*. It is thus an engineer's translation of the design-phrase "skin treatment" into a specification for a tough, attractive *hide*. And while many materials in common use conform to this definition to some degree, architectural concrete slabs have been deliberately designed to express it to the maximum attainable extent.



Richard Averill Smith, Courtesy Universal Atlas Cement Co.



COLOR **AGGREGATES**, used in constructing the slabs for the Department of Justice ceiling shown on preceding page, and sample panel made from the same aggregates showing pattern work. In addition to natural stones in various colors, various ceramics and vitreous enamels are used to obtain a wide range of colors, set off by a matrix of white cement. Since aggregates are merely crushed, and need not be cut or polished, hard stones not heretofore available for architectural purposes, such as quartz, may be used.

At first glance, this is likely to seem an overstatement. A series of looks, however, reveals the fact that this new facing extends every one of the physical and economic boundaries to which the designer has long been accustomed. Its color, pattern, texture, shape, size, and strength may be varied at will to an extent far beyond that of most building materials, and—in the case of some of these properties—beyond even that of specialty items. Indeed, its governing limitation for some time is likely to be the designer's imagination and his ability to harmonize its new possibilities with prevailing design standards rather than the limits of practicability.

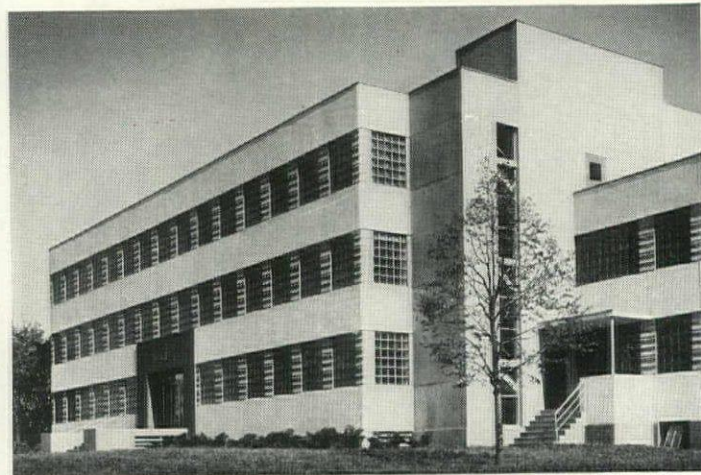
In order to acquire the "feel" of a new material, one must become familiar with its various properties and possibilities, gain some knowledge of the manner in which it is produced, and study the way it has been employed by others. To this excellent rule, the architectural concrete slab is no exception; in fact, its very uniqueness makes the task doubly difficult, and at the same time multiplies the reward. The design possibilities opened up by its versatility, coupled with its relative economy, warrant the serious examination of architects everywhere.

COLOR

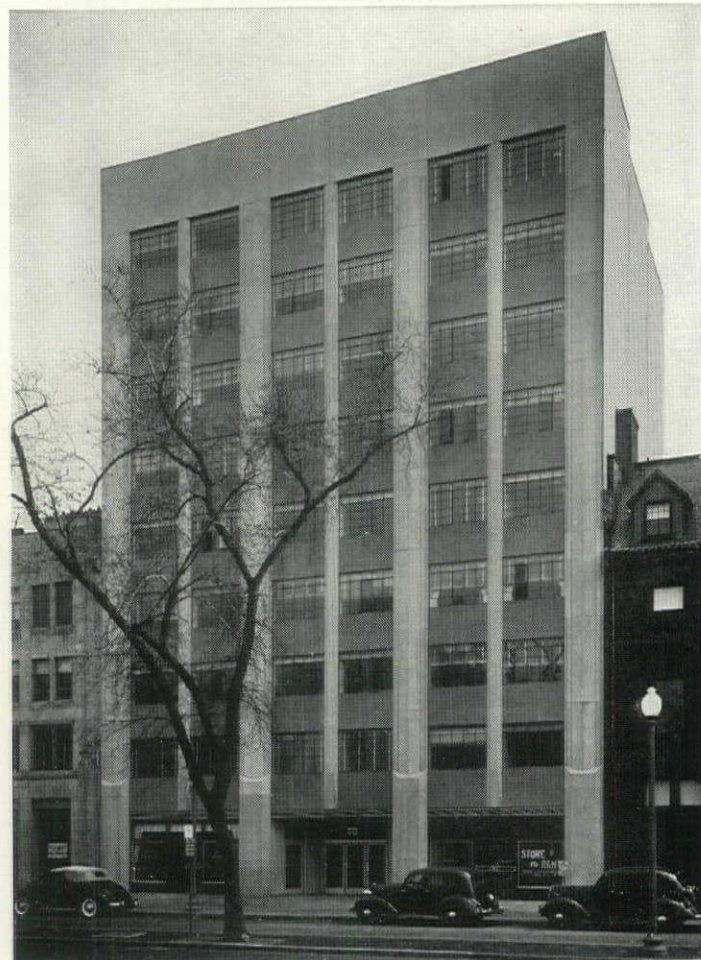
Architectural concrete slabs owe their appearance to the hues of the exposed aggregates, set off against a matrix of white cement. Color is therefore limited only by the shades of aggregate available. Since these may be effectively combined to produce intermediate shades and may include vitreous as well as natural materials, the range of color which may be obtained is so broad that it has as yet been only partially explored, and is capable of meeting the most exacting requirements. An interesting advantage of the method is that colors are blended by what is known as the "additive" process—juxtaposition of pure color-spots sufficiently small in scale to combine visually—rather than the "subtractive" process, as is the case in the mixture of pigments. Those who are familiar with the stipple technique of the early Impressionists will remember the brilliance and clarity which this phenomenon imparts, especially to secondary colors. Another advantage is that the designer's original conception is protected by the assurance of permanent, non-fading hues.

Still another factor which contributes to the brilliance and clarity of the colors obtained with the exposed aggregates used in the slabs is that their small size and jagged shape results in their catching and refracting light from all directions, giving the surface a subdued "sparkle" which is highly distinctive.

This freedom in the use of color includes, of course, the freedom to use no color at all. Architects have been limited in their choice of exterior color for so long that they have made a virtue of this necessity, and it may be some time before we become accustomed to the use of the vivid colors which this new product permits—at least for large surfaces. In the meanwhile, quieter tones in simulation of natural materials are readily available. And, since relatively small quantities of material, which may be made from scrap, are used in the manufacture of the slabs, choice is very little restricted by the cost of the aggregate. It therefore makes little difference whether or not native stones are used, while an incidental result of the development of the slabs has been the revival of the working of local quarries which had been abandoned as unfit for further cutting.

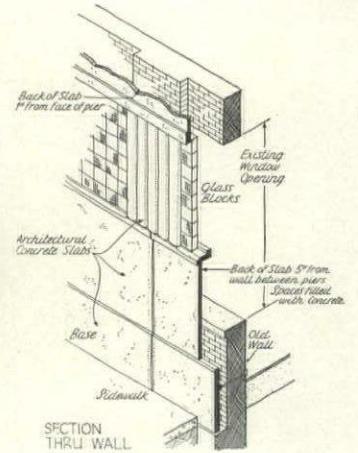
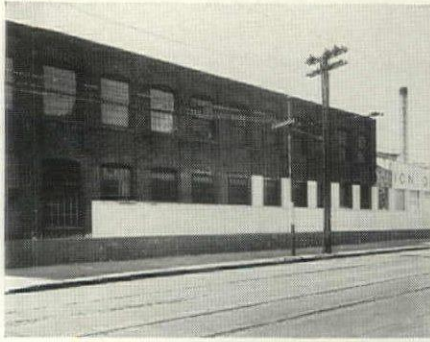


Sigurd Fischer



Richard Averill Smith

COMMERCIAL buildings of all kinds may be faced with the slabs at a cost midway between brick and stone. Upper picture, Squibb Laboratories, New Brunswick, N. J., Sherley W. Morgan, Architect. Lower picture, Normandy Office Building, Washington, D. C., Harvey Warwig, Architect. Slabs for both jobs by John J. Earley, Washington.



INDUSTRIAL buildings, including refacing work as in this example, offer a broad field for the use of the new material. Here, as shown by the detail on the right, flat slabs are used to cover existing projections, the space between being filled with poured concrete. Wire Rope Corp. of America, New Haven, Conn., Leo F. Caproni, Architect. "Mo-Sai" slabs by Dextone Co., New Haven.

PATTERN

Equally variable with color, the introduction of pattern treatments adds but little to the cost. Simple bands and squares require less work both in the construction of the mold and in placing the material, but intricate designs, lettering, etc., may be formed with surprising fidelity at reasonable expense. Relief pattern is even more readily obtained than flat, since relief molds simplify the job of placing the different colored aggregates during the manufacturing process.

Pattern work may be reproduced from sculptor's models by plaster casts set in the molds, or built-up with various materials from dimension or full-size drawings. In its simplest form, it is achieved by securing sheet materials of proper shape and thickness to the bottom of the mold in such a way as to create recessed designs in the face of the finished slab. These are readily picked-out in different colors, since the background color may be troweled flush with the top of the raised pattern piece and concrete containing the colored aggregate spread over the top without regard for outline.

Where separation of color on a flush surface is desired, this is obtained by constructing plastic "dams" outlining the color work on the bottom of the form, and removing these after the colored concrete has had time for its initial set, but before troweling on

the background material. In this way, intricate patterns containing a number of different colors may be gradually built up. Since color and pattern work extends to a depth of $\frac{1}{2}$ in. or more in the finished surface, it is as permanent as the slab itself. All kinds of lettering, in practically any size, may be executed in the same way.

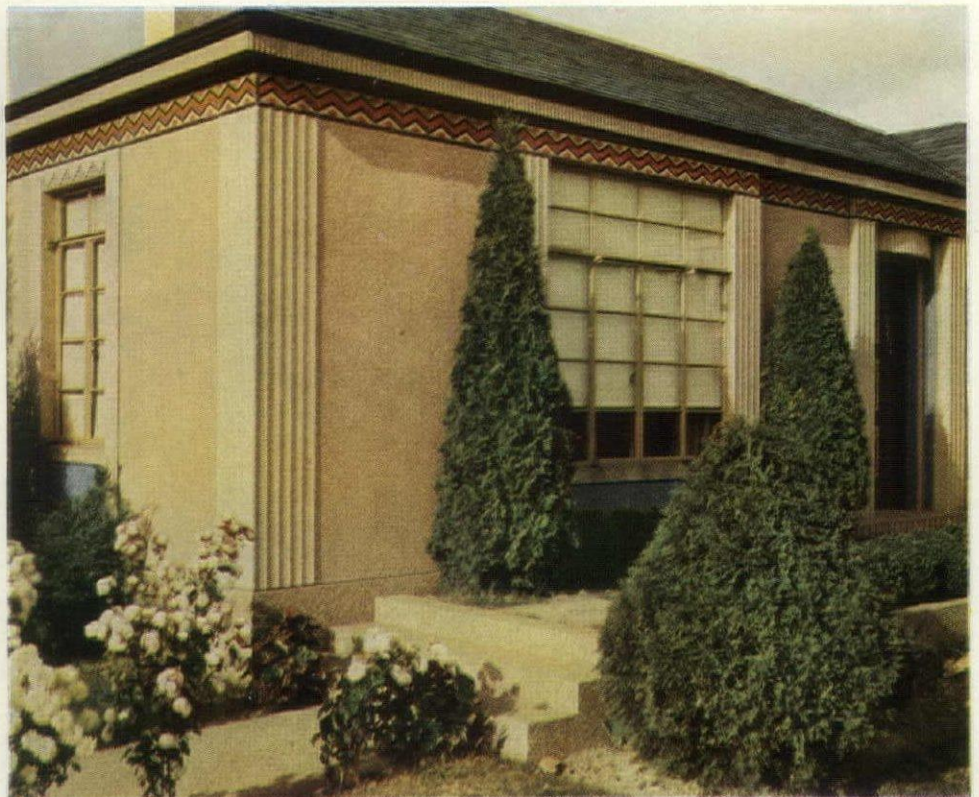
TEXTURE

The surface appearance of the exposed aggregates used in the slabs is only partially conveyed by photographs. Generally, it is made up of a myriad of tiny, irregular stone chips averaging about $\frac{1}{4}$ in. in maximum dimension, and closely grouped. Interstices are slightly recessed by the brush-and-acid cleaning which the slabs receive after their removal from the mold, and the stone chips are slightly tilted in various directions, resulting in a richly textured surface which, however, is held firmly in plane by the flat surface of the mold. Degrees of texture may be varied from smooth to rough with different sized aggregates without destroying the fundamental flatness of the resulting surface.

The use of ground and polished finishes, such as are employed in cast stone work to imitate polished granite, are in general not recommended for the slabs, because of the considerable cost of finishing large areas, returns, etc., in this way, but polished cast stone

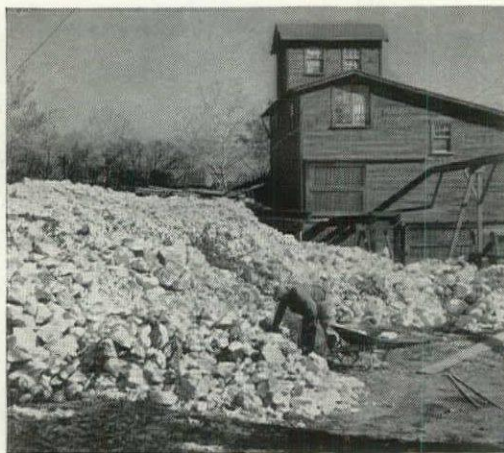


Richard Averill Smith

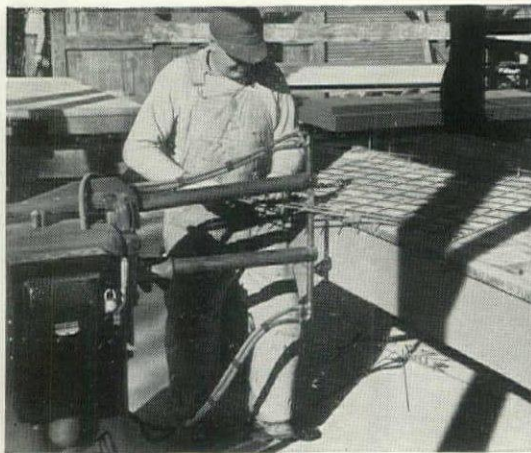


Color photo, Richard Averill Smith, Courtesy Universal Atlas Cement Co.

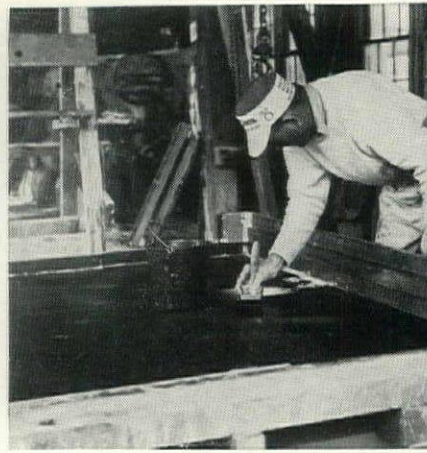
HOUSES, prefabricated from structural slabs in color and black and white, were an early and successful experiment of John J. Earley, pioneer in the development of the new material. Those shown in these pictures have been standing in Silver Springs, Md., for five years, offer convincing testimony to the permanence and non-fading properties of the exposed aggregate surface, as well as the strength of the units themselves. In this instance, steel windows were cast in the slabs at the time of manufacture, simplifying the process of assembly at the site, while reinforced ribs on the back of the slabs act as the structural framework supporting floors and roof. J. R. Kennedy, Architect.



1.



2.



3.

may be utilized for base courses, decorative bands, and other detail work if desired.

SHAPE

It is in the property of shape that the basic concept behind the development of the slabs acquires its greatest importance. Fundamentally, the slabs are designed as a covering for other materials—a protective surface for the building structure in the form of a membrane. As such, they may be “wrapped” around corners, window reveals, sills and heads, and over parapet copings, thus minimizing the need for flashings, spandrel waterproofing, and separate sills. Lugs may be formed in accordance with the architect’s details to receive steel windows, door bucks, and other materials; in multi-storied buildings, spandrels, extending from one window head to the sill above, may be made in a single piece. This has the effect not only of reducing the cost of the finished wall, but also of improving its appearance and weather-resisting quality. It permits an exterior of a single, uniform material, where heretofore a combination of several was often necessary.

Decorative elements are formed with equal ease. Columns, pilas-

ters, cornices, fluted and ornamental profiles, as well as pierced designs and grillework are cast in appropriate molds at relatively low cost, especially where the same element is repeated a number of times. Due to the use of heavy wire reinforcement, and the care with which even simple slabs are cast, work of surprising delicacy and fidelity is successfully carried out.

The ideal slab shape, from the manufacturing standpoint, consists of a large, flat area with the members at right angles to the main surface comparatively short, and such shapes are naturally somewhat less expensive than those more difficult to fabricate. Repetition of identical units, while contributing to economy up to a certain point, should not be made a fetish, since in the event of a large order for a given unit additional molds will probably be made up to speed the process of manufacture, and a certain amount of dismantling of the mold is almost always necessary in order to remove each slab cast.

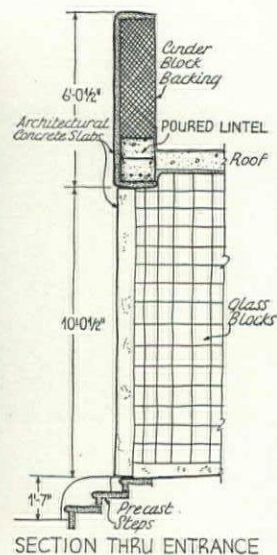
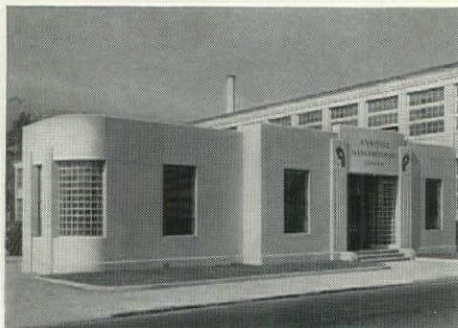
Physical limitations on the shape of the slabs are few, the only important restriction being against solid projections on the face such as cornices, which should not exceed twice the slab thickness, or four inches, unless hollowed out and reinforced. Bear in mind



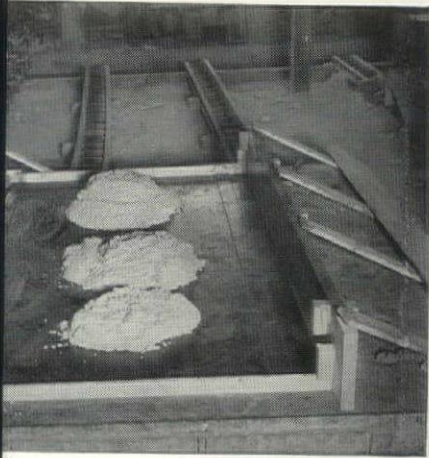
Richard Averill Smith, Courtesy Universal Atlas Cement Co.



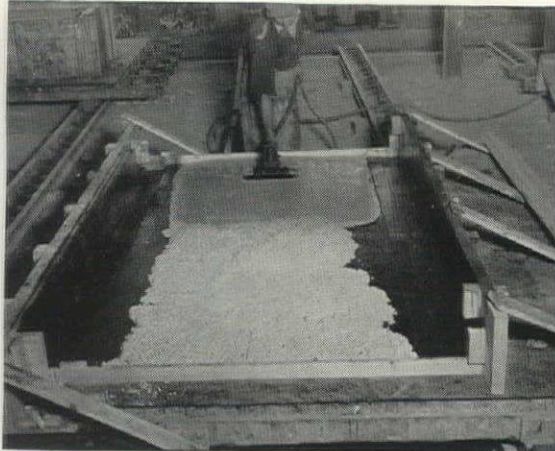
DETAIL, showing color and pattern work used in the Heidebach Co. store, Washington, D. C. Thinness of the slabs permits refacing without disturbing existing walls. J. R. Kennedy, Architect. Slabs by Studio of John J. Earley, Washington.



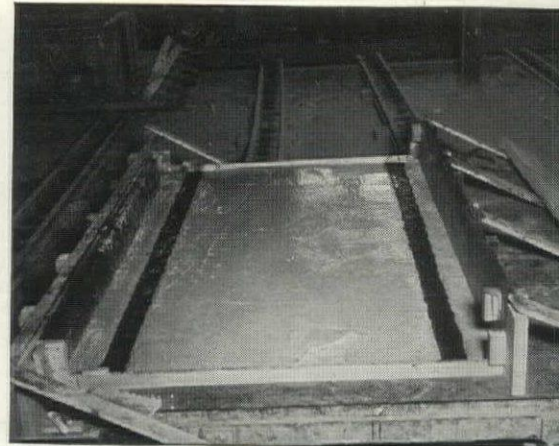
HUGE, curved, lintel-slab used in the construction of this factory office in New Haven, Conn., which also acted as the exterior and bottom form for the reinforced concrete structural lintel, as well as an identifying sign. Note also curved and L-shaped corner units, and relatively small number of joints in the finished job. Brown and Von Beren, Architects. “Mo-Sai” slabs by Dextone Co., New Haven.



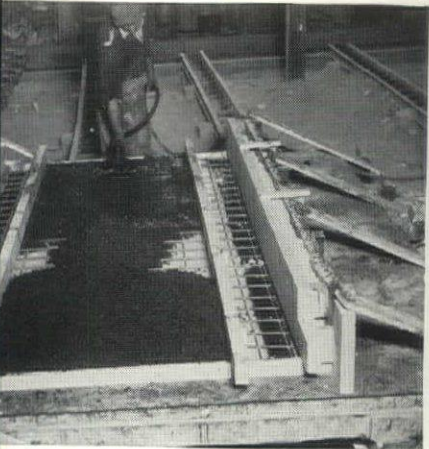
4.



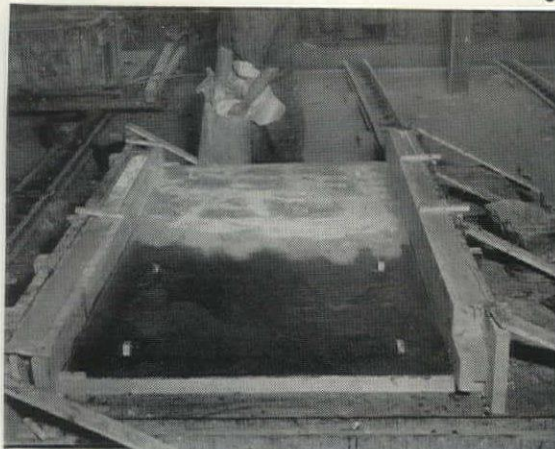
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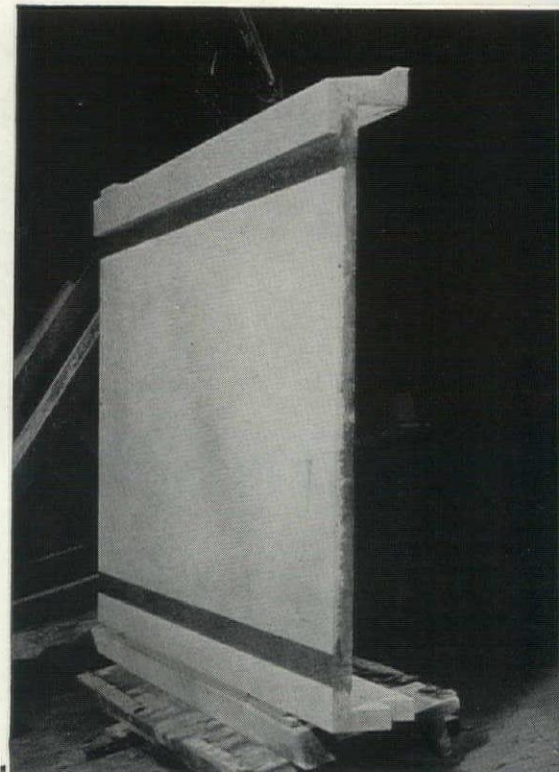
6.



7.



8.



9.

GENESIS of an architectural concrete slab is shown by the series of pictures above and at the right. 1. shows pile of stone aggregates, ready to be crushed to required fineness for use in the slabs, 2. workman forming slab reinforcement from galvanized steel mesh with an electric spot-welder, and 3. bottom of mold being shellacked in preparation for use. In 4., the required amount of facing material, containing the decorative aggregates, has been deposited in the mold in such a way as to indicate the stiffness of the mix, while in 5. it is being troweled smooth to the level of the top of the raised strips on the bottom of the form which are to form recessed color-strips on the face of the finished slab. In 6., concrete containing colored aggregates has been troweled over these strips, and in 7. the outer layer completed, sideboards set in place to form return ends, and the reinforcing mesh secured in position by 2 x 4 sleepers. In 8., backing material has been applied, completing the work of placing the concrete, and in 9. the slab, in this case a spandrel, has been removed from the form and the surface cleaned to expose the aggregate. 10. shows a number of slabs curing in the yard outside the plant.

Pictures 1, 2, 3, and 10, Studio of J. Earley, Washington, D. C.
Balance from the Destone Co., New Haven, Conn.

that the success of the casting and curing process depends to a large part on the thinness of the finished product, and avoid bulky sections which might interfere with these operations.

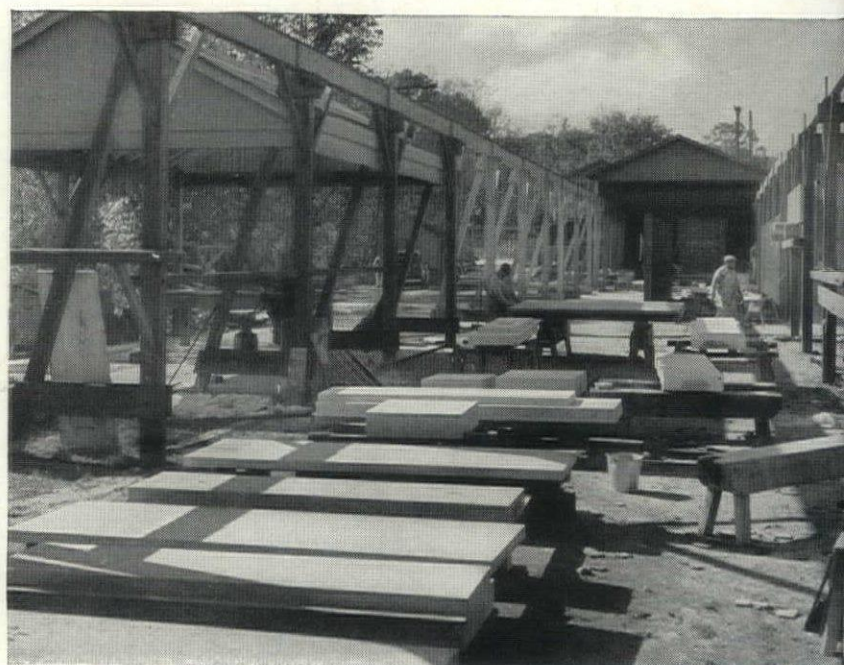
SIZE

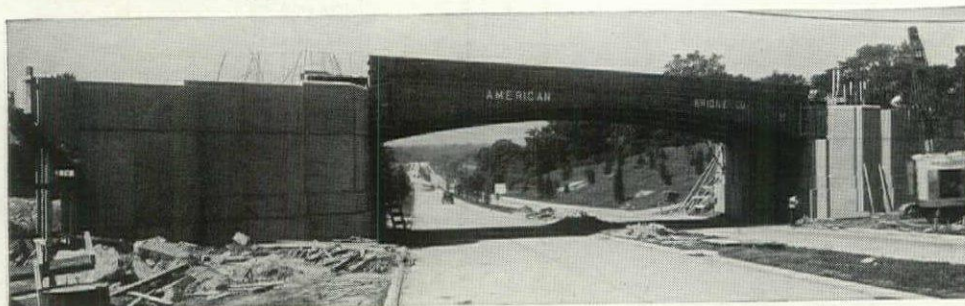
Practically the only limit which controls maximum size is convenience in handling during manufacture, shipment to the job, and erection. Slabs up to 30 ft. in length have been fabricated and erected with no great difficulty, and doubtless still larger items could be successfully handled if good reason existed for so doing. As a rule of thumb, but by no means as an absolute limit, a maximum of 100 sq. ft. of surface may be taken as governing ordinary work. One of the important virtues of architectural concrete slabs is their large size, and this should be taken advantage of wherever possible.

STRENGTH

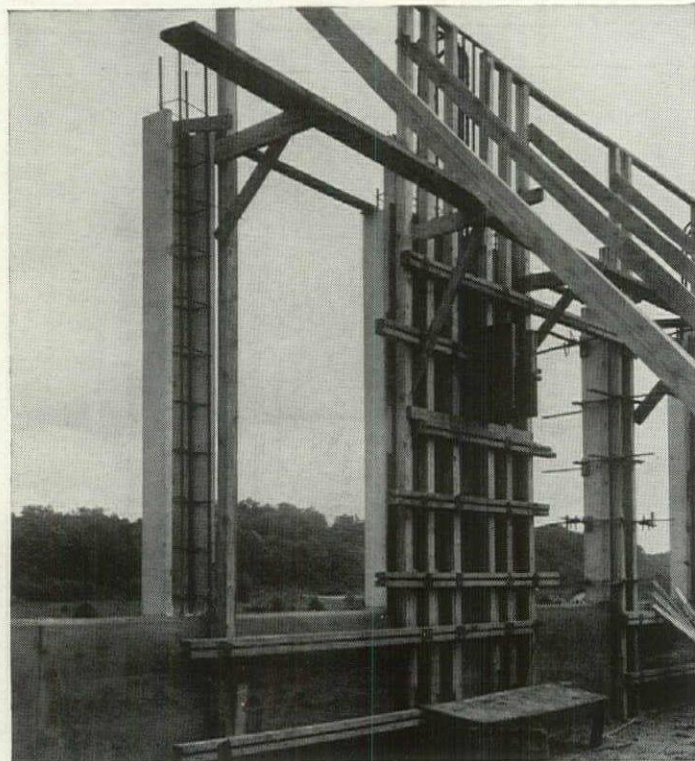
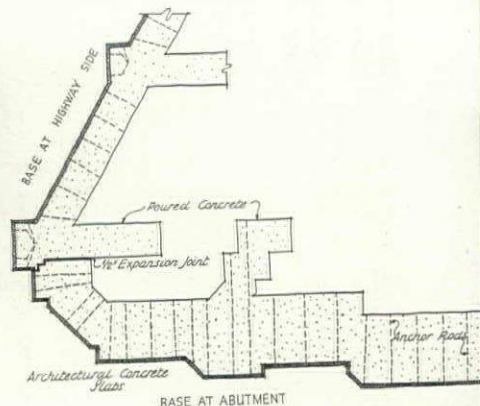
The concrete used in slab manufacture is unusually dense and strong, and slabs are reinforced with heavy welded mesh throughout. Result is a product which, while not intended for structural purposes except when combined with poured concrete, is thoroughly capable of withstanding any of the stresses to which it may properly be subjected in performing its function in a completed building. Loops for anchoring the slab to the backing mate-

10.





BRIDGE, on the Merritt Parkway, near Westport, Conn., under construction. Slabs are used as a decorative outer form for mass concrete in the abutments. Designed by George L. Dunkelberger, Conn. State Highway Dept., the "Mo-Sai" slabs were manufactured by the Dextone Co., New Haven, Conn.



APPROVAL, by the U. S. Navy, of the use of the slabs for the huge David W. Taylor Model (Ship-Testing) Basin building, Carderock, Md. (above and below), marked an important stage in their development, as well as their first large-scale use as an exterior form for structural concrete. Designed by Rear Admiral Ben Moreell, U. S. N., slabs are by the Dextone Co., New Haven, Conn., John J. Earley, of Washington, Consultant.

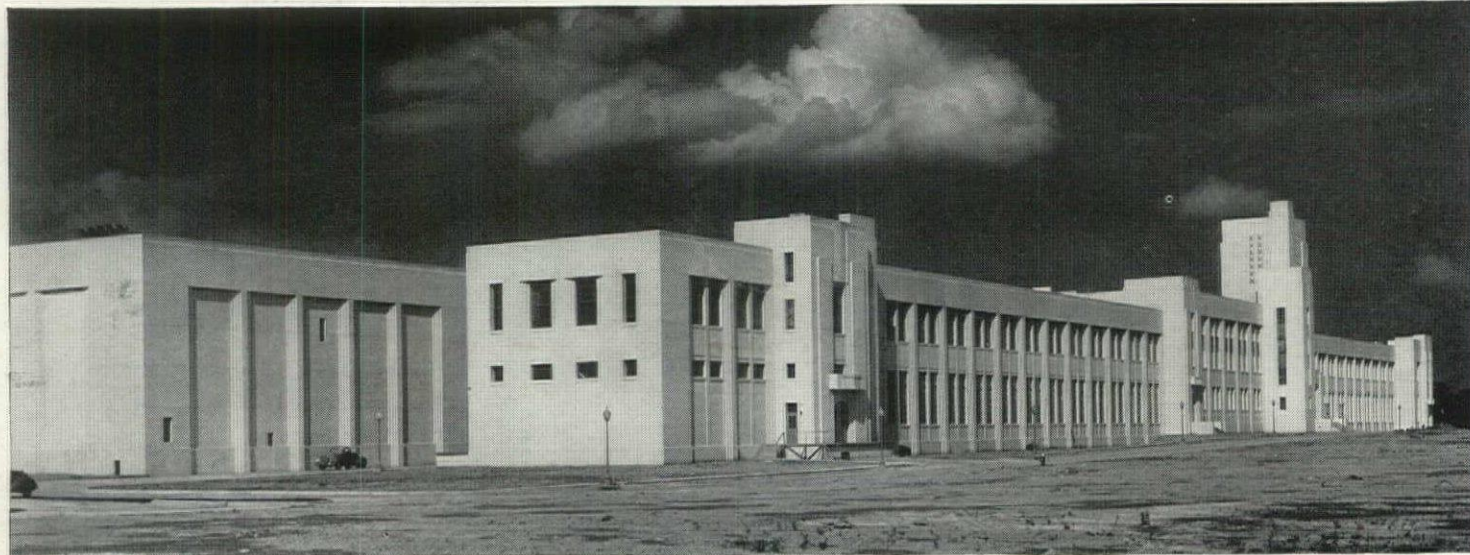
rial or supporting framework, and for bracing when the slabs are used as forms for poured concrete, are welded directly to the reinforcing mesh.

ERECTION

Architectural concrete slabs are employed in building in several different ways, but in each case the technique of fixing in place varies but slightly. In new work, they may be used as a facing for structural masonry, hung on a structural frame and backed-up with masonry units, or used as the outer form for structural concrete. In each of these applications, the slab itself remains much the same, the only difference being in the type and positioning of the anchoring devices provided. Where slabs are used as forms for structural concrete, the bond obtained is so good that half the slab thickness may be considered as structurally effective. In the refacing of existing structures, to which the slabs are particularly adapted because of their thinness, the method of application is adapted to the conditions encountered—where it is desired to cover existing projections with a flat wall, for instance, this has been done by filling the resulting cavity between the projecting elements with concrete.

Joints are usually made $\frac{1}{4}$ in. to $\frac{3}{8}$ in. in thickness and pointed with white or colored cement mortar, as in ordinary masonry. Where required, expansion joints are readily formed and may be calked with mastic. Erection is usually handled by regular masons, and requires no special skill or training, but must, of course, be adequately supervised to assure the accurate setting which the use of a large-sized unit requires.

In addition to their use as an exterior wall facing, the slabs are well adapted to monumental interiors, and for decorative ceilings, especially where these are exposed to the weather. In the latter instance, the slabs may be usefully employed as a form for the structural concrete floor or roof above. Specialty items, such as railings, radiator enclosures, and even fixed furniture may be made up to match architectural concrete interiors or exteriors.



HOUSES

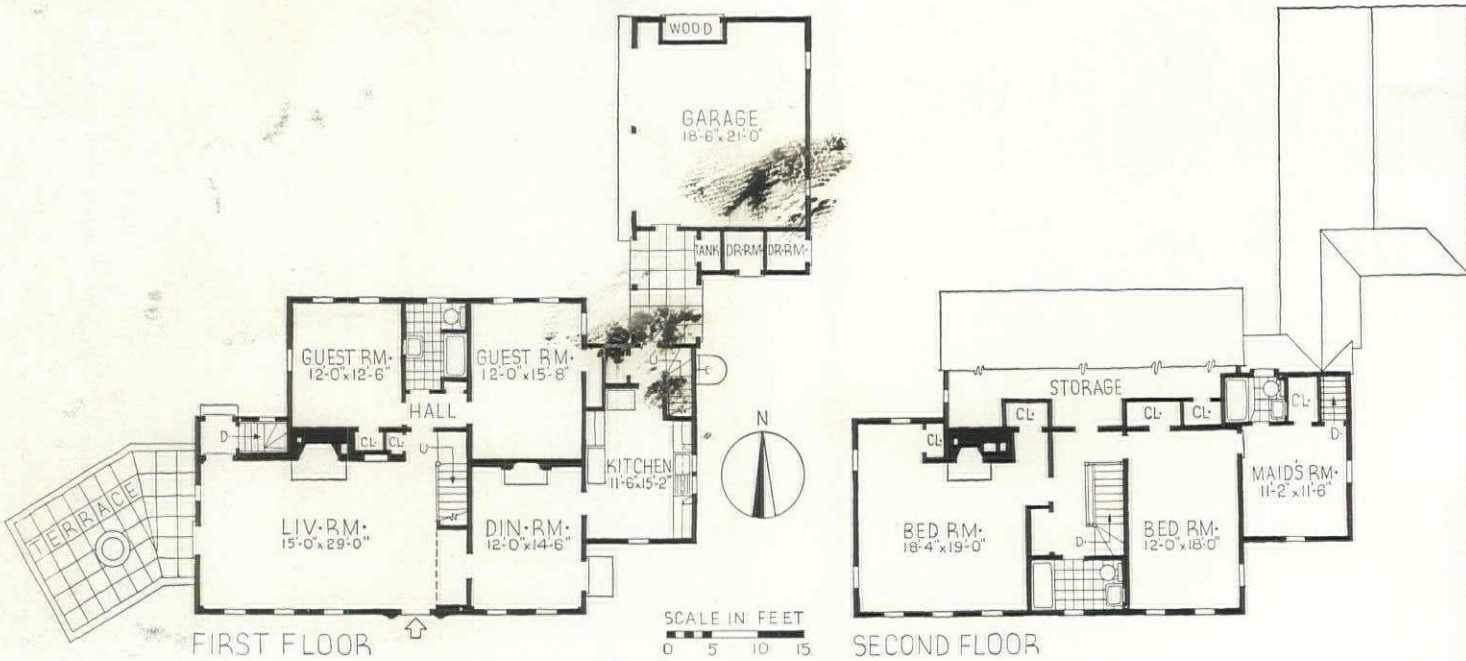
HOUSE FOR J. MARSHALL HUBBARD, WEST HARWICH, MASS. DAVID J. ABRAHAMS, ARCHITECT



HOUSE FOR J. MARSHALL HUBBARD, WEST HARWICH, MASS.



All photos, Harold A. Willoughby & Associate





BEDROOM
LIVING ROOM



CONSTRUCTION OUTLINE

FOUNDATION: Walls—concrete blocks. Cellar floor—3 in. concrete over sand and gravel fill.

STRUCTURE: Exterior walls—New England braced frame, 2 x 4 in. studs, 7/8 in. sheathing, covered with cedar shingles and clapboards. Interior partitions—2 x 4 in. studs, gypsum lath and plaster, Atlantic Gypsum Products Co. Floor construction—joists, sub-floor and fir and pine finish flooring. Ceilings—gypsum lath and plaster.

ROOF: Covered with asphalt felt and cedar shingles.

CHIMNEY: Damper—H. W. Covert Co. **SHEET METAL WORK:** Flashing—16 oz. copper. Ducts—26 gauge galvanized iron.

WINDOWS: Sash—stock wood, Unique Window Balance Co. balances. Glass—single strength, quality B.

STAIR: Treads—oak. Risers and stringers—white pine.

FLOOR COVERINGS: Living room—white pine. Bedrooms and halls—fir. Kitchen and bathrooms—linoleum, Armstrong Cork Co.

WALL COVERINGS: Living room—white pine and plaster; remainder—plaster.

WOODWORK: All white pine.

HARDWARE: Wrought iron.

PAINTING: Exterior walls—stain, Samuel Cabot, Inc.

ELECTRICAL INSTALLATION: Wiring system—60 ampere and BX. Switches—Hart & Hegeman.

KITCHEN EQUIPMENT: Range—Hot Point, Edison General Electric Appliance Co. Refrigerator—General Electric Co. Sink—American Radiator & Standard Sanitary Mfg. Co.

BATHROOM EQUIPMENT: All fixtures—American Radiator & Standard Sanitary Mfg. Co.

PLUMBING: Soil pipes—cast iron. Hot and cold water pipes—brass. Pump and tank—Westco Pump Co.

HEATING AND AIR CONDITIONING: Hot air furnace with blower and filters, Richardson & Boynton Co. Oil burner—Delco Appliance Corp.

DINING-KITCHEN



Chiefly by meticulous attention to detail, the architect has succeeded in recreating the character of early Colonial work to an extraordinary degree in this house. Particularly striking are the enormous chimney and the change in wall materials from clapboards to shingle, the latter being a fairly common feature in old houses to which later additions were made. Despite the emphasis on archaeological correctness, however, the plan seems quite suitable for present-day requirements. The four main bedrooms are evenly divided between the two floors, and the maid's room is given all needed privacy by the separate stair to the kitchen. The informal arrangement of the main elements of the house fits well into the unusually attractive surroundings. Cubage: 40,400. Cost: \$17,000.

HOUSE FOR

A lavish use of space is the most noticeable characteristic of this house, which contains over 70,000 cu. ft. and has only three sleeping rooms outside of the servants' quarters. An open plan and the judicious placing of windows further accentuate this impression of luxury, while on the second floor the owner's suite occupies an entire wing of the house. The plan is simple and regular in arrangement, and represents a compromise between the requirements of orientation and view. In the design of the exterior advantage has been taken of various projecting elements to relieve the severity of the mass; use has also been made of awnings and planting to soften the lines. Cost: about 35 cents per cubic foot.

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—stucco on self-furring metal lath, building paper, sheathing, 4 x 6 in. girts, 2 x 4 in. studs, metal-backed rock lath; inside—wire lath and plaster.

ROOF: Covered with 5-ply tar and gravel.

SHEET METAL WORK: Flashing—16 oz. copper.

INSULATION: Roof—3 in. rock wool bats.

WINDOWS: Double Sash—Chamberlin Metal Weather Strip Co., insulated, installed over Cotswold casements, Hope's Windows, Inc. Glass block—Pittsburgh-Corning Corp.

FLOOR COVERINGS: Main rooms—oak, carpet covered. Kitchen and bathrooms—linoleum.

WOODWORK: Trim—California pine. Exterior doors—Rezo, flush, Brockway-Smith-Haigh-Lovell Co.

LIGHTING FIXTURES: Pettingell-Andrews Co.

KITCHEN EQUIPMENT: Range—gas. Refrigerator—electric, General Electric Co.

BATHROOM EQUIPMENT: All fixtures by American Radiator & Standard Sanitary Mfg. Co.

PLUMBING: Hot and cold water pipes—Alpha iron sized, brass, Chase Brass & Copper Co.

HEATING AND AIR CONDITIONING: Warm air and steam system with humidifier and oil heater by General Electric Co. Boiler—General Electric Co.

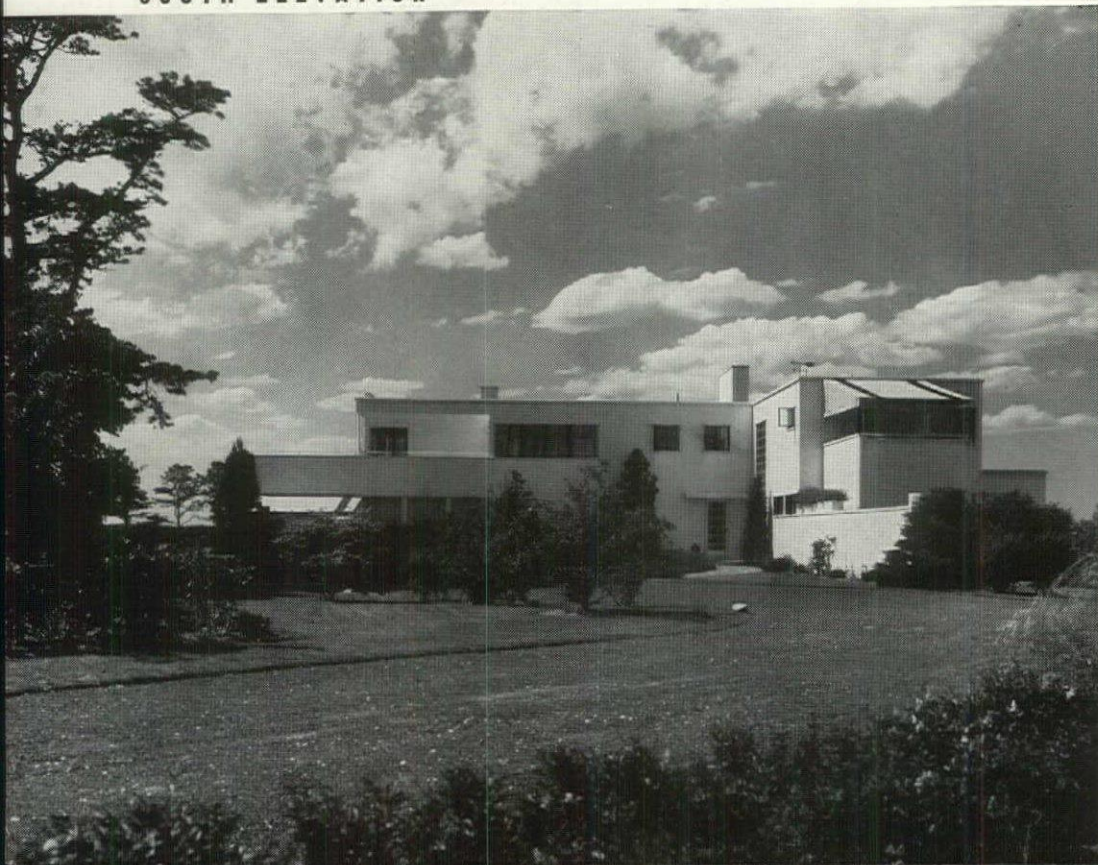
LIVING ROOM



NORTH ELEVATION

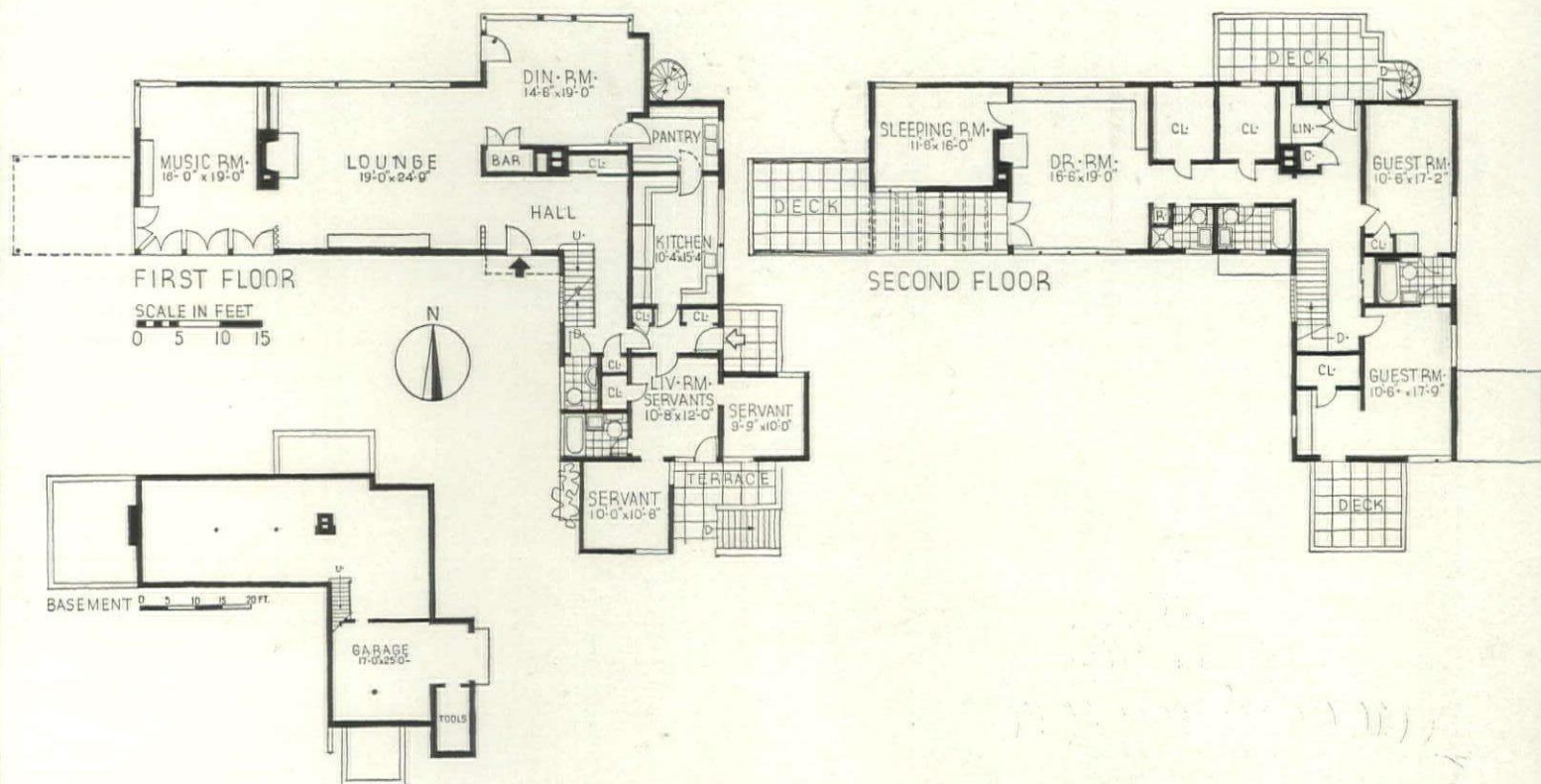
SOUTH ELEVATION

Haskell Photos



ARTHUR H. SHAW, BUZZARDS BAY, MASS.

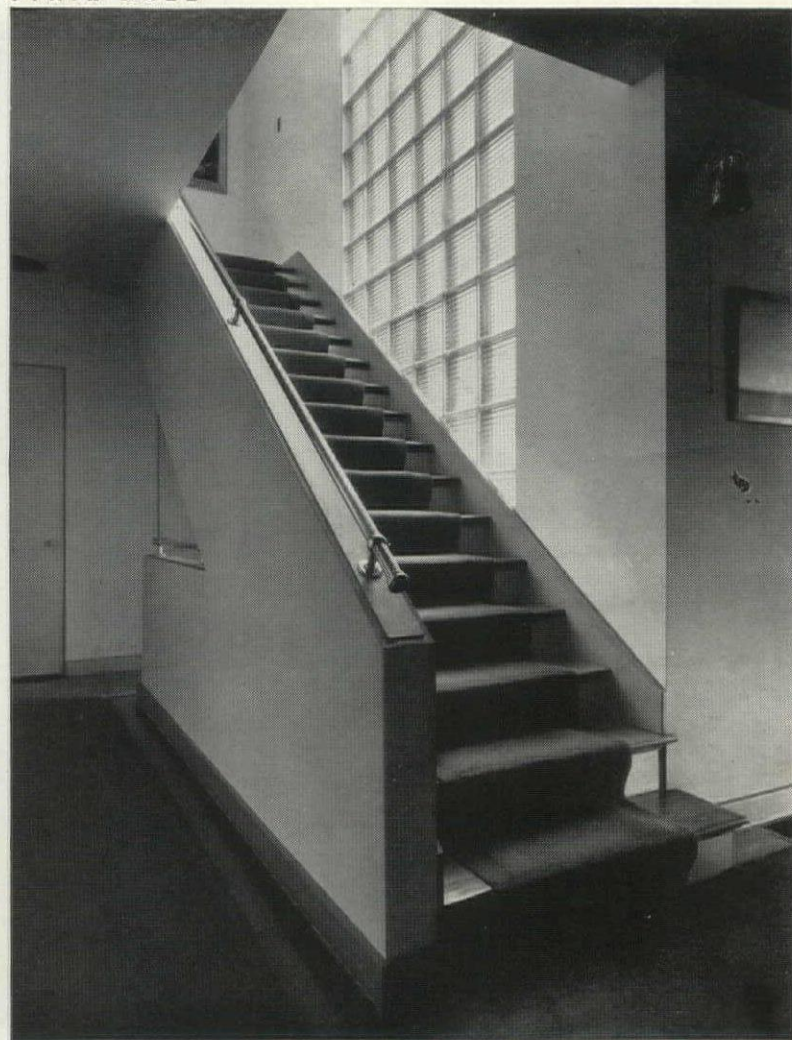
ROYAL BARRY WILLS, ARCHITECT



DINING-LIVING



STAIR HALL

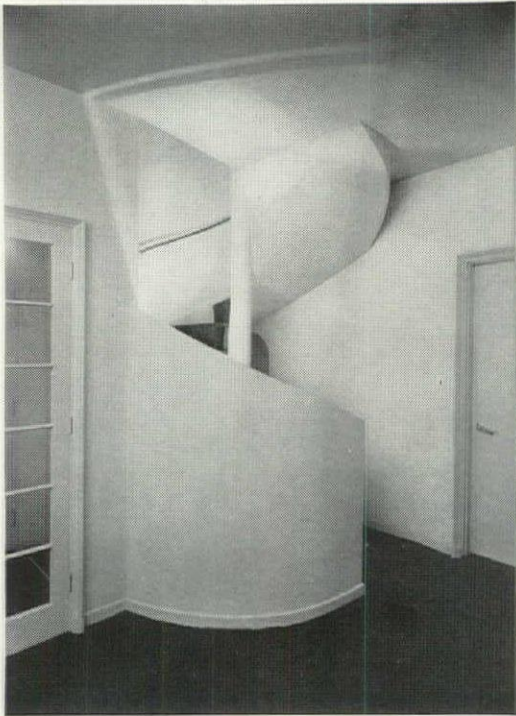


HOUSE FOR THEODORE T. MILLER, BELMONT, MASS.

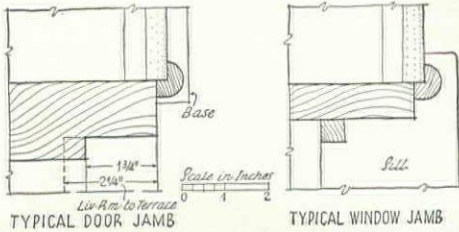
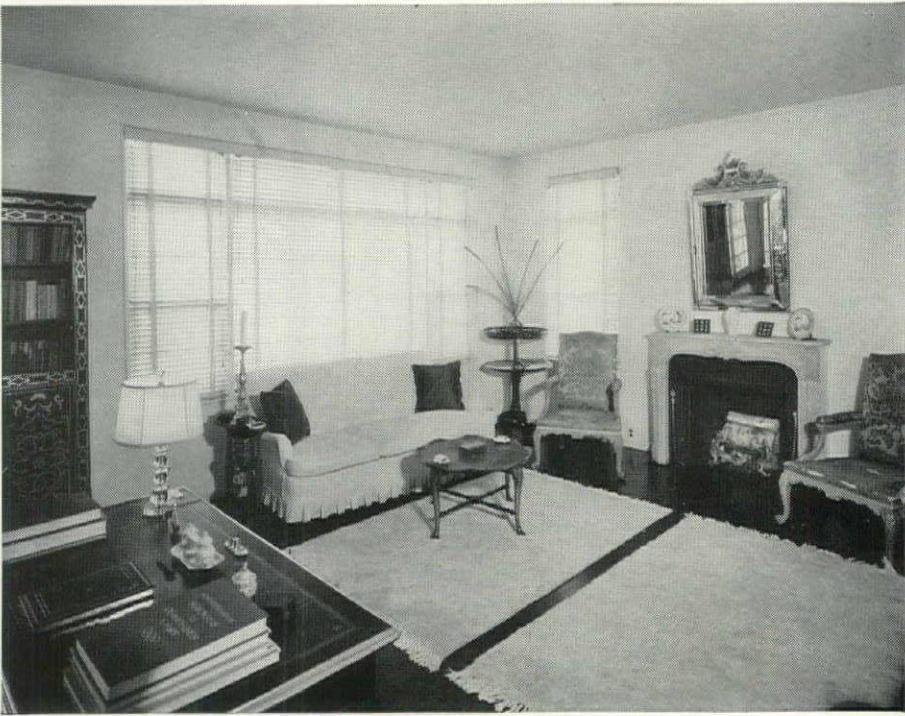


All photos, Paul Davis

ENTRANCE HALL



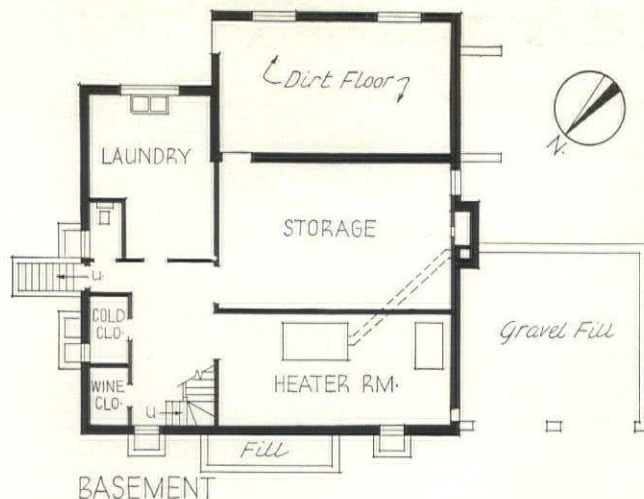
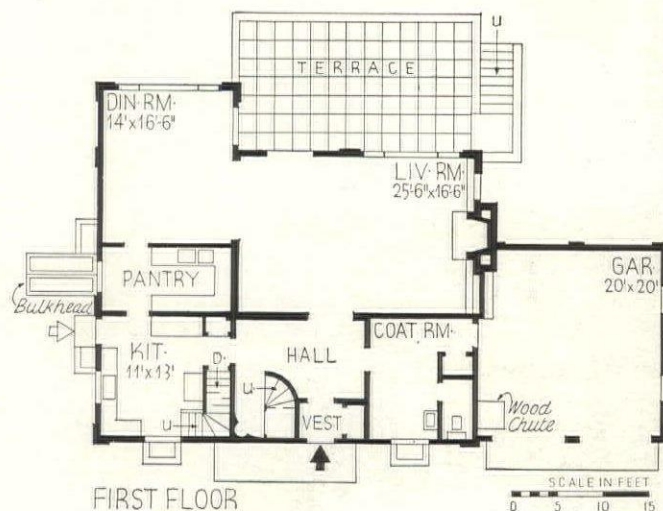
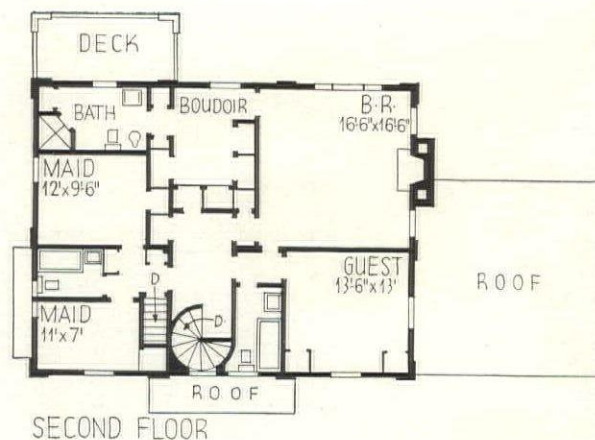
LIVING ROOM





ENTRANCE

Plan requirements for this house were somewhat unusual: the second floor, for instance, has two maid's rooms and a guest room, but only one master bedroom. The very large coat room below is also an uncommon feature, but an extremely practical one which provides very useful storage space; here it serves as a vestibule for the garage as well. All main rooms, both upstairs and down, face the rear garden and the raised terrace. The exterior treatment shows something of a California influence, particularly in the handling of the walls, shutters and entrance porch; the formal design is interesting, and seems quite at home in its New England setting. Cubage: 48,200. Cost: \$19,869, including grading.

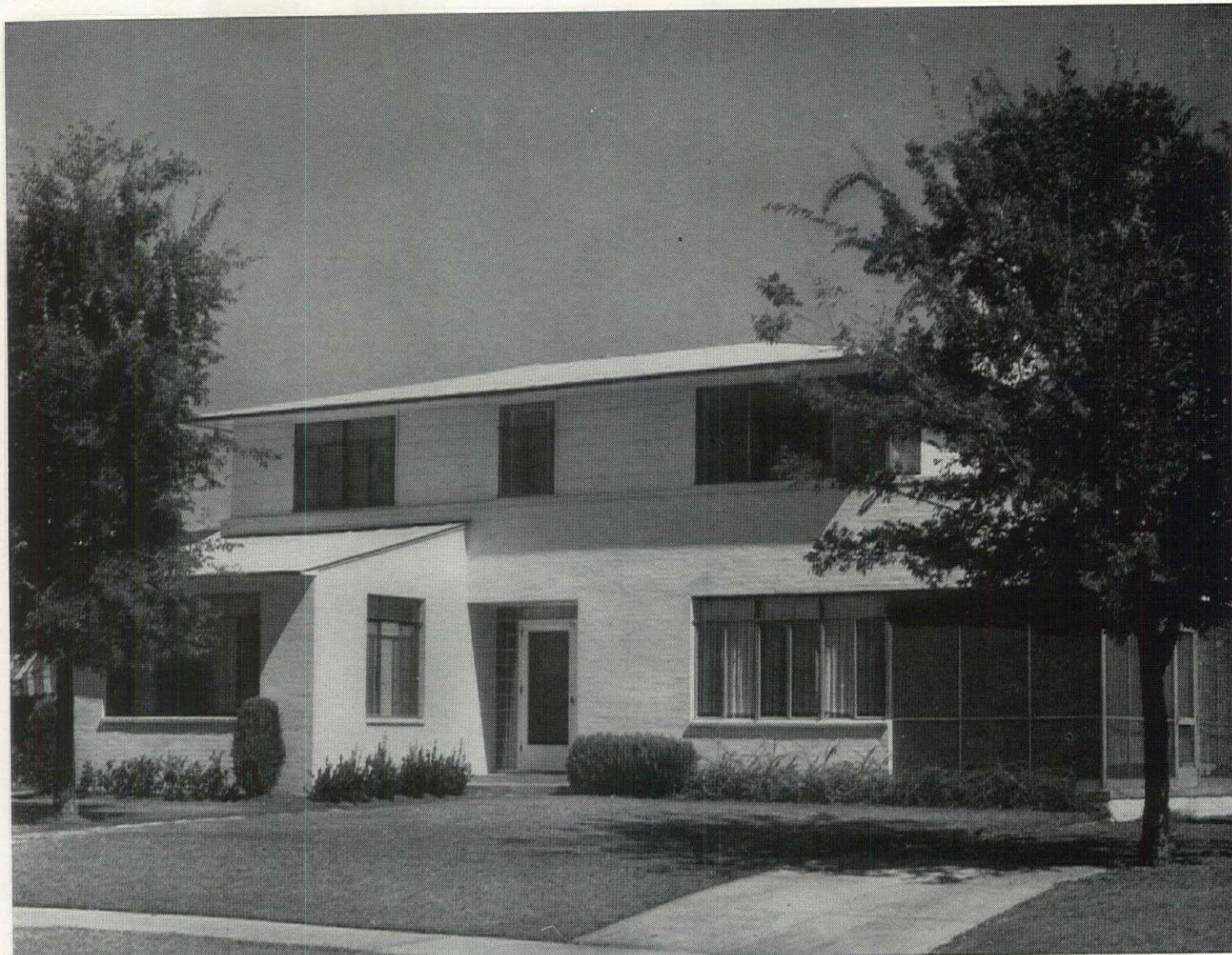


CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—wood framing, No. 1 common fir; Pacific West Coast cedar for exterior finish. Interior partitions—wood studs, 2 coats hard plaster on Insulite Co. lath.
ROOF: Covered with 5-ply asphalt and gravel roofing, Barrett Co.
CHIMNEY: Damper—H. W. Covert Co.
INSULATION: Outside walls and sound insulation—Cabot's Quilt, Samuel Cabot, Inc. Roof—3-ply Cabot's Quilt with 1 in. Insulite Co. roof insulation.
WINDOWS: Sash (basement)—metal casement, Detroit Steel Products Co.; all others—stock wood, Brockway-Smith-Haigh-Lovell Co. Sash balances—Unique Window Balance Co. and Samson Spot Cord, Samson Cordage Works. Window shades (service)—Bontex, Columbus Coated Fabrics Corp. Glass—quality A, Pittsburgh Plate Glass Co. Screens—Chamberlin Metal Weather Strip Co.

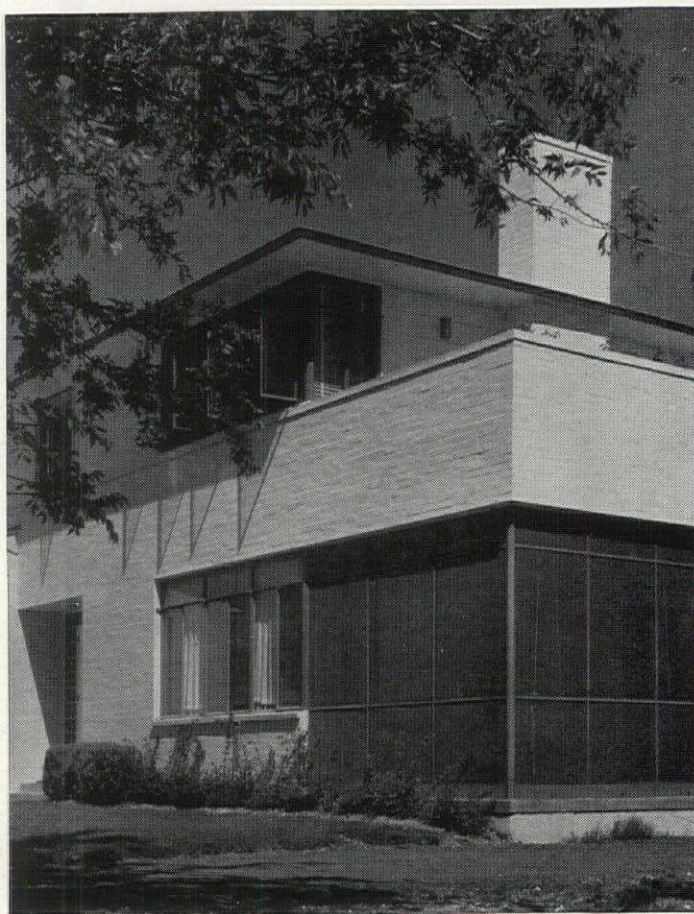
FLOOR COVERINGS: Main rooms—oak. Vestibule, kitchen and bathrooms—linoleum, Armstrong Cork Co.
WOODWORK: Pine throughout. Garage doors—Overhead Door Co.
PAINTING: Service and baths—3 coats lead and oil, gloss; remainder—2 coats National Gypsum Co. Sunflex. Floors—stain, Charles F. Richardson.
KITCHEN EQUIPMENT: Range and refrigerator—electric. Sinks—Elkay Mfg. Co. and Standard Sanitary Mfg. Co.
BATHROOM EQUIPMENT: All fixtures by American Radiator & Standard Sanitary Mfg. Co. Cabinets—Par-Metal Products Corp.
PLUMBING: Hot and cold water pipes—copper, American Tube Works.
HEATING AND AIR CONDITIONING: Warm air system. Air conditioning—filtering and humidifying, Gar Wood Industries, Inc. Grilles—Tuttle & Bailey Mfg. Co. Water heater—electric, Hewitt Electric & Mfg. Co. Bathroom heater—Prometheus Electric Co.

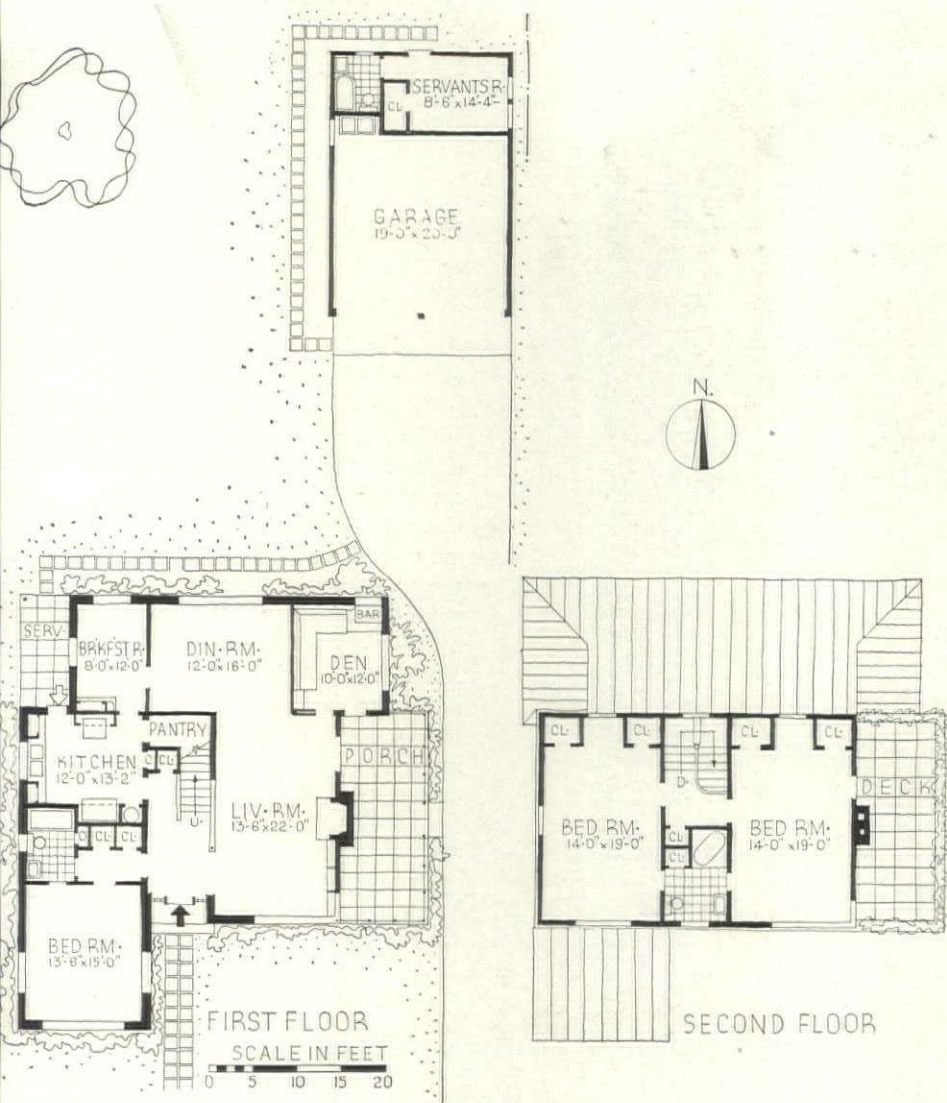
HOUSE FOR MELVILLE S. ROSE, DALLAS, TEXAS



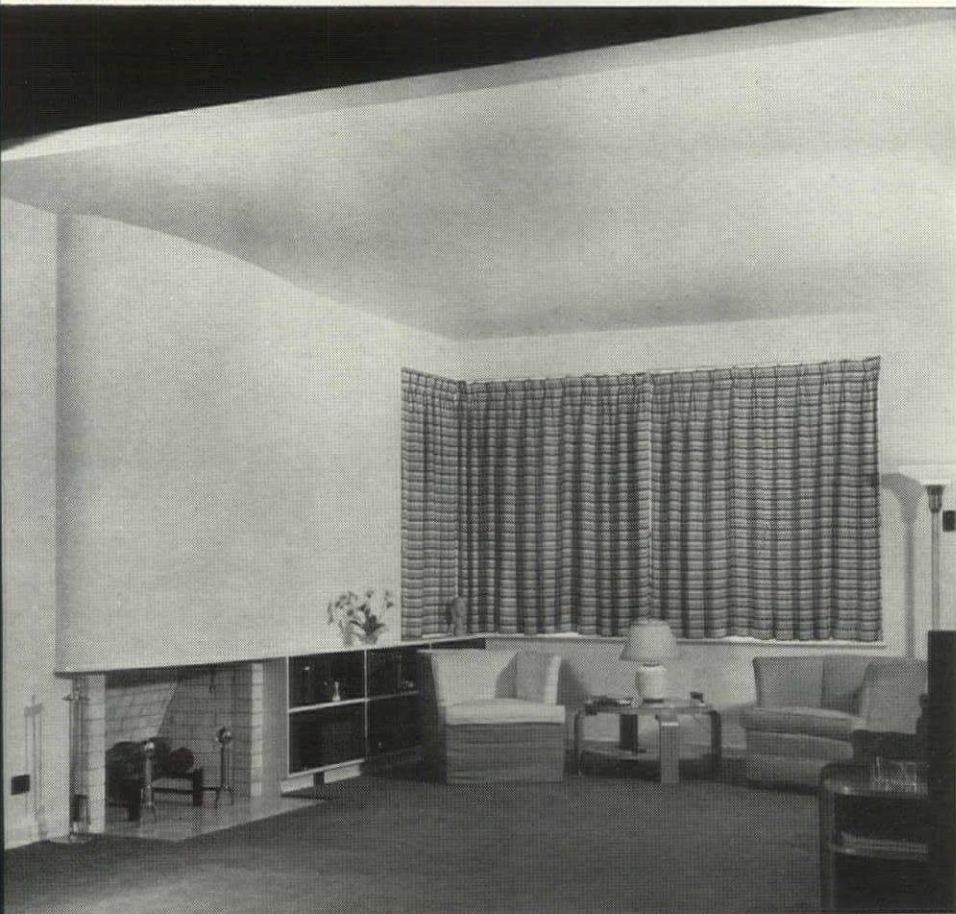
All photos, Walter Steinhard

An unaffected exterior is given unusual delicacy by the handling of the metal roof, whose low pitch and thin profile combine to produce an extremely pleasing house. Evidence of careful study is found in the slight but effective variations in wall texture, in the second floor windows which extend to the eaves, and the arrangement of the screened porch and living room windows in a single design unit. The plan shows a good relationship of open and private areas. As indicated, the dining room is useful in extending the living room space; it could be easily screened off, however. The downstairs bedroom is not only practical for use as a guest room, but its location makes possible the elimination of a separate lavatory. It would be difficult to find a less wasteful second floor plan than the one shown here. Cubage: 33,550. Cost: \$12,100.





LIVING ROOM



CONSTRUCTION OUTLINE

FOUNDATION: Walls and piers—reinforced concrete.

STRUCTURE: Exterior walls—2 x 4 in. yellow pine studs, shiplap sheathing, 15 lb. asphalt saturated felt and brick veneer; top exterior finish v-joint shiplap white pine; inside U. S. Gypsum Corp. perforated rock lath and 1/2 in. plaster. Floor construction—joists, sub-floor and red oak finish flooring. Ceilings—rock lath and plaster.

ROOF: Covered with 28 gauge Cop-R-Loy, Wheeling Steel Corp. Deck—covered with Consortex, William L. Barrell Co.

CHIMNEY: Brick, Fraser Brick Co., clay tile lining. Damper—H. W. Covert Co.

INSULATION: Attic floor and roof—rock wool, Eagle-Picher Lead Co. Weatherstripping—National Weatherstrip Co.

WINDOWS: Sash—Fenwrought steel, Fenestra screens, Detroit Steel Products Co. Glass—Double strength, quality A, Libbey-Owens-Ford Glass Co. Glass blocks—Insulux, Owens-Illinois Glass Co.

FLOOR COVERINGS: Main rooms—carpet, Mohawk Carpet Co. Kitchen—linoleum, Armstrong Cork Co. Bathrooms—Tile-Tex, The Tile-Tex Co.

WOODWORK: Trim—pine. Cabinets—white pine and birch plywood. Interior doors—birch veneer slab, Roddis Plywood & Veneer Co. Door casings—Knapp Bros.

HARDWARE: By Russell & Erwin Mfg. Co.

PAINTING: Interior walls and ceilings—Dutch Boy, National Lead Co. Sash—Ripolin enamel, The Glidden Co. Exterior walls and roof—cement paint, General Paint Corp.

ELECTRICAL INSTALLATION: Wiring system—conduit, Steel & Tubes, Inc. Switches—(main) Westinghouse Electric & Mfg. Co.; (wall) Arrow, Hart & Hegeman Electric Co.

KITCHEN EQUIPMENT: Range—Estate Stove Co. Refrigerator—Crosley Radio Corp. Sink—American Radiator & Standard Sanitary Mfg. Co. Cabinets—white pine plywood; linoleum tops, Armstrong Cork Co.

BATHROOM EQUIPMENT: All fixtures American Radiator & Standard Sanitary Mfg. Co. Cabinets—Hall-Mack, Hallensheid & McDonald.

PLUMBING: Hot and cold water pipes—Revere Brass & Copper Co.

HEATING: Warm air, gas fired floor furnaces, dual push button controls, Moncrief Furnace Co.

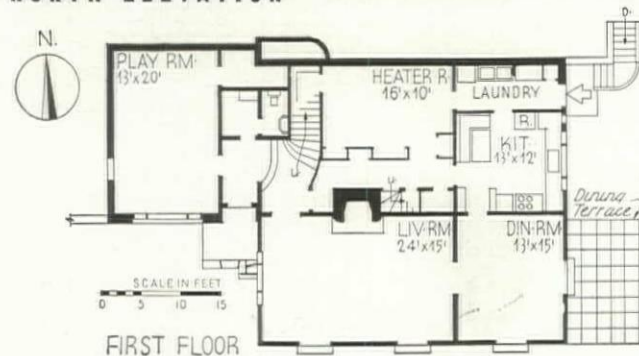
HOUSE FOR MASON R. SMITH, GOUVERNEUR, N. Y.

D. KENNETH SARGENT

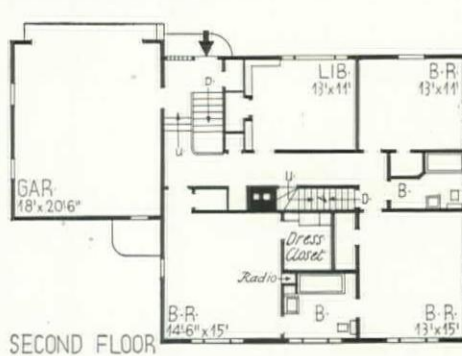
ERVAY J. BAKER, ARCHITECT

A design for an irregular site, with the garage and main entrance on the upper level, and the main living rooms below. While somewhat unconventional, the plan shows a very effective disposition of living areas; the living and dining rooms have access to the rear garden, and the services are concentrated in the unlighted space at the rear. A playroom below the garage provides for children's recreation, and has a closet for toy storage. The library on the second floor is ideally located for both study and the accommodation of guests. A maid's room occupies the attic, and is reached by a separate stair. Cost: about 40 cents per cubic foot.

NORTH ELEVATION



SOUTH ELEVATION



CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—cedar siding, sheathing, 2 x 4 in. studs, Celotex Corp. insulating lath and sand-floated tinted plaster. Interior partitions—perforated rock lath and plaster, National Gypsum Co.

ROOF: Cedar shingles, Weatherbest Corp.

FIREPLACE: Damper—Donley Bros. Co.

INSULATION: Attic floor—4 in. rock wool, National Gypsum Co. Weatherstripping—Accurate Metal Weather Strip Co.

WINDOWS: Sash—wood casements and double hung, Andersen Corp. Glass—double strength, Libbey-Owens-Ford Glass Co. Glass block—Pittsburgh-Corning Corp.

FLOOR COVERINGS: Kitchen and bath—Sealex linoleum, Congoleum-Nairn, Inc.

WOODWORK: Doors—Paine Lumber Co. Garage doors—Corland O'Head Door Co.

HARDWARE: By Yale & Towne Mfg. Co.

PAINTING: Walls and sash—Sherwin-Williams Co. Floors—Seal-O-San and wax, Huntington Laboratories, Inc.

KITCHEN EQUIPMENT: Range and refrigerator—Westinghouse Electric & Mfg. Co. Sink—Crane Co.

BATHROOM EQUIPMENT: All fixtures by Crane Co. Cabinets—Miami Cabinet Div., Philip Carey Co.

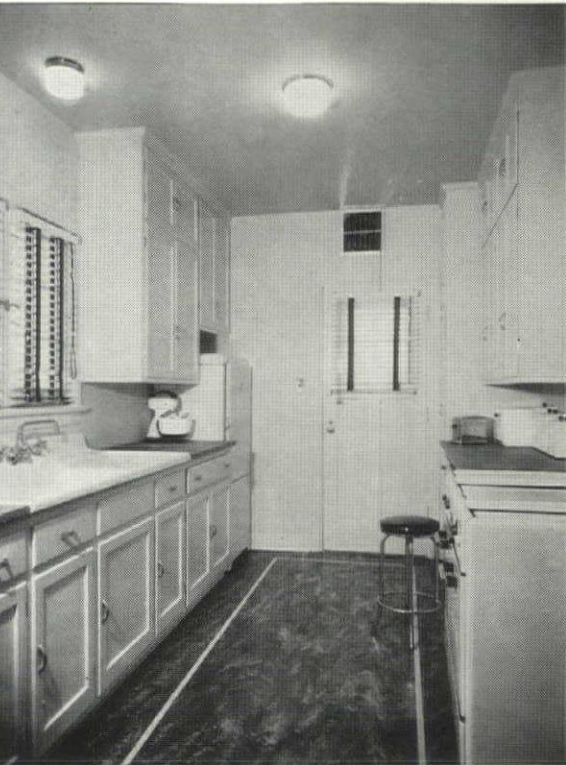
HEATING AND AIR CONDITIONING: Warm air generator with oil burner, Fitzgibbons Boiler Co., Inc. Grilles—Tuttle & Bailey Mfg. Co. Thermostats—Minneapolis-Honeywell Regulator Co. Water heater—Hot Point, Edison General Electric Appliance Co., Inc.

Severance

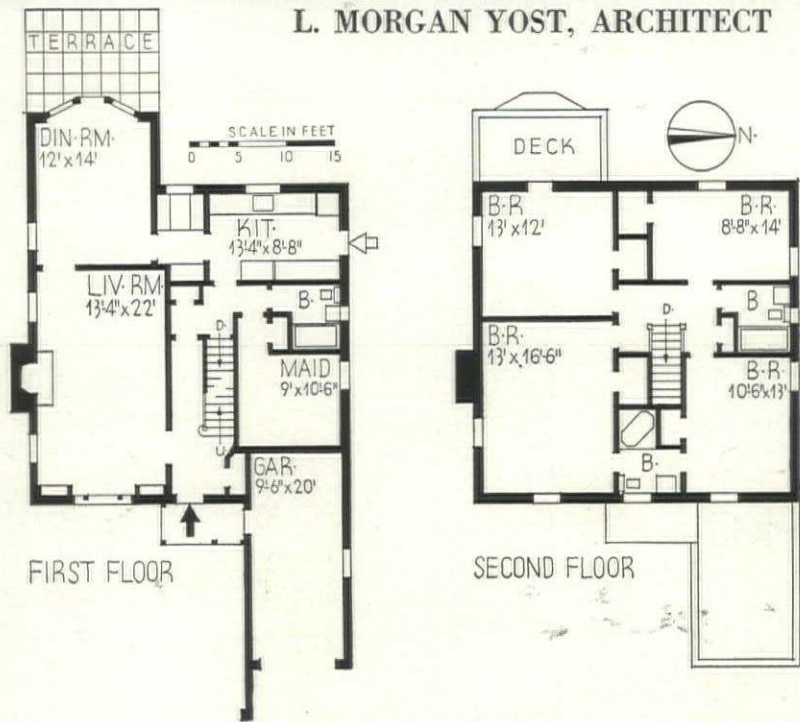
HOUSE FOR HENRY J. STENTIFORD, WILMETTE, ILL.



This modernized Georgian residence shows a number of features found in many successful competition designs, including a very compact second floor plan and an attached garage with sheltered access to the house. The service quarters have a privacy uncommon in small houses, the maid's room, bath and kitchen forming a completely separate unit. There is a breakfast room of minimum size which also serves to isolate kitchen noises. Cubage: 35,100. Cost: \$15,750.



L. MORGAN YOST, ARCHITECT



CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—brick, Biltrite sheathing, The Insulite Co., 2 x 4 in. studs, U. S. Gypsum Co. rock lath and plaster; Robinson Clay Products Co. lap-lock tile coping. All lumber by Weyerhaeuser Lumber Co.
FIREPLACE: Dampers—Colonial Fireplace Co.
INSULATION: Outside walls and attic floor—rock wool bats, Johns-Manville Corp.
WINDOWS: Sash—wood, double hung. Glass—single strength, quality A, Libbey-Owens-Ford Glass Co.
FLOORS: Living room and bedrooms

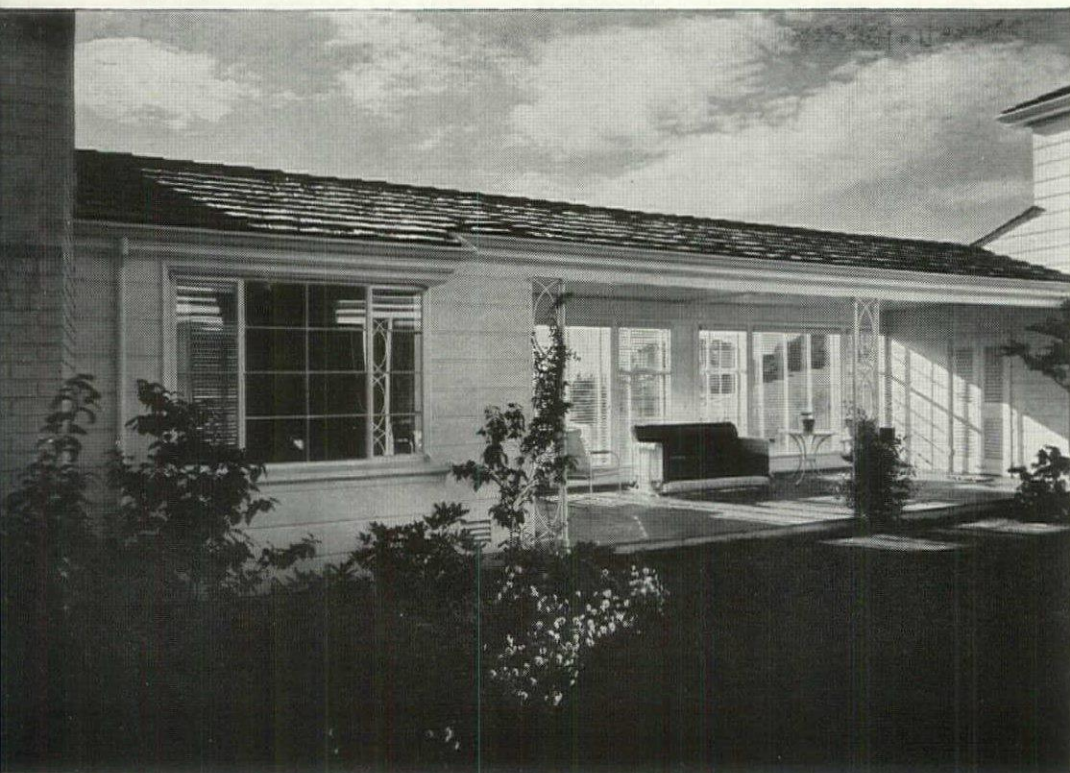
and halls—oak. Kitchen—linoleum, Armstrong Cork Co. Bathrooms—tile, Franklin Tile Co.
HARDWARE: By Sager Lock Co. Garage doors—Overhead Door Corp.
KITCHEN EQUIPMENT: Range—Magic Chef, American Stove Co. Sink—Crane Co.
BATHROOM EQUIPMENT: Tubs by Crane Co. and Standard Sanitary Mfg. Co.; remainder of fixtures by Crane Co.
HEATING AND AIR CONDITIONING: System includes filtering and humidifying, L. J. Mueller Furnace Co. Thermostats—Minneapolis-Honeywell Regulator Co.

HOUSE FOR R. A. SPROUSE, PIEDMONT, CALIF.



All photos, Esther Born

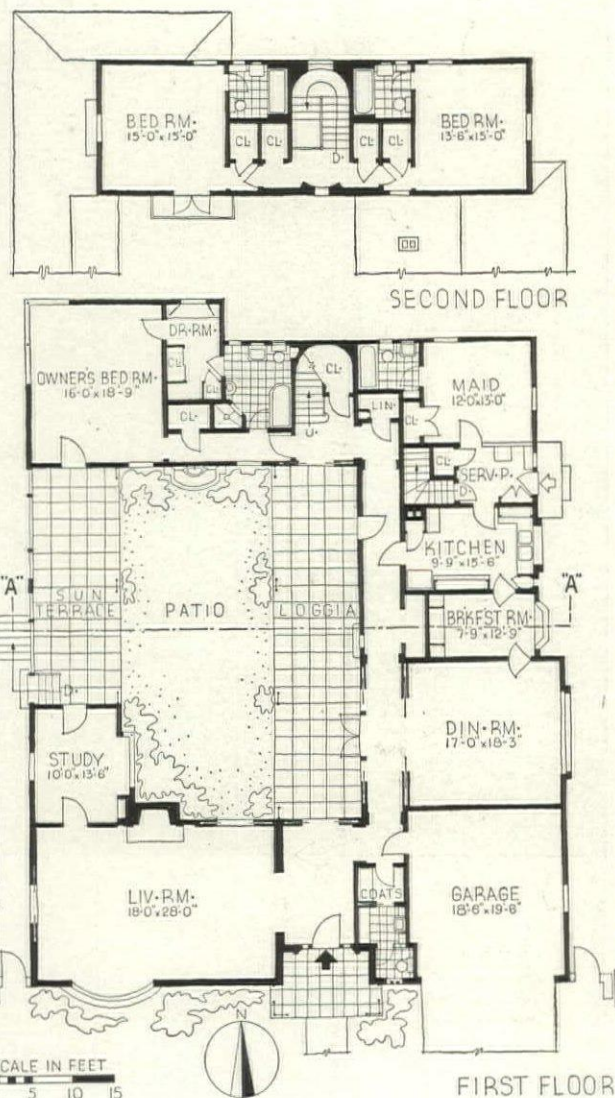
PATIO



The modest facade of this house conceals an establishment of rather impressive dimensions. Based on a patio scheme, the plan encloses a large part of the site, and is carried up only one story except for the bedrooms at the rear. This placing of the sleeping quarters has a distinct advantage in the elimination of street noises; the location of a one-story unit on the south has a further advantage in admitting a maximum of sunlight to the garden. As in any such scheme there is a large amount of corridor space and the rooms are widely separated; an excellent arrangement minimizes the inevitable inefficiency which, moreover, is easily compensated for by the livability of the house as a whole. Cost: about 39 cents per cubic foot.



ENTRANCE



CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—California Redwood Assn. A. grade wood frame construction, 1 x 12 in. channel rustic with combination brick veneer. Interior partitions—plaster on wood lath. Floor construction—T. & G. pine sub-floor, oak finish floor. Ceiling—plaster and canvas.

ROOF: Covered with split cedar shakes.

CHIMNEY: Common brick, terra cotta lin-

ing. Damper—Richardson Damper Co.

SHEET METAL WORK: Flashing and leaders—Armco galvanized iron, American Rolling Mill Co.

WINDOWS: Sash—steel casement, Michel & Pfeffer Iron Works, Inc. Glass—single strength, quality A, Libbey-Owens-Ford Glass Co. Screens—Rolscreen Co.

STAIR: Treads and risers—oak. Stringers—pine.

FLOOR COVERINGS: Main rooms—oak. Kitchen—linoleum. Bathrooms—tile.

WALL COVERINGS: Living room and halls—canvas. Bedrooms—wallpaper. Kitchen and bathrooms—Sanitas, Standard Coated Products Co.

WOODWORK: Pine used throughout. Lumber by E. K. Wood Co. Millwork by Pacific Mfg. Co.

HARDWARE: By Russell & Erwin Mfg. Co.

PAINTING: Material by National Lead Co.

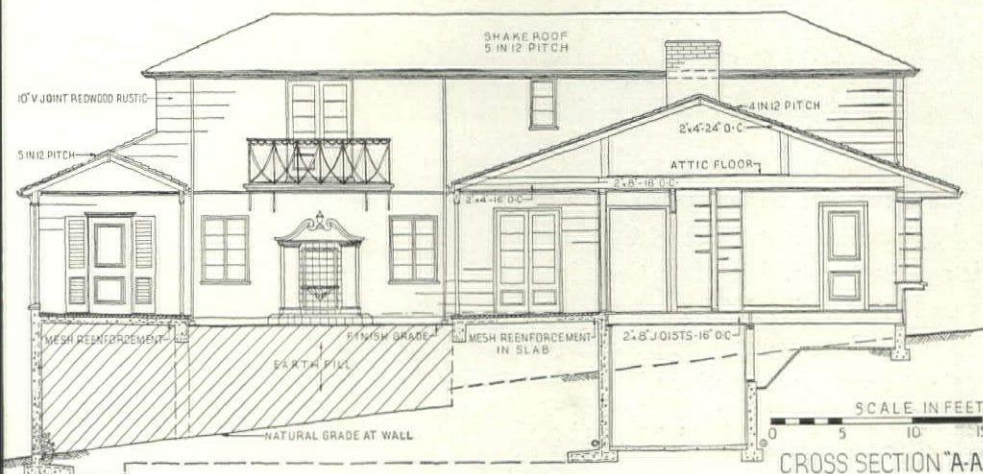
ELECTRICAL INSTALLATION: Wiring system—knob and tube. Switches—General Electric Co. Fixtures—Roberts Mfg. Co.

KITCHEN EQUIPMENT: Range and refrigerator—General Electric Co. Sink—American Radiator & Standard Sanitary Mfg. Co.

BATHROOM EQUIPMENT: All fixtures by American Radiator & Standard Sanitary Mfg. Co.

PLUMBING: Soil pipes—cast iron. Cold water pipes—galvanized steel, U. S. Steel Co. Hot water pipes—Chase Brass & Copper Co. tubing, Mueller Brass Co. Stream-line fittings.

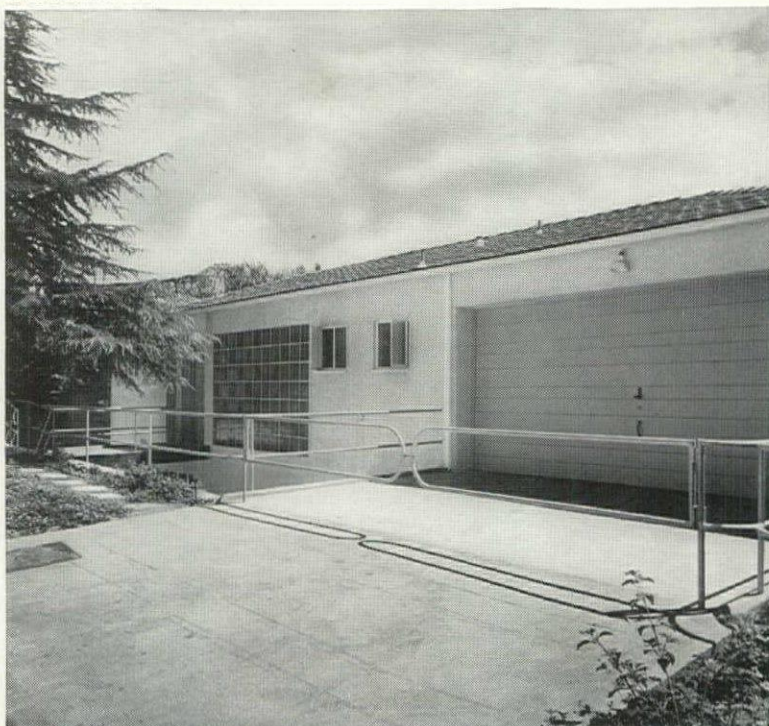
HEATING AND AIR CONDITIONING: Gas fired, hot air system, automatic forced air, filtered, Haren Furnace & Supply Co.



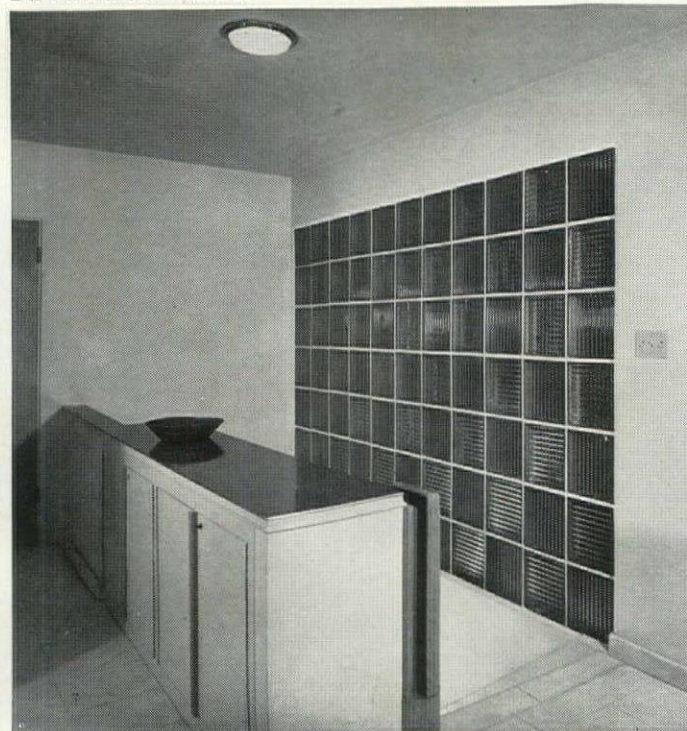


All photos, Julius Shulman

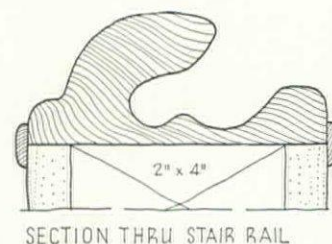
ENTRANCE



ENTRANCE HALL



A steep hillside has here been used in a manner common in California, with the garage and bedrooms at street level and living quarters below. Use of the retaining wall to create a light well, however, is a departure which offers the advantages of light and air to the service rooms on the lower level. The nature of the site and the plan made it simpler to omit any indoor connection between the garage and the rest of the house. All important rooms face south and the view; the first floor is of interest for its flexible relationship of indoor and outdoor spaces. House: 2,980 sq. ft., terraces: 588 sq. ft. Cost \$12,500.



HOUSE FOR DR. HANS SCHIFF, HOLLYWOOD, CALIF.

PAUL LASZLO, DESIGNER

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—stucco, 15 lb. asphalt saturated felt, 2 x 4 in. studs; inside-plaster.

ROOF: Covered with shingle tile, Gladding, McBean & Co. Deck—covered with canvas.

SHEET METAL WORK: Toncan galvanized iron throughout, Republic Steel Corp.

WEATHERSTRIPPING: Doors—interlocking bronze, Ideal Weatherstripping Co.

WINDOWS: Sash—steel casement, Fenetron Steel Co. and Lee Miller & Co. Glass—double strength, quality A, Libbey-Owens-Ford Glass Co. Glass blocks—Insulux, Owens-Illinois Glass Co.

FLOOR COVERING: Living room—oak. Bedrooms and kitchen—linoleum, Armstrong Cork Co. Halls—composition Travertine, E. B. Scott. Bathrooms—Wingfoot sheet rubber, Goodyear Tire & Rubber Co.

WOODWORK: Trim, cabinets and exterior doors—pine. Interior doors—"Sturdibilt", M. & M. Woodworking Co. Garage doors—Pacific Overhead Door Co.

HARDWARE: By Schlage Lock Co.

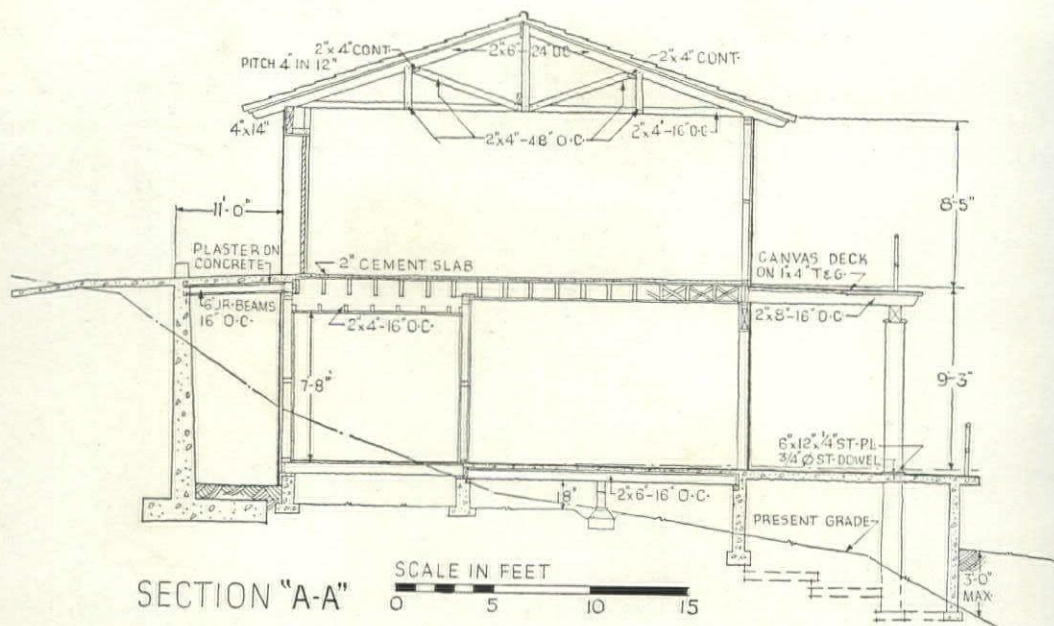
PAINTING: Material by W. P. Fuller & Co.

ELECTRICAL INSTALLATION: Switches—Hemco, Bryant Electric Co. Fixtures—Pryne Co. and Leo Dorner Co.

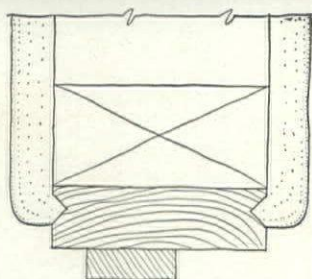
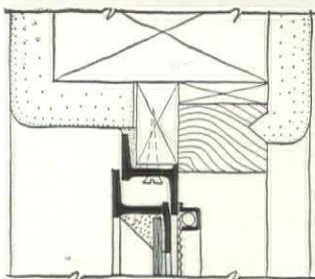
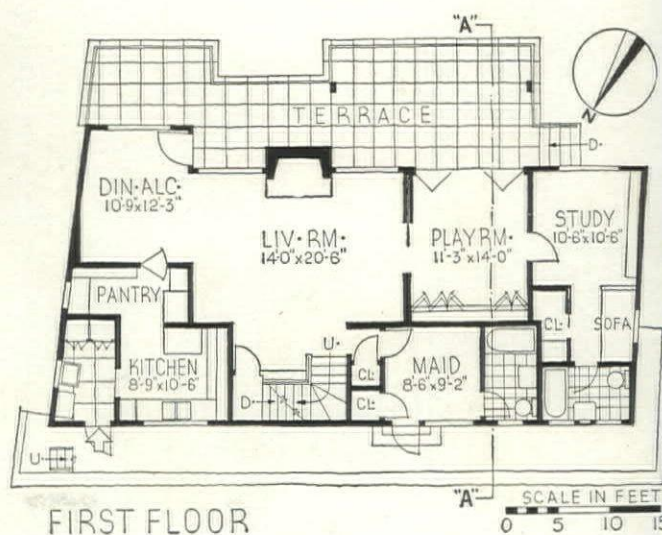
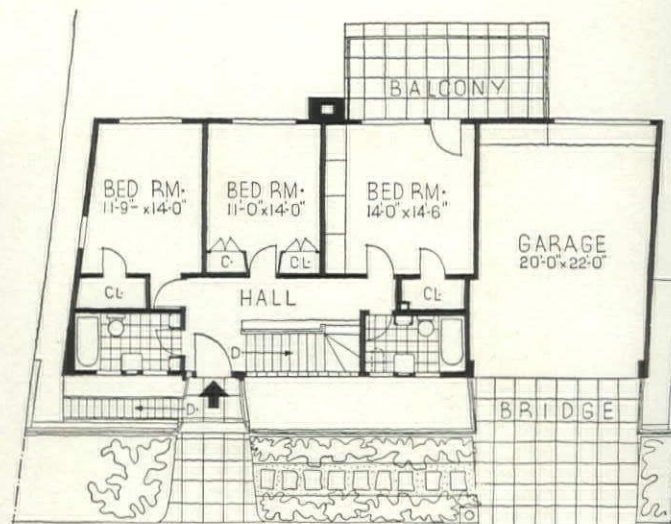
KITCHEN EQUIPMENT: Range—Gaffers & Sattler. Refrigerator—Kelvinator Co. Sink—Crane Co. Fan—Harmony Mfg. Co.

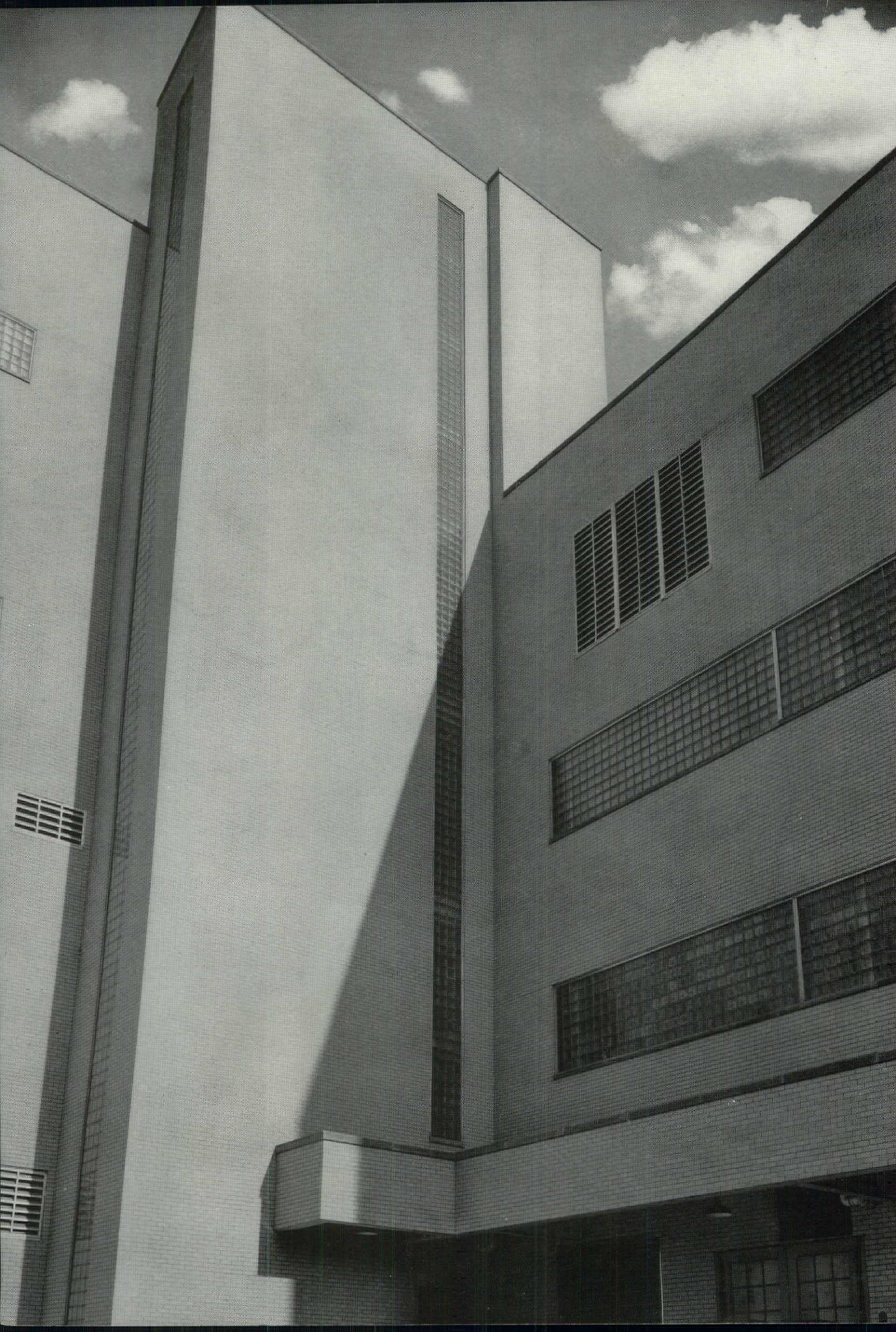
BATHROOM EQUIPMENT: All fixtures by Crane Co. Cabinets—Hallenscheid & McDonald Co.

HEATING: Forced air heating system, Crown Furnace & Supply Co. Bathroom heaters—Thermador Electric Co. Hot water heater—Hoyt Heater Co.



PLAY ROOM



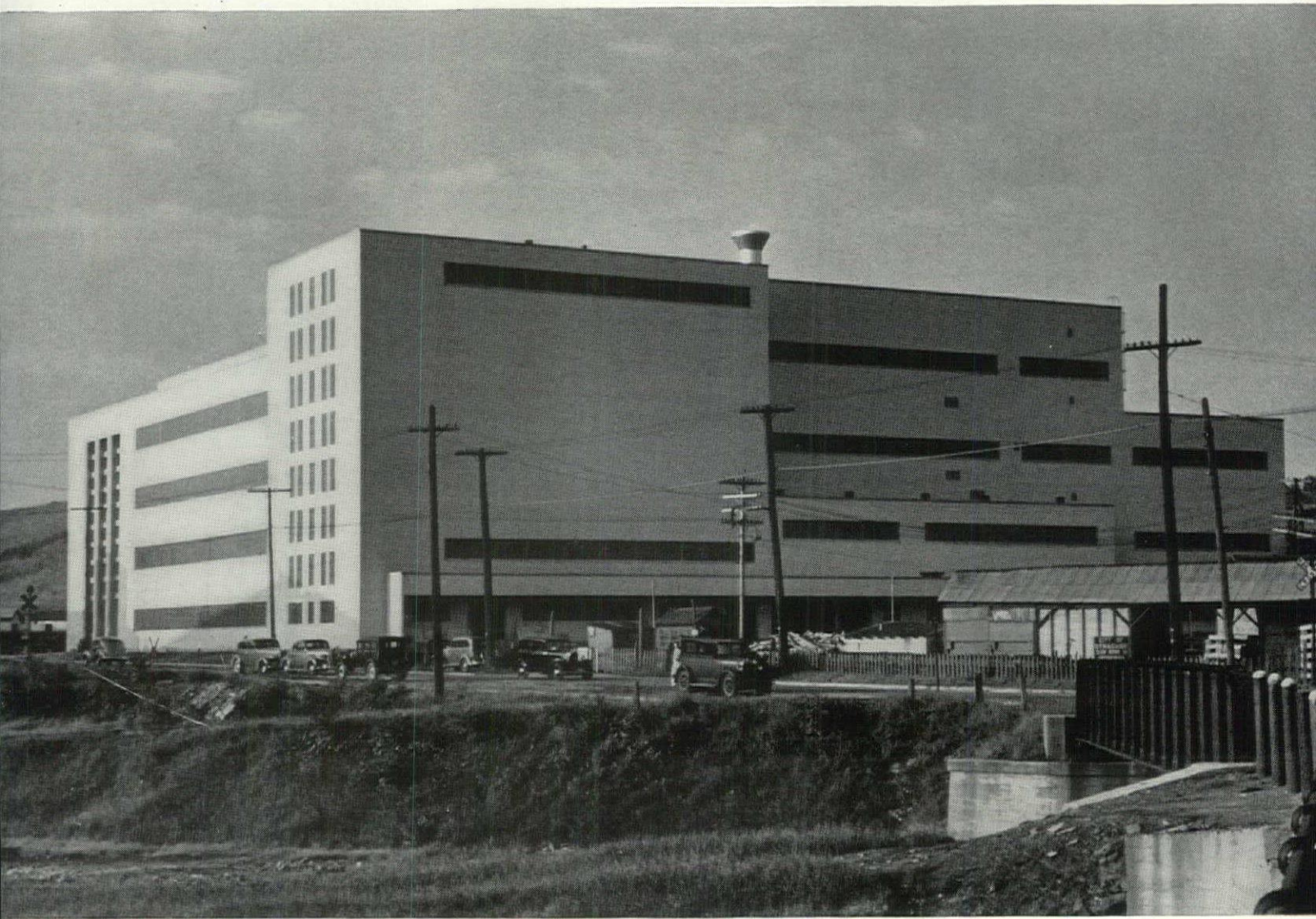




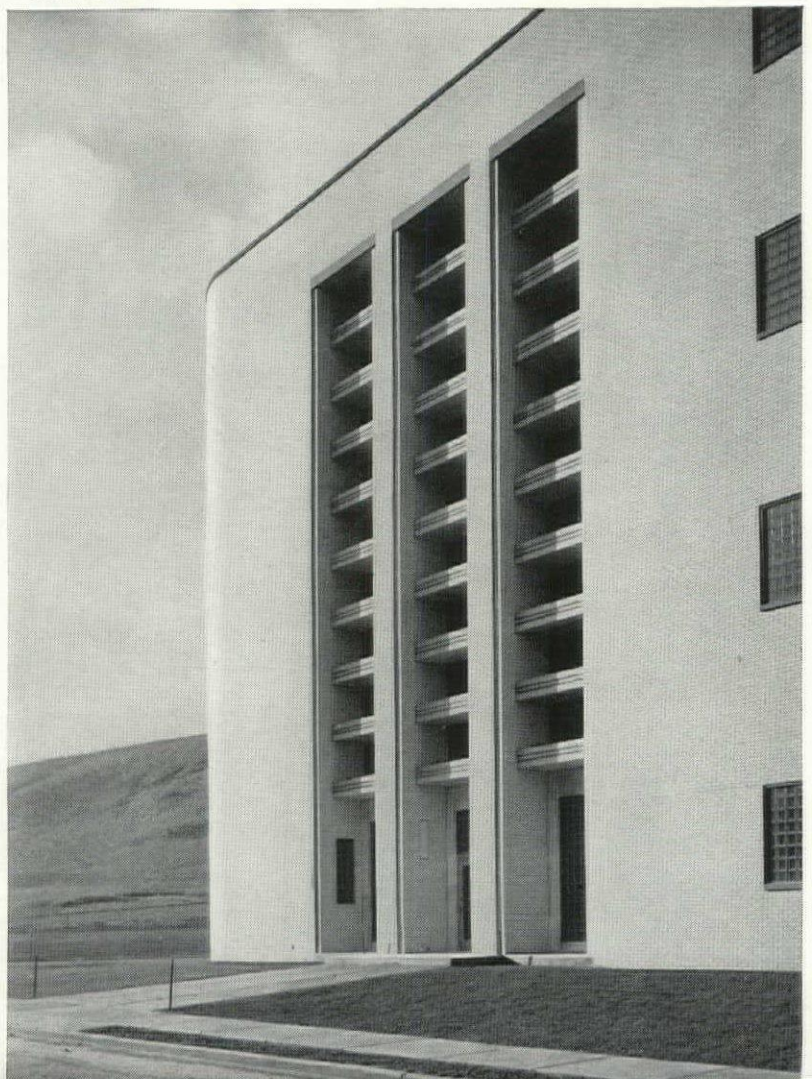
FACTORY FOR CHURCH & DWIGHT, SYRACUSE, N. Y.

THE AUSTIN CO., ENGINEERS AND BUILDERS

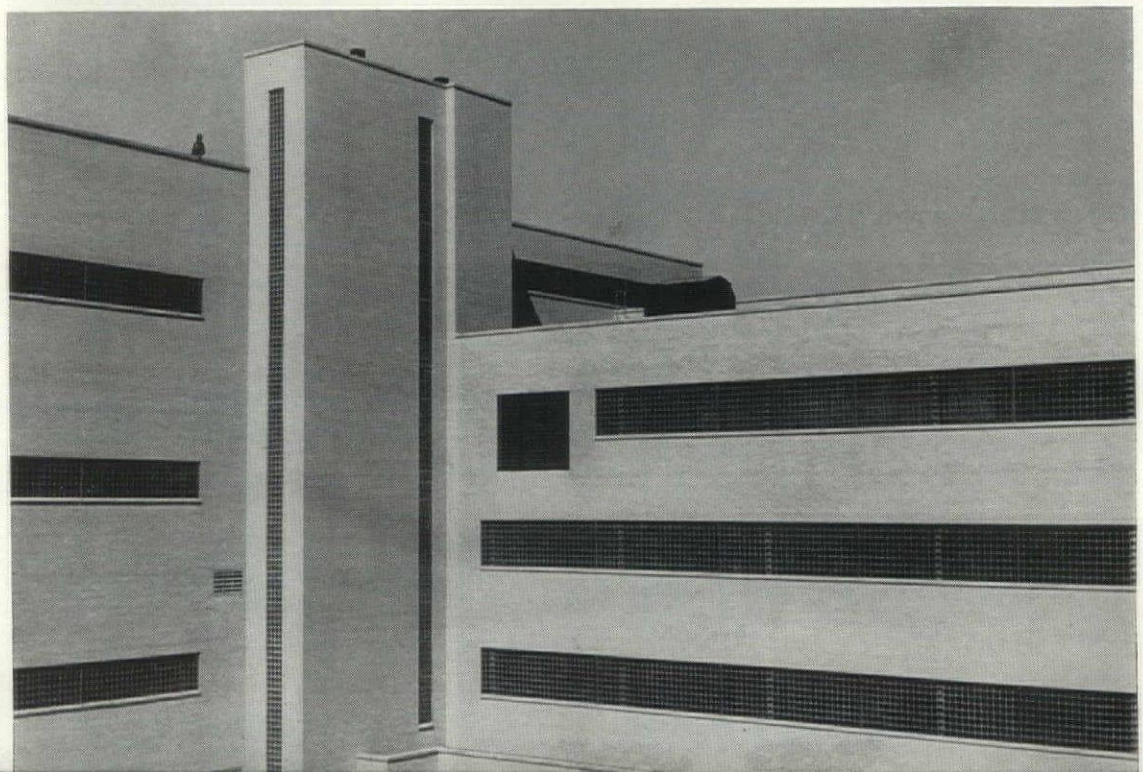
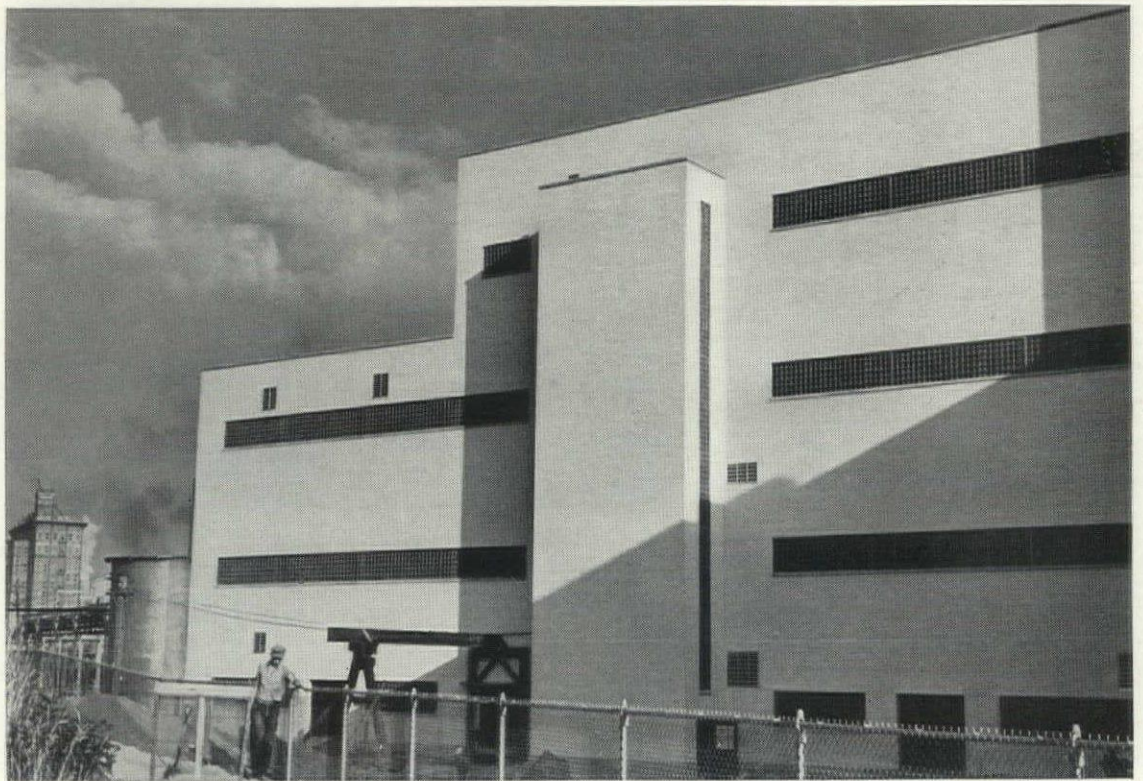
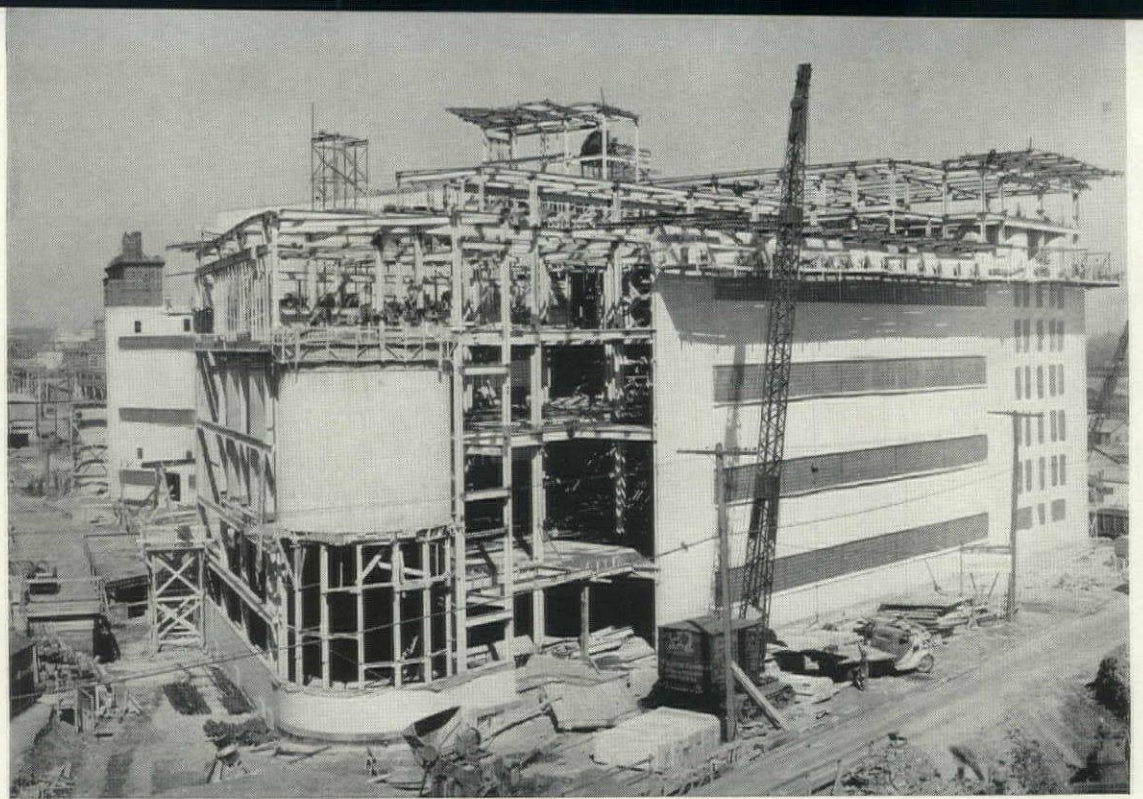
This recently completed factory building forms an intermediate unit in a plant manufacturing baking soda; the product enters from a nearby factory in the form of sludge, and is pumped out as a dry powder through an underground pipeline to the packaging plant across the street. A handsome example of industrial architecture, the building is interesting as a piece of functional design. Air conditioning is an important adjunct to the manufacturing process, and consequently windows have been replaced by glass block where daylight is required; elsewhere the walls are left appropriately blank. Although the plant has many elements which have tended to produce an irregular building, to a remarkable extent these have been made part of a coherent design; even the curved corner next to the main entrance derives its shape from that of a storage bin inside. Shown to the right in the above photograph is another unit of the plant. A much older structure, it was remodeled to conform with the design of the new building; the full extent of the transformation is illustrated on page 126, and suggests the great possibilities in a field hitherto untouched.

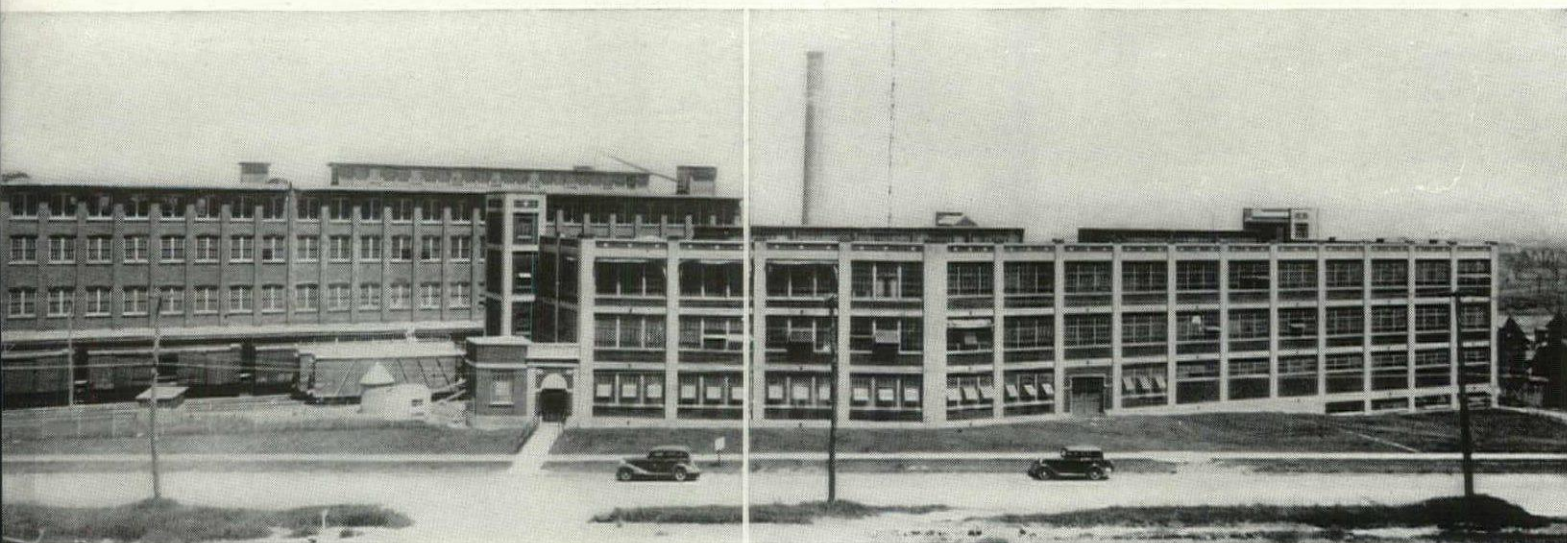


ENTRANCE



Due to the unusually heavy concentrated loads, the framing of the building presented a number of technical difficulties. Some of the concrete bins, for example, weigh 250 tons, and many connections had to be designed for loads of 250,000 pounds. A view of the partially enclosed frame, all of whose connections are welded, is shown on the opposite page. The only architectural feature of the building not directly conditioned by manufacturing requirements is the monumental entrance, a four-story unit with massive horizontal fins of limestone.





BEFORE



REMODELING AND ADDITION

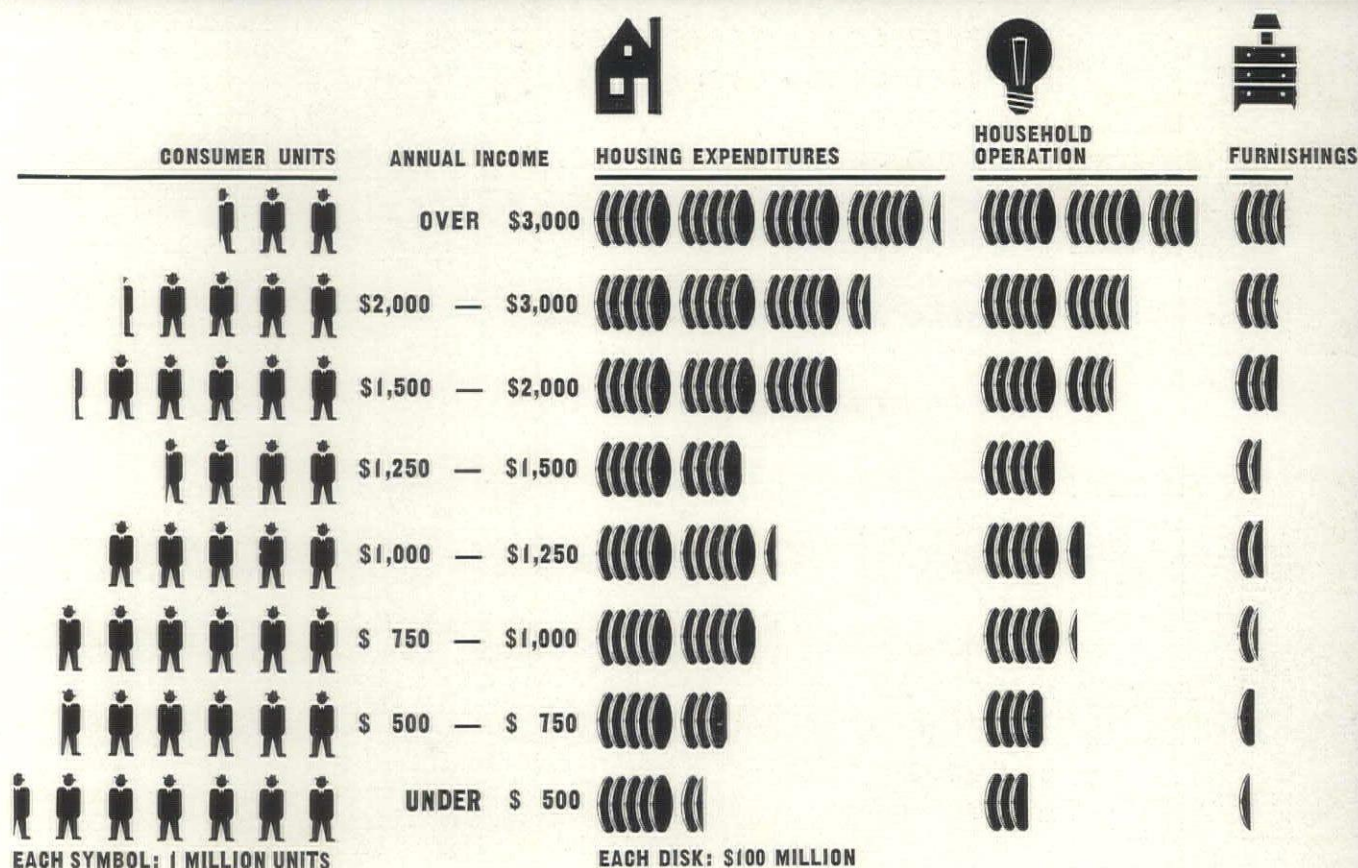
CONSTRUCTION OUTLINE

STRUCTURE: Structural steel—all welded, The Austin Co. Welding wire, Lincoln Electric Co. Face brick, Hanley Co. Sand lime brick—Paragon Plaster Co. Concrete stone and sand—Solvay Sales Corp. Cement—Medusa Portland Cement Co. Limestone for trim, sills and coping—Indiana Limestone Co. Wall tile, glazed inside—Mapleton Clay Products Co.
ROOF: Lightweight slabs of Haydite, Federal American Cement Tile Co. covered with 20-yr. bonded roofing, Barrett Co.
INSULATION: Cork board, Armstrong Cork Co.
GLASS BLOCKS: By Owens-Illinois Glass

Co. Calking and glazing compounds—Tremco Mfg. Co.
STAIRS AND ELEVATORS: Stairs—steel, Empire Structural Co. Safety treads—American Brake Shoe & Foundry Co. Elevators—Otis Elevator Co.
FLOOR COVERINGS: Asphalt tile—Johns-Manville Corp. Quarry tile—Paragon Plaster Co. Wood block—Jennison-Wright Co.
DOORS: Fire doors—Syracuse Fire Door Co. Steel overhead doors—J. G. Wilson Corp. Hollow metal doors—Richmond Fireproof Door Co. Stainless steel doors—Art Metal Construction Co.
HARDWARE: By Yale & Towne Mfg. Co.
PAINTS: Metal protective—Sherwin-Williams Co. Wall finishes—Socony-Vacuum Co.

ELECTRICAL INSTALLATION: Conduits—General Electric Co. Panels and controls—Trumbull Electric Co. Fittings—Crouse-Hinds Co. Fixtures—Holophane Co.
PLUMBING: All fixtures by American Radiator & Standard Sanitary Mfg. Co. Toilet partitions—Sanymetal Products Co. Sprinkler system—Grinnell Co.
HEATING AND AIR CONDITIONING: Complete system including unit heaters—Carrier Corp. Temperature control—Johnson Service Co. Heat valves—The Swartwout Co. Ventilating and exhaust fans—American Blower Corp. Roof ventilators and louvers—H. H. Robertson Co.
SPECIAL EQUIPMENT: Stainless steel bin lining—Graver Tank & Mfg. Co.

BUILDING MONEY



HOUSING—AN ITEM OF NATIONAL EXPENSE

comes second to Food, totals \$9.5 billion per year. A timely market analysis.

No one will deny that the building industry has known prosperity despite its meager market research and its inattention to whatever facts and figures were available. Up to 1930 specific knowledge of the market was apparently less important than the general knowledge that the market—whatever it was—was expanding. Population was still steadily on the upswing, and the development of natural resources in newly acquired territories was far from complete. Today the picture is different; population growth is comparatively static*, the U. S. has long since taken its eyes off territorial expansion, and natural resources are well developed.

But, prophecies of some fatalists notwithstanding, Building's market is and will continue as big as it ever was. Diminishing population growth does not necessarily mean a shrinking of the market. On the contrary, it may produce an increased demand for housing. If a lower rate of population growth means smaller families, it is also true that the moderate-to-low income families, with fewer dependents, can better afford to buy houses. Illustrative is the experience of England

and Wales where, during the past decade, population has been almost stationary, average family size has been decreasing, and the rate of residential building (new dwelling units per family) has almost equaled the U. S. rate of the booming Twenties.

But, if U. S. Building does not need to worry about the approach of stagnation in population, it is only because of its greater efficiency of production, the higher quality of its materials, the better balance between the price and value of its products and its increased attention to the wants of a greater part of the population. What Building needs now more than ever before is an accurate appraisal of its existing market and then a further self-adjustment of its operations to the market.

Being parts of a closely knit industry, automobile dealers need not worry about market trends; Detroit does much of their thinking for them, ships them products tailored to fit the local market. Marketers of housing, on the other hand, have no central agency within their industry for research and advice. To capitalize on their market, they must rely, in part, on such an analysis as is presented on these pages.

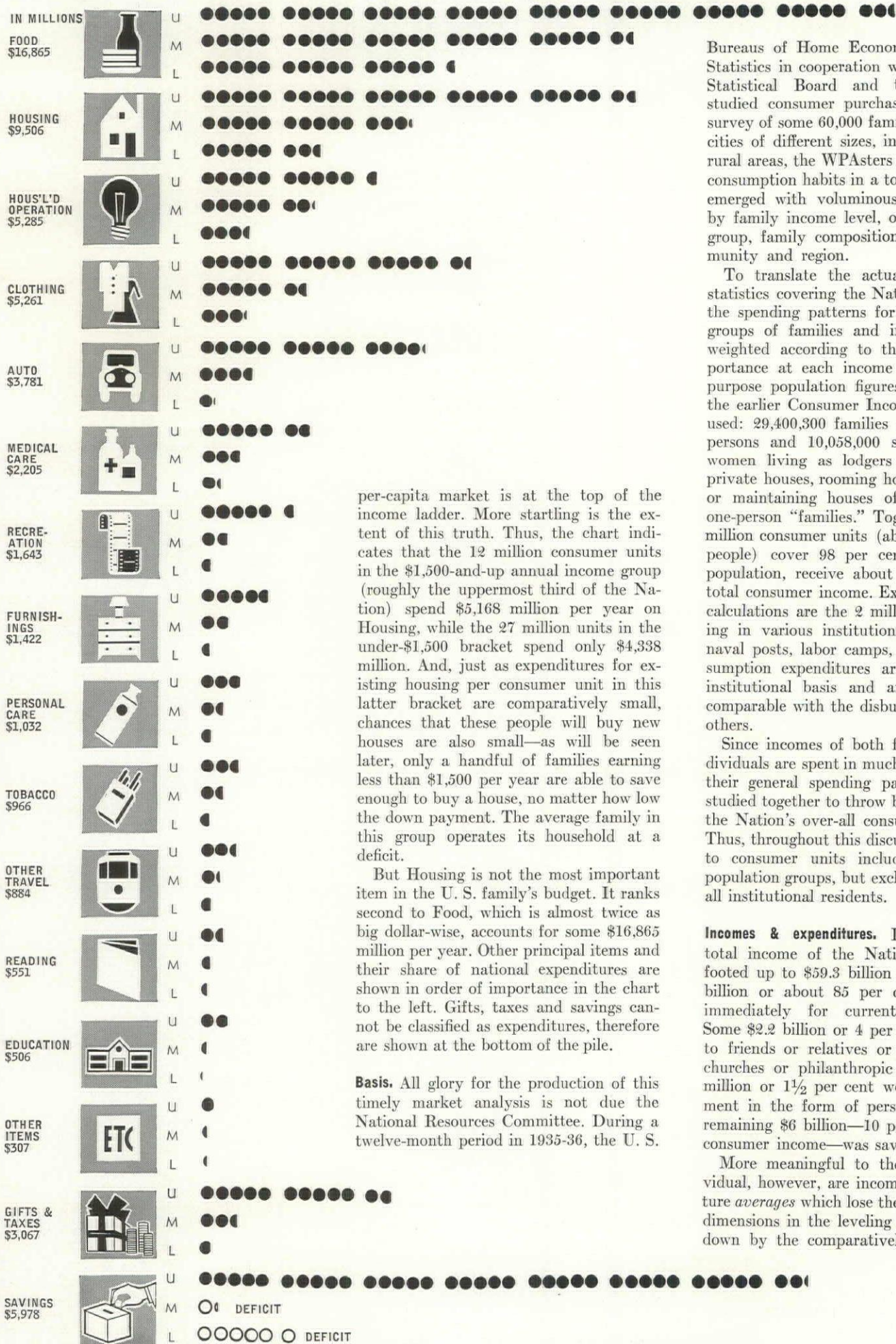
Timely, therefore, is the publication of *Consumer Expenditures in the U. S.*, the most detailed and comprehensive national market analysis yet produced. A 200-page text jam-packed with useful facts, figures and charts, it has been prepared by the industrial division of the prolific National Resources Committee as a companion volume to its study of *Consumer Incomes* (August, 1938). Its documented estimates of U. S. consumption in terms of average consumer spending at different income levels are as significant as any data yet corralled by Government.

For the several branches of the building industry the significance of this research is keynoted in the pictorial chart above. It shows that the Nation's 39 million consumer units (non-institutional families and single individuals) spend \$9,506 million per year for Housing, \$5,285 million for Household Operation, and \$1,422 million for Furnishings.* Quite logical is its graphic proof that the more people earn the more they spend, that Housing's best

* Actually all figures presented herein refer to 1935-36, but since conditions today are basically the same, use herein of the present tense seems justified.

* See page 132 for U. S. population trends.

AGGREGATE EXPENDITURES by three income groups*



Since incomes of both families and individuals are spent in much the same way, their general spending patterns may be studied together to throw brighter light on the Nation's over-all consumption habits. Thus, throughout this discussion, reference to consumer units includes both these population groups, but excludes, of course, all institutional residents.

More meaningful to the average individual, however, are income and expenditure *averages* which lose their astronomical dimensions in the leveling process. Pulled down by the comparatively low incomes

of single persons, the average consumer unit nets \$1,502 per year (family average: \$1,622). After gifts and personal taxes amounting to \$55 and \$23, respectively, and current living costs totaling \$1,273, the average consumer unit is able to save only \$151 per year. On a per-capita basis (3.2 persons per consumer unit), the 126,024,000 individual consumers, including children and other dependents, each earn an average of \$470 per year, spend \$399, give \$17, pay \$7 in taxes and save \$47.

In actuality, however, these average statistics hold good for only a very small part of the total U. S. population. As amply demonstrated by the chart on this page, the savings item, for instance, is held up by 110,135 units in the \$20,000-and-over income group who save more than half their income (a total of \$2,360 million per year) and is held down at the other end by the 23 million units who earn less than \$1,250 and save nothing, but operate instead at an aggregate annual deficit of \$1,533 million.

Such are the dollar dimensions of the national market basket—of interest to Industry in general. More significant to Building, of course, are the dimensions of its individual goods and services within the basket:

Housing, next to Food (see below), is the biggest egg in the basket—an egg valued at \$9.5 billion per year. And it would be still bigger if it included the value of new private residential construction which last year totaled some \$1.9 billion (ARCH. FORUM, Jan. 1940, p. 60). But, since the

term "Housing" as used herein covers only current consumption, the purchase of houses both new and old is not considered a Housing expense, but rather an investment from savings (see below). Included are all direct money expenses and the imputed value of owner-occupied houses and other housing not directly paid for. In other words, Housing is composed mainly of rents paid*, cash maintenance costs, mortgage interest, taxes, etc., plus the estimated rental value (minus the ownership expense) of owned houses. It also includes the rent or rental value of vacation houses and the cost of other lodging while the consumer is away from home.

It is for these items that the Nation spends \$9.5 billion per year—16 per cent of its total income. (About \$7.1 billion represents actual money transactions as opposed to imputed values.) As indicated by the chart on page 128, bulk of this Housing bill, some 56 per cent, is paid by the uppermost income third. The middle third pays 28 per cent; the famous "ill-housed" lowest third, only 16 per cent. This unequal distribution is readily explained by the wide variation in incomes and the standards of housing they are able to support.

When broken down into percentages, these Housing costs refute the long accepted rule-of-thumb that the average family spends about one-fifth of annual

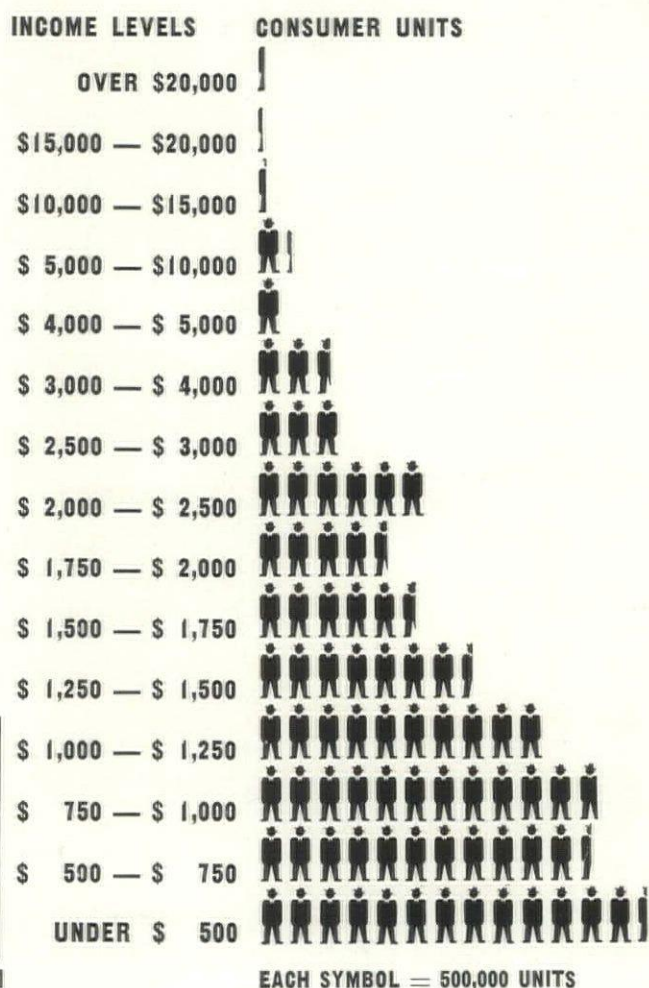
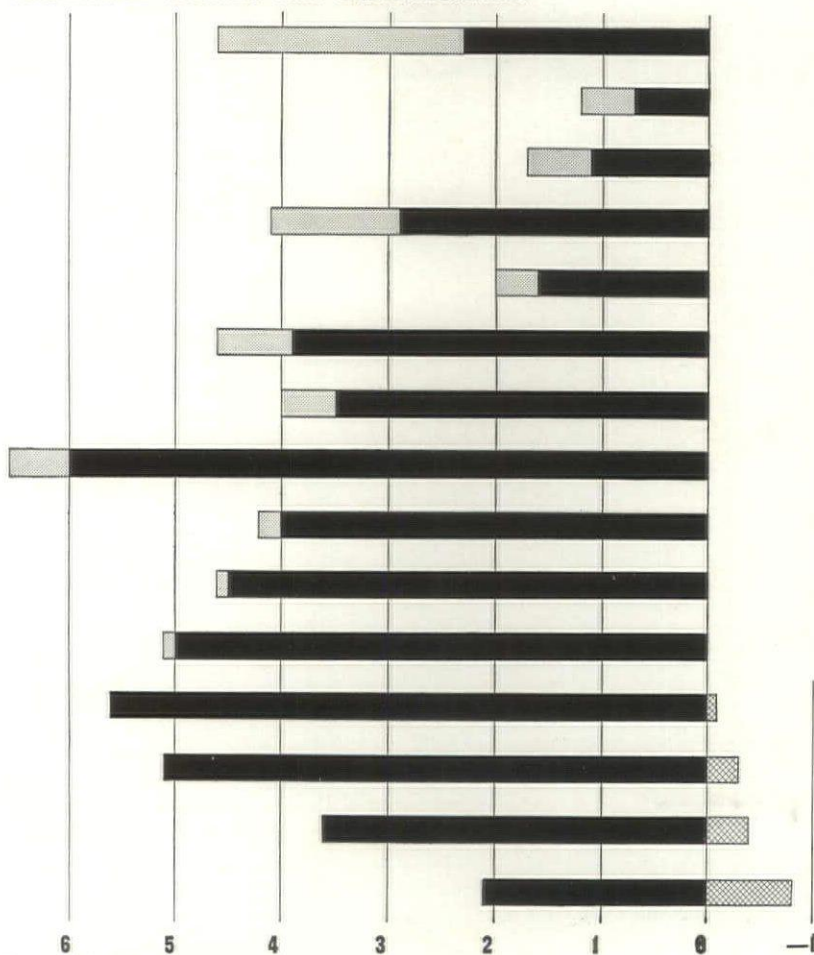
* If heat, light and refrigeration costs are billed to tenants separately from rent, they are included in Household Operation.

income on current housing expenses. Thus, while it is true that about 19 per cent of total *annual expenditures* are devoted to Housing by consumers in every income group, its percentage of total *annual income* runs from 31 per cent for the under-\$500 bracket to 19 per cent for the \$1,000-\$1,250 bracket, to 13 per cent for the \$4,000-\$5,000 bracket, down to only 7 per cent for the \$20,000-and-over incomers. The average is 16 per cent (see chart, page 130). Translated back into dollars and cents, these ratios mean that the income groups mentioned spend \$94, \$208, \$584 and \$2,964 per year on Housing, respectively, with the average at the surprisingly low level of \$241—\$20 per month.

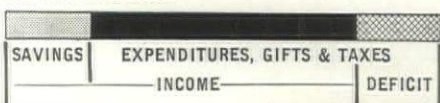
The vast extent of the low rent housing market is more heavily underlined by the fact that more than two thirds of the Nation's consumer units fall below the \$1,450 annual income level where Housing expenditures average only \$155 per year, or \$13 per month. This figure, which is comparable to monthly rent *per dwelling unit*, is well below the average monthly rent *per room* charged in all the housing now being built by private enterprise.

The lowest income third—earning less than \$780 per year and paying only about \$9.60 per month for Housing—is, at least for the present, the market for the U. S. Housing Authority program which is supplying new dwelling units at an average rental of \$10 in the South, \$15 in the North, excluding utilities (ARCH. FORUM, Jan. 1940, p. 1 et seq.) Since these rents—the lowest in history for new dwellings

AGGREGATE INCOMES AND DISBURSEMENTS

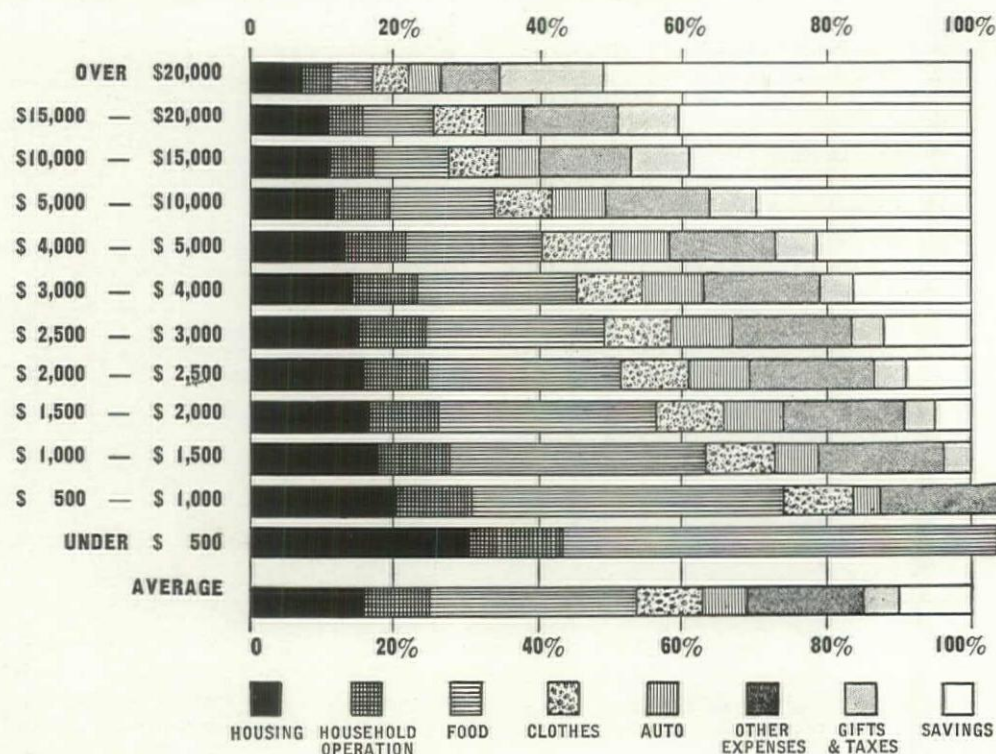


BILLION DOLLARS



EACH SYMBOL = 500,000 UNITS

PERCENTAGE USE OF INCOME at different income levels



—are achieved only with the aid of 50 per cent subsidies from the local and Federal Governments, it is readily apparent that unassisted private enterprise will have to sharpen its pencil considerably if it expects to build new rental housing for the 26 million consumer units in the lower two-thirds. Their \$13 average expenditure per month for Housing, indicates that most of them will continue to be customers for second-hand dwellings.

Savings, while not an expenditure, occupies as important a place in Building's market analysis as Housing. It is their \$6 billion of annual Savings (10 per cent of income) that the consumers tap to buy their houses. Furthermore, for the purpose of this discussion, it is essential to label as investments, or Savings, the cost of all the houses—new and old—purchased in any one year. Actually, a house is as necessary a commodity as a loaf of bread; but, unlike the cost of bread, the cost of a house is a non-recurring item in the family budget and must therefore be separated from the every-day items of current consumption. Only other alternative is to classify it as Savings.

Of course, the term "Savings" means much more than potential housing purchases and actual housing investments. For want of an accepted definition of Savings, the National Resources Committee cooked up its own: "The net change in assets and liabilities of a family (or single individual) during the year, exclusive of gains or losses from revaluation of assets. Appreciation or depreciation in the value of stocks or other holdings, whether realized or not, are not included in income, and accordingly are not considered in Savings." (In other words, Savings equals

income less expenditures for current consumption less all gifts and personal taxes.) Changes in assets cover all purchases and sales of capital assets and changes in the amounts of cash on hand and in banks. And, capital assets, in turn, include houses, their improvements and capital goods used for business purposes. Other assets: life insurance and similar policies (premiums for which are counted as savings), real estate and improvements, stocks, bonds and loans. Liabilities: amounts due on installments, mortgages, notes, back rents, charge accounts and gains or losses from revaluation of assets. An increase in assets accompanied by a decrease in liabilities produces positive Savings; the contrary, "negative Savings," or deficit.

While the \$6 billion total net annual savings of the Nation is in itself an astounding statistic, its use is considerably qualified by the fact that all of it is concentrated in the pockets of the 16 million consumer units (41 per cent of the 39 million total) whose annual income amounts to \$1,250 or more. (See chart, page 129). The net positive savings accumulated by this group amounts to \$7,511 million, is offset in part by the net "negative savings" of \$1,533 million suffered by the 23 million consumer units below this income level. Throwing further light on the distribution of savings is another breakdown of the population which shows that the 7 per cent of the consumer units earning more than \$3,000 per year save a total of \$5,900 million—almost as big as the national aggregate.

Of particular use to builders, these Savings statistics gauge the market for owner-occupied new housing at the various income levels. Thus, after all consumer

expenditures, the various income groups in the upper two-thirds have these annual savings with which to buy new houses or, of course, to make other investments.

Income Group	Consumer Units (000)	Savings per Unit
\$15,000 and over	178	\$15,911
\$5,000-\$15,000	749	2,535
\$3,000-\$5,000	1,818	647
\$2,000-\$3,000	4,434	241
\$1,450-\$2,000	5,974	77

While the 10,408,000 consumers in the two bottom brackets would not be able to make the minimum down payment (5 per cent on \$2,500 houses financed under the Federal Housing Administration's

mortgage insurance program) toward even the lowest priced new houses on the market today, accumulation of their small savings over a period of years would amply cover the initial costs of home ownership. It is to be emphasized, however, that to capitalize on this housing market Building must shift much of its production to really low cost houses—those selling for \$4,000 and less with lot. Otherwise, the bottom groups of these 13,153,000 consumer units cannot justifiably be included in Building's potential market for new owner-occupied homes. If really low cost houses are built, however, Building may in addition tap some of the consumers in still lower income groups who through frugality are able to go against the averages, save a little money each year.

Household Operation is the third biggest item in the family budget. Principal items included are electricity, gas, coal and other fuels for heating and lighting purposes and for motor power. (When cost of these utilities are billed with the rent, it is included in Housing; see above.) Also included are expenditures for household help and such operating expenses as ice, telephone, laundry service, miscellaneous household supplies and, to a minor extent, the imputed value of home-produced ice and fuel by rural families. Excluded from the entire discussion is the value of the services of the housewife and the productive activities of other members of the family.

Total national expenditure for Household Operation is \$5.3 billion per year—9 per cent of total income. While it accounts for about 12 per cent of total expenditures at every income level, its ratio to total income, like that of Housing, fluctuates widely up and down the income scale. Thus, the chart above shows that the lowest income bracket spends 13 per cent of its annual income for Household Operation, that the highest incomers spend only 5 per cent, that the average consumer unit spends about 9 per cent (Continued on page 42)

A LOW COST HOUSE IS PLUGGED

by a progressive newspaper in Bridgeport, Conn. Architect Graham cuts cost corners, makes a \$2,300 boast; Builder Henry justifies it.

Many a newspaper has passed editorial judgment on Building's apparent refusal to produce sufficient low cost houses, but few have gone beyond this verbal prodding. A notable exception is the Sunday *Herald* of Bridgeport, Conn., which, not content with decrying the local lack of new low cost homes, set out to prove that Building could produce them if it tried. Via its real estate section, the *Herald* sponsored the design of a minimum house for Connecticut by local Architect Philip Sands Graham, and boldly claimed that the house could be built for \$2,300. To prove this claim, Mason-contractor Kenneth Henry built the house in nearby Fairfield. Results: 1) a construction cost, excluding extras, within \$27 of the original estimate, 2) a sale before completion, 3) an education in low cost housing for the 5,000 people who trooped through the open house, 4) a measurable boost for the sponsoring newspaper and architect.

Inspiration for the *Herald's* attempt to bring low cost housing to Bridgeport was

a Federal Housing Administration pamphlet entitled "Principles of Planning Small Houses." A plan therein for a house purported to cost from \$1,650 to \$2,000 set Architect Graham and *Herald* real estate editor Maus Darling to scheming how it could best be adapted to Connecticut customs and climate and how it could be sold to Yankee cynics.

With this plan as a springboard, Architect Graham dove into the special problems of minimum design. He found what many another architect has discovered before him: that the necessary limitations of the low cost field leave little room for architectural half-gainers. Nonetheless, his final solution is both sensible in plan and attractive in appearance, amply proves that the low cost house need be neither boxy nor ugly.

Since an FHA design was the house's basis, it was logical to expect that the planning would meet the Government's minimum structural requirements. Such was the original intention of the sponsors,

but an out-moded copy of FHA requirements misled Architect Graham into designing the master bedroom a few square feet too small. Had he followed customary practice and submitted his design for FHA approval prior to construction, this mistake could have been caught and corrected, but Henry's house was well under way before the local FHA office was given a peek. Fortunately, this proved no handicap to the sale of the house. A local Bridgeport bank, which had been following the campaign with interest, financed it. For all future builders, however, Graham revised the plans, made them toe the FHA mark.

Costs. In building the *Herald*-Graham house, Contractor Henry not only justified the boast of a \$2,300 cost, but also unwittingly underlined the biggest obstacle in the production of houses priced at the very bottom of the cost scale: the desire for "extras." To meet his mark, Architect Graham cut every justifiable cost corner he could think of. But, when Henry built the house he made some additions here and there on his own account and upped the construction cost by \$310.* Elimination of Henry's "extras" from the cost breakdown shows how closely Architect Graham figured his dollars:

Building permit	\$ 3.00
Excavation	25.00
Masonry (contract)	575.00
Carpentry (contract)	585.00
Flashing	15.00
Hardware	25.00
Hardwood floors	100.00
Linoleum	24.00
Painting (interior and exterior)....	125.00
Electric wiring	75.00
Plumbing	360.00
Heating	150.00
Plastering	125.00
Insurance (fire, compensation, etc.)	25.00
Steel sash and glazing	115.00
TOTAL	\$2,327.00

In addition to these expenditures for construction, Henry charged \$500 as the price of the 50 x 125 ft. lot, \$60 for a septic tank and \$120 for grading and landscaping. Thus, the total cost, including the \$310 of "extras," came to \$3,317. Henry's profit is hidden in the masonry contract, which he himself handled, and in the price of land, which he owned.

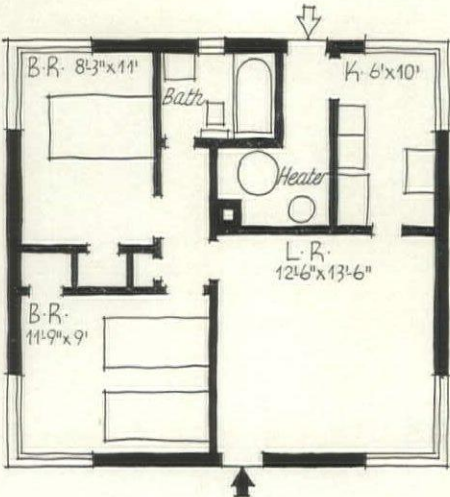
Paper Profits. The Sunday *Herald's* experience would indicate that trail-blazing on the real estate page pays dividends. Advertising space in the newspaper's one-page building section usually averages some 70 column-inches as contrasted with 80 column-inches of editorial matter. During the main part of the *Herald*-Graham three-months campaign, this average was little affected. But with the denouement—the completion of the house and its ex-

(Continued on page 40)

* Principal "extras": oil instead of coal burner; stucco instead of cement paint.



An economical square, Architect Graham's floor plan sprang from an FHA pamphlet, but its 11 $\frac{3}{4}$ x 9 ft. master bedroom was a few square feet too small to meet FHA's minimum requirements for mortgage insurance. Today, if Connecticut's new FHA standards for all one-story, one-family, detached houses are in line with those already released by other States, this small master bedroom would pass the 100 sq. ft. minimum with 5 $\frac{3}{4}$ ft. to spare. While the house in general is admirably planned, relation of the kitchen to the heater room might have been restudied to obtain increased usable space. Exterior design is a frank expression of the plan and is commendably simple. Result: a low cost house with a better-than-average appearance.



NOSES, HOUSES AND CONTRACTORS to be measured in 1940 census

Month ago the Federal Government launched the biggest probe in U. S. history. But, this time no public enemies, petty crooks nor trusts-in-restraint-of-trade went on the mat. Instead, Government has scheduled for thorough questioning every one of the Nation's residents, and some of them will be questioned over and over again. Government probers expect to ask some 7 billion questions before they are through, and, with threats of fines or imprisonment, they are sure of getting the correct answers to all of them. These probers are taking the Sixteenth Decennial Census.

More comprehensive than any predecessor survey, the 1940 Census will not only count the Nation's 132 million noses but will snoop among the vital statistics of the country's 33 million dwelling units, its 7 million farms, its 3 million business concerns and its 12,000 mines and quarries. Coverage of the last three groups began on January 2, will be completed by early summer. Population, houses and farms will be counted during April.

Being big, the 1940 census will cost big money, require a big personnel, be a big headache for 69-year-old William Lane Austin, for 40 years a member of the Commerce Department's Census Bureau, for seven years its director. To accomplish this task he has the able assistance of Dr. Vergil Reed, a \$53 million Congressional appropriation, some 150,000 employes, the largest battery of owned tabulating machines in the world, and a three-year period within which to grind out the last statistic. Much of the corralled information, however, will be released long before this final deadline. Expectation is that preliminary findings will begin to trickle out during the latter part of the year.

While the Census results are eagerly awaited by every statistically minded body in the country and especially by the Government itself, they will be of greater interest to Building than to any other industry. Principal reason: The far-flung branches of Building comprise the biggest part of the survey's subject matter. Thus, the census of quarries and mines and of manufacturers will give Building an X-ray view of the production of its materials and equipment as well as an inventory of stocks on hand. The farm census will gauge, among other things, the condition of non-residential agricultural structures, will measure the demand for this type of Building's product. Still more significant for Building will be the census of population (Building's consumers), the census of housing (Building's market) and the census of contractors (Building's business).

Noses. Since territorial expansion of the U. S. has stopped and since the population growth has slowed tremendously*, the 1940 population census will concern itself more with social and economical values than with the physical characteristics of the Nation. Noses will be counted as a check upon the numerical representation of the States in the House of Representatives—the original purpose of the Census as required by the Constitution. But, with Government and Business increasingly interested in such social activities as farm assistance, unemployment relief, health, child welfare, housing, social security, etc., the nose-count will be only incidental.

By determining where each person lived five years ago, Government will point out current trends of population movements between urban and rural areas and between geographical areas. (In 1900 the population was only 40 per cent urban; today it is nearly 60 per cent.)

A whole series of new questions included in the 1940 population schedule will show how many people are employed and where and how. They will also accurately indicate the extent and types of unemployment. Along with this information the Census Bureau will collect exact data on individual incomes.

Other new questions will determine the national birth rate, the birthplaces of the foreign born and the extent of U. S. education.

Houses. In 1930, census takers asked only four questions concerning the houses in which the U. S. lived, and their meager findings were limited to only a few salient facts: 1) that there were 25,204,976 dwelling units housing some 30 million families, 2) that 90.6 per cent of these units

were in one-family houses, 3) that 46.8 per cent of them were owned, the balance rented, 4) that \$4,778 was the median value of all owned non-farm houses and 5) that \$27.15 was the median monthly rental of their rented sisters.

This year, these four housing questions have been expanded to 33, have been tabulated on a separate "Housing Schedule" (see reproduction, opposite page) which will be used by the census takers in conjunction with the population count. Too numerous and important to summarize briefly, these questions have been prepared with the assistance of private housing experts and cover every major aspect of the subject. Suffice it to say that when the returns are tabulated and digested, Building at last will have its vital statistics.

Since the answer to question No. 1 on this Housing Schedule ties the subsequent housing questions to the income and employment questions on the population schedule, housing data will be easily related and compared to family income, employment status, etc.

Contractors. As a part of the business census, Government is now surveying the work of the Nation's 200,000 construction contractors. As reported in detail earlier (ARCH. FORUM, Dec. 1939, p. 2), this probing will record the 1939 activities of all general contractors and of more than 25 different kinds of special trades contractors—those engaged in everything from demolition to air conditioning. Every individual and firm that is in the construction industry for profit will be covered—whether he builds Boulder Dams or bungalows. And since this part of the Census is already under way, it is anticipated that at least the basic information it produces will be released by summer or early fall.

Building's financiers, material dealers and other constituents will be probed simultaneously in other branches of the business census.

Not since 1935 has Business, including Building, taken the witness chair for questioning, and then its answers were not very significant. Reason: Business men were requested to talk but were not compelled. In every phase of the 1940 Census, however, all questions must be answered, and all must be answered correctly. The penalty: fat fines, even imprisonment. As shown in small type at the top of the Housing Schedule (opposite), everyone is required by an act of Congress to participate in the census. The same act specifies that information obtained by the Census Bureau be kept confidential; hence there is no chance of it being used for purposes of taxation, regulation or investigation.

By promptly cooperating with the census takers, Building will hasten the production of the most valuable statistics ever made available to any industry.



Census Director Austin appraises one of the unit tabulator machines developed by his Bureau. Operator: Catherine Mahon.

*Rate of U. S. population increase between 1850 and 1860 was more than 30 per cent; between 1920 and 1930, 16 per cent. During 1930-38 emigration exceeded immigration.

Government's biggest break for Building

Your report is required by Act of Congress. This Act also makes it unlawful for the Bureau to disclose any facts, including names or identity from your census reports. Only sworn census employees will see your statements. Data collected will be used solely for preparing statistical information concerning the Nation's population, resources, and business activities. Your Census Reports Cannot Be Used for Purposes of Taxation, Regulation, or Investigation.

HOUSING SCHEDULE

DEPARTMENT OF COMMERCE—BUREAU OF THE CENSUS
Sixteenth Census of the United States : 1940

When an item contains a series of check blocks enter an "X" in one block only

I. FOR EACH HOUSEHOLD ENUMERATED ON THE POPULATION SCHEDULE
Items 1 to 6 are copied from the population schedule

1. Population schedule:
Sheet No. _____ Line No. _____

2. Color or race of head
White ☐1; Negro ☐2; All other ☐3.

3. Number of persons in this household _____

4. Live on a farm? Yes ☐1; No ☐0

5. Home tenure _____ Owned ☐0; Rented ☐1

6. Value of home or monthly rental \$ _____

7. Estimated monthly rental value of owner-occupied nonfarm dwelling unit \$ _____

II. FOR EACH DWELLING UNIT NOT ENUMERATED ON THE POPULATION SCHEDULE

8. Is this dwelling unit located on a farm? Yes ☐1; No ☐0

9. Occupancy status of this dwelling unit:

	Ordinary dwelling	Seasonal dwelling
a. Occupied by nonresident household _____	<input type="checkbox"/> 3	<input type="checkbox"/> 6
Vacant at time of enumeration:		
b. For sale or for rent _____	<input type="checkbox"/> 4	<input type="checkbox"/> 7
c. Held for occupancy of an absent household _____	<input type="checkbox"/> 5	<input type="checkbox"/> 8

10. Monthly rental or estimated monthly rental value of nonfarm dwelling unit \$ _____

III. FOR EACH DWELLING UNIT—CHARACTERISTICS OF STRUCTURE

11. Type of structure in which this dwelling unit is located: (Enter "X" or number of dwelling units in one)

a. Residential structure without business:

(1) 1-family detached structure _____	<input type="checkbox"/> 1
(2) 1-family attached structure _____	<input type="checkbox"/> 0
(3) 2-family side-by-side structure _____	<input type="checkbox"/> 1
(4) Other 2-family structure _____	<input type="checkbox"/> 2
(5) 3 or more family structure _____	<input type="checkbox"/> 3

b. Structure with business _____ (Number of dwelling units) ☐4

c. Other dwelling place _____ (Number of dwelling units) ☐5

12. This structure was originally built as:

a. A residential structure with the same number of dwelling units _____ ☐1

b. A residential structure with a different number of dwelling units _____ ☐2

c. A nonresidential structure _____ ☐3

13. Principal exterior material of this structure:

a. Wood _____ ☐1 c. Stucco _____ ☐3

b. Brick _____ ☐2 d. Other _____ ☐4

14. Is this structure in need of major repairs? Yes ☐1; No ☐0

15. Year this structure was originally built _____

IV. FOR EACH DWELLING UNIT—CHARACTERISTICS OF DWELLING UNIT

16. Number of rooms in this dwelling unit _____
(Exclusive of bathrooms, halls, and pantries)

17. Water supply:

a. Running water within dwelling unit _____ ☐1

b. Hand pump within dwelling unit _____ ☐2

c. Running water piped to within 50 feet of dwelling unit _____ ☐3

d. Other outside water supply within 50 feet of dwelling unit _____ ☐4

e. No water supply within 50 feet of dwelling unit _____ ☐5

18. Toilet facilities:

a. Flush toilet within structure for exclusive use of the household _____ ☐1

b. Flush toilet within structure shared with other households _____ ☐2

c. Chemical or other nonflush toilet within structure _____ ☐3

d. Outside toilet or privy _____ ☐4

e. No toilet or privy _____ ☐5

19. Bathtub or shower with running water:

a. Bathtub or shower within structure for exclusive use of the household _____ ☐1

b. Bathtub or shower within structure shared with other households _____ ☐2

c. No bathtub or shower within structure for use of the household _____ ☐3

20. Principal lighting equipment:

a. Electric _____ ☐1 c. Kerosene or gasoline _____ ☐3

b. Gas _____ ☐2 d. Other _____ ☐4

V. FOR EACH OCCUPIED DWELLING UNIT

21. Principal refrigeration equipment:

a. Mechanical refrigerator _____ ☐1 c. Other _____ ☐3

b. Ice refrigerator _____ ☐2 d. None _____ ☐4

22. Is there a radio in this dwelling unit? Yes ☐1; No ☐0

23. Principal heating equipment:

a. Steam or hot water system _____ ☐1 d. Heating stove _____ ☐4

b. Piped warm air system _____ ☐2 e. Other or none _____ ☐5

c. Pipeless warm air furnace _____ ☐3

24. Principal fuel used for heating:

a. Electricity _____ ☐1 e. Fuel oil _____ ☐5

b. Gas _____ ☐2 f. Kerosene or gasoline _____ ☐6

c. Coal or coke _____ ☐3 g. Other _____ ☐7

d. Wood _____ ☐4 h. None _____ ☐8

25. Principal fuel used for cooking:

a. Electricity _____ ☐1 e. Fuel oil _____ ☐5

b. Gas _____ ☐2 f. Kerosene or gasoline _____ ☐6

c. Coal or coke _____ ☐3 g. Other _____ ☐7

d. Wood _____ ☐4 h. None _____ ☐8

Items 26 to 33 are not applicable to farm dwellings or to vacant dwellings

VI. FOR EACH RENTER-OCCUPIED NONFARM DWELLING UNIT Code B

26. Rental value without furniture:

a. Is use of furniture included in the monthly rental entered for Item 6? Yes ☐1; No ☐0

b. If answer is "Yes," what is monthly rental value of this unit without furniture? \$ _____

27. Average monthly cost of utilities and fuel paid for by the renter in addition to the monthly rental entered in Item 6:

Utility or fuel	Average monthly cost
a. Electricity _____	\$ _____
b. Gas _____	\$ _____
c. Coal, wood, fuel oil, kerosene, gasoline, and other fuel _____	\$ _____

VII. FOR EACH OWNER-OCCUPIED NONFARM DWELLING UNIT

In structures without business containing not more than four dwelling units

28. Market value of this property:

a. Owner-occupant's estimate of the market value of this property \$ _____

b. Number of dwelling units included in this value _____

29. Is there a mortgage (or land contract) on this property? Yes ☐1; No ☐0

Items 30 to 33 need be enumerated only when "Yes" is entered in Item 29

30. Present amount of outstanding indebtedness:

a. On first mortgage or land contract _____ ☐1 Code C

b. On second mortgage and other junior liens _____ ☐2

31. Regular payments required on this first mortgage or land contract: Code D

a. Frequency and amount of regular payments including interest
(Enter amount in 1, 2, 3, or 4; or "X" in 5 or 6)

(1) Monthly payments of \$ _____	1
(2) Quarterly payments of \$ _____	2
(3) Semiannual payments of \$ _____	3
(4) Annual payments of \$ _____	4
(5) Other regular payment plan _____	5
(6) No regular payments required _____	6

b. Do these payments include an amount for reduction of principal? Yes ☐1; No ☐0

c. Do these payments include real estate taxes? Yes ☐1; No ☐0

32. What interest rate is now charged on this first mortgage or land contract _____ %

33. Who holds this first mortgage or land contract?

a. Building and loan association _____ <input type="checkbox"/> 1	d. Home Owners' Loan Corp. _____ <input type="checkbox"/> 4
b. Commercial bank or trust company _____ <input type="checkbox"/> 2	e. Life insurance Co. _____ <input type="checkbox"/> 5
c. Savings bank (mutual or stock) _____ <input type="checkbox"/> 3	f. Mortgage Company _____ <input type="checkbox"/> 6
	g. Individual _____ <input type="checkbox"/> 7
	h. Other _____ <input type="checkbox"/> 8

Name of head of this household _____
(Last name, first name, initial)

Block No. _____ Structure No. _____ Dwelling Unit No. _____
(In order of visitation) (Within structure)

Street address _____
(House number) (Street, avenue, road, etc.)

Apartment number or location _____ Date of enumeration _____, 1940

U. S. GOVERNMENT PRINTING OFFICE 186108 Code E Code F

FEBRUARY 1940

BUILDING MONEY

133

FORUM BUILDING COST INDEX

Local home building costs in 81 cities—expressed as per cents of the 1936 national average

STATE	CITY	LATEST MONTH	PRECEDING MONTH	SAME MONTH 1938	STATE	CITY	LATEST MONTH	PRECEDING MONTH	SAME MONTH 1938
ALA. ¹	Birmingham	93.8	93.1	102.5	NEV. ²	Reno	121.1	118.8	118.7
ARIZ. ²	Phoenix	112.5	110.8	116.9	N. H. ¹	Manchester	97.3	96.4	100.4
ARK. ²	Little Rock	93.7	94.4	94.0	N. J. ³	Atlantic City	113.4	104.1	106.7
CALIF. ²	Los Angeles	95.9	94.6	98.9		Camden	105.4	100.8	100.5
	San Diego	98.9	101.3	105.2		Newark	102.2	99.3	100.1
	San Francisco	113.9	114.1	115.1	N. M. ²	Albuquerque	114.2	115.7	118.2
COLO. ¹	Denver	112.5	113.4	116.2	N. Y. ³	Albany	....	105.6	105.7
CONN. ¹	Hartford	106.7	105.5	106.2		Buffalo	113.1	107.6	113.9
	New Haven	104.7	102.5	101.5		Utica	104.6	103.1	102.3
DEL. ²	Wilmington	97.4	97.9	106.6		White Plains	112.0	110.2	112.7
D. C. ¹	Washington	103.7	103.7	105.8	N. C. ¹	Asheville	92.5	87.8	91.7
FLA. ¹	Tampa	103.2	100.8	99.7		Raleigh	93.6	87.7	95.3
	West Palm Beach	103.8	103.1	105.5		Salisbury	88.2	84.0	85.7
GA. ¹	Atlanta	89.0	86.6	90.5	N. D. ³	Fargo	105.8	101.3	105.4
IDAHO ³	Boise	110.5	111.4	108.5	OHIO ²	Cincinnati	105.0	103.8	105.5
ILL. ¹	Chicago	122.7	122.3	123.6		Cleveland	123.5	117.3	116.0
	Peoria	124.9	120.0	116.4		Columbus	104.4	101.6	103.5
	Springfield	127.9	122.5	123.1	OKLA. ¹	Oklahoma City	100.5	106.5	106.2
IND. ³	Evansville	110.2	103.8	103.8	ORE. ³	Portland	99.9	97.6	98.6
	Indianapolis	103.5	107.7	104.2	PENNA. ²	Harrisburg	110.4	103.5	102.7
	South Bend	105.7	100.4	96.8		Philadelphia	100.9	99.1	97.2
IOWA ³	Des Moines	113.9	113.6	111.4		Pittsburgh	115.7	116.4	115.8
					R. I. ¹	Providence	108.6	107.5	106.5
KAN. ¹	Wichita	106.8	109.6	107.8	S. C. ¹	Columbia	84.5	85.3	88.4
KY. ²	Lexington	106.9	100.4	98.9	S. D. ³	Sioux Falls	109.4	108.7	116.5
	Louisville	97.6	94.5	94.7	TENN. ²	Memphis	97.9	95.2	97.0
LA. ²	New Orleans	105.9	102.0	104.9		Nashville	90.8	89.6	92.5
					TEXAS ²	Dallas	96.4	98.2	103.9
ME. ¹	Portland	94.8	94.9	95.1		Houston	106.0	106.3	106.9
MD. ¹	Baltimore	91.7	89.8	89.0		San Antonio	102.8	106.1	107.2
	Cumberland	99.0	99.0	98.4	UTAH ³	Salt Lake City	108.4	108.7	106.3
MASS. ¹	Boston	116.2	114.5	115.4	VT. ¹	Rutland	95.3	96.8	98.9
	Worcester	....	102.6	....	VA. ¹	Richmond	89.5	90.1	91.8
MICH. ³	Detroit	107.3	110.6	111.5		Roanoke	97.7	97.0	95.9
	Grand Rapids	102.5	105.3	106.1	WASH. ³	Seattle	114.1	113.1	113.1
MINN. ³	Duluth	109.2	108.5	111.8		Spokane	113.6	110.5	113.6
	St. Paul	118.4	118.4	118.1	W. VA. ²	Charleston	105.6	105.1	106.4
MISS. ²	Jackson	108.7	106.5	109.6		Wheeling	114.7	114.1	108.5
					WIS. ¹	Milwaukee	109.2	107.4	104.0
MO. ³	Kansas City	107.7	110.5	....		Oshkosh	104.3	106.7	106.6
	St. Louis	109.4	107.7	108.3	WYO. ³	Casper	119.2	117.9	116.2
MONT. ³	Great Falls	124.5	125.3	....				
NEB. ¹	Omaha	109.9	107.4	103.3					

1 Latest report—December; preceding report—September; 1938 report—December.

2 Latest report—November; preceding report—August; 1938 report—November.

3 Latest report—October; preceding report—July; 1938 report—October.

Based on Federal Home Loan Bank Board statistics covering the cost of building the same typical house in each city. This typical or standard house has six rooms, a total volume of 24,000 cu. ft. On the first floor are living and dining rooms, kitchen and lavatory; on the second floor, three bedrooms and bath. Exterior finish is wide-board siding with brick and stucco as features of design. Included in the cost of the standard house are all fundamental structural elements, an attached one-car garage, unfinished cellar and attic, fireplace, insulation, and all essential plumbing, heating and wiring. Only cost variables are materials and labor; compensation insurance, overhead and profit are included as constants. Excluded from the cost of the standard house are all items of finish and equipment such as wallpaper, lighting fixtures, refrigerator, window shades, etc. Costs do not include land, landscaping, walks and driveways, architect's fee, building permit, financing charges, etc. For a more detailed explanation, See ARCH. FORUM, Dec. 1939, Page 474.

USE OF INDEX.

1. To show current local trends of building costs by means of three reports for each city, covering the most recent month, as well as three months and a year

previous. In addition, the index of each city provides a direct comparison with the 1936 national average, as it is given as a percentage of that average.

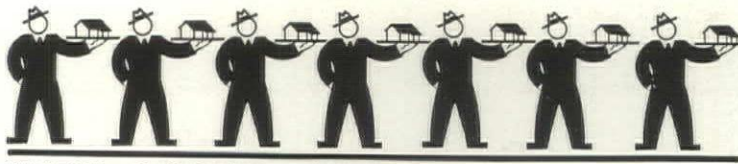
2. To report the wide variation in local cost levels, shown by the relative size of the index figures. As all local indexes are based on the 1936 national average, they are directly comparable.

3. To provide a ready means of adjusting house costs between cities.

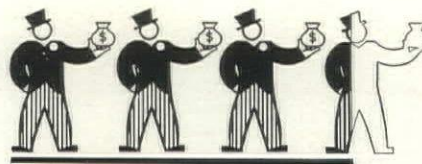
Thus, to find the cost in City B of a house built in City A for \$5,000, first multiply the most recent City B index (90) by the cost of the house in City A (\$5,000). The result is 450,000. Second, divide that 450,000 by the latest City A index (110). Result: \$4,090—the approximate cost of the house in City B.

In using THE FORUM Building Cost Index to make such an adjustment of costs between cities, the basis of the index—the standard house, defined in the first column—should be kept in mind. The index applies to medium-to-small houses, not to large houses and those replete with gadgets. Neither does it apply to costs which include land. If land is included in the total cost, 20 per cent may be deducted to obtain a rough approximation of construction costs. For application in the South, the cost of cellar and heating plant may be eliminated from a Northern house by deducting 10 per cent.

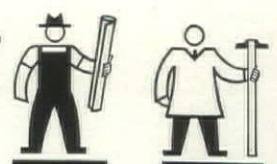
A SURVEY MEASURES REMODELING for the property owner and material dealer. 1,362 realtors, financiers, contractors and architects answer for the owner:



REALTORS Each Symbol = 100 Respondents



FINANCIERS



BUILDERS ARCHITECTS

The Little Three of the building industry—additions, alterations and repairs—assume big league proportions when lumped together. Last year they amounted to \$340 million in some 2,100 leading U. S. cities, accounted for about 17 cents of every building permit dollar.* But, aside from their over-all dollar dimensions, the significance of the Little Three has continually gone unmeasured—and to their own detriment.

To show residential property owners the dollar and cents improvements that go with remodeling and to gauge in more specific terms the many facets of the remodeling business the United States Gypsum Company last year surveyed 10,000 building professionals.

Of the total number questioned, 1,362 or 13.6 per cent returned usable replies, representing all 48 States, the District of Columbia and the Territory of Hawaii. Participating in the first part of the survey (summarized to the right) were 693 realtors, 333 financiers, 107 contractors and 103 architects. The second part (summarized below) was limited to building material dealers who numbered 126. All returns were opened and tabulated by a disinterested agency. All statistics pertain solely to detached residential units.

*Preliminary estimates. See page 139 for actual 1939 statistics.



126 building material dealers speak for themselves:

1. Do you consider the sale of materials for remodeling and repair jobs an important part of your business?

YES—92.74% NO—7.26%

2. Approximately what percentage of your total volume did the repair, modernization and alteration market represent during 1938?

39.81%

3. Approximately what percentage of the repair and remodeling jobs in which you are interested are sold under a time payment plan?

41.28%

4. How does the profit margin on materials sold for the average remodeling job compare with the profit on materials sold for new construction?

GREATER—91.18% LESS—8.82%

5. Which of the following sources do you depend on for money to finance repair and remodeling jobs?

THE FIRST EIGHT ACCORDING TO RANK:

- | | |
|------------------------|-------------------------------|
| 1. Local Banks | 5. Outside banks |
| 2. Self | 6. U. S. Gypsum plan |
| 3. Weyerhaeuser plan | 7. Bldg. and loan association |
| 4. Johns-Manville plan | 8. First Bond Credit Co. |

1. What is the rental value of the average older five- or six-room house typical of some one locality in which you operate?

FIVE-ROOM HOUSE—\$31.89

SIX-ROOM HOUSE—\$40.03

2. How much should any one of the following improvements increase the rent for the average house noted above?

RENT INCREASE		RENT INCREASE	
Adding extra bathroom..	13.78%	Resurfacing or painting exterior	10.87%
Modernizing present bathroom	8.88	Insulating the house....	9.80
Modernizing kitchen	10.66	Finishing basement (playroom, etc.)	9.91
Installing automatic heat	13.40	Finishing attic (extra room)	11.40
Enlarging or building new garage	8.98	Adding third bedroom...	15.35
Adding sleeping or sun porch	11.07	Rearranging interior floor plan	17.38
Redecorating interior ...	13.22		

6. Which of the following promotional activities do you use to sell materials for repair and remodeling?

THE FIRST EIGHT ACCORDING TO RANK:

- | | |
|--------------------------|---------------------|
| 1. Newspaper advertising | 5. Radio |
| 2. Direct mail | 6. Billboards |
| 3. Contractor meetings | 7. Personal contact |
| 4. Window displays | 8. Salesman contact |

7. Do you think a marked increase in new construction would tend to lessen your efforts to get repair and remodeling business?

NO—70.34% YES—29.66%

8. Which do you depend on to sell remodeling and repair jobs, your salesmen or carpenter-contractors?

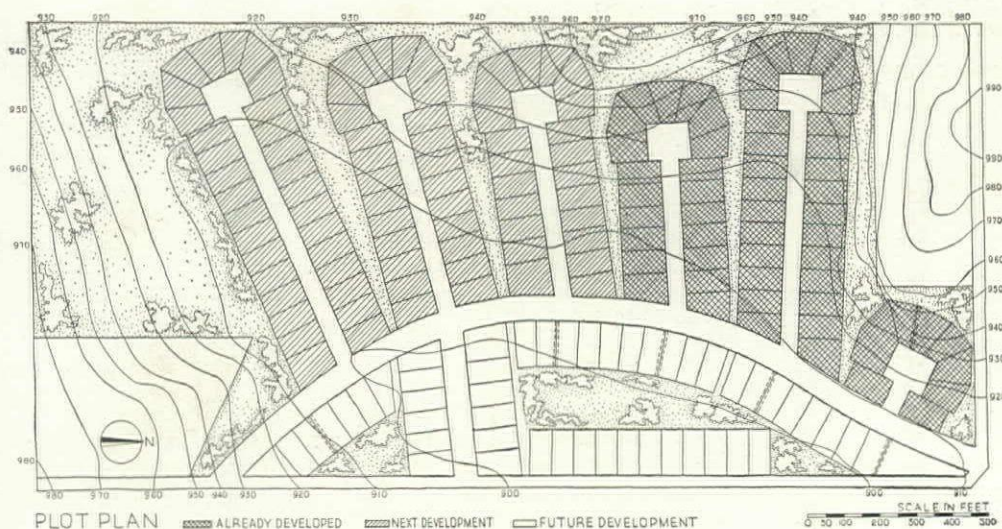
SALESMEN—50% CARPENTER-CONTRACTORS—50%

9. What is the dollar value of the material you sell on the average remodeling job?

\$268.83

10. What percentage of your remodeling business comes from each of the following classifications?

URBAN RESIDENTIAL	62.80%
FARM HOUSES & BUILDINGS.....	25.59%
COMMERCIAL, INDUSTRIAL & INSTITUTIONAL.....	22.00%



COOPERATIVE SUBDIVIDING

teaches Wisconsin traditionalists a lesson. Low land costs and wooded cul-de-sacs attract 89 members, 20 attractive houses.

Cooperatives in the U. S. are a growing form of community enterprise. They produce everything from bread to automobile tires, and they participate in many forms of economic activity from lending money to selling milk. High on this roster of activities is Housing. Cooperative enterprise has been responsible for such large apartment projects as the 700-family United Workers Cooperative in New York City; it has motivated the construction of Park Avenue apartments in Manhattan, as well as Finnish boarding houses in Minnesota.

Newsworthy variation of the cooperative housing theme is a 200-lot subdivision on the outskirts of Madison, Wis. Dubbed Crestwood, it was developed by the Wisconsin Cooperative Housing Association and, as yet, shows none of the symptoms of financial headache which have cropped

up in some other cooperative undertakings. It has limited its activities to subdividing, has built no houses. But its members have: Crestwood now boasts 20 houses (all built within the past year), plans twenty more for 1940.

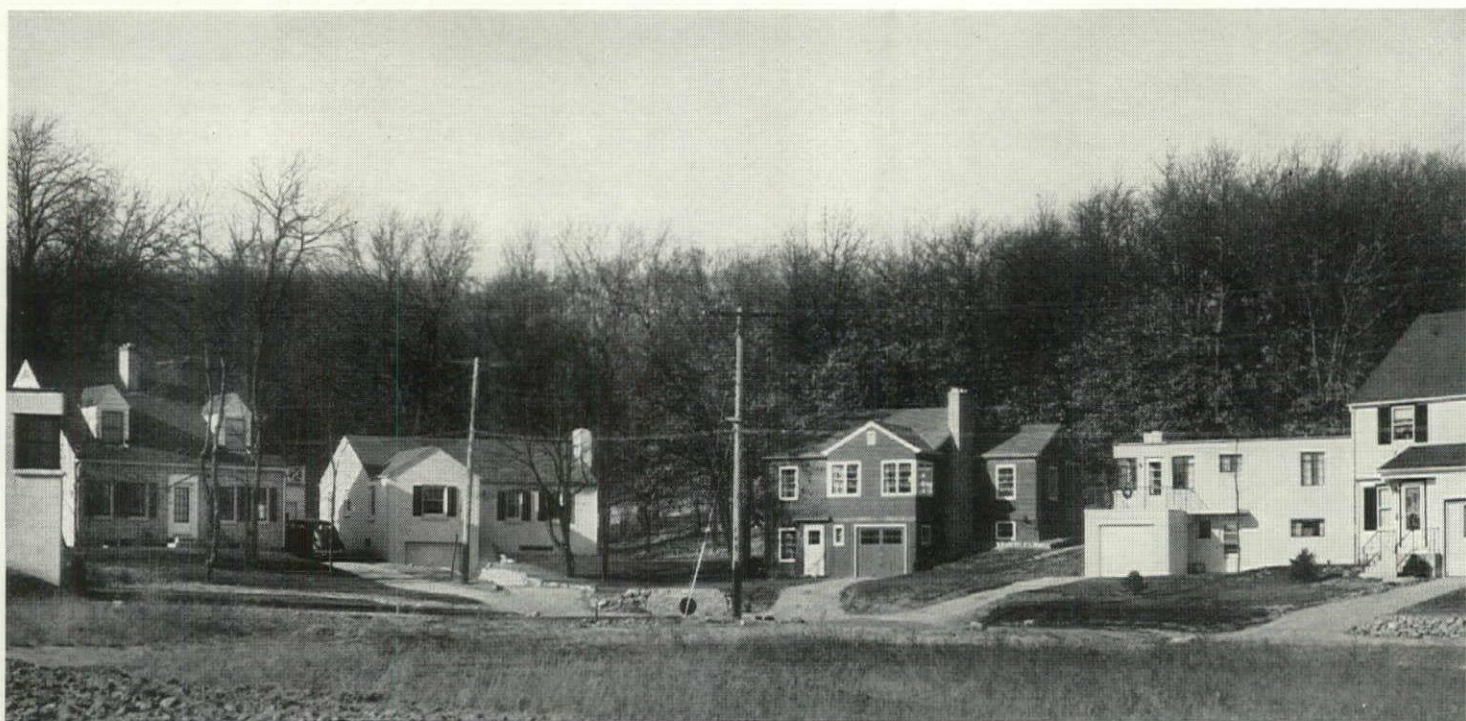
Basic test of any cooperative's value is what it has done for its members and how much money it has saved them. In both respects, the Wisconsin Association rates a passing mark. Its lots are better platted than in many a conventional subdivision and cost their owners \$450 to \$600 instead of \$1,000 or more—the price of comparable property in other Madison suburbs. Every lot in the development is backed up by wooded park lands, which make up 20 per cent of the total area; a good majority of them face quiet cul-de-sacs designed to discourage through traffic.

Reflecting the guidance of an Architectural Committee, many of the houses have the flavor of Modern, and all harmonize with the rolling Wisconsin landscape.

As Crestwood is Wisconsin's first co-operative housing project, its sponsors had no local precedents to follow and embarked on their housing venture armed with little more than a desire for home ownership. Hence development of Crestwood took time. Its beginnings date back to early 1936 when State employees, aroused by high rents, set out to provide their own shelter. But this initial movement, backed by the State Employees Association, came a cropper through inexperience.

To put it back on its feet, the Employees Association enlisted the aid of State civil servant John S. Bordner. He is well versed in real estate problems and in addition has a wide knowledge of the cooperative movement in general. His official job is to make land inventories, study better land usage.

Under his guidance the sponsors could soon point to concrete progress. They drew up plans of organization and at the same time studied all available building sites. By August 1936 the Association had acquired option to the Crestwood property and was ready for formal organization. But in the meantime, interest in the cooperative had spread far beyond the caste of State employees. Members of the University of Wisconsin faculty and Federal employees of the U. S. Forest Products Laboratory both became actively interested. Hence, when the articles of incorporation were filed, the State Employees Association bowed itself out of the picture. At the present time, over half of the cooperative's 89 members are State employees. Due to financing delays and utility installation difficulties, the first house was not completed until two years after the cooperative was organized—in August 1938.



All photos, Carl A. Jorgenson

In form of organization, the Wisconsin Cooperative Housing Association follows a fairly well established pattern. Membership is based on subscription to shares of Association stock, but no one may buy such stock unless he formally agrees to build in Crestwood.* Thus, there is no "inactive" membership. Furthermore, each member is allowed only one vote regardless of his share ownership. Right at the start, a majority of them used their vote to elect Bordner president, a job he still holds.

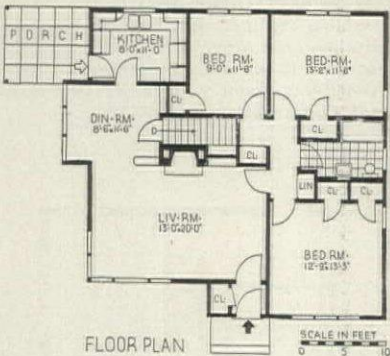
Stocks. Because the sole function of the cooperative is to provide better living quarters for its members, it is logical that its capital structure reflects those ends. The Association was incorporated with \$100,000 of stock divided equally between common and preferred. Purpose of the former was to cover initial land purchase, therefore it is non-returnable and bears no interest. Preferred stock, on the other hand, represents land improvements—streets, walks, and utilities—and pays a 5 per cent return.

Each member is required to subscribe to three shares of common stock at \$50 a share and to six shares of preferred stock at the same price, making a total individual investment of \$450. Ownership of the common stock gives a member the privilege of choosing a lot (average size: 60 x 120 ft.). If he picks one of the least attractive ones, his stock investment covers his total land cost, but if he wants one of the better lots he pays extra for the privilege. To compensate for variations in lot value, the Association set up a series of three extra "factor" charges of \$50 apiece. An appraisal committee determines the relative worth of each lot and the number of "factor" charges it shall bear. Hence a member can pay as much as \$150 over his initial stock subscription of \$450. These extras do not involve additional stock ownership, however.

Land. Any subdivision, cooperative or not, prospers or languishes on the quality of its land. In Crestwood, this quality is high. Composed of 75 rolling and well wooded acres, it is only five miles and ten automobile minutes from the center of Madison (pop. 58,000) and is conveniently served by a bus line. A State grade school adjoins the property and stores are within easy walking distance. Cost to the Association of this well-situated property was only \$200 an acre, or a total of \$15,000.

In platting Crestwood, the Association followed a rather unusual pattern—as illustrated in the plan on the preceding page. Highly commendable is the fact that it set aside sixteen acres as public park and playground areas and arranged the lots so that all owners would directly benefit from them. Deep cul-de-sacs are located so that narrow strips of park reach down between

* The by-laws are, of course, equipped with release clauses so that a member may sell his stock; but the new purchaser must be approved by the Association.



Well integrated with the wooded Wisconsin surroundings, this natural-finished Crestwood residence was designed by Eldon G. Baird. In its moderately open plan a waist-high book case separates the living and dining rooms, and generous fenestration keynotes every room. Construction costs came to about \$5,200 exclusive of \$100 for stone retaining walls and a flagged walk.

them at the back of the lots. If the Crestwood property were flat farm land, such narrow parks might easily deteriorate into neglected no man's lands; but the property is well wooded, and residents are working together with much enthusiasm to keep the grounds in shape. By planting additional trees and shrubs, they hope to make the dividing strips, as well as the rest of the park land, permanently attractive.

To aid in developing the park, the members have established a community nursery and garden which currently harbors some 6,000 trees and shrubs. By doing the work themselves, they estimate the total annual cost of park maintenance at only \$150.

Utilities. Biggest single problem of the Wisconsin Cooperative Housing Association was to provide the property with necessary services. Although electricity was available, the nearest metropolitan sewer connection was a mile away, and water mains were inaccessible. To bring these needed utilities to Crestwood, the Association embarked on a series of financial manipulations that would have done credit to a Morgan partner.

To take care of water needs, they floated a \$7,000 bond issue, used the proceeds to drill an artesian well and install necessary pumping machinery. As this operation was divorced from the basic member participation in the Association, own-

ers will retire the bonds by means of a water service charge.

Utilization of the city's sewage system was more of a problem. First, a Sanitary District was organized as the sponsor of the installation. Then the cooperative turned over to the Sanitary District some \$11,000 it had collected on preferred stock. In turn, the District covered this sum by issuing assessment bonds.

Members who have built homes and are living in Crestwood pay a pro-rated assessment to retire these Sewer Bonds, which will in turn retire the preferred stock. As both carry the same interest rate of 5 per cent, this involved procedure amounts to nothing more than a means of making those who directly benefit from the sewage system pay for it.

To keep service costs from weighing too heavily on its pioneering members, the Association cagily took advantage of the need for utility services by other home developers in the locality. The capacity of the utilities they installed—both water and sewage—is four times greater than Crestwood's maximum needs. Hence, it may service other subdivisions, spread initial costs over a wider base. As the cooperative's members will control for 30 years the mile-long sewer line which connects with the city system, they have ample time to amortize the investment.

Both water and sewage installations

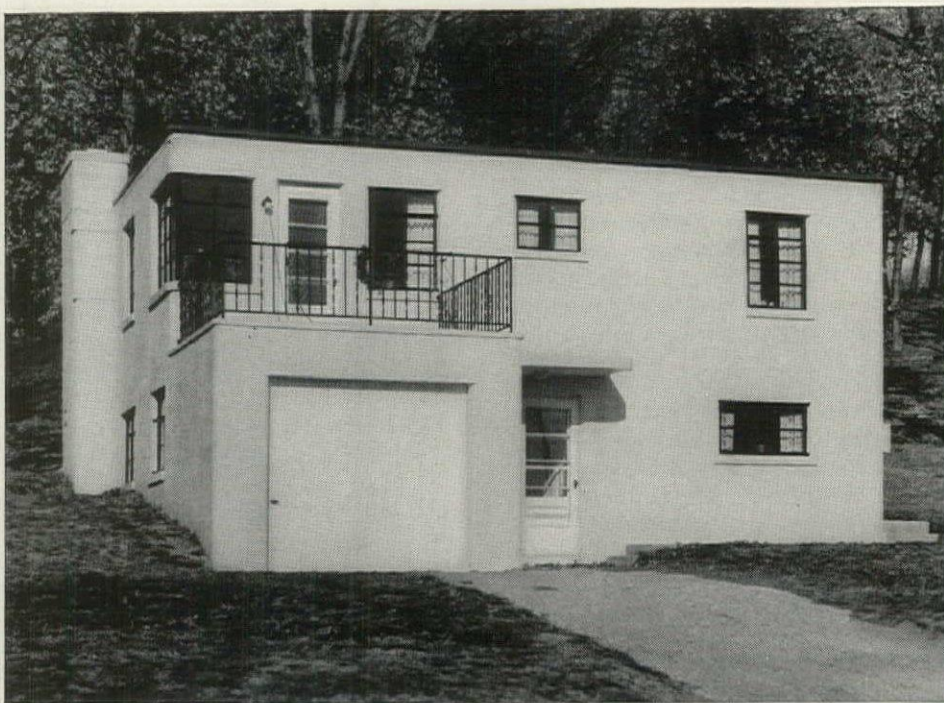
were handled as WPA projects, so costs to the cooperative were kept to a minimum. Including streets, which were surfaced by the township, total improvement costs have so far amounted to but \$20,000. This figure represents the development of only the first three of the cul-de-sacs, but the major part of the expense was for the mile of sewer line; the connection charge alone was \$1,000. President Bordner estimates that Crestwood could be completely improved for an additional \$7,500. Adding the \$15,000 initial land cost to these figures brings the total potential investment in the subdivision's land and utilities to \$42,500.

In contrast, when the Association has filled the development with 200 houses, it will have received \$90,000 for its stock, not counting the income from "factor" charges. Margin between this figure and the \$42,500 investment is the cooperative's potential net. Following accepted cooperative practice, whatever remains of this sum when the project is completed will be divided among the members. Although reserves, operating costs, etc., will probably dig deep into it, there is good chance that each member's \$450 investment will be considerably reduced.

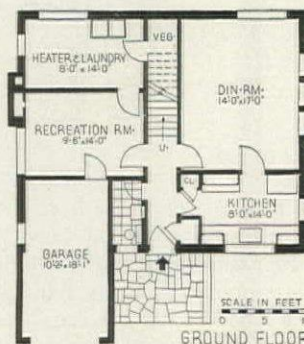
At the current stage of operations, it is not possible to foretell how much the prorated assessments for utilities will average per property owner. But with neighboring subdivisions carrying a part of the cost, these assessments will probably be no more than in other Madison suburbs.

Houses. When the Association was first organized, its sponsors planned to go the whole cooperative hog and build the Crestwood dwellings. They also proposed to retain common ownership of the land and to lease the individual plots to members for 99 years. This would have permitted economies in construction, as well as more control over the future of the development. But when they tried to mix such collective activities with individual mortgage financing, they ran into difficulties. FHA refused approval until they changed their plans and deeded the lots directly to members. The controversy regarding this change took considerable time and accounts for a good part of the lag between organization in 1936 and building in 1938.

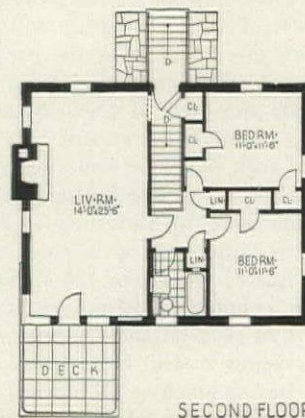
To prevent further delays, the Association also temporarily set aside its plans for cooperative building. All of the first twenty houses were constructed under individual contracts. Currently, however, plans are going forward for a collective building program which should permit definite economies through mass purchase of materials and construction. Although the Association gives each member complete freedom in handling the construction of his house, it requires that all plans be approved by an Architectural Committee. With leanings toward Modern, this Committee made steeply pitched roofs *verboten*. Nonetheless, many a Crestwood house bears the definite stamp of Tradi-



President Bordner's house reflects the modern inclinations of Crestwood's Architectural Committee which, for instance, has forbidden steeply pitched roofs in the cooperative subdivision. To capitalize on a sloping lot, the basement was set at grade, became in effect the house's first floor. In it were concentrated all service elements including kitchen and dining room, while the living room was raised to the second floor with the bedrooms. Designer: Norman N. Kandl. Construction cost: \$5,100.



GROUND FLOOR



SECOND FLOOR

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—concrete and Waylite blocks, Waylite Co. Interior partitions—furring, rock lath and plaster. Floor construction—reinforced Waylite concrete, Waylite Co., joists and concrete slab.

ROOF: Covered with asphalt 3-ply roofing, Durfee Bros. and Celotex Co. insulation. Deck—reinforced concrete slab.

CHIMNEY: Waylite Co. blocks, tile flue lining. Damper—Heatilator Co.

SHEET METAL WORK: Flashing—copper. Leaders—cast iron.

INSULATION: Outside walls, ground floor and sound insulation—Waylite Co. Attic floor and roof—Celotex Co.

WINDOWS: Sash—bonderized steel. Glass—double strength.

STAIR: Reinforced concrete covered with mat and carpet.

FLOOR COVERINGS: Main rooms—carpet. Kitchen and dining room—linoleum. Bathrooms—concrete.

WOODWORK: Doors—Waylite Co. and M. & M. Woodworking Co.

KITCHEN EQUIPMENT: Range and refrigerator—Monarch Mfg. Co. Sink and cabinets—St. Charles Mfg. Co.

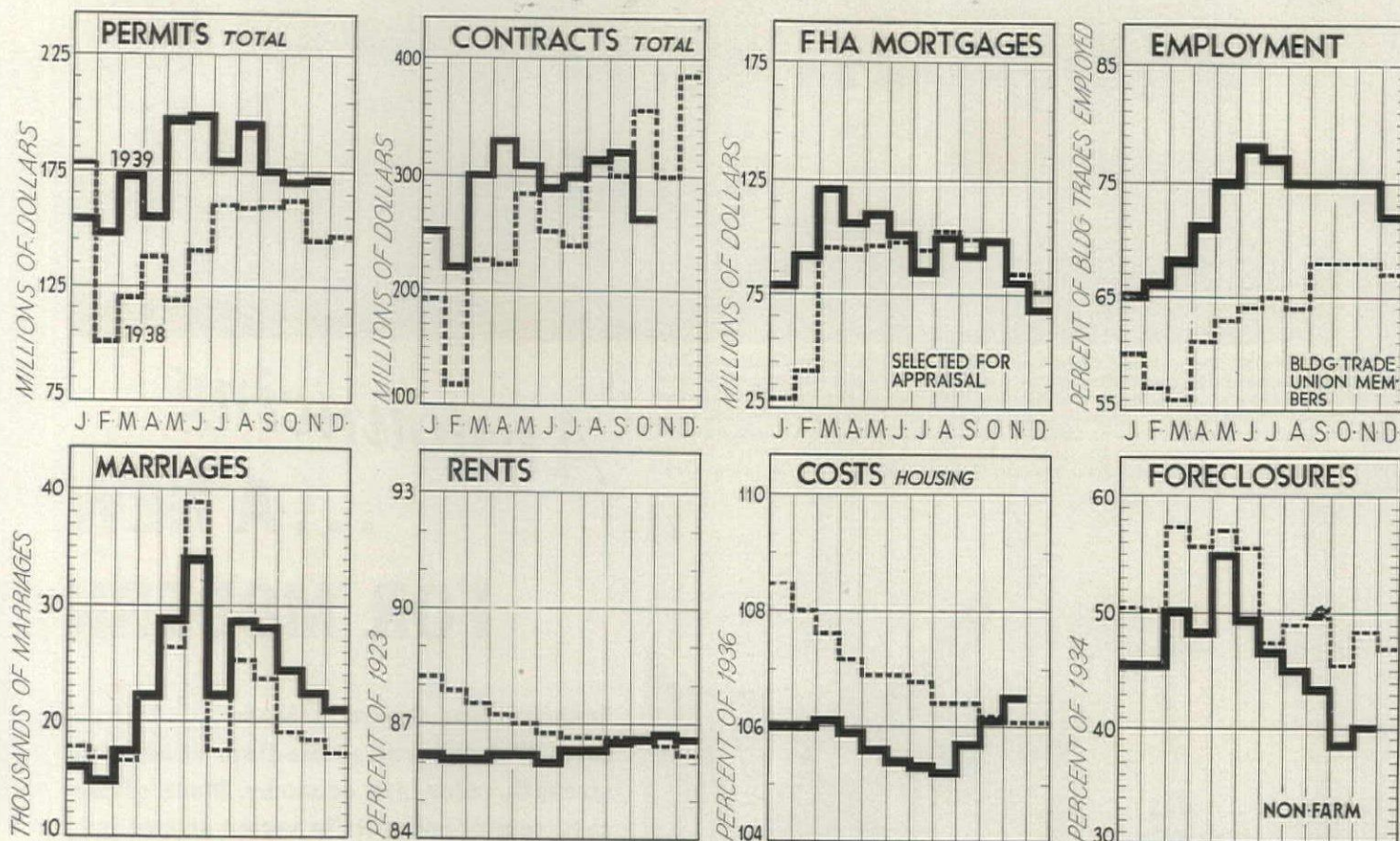
BATHROOM EQUIPMENT: All fixtures by Kohler Co. Cabinets—F. H. Lawson Co.

HEATING: Warm air, filtering and humidifying. Oil burner—Wisconsin Truck Equipment Co. Water heater—electric, Monarch Mfg. Co.

tion. The Committee also set a lower limit of \$3,000 on house costs, but so far no one has approached it. Most of the houses cost in the neighborhood of \$5,000 to \$6,000, are occupied by families with incomes of from \$1,600 to \$4,500. Majority of the twenty existing dwellings have been financed by two local mortgage lenders and, of course, with the FHA insurance which the cooperative worked so hard to get.

Future Plans. Even though the Association's 89 present members apparently do not make a very favorable numerical comparison with the 200-house capacity of Crestwood, no one is worrying. They have had enough on their hands providing lots for the existing membership without trying to expand it. But, now that the utilities are in, work should proceed more rapidly. Next on the list for development are the three remaining cul-de-sacs which, with the first three, will make available a total of 137 lots. In view of the relatively low lot price and the general interest of Madisonites in the development, sales to new members should be easy.

BUILDING'S CHARTS AND TABLES picture higher costs, steady rents and seasonally lower construction volume.



	LATEST MONTH*	PRECED. MONTH	CORRES. MO. 1938	CUMULATIVE 1939	CUMULATIVE 1938		LATEST MONTH*	PRECED. MONTH	CORRES. MO. PREV. YR.
PERMITS—residential (000,000) ¹	\$106.3n	\$93.0	\$74.3	\$1052.7	\$795.8	INSURANCE CO.—real estate held (000,000) ¹⁰	\$1,750.0a	\$1,747.0	\$1,801.0
non-residential "	43.2	48.7	49.0	549.3	497.6	COSTS—wholesale materials (% of 1926) ¹¹	93.0n	92.8	89.2
alterations "	23.0	29.0	22.3	315.9	290.7	housing—labor (% of 1936) ¹²	110.8n	111.1	112.1
total "	172.5	170.7	145.6	1917.9	1731.1	materials "	101.4	103.6	103.2
CONTRACTS—residential (000,000) ²	\$118.3o	\$129.7	\$112.7	\$1129.0	\$799.0	total "	106.5	106.1	106.2
non-residential "	72.2	82.5	131.0	830.1	816.6	RENTS—new leases (% of 1923) ¹³	86.6d	86.7	86.2
engineering "	70.8	111.0	114.0	937.5	890.2	FORECLOSURES—non-farm (% of 1934) ¹⁴	40.3n	38.7	48.4
total "	261.8	323.2	357.7	2896.6	2505.8	metropolitan (% of 1926) ¹⁵	129.0	120.0	151.0
DWELLING UNITS—total (000) ³	29.7n	24.0	20.1	286.5	216.4	BOND PRICES—real estate ¹⁶	\$314.0d	\$316.0	\$332.0
FHA—mortgage selections (000,000) ⁴	\$67.1d	\$80.7	\$76.9	\$1123.7	\$1010.6	STOCK PRICES—bldg. materials (% of 1926) ¹⁷	83.4d	85.0	107.5
mortgage acceptances "	53.2	65.0	51.9	737.9	650.1	WAGE RATES—common bldg. labor (per hr.) ¹⁸	\$0.688j	\$0.685	\$0.682
rental housing mtgs. "	2.9	1.5	2.8	51.4	47.5	skilled bldg. labor (per hr.)	1.50	1.46	1.43
modernization loans "	21.3	24.5	18.3	232.2	171.7	EMPLOYMENT—bldg. unions (% of total) ¹⁹	72.0d	74.0	67.0
MORTGAGES—						COST OF LIVING—(% of 1923) ²⁰	85.3d	85.7	85.6
building & loan assns. (000,000) ⁸	\$98.9n	\$105.2	...	\$1072.4	...	PAYROLLS—factory (% of 1923-25) ²¹	101.3o	93.6	84.2
insurance cos. "	28.3	28.5	...	302.5	...	PRODUCTION—industrial (% of 1923-25) ²²	124.0n	124.0	104.0
bank and trust cos. "	82.4	84.7	...	843.5	...				
mutual savings bks. "	14.6	13.0	...	127.3	...				
individuals "	52.2	53.9	...	598.7	...				
other mortgagees "	50.7	47.7	...	504.7	...				
total "	325.1	333.0	...	3449.0	...				
MARRIAGES—38 cities (000) ⁹	21.8d	22.4	17.3	282.1	269.6				

FOOTNOTES:

1—Valuation of building permits in some 2,100 communities; source, U. S. Department of Labor.
2—Valuation of contracts awarded in 37 States; source, F. W. Dodge Corp. via U. S. Dept. of Commerce.
3—Number of dwelling units covered by permits. See footnote No. 1.
4—Home mortgages selected for FHA appraisal under Title II, Section 203; source, FHA.
5—Home mortgages accepted for insurance under Title II, Section 203; source, FHA.
6—Large scale rental housing mortgages becoming premium paying under Title II, Section 207; source, FHA.
7—Property improvement loans insured under Title I; source, FHA.

8—Non-farm mortgage recordings of \$20,000 or less based on 500 counties (48 States); source, FHLBB.
9—Number of marriages recorded in 38 largest U. S. cities; source, ARCHITECTURAL FORUM.
10—Total real estate holdings by member companies of the Assn. of Life Ins. Presidents.
11—Composite index of wholesale building material prices; source, U. S. Department of Labor.
12—National averages based on six-room house of 24,000 cu. ft. unfinished; source, FHLBB.
13—Rates at which new rental contracts are made; source, National Industrial Conference Board.
14—Foreclosures in some 1,500 non-farm communities; source, FHLBB.

15—Foreclosures in metropolitan communities with population in excess of 100,000; source, FHLBB.
16—Average price of 200 hotel, office building and theater bonds; source, Amott-Baker & Co.
17—Average price of twelve building material manufacturers' stocks; source, Standard Statistics Co.
18—Source, Engineering News-Record.
19—Trade Union members employed; source, American Federation of Labor.
20—Covers clothing, food, fuel and light, housing and sundries; source, NICB.
21—Source, U. S. Dept. of Labor.
22—Combined unadjusted index; source, Federal Reserve Board.



The David W. Taylor Model (Ship-Testing) Basin of U. S. Navy, Carderock, Md. Architectural Concrete Slabs were used as the outer forms for the structural concrete. An excellent bond was obtained, and half of the slab thickness was assumed as effective structurally. Designed by Rear-Admiral Ben Moreell, U. S. Navy. Architectural Concrete Slabs for exterior walls made with crushed quartz and Atlas White cement by Dextone Co., New Haven. Consultant, John J. Earley, Washington, D. C. General Contractor, Turner Construction Co., New York.

Announcing ... A NEW FOR MODERN

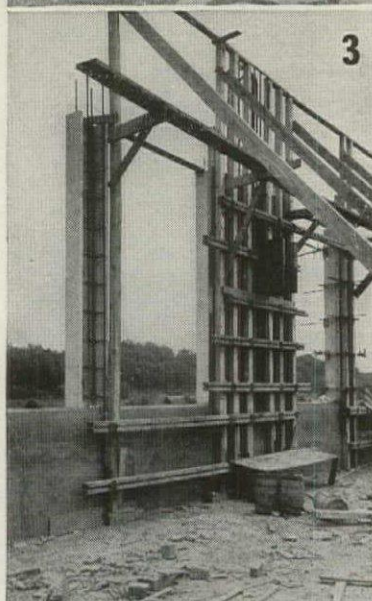
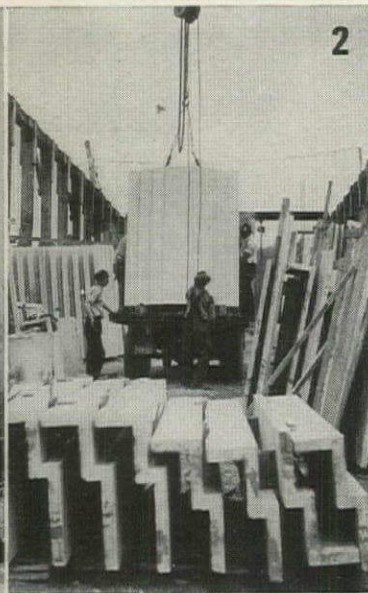
ARCHITECTURAL CONCRETE SLABS . . . A structural and decorative medium combining strength, color, and economy. Made of pre-cast, reinforced units in varied shapes only 2 inches thick and up to 100 sq. ft. in size.

ARCHITECTURAL CONCRETE SLABS have been successfully used on scores of important projects for exteriors and interiors of buildings and engineering structures—both new work and remodeling. The U. S. Navy's Model Ship-Testing Basin is an outstanding example of the structural value and the freedom of design which this material offers to architect and engineer.

Architectural Concrete Slabs *structurally* are diaphragms consisting of strong, dense, 2-inch concrete, reinforced with heavy, welded, galvanized steel fabric. *Architecturally*, they are decorative reinforced concrete units precast in large, thin, varied shapes and made with selected aggregates exposed in a matrix of Atlas White Cement to provide any desired color, texture and pattern.

Check carefully the following advantages which this material brings to modern construction:

1. Freedom of Design:—The architect and engineer can secure the color or texture desired, increase the scale and character of the design, provide the dignity and permanence that large-scale units give.



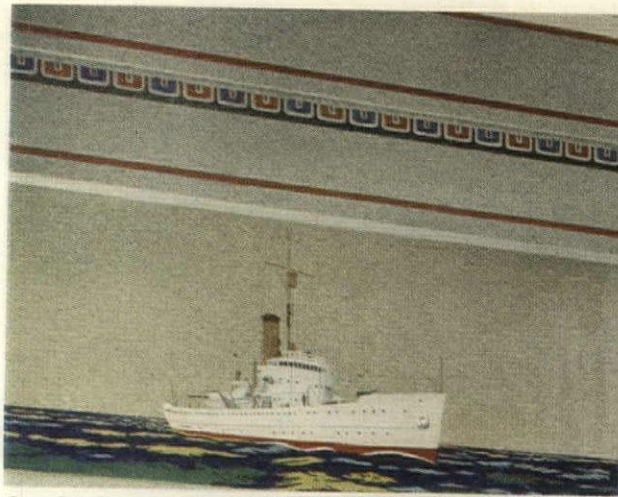
Architectural Concrete Slabs are precast in any desired size and shape.

Figure 1 shows rectangular, angle, and fluted sections for a commercial reception room.

Figure 2 shows various sizes and shapes for the U.S. Navy's Ship-Testing Basin.

Figure 3 shows the slabs being used for forms on the same job. Note large sizes of slabs and that regardless of shape, they have a cross-section of only 2 inches.

ARCHITECTURAL CONCRETE SLABS *made with*



One of six large ship murals, each a single Architectural Concrete Slab. Colors and design made entirely with exposed aggregates.

MATERIAL CONSTRUCTION!

2. **Sizes:**—Up to 100 sq. ft. or more.
3. **Shapes:**—Plain or fluted rectangles, curves, and channels, with or without returns such as cornice, spandrel, and soffit.
4. **Joints:**—Large sizes and varied shapes eliminate up to 80% of joints and flashing, reduce danger of leakage, and increase freedom of design.
5. **Strength:**—Scientific proportioning, careful curing, and heavy reinforcing provide high strength in sections only two inches thick.
6. **Remodeling:**—Relative thinness often permits use without ripping off front of old building.
7. **Forms:**—Slabs may be used as forms for the structural concrete.
8. **Color and Texture:**—Slabs are made with a matrix of Atlas White cement and selected aggregates to provide any desired color and texture.
9. **Economy:**—Reduction of joints, fewer forms, factory production, simplicity of installation, repetitive patterns cast from a single mold, color and texture obtained by exposing selected aggregates—all provide economies to modern construction.

Ask us for further information about the adaptability and versatility of this new material made with Atlas White Cement. Or see *Sweet's Catalog, Section 4*. Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), Chrysler Building, New York City.



Architectural Concrete Slabs were used for the interior of the Navy's Ship-Testing Basin. (Also see exterior on opposite page.) **Color and design** of the ship panels and other details were obtained entirely by exposing the aggregates in a matrix of Atlas White cement. By using aggregates such as crushed quartz, marble, granite, ceramics or vitreous enamel, practically any desired color and texture are obtained permanently and economically in a reinforced concrete unit also possessing definite structural advantages. For example, each pilaster here shown is *one* slab, and only three slabs, including the colored border, comprise the doorway. Architectural Concrete Slabs by John J. Earley, Washington, D. C.

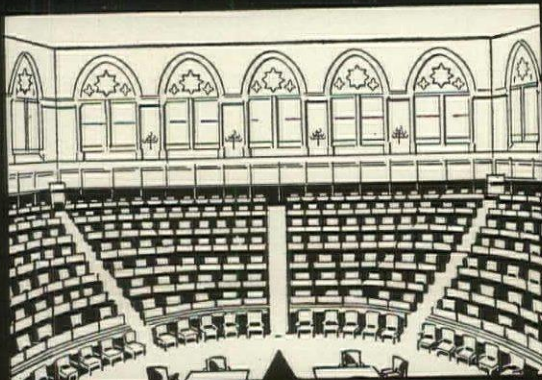
ATLAS WHITE PORTLAND CEMENT

AF-ACS-1



How would YOU tackle this problem?

To enable every Representative to hear and be heard in this large room? Ceilings are high, acoustics poor, reverberation excessive.



Here's how Western Electric equipment solved it for the Connecticut Legislature!

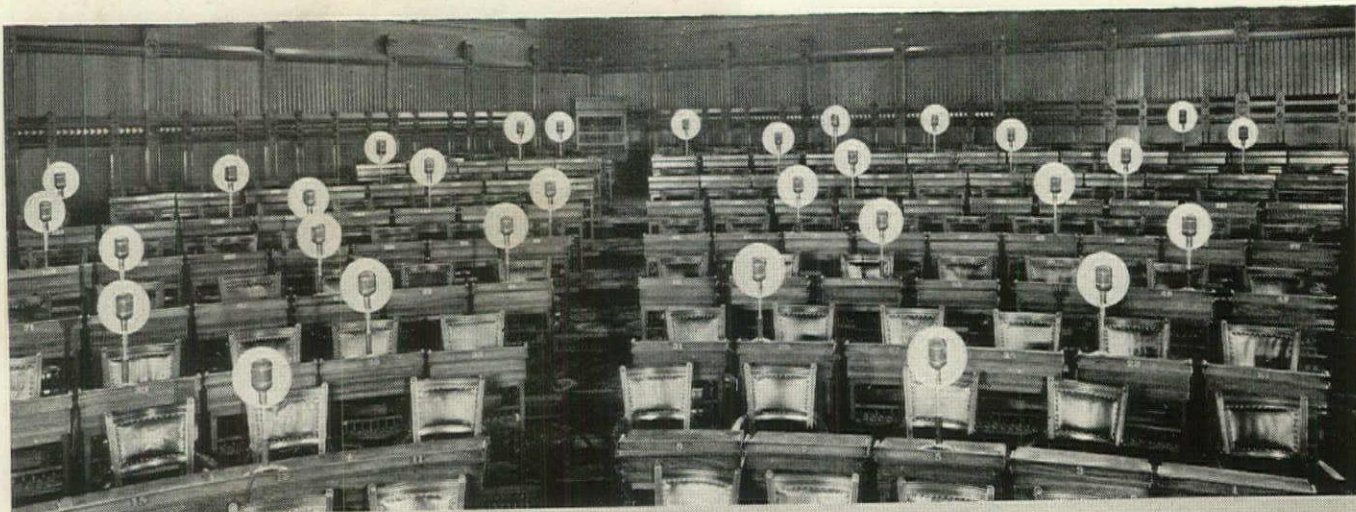
For years members of the Connecticut House of Representatives have complained of not hearing other speakers. The normal speaking voice wouldn't cover the large area. Raising the voice resulted in reverberation. *But Western Electric equipment provided the answer:—*

Four loudspeakers in a gondola mounted near the ceiling over the speaker's rostrum, "aim" the reproduced sound directly at the desks throughout the room. Set up within easy reach of Represen-

tatives are 46 Western Electric Cardioid Microphones—*right in the loudspeaker range*—their 120° "dead area" blankets sound from the loudspeakers—thereby killing feedback.

Call in Graybar when you have a Public-Address problem of any kind. Sound experts will study it for you—offer specifications and estimates without obligation.

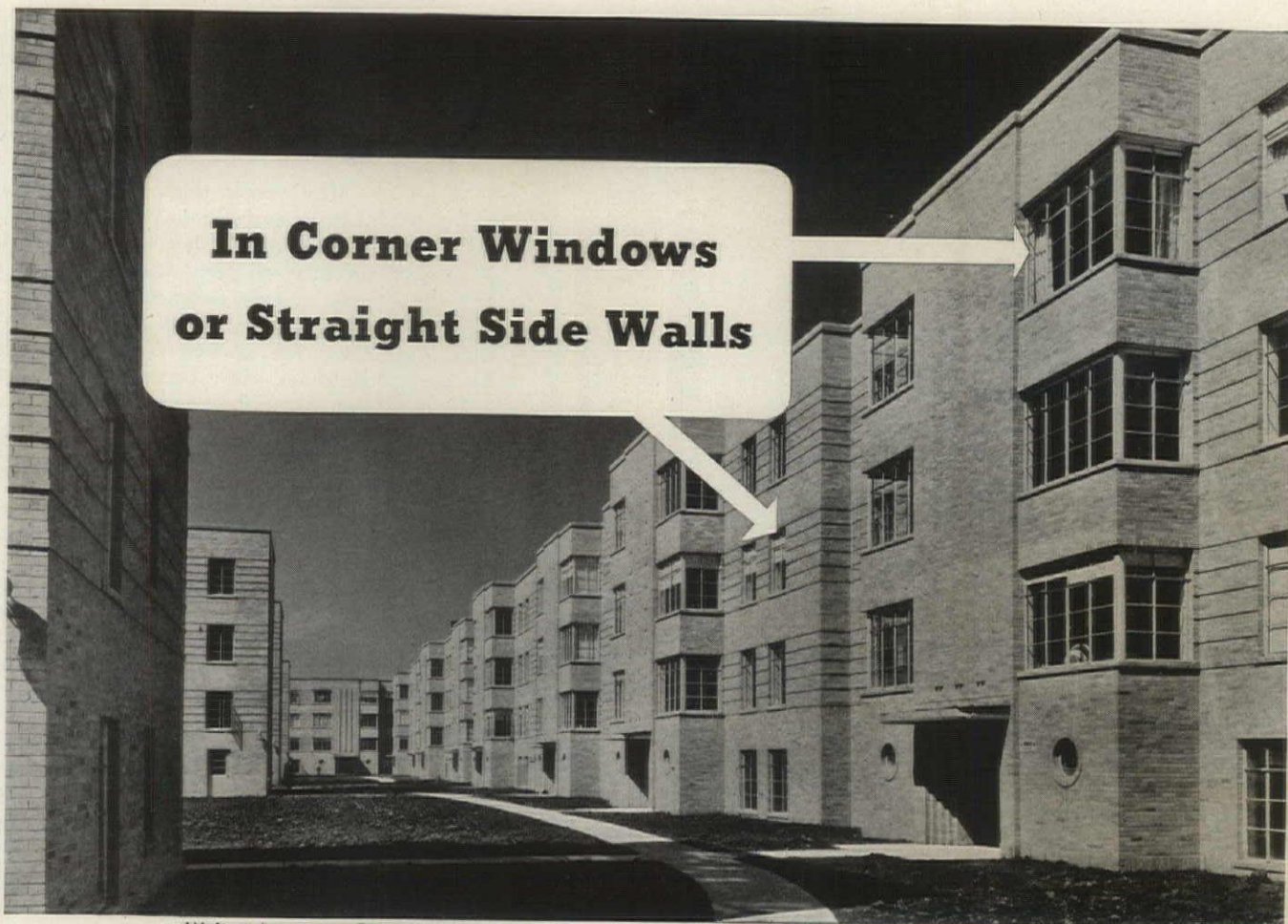
Just write to Graybar Electric Company, Graybar Building, New York, N. Y.



Western Electric

LEADERS IN SOUND-TRANSMISSION APPARATUS

**In Corner Windows
or Straight Side Walls**



Wolcott Apartment, Chicago, Ill.; Architect: C. S. Michaelsen, Chicago; Contractor: M. J. Boyle & Co., Chicago

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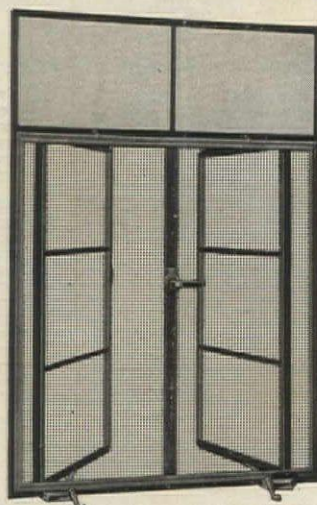
Fenestra always keeps pace with architectural trends. These better residence steel casement windows were among the first to be used in corner designs where well proportioned glass areas and attractive lines are essential.

The extra light Fenestra provides, the winter snug-tightness and the greater, controllable ventilation in summer, all help the architect satisfy his clients. These same advantages apply wherever Fenestra Casements are used, as do such practical conveniences as Easy Opening, Safe Cleaning from the inside . . . particularly important in the apartment, Better Screens and Fire Resistance.

And besides the first cost is low, because Fenestra Casements are delivered complete, fitted, hinged, hung, and primed. Built of steel that is Bonderized, prime-painted, oven-baked, for protection against rust, maintenance costs are low.

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LARGEST STEEL WINDOW MANUFACTURER**



One of many types of Fenestra Residence Steel Casements. Type shown affords 75% opening, for fresh-air ventilation—25% more than with double-hung windows.

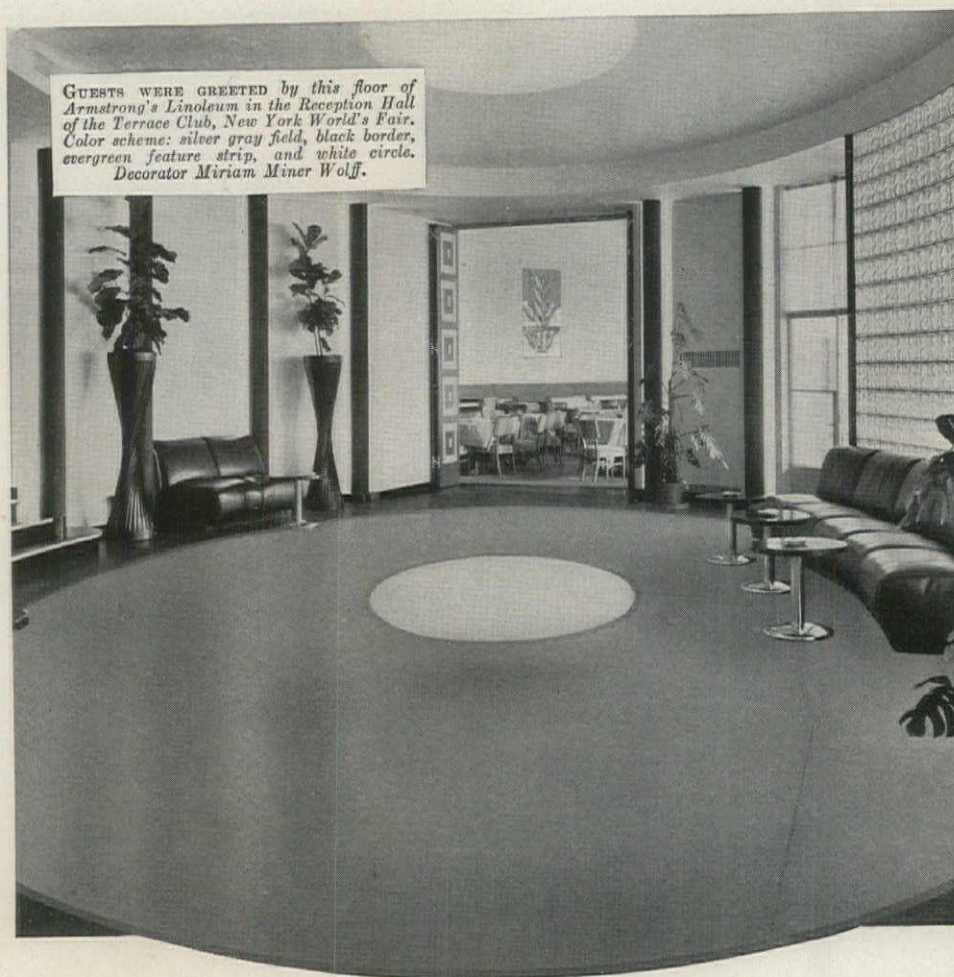
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**BONDERIZED STEEL CASEMENTS
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Please send free literature, as follows:

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THE PLACE: *Terrace Club, New York World's Fair*

THE FLOOR: *Armstrong's Linoleum*

THE REASON: *See Below*

FIGURES of international importance feasted their eyes on this Reception Hall floor in the New York Fair's famed Terrace Club. And hundreds of people walked over it . . . yet it never lost its rich dignity. That's because it is Armstrong's Linoleum.

You may not be concerned with plans for another Terrace Club. But we think you'll be interested—for any job—in a flooring that lends itself to the unlimited design possibilities of Armstrong's Linoleum. You have over 200 attractive colors and patterns from which to choose. Countless combinations and custom-floor effects can be achieved.

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leum. They'll be glad to know that it's easy to keep this linoleum fresh and bright for years—that simple sweeping, occasional washing and waxing, are all the care it needs. They'll be glad to know that the attractive colors and grainings won't wear or scrub off, because they run right through the material—so that expensive refinishing is unnecessary.

Another characteristic of Armstrong's Linoleum that appeals to clients—especially to those for whom you are doing a commercial job—is the underfoot quiet and comfort of this material. See *Sweet's* for all the facts . . . or let us send you file-sized, illustrated literature. Write Armstrong Cork Company, 1203 State Street, Lancaster, Pennsylvania.



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Rubber Tile - Linotile (Oil-Bonded) - Asphalt Tile - Cork Tile - Linowall Wall Covering

COLOR ENGINEERING

**makes the big house small,
the white house, whiter.**

Most people think of paint as an attractive overcoat to protect a house from the elements. A few realize that it is also an integral part of house design which may enhance commendable features, tone down an undesired impression. One of these few is New York City's Howard Ketcham whose business is color and design engineering and whose clients are industries rather than individuals.

Engineer Ketcham's pet peeve is Building's widespread disregard for effective color combinations—an art which even the egg industry has mastered. Thus, eggs are frequently packaged in blue containers to make them seem whiter, more attractive than they actually are. And the same color law, known as "simultaneous contrast," operates just as successfully for houses, new and old. Thus, if a house is white—and every other house in the U. S. is—a blue roof will make it look still whiter.

Getting down to cases, Mr. Ketcham prescribes light grays, yellows, and buffs for the body of Colonial houses, green for their shutters, white for the rest of the trimmings. For their roofs he recommends red or green "tweed" colors to be obtained by staining wood shingles or by buying ready-colored composition shingles. To one-story dwellings a light blue or green roof will give an illusion of added height; cream-colored siding (the natural color of asbestos shingles) and shutters and trim of a lighter tone will add measurably to the effect.

If a house has many such vertical design accents as leaders and high narrow windows, a dark colored roof by forcing the eye downward will give the house a more horizontal and therefore wider effect. If shutters are used on the second floor of this house they will look better painted the same color as the siding. Color accents will prove most effective when applied to first floor shutters and entrance.

Currently, roof colors are Engineer Ketcham's greatest interest. Via a nationwide sampling he has determined that the average home owner would gladly trade the inconspicuous drab of his present roof for a more interesting color. That there is ample room for improvement (and, incidentally, ample market for shingle stain and colored synthetic shingles) is seen in other results of the survey—prevailing roof colors: dark gray, 63 per cent; dark brown, 15 per cent; dark green, 6 per cent; red, 4 per cent; all others, 12 per cent.

With the roof playing an increasingly important role in color treatment, it is safe to say that most of the houses in the bottom three groups were built or reconditioned in recent years. Color-engineer Ketcham foresees a decided expansion in the "all other" category.



NEWS NOTE FOR 1940....MORE AND MORE

BUILDERS AND TENANTS WHO'VE HAD EXPERIENCE

... WILL CHANGE TO GAS REFRIGERATION



Builder "Our experience over many years with automatic refrigerators has sold us completely on Servel Electrolux gas refrigeration for our properties. Being the only refrigerator with no moving parts, it's the only one that can give permanently silent operation." *Harry A. Taylor, 520 Main St., East Orange, N. J.*

Tenant

"Having used several kinds of automatic refrigeration in apartment houses, I feel that my present Servel Electrolux gas refrigerator is the perfect refrigerator, due to its silence, sturdy beauty, fast freezing and absolute dependability." *Mrs. A. C. Ford, 742 S. W. Vista, Portland, Ore.*

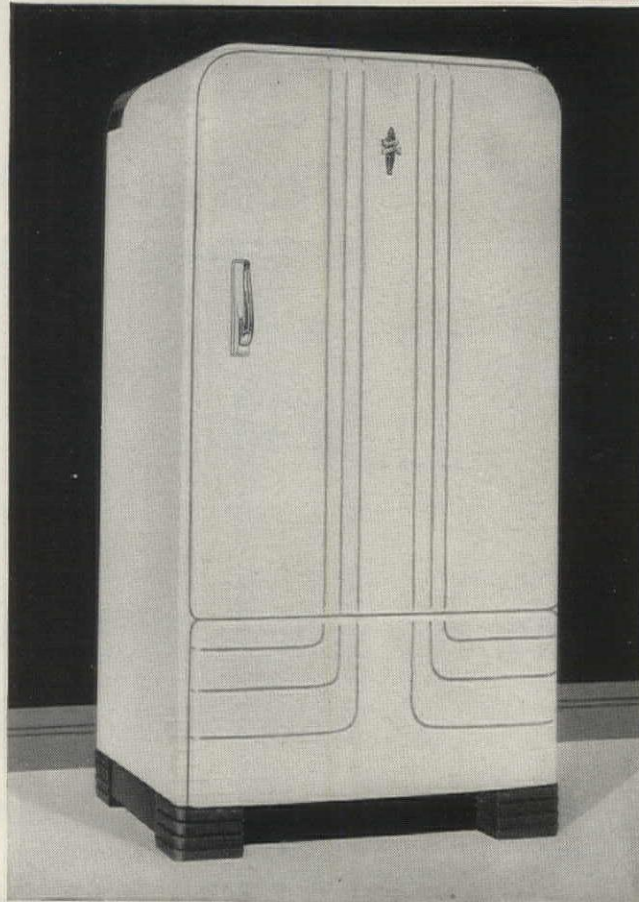


Different...

FROM ALL OTHERS:

- NO MOVING PARTS TO WEAR
in its freezing system
- PERMANENT SILENCE
- CONTINUED LOW OPERATING COST
- MORE YEARS OF DEPENDABLE SERVICE
- SAVINGS THAT PAY FOR IT

The
SERVEL
ELECTROLUX
Gas Refrigerator



SPECIFY THE REFRIGERATOR THEY HEAR ABOUT • BUT NEVER HEAR

MONTH IN BUILDING

(Continued from page 4)

ably be introduced to lower the interest rate on Home Owners Loan Corporation loans. However, since HOLC is now over the hump of its foreclosure worries and since it voluntarily reduced interest rates last spring, chances are these new bills will go by the boards.

► Absent from the pending list is any new FHA legislation. But, while the agency itself is 100 per cent satisfied with things as they are, it may be forced to accept an amendment calling for more favorable financing terms for loans on existing construction.

SMALL SPLASH. In one New York State county of 100,000 population there are a total of six hospitals. In a county of the same size somewhere in the South, there is not even a clinic; residents must travel eighty miles to reach an operating room. With this comparison President Roosevelt at year-end launched his newest building program. He wants Congress to authorize the construction of small rural hospitals with Federal grants.

In contrast to previous New Deal plans for public works, this program will give Congress no bulging pork barrel to fight over. In suggesting it, the President laid

emphasis first and foremost on economy. In fact, small hospital building is intended as a temporary substitute for Senator Wagner's far-reaching public health bill which would involve an \$800 million expenditure over a ten-year period. The President proposes the construction of one-story, 100-bed hospitals of frame construction. They would probably have two wings—one for Negroes, the other for whites—and would cost in the neighborhood of \$150,000 each. Although the President indicated a need for 100 such structures in different areas, particularly the South, he suggested the program begin with about 50.

Because these 50 hospitals will represent a total expenditure for construction of slightly under \$8 million, they will be welcome, not only to southern sick, but to southern Building. Nonetheless, they will make a relatively small splash in Building's hospital construction puddle; last year some \$100 million was spent the country over for this purpose.

DOUBLE VOTE. To amplify the protests of property owners against their heavy share of the local tax burden, Seattle last month launched a newsworthy but dubious movement. Instigator is Architect H. A. Frentz, a community leader and chairman of the newly incorporated United Home Owners of Washington. His goal: to give every home owner and real estate

taxpayer two votes on every election day. His purpose: "to guard their liberties and constitutional rights." Says Chairman Frentz: "They are penalized for owning homes, although they are admittedly the backbone of the Nation. On the other hand, the man who owns nothing is favored more and more by State and Nation. He is fed and housed at the expense of the taxpaying home owner." (Architect Frentz fails to recognize that the taxes paid by rental property owners are passed on to tenants in monthly rent bills.)

Since they claim that the Federal Government allows the States to set voters' qualifications and rights, the United Home Owners of Washington see no stumbling blocks ahead. And, although the campaign is just budding in Seattle (prior to a State-wide drive), it is claimed that offshoots are already sprouting in Oregon and California.

CANADIAN BUILDING. Trends within the Canadian building industry are of interest to the U. S. on two counts: 1) they offer an interesting comparison with domestic activity and 2) they underline in cold figures the effect of war on building. Last month, MacLean Building Reports, Ltd., Canada's counterpart to native F. W. Dodge Corp., provided the basis for a study of both subjects, announced:

(Continued on page 38)



O.K.



EASY TO REFILL!

FROM EVERY ANGLE



EASY TO INSTALL



LOW IN FIRST COST





LOW IN UP-KEEP

Delivers pure, gentle,
rich lathering
IVORY SOAP
in Flakes or Granules

If you're an architect, you'll naturally look at the Ivory Soap Dispenser from the angle of design. If you're a building owner or operator, you're sure to consider it from the economy angle, too.

But if you were a tenant . . . the man who actually *uses* the Ivory Dispenser . . . you'd be chiefly interested in *this* angle: *What does it deliver?*

And the answer to that question is sure to bring an enthusiastic response. For the Ivory Dispenser delivers genuine Ivory Soap—a soap that means top-notch cleansing satisfaction to millions of Americans.

Yes, we believe you'll find the Ivory Dispenser O. K. from *every* angle. It's attractive. It's low in first cost and in up-keep. It's virtually complaint-proof.

An illustrated folder which tells all about the Ivory Dispenser, is yours for the asking. Write for it.

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Industrial Sales Department, Gwynne Bldg., Cincinnati, Ohio

Pratt & Lambert Paint and Varnish



Photo courtesy Detroit Steel Products Co.

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James Gamble Rogers, Architect : Henry C. Pelton, Associate
Marc Eidlitz & Son, Inc., Contractor : Emil Angelon, Inc., Painting Contractor

Memorial Hospital (for the treatment of cancer) embodies all that is modern in design, equipment and research facilities. Careful, foresighted planning, to the minutest detail, is here apparent to those familiar with the rigid requirements in hospital maintenance. The selection of Pratt & Lambert Paint and Varnish in the decoration of this great hospital is a tribute to their outstanding durability, and economy in first application and up-keep. Whether it be an imposing metropolitan hospital or a modest residence, there are Pratt & Lambert Paint and Varnish products designed to provide maximum beauty and protec-

tion at minimum ultimate cost. The knowledge, experience and whole-hearted co-operation of Pratt & Lambert Architectural Service are yours for the asking. Write or telephone the office that is nearest to you.

PRATT & LAMBERT-INC., Paint & Varnish Makers
NEW YORK : BUFFALO : CHICAGO : FORT ERIE, ONT.



MONTH IN BUILDING

(Continued from page 36)

- That contracts awarded for all types of construction throughout the Dominion totaled \$187.2 million during 1939, a miniscule 0.05 per cent drop from the 1938 level. (Preliminary estimates of total U. S. construction activity point to a 22 per cent increase during 1939.)
- That residential construction rose 22.5 per cent from \$55 million to \$67 million. (In the U. S. total non-farm residential building expenditures totaled \$1,900 million—37 per cent more than in 1938.)
- That industrial activity measured \$23 million, an advance of 42.3 per cent. (U. S.:

\$200 million, up 4 per cent.)

► That "business" building contracts, covering commercial and other non-residential structures, dropped 13.2 per cent to \$55 million. (In the U. S. the comparable 1939 figure was \$530 million—3 per cent higher than in 1938.)

► That total building activity up to the declaration of war on September 3 was 6 per cent ahead of the corresponding period of the preceding year. Declining volume has been reported every month since, indicating that the war has discouraged some types of building to the tune of \$10 million. However, war prompted the construction of certain other types of building, reduced this figure to a net loss of some \$7.5 million.

Also significant is MacLean's report that

Canadian building material costs have firmed somewhat since the declaration of war, but that the average level for the year was only slightly above the 1938 average. For 1940 the statistical agency sees an extensive amount of building activity for war and allied purposes, concludes: "Coupled with the unsatisfied demand for homes and the increased betterment of general business resulting in extensions and reconstruction, (this) gives us reasonable hope that the coming year will see present activity well maintained."

LITTLE HOUSES. When FH Administrator Stewart McDonald on New Year's day greased the Nation's low cost housing gears (ARCH. FORUM, Jan. 1940, p. 2), he announced that FHA was revising its property standards and minimum construction requirements covering all one-story, single-family, detached houses whether their mortgages be insured under Title I or II.

North Carolina was one of the first States to release its revised code, and, while it pertains only to North Carolina, the principal changes effected show what may be expected in other States: 1) Room arrangements are more flexible and minimum dimensions are smaller. Now permissible is a combination living room, dining room and kitchen with an area of 220 sq. ft. Without the kitchen this area may be as little as 160 sq. ft.—the former minimum size for the living room alone. Smallest allowable master bedroom has been shaved from 110 to 100 sq. ft. 2) Houses in the North may now for the first time rest on piers. 3) Interior walls may be dry finished. 4) Where plaster is used, two coats are sufficient. 5) Studs, under certain circumstances, may be spaced 24 in. o.c., instead of 16 in. 6) In warmer climates and wherever insulation is used sub-flooring and sheathing may be omitted. 7) Houses may be heated by a unit of the "overflow" type.

USHA FAMILIES. Long awaited by Public Housing's proponents and opponents have been the vital statistics of the families who have moved into U. S. Housing Authority projects. Month ago USHA released the first batch of such statistics. They cover the Brentwood Park project in Jacksonville, Fla. (ARCH. FORUM, Jan. 1940, p. 16), one of the first to be opened.

Of Brentwood's 230 dwelling units, 187 are now occupied and, according to information in USHA's file cabinets, the rehoused families earn an average of \$55.40 per month, \$13.85 per week. Highest income is \$76.12 for a family of six; lowest, \$22.16. Prior to moving into the project, these families shelled out an average of \$20.55 per month for rent and utilities; now they pay only \$13.22.

That these people were once slum dwellers is seen in USHA's summary of their former living quarters: 124 families shared their baths and toilets with others, 52 were without adequate heating facilities, most of them were overcrowded.



PECORA Calking Compound is now on duty in this large hospital building and nurses home. It will be depended upon to render 24 hour service every day of the year for many years to come. No moisture, no dust, no drafts, will be permitted to penetrate joints that have been sealed with Pecora. Regardless of heat, cold or moisture, Pecora will retain its permanent elasticity, for when properly applied, Pecora will not dry out, crack or chip.

*Pecora Calking Compound was specified by Weiss, Dreyfous & Seiferth, the Architects for this large hospital project. Natchy Builders Supply Co., Inc., of New Orleans were the Calking Contractors for Geo. A. Fuller, Genl. Contrs. for the hospital building, and for Burks Bros., the Genl. Contrs. for the nurses' home.

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AZROCK goes for coffee ...with an embossed edge!

YES sir, AZROCK's exclusive, Embossed Edge Floor Tile brings distinction to the interior of the beautiful coffee shop illustrated above. Here, Embossed Edge AZROCK performs to perfection. This new style AZROCK Tile is designed to give that distinctive "tile look" to a solid colored floor.

AZROCK is resilient, which means added quiet and comfort underfoot. Micro-cut for close fit, all AZROCK floors are sanitary, easily cleaned, moisture-proof, fire-resistant — burning cigars and cigarettes leave no permanent stain. The exceptional beauty of AZROCK's many, many all-the-way-through colors and the opportunity they provide for individual floor patterns of both modern and conventional design often "makes"

the new or remodeled interior.

Most of all, however, builders and remodelers appreciate AZROCK Floor Tile for its economy and long life. Once installed, it is inexpensive to maintain and its durability means a long term of service.

Whatever your specifications—be it a factory, store, home, hospital or office—there is an AZROCK Floor Tile to serve you.

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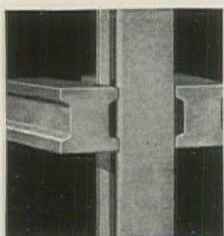
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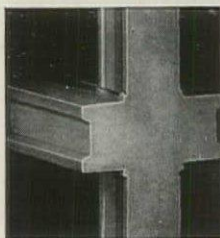
Gen. Offices: San Antonio, Texas; Mines:
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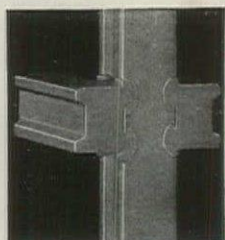
What Constitutes A GOOD IRON FENCE?



Right—Showing picket and rails after welding has fused them permanently together at eight points.



1. *Inseparably Welded Joints*—in Anchor-Weld Iron Fences the use of electric-pressure-welding at every point of contact insures a permanent union between rails and pickets. At left are picket and rails before welding.



Left—Same picket and rails, with ends of rails ground down to show perfect union of members.

2. *Rails and Pickets of same weight.* In Anchor-Weld Iron Fences permanence of alinement and freedom from sagging is brought about by the use of the same size section for both rails and pickets.

3. *No Center Supports.* A support in the center of an iron fence panel is an indication of structural weakness. In Anchor-Weld Iron Fences there are no center supports, but each panel will stand a ton of distributed load without showing permanent set.

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Please send Architect's catalog showing Anchor-Weld Iron Fence, and a sample weld for my examination.

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BRIDGEPORT HOUSE

(Continued from page 131)

hibition to the public—the section spread to three pages, commanded 260 column-inches of advertising.

In addition, the newspaper gained measurably in reader interest. Inquiries to the *Herald's* real estate editor usually dribble in at the rate of only two or three a week. During the campaign, however, some 200 readers wrote in to ask about the house itself—a baker's dozen per week. As the newspaper made no attempt to sell plans or give advice, the *Herald* turned all these inquiries over to Architect Graham for answer.

In dollars and cents, Graham's return for his efforts would not make a very inspiring hourly wage. All told, he grossed \$110 from the sale of plans and from architectural fees for plan alterations. Although he charged \$12.50 for each complete set of plans and specifications, he did not encourage their purchase except by those who actually planned to build. And the *Herald-Graham* house has been repeated just three times. But indirectly, Graham has been well compensated. He attributes a generous measure of his subsequent commissions to the publicity of the \$2,300 house.

The influence of the *Herald-Graham* campaign goes deeper than three small houses, however. Widespread public interest in the house has not been lost on local builders, many of whom are currently following its general design in local low cost subdivisions. Thus, should other architects and newspapers follow the *Herald-Graham* example, not they alone, but Building as a whole stands to benefit.

CONSTRUCTION OUTLINE

FOUNDATION: Walls—quarry stone laid in Penn Dixie cement, Penn Dixie Cement Co. Waterproofing—Anti-Hydro Waterproofing Co.

STRUCTURE: Exterior walls—stucco, Penn Dixie Cement Co., cement block, furring, U. S. Gypsum Co. rock lath and plaster. Interior partitions—wood studs, lath and plaster. Floor construction—single oak finish flooring over sleepers.

ROOF: Covered with cork insulated shingles, The Philip Carey Co.

CHIMNEY: Brick, terra cotta flue lining.

SHEET METAL WORK: Flashing—Anaconda copper, American Brass Co.

WINDOWS: Sash—Fenestra, Detroit Steel Products Co. Glass—single strength.

FLOOR COVERINGS: Main rooms—oak. Kitchen—linoleum, Armstrong Cork Co. Bathrooms—rubber tile, Armstrong Cork Co.

WOODWORK: Trim and cabinets—pine.

HARDWARE: By Stanley Works.

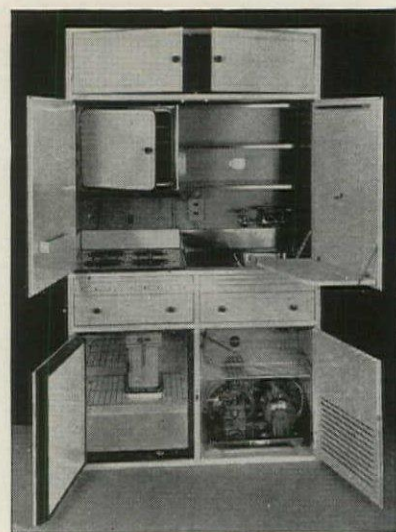
PAINTING: Material by Sherwin-Williams Co.

BATHROOM EQUIPMENT: All fixtures by American Radiator & Standard Sanitary Mfg. Co.

PLUMBING: Soil pipes—cast iron. Hot and cold water pipes—copper. Bridgeport Brass Co.

HEATING: Warm air, oil burner, Hoffman Oil Burner Co. Thermostat—Minneapolis-Honeywell Regulator Co.

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Start



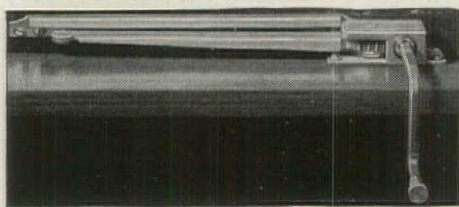
with WIN-DOR hardware
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Analysis of Win-Dor sales records show a surprising percentage of Win-Dor Casement hardware is bought to replace the original hardware on relatively "new" homes. This interesting fact simply emphasizes the unsoundness of loose specifications on window hardware.

With casement windows especially, the hardware is the thing... it does a lot of work — and must be built to stand it.

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Win-Dor Series 26 Operator (above) is and has been, for many years, a standard specification with architects. Over a quarter of a million of these quality operators are in use today. Series 26 Operator like ALL Win-Dor operators has the large Win-Dor 3/4-inch naval bronze worm, machine cut gear and many other exclusive features.

For YOUR convenience the complete Win-Dor catalog is in the new 1940 edition of SWEET'S with scale details and an accurate chart guide for modern casement installation.

Win-Dor
TRADE MARK
THE CASEMENT HARDWARE CO.
400A N. Wood St., Chicago, Illinois

CONSUMER EXPENSES

(Continued from page 130)

for this purpose. Dollar-wise, these extremes are \$40 and \$1,948 per consumer unit, respectively, and the average is \$134.

Furnishings. While only the eighth most important egg in the national market basket, Furnishings are closely related to the items discussed above. Together with Housing and Household Operation they account for a little over \$16 billion of total consumer expenditures, rank close to Food. Considered alone Furnishings—which include household equipment for kitchen, cleaning and laundry and such furnishings as chinaware, textiles, luggage as well as furniture—cost some \$1.4 billion per year. At no income level do Furnishings account for more than 4 per cent of consumer income or expenditures.

Food is of interest to Building only because it is the strongest competitor for the consumer's dollar. The biggest item of national expense (except in the \$20,000-and-up income brackets where Housing noses it out), Food accounts for \$17 billion, or 29 per cent, of the \$50.2 billion spent each year for current consumption. Of this amount, \$15 billion is the cash cost of food, candy, beverages, etc. purchased in retail stores and restaurants, while the remaining \$2 billion represents the imputed money value of food produced by rural families for their own use. (The latter value accounts for about 50 per cent of the total food "expense" for farm families, about 6 per cent for rural non-farm families.)

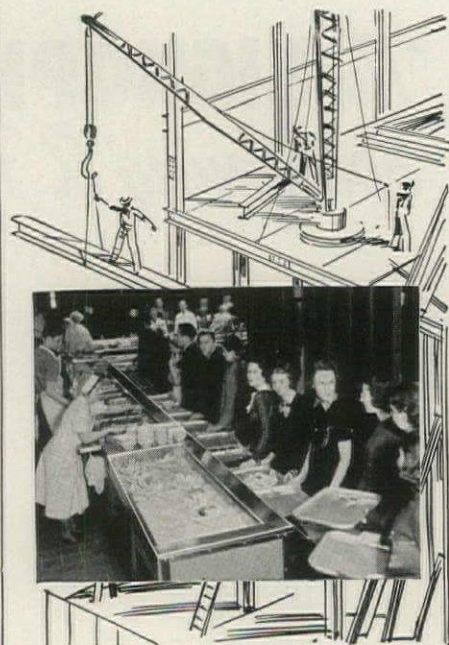
In the lowest annual income group—under \$500—the cost of food consumes about two-thirds of total income, but as it goes up the income scale it accounts for a rapidly decreasing proportion until at the \$20,000-and-over level it has shrunk to only 5 per cent. In fact, food expenditures in relation to annual income vary more than any other item of current consumption (see chart, page 130).

Other items. While several other items of current consumption bulk large in comparison with those already mentioned, they are adequately summarized in the chart on page 128. Worthy of particular emphasis, however, are such facts as these:

► Clothing (\$5.3 billion) gives Household Operation a close race for third position in the consumer expenditure race, but ends up in fourth place followed by the Automobile (\$3.8 billion).

► Average outlays for tobacco and smoking accessories equal or exceed the cost of personal care among the lower income groups, and the total annual expenditure for this item (\$966 million) is surprisingly greater than that for transportation other

(Continued on page 44)



PLANNING ENGINEERING DESIGN

IT IS just as important that the food service departments are properly designed and definitely specified as it is to engineer the structure itself to withstand the loads and stresses to which it will be subjected. The installation of food service equipment requires the coordination of steam fitting, plumbing, electrical work, ventilation. In this, John Van engineers can be of great assistance.

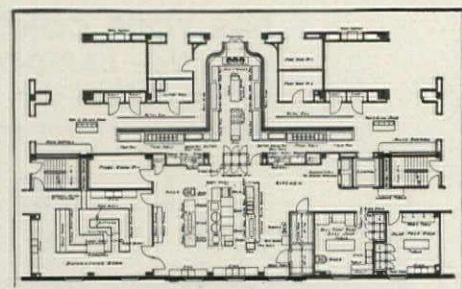
LEADING ARCHITECTS realize the importance of such problems as proper allocation of departments, relative areas, provision for service lines, and use of proper materials, and include such data in the early planning stage.

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FIRE AND LIGHTNING

FLY WHEEL

GROUND RENTS

HAUL

COVERAGES

HEALTH

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PARCEL POST

PLATE GLASS

PUBLIC LIABILITY

RENTS

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now feel that the houses in which it has been used are

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by William E. Melton

WEM/jo



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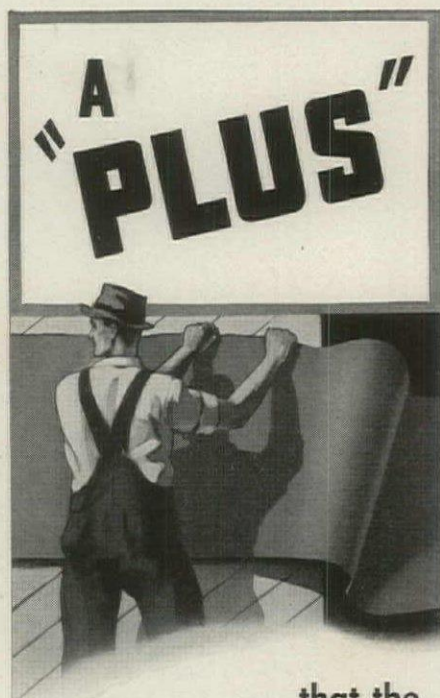
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(Continued from page 42)
than by automobile (\$884 million) or that for Reading (\$551 million).

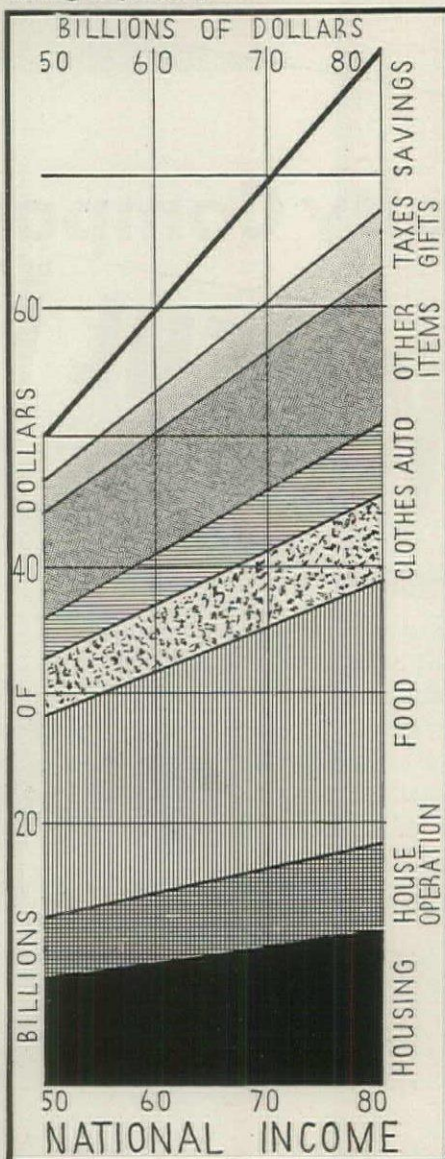
► Since by far the biggest part of the U. S. education bill is paid for by Government, the relation of the Education item (\$506 million) to other consumer expenditures is misleading. It includes, for the most part, the cost of school books and supplies and the tuition fees at private schools and colleges.

► "Other items" grouped together in the chart on page 128 include interest on debts, bank charges, lawyers' fees, funeral expenses, etc.

► Taxes, which cannot be considered an item of consumption, cover only Federal and State income taxes (the major items), poll taxes and certain personal property taxes. Other taxes levied upon consumers have been included in the specific categories to which they pertain. Thus, real estate taxes are included in Housing.

► Comprising a comparatively small use of income, Gifts have been lumped together with Taxes in the charts on pages 128 and 130. Noteworthy is the fact that,

TOTAL DISBURSEMENTS assuming four sizes of national consumer income distributed according to present pattern.



although the income of the lowest third is insufficient to cover expenses, consumer units at all income levels make gifts.

Possible Patterns. Throughout the foregoing analysis, two underlying factors have controlled the patterns of consumer spending: 1) the total volume of consumer income which in the year 1935-36 came to about \$60 billion and 2) the distribution of this income among the different population groups as shown in the chart on page 129. Using these tools and several arbitrary assumptions, it is possible to estimate the effects upon the National market basket of changes in economic conditions.

Assuming that population, prices and other conditions remain unchanged, a rise in consumer income if distributed according to the present pattern would expand the dollar outlays for every category of disbursement. (See chart, left, below.) Greatest expansion, however, would occur in Savings which, in turn, would broaden Home Building's market to a greater extent than any other. For instance: a 16 $\frac{2}{3}$ per cent increase in total consumer income from \$60 billion to \$70 billion would raise by approximately 50 per cent the net positive savings of the Nation—from \$6 billion to \$9 billion.

Among the current consumption categories, Food fluctuates most on a dollar basis with changes in total consumer income. Housing comes next. Largest percentage changes occur in the Education, Automobile and Recreation categories.

Under a second hypothesis, which assumes that distribution of income among consumer units becomes more equal as total consumer income increases, the same general effects upon the various categories of consumption are noted. In this case, however, more money goes to current consumption and consequently total Savings increase by a smaller proportion.

When it is assumed that the total amount of consumer income remains unchanged while its distribution becomes more nearly equal, it is found that Savings is hardest hit, that Food absorbs the greatest part of the income thus released.

These statistical wanderings through hypothetical conditions—which may someday exist—underline one salient fact: As total consumer income increases, expenditures for every category of consumption expand, without exception; and there is no evidence of a limit to this expansion which might be expected to result from satiation of wants.

On the basis of these carefully documented findings of the National Resources Committee, it is safe to say that U. S. consumers will continue indefinitely to increase their purchases of Building's products as long as national purchasing power increases. And a basic prerequisite to increased national purchasing power is the careful study by Building and all other industries of the spending habits within their markets.



Howard R. Jacobs

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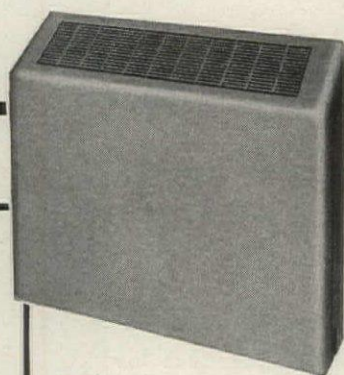


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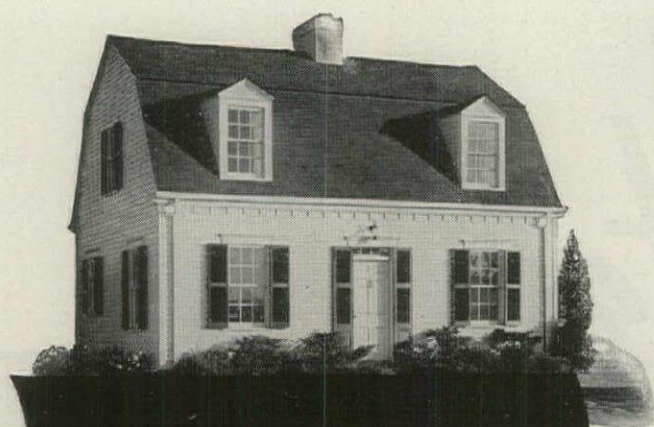
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Heating...Cooling...Air Conditioning Equipment

Unit Heaters - Convectors - Cooling Coils - Blast Coils - Unit Ventilators - Compressors - Air Conditioners - Low Pressure Refrigeration



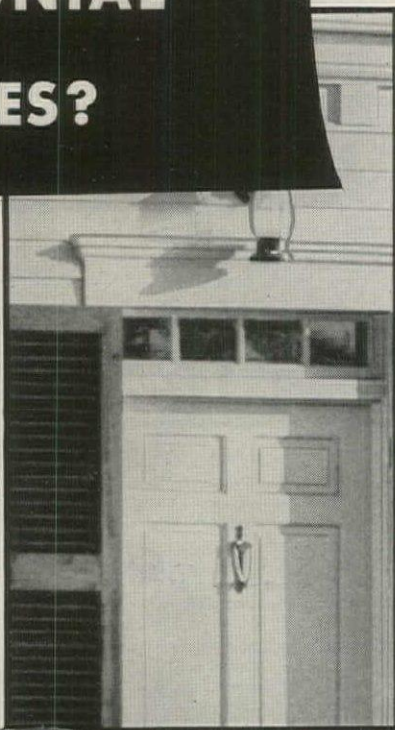
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do you specify
for DUTCH
COLONIAL
HOMES?**

• A safe specification is Eagle White Lead. Since 1843 Eagle White Lead has been preserving the beauty of American homes. This weather-resisting pigment creates an elastic paint film when mixed with oil. Doesn't scale. Doesn't crack. Your clients are money ahead when they paint with white lead.

The Eagle-Picher
Lead Company
Cincinnati, Ohio



EAGLE pure
**WHITE
LEAD**



ARCHITECTS — WEBER & SMITH

Makers of Eagle Home Insulation — Fireproof, Water-Repellent Mineral Wool.

FORUM OF EVENTS

(Continued from page 14)

COMPETITIONS

INSULUX GLASS BLOCK COMPETITION No. 4—A New Plant. \$2,500 in prizes; closing midnight of March 18 to architects, architectural designers and architectural draftsmen in the Western Hemisphere. Program available from THE ARCHITECTURAL FORUM.

BEAUX-ARTS INSTITUTE OF DESIGN—A 1,000-watt Broadcasting Transmitter Station. \$400 in prizes; closing March 18 open to students in all architectural schools and colleges in the U. S. Registration with the secretary, B.A.I.D., East 44th St., New York, N. Y.

DEATHS

WILL RICE AMON, architect, 40, in New York. Born in Lancaster, Ky., Mr. Amon studied engineering at the University of Kentucky, being later graduated from Massachusetts Institute of Technology in 1922, and receiving his Master of Arts degree in 1923. He won the LeBrun Traveling Fellowship and later the Aleau from Fontainebleau. After an association with M. & Aldrich from 1922 to 1929 he formed the partnership of Amon & Grieshaber. Mr. Amon was for two years an instructor of architectural design at Cooper Union, and since 1931 had been assistant professor of architecture at New York University.

GEORGE ERLE BEGGS, civil engineer, 56, in Princeton. Professor Beggs was head of the Department of Civil Engineering in the Princeton School of Engineering, and consultant on some of the Nation's largest bridges, including the San Francisco-Oakland Bay Bridge, the Golden Gate Bridge and the Arlington Bridge in Washington.

JONAS LIE, artist, 59, in New York. Born in Norway, Lie came to this country with his parents as a boy and attended the Ethical Culture School, and at the age of seventeen went to work as a designer of cotton fabrics. From 1903 onward his name became increasingly important in American art, and his pictures began to appear in the museums. Consistently a liberal in art, he was a group for the liberalization of the National Academy, and one time resigning from that body to set up the American Painters, Sculptors and Gravers. In 1934, however, Lie was elected president of the National Academy, and resigned from that post only last October to gain a rest and find more time for painting.

WILLIAM EDWARD PARSONS, architect, 67, in New York. Born in Akron, Ohio, Mr. Parsons was graduated from Yale in 1895, received his Bachelor of Science degree from Columbia three years later, and his Bachelor of Fine Arts degree in architecture from Yale in 1905. The McKim Fund scholarship was awarded him, and he studied at the Ecole des Beaux-Arts in Paris. Mr. Parsons was appointed consulting architect to the U. S. Government, for which he designed many public buildings in the Philippines during 1905 to 1914. Return to Chicago he formed a partnership with E. H. Bennett, and in 1922 became Bennett, Parsons & Frost. One of the firm's most conspicuous works was the development of the Capitol grounds between the Capitol and Union Station in Washington. In 1938 Mr. Parsons was made associate professor of architecture at Yale. He was a member of the American Institute of Architects.

WALTER MELLOR, architect, 60, in Germantown, Pa. In Philadelphia, Mr. Mellor studied at Haverford College.

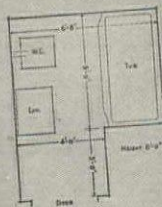
(Continued on page 60)

WE BRING **PRICE** OUT INTO THE OPEN

IS *Tile* ?
REALLY EXPENSIVE?



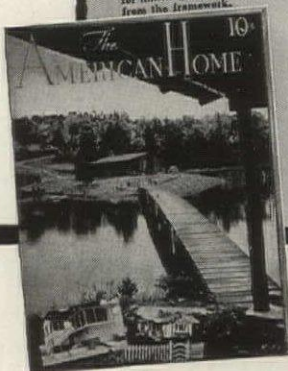
**YOU
BE
THE
JUDGE!**



THIS ROOM COST ONLY 15¢ MORE PER MONTH*

You recognize the high quality of tile... appreciate its beauty and durability. You know that it is always sanitary... that it does not chip, crack, peel or stain... requires no periodical refinishing or replacements... and that the swish of a damp cloth keeps it clean, bright and fresh always. But have you the mistaken idea that you have to pay a tremendous premium to enjoy the countless advantages of tile? Well, you don't. The difference in cost between a tiled room and one finished with other materials may be as little as the price of one pack of cigarettes per month. That is what the actual figures on this bathroom prove. So don't let 15¢ a month stand between you and the luxury of the tiled room you really want. Why be satisfied with substitutes, when tile is really the *least expensive* in the long run.

* This is the actual difference in monthly payments on a 25-year amortized mortgage, between tile and a commonly used substitute, according to Metropolitan New York bids for finishing the walls and floor of this bathroom starting from the framework.



*to correct a general
but mistaken idea*

Unfortunately, many people have the mistaken idea that they have to pay a tremendous premium to enjoy the countless advantages of Tile. That's why we show in the ad reproduced here that the difference in cost between a tiled room and one finished with other materials may be as little as the price of one pack of cigarettes per month. The actual figures prove this. When prospective home buyers and home builders realize that only 15¢ a month may stand between them and the luxury of the tiled room they really want, the bug-a-boo of high cost will be removed. Everyone recognizes the high quality of Tile... appreciates its beauty and durability... knows that it is always sanitary... that it doesn't chip, crack, peel or stain and that it requires no periodical refinishing or replacements. Our advertisements in *The AMERICAN HOME* and in *HOUSE & GARDEN* are spreading the news that Tile is actually the least expensive in the long run and that it is a mistake for anyone to be satisfied with substitute materials.

"FACTS ABOUT TILE"

24 pages of facts... new designs... rooms in full color. May we send you a copy for your files?

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TILE MANUFACTURERS'
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AF1



Cord Building, Beverly Hills, Calif., Alberene Black Serpentine Facing and Bulkheads; Burton L. Schutt, Architect.

The Popular Dark Stone for Facing and Panels...



Continental Oil & Gas Company Building, Houston, Tex., Alberene Black Serpentine Paneling; Kenneth Franzheim, Architect.

Moderate in Cost...Negligible in Upkeep!

Out in Beverly Hills, California, Burton L. Schutt produced a striking, modern building using Alberene Black Serpentine for facing and bulkheads and glass brick for walls.

In Houston, Texas, Kenneth Franzheim, Architect, selected this quarried stone for window paneling for the smart, business-like building for Continental Oil & Gas Co.

Alberene Black Serpentine is a good stone to remember when you want a durable, dark stone which can be installed at moderate cost. Having great toughness and density, it can be cut into sections as thin as $\frac{7}{8}$ " for facings, bulkheads, spandrels and panels. The stone polishes naturally to a rich, deep satiny finish, not reflective or mirror-like. A request on your business letter-head will bring you samples, conveniently boxed, showing the range of stones, including black and mottled dark blues and greens. Please address Alberene Stone Corporation of Virginia, 419 Fourth Avenue, New York. Quarries and Mills at Schuyler, Virginia. Sales offices in principal cities.

**ALBERENE
BLACK SERPENTINE
FROM THE ALBERENE QUARRIES**

ANNOUNCING

LONG-LIFE
CONSTRUCTION

The Smartest Thing On "Main Street!"

A BRAND-NEW NUMBER IN A WINTER AIR CONDITIONER HAS COME TO TOWN!

FROM THE JANITROL
BLUE-BLOODED FAMILY, TOO

BACKED BY
TWO-FISTED
SALES AND
ENGINEERING
HELPS

SIR, MISTER ARCHITECT...NOW ENGINEERING SKILL
AND QUALITY OF MANUFACTURE ARE COMBINED IN A
HEATING UNIT FOR TRUE FUNCTIONAL DESIGN!

How many times have you been limited in your design because of the heating system? "Too large"—"too difficult to install"—"too limited as to placement"—all these and many other difficulties have a familiar ring to your ears.

But Janitrol for 1940 is factory made—factory assembled—small enough in the most widely used sizes to go anywhere—compact and complete. Place it in basement corners—in equipment or utility rooms—even up in the attic—and you'll still have a balanced job.

It's new in looks—new in principle—new in economy of operation and new in low cost. Why not take advantage of all the pertinent information the Janitrol representative can give you about it. Call him for consultation.

SURFACE COMBUSTION CORPORATION • TOLEDO, OHIO

Don't put it off! Write for More Details on
THE SEASON'S "CATCH" IN EYE APPEAL!

JANITROL

FOR
1940

Sturdy streamlined cast iron combustion tube, simply designed, affords entirely new conception of compactness. Janitrol Combustion Engineers in maximum quantities absorb and transfer heat from hot combustion gases without massive complex heat exchangers. Multi-Thermex Tubes make this possible—one outstanding feature of phenomenal 1940 Janitrol.

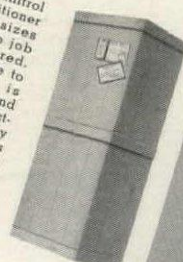
NEW
"MULTI-THERMEX"
HEAT
EXCHANGER

New Janitrol Amplifire Burners—another outstanding contribution to modern heating. Short, highly intense, continuous flame is directed exactly where it operates at highest efficiency. Easy to adjust—easy to inspect—easy to use—with famous Janitrol Safety Pilot—they make an unbeatable combination.

NEW
"AMPLIFIRE"
BURNERS

NEW
PACKAGING
COMPLETELY
ASSEMBLED

New 1940 Janitrol FAC conditioner in popular sizes delivered to job just as pictured. Only one crate to open—unit is ready to be set and connected to ductwork and supply lines. Yet with this saving feature, every part is readily accessible. It's a triumph in design.





New...
**A LOW-COST FLOOR
 THAT'S READY FOR USE
 The Instant It's Laid!**

YOU know how anxious a client is to move into his new home a week earlier. Bruce STREAMLINE Flooring comes factory finished... saves time of sanding, finishing, waxing and polishing. And yet this beautiful factory-finished floor usually costs less than ordinary hardwood floors finished on the job. Comes 25/32" thick by 3 1/4" wide in oak, beech, or maple.

Bruce STREAMLINE Flooring has beveled ends and edges. Gives a distinctive "patterned" effect that's bound to please the owner. And the factory-applied finish penetrates the wood. Provides a tough, lustrous finish that resists scratching... won't chip or peel.

Use Bruce STREAMLINE Flooring on your next job. Send coupon for details and scratch test panel.



E. L. BRUCE CO.

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 Memphis, Tenn.

E. L. BRUCE CO., 1530 Thomas Street, Memphis, Tenn.

Gentlemen: Please send fully illustrated literature all about the new Bruce factory-finished STREAMLINE Flooring. Also a Scratch Test Panel.

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Street.....

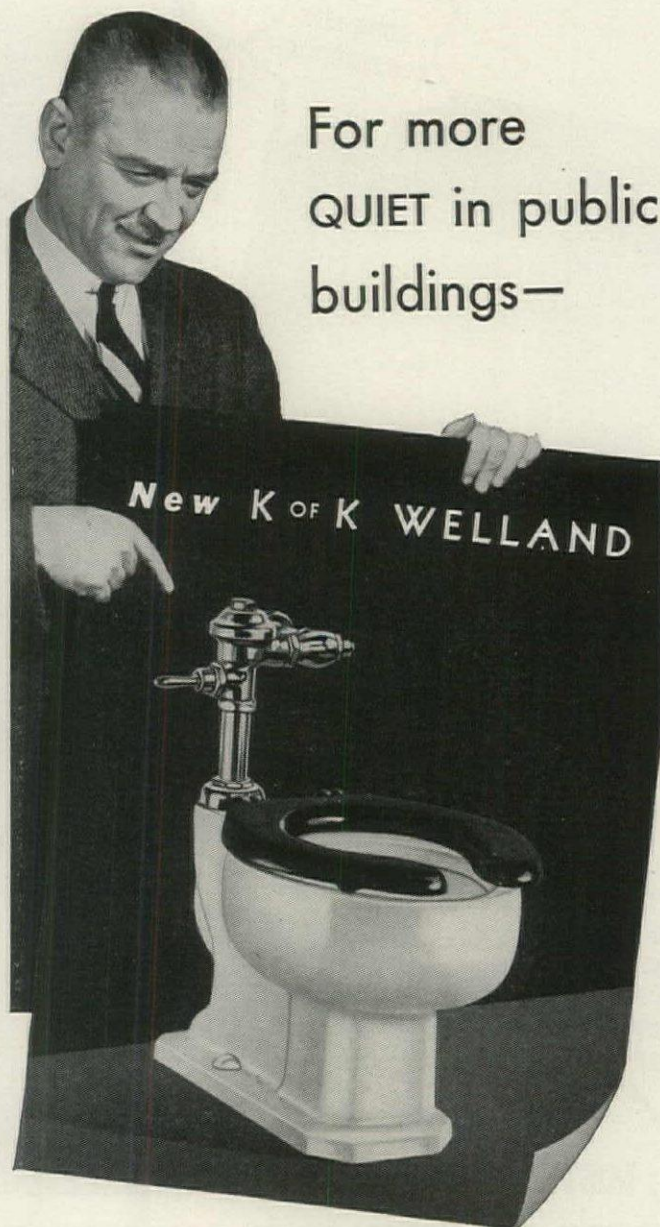
City.....

MAKE THIS SCRATCH TEST



"Bruce-Way" | Surface Finish

Send for this scratch test panel. Half is finished the new "Bruce-Way" used on STREAMLINE Flooring—other half finished the ordinary surface way. Scrape a coin across both finishes. See how the ordinary surface finish scratches and chips away, while the "Bruce-Way" finish is unharmed.

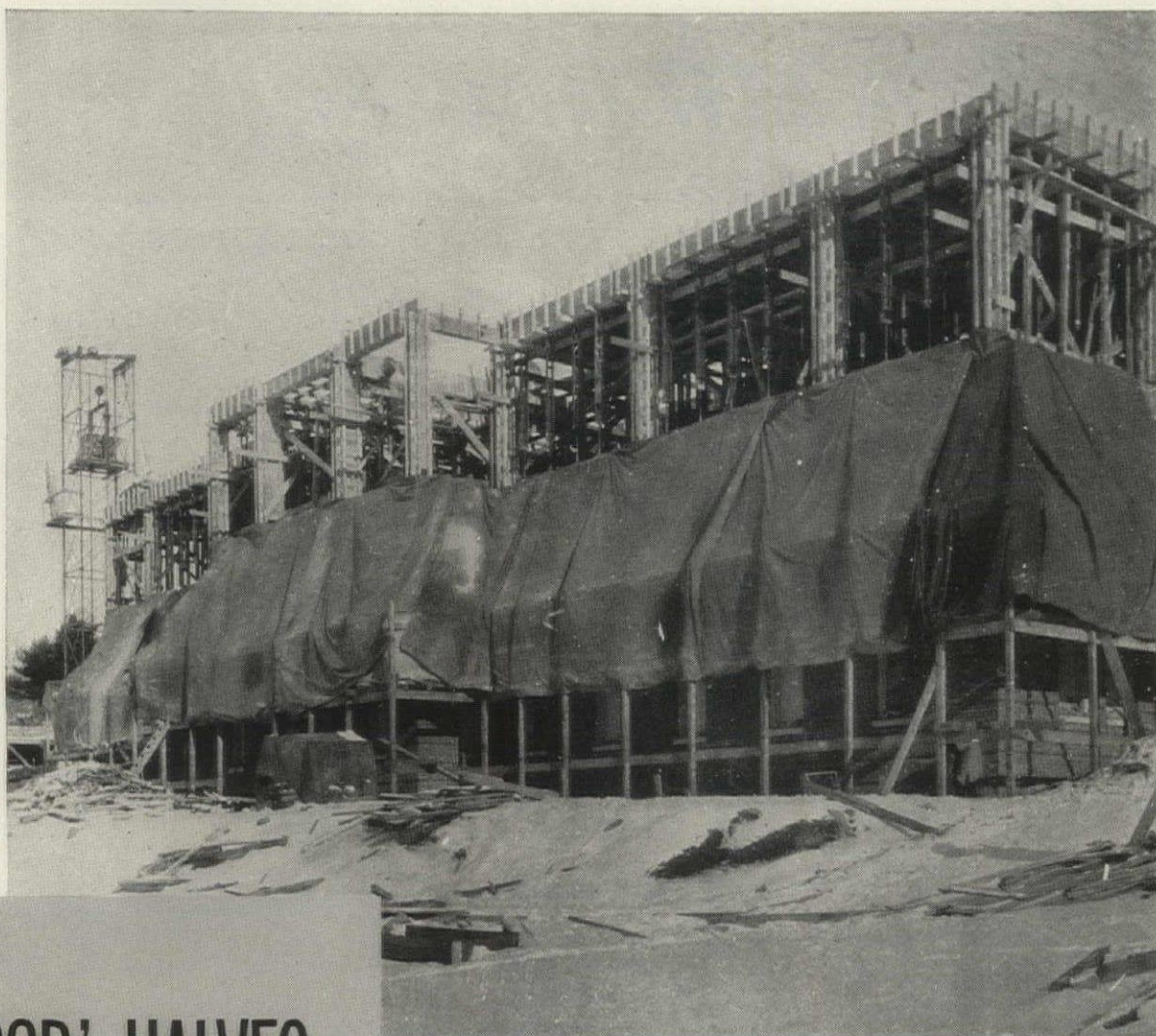


THE increasing demand for a quiet flush valve closet for apartments, hotels, hospitals, schools, other public buildings and new homes was the reason for developing the K of K Welland. When the closet is flushed, the whirlpool action in the bowl is remarkably quiet. For maximum quietness and efficiency, the Welland must be used with the newer type quiet-action flush valves.

For sanitation and easy cleaning, the Welland's design is clean-cut. No ridges or beads to collect and hold dirt. It matches other Kohler fixtures.

Write for particulars on the new Welland. And on the full line of quality Kohler fixtures and fittings for bathroom, laundry, kitchen. Kohler Co. Founded 1873. Kohler, Wisconsin.

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 PLANNED PLUMBING AND HEATING



'INCOR' HALVES HEAT-PROTECTION COSTS

AS temperatures fall, concrete hardens slower; at or about freezing, hardening stops altogether—and, left to itself, concrete is exposed to damage by frost. So heat-protection is employed to promote hardening and prevent freezing.

Because it cures or hardens in one-fifth the usual time, 'Incor' 24-Hour Cement reduces the cost of cold-weather concreting; for the obvious reason that one hour's heat-protection with 'Incor' is equal to five ordinarily. That is why 'Incor' saves 50 to 60 percent of the usual cost of heat-protection, producing concrete that is service strong, safe from freezing, days sooner.

In addition, 'Incor's dependable high early strength makes it possible to re-use forms sooner; and faster completion means earlier use, often at lower cost.

Specify 'Incor'* 24-Hour Cement for winter work. Write for copy of "Cold-Weather Concreting." Lone Star Cement Corporation, Room 2296, 342 Madison Avenue, New York.

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LONE STAR CEMENT CORPORATION

MAKERS OF LONE STAR CEMENT • • • 'INCOR' 24-HOUR CEMENT

Gas swings sales...



16,000,000 HOMES USE
***GAS* FOR COOKING**

The Gas range is America's preferred cooking appliance. And since homes these days are more than ever sold through the kitchen, it pays to equip your houses with ranges that are thoroughly modern in appearance and give the buyer maximum cooking efficiency.

With a Gas range you save money on initial and installation costs. The fact that a Gas range, especially the new CP Range, makes cooking easier, faster, cleaner, and thriftier is reason a-plenty why builders are installing Gas ranges to help sell houses.

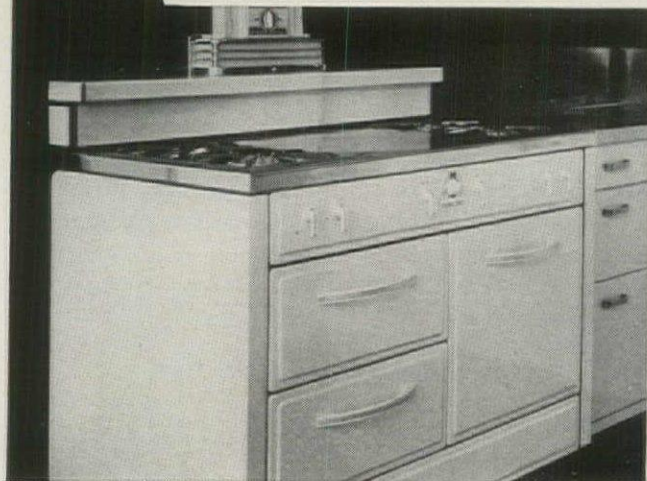
AMERICAN GAS ASSOCIATION

LET
GAS
DO THE 4 BIG JOBS

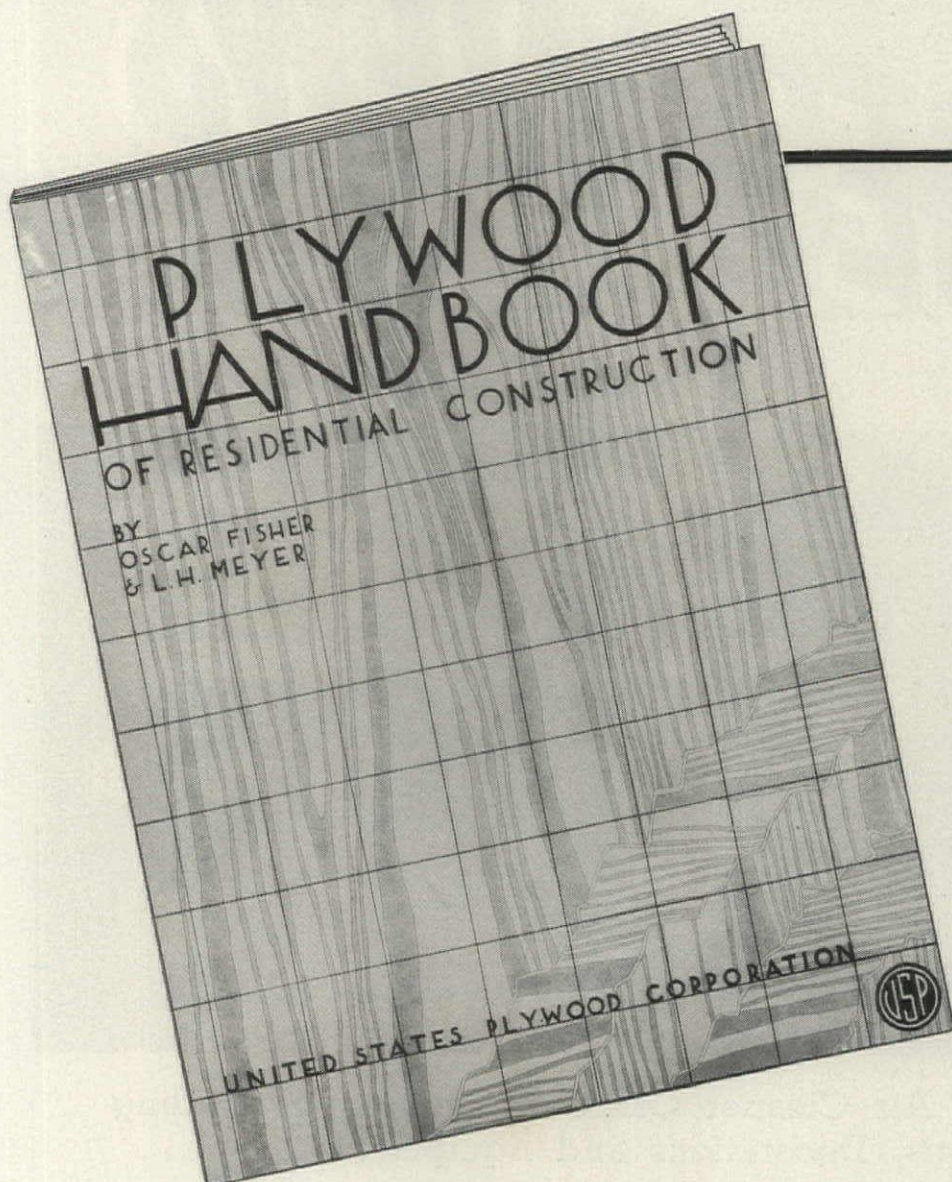
COOKING
WATER HEATING
REFRIGERATION
HOUSE HEATING



Be sure the gas appliances you specify bear the Approval Seal of the American Gas Association Testing Laboratories.



FREE to ARCHITECTS and BUILDERS



The Plywood Handbook

summarizes the *field* experience of *practical* men in the erection of all-plywood houses. It explains the fundamental steps in design and development and includes draughting details such as

● EXTERIOR and INTERIOR CORNERS and JOINTS, DATA on INSULATION and MOISTURE BARRIERS, NAILING and FINISHING.

The TYPICAL PLANS and renderings of \$2,000, \$3,500 and \$5,000 HOUSES with outline SPECIFICATIONS and COST BUDGETS will serve as a sound basis from which designers can develop individual ideas.

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A note on your letterhead or business card will bring this 40 pp. 8½" x 11" booklet

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FOR interior trim, in bright finish or under paint, enamel or wallpaper.

WELDWOOD

Waterproof Plywood

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BIGGEST NEWS

In air cleaning

Here the Precipitron is shown actually removing smoke particles from the air—as small as $1/250,000$ inches in diameter.



New Electrostatic Air Cleaner Offers Protection to Building Contents, Decorations and Equipment

When any new development brings entirely new protection to the building and its contents, greater comfort and healthier surroundings—*that's NEWS!*

For the first time, all buildings now can have perfected air cleaning. Precipitron—the new Westinghouse Electrostatic Air Cleaner—eliminates even those tiny, destructive particles below one micron in diameter. So efficient is the Precipitron that it actually traps tobacco smoke particles $1/250,000$ inches in diameter.

It is these millions of minute particles of air-borne foreign matter that collectively ruin building interiors, furnishings, decorations and documents, impair the efficiency of delicate machinery, and in general add to up-

keep and production costs.

So efficient is the Precipitron in removing these impurities that an improved measuring system—the Blackness Test—is used by the U. S. Bureau of Standards to determine its ability to remove foreign matter. Numerous installations in public, commercial and industrial buildings have definitely proved the superiority of the Precipitron in mass air cleaning.

You can obtain complete information about this new Electrostatic Air Cleaner through your nearest Westinghouse Office, or by writing Westinghouse Electric & Mfg. Co., Precipitron Dept., Edgewater Park, Cleveland, O.

*The Precipitron trade-mark is registered in the U.S.A.

Westinghouse PRECIPITRON



OUTSTANDING THE 1940 T/N

● When you specify the T/N one-piece Water Closet your clients are assured of a plumbing fixture that has been selected for years by architects and builders for all types of construction in every price range, and endorsed by plumbing contractors everywhere.

The result—owner satisfaction that means so much to you.

For 1940 the plus-value T/N has been further improved in its efficiency: the complete operation of the fixture takes place in less than a minute, and with unusual quietness. Add this new feature to the T/N's well-known advantages, and you have—more than ever—the outstanding plumbing fixture today.

ONE-PIECE • QUIET • NON-OVERFLOW • SAFEGUARDING HEALTH
Sixty-five colors for any decorative scheme



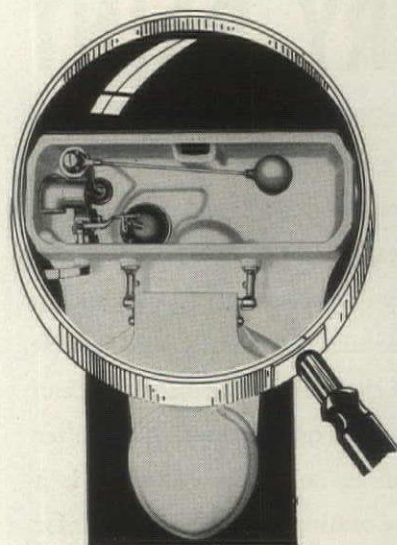
IMPORTANT ACCEPTANCE

Tested and accepted by leading authorities, including the National Plumbing Laboratory.



IMPORTANT PROTECTION

The atmospherically vented *non-syphoning* ballcock safeguards health by giving absolute protection to the domestic water supply. Precision-built for low maintenance cost.

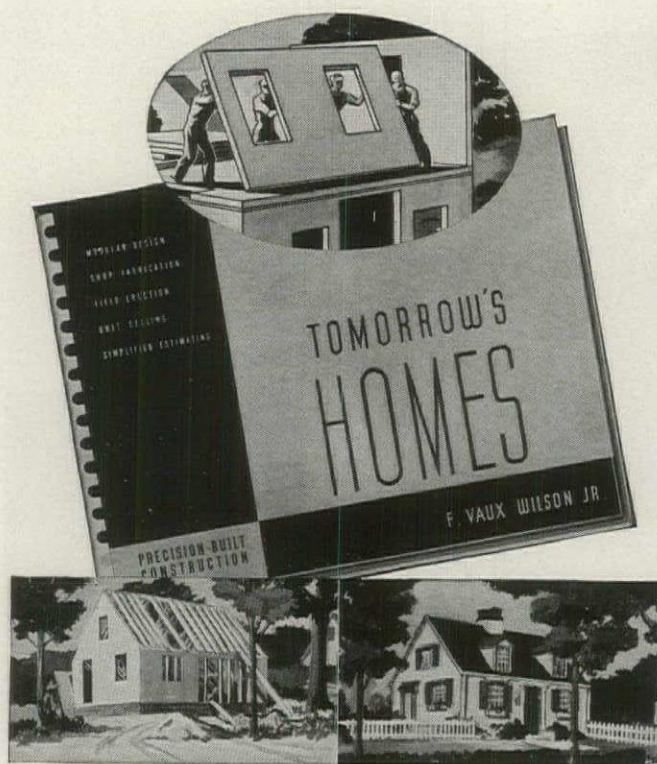


PLEASE WRITE TODAY

Case products are distributed nationally by plumbing wholesalers. There is a Case distributor in your vicinity who will be glad to demonstrate the new T/N. Write for name and address. Dept. E-20, W. A. Case & Son Mfg. Co., Buffalo, N.Y.

CASE

DISTINCTIVE PLUMBING FIXTURES



...This book tells how the **BEMIS MODULE** *simplifies design problems*

EXPLAINS THE PRECISION-BUILT SYSTEM OF CONSTRUCTION...TELLS HOW TO FABRICATE IN THE SHOP...HOW TO ERECT...HOW TO ESTIMATE...
HOW TO SELL HOMES

\$3,000,000 of architect-designed Precision-Built Homes have been erected within the past 3 years!

TOMORROW'S HOMES — just published — gives you the whole story. It shows the architect the way to new business; shows how to save time in planning, drafting, estimating and supervising the job. (The finished house—*any size, any type*—is ready for occupancy, 30 days after your design is approved.)

The Bemis 4" module is the smallest, nominal, structural dimension occurring in the wood frame house. The use of this module in the Precision-Built method, means standardization, integration, the simplification of the architect's designs, the saving of many hours in both drafting and detailing.

Yet it does not in any way re-

strict your flexibility of design!

Precision-Built Homes are built of standard materials and with quality construction throughout. They are doubly insulated; they stay "new" longer; they are eligible for F.H.A. Insured Mortgage Loan.

We invite you to write for a copy of **TOMORROW'S HOMES** (which is *privileged* to architects *without charge*). This book describes the principles of Modular Design and Precision-Built construction. It is profusely illustrated with photographs, working details, rafter tables, area, lineal foot and cubic yard tables. It shows you how to simplify design, cut costs, save time, build low-cost houses *at a profit*. We invite you to write for your copy, using your firm's letterhead. Only one copy to a firm.

HOMASOTE COMPANY
TRENTON • • • NEW JERSEY

GOOD NEWS!



A paint which can be applied to any masonry surface, old or new, painted or un-painted, wet or dry.

MURAL-TONE MASONRY PAINT

Mural-tone Masonry Paint is a weather-resisting and a non-fading decorative medium that puts the finishing touch of color on exterior masonry. It is made in eight standard colors and white, for use on new and old exterior and interior masonry surfaces of all types. Quickly ...and easily applied, one coat is generally sufficient. It dries rapidly and will not chalk, rub off or discolor. It can be applied to *new* masonry as quickly as 72 hours after construction. In addition to being decorative, it is a highly efficient protective coating. Please write for color cards and complete information.

THE MURALO COMPANY, INC. FOUNDED 1894

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For high lighting efficiency
and low annual costs..

ALZAK[®]

ALUMINUM

REFLECTORS

High efficiency, permanence, ease of maintenance; that's what you get in Alzak Aluminum Reflectors.

High reflectivity is obtained by a special electrolytic treatment of polished Aluminum sheet. This surface is protected by a smooth, oxide coating of glasslike hardness, to which dirt does not cling. It won't chip, doesn't scratch easily and can be readily cleaned by washing with soap and water.

Alzak reflectors cover a series of finishes, each suited to a different use. You can obtain bright, specular finishes or matte, diffuse surfaces. Reflectors can be supplied for ordinary indoor service or for exposure to the corrosive conditions encountered out-of-doors and in certain manufacturing processes.

Whatever your use, specify the right Alzak finish.

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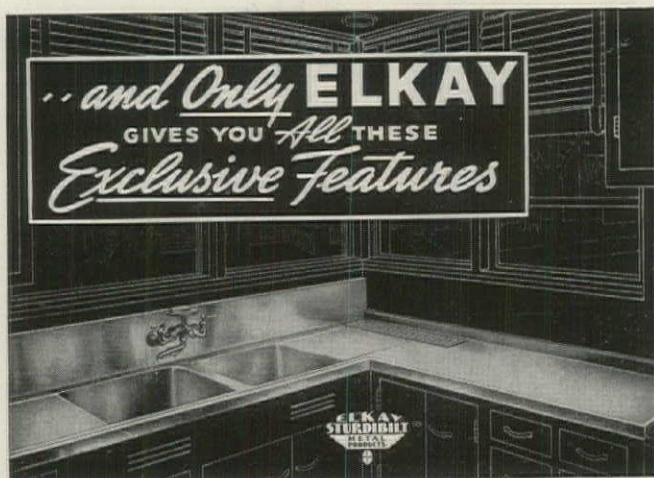
We do not manufacture reflectors. The companies listed above, licensed under Aluminum Company of America patents, are well able to take care of your requirements.



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ALUMINUM COMPANY OF AMERICA
1944 GULF BUILDING • PITTSBURGH, PA.



When your clients build a new home or remodel an old one, they make an investment in PERMANENCE. And, since the kitchen is the "workshop" of the home, it is most important that YOU select permanent equipment which will give them ALL of the exclusive features found only in

ELKAY "Sturdibilt" STAINLESS STEEL Cabinet Sinks and Tops

- 1 Made of No. 18 U. S. Standard Gauge genuine 18-8* Stainless Steel—proof against rust and stains from food acids.
- 2 Reinforced with 14 gauge steel sheets and heavy longitudinal steel channels running the full length of drainboards. This construction prevents sagging, warping, bulging and buckling.
- 3 Electrically welded (not soldered) throughout, leaving no unsightly seams, joints, or overlapping flanges to catch dirt and afford breeding places for germs, and permit seepage into cabinets.
- 4 Round cornered construction throughout, making it easy to clean and keep clean.
- 5 Drainboards are pitched full length to sink bowl forming a ledge that assures positive drainage.

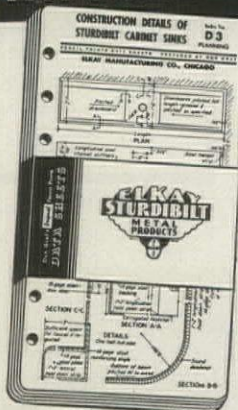
*"18-8" does not refer to Gauge but Stainless Alloy containing not less than 18% Chromium and 8% Nickel.

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FREE DON GRAF DATA SHEETS

MR. ARCHITECT: Here is the information you want and need to help you plan modern kitchens. Handy, convenient, with complete detail drawings and specifications. Write today for DON GRAF DATA SHEETS No. AF-240 and illustrated literature.

ELKAY MFG. CO.
4704-14 ARTHINGTON ST.
CHICAGO, ILL.



FORUM OF EVENTS

(Continued from page 48)

Haverford College and the University of Pennsylvania. He served his apprenticeship in the office of T. P. Chandler, 1904-06, when the firm of Mellor & Meigs was established, becoming Mellor, Meigs & Howe in 1917, and Mellor & Meigs again in 1928. Among the better known works of the firm are the residence for Arthur E. Newbold, Jr., the auditorium for Bryn Mawr College; the chapel at Bony, France, and the monument at Ypres for the American Battle Monuments Commission. In 1922 the firm was awarded the annual medal of the Philadelphia Chapter, A.I.A., and in 1925 the Gold Medal of The Architectural League of New York. Mr. Mellor was a Fellow of the A.I.A.

GEORGE STRAFFORD MILLS, architect, 73, in Toledo. Mr. Mills was born in London, coming to St. Louis as a boy of four. He attended St. Louis public schools, and was graduated from Washington University in 1884. Later he studied architecture with George I. Barnett. He moved to Toledo in 1885 to teach drawing, and later became superintendent of the Scott Manual Training School. In 1892 he resigned to enter the field of architecture, and was founder and senior member of the firm, Mills, Rhines, Bellman & Nordhoff. Among Mr. Mills' better known works are the Ohio Bell Telephone Buildings throughout Ohio; the Ohio Bank Building, the Edison Building, Toledo Club, the Commodore Perry Hotel. He was honorary president of the State Board of Examiners for Architects, and a Fellow of the A.I.A.

ALEXANDER MAIR STEWART, builder, 82, in New York. As senior member of the firm of James Stewart & Co. since 1892, Mr. Stewart was largely responsible for the construction of many well known buildings in England and America. During the World War he supervised construction for the A.E.F. Among some of the better known buildings erected under his supervision were the Madison Square Garden and the New York Central Building in New York; the Interstate Commerce Building, Department of Labor Building and U. S. Chamber of Commerce Building in Washington; State Capitol buildings of Utah, Oklahoma and Idaho; the Savoy Hotel in London. He was made a Grand Commander of the Cross of Italy in 1926.

AUBREY WEYMOUTH, engineer, 66, at Flushing, N. Y. Mr. Weymouth was vice president and chief engineer for Post & McCord, structural engineers of New York, who supplied and erected the steel for many notable buildings, including Empire State, Chrysler, Irving Trust, Metropolitan Tower, and the Music Hall in Rockefeller Center.

PERSONAL

Walter Antrim, a member of the firm of Davis & Dunlap, architects, Philadelphia, has been appointed City Architect.

L. Phillips Clarke, architect, announces that Clarence A. Smith, II, formerly with Massena & DuPont, Inc., Wilmington, Del., is now associated with him in the practice of architecture under the firm name of L. Phillips Clarke, Architect, & C. A. Smith, II, Associate Architect, with new offices in the Harvey Building, West Palm Beach, Fla.

Robert Montgomery Brown, architect, announces the transfer of his professional offices and residence to 1728 Spruce St., Philadelphia, Pa.

(Continued on page 64)



**NO OTHER DECORATIVE
MEDIUM CAN TRUTHFULLY
CLAIM ALL THESE QUALITIES**

- **Lowest Lifetime Cost**
- **Unrestricted Utility**
- **Structural Soundness**
- **Ageless Beauty**
- **Style Flexibility**

Suntile for this smart modern kitchen will be gladly displayed by your local authorized Suntile dealer. He has complete specifications for this Sunstyled room.

THE WOMEN . . . Bless Them . . . DOUBLE BLESS THE ARCHITECT WHO KNOWS HOW TO PLEASE THEM

Yes—how to please them and still recognize obligations of the profession. "I want my kitchen smartly modern"—"I want utility value in my kitchen"—"I want beauty, but it must be in good taste"—"I want cleanliness that's easy to maintain." For these feminine demands the architect has at least one correct answer—Suntile—the all clay tile of long lived beauty—cleanliness—modern design—lifetime economy. The medium that permits utmost latitude and flexibility of treatment, the happy combination that balances architectural soundness with client satisfaction. Suntile installations are guaranteed by the authorized Suntile Dealer—this means trustworthy cooperation that fulfills specifications to the letter. Talk with this Suntile Dealer before you specify your next job.

THE CAMBRIDGE TILE MFG. CO. • Cincinnati, Ohio

Warehouses in

NEW YORK CITY • BROOKLYN • CHICAGO • DALLAS • SAN FRANCISCO • LOS ANGELES



Suntile Color Selection SERVICE

A patented system of balanced color presentation, through an interchangeable section assembly of full size tile panels. You and your client can see in a few minutes color balanced combinations, including floors, wainscot and trim as they will appear in an actual installation.

Combinations of your preference can be quickly demonstrated. Experience has proved that this quick, effective presentation saves time, eliminates confusion, and the error of mental visualization. It avoids the difficulties so often encountered through insufficient or misproportioned samples. A demonstration by your authorized Suntile dealer will convince you.

ZURN ENGINEERED CARRIERS

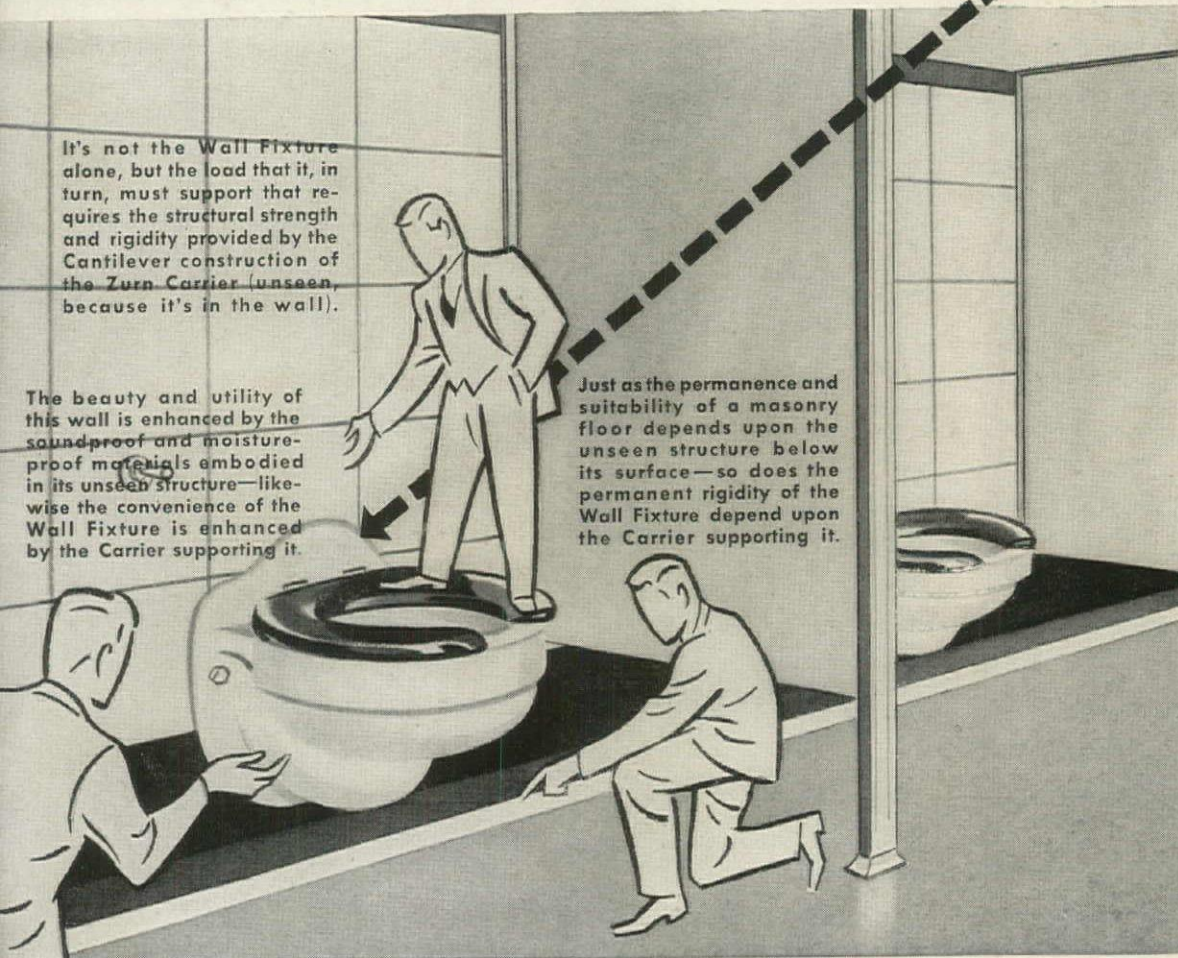
**Are No Less Important to Wall Fixture Installations
than the Fixtures They Support**

**FOR ALL TYPES
AND MAKES OF
WALL FIXTURES**

It's not the Wall Fixture alone, but the load that it, in turn, must support that requires the structural strength and rigidity provided by the Cantilever construction of the Zurn Carrier (unseen, because it's in the wall).

The beauty and utility of this wall is enhanced by the soundproof and moisture-proof materials embodied in its unseen structure—likewise the convenience of the Wall Fixture is enhanced by the Carrier supporting it.

Just as the permanence and suitability of a masonry floor depends upon the unseen structure below its surface—so does the permanent rigidity of the Wall Fixture depend upon the Carrier supporting it.



CARRIERS for Wall Fixtures are worthy of specification. So long as carriers are considered merely as incidental accessories to the fixtures they support, Wall Fixture installations are likely to be "jinxed" by damaging strain on the wall, installation grief, and other complaints. Zurn Engineered Carriers possess a distinct functional identity of their own.

The tested mechanical and structural features of Zurn Carriers overcome the inadequacies and risks usually traceable to common contrivances and ordinary methods of supporting Wall Fixtures. Zurn Engineered Carriers alone offer: (1) Cantilever construction; (2) Positive adjustability, both vertically and horizontally; (3) Easy, quick installation; (4) Permanent perfect alignment.

Now you can utilize in full, the sanitation, convenience, and style of Wall Fixtures without any reservations as to the continuing satisfaction of the installation. Specify Zurn Engineered Carriers for every Wall Fixture installation and run no risk of complaints cropping up later.

The basic line of Zurn Engineered Carriers includes 25 different styles—a type for supporting every make and type of Wall Fixture. The Zurn Carrier Catalog describes and illustrates each type and application. If you don't have a copy—use the coupon to get yours today.

J. A. ZURN MANUFACTURING CO. • Sales Office and Factory: ERIE, PA.



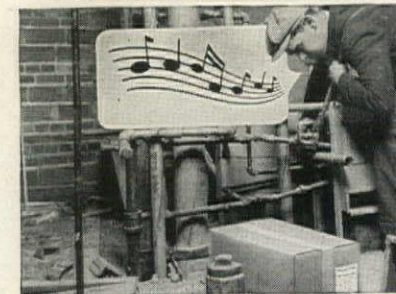
EXTRA FLOOR SPACE is provided by Wall Fixtures and sinks for accommodating hot water supply cabinets, waste baskets, etc.



AID TO SANITATION. Wall fixtures in restrooms and washrooms promote cleanliness. Floors are easy to clean and keep.



NO DAMAGING STRAIN ON THE WALL. The cantilever construction of Zurn Carriers—in principle to that used in supporting bridges—relieves the wall of damaging strain.



NO INSTALLATION GRIEF. Simple, positive adjustments compensate for structural variations in floors and walls. Step-by-step instructions insure correct installation procedure.

THIS CATALOG FREE. Only complete and authoritative book ever published on the subject of Carriers for Wall Fixtures.



J. A. ZURN MANUFACTURING CO., Erie, Pennsylvania

Please send me without obligation a copy of the Zurn Carrier Catalog.

NAME _____

ADDRESS _____

CITY AND STATE _____

P.S. Attach this to your business letterhead.

ZURN

**BUILDING DRAINAGE PRODUCTS
ROOF TO BASEMENT**



We believe you'll find it worth while to have full information about the complete Crane heating line. You also may want the facts about the advantages of infra-red ray heat as provided by Crane radiators. Write us—there's no obligation.

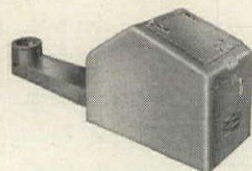


CRANE No. 10 BOILER

The Crane No. 10 Boiler is designed to burn *any* fuel economically—coal or coke, oil or gas. It can easily be converted from one fuel to another after it is installed. Here's a heating unit that offers the architect utmost flexibility in meeting various conditions. Other Crane Boilers may be had in sizes to meet any home requirement.

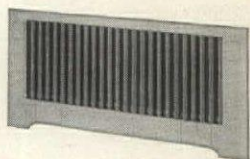
CRANE No. 16 SUSTAINED HEAT BOILER

The sustained heat principle, exclusive with Crane, prevents the escape of heat when the oil burner is turned off. Combustion gases are released *only* when their heat has been utilized. No wonder this Crane oil burning boiler is first choice for so many installations.



CRANE AUTOCOAL STOKER

Operates on the forced underfeed principle to give practically complete combustion . . . more heat units from cheaper sizes of fuel . . . saves fuel that would otherwise be wasted.



CRANE COMPAC RADIATORS

Crane Compac Radiators are built in sizes for every need. They may be recessed in the wall leaving the floor entirely clear or may be used for

free standing installation. Their slender compact design requires little floor space.



This symbol identifies dealers able to give your clients complete heating service.

CRANE VALVES AND FITTINGS

A Crane complete heating system is *all* CRANE—down to the valves and fittings—assuring utmost dependability in every part of the system.

The completeness of the Crane line assures the successful solution of any heating piping problem.



CRANE

CRANE CO., GENERAL OFFICES
836 S. MICHIGAN AVE., CHICAGO

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PLUMBING • HEATING • PUMPS

NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS



Here's

HELP

when price competition threatens a sale

WHEN the going gets tough and your sale is threatened by price competition, the *check list* in the booklet "How to Buy a Better Home" may save it for you.

Here's how one operative builder works it. There's space on the check list to "rate" three different houses. He fills out the list with *complete* information on the property *he* has for sale. He asks the prospect to do the same for any other property he's interested in, or does it for him.

With this information down in black and white, it's not difficult to point out the true value of *his* property—why it is worth the money he's asking—and close the sale.

But that's only one of the uses you can make of "How to Buy a Better Home." We'll be glad to suggest others.

If you haven't seen a copy of "How to Buy a Better Home," we'll be glad to send one free of charge, together with suggestions that may help you lay the old bugaboo of price competition. The coupon below will bring you this free copy. Send for it today.

The coupon below will bring you your free copy of our 68-page booklet, "How to Buy a Better Home." Use it today.

Better Homes & Gardens

BETTER HOMES & GARDENS

Dept. AF-2, Des Moines, Iowa

Send me my free copy of "How to Buy a Better Home" and suggestions for using it in selling houses.

Name _____

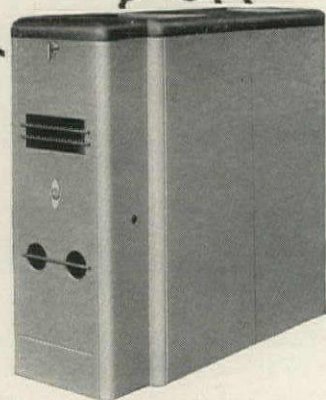
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City _____

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PAYNE'S NEW ZONEAIR

WINS
*Nation-Wide
Popularity*
IN A SINGLE YEAR



Just a year ago this month the new Payne Zoneair was introduced to the gas heating field. Yet in that short time it has won countless friends from coast to coast.

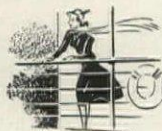
Why such outstanding, immediate popularity? Simply because the New Payne Zoneair offers, in a single, compact unit, all the features of true winter air conditioning. It heats, circulates, ventilates, filters and humidifies—*automatically!*

Used individually to heat separate groups of rooms, it provides the added advantage of convenient, economical zoned warmth.



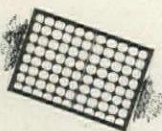
HEATS—The Payne Zoneair keeps the home in the comfort zone 24 hours a day. Just the degree of heat you want—*automatically controlled.*

CIRCULATES—Like all Payne units, the Zoneair employs the principle of *circulating* air distribution. A vital factor for health and comfort.



VENTILATES—A blower attachment, operating independently of the heating element, floods the home in summer with cooling ventilation.

FILTERS—Fine-spun, glass-wool filters clean the air before it enters the rooms—remove dust and impurities—keep walls and hangings cleaner.

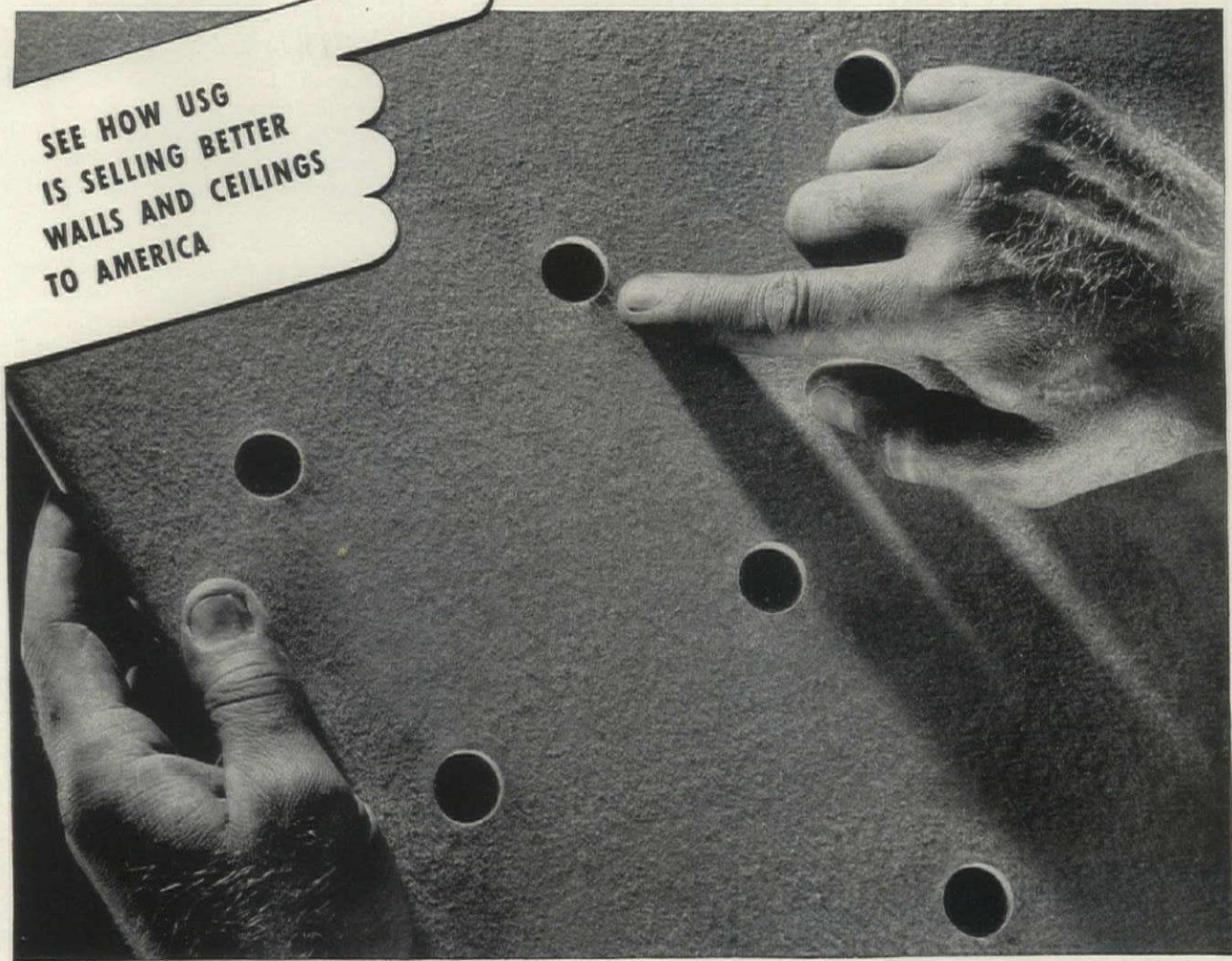


HUMIDIFIES—Proper humidity, an optional Zoneair feature, is conducive to good health—prevents excessive dryness and irritating head colds.

For information about the latest 1940 Model Payne Zoneair, see your local dealer or write the factory direct.

Payne FURNACE AND SUPPLY CO., INC.
BEVERLY HILLS, CALIF.

SEE HOW USG
IS SELLING BETTER
WALLS AND CEILINGS
TO AMERICA



We punched it full of holes, *to make a stronger wall*

WHEN we first started punching holes in Rocklath, the fireproof plaster base, some people found it hard to believe that holes would produce a stronger wall. But it's true!

Perforated Rocklath holds plaster in two grips instead of one—that's why it makes a stronger wall or ceiling. It's "riveted" because plaster is anchored through the holes in the Rocklath. It's "welded" because of the natural bond between the plaster and the Rocklath.

Walls and ceilings built with USG Perfo-

rated Rocklath and Red Top Plaster are smooth, durable surfaces. Rocklath does not warp, buckle or pull away from the plaster. It eliminates "lath streaks." Perforated Rocklath is *fireproof*. Tests show that a Perforated Rocklath partition, properly plastered, will hold fire at bay for at least one full hour!

Perforated Rocklath is an outstanding example of the application of research to home construction by the United States Gypsum Company. Like many materials developed

by USG, it gives homeowners better building, more fire protection and better walls and ceilings. Other important USG developments are resilient plastering systems, which reduce sound transmission between rooms and prevent cracks from frame movement.

USG materials are sold by leading lumber and building material dealers everywhere. Ask your dealer to secure for you USG's valuable books—*"How to Modernize and Make It Pay"*—and *"How to Have the Home You Want"*—or mail the coupon.

UNITED STATES GYPSUM COMPANY



-where research develops better, safer building materials

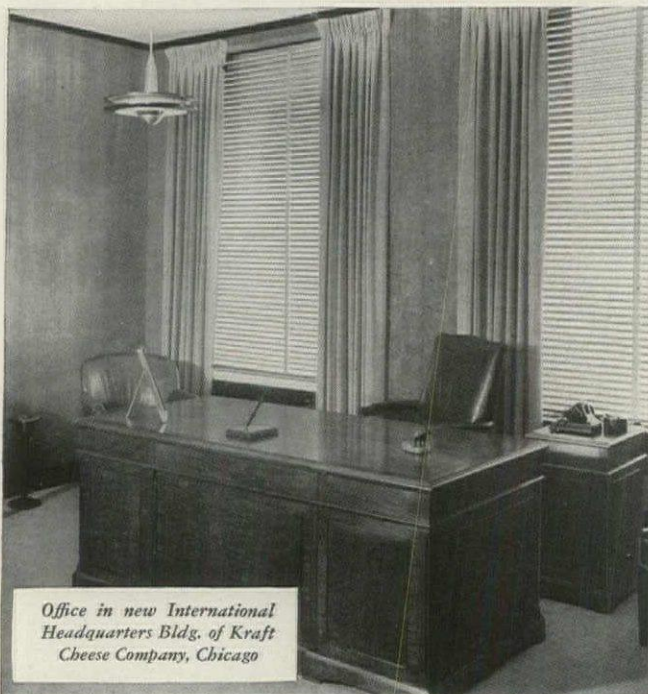
AF 2-40

UNITED STATES GYPSUM COMPANY
300

IN 1940 USG
ADVERTISEMENTS WILL APPEAR IN

The Saturday Evening Post
Better Homes & Gardens
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House & Garden
House Beautiful • Collier's
Life • Good Housekeeping
Woman's Home Companion

THESE ARE THE REMARKABLE VENETIAN BLINDS SPECIFIED IN SO MANY NEW CONTRACTS



Office in new International
Headquarters Bldg. of Kraft
Cheese Company, Chicago

Read the Surprising Facts About CHICAGO *ALUMILITE VENETIAN BLINDS

- Slats are 98% pure aluminum processed to give beautiful platinum-like finish which lasts indefinitely.
- Finish reflects room colors after manner of glass prism, automatically harmonizing with any color scheme.
- Cannot warp, chip or peel—never need painting.
- Absolutely immune to any and all climatic conditions.
- Keep rooms much warmer in winter, much cooler in summer.
- Provide indirect lighting effect by deflecting solar light to ceilings.



These are merely high-lights which have influenced the specification of Chicago Alumilite Venetian Blinds in so many office buildings, institutions and homes. Write for full details on Chicago Alumilite and the complete Chicago Venetian line, which includes wood, rigid or flexible metal and Plastone blinds.

*Patented process owned by Aluminum Company of America

CHICAGO *Venetian Blind* **COMPANY**
MICHIGAN AVENUE at 39th STREET, CHICAGO, ILLINOIS, U. S. A.
WORLD'S LARGEST CUSTOM-BLIND MANUFACTURERS
BETTER VENETIAN BLINDS

FORUM OF EVENTS

(Continued from page 60)

Harry A. Fulton, architect, Cleveland, Ohio and A. R. McCreary who for the past three years has acted as general manager of the Fulton office, announce the formation of a partnership under the firm name of Harry A. Fulton & A. R. McCreary, architects and engineers. The present office of the Fulton organization will be retained by the partnership at 5716 Euclid Ave.

W. H. Mark Hanna, director of Michigan's State Efficiency Engineering Division, is revamping the State files, and will be interested in receiving manufacturers' literature on the subjects of heat, light and power equipment, materials and supplies at #13 State Office Building, Lansing, Mich.

William Hasterlik has opened an office for the practice of architecture at 30 North LaSalle St., Chicago, Ill., and would be glad to have manufacturers' samples and literature.

T. R. Higgins, chief engineer of New England Structural Company, Everett, Mass., has joined the staff of the American Institute of Steel Construction as engineer in the New York district.

Sprague, Jones, Inc., commercial heating engineers, announce the new location of their offices, 1914 Vermont Ave., Toledo, Ohio.

Samuel M. Kurtz, architect, announces the removal of his office to 2061 Broadway, New York, N. Y.

Berj Tashjian, architect, has opened an office for the practice of architecture at 294 Washington St., Boston, Mass.

Charles I. Thiele has opened an office for the practice of architecture at 551 Main St., Niagara Falls, N. Y., and would be glad to have manufacturers' data for an A.I.A. file.

H. T. Williams and George F. Harrell announce their association in the firm of Williams & Harrell, architects, industrial and retail designers, with offices at 32 East 57th St., New York, N. Y.

Hobart Nichols, New York artist, has been elected president of the National Academy of Design, succeeding Jonas Lie, whose death closely followed his resignation.

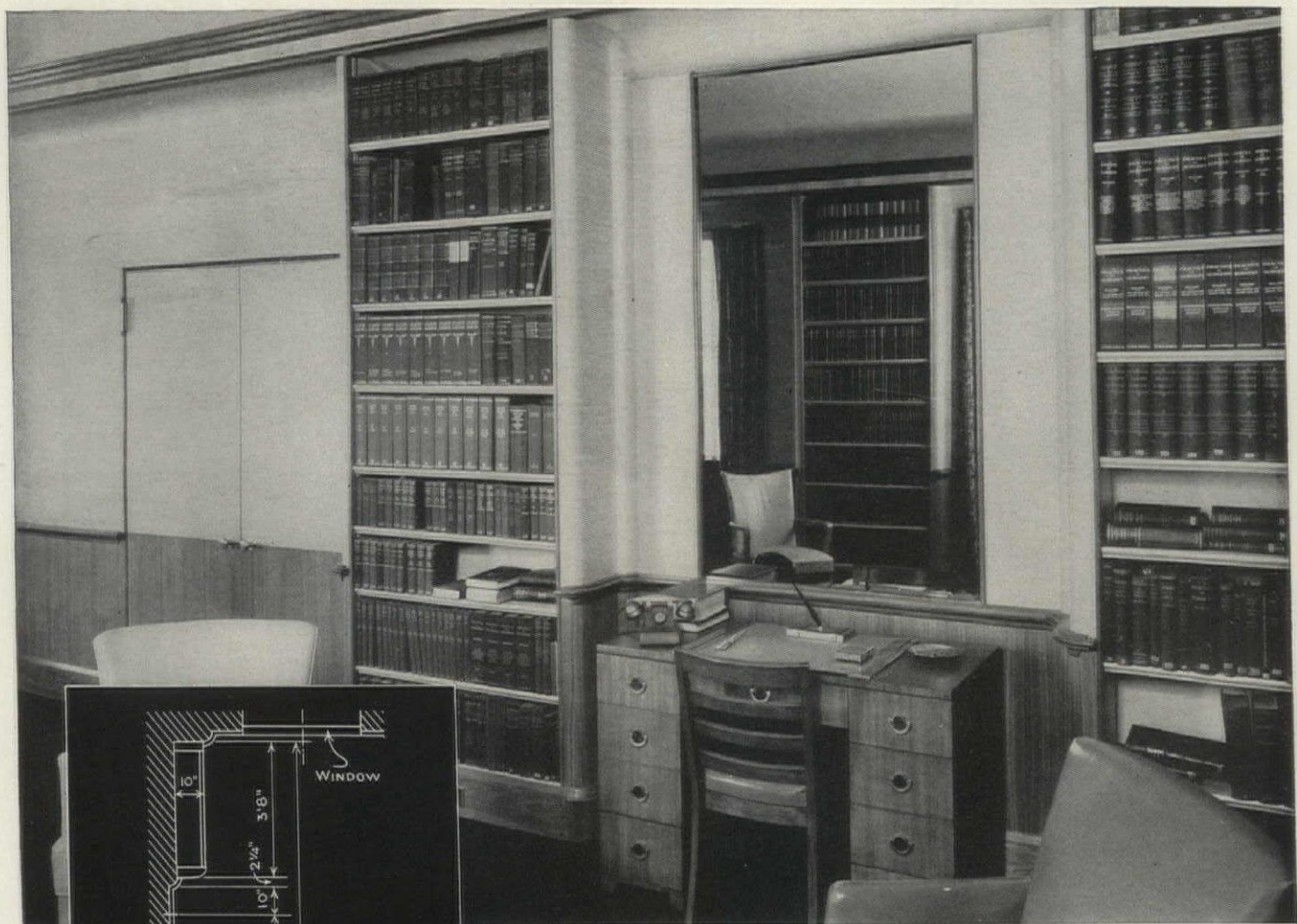
Antonin Raymond is contemplating the acceptance of a small number of apprentices to his architectural studio in New Hope, Pa. Further information can be had by communicating with Mr. Raymond.

Louis Skidmore, Nathaniel A. Owings and John O. Merrill announce the formation of the partnership of Skidmore, Owings & Merrill, with offices for the practice of architecture at 104 South Michigan Ave., Chicago, Ill., and at 5 East 57th St., New York, N. Y.

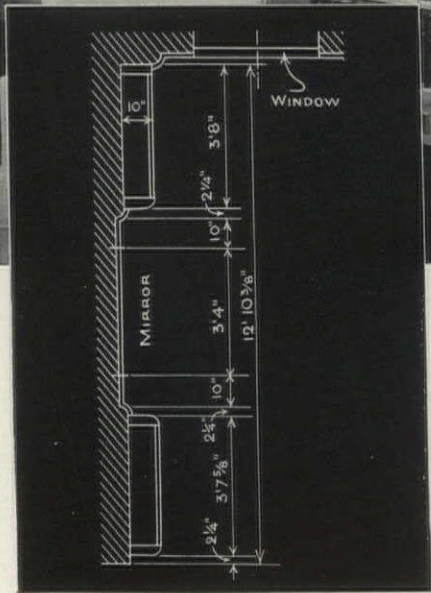
Carl F. Strohmeier, architect, formerly in the Calvert Building, has moved his offices to 101 West 22nd St., Baltimore, Md., where he will welcome manufacturers' catalogues and samples.

Wirtz & Calhoun, architects, announce the association of A. Osborne Willauer with the firm in the general practice of architecture under the firm name of Wirtz, Calhoun & Willauer, with offices at 500 Stuart Ave., Houston, Tex.

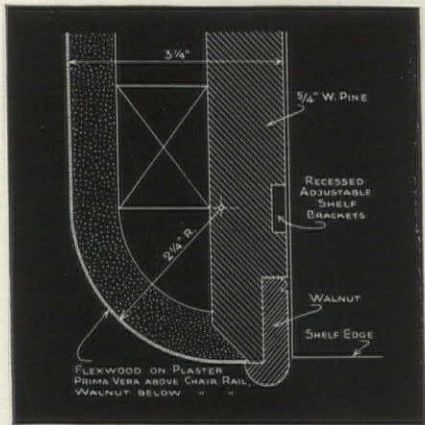
The art of modern wood treatment



Lounge-Library, Summit Medical Group, Summit, N. J. Ribbon Prima Vera Flexwood above chair rail; Quartered Walnut Flexwood below chair rail; Ray. O. Peck, Architect.



Plan of writing-niche and bookcase



Detail of construction of bookcase jamb

FLOWING, UNBROKEN FLEXWOOD TREATMENT, WITH AND AGAINST THE GRAIN, EVEN ON 2" RADII

Windows are the size of the mirror shown above and are in similar niches between book shelves, with the bookcase jambs throughout the room treated as shown in the photo, and in detail to the left. The match of the veneers is carried out over the double doors. The graceful, flowing lines are continued in the soffit, which is curved, and in the vaulted ceiling. Lighting is indirect. The combination of exotic Ribbon Prima Vera, applied horizontally, and mellow Quartered Walnut, applied vertically, is strikingly beautiful, but without Flexwood the cost of treatments such as this would be prohibitive. More than 40 rare woods are available and the ease and speed of application of Flexwood makes it the logical choice when the luxury of real wood is desired.

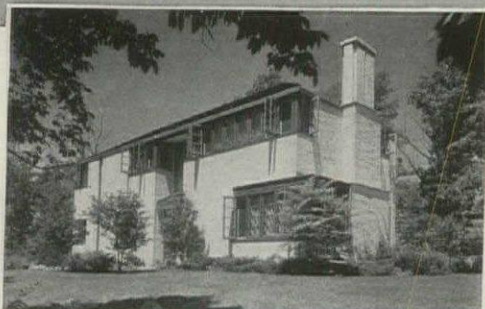
flexwood
[WOOD IN FACILE FORM]

UNITED STATES PLYWOOD CORPORATION, 103 PARK AVE., NEW YORK
Manufacturers of Flexglass, Plywood, Armorply, and Weldwood

Everything you want
in insulation—
now it's an

Improved Cabot's "Quilt"

*The
Time Tested Insulation*



House at Highland Park, Illinois, insulated with Cabot's "Quilt" and painted with Cabot's DOUBLE-WHITE. Architects: Dubin and Dubin, Chicago

High insulating value—proved by government tests, which we will be glad to have you examine.

Permanence—Cabot's "Quilt" has been made for half a century, and its basic materials have been used as insulation for 300 years. Inspection of old houses proves that Cabot's "Quilt" is rot-proof, vermin-proof, stays permanently in place, and does not settle.

Keeps Walls Dry—Air circulation on each side of the "Quilt" prevents the accumulation of moisture which often leads to paint failures on air conditioned houses.

Ease of installation—A new convenient fastening strip on the 16" "Quilt" makes it easier than ever to install.

Economy—Always economical, Cabot's "Quilt" gives even greater value at the new lower prices now in effect.



FREE BOOKLET

Build Warm Houses. Write today for your copy of this informative, file-size booklet, which gives much useful data on insulation. Address Samuel Cabot, Inc., 1269 Oliver Building, Boston, Mass.

Cabot's "Quilt"

Heat Insulating

Sound Deadening

Elsie N.
SAYS:

MEET US
IN
SWEET'S



"Here We Are With 14 Pages of Information on Modern Door Control"

"From the cover of our 1940 catalog in Sweet's our good-looking friend greets you as she steps through the doorway of a typical LCN door closer installation. This catalog is

Section 16/25

"Here are fourteen pages chock-full of usable door control data—the keys to unlock any problem you may have in this field. An outline of the contents:

Pages

- 1-3 LCN Concealed Installations**
- 4-5 What to Look for in a Door Closer**
- 5-7 Overhead Concealed Closers**
- 8-9 Floor Type Concealed Closers**
- 10 LCN Ball-Bearing Pivots**
- 10-11 Surface Type Door Closers**
- 12 Closer Dimensions, Specifications**
- 13 LCN Brackets, etc.**
- 14 List of LCN Representatives**

"The day is past when *designers* didn't need to consider the matter of door control. Modern concealment of all such devices where possible has made it distinctly worth while for every architect to be familiar with the means and methods available. There is no better place to look for this information than in the 1940 LCN catalog, right in your office now—if you have Sweet's.

"If you don't have Sweet's, or if you'd like a separate copy for individual use we'll be happy to send it."—*Elsie N.*, Norton Lasier Company, 466 West Superior Street, Chicago.

LCN

**Concealed and Surface
DOOR CLOSERS**
in 86 Types and Sizes



Carrara offers the architect latitude in design. Here, Carrara has been used by Architect Edward Paul Lewin to create an exceedingly attractive bathroom in wine and ivory. Note the sand-blasted figure on the Ivory Carrara above the tub.

CARRARA OPENS THE DOOR to better bathroom design

CARRARA Structural Glass has set new standards of bathroom beauty. Its lustrous surfaces, its mirror-like reflectivity (which only a mechanically ground and polished glass can provide), its attractive colors and its exceptional versatility make it a wall material which opens up new possibilities in bathroom and kitchen design.

Carrara's practical qualities are noteworthy, too. It will not fade, stain, craze or absorb odors. It is impervious to moisture and chemicals. And it is

easily cleaned with a damp cloth. Write today for complete information about this structural glass which has entirely changed the accepted idea

of what constitutes bathroom and kitchen beauty. Pittsburgh Plate Glass Company, 2035 Grant Building, Pittsburgh, Pennsylvania.

"PITTSBURGH" stands for Quality Glass

CARRARA
The modern Structural Glass
PITTSBURGH PLATE GLASS COMPANY

NOW... YOUR OWN MODELING

CAN BE
Reproduced in GLASS



PC ARCHITECTURAL Glass opens fascinating new possibilities to the architect. For this glass can now be produced in large, sculptured glass panels of unique beauty... reproducing faithfully your own modeling in clay or plaster. It's almost as though you could actually model in glass. Pieces of PC Architectural Glass as large as 4 feet by 4 feet may be used to reproduce a single design, or larger panels may be made up from a number of glass sections 4 feet square or smaller.

PC Architectural Glass is also available in a varied line of standard shapes, designed to meet every decorative need. We urge you to send the coupon for additional information about PC Architectural Glass.

In this modern office building reception room, sculptured PC Architectural Glass forms an attractive frieze, while stock shapes of the glass, illuminated from behind, are used to create pilaster and pillar.

"PITTSBURGH" stands for Quality Glass

Pittsburgh Corning Corporation
2031 Grant Bldg., Pittsburgh, Pa.

Please send me, without obligation, your free literature on PC Architectural Glass.

Name _____ Address _____
City _____ State _____



ARCHITECTURAL
GLASS

Distributed by
PITTSBURGH PLATE GLASS COMPANY
and by W. P. Fuller & Co. on the Pacific Coast

B O O K S

(Continued from page 20)

HOUSING LAWS OF GERMANY, by U. S. Works Progress Administration. New York City Housing Authority. 38 pp. 8½ x 10¾.

THE BERGPOLDER FLATS, by U. S. Works Progress Administration. New York City Housing Authority. 22 pp., illustrated by drawings. 8½ x 10¾.

The two latest publications in WPA's excellent series of foreign housing studies, issued as mimeographed pamphlets. The first includes housing laws enacted during the years of 1932 and 1933, and will be followed by other issues until all German laws published in the official legislative journal have been translated. The second deals with a nine-story Dutch housing project in Rotterdam. As a light steel building, designed for minimum cost, it is one of the most interesting experiments in rationalization of construction yet made. The book contains seven pages of drawings and a bibliography.

STEAM AND HOT WATER FITTINGS, by William T. Walters. American Technical Society, Chicago. 184 pp., illustrated. 6 x 8½. \$2.00.

A brief, well-organized manual, written for students, steamfitters, draftsmen and designers. It covers all standard types of steam and hot water systems and contains a brief chapter on panel heating, which, according to the author, will someday "take its place among the recognized systems of heating." Illustrations are excellent, showing not only diagrams of the different systems, but details of equipment and fittings.

THE MUSEUM IN AMERICA, by Laurence Vail Coleman. The American Association of Museums, Washington. 3 Vols. 730 pp., illustrated. 6½ x 9¼. \$7.50.

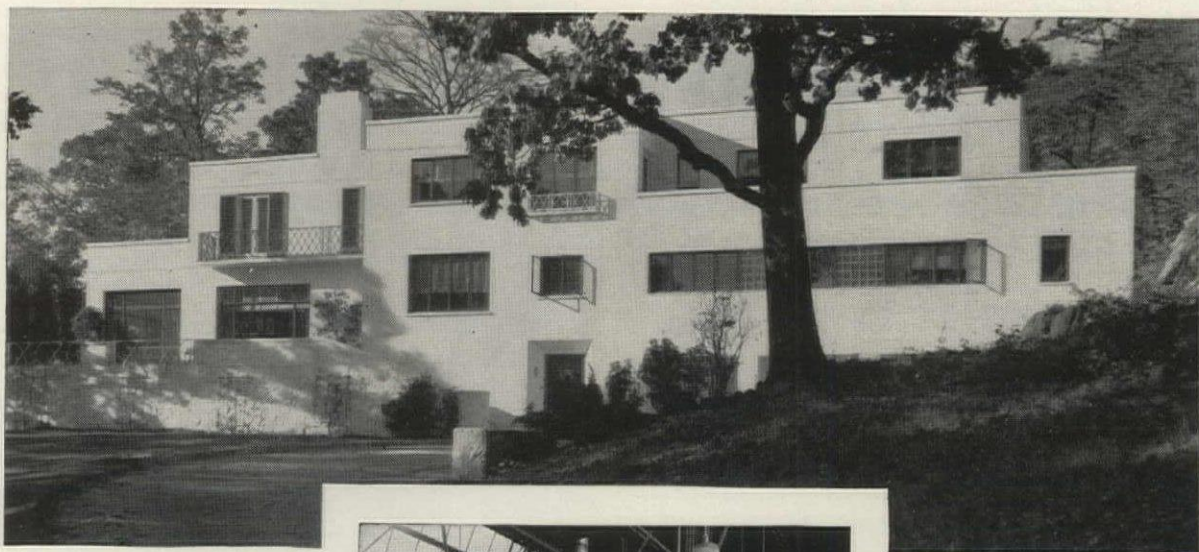
These volumes contain a painstaking survey of museums in this country, with classified lists of 2,480. It is not a manual, but an attempt to present every phase of museum activity, from money-raising to management. Public relations, work through schools, research, museum types, exhibition, collecting and planning are a few of the subjects covered. The architect engaged in museum work will find it valuable for background material; it contains little, however, that might be applied to specific problems of planning or design.

HOUSE CONSTRUCTION DETAILS, compiled by Nelson L. Burbank. Simmons-Boardman Publishing Corporation. 317 pp., 9 x 11. \$3.00.

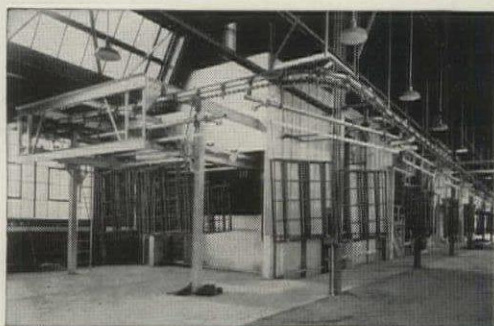
A compilation of construction details, tables, and photographs from articles, government publications, manufacturers' catalogues and other sources. Designed for use by apprentices and builders, it presents detailed information on construction which follows the normal sequence of building operations. There are also reasonably comprehensive sections on prefabricated houses and new materials. While cheaply printed, with a resulting loss of clarity in the photographic illustrations, the book is so well organized, and so full of useful information that it can be highly recommended as a guide to standard building construction. For the layman engaged in building a house it would prove an invaluable aid in explaining the various operations performed by his architect and contractor.

Modern

DETAIL COMPLETES MODERN DESIGN



*Residence at Briarcliff, N. Y.
Wells & Merrill, Architects*



Bonderizing Section—Hope's Windows Plant, Jamestown, N. Y.

HOPE'S WINDOWS ARE BONDERIZED

● Architectural materials have advanced hand in hand with the progress in functional design. One is definitely essential to the progress of the other. Both are necessary that the promise implied by radically changed architectural appearance will be fulfilled, by greater service and satisfaction to the occupants of the completed structure.

long, maintenance-free service.

With Bonderizing under the paint, rust is inhibited, paint adheres more tenaciously and fine appearance is maintained.

Hope's windows meet both modern design and service requirements, and they are Bonderized to assure ability to withstand rigorous exposure and render

PARKER RUST PROOF COMPANY, 2180 E. MILWAUKEE AVENUE, DETROIT, MICHIGAN



Send for This Book:

It deals specifically with rust inhibiting finishing methods on many types of architectural iron and steel products and indicates a solution of the finishing problem on galvanized units. Write today for your copy.

PARKER
Processes **CONQUER RUST**
BONDERIZING • PARKERIZING

YOUNG

Streamaire



Architects find the New line of STREAM-AIRE convectors is most modern, beautifully designed and well graduated in heating capacities. It includes six distinct types of enclosures from which to make a selection and many styles and grille patterns which harmonize with any type of architecture or interior decoration. Whether you are planning a new building or modernizing an old one, be sure to specify Young STREAM-AIRE convectors and assure the utmost satisfaction to the building owner.

Offices in all principal cities.

COPPER CONVECTORS

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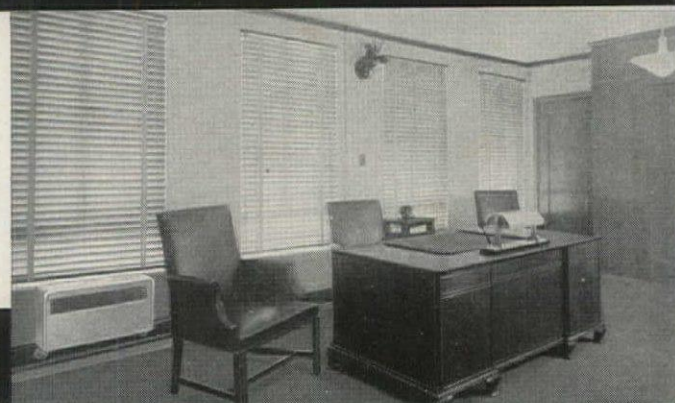
A handsome, 24-page, fully illustrated book, printed in color, showing interesting installations and mechanical details—giving capacities and performance tables. Drawings illustrating the best ways of installing and piping convectors. See this beautiful, newly engineered line. Use the coupon below. There is no cost, no obligation.

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YOUNG RADIATOR COMPANY
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I SEE A NEW, IMPROVED
COLD STORAGE DOOR COMING.
MODERN PLANTS DEMAND IT—
JAMISON COLD STORAGE DOOR
COMPANY WILL SUPPLY IT.

WATCH
NEXT
MONTH



JAMISON FOR A BETTER SEAL

See our catalog in Sweet's Catalog File

You Can't
Squeeze Down
A Big Boiler
To Make a Small One



THE only way to make a small boiler for small house heating, is to make a brand new boiler from the bottom up.

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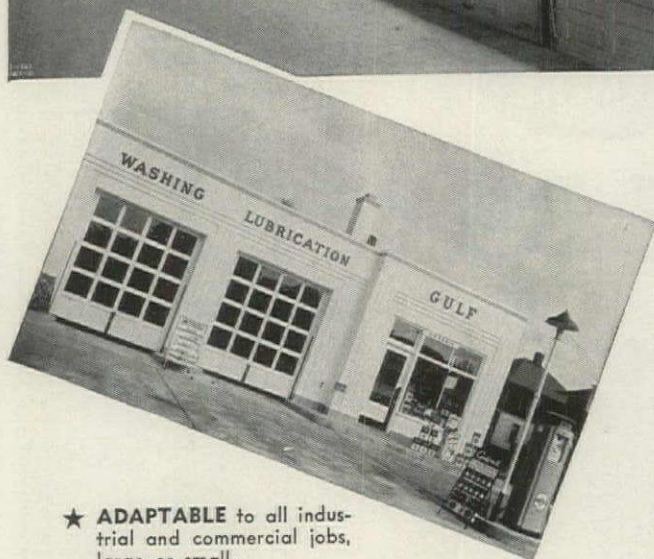
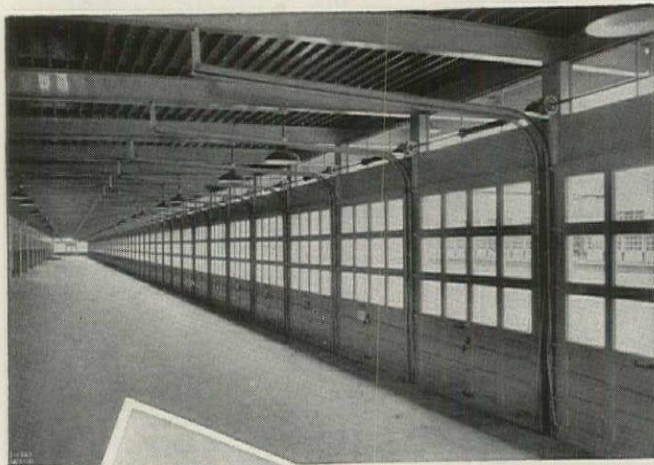


Above and below, two streets of the Development of N. C. Prior, Teaneck, N. J. 63 homes sided with Eternit Timbertex Colonial Siding.



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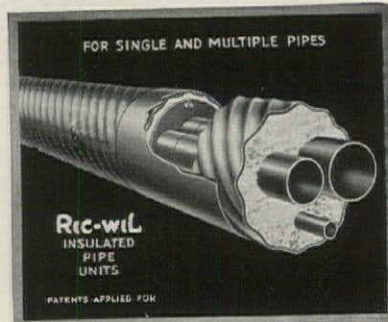
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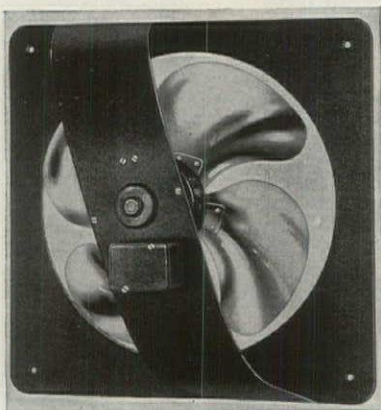
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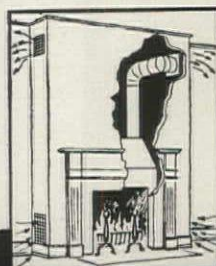
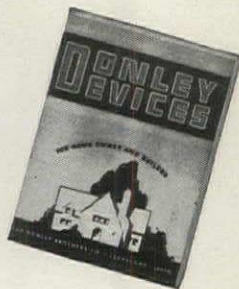
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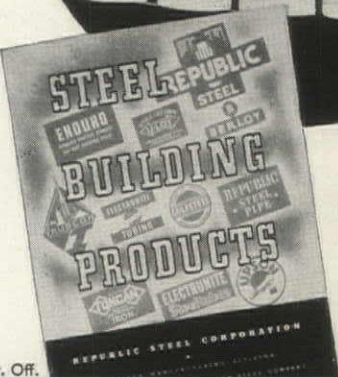


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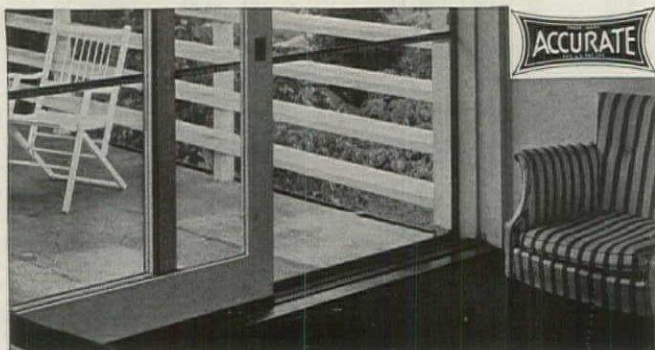
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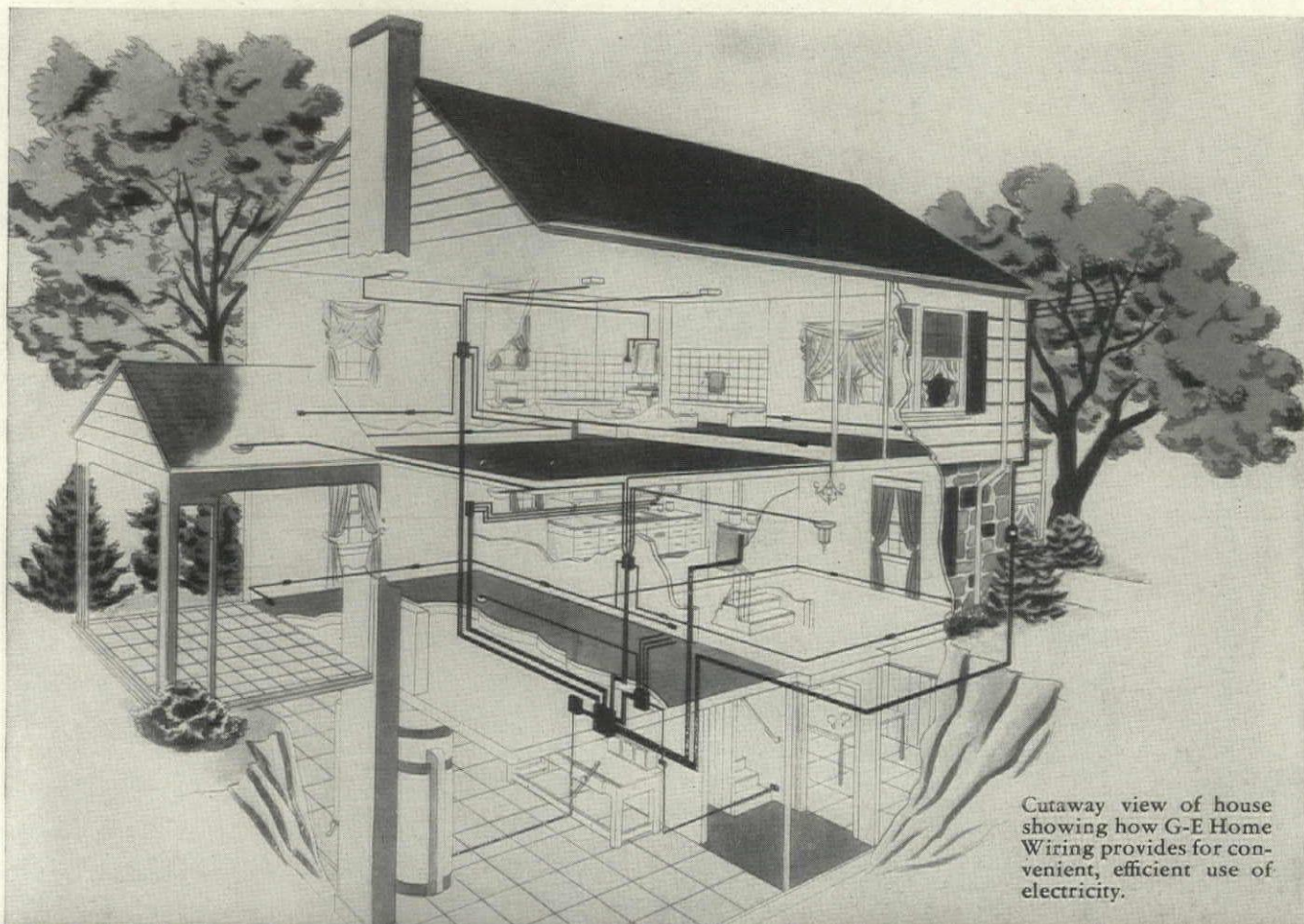
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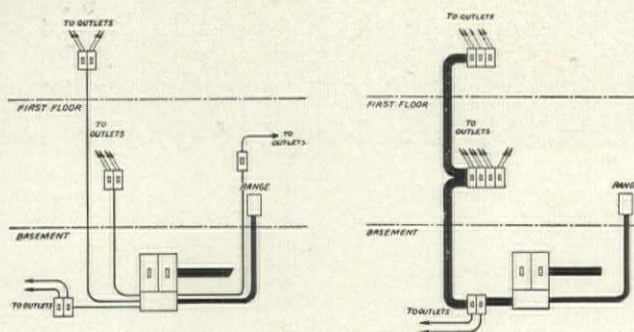
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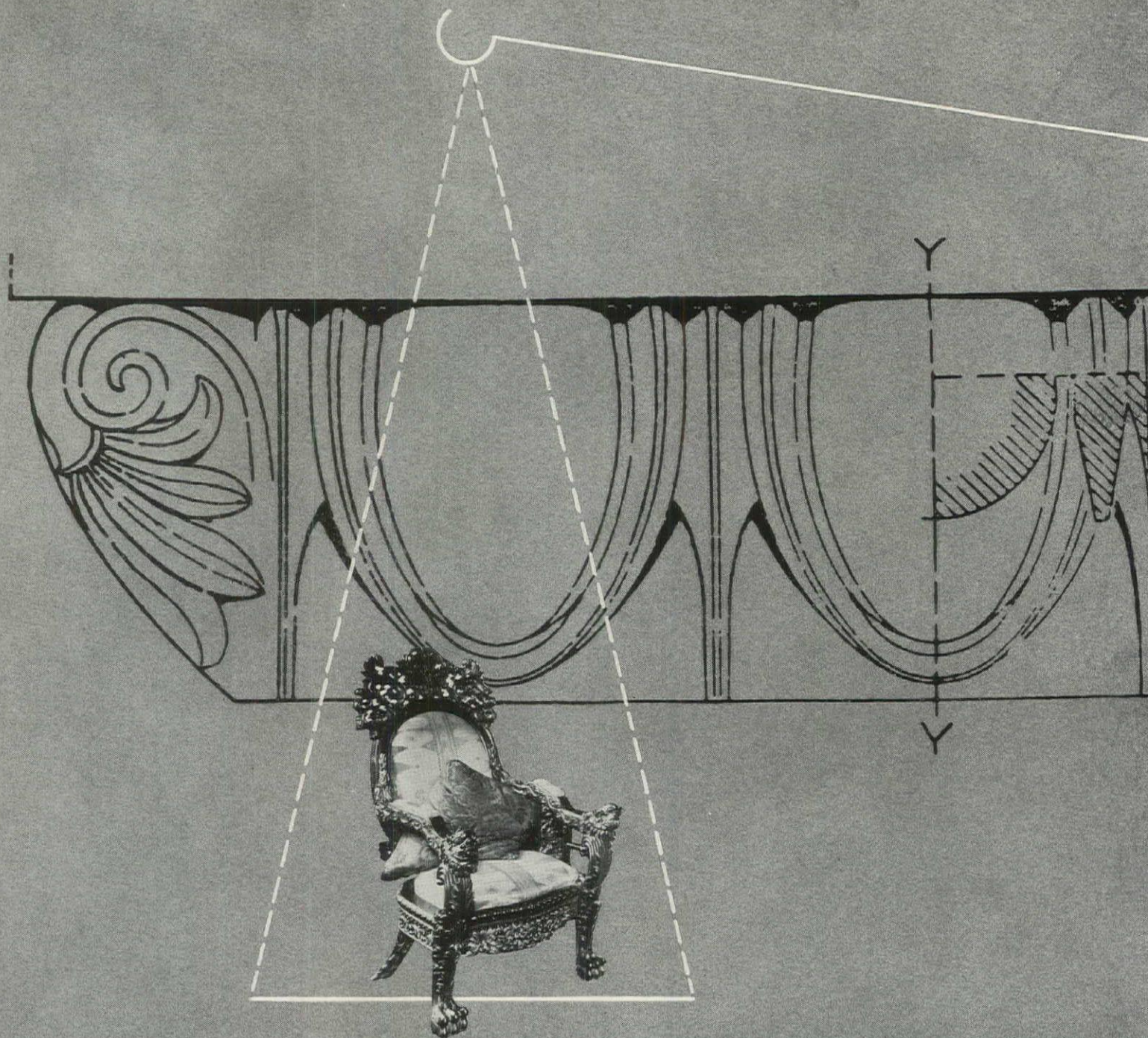
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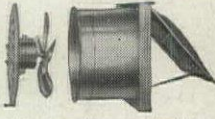
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At eclecticism THE FORUM has fired many an egg and dart. Our predilection for the modern approach goes back to days when its practitioners were few and its critics countless. Today THE FORUM reviews with satisfaction its part in the making of a new tradition. From the hundreds of thousands of structures to be erected this year THE FORUM will select for publication those most likely to stimulate creative minds.

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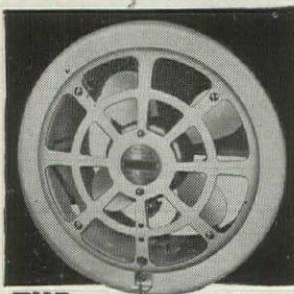
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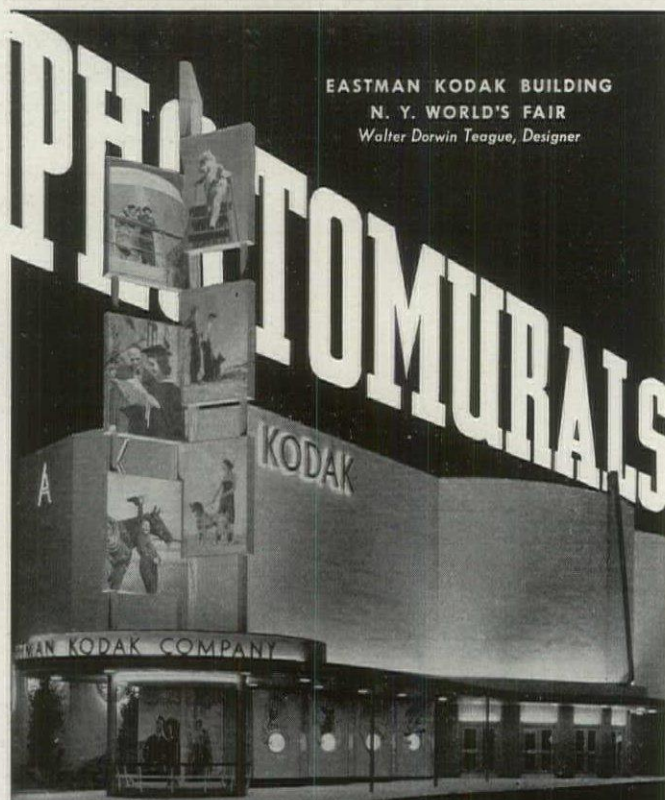


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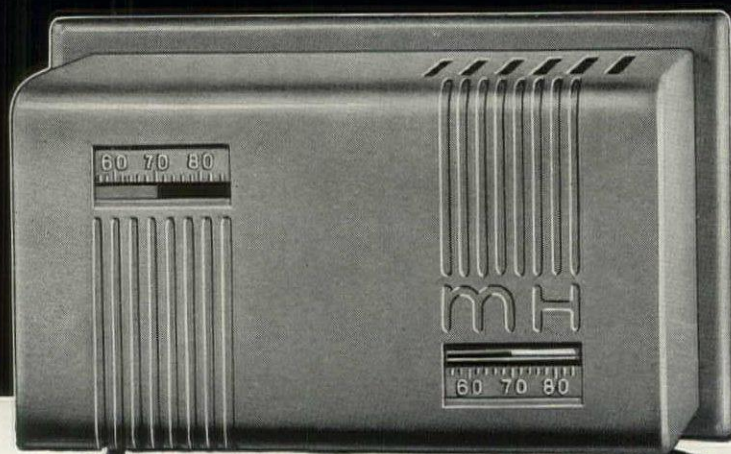
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YOU will never see more convincing proof of the value of a Johns-Manville Insulated Built-Up Roof. Snow fell while this roof was being laid. This photograph was taken the next morning. Look how the building's heat has leaked through the old *uninsulated* roof and melted all the snow off, yet where the J-M *Insulated* Roof has been applied, the snow remains. Think what this means in fuel savings!

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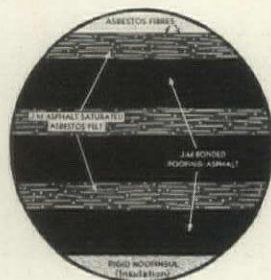


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ANNOUNCES ITS 1940

HOME BUILDING PROGRAM

ON THE opposite page are men from whose drafting boards has come the most important home building news of the year. They are the architects for the LIFE houses of 1940.

Following its success in 1938 and 1939, when LIFE published, and readers built the "eight most talked about houses in the U. S.," LIFE again sponsors a nation-wide home building program.

In communities scattered throughout the country ground will soon be broken for more than 50 new LIFE houses, and more are scheduled as Spring advances. Not isolated building projects, these houses, which conform with F H A standards, constitute the most important home building project of the year.

To initiate the 1940 program, LIFE commissioned eight distinguished architects to prepare plans and designs for eight houses of low and medium price suitable for typical American families. With the active cooperation of the Land Builders and Home Builders Division of the National Association of Real Estate Boards, LIFE then invited a group of Realtor-builders and department stores to build and furnish these houses in their own communities as practical, visible demonstrations of the building industry's solution of the small house problem.

When the houses are completed, LIFE will devote a significant portion of one of its Spring, 1940, issues to a thorough presentation of these houses, exteriors and interiors, together with a list of their locations so that LIFE's readers may see the actual finished houses.

Simultaneously, *The Architectural Forum* will publish the houses for its professional audience.

Thus, LIFE hopes to show its readers what every architect already well knows—that a house for modern living, whether Modern in design or not, is far different from the house of twenty, even ten years ago. And LIFE hopes, therefore, that when its readers see these houses in their communities and in the pages of LIFE they will want to build houses that reflect that advance in design, planning, construction and equipment.

For further information write to . . . 

ARCHITECTS FOR LIFE HOUSES



Cameron Clark, New York's famed Colonial architect designed for LIFE a two-bedroom Colonial cottage, with a combined living-dining room, kitchen, bath.



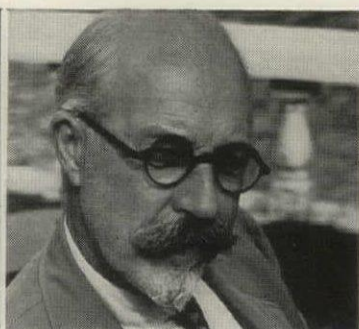
Gardner Dailey, leading San Francisco residential architect created a modern two-bedroom house with a living room, dining alcove, kitchen, and garage attached.



Holabird & Root, Chicago's noted skyscraper architects, have designed an unstyled country house, with three bedrooms and a living room united in one section and the service areas, kitchen, bath and utility room, grouped in another.



George Howe & Robert M. Brown, of Philadelphia, have dropped their usual modernity to design a story-and-a-half Colonial house with a large living room, dining room, kitchen on the first floor, two bedrooms on the second. Economy of construction is obtained through the symmetrical plan.



Perry, Shaw & Hepburn, the Boston architects who restored Williamsburg, have designed a two-story square house with three bedrooms on the second floor and an interesting porch and terrace giving off the large living room on the first floor. It is rare to find such distinction in so small a house.

Treanor & Fatio, of New York, Society's favorite architects, have contributed a house for the country. One wing off the living room has three bedrooms, the other a dining room, kitchen, garage.



Shreve, Lamb & Harmon, of New York, architects of the Empire State Building, have shown skyscraper efficiency in planning a two-story house with three bedrooms, first and second floor terraces, living-dining room, kitchen and garage.

Shaw, Naess & Murphy, brilliant Chicago designers, have created an interesting two story house combining modern planning with a traditional exterior. Bedroom balconies accent the design of the house, which has three bedrooms, living room, dining alcove and kitchen.

Invitation:

TO BUILDERS, AND OTHER BUILDING PROFESSIONALS IN THOSE COMMUNITIES WHERE LIFE HOUSES ARE NOT ALREADY ARRANGED FOR, LIFE EXTENDS A CORDIAL INVITATION TO PARTICIPATE IN THIS PROGRAM. PERMISSION TO BUILD WILL BE GRANTED TO QUALIFIED BUILDERS IN THE ORDER IN WHICH REQUESTS ARE RECEIVED. FOR FURTHER INFORMATION, INCLUDING A PORTFOLIO OF THE HOUSES, WRITE TO:

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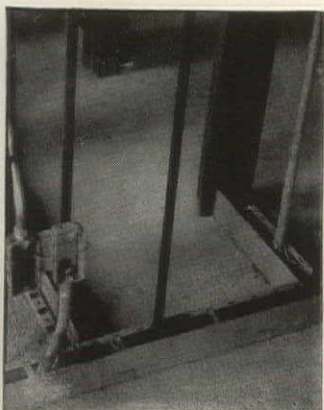


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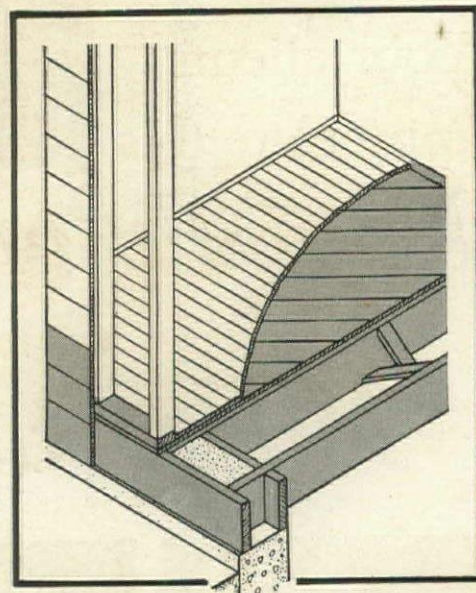


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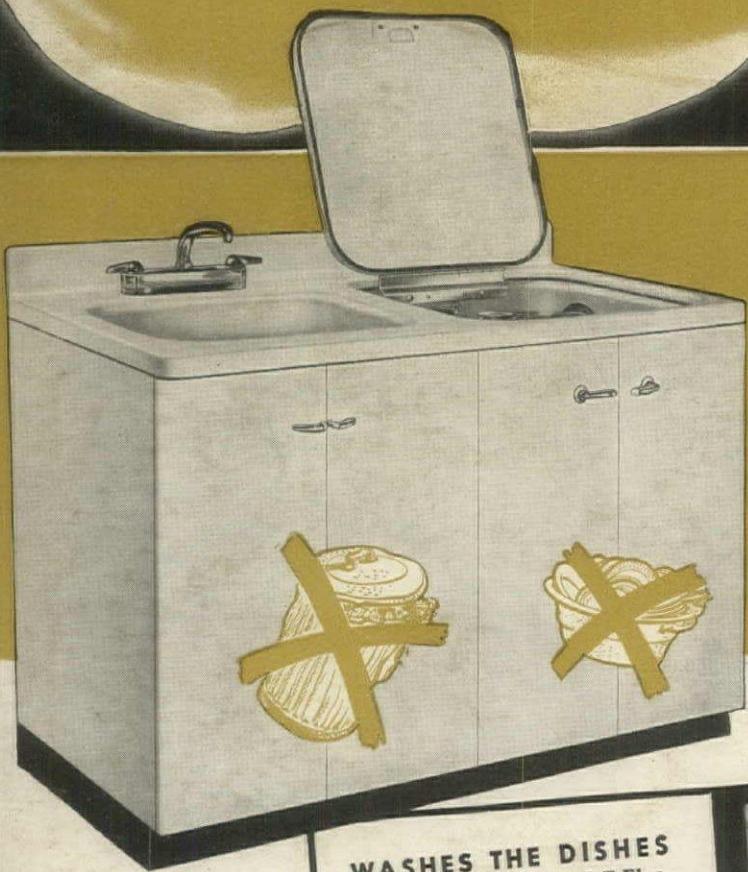
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