THE ARCHITECTURAL FORUM

INCLUDING "BUILDING MONEY"

MAY, 1936

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ARCHITECTURAL FORUM

MAY 1936

Editor, Howard Myers; *Managing Editor*, Ruth Goodhue; *Associates*, George Nelson, A. C. Shire, Ernest Born, Cameron Mackenzie, Max Forester, Paul Grotz, Madelaine Kroll.

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VOLUME LXIV NUMBER FIVE

MASONITE

Distressed by the enormous amount of wood wasted in sawmills, W. H. Mason decided to do something about it. Then . . . an accident gave the world a brand-new building material.

IN LAUREL, Mississippi, the huge trash-burner of Wausau Southern Lumber Company was devouring hundreds of tons of "tasty" wooden chips. This roaring furnace never needed to worry about its next meal. Part of every tree would always have to be thrown away . . . unless some use could be made of the odd shape, odd-length pieces that were left over after squared timber and boards had been cut.

In a workshed nearby, a man who had for seventeen years been associated with Thomas A. Edison was trying to cheat the trash-burner of its lavish feast. If he could discover a way to reduce that waste to fiber, without destroying the lignin which nature uses to hold them together, he could make them into a particularly efficient insulating board. Or perhaps a hard, dense board.

In 1924 he thought of exploding the chips under steam pressure. So he made a gun by drilling a hole in a steel shaft . . . filled it with chips . . . added a little water . . . sealed the end of the gun with a tapered steel plug. Blow torches were applied to the outside of the gun until he assumed that the pressure inside was about 600 pounds per square inch. Then the plug was jarred with an iron bar. Out it came—with such velocity that it could never be found—and with it thousands of fine wood fibers.

Mr. Mason used his knowledge of paper making to mix up a wet lap of fiber and water. He tried pressing it into a flat mass, which might be baked hard in an oven. But this attempt proved unsuccessful.

In a nearby paper mill, Mr. Mason obtained use of a small letter press, which was equipped with steam-heated platens to determine the moisture content of pulp samples. He thought a board might be produced by pressing the wet lap between the hot platens. And then came the accident!

During one of his experiments the inventor decided to go out for lunch and, as he thought, turned off the steam. But when he returned he discovered that the steam valve had been open for the two hours he had been away. He opened the press and, to his astonishment, found that the layer of wet lap had been pressed into a grainless board of iron-like hardness. This was the first piece of Genuine MASONITE PRESDWOOD ever made.

By June of 1926, the Mason Fibre Company was ready for operation. The gun and all its unique mechanisms had been perfected. Presses, consisting of twenty-one steam-heated platens on one side and a wire screen on the other, had been built. Temperatures and pressures had been determined for all types of wood. And four products had been developed from the same wet lap, each distinct as to weight, density and purpose, but all of them possessing new and valuable characteristics.

Because nothing more than the natural lignin of the wood, softened by steam and rehardened under pressure, is required to hold the millions of fibers together, Genuine Masonite Products contain no glue or artificial binder to be affected by moisture or excessive dryness. For the same reason it is possible to cut the boards into any size or shape without dulling the finest tools.

The flat-bed presses used to manufacture Masonite Products, combined with the fact that the fibers are felted together at all angles, produce boards which show no tendency to warp out of shape due to atmospheric changes. Nor will they chip, split, splinter, or crack.

TODAY Genuine Masonite Products are finding their way into every known business and industry, providing sturdy, light-weight materials which cut costs and give years of hard service.

Genuine MASONITE STRUCTURAL INSULATION offers the home owner, architect and builder an efficient insulating board which possesses exceptionally high tensile strength and a natural beauty that makes it ideal for exposed wall and ceiling surfaces. It is also used for lining of farm buildings, as a "cushion bed" for heavy machinery, and thousands of other purposes.

Genuine MASONITE DE LUXE QUARTRBOARD is harder and denser, yet it allows the same interesting wall and ceiling effects, serves as many uses and, like STRUCTURAL INSULATION, can be beveled or grooved with modern designs.

GENUINE MASONITE TEMPERED PRESDWOOD is the ideal hard board for home, office, store and industrial use. It has a marble-smooth surface, which can be varnished, painted or enameled with any standard applications. But its beautiful warm-brown color is so appealing to the eye that it needs no decoration to produce expensive-looking effects at a fraction of the usual cost.

Genuine MASONITE TEMPRTILE is a hard board similar to TEMPERED PRESDWOOD, grooved to provide tile-like surfaces for bathrooms, kitchens, stores and shops. It can be enameled in any desired color schemes, and can also be purchased from many wall-tile firms with finish already applied.

In Laurel, Mississippi, near the site where once stood the hungry trash-burner, now stands the modern plant of the Masonite Corporation—producing Genuine Masonite Products at the rate of 300,000,000 square feet per year. The products are sold by lumber dealers everywhere. Masonite Engineering Laboratories are equipped to offer assistance to architects in solving construction problems . . . *and reducing costs.*

Free samples and literature will be sent upon written request addressed to Masonite Corporation, 111 West Washington Street, Chicago, Illinois.

THE ARCHITECTURAL FORUM

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VOLUME LXIV
Number 5

THE MONTH IN BUILDING

VOLUME. A new five-year high mark in the dollar value of projects filed for building permits was set last month, as adjusted Department of Labor figures revealed new records in every classification. The March total outdid the twin peaks of approximately $87,000,000 in August and October, 1935, by over $20,000,000 (see chart, p. 444). Residential building broke its February post-boom record by 19 per cent; non-residential building outscaled its PWA-boosted peak in May, 1932, by 2.8 per cent; remodeling passed its post-boom high of last August by 10 per cent.

Looking to Dodge figures on contracts awarded, observers found actual construction in March up 40 per cent from February. This figure largely reflected the slack in February, when snows kept actual construction down 30 per cent from January, while permits were off but 1.4 per cent. Only district failing to register a gain was New England, where mid-March flood conditions were held responsible. The Dodge Corp. recorded actual volume in the first quarter of 1936 at $545,871,300, as compared with $297,761,600 for the same period of 1935.

Quick with its geographical collation of data for 215 cities, Dun & Bradstreet found anticipated work high in each of the areas affected by the floods, showed the Mountain States, that dark horse region which made the greatest gains in 1935, still leading the pack:

	Change Over 1935
New England States	+142.6
Middle Atlantic States	+ 37.7
South Atlantic States	+102.7
East Central States	+119.9
South Central States	+124.6
West Central States	+ 25.3
Mountain States	+251.5
Pacific States	+ 51.3

These reports were by all odds the best that recovering Building had heard since its cataclysmic drop in 1930.

WAGNER'S TERMS. Coolly impervious to the squabble which has failed to net the Administration a housing program worthy of its backing has walked a lone figure, strange in his sure-headed solitude. Two years ago as Franklin Delano Roosevelt's popular emergency emissary, New York's chunky, energetic Senator Robert Ferdinand Wagner, made more than Recovery history when he wrote into the National Recovery Act provisions for an altogether new type of Government activity: U. S. low-rent housing.

Certain of his purpose after two years of blundersome progress under these provisions, and undaunted by the fact that subsequent New Deal housing barks have proved more seaworthy, this doughty Senator last month put before Congress his second bill for public, low rent housing, a measure broadly aspiring to the title, U. S. Housing Act of 1936. It called, in brief, for the formation of a permanent U. S. Housing Authority to replace and perpetuate the housing activities of the expiring Federal Emergency Administration of Public Works.

Although the bill provided for the early assumption of low-rent housing by local agencies, it gave the Authority almost every power PWA now has, including the right to continue a demonstration program indefinitely. Over half of the possible $1,000,000,000 made available to the Authority would come not from public coffers, but from public bond issues. A total of $326,000,000 in direct appropriations and $550,000,000 from bonds would be obtainable in annual takes over four years. In addition, the Authority would be empowered to borrow up to $100,000,000 from the Reconstruction Finance Corp.

Grants up to 45 per cent of project-cost to local housing authorities would be supplemented by loans making up the remainder. Loans up to 85 per cent of project-cost with 60-year repayment privileges would be made available to limited dividend corporations. Interest on both types of loans would be no less than the going rate on Government bonds. These stipulations, together with one providing for payment by the Authority of a fee in lieu of local taxes, meet the principal objections raised by the Comptroller General to housing procedure under the NIRA.

"There can be no sustained prosperity until the building industry gets going . . . We must develop profitable areas for the operation of new capital. To accelerate this trend is the purpose of the legislation which I am introducing." Despite this forceful introduction by Senator Wagner, his $1,000,000,000 order was quickly steered into the Committee on Education and Labor, whence it may never emerge this session.

EARNINGS. By last month most building supply companies had completed the job of issuing their earnings reports for 1935. Without serious exception, these continued to reveal an upward trend. An accompanying rise in stock prices brought Standard Statistics' index for twelve building stocks to 132 per cent of 1926 (see p. 444). Those companies most interested in home construction remained the most consistent ground-gainers.

Following is a collation of 1935 reports, which are in addition to those published by THE FORUM in March:

D = deficit

	1935	1934
Aluminum Co. of America	$9,571,206	$6,466,149
American Laundry Machinery (commercial and institutional laundry equipment)	186,623D	687,024D
American Radiator & Standard Sanitary	2,798,860	1,455,227
American Rolling Mill	4,310,129	966,566
Art Metal Construction (office equipment)	259,147	71,970D
Bridgeport Brass	726,617	576,636
Briggs Manufacturing	9,266,200	5,121,625
Brunswick-Balke-Collender	49,057	346,065D
Philip Carey Mfg.	216,861D	146,740
Certain-teed Products	259,977	851,563D
Crane	1,147,651	1,021,543
Eagle-Picher Lead	583,620	153,192D
Gladding, McBean	159,269D	326,948D
Hobart Mfg.	175,729	666,591
Johns-Manville	2,164,858	749,803
National Gypsum	532,462	321,540
National Lumber & Creosoting	873D	5,127D
Otis Elevator	1,110,997	1,603,317D
Pittsburgh Plate Glass	11,398,739	5,763,694
Pratt & Lambert (varnishes, enamels, lacquer)	336,399	207,852
Revere Copper & Brass	425,555	1,011,101
Reynolds Metals	1,419,267	1,642,461
*Richmond Radiator	180,377D	298,446D
Ruud Manufacturing	33,573	33,019D
Schlage Lock	30,992	47,395D
Scovill Manufacturing	1,057,285	730,576
Simmons (bedding)	1,291,023	948,563D
U. S. Radiator	394,895D	464,481D
Yale & Towne	477,665	59,889

*Before depreciation of plants and equipment.

PUBLIC WORKS. Regular as a semaphore's response to a passing train is the hand which Building extends when Congress periodically considers renewing public works. In a pamphlet which began, "The prospects for additional funds are very dubious," and ended "Each and every one of your organizations should . . . impress them [Congressmen] with . . . the necessity of further PWA appropriations," the Construction League last month petitioned member associations to report whether they saw further use for additional funds in their respective fields.

Secretary Ickes had gone before Congress month before with a request for an additional $700,000,000, despite the President's known desire to cut down on heavy-type expenditures. With this money he said he could finance a total of $1,500,000,000 of projects which are completely approved. Having put but $327,000,000 to work out of last year's $4,880,000,000 Works Relief Appropriation, the PWA has in progress at present a total of $778,000,000, which will reach a peak in mid-July, and thereafter sharply decline.

Angling after funds for housing, Secretary Ickes stated that "Industries producing building materials are receiving more orders to go into PWA slum clearance and low rent housing projects than they received from all private residential construction in the 257 leading cities of the country in 1934." Observers found the statement hardly fair, however, in view of the fact that residential building was at its lowest ebb in recent times in 1934. Further facts were marshalled by New York's Representative Alfred Beiter in presenting the case in Congress. "I am a firm believer in the PWA plan," said he. "It is effective immediately, and when the depression is over all of the public dollars expended will be paying dividends . . . "

Building observers had no doubt of the efficacy of the PWA plan as a bridge for depressions, but wondered whether it was not time to call a halt on depression talk when obviously the depression in Building was over.

HOME POESY. That ubiquitous new name in Building, the Reynolds Corp., whose "Home With the Silver Lining" is fast becoming an historical marketing achievement, held a press fest last month which was not of the usual character. As simple as Eskimo pie, it was the idea of aggressive Richard S. Reynolds, whose rise to fame was via this be-tinfoiled sweet. And it captured large columns of newspaper space by proposing the revival of ballads about The Home.

There was talk about the practical results achieved from "Moon Over Miami," and "Hawaiian Moonlight," by the localities involved, and some reciting of specially prepared poesy by Building Man Reynolds, but the affair was mainly an occasion for realization that an ambitious plan was at last in action, some of the headaches of its conception put behind.

Between 30 and 35 Reynolds houses are under construction throughout the country in a scheme involving sale of every material which goes into a house for the first time by a single company. Features: Reynolds "Metalumber," Reynolds metal foil insulation, Reynolds air conditioning. There are even Reynolds mortgages. The system, however, involves no control over the design or selling of the house. Salient Reynolds arguments: "Furnishing all materials, Reynolds is not interested in getting as much of the builder's money as possible for one product . . . Architect, Builder, Dealer are the backbone of the Reynolds system."

BUTLER ON REALTY. Thrice forced by encroaching business to move from place to place in Manhattan, Columbia University is, in the words of its president, "one of the largest, if not the largest" municipal taxpayer in New York. Total value of its property runs to $86,595,000. Columbia has been the nub of cultural New York throughout its history, and its two original sites received the best of business tenants in its moves.

Each move was made with the thought that the district entered would surely remain a residential one. The site in downtown New York has been invaded by financial buildings, and upon the uptown site stands Rockefeller Center. Last month in a book of Columbiana issued by the University, its grizzled President Nicholas Murray Butler brought these facts to public attention with the assertion that the University's realty "represents the most secure investment of the endowment of a great institution of public service."

In still another capacity 74-year-old

International

Columbia University's Butler

President Butler is a figure in New York realty. Super-busy in University affairs, he still keeps nine stenographers in action, gets away only for occasional golf and for directors meetings at the New York Life Insurance Co. There he has occasion to decide upon the real estate problems which are facing New York Life as in every other lending institution. There, too, he lunches occasionally with fellow-director Herbert Hoover. That his comment on the stability of Columbia realty may have been timed to back up Trustee Hoover's current attempts to secure permission for investment in real estate by Stanford University (ARCH. FORUM, April, 1936, p. 4) was a tasty morsel for speculation.

U. S. SECOND MORTGAGES. Cap to a windy season of Washington housing palaver (see p. 3) was a plan put forth last month by the normally ultra-conservative Chairman John H. Fahey, of the Home Loan Bank Board, involving U. S. second mortgages. The plan did little else than split still deeper the already wide cleft between the Federal Housing Administration and FHLB.

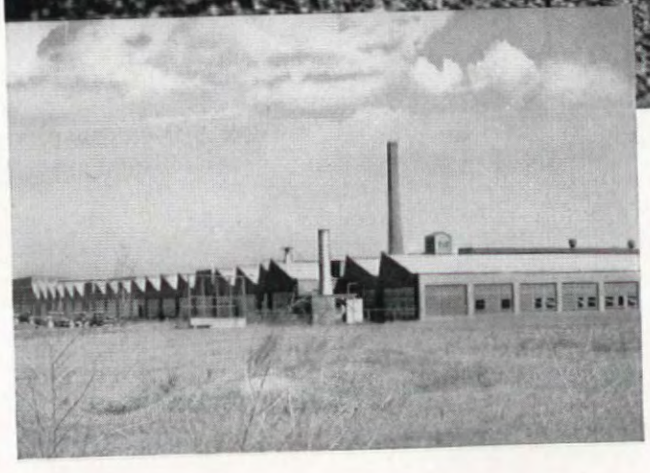
In brief, it called for the utilization of about $300,000,000 of unused HOLC borrowing power to make second mortgage loans on low-priced homes. These would run to 30 per cent of property value, matching first mortgages of 60 per cent. The Government would collect only interest, at 5 per cent, and none of the principal on these mortgages during the life of the first mortgage. Theory was that they would bridge the gap between first mortgage money and the extremely small equity money which moderate-income families can supply.

Chairman Fahey's proposal was obviously based on the probability that such financing would bring more business to the members of his Home Loan Bank System, would produce more work for HOLC. In addition, he argued that under it the Government would be able to keep better tabs on its stake than in providing jobs indefinitely for WPA workers on the one hand, while pledging itself for an indeterminate mortgage insurance loss on the other.

Siding with Fahey in his plan, which would abnegate the FHA's whole purpose, were RFC's Jesse Jones and expiring PWA's Secretary Ickes. Ickes' attitude was explained as more a result of his general dislike for FHA than of any deep-seated preference for the Fahey plan. Few others made so bold, however, as to expect anything important of a plan involving both further Government expenditures and a resuscitation of the unpopular second mortgage.

HORIZON. Set for completion by May 1 was the largest apartment to be air conditioned on record—the 22-story apartment house at 400 Park Avenue in Manhattan. Hardly like the usual mortgagee in deciding to spend so much, but nevertheless an unwilling owner was the air conditioner: the New York Central Railroad, which took over the property last year when it could no longer pay rent for the Central's air rights. Delco-Frigidaire got the job . . . Flood expenditures in the New England and East South Central States were expected to total $200,000,000 before the year's end (see p. 437) . . . The House of Representatives turned thumbs down on a $275,000 appropriation to finance research by the newly instituted Construction Economics Division of the Department of Commerce. The program-framers vainly pointed out that the Bureau of Agricultural Economics spends $6,700,000 annually, urged a comparative pittance for the second largest industry. But the Senate may reinstall the provision . . . The American Institute of Architects offered to cooperate with the American Bankers Association in working out a procedure for bettering small house design and construction. A.I.A. Housing Committeeman Richmond H. Shreve addressed the invitation to A.B.A.'s President Robert V. Fleming, in answer to a recent A.B.A. survey pointing little banker-appreciation of the need for good design, plan, building (see p. 430).

The greatest advance the BARRETT



Barrett ROOFS

This International Harvester Company building at Fort Wayne, Indiana, is protected by 109,000 square feet of Barrett Roofs, bonded against repair and maintenance expense for 20 years. Owner: International Harvester Company, Chicago, Illinois. Gen'l Cont.: Indiana Engineering and Contracting Company, Ft. Wayne. Rfg. Con't.: Knickerbocker Roofing and Paving Company, Chicago.

(*Above*) Close-up of a Barrett Steep Roof Pitch installation showing the firmly embedded gravel wearing surface, characteristic of Barrett Coal-tar Pitch and Felt Roof.

BARRETT

in ROOFING *since* SPECIFICATION ROOF

FOR years, the roofing industry has sought a roof for steep roof buildings that would match in performance built-up roofs of coal-tar pitch, felt and gravel on flat roof decks.

Barrett Steep Roof Pitch, a new and revolutionary building product, now provides a complete solution. Here is a product that combines *with unusual stability* all the unmatched waterproofing and weatherproofing characteristics of coal-tar pitch. The development of this product broadens the field for built-up roofs to include many types of buildings hitherto denied the advantages of this type of roof construction.

Barrett Steep Roof Pitch is the result of years of painstaking research and experiment, and ranks in importance with the famous Barrett Specification Roof, the practice of bonding roofs, the Barrett Approved Roofer organization and other developments that have distinguished Barrett's 82 years of leadership in roofing.

Field and laboratory tests under extreme conditions show that Barrett Steep Roof Pitch possesses unequalled resilience and self-healing qualities, will not slide or "bleed" at the highest temperatures to which roofs are subjected, will withstand intense cold without cracking or loss of bond, it holds gravel or slag firmly in place, and possesses the body, bond and waterproofness which have made coal-tar pitch the world's outstanding roofing value.

Steep roofs of Barrett Steep Roof Pitch and Barrett Specification Felt with a fire-safe gravel or slag wearing surface applied according to Barrett Specifications by Barrett Approved Roofers are bonded by the United States Fidelity and Guaranty Company against repair and maintenance expense for 20 years.

For complete information consult with your local Barrett Approved Roofer, or with us. Detailed specifications are published in Sweet's, and are available for distribution.

THE BARRETT COMPANY, 40 RECTOR STREET, NEW YORK, N. Y.
2800 So. Sacramento Ave., Chicago, Ill.
Birmingham, Alabama

STEEP ROOF PITCH

★

Let's talk about AIR CONDITIONING

★

THE planning of an air conditioning system is not, in itself, a particularly technical job. It is concerned with the distribution of air, in and out of rooms, or buildings. This passing of air through ducts has been quite well understood for some time.

One element was lacking

The idea sometimes implied that air conditioning is a mystery may go back to the days when it was an unsolved idea. For a long period the notion of controlling the heat and moisture content of air within buildings had attracted thoughtful attention. The chief difficulty lay in the absence of a safe, economical refrigerant. Since summer air conditioning is basically cooling and dehumidifying, this lack of a suitable cooling medium was serious.

To advance the application of electric refrigeration for use in air conditioning, General Motors sponsored a search for a new and better refrigerant. After thousands of experiments the searchers discovered a new liquid. They called it FREON. So brilliantly has FREON met every hoped-for requirement that the whole air conditioning industry adopted it almost overnight. Not until the perfection of FREON did air conditioning, for business places and homes, become really practicable. And with this discovery, the last mystery faded from the air conditioning picture.

Refrigeration is the basis

Summer air conditioning basically is cooling and dehumidifying. The accepted method is by electric refrigeration. Obviously, then, the factors which determine the effectiveness and economy of an air conditioning system go back to the manufacturer of the refrigeration equipment used. Consider his experience in the design, manufacture and application of this equipment. Delco-Frigidaire, through its General Motors background, represents such experience to the greatest degree of any organization in the field.

We welcome opportunities to confer with architects. On such occasions we strive not to beat the drum of sales talk. Rather we offer such suggestions as have come out of our long experience in the fundamentals that have made air conditioning possible.

2 ACCEPTED FACTS ABOUT AIR CONDITIONING THAT POINT TO ONE CONCLUSION

1 Summer air conditioning is basically cooling and dehumidifying.

2 The accepted method of accomplishing this is by electric refrigeration.

CONCLUSION

Buy air conditioning from Delco-Frigidaire—the organization representing most experience in electric refrigeration.

See Sweet's Catalogs File (Section 26/7) for details on our air conditioning equipment.
Write our headquarters at Dayton, Ohio, or telephone our New York office at BRyant 9-0452

DELCO-FRIGIDAIRE CONDITIONING CORPORATION

AUTOMATIC HEATING **DAYTON, OHIO** *AIR CONDITIONING*

PRODUCTS OF GENERAL MOTORS

LETTERS

Winter Building

Forum:

. . . As a fee architect with the Federal Housing Administration I know there are many houses under consideration for spring building. I look for a jam or crowding in order to get the work of building under way and the owners who get started early will not be troubled with getting good workmen and materials.

It is my humble opinion that if more stress were laid upon the subject of winter building, that there would be many more houses under construction now. It can be done and should be done, and the owner, craftsmen, material dealers and all others would be greatly benefited thereby.

The chart of construction volume would be more of a straight line instead of the highs in the summer months and lows of the winter months, with the general loss of purchasing power and loss of trade . . .

GUY N. CRAWFORD

Minneapolis, Minn.

The Prefabricated Pfuture

Forum:

We have been having some interesting discussions down at my club, the Market Avenue Architectural and Asthma Association. The club is a veritable Mecca for bon vivants; our imported French chef, Monsieur Butch Fiddlebaum, has the knack of turning out dishes with an Old World charm. His fried mush with Thousand Island dressing, for instance, has aroused wide discussion accompanied by acute gastric disturbances. When rallied on his culinary prowess, M. Butch always replies modestly in his quaint Provencal patois, "Utsnay to you umpchays."

Last night after dinner we were discussing, as architects will, modern trends in architecture—"Is indoor plumbing here to stay?" and "Corbusier and Calvinism" and "Who was that lady I seen—" no, come to think of it, that was the night BEFORE last. Finally one of our most gifted members, Dr. F. X. W. Barnsmeller, who is possibly the country's leading authority on Steamboat Gothic, cleared his throat and asserted that what this country needs is a good prefabricated house.

"What this country needs," he insisted, stirring his coffee with his stogie in the traditional Beaux Arts manner, "is a good prefabricated house."

"What this country needs, besides a good five-cent nickel, is a prefabricated client," I contradicted.

"It ought to be as obvious as a $2 toupee," I continued, "that it would be a far, far better thing for the profession, as I have nicknamed we architects, to have prefabricated clients available than to have any quantity of prefabricated houses lurking around the rolling mills, ready to spring into a box car as soon as a person's back is turned. What good does it do an architect to know that for $1,196.75 he can buy a prefabricated house f.o.b. Nelson's Switching, Md., complete with four rooms, windows running around corners like a man pursued by bill-collectors, and air conditioning? Where would an architect get $1,196.75?"

"Let's not be gruesome," suggested a listener. "But speaking of air conditioning reminds me that when I was a boy, a woodshed and a couple of shingles was all the heir conditioning apparatus MY father needed. But go on with this description of your prefabricated client."

"Imagine how much pleasanter would be the life of the architect if, when business was slack, he could call up the factory and say, 'Have six prefabricated clients, all wound up and raring to go, at my office at 8:30 tomorrow morning.'"

"Pooh, pooh," interjected Dr. Barnsmeller, "what would these prefabricated clients of yours be made out of?"

"Naturally the ideal prefabricated client would be made out of money, you fool."

"Young man, you are standing on the brink of an abscess," warned the Doctor. "But I disregard your language as beneath my attention. Where, I repeat, would you get the money to make the prefabricated clients of yours out of?"

"No gentleman ever ends a sentence with a preposition, or with a proposition either," objected Horatio Rancid, another one of our leading members. He generally leads a singleton after bidding six spades vulnerable. "Nevertheless, the Doctor's point is well taken. Where are you going to get the money with which to manufacture and equip prefabricated clients? It will take no mean quantity, as I assume that the P.F.C. will have money dripping out of all pockets?"

"You have touched upon the only point that I have not yet satisfactorily solved," I admitted. "However, I believe that by a slight alteration in the Townsend Plan we can overcome this trifling defect. My idea is that instead of promising $200 a month to everyone past 60, the thing to do is to guarantee $60 a month to everyone past 200. If the good continue to die young, obviously the only ones who will collect the $60 will be architects. Besides, any architect who has lived through the last five years should have no difficulty whatever in living through the next 150. The immense savings thus made would leave ample funds with which to inaugurate the Prefabricated Client Administration, complete with vouchers, senatorial investigations and editorials in the Hearst papers. The idea is stupendous."

"It's colossal, in a small way," agreed the Doctor, as the party broke up in confusion as the waiter approached with the check.

ROGER ALLEN

Grand Rapids, Mich.

So True It Hurts

Forum:

. . . Some time ago in a letter to your magazine, I suggested that as a professional magazine you should encourage constructive discussions among architects relative to this profession. At that time you labeled this suggestion "fearless business" or something of the kind. It may be, but isn't it necessary? I am sure that there are many who would be glad to contribute to such discussions and I can not think of anything that would be more constructive for the architectural profession, because it would bind the various schools of thought together in arguments and a battle would result that at least would show some life and in the end something would be accomplished once and for all and architects might then become a unified body.

I realize that in general architects do not want to be a unified body. They cling to the idea that individuality is their greatest asset and that that could not exist if the profession were unified. It seems we are like the medical profession about a hundred years ago. Its basis was constructed upon personal feeling with almost no exact knowledge. We all have our own ideas of what is right and wrong with only romance for a basis, and since that never strikes two people alike, no two of us ever agree and the knowing client says: "Well, my guess must be as good as theirs, so why have an architect?" This is so true it hurts. With romance the basis, the client usually has a clearer picture of what he wants than any other person could possibly have and in such cases the architect most in demand is the best mindreader. Surely this does not add respect to our profession. Along with this, magazines are helping the way down. They have done their best to make architects out of every home builder. We cannot blame them because they must keep up interest in some way. But when any profession attains a reputation within reach of the public for the price of a magazine, there is something wrong.

We dodge the issue again under the heading of "building money." All the money in the world cannot create a market if there is nothing to buy. It is true there is a great demand for cheap housing but as long as that exists almost anything will sell and architects will have little to say about it. As I see it, architects are going to have a very small part of this new building money unless they seek a new standard above the ability of the speculative builder who is his own architect. . . .

That is what I am doing here in Midland. I realize that there are a few clinging to the ideals of their grandfathers and even more to the idea of being their own architect, but there are more and more who see the possibility of a science of architecture, and in that lies the future of this profession. . . .

ALDEN B. DOW

Midland, Mich.

See Our Catalogue in Sweet's

MACBETH AIRFLOW GLOBES

In tune with the trend toward streamlining and combining the very finest features of modern illumination, this globe of famous "Monax" Glass demands serious consideration. It provides (1) more efficient lighting as proved by photometric tests (2) famous Macbeth "Chip-proof" rim which strengthens the glass and eliminates sharp edges (3) completely enclosed, flush-type opening which greatly reduces dust accumulation. Here is a Globe of simple grace and beauty in harmony with modern decoration yet free from all garishness that would clash with more conservative interiors . . . Write us for complete information on this new globe . . . today.

MACBETH-EVANS GLASS COMPANY
CHARLEROI • PENNSYLVANIA

Art Museum of the J. B. Speed Memorial, Louisville, Ky., protected with a Genasco Standard Trinidad Built-up Roof since 1926. Arthur Loomis, Architect; Wm. A. Netherland, Associate—Netherland & Hawkins, successors. National Roofing & Supply Company, Louisville, Roofing Contractor.

Specification:— A roof that will endure with the building

. . . and it was fitting that in 1926 a Genasco Standard Trinidad Built-up Roof was specified for the J. B. Speed Memorial, Louisville, Ky.

Today, ten years after its application, the Genasco Standard Trinidad Built-up Roof, is giving the same protection to the J. B. Speed Memorial as it did during its first year, and in all parts of the United States for more than a generation Genasco Standard Trinidad Built-up Roofings have given maximum protection to institutional, industrial, commercial and public buildings. For a Genasco Standard Trinidad Asphalt Roof is constructed with thoroughly saturated long-fibred all-rag felts and waterproofed with Trinidad Lake Roofing Asphalt. This roofing asphalt is made from native Trinidad Lake Asphalt—nature's own product —famous for its waterproofing and weather-resisting qualities.

When you specify a Genasco Standard Trinidad Built-up Roof you can count on a roof that will "last with your building." Against two of a roofing's worst enemies—sun and water—you have in Trinidad Lake Roofing Asphalt a natural waterproofer, and a natural product inherently resistant against the destructive action of the actinic or ultra-violet rays of the sun.

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Roof security is *felt* with Trinidad

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1600 Arch Street
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Please send me a copy of your illustrated book "For Your Roof" which carries illustrations of many prominent buildings in all parts of the country protected with Genasco Standard Trinidad Built-up Roofing.

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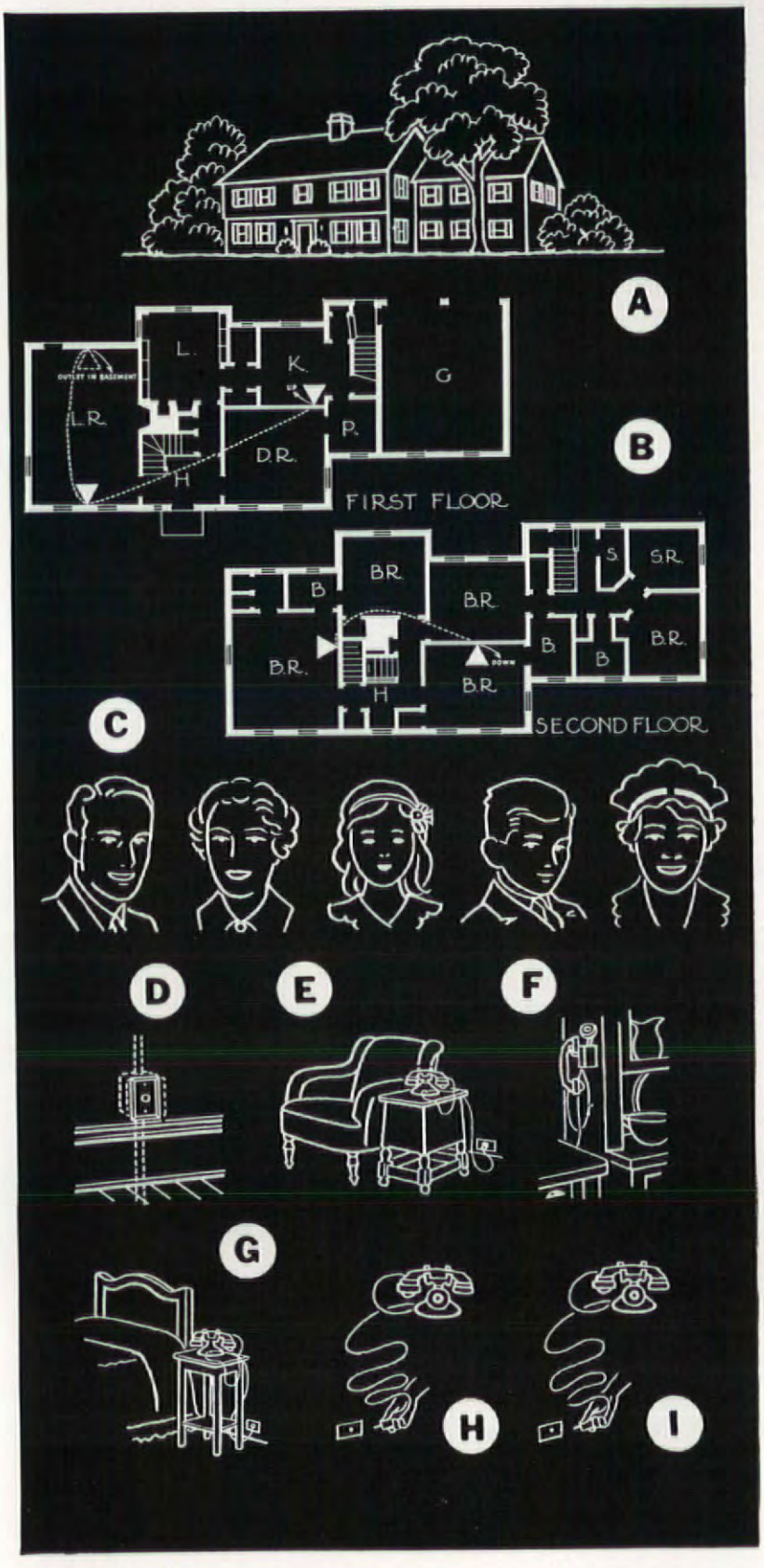
PROBLEM No. 1



A This is the house that Jackson will build.

B These are the floor plans for the house that Jackson will build.

C This is the household that will live in the house that Jackson will build.

What should be the telephone arrangements for the house that Jackson will build?

D Built-in conduit to prevent exposed wiring and provide protection against certain types of service interruption.

E An outlet in the living-room for all the family.

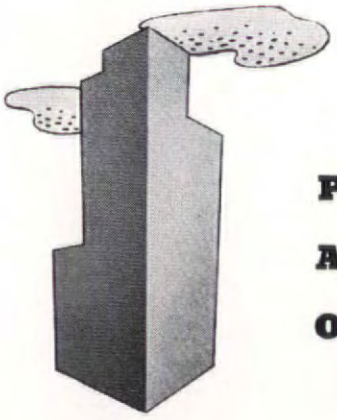
F An outlet in the kitchen for household business.

G An outlet in the master bedroom for protection at night and convenience all the time.

H An outlet for portable telephone in the guest-room—to serve guest or invalid.

I An outlet for portable telephone in basement recreation room to save running upstairs.

This is a suggested approach to a typical problem. Trained telephone engineers will help you custom-tailor efficient, economical conduit layouts for any of your projects. Just call the Business Office of your local telephone company and ask for "Architects' and Builders' Service."

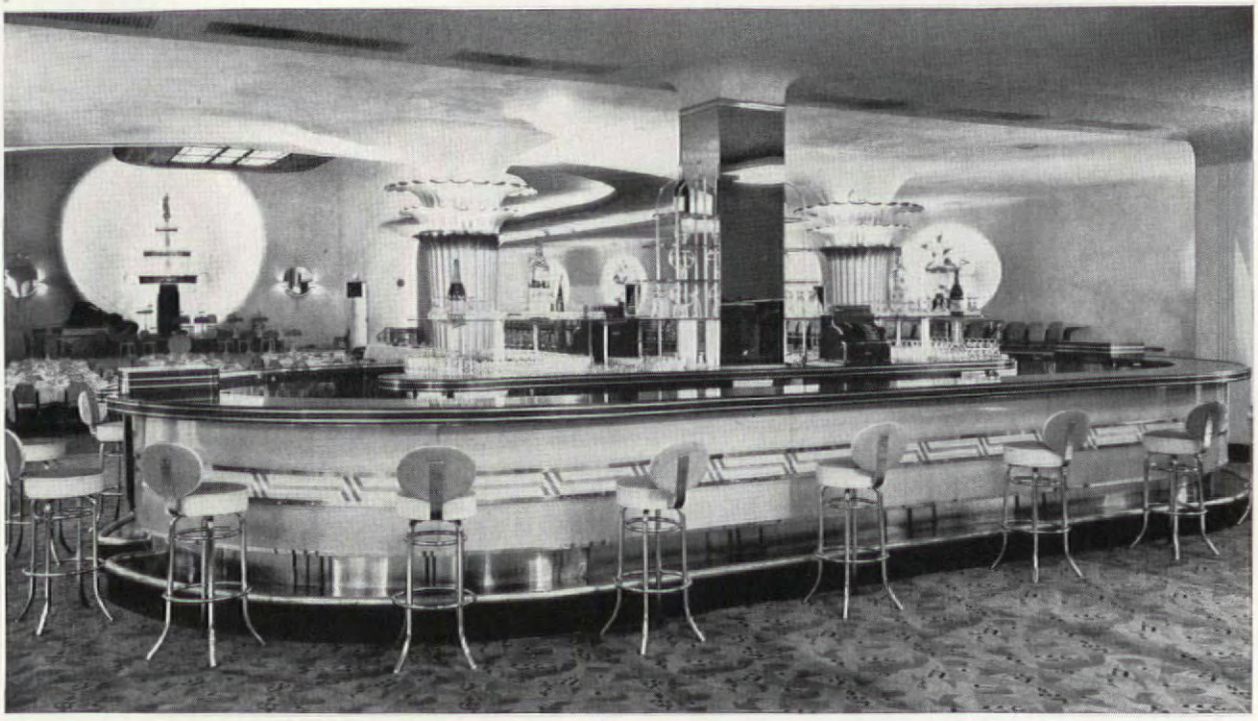


PLAN TO AIR CONDITION AN OFFICE BUILDING, OR A SUITE OF OFFICES?

Call Carrier

● Regardless of size, type or location, Carrier not only is at your service, but Carrier can adequately serve you. For Carrier engineers have designed air conditioning systems to fit every need. Each job is individually engineered—worked out in cooperation with your own engineering staff. Carrier engineering service is available in principal cities throughout the country. That's why we say "If it's air conditioning—call Carrier." And if you want to know in advance whether it will pay you to condition a certain type of office building, send for the Carrier Econograph. It will tell you. No charge. Address: Carrier Engineering Corp., 850 Frelinghuysen Ave., Newark, N. J.

It pays to have **Carrier AIR CONDITIONING**



Striking Translucent Bar Panels

The luminous glow of the orange and red translucent bar panels on this striking counter make it one of the most unusual bars in the country. It is the last word in modern construction, with Formica tops with bright metal inlays on the edges, and translucent Formica panels illuminated with neon tubes behind them . . . This is a counter idea that is bound to be more widely used . . . The bar is in the Pavillon Caprice of the Netherland Plaza in Cincinnati. It was designed by Lessman, Inc., New York, and installed by C. Loth, Inc., of Cincinnati . . . If you have modernizing to do, investigate Formica.

THE FORMICA INSULATION COMPANY
4658 Spring Grove Avenue • Cincinnati, Ohio

FORMICA

FOR FURNITURE & FIXTURES

FORUM OF EVENTS

MUTINY IN THE BASEMENT

ABOVE: A "before" cellar—typical of 36 basements confronting contestants in the American Radiator "Cellar Reborn" competition. BELOW: Six suggested solutions for six different cellars. Cost for renovating and furnishing—but exclusive of new heating equipment—ranging from $240 to $424.

1.	Playroom ..... (est.) Cost:	$240
2.	Sports room	$250
3.	Hobby room (aquarium)	$424
4.	Gymnasium	$356
5.	Utility room (cannery)	$303
6.	Study	$365

"THEY'RE so *cute*," gurgled a pretty visitor to the exhibition of miniature basements sponsored recently by The New York School of Fine and Applied Arts and the American Radiator Company on the roof of Rockefeller Center's Maison Français. Cute only in the sense of petiteness, the 36 models graphically demonstrated how gloomy, dingy cellars could be "reborn" into cheerful, livable rooms at very little cost, were so enthusiastically received by the public that the exhibition was continued an extra week before being packed for an extensive tour of leading U. S. cities. First stop: Philadelphia.

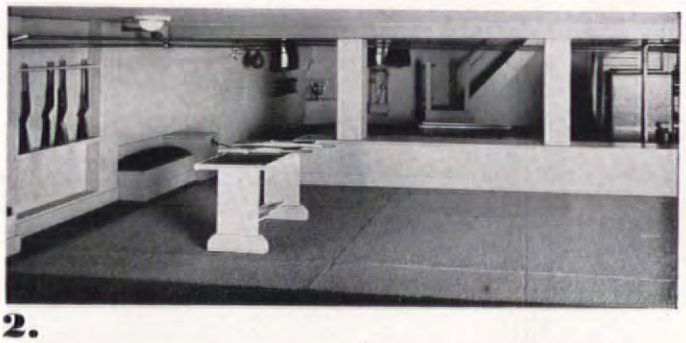
The work of students at the School of Fine and Applied Arts, the miniatures were suggested improvements for actual cellars in the New York area, visited and inspected by the sponsors. Each model was shown with a photograph of the basement from which it was derived. No liberties were allowed with necessary columns or supports but otherwise the sky was the limit. Not including the cost of new heating equipment—necessary to eliminate huge pipe and furnace areas—the rebirths showed what could be accomplished for as little as $170 to a top of $400. Depending upon the size of the house and the type of system desired, total costs could run anywhere from $1,000 up.

Germinating from 36 different brains, the results are gratifyingly diverse. Under such group headings as rumpus rooms, hobby rooms, sports rooms, utility rooms, study rooms and playrooms, the observer finds sufficient individuality to satisfy even the most fastidious critic. For example, under sports rooms there are five ingenious solutions: 1) a boxing ring; 2) a shooting gallery; 3) a small gymnasium, complete with parallel bars, chest weights, rowing machine and punching bags; 4) a bowling alley; and 5) a pool table. Under hobbies: a room devoted to Indian relics, another for tropical fish, a third for film developing and a fourth for showing marionettes, complete with a small stage.

Meticulously carried out with infinite patience and better than average crafts-

(Continued on page 56)

1.



2.

3.

4.

5.

6.

Dria Duryea Photos

JOHNSON AUTOMATIC CONTROL *Heating-Cooling*

for many U. S. GOVERNMENT BUILDINGS . . . *in Washington and elsewhere—*

Time-tested apparatus, controlling Heating . . . Ventilating . . . Air Conditioning.

U. S. TREASURY DEPARTMENT BUILDING
Recent Air Conditioning Installations designed by Mechanical Engineering Section, Office of Supervising Architect.

U. S. DEPARTMENT OF JUSTICE
Zantzinger, Borie and Medary, architects, Philadelphia, Pa.

ARCHIVES BUILDING
James Russell Pope, architect; Clyde R. Place, consulting engineer, New York City.

In the U. S. Treasury Department Building, eleven air conditioning systems, serving basement to third floor inclusive, are Johnson controlled . . . Similarly, at the Department of Justice, nine central-plant systems which condition the entire building are equipped with Johnson thermostats, valves, and dampers . . . Room temperatures in the Archives Building are regulated precisely by 225 Johnson room thermostats operating more than 300 Johnson radiator valves. Here, too, the eight air conditioning systems are watched over by Johnson apparatus.

These are only three examples of many Johnson installations in U. S. Government Buildings in Washington, not to mention a variety of Johnson-controlled governmental buildings elsewhere . . . Post Offices, Court Houses, Office Buildings, Appraisers' Stores . . . new and old. Many of them are equipped with Johnson Zone Control systems, commanded by the Johnson *"Duo-Stat,"* the automatic control engineer who never sleeps but sits with one hand on the radiator, the other outdoors and his foot on the throttle of the heating system.

Whatever the temperature and humidity control problem . . . heating, cooling, ventilating, humidifying, dehumidifying . . . Johnson apparatus is the answer.

JOHNSON

AUTOMATIC HEAT & HUMIDITY CONTROL

JOHNSON SERVICE COMPANY . . . MILWAUKEE, WISCONSIN . . . OFFICES IN ALL PRINCIPAL CITIES
A SINGLE NATION-WIDE ORGANIZATION DEVOTED TO ONE LINE OF BUSINESS FOR MORE THAN FIFTY YEARS

HERSHEY CHOOSES LINOTILE

Linotile floors brighten Visitors' Room of Hershey Chocolate Corp., Hershey, Pa. Colors are Oyster, Travertine, and Light and Dark Walnut, in 30" x 36" tiles. Walls and pilasters are Armstrong's Pine and Walnut Linowall. Sound-absorbing ceiling is Armstrong's Corkoustic. More than 32,000 sq. ft. of Linotile; 45,000 sq. ft. of Corkoustic; and over 1,000 sq. yds. of Linowall were used in this building.

Linotile floors like this

HELP YOUR CLIENTS RENT AND SELL

YOUR clients will find it easier to rent and sell when their stores and offices have the eye-appeal that richly colored, handlaid floors of Armstrong's Linotile bring to this room in the Hershey Chocolate Corporation's new windowless office building.

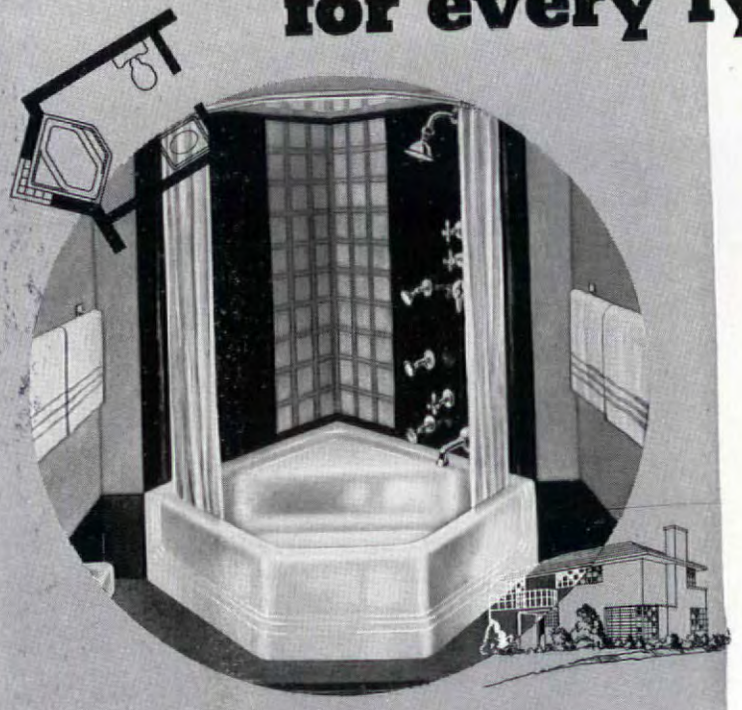
Linotile is an exceptionally durable resilient tile. Inexpensive to install and easy to maintain by occasional washing and waxing, it never requires costly refinishing. Colors run through the full thickness of each tile, so that scuffing feet and scraping furniture cannot wear away their freshness and beauty.

When you remodel or build, Armstrong's Architectural Service Bureau can give you unbiased, money-saving suggestions because Armstrong offers the only complete line of resilient floors: Linotile, Accotile, Cork Tile, Rubber Tile, and Linoleum. Write now for "Individuality in Handlaid Floors." Armstrong Cork Products Co., 1304 State St., Lancaster, Pa.

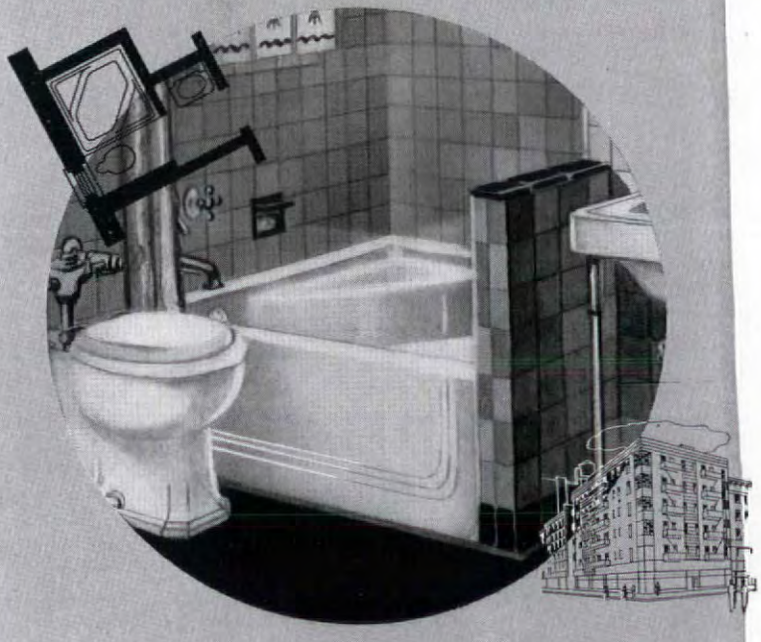
ARMSTRONG'S *Linoleum* *and* RESILIENT TILE FLOORS

LINOTILE · ACCOTILE · CORK TILE · RUBBER TILE · LINOWALL · ACOUSTICAL CEILINGS

EVERY TYPE OF BATHING
for every type of home



In Residences . . . Neo-Angle furnishes the latest note in smartness. This unusual bathroom design was obtained by using the corner Neo-Angle. Glass brick in the wall back of the bath provides extra daylight.



In Apartments . . . Neo-Angle is a real space-saver. The use of Neo-Angle Baths in this New York apartment building resulted in the saving of 4 feet of outside wall space, architects say.

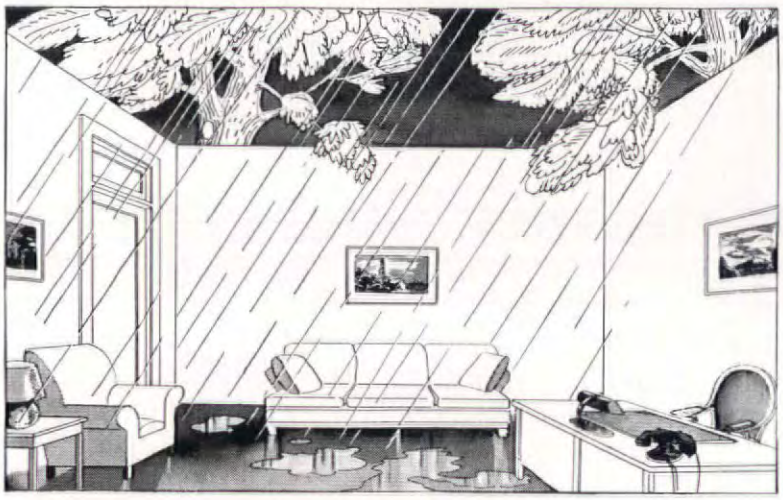
"Standard" neo-angle bath

● The "Standard" Neo-Angle Bath has captured the imagination of America. In large homes where beauty is a major consideration, it furnishes the newest note in smartness. In small homes and apartments where space is at a premium, it's a necessity. It's different, it's practical, it has added safety. And because of its compact size and attractive design, no other bath in the world is so adaptable for unusual bathroom planning and different types of buildings—for new buildings or for modernizing old ones.

Prestige and profits follow when you use the "Standard" Neo-Angle Bath in new homes or in modernizing old ones. It's only four feet square, yet it provides a full-size, roomy bathing compartment, convenient seats in two opposite corners, and an ideal shower bath. In every way, the "Standard" Neo-Angle is the bath of the future for all homes of today. For complete information, consult your "Standard" catalogue or write today for literature.

Standard Sanitary Mfg. Co.

PITTSBURGH, PA. *Division of* AMERICAN RADIATOR & STANDARD SANITARY CORPORATION



• Expose a room to the weather? Ridiculous — everything in it would be ruined. That is, almost everything. One thing wouldn't be harmed at all — the beautiful Dutch Boy White-Lead and Lead Mixing Oil finish on the walls. This remarkable durable flat paint is just as much at home outdoors as in.

PICK OUT any paint requirement you wish—and this is what you'll find: *The flat paint to use is the one made by combining Dutch Boy White-Lead with Dutch Boy Lead Mixing Oil!*

Is durability a major consideration? Here is that exception among flat paints — one that is used outdoors as well as in.

Its extensive use on concrete, stucco and brick exteriors is the best possible proof of its great durability. It takes all the punishment the elements can give, defying the weather year after year.

That sort of service outside gives you some idea of how it behaves inside — how it withstands wear and repeated washing. Also, it can be washed completely clean even after being ink-stained, pencil-marked, grease-smudged or defaced with shoe-blacking and mercurochrome.

You will find, too, that a white-lead and lead mixing oil finish has the richness, solidity *and depth* characteristic of lead paints. It is a finish beautiful enough for the finest interiors.

Other advantages of this improved flat paint are the following: It stops suction and hides firecracks; and its high coverage of 800 square feet per gallon, added to its quick mixing and easy spreading, makes it low in first cost while its long wear and easy cleanability make it low in cost per year.

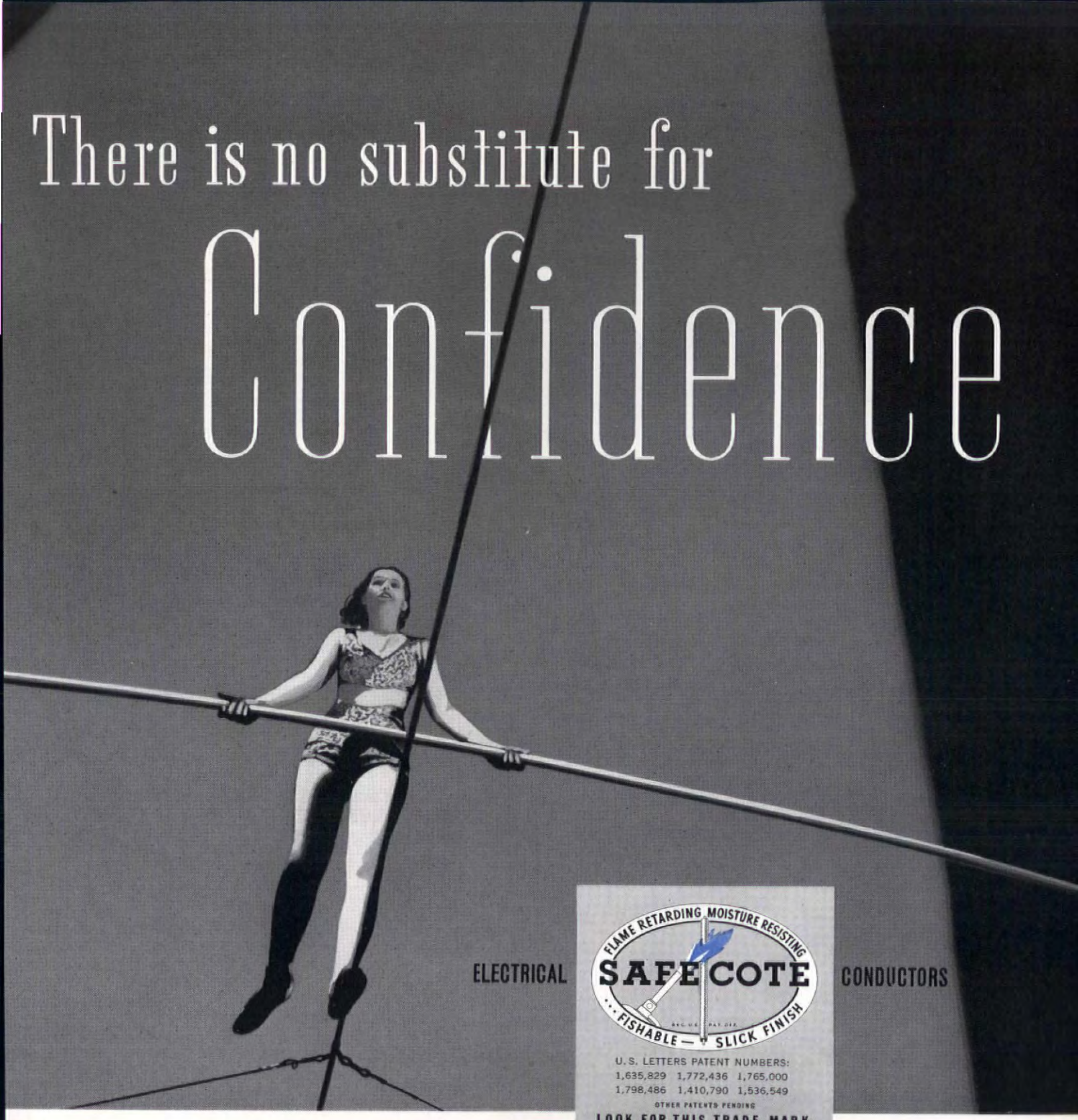
NATIONAL LEAD COMPANY

111 Broadway, New York; 116 Oak St., Buffalo; 900 W. 18th St., Chicago; 659 Freeman Ave., Cincinnati; 820 W. Superior Ave., Cleveland; 722 Chestnut St., St. Louis; 2240 24th St., San Francisco; National-Boston Lead Co., 800 Albany St., Boston; National Lead & Oil Co. of Penna., 316 Fourth Ave., Pittsburgh; John T. Lewis & Bros. Co., Widener Building, Philadelphia.

DUTCH BOY

WHITE-LEAD & LEAD MIXING OIL

There is no substitute for Confidence



ELECTRICAL

FLAME RETARDING MOISTURE RESISTING
SAFECOTE
FISHABLE — SLICK FINISH

CONDUCTORS

U. S. LETTERS PATENT NUMBERS:
1,635,829 1,772,436 1,765,000
1,798,486 1,410,790 1,536,549
OTHER PATENTS PENDING

LOOK FOR THIS TRADE MARK
INSIST UPON GENUINE SAFECOTE

Business is a matter of confidence. . . . Your client builds upon confidence. . . . You build upon your client's confidence. . . . The Safecote stamp is a mark of confidence. . . . No product is more jealously guarded, none more rigidly inspected. . . . Its greatest asset—the user's confidence—earned by outstanding performance and guarded by the eighteen leading wire manufacturers, would be impaired by the smallest flaw. . . . Specify Safecote—the wire that has no substitute.

SAFECOTE PERFORMANCE SPECIFICATIONS AVAILABLE UPON REQUEST

GEORGE C. RICHARDS • LICENSORS' AGENT • 155 EAST 44TH STREET • NEW YORK CITY

GIVE YOUR MONUMENTAL BUILDING A MONUMENTAL *ROOF*...

Monel Metal

Choose your metals . . . for 26 Years . . . or for 300!

● The Monel Metal roof on the Pennsylvania Station in New York City was laid when the station was built—back in 1910. The only part of the roof which was *not* originally Monel Metal was the skylight frames. Worn through by corrosion and erosion, these frames are being replaced—with Monel Metal.

The same corrosion from damp, grime, and fume-laden air . . . the same erosion from the scouring of water packed with cinders . . . which wore away the skylight frames, made no impression on the Monel Metal roof. Engineers estimate its probable life as at least three hundred years.

Workmen recently replacing worn-out skylight frames on the roof of the Pennsylvania Station, in New York, with Monel Metal. See what weathering did to the old frames in the foreground.

Next time *you* plan a roof for any institution . . . get the figures on Monel Metal. You want buildings of your design to stand up and command respect generations from now. Give them roofs that endure for generations . . . roofs of Monel Metal.

The same toughness, the same resistance to corrosion and immunity to wear that Monel Metal displays on the roof of the Pennsylvania Station give it a much *wider* usefulness. Wherever in *any* structure you must be sure of quality that endures, ask yourself, "What about Monel Metal?" Even in the small cottage, you'll find a place for it as sink and cabinet units for the kitchen, and hot water tank in the cellar.

The far-sighted way to find the actual cost of this long-lived metal is to divide the original cost by *the number of years it serves*. Judged by this method, Monel Metal is by all odds the most economical investment.

And even the first cost is less than you think. Write today for complete details.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET NEW YORK, N. Y.

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

Mr. Cram writes of a glamorous past and an alarming future . . . . A new book on English country homes in an inexpensive edition . . . . A check list of construction, materials, and equipment.

MY LIFE IN ARCHITECTURE, by Ralph Adams Cram. Boston: Little, Brown, and Company. 325 pp., 29 illustrations. 6½ x 9½. $3.50.

It is the story of a long and active life that Ralph Adams Cram has written. As the record of a period of profound and disturbing change in American architecture and its effect on a man of broad culture it is an excellent book, and whether or not one agrees with Mr. Cram's point of view it is ably presented and vigorously defended. Beginning his professional career in Boston after journalistic and other interludes he came under the influence of Richardson, McKim, Mead, and White, and other leading spirits of the rather excited '80s. Ruskin continued his education and Venice provided the discovery that there was no "pure architecture," that styles innumerable existed side by side in this lovely city, even in the same building, and that the result, curiously enough, was satisfactory. This discovery made a lasting impression upon him and he records that from this point on he no longer followed the strictly archæological approach but mixed his styles as he saw fit. That this conscious imitation of what had originally been a natural process had no validity since it lacked all relation to architectural realities was not apparent to Mr. Cram nor to many of his contemporaries.

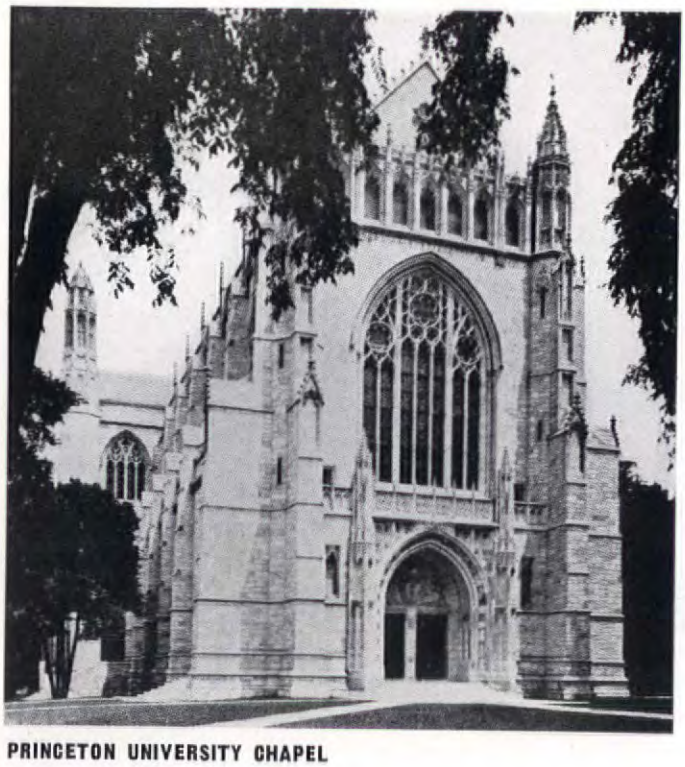
Today, at the age of 72, Mr. Cram observes what is happening in the world, and views most of it with alarm—particularly the architecture. So while the book dwells at considerable length on matters other than architectural, it is essentially a passionate plea to return to the ways of a past uncomplicated by plumbing, steel framing, and complicated apparatus. It is a losing fight, and the book's very vehemence indicates that perhaps Mr. Cram realizes it. None of the younger men today are particularly interested in Gothic or any other style for that matter, being much too busy trying to work out an architecture which, for the first time in over a hundred years, is based on sound building. This must seem like a depressing state of affairs to a man who has been a confirmed Gothicist most of his life, and to whom Gothic is the inevitable expression of Catholicism regardless of what the prevailing building techniques happen to be at any given time. There is still a large group of men in this country who persist in looking backward to find our architectural future, and Mr. Cram as their spokesman has presented their case forcibly. The book expresses clearly that remarkable confusion of architectural criteria and purely literary notions whose result has been the lowest level, esthetically speaking, to which the art of building has ever fallen. In Venice, to take as an example Mr. Cram's great inspiration, you may find three palaces side by side, each done at a different time, each having a definite relation to its own time. The result is three "styles" existing in perfect harmony. That someone can happen along several centuries later and find in this perfectly natural situation an excuse for repeating this process at one fell swoop is easy to understand but hard to condone.

Take as an illustration Mr. Cram's own description of the designing of the first buildings for Rice Institute in Texas.

(Continued on page 86)

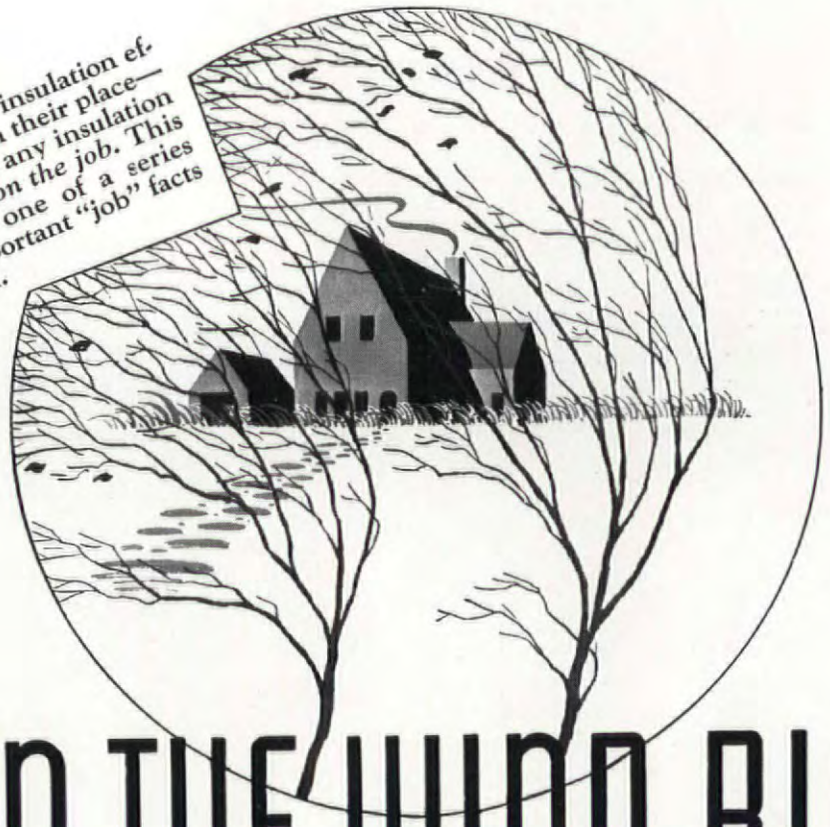
CATHEDRAL OF ST. JOHN THE DIVINE—NEW YORK

PROPOSED PARLIAMENT BUILDINGS—TOKYO



PRINCETON UNIVERSITY CHAPEL

● Laboratory tests of insulation efficiency are useful in their place—but the final test of any insulation is what it will do *on the job*. This advertisement is one of a series dealing with important "job" facts about insulation.



WHEN THE WIND BLOWS

Does Insulation really INSULATE?

Your clients buy insulation as a *permanent* investment. But we all know that insulation cannot give lasting protection if, as time goes on, it leaves loopholes for the wind to blow through.

There are two reasons why Balsam-Wool is *windproof*. First, it is sealed in a covering which wind cannot penetrate. Second, it is firmly *fastened* in place. It cannot settle as do fill types of insulation. It tucks into every crack and crevice, and remains in place regardless of movement of framing members.

Balsam-Wool is also *waterproof*—condensation within the walls of a structure cannot rob it of its efficiency. In addition, it is verminproof and non-combustible. Available in three thicknesses, it allows you to specify the *economical* amount of insulation for any structure. Complete facts, for your file, are yours for the asking. Write us for the whole story!

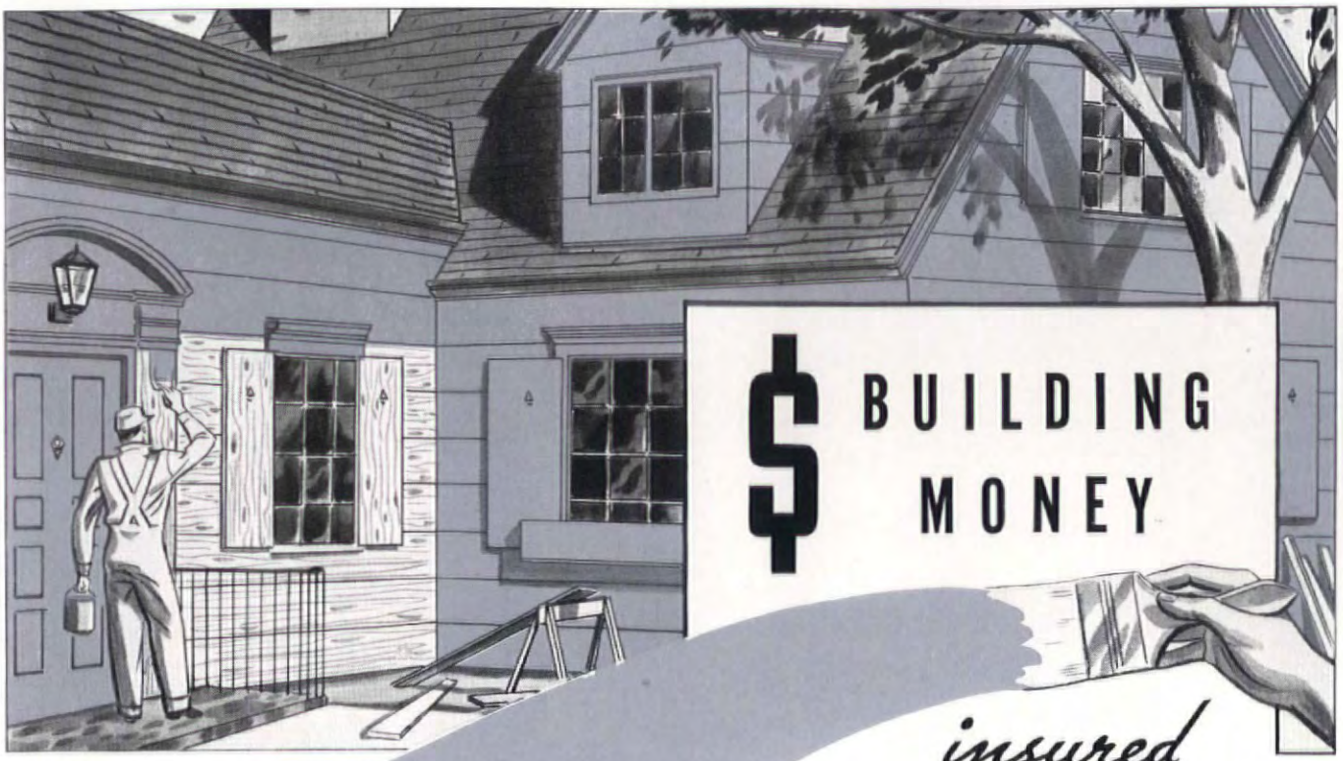
WOOD CONVERSION COMPANY
Room 147, First National Bank Building
St. Paul, Minnesota

BALSAM WOOL

Made By The Makers of
NU-WOOD

WOOD CONVERSION COMPANY — **ST. PAUL · · · MINNESOTA**

Products of Weyerhaeuser



insured with a Brush

ALUMINUM PRIMING IS *Better* PRIMING

● Even before your houses are completed, weather starts its unending process of destruction. Good paint is essential, and the better the paint you specify the better the building money is protected and the less maintenance will cost.

When your painter applies Aluminum Primer, millions of tiny Aluminum flakes by "leafing" form a continuous coat of metal protection which seals the surface against rapid moisture changes, retards harmful swelling and shrinking of the wood and effectively blocks the destructive action of the sun's rays. Your client's investment is safeguarded when your painter uses Alcoa Albron and a quality vehicle for wood surfaces.

The best Aluminum Paint consists of genuine Alcoa Albron Paste or Powder and vehicles suitable for different surfaces. Buy it from reputable paint manufacturers, their jobbers and dealers. For Aluminum Paint literature, write ALUMINUM COMPANY OF AMERICA, 2166 Gulf Building, Pittsburgh, Pa.

ALCOA ALUMINUM ALBRON

ALCOA ALBRON
paste and powder for
ALUMINUM PAINT

Spotlight! New Robertson System Focuses Attention on FLOORS

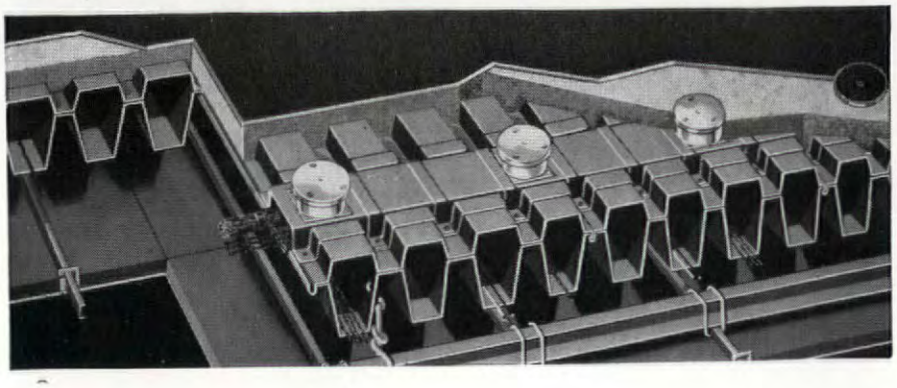
THE Robertson System of floor construction lifts FLOORS to a new position of importance in modern building practice.

The Robertson System speeds up building erection from 25% to 30% It eliminates temporary plank flooring, wooden floor forms, the delays incident to pouring and setting concrete. And it provides, once laid, a safe solid platform where other trades may go to work at once...where materials can be stacked for convenient use.

The Robertson System thus assures the building owner quicker occupancy of his building...valuable extra weeks or months of revenue.

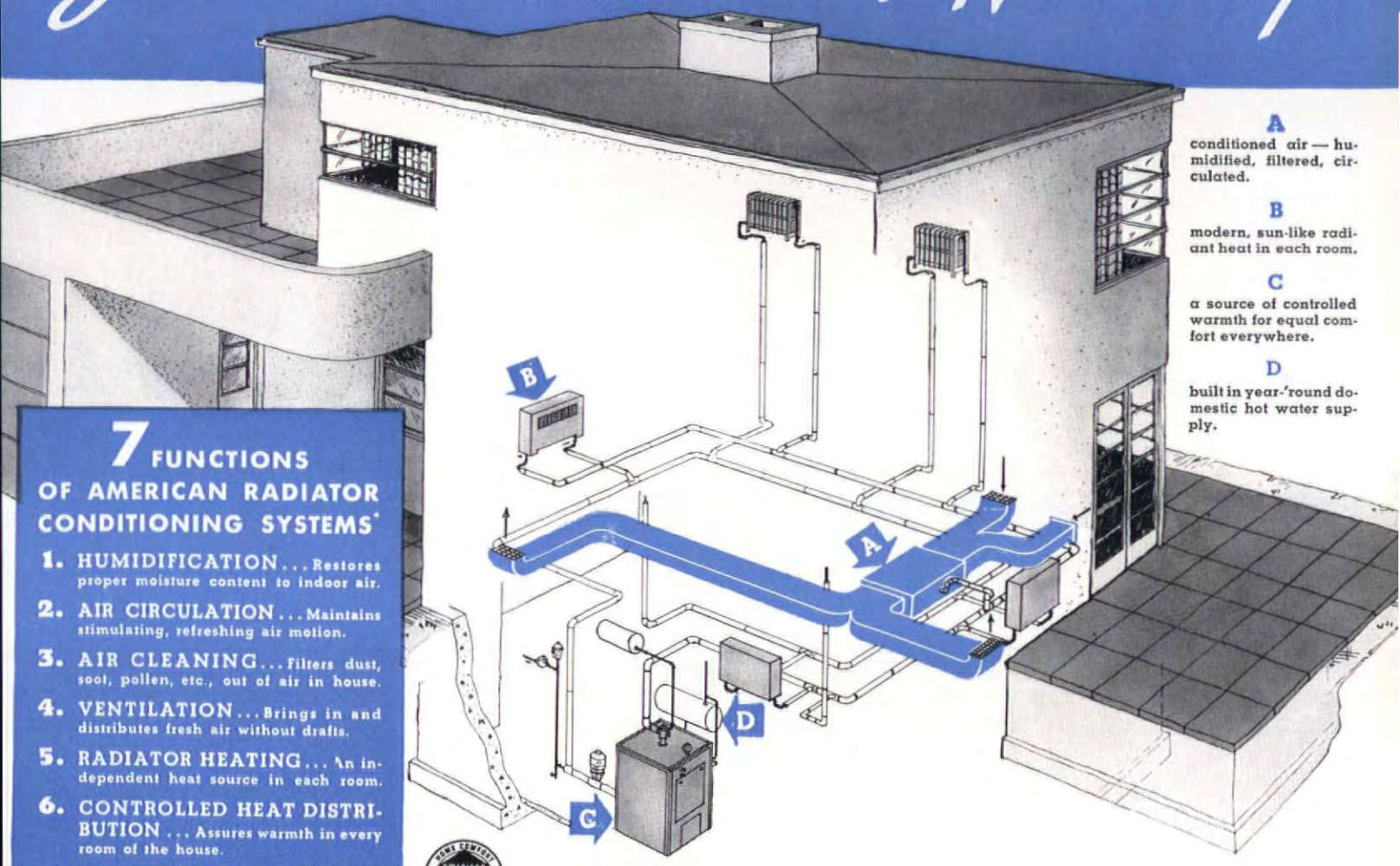
In addition, the Robertson Floor insures the continuing electrical adequacy of the buildings you design . . . because it is, in itself, a comprehensive system of protected wire raceways, capable of carrying more wiring than any building could ever need. This floor permits electrical changes or additions in your client's building to be made quickly and inexpensively as new electrical needs arise, for it is 100% electrically available.

Give FLOORS the consideration they deserve . . . whether designing office buildings, factories or residences. Find out what the Robertson System has to offer by writing for our free brochure "New Life for Buildings," and our special technical bulletin. H. H. Robertson Co., 2004 Grant Building, Pittsburgh, Pa.



ROBERTSON
STEEL FLOOR SYSTEM

New AMERICAN RADIATOR CONDITIONING SYSTEMS *For automatic Oil Heating*



A conditioned air — humidified, filtered, circulated.

B modern, sun-like radiant heat in each room.

C a source of controlled warmth for equal comfort everywhere.

D built in year-'round domestic hot water supply.

7 FUNCTIONS OF AMERICAN RADIATOR CONDITIONING SYSTEMS*

1. **HUMIDIFICATION** ... Restores proper moisture content to indoor air.
2. **AIR CIRCULATION** ... Maintains stimulating, refreshing air motion.
3. **AIR CLEANING** ... Filters dust, soot, pollen, etc., out of air in house.
4. **VENTILATION** ... Brings in and distributes fresh air without drafts.
5. **RADIATOR HEATING** ... An independent heat source in each room.
6. **CONTROLLED HEAT DISTRIBUTION** ... Assures warmth in every room of the house.
7. **YEAR-'ROUND DOMESTIC HOT WATER**

Mechanical summer cooling and dehumidification may be added if desired

ARCO OIL FURNACE No. 11
For Small Homes

Novel design of combustion chamber and new fin type flue passages assure maximum efficiency. Year 'round domestic hot water supply built in. Extended jacket completely conceals burner and all accessories.

WHAT makes this new kind of air conditioning new — and better — is the fact that heating operates independently of the other functions of air conditioning. The conditioning unit ventilates the home with fresh air that has been filtered, humidified and tempered, even when the heating is off.

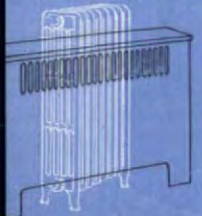
Heating is accomplished by a perfected radiator system. It uses the new Arco Oil Furnace No. 11 designed for the small home ... new radiators which may be entirely concealed ... new accessories for controlled heat distribution. Year 'round domestic hot water completes the system.

American Radiator Conditioning Systems are priced for today's market, for homes in every price range. There are systems for oil, coal or gas; completely automatic or manually operated.

These conditioning systems have definite sales advantages for the houses in which they are installed. National advertising in newspapers, magazines and on the air is assuring public demand and acceptance. They will be a feature of new and remodelled homes in 1936.

AMERICAN RADIATOR COMPANY
DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION
40 West 40th Street, New York, N. Y.

SE ARE THE PRODUCTS THAT BRING AMERICAN RADIATOR CONDITIONED COMFORT WITH AUTOMATIC OIL BURNING



, improved Radiators ntirely concealed or standing.

Ideal Variport Valve — regulates venting rate on 1 pipe steam or vapor jobs.

Automatic controls for every purpose: temperature, humidity, pressure.

New Packless Valves for every system. Never leak, never need repacking.

For rustproof, leakproof piping — Arco Wrought Copper Pipe and Fittings.

Equipment for year 'round domestic hot water supply — part of every system.

A Steel

A secure investment *as well as* a better place to live

THE public today is interested in security for the money put into a home in addition to obtaining an attractive place to live. A frame of steel —Bethlehem Steel Studs for exterior walls and interior bearing walls, and Bethlehem Open-Web Joists for floor construction—goes far to provide this security.

This construction is fire-safe, it stalls off obsolescence and reduces upkeep. With a steel frame you never have the disfiguring cracks, the doors out of alignment, resulting from shrinkage and warpage of the frame. A house built in this way can never be undermined by termite attack, is vermin-proof and practically sound-proof. It is, in every respect, a solid, substantial, enduring structure, worthy of what is to the average person the major investment of a lifetime. A further consideration is that air-conditioning can be installed at minimum expense even after the house is completed.

The extra security for the investment, safety against fire and other improvements resulting from the use of Bethlehem Open-Web Joists and Studs are obtained at little added cost. These steel structural members are rapidly winning the favor of architects and builders. They are easy to erect and are adaptable to any style of architecture, imposing no restrictions of any kind whatsoever on design.

Frame Home

Bethlehem Open-Web Steel Joists

These joists may be used either alone in floor or roof construction or in combination with the Bethlehem Steel Stud to form a complete steel frame. Floor structures of Bethlehem Open-Web Steel Joists, with concrete floor and plaster ceiling, are fire-safe, shrink-proof and immune to damage by termites.

The Bethlehem Steel Stud

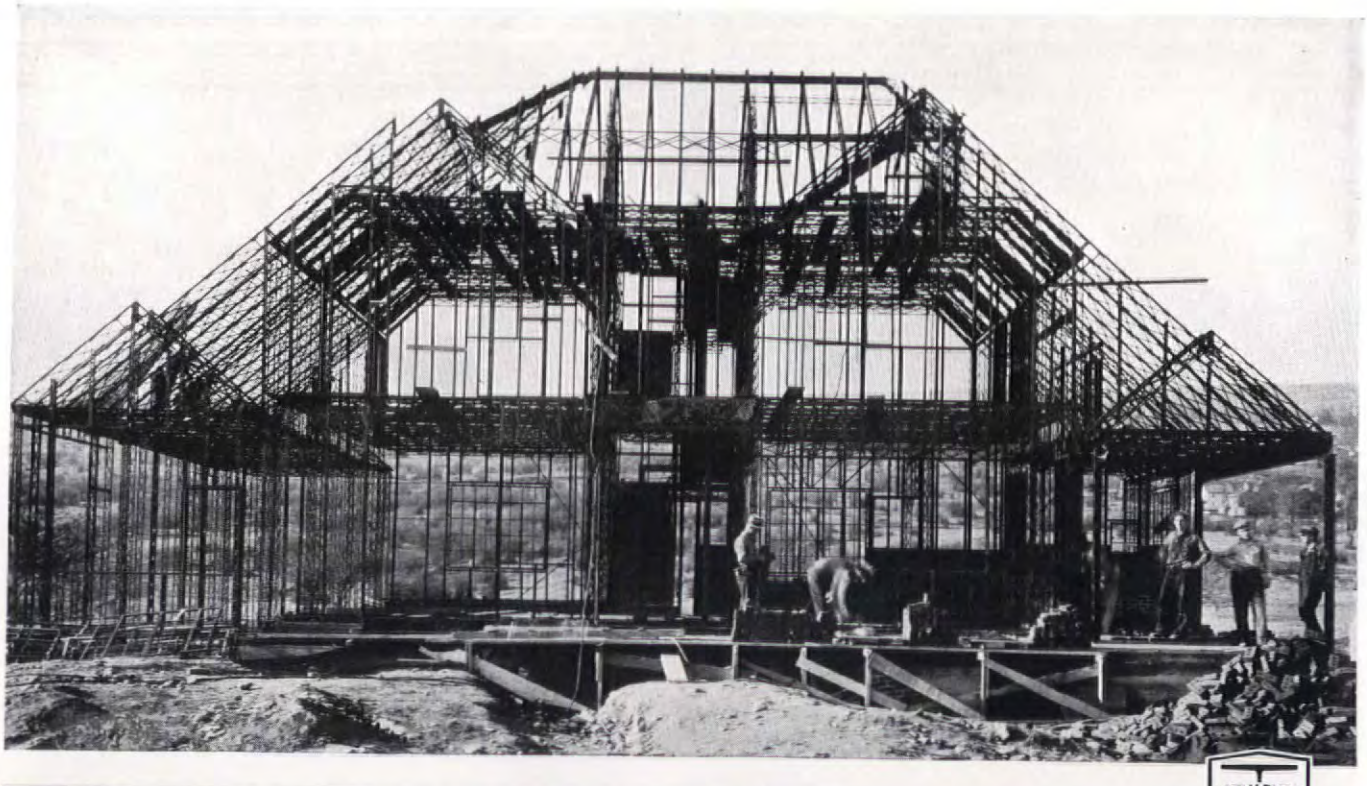
The newly developed Bethlehem Steel Stud is of major importance to designers and builders of modern homes—and of other light occupancy structures as well. The Bethlehem Steel Stud is a light-weight open-web member which is particularly well suited to use in the exterior walls and interior bearing walls of homes. Although only recently introduced, the Bethlehem Steel Stud is the result of much experiment and many years of experience in the design and manufacture of steel building products. The Bethlehem Steel Stud is well adapted for use with Bethlehem Open-Web Joists, to which it may be welded to form a complete steel frame.

A Complete Line of Steel Products for Building

You can specify all of your steel materials from this one source. In addition to the structural members mentioned, Bethlehem makes the following:

Wide Flange Sections—Light Sections—Beth-Cu-Loy Galvanized Sheets—Bethlehem Steel Pipe—Bolts and Nuts, Rivets—Steel Door Frames—Kalmantrim—Metal Lath—Bethlehem Insulating Wool—Reinforcing Bars—Steel H-Piling—Steel Sheet Piling.

BETHLEHEM STEEL COMPANY, *General Offices:* Bethlehem, Pa. *District Offices:* Albany, Atlanta, Baltimore, Boston, Bridgeport, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Honolulu, Houston, Indianapolis, Kansas City, Los Angeles, Milwaukee, New York, Philadelphia, Pittsburgh, Portland, Ore., Salt Lake City, San Antonio, San Francisco, St. Louis, St. Paul, Seattle, Syracuse, Washington, Wilkes-Barre, York. *Export Distributor:* Bethlehem Steel Export Corporation, New York.



BETHLEHEM STEEL COMPANY

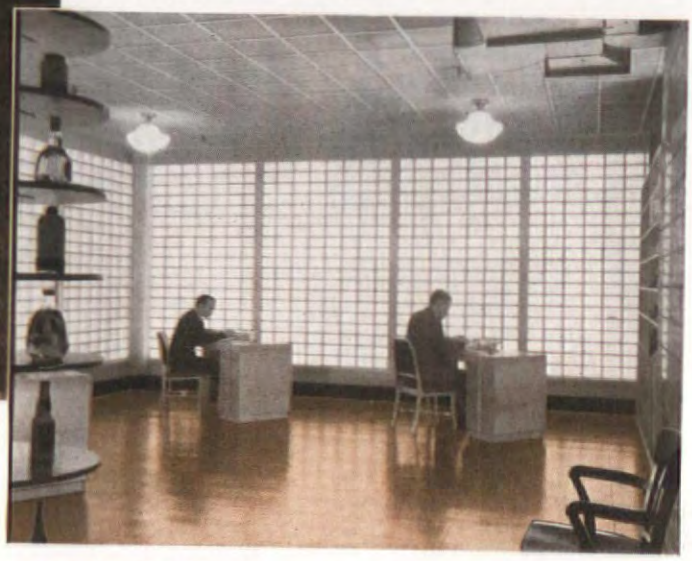
STOPS HEAT BUT NOT LIGHT

Glass—a building material tested and proved for centuries—now comes into its own as structural walls and partitions. Glass—but in a form that lends itself to attractive designs, practical shapes and almost limitless architectural possibilities. Glass masonry that retards heat flow—keeps heat inside in winter and outside in summer. Glass that admits floods of light, perfectly diffused. The building material that men of vision are thinking about, talking about and including in their plans. Insulux Glass Masonry answers many problems of design, air conditioning and lighting. Owens-Illinois has prepared an attractive brochure which presents the story of Insulux Glass Masonry in detailed form. You will want to keep this on file for frequent reference. May we send it to you.

OWENS-ILLINOIS GLASS COMPANY
Structural Materials Division, Muncie, Indiana.

OWENS-ILLINOIS
INSULUX
Glass Masonry

People do live in Glass Houses!



In the two views shown here of the handsome interior of the just-completed all glass building of the Owens-Illinois Glass Co., Toledo, Ohio, you will note the emphasis to modernity given by its AZROCK floors. In top picture, Industrial Tile, mahogany plain and textured is the AZROCK installation; at right, AZROCK is Textured Plank, mahogany.

Cellini, Michael Angelo and all those wonder workers of the Renaissance were swift to cast off outworn traditions and brilliant in creating new. But even they never dreamed of a great building made of glass, such as has been built by the Owens-Illinois Glass Co!

Their artisan minds, however, would be quick to recognize the significant fact that in the creation of this modern building marvel, the builders turned to AZROCK for floors in harmonious keeping with their achievement.

AZROCK recommends itself to the professionally alert because this modern mastic tile has so many superior advantages. It is subtly resilient, for reducing noise and increasing comfort. It is fire-resistant, moisture proof, long lived, exceptionally beautiful and surprisingly economical. Write for detailed literature.

AZROCK
(TRADE MARK REG. U.S. PAT. OFF.)
CARPET TILE

UVALDE ROCK ASPHALT COMPANY,
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Without obligation, please send me more information about

AZROCK ☐ Carpet Tile - AZROCK ☐ Industrial Tile
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In Celotex, the architect has found a basic building material whose permanent protective values add, not only to the integrity of the building he plans, but saves his client money because it does the whole job at one material cost—and no extra insulation cost.

Celotex insulating Lath is an ideal plaster base—Celotex insulating Sheathing makes stronger, tighter walls—and Celotex Decorative Planks and Tiles harmonize with any interior decorative scheme.

In all these applications, Celotex insulation and noise-absorbing values are constant benefits that add to the comfort of living. The Ferox Process (patented) by which all Celotex Cane Fibre Products are treated, make them proof against the attacks of Termites (white ants) and Dry Rot as long as the building shall last.

Celotex offers the full cooperation of its engineering staff to architects. For further information, write us.

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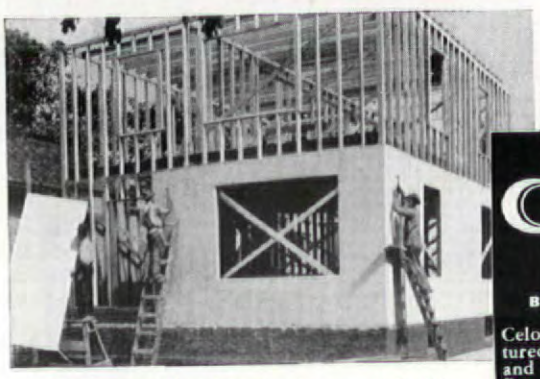

Celotex as Sheathing insulates as it builds

Be sure it's
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BRAND
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BUILDS • PROTECTS • INSULATES
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Celotex Cane Fibre Products are manufactured under the Ferox Process (patented) and resist damage by Fungus Growth, Dry Rot and Termites (white ants). Look for the brand name. Accept no substitutes.

Celotex as Plaster Base builds as it insulates

WILLIAM WURSTER

4 HOUSES IN CALIFORNIA

The facts of Mr. Wurster's career are few and unspectacular. He was born in Stockton, California, about 40 years ago. After completing the course in architecture at the University of California without especially distinguishing himself, he went to Honolulu and the Philippines. His first work in America was in the San Francisco office of John Reid. A year later he moved to Sacramento where he worked for Charles Dean, chiefly on buildings for a water supply project. Following a year—1922—in Europe, he entered the office of Delano and Aldrich and then, in 1924, returned to California. He did not open his own office until 1926, and only then on the strength of a commission which failed to materialize until much later. His practice has been almost entirely residential.

QUOTING MR. WURSTER—

"In these years we have heard so much about getting architectural work that I long ago wearied of this point of view and decided that I would attempt to work hard on what I had–let the rest go hang.

"Have never believed in proselyting, so feel I have no mission to put over any given expression on any client. I like to work on direct, honest solutions, avoiding exotic materials, using indigenous things so that there is no affectation and the best is obtained for the money.

"Always to do a thing from the positive side–never do so-called modern merely to be against what has been–to have sloping roofs if it comes naturally and there be no need of use–to have decks where it seems desirable.

"To make the outside garden easily accessible–to have appropriate materials–keeping the tempo sympathetic with the life and with the size–and expenditure.

"Being proud of things–remembering constantly that the personal victory is nothing–the result everything–it is of no importance who furnished the idea, the main thing being that it is there.

"Never obtain a decision from an owner based on aught else than the thing under discussion. It is all too easy to drive clients into the need of asserting themselves. Be flexible in mind–nothing is impossible, at least as far as giving it consideration. Some crazy ideas may have a germ of truth or beauty or greatness . . ."

One way to look at contemporary American architecture is to single out an individual whose work reveals some of the major influences which are shaping the trend. The Architectural Forum selected the four houses presented in this portfolio not primarily as interesting case studies in plan and design, but because, in addition to their own intrinsic merit, they are representative of a man who is himself representative of a native spirit. The significance of these houses does not lie in the fact that they might be imitated with varying success in Bangor or Louisville. They show that there are still creative forces in America constantly forming its architecture, building livable, clean, simple houses, depending neither on old nor international styles, and representing not compromise, but growth.

With today's small house so often teetering between an expression of machine fabrication and timid repetition of safe precedents, it is good to come upon a man for whom residential architecture is essentially a problem of sound building, a man whose indifference to style is as sincere as it is apparent.

Many find William Wurster's work queer because it lacks those familiar patterns which label. He once shocked San Francisco with a hillside house whose facade overlooking the bay was all glass. But no cubbyhole will contain his houses. His next looked as if it had been designed by a master carpenter. His sympathies are definitely modern, but flow in no rigid groove; wood, brick, tile, double-hung wood windows—these fit into the picture quite as reasonably as glass brick, plastics, and air conditioning.

As a result his houses not only have a remarkable range of expression, but by virtue of their adaptability to special conditions, possess a strong local character which can today be found in the work of few men.

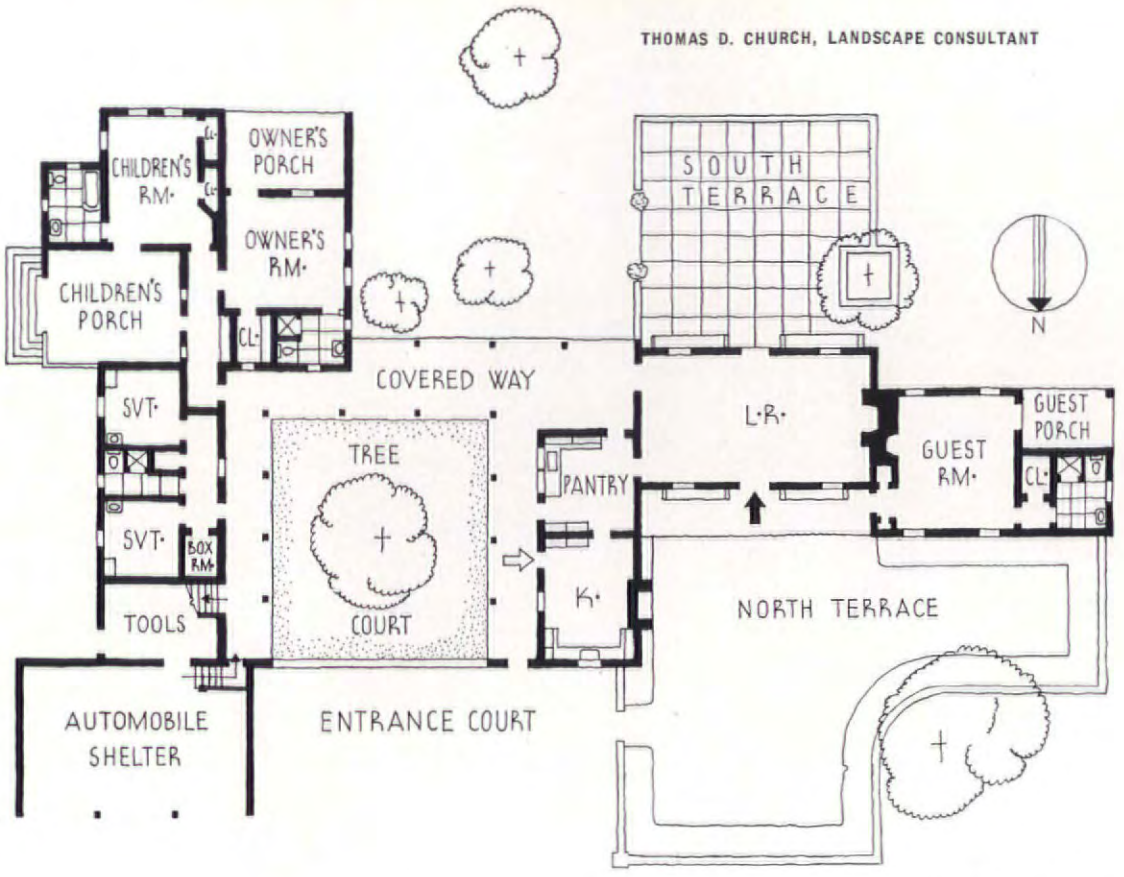
HOUSE FOR MR. AND MRS. DONALD GREGORY, SANTA CRUZ MOUNTAINS

LIVING ROOM TERRACE

Since the owner's town house is built on a steep slope, with many levels, he wanted this week-end and vacation house placed on one floor and kept as simple as possible to provide a complete change from city living. This requirement conditioned the architect's solution. He has used bare walls of redwood to furnish the required minimum of shelter, has depended entirely on the garden for decoration. It will be noticed that even the window trim in the living room has been reduced to a thin flat strip and plaster eliminated from the interiors. The attractive floor is of common hollow tile blocks whose use substantially reduced the cost. Much of the charm is due to practices that are possible only in a favorable climate: the vertical siding without battens, the open passages connecting the various room groups, and the doors which open directly on the ground level. These features not only furthered the client's expressed ends, but also had the advantage of reducing transportation costs for materials and eliminating highly specialized trades from the job. But the simplicity of the composition can be deceptive; close examination shows that the group and its details are the result of careful study. The view of the covered passage is an excellent example of the fine quality of design that can be achieved by intelligent use of the simplest materials.

HOUSE FOR MR. AND MRS. DONALD GREGORY, SANTA CRUZ MOUNTAINS

THOMAS D. CHURCH, LANDSCAPE CONSULTANT



FLOOR PLAN

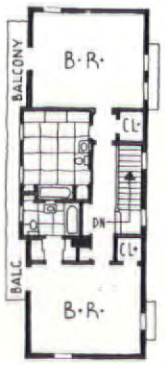
The plan shows really two houses, an arrangement made possible by the equable climate. Living and guest rooms are in one section, bedrooms in the other, with children's rooms between parents and servants for maximum security. Open air living is emphasized by terraces, sleeping porches, and by the loose plan composition. Since a closed garage is unnecessary, only a light shelter was provided. The garden has been kept simple so that the services of a gardener are unnecessary. A sun deck is located over the owners' room, reached by a folding ladder through a trap door in the ceiling.

GROUP

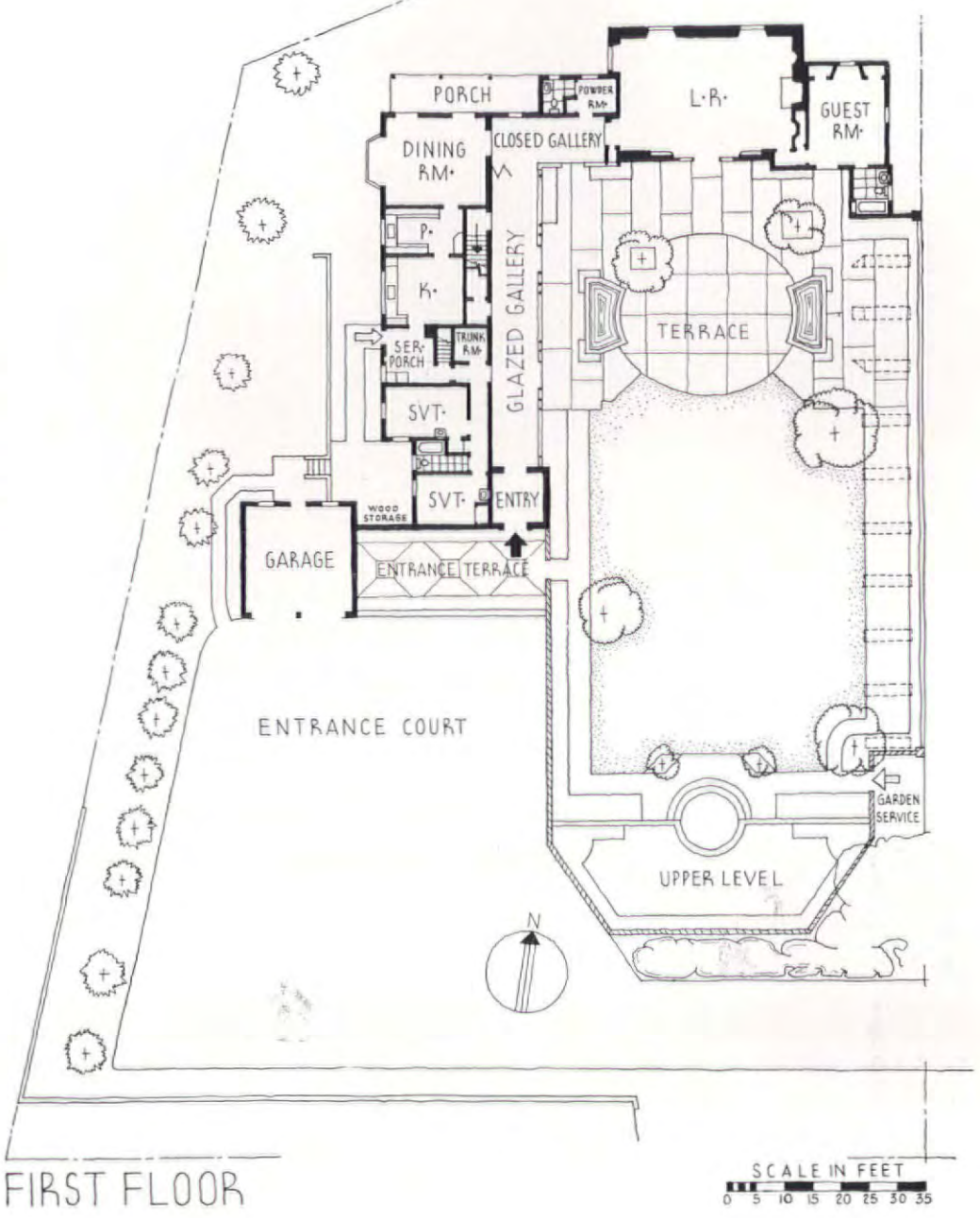
HOUSE FOR MRS. GEORGE B. ROBBINS, HILLSBOROUGH, SAN MATEO COUNTY

ENTRANCE FROM AUTOMOBILE COURT

Characteristic of this house is its freedom in plan and exterior from conformity to preconceived ideas of style and pattern. The site dictated the location of the various plan units, the living room at one end of the lot and the main entrance at the other. The reasons for this can be seen in the plan on page 385. The large trees at the south cast a shadow which, combined with a view of the Burlingame golf course, determined the situation of the living room. And the shade of these trees also placed the entrance court at the southwest corner. This apparent disadvantage in plan was met not with a conventional compromise, but by the introduction of a glazed gallery which sacrifices

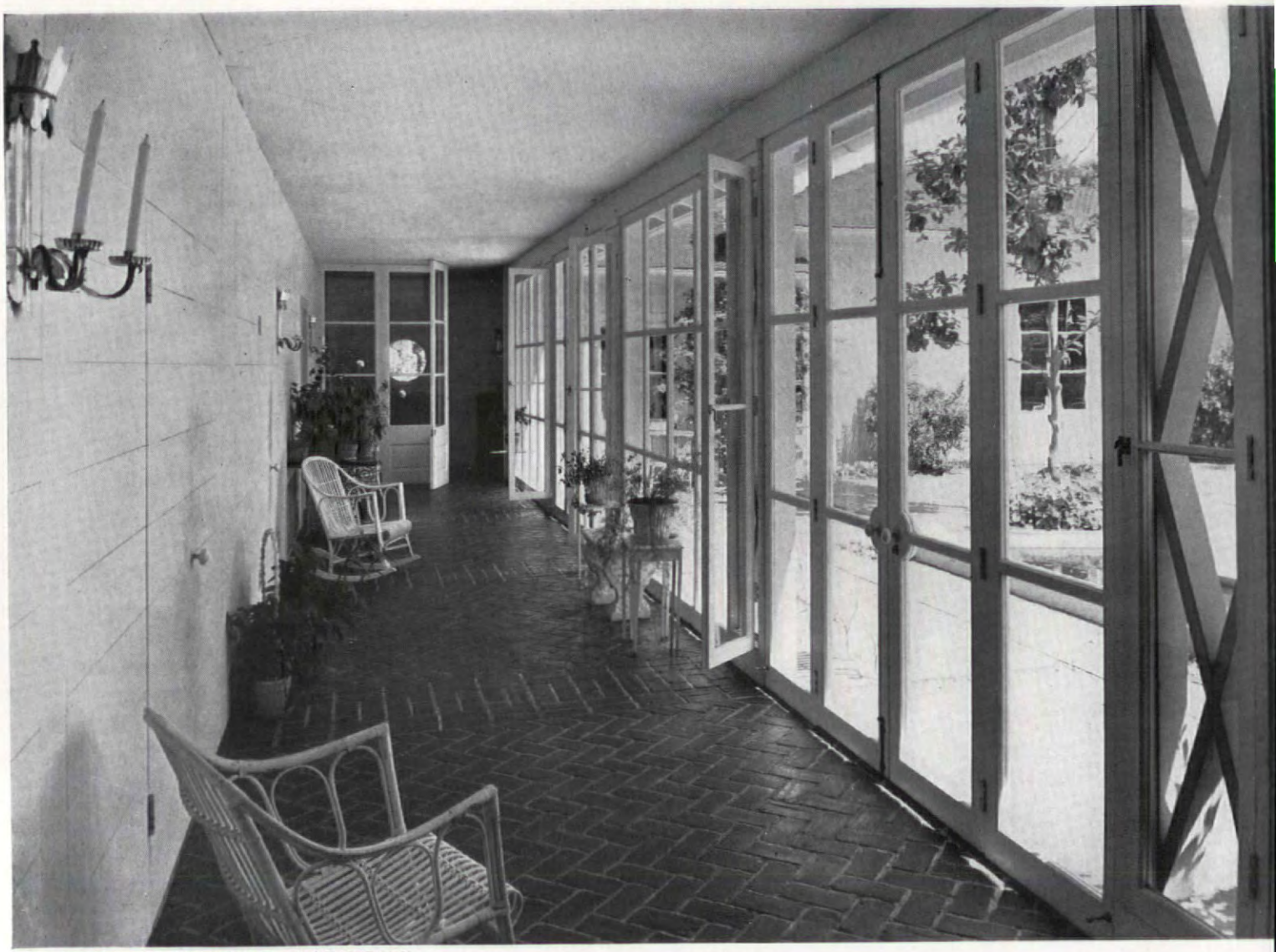


2ND FLOOR

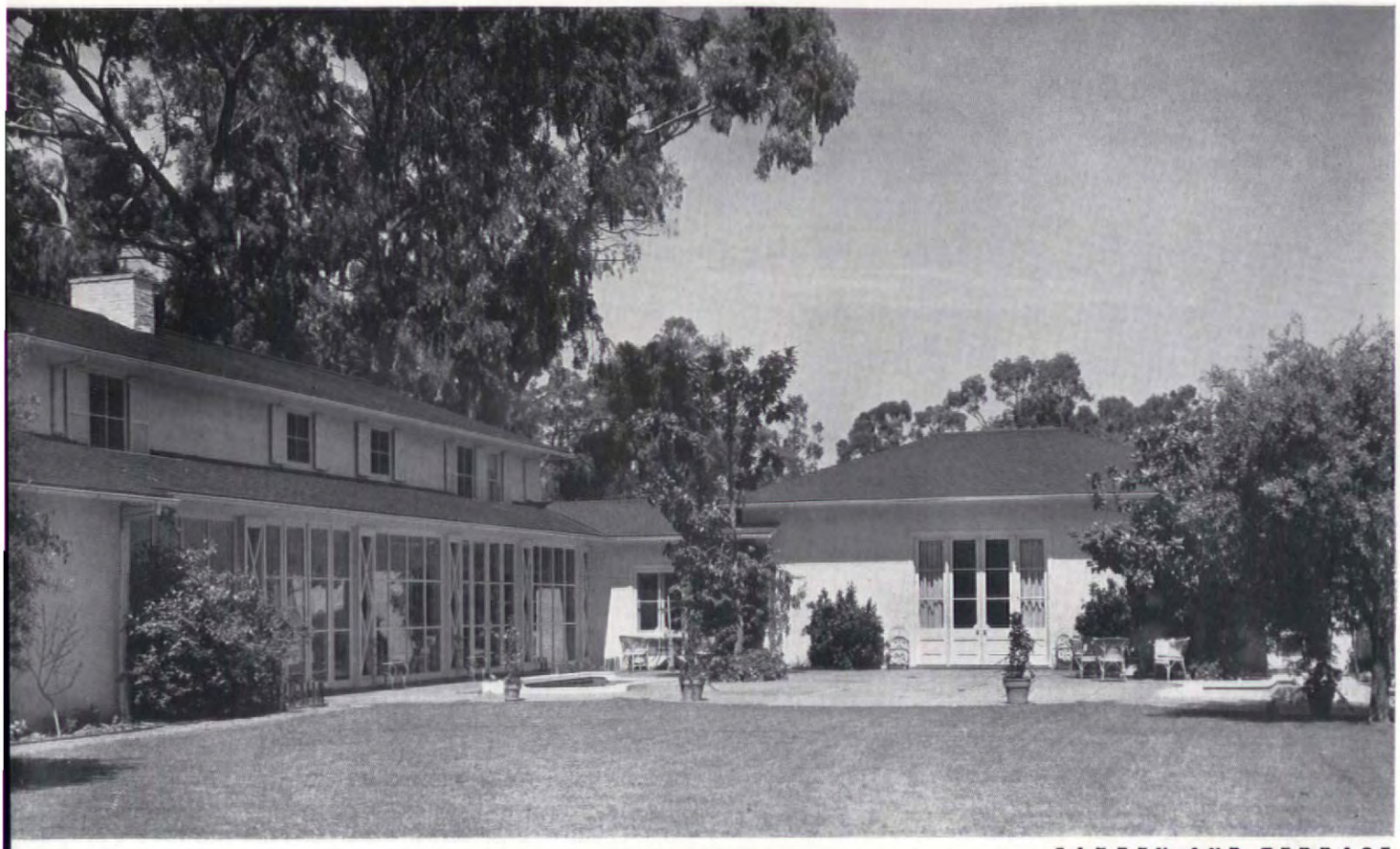


FIRST FLOOR

nothing in space relationship and which, on the exterior, is the dominating feature of the house. Again, the main part of the house was located on the west to protect the living terrace from the west wind, which is fairly cold even in summer. The entire plan will stand up under the most critical inspection. In its ingenious and unusual features it exhibits careful study and a determination to place the elements in their proper positions on the site and in relationship to each other without regard for familiar layout schemes. This technique demands courage in applying as its sole criterion a test of self-sufficiency—does the plan work, work practically and with esthetic satisfaction? When,



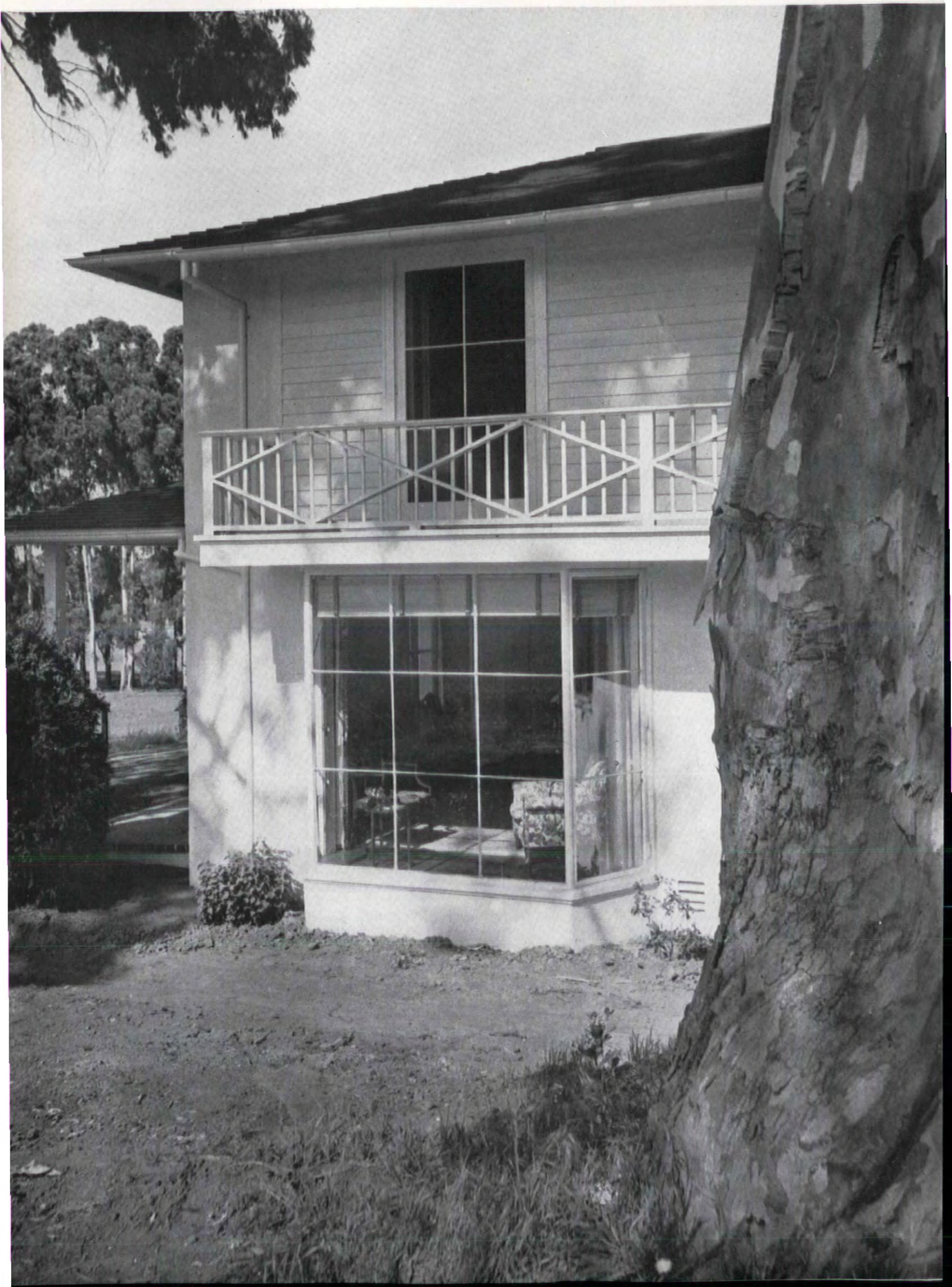
GLAZED ENTRANCE GALLERY



GARDEN AND TERRACE

as here, this attitude is carried over into exterior treatment, it produces harmony so that one almost forgets that the house has a plan. To this distinctly creative spirit the architect has added a fine appreciation for good materials, simply handled. There is here only one piece of decoration, the broadly handled lattice pattern which appears in the detail of the entrance and again in the long glazed gallery. The economy with which an effect of dignity and richness has been obtained is noteworthy. In the gallery, for example, the side wall is nothing but plain boards laid up horizontally, and the china knobs on the doors, as inexpensive hardware as can be found, add to the very pleasing appearance of this long hall. The glass doors are detailed with restraint and delicacy, and the subdued pattern of

HOUSE FOR MRS. GEORGE B. ROBBINS, HILLSBOROUGH, SAN MATEO COUNTY



VING ROOM

INING ROOM BAY WINDOW

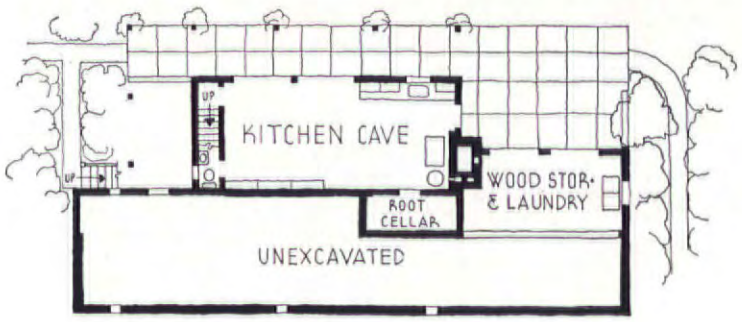
to, Berton Crandall

the floor picks up the regular rhythm of the doors and lattice. The various elements of the plan are well articulated, living room, gallery, and bedrooms being clearly expressed by the exterior. There is a knowing handling of masses, fenestration, and shadows that effectively obviates any possible coldness. Not of least importance, the garden, developed in association with Lockwood de Forest, Jr., has been so closely knit to the house that it is impossible to think of one without the other.

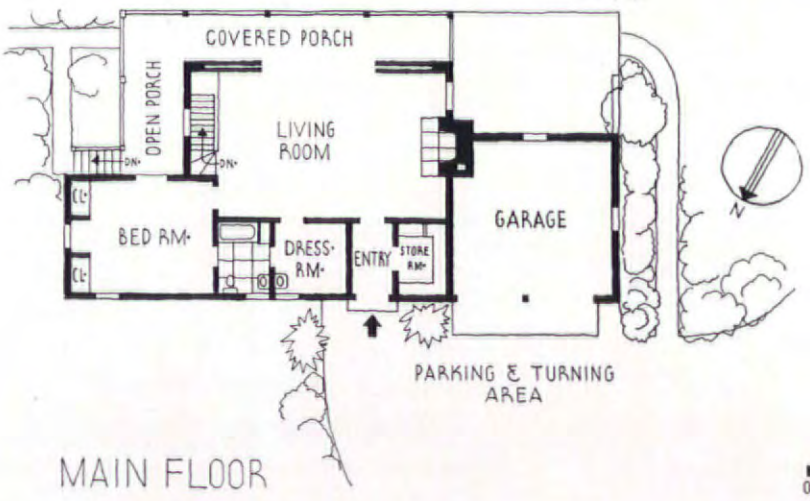
HOUSE FOR C. L. VOSS. MONTEREY COUNTY, NEAR PT. SUR

REAR VIEW

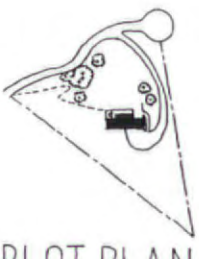
That the architect considers this one of the best houses that has ever come out of his office is most revealing. Seen from the rear, the house is no more than a barn with a view and were it not for the sureness and undeniable sophistication apparent in the design it might be taken for a carpenter's creation. Certainly there is nothing "architectural" about it in the academic sense, nor is there any of the labored picturesqueness so frequently considered an indispensable element in the rustic dwelling. The entrance is placed at the back of the house to preserve the view side for the use of the family and the large sliding doors in the upper living room have a magnificent command of the great sweep of coast below. They are protected in bad weather by a sharply overhanging porch roof. Situated at a considerable height above the water, the steep slope at this point made it possible for the house to have two stories on the lower side. This available



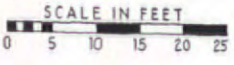
LOWER FLOOR



MAIN FLOOR



PLOT PLAN



PLAN

The plan is well designed for its hillside purpose, with all important rooms on the side with a view. There is only one bedroom, but the living room can accommodate a number of guests, with a dressing room and bath adjacent. The plan is so laid out that the first sight greeting the visitor on entrance into the living room is not the room itself, but the magnificent view, framed by the large door opening. No separate service stair is provided, as the very informal type of living imposed none.

FRONT VIEW

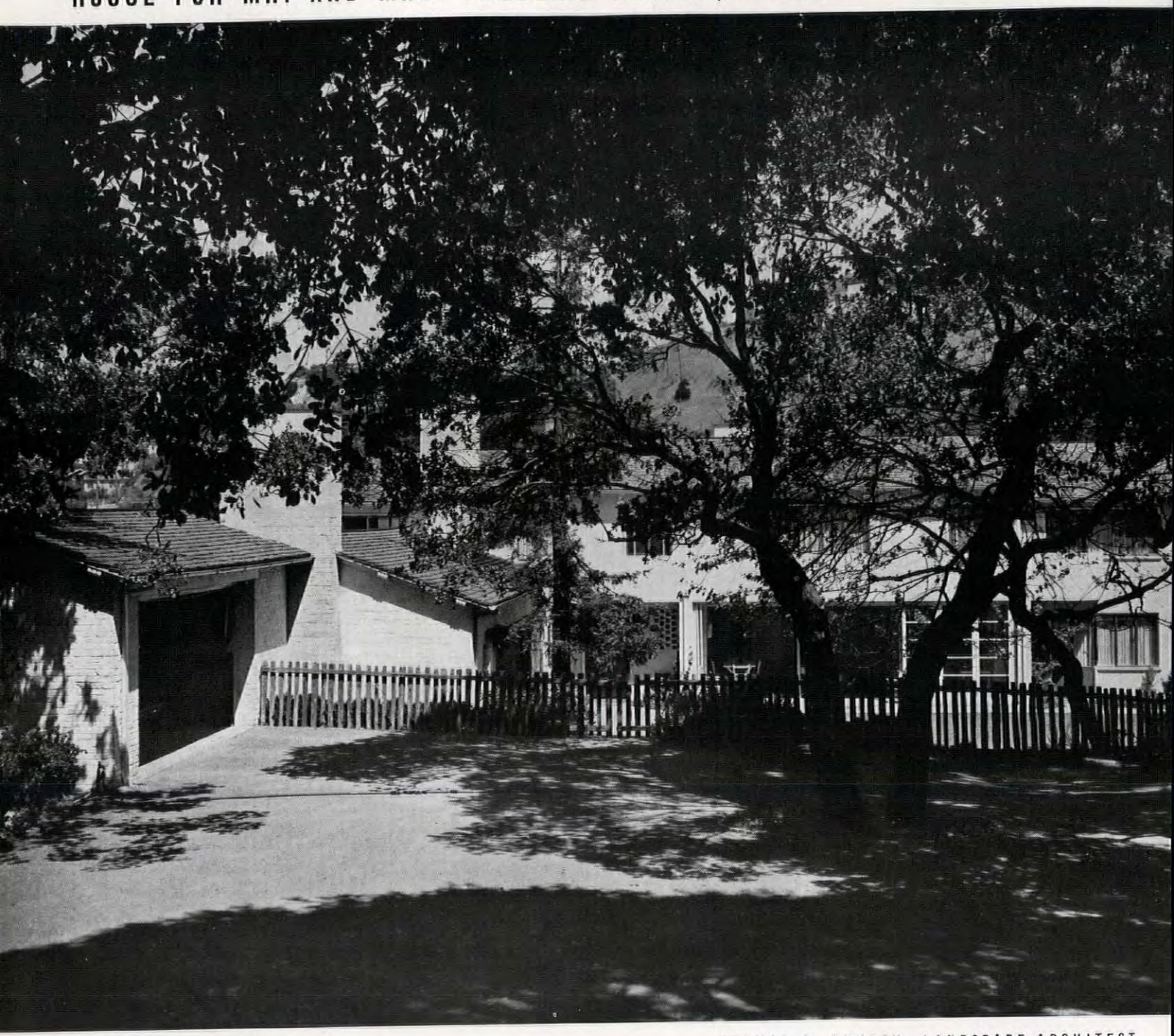
space on the ground floor led to the development of what is called the "Kitchen Cave," a room conveniently arranged for cooking and dining as well as general recreation purposes, and allowing the serving of meals out of doors with the porch floor above as shelter from the sun. This layout adds much to the living facilities of the small house—flexibility and separation of diverse activities.

In its appointments the house is modest, even primitive. There is no electric light or mechanical equipment and the heating apparatus is rudimentary. There is nothing in the plan or external handling which belies the functions of the house as a retreat from the complexities of urban life. Its downright honesty of purpose is plain spoken. There is nothing which could not be built conveniently by local labor: plain posts, brick chimney, board siding; even the sliding and hinged doors present no problem outside the experience of the country workman. Only the basic conception and its resulting expression indicate the presence of a cultured and sensitive mind. The Voss house looks easy, and only the absence of similar houses shows that it is not. To find its equal one must go back to the early wood architecture of Japan and Scandinavia.

ITCHEN CAVE

LIVING ROOM

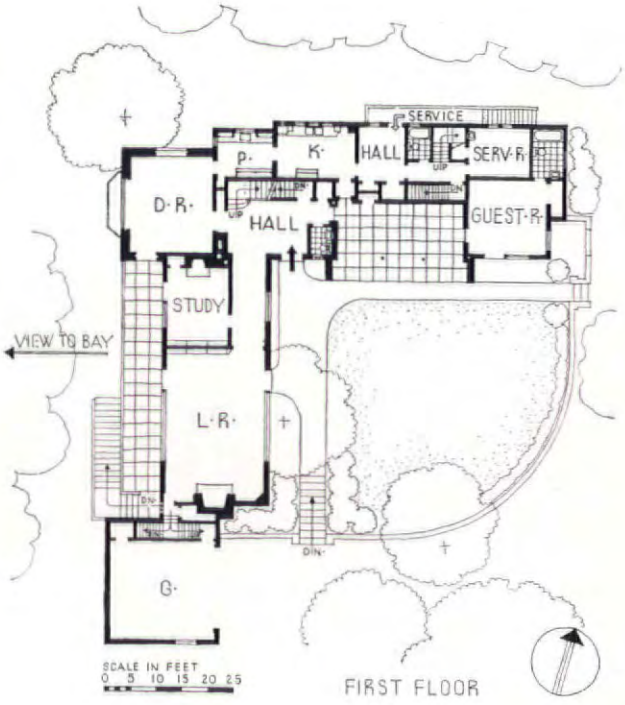
HOUSE FOR MR. AND MRS. FREDERIC BENNER, BERKELEY



ENTRANCE COURT

THOMAS D. CHURCH, LANDSCAPE ARCHITECT

To the large number of hillside sites in and around San Francisco much of the pleasant informality of its residences can be attributed, and long experience in building on the sides of hills has developed great skill in their use. The plot on which this house was built is located in a wooded cañon in Berkeley, and the ground was studied for a considerable time before the architect adopted his final solution. The plan originally called for a brown shingle house, but as the project developed, the advantage of a light color in the surroundings of dark green bay trees became apparent. As the house now stands it is a most successful blend of modern



FIRST FLOOR

The entire first floor level is set down about a dozen steps from the garage level. The living room can be entered from the garage, through a door concealed in the paneling, from the garden walk, or from the main hall. This room with the study and the dining room have a view to the west, being sufficiently above the surrounding trees to overlook the bay. Focal point of the composition is the sun porch, equally accessible from the living and service quarters. The guest room has complete privacy.

SECOND FLOOR

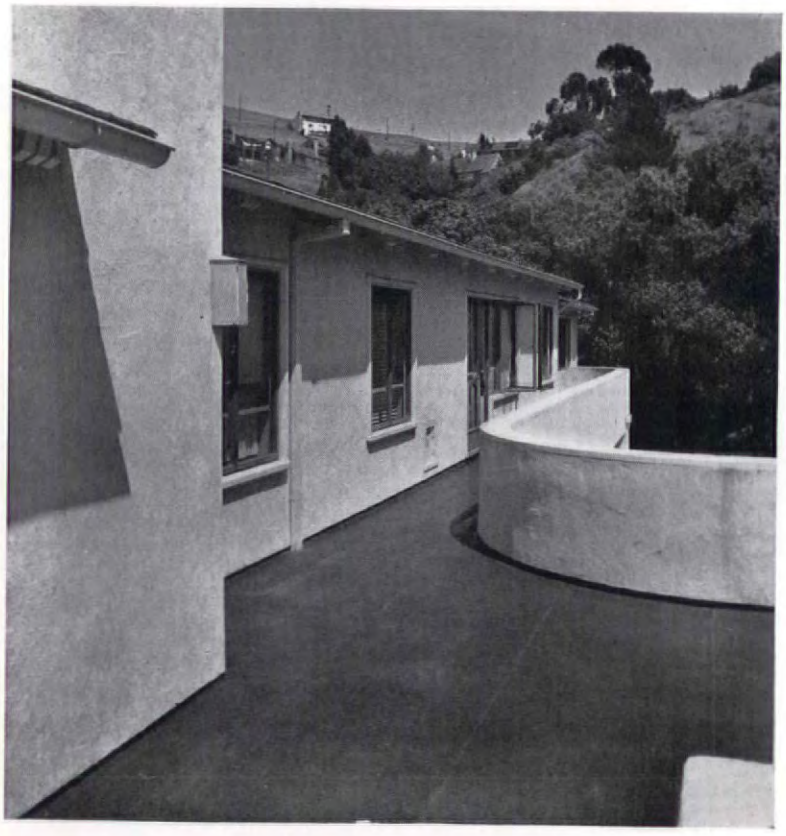
Main rooms face south, with a nurse's room conveniently placed in relation to children's rooms and service quarters. The sleeping porch, a common feature of houses in this climate, is accessible from any of the bedrooms. The main rooms open off a long terrace which leads to a sun deck. The pressing room, an excellent innovation in a house of this size, provides suitable space for linens, sewing, etc., and is well separated from the kitchen.

FROM ABOVE

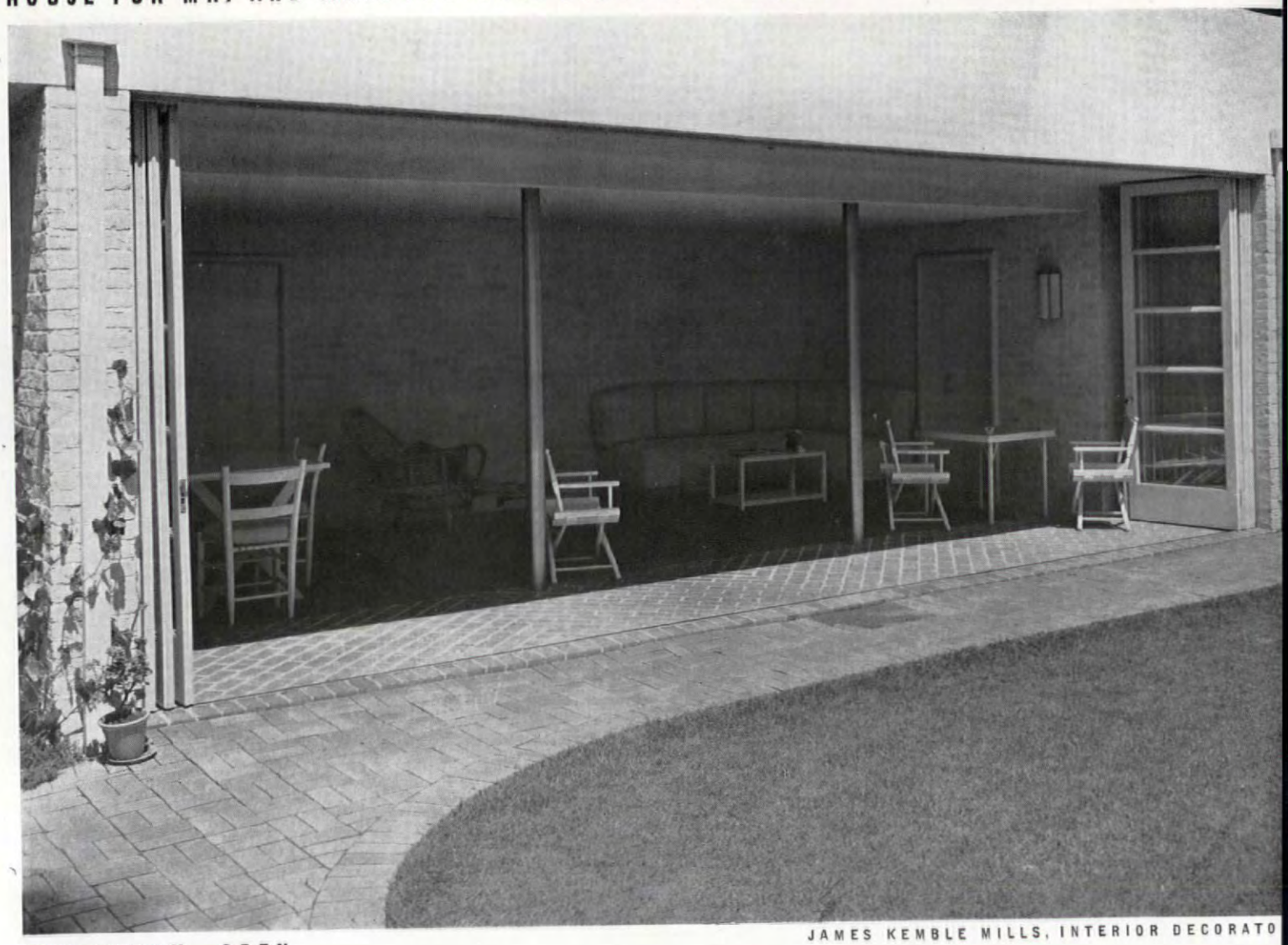
ENTRANCE, GARDEN AND SUN PORCH

motives and earlier California precedent, and is perhaps the best example of the designer's indifference to any style as such. During the preliminary stages of study he insisted that, regardless of how the house finally turned out, nothing was to be rejected simply because it had precedent, nor were new forms to be tried just because they were new forms. The sincerity of this approach is apparent in the photographs of the completed building. A conventional sloping roof covers the main body of the house because the presence of other houses higher up on the hill made its use as a sun deck inadvisable. An exterior that in other respects is certainly Modern has none of the coldness of the International Style; nor have the usual tricks been resorted to in an attempt to establish modernity. The architect's skill in handling masses is again demonstrated. The deep shadows created by the overhanging eaves and balconies are extremely pleasing. A sparing use of whitewashed brick in the lower story creates a variation

VING ROOM WING



SECOND FLOOR BALCONY

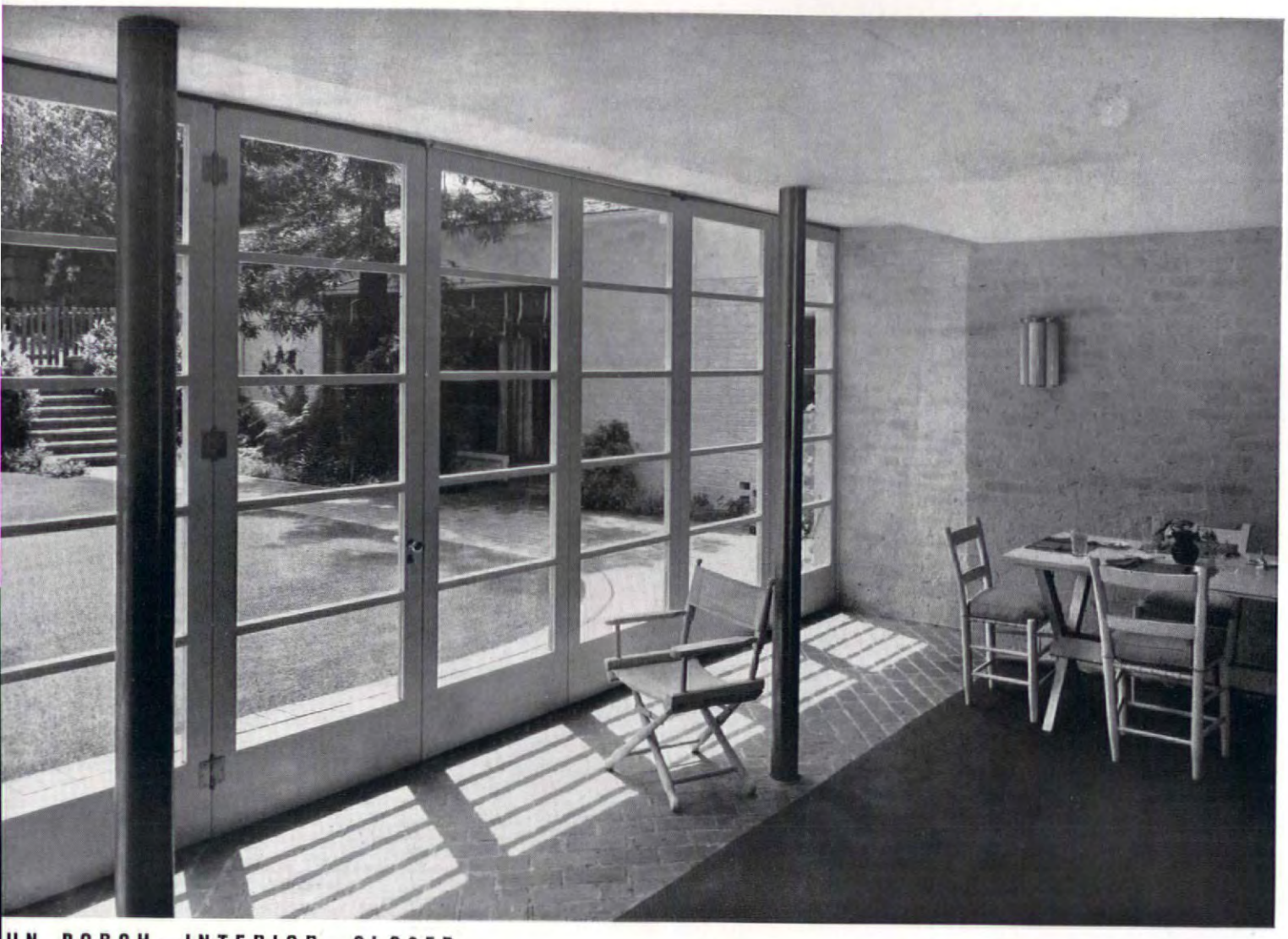


JAMES KEMBLE MILLS, INTERIOR DECORATO

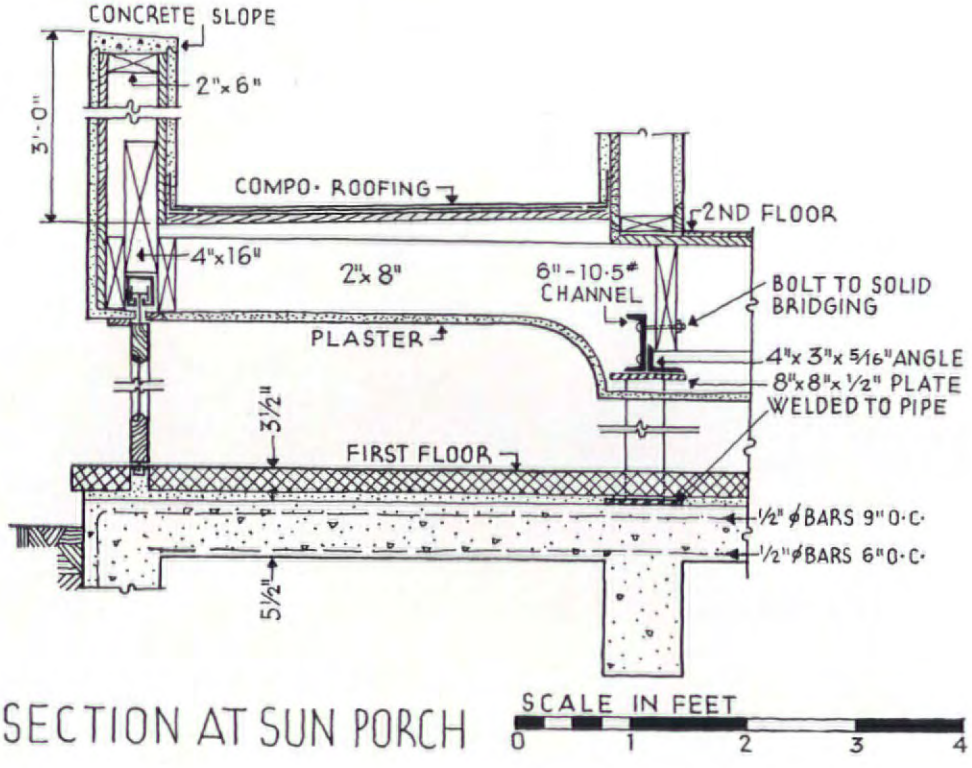
SUN PORCH—OPEN

in texture, echoed by the brick sidewalk that skirts the house on the garden side. Thomas D. Church, who did the landscaping, worked with a restraint equal to the architect's. A flat lawn provides an ideal setting, and the brick pavement is a sufficient transition from house to lawn, with flowers and other planting kept in small well-defined areas. There are no fussy borders, nor is there any need for them. The house and its garden present an excellent example of coordination between architect and landscape architect.

The house reaches a brilliant climax in the sun porch. Facing almost due south, it becomes a sun trap in the colder months, with glass doors that admit a maximum of light. In good weather the doors can be folded back, fitting into a pocket in the brick wall, creating an open porch whose pleasant light quality is complemented by the bright yellow ceiling and matching upholstery. In plan the room has been located so that it is not only easily accessible from the main hall, but meals can be served in it directly from the kitchen.

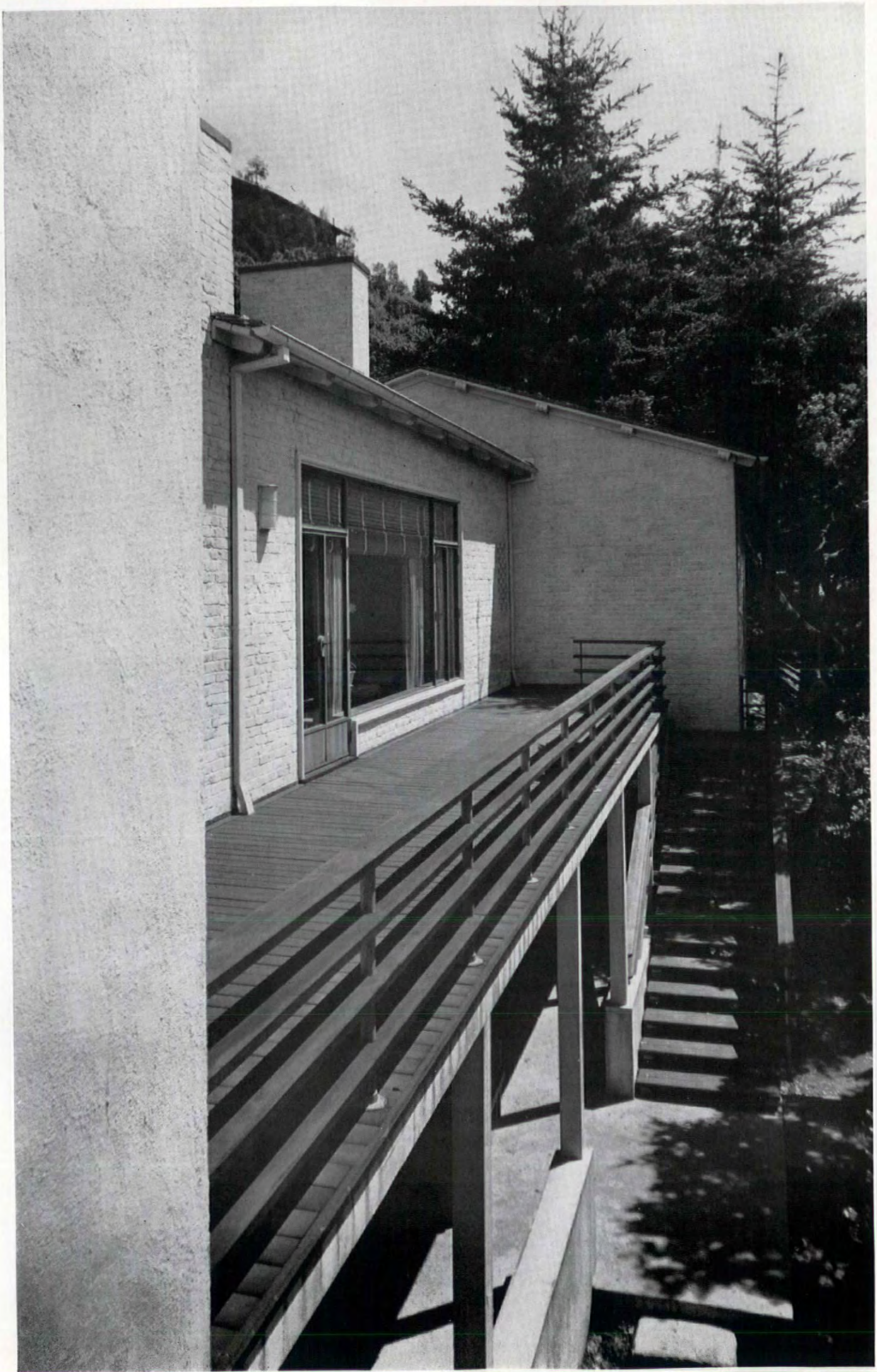


UN PORCH—INTERIOR—CLOSED

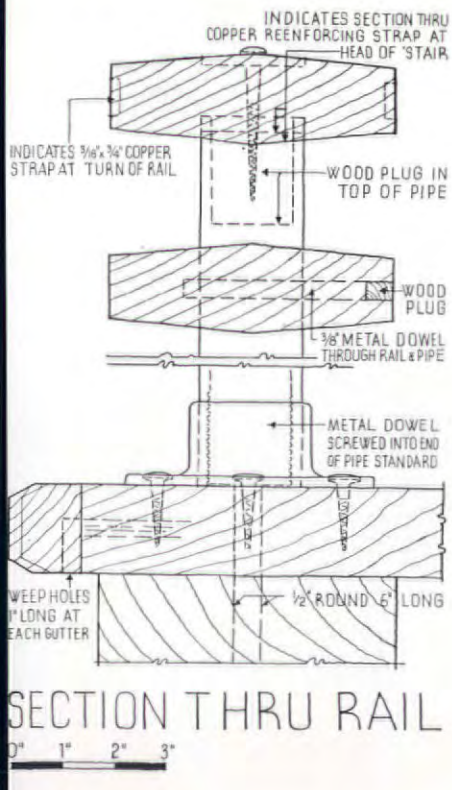


SECTION AT SUN PORCH

HOUSE FOR MR. AND MRS. FREDERIC BENNER, BERKELEY



WEST TERRACE AND STAIRS



It was not a sudden inspiration: its development can be traced from similar features in other houses (Voss house, page 390) and is the result of painstaking effort to interpret in the most direct manner possible the living requirements of clients. On the west side there is a fine view of San Francisco Bay and the Golden Gate, so glass, in large undivided sheets, was freely used. Both dining room and living room open onto a terrace and balcony which are treated with less formality than the garden side of the house. On the lower level are located a playroom for the children, laundry, and storage room. Again, to see simple means used to an end witness the humble lally columns, unadorned save for a few coats of paint. What could be better? What more refreshing?

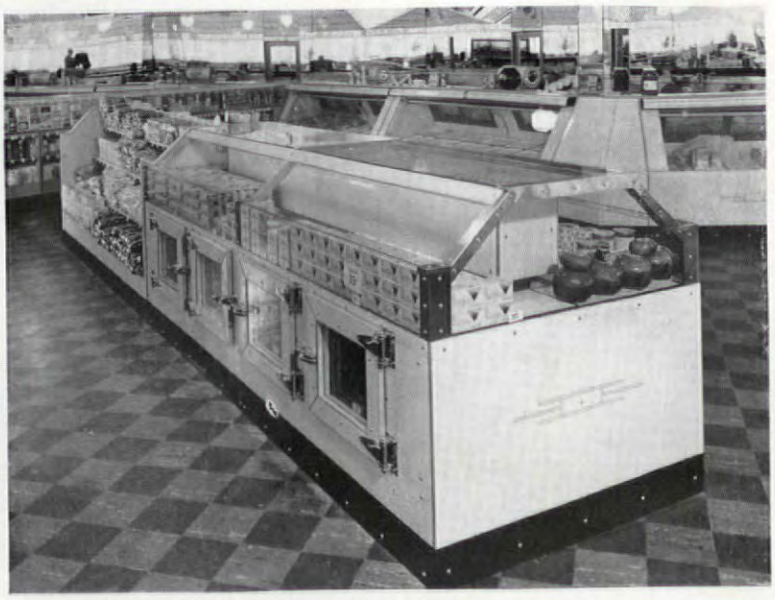
	GREGORY RESIDENCE	ROBBINS RESIDENCE	VOSS RESIDENCE	BENNER RESIDENCE
FOUNDATION				
WALLS AND PIERS	concrete	reenforced concrete	concrete	reenforced concrete
CELLAR FLOOR	none	concrete	brick	part wood, part concrete
WATERPROOFING	none	1 coat No. 4 Dehydraline, A. C. Horn Co	none	hot coating
FRAME CONSTRUCTION				
SILLS	Douglas fir redwood	No. 2 Douglas fir redwood	No. 2 Douglas fir redwood	No. 1 and 2 Douglas fir redwood
EXTERIOR SURFACE	1 x 12 in. rough redwood, placed vertically	cement plaster with portions of 3/4 x 6 in. redwood siding	1 x 12 in. rough redwood	second hand common brick on "Steeltex," Johns-Manville Corp.
ROOF	Split redwood shakes (on sheathing) 6 x 36, 11½ to weather	clear cedar shingles (on shingle lath) 5 in 2 in., 4½ in. to weather	redwood shakes (on sheathing) 26 in., 8 in. to weather	Cotswold shingle tile (on sheathing) Gladding, McBean & Co.
DECKS	prepared roofing, slate surface	tar and gravel	none	Composition roofing, Mastipave, Paraffine Co.
SHEET METAL WORK				
GUTTERS	redwood with lead strips at joints	galvanized iron	redwood	galvanized iron
FLASHING	galvanized iron	galvanized iron	galvanized iron	copper
LEADERS	galvanized iron	galvanized iron	none	galvanized iron
WINDOWS	sugar pine sash, fir frames	sugar pine sash, fir frames. Steel sash by Soulé Steel Co.	double hung and sliding windows, redwood sash, fir frames	steel sash weatherstripped, Soulé Steel Co.
GLASS	single strength, quality A, Libbey-Owens-Ford Glass Co.	single strength, quality A, Libbey-Owens-Ford Glass Co.	single strength	large windows, ¼ in. plate glass, balance single and double strength, quality A, all by Pittsburgh Plate Glass Co.
SCREENS	galvanized wire mesh in redwood frames	16 mesh bronze screens in redwood frames	redwood frames	roller type, Arthur Metal Products Co., San Francisco, Calif.
INSULATION	none	none	none	Celotex insulating lath
LATH AND PLASTER	none	fir lath, hard wall plaster, Standard finish plaster	none	hard wall plaster on insulated lath, sand and smooth white finish.
INTERIOR WOODWORK				
FLOORS	Douglas fir	plain select oak 5/16 x 2 in.	No. 2 Douglas fir, 3/4 x 6 in.	plain select oak, t. & g. Douglas fir under linoleum
TRIM	Douglas fir	Douglas fir	redwood	redwood and Douglas fir
CABINETS	cedar, kitchen and pantry—sugar pine	Douglas fir	Douglas fir	redwood and Douglas fir
DOORS	redwood, some Douglas fir boarding	sugar pine, Douglas fir frames	redwood with Douglas fir frames	redwood and sugar pine
HARDWARE	P. & F. Corbin	P. & F. Corbin	sliding doors, hangers and tracks, Richards-Wilcox Mfg. Co.	P. & F. Corbin and Stanley Co. folding partition in sun room, Richards-Wilcox Mfg. Co.
PAINTING, EXTERIOR				
WALLS	whitewash	lead and oil	untreated	none
ROOF	untreated	1 coat graphite and oil, National Lead Co.	untreated	none
SASH	lead and oil	lead and oil, rims oil stain	untreated	1 coat white lead and linseed oil, Dutch Boy white lead, National Lead Co.
PAINTING, INTERIOR				
FLOORS	filled and waxed	stained and waxed	unfinished	filled, stained and waxed
TRIM, DOORS AND SASH	2 coats lead and oil	2 coats lead and oil, 1 coat enamel, Fuller Co.	2 coats white lead and oil	2 coats lead and oil
WALLS	2 coats cold water paint, Fuller Co. Kitchen and bath—2 coats lead and oil	2 coats cold water paint. Kitchen and bath—2 coats lead and oil, 1 coat enamel.	2 coats white lead and oil	2 coats lead and oil and 1 coat enamel. Some walls—2 coats cold water paint all by Fuller Co.
WIRING				
CABLE	rigid galvanized conduit where exposed, rest knob and tube.	rigid galvanized metal conduit	no electricity	supply in rigid conduit, Steel & Tubes Inc., balance, knob and tube
SWITCHES	toggle type, Hart & Hegeman	toggle type, Hart & Hegeman		G-series, Hart & Hegeman
FIXTURES	porcelain receptacles only	made to order, Boyd Fixture Co.		made to order, Phoenix Day Co.
PLUMBING				
KITCHEN: SINK	enameled iron, Standard Sanitary Mfg. Co.	enameled iron, Standard Sanitary Mfg. Co.		double compartment, one-piece, Dalcross, Kohler Co.
BATH: TUB	corner type, Standard Sanitary Mfg. Co.	Neo-Classic, Standard Sanitary Mfg. Co.		enameled iron, Kohler Co.
TOILET	syphon action with jet, Standard Sanitary Mfg. Co.	Devoro, Standard Sanitary Mfg. Co.		one-piece, Kohler Co.
FLOOR	cement	vitreous ceramic tile		tile
PIPES	steel	Spellerized steel, National Tube Co.		cold water—genuine galvanized wrought iron, A. M. Byers Co. Hot water—copper.
HEATING	Wesix electric unit heaters	2 units of gas fired hot air furnaces, Aladdin Heating Corp., Oakland, Calif.	only fireplace	2 units of gas fired hot air furnaces, main furnace equipped with blower, filter and provision for humidifier, Aladdin Heating Corp., Oakland, Calif. Wesix electric unit heaters in bathrooms.

STORE BUILDING IN LOUISVILLE, KENTUCKY

WISCHMEYER AND ARRASMITH, ARCHITECTS

Any American business street will testify that it is not customary practice for store owners to get together with the expressed intention of putting up a building whose unified appearance would be an asset to its surroundings. If it did no more than quietly point out the complete futility of this peculiarly obnoxious form of rugged individualism, this building which houses two local chain stores and a small shop could be considered a success. As it stands it is an excellent solution of a commonly disregarded problem, fulfilling its purpose effectively and without pretense. It is to be regretted that the druggist did not take the architect's cue and omit the ugly and superfluous signs at the top of each show window. Everybody knows you can get Coca-Cola, cigars, and prescriptions in a drug store, and plain signs similar to those on the side elevation would have conveyed all necessary information, to say nothing of making possible something better than the usual banal drug store front. The site is

STORE BUILDING, LOUISVILLE, KY.

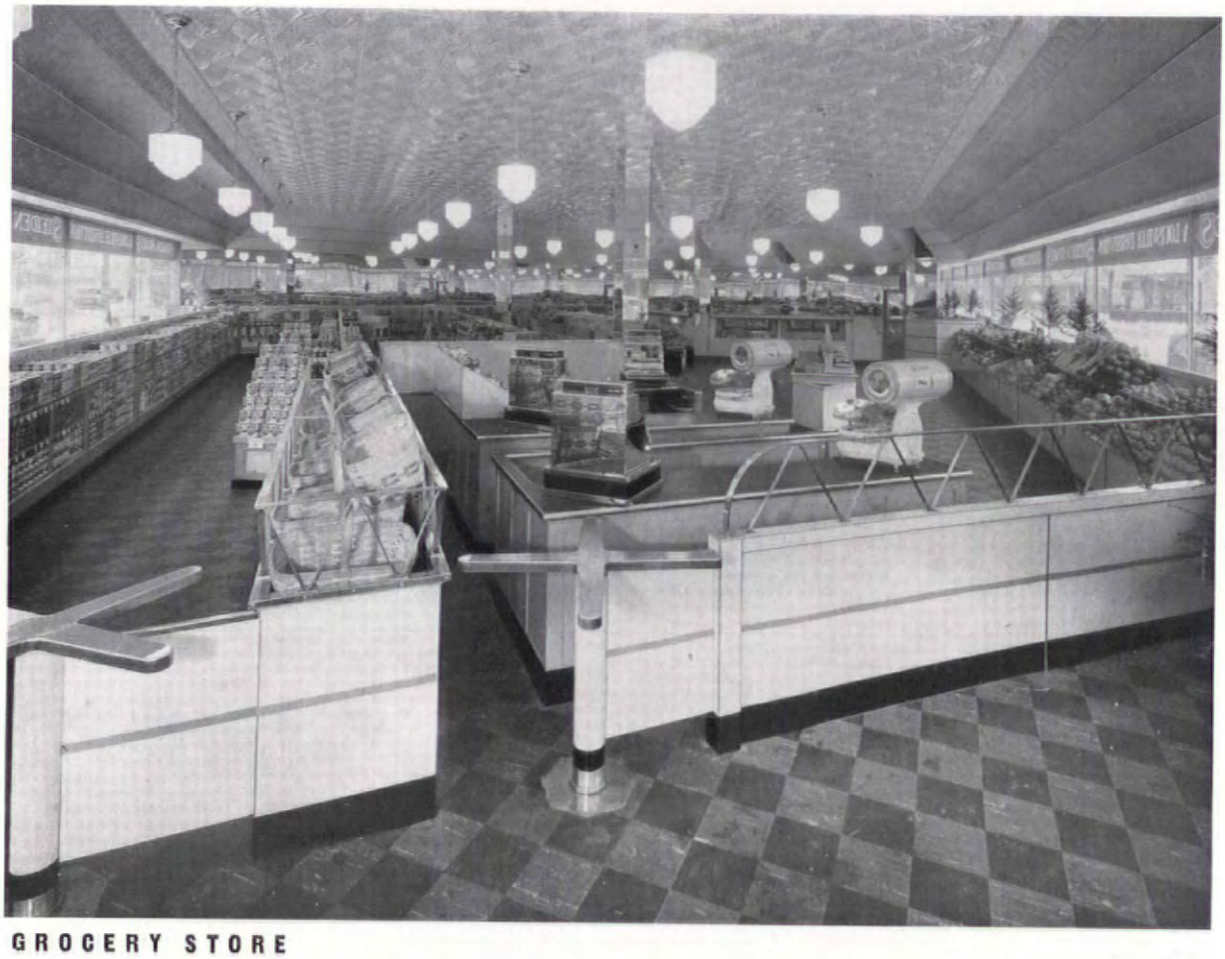


Royal

an island of irregular shape, created by the intersection of three streets. Located in the heart of a rather large suburban community, and a transfer point for car and bus lines, it is a natural shopping center. The building was conceived as a gigantic show case and the absence of extraneous detail reenforces the idea. Glass walls surround the shops on all sides, allowing an uninterrupted view of the interiors; external piers have been eliminated by the use of cantilevers. The parapet wall, placed over the interior columns, permits the effective use of free-standing block letter signs. To obtain a wall surface of maximum lightness porcelain enamel on steel pans was employed, applied directly over an inch of cement plaster on metal lath.

Both drug and grocery stores are fitted for the most part with stock equipment of a pleasingly simple character. The grocery interior is particularly successful. It is clean, light, and all merchandise is placed at a convenient height. The usual high shelves have been entirely omitted in favor of large windows, a decided improvement.

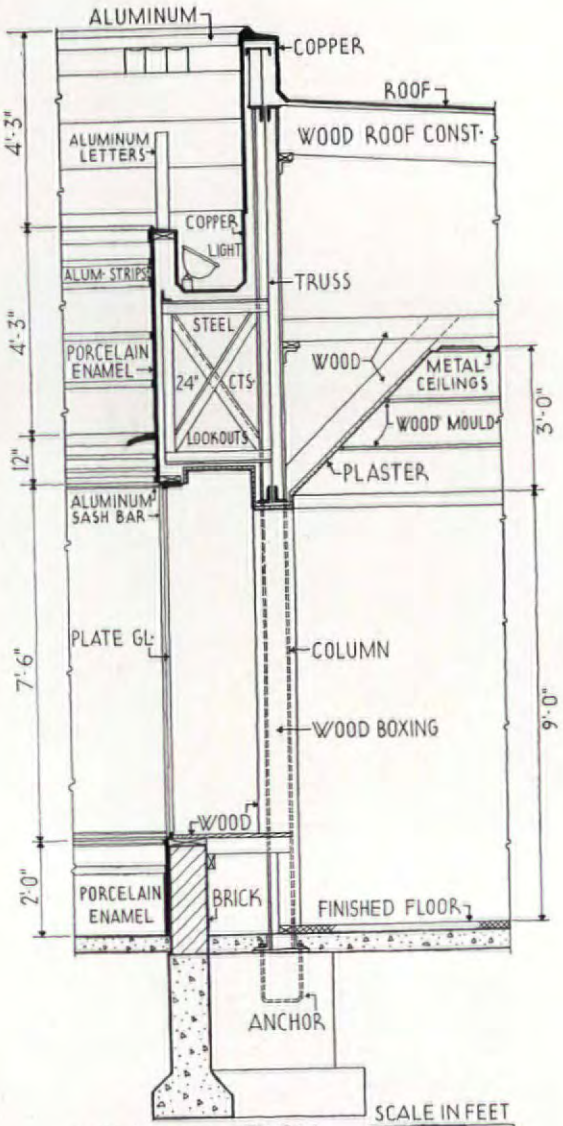
The cost of the building, exclusive of fixtures, was $33,000. There are about 12,000 sq. ft. at $2.58. Cubage is 195,000 at 17 cents. Air conditioning and fixtures ran approximately $5,000 in excess of this figure, making total final cost around 19 cents a cubic foot.



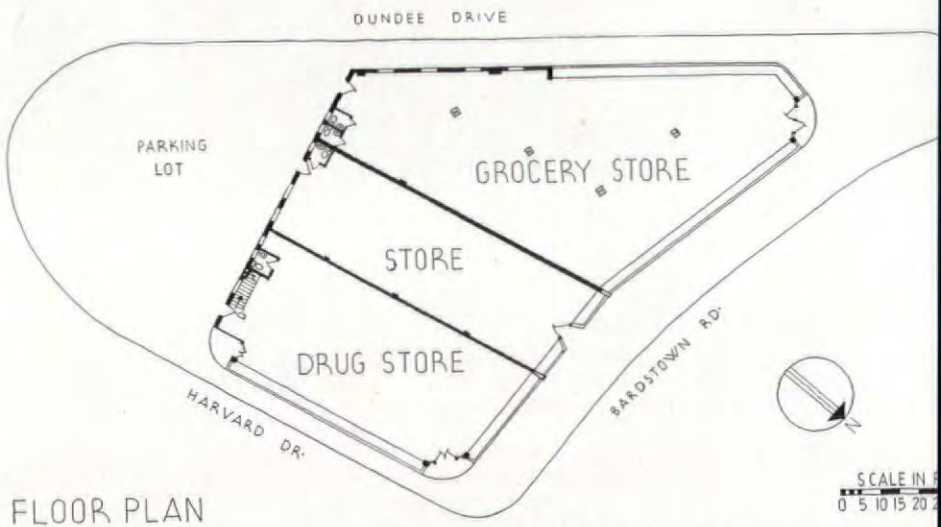
GROCERY STORE

DRUG STORE

Royal



WALL SECTION



FLOOR PLAN

CONSTRUCTION OUTLINE

BASEMENT
Walls and floors—concrete construction, Schickli Contracting Co.

STRUCTURAL STEEL FRAME
Steel, Carnegie Steel Co., fabricated and erected by Snead Architectural Iron Works, 2 coats of aluminum paint, Peaslee-Gaulbert Paint & Varnish Co.

FLOORS
Asphalt tile, applied directly to concrete floor slab with mastic, Armstrong Cork Products Co. Floor of drug store and entrance vestibules are of terrazzo, Keno Rosa Co.

SHEET METAL
Flashing of set-back in exterior wall and roof deck over show windows, 16 oz. soft roll copper, Philip Fink & Sons.

ROOF
Ten year bonded built-up asphalt applied over ½ in. Celotex insulation on wood deck, Philip Carey Co.

EXTERIOR AND INTERIOR WALLS
All exterior walls porcelain enamel applied over cement plaster base on high rib lath, wired direct to structural steel frame. The porcelain enamel manufactured and installed by Porcelain Metals Corp. Interior partitions are brick between main stores with stud partitions for interior sub-divisions.

GLASS
Plate glass, Louisville Plate Glass Co., glazing metal by Brasco Mfg. Co.

PLASTER WORK
All plaster work on laths, 3 coats; on masonry walls, 2 coats, Red Top, U. S. Gypsum Co.

INSULATION
4 in. rockwool over entire ceiling in attic space, Atlas Plaster & Supply Co. Rockwool by U. S. Gypsum Co.

PAINTING
All walls and ceilings given 3 coats lead and oil, stippled finish and starch, Peaslee-Gaulbert Paint & Varnish Co.

ORNAMENTAL METAL
Metal bands on exterior stainless steel, Pyramid Metals Co., Chicago, Ill. Metal letters on parapet executed in alumilite and enameled sheet metal, Newman Bronze Co., Cincinnati, Ohio.

INTERIOR FINISH
Walls plastered, rear walls in grocery store covered with mirrors above porcelain enamel wainscot. Ceiling—braced zinc, Wheeling Corrugating Co., Wheeling, W. Va.

FIXTURES
American walnut, soda fountain finished in metal and cafolite, fixtures by Winebrenner Fixture Co., fountain accessories, Russ Soda Fountain Co., Cleveland, Ohio, steam table by Standard Furnace & Range Co. Grocery store fixtures—porcelain enamel.

HARDWARE
White metal satin, Sargent.

LIGHTING FIXTURES
Show window lights, Holophane Co., parapet sign lighting, General Electric Co.

ELECTRIC WORK
Conduit, wire and switches, General Electric Co., panel boards, Frank Adam Electric Co., St. Louis, Mo.

PLUMBING FIXTURES
Standard Sanitary Mfg. Co., water heater, Hoffman Gas & Electric Heater Co.

HEATING
Unit gas heaters of the Pittsburgh Unit Heating Co.

AIR CONDITIONING
Drug store is equipped with duct system and fan for future air conditioning. Grocery store has two 42 in. exhaust fans in attic penthouses, which give an entire change of air approximately every three to four minutes.

BEAUTY SALONS

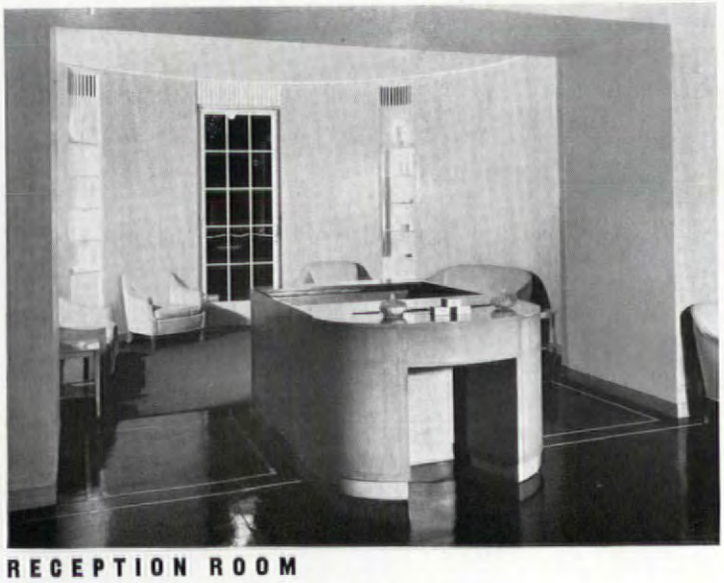
Hedrich-Blessing

Beauty business is big business. Last year a large percentage of the U. S. female population poured $116,795,000 into the cash registers of over 42,000 shops. Add to this the huge volume of sales of cosmetics, lotions, creams and other preparations; add the fabulous array of enormously complex apparatus without which no up-to-date salon can function; add the furniture, wall and floor coverings, air conditioning apparatus, lighting fixtures, etc., and you have a major industry. Today's beauty shop, in the face of stiffening competition on all sides, is having its face lifted. The esthetic problem

COCHRANE'S BEAUTY SALON, CHICAGO, ILLINOIS, HOLABIRD AND ROOT, ARCHITECTS

Hedrich-Blessing Photo

MAIN WORK SPACE

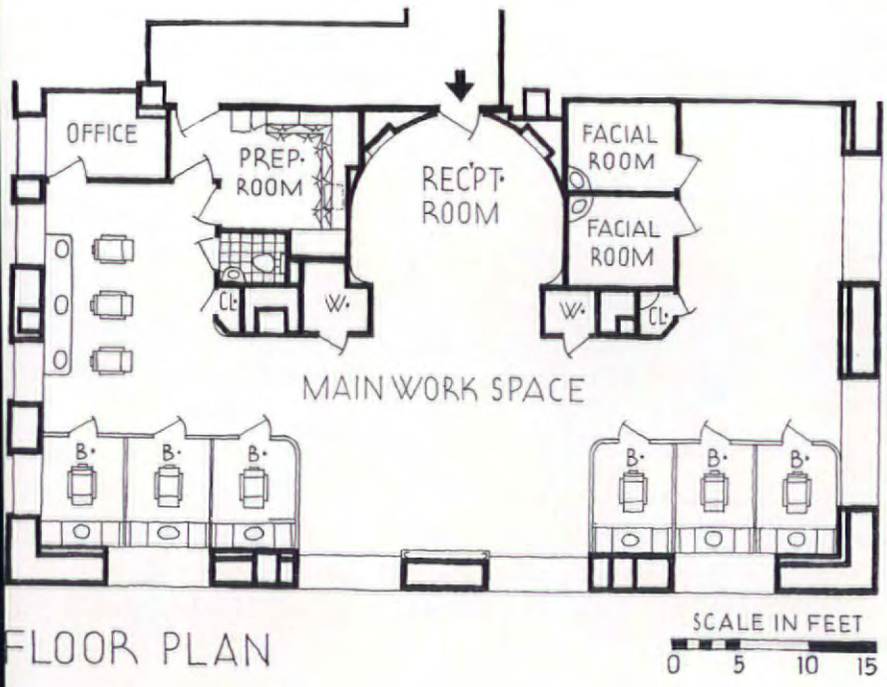


RECEPTION ROOM

of the beauty salon is twofold: it must have a atmosphere of smartness, and it must provide suitable background for a large amount of ma chinery. The solution demanded is a clean an direct one, with none of the frills that supposed constitute the feminine touch. The first sho illustrated is a good example of the modern a proach. Well-designed furniture and simple su faces have produced a smart and well-organize interior. Venetian blinds, dark green rubber floo pale gray wood, and yellow upholstery supp all the decoration that is needed. An effect quiet luxury has been obtained in the recepti room by wood veneer walls, a green velvet ca pet, and a few comfortable chairs.

BOOTH

Hedrich-Blessing



FLOOR PLAN

CONSTRUCTION OUTLINE

INTERIOR PARTITIONS
Hollow tile partitions around all pipe shafts, closets, toilet, kitchen, facial rooms and offices, Carroll Construction Co. Wood partitions, 7 ft., enclosing six booths, U. G. Johnson & Sons Co.

METAL FURRING AND LATHING
Suspended ceiling expanded metal lath. Corner beads all bullnose corner type, Knapp Bros. Mfg. Co.

PLASTER
All plaster work on metal lath 3 coats, on tile partitions 2 coats. Keene's cement plaster in toilet room. Lime, bond plaster, neat plaster, plaster of Paris, U. S. Gypsum Co.

PAINTING
Walls and ceilings—painted 3 coats of lead and oil, starched and stippled. Kitchen walls, ceilings and trim—enamel paint. All trim throughout—enamel paint. Facial rooms—lead and oil paint on walls and ceilings. Paint material by Pratt & Lambert.

DOORS
Entrance door—wrought iron with painted finish. All other doors—wood wth Harewood veneer, U. G. Johnson Co.

HARDWARE
All hardware solid nickel chromium plated, Sargent Co.

INTERIOR FINISH
Wood booths canvased and finished with Harewood veneer, on outside Smith veneers. Inside of booths finished with Formica, Formica Co. Plaster walls in work space. Reception room—finished with Harewood veneer bleached, stained to match Harewood doors and trim and finished with 3 coats of Pratt & Lambert's lacquer. Shampoo counters in booths—Catalin, Catalin Corp. of America. Outside shampoo counters—topped with Belgian black marble, cabinets and compartments below finished in Harewood. Mirrors and all glass—Pittsburgh Plate Glass Co. Furniture—Garland Furniture Co.

FLOORS
Cement finished floors covered with rubber tile and base in work space, booths, facial rooms, kitchen and office, W. H. Salisbury Co. Toilet, asphalt tile floor and base. Reception room carpet, American Rug & Carpet Co.

FIXTURES
Counters, display cases and reception desk, Harewood.

KITCHEN EQUIPMENT
Kitchen cabinets hollow metal baked on enamel finish, solid nickel chromium plated hardware, Monel metal sink.

VENETIAN BLINDS
Venetian blinds on all windows, Western Venetian Blind Co.

ELECTRICAL WORK
All electrical work connected to main building system. Electrical work furnished by J. Livingston & Co.

ELECTRICAL FIXTURES
All indirect lighting troughs furnished by the Belson Mfg. Co. Fixtures in toilet, kitchen, office, booths—furnished by Cooper-McGurk-Stewart, Inc.

PLUMBING
All shampoo basins Monel metal, all trimmings chromium plated, W. H. Clow Co. Plumbing system connected to building plumbing system.

HEATING AND VENTILATING
Heating and ventilating systems connected to main building systems.

AIR CONDITIONING
Air conditioning unit installed in ceiling by Kelvinator Corp. on direct contract with owner. All spaces in shop are air conditioned.

BEAUTY SALON FOR THE J. W. ROBINSON CO., LOS ANGELES, CALIF., WILLIAM RICHARDS, ARCHITECT

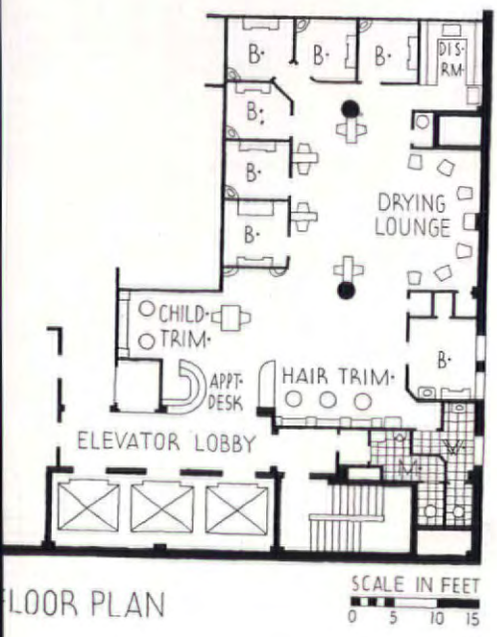
HAIR DRESSING ROOM

MANICURE TABLES

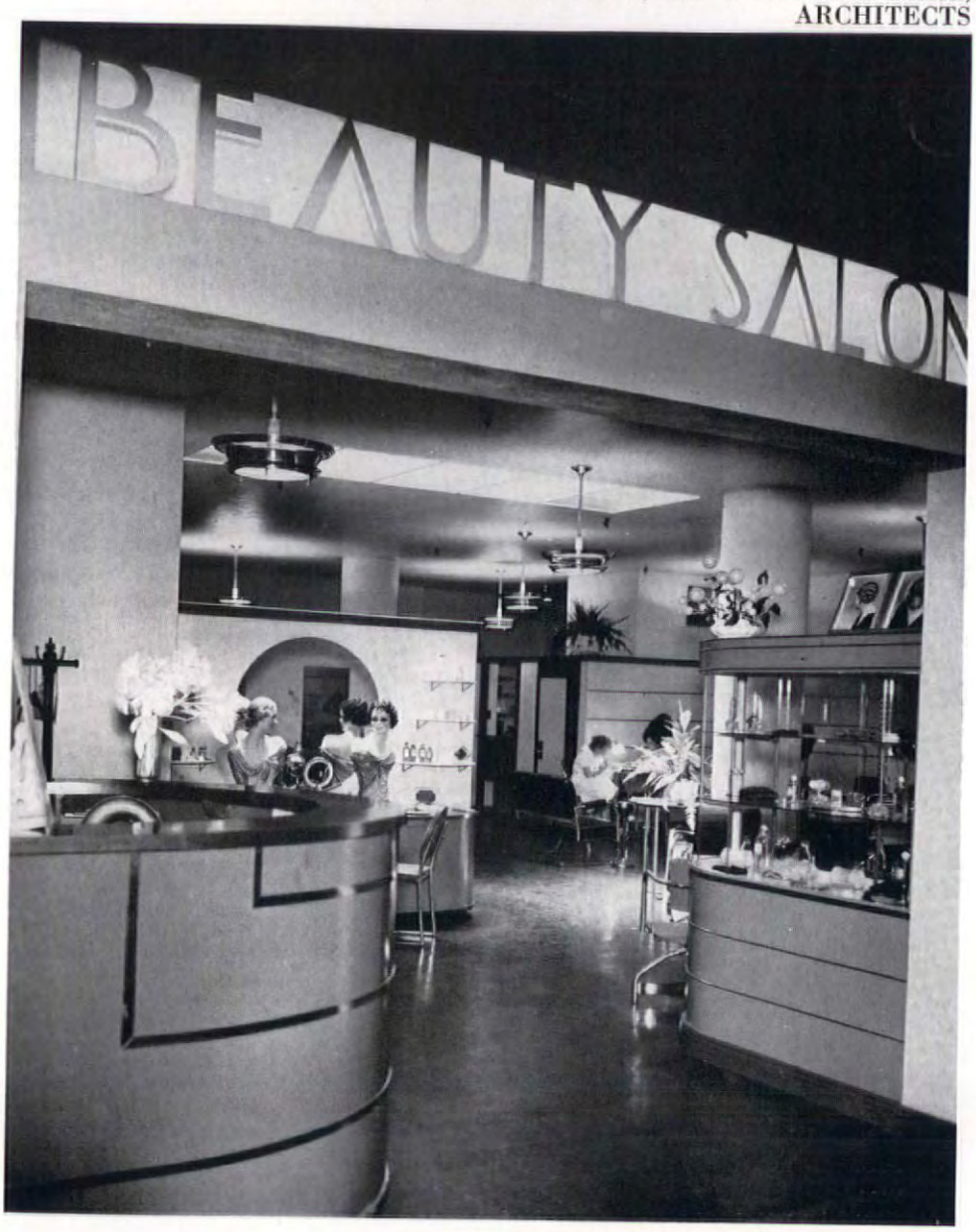
Dick Whittington Photos

A salon for a large department store, designed t accommodate many more people at a time than th preceding example. While the insistence on detail consisting chiefly of parallel lines is perhaps to strong, the general composition is most effectiv When there is a repetition of a unit pattern, suc as the booths shown in the lower illustration, th result is usually better decoration than any applie ornament could possibly be. To give unity to th various rooms one of the devices adopted was conventionalized leaf insert in the rubber floorin All equipment was designed and arranged f maximum ease in use and cleaning.

BEAUTY SALON FOR VOLK BROS. CO., DALLAS, TEXAS, H. M. GREENE, LA ROCHE AND DAHL, ARCHITECTS

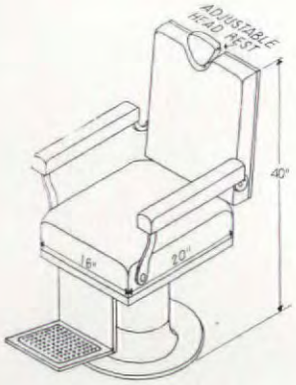


FLOOR PLAN



Hayes Photos

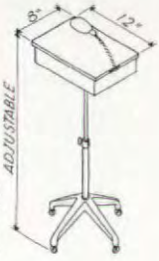
Another department store beauty salon, filled with metal furniture of stock design, represents an attempt to do over a portion of the store at the smallest expense and consequently lacks something of the consistency of the other shops illustrated. As in the majority of establishments of this kind attention has been given not only to the planning of the various services, but to the sale of preparations whose sale forms a considerable source of revenue. Here a large showcase is placed directly opposite the appointment desk. The color scheme is pale mauve-pink for the walls, with accents of terra cotta and chrome.



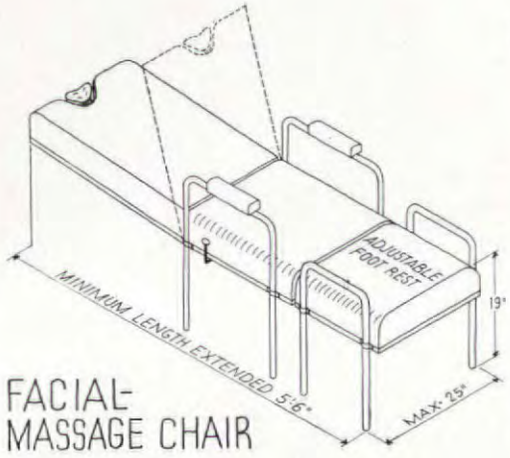
BARBER OR DENTAL TYPE OF CHAIR

LOTION CABINET

MANICURE TABLE

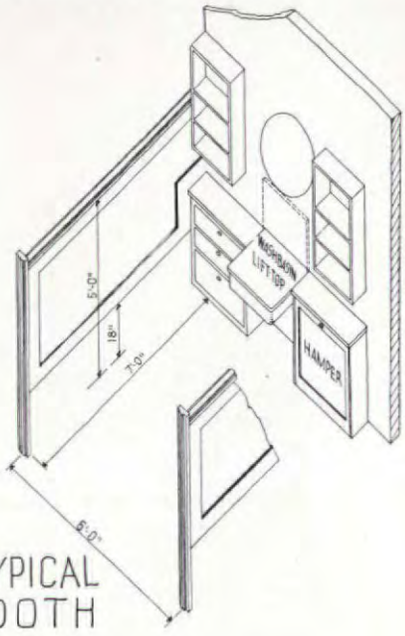


MANICURE TABLE



FACIAL-MASSAGE CHAIR

MANICURE TABLE



TYPICAL BOOTH

WALLS
Should be washable; enameled metal, wood veneer, washable paint or paper.

BASEBOARDS.
Eliminate hair and dust catching moldings; a coved metal or composition base is good. In lieu of this a 5 to 18 in. clearance space may be left below the booth partitions.

FLOORS
Terrazzo, linoleum or rubber tile for work spaces.

LIGHTING
Comparatively few beauty shops have natural light. The problem is to have sufficient light without its being irritating. Indirect wherever possible. Diffused type when located in ceiling of booth is satisfactory.

VENTILATION
Air conditioning or some form of blower system advisable to counteract heat of driers, etc. Air circulation space above and below the booth partitions frequently provided. Some booths have double hung metal walls which may be lowered to allow freer circulation.

PLUMBING
All basins and water outlets must be well trapped and all traps easily accessible for frequent cleanings where possible. Extra precaution should be taken with drains to prevent clogging of trap with hair, pins, etc. Thermostatic control of shampoo water and central soap dispensing system sometimes used.

BOOTHS
Size 6 x 7 ft. to 7 x 9 ft. Partitions should be at least 5 ft. high, higher if possible. Either curtains or doors may be used. If door is used it should have a grille at eye level so that the manager may observe the progress of the treatment or see if booth is occupied, etc., without disturbing the client. Built-in wash basin very frequently has cover and is used as work space. Cabinets are provided for combs, lotions, etc. Built-in hampers for soiled linen. The booth for facial massage is usually 7 x 9 ft. to accommodate the facial chair extended to full length. Partitions of facial massage booths are, as a rule, built to the floor for privacy.

CHAIRS

Standard chairs are of wood or metal with leather upholstery and adjustable back. The head rest may be replaced by drain board for shampooing. The barber or dental type of chair, on which an hydraulic lift is provided, has a foot rest and back which incline simultaneously to provide a comfortable angle for either massage or shampoo. Chair extended averages 5 ft. 6 in. The chair revolves on a stationary base.

Chair for facial massage, equipped with movable leg rest, reclining back and adjustable head rest. Minimum length extended 5 ft. 6 in. Seat approximately 18 in. from floor. Comfortable, grease-proof upholstery. Used without the leg rest and with the back erect, this chair may be used for ordinary purposes. Other versions of this chair closely resemble the chaise-longue and are devoted exclusively to the massage. They are bulky and only used when space is not at a premium.

LOTION CABINET
Mounted on casters, provided with sliding split top giving operator access to cream and lotions used in facial massage. Has several drawers and towel cabinet.

MANICURE TABLE
There are many types of manicure tables. The stationary type will function as a utility table as well, having a number of drawers and a cabinet. Average size: height 30 in., width 20 in., length 40 in. Usually of enameled sheet metal with chrome finish.

The movable manicure table, which is practical for use in the booth, has a top which may be raised or lowered. Usually provided with a goose neck lamp attached to table. Legs and base, chrome finish. Rubber trim casters. Top 8 x 12 in. Larger movable type not adjustable as to height, contains sterilizing cabinet; height 29 in., width 11 in., length 16 in. Plastic tops are frequently used.

In the larger shops, manicure tables are very often a part of the reception room equipment. Built-in tables are attached to the wall at one end and supported at the other by chrome-finished legs.

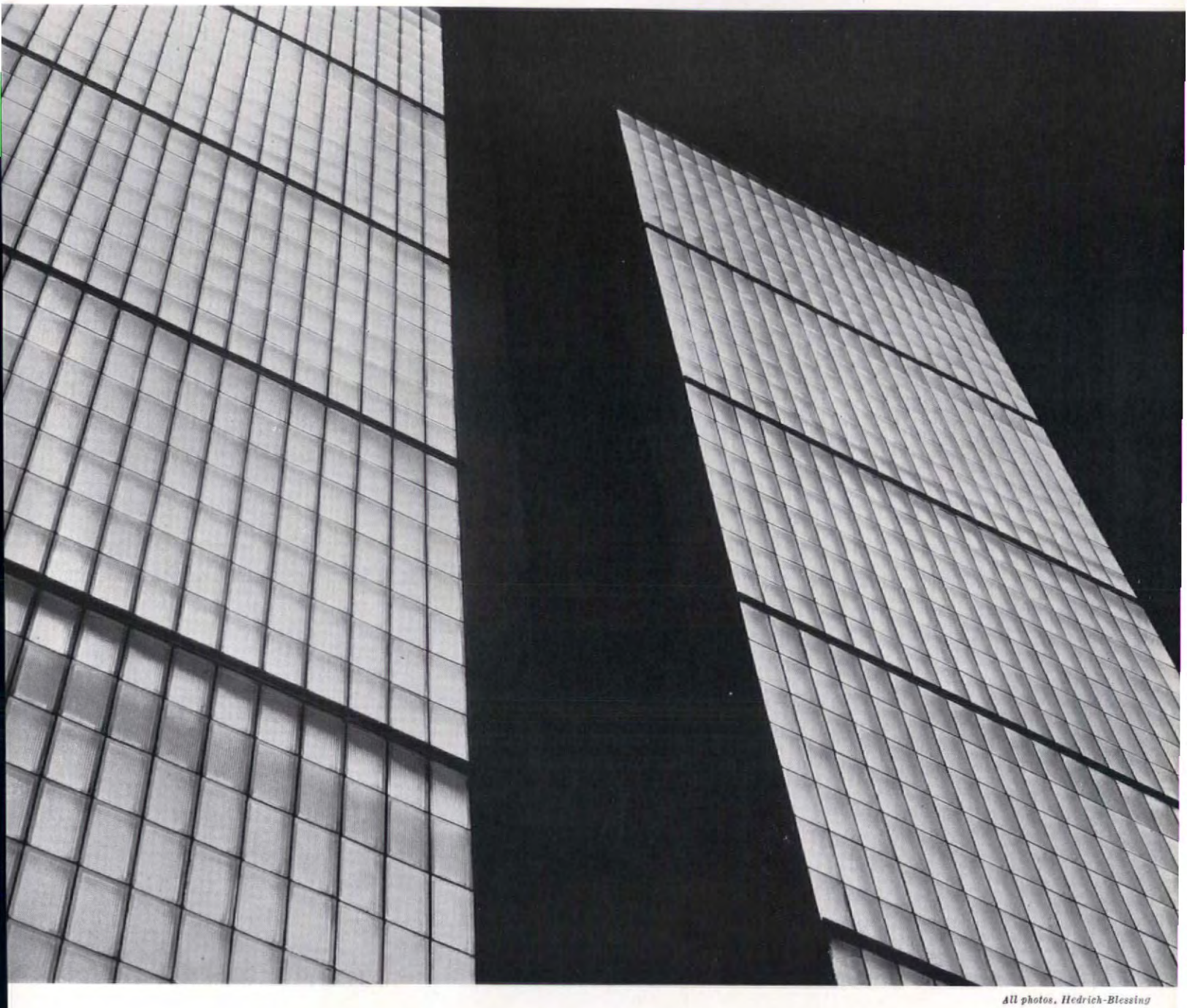
MACHINERY
If space permits, a battery of driers is usually installed along one wall of the hair dressing salon so as not to tie up the customer traffic in the booths. However, movable driers may be attached in any location. Base averages about 28 in.

Permanent wave machinery is of movable type, size of the machine governing base. All models are bulky, would occupy about 6 sq. ft. of floor area.

OWENS-ILLINOIS RESEARCH BUILDING

TOLEDO, OHIO

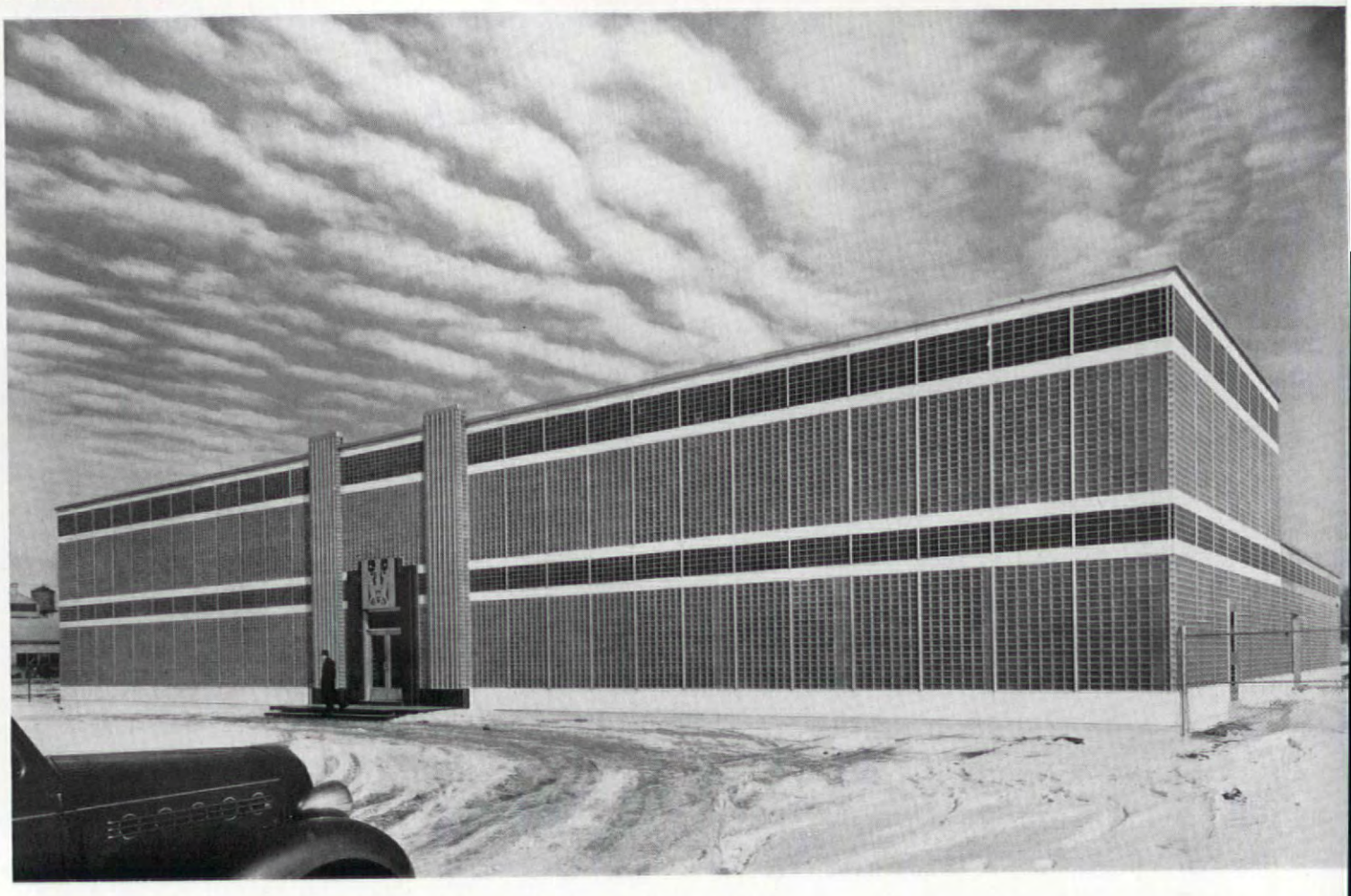
WALKER AND WEEKS, ARCHITECTS

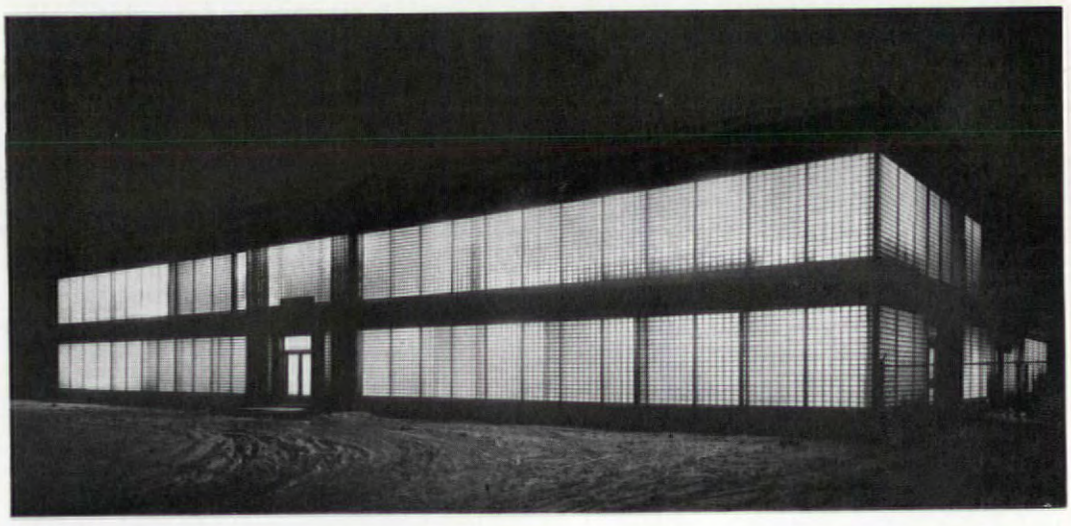


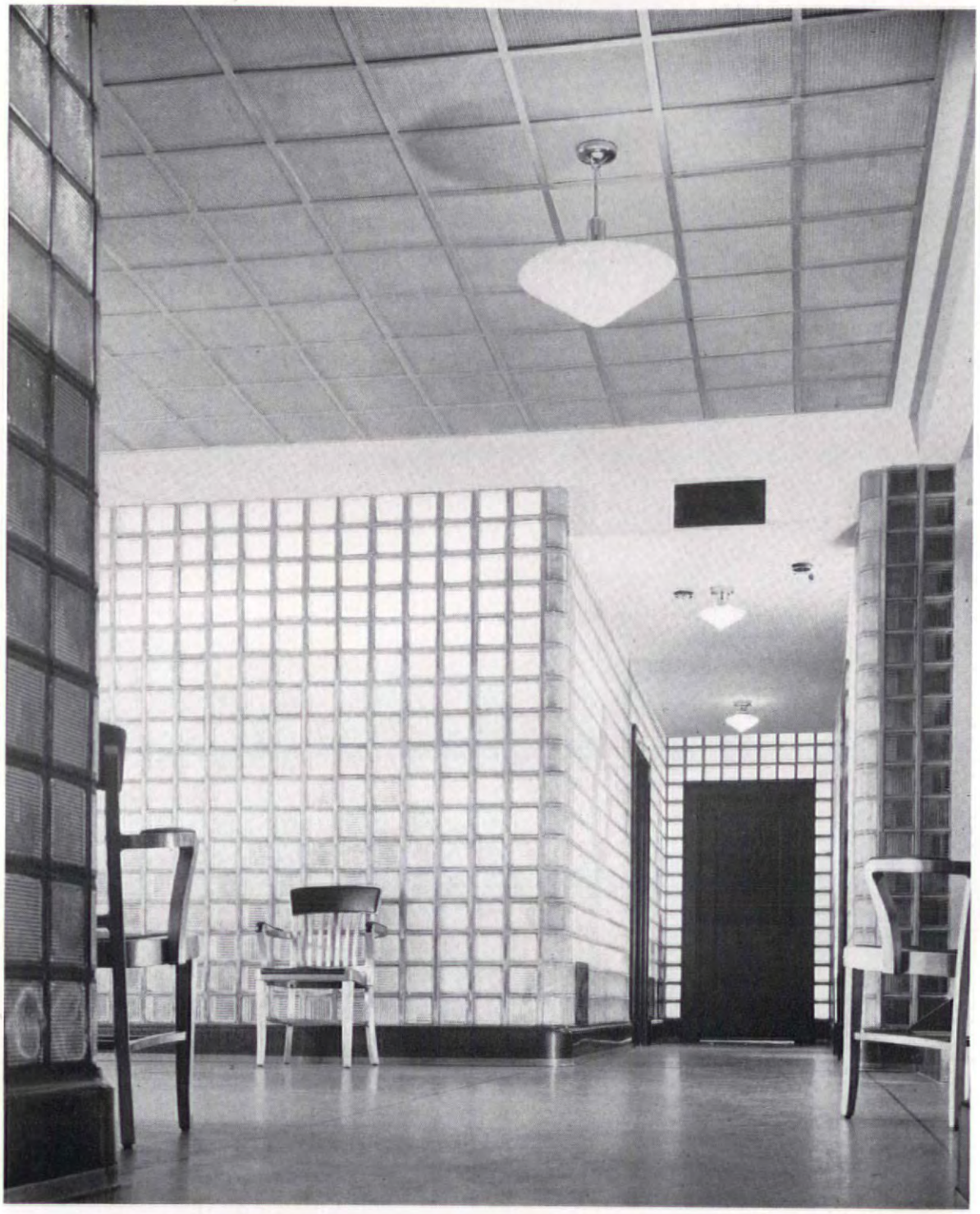
All photos, Hedrich-Blessing

In spite of the fact that windowless buildings have been possible for a number of years, there is no great likelihood that this type of building would have been accepted had it not been for the advent of glass blocks. Introduced in Europe some years ago and used in moderate amounts in Holland, Belgium, and other countries, its recent rapid development in the U.S. may be attributed in part to the equally recent advances in air conditioning and to the technical merit of the domestic product. Combining certain advantages of the window with those of the insulated masonry wall, this new architectural medium is one of the most promising that has appeared in many years, and in addition

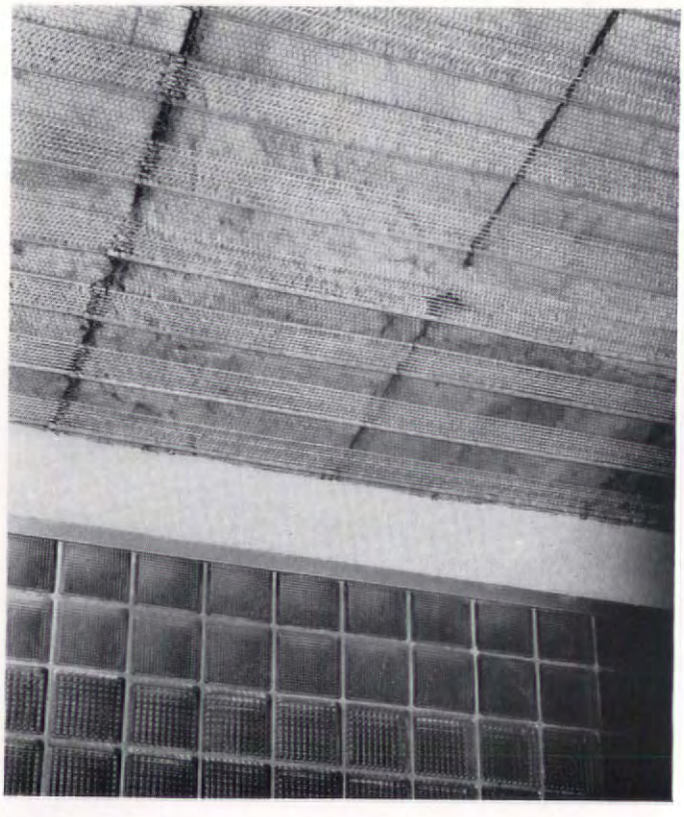
OWENS-ILLINOIS RESEARCH BUILDING





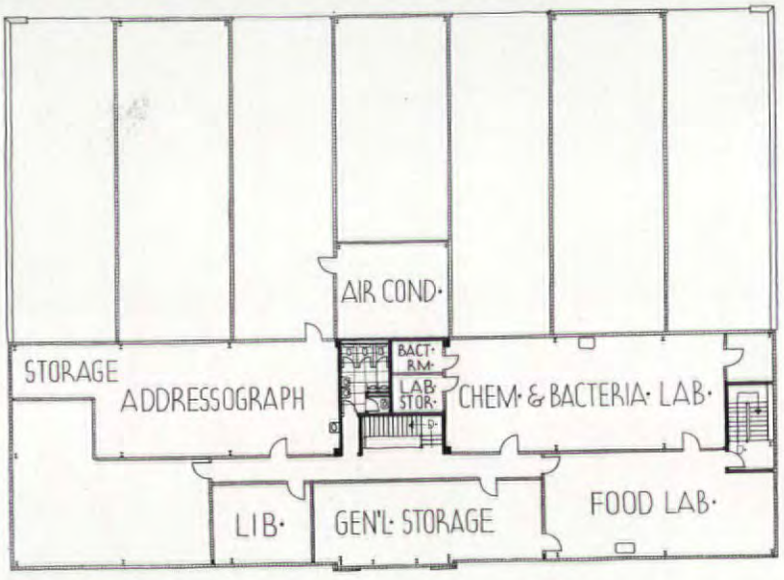


possesses stimulating decorative possibilities, particularly for night effects. To demonstrate their product, the Owens-Illinois Company constructed this research laboratory with interior and exterior walls of glass block. Even the spandrels are of this material, backed with green sheets to give color variation on the exterior. Used for interior partitions glass block is especially suitable, as it transmits a considerable amount of light to inside rooms and corridors. Its weight is another favorable factor: the 80,000 blocks used weigh only 150 tons, much less than other types of masonry. Other uses of glass in the building are for acoustical ceilings, roof insulation, and for filters in the air conditioning system. The building houses five separate laboratories, mainly devoted to the development of new applications of glass in the packaging industry as well as testing of container closure machinery and foods packaged in glass containers.

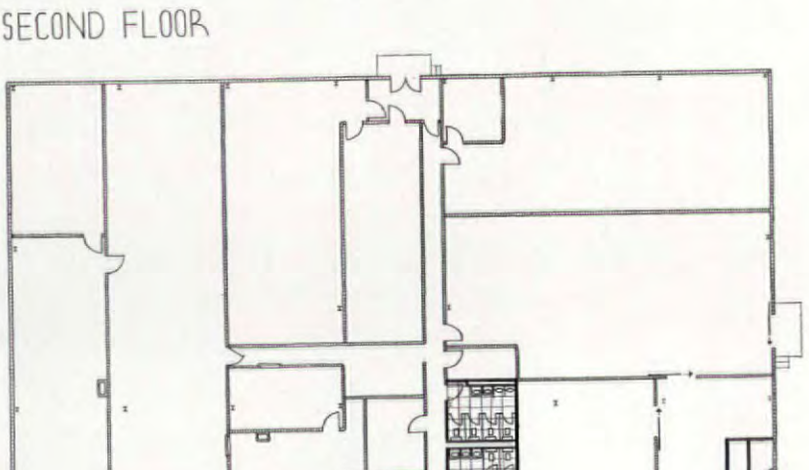


ACOUSTICAL CEILINGS

The ceilings in the building are made of a newly developed glass wool which is held in place by a decorative wire mesh. The material is divided into square panels by small wood members, and these strips as well as the mesh have been painted silver. In addition to its acoustical properties the ceiling forms an excellent reflecting and diffusing surface with which to use indirect lighting fixtures. In the work room section a plain metal lath (see illustration at right) was used under the wool instead of wire mesh; this simpler method was possible because direct lighting is used throughout the area.



SECOND FLOOR



FIRST FLOOR

CONSTRUCTION OUTLINE

EXCAVATION FOR FOOTINGS AND PIT
First floor on grade. Pit 8 x 12 ft., 8 ft. deep, for vacuum pump, steam supply, gas and water meters.

STRUCTURAL STEEL
Steel, Bethlehem Steel Co. Shop coat, Detroit Graphite Co.; field coat, aluminum paint.

FLOORS
First floor—concrete slab on grade 140 x 100 ft. Finish floors. Office portion—terrazzo, art mosaic. Model shop floor—wood block, Jennison-Wright. Model design and print shop—Azrock tile, Uvalde Rock Asphalt Co. Second floor—140 x 40 ft. 6 in. wood floor on structural steel. Finish floor—Azrock tile.

ROOFING AND SHEET METAL
Barrett Co. built up roof, Fred Christen & Sons. Gutters on rear, all flashing and parapet caps, Toncan metal, Republic Steel Corp.

EXTERIOR WALLS
Insulux glass building blocks, 5 x 8 in., 4 in. thick, No. 101 face, Owens-Illinois Glass Co. Main entrance and steps—St. Cloud, Minn., granite.

INTERIOR WALLS
Insulux glass building blocks, 6 x 6 in., 4 in. thick in a variety of face patterns, Owens-Illinois Glass Co. Partitions around stairway and toilet rooms, U. S. Gypsum Co. Pyrobar, 3 coats plaster.

METAL FURRING AND ACOUSTICAL CEILINGS
Suspended ceilings in corridor and toilet rooms, expanded metal lath, U. S. Gypsum Co., 3 coats plaster. All other ceiling areas—glass wool acoustic treatment, Owens-Illinois Glass Co., 4 in. batts of spun glass wool, compressed to 2 in. thick in 16 in. square panels, mounted in wood frames, 9 panels to 48 in. square frame. Erected on 2 x 2 in. wood stripping. Exposed surface, special woven wire cloth, W. S. Tyler Co.

PAINTING
On plaster, 2 coats Stream-lite, A. C. Horn. On woodwork, 3 coats lead and oil, Pittsburgh Plate Glass Co. On acoustic ceiling, 2 coats lead and oil, sprayed on wire cloth before erection. Finish coat brushed on in place. Exposed ducts and piping, 2 coats aluminum paint.

DOORS
Main entrance—one pair balanced doors, Ellison Bronze Co., Inc. Rear and side—steel doors, aluminum finish. Sliding door 8 x 8 ft., Kalamein door, aluminum finish. Interior doors and trim, office section and corridors—metal doors and trim, glass and solid panels, Dahlstrom Metallic Door Co. Shop portion and intercommunicating—5 panel wood doors.

ORNAMENTAL METAL
Pierced symbolic panel over main entrance—cast aluminum, Ellison Bronze Co., Inc. Stair rails—extruded aluminum. Metal newels and wrought iron spindles, metal risers and terrazzo treads.

AIR CONDITIONING
Steam purchased. Deep well for cooling. Air conditioning system, Clarage Fan Co. Automatic control, Johnson Service Co. Building divided into seven zones, with each office individually controlled, and booster coil in each supply duct to these offices. Grilles, Tuttle & Bailey. Duct work, A. H. Lumm.

ELECTRICAL WORK
Underfloor system, Russell & Stoll. Panels, Trumbull Electric Co. Metal base for conduits, Dahlstrom Metallic Door Co. Installation, Romanoff Electric Co.

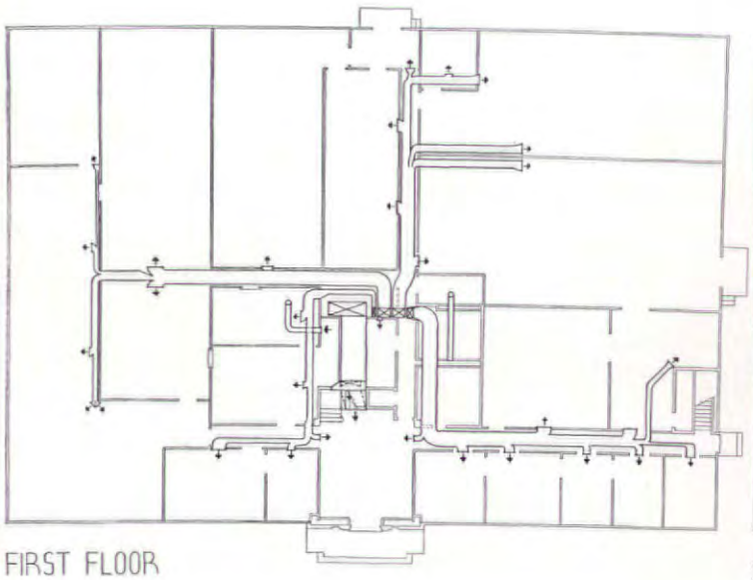
LIGHTING FIXTURES
All fixtures by Ted Donoher Lighting Studio, Inc. Lobby and executive offices, Westinghouse Magnalux Units. Equipment and demonstration room and model shop—Superlume Reflector Units, Day-Brite Reflector Co. Model design, Phoenix Magia Glass Units. Corridors—Perfeclite fixtures with Silvaglo glassware, Gleason-Tiebout Glass Co. Other spaces—metal dome reflectors, Benjamin Electric Mfg. Co.

PLUMBING
Fixtures—Standard Sanitary Mfg. Co. Installaton—Wm G. Coyle.

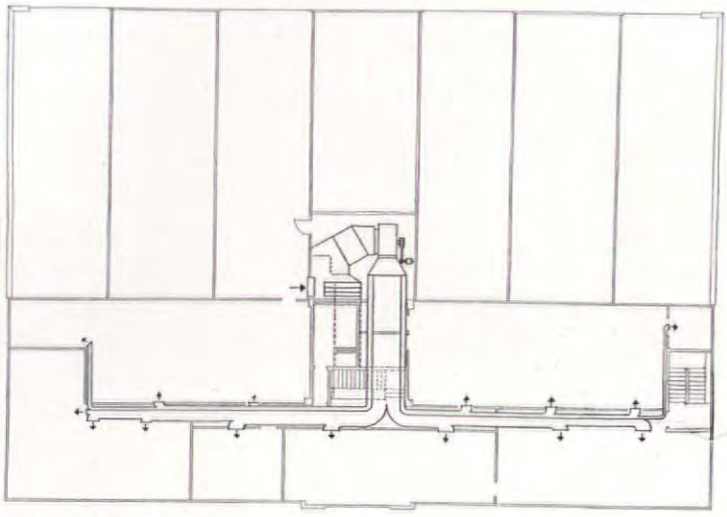
SPRINKLERS
Automatic Sprinkler Co. of America. Hose reels—W. D Allen Co.

HARDWARE
P. & F. Corbin, Bostwick-Braun Hardware Co.

DEEP WALL
Ten inches diameter, 560 ft. deep. Pump—Cook turbin 200 gallons per minute, installation, King & Sons.



FIRST FLOOR



SECOND FLOOR

Notes Based on Data Supplied by Clarage Fan Company

The installation of an air conditioning system to serve the research laboratory involved the consideration of a number of problems not generally encountered. For the construction of this building, glass blocks, partially evacuated to retard the transmission of heat, were used throughout. As no windows are employed, infiltration of air is entirely eliminated and all air required for ventilation purposes is introduced through the air conditioning system. In this manner, dirt which may ordinarily enter is eliminated from the fresh air supply prior to its introduction to the conditioned spaces. For this particular installation a large amount of fresh air was required, the volume being greater than the combined volumes of all exhaust systems, in order to maintain a slight positive pressure in the building.

The system is of the central station type. Division of the building into seven zones, exclusive of the five private offices, was found necessary to compensate for fluctuations in the demands due to changes in sun exposure, wind velocity and direction, occupancy, etc. Temperature conditions are maintained independently in each of the seven zones both summer and winter by means of a zone thermostat located in such a position as to be affected by an average zone condition. The air conditioning equipment consists of a Clarage Unicoil Unit, complete with coils, eliminator plates, humidifying sprays, casing and drip pan. As the medium employed for cooling and dehumidifying is cold well water, the type of coil used for cooling can also be employed with steam or hot water for heating. For this installation one bank of the coils is arranged with steam supply for tempering or heating the air under periods of winter operation. A bank of Owens-Illinois Company's "Dustop" filters are located ahead of the conditioning unit to remove all dirt and dust from the recirculated as well as the fresh air. The supply fan which is of the multi-blade type is driven by means of constant speed motor. With the variations in the volume of air demanded by the various zones a balance of the system is maintained by means of a static pressure regulator which provides a constant discharge pressure in the supply duct by actuating a Clarage Vortex Control located in the fan inlet.

The five private offices are supplied by a separate fan which under periods of winter operation is arranged to deliver a mixture of conditioned air and filtered fresh air at a temperature of 68 to 70°F. to the duct system. The reheating effect required is provided by five booster heaters located in the branch ducts adjacent to the grilles which supply the five private office spaces. For periods of summer operation thermostats in the private office spaces control volume dampers, varying the volume of air supplied in accordance with the temperature demands of each respective space.

The system was designed to maintain a 83° dry bulb and 50% relative humidity during periods of summer operation. The above conditions are based on a maximum outside design condition of 95° dry bulb and 78° wet bulb and requires the use of 175 gal. per min. of cold water at a temperature of 53° Fahr. The estimated sensible heat cooling load of the building on the basis of the design conditions is 509,000 B.T.U. per hour. In addition to the transmission and sun effect losses this load includes heat generated by 25 ¼ HP motors, 140 occupants, and two blueprint machines.

For winter operation the system is designed to maintain an inside temperature of 70°Fahr. dry bulb with an outside design condition of minus 10°Fahr. The estimated heat losses on the basis of the design conditions amount to 791,500 B. T. U. per hour. The steam consumption under design conditions varies with the volume of fresh air taken, amounting to approximately 2,000 pounds per hour with the maximum volume of fresh air, to 1,400 lbs. per hour with the minimum of 5,000 cu. ft. per minute outside air.

On the basis of the estimated requirements a main supply fan was selected to deliver a maximum of 26,000 cu. ft. per minute, with a maximum of 12,000 cu. ft. per minute of outside fresh air. As the system resistance is approximately 1½" the brake horsepower is 8.7. However, as the volume of conditioned air required is reduced by the Vortex Control the horsepower consumption of the motor is lowered. Such an arrangement effects an operating economy over the use of a slip ring motor or the ordinary louver type volume dampers. The fan for the private office system is of the Multiblade, single inlet, single width type and delivers a capacity of 1300 cu. ft. per minute. This unit is driven by means of a ½ HP motor.

A complete system of pneumatic temperature and humidity control is provided consisting of:

Summer-winter room thermostats located in each of the seven zones and the five private offices, operating volume dampers controlling the volume of air delivered to each of these spaces. These thermostats are so arranged that the switchover from summer to winter, or from winter to summer operation is accomplished at the main control switch panel in the equipment room by varying the main line air pressure.

An insertion type thermostat located in the main supply duct to the private offices actuates two automatic dampers, proportioning the mixture of fresh and conditioned air to maintain a set air delivery temperature. For summer operation this thermostat is inactive and the entire volume taken is conditioned air.

The static pressure regulator previously mentioned controls the volume of air handled by the main supply fan in accordance with the requirements of the seven zones.

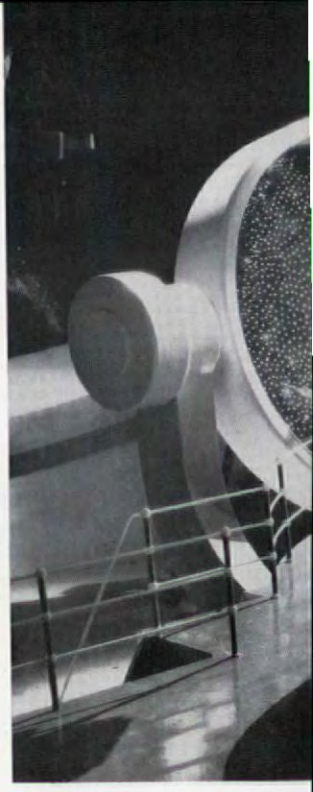
A two-point insertion thermostat located ahead of the conditioning unit actuates the automatic fresh and return air dampers permitting the taking of outside air over and above the minimum volume when outside conditions are favorable.

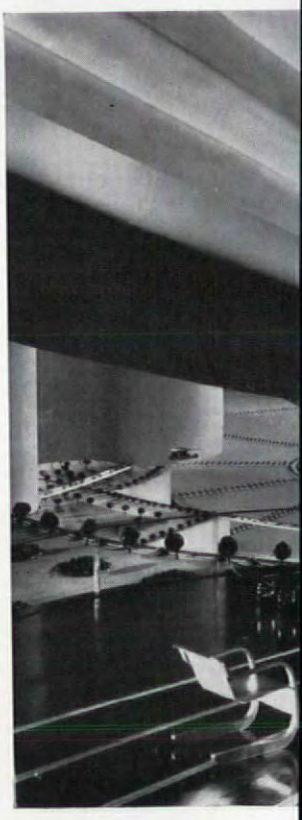
The insertion type humidistat located on the return air duct regulates the relative humidity maintained under periods of winter operation by varying the tempered water supply to the humidifying sprays in the conditioning unit.

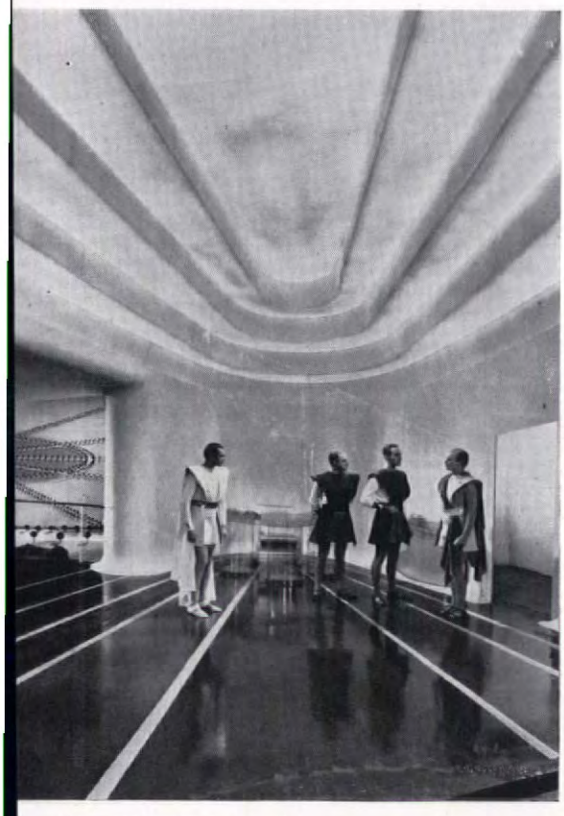
An electro-pneumatic switch, interconnected with the main supply fan motor circuit, controls one section of the fresh air damper in order to provide at all times sufficient outside air for ventilation purposes.

Compressed air for actuating the control equipment is supplied by an electric air compressor equipped with storage tank. The different air pressures required are secured by the use of three pressure reducing valves.

THINGS TO COME







War and the common cold are absent from Mr. Wells' cinematic vision of the future, a sterilized Utopia whose underground cities, undisturbed by sun, rain, heat, or cold, represent Man's final break with his natural environment. Deep in sunless caverns a new society, clad in garments containing complete radio telephone systems, inhabits windowless buildings, strolls along avenues from which automobiles are conspicuously absent, and stands on broad flights of anachronistic steps. Communication seems to be largely by means of suspended railways, and elevators, mysteriously rising and descending in mammoth tubes of glass, give access to the different levels. The use of glass, or something resembling it, is extensive. Even furniture is made of it, with the exception of some very handsome plywood chairs which can be bought in England today. The sets, for the most part small-scale models, are marvels of craftsmanship. The architecture owes much to the vivid word pictures of Mr. Wells, more to the work of men like the Brothers Luckhardt and Miës van der Rohe, but most of all to the imaginative brilliance of the younger group of architects whose efforts during the past half dozen years are already changing the face of England.

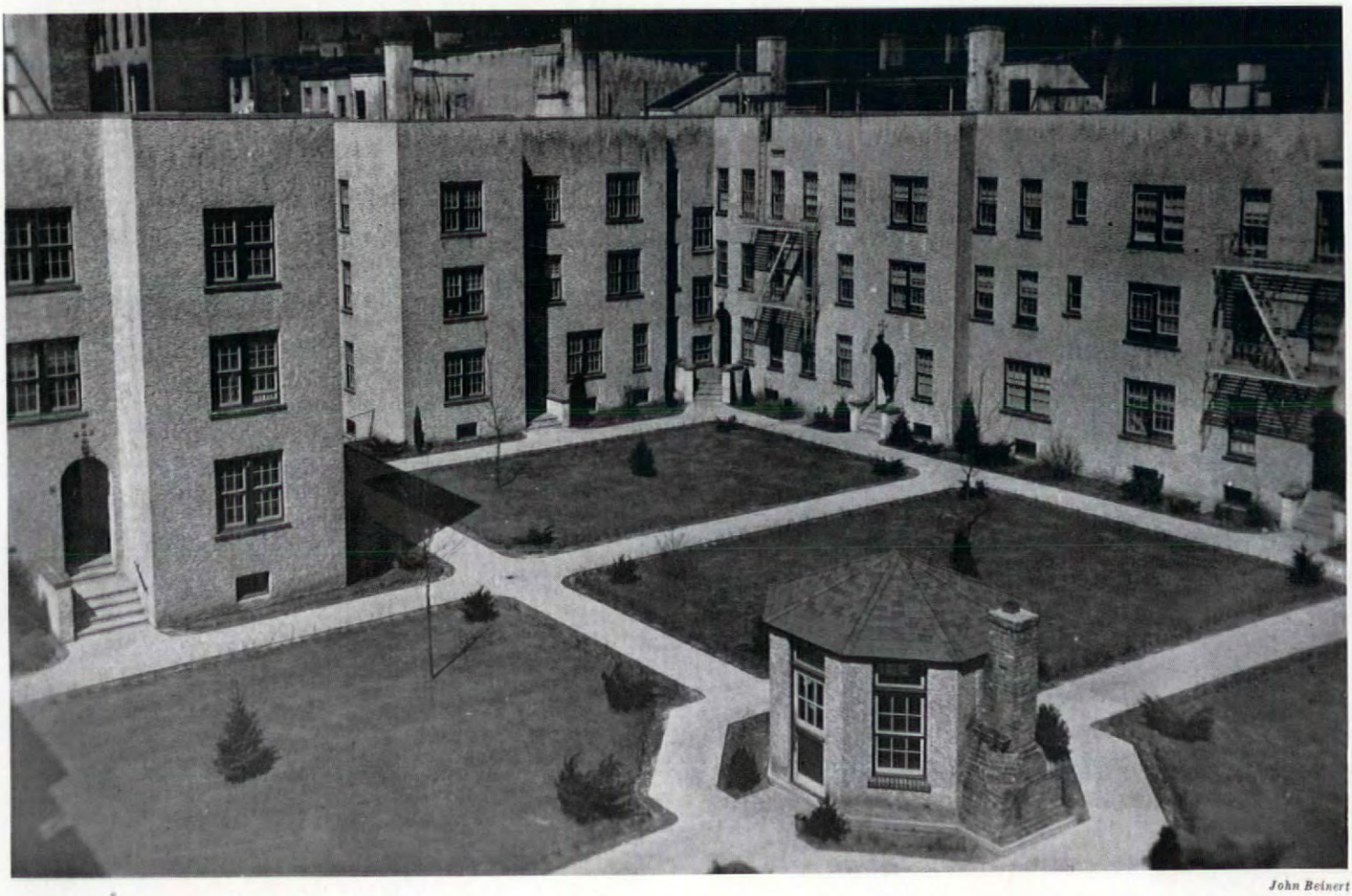
CHELSEA LANE APARTMENTS, NEW YORK CITY

FOR McPHERSON, INC.

JOSEPH MARTINE, ARCHITECT

ENTRANCE

INTERIOR COURT



John Beinert

LIVING ROOM

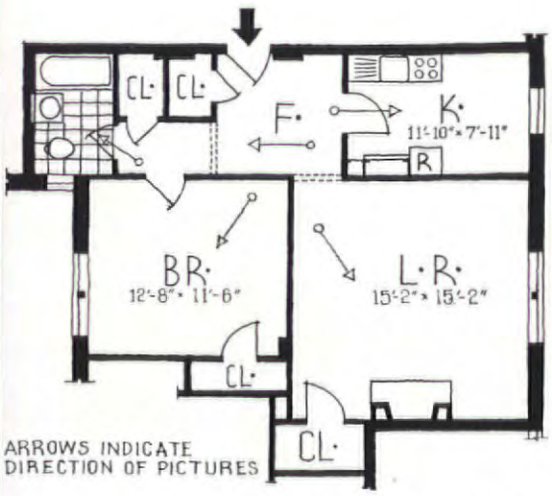
Little that is suggestive of inspired design meets the eye in this unpretentious group of low apartments. The over-rough plaster, the fenestration, and the rather dry treatment of the court are all familiar features of a type of apartment house that is by no means uncommon. Nevertheless this development is one of the most commendable bits of private enterprise that has recently appeared in New York. To the resident of a small city it may seem hard to believe that sun and air are at such a premium that a group like this is in any way unusual, but such is the case. The use of shallow building units and the absence of projecting wings have resulted in an open space creating a living condition as favorable as it is uncommon. The building of similar groups to produce a series of "internal suburbs" would do much to reclaim the blighted areas of our larger cities. The property for this development was leased for 21 years from one of the New York hospitals, with a clause allowing the lease to be broken after 1940 upon payment of a fixed sum, should a favorable occasion for selling present itself. The apartments are small, being occupied for the most part by young couples, the wives as well as husbands being employed. The octagonal structure in the court is for a watchman and contains a switchboard. Packages are also delivered here since most of the tenants are out during the day. Rooms rent for about $25 per room per month, and cost about $1,500 to build. The total cost, including demolition of a hospital on the premises, was approximately $370,000.

CHELSEA LANE APARTMENTS

BEDROOM

BATH

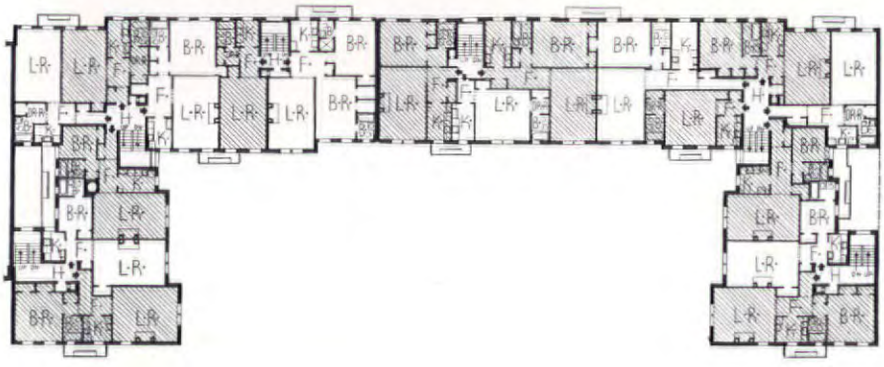
KITCHEN

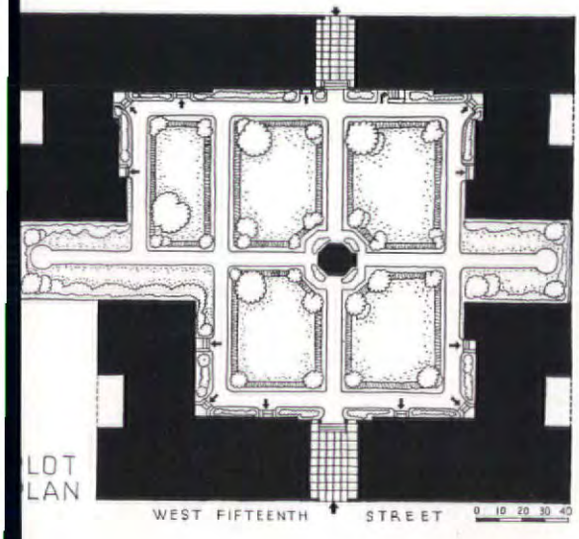


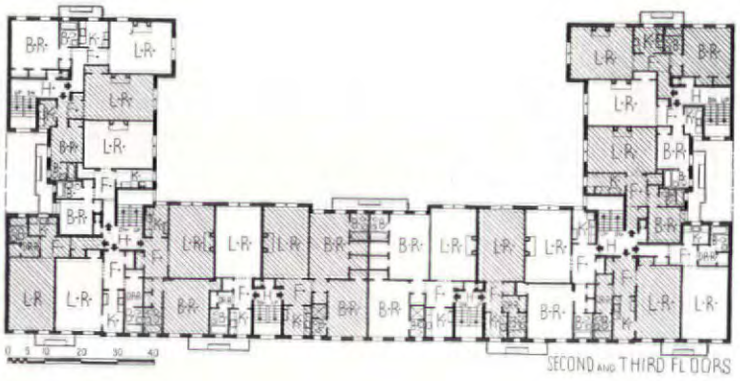
TYPICAL 3 ROOM APARTMENT

PLAN

All apartments are two rooms deep, the arrangement for which the New York City block was originally designed. The great majority of apartments have ample light and cross ventilation. Plumbing is concentrated by the placing of kitchens and baths. The average apartment consists of a living room, bedroom, bath, small kitchen, and foyer.







ONSTRUCTION OUTLINE

TRUCTURE
tructural steel frame, Grand Iron Works, Inc.
LOOR ARCHES
oncrete with wire mesh reenforcing, Barnaby oncrete Corp.
OOFING
arrett specification.
HEET METAL
opper flashing at roof and bulkheads, Chase rass & Copper Co.
ETAL WINDOWS
enestra steel windows—casement type, Detroit teel Products Co. Wooden sash, double hung, Entenman & Son.
LASTER WORK
xterior walls—3 coats Portland Cement stucco, ac-Stone Stucco Co., Inc., application by Gag-no-Indelicato, Inc., with Atlantic Gypsum aster. Interior—plaster on lath and masonry, 3 ats. Red Top wire reenforced insulated lath, S. Gypsum Co., installation by Kingston Lathing Co., Cornerite and rail beads, Youngstown Pressed Steel Co.

TILE WORK
Bathrooms—tile floors and tile wainscot, Cambridge-Wheatley Co., Cincinnati, Ohio, installation by Henry Miles & Sons.

FLOORING
Beech, Sam E. Barr, Inc., Newark, N. J., stained with one coat of Minwax, polished with H. F. Staples & Co., Inc., Medford, Mass., hot process machines.

DOORS
Fireproof doors, Williamsburgh Fireproof Sash & Door Corp.

HARDWARE
Norwalk Lock Co.

PAINTING
Entrance and foyer halls—wallpapered with a Colonial pressed paper, Prager Co., Inc., Worcester, Mass. Interior—sidewalls either stippled or wallpapered with Ar-Be-Tex, painted woodwork, Colonial Paint Co.

ELECTRICAL WORK
Bells, transformers and inter-communicating telephone, Auth Electric Specialty Co., installation by H. H. Schwartz, Inc.

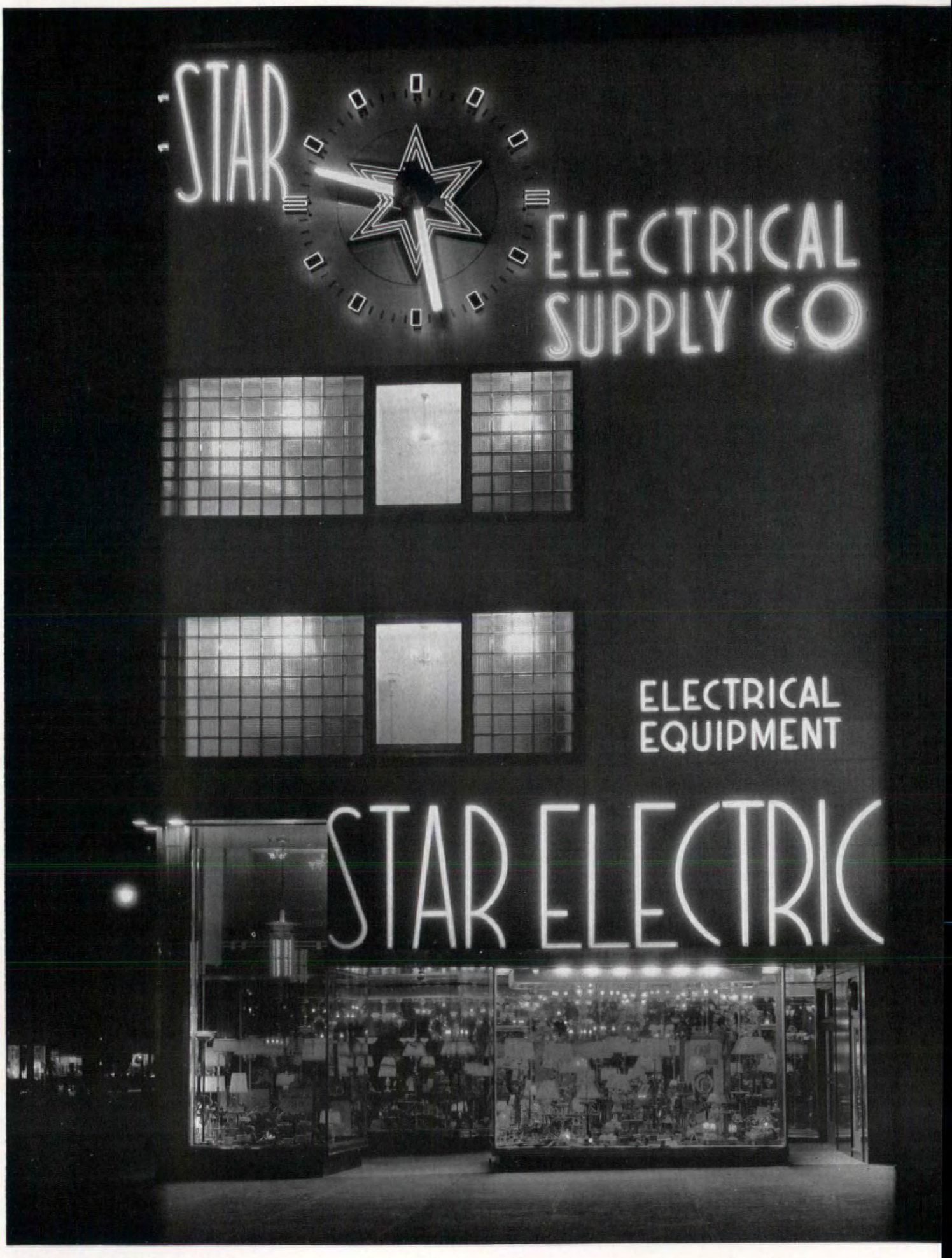
LIGHTING FIXTURES
Fixtures—Standard Lighting Fixture Co., Inc.

PLUMBING
Brass pipe, American Tube Co. Hot water tank, Maxweld Corp. Brass flushometers, Coyne & Delany Co. Bathroom fixtures, Crane Co., installation by Lipsky & Rosenthal, Inc.

HEATING
One-pipe gravity return steam with two Titusville Iron Works boilers and two Whitty Mfg. Co. stokers, Cash Draft Control, Johns-Manville pipe insulation. Radiator airvalves—Russell No. 12, W. A. Russell Mfg. Co., New Britain, Conn. Radiator supply valves—Detroit No. 72, Detroit Lubricating Co., installation by Willner Heating Co., Inc. Radiators, American Radiator Co.

INCINERATORS
Pyroneel, installed by J. C. Rochester & Co., Inc.

STAR ELECTRIC BUILDING, NEWARK, N. J. B. SUMNER GRUZEN
ARCHITEC



John Franke Photos

BEFORE

The superiority, from a merchandising point of view, of the new building over the old quarters of the Star Electrical Supply Co. is well shown by the photographs. The exterior of a building of this nature may be legitimately considered as an advertisement of its merchandise, and the architect, with this in mind, attempted to incorporate as many features as possible that suggested the use of electricity. This idea is expressed with particular force at night when the entire facade becomes a flat sign, with a design consisting of neon lettering, a clock, and brightly illuminated glass brick windows. The show windows have been arranged to accommodate the various types of equipment for sale, with a very high window on the corner for the display of large chandeliers, and a mezzanine for refrigerators, washing machines, and similar apparatus. The jumbled and confusing displays are at considerable variance with the bold directness of the building itself, but the practice of cramming all surplus stock in the show windows is apparently of too long standing in the trade to be corrected overnight. The building is blue in color, with a finish of large terra cotta blocks, and blue is repeated in a darker shade around the windows.

STAR ELECTRIC BUILDING, NEWARK, N. J.

SALES ROOM

FLOOR PLAN

CONSTRUCTION OUTLINE

STRUCTURAL STEEL
Structural steel framing with wood joists. Fireproofing with cement plaster on metal lath.

MASONRY AND STEEL
Exterior—16 x 24 x 4 in. machine finished terra cotta block, powder blue in color, darker blue trim at windows and coping, Federal Seaboard Terra Cotta Corp. Clay and sand lime brick for backing up of exterior terra cotta walls, 4 in. hollow tile in partition separating store from store front.

SHOW WINDOWS AND SASH
Metal sash for show windows is Kawneer Enduro stainless steel sash, also in show window doors which have Corbin cylinder lock with piano hinges. Aluminum sash on second and third floor windows.

GLASS AND GLAZING
Show window plate glass ¼ in. thick, Newark Glass Co., glass by Pittsburgh Plate Glass Co.

STRUCTURAL GLASS AND MARBLE WORK
The glass brick on the second and third floors is the Corning Steuben vacuum glass brick 11¾ x 11¾ x 4 in. with circular corner pieces No. 2205A. Each joint of glass brick has a ⅛ x 1 in. steel bar horizontally. The corner column is faced with Corning Steuben Glass panel No. 2064, 12 x 12 x 1 in.

The bulkheads and piers on the first floor are faced with 2 in. black marble, also entire wall separating store from store front, Alberene Stone Corporation of Virginia.

METAL LATH AND FURRING
Ceilings suspended by steel hangers, purlins, cross furring members and lath, corner beads of metal rail type.

PLASTER
Plaster work on metal lath is 3 coats, on masonry walls 2 coats.

TERRAZZO
The terrazzo floor in the vestibule is dark blue with ¼ in. white metal strips. Numerals are of red terrazzo outlined with white metal strips.

CORNICE
Cornice over show windows of Enduro stainless steel furnished by Republic Steel Corp. and fabricated by New Jersey Claude Neon Corp.

METAL SIGN AND NEON TUBE DISPLAY
Cornices, letters and words "Star Electric" and "Electrical Equipment" are stainless steel with a 2 in. porcelain enamel channel letter on face of "Star Electric," which are 7 ft. in height. The enamel color is burnt orange. The words "Star Electrical Supply Co." are cut 2 in. into the terra cotta face and are in ultramarine blue enameled terra cotta. The clock hands, hour markings and the star and its background are all in porcelain enamel steel with a stainless steel disc hiding the mechanism of the hands. All neon lighting is executed by New Jersey Claude Neon Corp.

INTERIOR FINISHES
The ceilings in the show windows are Formica in a light orange color and that in the vestibule of a dark red. The entrance doors are red Morocco Formica. Tables have black Formica bases and Formica counters, Formica Insulation Co. The ceiling below mezzanine is walnut, the balustrade is faced with Oriental walnut. Display cases are paneled with Oriental walnut or Brazilian rosewood. The base continuing throughout the store and the ceiling scribe molding are made of solid ebonized maple. The staircase has a solid railing of walnut with handrails of ebonized maple. Counters and wall cases of veneered woods by Charnin Architectural Woodwork Co. Wood furnished by U.S. Plywood Co. Gold mirrors on side and rear walls, Semon Bache & Co.

LIGHTING FIXTURES
All stock fixtures furnished by Star Electrical Supply Co.

GENERAL CONTRACTOR: George Seigler Co.

BUILDING MONEY

A monthly section devoted to reporting the news and activities of building finance, real estate, management and construction

CONTENTS

George Nelson

Man of the Month RICHMOND HAROLD SHREVE, A. I. A. (see Page 430)

COMMERCIAL BANKS TRY THEIR WINGS

on home mortgages as the American Institute of Architects offers protection through Housing Chairman Shreve.

THE argument whether commercial banks belong in the mortgage lending business continues with fervor but in a somewhat more academic vein in the face of the fact that they are undeniably in it. The extent to which this is so is surprising when two recent statistics are put together. During the last seven months of 1935, 31 per cent of all U. S. small house construction was financed by FHA-insured mortgages. And of the latter 69.7 was written by commercial banks and trust companies.

Noting this, *Banking*, the official organ of the American Bankers Association, surveyed the country's banks last month to see how bankers were handling this unfamiliar activity, what they were doing to improve construction standards. The results were vastly illuminating. On the average, the nation's bankers were found unusually interested in promoting building revival in their respective communities, only moderately active in safeguarding standards of construction (see chart).

The importance of this revelation was not to be discounted by any interpretation of commercial bank lending as a temporary proposition. The banks have not stepped over from Title I character lending to Title II mortgage lending because of their friendship for FHA. They have done so, fundamentally, as a result of a change in the character of their business. Commercial lending opportunities have been declining for many years, and it is through mortgages that the average bank perhaps can best recoup its profits. The Banking Act of 1935 was taking cognizance of this fact when it provided for mortgage discounting by the Federal Reserve.

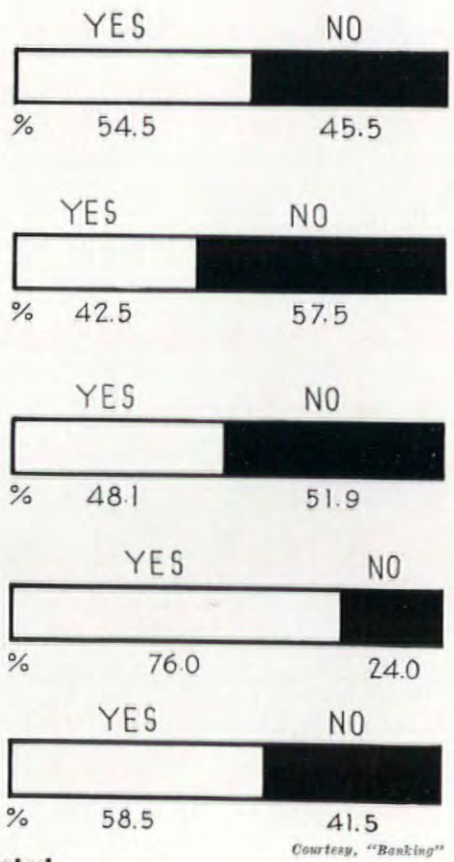
Reaction. It was perhaps because of their pivotal position in the industry that a group of architects was last month first to appreciate this situation, and to act constructively thereon. This enlightened motive, and the further circumstance that architecture has a housing leader keen on every chance to further a fast-expanding small house program, were responsible for an invitation to the A.B.A.

Inviter was the American Institute of Architects' busy housing committee chairman, Richmond Harold Shreve, whose Manhattan firm of Shreve, Lamb & Harmon designed the Empire State Building. In 1934, impelled by the awful argument of slums, he entered as a public service into low rent housing work. Since then, as the U. S. housing problem has become more accurately defined in terms of single-family homes, he has deftly turned his committee's attention from urban, multi-family housing to the more universal one of small houses.

For months Committeeman Shreve has been fighting against professional reticence to promote among the country's architects a small house "clinic" which lenders have welcomed as the key to safeguarded small house lending (ARCH. FORUM, March, 1936, p. 206). This plan, allowing for fee reductions in group action, was worked out in close cooperation with that most experienced group of small house lenders, the building and loan associations. Its promotion locally has been hindered by backwardness both on the part of architects and building and loans. Nevertheless, the Federal Home Loan Bank Board, representing the associations, reported six of these bureaus under way last month in as many cities.

Quite as clear, however, as was this plan's ability to work under practical circumstances, were its limitations in application to one specific class of lender. Partly because last month's A.B.A. disclosures gave fresh impetus to his convictions and partly, it was suspected, with the hope of gaining for his home clinic plan a broader base, Committeeman Shreve put his reactions and a concrete suggestion in a letter to A.B.A.'s President Robert V. Fleming, which was widely circulated in the Press. Gist of it was that in view of the results of the survey, discussions in joint committee between the A.I.A. and A.B.A. might well be held to bring about the kind of cooperation serving best the interests of building, banker and architect alike.

Bid. Acknowledging and complimenting the commercial banks of the country upon the "most significant part which they have played in the present revival of home construction," Committeeman Shreve implied that the only basis upon which such cooperation would continue to profit them



Banker Attitude Toward Building Charted

Courtesy, "Banking"

was one promising a steady production of houses from year to year. Underlying this, he said, was the necessity for producing well-conceived houses whose values would last, a fact implicit in present mortgage lending plans.

"Your member banks have taken a great step," he wrote, "in conducting this new mortgage business on an amortized basis, insuring a steady return of funds loaned. The fact shown in your recent survey that 75 per cent of all banks are now using the amortized mortgage must be gratifying, as it allows for continued reinvestment of these funds in new building. You, as well as those who design and erect houses, are undoubtedly interested in such a steady building program as this would permit.

"Hand in hand with amortization, however, must go the assurance that the house as a product will last its appointed time. In this respect, too, your survey carries a significant message."

Architect Shreve declared he saw the need of some means which would offer lending institutions "direct and personal assurance that the homes on which they lend are built to fit the needs of the family, and of a quality which will minimize upkeep costs and protect resale values."

"Some lending institutions have satisfied themselves in this regard by the requirement that the builder have an architect," Mr. Shreve suggested. "Others have in addition adopted minimum construction standards against which every plan submitted is checked. In still other cases, architects have been retained on a salaried basis by lending institutions for inspection and supervision."

Terming the matter one which "obviously calls for discussion," he declared his committee would "count it a pleasure if at some time in the near future a general discussion of this whole topic could be held with representatives of your organization."

Significance. So direct a move by the staid old American Institute of Architects proved somewhat surprising to the industry last month. But most observers were pleased to see this body take the lead in housing, without an impetus from a Government which for the nonce has grown peculiarly sterile of housing ideas.

While the clinic plan would not be the only topic for discussion between the A.I.A. and A.B.A., it would be the main one. Committeeman Shreve could happily report last month that only seven of the A.I.A.'s 66 chapters were opposed to the plan. Thirty of these have already approved the plan and twelve have organized bureaus (see box). Other topics ripe for discussion: the advantages of lending from plans and specifications; architectural inspection by fee or salary; formulation of minimum construction standards for various sections of the country.

Most serious of all questions was whether the banks would contend that they were receiving adequate protection from the FHA. They have in large part relied on the local offices of FHA for discovery of prospective borrowers, and the appraisal of property, the borrower's credit and his plans. Commitments to lend to operative builders have been general, the checking of plans by the banks in many cases purely cursory. It is thought that the FHA's lifting of foreclosure fears has been the cause of this.

The architects were expected to argue that income from loans, which will always be above that from FHA foreclosure debentures, would be assured when architectural service has fitted homes to local needs, and local supervision had made certain the house was built in the manner intended under the loan. They also had the broader argument that well-designed homes make for better communities, in which stable values will allow continued investment opportunities.

It was hoped that the inauguration of discussions between the two organizations would also lead to banker alignment with local chapters of the U. S. Construction League, with which the A.I.A. is affiliated. Much could be done toward solving vital problems like that of a controlled building program, were such cooperation obtained.

Shreve. When the American Institute of Architects sits in annual session at Williamsburg, Va., first week this month, chief topic will be the development of a small house program. As indicated by the attitude of several of the chapters, some opposition exists to the plan already put into action. But this opposition, mainly resting on the point of fee reduction, was not general enough to signify a split. Split there might have been, however, but for the expert handling of this delicate question by Housing Committee Chairman Shreve. He goes to the convention a popular, well-supported leader of its housing deliberations.

The command of a high professional reputation and his rare ability to pursue an idea to a practical end have made Architect Shreve one of the most looked-to men in Building today. His rise from a professorship at Cornell, through the famed architectural office of Carrere & Hastings in New York, to head of its successor office, Shreve, Lamb & Harmon, is but one phase of his accomplishment. This phase culminated spectacularly in the designing by Shreve, Lamb & Harmon of many a Manhattan skyscraper. Besides the Empire State, for which the firm is most famed, Shreve, Lamb & Harmon designed 500 Fifth Avenue, 60 stories; the Lefcourt National Building, 40 stories; the Insurance Company of North America Building, 25 stories.

Already apparent in the direction of his organization and in his dealings with big clients was Architect Shreve's other propensity to practicalness. Unlike most architects in New York, he is an active member of the Real Estate Board, and also has for years been active in the New York Building Congress. His sensible approach to problems involving more than designing ability was well demonstrated when in 1934 he assumed the chairmanship of the Slum Clearance Committee of New York, successfully pulled tangible results from relief workers in New York's housing program. His switch from skyscraper design to housing is again demonstrating his versatility as an organizer.

STATUS OF THE A.I.A.'S CLINIC PLAN

The small house "clinic" plan sponsored by the Committee on Housing of the American Institute of Architects had won the pre-convention support of 30 of the Institute's chapters by the middle of last month. Its status with the chapters:

Reported but no action	Approved but not organized	Approved and organized	Undecided but not opposed	No report	Opposed
CINCINNATI	BOSTON	ALABAMA	NEW JERSEY	ALBANY	CHICAGO
DETROIT	CENTRAL NEW YORK	BALTIMORE	RHODE ISLAND	ARKANSAS	DAYTON
MADISON	COLORADO	BUFFALO	SO. GEORGIA	CONNECTICUT	HAWAII
MAINE	EASTERN OHIO	CENTRAL ILLINOIS	SO. TEXAS	IOWA	NORTHERN CALIFORNIA
SANTA BARBARA	FLORIDA CENTRAL	CLEVELAND	WASHINGTON (STATE)	KANSAS CITY	PHILA.
	FLORIDA NORTH	COLUMBUS		KANSAS	SOUTHERN CALIFORNIA
	FLORIDA SOUTH	DELAWARE		NO. CAROLINA	ST. PAUL
	GEORGIA	KENTUCKY		NO. TEXAS	
	GRAND RAPIDS	MINNESOTA		NORTHWESTERN PENNSYLVANIA	
	INDIANA	NEW YORK		OKLAHOMA	
	LOUISIANA	WASHINGTON, D. C.		SCRANTON	
	MISSISSIPPI	WISCONSIN		SO. CAROLINA	
	MONTANA			ST. LOUIS	
	NEBRASKA			TENNESSEE	
	NO. LOUISIANA			VIRGINIA	
	OREGON			W. VIRGINIA	
	PITTSBURGH				
	SAN DIEGO				
	SO. PENNSYLVANIA				
	TOLEDO				
	UTAH				
	W. TEXAS				

MINIMUM HOUSES BY FHA

cost only $1,300 to $2,500 to build, yet provide every essential service for the average family.

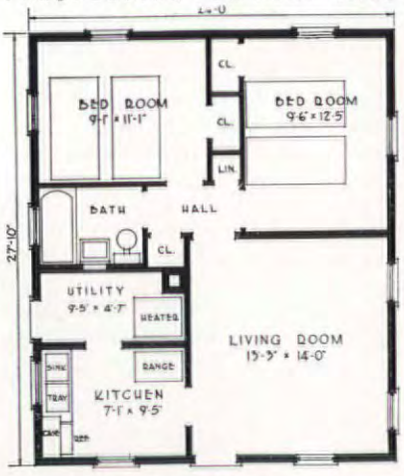
In an effort to show how adequate housing, stripped of frills, yet practically planned and equipped, can be produced at relatively low cost, the Federal Housing Administration has produced five notably simple plans for houses of from $1,300 to $2,500 in price. Last month FHA gave newshawks a look at these houses prior to their publication in a bulletin titled "Principles of Planning Small Dwellings."

Costs were based upon neither trick construction methods nor large scale production. In all cases estimates were made for construction in the Washington, D. C., territory. Prices would vary slightly with construction costs in other localities. The variations given occur because of the type of foundation used; in each of the plans below, the top price permits the construction of a basement.

Standard lengths of lumber are used, and the windows are stock sizes. A single plumbing stack serves both the kitchens and the baths. Usual plumbing fixtures and hot-air heating are included, but no provision is made for refrigerators. The interior walls are of wallboard, and while the exteriors are designed for lumber, the houses may be of brick, cinder block, stucco, or stone as desired.

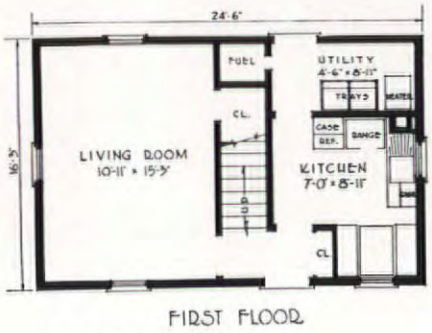
Designed for families of three or four persons, two of the houses are one-story and three are two-story. All are easily convertible into semi-detached units. The houses can be built anywhere, but locations in the outlying sections of cities and towns where land is cheap and where sewer and water connections are available are recommended. Because of the high cost of providing adequate sanitation, the savings effected by erecting the houses upon very cheap rural lots would be lost.

PERSPECTIVE FOR PLAN BELOW



$1,300 to $1,700

$1,700 to $2,000



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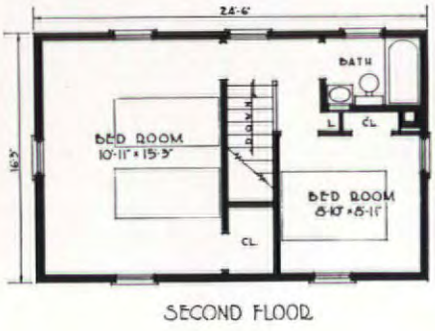
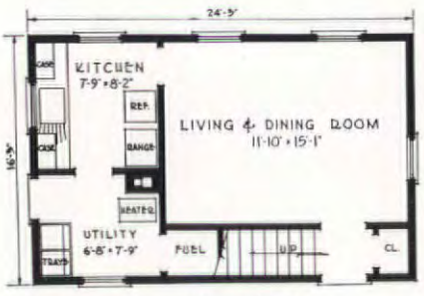


SECOND FLOOR

$1,700 to $2,200



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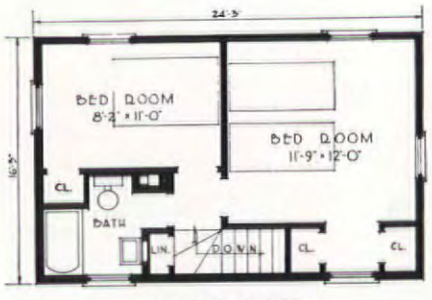

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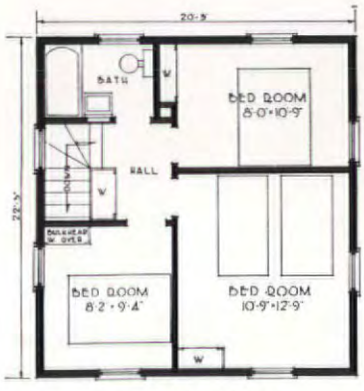
$1,700 to $2,200



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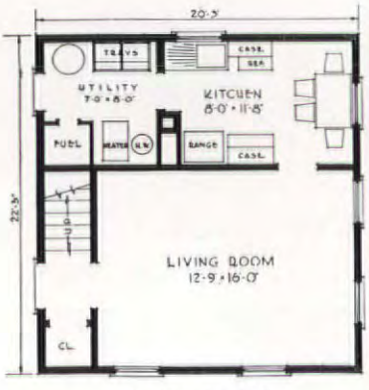
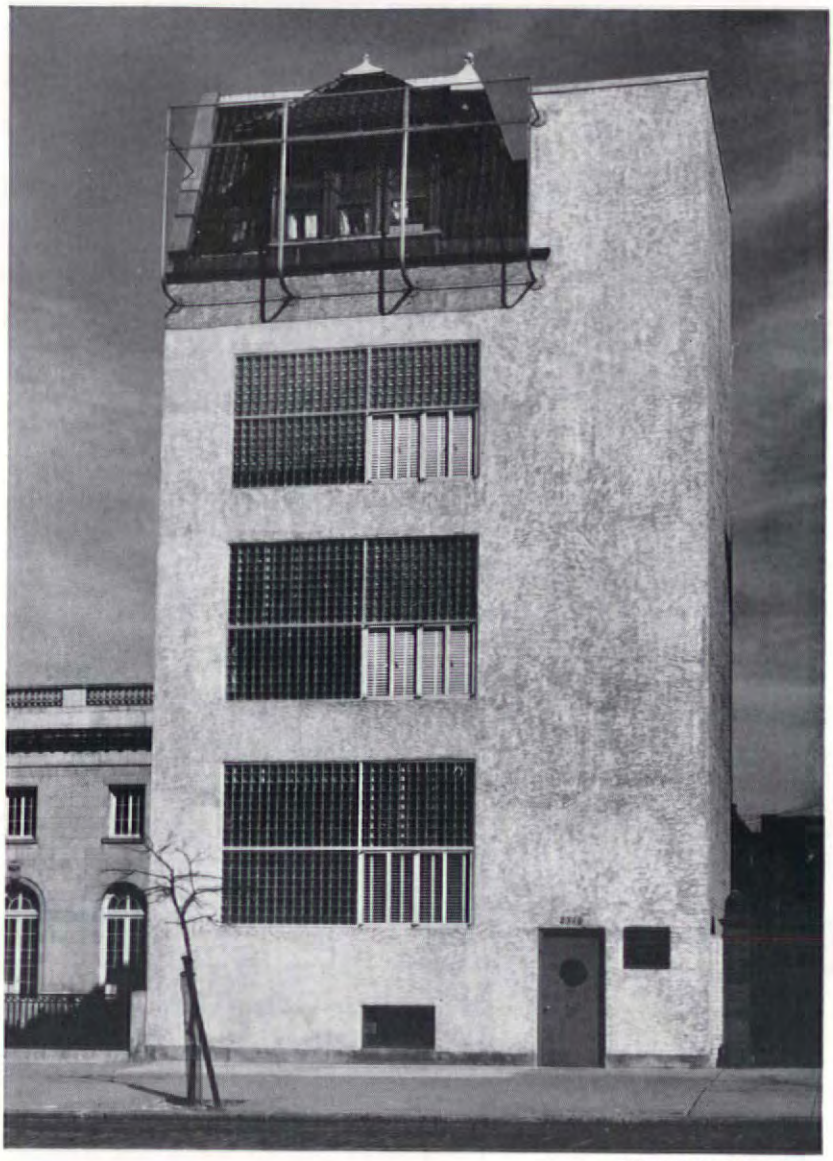


FIRST FLOOR

$2,200 to $2,500

A Residential Relic into Modern, Glass Brick Offices

BEFORE



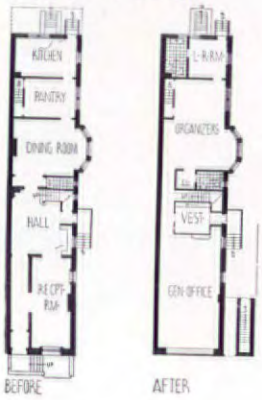
Elizabeth R. Hibbs Photos

The banker's traditional aloofness toward modern architecture is disappearing. And the reason is plain: it is economical. Philadelphia's Western Savings Fund Society secured remarkable results in this instance for the $11,000 spent. Its front re-shored in glass brick and its interior completely remodeled, an old Broad Street mansion which the bank had acquired now houses the offices of the American Federation of Hosiery Workers. When the budget ran too low to provide for the removal of its ancient mansard roof, Architect Oscar G. Stonorov added a note of humor by veiling it with an ivy trellis. Mortgage at foreclosure, $12,000; taxes, $694; rents before remodeling, none. Cost of remodeling, $11,787; rent after remodeling, $2,100.

COSTS

Carpentry	$ 1,577.51
Lumber and nails	487.04
Hardware	169.53
Masonry	1,049.78
Demolition	228.75
Electric work	416.94
Heating and plumbing	1,734.52
Hardwood floors	255.00
Plastering	1,027.99
Residence casements	372.00
Glass	208.75
Roofing	419.10
Tile	59.84
Painting	665.00
Ornamental iron	421.87
Linoleum	129.00
Structural glass	400.00
Millwork	193.66
Lintels	28.00
Grading	28.00
Window cleaning	16.00
Insurance	86.77
Misc. expenses, permit, etc.	61.27
Total, excluding architect's fee	$10,036.32

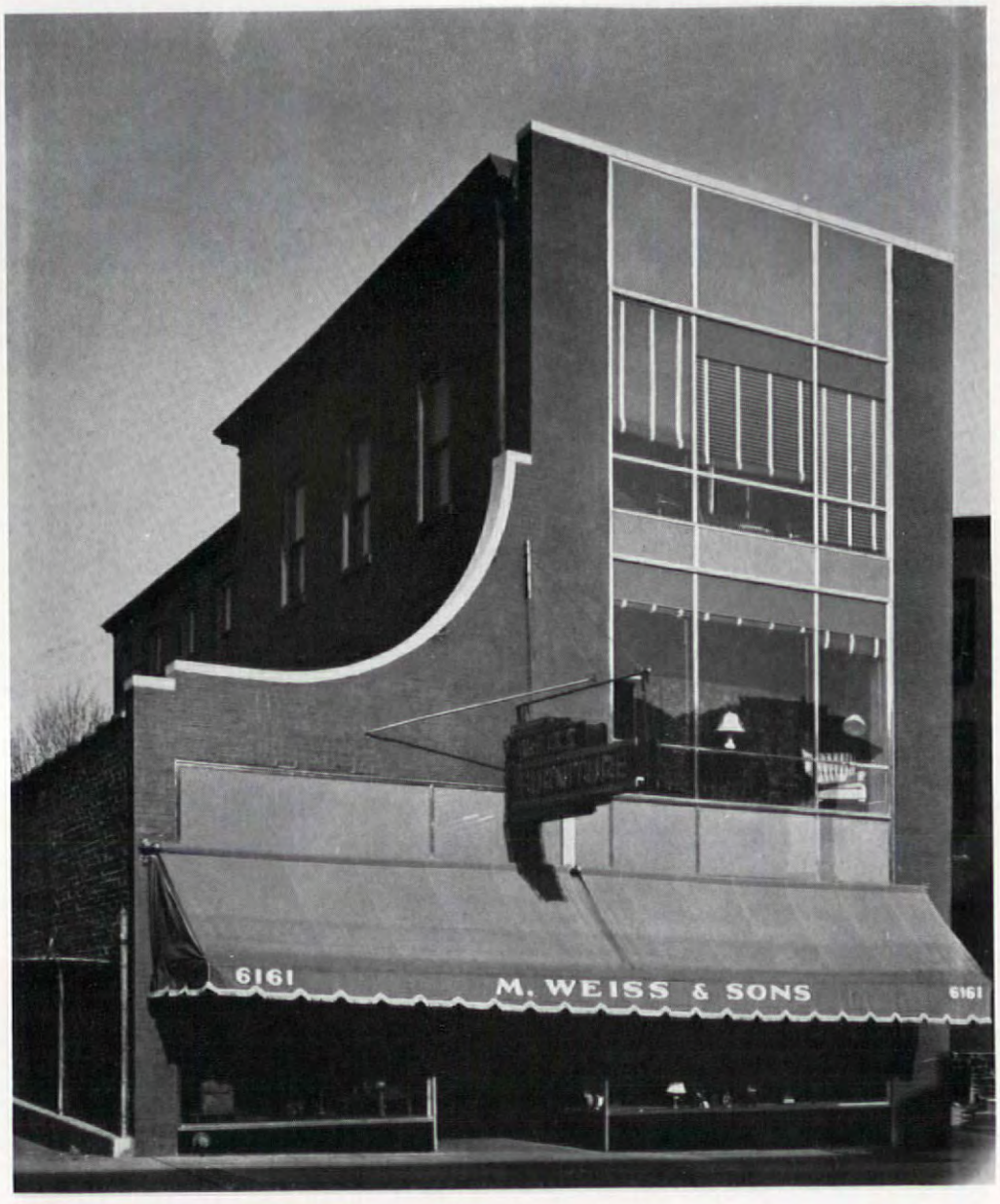
FIRST FLOOR



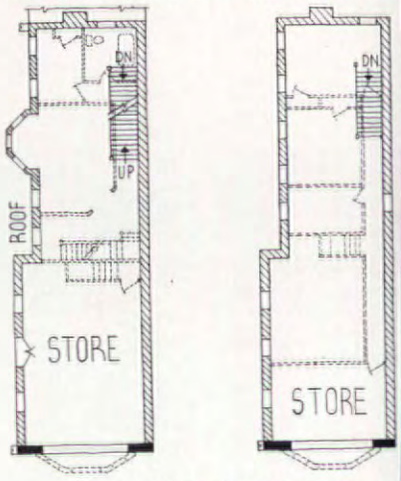
SECOND FLOOR

THIRD FLOOR

A Trim Store Replaces Old Flats in a Leasing Coup



SECOND AND THIRD FLOORS



FIRST FLOOR

In this complete transfiguration the Philadelphia Saving Fund Society sagely recognized the possibilities of the former old flats (right) as a home for a large commercial tenant, then followed out Architect Edmund B. Gilchrist's plan to provide the necessary space and a pleasing facade of brick and green Vitrolite. It thus upped income from a 4.7 per cent deficit to a 4.6 per cent net yield, secured a thoroughly salable building. Assessed value before remodeling, $30,000; carrying charges, $866; rents before remodeling, none. Cost of remodeling, $9,585; rent after remodeling, $2,300.

COSTS

Demolition	$ 150.00	Metal ceiling	$ 200.00
Excavation and stone masonry	700.00	Electrical work	600.00
Brickwork	1,000.00	Glazing	850.00
Concrete and cement	400.00	Plumbing and heating	1,200.00
Cast stone	100.00	Painting	475.00
Carpentry, lumber and millwork	1,885.00	Roofing and sheet metal work	100.00
Hardware	100.00	Tile work	50.00
Stairwork	350.00	Sprinkler system	375.00
Structural steel	700.00		
Plastering	350.00	Total	$9,585.00

A New Deal for the Merchant Who Lives Upstairs

Architect Gilchrist and the Philadelphia Saving Fund Society used the same technique here as in their furniture store (see opposite page). Keeping to simple lines and good proportions netted them an excellent result at a cost of $3,800. This expenditure changed a deficit of 3.1 per cent to a yield of 4.8. Improvements by the neighboring buildings forced the job's extension to the building line. The brick is glazed black and the white material separating the windows is Transite. Mortgage at foreclosure, $5,000; carrying charges, $209; rent before remodeling, none. Cost of remodeling, $3,821; rent after remodeling, $780.

COSTS

Metal windows	$ 107.00	Linoleum and monotile	$ 53.00
Electrical work	116.27	Tilework	24.50
Plastering	190.00	Millwork	253.00
Glazing	135.00	Structural steel	60.00
Roofing	66.50	Hardware	63.50
Painting	290.00	Carpenter work	1,155.00
Plumbing and heating	617.00		
Brickwork	666.00	Total	$3,821.77
Cast stone	25.00		

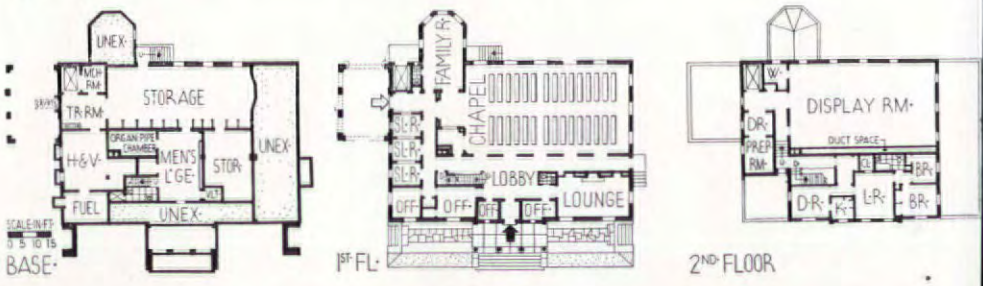
An Undertaker's Establishment from an Outmoded House

United Photo Shop

The undertaking business, like every other, must rest on profit. The John A. Beck Co. of Bloomington, Ill., profited on its capital investment in this $48,896 plant by building it upon the timbers of a large old Bloomington residence. The cost includes an elevator, air conditioning, architect's fee, walks and drives, landscaping. By using the old foundation walls, some of the floor construction, half of the exterior walls and all of the roof construction, Architect Edgar E. Lundeen saved the company 14 per cent of the cost of building anew.

BEFORE

AFTER



ENTRANCE HALL

FAMILY ROOM

Oberkoetter Photo

A $200,000,000 REPAIR BILL

is left in the wake of the East's March floods. Notes on the damage in Hartford and Pittsburgh.

In mid-April, month after waters rose and fell in perhaps the worst general flood that the Northeast section of the U. S. has ever experienced, reconstruction had only started on what was probably a $200,000,000 job for building. Observers in the industry thus placed probable building repairs at somewhat less than half the original estimate of $500,000,000 in total damages of every kind. It was figured that actual building damage had equaled easily half of whatever damage was done, but that reductions were in order for two specific reasons.

First, doubt existed that actual damages, especially to building, had equaled estimates made at the flood's height. A Georgia tornado intervened last month, whose damage was quick and precise; it clipped down 3,200 homes and left no doubt behind as to their destruction. Floods, on the other hand, may have appeared more destructive to building than they were in actuality.

In addition, observers were not willing to admit that repairs would equal actual damages, particularly in southern Pennsylvania where an inactive mining industry has reduced both incomes and populations.

A survey by THE ARCHITECTURAL FORUM in Hartford and Pittsburgh, the two largest centers affected, found figures scarce on contemplated repairs. Particularly in Pittsburgh, where damage was spread out over a large area, estimating proved difficult; Pittsburgh's newspapers gave up their surveys. In both cities large industries balked at giving out figures, fearing to excite stockholders.

Hartford. The Open Shop Building Council estimated that repair work would last until June 1, would total $1,500,000, a million of which would be expended for materials. Roughly 5,000 buildings were flooded, 2,000 of which were homes.

A breakdown of the figures for repairs to residential and commercial property showed residence damage outtopping commercial, $650,000 to $400,000. The residential estimate was made on the basis of a $330 average figure for repair loans being made. It included 50 demolitions at $600 per building and 600 cases of structural repairs, mostly to chimneys and foundations, at $200, in addition to general expenditures for redecoration, cleaning, plastering, repairs to lighting, heating and plumbing. The commercial figure included the expenditure of $100 per building in Hartford's foreign quarter, and $100,000 in all, in its main business section.

The housing problem diminished in acuteness as the number of shelterless persons, once at a peak of 20,000, dropped to 300. Business mopped up, replaced plate glass in great quantities, painted, restocked. New fixtures and store-fronts were out of the question, however, for the type of small business man struck in Hartford.

Active in supplying credit was the Hartford Clearinghouse Association, with $300,000 subscribed for character lending by individuals willing to take a 33 per cent loss on principal.

Close-Ups: The Hotel Bond (Hartford's largest) ferried guests to and from the railroad station. The guests embarked and landed half way up the stairs to the mezzanine in the hotel lobby . . . A large manufacturer of dental supplies successfully calked the flood out of his basement by sealing the windows with dental wax, was later foiled by overflowing toilets.

Pittsburgh. While at one point Pittsburgh's Chamber of Commerce set the damage at from $100,000,000 to $150,000,000, observers were not even inclined to guess last month at damage figures, let alone repairs. The City Planning Commission counted 6,519 flooded homes in Pittsburgh proper; 79,044 throughout Allegheny County. However, it was impossible to draw an estimate of residential damage done, or of repair work contemplated, with these as the only basis.

Largest commercial expenditures were being made by department stores, hotels and theaters in the Golden Triangle district. Office buildings for the most part escaped serious expenditures, aside from pumping and cleaning costs. A partial list of big damage toll:

Horne, Rosenbaum and McCreery stores	$2,500,000
Roosevelt Hotel	58,000
Mayfair Hotel	25,000
Keystone Hotel	60,000
Fort Pitt Hotel	50,000
Loew's Penn Theater	300,000
Stanley Theater	250,000
Alvin Theater	200,000
Barry Theater	25,000

Homeless refugees numbered 1,000 last month, representing a drop from approximately 72,000. Several hundred persons were being accommodated in shelters provided by city authorities. Others were temporarily doubled up. Few material ill effects remained in Pittsburgh business streets. Small merchants were reopening their doors with surprising rapidity. Walls were still too wet to repaint, but business went ahead apace.

RFC was surprised when out of 250 applications for small loans none was from industrial plants, but all from small butcher and baker fry, which could not satisfy it with collateral. Forthwith it withdrew from Pittsburgh.

Close-Ups: Electricians were greatest in demand, cabinet makers next, plasterers next, painters last. Plasterers and painters expect sustained business for months to come. . . . Perhaps Pittsburgh's busiest building manager during the flood was popular young Francis McIlhenny Stiffler, a one-time newshawk who for four months has been manager of the Henry C. Phipps properties in the Golden Triangle. Six Phipps buildings were in the path of the flood . . . Architects Janssen & Cocken were the only architects known to have secured a job as a result of the flood—a new interior for the Joseph Horne store.

International

Muck in Home and Store

Wide World

NEW ROW HOUSES FOR OLD

A demonstration in row-scourged Philadelphia that better row housing can be built, at no sacrifice to economy.

For decades, Philadelphia has prided itself upon its pre-eminence as a city of owned-homes, yet sanctioned the scourge which makes it such: its horrendous row houses. For it is upon the simple economy of the party wall that the city's home pre-eminence was built. Yet a way out of this ignoble situation appeared last month, as a lending institution, a builder and an architect in Philadelphia forcibly demonstrated that houses immeasurably better than the old monstrosities could be built without a sacrifice either to row house economy or legitimate profit.

This demonstration resulted from a unique collaboration between Colonial Title Co., a Pennsylvania Co. subsidiary, and a veteran builder of row houses named George H. Weinrott. It was through a semipromotional organization conceived by Builder Weinrott that the houses were finally built. Inspired by the National Housing Act after five years of idleness, short, expostulative Builder Weinrott had organized among builder and lending friends a Better Housing Institute to promote Title I lending. Before the FHA assumed its own local promotional work, this agency rendered able public service.

Under Title II, Builder Weinrott, in league with Colonial Title Co., a BHI collaborator from the first, saw his chance to do another promotion job of a semipublic character. With Colonial Title's William M. West he worked out the details for an unusual new row house development, to demonstrate to other builders what could be done under FHA. Immediate problem was to stem an interest loss of $756 and a tax loss of $650 on a pre-crash investment of $12,600 in a North Philadelphia tract by Colonial Title.

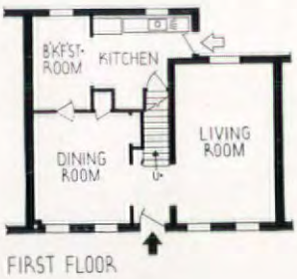
Securing FHA approval, BHI tackled its Title II experiment in cooperation with Colonial Title with a vim. Enlisting the aid of Fleisher & Stephens, Architects, it registered its greatest coup by building its houses 30 ft. wide instead of the usual 16. To many a buyer this extra frontage alone would have doubled these homes in value. In addition, the houses were held to a restrained design, staggered pleasantly. A plan incomparably better than the traditional row house plan was evolved.

Sixteen houses in all were built at a cost of $84,470, to sell at $5,400 each. When sales lagged, the sponsors decided to rent them for a period of time rather than to sell them. They are currently 100 per cent rented at $50 apiece, or $6.25 per room per month. Return to BHI is $6 a month per house, or $1,152 annually, after payment of $44 upon the Colonial Title mortgage. And Philadelphia builders have good reason to believe that there is ample profit in a better product.

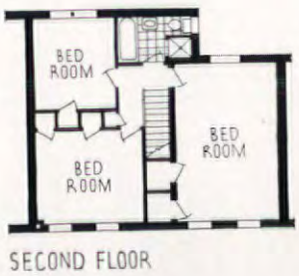
P. B. Wallace Photo

Twice as many persons as necessary were crowded into houses easily twice as bad in the typical old Philadelphia row house job (right). There was no light, except at front and back (see typical floor plan, right). Below, Better Housing Institute's neat job in plan and interior photographs.

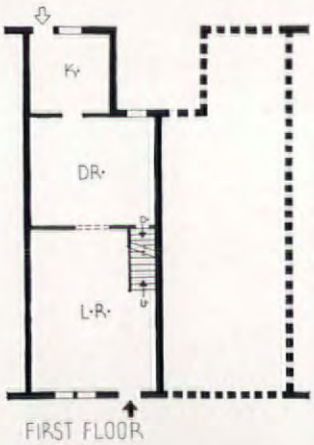
BASEMENT



FIRST FLOOR



SECOND FLOOR



FIRST FLOOR

P. B. Wallace Photos

What paint will best protect this HOME-TO-BE?

National Survey* shows that 68% of leading architects specify PURE WHITE LEAD in Oil for exterior painting

**Impartial survey made by Forest Products "Better Paint Committee"*

ADDED RESPONSIBILITY

Architects know that their job isn't finished when a house leaves the drawing board. It's up to you to make sure that quality materials go into its building. Eagle Pure White Lead in Oil has proved in test after test that it's the longest-wearing, most economical paint an architect can specify.

NO CRACKING • NO SCALING

New, experimental paints have flooded the market during the past few years. But Pure White Lead in Oil is still first choice of architects. Eagle Pure White Lead has proved over 90 years that it gives maximum protection against paint failures —cracking, scaling, excessive chalking.

CONTRACTORS APPROVE

There's no argument with building contractors when the paint you specify is Eagle Pure White Lead in Oil. Contractors know from long experience that white lead gives a longer-wearing, more satisfactory job. It's the paint they prefer to use.

Eagle

pure WHITE LEAD

CHOICE OF GOOD PAINTERS SINCE 1843

THE EAGLE-PICHER LEAD COMPANY, CINCINNATI, OHIO

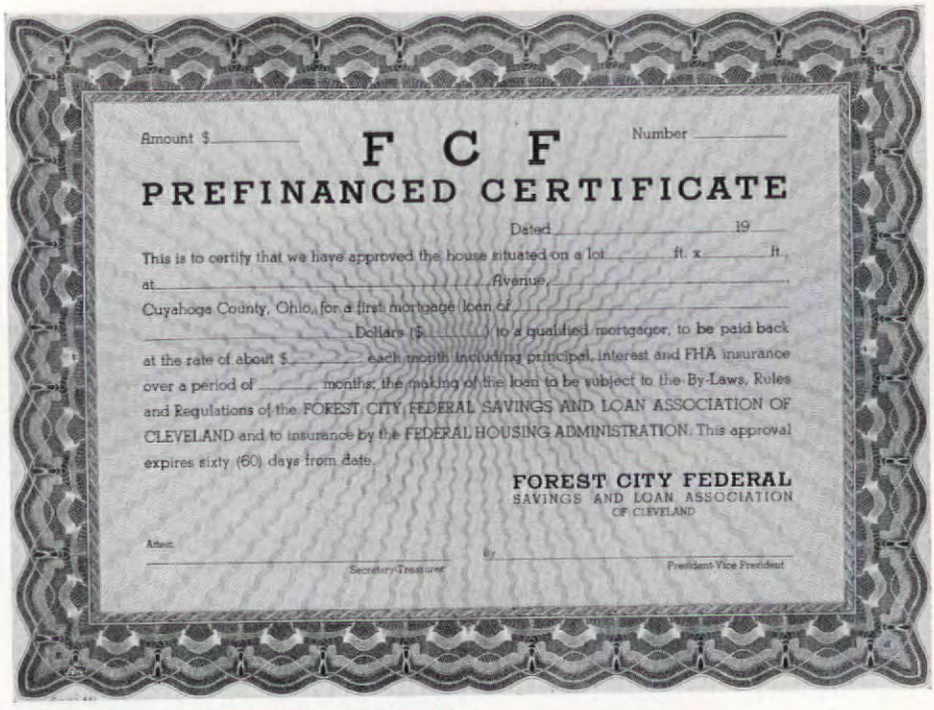
ADVANCE FINANCING

is undertaken as a business producer by a Cleveland lender.

A UNIQUE plan to stimulate the sale of existing houses and to increase profitable lending was put to work last month by Cleveland's Forest City Federal Savings and Loan Association. Called prefinancing, it involved the making of advance commitments upon houses listed for sale.

In a bid to local realtors, Forest City offered to make a free appraisal at the invitation of any owner or his agent, and thereupon to issue a certificate stating just what it would lend in the event of sale (see cut). Qualification under Federal Housing Administration regulations and the association's credit rules are the only requirements to be made of buyers. Owners and realtors armed with such certificates, stating concisely the source and terms of credit, will naturally have an effective selling weapon. Prevention of loan shopping and the elimination of attempts at over-optimistic financing were listed as general advantages of the plan.

Prefinancing was evolved by Forest City's keen-minded president, Carlton Schultz, Cleveland realtor nationally known for his professional contributions particularly in the field of building management. The form of his certificate is copyrighted; not so the general scheme, which any lending institution might well adopt.



Amount $_____ Number _____

F C F

PREFINANCED CERTIFICATE

Dated _____ 19____

This is to certify that we have approved the house situated on a lot _____ ft. x _____ ft., at _____ Avenue, _____, Cuyahoga County, Ohio, for a first mortgage loan of _____ Dollars ($_____) to a qualified mortgagor, to be paid back at the rate of about $_____ each month including principal, interest and FHA insurance over a period of _____ months; the making of this loan to be subject to the By-Laws, Rules and Regulations of the FOREST CITY FEDERAL SAVINGS AND LOAN ASSOCIATION OF CLEVELAND and to insurance by the FEDERAL HOUSING ADMINISTRATION. This approval expires sixty (60) days from date.

FOREST CITY FEDERAL
SAVINGS AND LOAN ASSOCIATION
OF CLEVELAND

Attest _____ By _____

Secretary-Treasurer President-Vice President

Forest City's Prefinancing Certificate

IT'S NEW...

It's a necessity....

IT'S NON-COMPETITIVE...

There are Customers waiting

THAT'S FRONT PAGE NEWS!

THE NU-BIDET is the newest and greatest improvement in bathroom fixtures in the past twenty-five years.

The Nu-Bidet is a thoroughly modernized Sitz Bath . . . and more. It has four distinct uses:

Sitz Bath for personal hygiene and treatment of rectal disorders.

Spray for same purpose and for feminine hygiene. Attachment for douche and enema entirely eliminating the old rubber bag method.

The Nu-Bidet is a complete unit of toilet seat, bidet and lid. It replaces the regular toilet seat and lid; is equipped with hot and cold water; completely installed on any standard toilet in two hours.

The Nu-Bidet is as necessary to personal hygiene as a tooth-brush or the bathroom itself. It is an excellent and extremely smart bathroom accessory both for new building and remodelling jobs. The roster of the finest homes, hotels and hospitals which have ordered the Nu-Bidet, is a cross-section of the "Who's Who of America."

The Nu-Bidet is as new as the latest edition of your newspaper and contains just as much news, from a human interest standpoint. It will give you the reputation of offering the best of the new things first.

To this you may add the advantage of sponsoring a totally non-competitive accessory, at a moderate price, which converts the ordinary bathroom into one that is thoroughly hygienic.

Return the coupon right now while you are thinking about it and full information will be sent. No obligation.

KLEENSAN CORP., 341 PARK AVE., NEW YORK, N. Y.
Please send me full information regarding the Nu-Bidet.
F

Name_____

Address_____

City and State_____

The Nu-Bidet

KLEENSAN CORPORATION • 341 Park Avenue • New York

80% FUNDS FOR 5 STATES

is the goal of General Discount Corp., new Detroit lender.

FANWISE out of Detroit last month a newcomer among lending institutions was rapidly extending its lending radius to include the States of Michigan, Wisconsin, Illinois, Indiana and Ohio. With the rather unimaginative name of General Discount Corp. but colorfully sponsored by a former aide of Henry Ford, it planned to establish a source of 80 per cent mortgage money in every town and hamlet of the region.

Already one of Detroit's biggest FHA lenders, General Discount but recently received its FHA approval, has secured loans by dint of aggressive tie-up work with Detroit realty offices. Spurring its expansion is its hope of whopping business as correspondent and dealer under the newly conceived First Home Plan scheme to issue certificates against FHA mortgages (ARCH. FORUM, April, 1936, p. 378). Disclaiming this as its sole inspiration, however, the company by last month had established sixteen outposts throughout its five-State territory, and was hunting more.

General Discount Corp. was pieced together out of two old automobile and mortgage finance companies, Republic Finance Co. of Indiana and Federal Discount Corp. of Michigan, in 1932. In 1933, when Frank L. Klingensmith, former vice-president and treasurer of the Ford Motor Co., became its head, its automobile loans were segregated under a separate company. While the latter reentered automobile finance, General Discount sat tight, nursing a $2,000,000 foreclosed realty account.

Decision to resume lending was made late last year. Into the expanding company President Klingensmith drew many an employe from the local office of FHA. Dewey Bullock, a wizard on Government-in-mortgages, he put in active charge of mortgage lending. The company's home office, in Detroit's tall Barlum Tower, is managed by F. Phillip Sadowski. Its only branch office is in Milwaukee, under H. M. Wade, former Associate State Director of FHA for Wisconsin. To the number of correspondents throughout the company's territory there will be no limit.

In a row over policy, Frank Klingensmith quit the Ford Motor Co. in 1922, after sixteen years of service as its head financial man. During these years of great growth for the company he was Mr. Ford's closest adviser, is highly respected and admired in Detroit. A man of 58, he lives quietly with his wife and three children in exclusive Bloomfield Hills, enjoying golf and his acquaintances. In General Discount Corp. he undertakes his first big business venture since his association with the Fords.

"ELECTROLUX ASSURES LONG SERVICE AT LOW COST"

Building owners report

TWIN CITY DEVELOPMENT CO., INC.
1334 FORTY EIGHTH STREET
BROOKLYN, N. Y.

March 4, 1936

Kings County Lighting Company
6740 Fourth Avenue
Brooklyn, N. Y.

Dear Sirs:

We have always found that it is good business to place the welfare of our tenants first in the choice of equipment for our buildings. We believe that our apartments reflect this attitude. And this was one of the big considerations in our choice of our first Electrolux Refrigerators seven and a half years ago for our 19 Apartments at 801 - 72nd Street.

The silence and low cost to run of the gas refrigerator were two features which we knew would add to the satisfaction of our tenants. Furthermore, it seemed to us that a refrigerator with no moving parts should offer a very minimum of service interruptions with a resulting small cost of maintenance. In addition, we had the assurance of your Company's dependable service should we ever need it.

On every point, the performance of the Gas Refrigerator has justified its choice. Tenants have had continued low operating cost with our 18 Electrolux installed more than seven years ago. These refrigerators continue to be as efficient and silent as when we put them in. And you know what low maintenance we have enjoyed during these years.

Since our first purchase of Electrolux, we have installed it in every building we have built. Today, we have a total of 255 Gas Refrigerators in our six apartment buildings, and I can heartily recommend this refrigerator to any builder or owner.

Cordially yours,

TWIN CITY DEVELOPMENT CO., INC.

Louis Levine

Louis Levine,
President

LL:HP

Read the experience of Mr. Louis Levine—president of Twin City Development Co., Inc.—with Electrolux during past 7½ years

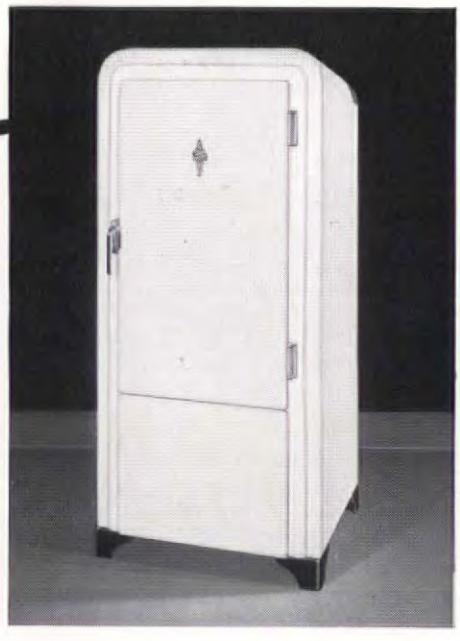
BEHIND the choice of Electrolux for more and more apartments and homes every year lies a record of performance—of *lasting efficiency*—that is important to any refrigerator buyer.

This record is based on the experience of builders and owners who have been equipping their properties with this modern gas refrigerator since 1927, when it was first introduced. They report that even their earliest Electrolux Refrigerators—now 7, 8 and 9 years old—continue to give the *same* dependable, low-cost service they did when new!

Tenants, too, are enthusiastic about the gas refrigerator because of its *continued* low running cost and *permanent* silence. The long-life, money-saving advantages of Electrolux are the result of a *different*, simpler refrigerating method. A tiny gas flame takes the place of all moving parts . . . circulates the simple refrigerant without noise, force or wear.

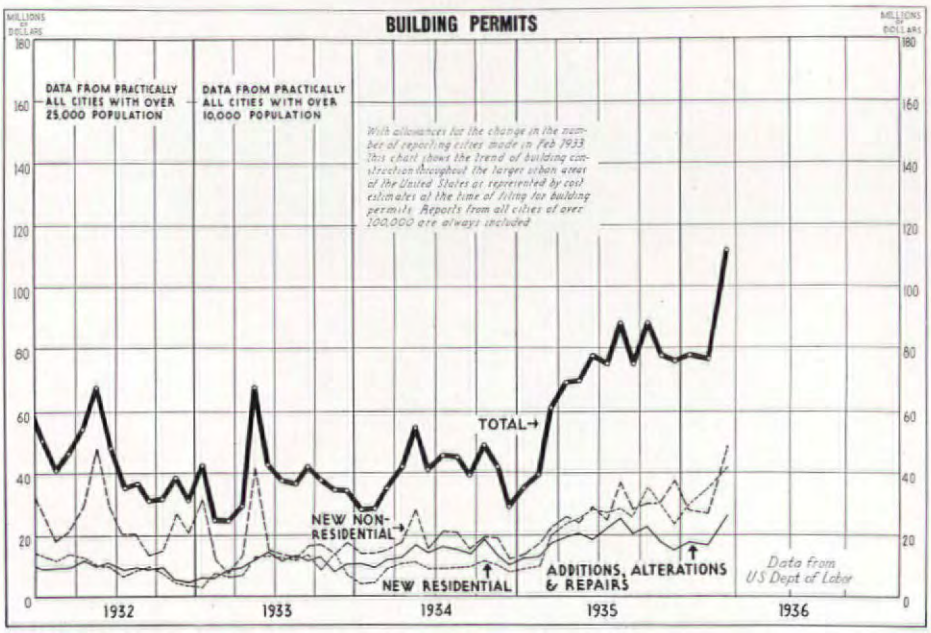
Talk to any user about Electrolux! Or see your local gas company. Get all the facts before choosing your *next* refrigerators! Servel, Inc. Electrolux Refrigerator Sales, Evansville, Ind.

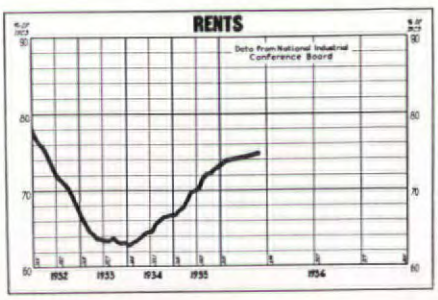
New Air-Cooled **ELECTROLUX**
THE SERVEL *Gas Refrigerator*

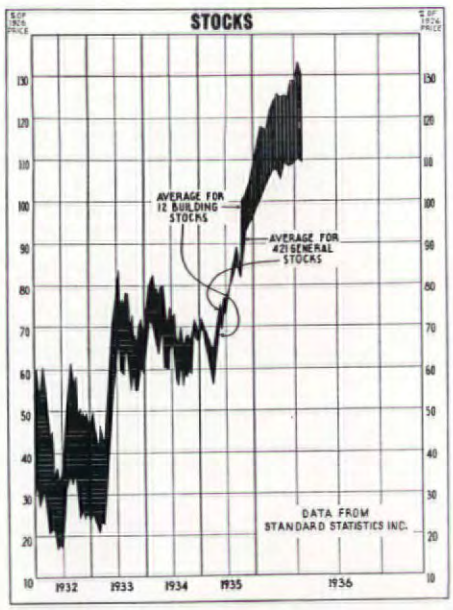


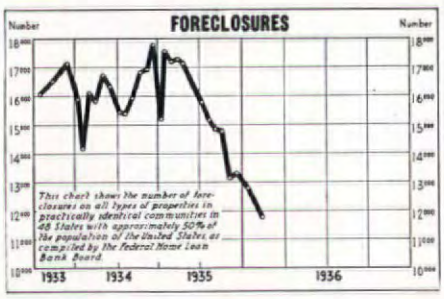
PERMITS HIT RECORD HEIGHTS

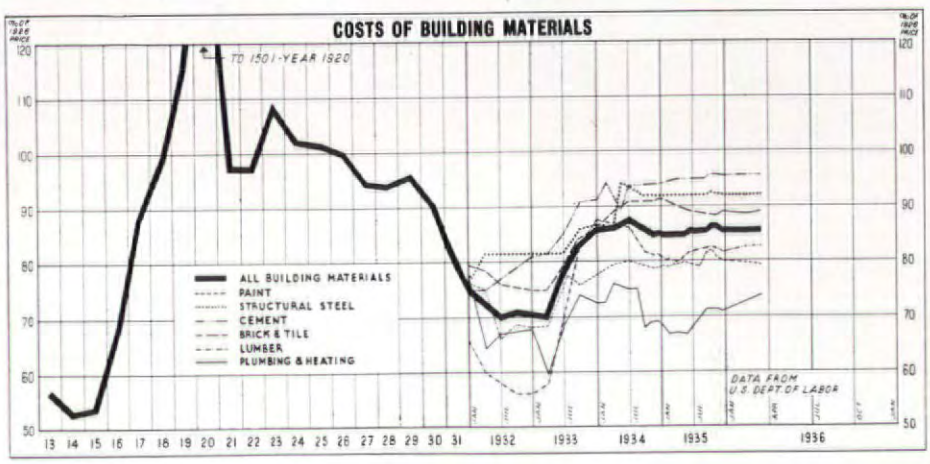
All building types gain in March. Rents up with costs steady; foreclosures off. Stocks at 132 per cent of normal.



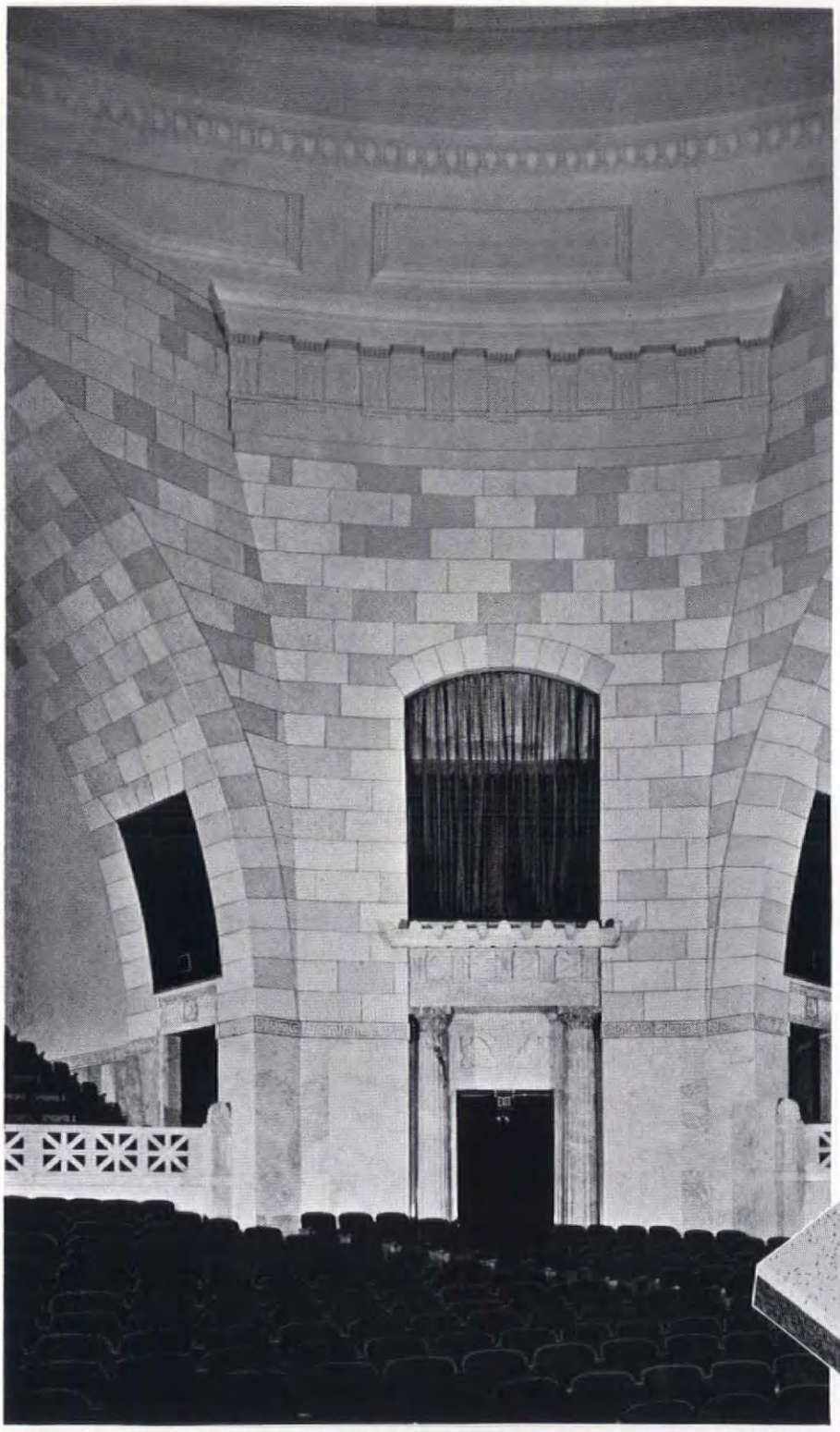








Here's an acoustical material that *decorates*



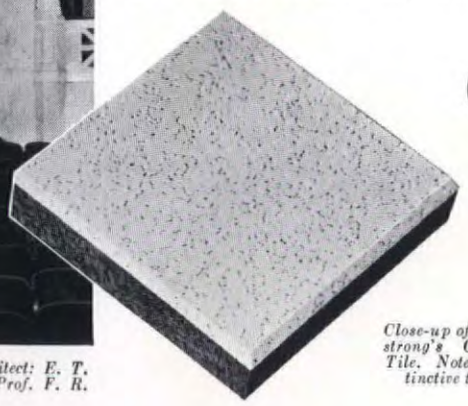
18,000 *sq. ft. of Armstrong's Corkoustic in Louisville Memorial Auditorium, Louisville, Ky. Architect: E. T. Hutchings reports that Corkoustic "vastly improves hearing conditions." Acoustical consultants: Prof. F. R. Watson and Dr. Paul E. Sabine, General Contractor: H. G. Whittenberg.*

Armstrong's Corkoustic provides an attractive interior finish for any type of building

NOW you can decorate and correct acoustics with one material . . . Armstrong's Corkoustic.

Armstrong's Corkoustic is made of sound-absorbing cork particles and has a pleasing texture resembling travertine. It is furnished in individual tiles of white, ivory or buff—also special colors to order. Tiles are easy to apply and may be washed or repainted without destroying their acoustical properties. And in addition to high sound-absorption (61% at 512 cycles), Corkoustic has insulating qualities of special value in air conditioned areas. It has high light-reflection properties and is fire-retardant too.

It will pay you to investigate Armstrong's Corkoustic for your next acoustical job. For more complete information, see Sweet's or write, on your letterhead, to Armstrong Cork Products Company, Building Materials Division, 1203 State Street, Lancaster, Pa.



Close-up of an Armstrong's Corkoustic Tile. Note its distinctive texture.

Armstrong's CORKOUSTIC

LENDER-BUILT HOMES

help rejuvenate the New Orleans small house market.

STRONG in New Orleans are its homestead associations, which are the counterpart of the building and loan associations of other communities. These institutions did approximately 80 per cent of all pre-depression home financing in that pleasant southern city. As a result, they were struck hard in the crash. A brand of cooperation elsewhere unequaled between building and loans has proved the only remedy for their plight.

Through a ten-year-old trade organization, the New Orleans Homestead Clearinghouse Association, the city's 53 homesteads decided to advertise their foreclosed property cooperatively, and $25,000,000 of residential realty was thus moved off their hands in 1935. As 1936 approached, the same method was considered as a means for disposing of some $6,000,000 worth of unimproved property also held by the associations.*

To Clearinghouse President Curtis F. Scott's proposals in this regard some of the associations were extremely cool. There hadn't been a dozen site sales in a month, said they. There was still an abundance of homes on the market. Any effort to start new home building, they argued, would surely retard their attempts to clear their portfolios of existing structures. But President Scott kept hammering in the face of these objections until a substantial group of the homesteads had agreed to support his plan.

Keystone of the Clearinghouse campaign was the plan of a dozen cooperating associations to erect model houses, in the $3,000 to $5,000 class, on vacant homesites. In addition, three contests were devised to keep the public interested. One called for house designs by housewives; another for designs by architects and architectural students; a third for essays by school children. Employing the newspaper, the radio, and even a float in the Mardi Gras, the associations stirred up widespread interest in their project.

The program approximately one-third over last month, President Scott found that the associations' sales of homesites had reached 700, or about five times their total in 1935. Meanwhile, sales of repossessed houses, receiving impetus instead of setback, had increased 50 per cent over the preceding quarter. Also largely to be attributed to the program was the fact that New Orleans home building in the first three months of 1936 exceeded by 50 per cent the total for the whole of 1935.

*Ownership of vacant property is peculiar to Louisiana associations; in most other States lending was not allowed on land alone.

A RETURN TO CODES

is incited by general contractors in scattered localities.

With the NRA in a cocked hat, business as a whole was jubilant. But in building, some excuse existed for dismay. For in certain localities where competition is keen and labor conditions trigger-edged, the Construction Code was a real boon. Particularly benefited was the general contractor, whose key position in the building production line makes his welfare a matter of prime importance to the industry.

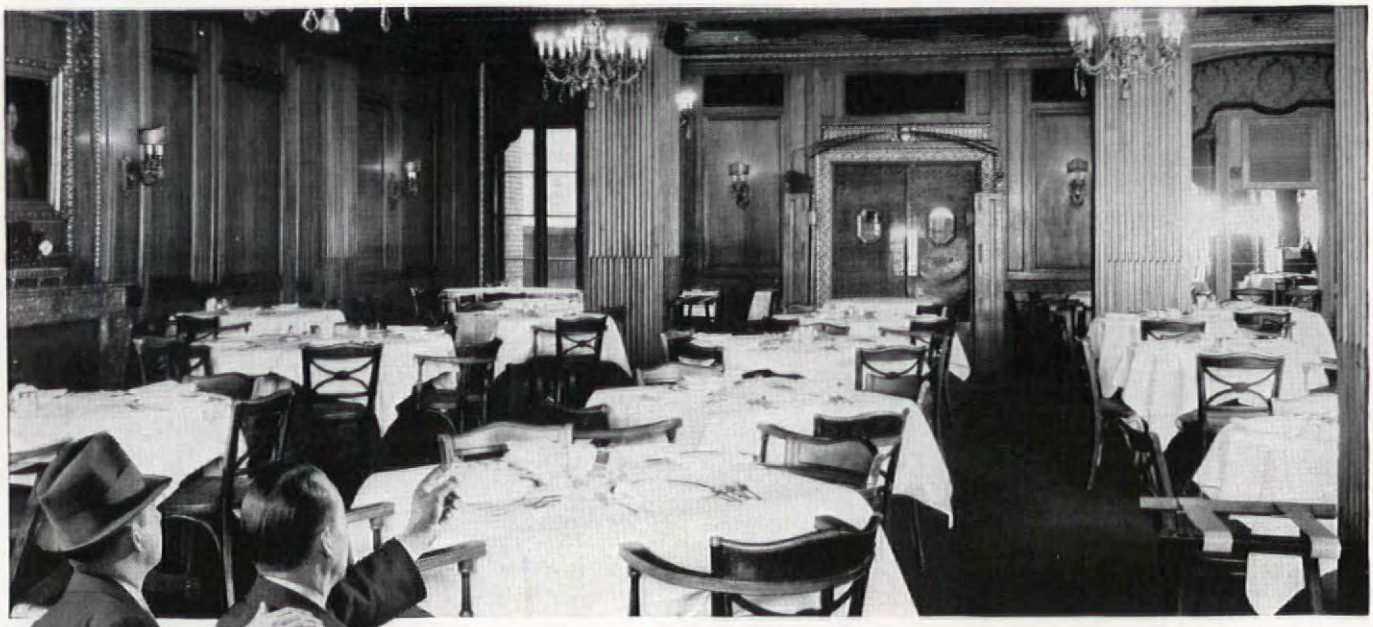
Here and there small groups of contractors have lately banded together to receive again the benefits first tasted under NRA. Impetus was given this movement when last January the Associated General Contractors, convened in Miami, picked recodification as its major objective in 1936. However, in this drive the association's 3,000 members were merely circularized, not marshalled under any kind of uniform procedure.

As a result, minor Construction Codes have mushroomed everywhere in wide variety. The character of each organization has largely been determined by the local conditions faced. Exemplifying this is the Seattle Construction Council, recently instigated by Seattle's general contractors, and now with fourteen divisions for cooperating trades. Its growth undoubtedly resulted from the necessity for treating with Seattle's notably well-organized labor groups.

Most of the new organizations, however, remained primarily contractor groups. Typical was the line of action being taken in Westchester County, N. Y., where 500 general contractors have allied themselves as the Westchester Construction Employers League. This group has equipped itself with rules of fair trade and with simple machinery for labor adjudication. Seven representatives of a labor group sit on a board of fourteen. A set of bid depository rules has won the approval of the Westchester Society of Architects. And the possibility is cherished by the sponsors that other branches of the industry will decide to cooperate later.

The advantages of pure cooperation to meet local conditions, minus the red tape of the old system, were apparently many as the AGC reported last month that "at least 25" agencies like Seattle's and Miami's had been formed.

¶ Issued in the Federal Housing Administration's Technical Bulletin No. 3 last month was a specimen short-form contract which should go far to facilitate small house work. Besides listing articles of agreement and general conditions, the pamphlet contained instructions for specification writing and sample working drawings.



BACKED BY 21 YEARS EXPERIENCE IN THE TEMPERATURE CONTROL FIELD

Kelvinator has the answer to Air Conditioning

With equipment that fits remodeling or new construction needs EXACTLY

● As an architect we believe that three things are paramount in your mind regarding any air conditioning installation.

First, you must have equipment which is absolutely dependable. Second, you want to keep first cost as low as possible. Third, you want minimum operation cost.

With Kelvinator you are sure of all three.

You know Kelvinator's dependability—the result of over 21 years of experience in the temperature control field. The completeness of Kelvinator line enables you to specify the exact amount of equipment the job requires—no more. This means low first cost. And the outstanding efficiency of Kelvinator equipment cuts operation and maintenance cost to a minimum.

Complete information or dependable engineering and value surveys are quickly available. Merely get in touch with your nearest Kelvinator representative who will gladly work with you in your office or in the field, or write to Kelvinator Corporation, Detroit, Michigan. Factories also in London, Ontario, and London, England.

Kelvinator

AIR CONDITIONING FOR PROFIT

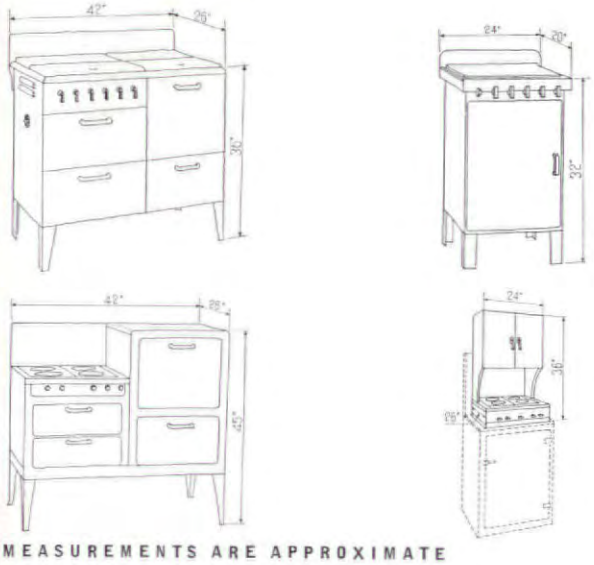
PRODUCTS AND PRACTICE

DOMESTIC RANGES

The kitchen range is one of the most important items of house or apartment equipment. Modernization work, as well as new construction, calls for the installation of new kitchen ranges. The several kinds of fuel available, their varying cost in different localities, the many types of ranges and their essential parts, and the conflicting claims of manufacturers, make selection difficult.

NOTE: Since gas and electricity are by far the most commonly used fuels in urban localities, most of the following material is devoted to ranges using those heat sources.

SHAPES AND SIZES OF RANGES



MEASUREMENTS ARE APPROXIMATE

CABINET. The top, at same level as other kitchen work surfaces, has three or four burners or heating elements and some non-heated space for standing cooking utensils. Below are an oven and broiler, sometimes combined in one compartment, utility drawers, and sometimes a warming cabinet; often has a flat cover concealing the heating elements to give work space for other purposes. The low oven in this type is more convenient for short than for tall cooks. Fits in well with straight line kitchen set up. Compact small size for kitchenettes.

CONSOLE. The cooking top is largely taken up by three or four burners or heating elements. The oven and broiler, separate or combined, are at the side. Utility drawers may be below the cooking top; the oven being higher is readily accessible. The high legs leave available space under the stove.

HIGH OVEN. This space saving type sets on cabinet or refrigerator; oven and broiler are usually combined. The oven is very high for short people.

LARGE SIZES. For large households. Cooking top has six or more burners or heating elements. There may be two ovens and a separate broiler with shelf or a warming chamber above cooking top.

THE ELECTRIC RANGE

OPEN TYPE

ENCASED TYPE

ENCLOSED TYPE

ENCASED TYPE

SURFACE HEATING UNITS

The heating element in almost all cases is a coiled high-grade nickel chromium alloy wire. Two or three such coils are used in each unit, so switched that one, two, or three of them may be turned on at once giving low, medium, or high heat. The coils may continue to spiral out from the center so that the coil nearest the center gives a hot spot for low heat, or they may be arranged in parallel spirals so that the heat is uniformly distributed, even when low. Insulation is usually placed directly under the heating unit. Cooking tops will usually have three or four heating units. One unit may operate on a higher wattage than the other, giving off a greater amount of heat for larger amounts of food.

Cooking utensils for economical and rapid heating should have flat bottoms large enough to cover the entire heating unit, and the utensil bottoms should be black or dull rather than bright.

OPEN TYPE. The coiled wire is laid in spiral or star shaped grooves in a ceramic disc. This is the cheapest but least durable unit since the heating element is unprotected and subject to mechanical injury. Food spilling over chars and can be brushed off.

ENCLOSED OR EMBEDDED TYPE. The coiled wire is spiraled in a frame or ceramic disc and covered over with a metal plate which is heated by the hot wire.

ENCASED TYPE. The wire, surrounded by a dielectric material, which prevents short circuiting but conducts heat, is placed in metal tubes or in concentric discs. The tubular encased type is the most efficient heating unit.

COAL AND ELECTRIC RANGE COMBINED

THE OVEN AND BROILER

HEATING ELEMENTS. Consist mostly of the coiled nickel chromium alloy wire supported by refractory porcelain insulators on a rectangular steel bridge work. The metal encased heating element is also used. Usually two elements are placed in the oven, one on the top and one on the bottom; this arrangement insures even heat distribution.

INSULATION. Since the purpose of a burner is to heat the food and not the kitchen, ovens and broilers should be well insulated on all sides and on the door, and the door should fit tightly. Insulating materials, such as mineral wool or magnesia, should be 1 to 2 inches thick. Reflective insulation or bright oven linings, with dead air spaces, are effective and permit rapid heating; however, it is difficult to keep oven linings bright.

THERMOSTAT CONTROL. The new thermostat regulators give accurate oven temperature control with only slight variations caused by the fact that electric controls work on a snap-on and off action of the current and not on a gradual reduction of wattage in-put. They insure maximum economy of oven operation.
An oven indicator light is often used; it tells when the oven has reached the temperature at which the thermostat has been set.

AUTOMATIC TIME CONTROL. Thermostatic control in connection with an electric clock working on alternating current only (when A.C. is not available a hand-wound clock can be employed) makes the operation of the oven automatic. At predetermined times the current is turned on and off. This automatic control can also be extended to a surface unit or to an appliance plug but so far only to one at a time.

WELL COOKER

Optional and on some ranges standard equipment. A low wattage, highly insulated container (approximately 12 in. deep and of 8 in. diameter) placed beside the surface units. This economy cooker works on two or three speeds, approximately 600 watts on high and 100 watts on low. Besides being used for foods which require long time and low heat, it can also be used for baking and roasting.

THE GAS RANGE

ROUND BURNER AND AUTOMATIC LIGHTER

MUSHROOM BURNER

BURNER TYPES

DRILL PORT STAR BURNER. Made of cast iron about 5 in. in diameter. The large burning surface permits heat to escape around the sides of the cooking utensil. The holes, being in the top and unprotected, are easily clogged by overflowing food. The oldest type of burner and still used on cheap models.

SMALL ROUND BURNER. Made in several metals—cast iron, often enameled, aluminum alloy; about 2½ to 3 in. in diameter. Holes, round or square, on the top or sides are around the periphery with a few in the center. Distributes heat evenly and efficiently.

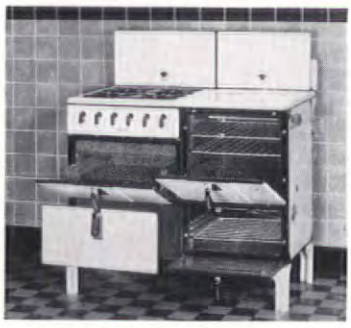
TOWER OR MUSHROOM BURNER. Four small mushroom-like burners grouped around the center. The openings are under the mushroom-like caps and the flame emerges from around the sides of the caps, which protect the openings from dirt and overflowing food.

AERATION BOWL. Modern type burners have a bowl below the burners which deflects all heat upwards and controls the amount of air necessary for proper combustion.

SMOOTH TOP. The burner is dropped lower and covered over with heavy metal rings or discs flush with the cooking top. Heats slower, less efficiently.

GRILL OR GRID TOP. Burner is dropped to permit grill or grid to run over entire burner. Lower burner often results in lowered efficiency.

Note: Burners intended for city gas will not burn most bottled gases efficiently or satisfactorily. On some burners competent adjustment will make the burner effective with the other type of gas.



AUTOMATIC LIGHTER

PUSH BUTTON TYPE. A small pilot light, always burning in center of cooking top, throws out a flame to each burner on pressing a button which increases the gas feed.

FULL AUTOMATIC. The pilot light in the center of the cooking top is connected to each burner by a small pipe or channel. When the gas is turned on in the burner, it enters the pipe or channel, ignites, and flashes back to the burner.

THE OVEN AND BROILER

OVEN TEMPERATURE REGULATOR. A thermostat, which can be set for the desired temperature, raises or lowers the gas flame with changes in oven temperature. The temperature dial is often combined with a table showing the proper oven temperature for various foods. Regulators are valuable for uniform baking and oven cooking and save time, effort, and fuel.

AUTOMATIC OVEN CONTROL. A clock device combined with an automatic safety lighter turns gas on or off at pre-set time. Very useful where constant attention cannot be given to cooking.

VENT FLUE. To carry off the continuously in-flowing air necessary for combustion, every oven is provided with a vent. This may be connected to a flue to carry off the heated air, which contains water and possibly fat vapor, and so keep the kitchen cooler and cleaner, but the flue is not necessary for safety.

INSULATION. Same as for electric stoves, but gas range ovens, generally, are not so well insulated as electric ovens.

GAS SAVERS

Many of these devices bring about the production of deadly carbon monoxide gas. The National Bureau of Standards states, "Although many of these devices have been tested at the Bureau . . . there have been only a few which saved any gas at all. Even in the few cases in which there has been a small saving, it has been accomplished at the expense of safety."

FIRELESS COOKER

An insulated chamber which comes down over the utensil after the gas is turned off, or into which the utensil is placed, permits cooking to continue slowly without further gas consumption.

A. G. A. LABEL

The American Gas Association places its seal of approval on all gas appliances which it finds to be safe, economical in performance, and reasonably durable. Its standards are not excessive and the label will be found on nearly all worth while gas ranges regardless of price.

COMPARATIVE OPERATING COSTS — GAS AND ELECTRICITY

The costs of cooking by gas and by electricity may be compared in two ways: 1) by estimating the cost for the expected amount of cooking for any given period for each type of range at the prevailing local rates; 2) by calculating the rate for one service which would give a cooking cost equivalent to the known rate for the other service. It is not to be expected that an exact comparison can be made in either way; there are too many uncertain quantities from which the calculations must be made—family size, tastes, income, methods of cooking, efficiency of the particular range and the care with which it is operated.

However, comparative estimates of costs can be made which will be accurate enough for ordinary purposes. Table 4 lists a number of tests which have been made to determine comparable gas and electric consumptions. In these tests, identical cooking operations were carried out on both types of ranges.

In estimating family gas or electric consumption, the energy in-put, or B.t.u. consumption, shown in Tables 1 and 2 will be helpful.

Electric ranges produce 3413 B.t.u. per kilowatt hour; hence, the estimated or determined B.t.u. consumption for any particular family cooking on an electric stove divided by 3413 will give the number of kilowatt hours of electricity used.

Manufactured gas produces about 530 B.t.u. per cubic foot, natural gas, about 1080 B.t.u., and mixed gas, which is used in many cities, may be anywhere between these figures. To figure gas consumption in cubic feet, divide the gas B.t.u. consumption by the number of B.t.u. per cubic foot of the particular gas used.

Tables 1 and 2 give the monthly costs of gas and electric cooking at various rates as calculated by the American Gas Association from the data obtained in their 1934 tests.

To determine equivalent gas and electric rates, a figure representing the ratio of gas to electric energy consumed

Data on ranges continued from this page on page 47

for equivalent cooking operations is used as a base. Equivalent rates can be easily read directly from Chart 1. The dotted line shows the gas rate equivalent to 1½ cents electricity for manufactured (532 B.t.u.) and natural (1,000 B.t.u.) gas. This graph is based on an energy ratio of 2.077, which is the ratio determined by the American Gas Association from a week's cooking for a family of moderate income. It will be noted that this figure is almost exactly the same as the average energy ratio of all the tests listed in Table 4. The electric range manufacturers claim, however, that an energy ratio as high as 2.68 can be obtained when the fullest advantages of electric cooking are taken. This figure is based on a recent test made at a mid-western university.

The equivalent rates for any energy ratio can be calculated from the following formula: $\frac{3.413 \times G \times k}{\text{B.t.u. per cu. ft.}} = E$

G = Gas rate in dollars per thousand cubic feet

E = Electric rate in cents per kilowatt hour

k = Energy ratio of electricity to gas consumption.

Bottled gas is sold in liquid form, bottled under pressure in steel cylinders. It becomes a gas at atmospheric pressure and ordinary temperatures. Most bottled gases are either propane or mixtures of propane and other gases; some are pentane. Propane is completely odorless and should have a distinctive odor added to it so that escaping gas can be detected. Bottled gas is sold by the pound, has a content of about 21,600 B.t.u. per pound, and the average family consumption will be from 30 to 40 pounds per month when burned in stoves designed for its use.

CHART 1.

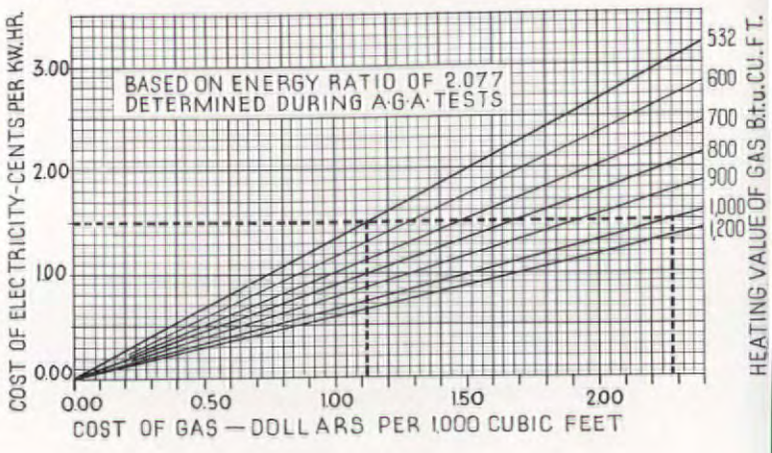


TABLE 1. MONTHLY COST OF COOKING (Based on Item 1, Table 3)

GAS

Heating Value Btu.	Cost—Dollars Per M Cubic Feet 1.75	1.40	1.20	1.00	0.80	0.60	0.40
	Cost per Month—Dollars						
1200	1.63	1.31	1.12	0.93	0.75	0.56	0.37
1050	1.86	1.49	1.28	1.07	0.85	0.64	0.43
900	2.18	1.74	1.49	1.24	0.99	0.75	0.50
750	2.61	2.09	1.79	1.49	1.19	0.89	0.60
525	3.73	2.98	2.56	2.13	1.70	1.28	0.85

ELECTRICITY

	Cost—Cts. per Kw. Hr. 6	5	4	3	2	1
Cost per Month—Dollars	9.47	7.89	6.31	4.74	3.16	1.58

TABLE 2. MONTHLY COST OF COOKING (Based on Item 2, Table 3)

GAS

Heating Value Btu.	Cost—Dollars Per M Cubic Feet 1.75	1.40	1.20	1.00	0.80	0.60	0.40
	Cost per Month—Dollars						
1200	0.95	0.76	0.65	0.54	0.43	0.32	0.22
1050	1.08	0.86	0.74	0.62	0.49	0.37	0.25
900	1.26	1.01	0.86	0.72	0.58	0.43	0.29
750	1.51	1.21	1.04	0.86	0.69	0.52	0.35
525	2.16	1.72	1.48	1.23	0.99	0.74	0.49

ELECTRICITY

	Cost—Cts. per Kw. Hr. 6	5	4	3	2	1
Cost per Month—Dollars	6.33	5.28	4.22	3.17	2.11	1.06

TABLE 3. SUMMARY OF ENERGY DATA FROM A.G.A. 1934 TESTS

Item	Scope of Tests	Percentage of Energy Utilized in Oven* Elec.	Gas	Average Energy Consumed for Each Type of Range—Btu. Elec.	Gas	Energy Ratio: Gas to Electricity	Commodity Unit Ratio: Therms† to Kilow. Hrs.††
1	1st Wk's. Menus	47	61	134,706	279,831	2.077	0.0709
2	2nd Wk's. Menus (Families of Limited Income)	24	32	90,045	162,030	1.799	0.0614
3	Food for Infant	0	0	73,320	128,597	1.754	0.0598
4	1st Wk's. Menus Plus Food for Infant	40	53	208,026	408,428	1.963	0.0669
5	2nd Wk's. Menus Plus Food for Infant	13	18	163,365	290,627	1.779	0.0607

*Approximate †A therm is 100,000 B.T.U. ††Kilowatt hour equals 3413 B.T.U.

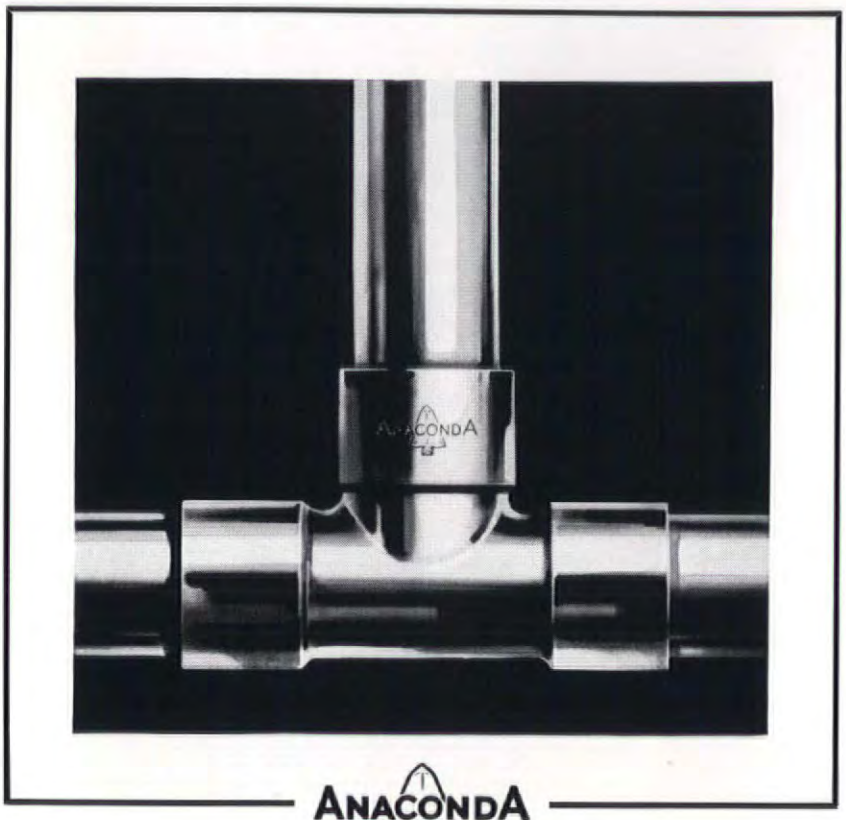
The lower energy ratio of gas to electricity for items 2 to 5 is due to the lower percentage of oven use in the latter menus. It was found that oven operations showed an energy ratio of 2.624 as compared with a ratio of 1.532 for the cooking tops.

TABLE 4. SUMMARY OF RESULTS SECURED DURING VARIOUS INVESTIGATIONS OF COOKING BY GAS AND BY ELECTRICITY

Source	Date of Tests	Nature of Tests	Consumption in Btu. Electricity	Gas	Energy Ratio: Gas to Electricity
Ohio State University	1917	18 Meals for 6	19,448	56,000	2.88
	1917	Baking 4 Loaves Bread	3,412	10,000	2.93
Stevens P't Normal School	1919	9 Meals for 5	111,000	161,100	1.45
Appliance Research Lab.	1924	Baking Oven	6,355	18,600	2.93
	1924	Broiling-Top Burners	1,742	1,925	1.11
Large Middle West Gas Co.	1924	Full Meal for 6	14,500	27,100	1.87
Large Eastern Gas Co.	1927	Cooking Meals	24,500	60,100	2.45
Large Eastern Gas Co.	1927	Light Meals for 1 Month	486,000	840,000	1.73
	1927	Heavy Meals for 1 Month	555,000	1,330,000	2.40
University of Washington	1928	Week's Meals for 5	137,100	288,200	2.10
Mfgr. Gas & Electric Ranges	1929	Top—Raising 5 lbs. Water 150°F.	1,605	2,200	1.37
	1929	Oven—Preheating Oven 500°F.	1,949	4,620	2.37
Purdue University	1930	Meal for 5-6	7,245	13,585	1.88
	1930	Distilled Water to Boil. Pt. for 1 hr.	8,575	15,000	1.75
Western Reserve University	1930	8 Oven Cooked Meals	6,145	18,020	2.93
Large Eastern Power Co.	1930	1 Week's Meals for 6	139,300	339,500	2.44
American Gas Assoc. Lab.	1931	1 Week's Meals for 5	155,044	335,584	2.16
Good Housekeeping Inst.	1933	1 Week's Meals for 3	73,600	135,260	1.84
	1933	1 Week's Meals for 5	116,900	163,425	1.40
	1933	1 Week's Meals for 7	139,100	239,450	1.72
American Stove Company	1934	1 Week's Meals for 4-5	143,679	353,900	2.46
American Gas Association	1934	1st Week's Menu for 4	134,706	279,831	2.077
	1934	2nd Week's Menu for 4	90,045	162,030	1.799
	1934	1 Week's Food for Infant	73,320	128,597	1.754
Total Consumption for All Tests			2,450,270	4,984,027	
Weighted Average Energy Ratio for All Tests					2.035

Above tables taken from American Gas Association Bulletin No. 6 entitled Investigation of Domestic Cooking by Gas and by Electricity.

FOR HEATING LINES
COPPER TUBES are "the last word"



ANACONDA
from mine to consumer
REG. U.S. PAT. OFF.

COPPER TUBES lead to greater efficiency in hot water heating systems... give longer and more reliable service. Permanently smooth inside surfaces reduce resistance to the flow... especially in forced circulation systems. And hot water conveyed through copper tubes loses only about one-half as much heat as when black iron is used. Faster flow and reduced heat losses mean quicker circulation; the maximum amount of heat is delivered to radiators in the least possible time.

The cost? Assembled with solder-type fittings,* *the cost of a copper tube installation is scarcely any more than that of rustable material.*

Anaconda Copper Tubes and a complete range of Anaconda Solder-Type Fittings... trade-marked for easy identification... are hydraulically tested to insure soundness, and are produced to the close tolerances necessary for tight and strong soldered joints.

• • •

Where standard-size, rigid pipe is required, Anaconda Brass Pipe has long been the standard of quality. Two scientifically-determined alloys are carried in stock by leading supply houses . . . *Anaconda 67 Brass Pipe* for normally corrosive conditions, and *Anaconda 85 Red-Brass* for highly corrosive conditions.

*Where temperature range does not exceed 180°F., soft solder made of 95% tin and 5% antimony is recommended. "Sil-Fos" brazing is suggested for higher temperature.

THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Connecticut
Offices and Agencies in Principal Cities

ANACONDA COPPER & BRASS

'INCOR' PAID 3 TO 1 AT SUFFOLK DOWNS

Forty thousand people saw the first race at Suffolk Downs, East Boston, last July 10. Ten weeks before, the track site had been a barren waste, a public dump. Once again the 'impossible' was accomplished. To illustrate: Work on 'the world's largest race-track grandstand'—8,000 cu. yds. of concrete—started May 24, was completed June 21. With ordinary cement, forms would have remained in place six days, requiring purchase of lumber for the entire job. By using 'Incor' 24-Hour Cement, forms were stripped in two days, re-used again and again. That meant 62½% fewer forms. Result, a $10,000 saving—more than three times 'Incor's added cost.

'Incor'* is a better Portland cement—it attains service strength in one-fifth the usual time. But it goes much deeper than mere time-saving—for 'Incor' saves money, by eliminating dead-time waiting for ordinary concrete to harden. This basic principle applies wherever concrete is used—suggesting that contractors be encouraged to estimate under form-removal specifications which take full advantage of 'Incor's earlier service strength. Made and sold by producers of Lone Star Cement, subsidiaries of International Cement Corporation, New York; also sold by other cement manufacturers. *Reg. U. S. Pat. Off.

'INCOR' 24-HOUR CEMENT

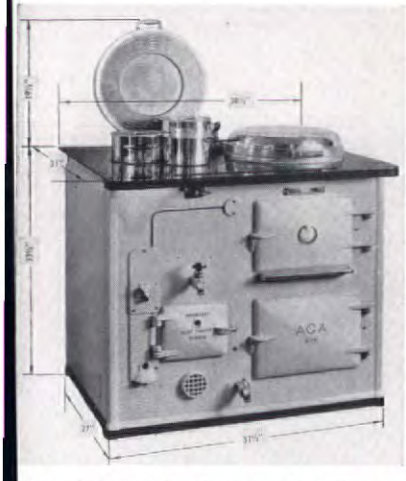
PRODUCTS AND PRACTICE

(Continued from page 44)

TWO COAL RANGES

HEATERANGE. The Jeddo Highland Heaterange, to all appearances a coal burning cooking stove, is also a warm air furnace from which, by the usual arrangement of ducts, blower, and humidifier, warm humidified air is circulated throughout the house. As with other furnaces, a water back and storage tank provide for the supply of domestic hot water. All this is accomplished within the space and in the guise of an attractive coal burning range. It is well insulated and tests indicate that it utilizes for its various purposes about 68 per cent of the heat and fuel which it consumes.

The Heaterange, combining a cooking stove, forced warm air heating plant, and water heater, costs $250, including the blower but exclusive of delivery and installation charges, and duct work.



AGA STOVE. AGA in this case are not the initials of the American Gas Association, known as A.G.A., but is the name of a Swedish stove distributed here by the American Gas Accumulator Co. Whereas the average coal range operating intermittently has an efficiency of 10 to 25 per cent, it is claimed that this scientifically designed stove utilizes about 80 out of every 100 heating units which it consumes, and will burn for twenty-four hours on a bucket of coal. Tests showed that the actual coal consumption under ordinary operating conditions was not over 8 to 10 pounds of chestnut anthracite per day. Burning steadily twenty-four hours a day for a year, the coal consumption would be less than 1¾ tons.

The AGA stove is exceptionally well insulated, even the cooking top having insulated covers to prevent the loss of heat when not in use. The draft is regulated by a thermostat so that very little fuel is burned except when needed. Special devices make refueling, ash removal, and even relighting easy and clean operations.

The cooking top has a hot plate for fast cooking and another for simmering. The fast plate heats more rapidly than the large burner of a gas stove. There are two ovens, one a fast oven and the other kept below the boiling point of water. From a 10 gallon water compartment within the stove, water just ready to boil can be drawn off for cooking and other kitchen purposes.

(Continued on page 48)

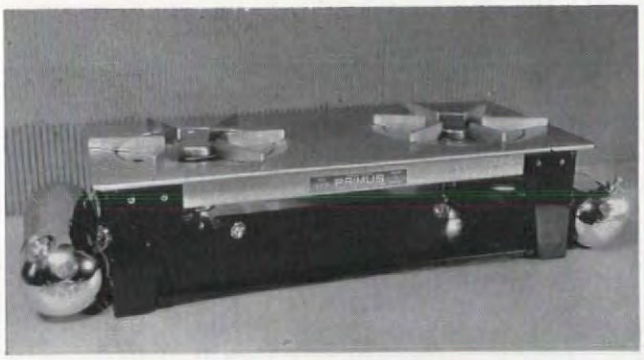
PRODUCTS AND PRACTICE

(Continued from page 47)

The cost of the domestic size is $350, installed. This cost includes a complete set of cooking utensils which are designed to enable the AGA stove to work at its maximum efficiency. There is also a large size for hotels, restaurant use, and large households, which burns about one-half of a ton of coal per month.

KEROSENE STOVES

Gravity feed kerosene stoves are made in several types: the long chimney wick type, the short chimney wick type, the wickless type, and the asbestos lighting ring types. The long chimney wick type heats quicker and responds more quickly when the flame is turned higher or lower but consumes more fuel than the other types. The wickless and lighting ring types present a greater fire hazard and are more apt to smoke and smell, but they are the most economical in fuel consumption. The average family consumption of kerosene for cooking may be around 13 gallons per month. For the modern kitchen, kerosene stoves are enclosed in attractive cabinets. The illustration above shows the long chimney type.



PRIMUS stoves, made in Sweden, are so well known throughout the world that the tradename has become identified with the type, a wickless stove burning kerosene under pressure. While the original Primus was a small portable, simple, one burner affair with a "roarer" burner and is still so made for camp and expeditionary use, Primus also makes a regular domestic range with an oven and warming chamber below the cooking top, and with a silent type burner. By an ingenious arrangement, only one burner is needed for this entire range. The illustration shows a two burner portable for kitchen or camp use.

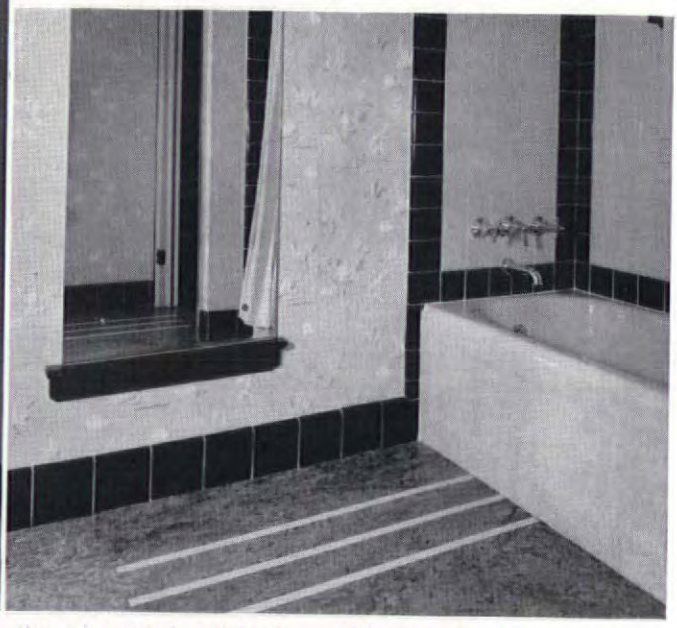
In order to start pressure kerosene stoves, it is necessary

(Continued on page 50)

For greater sales appeal

C. H. REIS SPECIFIES SEALEX LINOLEUM in 100 low-cost homes

Every unit of new Lylewood Hills development of $6,500 homes will feature Sealex Floors in kitchens and baths, announces Charles H. Reis



Colorful Sealex Veltone Floors, with feature strips in contrasting colors, "style up" kitchens and baths in Reis homes.

FOR nine years, Mr. Charles H. Reis has been using Sealex Linoleum in *every* house constructed by his company. Experience has proved to him that Sealex gives a residence *plus* sales appeal. Naturally, he specified Sealex for his newest development of $6,500 homes at Tenafly, N. J.

Declares Mr. Reis: "We have found this material gives us the utmost satisfaction from the standpoint of durability, ease of maintenance, and attractive . . . colors and patterns."

This is just another proof of the fact that, in individual units or developments of 300 houses, the architect and builder of moderately-priced homes can speed sales by specifying Sealex Linoleum.

There are Sealex patterns available that will help sell your prospects not only on kitchens and baths, but on other areas, such as halls, sunporches and game rooms. Even more attractive results can be obtained, as many builders are finding, by installing Sealex Wall-Covering as well.

Let our engineers consult with you on Sealex Floors and Walls for any type of residence. Write: CONGOLEUM-NAIRN INC., KEARNY, N. J.

SEALEX TRADEMARK REGISTERED **Linoleum Floors and Wall-Covering**

(Continued from page 48)

to pre-heat the burner. This is usually done by burning a small amount of alcohol in a little cup just below the burner. These stoves burn with a blue, smokeless, hot flame which consumes only about one-third of a pint of kerosene per hour. Primus stoves come in various portable models for yachts, camps, tourists' trips, and polar expeditions. They are also made to operate with gasoline.

SCHOOLROOM LIGHTING

To demonstrate both good and bad schoolroom lighting a typical classroom has been set up at the General Electric Institute. When the classroom is lighted by daylight from the windows, it is found, as might be expected, that the light intensity decreases as one goes away from the windows and also, as would be expected, the intensity of the light changes during the day, decreasing in the afternoon. In order to maintain a nearly uniform light intensity in all parts of the room during all hours of the day, a lighting arrangement with flexible controls has been installed. An "electric eye" turns the lights on or off, depending on the amount of natural light present in a room at any time, thus maintaining a minimum level of illumination for safe seeing. The lighting fixtures are arranged for variable intensities so that not only may failing daylight be supplemented by a necessary amount of artificial lighting, but those parts of the room which receive lesser amounts of natural light will receive greater amounts of artificial illumination. At night, all fixtures can be used with an equal intensity and, with daylight strong enough to make any artificial light unnecessary, the "electric eye" automatically turns off all lights. With this arrangement, lighting is kept at a nearly uniform level of the proper intensity and artificial light is never used unnecessarily.

Artificial lighting in this demonstration room is provided by two rows of pendent ceiling fixtures with three units in each row. Each fixture of the semi-indirect type contains a 200-300-500 watt Three-Light lamp. These lamps permit considerable flexibility in lighting intensity and, by means of a special transformer, a light output equivalent to that of a 750 watt lamp is obtainable from each of the units. This will permit more than 50 foot-candles of artificial illumination at the desk tops.

Supplementing this are eight blackboard lighting units recessed at the ceiling about 2 ft. from the wall. Employing two 150 watt clear lamps behind prismatic glass plates, these units spray the blackboards with an even distribution of light.

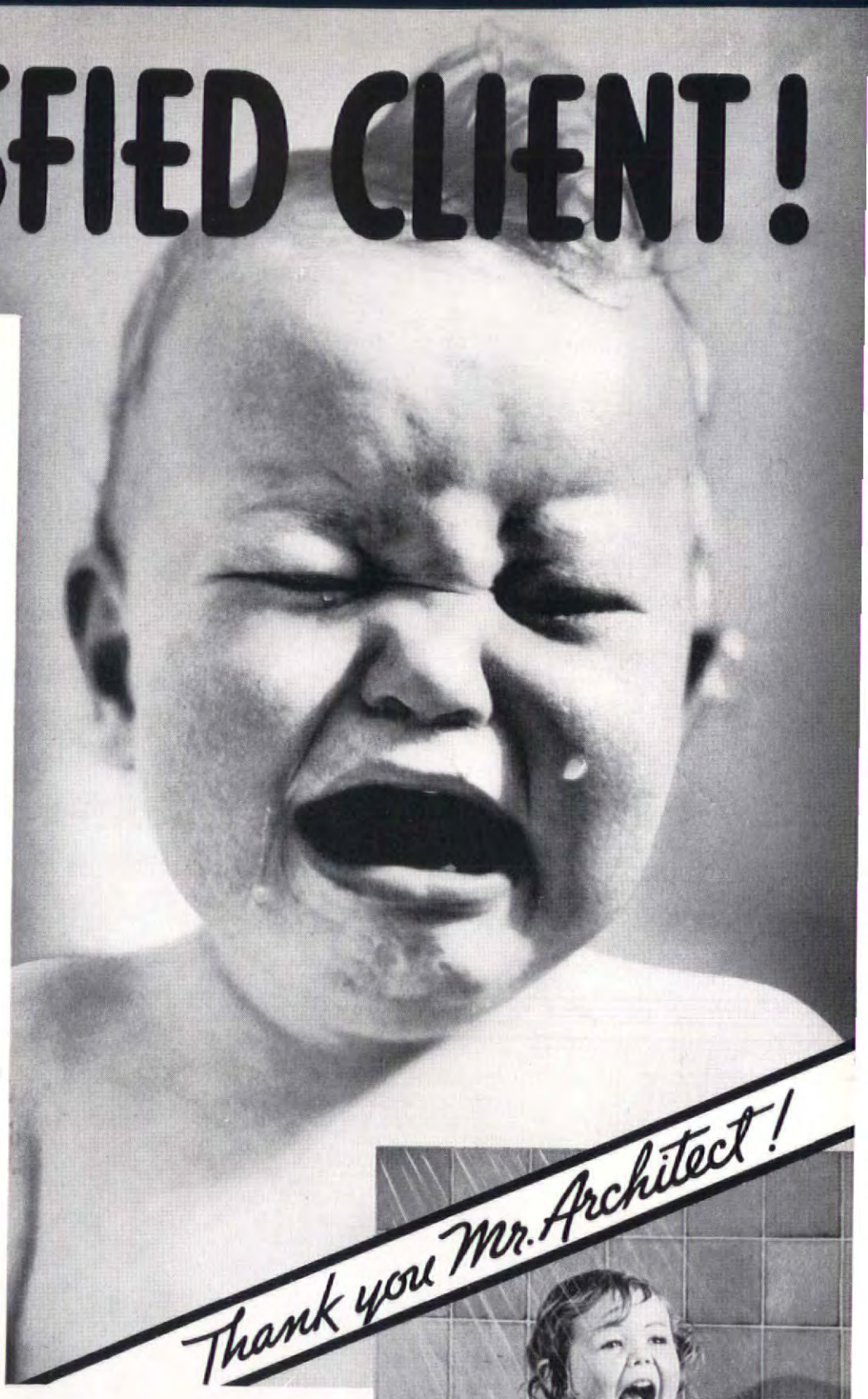
SOUND ISOLATION

In a hospital, where quiet hastens convalescence and often prolongs life, sound sources must be isolated. If this can be effected with economy it is apt to be done; if not, it is too often neglected. The designers of the Washington County Hospital, Hagerstown, Md., of which Charles F. Neergaard was the Hospital Consultant, appreciating this problem, looked for a partition that would be satisfactory as a sound isolator, which would not require undue sacrifice of floor space and would not have excessive weight or cost. Not finding a partition which met these requirements to their satisfaction, they designed and had tested another.

This partition was made of Thermax partition blocks 20 x 32 in. and 3 in. thick laid up in gypsum mortar, following the usual method of masonry partition work. On this Thermax wall were nailed lapped sheets of Sisalkraft made of five laminations of tough paper and asphalt. On the paper covered side of the Thermax blocks there was then nailed Thermax insulating board 20 x 64 in.

(Continued on page 52)

ISSATISFIED CLIENT!



Discontent caused by a system that doesn't keep water *always* ready, *always* hot, *always* plentiful—runs from inconvenienced babes to irritated bill-payers.

Today, the modern, automatic gas water heater offers architects the most practical type of system from the standpoints of both *service* and *economy*.

Continuous, trouble-free operation is completely assured. The owner never has to look at the heater—never has to wait for hot water. Automatic gas-fired heaters deliver *hot* water day and night—and they deliver it at low cost.

New advancements in construction, insulation, thermostatic control and burners have greatly improved heat utilization, raised efficiency, lowered operating costs and modernized appearance.

Secure the comparative costs of operating various types of water heating systems by writing this Association. The figures are from tests by unbiased authorities. They can be applied to local rates for all types of fuels.

They definitely prove that automatic gas water heaters are the most practical heaters to recommend. Write them into your specifications.

Thank you Mr. Architect!

TOMATIC GAS WATER HEATER MANUFACTURER MEMBERS

AMERICAN GAS PRODUCTS CORPORATION
CLEVELAND HEATER COMPANY
CRANE CO., PREMIER HEATER DIVISION
EVERHOT HEATER COMPANY
GAS AND ELECTRIC HEATER COMPANY
GAS EQUIPMENT COMPANY
HANDLEY-BROWN HEATER COMPANY
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THE PITTSBURG WATER HEATER CORPORATION
RUUD MANUFACTURING COMPANY
SANDS MANUFACTURING COMPANY
SURFACE COMBUSTION CORPORATION
UNITED AMERICAN BOSCH CORPORATION
WELSBACH COMPANY
WHITEHEAD METAL PRODUCTS COMPANY

SOCIATION of GAS APPLIANCE and EQUIPMENT MANUFACTURERS

GAS WATER HEATER DIVISION, 60 East 42nd Street, New York

(Continued from page 50)

and 1 in. thick in such a way as to insure broken joints in both directions. This wall was then plastered on both sides with two coats of brown plaster and a white finish coat. This finished partition weighs 19 lbs. per sq. ft. and is 5 in. thick. A full size partition was constructed and tested at the Bureau of Standards. The test showed an average transmission loss over nine frequencies of 47.4 decibels. In the Bureau's official report, the following general observation is made: "The average transmission loss for this panel is 47.4 decibels, which is approximately the same as that for a six or eight inch load bearing clay tile partition plastered on both sides." A six inch load bearing clay tile partition, plastered, weighs 42 lbs. per sq. ft. and is seven inches thick, finished.

In the following tabulation are given comparative sound transmission values and approximate costs obtaining in large metropolitan areas for the five types of sound isolating partitions.

A	B	C	D	E	F
	Lbs./sq. ft.	$/sq. ft.	$/sq. ft.	$/sq. ft.	Average
1	19	.30	.12	.42	47.4
2	42	.33	.14	.47	47.0
3	28	.22	.14	.36	44.0
4	34	.37	.14	.51	39.0
5	21	.17	.14	.31	30.0

A Partition number.

B Weight of core including plaster.

C Cost of core erected but not plastered. Includes material, labor, overhead and profit.

D Cost of brown and finished plaster. Includes material, labor, overhead and profit.

E Total cost.

F Decibel reduction.

Partition No. 1 3 in. Thermax block wall laid in mortar, Sisalkraft and 1 in. Thermax board attached to it, and plastered ½ in. both sides with gypsum plaster.
Authority: Bureau of Standards test over nine frequencies.

Partition No. 2 6 in. Hollow Clay Tile wall, 6 cell load bearing tile laid in mortar, plastered ⅝ in. both sides with gypsum plaster.
Authority: Bureau of Standards test over five frequencies.

Partition No. 3 4 in. Hollow Clay Tile wall, 3 cell partition tile laid in mortar, plastered ⅝ in. both sides with gypsum plaster.
Authority: Bureau of Standards test over five frequencies.

Partition No. 4 Two 3 in. Gypsum block walls laid in mortar with 1 in. Flax-li-num between, plastered ⅝ in. both sides with gypsum mortar.
Authority: Prof. F. R. Osborn.

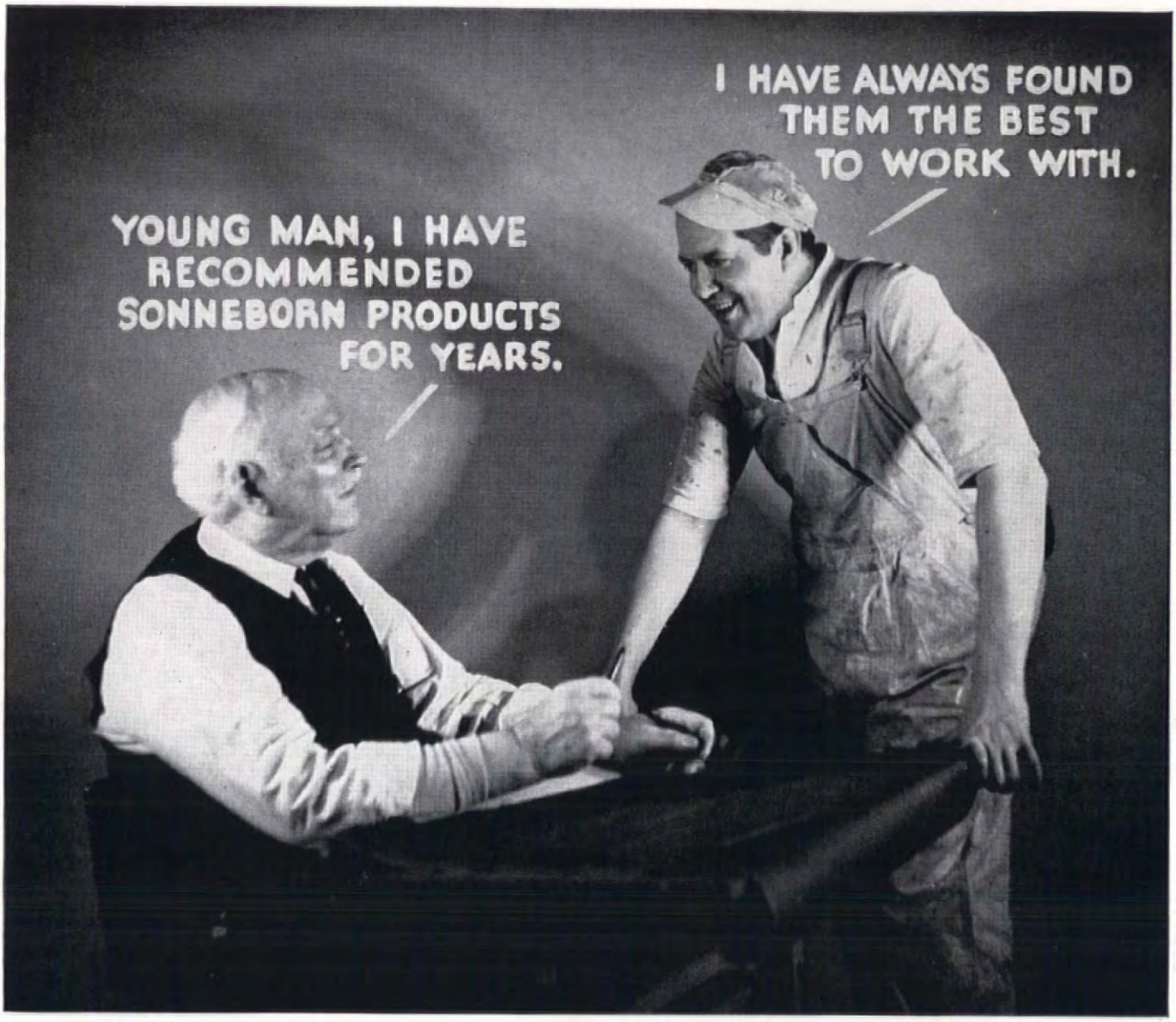
Partition No. 5 3 in. Gypsum block wall laid in mortar, plastered ⅝ in. both sides with gypsum plaster.
Authority: Prof. V. O. Knutsen. Test over five frequencies.

501. CASEMENT WINDOW HINGES

Wood casement windows may now have extension hinges, a type common on steel casements. These hinges hold the sash 4 in. away from the frame when the window is opened. This permits easier access for cleaning the outside of the window from the inside of the room and is particularly convenient for reaching fixed lights at the side of the operating sash.

Ventilation is increased by the use of extension hinges as, when the window is open, it acts as a baffle for breezes, deflecting the air into the room from either side of the window.

Such extension hinges are made by the Casement Hardware Co. in the loose pin type with bronze bushings.



They Agree on Sonneborn Quality

Leading architects, plant superintendents, builders, and painters, throughout the country, have recommended products made by SONNEBORN because they have used them successfully for years in homes, schools, and industrial buildings.

Over a quarter of a century of scientific research by competent laboratory technicians, keeping abreast of the times with every new development in the building field, have made SONNEBORN'S Waterproofing, Damproofing, and Paint Products the most reliable on the market.

This successful record of the proved efficiency of these products is your best assurance of satisfaction.

Write for literature of SONNEBORN'S tested products.

SONNEBORN'S TESTED PRODUCTS

LAPIDOLITH
The guaranteed method of securing dustproof concrete floors.

LIGNOPHOL
A scientific penetrating preservative and finish for wood floors.

HYDROCIDE COLORLESS
For exterior waterproofing of masonry walls.

KAUKIT
Non-shrinking waterproof caulking compound.

CEMCOAT
Light reflecting enamel for interiors; also waterproof coating for exteriors and floors; is outstandingly superior for masonry surfaces.

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MANUFACTURERS' PUBLICATIONS

Among the manufacturers' publications recently received of interest to the architectural profession were the following:

502. OIL BURNER
Bethlehem Foundry & Machine Co.—a booklet describing the new Bethlehem Doe Oil Burner.

503. SOIL PIPE FITTINGS
The Cast Iron Soil Pipe Assn.—American Standards on Cast Iron Soil Pipe and Fittings—reference data on nomenclature and dimensions of cast iron soil pipe fittings.

504. VENTILATING APPLIANCES
The Allen Corp.—a catalogue of their roof ventilators and exhaust fans, with some useful tables on air velocities, moisture, and mensuration.

505. AUTOMATIC CONTROLS
Minneapolis-Honeywell Regulator Co.—"Automatic Heating and Air Conditioning" describes the function performed by their automatic controls in heating and air conditioning work.

506. The Johnson Service Co.—"Johnson Zone Control Systems" sets forth the advantages of zone control and tells how the "Duo-Stat" zone control is applied to a heating system.

PAINT

507. Medusa Products Co.—"How to Paint Concrete, Stucco, Masonry and Other Surfaces" describes the use of Medusa paints for these purposes.

508. The New Jersey Zinc Co.—"Improving Paint Service on Wood with Special Priming" is a manual on better paint practice. The results of tests of various paints on different kinds of wood are illustrated and interesting paint theories are set forth.

509. ROLLING GRILLES
Cornell Iron Works—a booklet illustrating installations of steel, bronze, and aluminum rolling grilles with detail drawings and specifications.

510. JOHNS-MANVILLE CORPORATION
"40 Points You Should Consider in Building Your New Home" makes suggestions on financing, recommends the use of competent architect and reliable builder, illustrates popular architectural styles, and gives points on foundation and framing methods and interior planning. The manual then goes on to describe the "Triple Insulated House," to explain the use of Johns-Manville products in building a house. "101 Practical Suggestions for Home Improvements" illustrates and explains the use of Johns-Manville products throughout the house.

REQUEST FOR DATA

To obtain any of the publications reviewed on these pages, indicate the number and send coupon to The Architectural Forum, 135 East 42nd St., New York

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IN EVERY ADVERTISEMENT TO PROSPECTIVE BUILDERS OR MODERNIZERS WE SAY: "IT WILL PAY YOU TO SEE AN ARCHITECT WHEN YOU BUILD OR REMODEL"

FORUM OF EVENTS

(Continued from page 15)

manship, the inch scale models are the product of 29 girls, 7 boys. The most amazing feature of the whole exhibition was the fact that girls sired the more masculine rooms, the shooting gallery, boxing ring, gymnasium, etc., while the young men went in more for the more homely pursuits of vegetable and fruit canning, and laundry layouts.

Unobtrusively in every cellar is a complete, up-to-date miniature heating unit, complete with copper piping, cast to scale especially for the models and set up under engineering supervision by professional model makers for the American Radiator Co. In this way, visitors could see exactly how the reborn cellar would look when completed, even to tees, valves, elbows and other accessories.

BROADWAY AQUARIUM

HERDED over on the west side of Times Square by a squad of 40 policemen, a ruly crowd listened patiently to several fanfares by four girl trumpeters draped in fleecy gold gowns, gasped politely as jovial little Albert E. Gans, co-father of the Great White Way, gently pushed a button that brought to light the latest and largest of Broadway's spectaculars. Designed for the manufacturers of Wrigley's chewing gum by pretty, 25-year-old Dorothy Shepard, famed Californian interior decorator, the sign shows vividly stylized, multicolored tropical fish floating all the way from 44th to 45th

WRIGLEY'S WIGGLIES

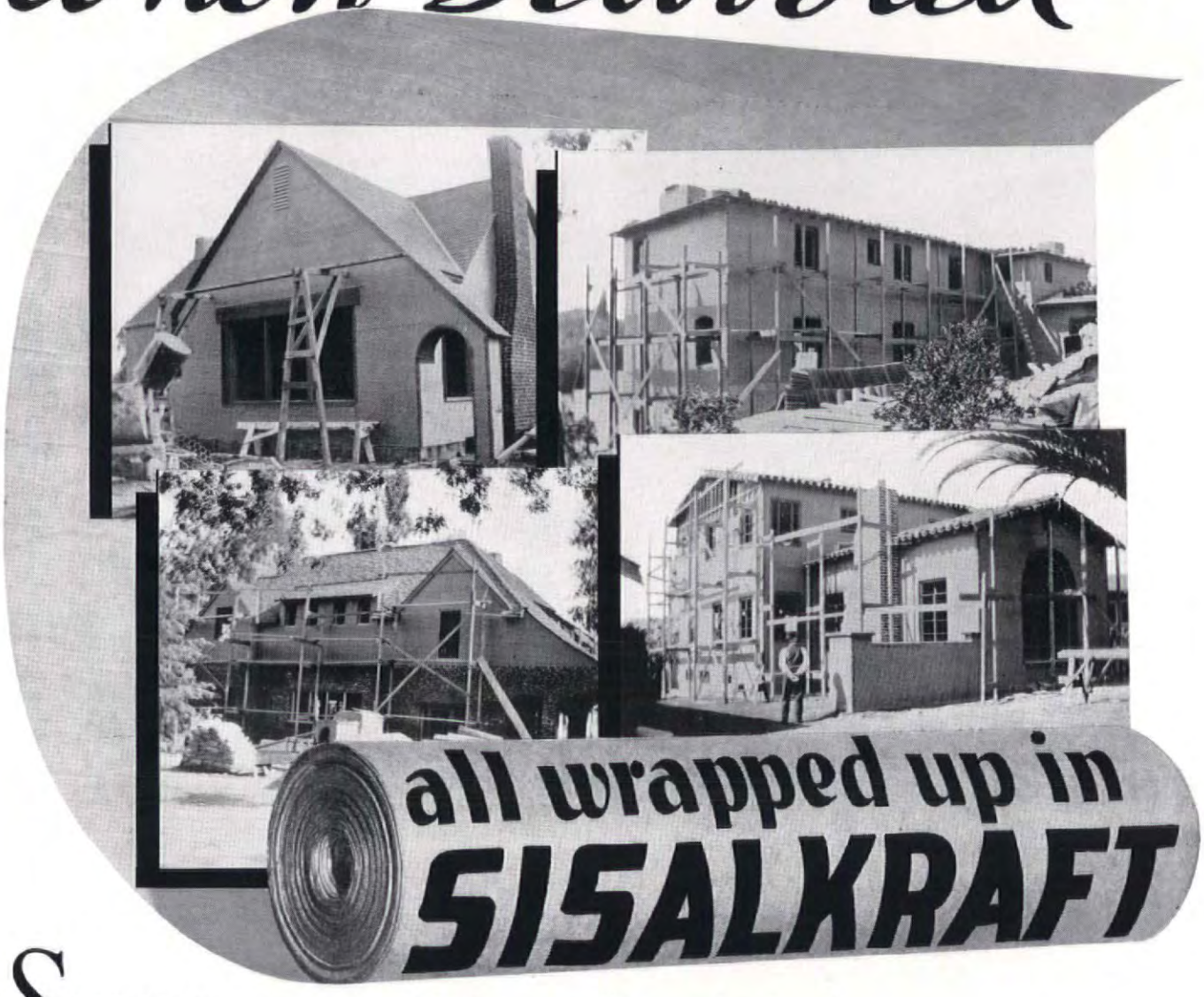
Street, towers ten stories over the unfinished two-story theater building that is being built to replace the late Oscar Hammerstein's architectural abortion. In the center is a huge package of Wrigley's Spearmint Gum atop which is perched the traditional Spearman who actually grins over a yard wide as he busily points out old familiar slogans interspersed with such new ones as "keeps the taste in tune" and "steadies the nerves."

Modestly termed the largest spectacular (electric sign) in the world, it is narrower than the Bayer sign in Leverkusen, near Dusseldorf, falls far short of André Citroyen's well known electrotechnics on the Eiffel Tower in Paris. Even in New York its crown is threatened by the huge electric tower, topped off by a star, being erected by Schenley Products Co. on the roof of the new Rialto Theater at 7th Avenue and 42nd Street and which will blaze forth sometime late this month.

Unlike other signs that abound the Stem however, the new Wrigley tapestry is keyed in a leisurely tempo, soothes rather than startles the observer. The fish, magnified hundreds of times, are artistic adaptations in both form and color of authentic South Sea fauna. As they rhythmically burp large white bubbles, they seemingly swim through space, the illusion being created by vertical flickerings in their scales and a running motion in the waves. Only in the rolling of the eyes and the jerking of the arms of the merry little Spearman does the neon mural revert to the quick-flashing

(Continued on page 58)

When Delivered-



SISALKRAFT is the reenforced building paper. When used under prepared roofing, under flooring and over sheathing in the sidewalls, it is the "unseen, tough membrane" that wraps up what is perhaps the most valuable purchase of a man's lifetime. It delivers a home that will be windproof, waterproof and more comfortable under all weather conditions for the next 10, 20, 30 years or more.

SISALKRAFT is strong, tough and durable. The contractor handles it quickly without rips, tears or punctures. There will be no holes to allow the infiltration of dust, air or rain. Every home deserves to be wrapped up in Sisalkraft—when delivered. SISALKRAFT deserves to be written into all of your plans and specifications.

SISALKRAFT IS ECONOMY! It costs about $1.10 to cover a space of 100 square feet. What a very small percentage of the total building cost for such true protection!

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New York San Francisco

FORUM OF EVENTS

(Continued from page 56)

type and ruffle its calm. To accomplish this animation, intricate flashing mechanisms rivaling the ingenuity of stage-lighting devices are spread all over the steel network. The flashing mechanism consists of 21 pieces of apparatus, all working in unison but none synchronized with another. The connected electrical load is equivalent to 940 horsepower and the annual wattage consumed is sufficient to operate every radio in the U.S. for a two-hour period.

The predominant colors are ultramarine blue and sea green. In lesser degree appear vermilion, orange, yellow, metallic green and white. Developed especially for the sign by General Electric, they are achieved through frosted or capped bulbs and variously colored neon. In all, the sign boasts 1,084 ft. of neon tubing, 29,508 lamps; burns enough electricity to serve a town of 10,000 inhabitants. Using approximately $4,000 worth of electricity a month, the annual cost of operation will exceed $150,000, will take nearly a week's sale of gum to make the sign break even.

Anchored to the roof by means of steel legs braced 30 ft. apart, the 110 ton sign is constructed to withstand winds of even hurricane strength. The building itself, of steel and concrete, was possibly inspired by plans submitted in the open competition conducted by THE ARCHITECTURAL FORUM (Feb., 1934, p. 158-9).

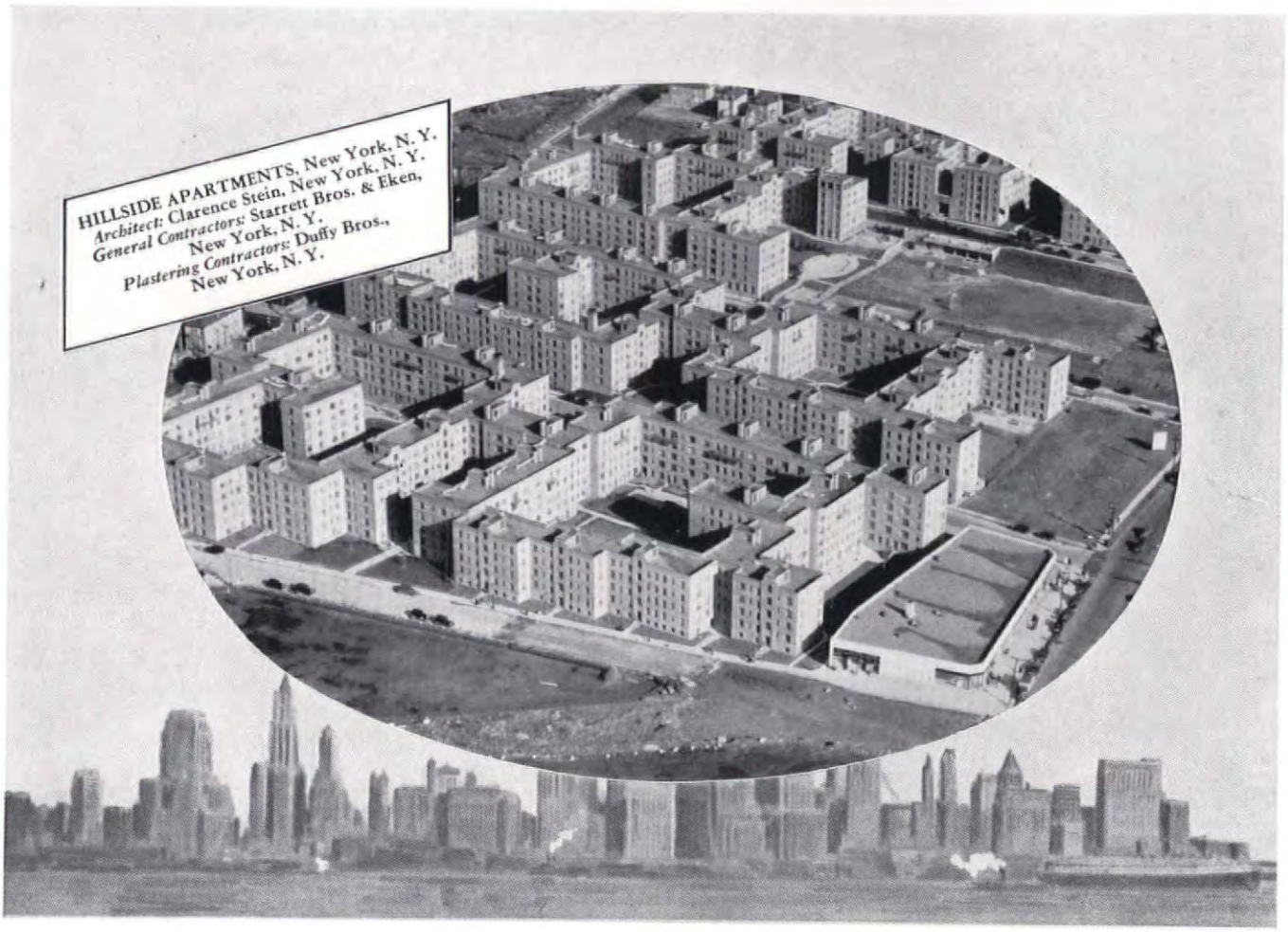
FAIR FLASHES

DALLAS, TEXAS: "The architecture of most of the buildings at A Century of Progress was modern and functional," said recently George L. Dahl, chief Centennial architect. "That of San Diego is a mixture of Spanish and California Colonial—simple walls with Spanish ornamentation. The Centennial buildings will be primarily functional . . . Our architecture is contemporary, however, rather than ultra-modern."

FORT WORTH, TEXAS: Biggest news was the appointment of Producer Billy (Jumbo) Rose to general manager of the Texas Frontier Exposition at a reputed salary of $1,000 a day. No less important was the news that Albert Johnson, Broadway's famed designer, has been given 150 acres on which to exercise his violent art and produce a frontier town that will combine the best features of Deadwood, Virginia City and San Francisco of '49. The town will boast an outdoor cabaret with 5,000 seats, a one-ring circus, a monster zoo, a shooting gallery for 500 marksmen, and a Texas cemetery of 100 years ago, to remind visitors of the violent ends of their ancestors. Super-showman Rose's appointment was directly due to a civic feud between Dallas and Fort Worth. Disgruntled that their sister city should be chosen as the site for the Texas Centenary, Fort Worth's city fathers decided to take steps to put Dallas in her place. If the Dallas celebration was to be cultural and refined, Fort Worth would offer a combination rodeo, Coney Island, circus and Mardi Gras. To find a man who would carry out their rowdy desires, the city fathers unanimously agreed on Billy Rose. Said he last month, from under a brand new 10-gallon hat: "I'm going to have a Texas pageant, to be called 'The Fall of the Alamo,' 'The Battle of San Jacinto,' or some such Texas name. I'll have 2,000 Indians and 1,000 cowboys in that number, and guess who wins?"

CLEVELAND, OHIO: Construction last month was humming along the banks of Lake Erie. From the headquarters of the Great Lakes Exposition came these additional announcements: To be chief of construction: Albert N. Gonsior, graduate of Engineering School of the University of Illinois and superintendent of construction at the Chicago Century of Progress. His assistants: (technical) M. G. Laigle; (others)

(Continued on page 60)



SPEED AND LOW COST . . . often requisite . . . can be achieved without sacrifice of beauty, fire-safety, or rigid strength when it comes to subdivision of large areas into livable quarters by use of Steelcrete Metal Lath and accessories—the ideal base for plastered walls and ceilings. In that notable project, Hillside Apartments, two-inch solid partitions for 1416 apartments (5,278 rooms) were constructed quickly and efficiently with Bar-X-Lath. This outstanding Steelcrete plastering base is a diamond mesh expanded metal lath, to each sheet of which is welded four pairs of No. 11 rods spaced on 7″ centers to reinforce the large flat sheets for ideal rigidity. In specifying Steelcrete Steel or COP-R-LOY Lath—whether it be Bar-X-Lath or other Steelcrete types—you have definite assurance of your own and your client's satisfaction in the finished results. May we send you descriptive literature?

THE CONSOLIDATED EXPANDED METAL COMPANIES
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Steelcrete

FORUM OF EVENTS

(Continued from page 58)

Charles Smallwood and H. E. Hempel. The following appointments were announced: Director of Works, R. C. Frisbee; architect in charge, Anthony Thormin; head designer, Carl Guenther; chief engineer, (electrical) A. H. Heidenrich. Building awards: Hall of Progress, to Walker & Weeks, architects; Transportation Building to Antonio di Nardo, architect; Horticultural Building to Warner & Mitchell, architects. The producer of "Parade of the Years" will be Edward Hungerford; the designer of the sets, Richard Rychtarik.

The general purpose of the Exposition: To present an accurate picture of the commerce, industry and culture of the Great Lakes Region, dramatized as is possible only through the presentation of a big show. It is estimated that over 4,000,000 people will attend before the October 4 closing. Of the new structures erected for the Exposition, only the Horticultural Building will remain as a permanent feature after the close of the show.

JOHANNESBURG, SOUTH AFRICA: All parts of the British Empire are cooperating with Joburg to make the exhibition a great success. India is building a reproduction of the Taj Mahal. The Port of London will erect a large reproduction of their London headquarters. In a "Court of the Provinces" each African region and city of importance will have its own individual exhibit in a garden court. The site will cover more than 100 acres.

PARIS, FRANCE: Opening date for the Paris International Exposition of 1937 has been set for May 16. The show will continue for six months, close in late November. Called the "Exposition of Arts and Crafts in Modern Life," the Fair will present works of new inspiration, executed by craftsmen, artists and creators in their individual fields of decorative arts and modern industry. The announced desire of the Exposition is to combine beauty with utility. As far as France is concerned, the Fair will try to emphasize the present trend of French decorative art. At least two permanent buildings will evolve from the show: a new Trocadéro that will commemorate the capture of the Fort du Trocadéro in the Bay of Cadiz by the Duc d'Angoulême in 1823, and a group of buildings to be called Museums of Modern Art. A feature of the Fair will be the wine festival held in conjunction with the showing of the wares of 700 French wine merchants.

SAN FRANCISCO, CALIFORNIA: San Francisco's hat is in the ring. With the largest bridge in the world to dedicate, San Francisco will take that opportunity to play hostess to the world with another International Exposition. The date is still tentative but the year is 1939. To be promoted by some of the same men that were responsible for the financial success of the 1915 show, the 1939 Fair is expected to: 1) be a "show of surpassing beauty;" 2) be of enormous benefit to local business; and 3) draw an estimated attendance of at least 10,000,000 people.

NEW YORK CITY: Last month perhaps ended the Fair to end Fairs. Under the leadership of President McAneny, the board of directors voted to drop all preparations until "adequate appropriation by public authorities has been made." The vote was unanimous.

ALSO RAN: Not complete by any means, these briefs have made no attempt to cover the small industrial fairs which will occupy the larger part of the present calendar year even though 1936 will probably usher in more international,

(Continued on page 62)

It's spring the year 'round—

WITH A NORGE FINE-AIR CONDITIONING FURNACE UNIT

In the home of today—and certainly the home of tomorrow—more is expected of a heating plant than heat. Properly conditioned air is not a future desire, it is a present demand.

For the home selling for from $5,000 to $50,000 Norge offers the *complete* solution to the problem of air conditioning. The Norge Fine-Air Conditioning Furnace Unit warms, filters, humidifies, circulates the air in every room in the house, provides plenty of hot water. It may be used to circulate filtered air in Summer. Its heating efficiency is over 80% as compared with 20% to 45% in the old-fashioned heating plant which does nothing but provide heat.

The more you study the Norge Fine-Air Furnace, from the standpoint of engineering and construction, the stronger will be your conviction that it is truly the Winter air-conditioning system of the future. And it may easily be supplemented with Norge cooling equipment if lower Summer temperatures are desired than are effected by the forced circulation of air.

For more complete information about Norge heating and air conditioning, get in touch with the Norge distributor in your vicinity or write direct to us.

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Borg-Warner Corporation, Detroit, Michigan
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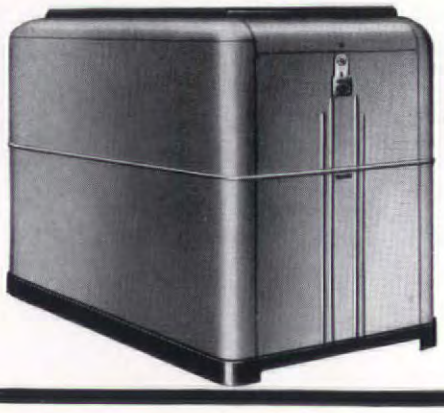

Get the complete story of Norge Home Appliances for apartment or home installation. There are distinct advantages in standardizing on Norge equipment—apart from the exceptionally high quality of the products themselves.

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FORUM OF EVENTS

(Continued from page 60)

national, state and local fairs and expositions than any other period in history. Already exhausted are: Trade Fair, Leipzig; International Fair, Lyons; Sample Fair, Praha; International Fair, Vienna; Spring Fair, Utrecht; Spring Samples Fair, Cologne; Spring Fair, Haarlem; Spring Fair, Frankfort; Swiss Industrial Fair, Basle; Spring Fair, Nantes; International Fair, Lille; etc.

IN PROSPECT: Oriental Fair, Damascus (May); Levant Fair, Tel Aviv (May); Iowa State Fair, Des Moines (August); California State Fair, Sacramento (September); Mid-South Fair, Memphis, Tennessee (September); Brockton Fair, Massachusetts (September); Virginia State Fair, Richmond (October); Louisiana State Fair, Shreveport (October); etc., etc.

BROCKWAY LIBRARY

"IT SHOULD be a matter of rejoicing . . . that this collection of books is to be kept intact . . . and made available for the use of future architectural generations," said Harold L. Butler, Dean of Syracuse University's College of the Fine Arts, on the occasion, last month, of the acquisition of the library of the late Albert L. Brockway, founder and first head of the University's department of architecture.

Begun while Brockway was a student at l'École des Beaux Arts, the collection includes many valuable volumes on European schools of architecture, civic planning, industrial design, furniture, garden art, sculpture and painting. Among the outstanding features are a second edition of Palladio (Venice, 1786), an 1825 edition of Vitruvius, a Liège edition of Edifices de Rome, and an original edition of Owen Jones. Another invaluable part of the library is the collection of photographs of some 200 English, French and Italian buildings—together with complete details of construction.

M.I.T. HOMEWORK

TO BRING to architecture the same laboratory method of instruction that has made the science and engineering departments renowned, the Massachusetts Institute of Technology this year inaugurated a new type of course for first and second year students in the school of architecture. In brief, it provides not only instruction in house design, but practical experience in construction and sale.

The problem this year was to build a house to fit the requirements of an average family whose special desires as to number of rooms, economy and conveniences were set forth in a letter such as any prospective client might write a professional architect. The winning design, by Thomas Akin, Jr., '38, of New Bedford, was a seven-room Colonial house. The site: a piece of land owned by the Institute in Wellesley, Mass.

The next step will be to make working drawings from which contractors can build the house next Fall. For this purpose, first and second year men are being divided into competing squads, each headed by a captain. The best set of drawings will be chosen by a jury for the actual construction. During building, the students will participate in writing specifications, selecting contractors and supervising building from excavation to final coat of paint.

When completed, the sale of the house will not only give the students experience in the legal and financial angles of property transfer, but the money received will be used to defray costs of designing and building another house the following year.

(Continued on page 64)

One fact worth remembering about

RUBBER FLOORS

MAKE THIS TEST — *burning matches, cigars and cigarettes neither char nor stain Goodyear Rubber Flooring*

ONE FLOORING
that meets every specification

DURABILITY — *withstands heaviest traffic for years without appreciable wear.*

CLEANLINESS — *imperious to dirt; kept spotless with damp mop.*

FIRE- AND STAIN-PROOF — *not marred by alcohol, inks, most acids, cigar stubs, etc.*

QUIET — *its resiliency minimizes noise and gives maximum comfort underfoot.*

BEAUTY — *wide choice of rich tuemonizing with any decorative scheme. and three-tone permanent colors har-*

See Sweet's 1936 Architectural Catalogue for complete specification data

Beautiful, quiet, permanent — *Goodyear Rubber Tile floor in main lounge, Masonic Temple, Columbus, Ohio* — Architect: *Richards, McCarty & Bulford*

FLOORING is the most difficult of all rubber products to compound. Surface qualities — color, flexibility, resilience — are important to the architect. But far more so is the manufacturing skill and integrity that insures their permanence without excessive maintenance cost.

That is why Goodyear Rubber Flooring has been specified in so many of the nation's finest public buildings and homes—*records prove it wears longest!* A product of the world's largest rubber company, its composition embodies all Goodyear's wide experience in compounding rubber goods to withstand severest conditions of wear, abrasion, temperature, weathering, etc.—factors which appreciably shorten the life of ordinary flooring.

Remember that when your floor plans call for rubber. If you want a floor whose beauty will still do you credit years hence; that will not become stained, indented nor ingrained with dirt; that will not be scarred or marred by burning cigarettes or matches—look to the greatest name in rubber.

Now made in two types

Goodyear Rubber Tile — laid in individual blocks of any size, shape or color in any desired pattern or mosaic — the finest floor money can buy. *Goodyear Wingfoot*

Sheet Rubber Flooring — at lower cost — made and laid in continuous lengths like linoleum and adaptable to more than 100,000 different designs. For full particulars, write Goodyear, Akron, Ohio, or Los Angeles, California.

WINGFOOT GOODYEAR FLOORING

THE GREATEST NAME IN RUBBER

GOODYEAR

FORUM OF EVENTS

(Continued from page 62)

PERSONALS

Bernard H. Prack and Arthur E. Prack announce the formation of a partnership for the general practice of architecture with offices at 517 Martin Building, N. S. Pittsburgh, Pa. The firm name will be: Prack & Prack, Registered Architects.

Paul Schweikher and Theodore Warren Lamb (winners of Grand Prize, General Electric competition) announce the opening of an office at 161 East Erie St., Chicago, for the general practice of architecture and industrial design.

Peter Copeland, New York architect and industrial designer, has been appointed consulting architect for the Marizon-Rosenberg Co. With headquarters at 225 West 34th St., the company represents 175 stores all over the country.

Robert E. Bourke and George Havens have been admitted to partnership in the firm of Mundie & Jensen, architects, with offices at 39 South LaSalle St., Chicago. The firm name now: Mundie, Jensen, Bourke & Havens.

Bertrand Goldberg announces the opening of an architectural office at 1755 East 55th St., Chicago.

William Ginsberg, New York architect, was cited recently by the Washington Board of Trade for "architectural merit" in his Washington Daily News Building.

The firm of Coggins & Hedlander, architects, has removed its offices to the Chateau Lafayette, Boston Post Road, Greenwich, Conn. Their former address: Stanwich Road, Greenwich.

COMPETITIONS

Applications for the Kate Neal Kinley Memorial Fellowship ($1,000) should reach the Committee not later than June 1, 1936. Application blanks and instructions from Dean Rexford Newcomb, College of Fine and Applied Arts, University of Illinois.

The George G. Booth Traveling Fellowship in Architecture is open to any graduate of the University of Michigan who has not reached the age of thirty by June 22, the date on which the competition will be conducted. Further information, write Director Emil Lorch, College of Architecture, University of Michigan, Ann Arbor.

The College of Architecture, University of Michigan, will again hold summer classes this year. Opening June 29, the school will conduct seven weeks' courses in architectural drawing, undergraduate and graduate architectural design, elements of office practice and outdoor painting and sketching.

AWARDS

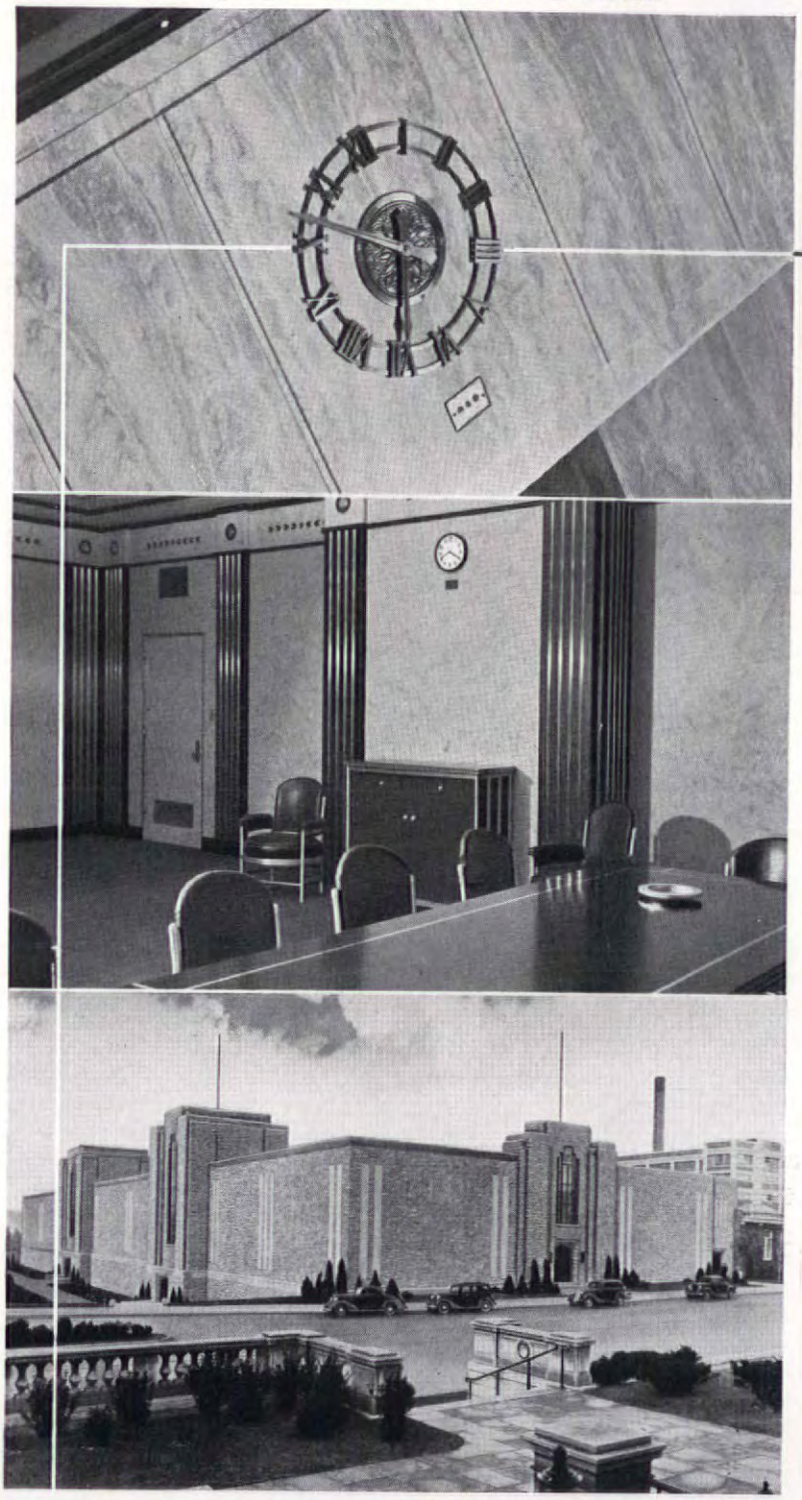
American Academy in Rome announcements:

Awarded: Rome Prizes in classical studies to Walter F. Snyder (Swarthmore; Yale) of Merchantville, N. J., and to Miss Susan M. Savage (Bryn Mawr; U. of P.) of Audubon, N. J.

Survivors (preliminary competition in architecture):
Richard Ayers, Jefferson, Georgia (Yale).
James W. Breed, Philadelphia, Pa. (U. of P.; Cornell).
John J. Brust, Milwaukee, Wis. (Notre Dame; Catholic U.).
Joseph P. Ceruti, Cleveland, Ohio (Cleveland School of Architecture; Princeton).
Vernon F. Duckett, Washington, D. C. (Catholic U.).
James M. Hunter, Urbana, Ill. (undergraduate, University of Illinois).
Joseph V. Keyes, Manchester, N. H. (U. of P.).
George N. Lykos, Boston, Mass. (M. I. T.).
S. Thomas Stathes, Washington, D. C. (Catholic U.).

(Continued on page 66)

Main lobby with Telechron skeleton clock in view. Note the weather signal lights directly below the clock, to inform all persons inside the building regarding outdoor weather conditions.



This ultra-modern, windowless office building, operated entirely on artificial weather, is equipped with the best clock system — a Telechron MDMR (manual dual motor reset), consisting of 26 office clocks, a 54″x44″ outdoor clock mounted above the panel of the Chocolate Avenue (south) side of the building, and central control.

Architect, D. Paul Witmer; *Engineer*, A. Bowman Snavely; *General Contractor*, Hershey Lumber Products; *Electrical Contractor*, Hershey Chocolate Corporation.

THE MOST MODERN TIME FOR THE MOST MODERN BUILDINGS

MODERN plants require modern timekeeping equipment. One of the most interesting developments in modern architecture is the new Hershey Chocolate Corporation Office Building, at Hershey, Pennsylvania. Completely modern in function and design, it is operated entirely on artificial weather, lighting, and Telechron time.

Accurate, silent, dependable Telechron time service makes every type of building, new or modernized, more efficient. Actual installations vary from one to thousands of Telechron clocks—operating as a unit, and controlled from a central point.

Important in the consideration of a Telechron clock system is its economy. The initial cost is low . . . operating and maintenance charges are negligible.

We would be pleased to send one of our representatives to discuss your projects with you. Address the Warren Telechron Company, 756 Main Street, Ashland, Massachusetts.

Telechron

(Reg. U. S. Pat. Off. by Warren Telechron Co.)

SELF-STARTING SYNCHRONOUS ELECTRIC CLOCKS

FORUM OF EVENTS

(Continued from page 64)

AWARDS cont.

Max O. Urbahn, Milwaukee, Wis. (University of Illinois; Yale).

Survivors (preliminary competition in landscape architecture):

Harold E. Atkinson, Cleveland, Ohio (Cornell).
Robert S. Kitchen, Dayton, Ohio (Cornell).
Joseph W. Langran, Grand Prairie, Tex. (U. of P.).

DEATHS

CHARLES A. COOLIDGE. F.A.I.A., 77, architect; suddenly, in Locust Valley, Long Island, April 1.

Charles Allerton Coolidge was born in Boston, Mass., in 1858. He prepared at Mr. John P. Hopkinson's Private Classical School for Harvard, where he was graduated in 1881, studied as a special student of architecture at Massachusetts Institute of Technology for a year, then resided in Chicago from 1892 to 1900. In these nineteen years following his graduation from Harvard, he was associated with the architectural firms of Ware & Van Brunt, H. H. Richardson, and Shepley, Rutan & Coolidge, which was formed in 1886.

Returning to Boston and his home in Jamaica Plain at the turn of the century, he was with the last-named firm until it was dissolved in 1914 to be succeeded by Coolidge & Shattuck. This partnership lasted until 1924 when he became connected with the firm of which he was the senior partner at his death, Coolidge, Shepley, Bulfinch & Abbott. Until 1930, he was also senior partner of Coolidge & Hodgdon of Chicago.

In 1916 he was sent to China by the Rockefeller Foundation to prepare for the building of a hospital and medical school at both Peiping and Shanghai. He was in Europe in 1884, 1889 and 1900 on business trips, and when working on Leland Stanford University, he made six trips to the Pacific coast in one year. He was also architect for the University of Kentucky, the University of Chicago, and Vanderbilt University at Nashville, Tenn.

Among other works of first importance that he designed are the Rockefeller Institute in New York City, the new Harvard Medical School, the Art Institute and Public Library, Chicago, the Sprague Music Building at Yale, the John Nicholas Brown Library at Brown University, buildings for the University of Nebraska and the Medical School for Western Reserve University. He was also consulting architect

(Continued on page 68)

Harold Mueller, president, L. J. Mueller Furnace Company, Milwaukee, Wisconsin, goes over the new Mueller line of heating and air conditioning equipment with Mr. A. L. McKinstry.

PLAIN TALK BY HAROLD MUELLER

WHEN I was a little fellow running around my grandfather's furnace shop, he used to tell me, "My boy, if you build an honest product and sell it honestly, you'll never have to worry about keeping customers. Even if you have to charge a little more for good workmanship, your customers will remember quality long after they forget price."

That was a good policy 79 years ago and it's good today. It's like the constitution—a little old-fashioned, perhaps, but still reliable.

Fundamentals don't change even though ideas and living standards do. In the seventy-nine years my family has been in the heating business a lot of changes have taken place. In the last ten years alone, ideas about home heating have done a complete about face.

Homes built according to 1936 standards will completely outmode those of 1926. One major change is the public's opinion about heating. Today the call is for automatic heat and air conditioning.

Alert homebuilders are aware that modern heating and air conditioning systems are far ahead of the old-fashioned heating plants they have supplanted.

Air-Conditioning Oil Furnace. We are proud of this modern, compact unit which represents the first complete departure from conventional furnace design in a direct-fired forced air heating and air conditioning plant.

During the last ten years our engineers have pioneered automatic heating and air conditioning. Today we are ready with a complete line of Climator equipment, Gas Era Furnaces and Boilers, the great new Air Conditioning Oil Furnace —all newly styled and attractively priced. Be sure to get all the facts about this new equipment—and of course we still continue to produce the standard line of Mueller coal-fired furnaces, registers and fittings.

Be ready for a big year in 1936. Our engineers will gladly cooperate with you.

H. J. Mueller

PRESIDENT

MUELLER-MILWAUKEE

FORUM OF EVENTS

(Continued from page 66)

for the buildings of Constantinople College in Turkey.

His most recent works include the new Harvard Houses, the new dormitories in Harvard Yard, the new Fogg Art Museum, the Collis P. Huntington Memorial Hospital, the Lakeside Hospital in Cleveland, the New York Hospital-Cornell Medical School group in New York City and the new dormitories for the Harvard Medical School.

Harvard invented a new honorary degree for him when it wished to honor its distinguished alumnus in 1906, and he became the first recipient of the degree of Doctor of Arts. John Singer Sargent was the only other man to receive this degree. He was also honored with the decoration of Chevalier of the Legion of Honor of France in his official position as American architect to the Paris Exposition in 1899.

Photographing ancient headstones so that they might be preserved was one of his hobbies. He had privately printed and distributed a monograph, "Gravestones in Boston and Vicinity." The original was given to Harvard's library.

In his undergraduate days at Harvard, he was one of the original members of the editorial board which founded the Harvard *Lampoon*, the first comic periodical successfully produced at any college. In 1926, he joined five other prominent Harvard alumni in deploring the November, 1926 (Princeton game), number of the *Lampoon* that was so instrumental in causing the famous athletic break between the two institutions.

Among the offices Mr. Coolidge held were:

Member, American Academy of Arts and Sciences; director, American Institute of Architects; president, Boston Society of Architects; trustee, Art Institute, Chicago; trustee, American Academy in Rome; chairman of the mayor's committee on memorials to soldiers and marines in Boston; park commissioner, Boston; director and clerk of the Home for the Aged Men, Boston; director, Bunker Hill Monument Association; president, Vincent Memorial Hospital, Boston; vestryman of Trinity Church, Boston; president, Massachusetts Society of the Cincinnati; governor of the Massachusetts Society of Mayflower Descendants; life member of the Corporation of Marine Biological Laboratory, Woods Hole; overseer, Harvard University; president, Harvard Alumni Association and member, U. S. Commission of Fine Arts.

ALFRED J. S. HOLTON, architect, 58; after a four months' illness, in Brooklyn, N. Y., April 6.

Alfred J. S. Holton was born in Belleville, Ontario, in 1878. Educated there, he came to this country in 1897, settled in Brooklyn. Long associated with the architectural firm of Clinton & Russell, he was taken into the firm as a partner in 1904. In 1926, Clinton & Russell merged with the newly formed firm of Holton & George, and he became the senior member of the combined Clinton, Russell, Holton & George. Among his many designs are the Whitehall Building, the National Board of Fire Underwriters Building, the New Amsterdam Casualty Building and the Astor Hotel.

During the war, he served with the Housing Division in Washington, held a commission of Major in the Officers' Reserve Corps.

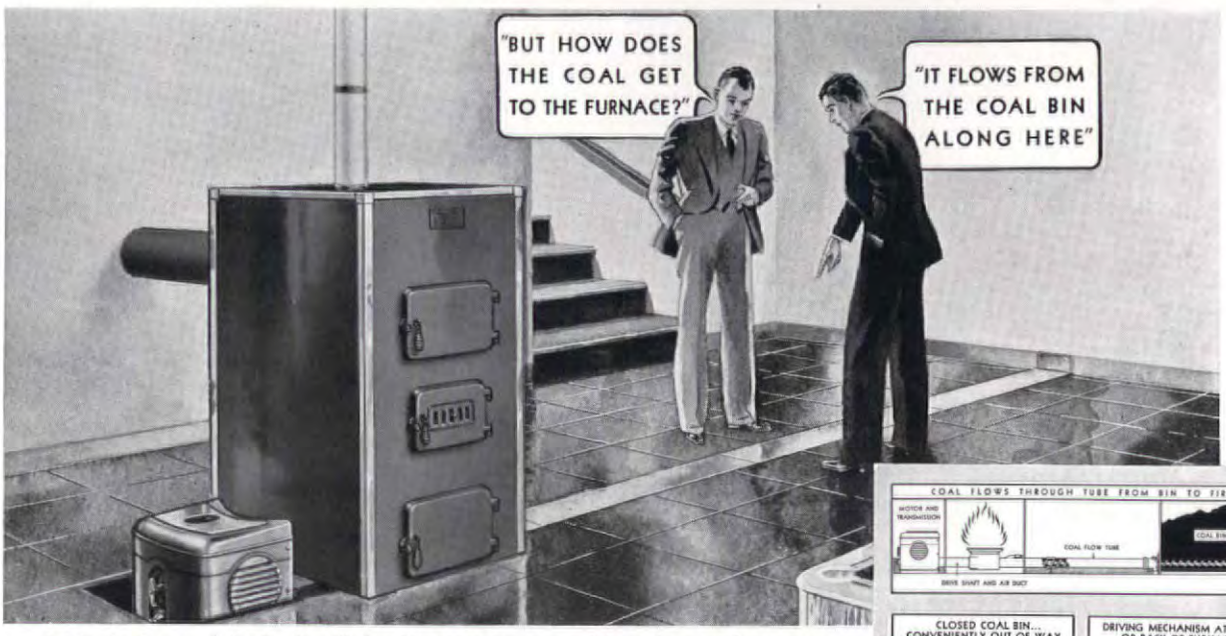
EDWARD H. HOYT, F.A.I.A., 68; after a lingering illness, in Brighton, Mass., March 20.

Edward H. Hoyt was born in Ossipee, N. H., in 1868. Educated in the Boston schools, he received his architectural training in the offices of Peabody & Stearns, Cabot & Chandler and Wheelwright & Haven, later becoming a partner in the latter firm which then became Haven & Hoyt and Associates. Among his many designs are the Boston Opera House, the Boston Conservatory of Music, various buildings of the Massachusetts General Hospital, the Faulkner Hospital and a number of school buildings in and about Boston.

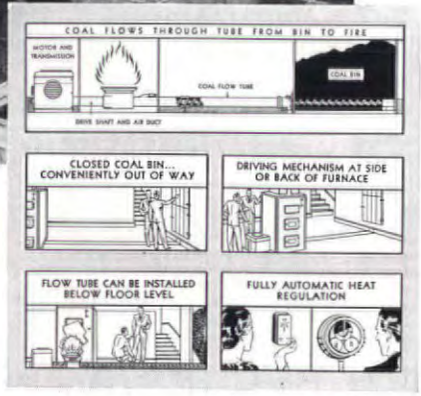
Announcing The IRON FIREMAN

COAL FLOW

Coal now the finest and most economical form of automatic-heating



Coal Flow in a hot water boiler. Equally well adapted to steam or vapor-vacuum boilers and warm air furnaces



Iron Fireman brings you this latest coal firing convenience

DOES AWAY WITH COAL HANDLING

IN A YEAR when home building is showing a definite increase; when architects, builders and their clients are thinking definitely of automatic home heating, Iron Fireman is happy indeed to present its new *Coal Flow* model.

With the development of this advanced automatic burner, coal goes completely modern and automatic. As the name implies, coal *flows* from bin to fire. From the time that the coal is put into the bin until it is transformed into useful heat in the furnace or boiler, it is an invisible, self-serving fuel.

Like all Iron Fireman burners, the *Coal Flow* uses inexpensive sizes of coal. The burner achieves combustion efficiencies fully as high as liquid or vapor fuels. This high heating efficiency combined with low fuel cost enables an Iron Fireman burner to cut fuel bills from 15% to 50% over hand-firing, and from 25% to 75% over other types of automatic heating.

Coal Flow models are available to fit practically every type of heating plant and basement arrangement. The distance the coal is conveyed and the location and size of the bin can be varied greatly. This wide flexibility makes possible installations that are specially designed to fit the most diverse individual requirements.

Iron Fireman prices are the lowest in history. A *Coal Flow* model may be purchased for as little as $10.72 a month, with a small down payment; standard hopper models for as little as $8.97 a month.

We suggest that you write for complete descriptive information, or get in touch with your local Iron Fireman dealer. Iron Fireman Manufacturing Company, Portland, Oregon; Cleveland, Ohio; Toronto, Canada. Dealers everywhere.

THE IRON FIREMAN

NOW ON DEMONSTRATION AT IRON FIREMAN DEALERS

An Iron Fireman for every firing job

RESIDENTIAL

INDUSTRIAL

There is an Iron Fireman for every firing job; for firing every type of coal—bituminous, anthracite, lignite—and for firing practically every kind of furnace and boiler from a small residential warm air furnace up to industrial boilers developing 500 horsepower. Illustrated literature will gladly be sent to you free upon request.

SEND FOR FREE LITERATURE

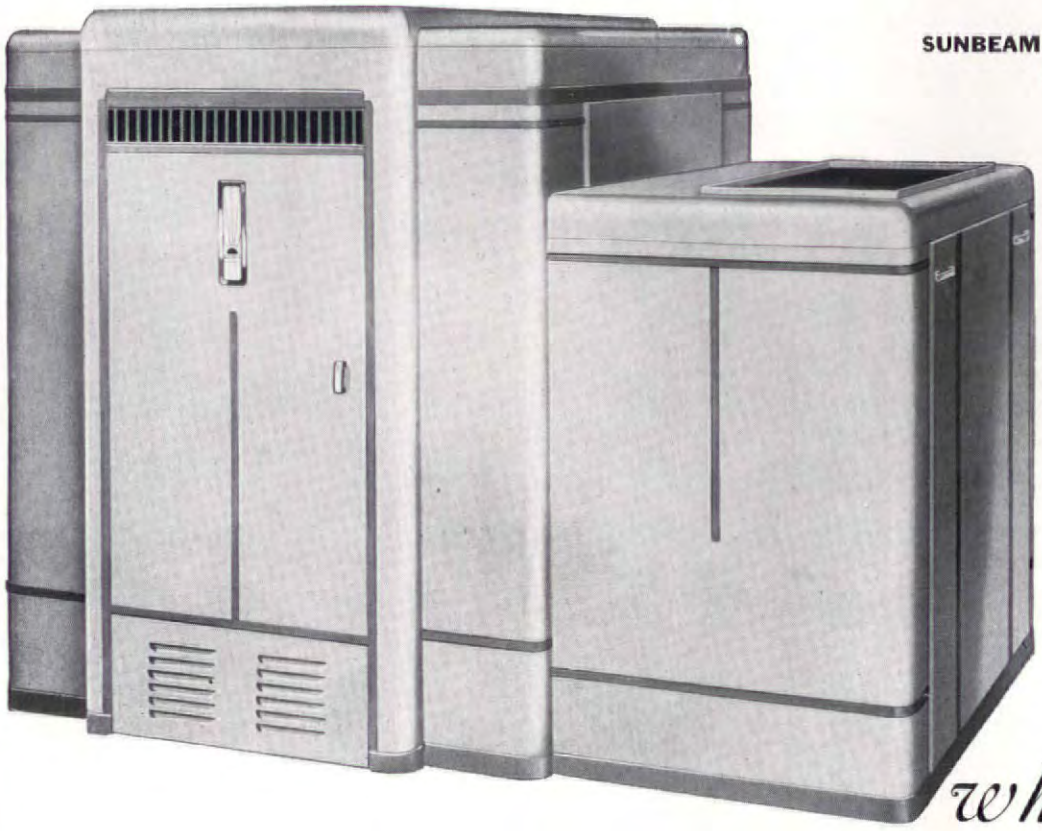
IRON FIREMAN MANUFACTURING CO.
3016 W. 106th Street, Cleveland, Ohio.

Gentlemen: Please send full particulars about the Iron Fireman *Coal Flow* for:

☐ Residence ☐ Large Heating Plant ☐ Power Boiler

Name .....

Address .....



The new
SUNBEAM AIR CONDITIONING UNIT
for oil, gas or coal

what should

AIR CONDITIONING DO?

THERE is no mystery about residential air conditioning. Its functions have been clearly defined. Let Sunbeam Air Conditioning be your measure of what residential air conditioning should do. It heats in winter, cools in summer; humidifies, filters and circulates the air. Equipment for mechanical cooling can be added at any time. Without it, you can promise relief from summer heat through circulation and ventilation with cool, night air.

The Sunbeam Air Conditioning Unit, handsome in appearance, is installed in the basement. Through wall baseboard grilles in each room, it delivers a plentiful supply of clean, conditioned air. There are models for oil, gas and coal . . . sizes for every home . . . completely automatic . . . reasonably priced.

Your new homes should have the benefits of "Custom Made Climate." It's a necessity for modern residential construction. But be sure you install practical air conditioning. Fifty years of experience in air treatment—plus successful performance in many large homes for the past five years—assures the dependability of Sunbeam equipment. Sunbeam engineers will be glad to design your air conditioning layouts from your building plans. The service is free. Mail the coupon today for complete information and specifications.

SUNBEAM
AIR CONDITIONING
HEATS IN WINTER ▪ COOLS IN SUMMER

BETTER HOUSING PROGRAM

THE FOX FURNACE CO., ELYRIA, OHIO

DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

FOX FURNACE CO., ELYRIA, OHIO.
Send me literature and specifications on Sunbeam Air Conditioning . . . and details on your free Air Conditioning layout service.

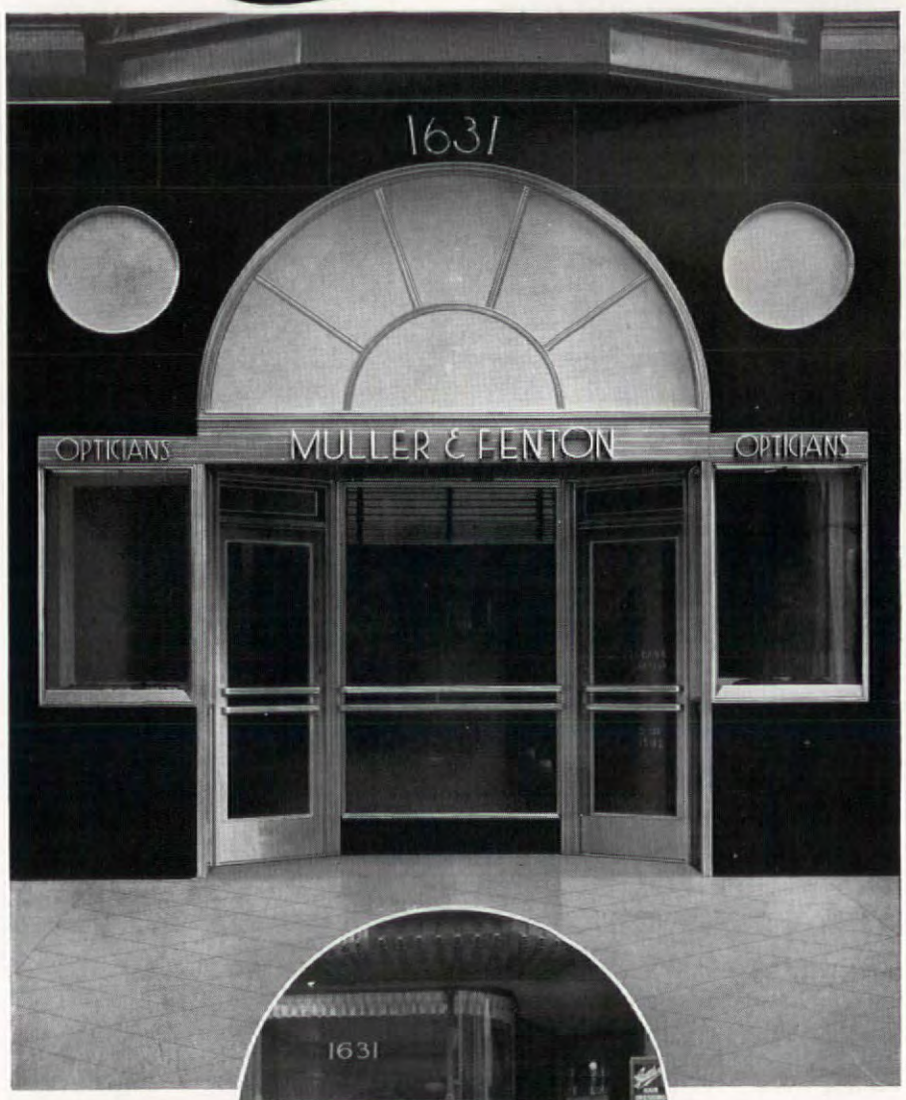
NAME .....

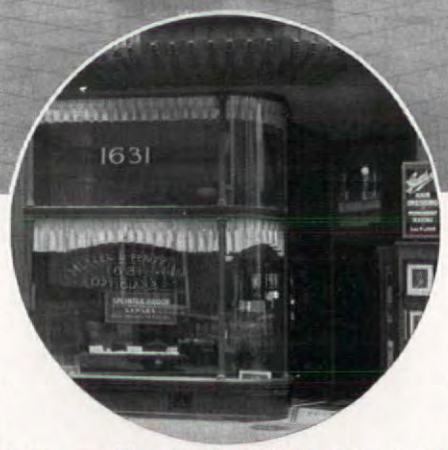
FIRM NAME .....

ADDRESS .....*CITY*.....

A-5

For perfect execution of the Store Fronts you design . . .





An opticians' shop in Philadelphia, Pa., before and after Architect Warden H. Fenton of New York City remodeled it with a new Pittco Store Front. Mr. Muller, the optician, writes: "We are very much pleased with the new store front . . . many people have complimented us on our beautiful new store and we feel sure it will be quite productive of increased business."

PITTCO STORE FRONT PRODUCTS

YOU will make certain that the store fronts you design will look as well in reality as they do on paper if you use Pittco Store Front Products to execute them. These products . . . glass, metal and paint . . . are of the best quality obtainable. They help you transform an old front into a modern, sales-building, revenue-producing front. They allow you full scope for original and effective treatments. And they assure client satisfaction of the highest order.

The new Pittsburgh Time Payment Plan, which makes it easy for merchant or property owner to finance the purchase of a new Pittco Store Front, also includes provision for an architect's fee. So many prospects in your community will be remodeling their stores . . . and calling you in to help. When they do, tell them the advantages of Pittco Store Front Products. And meanwhile, we invite you to clip the coupon below and have your name entered on our architect's list to receive our "Design of the Month" service. Each month, our staff of store front experts, maintained to cooperate with architects on problems of construction and product application, prepare a style suggestion on some type of front. We would like to send these "Designs of the Month" to you.

Listen to the Music You Love, superbly rendered by the Pittsburgh Symphony Orchestra and distinguished guest artists every Thursday at 8:00 P. M., E. S. T., over NBC Blue Network and associated stations.

CARRARA STRUCTURAL GLASS
PITTCO STORE FRONT METAL
PITTSBURGH MIRRORS

PITTCO STORE FRONTS
glass . . . metal . . . paint

PITTSBURGH PAINT PRODUCTS
POLISHED PLATE GLASS
TAPESTRY GLASS

PRODUCTS OF
Paint { PITTSBURGH PLATE GLASS COMPANY } Glass

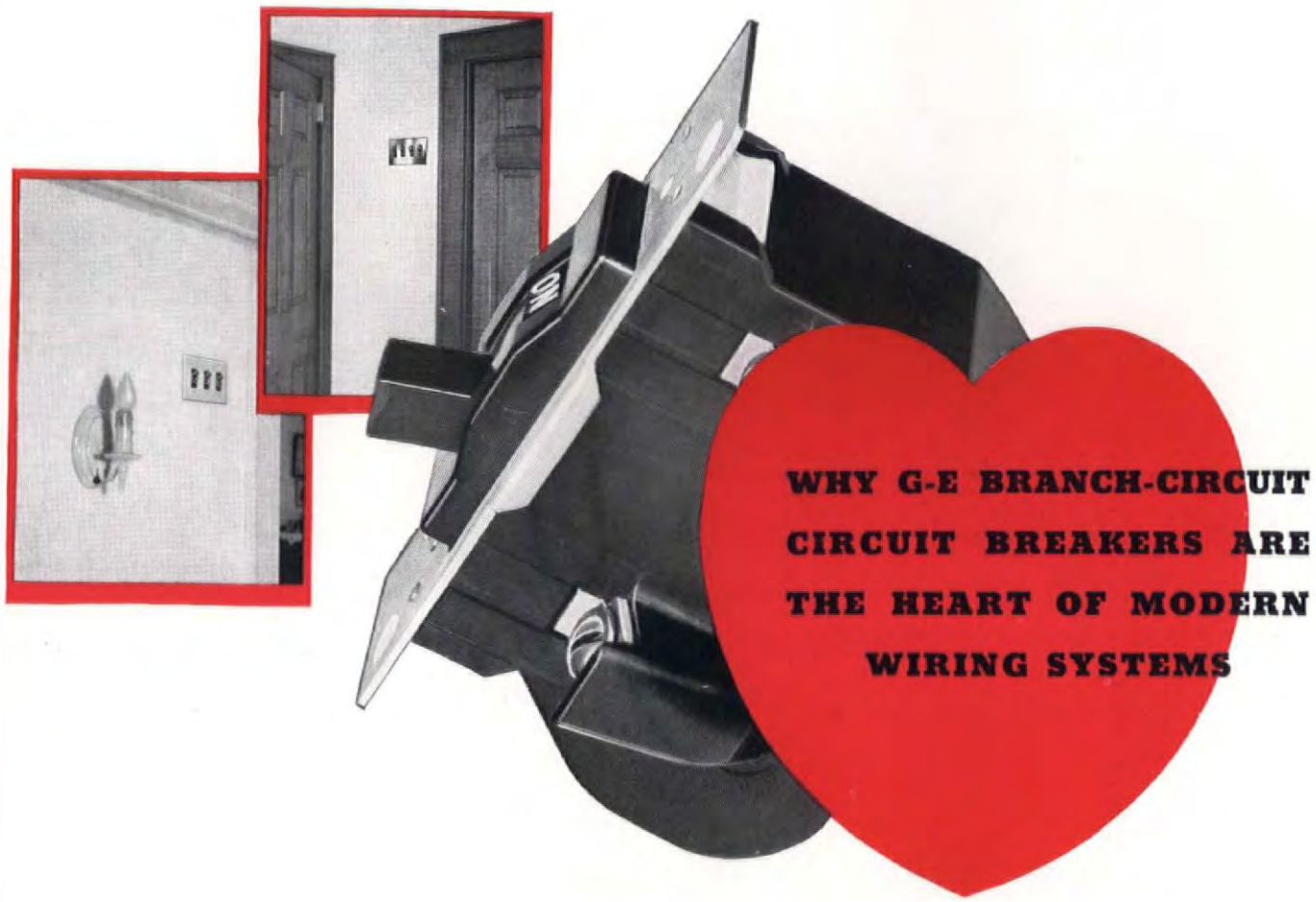
Pittsburgh Plate Glass Company,
2189A Grant Building, Pittsburgh, Pa.

Please enter my name on your list of architects who will receive your store front "Design of the Month" suggestion regularly each month during 1936.

Name_____

Street_____

City_____ State_____



WHY G-E BRANCH-CIRCUIT CIRCUIT BREAKERS ARE THE HEART OF MODERN WIRING SYSTEMS

You are designing today's home for comfortable and convenient living. Wisely, you consider a modern wiring system of vital importance. Now, General Electric introduces a new circuit protecting device, which is designed for standard outlet box mounting, that aids you in functional design of homes, apartments, and other buildings.

These new Branch-circuit Circuit Breakers fit in well with modern trends. Your clients will appreciate the livability that they add to the homes you design. These devices apply the successful principles of protection and control, long used for industrial equipment. They can be furnished in capacities of 15, 20, 25 or 30 amperes; single-pole, 125 volts A-c. or D-c.

You will be most interested in the convenience that their use offers your clients. Because they have the neat outward appearance of flush Tumbler Switches, they can be placed in living rooms, kitchens, bedrooms — and their appearance is similar to that of the neat appearing Tumbler Switches.

When a short circuit or overload occurs, service in that particular circuit is resumed after the trouble has been removed, by simply flipping the breaker. They can be placed in accessible spots about the house near the circuit that they protect. Thus, inconvenient changing of fuses in branch circuits is eliminated. Home owners will appreciate this step-saving feature which is another aid to good housekeeping.

As well as convenience, mark these additional advantages of using G-E Branch-circuit Circuit Breakers:

They offer safe and positive protection. Factory calibration and sealing practically eliminates tampering. They insure positive short circuit and accurate overload protection for branch circuits.

They may be used as master switches to control the circuits that they protect.

These breakers are designed for all conventional wiring systems and are specified in the new G-E Radial Wiring System.

They have satisfactorily passed all tests of, and are listed by, the Underwriters' Laboratories, Inc.

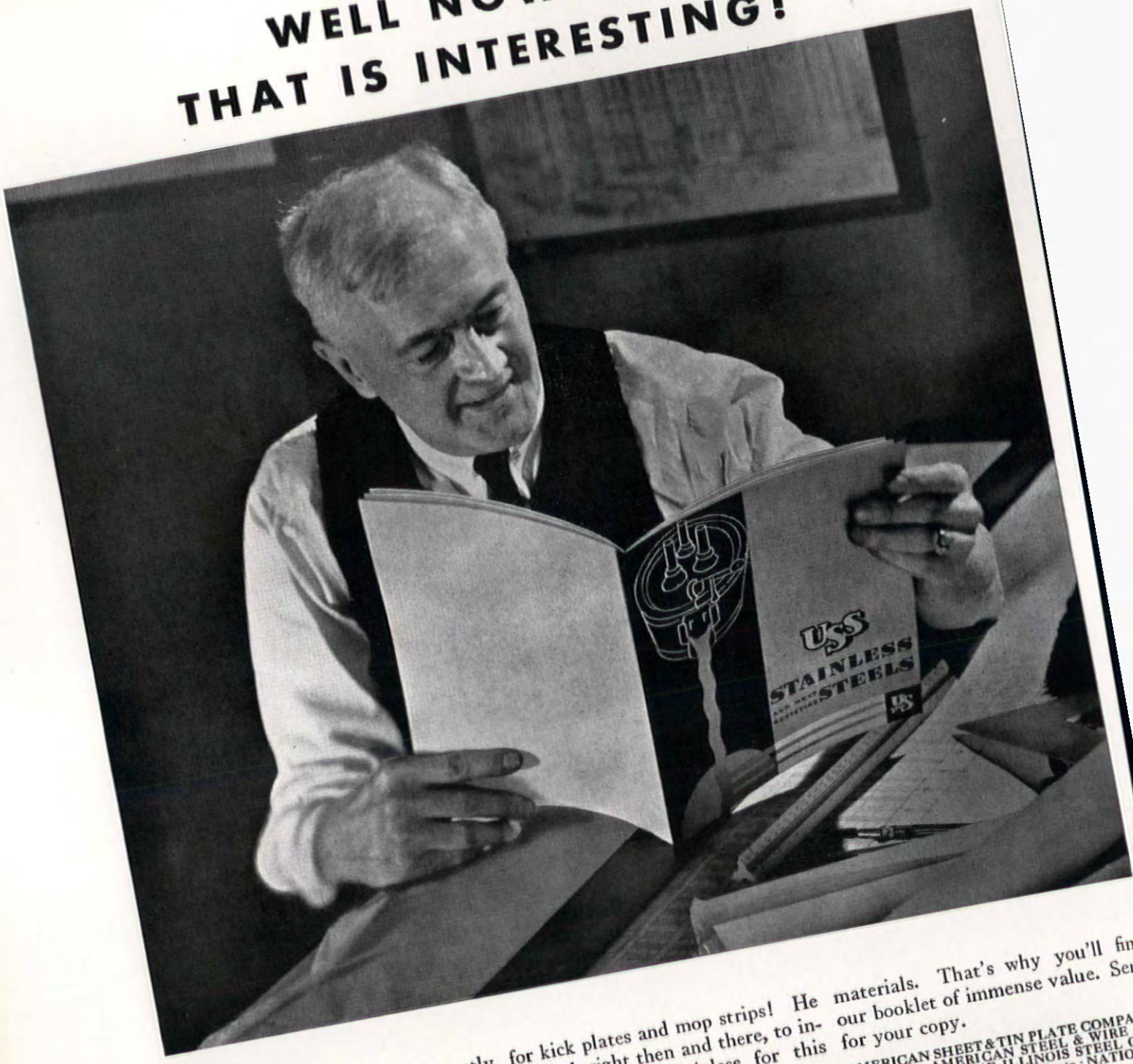
For further information on their convenience - appearance - safety and control, refer to "Sweet's Architectural Catalog" and "American Architect Time-Saver Specifications", or write Section CDW-915, Appliance and Merchandise Department, General Electric Company, Bridgeport, Connecticut.

GENERAL ELECTRIC

WIRING DEVICES

APPLIANCE AND MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONN.

WELL NOW! . . . THAT IS INTERESTING!



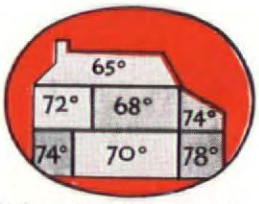
THIS gentleman was pleasantly surprised to learn that there were so many different applications of USS Stainless Steel. He had always thought of it in connection with spandrels, perforated sections with ornamental sections, sheets for re-designed store fronts and similar applications. It had escaped his attention that one of the large uses is for kick plates and mop strips! He decided, right then and there, to incorporate USS Stainless for this purpose in his present specifications. The advent of Stainless Steels has thrust an increasing demand upon the architect, the engineer, and the builder for a knowledge of the fabricating characteristics, and the application of these non-corrosive materials. That's why you'll find our booklet of immense value. Send for your copy.

AMERICAN SHEET & TIN PLATE COMPANY, Pittsburgh · AMERICAN STEEL & WIRE CO., Chicago · CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh and Chicago · NATIONAL TUBE COMPANY, Pittsburgh

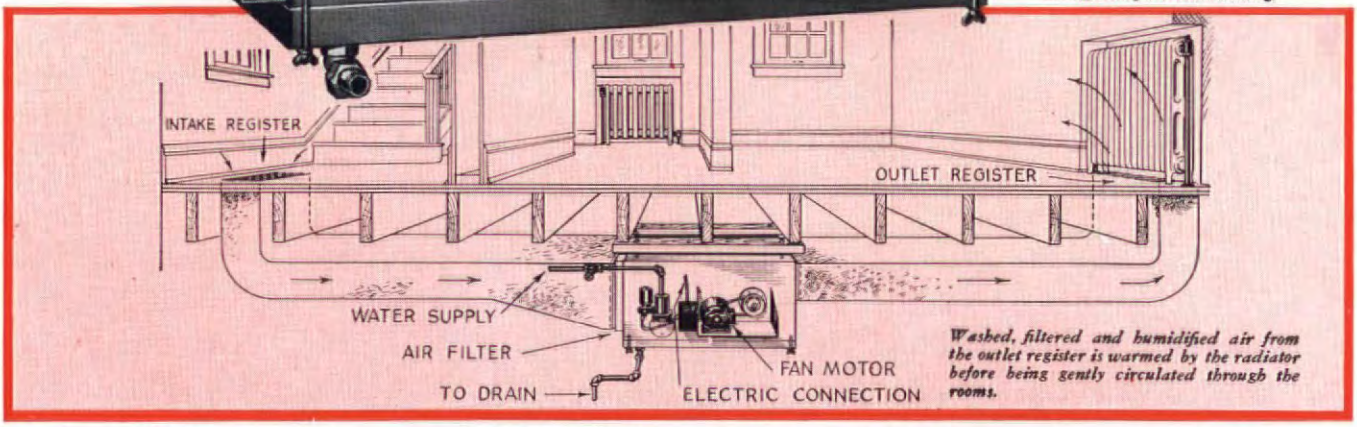
Columbia Steel Company, San Francisco, *Pacific Coast Distributors* · United States Steel Products Company, New York, *Export Distributors*

UNITED STATES STEEL

NOW.. HOFFMAN CONTROLLED HEAT WITH *Air Conditioning*



Hoffman Controlled Heat delivers to each room individually as much or as little heat as desired—without affecting air-conditioning.



Washed, filtered and humidified air from the outlet register is warmed by the radiator before being gently circulated through the rooms.

Air conditioning for the home is now available in its most effective and satisfactory form—*with radiator heating!* Installing the new Hoffman Air Conditioner with a Hoffman Controlled Heat System provides all the essentials of true winter air conditioning—correct heating, humidification, air cleaning and air circulation. Functioning of the conditioning unit is entirely independent of the heating system, a feature which permits separate or combined operation. Only in the radiator heated system is this dual control possible. The diagram shows how easily the compact Hoffman Air Conditioner is installed, requiring a minimum of space and duct work. Hoffman Controlled Heat, a two-pipe vapor-vacuum system, delivers to any room as much or as little heat as desired by merely adjusting the lever of the Hoffman Modulating Valve installed on the radiator. Operation is exceedingly economical because fuel consumption is only in proportion to the demands for heat. The Hoffman Air Conditioner can be as easily installed in homes heated with simple one-pipe steam. It is sold everywhere by leading wholesalers of Heating and Plumbing Equipment.

HOFFMAN SPECIALTY CO., Inc.

HOFFMAN SPECIALTY CO., INC.
Dept. AF-5, Waterbury, Conn.

Send at once complete information on the New Hoffman Air Conditioner and Hoffman Controlled Heat.

Name .....

Address .....

City ..... *State* .....

Made by the makers of Hoffman Venting Valves, Supply Valves, Traps and Hoffman-Economy Pumps.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PICKERING
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MC LEAN
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KENDALL
NILES
F·GRANGER
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JOHNSON
COLL
HAL
HUBE
CAM
BRO
KIN
DEN
RAN
CRES
MAR
BOHN

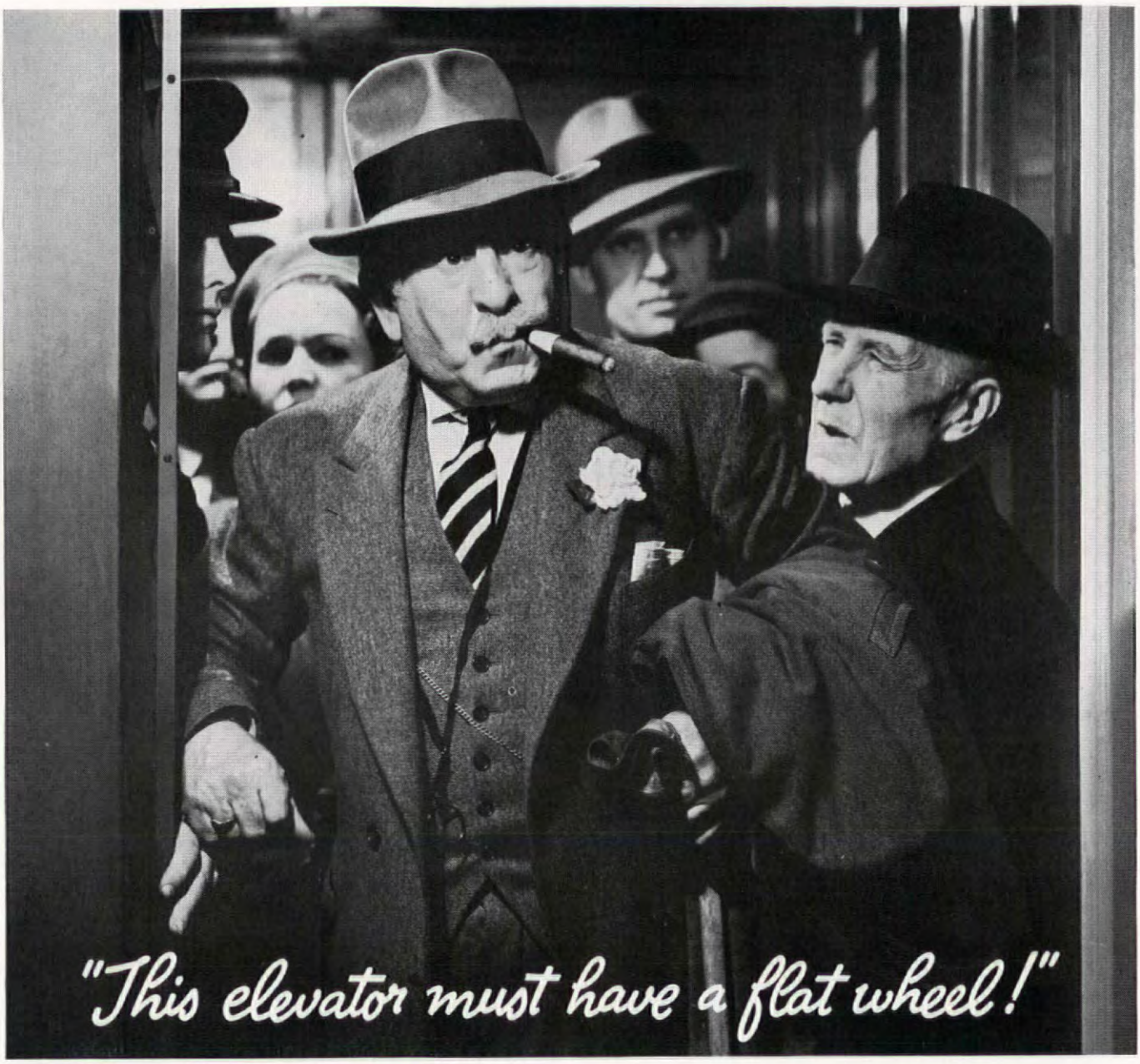
SOMETHING LARGER THAN SIZE

•

A CONCEPT is without dimension. It is exactly as large as it is true. A concept may be as great, and as lasting, in minuscule as in monument ★ There is reason to suspect that the future will measure our modern architectural concepts by the intelligence of our use of today's materials, rather than by the artisanship of our adaptation of the massy materials of the ancients to modern building ★ Alcoa Aluminum is of today and for the future ★ Which is to say that its infinite variety of appearance gives full expression to the modern tempo, and that its durability and nobility are certain hostage to the future. The structural sufficiency and versatility of Alcoa Aluminum goes without saying ★ We forego actually labelling the building illustrated in order to stress the obvious fact that its real distinction is distinction. Aluminum Company of America, 2166 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA

ALCOA · ALUMINUM



ELEVATOR passengers *feel* slow and jerky elevator motion and jiggly starts and stops. They *feel* the discomfort of crowded cars and long, nerve-upsetting waits at the landings. Poor elevator service just can't be hidden behind a coat of paint—unless passengers can be deprived of this sense of *feel*. The better plan is to modernize.

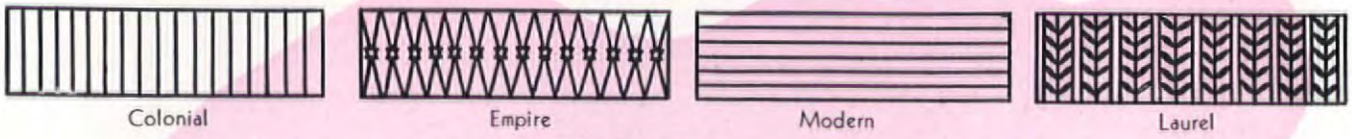
If you wish to "go easy" in order to accommodate your budget, modernize *one step at a time*. But (and this is important), put the vitally essential changes first on the list—the changes that will mean the most in better service. And then proceed step by step and pay for each step when it is completed. This will give you partial modernization at once and eventually complete modernization *without financial burden*.

We shall be glad to go over your elevators and lay out this plan in logical steps. This will *not* cost you a red cent, and it will give you a picture of your elevators as they are today and as they will be should you decide to modernize. Start the ball rolling by talking it over with the local Otis representative next time he drops in to see you.

OTIS
MODERNIZATION
PAYS DIVIDENDS

MAKE YOUR OWN CONVECTOR GRILLE DESIGN

at no extra cost



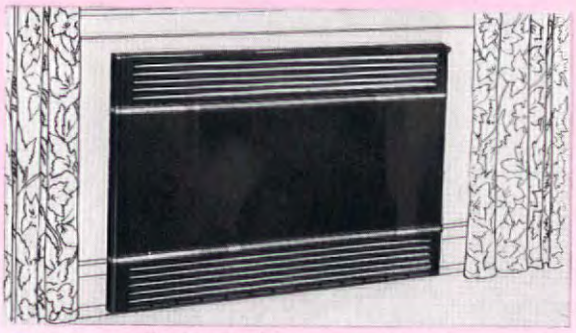
Colonial · Empire · Modern · Laurel

THE FOUR ELEMENTARY GRILLE DESIGNS

Colonial Classic

Colonial Medallion

Colonial Venetian



THE RECESSED CONVECTOR

Design Patents Applied for

Regency Classic

Regency Medallion

Regency Venetian

Colonial Laurel

Empire Classic

Modern Classic

Colonial Dual Medallion

The striking beauty of enclosures and grille designs of the new Modine Convector now keeps pace with mechanical excellence. For the first time the architect has complete freedom in adapting to his own uses the almost unlimited variations available in Modine grille design combinations.

The architect can now devise his own grille *at no additional cost* by using combinations of the four elementary grille designs. These represent four widely divergent decorative motifs, ranging from the traditional to the modern. They may be combined in innumerable arrangements to create intermediate motifs suited to the individual requirements of any room . . . harmonizing enclosure and grille with any style or period of the interior appointments of even the finest home. This *complete flexibility* of grille design is *exclusive with Modine*, being fully covered by patent applications.

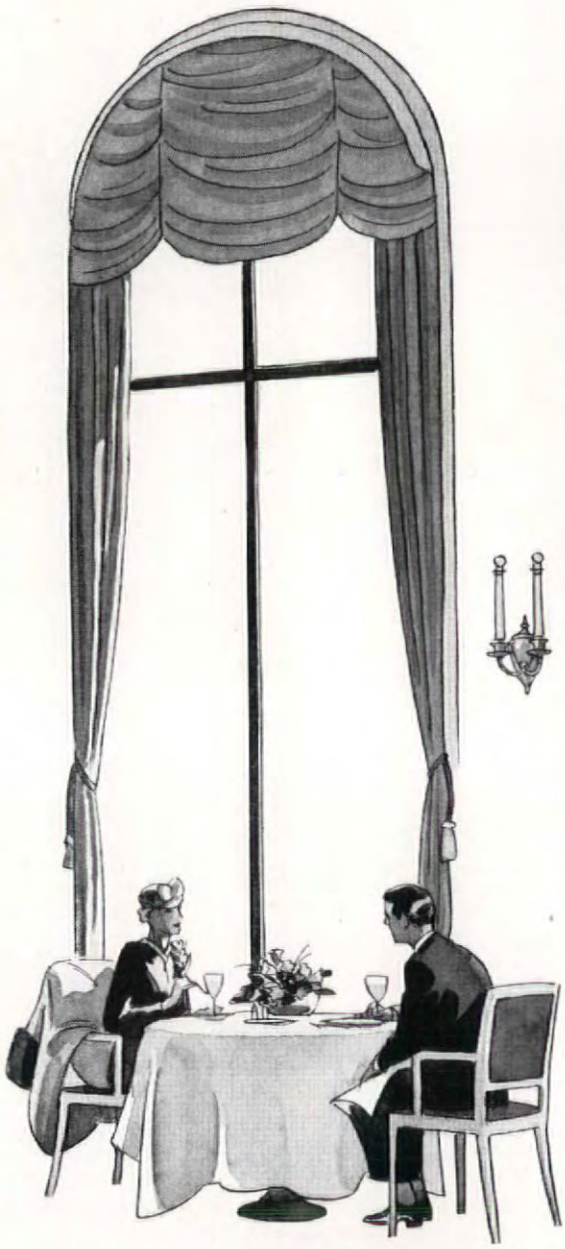
Modine grilles are die castings *not integral with the convector front*. Being noncorrosive, their beauty of design may be still further enhanced by exceptionally attractive plating . . . at slight additional cost . . . to match the decorative scheme of the rooms or the period of their furnishings, and the character of the grille design itself. Grille patterns are available with such handsomely appropriate finishes as 24-carat gold, bright brass, antique silver, statuary bronze, and chrome. *New catalog* gives complete details and specifications — *write for it.*

MODINE MANUFACTURING COMPANY

1228 17th Street • Racine, Wisconsin

HEATING, COOLING AND AIR CONDITIONING EQUIPMENT FOR DOMESTIC, COMMERCIAL AND INDUSTRIAL APPLICATION

The importance of planning large glass areas is quite evident when one considers that the average person spends at least half a lifetime between four walls. And the desirability of specifying the highest quality glass available is just as obvious.



LIBBEY·OWENS·FORD

Quality Glass

Libbey·Owens·Ford Glass Company, Toledo, Ohio manufactures a complete line of flat glass, including Flat Drawn Window Glass...Polished Plate Glass, both plain and colored...Heavy Sheet Glass...Greenhouse Glass...Safety Glass...Tuf-Flex tempered plate glass...Vitrolite opaque structural glass...Aklo heat absorbing glass...and distributes the Figured and Wire Glass manufactured by the Blue Ridge Glass Corporation of Kingsport . . . Tennessee.

WHEN EVERYTHING IS EQUAL

. . on the Surface!

EVERY DAY we are faced with this problem . . . when are things that look the same . . . *not* the same. «» Here are some motors . . . dimensions and electrical characteristics identical—prices about the same . . . so what? «» *This is what* . . . the cost of a motor can't be answered by quoting price. It can only be computed in terms of maintenance costs, operative efficiency . . . and durability. «» On the surface, motors look much the same, but examine them carefully and compare Allis-Chalmers Motors with any other motors built. You will find that they are the sturdiest motors on the market—*bar none.* Note their cast steel frames and the studied use of steel throughout them. Note their heavy cast iron housings, bearing enclosures and shafts; ample insulation of the best quality, with a big margin for mechanical durability. Then you will understand why they can handle overloads, shocks and strains and do it *day in and day out, year after year.* That mechanical and electrical strength means the reduction of maintenance costs to the minimum and a life beyond that of less sturdily constructed motors. That is why, today, Allis-Chalmers Motors excel and are the most profitable motor buy on the market.

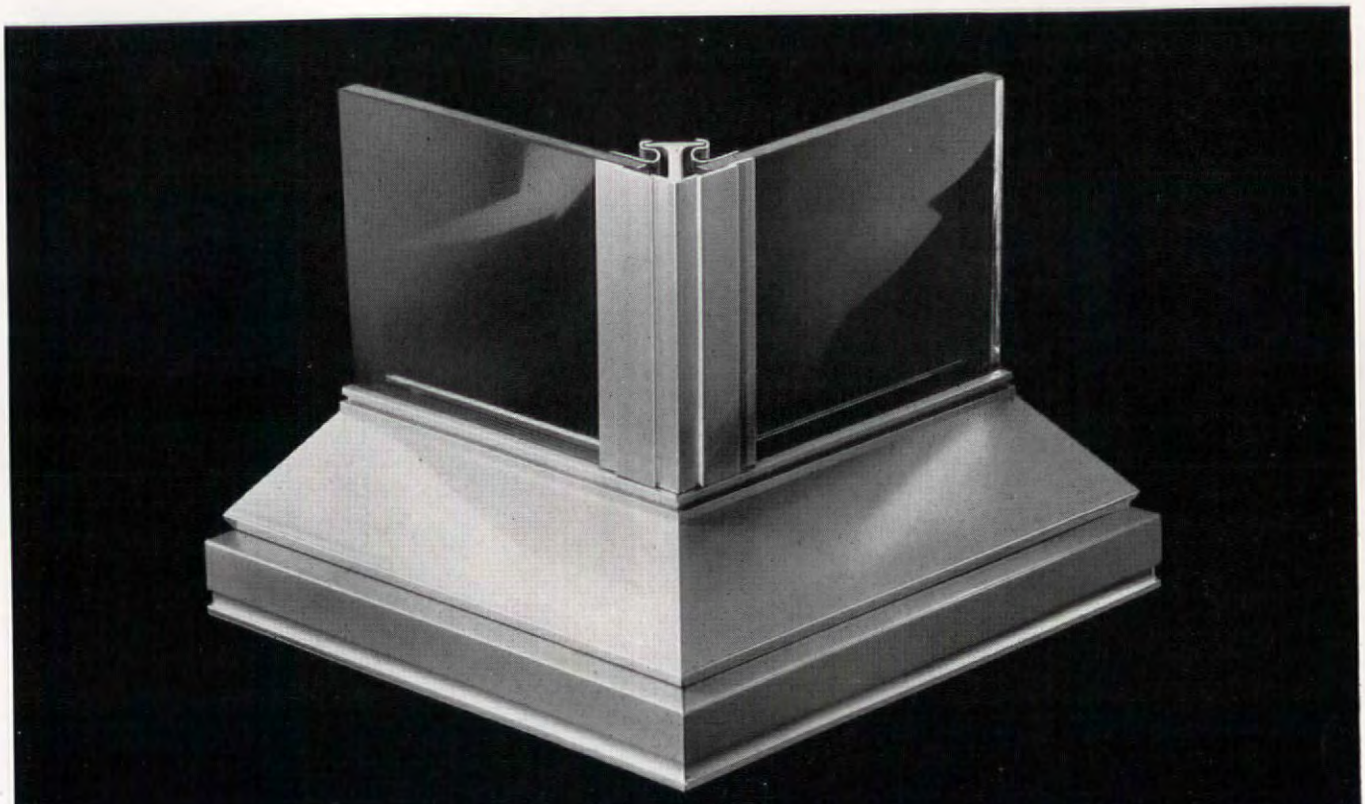
The Allis-Chalmers Mfg. Co. builds standard motors of every type from 1 h. p. up—also motors for special application

MOTOR DIVISION

ALLIS • CHALMERS

FOR EVERY PURPOSE

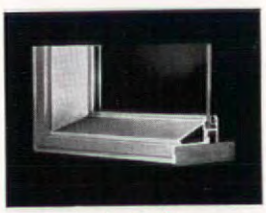
MILWAUKEE WISCONSIN



NEW KAWNEER EXTRUDED STORE FRONT CONSTRUCTION

PATENTS PENDING

★ NEW BEAUTY, ★ DESIGN, ★ PRECISION, ★ RESILIENCY!



A-1 SASH

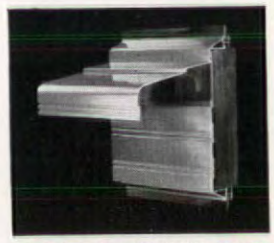
CONCEALED AWNING BAR

Now you can specify either cold-rolled or extruded store front members and still obtain precision manufacture, modern beauty, and the high degree of RESILIENCY in glass-holding members which has always made Kawneer construction dependable.

The Kawneer extruded line of metal store front members, like the cold-rolled line, is harmoniously designed to perform various functions such as holding plate glass, housing the awning roll, providing contrast and ornamentation, and where desired to face the entire front in attractive, modern metal. Self-supporting sash consists of only 3 parts, including a continuous spring which holds glass in an even, resilient grip by outward pressure along its entire edge. Perfect miters and sight lines are possible—caps may be eliminated. New awning bars allow for recessing or completely concealing the awning roll. Durable Kawneer Doors give dependable service and contribute to the modern store front effect. Other members offer interesting design possibilities. Available in aluminum with alumilite finish, and bronze, satin or polished.

★ F. S. Details and folder on new Kawneer Store Front Construction are available on request. Write also for the new KAWNEER BOOK OF STORE FRONTS—a valuable and interesting source of ideas on store front design with its HUNDREDS OF STORE FRONT PICTURES, FROM ALL OVER THE WORLD!

RECESSED AWNING BAR



HOOD AWNING BAR

Specify

Kawneer

RUSTLESS METAL

STORE FRONTS · DOORS · WINDOWS

FREE—THE KAWNEER BOOK OF STORE FRONTS

The Kawneer Company, Niles, Michigan
Send copy of ☐ The Kawneer Book of Store Fronts ☐ F.S. Details and folder on new Extruded Construction. ☐ New F.S. Details on Rolled Construction.

NAME AF-5

ADDRESS

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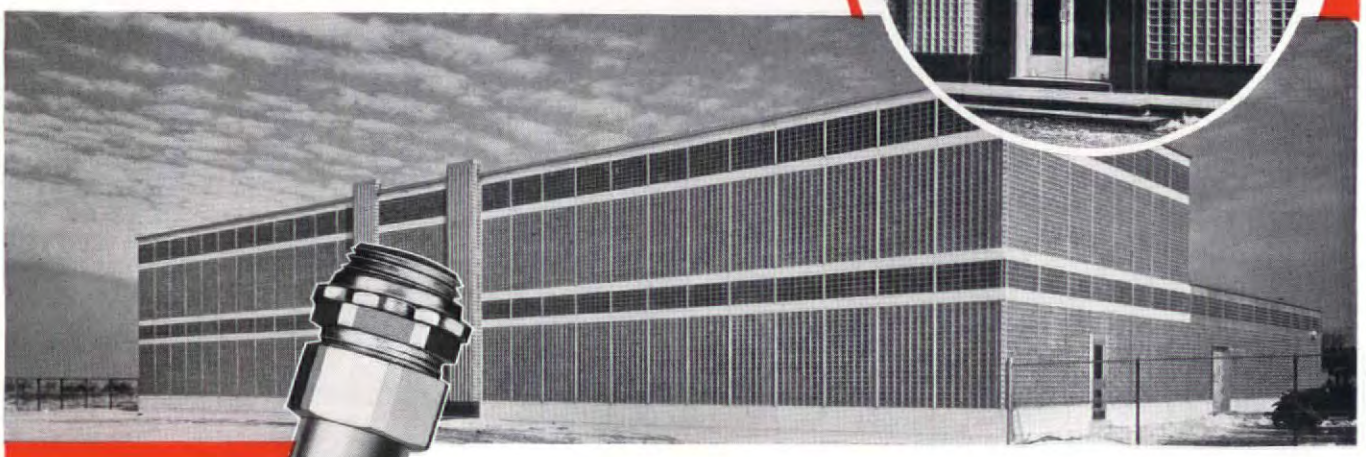
REG. U. S. PATENT OFFICE

Steeltubes



Patent No. 1,962,876

ELECTRICALLY • WELDED •

THIS building, housing the Packaging Research Laboratory of Owens-Illinois Glass Co., is a fine example of functionalism in modern industrial building. Its Insulux Glass Masonry brings the outdoors inside. But when night falls or dark winter days provide but little light—then ELECTRUNITE Steeltubes come into play.

Thousands of feet of this most modern electrical metallic tubing were used in the wiring of this building. Ten thousand feet of ELECTRUNITE Steeltubes were recently installed in a new building for Closure Service Co., a division of Owens-Illinois Glass Co.

These are but two of many recent industrial installations where this modern raceway for wiring has been used. And these are the reasons why: It is easy to install—light in weight, easy to cut and bend, requires no threading, only three simple fittings required for any job. It is easily adapted to existing threaded conduit installations. Wiring may be changed quickly and at low expense when machines are moved. It affords adequate electrical and mechanical protection. It makes wire pulling 30 percent easier. With all necessary fittings, it costs less than threaded conduit. It takes up less space in floors and walls. And it has been given wide approval for all types of buildings.

Specifications will be found in Sweet's, or write for literature.

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The great names of American business are choosing concrete, not by chance, but because it offers a combination of advantages that is unique:

Architectural distinction and beauty whether cast in the intricacies of the Gothic or in the simple planes and masses of modern, functional design. . . .

Fire-safety joined with rugged strength that resists earthquakes and the equally destructive boring of time and decay. . . .

Economy of construction that results from the casting of structural frame, exterior walls and decorative detail in *one* operation.

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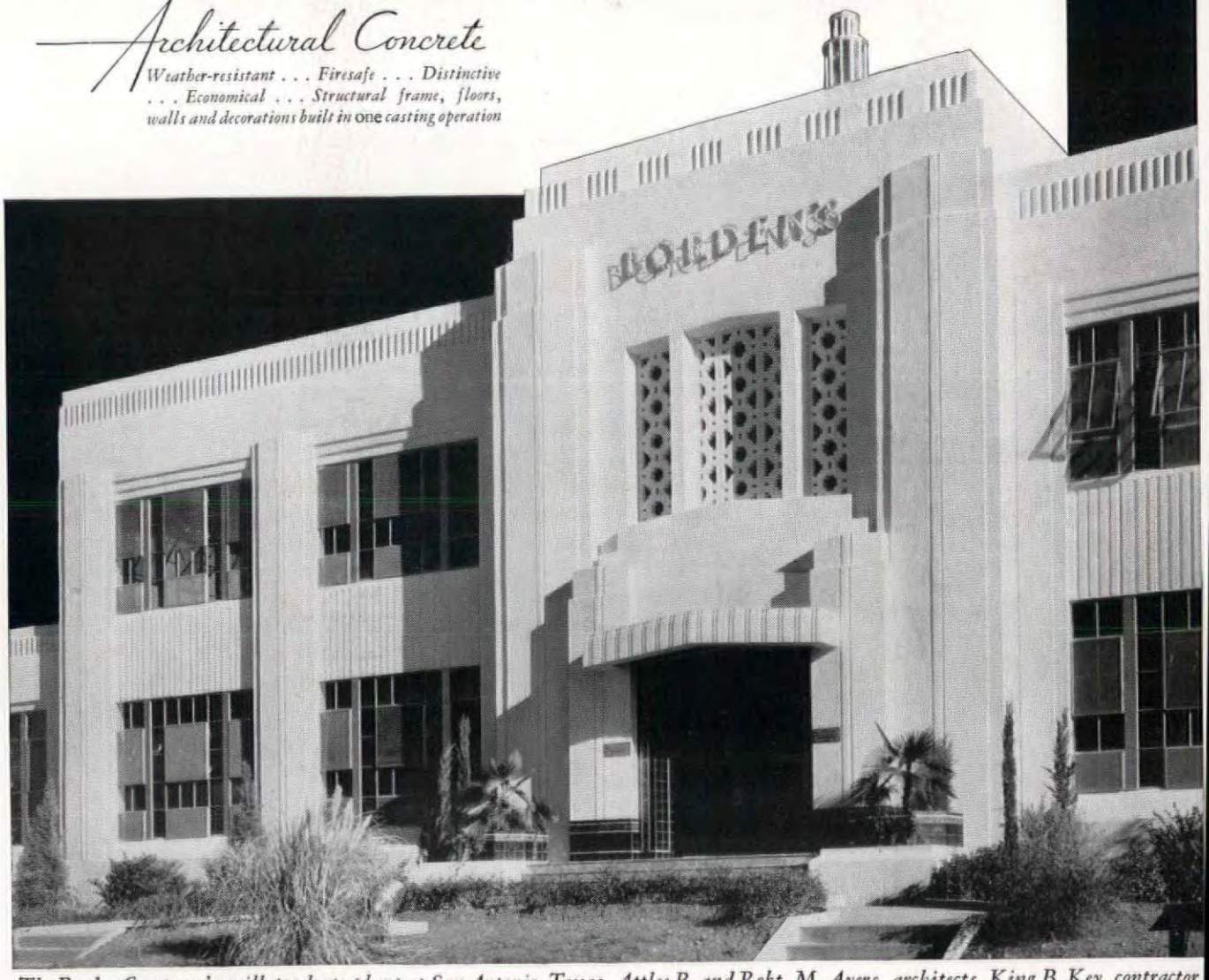
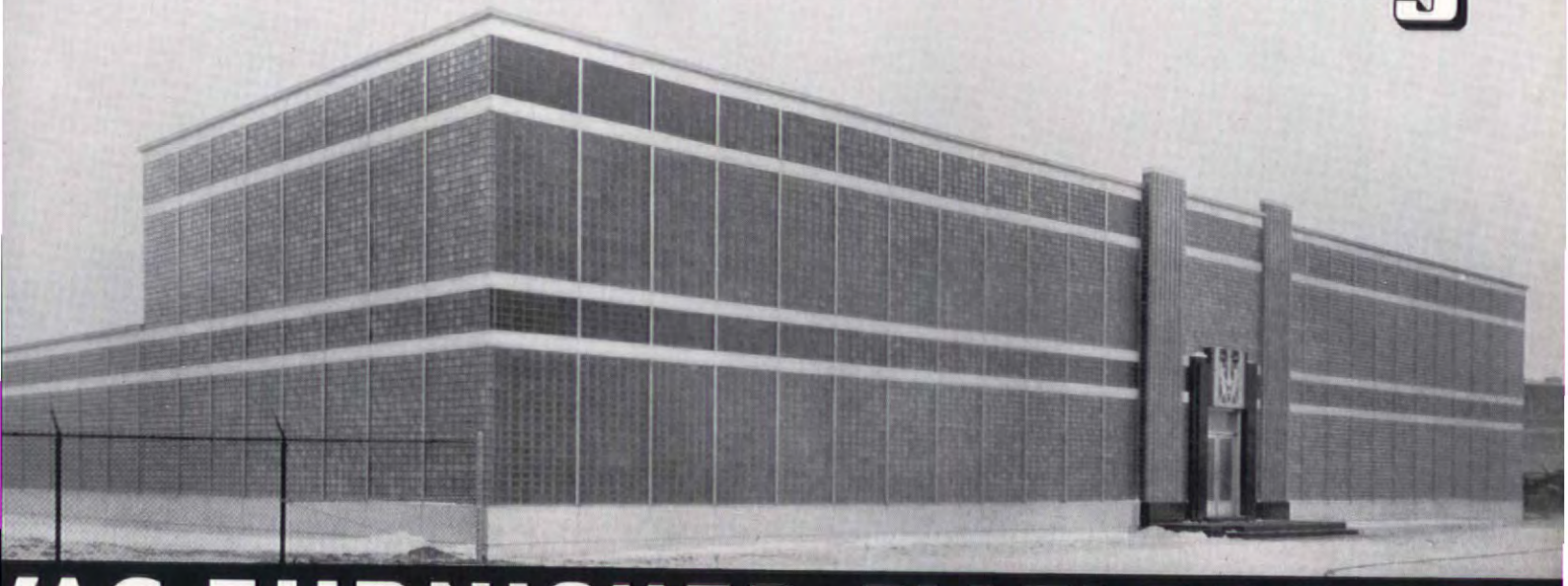


The Borden Company's milk products plant at San Antonio, Texas. Attlee B. and Robt. M. Ayers, architects. King B. Key, contractor.

The Air Conditioning



WAS FURNISHED *BY* CLARAGE

st All-Glass Windowless Building

W RESEARCH LABORATORY OF OWENS-ILLINOIS GLASS CO.—TOLEDO)

uilding without a single window—constructed entirely of Owens- glass blocks—is completely air conditioned by a Clarage System, ed specially to meet the unique requirements encountered. An inter- example of Clarage facilities and resourcefulness.

fectly compensate for fluctuations in sun exposure, wind, occupancy, e building is divided into seven conditioning zones, exclusive of the vate offices. Temperature, both summer and winter, are controlled ndently in each zone.

l water is the medium used for summer cooling and dehumidification, effecting a n both first and operating costs ared with the use of a direct ex- refrigerant.

n supply fan is equipped with Vortex Control (patented) which ically regulates the volume of ned air delivered in accordance e requirements, and thereby operating horsepower during f light load over that required ther type of system.

ned air to the five private offices hed by a separate Clarage Fan tex Control.

rage installation incorporates vanced ideas and the finest in ng—an ultra-modern air con- plant for an ultra-modern

The conditioning plant consists essentially of a Clarage Unicoil Unit (shown at left), Clarage Supply Fan, Owens-Illinois Dustop filters, heating and cooling coils, and necessary controls for completely automatic operation.

uiry is invited. We manufacture the uipment for any air conditioning or ob, large or small. Write us!

Chemical Laboratory located on second floor of building. Note air conditioning grilles at top of glass block partition.

Drafting Room. These glass block walls are translucent, providing a flow of soft, diffused daylight. Air conditioning duct is shown along right wall.

Specify Clarage for:

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- Ventilation
- Heating
- Cooling
- Mechanical Draft
- Fans & Blowers for Industrial Needs

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Sales Engineering Offices In All Principal Cities

BOOKS

(Continued from page 25)

The problem here was to select a style. Mission, Colonial, Spanish-Indian Baroque. These were all judged to be inappropriate; so was Gothic, and "by an act of will" the architect tried to imagine a Mediterranean race, influenced by the "religious and energizing force initiated by Saint Benedict." What this suppositious race would have built, he decided, was what the Texans needed. "I had traveled much in Mediterranean lands and was familiar with their architectural documents, so I reassembled all the elements I could from southern France and Italy, Dalmatia, the Peloponnesus, Byzantium, Anatolia, Syria, Sicily, Spain, and set myself the task of creating a measurably new style that, while built on a classical basis, should have the Gothic romanticism, pictorial quality, and structural integrity." Out of this stupendous flight into Never-Never Land came a building for an American educational institution. It all recalls to mind a rather irreverent bit of doggerel:

> The architect puffed at his Period pipe,
> As he sat in his Renaissance chair,
> And he gave me a smile in the pure Gothic style,
> Though he spoke with a Romanesque air.

Mr. Cram's sincere belief in the rightness of his credo is not by any means based upon an unfamiliarity with recent developments, and in the chapter "Tradition Plus Modernism" one finds a splendid summing up of a complicated situation. "What to do now, when we no longer do anything instinctively; when a life without unity or consistency furnishes no creative impulse; when we have only rudimentary and fluid ideas as to what constitutes beauty; when we have cut ourselves off for a century from any sort of living tradition; and finally when in our helplessness we have to rely on the broken reed of the professional architect?" The trouble is that he gives no answer beyond "I suppose we have got to begin again." And here is the justification of the modern architect: he is trying to begin again, and the only place to begin, when all else has been swept away, is with the structure. If much modern work is bad, at least it is better than playing safe and solving nothing. Have the early Romanesque builders ever been ridiculed because they were incapable of building a premature Amiens? Mr. Cram defends St. John the Divine on the grounds of functionalism: no steel hides behind the stone facings; one can commend the honesty of purpose, but what meaning is there in an elaborate structural system for whose use few workmen are trained today? Would the Gothic builders have painfully struggled with vaults and buttresses if they had steel to build with?

The problems of today are not churches. Our cities have grown out of all human scale, and are overrun with slums and automobiles. Our houses are expensive and inadequate. These are the things crying for attention. Misuse of the machine got us into a monumental mess esthetically, spiritually, and economically, but it does no good to cry fretfully that "the internal combustion engine is the greatest calamity that has befallen mankind." Nor does it do any good to dream of a return to the thirteenth century with a happy American peasantry busily building Gothic cathedrals and riding to work in Fords. The machine is here to stay and we must learn to use it. If we return to the spirit of the great days, it will not be by going backwards. Times have altered; ours is not a church-building age, nor can we make it one by putting up a few expensive fantasies. When faith, and a measure of peace, return to the earth there will be men to build churches, and they will be great churches even if they are built of steel, concrete, or glass. And the shades of the true Gothic builders will be the first to approve.

(Continued on page 88)

THE HIGH COST OF CHEAP CONSTRUCTION

The jerry-builder was checked once . . . and to the Architectural Profession goes much of the credit.

He can be checked again.

From the beginning Weyerhaeuser has realized that the campaign against shoddy construction and hybrid design cannot be won by architects alone.

Assuming a measure of responsibility, Weyerhaeuser has consistently pioneered vital improvements in construction materials and methods . . . has recognized the importance of pure architectural design.

★ ★ ★

The founding of the White Pine Bureau in the early 'Twenties was followed by the White Pine Monograph Series . . . now a collector's item.

And in the publishing of its fact-full treatise on "The High Cost of Cheap Construction," Weyerhaeuser voiced the first public warning against the reckless evils of jerry-building.

Outstanding among later contributions was the perfecting of Weyerhaeuser 4-SQUARE Precision Lumber, and a gradual widening of this line to include the principal structural elements of the house.

Progress has been made—minimum standards of construction have been raised—but the battle is not yet won. Vigilance is demanded during the coming building boom to prevent a renascence of poor construction.

★ ★ ★

Specifying Weyerhaeuser 4-SQUARE Precision Lumber is one way to protect against hit-and-miss building. Micrometrically squared ends permit truer, faster assembly. Exact specified lengths permit the full use of stock sizes . . . a more accurate spacing of members. Waste is minimized—a paramount factor in low-cost housing.

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WEYERHAEUSER SALES COMPANY • FIRST NATIONAL BANK BUILDING, SAINT PAUL, MINNESOTA

BOOKS

(Continued from page 86)

THE ENGLISH COUNTRY HOUSE, by Ralph Dutton. Charles Scribner's Sons, New York, 120 pp., illustrated, 8¾ x 5¾, $2.75

The number of inexpensive books dealing with architecture and allied subjects which have recently been put on the market is a most heartening indication of a general increase of interest in the subject. The book under consideration is one of the English Countryside Series, which has been in the course of publication for a number of years. While it presents nothing that has not already been treated in more elaborate studies, such as Nathaniel Lloyd's "History of the English House," it does give a great deal of information, well supplemented by numerous excellent photographs and

MANOR HOUSE—DORSET

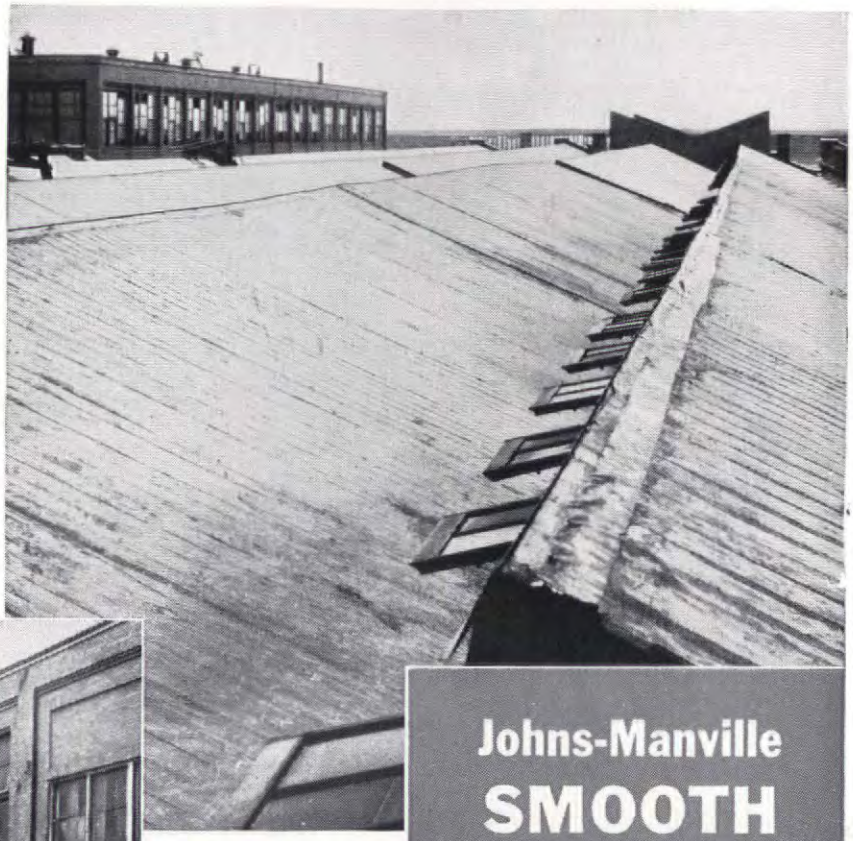
plans, at a price which is only a fraction of that of the majority of books on the subject. English supremacy in country house design has long been accepted and has had a great influence on residential work in America. The present examples show clearly how well founded is their reputation. The subject is treated in chronological order with divisions of periods much less complicated than those customarily accepted. Interest is given the book by the inclusion of considerable historical data, and an excellent picture of the social background in each period is presented by the author. The book concludes with a study of the English garden. While designed for use by the layman, the book has been documented and illustrated in a manner which entitles it to a place in the architect's library.

CHECK LIST OF CONSTRUCTION, CONSTRUCTION MATERIALS AND EQUIPMENT, by George W. Spaulding, George W. Spaulding, Denver, 10½ x 6¾, $7.

A condensed, quick reference of the construction industry in one volume indexed for convenient use, listing standard materials, equipment, and accessories under various headings; the selection of materials, however, is left to the reader's judgment. It is designed for use by contractors and others who are engaged in making up material lists, and so on. Items for specific buildings have not been listed as it is possible by checking the appropriate sections to find practically all of them.

As a service to interested readers, THE ARCHITECTURAL FORUM *will undertake to order copies of foreign books or others not conveniently obtainable locally, which have been reviewed in this department. Checks and money orders to be made payable to* THE ARCHITECTURAL FORUM.

26 YEARS Of Proof



26 YEARS of proof at South Bend, Ind. This J-M Smooth-Surfaced Asbestos Roof has been protecting the Oliver Farm Equipment Co., factory since 1910... and is still on the job!

J-M Smooth-Surfaced Asbestos Roofs Provide a Lasting Solution to One of Your Major Investment Problems

A ROOF is a major investment. All the more important because you buy it to protect other investments... materials, merchandise, equipment . . .

Which means you want lasting protection. The factory shown here offers 26 years of proof that J-M Smooth-Surfaced Asbestos Roofs can and do provide such protection.

And the case is *not* an isolated one—as proved by the partial list of long-lived roofs shown at the right. Many J-M Roofs . . . in prime condition . . . are nearing or have passed the quarter-century mark . . . thanks to this same protective value they all have in common:

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Asbestos fibres are solid, non-capillary by nature. Thus, J-M Roofing Felts form a *positive barrier* against evaporation of the lighter oils in the asphalt, preserving their waterproofing qualities indefinitely *despite* the intense drying-out action of the sun. Hence, there is minimum maintenance on weatherproof J-M Asbestos Roofs throughout their long lives.

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BONDED ASBESTOS ROOFS

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22 YEARS old at Seattle, Wash.
(Port of Seattle, Bell St. Dock)

36 YEARS old at Newark, N. J.
(General Leather Co., Bldg. No. 4)

25 YEARS old at Cincinnati, Ohio
(American Valve & Meter Co.)

23 YEARS old at Chicago, Ill.
(Sears, Roebuck & Co., Grocery Bldg.)

24 YEARS old at Louisville, Ky.
(American Medicinal Spirits Co.)

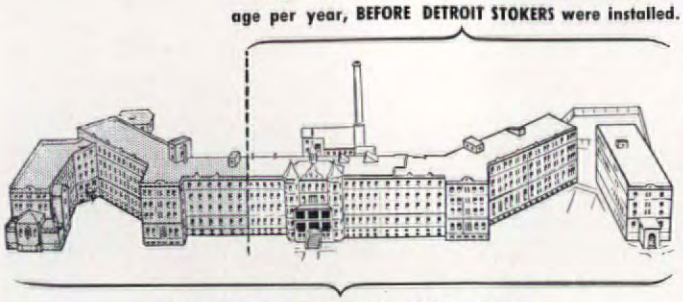
24 YEARS old at Kansas City, Mo.
(Kansas City Star)

26 YEARS old at Beech Grove, Ind.
(Big Four Railroad Shops)

24 YEARS old at Detroit, Mich.
(Detroit Baseball Club, Navin Park)

33% MORE STEAM
from the same amount of coal

Heating original building required 2000 tons (average per year, BEFORE DETROIT STOKERS were installed.

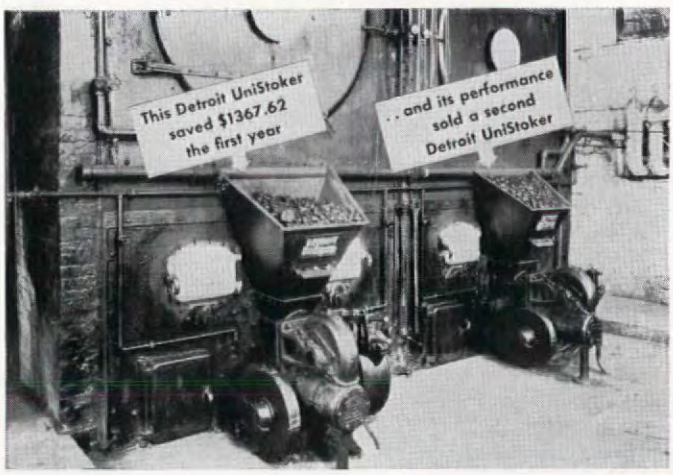


Wing added and DETROIT STOKERS installed.
Heating requires only 2000 tons (average) per year.

ST. FRANCIS HOSPITAL
EVANSTON, ILLINOIS

When the north wing (shown in sketch above by the shaded area) was added, two DETROIT UNISTOKERS were installed with present boilers. The heating load was increased by about one-third but the coal consumption was not increased—in other words, the new wing of the hospital is being heated at no expense because of DETROIT STOKERS.

At ST. JOSEPH'S HOSPITAL
HAMILTON, ONTARIO



The year following the installation of the first DETROIT UNISTOKER the coal cost was reduced $1367.62. Because of this very important saving in coal, another DETROIT UNISTOKER was installed with the second boiler.

Write for Bulletin No. 563

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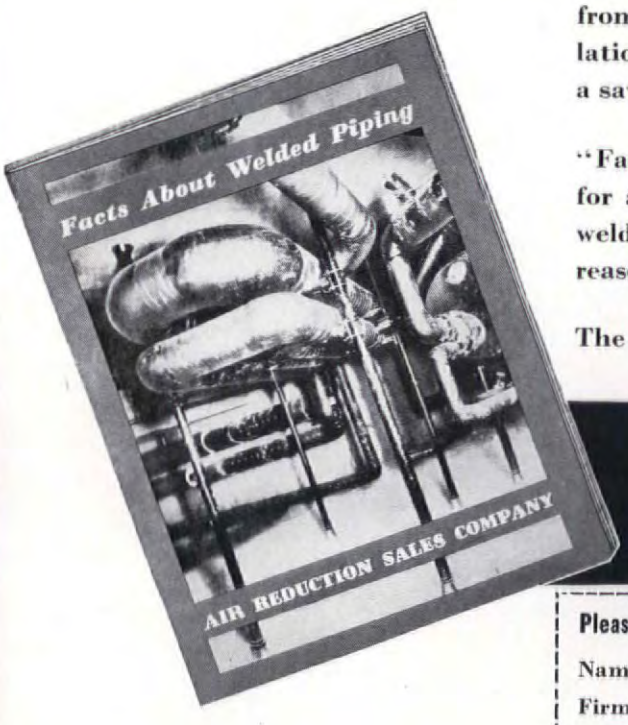

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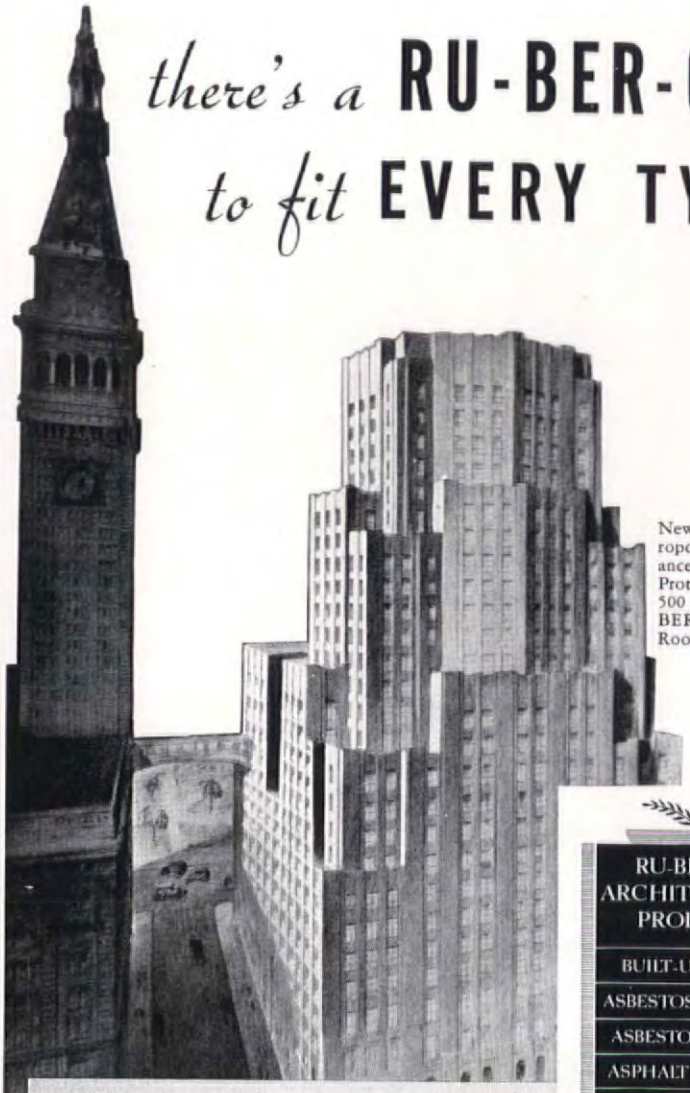

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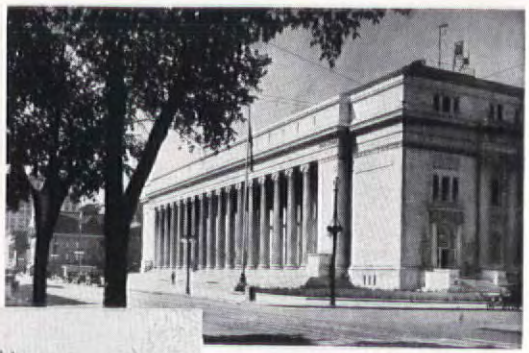

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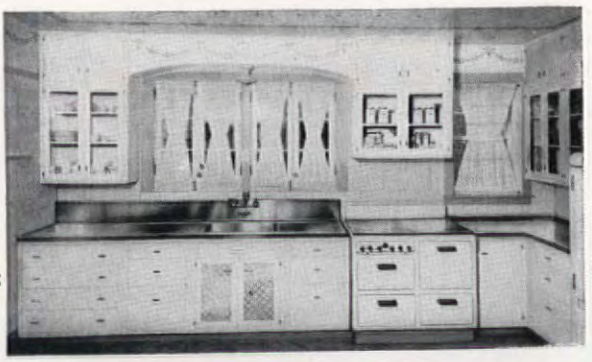

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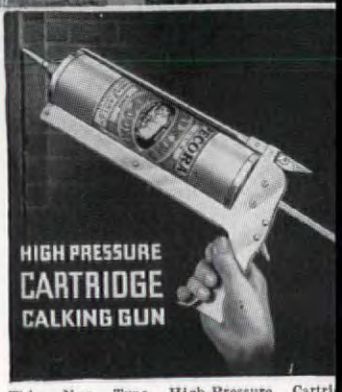

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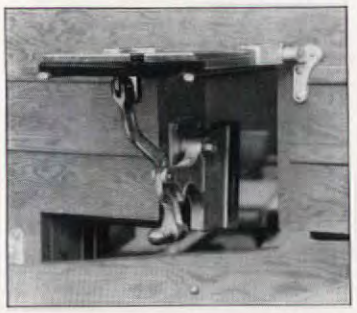

This is the York Track Door Flap in "Open" position. Note the simple but positive mechanism which operates the flap . . . keeps gasket on flap tightly compressed when door is closed.

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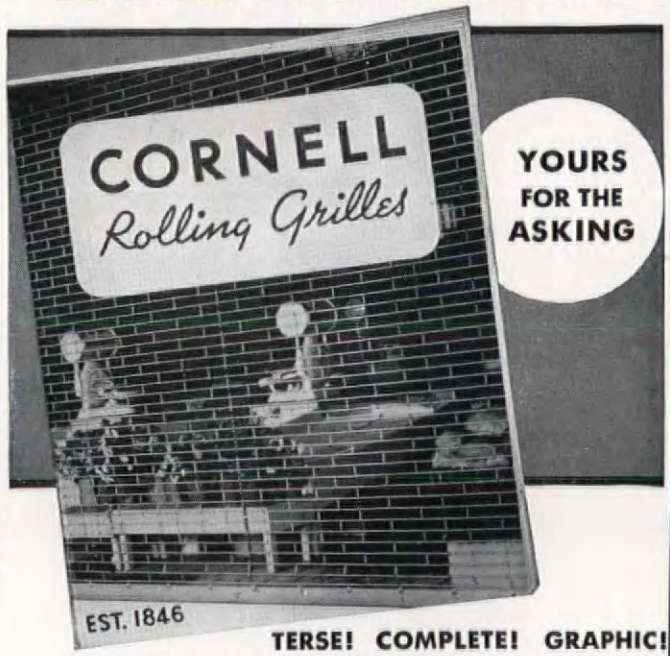

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FROM RENT TO SPACE

THE ARCHITECTURAL FORUM

announces for June the first instalment of

A Study in Apartment Planning Technique:

Money • Tenants • Land • Building

HERE is a new realistic approach to planning multi-family dwellings—a technique which translates rent into space. The authors' formula begins with the required rent, relates it to the space elements of one room, then a series of rooms or apartments, and finally an entire building or group of buildings. It provides a new rational procedure for coordinating architectural planning and economics—makes available an organized and methodical basis for analyzing multi-dwelling projects.

In addition to the first instalment of this apartment plan study, the June FORUM includes an exclusive presentation of the 1936 AIA convention exhibition .... 12 pages on the new Long Beach Technical High School .... a section on Broadcasting Studios .... a new portfolio in the Historical American Building Survey series .... two notable examples of contemporary store architecture .... and a continuation of The FORUM's collection of small house case studies.

As this issue goes into the mail there are a few copies of the April $5000 House Reference Number of The FORUM available for new subscribers. To enter a new subscription, or renew an old one simply sign and mail the attached card—it needs no stamp.

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MAY 1936

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