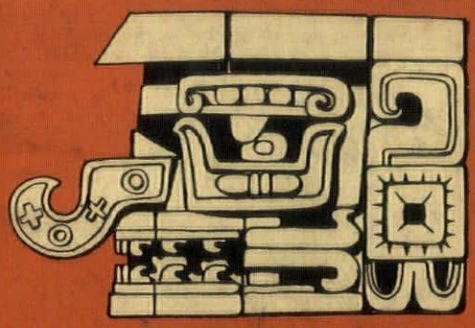
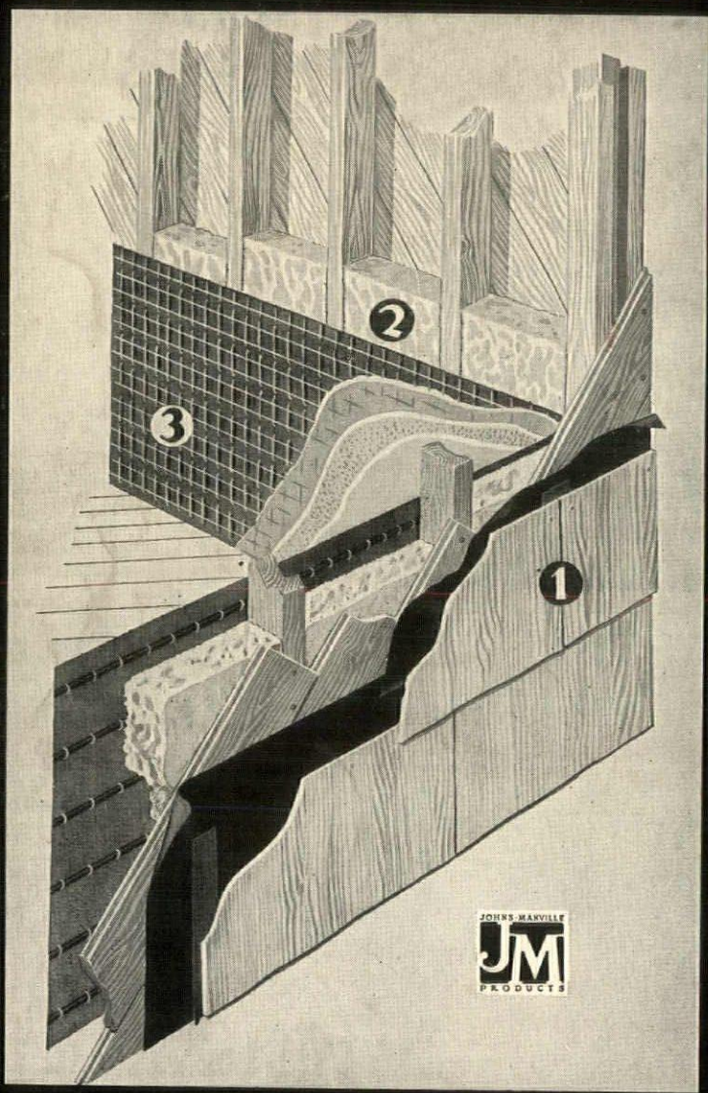


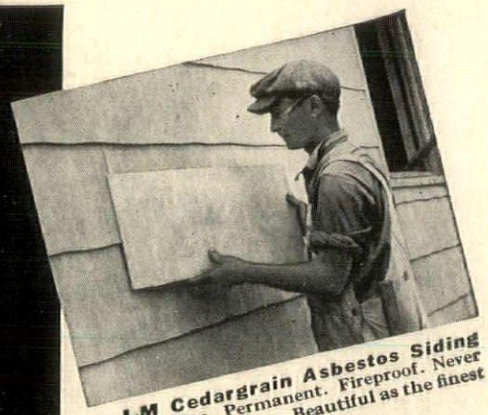
ARCHITECTURE

SMALL HOUSES

May, 1936 CHARLES SCRIBNER'S SONS 50 Cents

Why not give your client a Triple-Insulated Wall Construction?





1 **J-M Cedargrain Asbestos Siding Shingles.** Permanent. Fireproof. Never require painting. Beautiful as the finest wood shingles.

2 **J-M Rock Wool Home Insulation.** Full-Thik bats. No voids. Maximum insulating effectiveness. An effective fire stop. And it cannot settle.

3 **J-M Steeltex for Plaster.** Reduces cracking to an absolute minimum. Adds permanence, strength and fire resistance.

The New Johns-Manville TRIPLE-INSULATED WALL

– Fortified against hot and cold weather
– Protected against fire
– Armored against time and deterioration

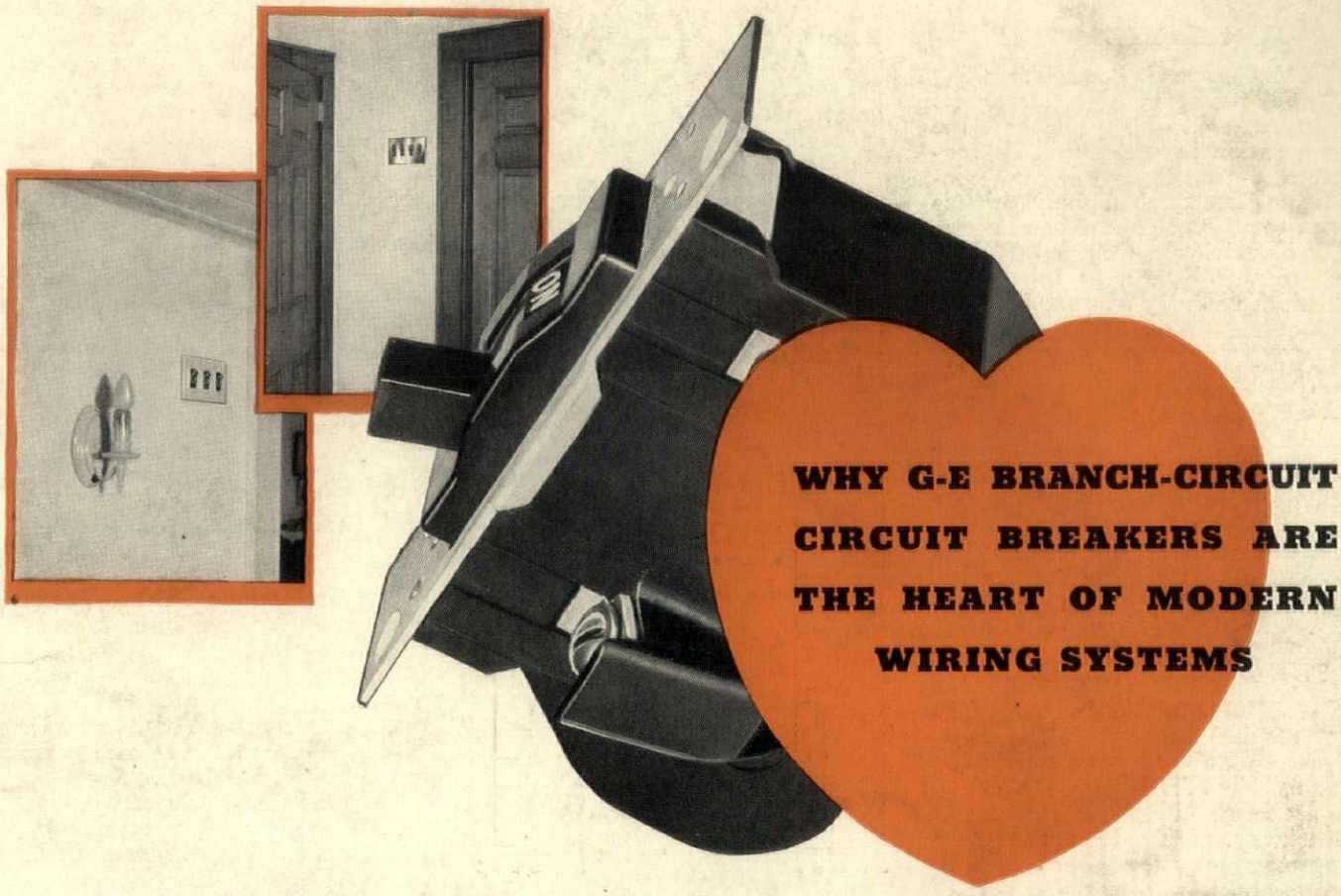
And what do we mean by a "triple-insulated" wall?

First, an outer wall with all the beauty of wood shingles but which cannot burn or rot and never requires painting (permanent, fireproof J-M Cedargrain Asbestos Siding Shingles).

Second, an inner-wall construction that stops fire spread, keeps the house comfortably cool in summer and saves up to 30% in fuel bills in winter (hollow wall spaces are filled with J-M Rock Wool Home Insulation).

Third, an interior plastered wall with maximum resistance to cracking (J-M Steeltex for reinforcement).

In short, J-M's new Triple-Insulated Wall insulates against hot and cold weather; protects against fire; fortifies against time and deterioration. For further data write Johns-Manville, 22 E. 40th St., New York.



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-285, Appliance and Merchandise Department, General Electric Company, Bridgeport, Connecticut.

GENERAL ELECTRIC

WIRING DEVICES

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

THE BULLETIN-BOARD

BOOTH FELLOWSHIP

THE George G. Booth Travelling Fellowship in Architecture has been renewed this year, and the competition in design will be conducted during the two weeks beginning on June 22. The competition is open to all graduates of the University of Michigan College of Architecture who have not reached their thirtieth birthday on that date.

UNIVERSITY OF MICHIGAN

THE College of Architecture, University of Michigan, will again conduct classes during the coming summer. Instruction will be offered from June 29 to August 21 in architectural drawing, all undergraduate and graduate architectural design, elements of office practice, and in outdoor drawing and painting.

THE BROCKWAY LIBRARY

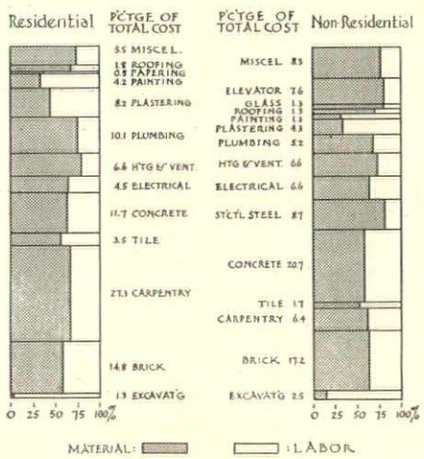
DEAN HAROLD L. BUTLER, of the College of Fine Arts, Syracuse University, announces the acquisition of the architectural library formed by the late Albert L. Brockway. The collection numbers approximately four hundred volumes, and it will become a part of the branch library in Slocum Hall, which houses the Department of Architecture. It is particularly fitting that Mr. Brockway's library now becomes an instrument of the Department of Architecture which Mr. Brockway helped to organize, and of which he served as its first head forty years ago.

A MATTER OF ARCHITECTURAL CREDIT

IN the January issue, in connection with Mr. Edwin Bateman Morris's article on architectural sculpture, there is some ambiguity in the captions. The Supervising Architect's office was mentioned only in connection with Mr. Arthur Brown, Jr., in his work on the building for the Labor and Interstate Commerce Commission. The relationship between the designing architect and the Supervising Architect's office was similar in the case of Zantzinger, Borie & Medary on the building for the Department of Justice, with Delano & Aldrich in the building for the Post Office Department, and with the Office of John Russell Pope in the Archives Building. Mr. Cret's work on the Folger Shakespeare Library had, of course, no connection with any government agency.

LABOR AND MATERIAL

THERE is an interesting breakdown of the relative cost of labor and material in different classes of construction that has been issued recently by the United States Bureau of Labor Statistics. Residential work differs rather widely from non-residential work, so that the two analyses are shown in parallel.



ROME PRIZES

THE preliminary competition for the Rome Prize in Architecture was held March 13–14, and the following ten final competitors have been chosen from ninety entrants:

Richard Ayers of Jefferson, Ga., graduate of Yale. James W. Breed of Philadelphia, Pa., graduate of University of Pennsylvania, M.A. from Cornell. John J. Brust of Milwaukee, graduate of University of Notre Dame and graduate student of Catholic University. Joseph P. Ceruti of Cleveland, graduate of Cleveland School of Architecture and graduate student at Princeton. Vernon F. Duckett and S. Thomas Stathes of Washington, D. C., both from Catholic University. James M. Hunter of Urbana, Ill., now a senior at University of Illinois. Joseph V. Keyes of Manchester, N. H., graduate of University of Pennsylvania with the Master's degree. George N. Lykos of Boston, Mass., graduate of Massachusetts Institute of Technology. Max O. Urbahn of Milwaukee, graduate of University of Illinois and candidate for Master's degree at Yale this year.

The problem in this competition was a post office and city block, done by each competitor in twenty-four consecutive hours.

The jury consisted of William Mitchell Kendall, chairman; Louis Ayres, John Russell Pope, James Kellum Smith, and Edgar I. Williams.

In Landscape Architecture, after a preliminary competition, the following three finalists were chosen from twenty entrants:

Harold E. Atkinson of Cleveland and Robert S. Kitchen of Dayton, Ohio, both graduates of Cornell University; and Joseph W. Langran of Grand Prairie, Tex., graduate of University of Pennsylvania.

The problem was the designing of a city square as a memorial to a distinguished naval officer, done by each competitor in sixteen consecutive hours on March 6.

The jury consisted of Gilmore D. Clarke, chairman; Noel Chamberlin, and Henry V. Hubbard.

The final four-weeks competition in both subjects began on April 6. One winner in each branch will be selected.

BUILDING PERMITS FOR MARCH

THE building construction industry in March gained by about the normal seasonal amount over February, thereby lifting the total value of permits issued last month at the 215 cities regularly reporting to Dun & Bradstreet, Inc., to $78,120,344. This was the largest March figure reported since 1931 and was the highest total recorded for any month since September of that year. Compared with the February permit value of $51,559,661, a rise of 51.5 per cent is shown, while the increase over the March, 1935, figure of $45,063,852 amounts to 73.4 per cent.

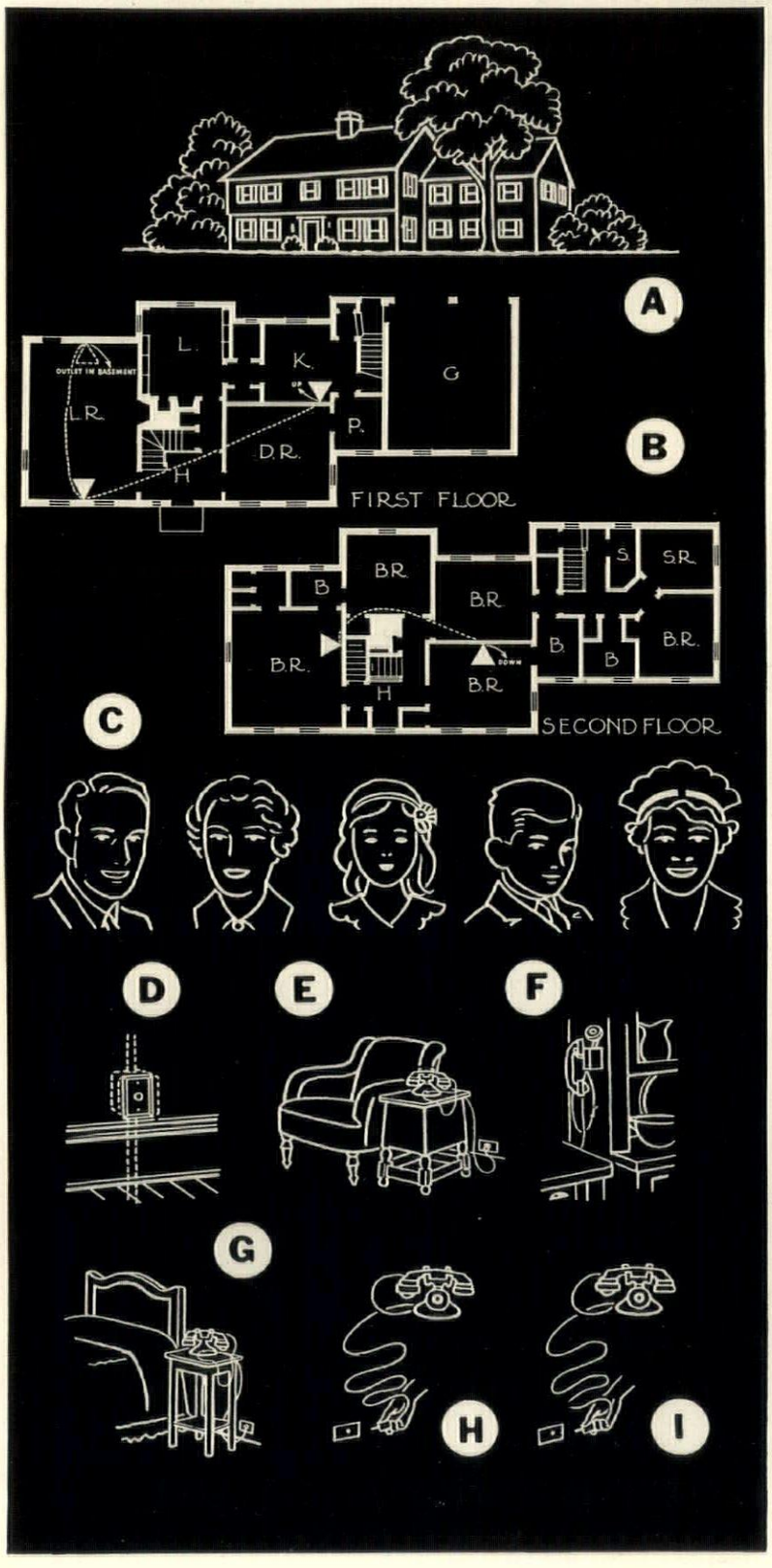
A comparison by geographical sections reveals gains in virtually all sections of the country in contrasting the March expenditures with those of February, the South Central group showing the only decline. In comparing the March permit values with the same month of last year, all sections registered heavy increases.

Although slightly below the final

(*Continued on page 14*)

ARCHITECTURE, published by CHARLES SCRIBNER'S SONS, 597 Fifth Avenue, New York, N. Y. May, 1936. Volume LXXIII, No. 5. Published monthly on the 28th of the month preceding date of issue. Entered as second-class matter, March 30, 1900, at the Post-Office at New York, N. Y., under the Act of March 2, 1879. Yearly subscription rate to members of the architectural and allied professions, $3; to all others, $6; add $1 for Canadian postage and $2 for foreign postage. Single copies, $.50.

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.

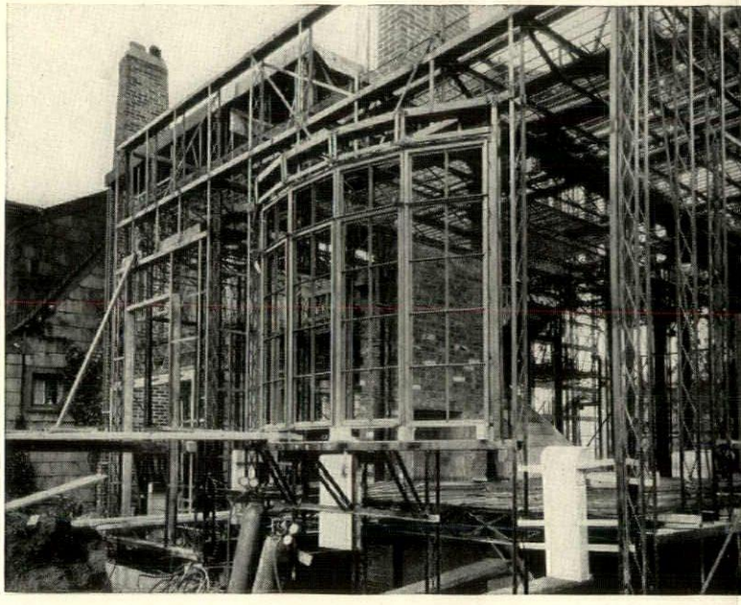
H An outlet for portable telephone in the guest-room—to serve guest or invalid.

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."

The Investment of a Lifetime

Safeguarded— by a rigid frame of strong, dependable steel



FOR most people the building of a home represents the most important purchase of a lifetime. Granted that your client thinks first of the home you design for him as an agreeable place to live in, he is also vitally interested in it from the investment standpoint.

A home with Bethlehem Open-Web Steel Joists in its floor construction, and Bethlehem Steel Studs for exterior walls and interior bearing walls, is an investment in which the owner can put his savings without fear of rapid obsolescence or excessive cost of upkeep. With its framework of strong, dependable steel, such a house will remain for generations as good and as serviceable, in all essentials, as on the day it was completed.

A home built in this way is of course fire-safe. Its rigid steel framework remains forever free from the shrinking and warping that so often cause disfiguring cracks, and throw doors out of alignment. It is safe against termite attack, is vermin-proof, and the walls are practically soundproof. Air-conditioning can be readily installed at a minimum of expense, even after the house is completed.

In spite of the values that Bethlehem Open-Web Steel Joists and Studs contribute they add very little to the cost of a home. These steel members, developed and manufactured by Bethlehem Steel Company, provide a thoroughly practical, simple and economical way to construct a steel frame. Architects and building contractors who have used them in home construction are enthusiastic about their possibilities.

Still another advantage of Bethlehem Studs and Joists is the fact that they lend themselves equally well to any style of architecture, and impose no restrictions whatever on the architect. They enable him to design a home that has the advantages of steel-frame construction, while he retains complete freedom in working out all architectural details.

A New Light-Weight Open-Web Steel Stud

THE Bethlehem Steel Stud is a new development greatly extending the use of steel in building construction.

Used in combination with the Bethlehem Open-Web Steel Joist, this new Stud offers a simple, thoroughly practical method for the construction of steel-frame dwellings of any size and any type of architecture at reasonable cost.

It has many other uses, throughout the field of light-occupancy structures.

The Bethlehem Steel Stud is the latest addition to Bethlehem's group of Building Steel products—a line of products covering virtually the entire range of building construction requirements.

Bethlehem Steel for every type of building construction

BETHLEHEM STEEL STUDS
BETHLEHEM OPEN-WEB STEEL JOISTS
BETHLEHEM WIDE-FLANGE STRUCTURAL SHAPES
BETHLEHEM LIGHT SECTIONS
BETH-CU-LOY GALVANIZED SHEETS
BETHLEHEM STEEL PIPE **STEEL DOOR FRAMES**
KALMANTRIM **REINFORCING BARS** **METAL LATH**
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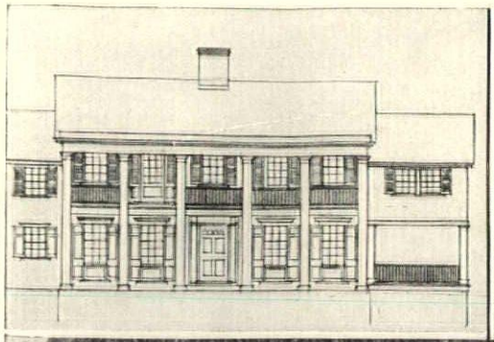
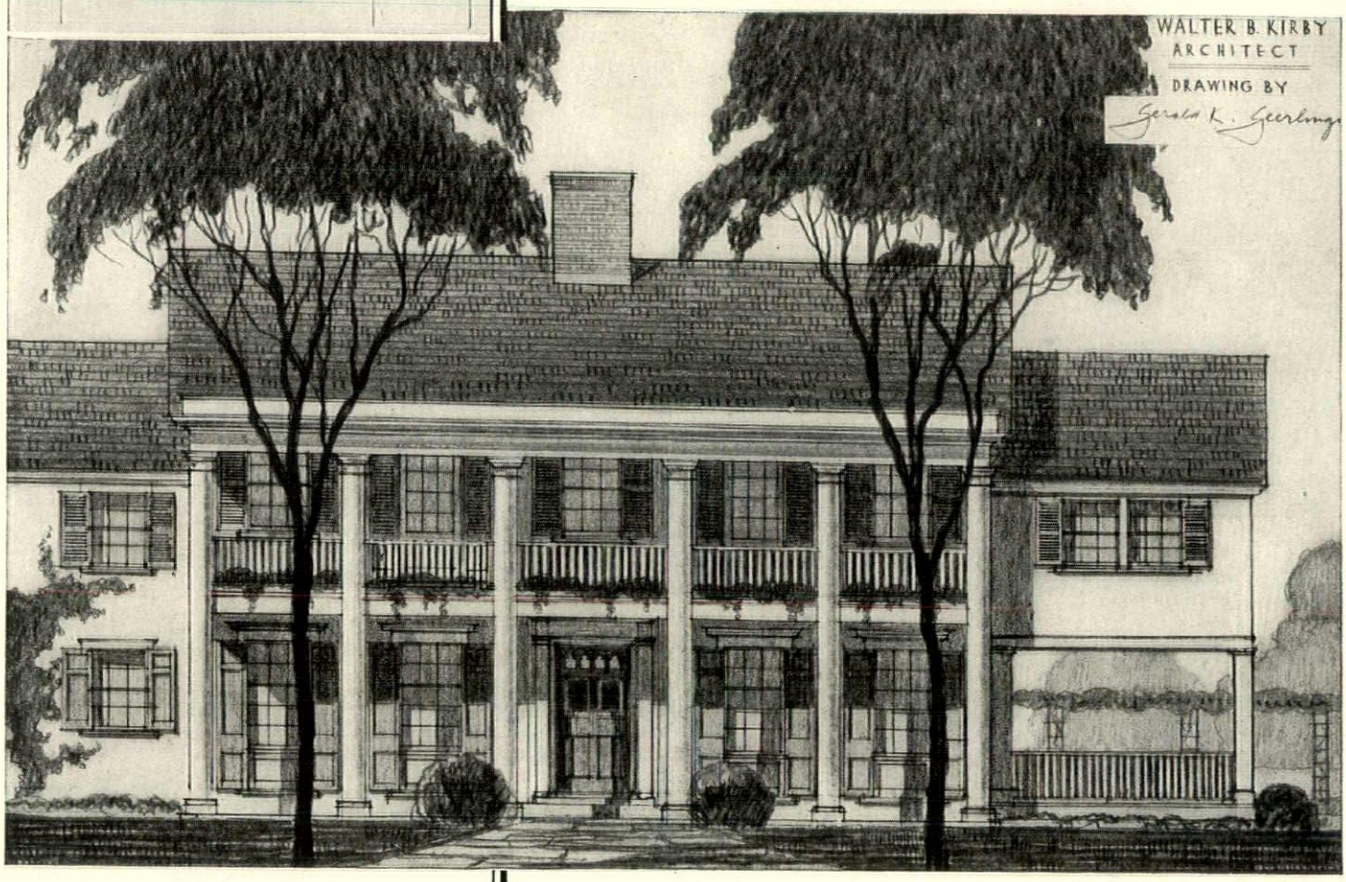
BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY



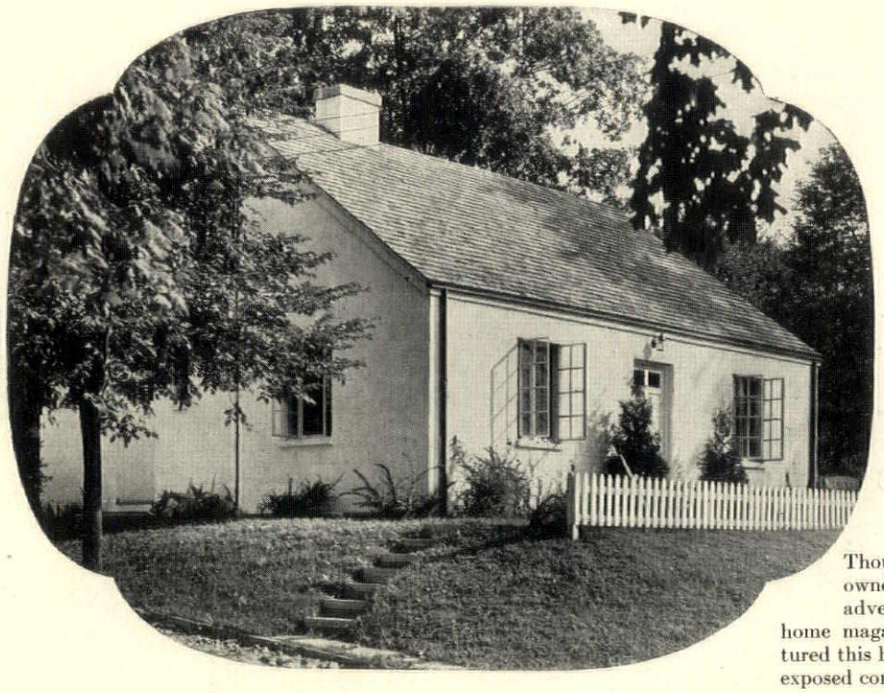
Line Elevation into Presentation Drawing



RENDERED ELEVATION

"When working drawings are at 'quarter-inch' it may not only involve considerable time to render them at this scale, but the finished products may appear too cumbersome. One solution illustrated here is to render a photostat made at smaller size. If any dimensions or notes appear, these can easily be covered by opaque white. On the other hand if the elevations are not too large, or if the client will be impressed by size, then the advisable procedure is to put tracing paper over working drawing and trace only those lines which are essential. Shadows in the conventional manner are an aid—but only if they are so designed as to make the rendering more dramatic and the relation of the various planes easier to understand. If foliage is apt to be both a problem and a disappointment, first eliminate as much foreground as possible. Then, after doing a careful outline of leaf forms from nature (or consult several good photographs rather than another's drawing), fill in with flat or nearly-flat tones as suggested above."

GERALD K. GEERLINGS.



Thousands of prospective home owners wrote in response to an advertisement in the national home magazines which recently featured this house. Concrete floors with exposed concrete beam ceilings, cinder concrete masonry walls painted white. Bedford Hills, N. Y.

ARCHITECTS ARE BLAZING NEW TRAILS WITH CONCRETE

Everywhere you see evidence that architects are "thinking" in concrete as never before. Demonstration and exhibition homes show it. Many of the prize winners in recent competitions were designed with an eye to the modern beauty and sound values obtainable with concrete.

What the public thinks is shown by its enthusiastic acceptance of these homes.

Here's what concrete means to you:

Its versatility frees you from conventional design limitations; gives your ingenuity full play. Concrete lends itself equally well to modern design, or Cape Cod cottage. Permits precise specification of color and surface texture.

Here's what concrete means to your clients:

Recent engineering developments have greatly reduced cost of reinforced concrete and concrete ashlar walls. Rigid firesafe concrete floors are now so economical that they can be specified in *all* the houses you build.

Concrete is low in first cost even for small homes—incomparably low in cost per year of occupancy because concrete endures.

You can promise maintenance-wary prospects that concrete homes cost little for upkeep—not merely for a few years, but for *decades!* That they're safe from the hazard of fire. That they weather the attacks of termites, time, storm and decay. That they're cool in summer and economical to heat in winter.

If you're not entirely familiar with all the newest developments in concrete construction for homes, write us for the facts. It's a great creative material that will give you new joy in your job.

CONCRETE *Builds the Carefree Home*

Ashlar or reinforced concrete walls with concrete floors and firesafe roof

PORTLAND CEMENT ASSOCIATION
Dept. A5-6, 33 W. Grand Ave., Chicago, Ill.

Please send literature on subjects checked:

☐ Fireproof house design; ☐ Concrete residence floors; ☐ Concrete ashlar walls; ☐ Facts about concrete masonry; ☐ Reinforced concrete houses, construction details; ☐ Portland cement stucco; ☐ Quality concrete making.

Name.....

Address.....

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Extra PROTECTION THAT COSTS NO MORE!

Insulite's exclusive Termilite Process provides permanent protection against termites, dry rot and fungi. No ingredients are used in this process which are harmful to either human or animal life.

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1. **Greater resistance to moisture.**
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3. **Saving in pitch or asphalt on job.**
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5. **Permanent Insulation.**

Insulite Asphalted Roof Insulation costs no more than ordinary roof insulation.

Our engineering department will give you specific data on your roof insulation and condensation problems. Write for free sample of Insulite Asphalted Roof Insulation. The Insulite Co., Dept. A-36, Builders Exchange, Minneapolis, Minn.

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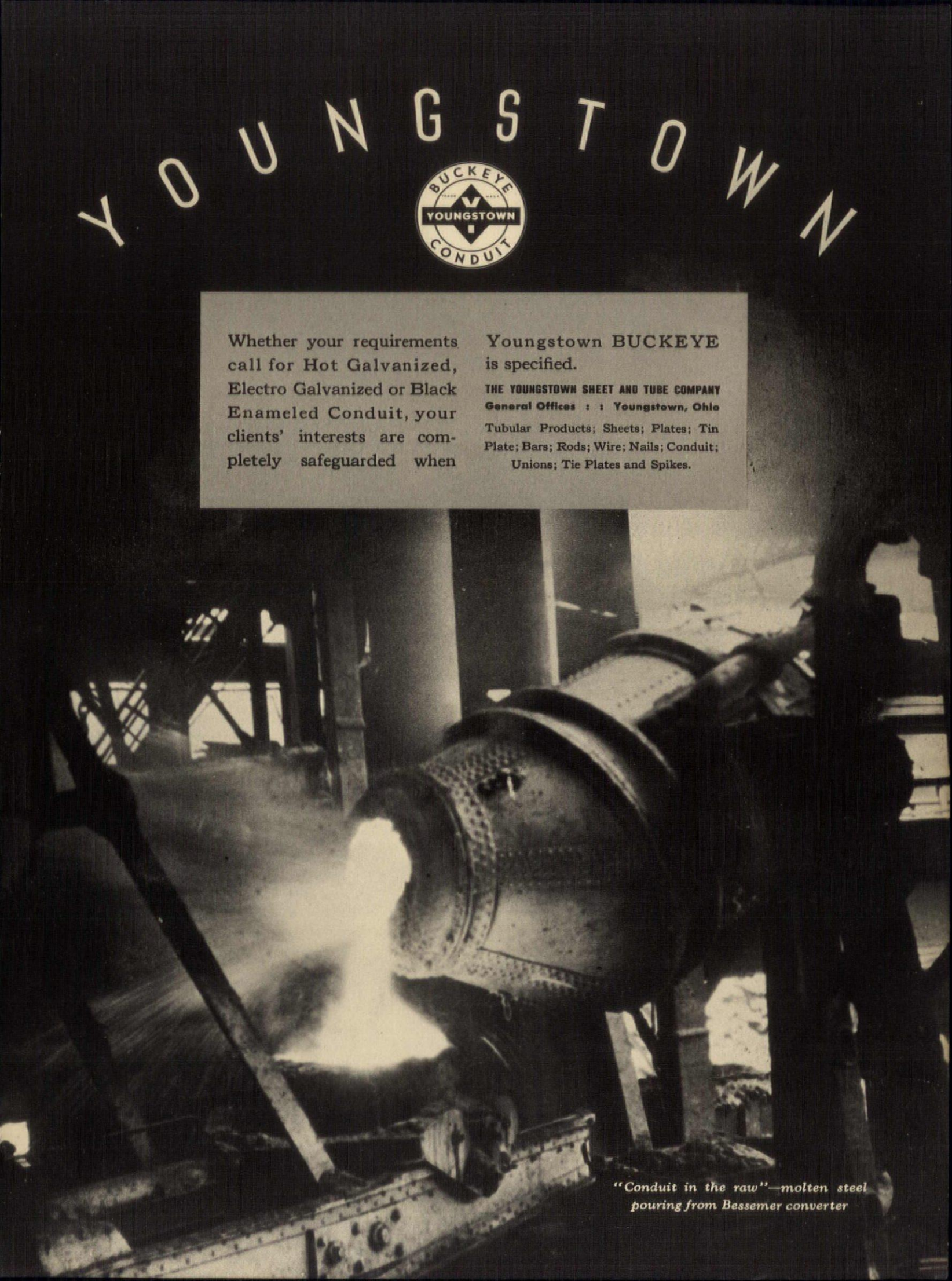
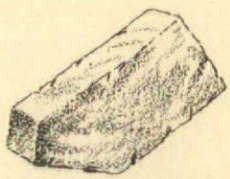


"Conduit in the raw"—molten steel pouring from Bessemer converter

He Won't Let Us Mention His Name

But Here Are The Facts

[A MAKE-GOOD PROMISE]



Admittedly, specials are an "onery" sort. But send along your requests and we'll keep smiling just the same, even if we have to grimace a little doing it.

RECKON you were right. It was sort o' careless like for me to make a promise. It's a thing we brick makers ain't so powerful much given to.

However, am going through with this one, even at the danger of being reprimanded. You'll recollect that one of you up-North architects wrote me what might pass as a brief letter.

It said: "What is your percentage of rejects? Do you make specials?" Then he ended it with, "Yours truly." That word "truly" always annoys a brick maker. But perhaps I'd better let it pass.

Being a brick maker—and even so a human—reckon I shouldn't be shy on a little horn-blowing about our rejects. But you wouldn't believe me if I did. So leaving out the horn, suspect the next best thing is to tell about an actual happening.

A while back your Government at D. C. Washington (as some of the colored folks down here call it) took a notion to build a Veterans' Hospital at Roanoke. Somehow or other, we were picked on to furnish one million two hundred thousand of our Standard Size Old Virginians. Believe it if you like, or just as you incline, but so far we haven't heard of any rejects and the building is up and occupied.

As for specials, well on that same job we furnished 72 thousand and neither was there any squawking on them.

With facts like that staring at a fellow, I sort of came to the conclusion, that maybe there were other brick plants that might do as well, but they'd have to step out some to beat that percentage.

Am being frank when admit we are not powerful keen about making specials, no more than is any plant. All of us have found out, it's no more than just a break-even job at best.

But nevertheless we don't mind doing it for you architects, knowing as how, if we didn't make 'em, somebody else would. Meaning we might easily lose a tidy order for our other bricks. It's what, if I recall aright, they call up in New York State, "making one hand wash the other."

Just been looking out the window. The smoke is belching out of kiln number nine like they wuz burning tar. There's a quarter of a million brick in that kiln, and three different kinds of coal are used to make the true Old Virginians. It has to be done to get the right color. Just ain't no other way.

Have a notion it's the black belching that's now going on, that makes Old Virginia Brick look born-old, time-toned, or whatever you fellows call it.

Not that you so much care what makes it, only that so far as we can learn, no other brick have that time-toned look on their natal day. Might get it after 150 years or so. But as we understand it, some of you can't wait that long.

Maybe you'd like a panel of them to be in the way around your office. "No?" Well didn't more'n half think you would, but just natcherly took a chance on that other half.

HENRY GARDEN
Brick Maker for
OLD VIRGINIA BRICK CO.
with Mr. Jefferson as a Guide

OLD VIRGINIA BRICK

Old Virginia Brick Company
Salem, Virginia

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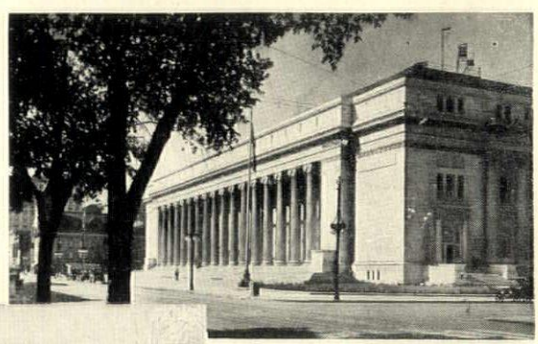


U. S. Post Office Building, Denver, Colorado. Protected with 8,500 square feet RU-BER-OID Built-up Roofing.

Cleveland Stadium, Cleveland, Ohio. Protected with 220,000 square feet RU-BER-OID Built-up Roofing.

Southern Kraft Corporation Mill, Mobile, Ala. Protected with 264,000 square feet RU-BER-OID Built-up Roofing.

Benjamin Franklin High School, Rochester, N.Y. Protected with 140,000 square feet RU-BER-OID Built-up Roofing.

The BULLETIN-BOARD

(*Continued from page 4*)

quarter of last year, the volume of permits for the first quarter of 1936 eclipsed any similar period since 1931. The aggregate for the first three months of this year totalled $184,637,909, compared with $99,526,487 a year ago, or an increase of 85.5 per cent. Contrast with the $52,705,189 total recorded in the first quarter of 1933, when the building industry was at its lowest, shows a rise of 250 per cent.

VARIABLE COST OF BUILDINGS

THE Federal Home Loan Bank Board has been investigating the cost of building an identical home in various cities. To date the lowest cost reported is that in Columbia, S. C. Here are the cost figures for cities from which reports have been received:

Baltimore	$5,028	Seattle	5,315
Cumberland, Md.	6,033	Cheyenne	6,506
Chicago	6,361	Wilmington, Del.	5,360
Hartford, Conn.	5,846	Harrisburg	5,583
Oklahoma City	5,756	Philadelphia	5,494
Pensacola	5,095	Buckhannon, W. Va.	5,214
Colorado Springs	5,972	Charleston, W. Va.	5,355
Providence, R. I.	6,442	Wheeling	5,819
Columbia, S. C.	4,337	Ashland, Ky.	5,439
Atlantic City	5,922	Covington, Ky.	5,673
Camden	5,082	Lexington, Ky.	5,039
Newark	5,709	Louisville	5,484
Albany	5,340	Paducah	5,170
Binghamton	5,370	Cleveland	5,888
Buffalo	5,490	Columbus	5,559
Syracuse	5,500	Chattanooga	5,217
White Plains, N. Y.	5,143	Knoxville	4,979
Indianapolis	5,889	Memphis	5,079
South Bend	5,787	Nashville	4,886
Detroit	5,032	Fort Smith	4,764
Des Moines	5,874	Little Rock	5,222
St. Paul	5,330	Texarkana, Ark.	4,892
Kansas City, Mo.	5,328	New Orleans	5,328
Springfield, Mo.	5,808	Hattiesburg, Miss.	4,846
St. Louis	6,342	Jackson, Miss.	5,198
Fargo	5,606	Meridian, Miss.	5,272
Minot, N. D.	5,914	Albuquerque	6,067
Sioux Falls	5,751	San Antonio	5,958
Boise	6,777	Phoenix	6,113
Great Falls	6,779	Los Angeles	5,177
Portland, Ore.	5,267	San Diego	5,520
Salt Lake City	5,980	Reno	6,006

NATIONAL HOUSING ACT AMENDED

THE sixty-three insuring offices of the Federal Housing Administration and 7872 private financial institutions making insured loans to the public under the modernization provisions of the National Housing Act have been notified that Congress has passed amendments extending this phase of the Act until April 1, 1937.

In order to facilitate the immediate utilization of the new amendments to the Act, the previously existing regulations will be re-enacted with such changes as are required by the amendments and will be supplied to the insuring offices and lending institutions immediately.

The revisions in the insured modernization credit plan for property improvement and repairs are expected to give new impetus to this part of the Federal Housing Program which has, since August, 1934, produced 922,773 transactions involving $324,672,553 in loans made by private lending agencies and insured by the FHA.

In the future, modernization loans can be made only for financing alterations, repairs and additions upon improved real property "by the owners thereof or lessees of such real property under a lease expiring not less than six months after the maturity of the loan."

Loans in excess of $2000 for the purchase and installation of equipment and machinery for business properties remain eligible under the amended Act with a maximum of $50,000 for these loans, but loans of $2000 or less for the purchase and installation of equipment and machinery on any type of property are specifically excluded.

The amount of insurance for private financial institutions making modernization loans is reduced from 20 per cent of the total amount of loans extended to 10 per cent.

From the experience of the FHA since the first loans were made in August, 1934, the 10 per cent coverage is more than ample. It was explained, however, that all loans made prior to April 1, 1936, will be insured up to the full 20 per cent.

CHARLES A. COOLIDGE, 1858–1936

CHARLES ALLERTON COOLIDGE, architect, of Boston, died suddenly April 1, while visiting a daughter on Long Island.

Mr. Coolidge was born in Boston, received his Bachelor of Arts degree from Harvard in 1881, and then took a special course in architecture at the Massachusetts Institute of Technology.

In the fall of 1882 he entered the office of H. H. Richardson. Four years later he established the firm of Shepley, Rutan & Coolidge, which practised for twenty-eight years under that title. From 1914 to 1924, he was senior member of Coolidge & Shattuck—since July, 1924, Coolidge, Shepley, Bulfinch & Abbott. For some years, until 1930, he was also a member of Coolidge & Hodgdon of Chicago.

The work of Mr. Coolidge and his associates is so extensive, so widespread, and so well known as to need no enumeration.

Mr. Coolidge was a member of the board of overseers of Harvard. Incidentally, he was one of the founding members of the Harvard *Lampoon*. Mr. Coolidge was president of the Massachusetts Chapter of the Order of the Cincinnati, a Chevalier of the Legion of Honor, and a member of the United States Commission on Fine Arts. In 1906, Harvard conferred upon him the honorary degree of Doctor of Arts, a degree it has awarded to only one other man, the late John Singer Sargent. Mr. Coolidge was a Fellow of the American Institute of Architects.

TEUNIS J. VAN DER BENT, 1863–1936

TEUNIS J. VAN DER BENT, a member of the firm of McKim, Mead & White, died March 25, at Roosevelt Hospital after a short illness.

Born in Suriczee, the Netherlands, Mr. Van der Bent was educated as an architect and engineer at the University of Delft. Coming to the United States in 1886, he entered the offices of McKim, Mead & White a year later as a draftsman. In 1909 he became a partner in the firm. After Mr. Mead's death in 1928, Mr. van der Bent succeeded him as head of the firm's general business administration.

Mr. van der Bent was a former president of the Netherland Club. He belonged also to The Architectural League of New York, and was a member of the American Institute of Architects.

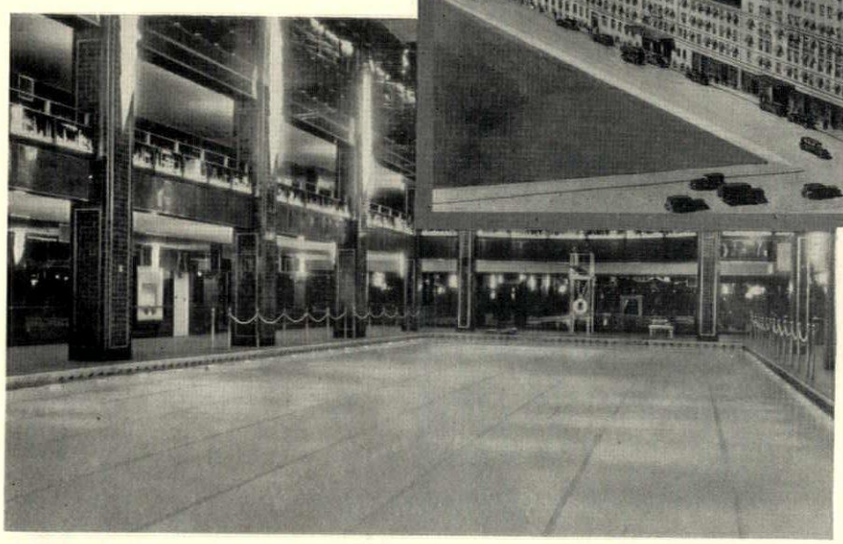
WERNER HEGEMANN, 1881–1936

WERNER HEGEMANN, an authority known internationally in connection with city planning, died April 12, in the Doctors' Hospital, New York City, following a short illness.

Dr. Hegemann was born in Mannheim, Germany, was graduated from the University of Berlin, and began his professional career with an intensive study of city planning. In 1905 he first visited America, and became housing inspector for Philadelphia. In 1909, he was director of the first city-planning exhibition shown in Boston, and taken from there to Berlin, Düsseldorf, and to the Royal Academy in London. As a result of this exhibition in Berlin, Dr. Hegemann was made director of a socialist "Co-operative Building Association Ideal." In 1914 and 1915 he came again to America, and conducted several planning projects for the East Bay communities of San Francisco. Fom 1916 to 1921 he was engaged in directing important subdivision work in Wisconsin and Pennsylvania. From 1924 to 1933 he was at various times city-plan-

(*Continued on page 20*)

THE ARCHITECT SAYS . . . about CHLORINATION



Hotel St. George, Brooklyn, N. Y., and below, a view of the pool — Emory Roth, Architect, N. Y. C.

The St. George Pool, often spoken of as the most beautiful pool in the world, employs every modern aid in protecting the health of the bather. Every drop of water is continuously sterilized by a W&T Chlorinator and Ammoniator.

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CONTENTS

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THE BUILDING TREND

By E. L. Gilbert

MARCH construction figures indicate a continuance of the steady improvement in New Residential building, a reasonable gain in Commercial and Industrial activity compared with last year, and a spurt in Other Work. Total building construction for the entire United States revealed a betterment by more than 31 per cent above March, 1935, and higher by 13 per cent than last month's total volume. With building material prices holding their own without either great advances or declines, plus the undoubted optimism expressed by building-field professionals, there seems to be plenty of reason to look forward to a well-sustained and active building year in 1936, with substantial gains yet to be recorded during the late spring and early summer months.

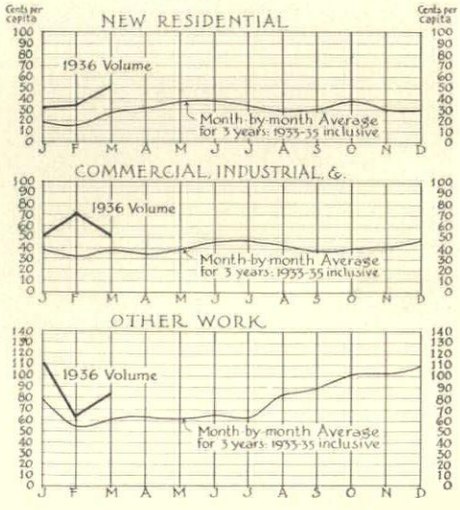
MONTH OF MARCH
(DOLLARS PER CAPITA, ENTIRE U. S.)

CLASSIFICATION	1934	1935	1936
New Residential . .	$.26	$.35	$.51
Commercial, Industrial, etc.	.52	.40	.52
Other Work	.64	.67	.84
Totals . . .	$1.42	$1.42	$1.87

Building Material Prices, U. S. Dept. of Labor, end of March* . .	86.2	85.0	85.1

* Index numbers based on: 1926 = 100.

THE YEAR



House of Thorsten Sigstedt, Bryn Athyn, Pa.
Dominique Berninger, architect. (*See also page 262*)

ARCHITECTURE
VOLUME LXXIII NUMBER 5
MAY, 1936

Architectural Service in the Small-House Field

TO one whose eye is lifted above and beyond an individual practice, scanning the signs of the times, an architectural movement of unquestioned power and significance seems imminent. It has to do with neither modernism nor traditionalism; it is unhampered by considerations of style; it impinges only slightly on the field of æsthetics. The movement approaches—not in the trappings of the zealot in artistic creation, en route to a pageant, but rather in the working clothes of a master builder who has a practical but immensely important task to perform.

The movement, if such it turns out to be, is a rapidly expanding effort to help some hundred millions of Americans to build themselves decent homes. It seeks to dip beneath the creation of cathedrals, the building of monuments to the patrons of art, the glorification of industry, reaching into that vast ocean of human needs for a real job—the genesis of all structure, the modest home of the average citizen.

If the man who, in a given society, has been selected, trained and set apart to serve it as building technician—if this man deliberately turns away from what should be his most important responsibility, he fails—utterly—and society must replace him with one who is able and willing to serve it.

It would seem that society has been more than patient with the architect, treating him as it would a child suspected—perhaps without justification—of being gifted beyond his fellows. Society has favored its precocious child, has excused his practical shortcomings, his occasional haughty petulance over the common duties and responsibilities of life. It seems unlikely, however, that society, the great mother, will continue indefinitely to pamper a child that, having the ability to carry his share of the common burden, persistently refuses to shoulder it.

Perhaps an inkling of this homely fact is beginning to percolate into the collective mind of the architectural profession. There are signs that the architect is awakening to the realization that he had better put on some working clothes and lend a hand with the chores.

Buffalo

AS the present movement to establish an adequate architectural service in the small-house field goes down into history, those who come after us will soon be debating as to who started it all. There may be another claimant for that honor, but it seems likely that the Buffalo Small House Bureau, formed under the sponsorship of the Buffalo Chapter, A. I. A., was the first one to get into action. The movement in Buffalo started about a year and a half ago with a Housing Show. The fifteen or twenty members who formed the Bureau took advantage of that opportunity to establish a knowledge of this new relationship in architectural practice by having one of its members available at all times in the show to answer the questions of visitors.

The movement in Buffalo has had the co-operation of the Real Estate Board, and was instituted with the intention of enlisting the support of local loaning institutions. The details of this latter co-operation have still to be developed.

An office has been established in the Architects and Builders Exhibit—a permanent exhibition of building materials—and in charge of this office is a manager and a stenographer. Any one interested in building a small house may see in this office the designs of various types made by the members of the group. A small printed circular is available for any one who calls, explaining the nature and full details of the service offered. There are at present three or four inquiries each day, and, as in the case of most of the other groups, there seems to be a period of incubation of indefinite length. Occasionally an inquiring prospect returns in a week, sometimes not for a year. Up to the present writing seven commissions have been undertaken.

As to some of the details of procedure, the group furnishes the services of one of its members at the stated lump-sum fee only if there are no changes to be made in the drawings. Any changes, however minor, are paid for at the rate of $2.50 per hour drafting time. The group furnishes four sets of blue prints and specifications, and takes bids from three or four contractors selected by the designing architect. There is no approved list of contractors privileged to bid; each architect uses his own discretion in the selection of those permitted to bid. The limited architectural service includes three preliminary office visits or conferences between the client and the designing architect. Additional visits, when requested by the client, are charged at $5 each. Six stated inspections of the house form a part of the service.

As to payment, the fees vary from $100 for a house costing under $4000 to $150 for the maximum limit of $7500. The client pays 10 per cent of the fee upon the selection of a plan; 50 per cent more upon the taking of the bids, and the balance as the work progresses.

For each commission accepted, the architect pays into the Bureau treasury the sum of $10. It was expected that the money so received would maintain the headquarters—not at the outset, but when the plan is fully in operation.

JAMES WILLIAM KIDENEY

Washington, D. C.

A NUMBER of Washington's younger architects, forced by circumstance to realize that the small-house field must constitute the major source of work for some time to come, and aware that only a very small portion of that work has ever come the way of the architect, decided to offer a modified form of architectural service and thus broaden their field of potential clients.

The recent endorsement of the group service plan for small-house work by the Board of Directors of the American Institute of Architects prompted the formation of an organization along the lines of those already approved and in operation.

It was apparent from the first that the success of the venture would depend upon the solution of the following problems: Financing the organization which was felt necessary to the proper execution of the plan; developing a dignified and ethical method of acquainting the public with the service offered; and, finding the most direct source of contact with persons who might be seriously thinking of building.

It was while these problems were being considered that the group was tendered an offer of assistance from the Federal Home Loan Bank System in the development of the plan.

In spite of considerable skepticism on the part of the group as to the wisdom of operating in any manner other than as an independent entity, the offer was accepted and, with the approval of the Washington, D. C., Chapter, A. I. A., a plan was formulated which, for the first time, brought together the three major factors in residential work: the architect, the builder, and the lending institution.

The result of this collaboration was the immediate solution of all the real problems mentioned above. The need for extensive capital and staff was eliminated by the use of the lending institution as the central headquarters and display room. The matter of proper advertising was likewise disposed of by the revision and broadening of that institution's regular advertising program—and the problem of direct contact with prospective home builders was solved in a most excellent manner due to the fact that the display was bound to be constantly before the eyes of depositors, the genuine source of prospective clients.

It would perhaps be best to follow an imaginary client through the whole procedure of the service.

Mr. Doe, interested in building a house which would cost not more than $7500, finds an advertisement in his daily paper which states that the Perpetual Building Association of Washington is offering a new architectural advisory and supervisory service which will make the building of his home an easy and pleasant undertaking and, at the same time, will relieve him of worry and concern about the proper construction of the house.

Parenthetically, the price limit for houses in this service plan has been set at $7500 (as is the case with most of the groups in other cities) as representing the cost above which group service at a modified fee would encroach upon the field of practice of individual architects.

The prospect's interest aroused, he visits the Association named and finds an extensive display of varied small-house designs prepared by the Washington Architects Small Home Service group, all of whom are registered and recognized architects experienced in small-house work. An attendant, conversant with all details of the service, explains the plans and points out the complete description of materials, equipment and finish, as well as the carefully prepared estimate of cost of each design.

Mr. Doe is asked to fill out a prepared form which will set forth his requirements for a house, his occupation, location of lot, a brief financial statement and other pertinent data.

He learns that, having a lot free and clear, he may borrow as much as 75 per cent of the appraised value of lot and the house he proposes to build.

Suppose then that Mr. Doe selects a design from those displayed. He finds that the architect's fee (amounting to slightly more than 2½ per cent of house cost) is included in the estimate of cost and will be considered in the appraisal of house value. He finds, too, that he may, if he wishes, deposit with the lending institution the cash which represents the difference between the amount of loan and the combined house cost and architect's fee and that all disbursements will be made to both architect and builder by that association.

Having selected a design, Mr. Doe is directed to the architect by whom it was prepared, and both visit the site selected to determine the suitability of design to lot and neighborhood. Should the site be found favorable, Mr. Doe and his architect will proceed with the next step. Should the architect decide that the design selected is not suited, he will make recommendations for adjustment of plan to site, or in extreme cases, refuse to permit the use of the design on the site. In the latter case it will then be necessary to select another design which may be better suited to neighborhood and site conditions.

Assuming that the site, etc., has been approved, a contract is then entered into by Mr. Doe and the architect. At this time the architect receives one-fifth of his fee.

The architect, having the working drawings for the design selected already prepared, need only make one more drawing peculiar to the requirements of this project, namely, the plot plan. This plot plan shows the adjustment of the plan to grade conditions of Mr. Doe's lot.

This plot plan, constituting a special service for each client, must be paid for independently of the flat fee already included in the estimate of cost. The charge for this plan is based on actual cost of drafting and, as two or three hours will suffice for its preparation, the charge will be nominal.

Granted that all necessary information has been assembled which will affect the project, the specifications (which, like the drawings, are already prepared) are modified in minor details as to finish or equipment and the job is put out to bids to not less than four builders who have been selected from an approved list.

The bids in, and the builder selected, the architect furnishes the builder with six sets of blue prints and the work is begun.

The supervisory service furnished by the architect will be as follows:

1. Inspection of the excavation and soil before footings are placed.
2. Inspection of all walls below first-floor joists.
3. Inspection of all work before second-floor joists are placed.
4. Inspection of all work up to, and including, roof framing.

5. Inspection of roughed-in plumbing and electrical work.
6. Inspection of plastering before trimming out.
7. Inspection of all trim and finish woodwork and equipment installation.
8. Inspection of paint and other finish.
9. Final inspection of completed work.

Upon awarding of the contract the architect receives another two-fifths of his fee.

Payments to the contractor are made at stated intervals according to regular practice, during execution of the work, and only upon certification by the architect that the work has been satisfactorily carried to the stage required for payment.

The balance of the architect's fee is paid in three equal instalments. The advantages of this system for architectural services on small homes are obvious.

The very fact that the lending institution, the architect and the builder are in accord and co-operating to make the service available and workable through an established and reliable source, that is, the Building Association, is evidence of prequalification of those concerned in the project.

E. P. SCHREIER, A. I. A.

New York

NEW YORK caught the germ at a comparatively late date in the recent epidemic, but surely has not lacked in the depth and speed of the inoculation. There are between fifteen and twenty individuals and firms in the group, and for a limited time—until some things are learned about procedure and needs, the group is temporarily closed. It is by no means, however, to remain a closed shop. A committee on members will have the duty of passing on the qualifications of architects who would join Small House Associates after the preliminary test period. There is only one thing that would keep one out, and that is lack of ability in the small-house field.

During the first month or two of its existence, one of the members loaned a room in his offices in which designs made by the various members were on view in a fairly uniform method of presentation. Incidentally, these original mounts, bearing a pencil perspective and poché plans, were soon found to be suffering badly from handling. Several sets of photostatic copies were made, about 8½ by 11 inches in size, and bound in loose-leaf flexible binders, which facilitated the inspection of the designs when there was more than one visitor. Members of the group took charge of the room on a schedule, each serving about a half day in each two or three weeks. This practice soon became burdensome, and a part-time manager was employed. At the present writing the installation of a full-time manager is being considered, together with the group's own office space.

From the very first, it was considered an essential to the success of the movement that the co-operation of the lending institutions should be enlisted. Progress in this effort is being made rapidly, largely through the aid of those in the Home Owners Loan Corporation and FHA who had been working toward an improvement in small-house practice.

In the brief experience of the New York group, few, if any, of the designs available have been selected as the basis for a commission. Prospective clients, however, have, in a number of cases, informed the office of their intention to build somewhat larger houses than those represented, and each has been put in touch with the architect whose work he most admired, to sign eventually a contract for the regular architectural service at the regular fee.

A booklet is available in the offices, explaining very briefly the limited service offered and its cost. Here the fee varies from $150 for a house costing $3500 to $4000, up to $260 for a house costing $7500 to $8000. The work of Small House Associates, it is believed, differs from other groups in that it is expected that minor changes will be required, and drawings in accordance with these are included in the stated fee. These changes, however, have to be based upon two conferences and a signed questionnaire, and the drawings and specifications are not subject to further changes without additional charges, on the basis of drafting time required.

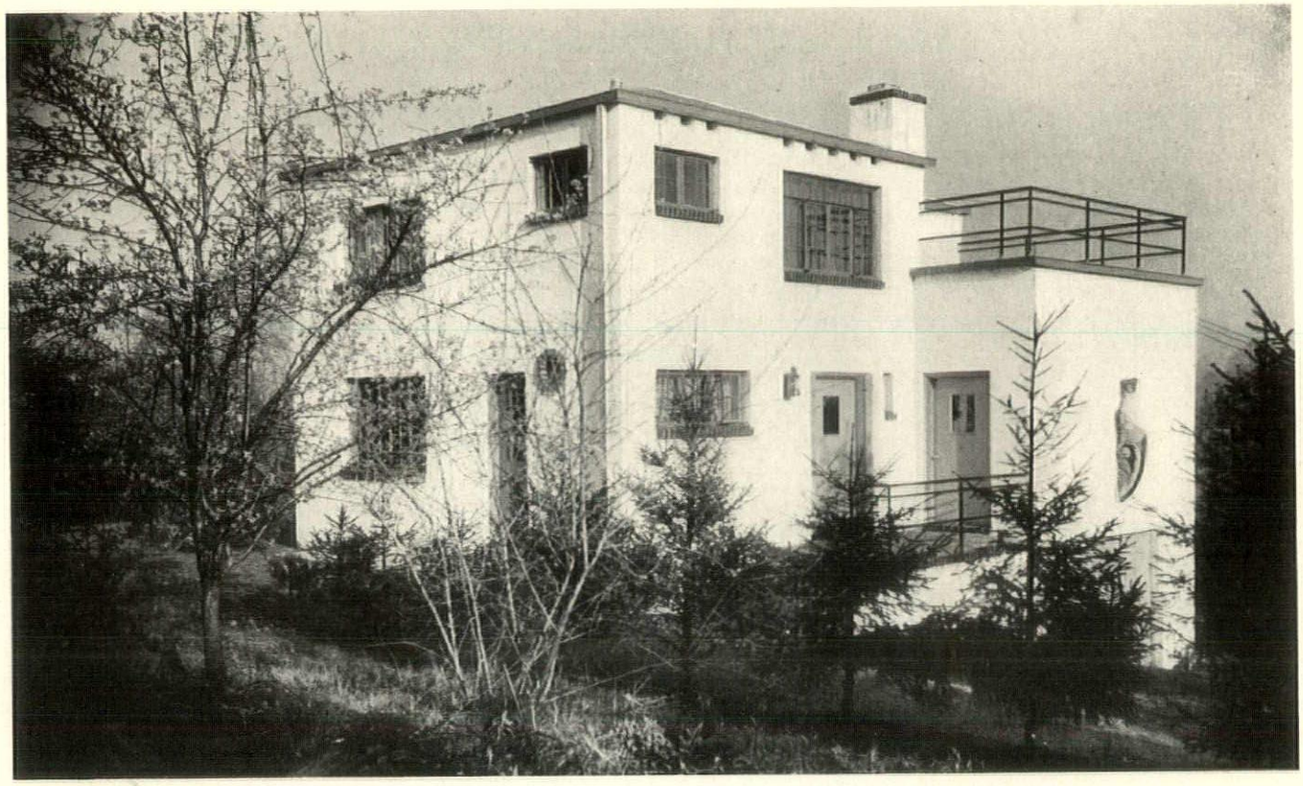
At the first conference between client and the architect who has been selected upon the basis of a choice from the standard designs, the client signs a contract for architectural services, and pays 10 per cent of the fee. A second conference is arranged when the working drawings are in their preliminary stage, to check these and the applicable portions of the specifications. At this conference, an additional 10 per cent of the fee becomes due. When the working drawings and specifications are completed, a third conference is held, at which the drawings, details, lists, and specifications are signed, and thereafter sent out for bids. At this time an additional 40 per cent of the fee is due. It is planned, but not fully determined as yet, to accept no more than four bids from an approved list of contractors.

Six visits of inspection are made either by the designing architect or by a qualified superintendent employed by the group.

Here is another notable departure from the established procedure of architects in general, and of the small-house groups as well. The careful cost estimates procured in advance by the Small House Associates make it possible to foretell within reasonably close limits the cost of any house the client selects. The Small House Associates, of course, do not guarantee the cost of any house, but if the low bid of a contractor acceptable to the Small House Associates is more than 10 per cent above the preliminary estimate, taking into account any changes made in the drawings and approved by the client, all payments made on account of the fee will be refunded if he decides to drop the project. In other words, the New York group feels that if it fails, through its own lack of knowledge and professional skill, to do for a client what it says it can do, then the group's own cost in the proceedings should surely be its own loss, not the client's.

Small House Associates has been, and still is, supported at the expense of its members. Just how long this burden will continue is a matter for conjecture, but the group members are reconciled to the possibility of six months' operation before it becomes self-supporting.

HENRY H. SAYLOR

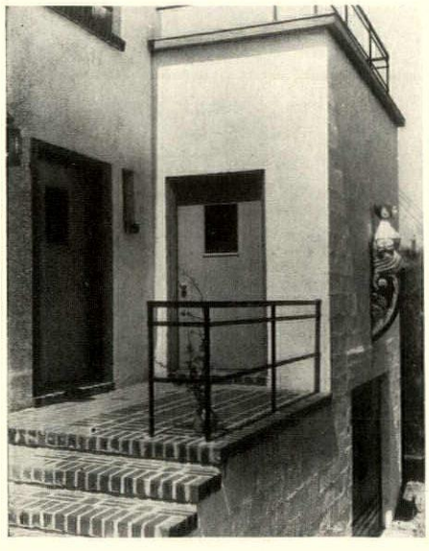


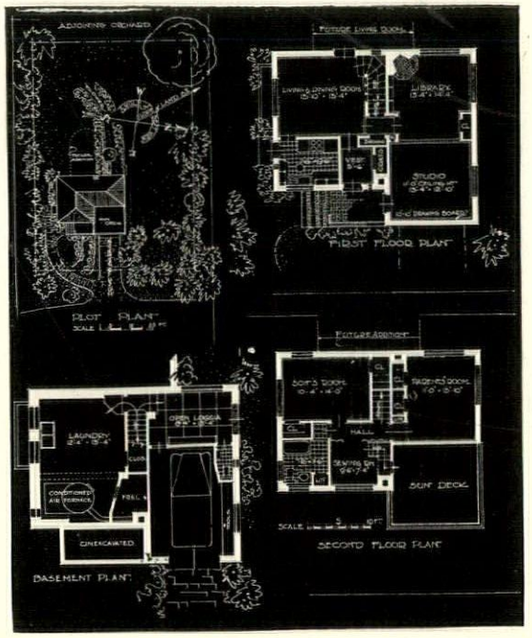
House of Thorsten Sigstedt, Bryn Athyn, Pa.

DOMINIQUE BERNINGER, ARCHITECT

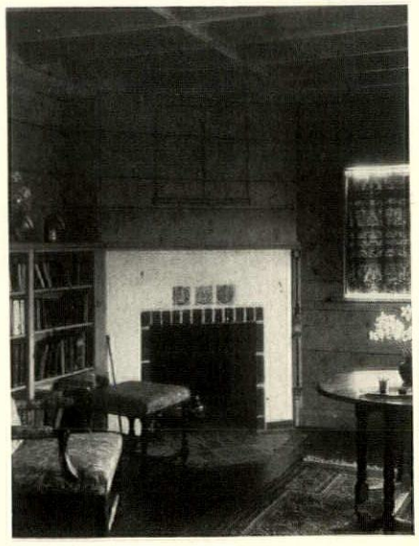
A primary requirement was a studio, 11' high, accessible without passing through the residential portion of the house, yet available for social use in conjunction with the library. A large living-room, as indicated on the plot plan, is contemplated

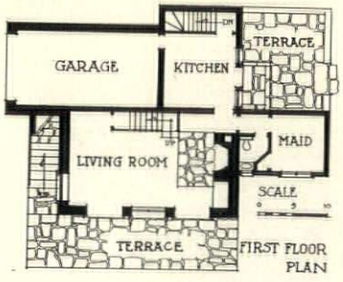
Main entrance doors to house (left) and to studio. The house has a cubage of 21,500 ft., and cost $5830, exclusive of screens, refrigerator, finished grading and planting





Joists with solid bridging show over library and combined living-room and dining-room. Horizontal knotty pine sheathing is used here, sand-finish plaster elsewhere. The house is thoroughly insulated

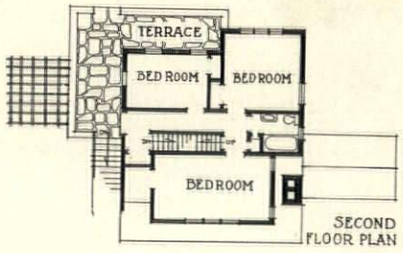




A cottage planned for week-end and occasional use, located on the towpath between canal and river, with advantage taken of both views, sun and prevailing breezes. The ground-floor bedroom can be used either as maid's room or a guest room.

Stonework of walls and flagstones of paving, in soft reds, grays and blues; woodwork inside and out, a cream white; shutters and doors, blue green; roof shingles of three sizes, laid with varying weatherage.

Cost, approximately $7500, without land, well, pump or sewage disposal plant. Cubage, 22,400



House of Miss Christine Ross, New Hope, Pa.

MARGARET F. SPENCER, ARCHITECT

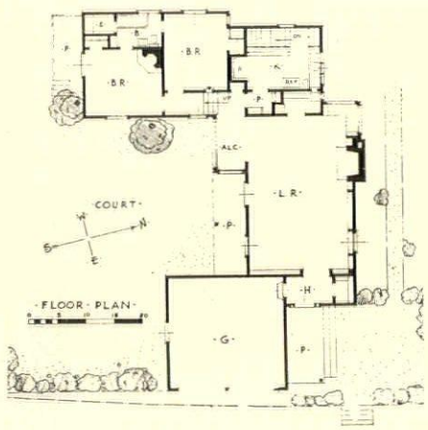
House of W. H. Durham, Berkeley, Calif.

ROLAND IRVING STRINGHAM, ARCHITECT

On a foundation of reinforced concrete, the superstructure is of frame covered outside with redwood boards molded on the edges and painted white. Roof is of untreated cedar shingles. Shutters are of white pine, painted green. Heating is by gas-fired warm-air furnace, and there is no insulation beyond the usual building paper.

In the living-room the walls are of white pine, glazed with white lead, and the trussed ceiling is in evidence. A corner window by the fireplace looks over San Francisco Bay and Mt. Tamalpais, while the window in the alcove opposite gives a view over Wildcat Canyon and admits morning sun to the breakfast table.

Cubage, 17,075; total cost, $6800, or 40 cents per cu. ft.



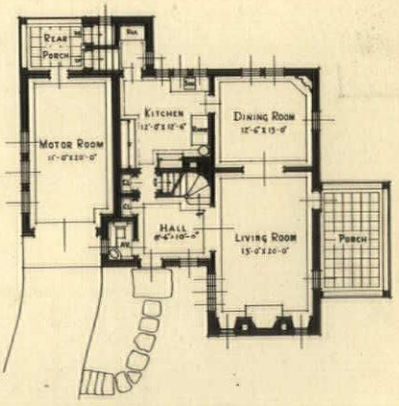
Exterior walls are of frame construction covered with 24-inch shingles painted, and brick veneer across the chimney end. Cubage, 28,000 feet; cost, including architect's fee, $7400

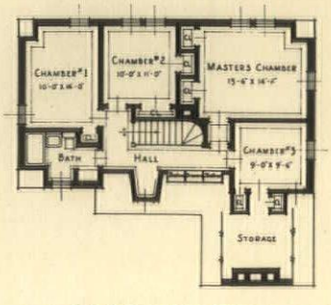
Photograph by George H. Davis Studio

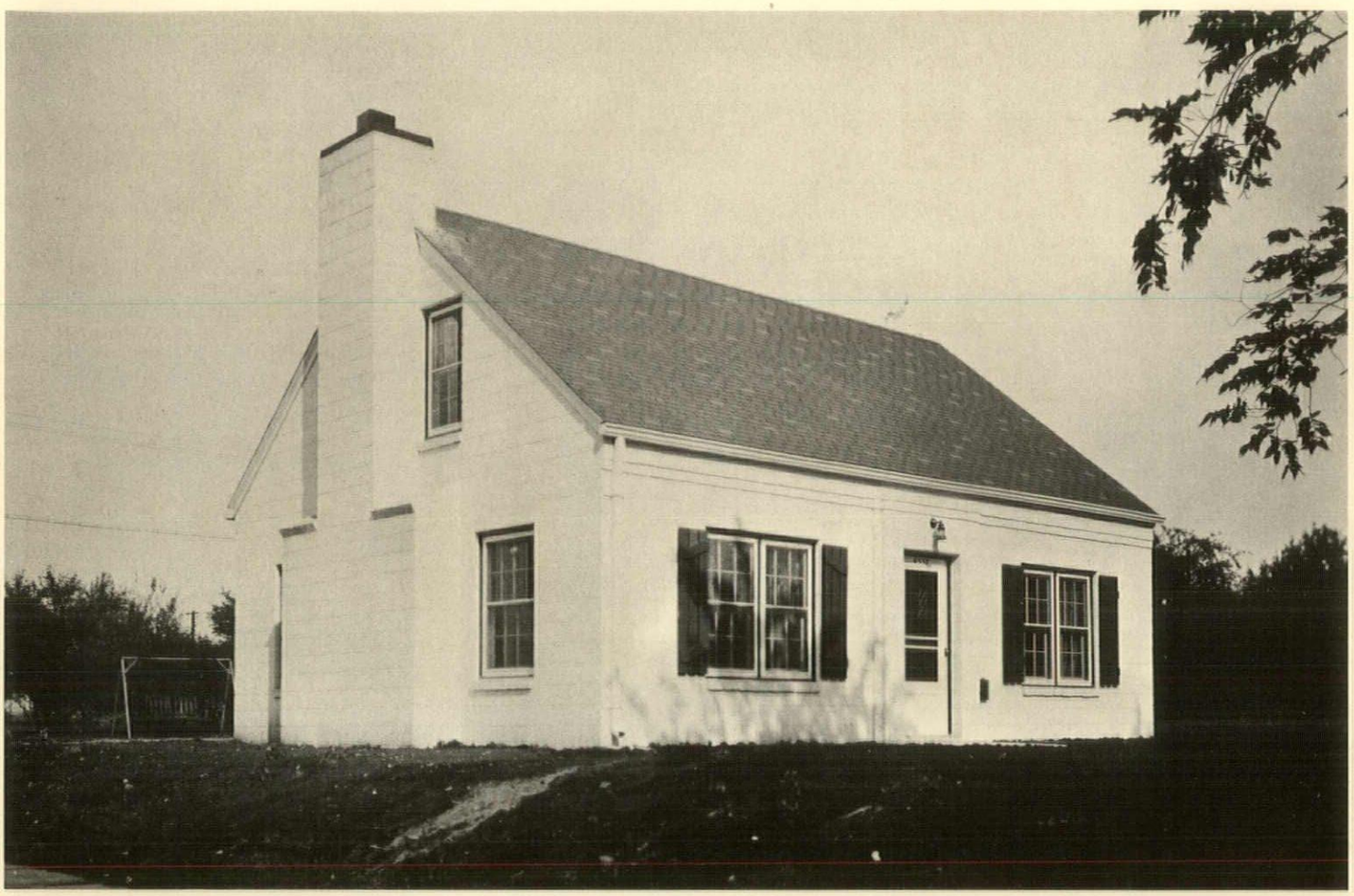
House of Edgar F. Bickford, West Medford, Mass.

SAMUEL GLASER, ARCHITECT

Entrance steps and porch are paved with flagstone; windows are both wood double-hung, and leaded-glass casements; oak floors throughout, with the exception of kitchen and bathroom, which have linoleum. The roof shingles are of the asphalt type. Vapor heating is installed, with an oil burner. The bathroom is tiled around the tub. Walls are, for the most part, papered, with pine sheathing on the fireplace end of the living-room. There is an incinerator and a clothes chute





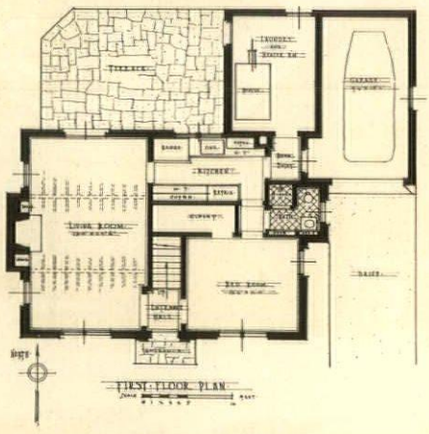


House of Paul W. Miles, Des Moines, Iowa

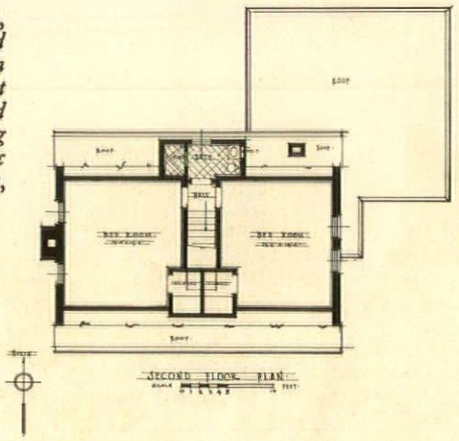
WETHERELL & HARRISON, ARCHITECTS

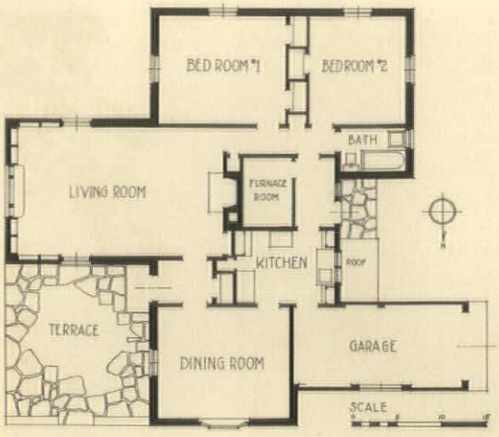
The house is built of cinder blocks, the exterior of which are painted with cement paint. There is no basement, the first floor being placed upon a layer of sand and building tile to provide drainage and air space under the cement floor. The entire first floor has linoleum covering the cement.

All walls, excepting in the bathroom, are sheathed with knotty pine. Joists for the second floor are adzed beams, which show on the living-room ceiling. A rigid insulation board was used over these beams under the second-floor boards, serving both for sound deadening and as finish ceiling



Roofing is of black asphalt shingles, excepting the roof over garage and laundry room, which is flat and is a built-up composition roof. Heat supplied by a warm-air furnace and an oil burner, the furnace being equipped with filters and automatic humidifier. Cubage, 17,800 feet, costing $.278 per cubic foot





An unusual scheme was carried out in the living-room, where the walls are sheathed with pine stained rather dark, and a simple cornice, chair-rail and doors are painted ivory

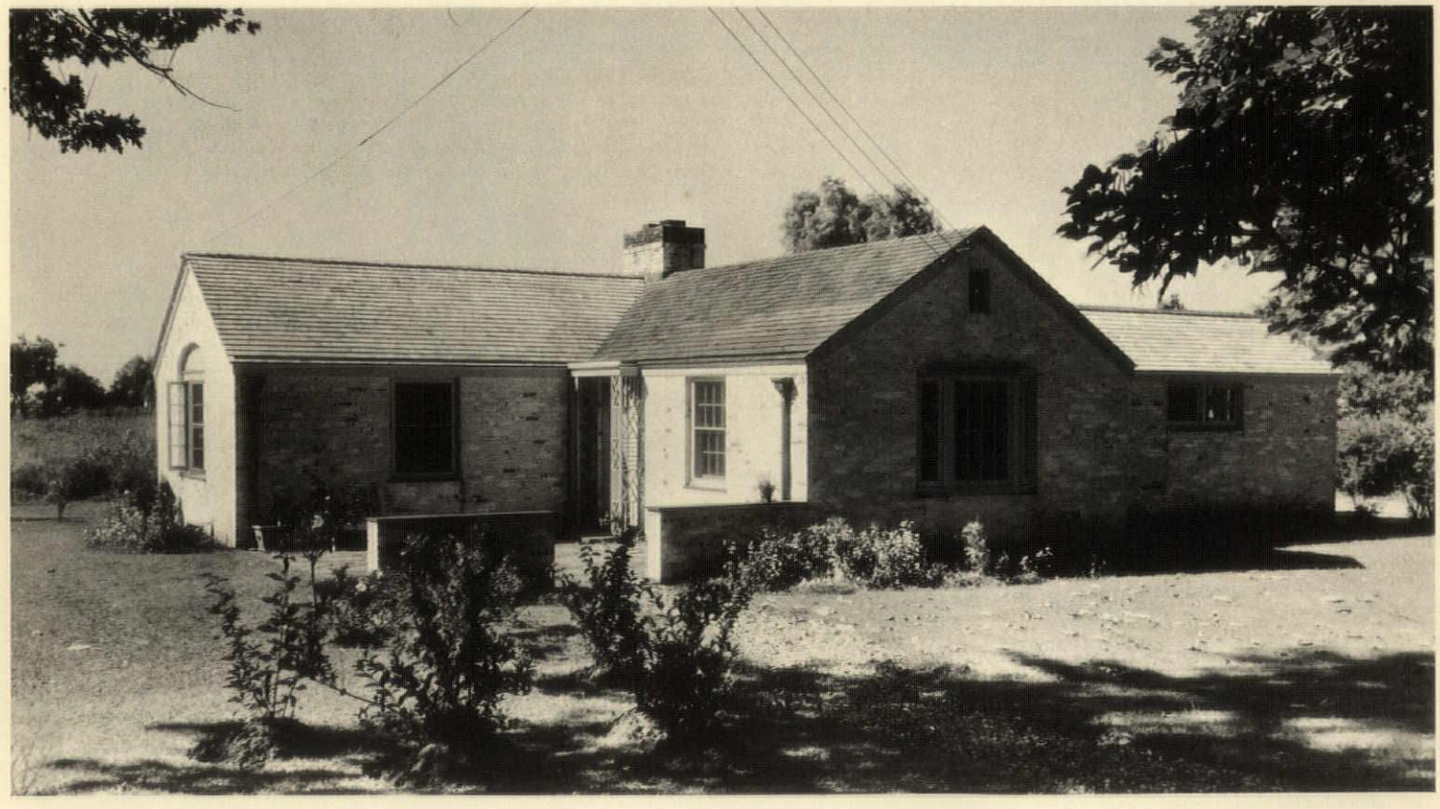
There is no cellar under the house, the air-conditioning system being located just back of the one chimney

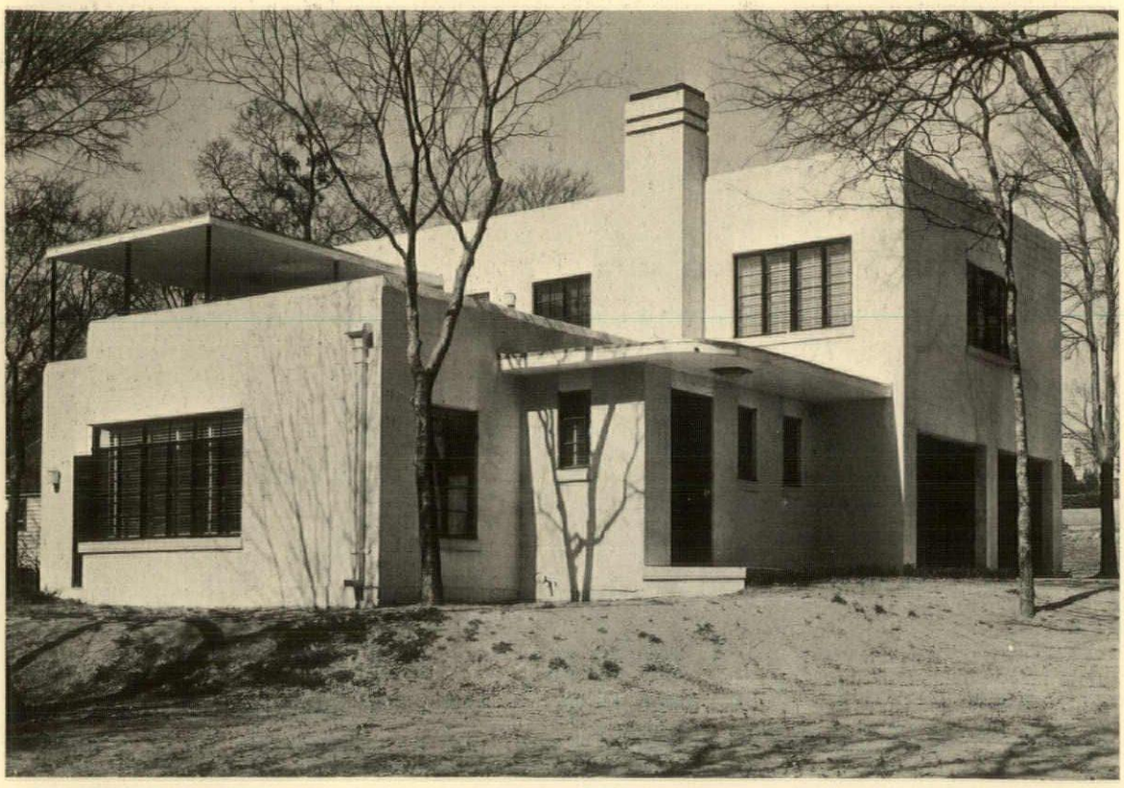
House of L. P. Simpson, Old Greenwich, Conn.

HARRISON GILL, ARCHITECT

Photographs by George H. VanAnda

Second-hand brick were used for the walls, painted with an oil paint. Roof is of red cedar shingles. Outside trim is painted a cream color





Steel casement windows are used throughout, and the concrete tile has been given a coat of cement paint

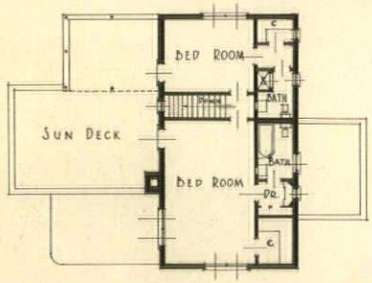
Photographs by Farley Studio

House of William Lipscomb, Dallas, Texas

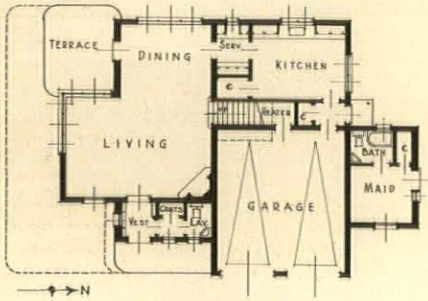
THOMPSON & PERRY, ARCHITECTS

In the rather hot Southwest, the prevailing breeze is always from the south. It is absolutely necessary in a well-planned residence for bedrooms and other living quarters to have this south exposure.

Exterior walls are of concrete tile, the inside plaster being applied on furring strips. Throughout the first story, the flooring is terrazzo on a concrete slab; on the second floor, hard wood. Quarry tile floors the sun deck, and the bathrooms have tile floors and wainscot. The roof is of a built-up membrane type, under which there is insulation consisting of four inches of rock wool. Total cubage, 22,436 feet. Erected in 1935 at a cost of $.333 per cubic foot



SECOND FLOOR PLAN



FIRST FLOOR PLAN

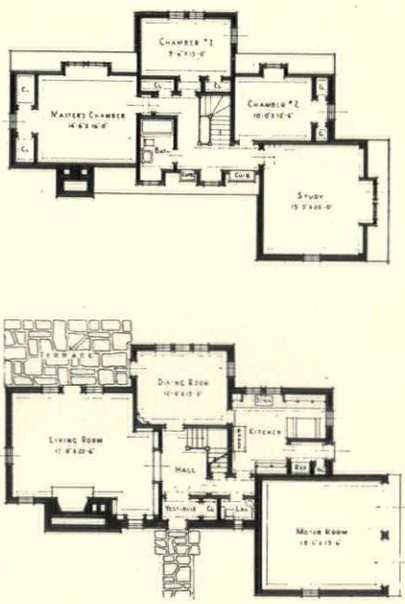
Outside walls are of 24" shingles and brick veneer, the chimney of brick. Asphalt shingles are used on the roof

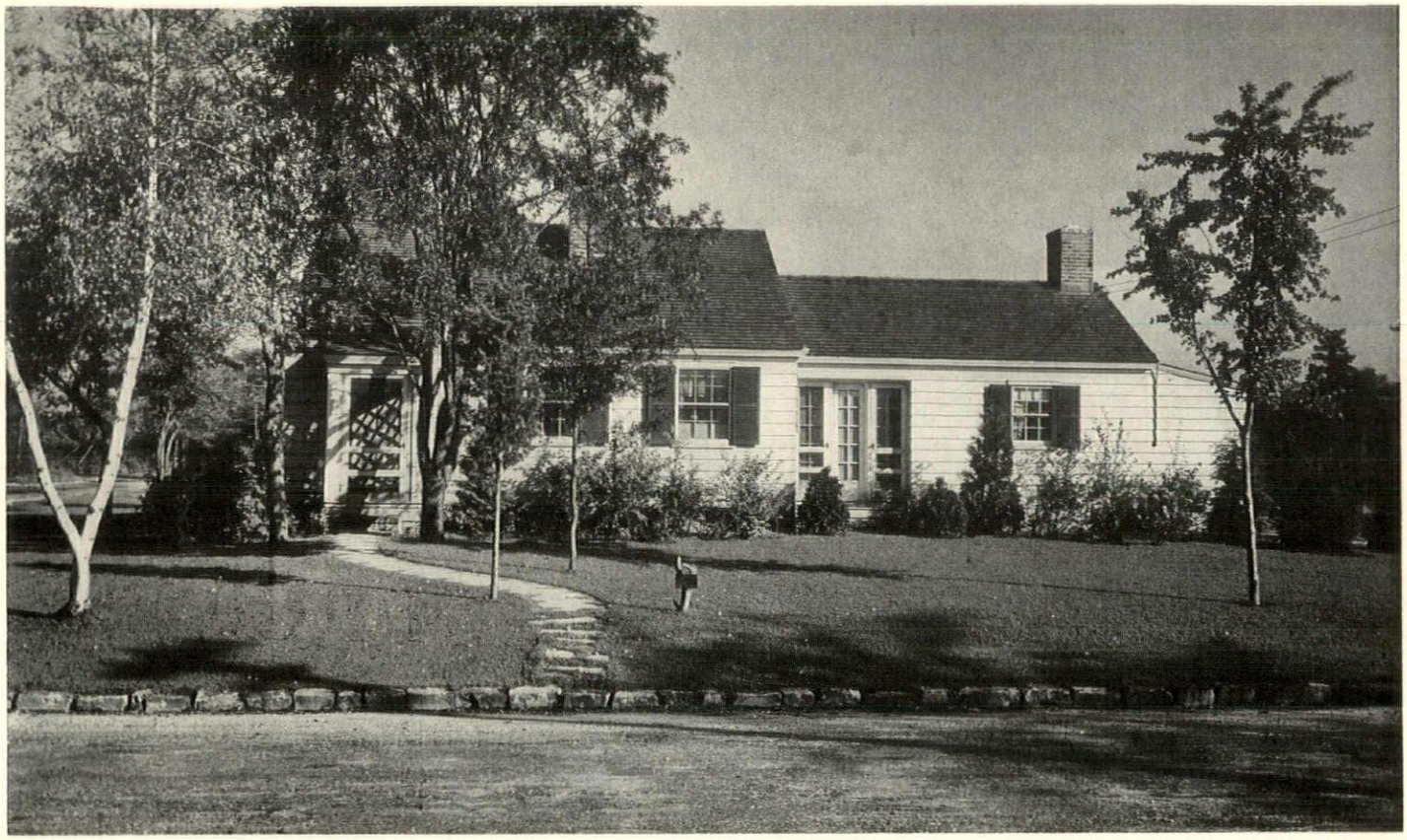
House of Philip Marson, Brookline, Mass.

SAMUEL GLASER, ARCHITECT

Photographs by George H. Davis Studio

The house contains 29,000 cu. ft., and was built at a cost of $7500, including architect's fee, or 25.5 cents per cu. ft. White pine was used for trim and for special details in living-room and elsewhere. Floors are of oak, except kitchen and bath, which are covered with linoleum. The house has interlocking weatherstripping, insulation in walls and attic floor, a basement-fed incinerator, and is heated by a vapor system with oil burner



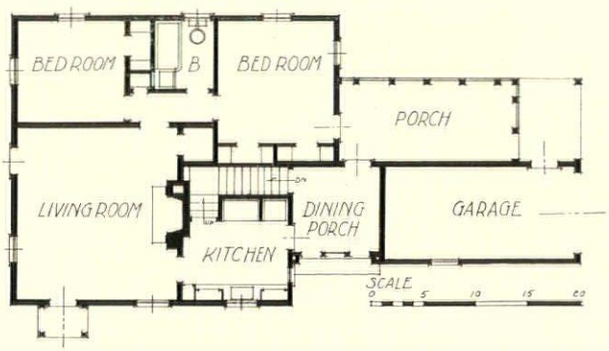


A House at Harbor Green, Long Island

RANDOLPH EVANS, ARCHITECT

Photographs by Gustav Anderson

The house contains 15,000 cu. ft., and was built at a cost of $7050, including lot, planting, oil burner, washing-machine, gas range and electric refrigerator. The house is planned with the idea of adding a porch on the living-room end, 9' x 14', centering on the door and extending only to the near edge of the flanking windows, so as not to cut off too much light from bedroom and living-room

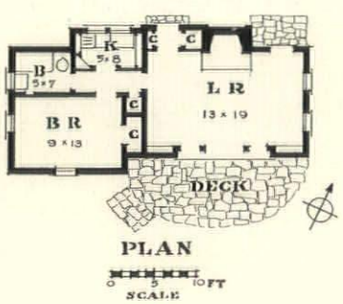


House of Miss Mary Burnham, Yorktown Heights, N. Y.

ELISABETH COIT, ARCHITECT

The owner is a serious and prolific amateur gardener who desired a shelter planned to require a minimum of housekeeping—and a maximum of view toward the Westchester Buttermilk range. Flanking the garden entrance are closets for tools and clothes. On either side of the deeply recessed south doors and windows of living-room are niches for books and for flower display.

The exterior is of light gray shingles, with dull red shutters, and dark gray shingle roof. The cost, $3000



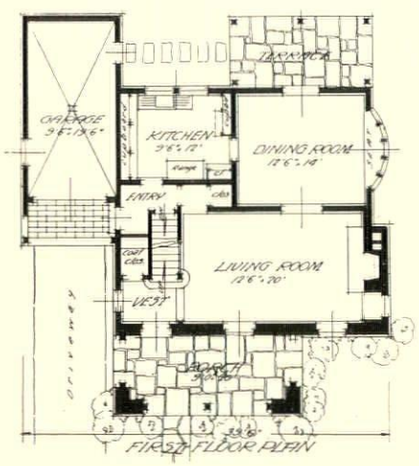
PLAN

SCALE 0 5 10 FT

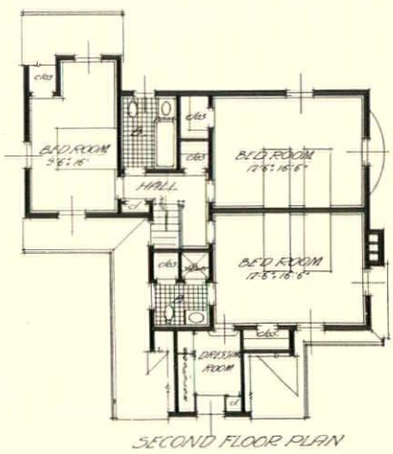
A House at Hackensack, N. J.

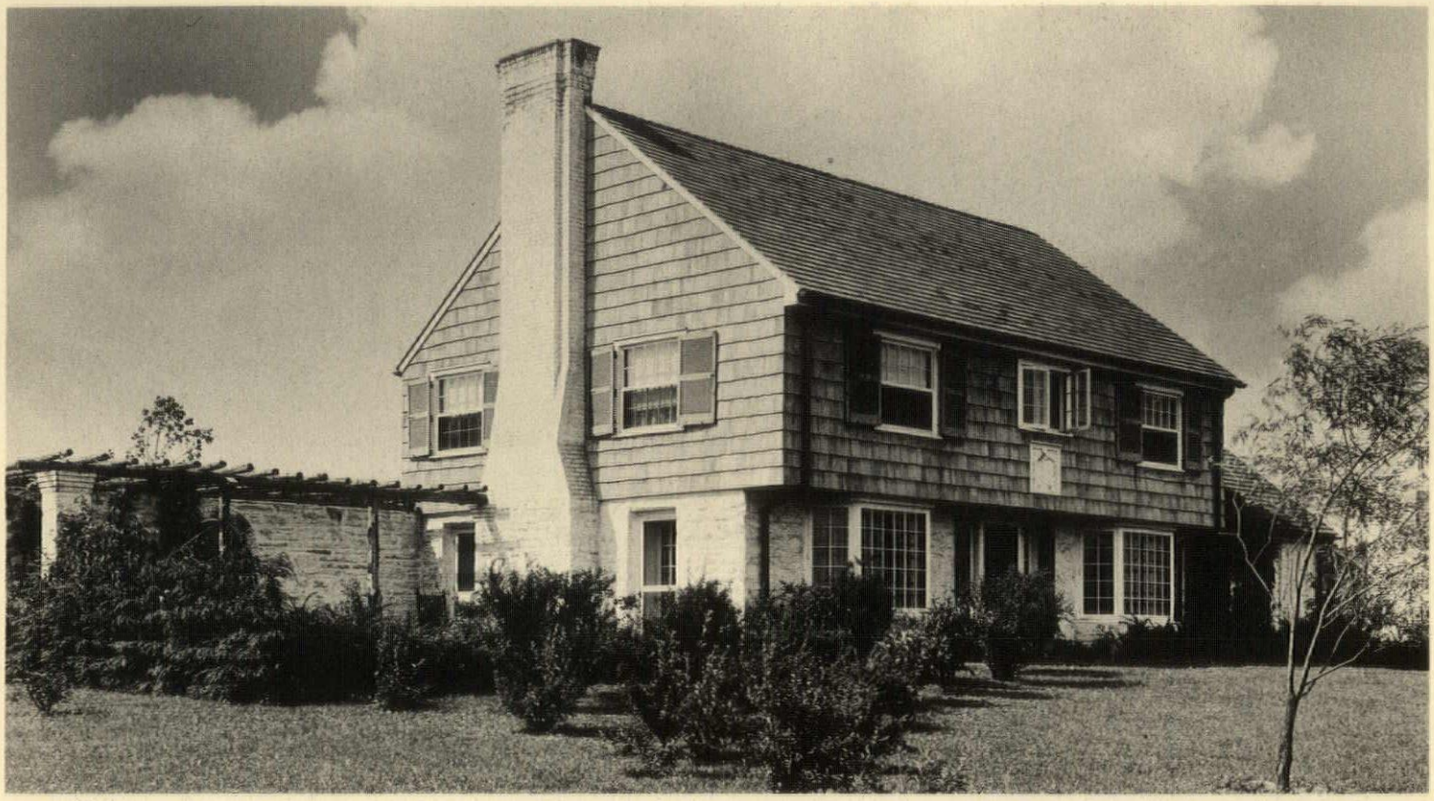
R. C. HUNTER, ARCHITECT

Photograph by Adolph Studly, Jr.



The house contains 27,900 cu ft., and cost $8900, or about 32 cents per cu. ft. There is a full cellar under it. Front wall and porch are of Pennsylvania ledge stone, the other walls of frame construction covered by stucco and shingles. The roof is of slate, and is insulated. Inside, the baths are tiled, other floors oak, with the exception of linoleum in the kitchen



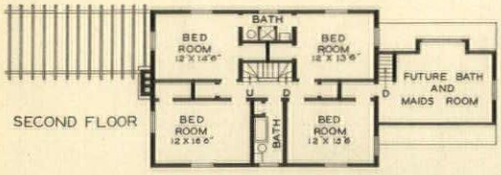


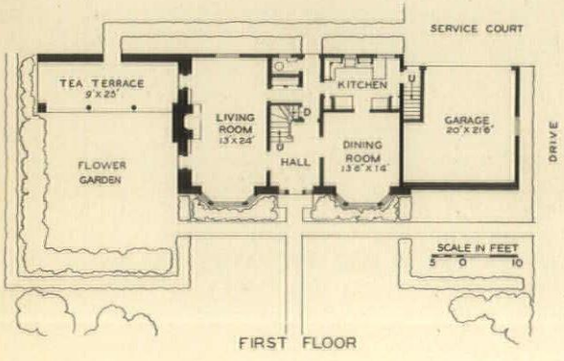
House of Dr. Stephen B. Sweeney, Lansdowne, Pa.

W. POPE BARNEY, ARCHITECT; ROY W. BANWELL, ASSOCIATE

Photographs by Dana A. Barnes

Instead of the usual open terrace or covered porch leading from the living-room, the plan shows a stone wall continuing out from the house with a tea terrace sheltered by an open roof of unfinished cedar poles—this terrace forming a secluded site for a flower garden that is in effect an additional outdoor room. As the plan indicates, there is provision here for a maid's room and bath to be finished sometime in the future over the garage



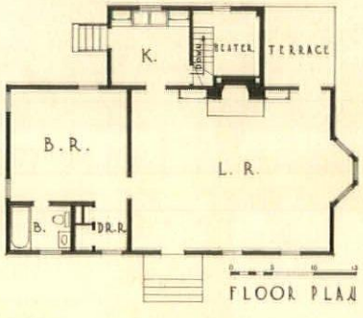


House of R. C. Beatty, Tuscaloosa, Ala.

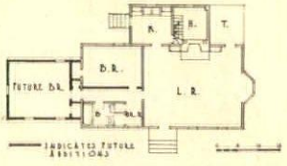
MILLER, MARTIN & LEWIS, ARCHITECTS AND ENGINEERS

Photographs by O. V. Hunt

Here is a one-story house of minimum accommodations, but planned with a definite provision for adding a second bedroom and closets. The roof is of asphalt shingles; the exterior walls of weatherboard over wood sheathing. Inside, the living-room is sheathed in wood, the walls elsewhere plastered. Floors are of oak, fireplace of native stone. The house was built at a cost per cubic foot of $.16



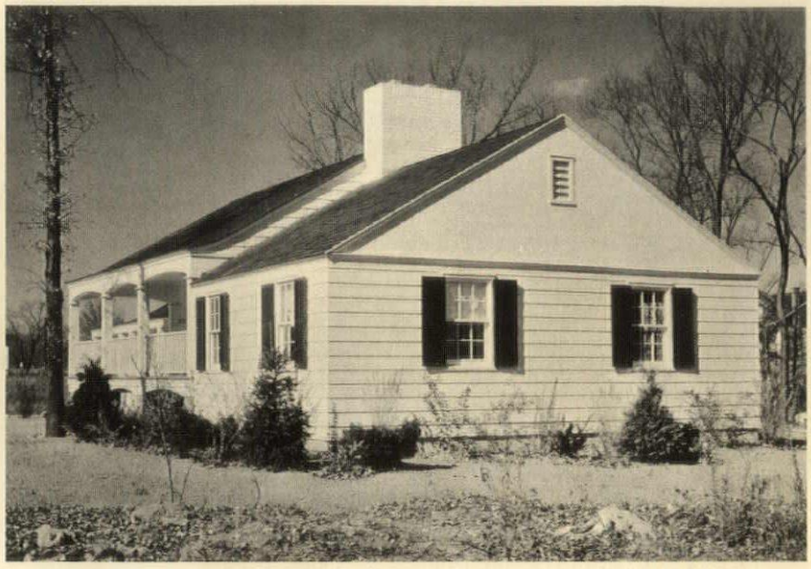
FLOOR PLAN



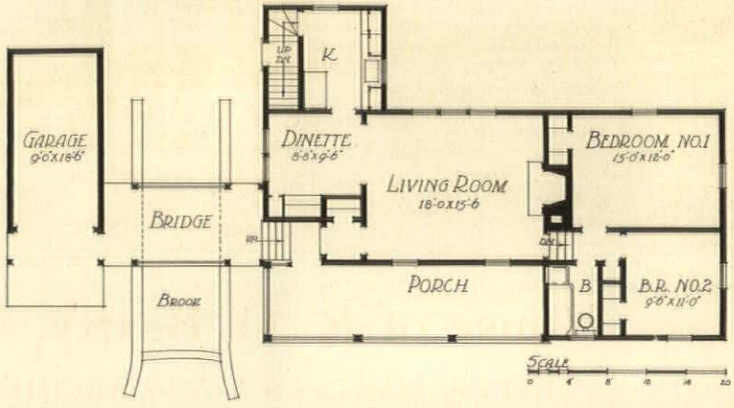
A House at Chatham, N. J.

RANDOLPH EVANS, ARCHITECT

Photographs by Gustav Anderson



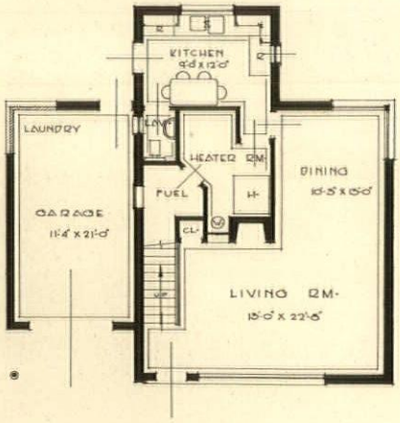
The architect has seized upon the small brook as a feature of both plan and landscape, giving the house an individuality that might not otherwise have been achieved. The house totals 18,700 cubic feet, and was built at a total cost of $9300, including the land, the landscaping, oil burner, washing-machine, gas range, and electric refrigerator

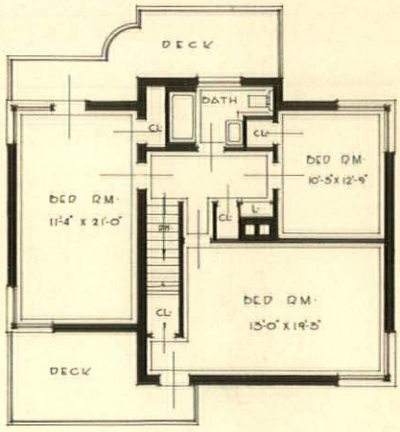


House of L. C. Crandall, Toledo, O.

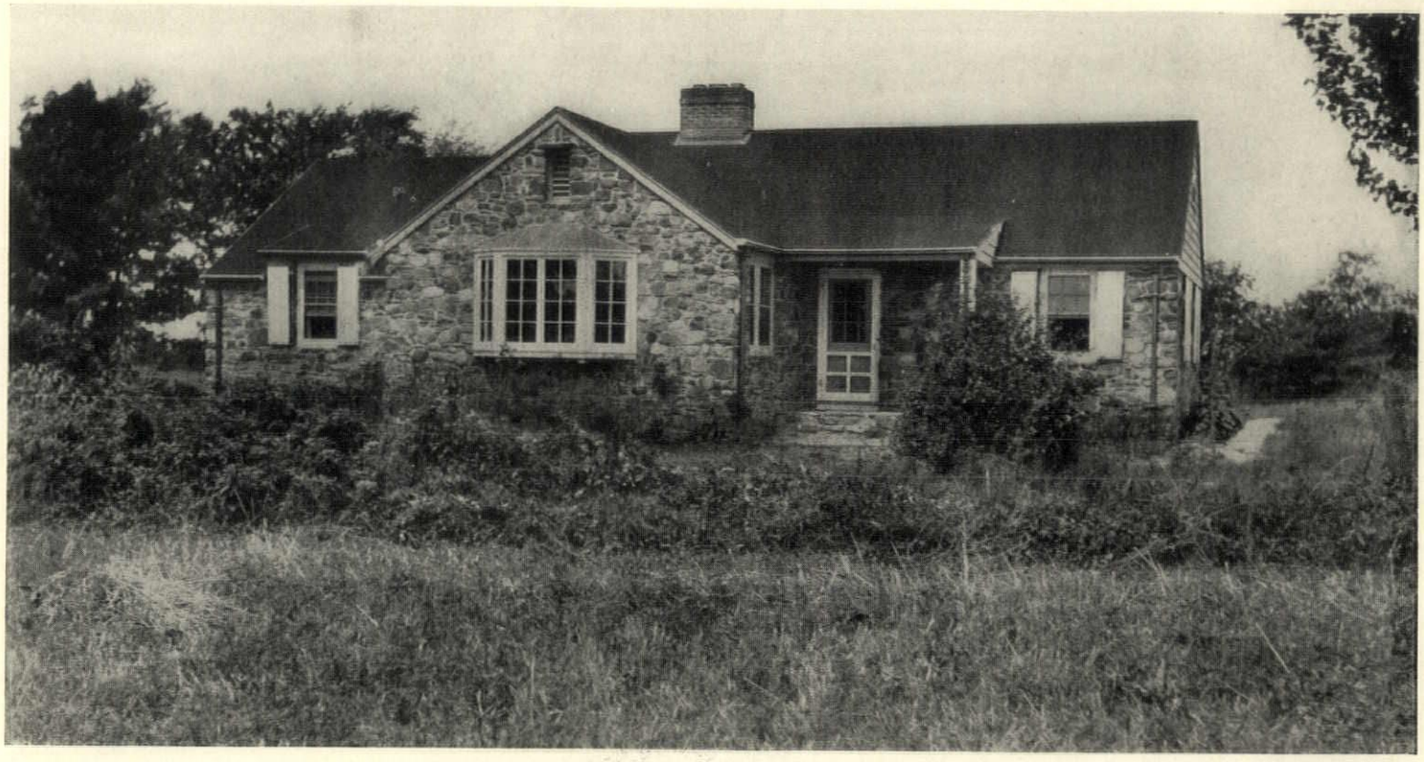
BRITSCH & MUNGER, ARCHITECTS

The house is built of cinder concrete block, with concrete joists and floor slabs. The concrete joists are exposed and painted. The house contains approximately 20,000 cubic feet, and the cost was $.30 per cubic foot





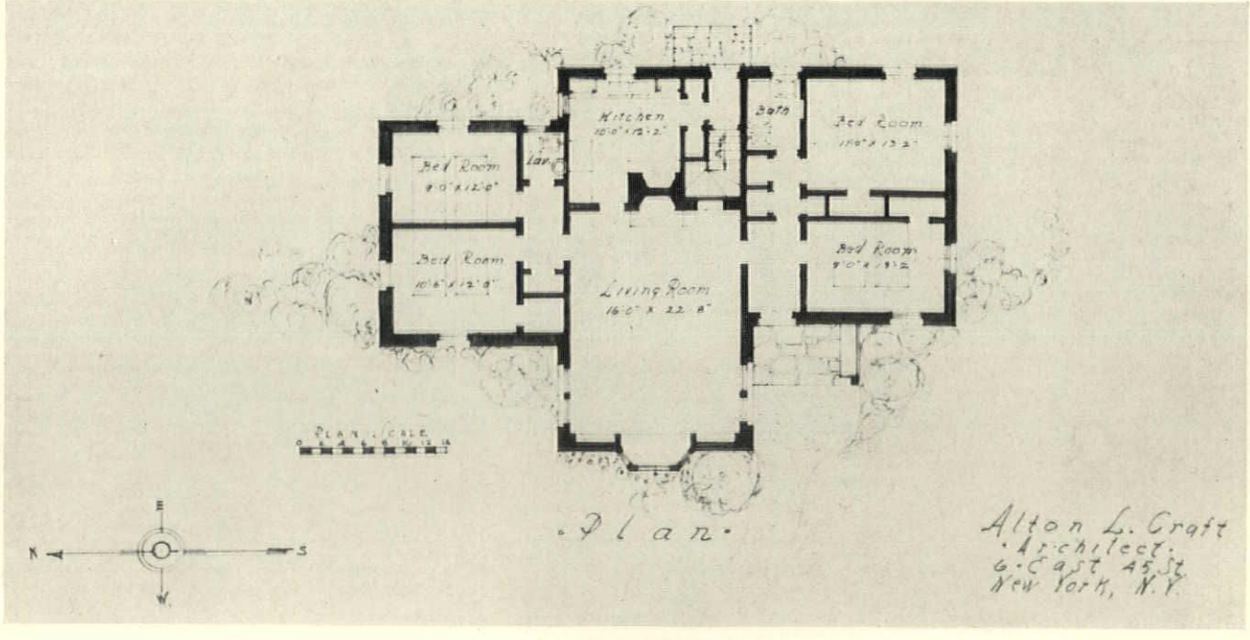
There is no cellar under the house, a heater room being provided behind the one chimney, as indicated



House of Eugene Egan, Walden, N. Y.

ALTON L. CRAFT, ARCHITECT

The house contains 25,800 cu. ft., and cost 30 cents per cu. ft. Exterior is finished with 8 in. of stone veneer against a wood frame, with asphalt shingle roof. Recirculated, humidified air is used in a system combining furnace and gravity-feed oil burner. No insulation or weatherstripping. Living-room has knotty pine sheathing and sand-finish plaster ceiling. Elsewhere inside, the walls are of three-coat plaster on gypsum lath



House of James Larkin, Birmingham, Ala.

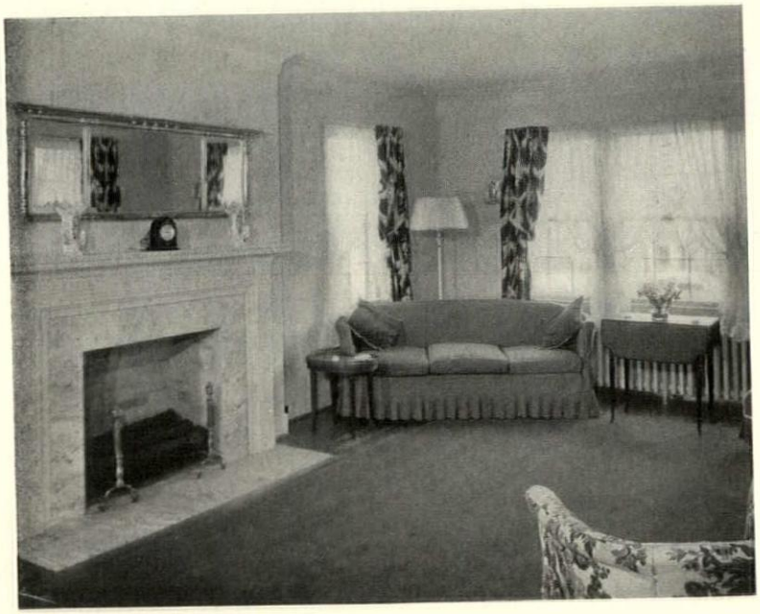
Photographs by A. C. Veily

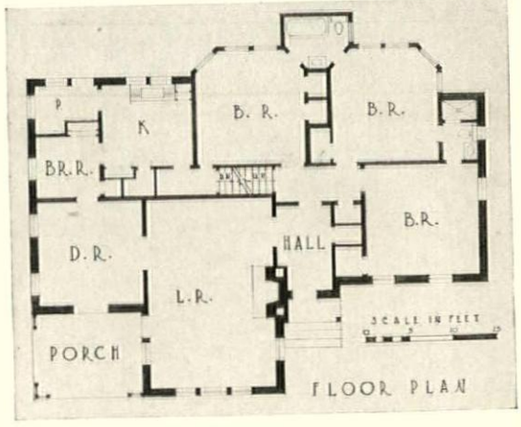
MILLER, MARTIN & LEWIS, ARCHITECTS

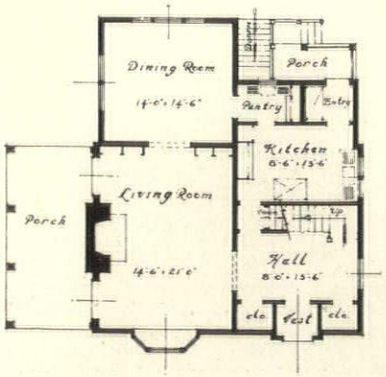
A house built for sale, with the object of providing arrangements and equipment to meet average requirements in a minimum area.

Walls are brick-veneered, whitewashed; roof, asphalt shingles; porch floor, brick-paved; heating by steam; bathrooms tiled on floor and wall; oak floors; interior walls plastered and papered; windows double-hung; garage and servants' quarters detached.

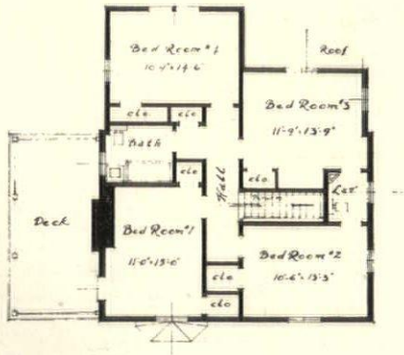
Cost per cubic foot, 27 cents. Financing through FHA-insured mortgage loan. Sale made before completion of house







Photographs by Samuel H. Gottscho

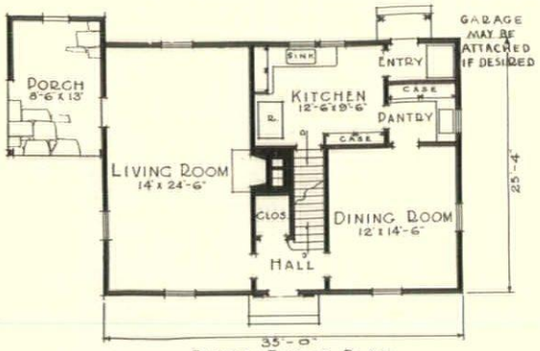


There are approximately 33,000 cu. ft. in the house, and at 32 cents per cu. ft.—a fair estimate under present conditions—would cost about $10,560. The plan is such that it can be built on a comparatively narrow plot and still not appear crowded. There is a two-car garage in the basement.

This house won the Bronze Medal of "Better Homes in America" in 1932

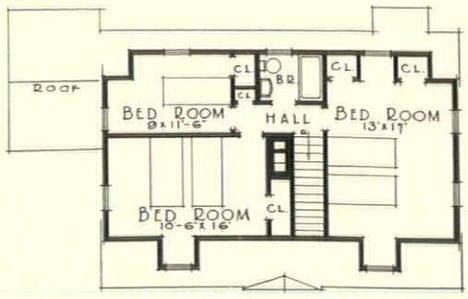
House of Thomas McCall, Riverdale-on-Hudson

DWIGHT JAMES BAUM, ARCHITECT



FIRST FLOOR PLAN

The porch at left was reversed, and the garage built at the right rear corner, as indicated in the photograph



SECOND FLOOR PLAN

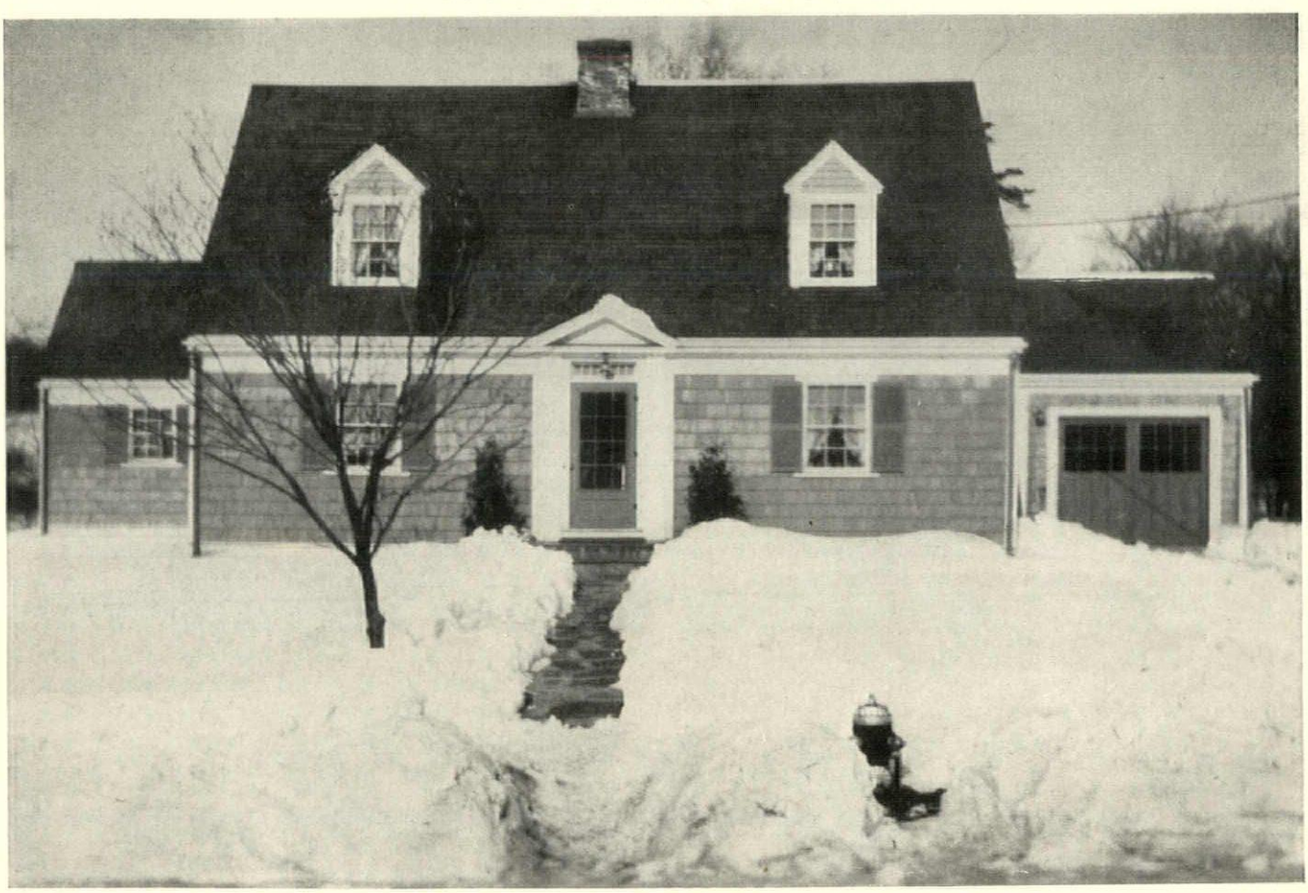
A House at Wellesley, Mass.

THE ARCHITECTS' SMALL HOUSE SERVICE BUREAU, NEW ENGLAND DIVISION
BENJAMIN PROCTER, SUPERVISING ARCHITECT

The house was built from a standard plan of the Bureau, with minor revisions made to fit the owner's needs and desires by the architect who supervised the construction.

Thoroughly insulated with rock wool and efficiently weather-stripped, the house has a simple type of air conditioning. An unusual circumstance facilitated summer cooling: in excavating, two springs were found and these were enclosed with tile and piped to a nearby brook. In the summer months an automatic fan draws air from the outlet at the brook, passing it over the cold water, and circulating it through the house.

Cubage, approximately 24,600 cu. ft.; cost, $6000.

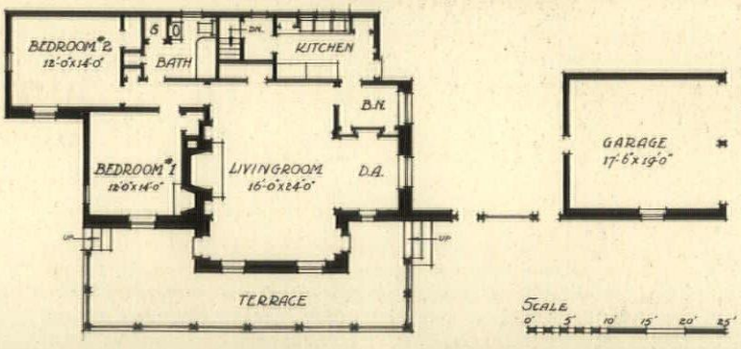


Photographs by Phil B. Wallace

House of William Elliott, Gulph Mills, Pa.

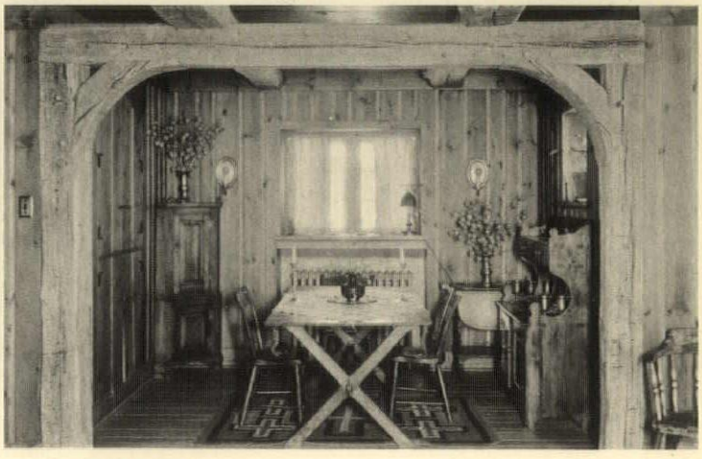
J. LINERD CONARROE, ARCHITECT

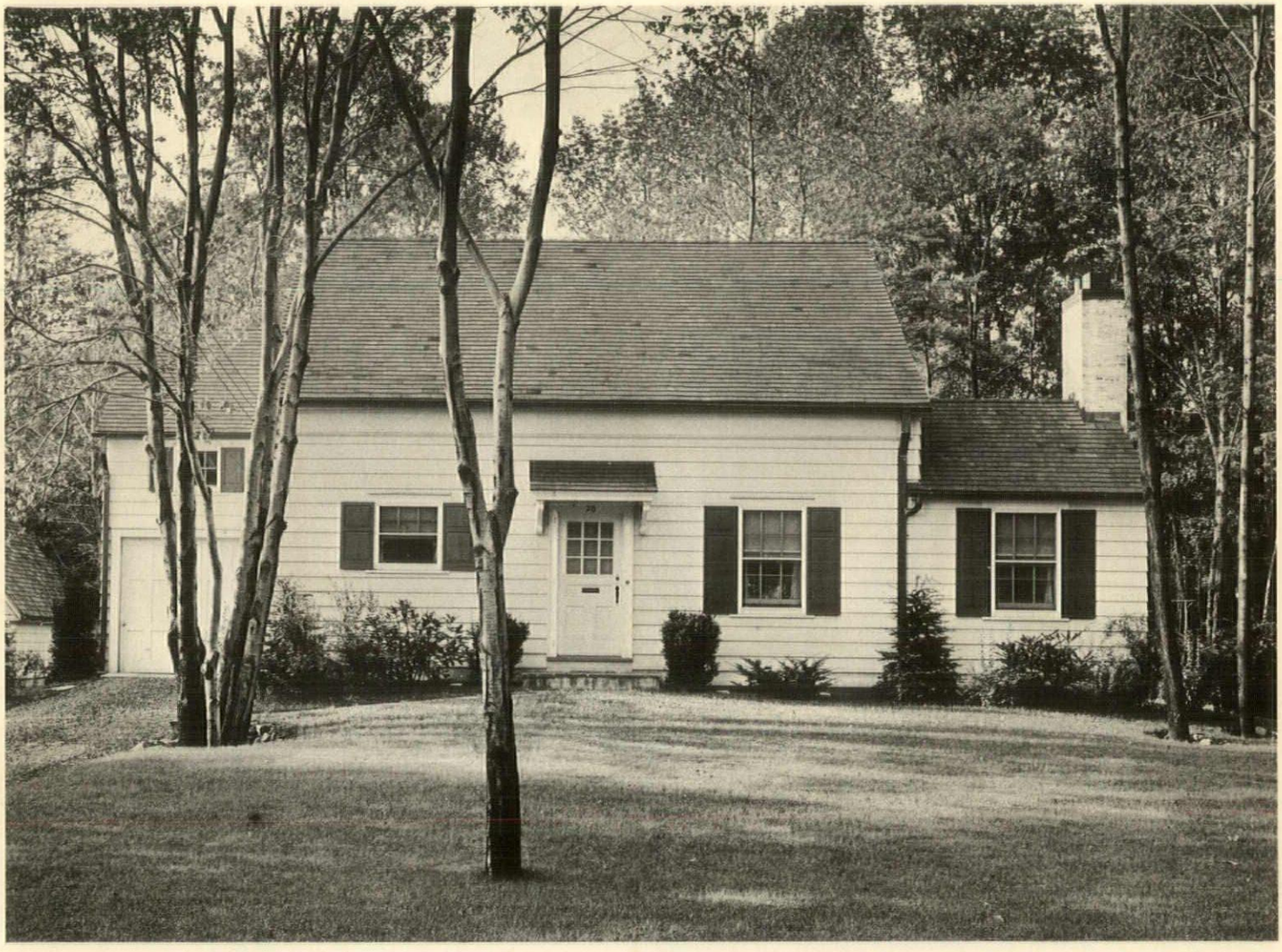
In spite of the fact that the sloping side called for a rather extensive stone wall to support the front terrace, the cost per cubic foot was in the neighborhood of $.32



The walls of the living-room show the timber construction, with a textured plaster between. Some old beams from a barn were used to support the second floor

Pine sheathing with a molded joint is used in the dining alcove off the living-room. The old beams were cleaned with acid and scraped



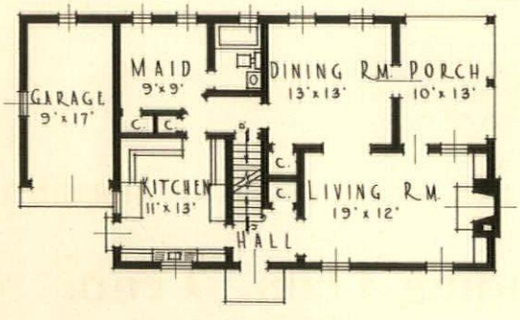


House of E. Kettner Gadebusch, Summit, N. J.

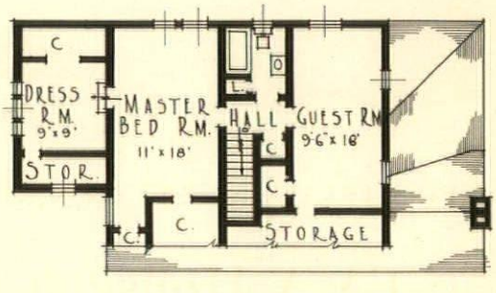
DAVID LUDLOW, ARCHITECT

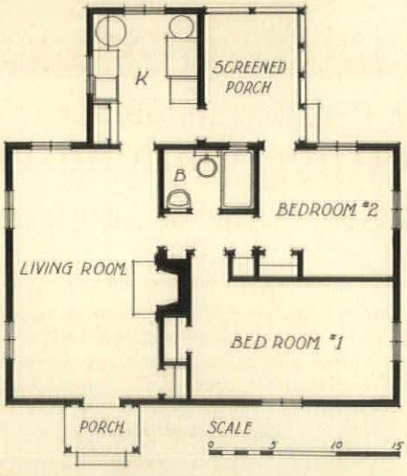
Photograph by Gustav Anderson

The house stands upon a 75-foot lot facing due north. The siding is a cream color; shutters, green; shingle roof, a tobacco brown. The house is heated with a one-pipe steam system fired by an oil burner. All radiation is concealed. Second-floor ceiling and walls have been insulated with glass wool. The house contains 24,500 cubic feet



The plan is interesting in that both second-floor bedrooms have cross ventilation and three windows, each, in spite of the one-story Cape Cod effect on the front

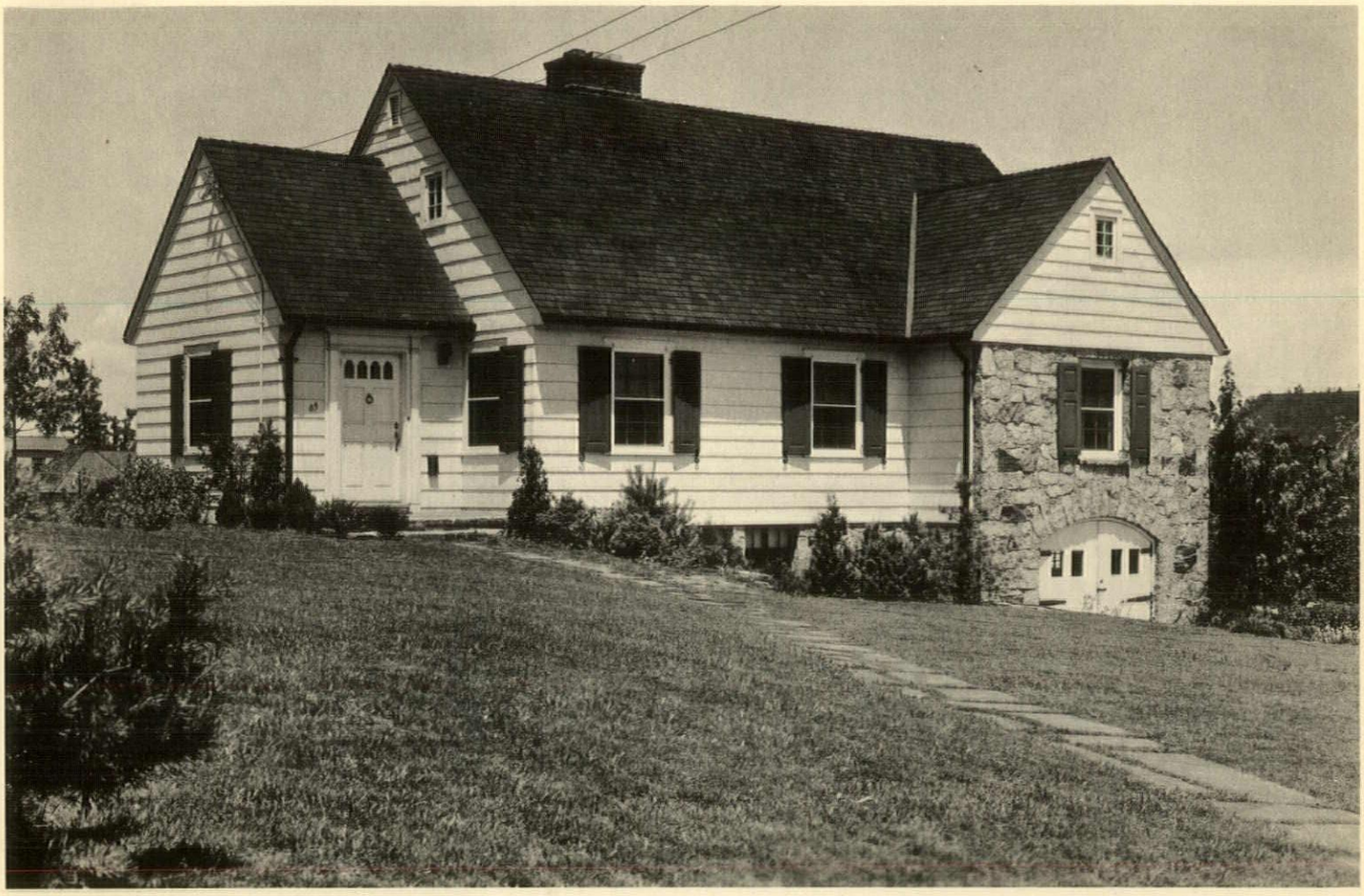




Wood frame on brick foundation. Interiors, plaster on metal lath. Exterior walls and exposed ceilings are insulated with glass wool. The house is fully electrified, including the heating. Cost, not including overhead, $4359

ARCHITECTURAL SECTION, TVA, DIVISION OF LAND PLANNING AND HOUSING

TVA House at Pickwick Landing Dam, Tenn.

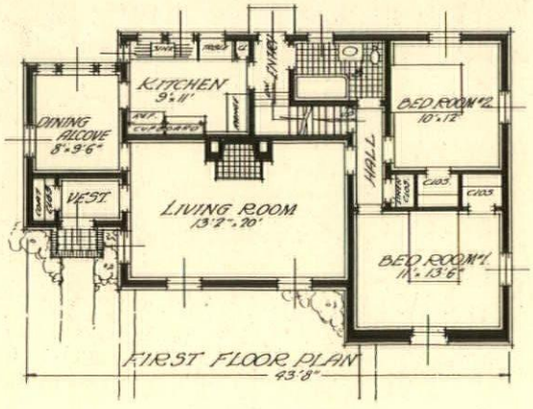


House in Great Neck, N. Y.

R. C. HUNTER, ARCHITECT

Photograph by Adolph Studley, Jr.

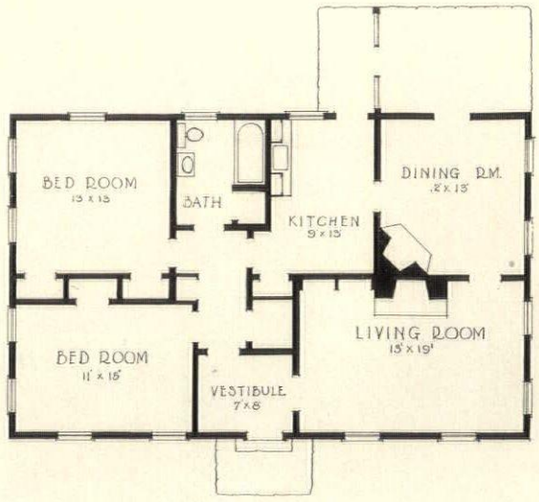
The house is of frame construction on a stone foundation, with wood shingle roof, insulated. It contains 23,500 cubic feet, including a full cellar and finished second story, and cost $7700, or $.32 per cubic foot



Linoleum is used for the kitchen floor, tile for the baths

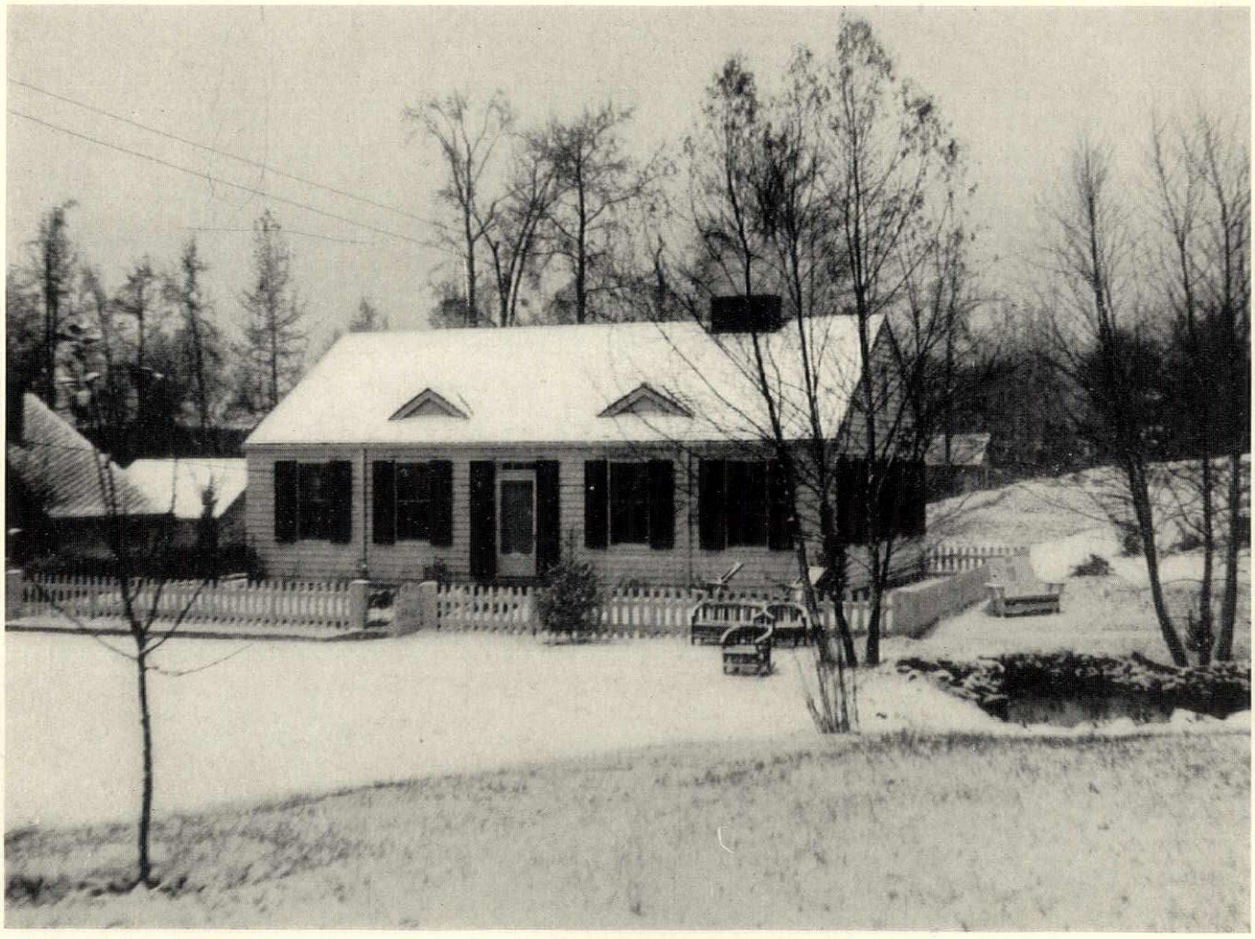
The sloping site made it possible to put the garage in the cellar and make a feature of its entrance

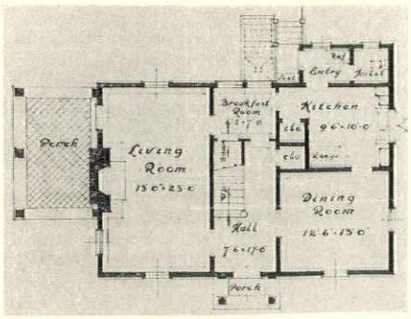
On a concrete foundation, the house has a wood frame covered with bevelled siding; roof is of hand-split cypress shingles. Inside, the walls are plastered and papered; wide pine boards are used for flooring, treated with a dark stain filler and covered with dull-surface varnish. As to size, the house contains 17,835 cu. ft., and the cost was $4000



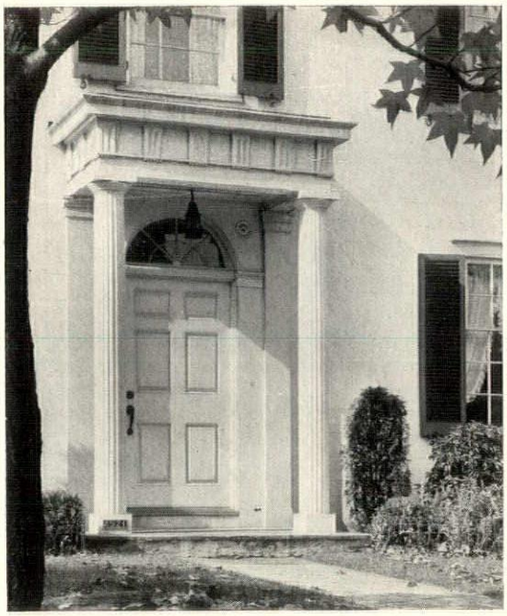
House of Mrs. W. O. White, Camden, Ark.

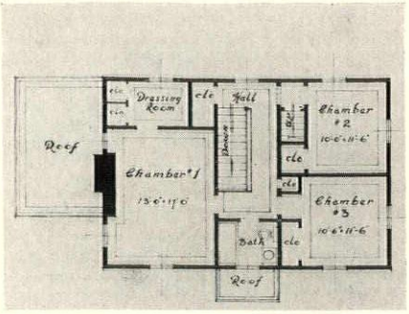
BRUEGGEMAN & SWAIM, ARCHITECTS





A house which was awarded the Gold Medal of "Better Homes in America" for its simplicity and charm. The architect has evidently endeavored to translate, in the simple mass and restrained detail, something of the character of our own Greek Revival. With the exception of the front, which

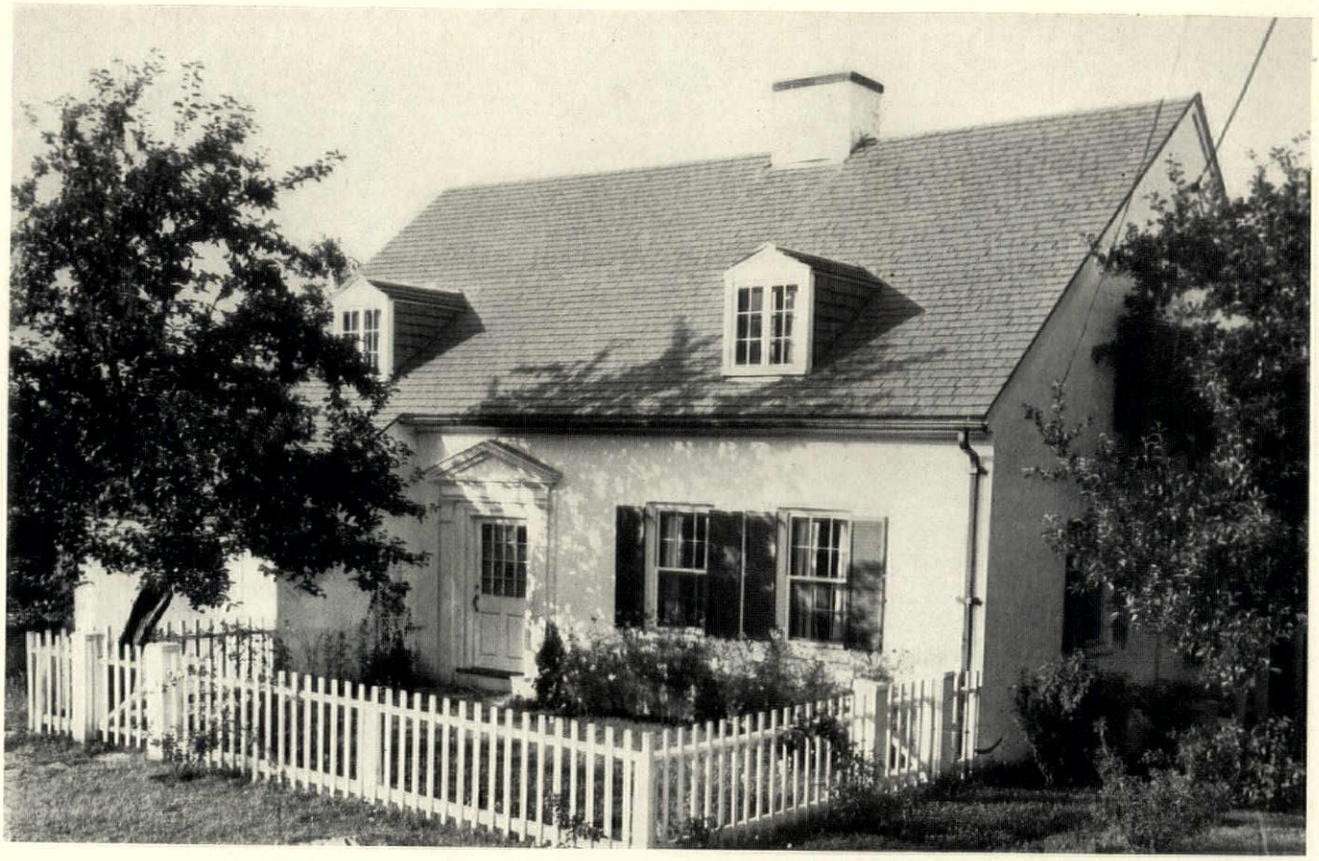




is faced with shiplap, the house is shingled and painted white, with dark green shutters and roof. Cubage, approximately 30,000 cu. ft.; cost, about 34 cents per cu. ft. Away from the New York area the architect has built similar work for 32 cents per cu. ft.

House of Dr. Francis J. Collins, Fieldston, N. Y.

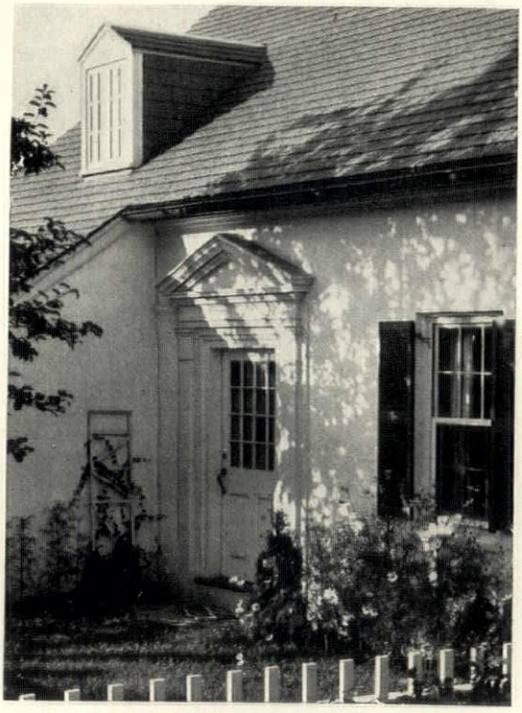
DWIGHT JAMES BAUM, ARCHITECT

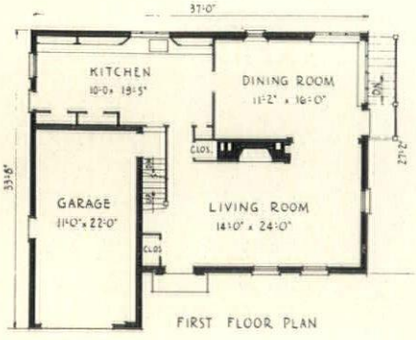


House of Arthur Yaker, Lexington, Mass.

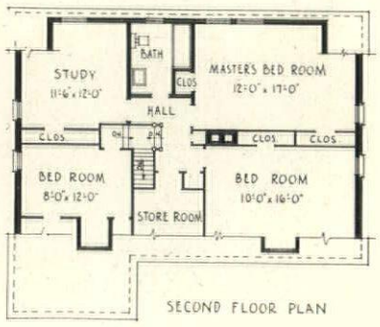
CHARLES M. WILLIS, ARCHITECT

This house represents a very definite effort to bridge the gap between the traditional architectural vernacular of the New England countryside and the fire-safety of modern materials. The walls are of concrete blocks painted white, the roof of asphalt shingles. What exterior woodwork is used is painted white, and the green blinds and white picket fence echo the New England tradition. Inside, the block walls are furred with fiber board with the joints smoothed to afford directly a surface for wall-paper. There is a basement under the house, and its total cost was $6000

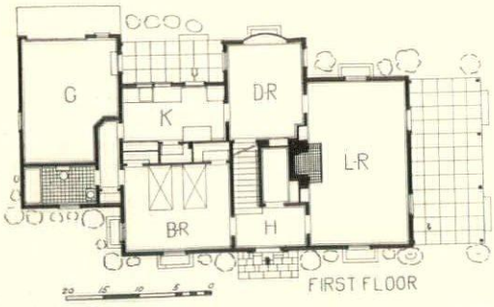




FIRST FLOOR PLAN



SECOND FLOOR PLAN



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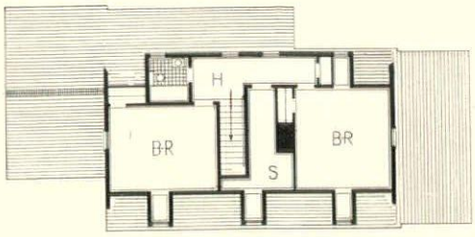

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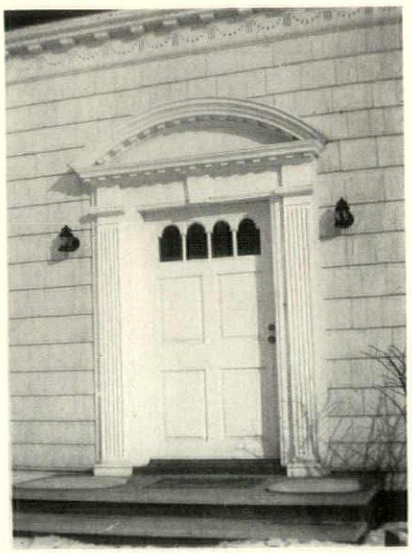
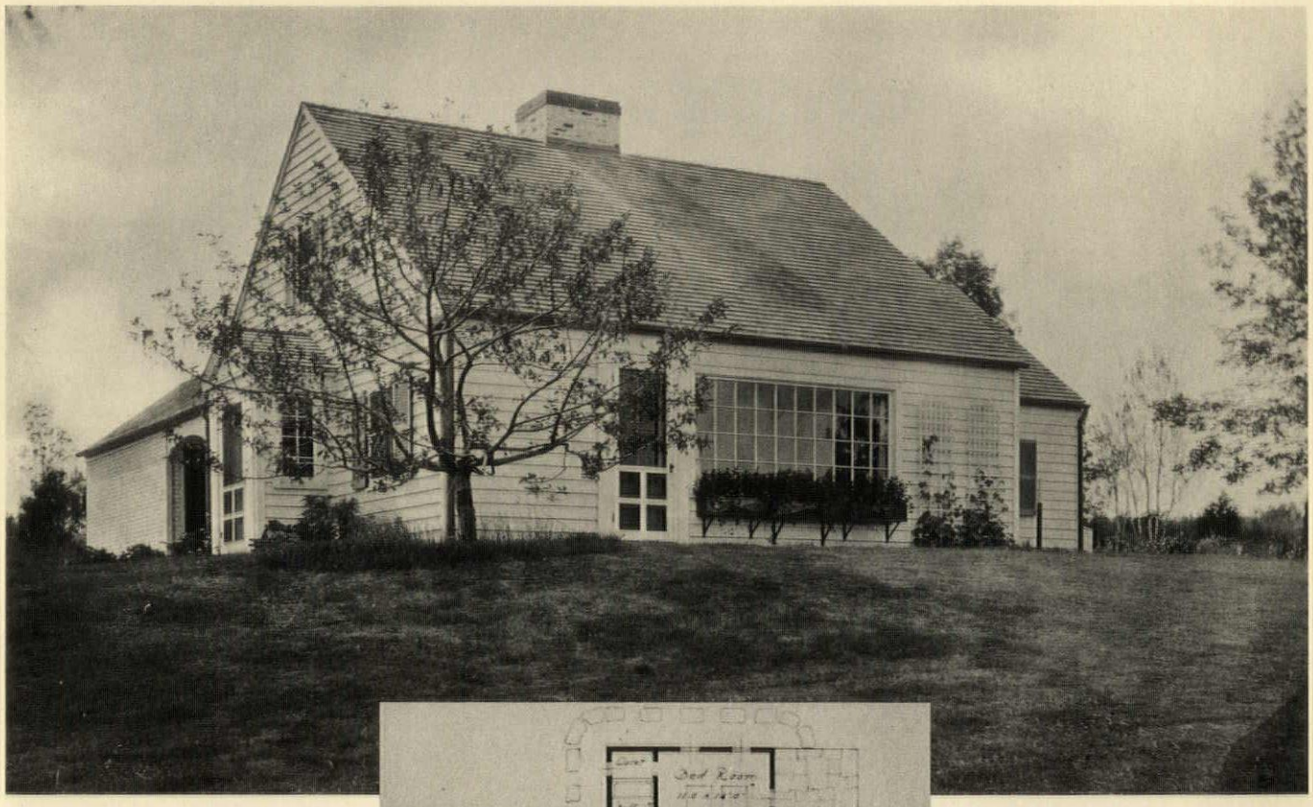


On a foundation of concrete blocks waterproofed with tar, the frame is of wood covered with shingles stained gray; roof of shingles on shingle lath, stained quite dark; windows, double-hung; interior trim, white pine, special; floors, oak; window screens, roll type; metal weather-stripping; walls insulated with mineral wool, rafters and second-floor ceiling with fiber board. Heating is by an oil-fired boiler with concealed radiation. Entrance-door paving is of flagstone; porches wood-floored.

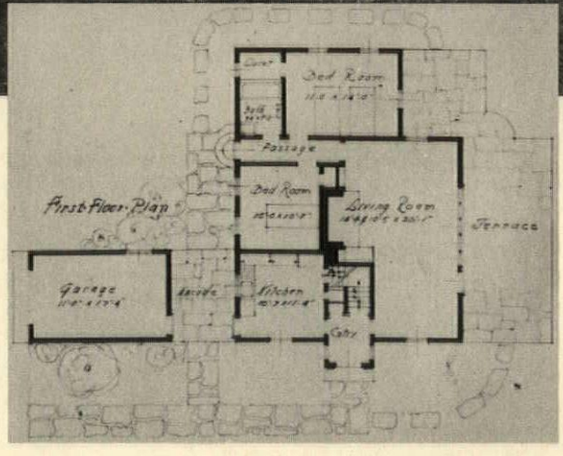
The cubage is 33,000; the cost $7500, or 22½ cents per cu. ft.

House of J. B. Woodcock, Middletown, N. J.

JOHN T. SIMPSON, ARCHITECT



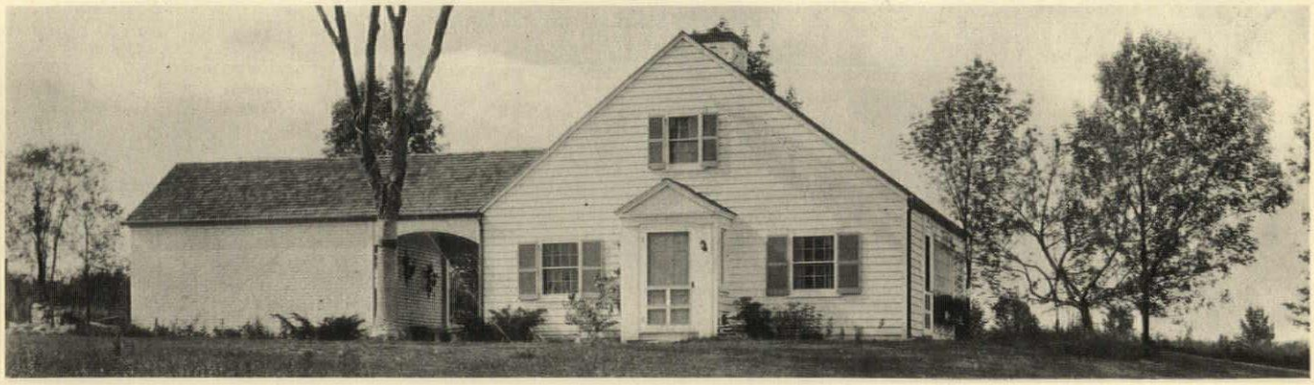
The house offers convincing evidence of the fact that the simple farmhouse type can, upon occasion, have large areas of glass windows without spoiling its exterior scale



Garage is of brick and house of wood, yet the two are well tied together by the white paint and the roof over the arcade, or, as it is sometimes called, the dog-trot

House of Leslie S. Pearl, Katonah, N. Y.

ALTON L. CRAFT, ARCHITECT

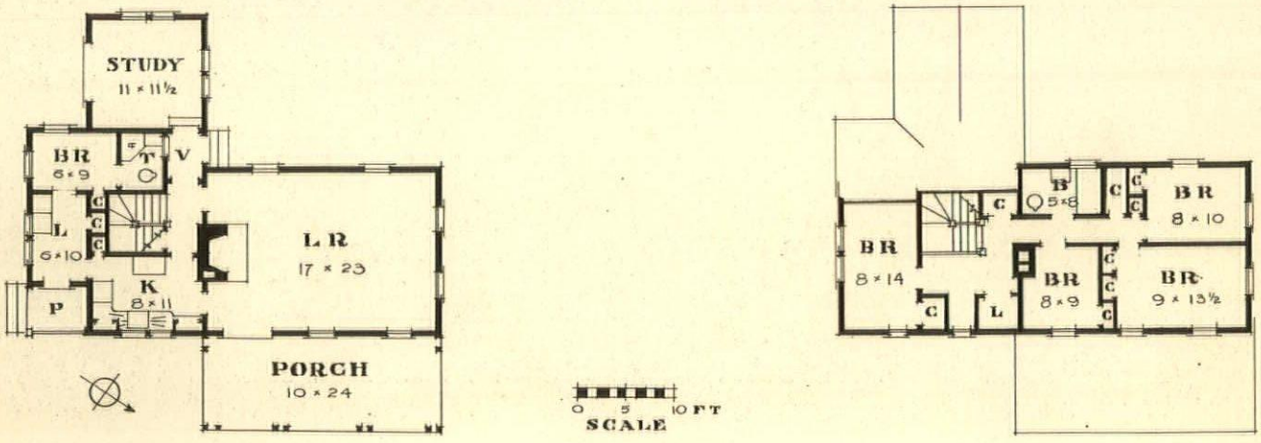


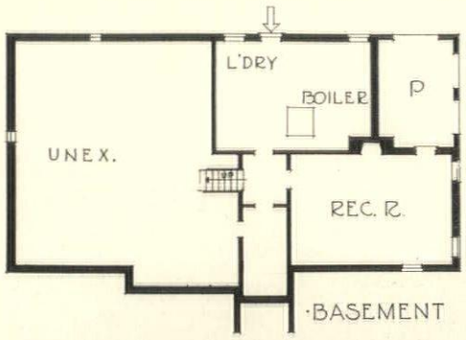
The house was designed for the family of a young minister who spends several months during the summer in the New Hampshire hills. An essential of the plan was an added study, proof against children and guests. Exterior is of gray stained shingles with green shingle roof, some green trim, and green shutters. Inside, the interior depends entirely for its effectiveness upon exposed framing of white pine, beautifully joined by two old country carpenters. The house cost $6500

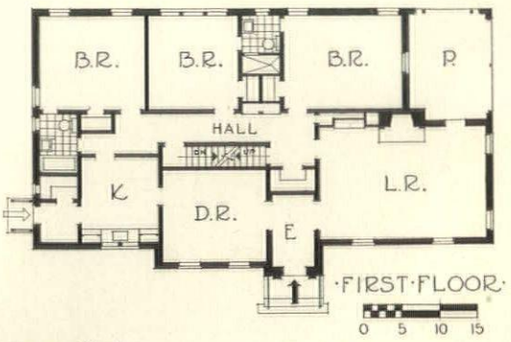
Photograph by The Tinkham Studios

House of Rev. Morgan P. Noyes, Holderness, N. H.

ELISABETH COIT, ARCHITECT







Foundation walls and piers are of brick on concrete footings; framing of yellow pine; walls of common brick veneer, cement-painted; roof, composition shingles on sheathing and felt; window frames and sash, yellow pine; doors, fir; porch floors, tile on concrete; interior walls, wood lath, metal corners and two-coat sand-finish plaster; baths, tile floor and wainscot; kitchen, tile 4' wainscot; floors, oak, stained, shellacked and waxed; interior woodwork, yellow pine with semi-gloss enamel; heating by gas-fired furnace. Attic, rough floored only; recreation room, rough work only. Cubical contents, 43,600 cu. ft.; cost, 18 cents per cu. ft.

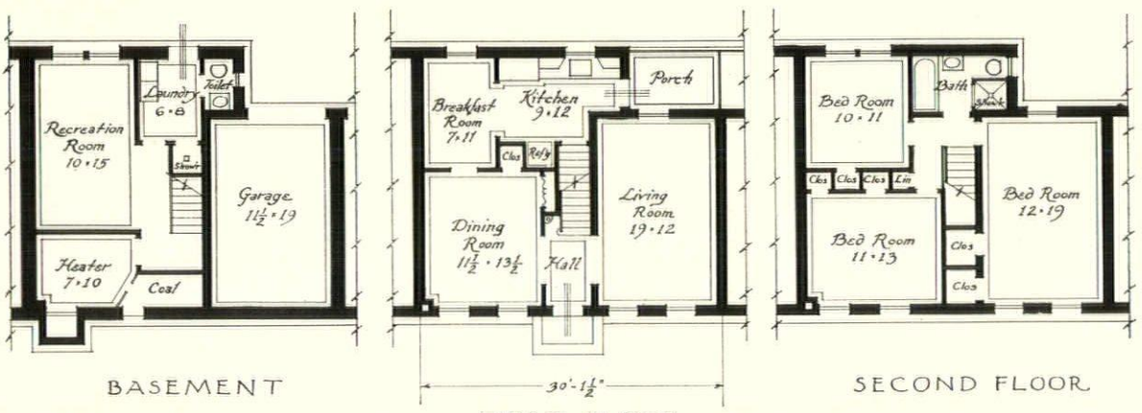
House of D. B. Alexander, Atlanta, Ga.

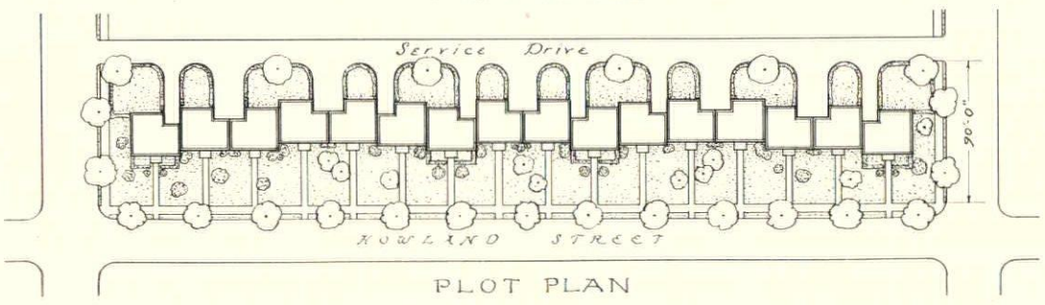
SMITH & SORRELLS, INC., ARCHITECTS

Sixteen Houses, Howland Street, Philadelphia, Pa.

FLEISHER, STEPHENS & FLEISHER, ASSOCIATE ARCHITECTS

The group was built in one operation, financed by an FHA-insured mortgage loan, and represents an effort to incorporate a better type of plan and design in Philadelphia's typical two-story row house. FHA standards (since abandoned, unfortunately) called for the elimination of the interior dining-room and interior bedroom overhead, and forced a wider lot than the prevailing 15' front. In contrast to the usual array of fake gables and imitation eaves, the façades are simple and honest. Exterior and party walls, 13" brick; wood joists; steel lintels; slate and slag roofs over rock-wool insulation. Cost, $5100 per house, including oil burner; cubage, 21,000 each house





The Editor's Diary

Monday, March 2.—Lest this important historical fact be lost, let us set down here that America's first bathtub was built in Cincinnati in 1842. It was made of mahogany, lined with sheet lead. Local papers denounced it as a luxurious and democratic vanity. Medical men pronounced it a menace to health. A year later, Philadelphia undertook by public ordinance to prohibit bathing between November 1 and March 15. Boston went further, and made bathing unlawful except when prescribed by physicians. And taxes, then as now, were with us, for bathtubs were taxed thirty dollars yearly.

Wednesday, March 4.—At a luncheon meeting of the New York Chapter, A. I. A., today, Richmond H. Shreve, chairman of the Institute's Regional Committee on Housing, brought us up to date with respect to the activities of his committee. Its work has had to do largely with the renewed efforts of the profession to solve the problem of how the architect can design and supervise the small house. With every indication from the building graphs that small-house construction promises to form the main activity of the building industry for at least a year to come, this subject of how the architect can function in that field becomes of paramount importance. Elsewhere in this issue and the last one, these pages reflect the progress being made along these lines.

Thursday, March 5. — Andrew J. Thomas, pioneer architect in multiple-housing, addressed a meeting at The League today and, with lantern slides, reviewed the history of our efforts in New York at least to secure better accommodations, more light, more air, and less crowding on the land. The long struggle, over many years, to achieve these results appear, on the basis of Mr. Thomas's experience, to have been a constant battle, not so much against ignorance of the public as to its needs, but rather a fight against the greed and short-sightedness of those who had the money to invest in multiple-housing. It is discouraging to review the long war against the stupidity of those who had money to loan, in that they thought almost exclusively in terms of the yard-stick of coverage. The more of the land that one could cover with building, the better the investment—so they reasoned. Some of Mr. Thomas's early plans for the development of large areas proved conclusively that skillful design would bring the same number of rooms as in the previous dark ages, but adequate light, air, and planting. But this was not enough to satisfy them. If this result can be achieved, why not go further, cover the land a little more densely, and secure even more of the rentable space? The introduction of trees in the middle of city blocks was a daring innovation that smacked, to the investors, of the impractical dreamer.

Friday, March 6.—The New York Fair, whatever other effects it may be having at the moment, is certainly producing plenty of new organizations. Today at a luncheon at The League, the craftsmen came together to organize in some form of body that could, presumably, command the attention of those responsible for the Fair's material side. Architects, painters, sculptors, and landscape architects have already combined to offer their co-operative services in an advisory capacity, and the industrial designers have no intention of being left out of the picture.

Saturday, March 7.—The subject of housing for the low-income groups, through either private initiative or public works, seems to be in a parlous state. The President himself calls it "a mess." Some one else suggested the other day that housing has become a form of oratory, while slum clearance might possibly be more accurately designated at the moment by the title "throat clearance."

Monday, March 9.—Kenneth Stowell, Howard Myers, and I took W. L. Wood to luncheon today with the purpose of exchanging among ourselves the differing points of view and methods applying to architectural publications in England and in America. One of the widest differences in conditions between the two fields lies in the attitude of the publisher toward the advertiser. Mr. Wood says that abroad they do not quote figures of circulation—they merely tell the prospective advertiser that if he will look in the various architectural offices, he will find their publications in evidence. Over here, many men are busily engaged in preparing graphs, surveys, geographical distribution charts, and other like devices to prove and elaborate the certified circulation figures of the Audit Bureau of Circulations. Incidentally, Mr. Wood told us that he has had on the front cover of *The Architect and Building News* at least one advertiser whose copy has appeared there since the publication was founded some half-century ago. Here our advertising departments strive mightily to secure an advertiser for one issue; in England they discuss two-year and three-year periods rather than single insertions.

Thursday, March 12.—Those of us interested in drawing for its own sake had an unusual treat tonight at The League, when Alexander Iacovleff demonstrated, with a model, the elements of his technique in drawing from life. Iacovleff, who has been teaching at the Boston Museum School, has no use whatever for the plumb bob, center line, method, contending that this merely results in a flat representation of outline. Moreover, this outline is constantly changing, not only in itself, but in its distance from the plumb-bob line, since no model can hold a rigid position. His method, on the other hand, consists in indicating very roughly the elements of the figure as volumes—much in the way that a child joins together a small circle, a larger circle, and the dependencies. These volumes are then studied and modelled, rather than merely outlined, with constant reference to the articulation of all the joints, the functions of muscles, lax or at work. Mere outline, the chief goal of so many who draw the human figure, is the last thing sought or set down by Iacovleff. After modelling a head, chest, or arm as a volume in space, the outline comes last as an inevitable result. Iacovleff works almost exclusively in sanguine crayon, using the flat of it for his shadow masses, and incredibly small bits as it progressively breaks up, to achieve his marvellous results.

Saturday, March 14.—The Architects' League of Northern New Jersey apparently looks with no great enthusiasm upon the efforts stimulated by various A. I. A. Chapters to find some practicable means of extending technical aid to the prospective builder of a small house. They fear once more for the interests of the architect in the suburbs who designs small houses and whatever else he can get. If New Jersey disapproves, it would be interesting to know what New Jersey proposes—surely not a continuation of the present state of affairs wherein possibly 80 per cent of the really small houses are built without architectural advice.

Monday, March 16.—Up to the Fine Arts Building to see the opening of the National Academy of Design's one hundred eleventh annual exhibition—on the whole, a good show, particularly, it seems to me, in the division of etchings and prints. Gerald Geerlings senses, in that there are decidedly more than the usual number of snow scenes, an indication of the fact that we have had a real old-fashioned winter.

Tuesday, March 17.—Judge Leonard C. Crouch, of the New York State Court of Appeals, adds another stone in the structure of the public's right to better housing. In an opinion handed down today, the constitutionality of the Housing Authority Act is upheld. While admitting that "nothing is better settled than that the property of one individual cannot, without his consent, be devoted to the private use of another, even when there is an incidental or colorable benefit to the public, the facts here present no such case. In the matter of far-reaching public concern, the public is seeking to take the defendant's property and to administer it as part of a project conceived and to be carried out in its own interest and for its own benefit."

Wednesday, March 18.—Oscar B. Bach, whose knowledge of metal working is constantly attested by his works, has developed a method for producing stainless steel in colors. The samples, which are on exhibition at PEDAC, indicate that this is no enamelling process or anything like a coating of some other material; it is evidently a chemical action—possibly oxidation of the steel itself—on the surface. Bach says that he can produce any color in the spectrum, and he is a man not given to idle boasts.

Friday, March 20.—Benjamin Betts, who is helping Purdue University in its efforts to find out something about materials and maintenance of the house of moderate size, tells me that our Diary note of December 6 was apparently written under a slight misapprehension. Betts says that the Purdue Housing Research project is exactly what its name implies—a research project. It is not being built for the scientific staff of the university; members of the staff may live in the houses *for* the project. The houses are being built to find out something. Therefore, people must live in these houses. By having members of the scientific staff do this, the project is assured of sympathetic tenants who are themselves interested in research. These tenants will be willing and able to keep records and reports that the average layman might not do. In a word, staff occupancy is not the important thing; research is.

Saturday, March 21.—The Editor's mail is always a varied and usually mildly surprising accumulation, but this morning there is a really rare item in it. A young lady writes from a western university, telling me that she is a senior student in architectural engineering, expecting to receive her degree in June. In addition to her architectural training, she has had seven years of secretarial experience. Her aim after graduation is to secure a position in which her work will be largely secretarial, but in which the technical training in architecture will be a distinct advantage. There is specialization for you. I should think that a capable secretary who knows what working drawings are trying to say, and to whom the text of a specification is not an assemblage of unknown terms, would be a rare find for some architectural office. Well, I have the lady's address if anybody wants it.

Tuesday, March 24.—Faber Birren was telling me today how he came to put purple cloth on billiard tables—one of the startling innovations in the recent championship matches. Birren says that he tested out various colors with a pair of binoculars to see which colors receded from the normal plane, and which colors advanced. Yellow was one of the colors that stayed put, but of course one couldn't make billiard-table cloth yellow—unless one used black balls. Gray would have served, but was abandoned in favor of the purple, for æsthetic reasons. Hoppé, who won the championship, likes the purple cloth. The runner-up is not so sure about it.

Thursday, March 26.—Some interesting early history of the Washington Monument is coming out of *The American Guide* project of WPA. Dollar contributions provided the money to build the Monument after Congress had voted for such a tribute on August 7, 1783. It was not until 1848 that enough money had been collected to start building. The original plans provided for an Egyptian shaft to rise 700 feet above a circular Greek temple 250 feet in diameter and 200 feet high. Above the main entrance, a quadriga would have presented a colossal figure of Washington, clad in a Roman toga, standing in a chariot driven by an Etruscan Victory, and drawn by Arabian horses—pretty much of an international mélange. The temple feature was first abandoned, and other alterations were made as the work proceeded, with the masonry finally reaching a height of 174 feet. The design of Robert Mills did not really crystallize until forty-three years after the first design had been accepted, and thirty-one years after building had begun.

When the money was exhausted, citizens of Alabama asked that they might be allowed to contribute stones in lieu of cash. The Washington Monument Association accepted the idea, sending out a general call. Emperors, kings, states, nations, organizations, and individual citizens responded, and each stone bore an inscription with the name of its donor and the date of its presentation. Fortunately, these are on the *inside* of the shaft, where the inscriptions may still be read. The exterior of the shaft is of Maryland marble, except for a band of Vermont marble from 174 to 200 feet above the ground, this work having been finally completed with funds voted by Congress nearly a hundred years after the first official action.

Saturday, March 28.—Too many of the popular magazines are suddenly becoming house conscious, with the result that they are straying into absurdities, that may do an untold amount of harm. John T. Flynn writes an article for *Collier's* of March 28, on "A Good Place to Live," which, if it does its job of selling plans at three dollars per set, is likely to break the hearts of many prospective home builders. The article is of the type becoming more and more common these days, in which the author marvels at the fact that architecture has been practised heretofore in a totally wrong manner, and is now to be saved by the fact that a few rare souls have suddenly discovered that the architect's reasoning, if inverted, will save us. There is the now familiar twaddle about "planning from the inside out," the "machine for living," the necessity for "a plan that works," and all the rest of it. The prize statement, however, is that of *Collier's* editorial staff, which says at the end of the article: "The architect's work on this house is done. You can get a set of complete working drawings and specifications for your builder for three dollars." It would be amusing, if it were not so tragic, to attempt to visualize just what the ordinary run-of-the-mine builder would do with a set of drawings of this house, unhampered by supervision. And it all, we are told, will cost you somewhere between $12,000 and $16,000, including terrazzo floor, glass-block partitions, steel beams, insulation, air conditioning, and all the gadgets. Well, we are buying a set of plans to find out some more about it.

Monday, March 30.—For a day or two I have been examining plans and photographs of small houses. Why is it that perhaps one architect in thirty takes the trouble to indicate on his plans the points of the compass? I should hate to think it might be because he is not altogether satisfied with his disposition of rooms in accordance with the orientation.

NEW HOUSEBUILDING TECHNIQUES

Introduced by the technical survey made and reported by the FHA, which was printed in ARCHITECTURE'S *November and December issues, we purpose reviewing in detail these new methods and materials. A snap judgment among them is impossible. For the present, all we can do is to present the new systems. Their ultimate acceptance or rejection will depend largely upon your faith in their merits and your willingness to submit them to the test of use—"the proof of the pudding . . ."*—EDITOR.

Modern Construction in Brick

BY NORMAN F. MacGREGOR, JR.

THE new housebuilding techniques that we have presented heretofore in this series have embodied, for the most part, radical departures from the accepted methods of construction. And justly so, for we are living in an era of change, and it is only logical that machine production should affect our dwellings, even as it has gradually revolutionized our work-a-day habits of life. The demand of today is for a cheap fireproof house, solidly and permanently built, and if prefabrication or quantity production of unit parts can enter the field, and supply a more serviceable and durable product, there is no reason why architects and laymen should not accept the newer standards and evolve from them an architectural style expressive of our civilization.

The tendency in the building field, however, is generally toward conservatism, and traditional building materials maintain a remarkably strong hold upon public consciousness. This is governed by more fundamental causes than mere æsthetic standards, for there is the ever-present question of investment values, involving durability and resale factors, coupled with the problem of harmonizing existing possessions with a new architectural background. The great mass of humanity has not risen above the herd instinct, and the tendency is to watch and wait for the more individualistic spirits to prove the pudding.

But durability, fire-resistance, cheapness, and traditional feeling are difficult factors to combine, and low-priced dwellings bound by these qualifications present a serious problem for the designer and builder to solve. It can only be accomplished in one of two ways: either by applying new methods to old forms, or by using traditional materials in a more progressive way, thus bringing about a gradual evolution of new building concepts.

Brick provides an extremely adaptable medium for experimentation of this latter type, for its record of performance from earliest times and its general acceptance by practically every period in history often make it a first thought in small-house work. It requires no sales talk to recommend it, either to the architect or to the layman. It seems sure.

But contemporary construction methods, using the material for either solid or veneered walls, overlook many of its salient features, and run up construction costs proportionately, making it almost prohibitive where cheapness is a factor. In the first instance, 8″ or 12″ walls develop strength far in excess of that required by any load to which they are subjected, and in the latter case a constructional material, capable of bearing an independent load, is used primarily as a facing over a structurally complete wood building.

THE 8″ RIBBED WALL

The 8″ ribbed wall, as proposed by J. H. Hansen, of the Brick Manufacturers Association of New York, goes far toward minimizing these two difficulties by eliminating all useless material, thus reducing construction costs without impairing the quality of the wall. To all intents and purposes, the exterior appearance of the building remains unchanged, although the method of laying the bricks tends to develop a unique bond that produces an interesting surface pattern. The actual principle, however, is a distinct advance over older methods, being fundamentally an integral frame construction in brick (see Figure 1). In many ways, it may be described as a development of the veneer wall, the regularly spaced ribs replacing the inflammable studs, but sharing their work by reciprocal action with the facing bricks, which also act as a bracing and obviate the necessity of sheathing.

In plan, the vertical ribs divide the wall into a series of boxlike compartments, that may be utilized for running pipes, wiring, ducts, etc., and that provide an air space for insulation. These are closed, top and bottom, by reinforced horizontal ribs or beams that are corbelled out from the interior wall face at floor levels, windowsills and wall heads. These act as fire stops, seal the air spaces effectively, and provide ties as additional lateral bracing.

The strength and durability of a masonry wall depends, in large measure, upon the mortar work, and it is interesting to note that a 1 : 2 : 9 cement, lime, sand mortar, by volume, is recommended, which indicates the potential strength developed by the constructional method itself. Waterproofing may be applied to the inside face of the entire wall, or only on the ribs.

The interior face may be finished with either plaster or insulating board. In the former case, the metal lath is applied by fastening it with clips previously set in the mortar joints of the ribs or to metal furring strips to avoid any possible risk of seepage; while in the second instance, the wall board is attached to the ribs with a plastic cement, or by special clips for bevelled edges. The use of an insulating board, however, involves a special problem, for it is impossible to arrange the spacing of the ribs to coincide with the standard sizes of the wall board. In most instances, therefore, an economical solution is best attained by running the material horizontally to minimize waste. In all cases, the method provides for a finished wall

completely free from any inflammable material and without recourse to nails.

The chief advantage of the system is, of course, the cheapness with which it provides a fireproof wall. Estimating the cost per sq. ft. we find:

	Cents
8 to 9 bricks at $12 per M.	9.6
.085 cu. ft. of mortar at 24 cents per cu. ft.	2.1
Labor on brick and mortar at $14 per M.	11.9
1 sq. ft. of metal lath at .04 cents	4.0
1 sq. ft. of plaster at .05½ cents	5.5
Miscellaneous	1.0
Total	34.1

This cost may be reduced by the use of wall board, or increased by the use of any desired insulator in the air spaces.

Nor is the cost of construction increased by the necessity of training workmen in the uses of new techniques, for any skilled bricklayer should be able to follow the idea immediately, and once the first course of bricks is laid, the rest follows automatically. The fact, too, that only one type of material exists in the construction eliminates any danger of cracks due to uneven contraction and expansion. The system, moreover, is completely versatile in its arrangement, and can be applied to any problem where the wall provides sufficient bearing strength.

While any type of floor construction may be used in conjunction with this wall, the most satisfactory would perhaps be a new fireproof floor recently perfected by J. H. Hansen and Odd Albert. This consists of a single layer of common brick laid flat in a bed of stiff mortar on top of ribbed metal lath, a stock item. It is quickly and easily built, excessively strong, and more economical than any of the generally used constructions except, of course, the nonfireproof wood floor.

The ribbed metal lath, weighing .86 lbs. per sq. ft., acts both as form and positive reinforcement. It is laid across the bearing members, which may be steel or concrete beams, or load-bearing walls, and clipped into place with steel clips (see Figure 2). A 1″ bed of stiff mortar is then applied evenly over the surface and on this, the bricks, spaced ½″ apart on all sides, are placed. Quarter-inch negative reinforcing bars, running at right angles to the bearing members, are then dropped into place between each row of brick, giving a spacing of 4½″ center to center. The floor is completed by pouring a thin mortar grout between the joints. When this is hard, the floor may be polished and waxed to a finish, or it may be covered with hardwood on mastic.

The construction is independent of skilled labor, as the simplicity of each operation permits common laborers to perform the work as efficiently as masons, provided the unions will permit. Openings can readily be made wherever necessary by leaving out bricks and filling the joints around the aperture with a stiff mortar before pouring the grout.

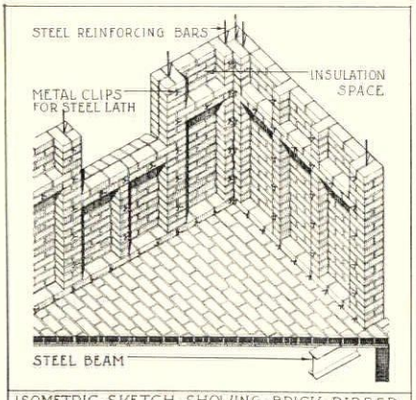
Tests have been conducted on slabs over short and long spans at New York University, under the sponsorship of C. T. Schwartz of the Civil Engineering School, to determine the strength attained by the method. In the first series of experiments, performed on 30″, 36″ and 40″ spans, only one slab could be broken, failure occurring, in this instance, under a load equivalent to 1120 lbs. per sq. ft., uniformly distributed; while a second specimen, loaded with all of the available material, refused to fail or show signs of excessive deflection under a load equivalent to 2140 lbs. per sq. ft.

The second group of tests, performed on slabs over spans of 5′, 5′ 6″ and 6′, required a slightly altered form of construction. In this case, the metal lath and the brick were used in the same manner, but negative reinforcing bars were bent as shown in photograph to provide additional positive reinforcement. Here again, the construction stood up admirably when subjected to extreme conditions, failing under a uniformly distributed load of from 651 to 839 lbs. per sq. ft. As a result of these tests, the Board of Buildings of New York City has approved the construction for both floors and roofs in non-fireproof buildings under specified loadings that may be obtained from the Brick Manufacturers Association of New York.

The cost of the floor averages 30 cents per sq. ft., which estimate includes the price of steel beams. This would mean an increased cost of about 13 cents a sq. ft. over a wood floor, but which would total only $78 over a 20′ by 30′ area. This added expense might well be offset by the increased rigidity which it would lend to the structure, and the decrease which it would effect in insurance rates.

All of the necessary materials are readily available in nearly every section of the country, and the construction can be carried out by almost any type of laborer without expensive equipment or tools. The work can be stopped at any point without recourse to building bulkheads and resumed without prolonged and costly preparations.

With the application of these two techniques to the small house, it should be possible to achieve durability, fire-resistance, cheapness and traditional feeling without departing from the accepted materials of the past.



ISOMETRIC·SKETCH·SHOWING·BRICK·RIBBED WALL·READY·TO·RECEIVE·INSULATION·LATH·AND·PLASTER·

Fig. 1

Grouting the joints of the reinforced brick slab used for floor construction, the brick having been laid in stiff mortar on ribbed metal lath

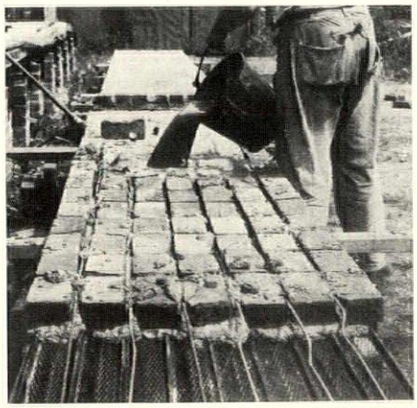
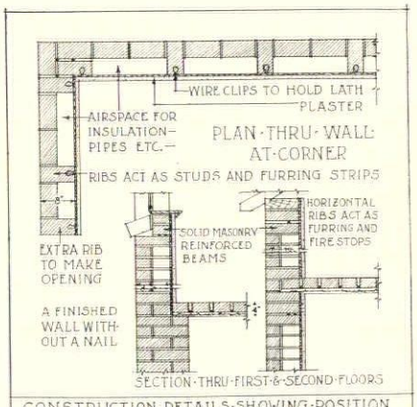


Fig. 2



CONSTRUCTION·DETAILS·SHOWING·POSITION OF·STEEL·REINFORCING·BARS·AND·PRINCIPLE OF·DESIGN·

BETTER PRACTICE

By W. F. Bartels

DUMBWAITERS AND INCINERATORS

1—DUMBWAITERS

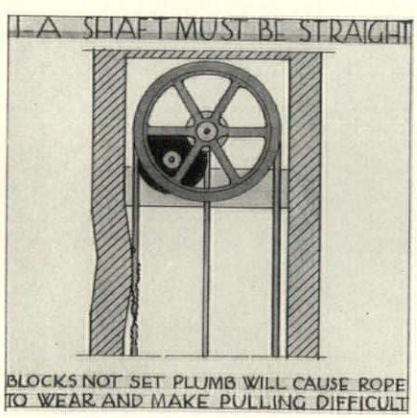
WHEN the architect specifies dumbwaiters he must take into consideration a number of factors, such as types of gears, guide rails, quality of rope, etc. Then again he may have in mind specifying the product of one of several manufacturers who produce very satisfactory machines. In any case, it is desirable that he know some of the more salient features of the machine he is installing. The manufacturers will be only too glad to give the architect specific recommendations on type, size, capacity, and arrangement of the dumbwaiters best suited to the installations planned. From long experience they have collected much data concerning such items as car width exceeding car depth to give access and the advantage of locating shaft doors in one front where possible. The architect will of course realize that a standard size car with standard equipment will cost less than any odd size or a car with special equipment. He should be careful to specify the type of machine, its capacity, its uses, by whom and how it is to be operated.

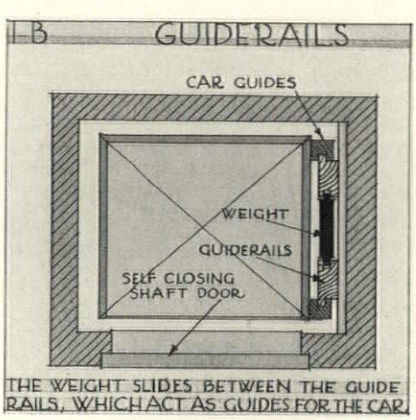
After all these questions have been settled in his mind, it will be necessary for him to go into some of the construction details which are essential for the successful installation of the machine. The manufacturers of dumbwaiters are in a position to give pertinent information concerning code requirements, relating not only to the machines and their installation, but also to the construction of the shafts in which they are to be installed. The architect should avail himself of this information, as codes in each community differ and he will thereby save himself much time. Considering the shaft first, there is no doubt that it should be fireproof.

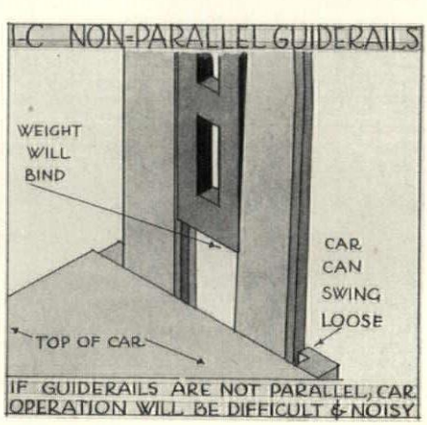
The shaft should be kept for the sole purpose of running the dumbwaiter in it and not as a passageway for wires, pipes, etc. In no case should loose wires be allowed in the shaft, because electric wires are apt to have insulation rubbed off and subsequently cause fires. The construction of a dumbwaiter shaft should never be neglected or considered wasted effort. If the shaft is not perfectly aligned there is danger that projecting blocks will cause undue wear on the ropes, as well as make the use of the dumbwaiter more arduous (Fig. 1A). Besides, if the shaft is not straight it becomes more difficult to properly align the guide rails. The mason's materials should be entirely self-supporting as well as properly bonded, whether they be brick or blocks. If the size of the car is determined beforehand and the enclosure is properly laid out, there will be no need to block the guide rails out an excessive distance in order that the car will come in the proper location in the shaft. Obviously, the less blocking the firmer are the guide rails.

The guide rails themselves are generally made of hard pine or maple. They are so grooved that the weight slides between them while the car guides fit into the outside of the rail (Fig. 1B). These rails must be perfectly plumb and parallel if the car is to work easily as well as noiselessly. If there are any bends in the rails the counterweight will bind and the car itself may even swing loose in the shaft (Fig. 1C). Then, too, if the guides do not fit the rails properly, the car may work well enough but it may be inclined to "slap" when being pulled up or down and cause considerable noise. The guides should be screwed to the blocking, not nailed.

The door bucks and frames should be lined up while the shaft is being constructed, so that in the future when the dumbwaiter is in operation all doors will center on the car when in an open position. This is essential, particularly where an electric dumbwaiter is used. The shaft should be so constructed that the machine may be readily accessible for cleaning and oiling. If easy provision is not made it provides the caretaker with a ready excuse for a squeaky machine. Where the shaft is carried above the roof it should be properly protected to prevent rain or snow getting in the shaft. If not of brick it is generally covered with metal. Flashing must be adequately provided. Where the dumbwaiter shaft does not go through the roof it should be capped by a fireproof slab, so that any fire in it could not spread to adjoining parts of the building. This is required by many local codes. The architect might remind the contractor that the shaft sides of the doors are to be painted before any whitewashing is done, or else he will find the painter painting over whitewash—a practice not very conducive to a good paint job. A guide is generally placed at the bottom of the







shaft for the pull ropes, so that they may not jump up the shaft when given too hearty a yank.

Doors for manually operated dumbwaiters should be 4′ in height to allow the operator to secure a free pull on the hand rope, and the sill should be 2′ 6″ above the floor.

The bottom of the shaft is generally provided with a door of sufficient size so that the dumbwaiter car may be cleaned. The bottom of the shaft should be of cement, pitched to the outside, so that when the cellar or floor is washed the bottom of the shaft may be easily cleaned at the same time. While it is desirable that the inside of the shaft be as smooth as possible in the interest of cleanliness, it generally suffices if the joints of the masonry are struck.

The doors should be of metal and of the self-closing type. In apartments these doors are, as a rule, hung with self-closing hinges. However, where there is limited space such as behind counters, doors are used in sliding form, either as single or double units, for more rapid operation. They may also be of the lift type where this is desirable. Where headroom above the upper floor level is scant, or it is not desired to run the dumbwaiter above the counter level, the dumbwaiter machine may be located on the lower floor. This type of installation has been satisfactorily used in stores, restaurants, and soda fountains. In most apartment types a simple snap catch is the sole guard against the doors being opened from the shaft side, but most tenants feel more secure if an additional lock or bolt is installed on the doors.

Very often, fires in dumbwaiter shafts arise from waste papers being thrown down the shaft between the normal times for their collection. Very often, too, people throw waste matter down the shaft who would not do so if they thought of its effect upon their own health. These two undesirable practices can be stopped by having locks put on the shaft side of the dumbwaiter so that the doors can be opened only by the person collecting the waste. These locks generally consist either of latches which cannot be operated from the apartment, or else a chain or rope type which when pulled taut in the cellar will not allow the doors to be opened. These protective measures are very desirable in many types of house.

The car should be one of sufficient strength to withstand all uses for which it may be employed. The rope connections to the top of the car and to the counterweight should be spliced and not tied. If cable is used, the fastenings should be made by means of approved cable clamps, which will permit the length of the cable to be adjusted if a certain amount of stretch occurs after use. Good cable clamps properly applied are better than clamp sockets in which the socketing has been done inefficiently. If the hand rope is spliced, all of the twist should be taken out of the rope before splicing, so that it will not tend to curl.

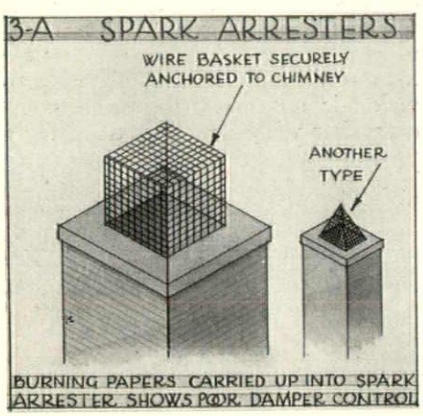
Dumbwaiter machines are generally carried on the walls of the shaft, and as a rule require no special framing unless the loads they are to carry are exceptionally heavy. Electric dumbwaiters are in reality small elevators, and the architect should carefully study their support and fastening. It is desirable in the case of these electric dumbwaiters that steel rails be used in place of the conventional wood ones used for the hand variety. The doors must be perfectly aligned, as was noted above, and they should carry all necessary and usual safety features, so that the operators may not be injured. The car should have a small light in it and the doors a pane of wire glass, so that the position of the car may be determined.

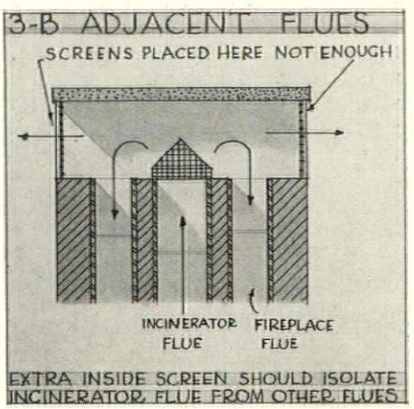
2—ASH HOISTS

Before specifying an ash-hoist opening in the sidewalk, the architect should consult the local ordinances to see just what is required, not alone to comply with the law but also to make sure that it meets with the approval of the liability insurance carriers. These openings are generally against the building for various reasons, and should provide proper protection for passers-by when open. The type of hoist, whether it be manual or automatic, should be selected with some thought in mind concerning those who will have to operate it. It is readily seen that in a building where there is one superintendent it would be unwise to install a type that requires two men to operate.

3—INCINERATORS

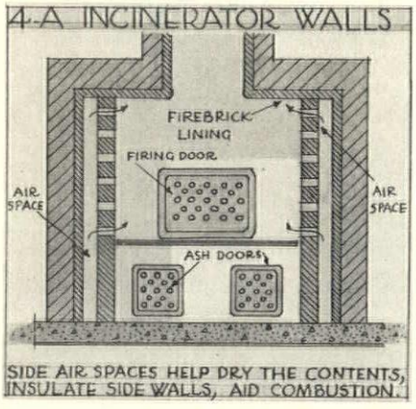
Incinerators or refuse destructors offer many advantages to the housekeeper, whether in a small one-family house or a multi-family apartment. Their aid to health and cleanliness cannot be overestimated. The labor-saving feature is as evident in small units as in large ones. Rubbish and waste is disposed of as soon as it collects. In apartments, if one collection is missed it is not

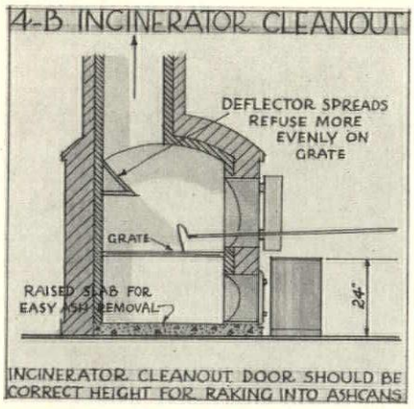


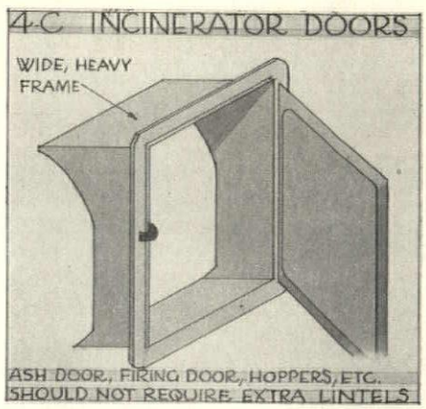


necessary to let the rubbish accumulate until the next day; one may simply make use of the incinerator which is always at the disposal of the tenant.

The architect in providing an incinerator should be very specific in his requirements. In most cases the incinerator manufacturer furnishes the necessary parts and they are erected by the mason under the explicit plans and instructions sent out by the incinerator company. The mason should be given all these details and be informed that the work is to be done in strict accordance with them. It will readily be seen that the manufacturer's representative will be unable to inspect all jobs for which they have furnished their incinerators, but this need cause no misapprehension if the work is done in accordance with the manufacturer's directions.







In laying out the incinerator, it is well for the architect to consult the manufacturer of several types, so that he may be well advised on the more essential points of the construction. The destructor should be large enough to take the accumulation of rubbish during at least one day, preferably two.

The success of the job depends upon there being enough dry material to accomplish the destruction of all material without fuel. In the ordinary private dwelling and apartment house, there is in the vast majority of cases enough dry material to accomplish this purpose. In hospitals and other institutions the quantity of wet and dry materials must be gone into, so that there will be no doubt of the unit's working. In this regard the architect should be guided by the manufacturers' recommendations for the proportion of wet and dry refuse. The combustion chamber must be laid out to the correct size. With refuse destructors, as with stoves, consideration must be given to grate areas, size and height of flues, and the proper proportions thereof. The location of the building will influence the flue. The type of refuse will affect the entire apparatus. As with a chimney, the flue should not be located so that super-roof structures affect its draft; hence it should be kept above ridges and extend at least ten or twelve feet above any surrounding flat roof. The flue detail should be passed on by the incinerator manufacturers and their approval obtained in writing.

The manufacturer of incinerators often prefers the owner to be the first one to use the incinerator if they themselves are not able to make a test of it. They feel that if the contractor puts a test on the incinerator there will be a temptation on his part to use up a lot of the waste materials left on the job and hence put a heavier duty on the apparatus than it was designed for. In fact, where the manufacturers supervise the installation, they may even put signs on it forbidding its use except by themselves or the owner.

While the architect should go into the matter of parts very thoroughly, he can easily gain the necessary information from manufacturers, who are always glad to contribute whatever data are necessary. He must decide the kind and type of hopper door, as to whether this is to be cast iron or heavy sheet metal. Then he will have to investigate the matter of hopper closers. Many local codes call for hoppers to be self-closing. If they are only counterbalanced for closing, there will of course be some noise when this operation takes place. This can be eliminated by installing a more expensive automatic closer which will work noiselessly. However, these closers should be so installed that it will not be possible for tenants to tamper with their action.

In very tall buildings damper regulators should be provided. These are placed at the bottom of the stack and are so arranged that they will directly close the flue off when the firing door is opened. These are not required in the average private dwelling, only in the tall building. If there is a strong wind the lighted matter would be carried up the flue. Burning paper in spark arresters is a sign of poor damper control (Fig. 3A). The damper control will also tend to eliminate the usual whistling in the firing room and also will be a decided factor in keeping down the flying ash. One of the most important things to be borne in mind is that the room in which the incinerator is located should be fireproofed. It should be protected by a fireproof door and there should be an adequate amount of air supplied for proper combustion. This can be done by having a manual ventilator in the door. In a certain private house, the first time the incinerator was used it was lighted by the general contractor after all the decorating was completed, just before he left the house one evening. Some large unburned paper was carried up to the spark arrester, and the smoke was forced down the adjacent flues. When the contractor arrived with the owner the next morning he was baffled as to why all the interiors were smoked—and despondent because the cost of redecorating wiped out his narrow profit. A proper spark arrester would have prevented the damage (Fig. 3B).

Spark arresters are a part of the

manufacturer's equipment which is furnished, and under no consideration should the mason fail to install this fire-preventive element. While most residence incinerators will function in the winter because the adjacent flues are warm, they may not be so accommodating in the other seasons, when rain has run down the cold flues. If possible it is well to locate the incinerator flue (*always* a separate flue) adjacent to that of the hot-water heater, because of the drying action of the heat generated.

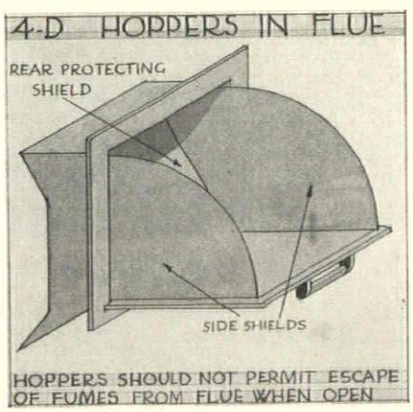
The architect is often desirous of having a flat or pitched top to his chimney, but this is not desirable from the standpoint of the incinerator manufacturer. The latter desires to have a screen exposed if possible so that a large area of it may be wind-swept. One method which will allow this and yet remove most of the basket from the line of sight is shown in Fig. 3C.

4—CONSTRUCTION

Naturally, if the incinerator is to work properly and eliminate odors it must be properly constructed. It must be treated as a chimney as far as construction is concerned, in that no beams are to rest on any part of it, but must be framed around it. The foundations should be of such depth and width that there will be no settling which would cause cracks in the upper part of the combustion chamber or flue.

Before going into details of construction, it might be well to look over the items necessary for the successful and satisfactory operation of the plant. The chief items are the thorough and rapid drying out of the refuse, together with its complete and odorless combustion. This accounts for the types which have air chambers around the sides which, besides aiding in the drying of the refuse, serve also to reduce the heat which would otherwise be transmitted to the regular brickwork (Fig. 4A). However, various manufacturers all have their own methods for accomplishing this purpose and do it very efficiently.

The hoppers or feed doors should be located in accessible places and at a convenient height. The height of the fire door should be such that the unburned refuse, such as cans, bottles, etc., can be raked directly into refuse containers. The standard container is 24″ in height (Fig. 4B). Below the combustion chamber the ash pit should have a cement slab raised to such a level that the ashes may be easily raked out and not be caught on the frame of the door (Fig. 4B). If waterproofing is used in the floor, additional precautions will be necessary so that this will not be harmed by the terrific heat developed. This may be done by laying the slab over hollow blocks, or by other similar methods. The firebrick with which the combustion chamber must be lined should be well bonded to the regular brickwork by means of headers. The firebrick should be set in fire clay and should be carried a considerable height up the flue. Above the firebrick, terra-cotta flue tile should be used. There should be no short-sighted attempts to save by skimping on either firebricks, flue tile, or fire clay. Such saving only results in potential fire danger. The sides of the flue and the chamber should be smooth, so that nothing will cling to the sides and there is positive charging action. The top of the chamber should be of such shape that it will carry itself on the walls rather than need special framing for it. If the top is made by means of corbelled brick, the projection of the brick should be slight so that there is no danger of the bricks snapping off when combustion takes place. In the smaller installation, steel members are used to support the top of the incinerator, and this exposed steel is not affected because the amount of heat generated is not sufficient to do any harm.



The flue should be perfectly vertical if hoppers open into it. Some incinerators have deflectors at the bottom so that the refuse will be distributed over the grate and have a better chance of being dried and burned (Fig. 4B).

The ash door, firing door, and hopper doors should have broad frames, so that there is no necessity for additional lintels to be framed over the openings for these doors (Fig. 4C). Also, it is essential that they be wide and of sturdy construction, so that they will not be loose in the opening. The hopper doors must be very carefully installed, or else very soon after installation they will show signs of leakage of dirt and ashes around their edges. For a multi-dwelling house the hoppers should be such that when they are opened for loading no gases can escape from the flue (Fig. 4D). Another precaution to be observed is that no wooden furring or lath should be used against the flue or near the hopper door, but only metal furring, metal lath, and cement plaster. Before the flue finally ends in the open air it should terminate in an expansion chamber, if the flue is very high. The comparatively small area of the flue as compared to the height in a tall building gives a very great velocity to the gases going up. The result is that a large amount of flying ash and partly burned papers would be carried up and then clog the spark screen if no precaution were used to slow up the rate of flow. Thus, conducting the flue through a fireproof chamber of larger size than the flue causes a decrease in the velocity, and the fine ash drops in this chamber, or baffle room, and may be cleaned out at will. Where the flue goes through the roof it must of course be properly flashed, as would any other flue or chimney. The spark screen should be one that will be able to withstand the weather, as well as the fumes which pass through it. The screen is generally made of a heavy galvanized or copper wire in the form of a square domed basket which will be fastened to a frame. It will readily be seen that this basket must be fastened so that it is possible to renew it easily and quickly for cleaning or repairing. Also there are cast-iron spark arresters which reduce the necessity for changing the basket often, the latter type being better able to withstand the uses to which they are subjected but also presenting an element of risk in that they will be more susceptible to clogging.

NUMBER 115

IN A SERIES OF COLLECTIONS OF PHOTOGRAPHS
ILLUSTRATING VARIOUS MINOR ARCHITECTURAL DETAILS

ARCHITECTURE'S PORTFOLIO OF CORNER WINDOWS

Subjects of previous portfolios are listed below at left and right of page; forthcoming portfolio subjects below

1926
DORMER WINDOWS
SHUTTERS AND BLINDS

1927
ENGLISH PANELLING
GEORGIAN STAIRWAYS
STONE MASONRY TEXTURES
ENGLISH CHIMNEYS
FANLIGHTS AND OVERDOORS
TEXTURES OF BRICKWORK
IRON RAILINGS
DOOR HARDWARE
PALLADIAN MOTIVES
GABLE ENDS
COLONIAL TOP-RAILINGS
CIRCULAR AND OVAL WINDOWS

1928
BUILT-IN BOOKCASES
CHIMNEY TOPS
DOOR HOODS
BAY WINDOWS
CUPOLAS
GARDEN GATES
STAIR ENDS
BALCONIES
GARDEN WALLS
ARCADES
PLASTER CEILINGS
CORNICES OF WOOD

1929
DOORWAY LIGHTING
ENGLISH FIREPLACES
GATE-POST TOPS
GARDEN STEPS
RAIN LEADER HEADS
GARDEN POOLS
QUOINS
INTERIOR PAVING
BELT COURSES
KEYSTONES
AIDS TO FENESTRATION
BALUSTRADES

1930
SPANDRELS
CHANCEL FURNITURE
BUSINESS BUILDING ENTRANCES
GARDEN SHELTERS
ELEVATOR DOORS
ENTRANCE PORCHES
PATIOS
TREILLAGE
FLAGPOLE HOLDERS
CASEMENT WINDOWS
FENCES OF WOOD
GOTHIC DOORWAYS

Self-supporting Stairways
JUNE

Window Heads
(INTERIOR)
JULY

Garden Enclosures
AUGUST

Church Lighting Fixtures
SEPTEMBER

Oriel Windows
OCTOBER

An Announcement:

In response to continued requests, we are arranging for the reprinting of back issues. This will take time, for we are dealing with a collection of illustrations totalling nearly seven thousand. At the moment, the subjects starred with an asterisk are available; additions to these will be made as rapidly as practicable. Subjects will be sold to our subscribers at 25 cents each — sixteen pages in loose-leaf form, postpaid. Remittance must accompany order. Order only from subjects starred.

1931
BANKING-ROOM CHECK DESKS
SECOND-STORY PORCHES
TOWER CLOCKS
ALTARS
GARAGE DOORS
MAIL-CHUTE BOXES

1931—*Continued*
WEATHER-VANES
BANK ENTRANCES
URNS
WINDOW GRILLES
CHINA CUPBOARDS
PARAPETS*

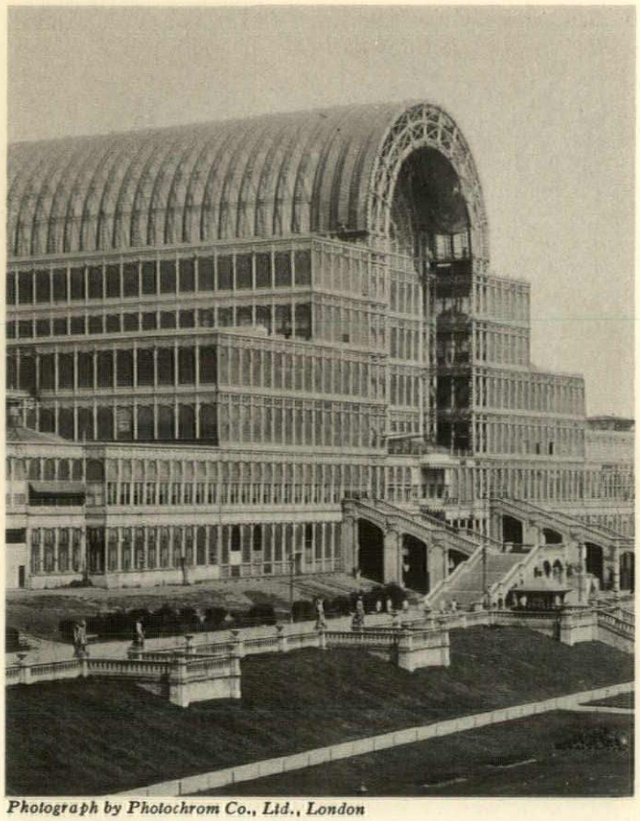
1932
RADIATOR ENCLOSURES
INTERIOR CLOCKS*
OUTSIDE STAIRWAYS*
LEADED GLASS MEDALLIONS
EXTERIOR DOORS OF WOOD
METAL FENCES
HANGING SIGNS*
WOOD CEILINGS*
MARQUISES*
WALL SHEATHING
FRENCH STONEWORK
OVER-MANTEL TREATMENTS*

1933
BANK SCREENS
INTERIOR DOORS
METAL STAIR RAILINGS*
VERANDAS
THE EAGLE IN SCULPTURE*
EAVES RETURNS ON MASONRY GABLES
EXTERIOR LETTERING
ENTRANCE DRIVEWAYS
CORBELS
PEW ENDS
GOTHIC NICHES
CURTAIN TREATMENT AT WINDOWS

1934
EXTERIOR PLASTERWORK
CHURCH DOORS
FOUNTAINS*
MODERN ORNAMENT
RUSTICATION*
ORGAN CASES*
GARDEN FURNITURE
WINDOW HEADS, EXTERIOR
SPIRES*
BUSINESS BUILDING LOBBIES*
ROOF TRUSSES*
MODERN LIGHTING FIXTURES*

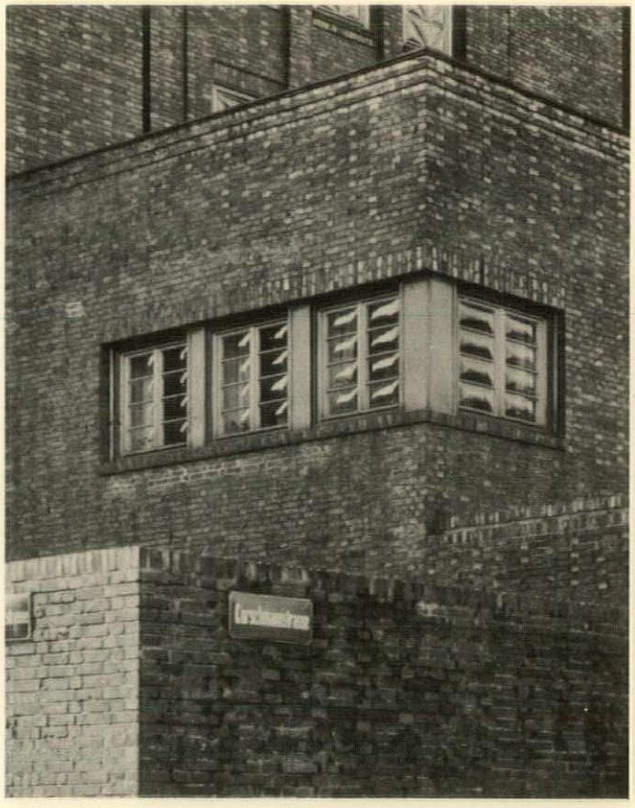
1935
CIRCULAR WINDOWS (GOTHIC AND ROMANESQUE)
TILE ROOFS*
MOLDED BRICK*
DORMER WINDOWS*
ENTRANCE SEATS*
OVERDOORS, INTERIOR*
BRICK CORNICES*
SIGNS*
CHIMNEY OFFSETS*
WINDOW HEADS (EXTERIOR, ARCHED)*
UNUSUAL BRICKWORK*
SHUTTERS AND BLINDS*

1936
FIREPLACES (MEDITERRANEAN TYPES)*
PEDIMENTS (EXTERIOR)*
BALCONY RAILINGS (INTERIOR)*
GOTHIC BUTTRESSES*



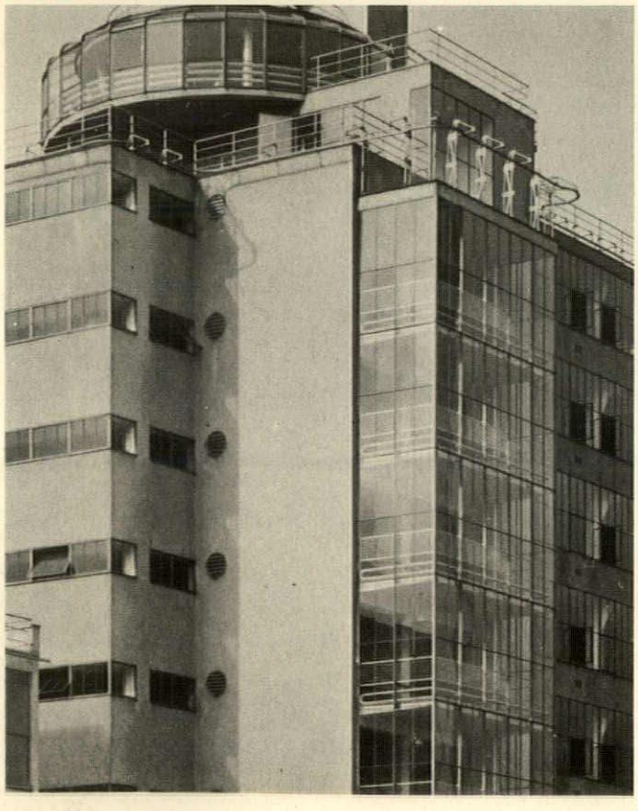
Photograph by Photochrom Co., Ltd., London

Crystal Palace, London (1854)

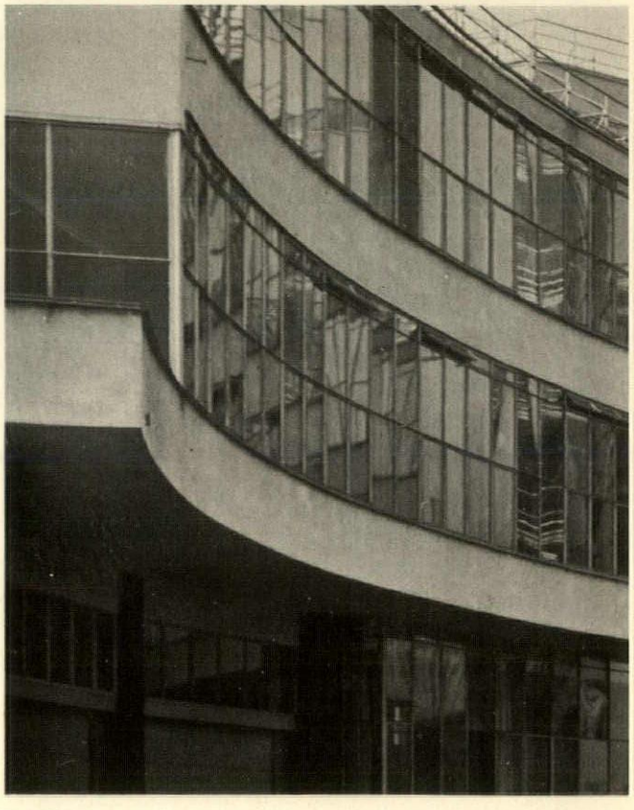


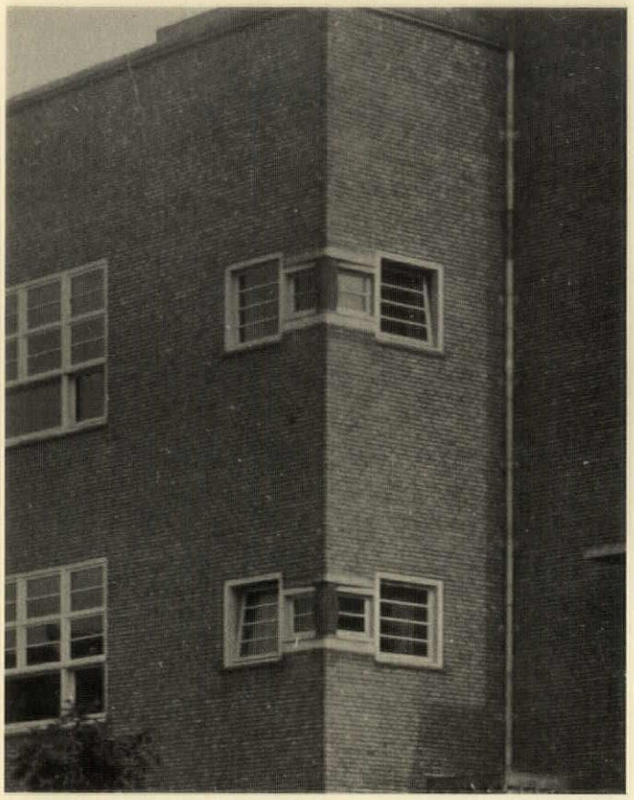
Girls' School, Hamburg, Germany

Van Nelle Factory, Rotterdam, Holland
J. A. Brinkman and L. C. van der Vlugt

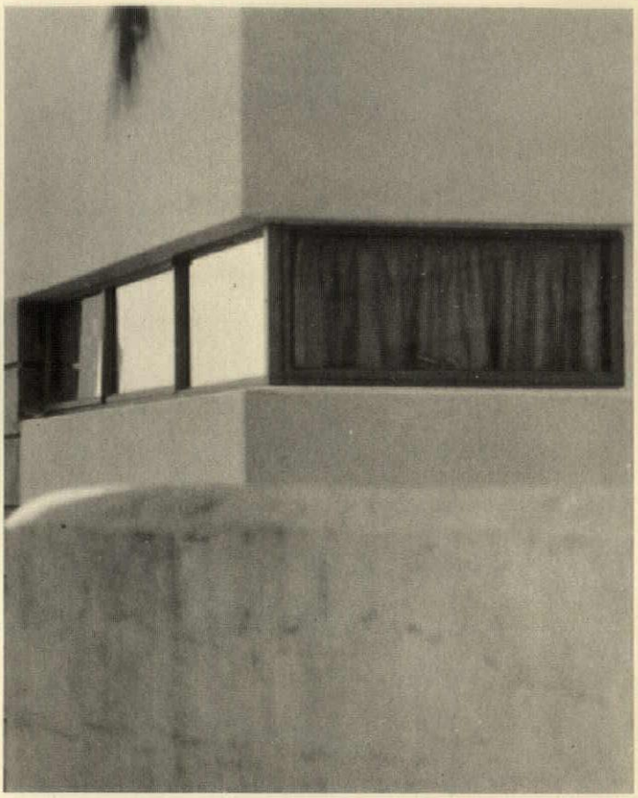


Van Nelle Factory, Rotterdam, Holland
J. A. Brinkman and L. C. van der Vlugt



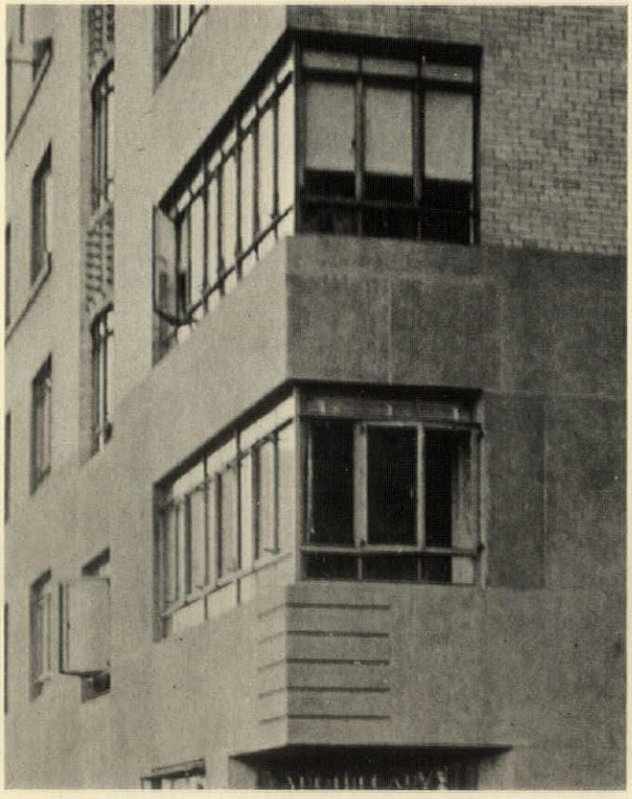


School at Amsterdam, Holland
Office of the City Architect

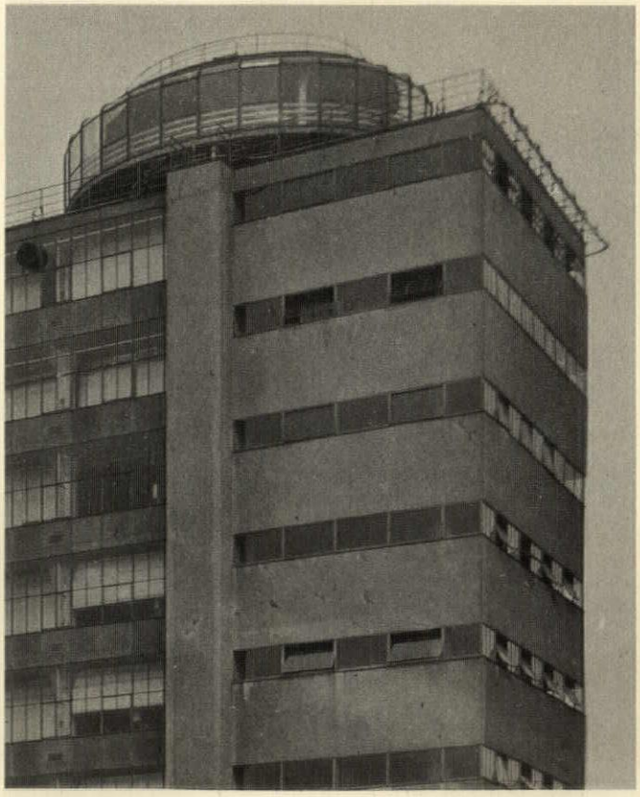


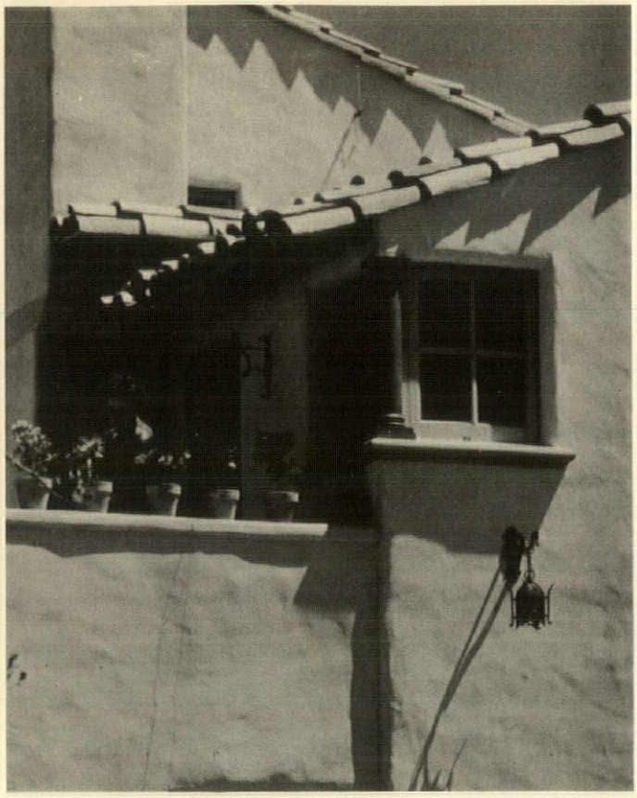
House at Santa Monica Canyon, Calif.
Cedric Gibbons and Douglas Honnold

Century Apartments, New York City
Office of Irwin S. Chanin

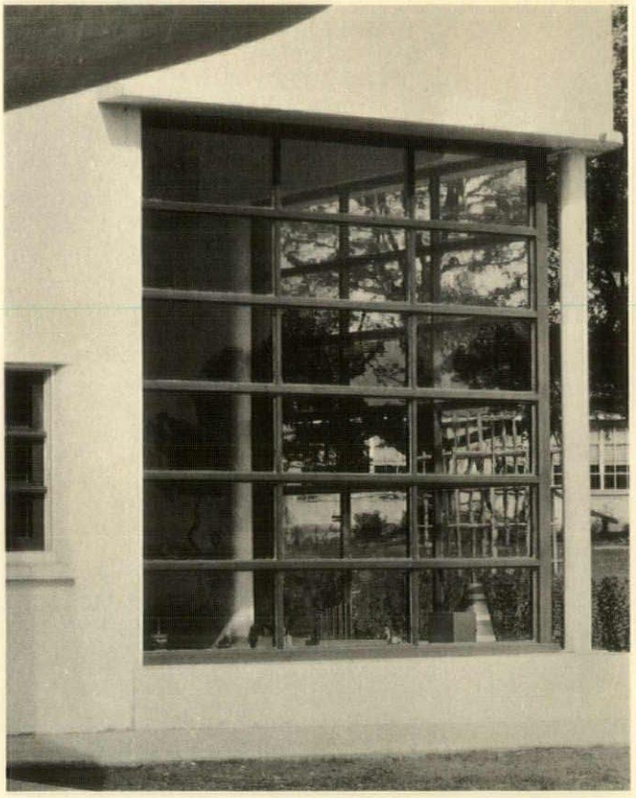


Van Nelle Factory, Rotterdam, Holland
J. A. Brinkman and L. C. van der Vlugt





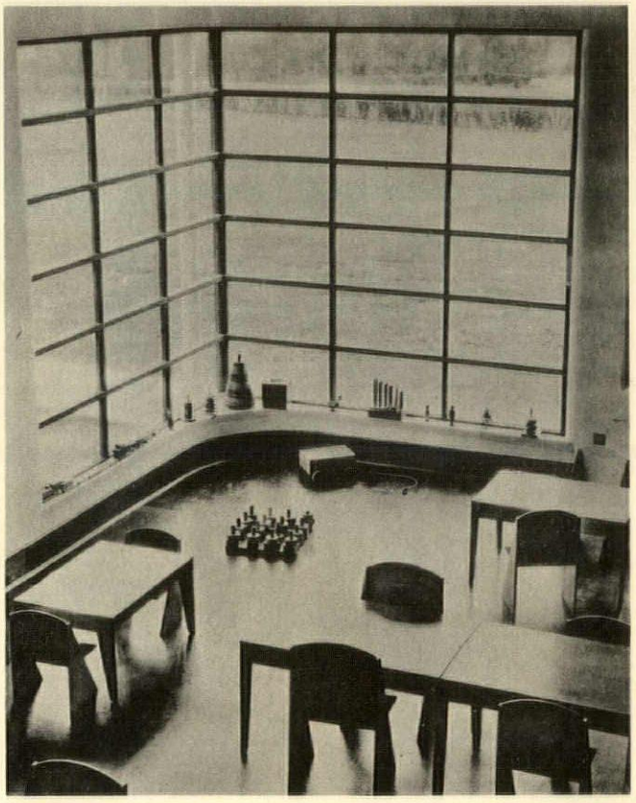
House at Hillsborough, Calif.
Willis Polk & Company

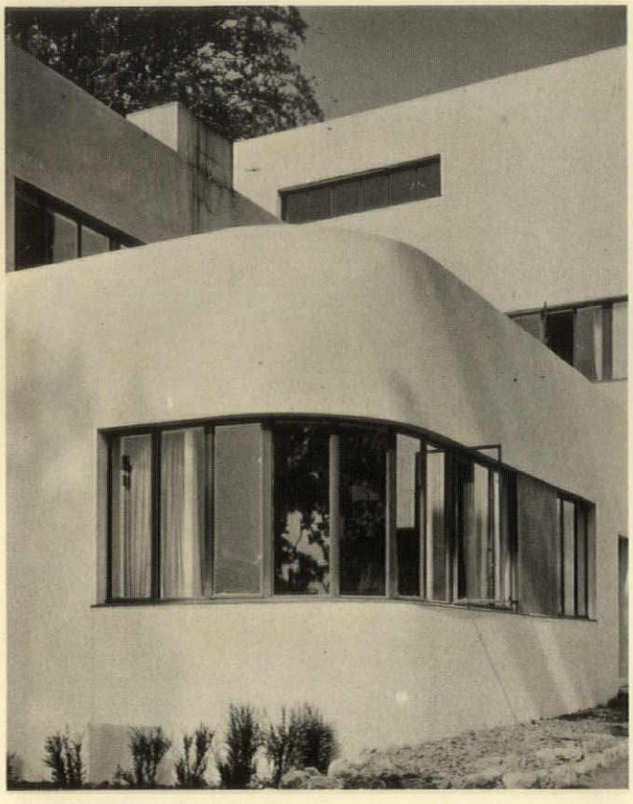


Country Day School, Oak Lane, Pa.
Howe & Lescaze

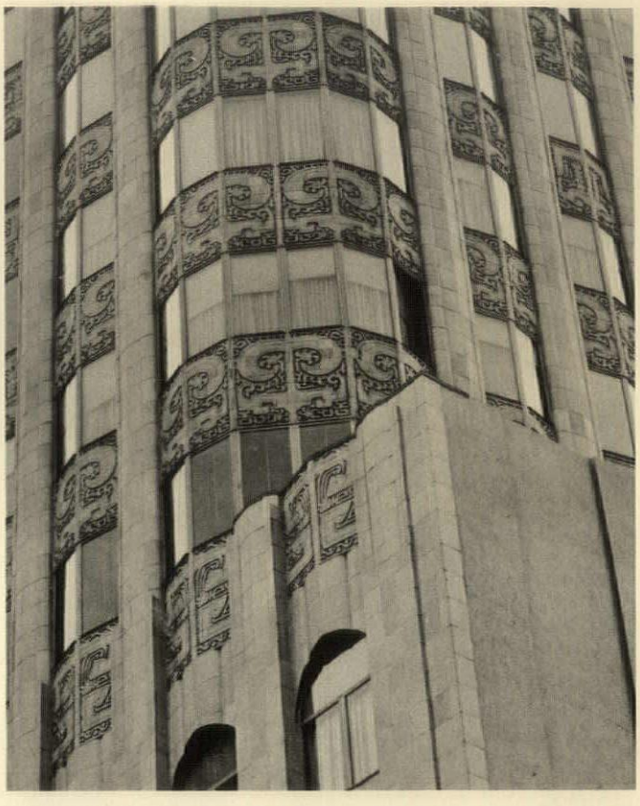
Interior of the above

Interior of the above





House in Devon, England
Howe & Lescaze

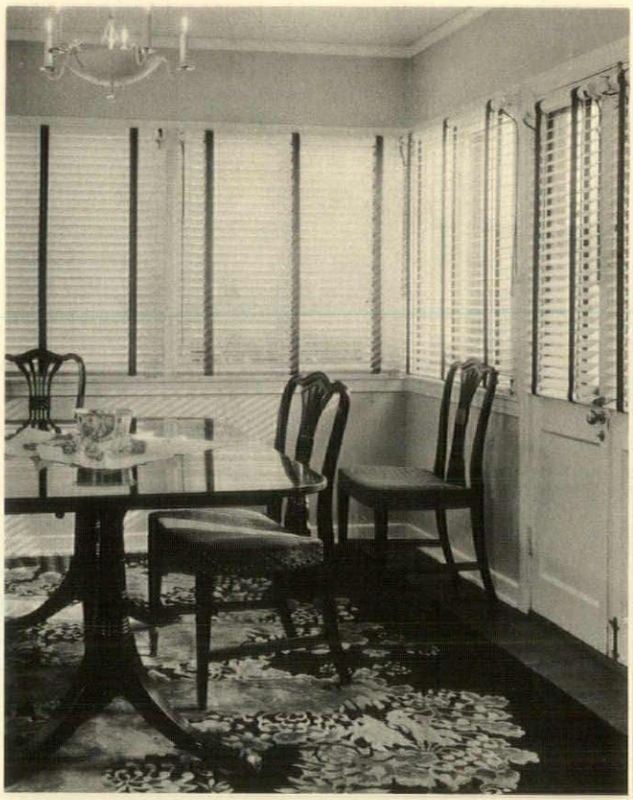


"Four-Fifty Sutter," San Francisco
J. R. Miller and T. L. Pflueger

Interior of the above

Interior of the above

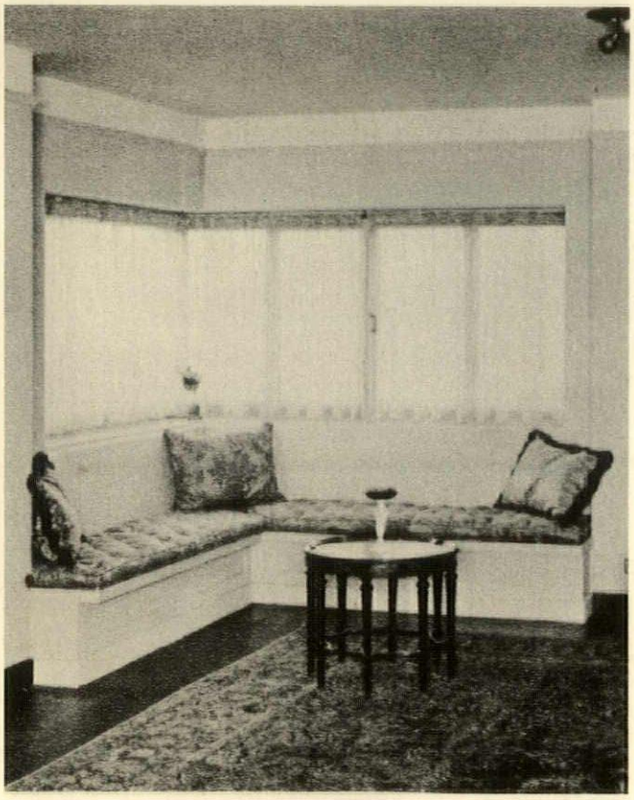
Roerich Museum and Apartments, New York City
Corbett, Harrison & MacMurray; Sugarman & Berger

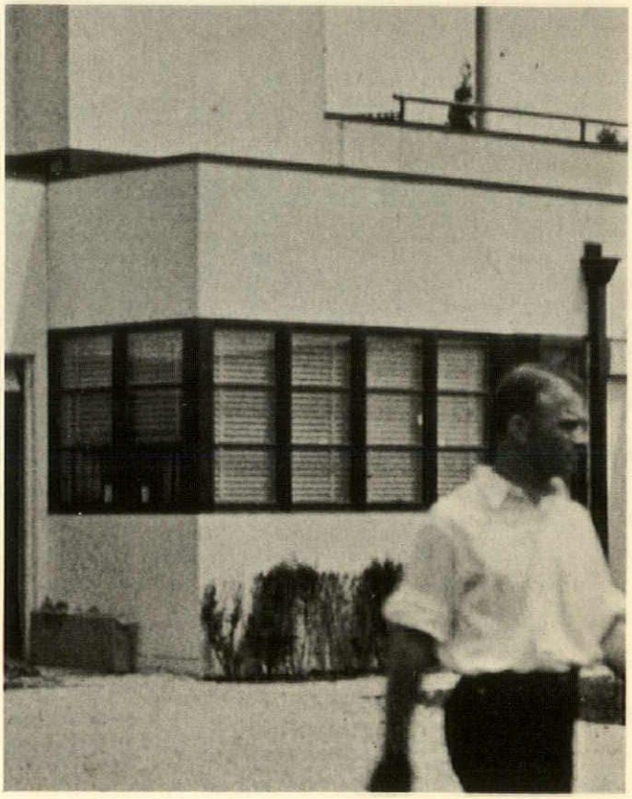


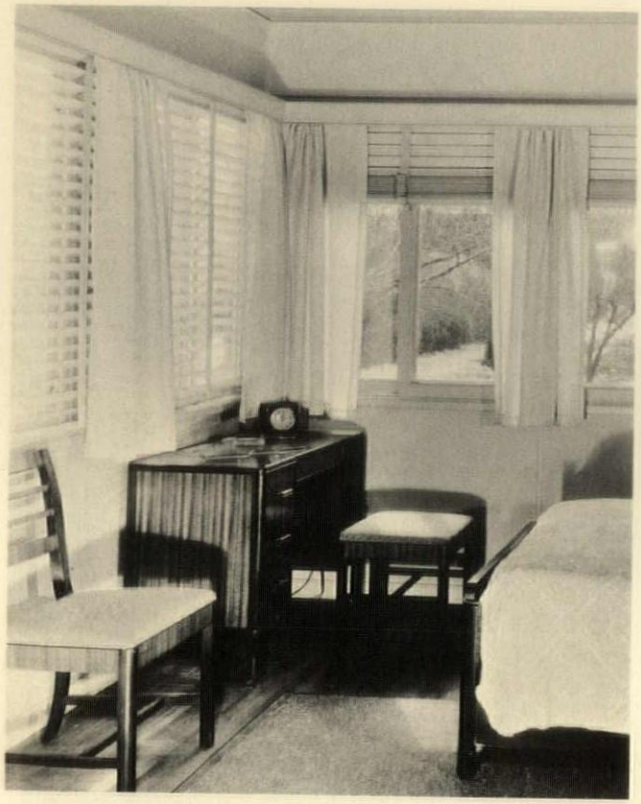
Interior of a prefabricated house
General Houses, Inc.

Masonite House,
Century of Progress Exposition, 1933

Interior of the above



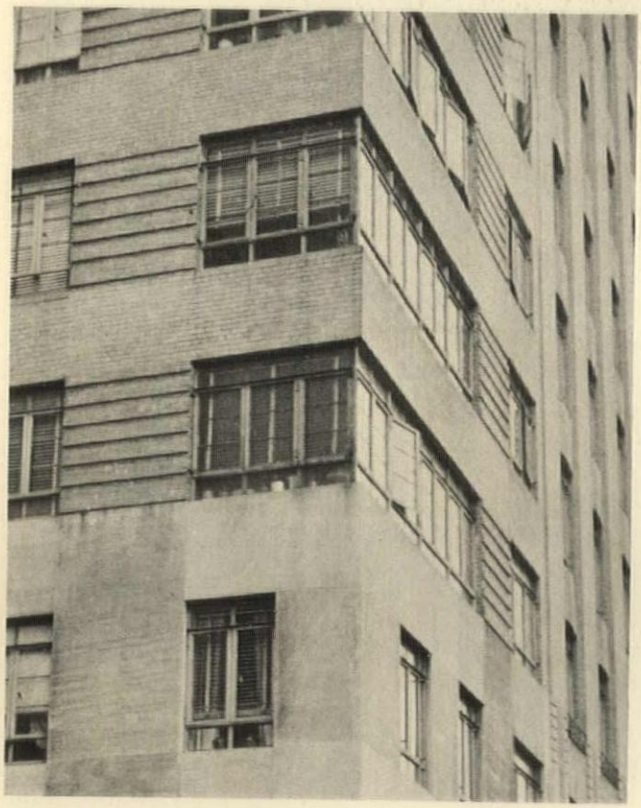




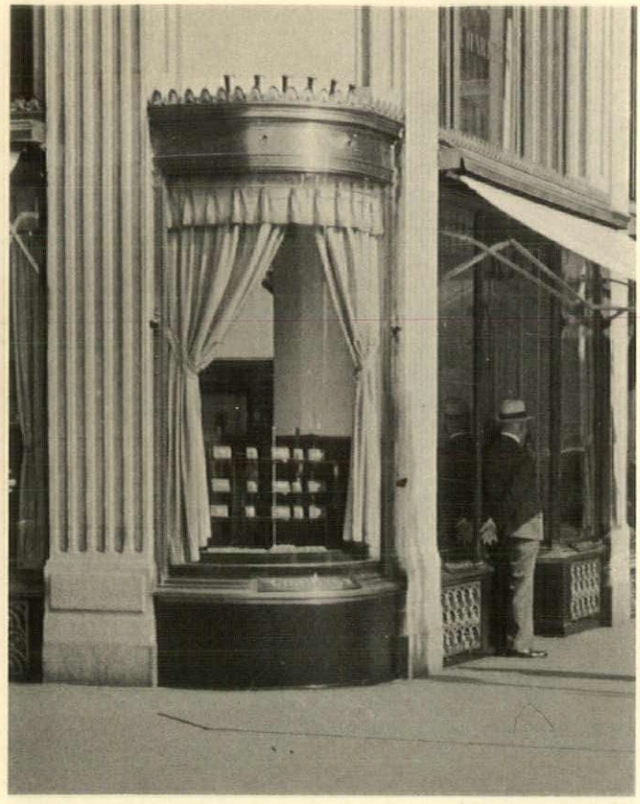
Interior of a prefabricated house
General Houses, Inc.

Stran-Steel-Irwin House,
Century of Progress Exposition, 1934

Majestic Apartments, New York City
Office of Irwin S. Chanin



Interior of the above



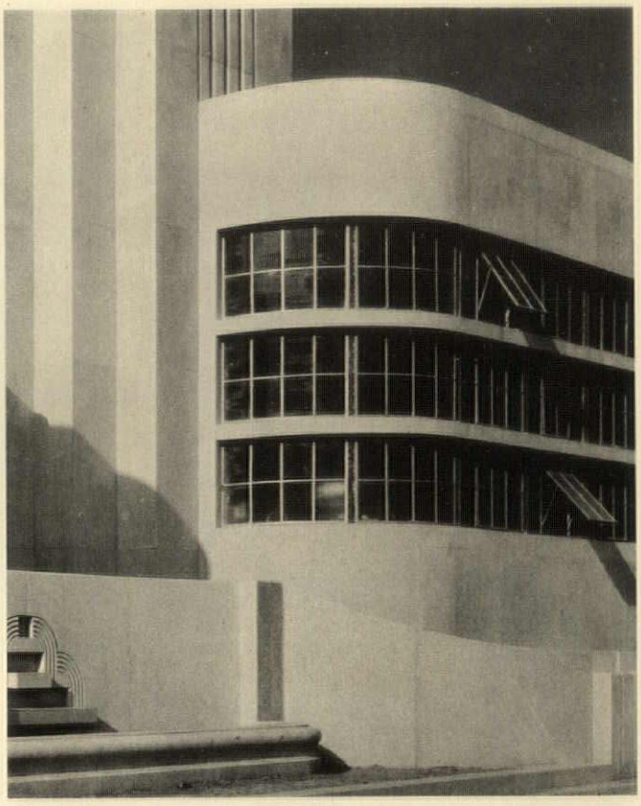
On Fifth Avenue, New York City

Childs Building, New York City
William Van Alen

Stockholm Exhibition, 1930
E. Gunnar Asplund

Childs Building, New York City
William Van Alen

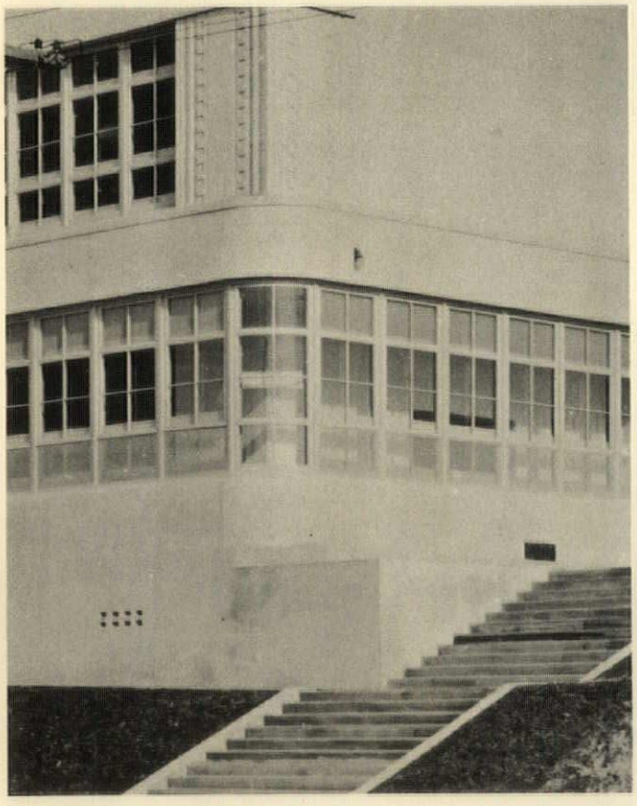
Apartment Building, Stuttgart
Mies van der Rohe

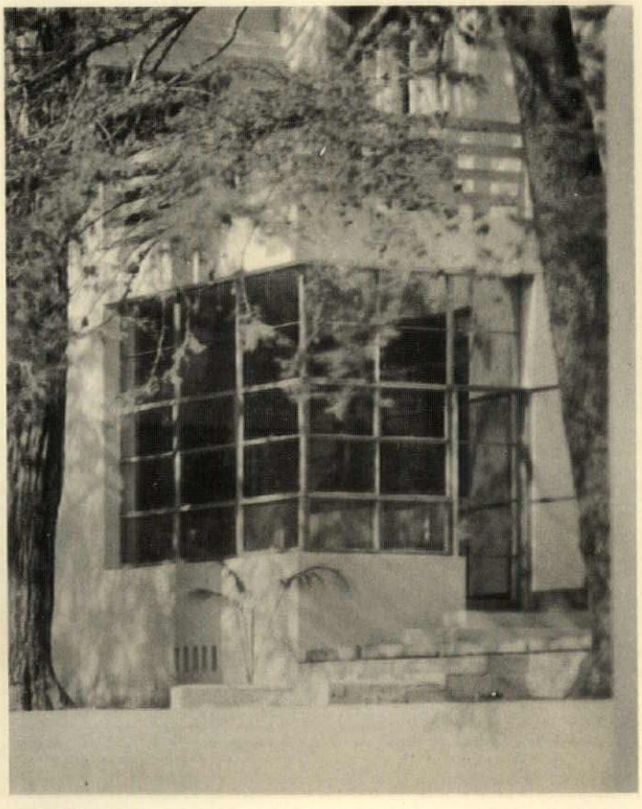


Laundry Building, Long Island City
Irving M. Fenichel

House at Santa Monica Canyon, Calif.
Cedric Gibbons and Douglas Honnold

High School, San Francisco
J. R. Miller and T. L. Pflueger

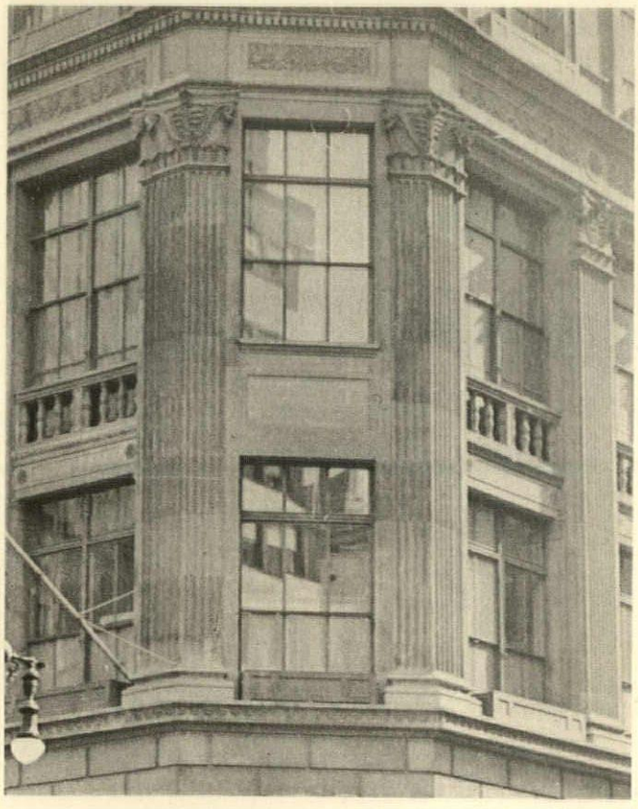




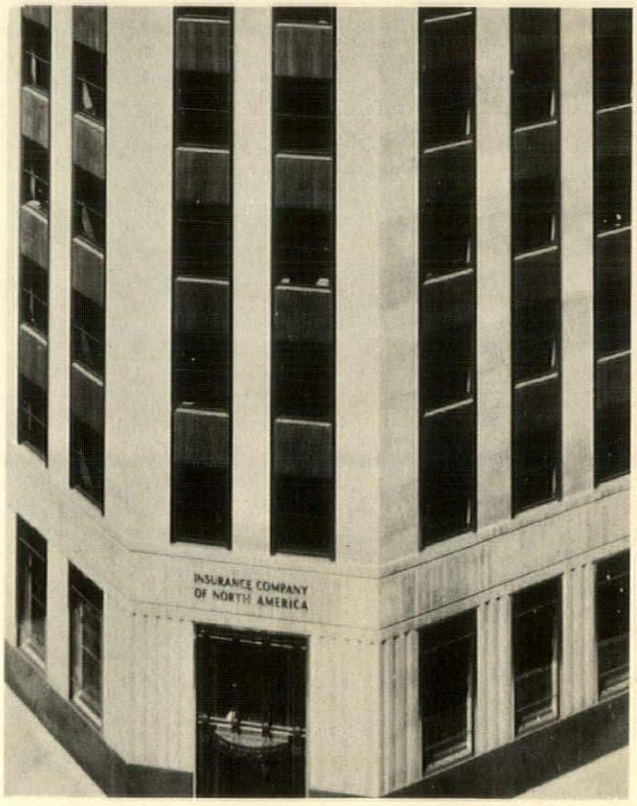
Aeolian Hall, New York City
Warren & Wetmore

Civic Opera House, Chicago
Graham, Anderson, Probst & White

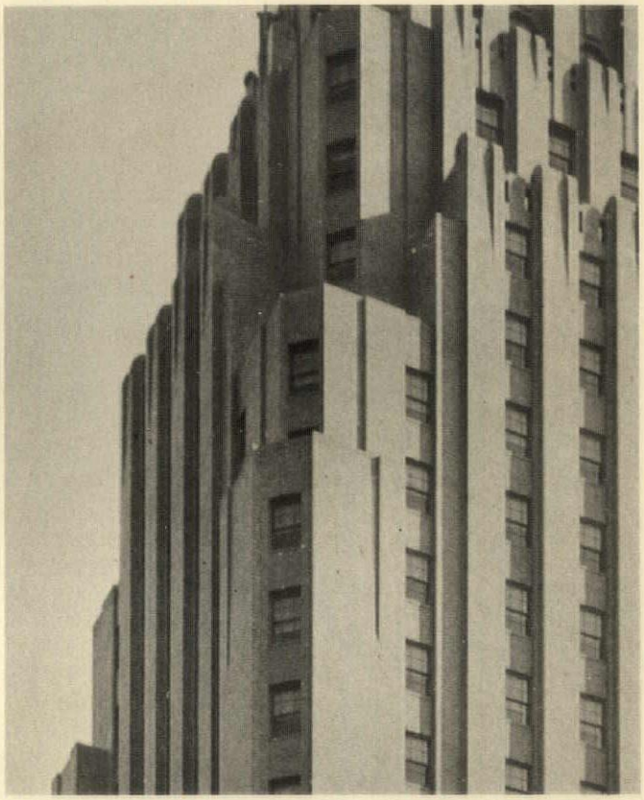
Saks Fifth Avenue, New York City
Starrett & Van Vleck



Office Building, New York City
Shreve, Lamb & Harmon

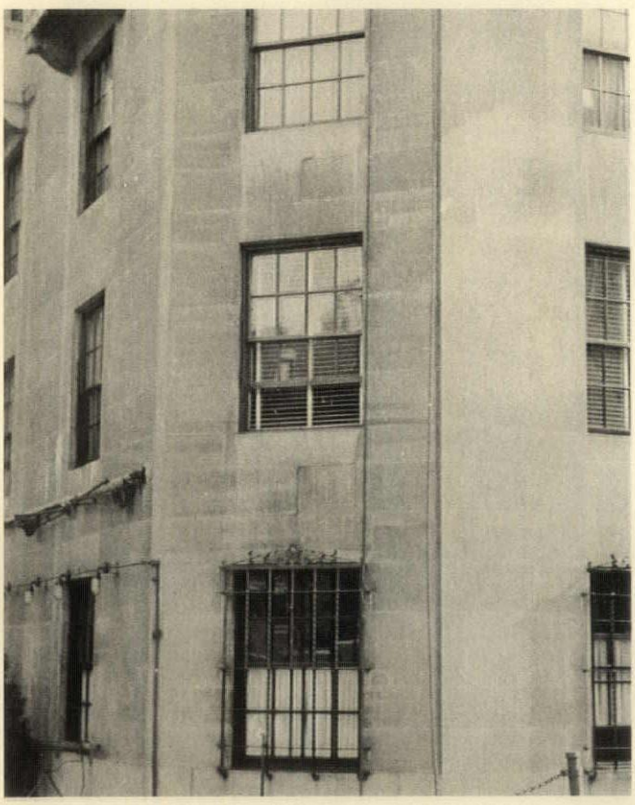


Mercantile Marine Building, New York City
Walter D. Chambers

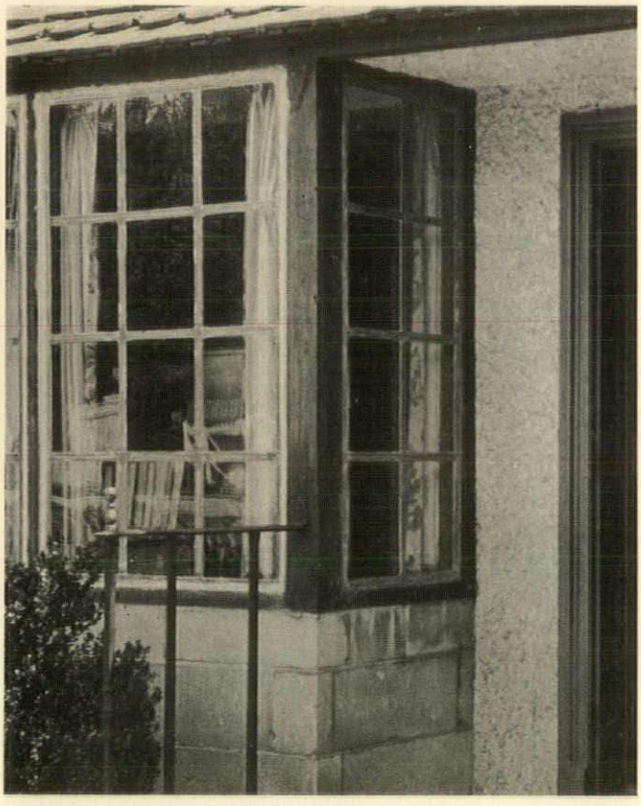


Beekman Tower, New York City
John Mead Howells

Apartment House, New York City
Corbett, Harrison & MacMurray



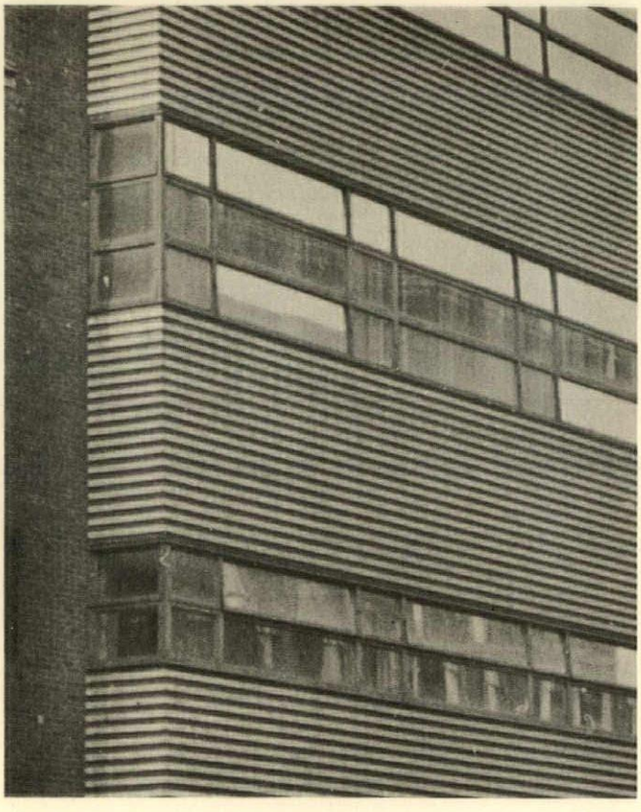
Newspaper Building, Copenhagen, Denmark
B. Hedweg-Moller



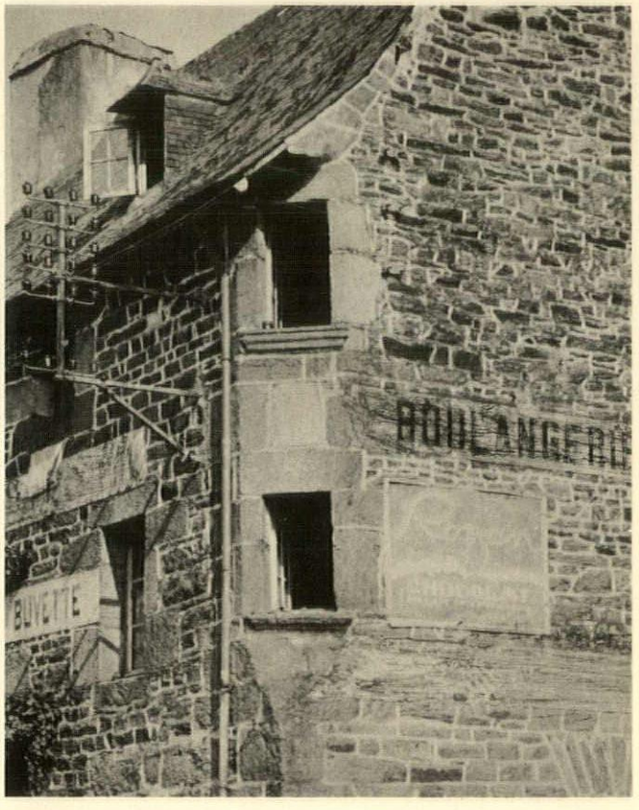
House at Hackensack, N. J.
Wesley Sherwood Bessell

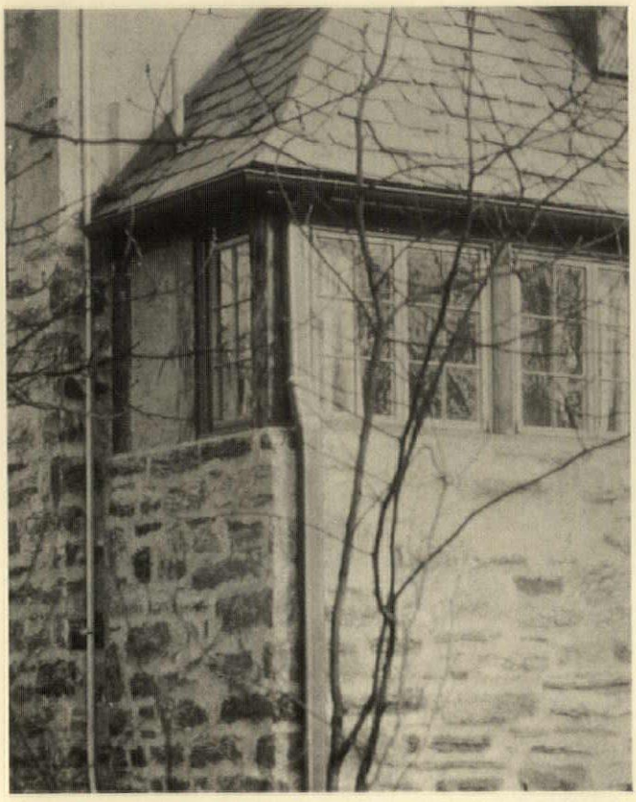
House at Scarsdale, N. Y.
Electus D. Litchfield

New School for Social Research, New York City
Joseph Urban

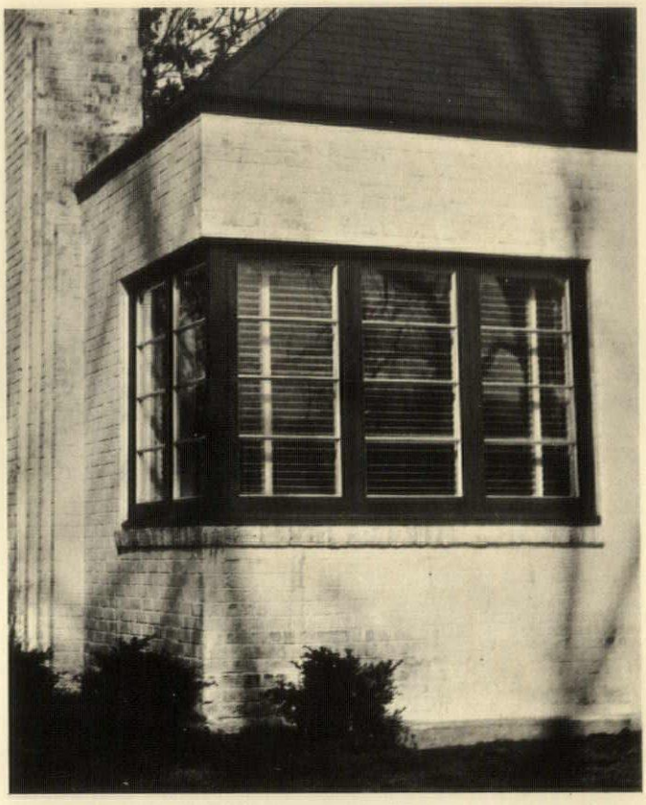


Old stone house in France



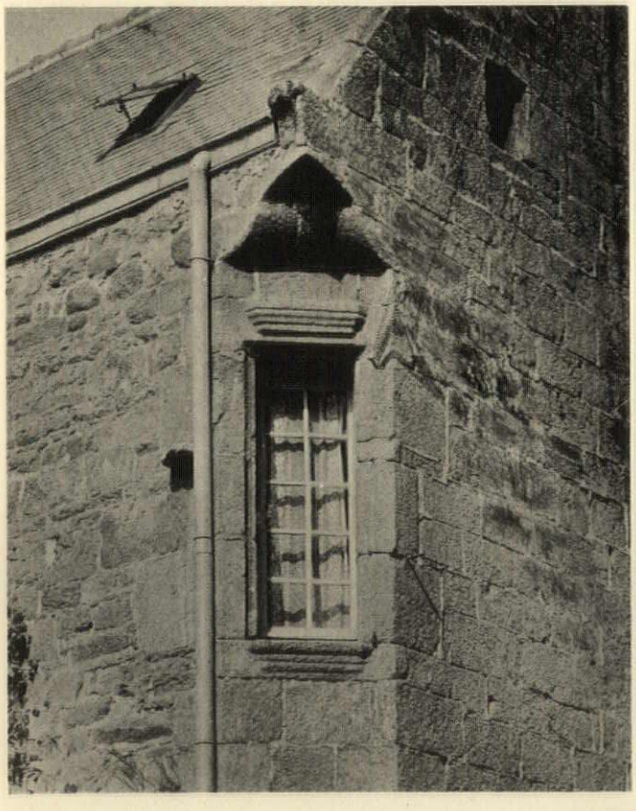


House at Wallingford, Pa.
Davis, Dunlap & Barney

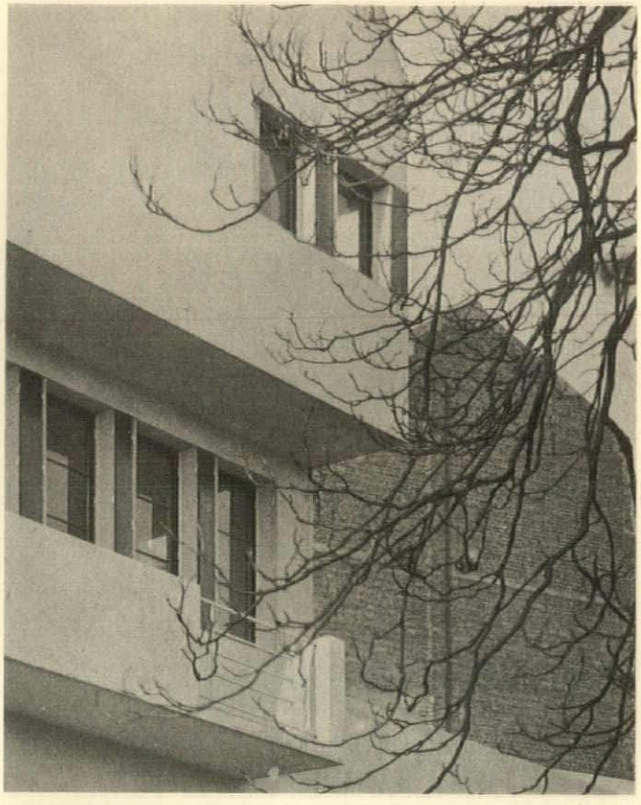


House at Hinsdale, Ill.
Harford Field, Inc.

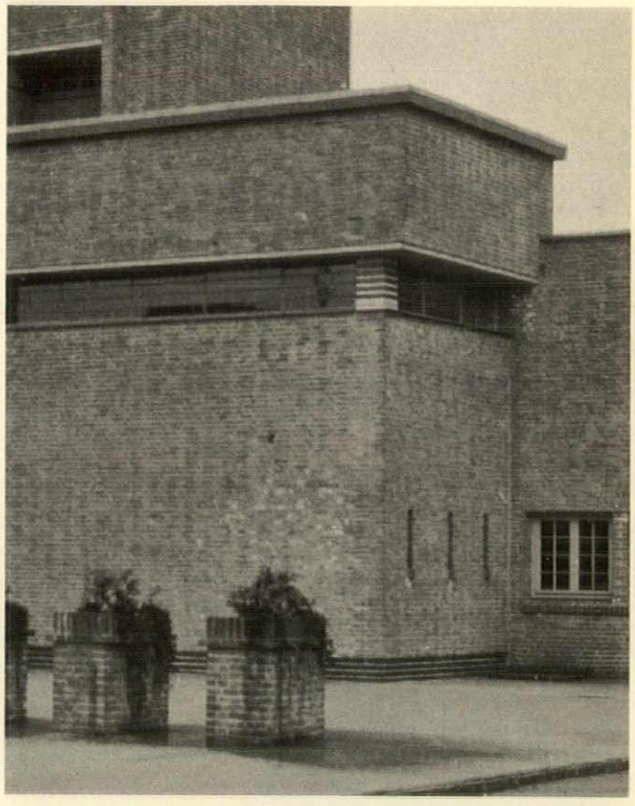
House in Roscoff, France



Edmond Meaney Hotel, Seattle, Wash.
Robert C. Reamer

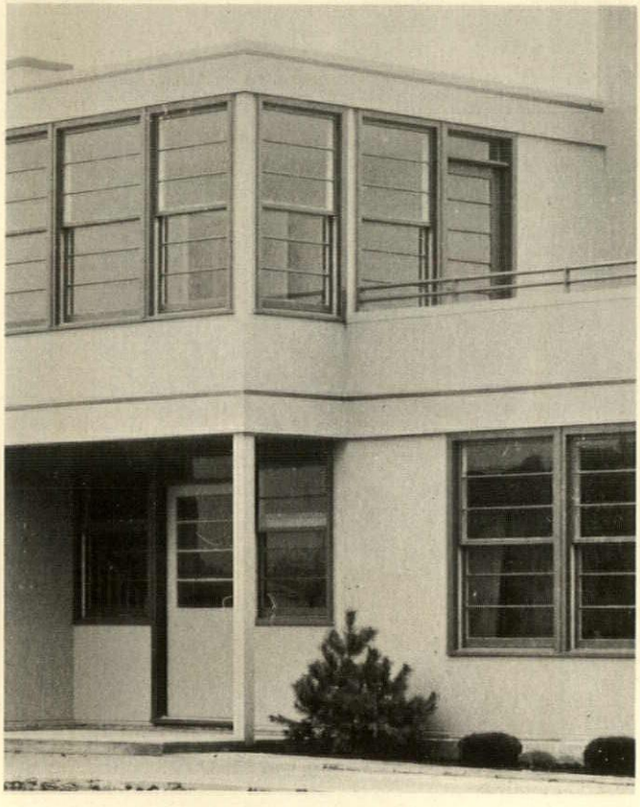


Apartment Studio, Paris

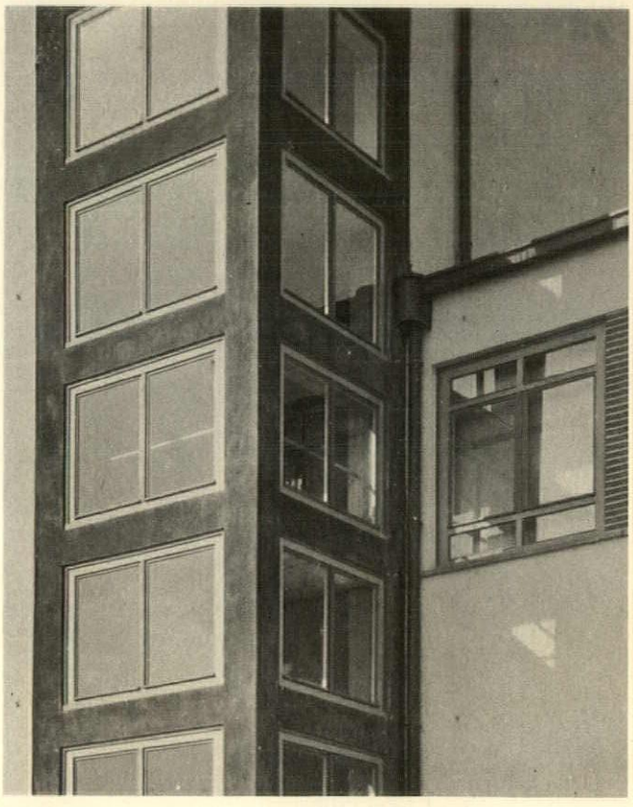


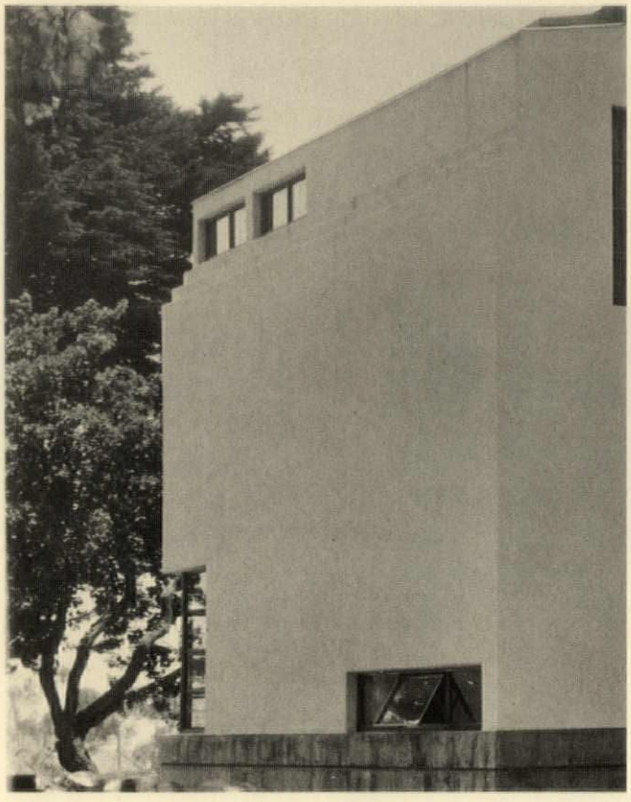
School at Hilversum, Holland
W. M. Dudok

Prefabricated house, Chicago
General Houses, Inc.

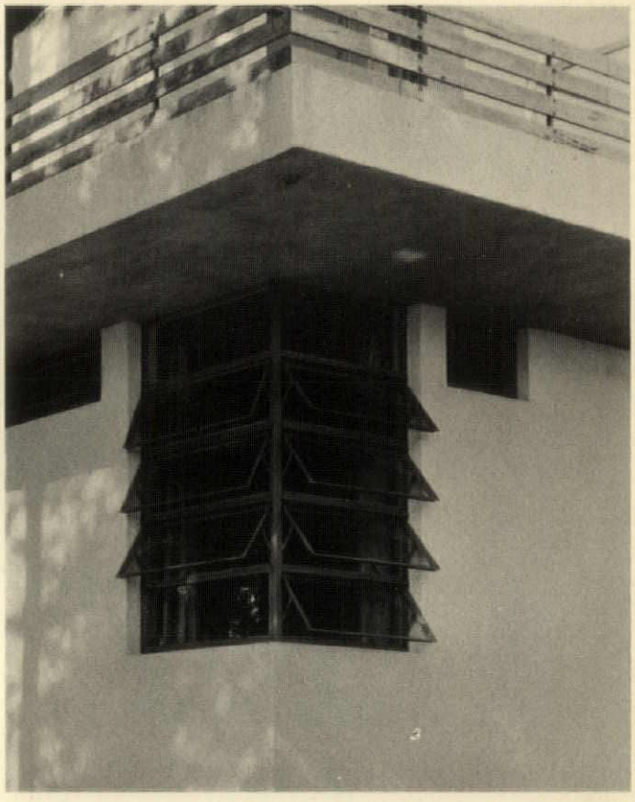


School at Frankfort, Germany
Prof. Martin Elsaesser





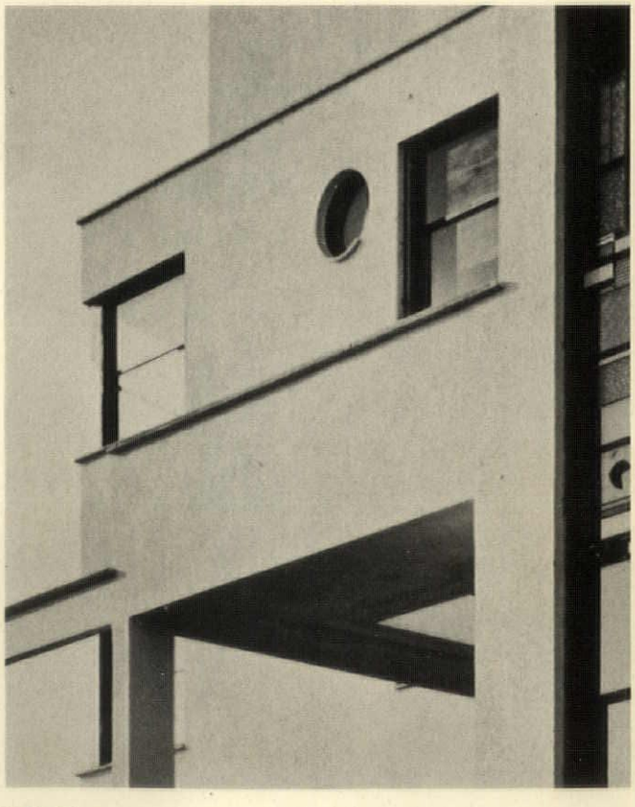
House at Santa Monica Canyon, Calif.
Cedric Gibbons and Douglas Honnold

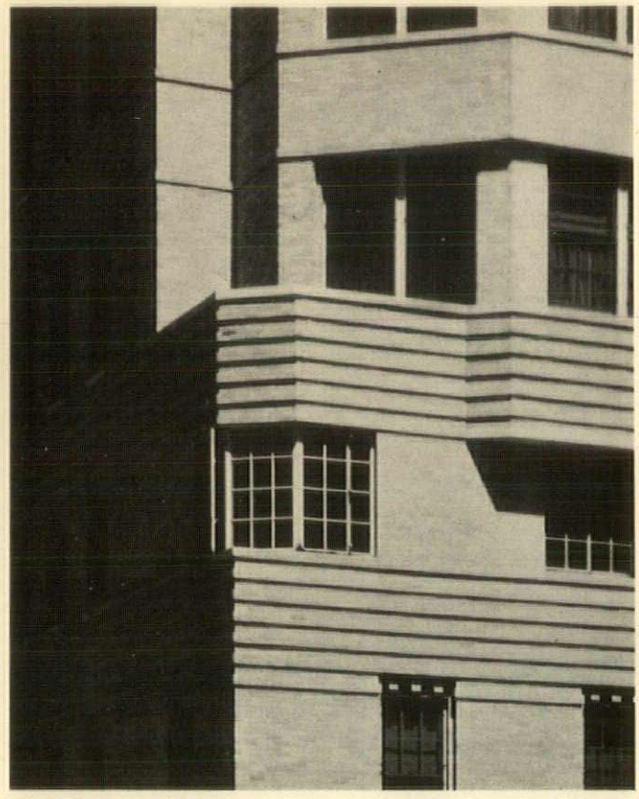


House at Santa Monica Canyon, Calif.
Cedric Gibbons and Douglas Honnold

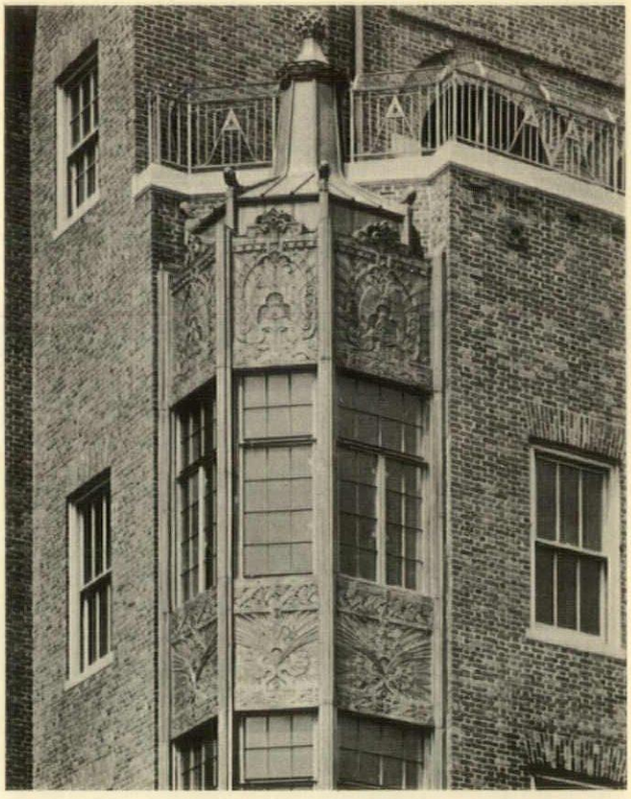
Garden House at Santa Monica Canyon, Calif.
Cedric Gibbons and Douglas Honnold

House in Paris
Ros Mallet-Stevens



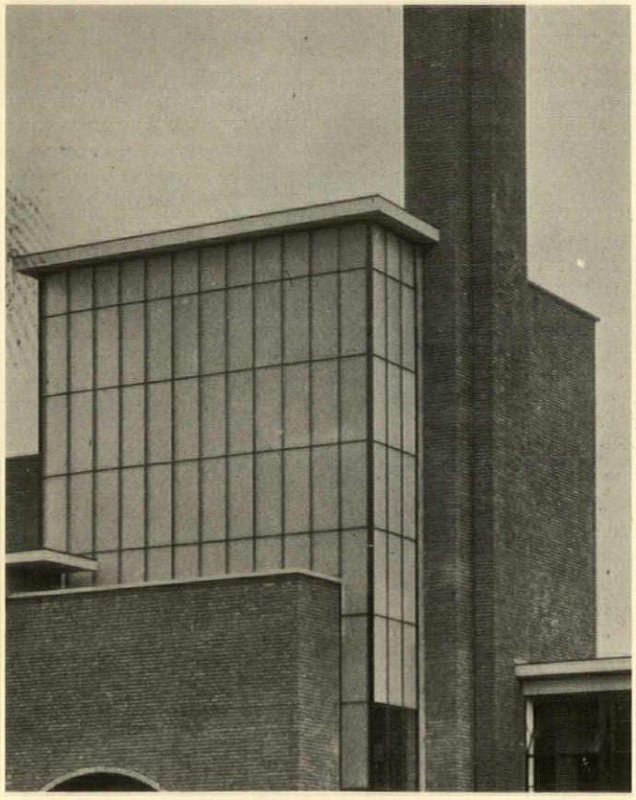


Columbia Presbyterian Medical Center, New York City
James Gamble Rogers

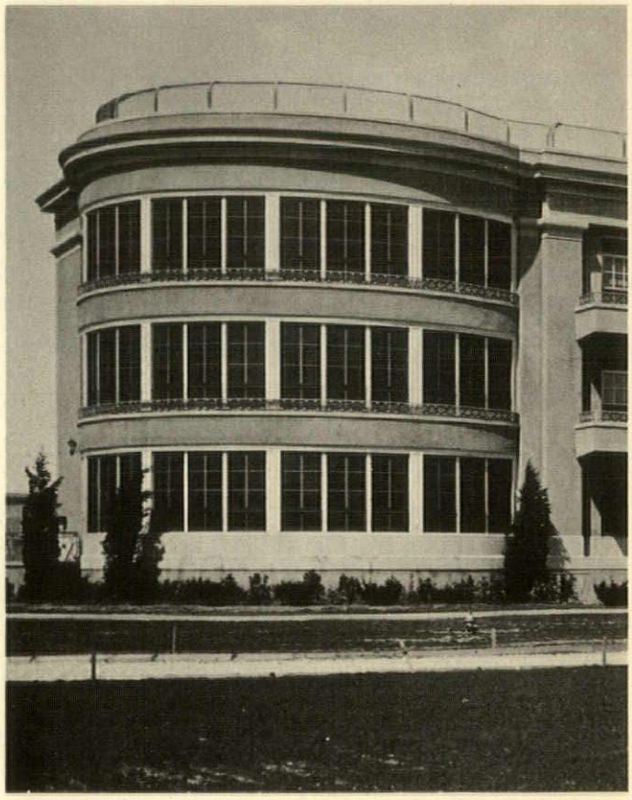


Kings County Hospital, N. Y.
William E. Haugaard, State Architect

School at Hilversum, Holland
W. M. Dudok



Meadowbrook Hospital, Hempstead, N. Y.
Office of John Russell Pope



DESIGN *in* MATERIALS

A DEPARTMENT DEVOTED TO A BETTER LIAISON BETWEEN THOSE WHO ARE DESIGNING THE NEW AMERICA AND THOSE WHO ARE PRODUCING THE MATERIALS WITH WHICH IT IS TO BE REBUILT

The CONSTRUCTION LEAGUE *of the* U. S.

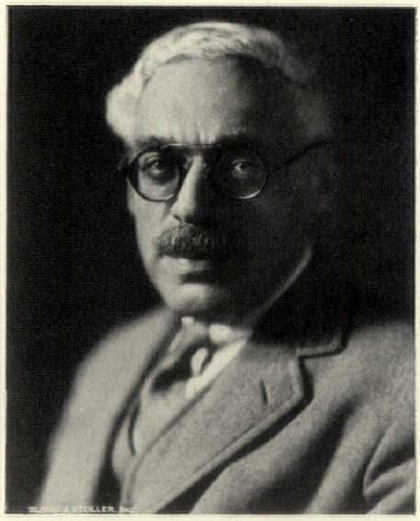
By Richmond H. Shreve

THE period in which we are living will undoubtedly stand out to future historians of American business as one of the most vital and at the same time most rapid ages of transition that organized society has ever witnessed. The approach to industrial and commercial practices is undergoing radical change; the very foundations of "rugged individualism" are being shaken to the core; and to replace it, there is emerging a concept of co-operation as a basis for human society. Selfish as the ideal may be in its original approach, imperceptible as the results may be in its present nascent condition, the ideal is, nevertheless, firmly established and, within a very short time, should show signs of an early fruition.

The movement is gradually extending from restricted organizations, limited in their membership to one profession or industry, into national organizations, all-embracive in their scope. Thus the construction industry, the second ranking economic factor in the country, responsible in 1929 for the livelihood of 4,400,000 workers, or for one-tenth of the employment in the United States, and whose far-reaching ramifications in the production and manufacture of raw materials, transportation, wholesale and retail distribution, design and actual job-site construction make it practically the balance wheel in our industrial system, organized in 1931 the Construction League of the United States, for examination of the industry's problems, and for consultation on them, in an effort to achieve a path of constructive, co-ordinated action.

The first meeting was called together by the American Institute of Architects, of which Mr. Robert D. Kohn was, at that time, president. The importance of such an organization had been made clear to him when, during the latter years of the war, he acted as chief of the Housing Division of the Shipping Board, at which time the need for quick, decisive action was rendered possible only by the complete co-operation of all of the elements of construction and industry. Accordingly, in 1920, he sought to generate this spirit in the industry as a whole, and was instrumental in forming the National Building Congress, of which the New York and other local building congresses are an outcome. The mother organization, however, was only partially successful; in the opinion of architects it failed to bring the industry together; and the overwhelming nature of its organization frustrated, in large measure, the very ends it had been created to further.

By 1931 this effort had become practically impotent from the point of view of constructive service. Consequently, Mr. A. T. North, a member of the Committee on Industrial Relations of the Institute, suggested to Mr. Kohn that he try again, this time through the medium of the national organization of the architectural profession, and taking every precaution to eliminate the mistakes that had impeded the usefulness of an earlier attempt. As a result, North's committee, headed by William O. Ludlow, issued invitations to various national organizations, to send representatives to discuss the possibility of forming a national conference board where the problems of the industry as a whole could be discussed for the mutual benefit of all. This invitation was issued with the approval of A. P. Greensfelder, president of the Association of General Contractors of America, and of H. H. Sherman, president of the Producers' Council. This new approach brought a 100 per cent response, and gave the first meeting, held at the Octagon in Washington, a very real impetus.



Robert D. Kohn, F. A. I. A., the Construction League's first president

It was agreed by all that the need of the League at that time was strikingly apparent, and it was felt that while the disinterestedness of a broadly representative group would lead to effective action, the objectives sought would be common to all branches of the industry, and would reflect equally upon all.

As a result, a membership was built up of associations, national in character, the major services or products of whose individual members formed an integral part of the construction industry. The initial assembly, held early in 1932, composed of approximately ten organizations, set forth the following as the nature and objective of the League:

"*a.* To create an agency truly representative of the whole industry through which to present the industry's viewpoint and needs to the public and the government.

"*b.* To strengthen and benefit the industry internally by furnishing an agency to work out intra-industry problems.

"*c.* To supply sound advice and criticism to the individual branches by common council and open forum

of architects, engineers, general contractors, specialized contractors, producers and dealers.

"*d.* To promote unified and cooperative plans of study, research and propaganda for the proper advancement of the construction industry in the best interests of the public."

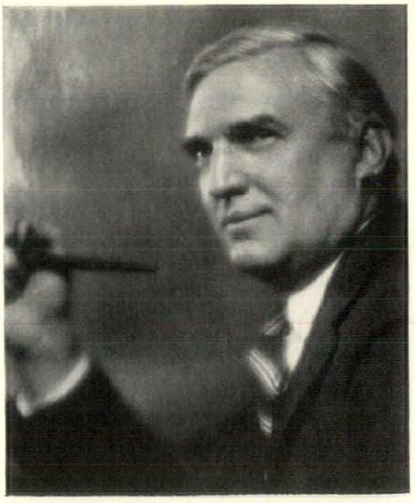
The spirit with which the formation of administrative machinery was approached is well illustrated by the passage with which the committee closed their report. "These rules do not contain the word 'shall' or any penalty. They are based on the word should, or the will to do. They recognize the principle of a premium and reward for doing the right thing in the right way. This is the principle of modern business and we must subscribe to such a principle if we would succeed in our constructive task of progress."

The difficulty of inclusively circumscribing the limits to which the term "Construction Industry" could be extended, and of providing an insurmountable safeguard against the introduction of selfish interests into League administration, provided a very real problem in the formation of an administrative program. The former was overcome by the following conclusive definition, which limits the organizations eligible to League membership and to participation in League consultation:

"The Construction Industry is that comprehensive synthesis of arts, professions, occupations and commercial elements whose major services or products are utilized in the creation or modification of structures and fixed improvements for the shelter or use of man."

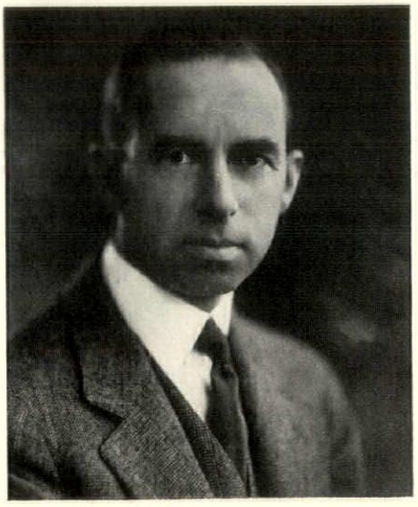
Impartial opinion and just consultation has been made possible by the wise basis upon which membership in the League rests. Thus, only broad nationwide associations, such as the American Institute of Architects, the American Institute of Steel Construction, and the Brick Manufacturers Association of America, are eligible to administrative membership. Individual members of an association do not obtain membership status by virtue of the membership of their association in the League. Their interests are represented by their association. Provision has been made, however, for non-voting sustaining members.

Despite the nationwide basis upon which the League operates, and the all-embracive scope of its activities,



Stephen Frank Voorhees, F. A. I. A., the League's second president

Col. John P. Hogan, the League's third president



Richmond H. Shreve, F. A. I. A., the League's fourth and present president

wise provision has obviated any possibility of unwieldy or clumsy operative principles. Each national member association elects five representatives to the League Assembly. This comparatively small group of voting members is again cut down to facilitate wise and decisive actions, in a Policy Committee which determines and directs the affairs of the League between meetings of the League Assembly, and its activities and powers include all matters commonly within the province of a board of directors. The Policy Committee includes the League officers and two assemblymen, generally representative of each of the following branches of the industry: architects, engineers, subcontractors (four representatives; two mechanical and two non-mechanical), producers (a material and an equipment manufacturer), fabricators (a material and an equipment representative), and distributors (a material and a machinery representative), always providing, of course, that the respective branches are represented in the League Assembly.

From this body, an Executive Committee is elected, which is entrusted with the execution of the League program between meetings of the Policy Committee.

The officers who conduct the affairs of the League are elected annually by the Assembly and consist of a general chairman, two vice-chairmen, a treasurer and a general secretary.

Every precaution has been taken against the introduction of party politics and electioneering methods into the League electoral system, and against one group of members—much less one company—forwarding their own individual interests. Comprehensive and decisive by-laws, including an expulsion clause, further eliminate all possibility of partisan policies.

The opportunities for organized action which the League inculcates in its administration, the potentialities for unifying divergent elements which it possesses, immediately present themselves to the observer. Further, however, the League anticipates the possibility of a national biennial Construction Congress, a national Construction Exhibition, and hopes to co-operate with other national or international bodies in arranging joint programs, thus extending its activities to a worldwide basis.

Some idea of the possibilities of current action is given by the following general committees that may be provided for to investigate current needs:

A Plan Committee to study internationally and nationally the application of community, public utility and private plans and planning programs covering construction work of various kinds.

An Employment Committee to consider matters pertaining to various phases of employment within the construction industry.

A Correlation Committee to consider matters relative to ethical practices and co-operation of members with each other and with the public. Upon request of the parties of interest, this committee may serve as arbitrators between such members.

A Research Committee to consider matters pertaining to betterment of construction methods, materials and machinery.

A Merchandising Committee to analyze and pursue matters pertaining to betterment of construction methods, materials and machinery.

A Public Relations Committee to consider matters relative to legislation and public contacts as they affect the construction industry.

The League, moreover, may render such library and other services, issue bulletins and other publicity, and support such joint activities of the League and any member as the Assembly may at any time authorize.

Representative of the services which the League may be able to render is the formation of a special Committee on Housing, to draft a definite League Housing Policy to present to the federal government. This committee is at present studying and co-ordinating the various reports on housing by such agencies as the Chamber of Commerce, the Committee for Economic Recovery, and others. It is also authorized to take any further action necessary in connection with future legislation affecting the construction industry.

The PRODUCERS' COUNCIL

Subjects to be Discussed in Convention

By John F. Gowen
Executive Secretary

THE Producers' Council is holding its annual convention, as usual, at the same time and place as the A. I. A., that is, down at Old Point Comfort, Va. The joint luncheon of the Institute and the Council will be held on Tuesday, May 5, and the speaker, a representative of the latter group, will be Carl M. Snyder, president of Houses, Inc. His subject will be "Low Cost Housing," and his experience in prefabrication would lead one to make an unofficial forecast that he will at least touch upon this phase of the building industry.

There is every possibility that this convention may prove an important point in the development of the Council's activities and services. At any rate, a number of plans will be discussed for increased activities.

One of the most important of these is a plan for Certified Houses recently proposed by G. P. MacNichol, Jr., of the Libbey-Owens-Ford Glass Co. The project as outlined consists of registering the nature of the construction incorporated in the building, based upon a certification by the architect that the materials designated were actually used, and installed in conformity with standard specifications or accepted practice. The expense of a continuing national promotional campaign would fall entirely upon the manufacturers' shoulders, but the possibilities which it holds for better building are immediately evident.

The architect would be the pivotal point of the plan, and as a consequence would receive, for the first time, the type of public promotion necessary to establish the importance of the profession in the mind of prospective building owners.

The forward-looking builder would receive a selling implement which, if properly used, would not only reflect itself to his credit, but give him a leadership in his field.

The manufacturer would be safeguarded against substitution of unknown and inferior products and the field for quality materials would be enlarged.

The mortgagee or lending institution would have a new assurance of the value of his investment and of its sustained value in case of resale.

The purchaser or client would know, for the first time, the fundamental facts pertaining to the largest investment which, in all probability, he will ever make.

Another matter for discussion will be the activities of the Manufacturers' Housing Display Council, which has been responsible for the success of a number of housing displays throughout the country. As these feature the products of the manufacturers of building materials, it would appear that there should be some logical method of co-operation between the two organizations.

The Manufacturers' Housing Display Council was formed last November by a group of manufacturers, after a conference with Peter Grimm, Assistant Director of National Emergency Council, to discuss means of closer co-operation between the federal government and building material manufacturers.

Another proposal which will be discussed is the possibility of the Council—in co-operation with the Association of the Collegiate Schools of Architecture—preparing a comprehensive series of illustrated lectures on the manufacture, application, and properties of construction materials. The plan is made possible by the development of apparatus which synchronize photographs with voice recording. Through this medium—lantern slides and vocal description—students could receive additional practical data to supplement the regular scholastic curriculum and correlate the practical and æsthetic approach to the architectural profession.

BUILDERS OF AMERICA: Elisha G. Otis

By Benton B. Orwig

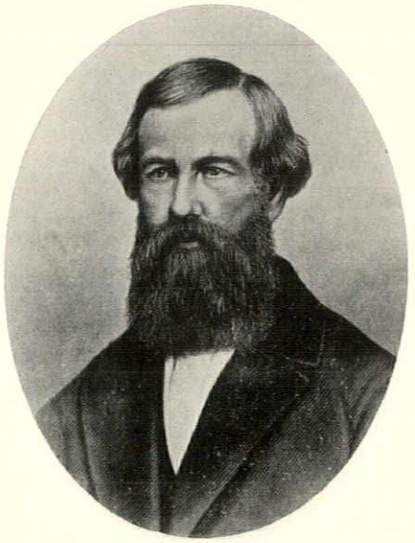
THIS IS THE FIRST IN A SERIES OF PERSONALITIES BACK OF OUR GREAT BUILDING INDUSTRIES

NOT so long ago, actually within the memory of architects now living, to plan a structure over five or six stories high would brand the architect as an impractical dreamer, chiefly because people refused to walk up too many flights of stairs. It was not until the elevator, as such, came into practical use that architects dared dream of tall buildings. In the elevator lay the inception of the skyscraper, and the most dramatic era in American building had one of its beginnings in a Yonkers bedstead factory some eighty years ago, where Elisha G. Otis built his first elevator.

In 1852, Elisha Otis was superintendent of the "Bedstead Factory" on the site of the Federal Sugar House in Yonkers, New York. An elevator was needed in the shop, so Otis decided to build one himself. Hoisting machines of various kinds had been in use throughout the ages, operated by man or animal power. Steam power was known in the latter part of the eighteenth century, but did not come into general commercial use until one hundred years later, and the steam hoists then in operation were considered very dangerous on account of the occasional breaking of ropes and the platforms falling.

"Elevator" inherently means "safety," and the word "elevator" came about when the hoist was made safe. Unlike the automobile, which was made for speed and more speed before inventive genius was applied to proper brakes, the elevator came into existence through the invention of brakes. Mr. Otis invented the elevator through his device which would grip the guide rails in case the hoisting ropes broke, and thereby made the lifts safe for passenger use, where heretofore they had been used almost entirely for lifting equipment and produce.

In 1853 came Otis's big opportunity when he exhibited this new safety device at the Crystal Palace Exhibition in New York. He gave practical demonstrations of its safety by standing on the platform at the top of the run and cutting the rope. A few wondering heads gathered about Mr. Otis while he demonstrated his machine, but the scoffers



Elisha G. Otis

laughed and incredulity was rampant. As people gathered along the banks of the Hudson to watch Fulton's *Folly* and cried "get a sail," so Otis probably heard such expressions as "walk up" or "use the stairs." We *do* know that he encountered the usual hardships that follow in the wake of every accomplishment.

In reporting this event, *The New York Tribune* of that day had this to say: "Machinery at the Crystal Palace—extending our sketches of new machinery we may commence by alluding to an Elevator, or a machine for hoisting goods, (exhibited by Mr. E. G. Otis of Yonkers, N. Y.) which attracts attention both by its prominent position and the apparent daring of the inventor, who, as he rides up and down on the platform, occasionally cuts the rope by which it is supported. There are two points in which this is superior to the hoisting apparatus in general use; first, the convenient arrangement of the 'belt-shipper,' and second the provisions for perfect safety in case of accident." *The Scientific American*, of the same period, says: "If the rope should break, the platform will be sustained and no injury or accident can possibly occur. This excellent platform elevator was on exhibition at the Crystal Palace during the past season and was much admired."

Mr. Otis was born in Halifax, Vermont, on August 13, 1811, and lived there on a farm until he was nineteen. His character and life were shaped by the rigor of his early surroundings. Brought up among the Green Mountains by frugal parents, he enjoys the same halo that surrounds most captains of early American history. Besides the land they lived on, his family's chief possessions consisted of the potter's wheel, the hand loom, the crude lathe and the rough forge.

Young Otis's first business venture was the manufacture of wagons and sleighs, in partnership with a friend. After building about twenty-five, the local market was well supplied, and so, at nineteen, he left his home and went to Troy, N. Y., which took him three days by horse and wagon. Here he engaged in making wood-turning lathes. After several years he became somewhat discouraged at his prospects, and, with $150 in his pocket, took the boat to New York. On the boat ride down the river, the steering chains made so much noise that they kept him awake all night, so he immediately planned and sketched a steam steering gear which later proved successful.

Mr. Otis then went to Bergen, N. J., where he acted as a mechanical superintendent for a furniture factory, owned by a partner in the Troy concern. Later he went to Yonkers, where the important phase of his life was to take place.

After his success at the Crystal Palace—and, despite considerable criticism, it was a practical as well as an inventive success—Mr. Otis designed and erected, in 1857, the first passenger elevator, which was located in the store of E. V. Haughtwout & Co., on the northwest corner of Broome Street and Broadway, in New York. The honor of being the first passenger elevator is sometimes claimed for the vertical screw railway installed in the old Fifth Avenue Hotel in New York about 1859, but

this claim is unfounded. As orders came in after his public demonstrations, Mr. Otis opened up shop, known as the "Union Elevator Works and General Machinery Depot" at 117 Franklin Street, New York, which was, as his circular reads, "second block West from the International Hotel and Taylor's Broadway Saloons." Among his early customers were men like B. T. Babbitt of soap fame, and Isaac Singer of sewing-machine fame. His announcement states that "Otis' Improved Platform Elevators are for steam, water, hand or other power, so constructed that if the rope breaks the platform cannot fall . . . suitable for Mills, Factories, Hotels, Hospitals, Laundries, Bakeries, Printing Offices, Book-Binderies, Sugarhouses, etc."

His smallest elevator, for lifting 500 pounds, sold for $350; his largest, for lifting 8000 pounds, sold for $750. Some of his customers included Lowerie, Hawley & Co., Nunns & Clark, Brooklyn Flint Glass Co., Passaic Mining & Manufacturing Co., Steinway & Sons, and Cox, Richardson & Boynton. He had installations in Baltimore, Newburgh, Cincinnati, Chicago, Syracuse, and even as far south as Charleston and New Orleans.

In his advertising promotion, Mr. Otis stressed the fact that "twelve men were killed in this city within four years with the old kind, and not one killed or hurt with Otis's Excelsior Elevators." His literature contained a large number of the highest personal endorsements. Mr. Otis was well known for keeping his business file in his huge pocket-book, which he carried with him at all times. He was an inexhaustible worker, of unquestioned honesty, and had all the personal qualities of the inventor. Besides the elevator, he applied for patents on a rotary bake-oven, a brake for freight cars, and a lift-bridge. He was more of an inventor and engineer than a business man, and died leaving little except his business.

Mr. Otis married twice and had two sons by his first marriage, Charles R. and Norton P., who carried on with the business after his death under the name of Otis Brothers & Co. A grandson, Sidney Otis, is now active in the business. Elisha Otis's life outside his business was relatively uneventful except for his ardent support of the Abolition Party. He was a personal friend of John Brown and, strangely enough, had a striking likeness to Brown. During a trip South, he was mistaken for John Brown and was arrested in Charleston, W. Va., and kept under guard for some time, until friends proved his identity.

On the same day, in April, 1861, that the Southerners trained their guns on Fort Sumter, Elisha Otis died, at the beginning of the era of great building in America. His sons carried on his business in Yonkers, and in 1872 the first geared hydraulic elevator was installed, and they soon developed this type with speeds that made twenty-story buildings feasible. Later they experimented with the electric elevator in collaboration with Rudolph Eickemeyer (one of the pioneers in the development of the electric motor) who at that time had taken into his shop a young immigrant by the name of Charles Steinmetz, who was later to become world famous in the field of electric development.

The first successful electric elevator was installed in 1889 by Otis Brothers and was operated successfully until it was removed thirty years later when the building was torn down. Improvements were continually made on the electric elevator until the latest great invention in 1924 brought into use the Otis Signal Control Elevator, making possible speeds from 700 to 1200 or more feet per minute. From its crude beginnings in Yonkers, the organization started by Mr. Otis now covers the world as the Otis Elevator Company and its associated concerns.

The building industry owes a great deal to the genius of Mr. Otis and his successors, as it is self-evident that elevators, and the progress in steel construction, have made the skylines of today possible. Every day in New York City more people ride on elevators than use subways, elevateds, and buses combined.

PAINT: Its Modern Technology

By C. Richard Forrester

PAINT may be defined as a self-hardening, adhesive fluid consisting of particles of pigment suspended in liquid, which will form a decorative or protective coating on the surface to which it is applied. Until the beginning of the century the architect knew and specified the component materials as lead and oil. They had been in accepted usage for hundreds of years, and the substitution of any other material would have been little short of heresy. In the brief period of a generation, many new materials have been introduced, until today the task of selecting a paint for a given surface has become a very specialized matter.

The change began when individual enterprise undertook to supplant dry ground pigments, or pigments ground in oil, with a ready-mixed paint sold in cans. The problem of preventing the different materials from separating, due to their varying specific gravities, or from hardening, necessitated research, and the first step, accomplished by Americans, was made with the discovery that silicate of soda, mixed with the linseed oil, permitted a permanent solution. That zinc oxide has since displaced the silicate of soda for this purpose is of little importance. Ready-mixed paints had been made a practical reality, and manufacturers were soon thrown into keen competition, each striving to improve his own individual product.

The second step was fostered by the quantity of lumber employed in American architecture. The historic use of paint has based its importance upon decorative effect, which was only natural, for brick and stone, the principal European building materials, were of a permanent nature. In this country, however, a superabundant supply of timber had made wood a very important structural element indeed, but one which deteriorated upon exposure. The manufacturers were quick to see the importance of this, and began to emphasize the use of

paint as a protective rather than a decorative coating. The introduction of iron and steel into the building world augmented this need, and a demand was created for specialized paints and permanent finishes. This demand, coupled with the discovery of synthetic products, and the addition of "trade names" has been responsible for the complication of the field today. The architect can no longer specify paints with the old assurance of positive knowledge, and the need has arisen for a modern technology sufficiently broad to embrace the entire range of paints, but at the same time simplified to an easy working basis.

Analysis of Paints

All paints may be reduced to a similar analysis. They consist of:

1. The pigment.
2. The vehicle or liquid conveyer which latter may be broken down into three component elements:
   (*a*) The drying oil.
   (*b*) The drier.
   (*c*) The volatile thinner.

The Theory of Paints

Again, all paints have a similar theory, and it is only the different materials used to fulfill the various functions which make one preferable to another, either in finish or protective quality, for a given purpose. The drying oil provides a binder for the pigment, the drier accelerates the action, and the volatile thinner is provided to give the paint the required consistency for ease of application. This latter evaporates almost immediately from the painted surface, and leaves behind the pigment and oil mixture as a wet coating. The oil, absorbing oxygen from the air, gradually dries into an elastic skin which adheres firmly to the surface and holds the pigment in place.

The Pigment

The pigment is responsible for not only the desired color, but for the covering capacity of the paint as well. Indeed, the body and durability of the paint is largely dependent upon the pigments used, for while oil is often referred to as the life of the paint, this is not altogether true. An oil film has very little durability, and the pigment added to it is largely responsible for its hard surface and its resistance to air and water.

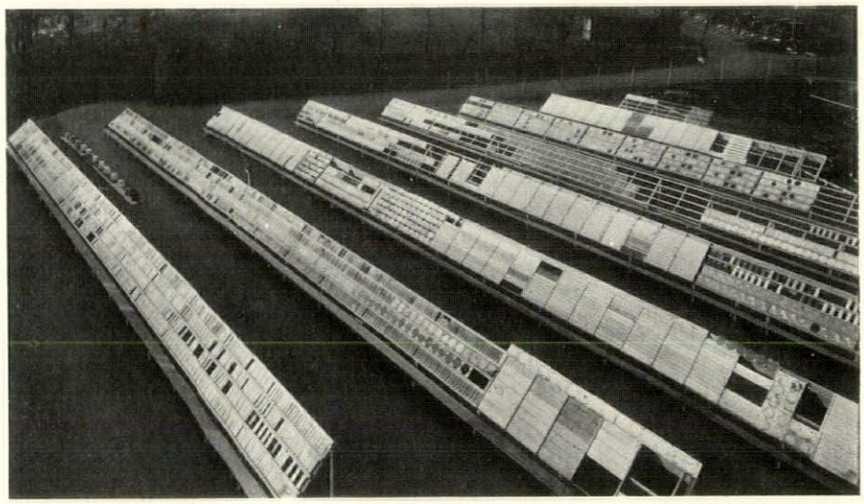
White, which is the weakest and most perishable of all the colors, is the only pigment of real concern to the architect, for the time-honored use of white lead has given way very considerably because of its many disadvantages. It is extremely poisonous, dries soft, is prone to chalking, darkens with age and becomes discolored when exposed to the fumes of sulphuretted hydrogen, which exists in the atmosphere of most cities. It is rapidly being discarded as a pure pigment, but its obscuring powers and smooth flowing qualities have maintained for it a place among the white pigments when used in conjunction with another that neutralizes its disadvantages.

The search for superior materials has brought into common usage zinc oxide, lithopone, titanium white, and white oxide of antimony. Of these, zinc oxide is the best known, and it has been proved to be a very adequate and satisfactory substitute. It is of a purer white than the lead, and has superior spreading powers, but it is not so opaque. It is very frequently used with white lead.

Titanium white is the most promising of the new pigments. Introduced into the paint world in the second decade of the present century, it has already come into prominent use, due to its high opacity, which exceeds even white lead, and to its remarkable permanency. When used with zinc white in a vehicle of heat-treated linseed oil or wood oil varnish it provides an excellent and durable paint, suitable for exterior use.

Inert Fillers and Extenders

Paint manufacturers have been prone to cover up their use of inert fillers and extenders, and in consequence they are considered by many as a diluent of the pigment. This is not altogether true, for nearly all mixed paints contain at least a small proportion of them, and they are used to fulfill a very definite purpose. In some instances, a pure pigment is too light to supply the proper body, and in other cases the reverse is true. Again, the pigment may be too costly or too concentrated to use alone. Inert fillers and extenders in commercial paints cannot be considered as dishonest substitution, therefore, unless they are used in excessive quantities, which frequently happens in so-called "second-grade" paints, for they have been found necessary; and while they may, and often do, reduce the cost of the paint, they frequently improve the quality and practicability. The principal inert fillers used are: barytes, barium sulphates, kaolin, charcoal, barium carbonates, white mineral primer, silica, asbestine, gypsum, clay.



Reputable manufacturers test the durability of their product on "paint farms," under actual weather conditions

The Vehicle

The drying oils are limited in quantity, for while nearly all oils are waterproof, there are few that will solidify into a hard, permanent film. This quality is the basic requirement, and the oils that possess it are known as fixed oils.

Linseed is the oil most frequently used for this purpose. Heat-treated and blown linseed oils are sometimes

added to increase the durability and wearing qualities of the paint. Flax and poppyseed oils have the same oxidizing properties but their cost has retarded their general use.

Another widely used vehicle is Chinese wood oil (Tung oil) varnish, obtained from the wood oil tree in China, and it is used in the preparation of paints that dry with a high glossy finish. Fish oil, obtained from menhaden, and refined, is sometimes used as a substitute for linseed oil.

While linseed oil dries by oxidation, siccatifs are usually added to accelerate the action. There are two classes of such driers, oil and rosin. The former are manufactured by heating linseed oil with a salt of oxide of lead and manganese to a very high temperature and then reducing the mixture with turpentine or benzine or both. The latter, also called Japan driers, consist of various metallic salts or bases fused with rosin or linseed oils and reduced with benzine or turpentine. This type is usually considered to be inferior.

Turpentine is the volatile thinner in most frequent use, but benzine or benzol have been extensively used to replace it. The latter acts both as a diluent and a liquid drier and is very much cheaper to use but does not necessarily produce an inferior product.

General Classification of Paints

The paints available on the market, and often disguised by "trade names," can readily be reduced to the following general classification:

1. Oil paints.
2. Enamel or varnish paints.
3. Flat paints.
4. Anti-corrosive paints.
5. Cellulose paints.
6. Metallic paints.
7. Fireproof paints.

Oil Paints

Oil paint is the good old-fashioned, garden variety of house paint, seen and used every day both for interior and exterior work. It dries with a medium or low gloss finish, and is dependable and durable under nearly all circumstances. It is the direct descendant of the universal lead and oil of a generation ago, and it still uses the oil vehicle. Its adaptability for interior and exterior use is governed by the pigment employed and by the proportion of oil and turpentine which it contains.

Enamel or Varnish Paints

This type is made by grinding the pigment in a varnish vehicle. It can be divided under two headings, dependent upon the medium used.

1. Rosin varnish enamels.
2. Copal varnish enamels.

The enamels made of the rosin varnishes dry with a high glossy surface, in from two to four hours, but are brittle and non-durable, except for interior use. The second type are slow drying, taking from eighteen to twenty hours, but they stand up under the severest conditions. They have a similar finish to the rosin varnishes, but are suitable for both interior and exterior use.

Flat Paints

Flat paint is technically a flat-drying enamel, and differs from the copal varnish paints in that it contains less varnish and more turpentine. They dry with a pleasing mat finish, often enhanced by the addition of wax to the vehicle, but are suitable only for interior use.

Anti-Corrosive Paints

This type falls under a number of different headings, and is used primarily for protecting iron and steel from rusting. The best known is undoubtedly red lead mixed with linseed oil. Until recently this type had to be prepared immediately before using, as the red lead settled into a hard mass upon standing, but recent investigations have developed a permanent red-lead paint.

Nevertheless, this material is rapidly being replaced by graphite, red oxide, and basic sulphate of lead paints. They have excellent anti-corrosive qualities, and are cheaper to use. They are made of an asphalt or bitumen base dissolved in a solution of naphtha or coal tar. They are usually black, but the introduction of a strong staining pigment allows of other colors as well.

Cellulose Paints or Lacquers

These lacquers consist of a pigment suspended in a vehicle made of nitrocellulose dissolved in suitable solvents. They are quick drying, tough and durable, and are not affected by moisture, steam, or extremes in heat and cold. They may be used on all woodwork, old or new, metal, and on furniture, floors, and walls. Their popularity has been very much augmented by their quick-drying properties, and they are almost invariably used where it is necessary to finish work expeditiously. They are highly inflammable.

Metallic Paints

Metallic paints are prepared by mixing finely powdered metals or their alloys with a copal or celluloid varnish. In the past they have been used primarily for imitative purposes, but aluminum paint is rapidly coming into favor as a protective undercoating for wood and metal. They are heat resisting, and in this connection it should be remembered that they reduce the heat-diffracting index when used on radiators, pipes, etc., as an outer coating.

Fireproof Paints

Fireproof paints are at best mildly fire retarding, and consist of an ordinary oil paint containing a proportion of fine asbestos, borax, sodium tungstate, or other fire-resisting materials. They are manufactured for use on inflammable surfaces, such as composition board and wood, but as they protect only the surface they do not prevent the interior from burning if subjected to sufficient heat.

In its final analysis the paint field is not nearly so complicated as it might seem. The principal difficulty occurs where unscrupulous manufacturers substitute unproven or even inferior products to cheapen the costs of "second-grade" paints. No danger could be easier to obviate. Reputable companies maintain technical laboratories for experimental purposes. Complex tests are carried on with accurate scientific instruments: gloss, drying time, elasticity, water resistance, and durability are all computed by mechanical means.

As further protection against an inferior product, proving grounds are maintained throughout the country, where painted panels may be tested under actual climatic conditions, and the finish studied to determine its endurance under actual weather conditions.

Thus, if the task of the architect in specifying paint requires more thought than it did a generation ago, he has gained, nevertheless, an assurance of a more lasting and satisfactory job, with a wider gamut of decorative finishes.

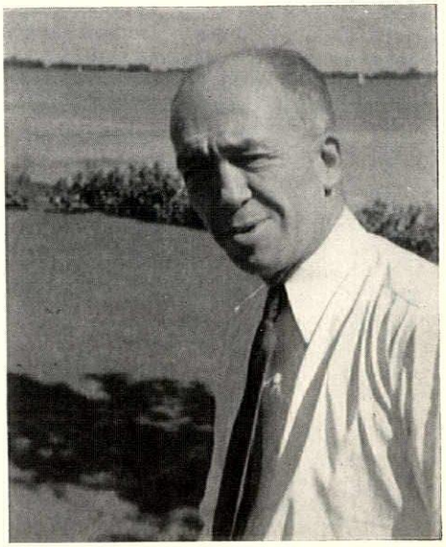
You may not, at first glance, recognize the gentleman here portrayed, for the drawing was made at Barbizon in the spring of 1893 by the late Evarts Tracy. The subject was, and still is, no other than a past-president of the A. I. A. and the first president of the Construction League of the United States—Robert D. Kohn

Your guess as to what Arthur Loomis Harmon is doing here, and why, is certainly as good as ours. He may be scrutinizing the top of an imaginary building higher than his firm's Empire State Building—or he may be merely —well, it's your guess

Usually, according to our own observations, associates in an architectural office are likely to separate as widely as possible when they go out to play. Yet here we have two of them out on a canoe trip in the Canadian wilds, and apparently enjoying one another's company—H. R. Dowswell and Richmond H. Shreve

Architects and Avocations

The digressionist activities of Elisabeth Coit, A. I. A., are somewhat varied, including wood chopping, water-color sketching, and carpentry, but her friends seem to derive most amusement from her playing of the ocarina



We are told that D. Allen Wright, of Detroit, wields a mean helm in small-boat sailing, when he escapes his clients, but he insists that architecture is one of his hobbies, even though it occupies much of his time and affords him a living

MAY 1936

Building Products' News

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Buckeye Conduit

Conduit Reference Book No. 3, published in answer to unprecedented demand for information regarding Youngstown Buckeye Conduit. Manufactured from the ore entirely by one organization which makes the iron, converts it into steel, and manufactures the pipe in its own Tube Mills. In addition to useful tables, engineering data, and illustrations, a brief description of the manufacture of Conduit from ore to finished product included. Youngstown Sheet & Tube Company. For further data, see page 11. **A. 509**

Chlorine and Ammonia Control Apparatus

Visible Vacuum Chlorinator, Chlorometer, Semi-Vacuum Chlorinator, the Chloro-Clock, the Lavel Process for Automatic Production of Sodium Hypochlorite Sterilizing Solution, Dry Chemical Feeder, Automatic Vacuum Solution Feed Chlorinator, Chlorine in Sewage Treatment, Automatic Flashers, and many other W&T activities, with specifications, tables, illustrations, and descriptions. Wallace & Tiernan Co., Inc. For further data see page 15. **A. 510**

Building for the Future

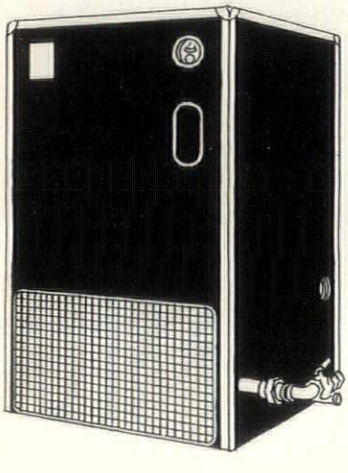
Complete discussion of Insulation, what it means, when to use it, how to do it, application details, its use as sheathing, as a plaster base, as an interior decoration and its use as an insulation for farm buildings, for commercial roofs, for ice and cold-storage plants. Check list of Insulite products also included. Insulite Co., Minneapolis. For further data see page 10. **A. 511**

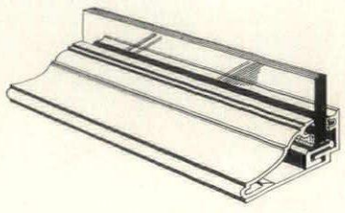
NO-D-K

Highly concentrated hardwood creosote oil with natural affinity for wood not possessed by other types of preservatives. Dark brown finish. Unusual depth of penetration which affords maximum protection. High boiling point and insoluble in water. Non-caustic. May be sprayed, used as a dip, or applied with brush. Description, discussion of uses and advantages, and methods of applying. Tennessee Eastman Corp., Kingsport, Tenn. For further data see page 24. **A. 512**

Dependable Heating Equipment

Catalog No. 73 includes tables of capacities and measurements of various series of boilers, so assembled that comparative ratings and sizes are read at a glance. Includes three types of coal-fired boilers, three of oil-fired, a smokeless, square, unjacketed boiler, welded steel boilers, round and square hot-water boilers, gas-fired boilers, three types of radiators and the Burnham Specialties. Burnham Boiler Corp. For further data see page 22. **A. 513**





Cushion-Grip Sash

New style sensation in metal store-front construction created by Pittsburgh Plate Glass Company—a style refreshingly different, enduring, distinctive. Plainly exhibited in all mouldings is a pleasing harmony and relationship of design. Each member extruded with clearly defined contours and sufficient strength to resist severe abuse. Paramount of many important features is double yielding cushion grip on glass—gentle and safe as a finger grip—positive as a vise. Diagrams, description, half-size details. File No. 26b1. For further data see page 21. **A. 514**

Compact Lamp Assembly

General Electric Company's Appliance and Merchandise Department, Bridgeport, has introduced compact lamp assembly, easily attachable to G-E Commerce model electric clock, which consists of cordset, a 7½ watt bulb, and a shaded fixture clamping over back edge of clock case directly above numeral twelve. Convenient means of illuminating clock. For further data see page 3. **A. 515**

Simplified Design of Concrete Floor Systems

Provides time saver in designing all types of concrete floors and quick means of determining relative economy of various systems. Formulas and tables in common use included together with safe load tables for one and two way solid slab and ribbed slab types. Description of each system given and merits of each under various conditions enumerated. Portland Cement Assoc. For further data see page 13. **A. 516**

No. 2614

New drinking fountain, designed for schools and public installations, affords maximum in convenience as well as sanitation. Glass filler gives it double purpose; patented two-stream projector and automatic stream control for protection against contamination. Halsey W. Taylor Co. For further data see page 22. **A. 517**

Built-Up Roofing

A. I. A. File 12-13-1 contains over thirty Ru-Ber-Oid Built-Up Roof specifications, including multiple layers of asbestos, tarred or asphalt felt, permitting selection of roof which meets conditions of climate, roof design, unusual wear, life of building and proximity to fire hazard. The Ruberoid Co. For further data see page 13. **A. 518**

Castell

Castell Drawing Pencils come in eighteen positively accurate degrees. The No. 9022 "Castell" Artist's Refill Pencil and No. 9030 leads in sixteen degrees. A. W. Faber Co. See page 20 for further data. **A. 519**

Corkanstele

Technical data, general specifications and method of handling, photographs, history, industry and uses, development, explanation of insulation, FHA ruling on Corkanstele construction, letters of comment from experienced users, and isometrical drawing of Corkanstele construction, assembled for technicians, developers, contractors, builders, realtors and architects. For further data see page 26. **A. 520**

Specials

Mr. Garden, of the Old Virginia Brick Company, says he isn't "powerful keen about making specials—but nevertheless will do it for you architects." He says he wants to help in the matter of special Virginians because he takes such pride in his brick, and will send you all the information you want. For further data see page 12. **A. 521**

Sanguine Sticks

Koh-I-Noor Pencil Co., Inc., have prepared special leaflet in true color illustrating Sanguine Sticks, which are made in three degrees, 1, 2 and 3, also in pencil form and lead form. For further data see page 23. **A. 522**

F-HB-4B

F and HB are for thin lines close together, but will also yield rich, bold blacks on any paper with some degree of "tooth." 4B is softer, yielding luscious blacks, but, when sharpened, makes thin lines as well. Eberhard Faber Pencil Co. For further data see page 8. **A. 523**

Carpet Counsel

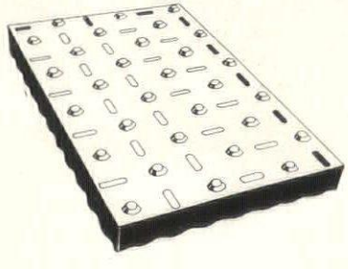
They say "the Admiral has never been to sea," but Bigelow-Sanford carpets are confirmed sailors, having been specified by the architects, because of their attractive appearance and wearing qualities, in the four latest Grace Line California ships. The Contract Department is anxious to tell you of the many and varied carpet problems they have solved and to help you with your carpet specifications. For further data see page 19. **A. 524**

Time-Tested School Supplies

Sterling Lifelong Blackboards for every purpose, Velvastone Blackboards, and Old Reliable Hyloplate Blackboards, installations, specifications, details and technical data, as well as diagrams and two samples of blackboard. Weber Costello Co. For further data see page 22. **A. 525**

Steel Paving Plates

Illustrated folder No. 354 describes two new types of paving plates designed for use on roadways, plant floors, loading platforms and docks. Suitable sketches provide instruction details for installation. Bethlehem Steel Co. For further data see pages 6 and 7. **A. 526**



Insulating Cane Board

Application instructions and specifications for sheathing and exterior finish, floors and roofs, for interiors, as sound-quieting applications, for painting and for decorating. Designs, cross-sections. The Celotex Corp. For further data see 4th Cover. **A. 527**

50 Series

General construction of Hoffman 50 Series Float and Thermostatic Drip Traps, factory test, applications, capacities, weights, sizes, dimensions, numbered drawing, specifications. For further data see 3d Cover. **A. 528**

Catalog T

Presents information of interest and service regarding leading types of Sedgwick Dumbwaiters and Elevators. Typical layouts, tabulated dimensions, specifications and other data compiled in 32-page illustrated catalog in accordance with experience of nearly half a century. In addition, special details and descriptive matter on individual types recommended for specific requirements. Sedgwick Machine Works, 139 West 15th Street, New York City. For further data see page 25. **A. 529**

Calking Compound in Cartridges

Of comparatively recent introduction, the Pecora Cartridge Calking Gun and Cartridges containing approximately one quart of Pecora Calking Compound, are meeting with rapidly increasing favor. It is claimed that work is speeded up and that material waste is eliminated. Attractive folder. For further data see page 26. **A. 530**

Permatite

Free testing kit consisting of a piece of maple flooring, two-ounce can of Permatite, wad of steel-wool, piece of cheesecloth, together with directions for application and specifications. American Crayon Co. For further data see page 24. **A. 531**

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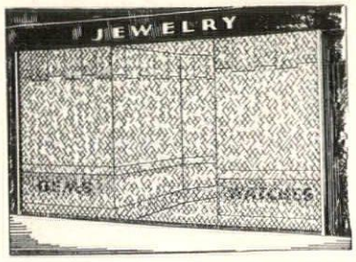

Rolling Grilles

Actual photographs of typical installations over store fronts, in revolving doors, entrances, over counters, bars, in gateways, corridors of commercial buildings, exhibit halls and schools, in front of open air markets, gas stations, etc. Construction drawings, application details and specifications. Cornell Iron Works. For further data see page 25. **A. 532**

Facts About Built-Up Roofs

Drawings show construction details of most commonly used roofs and are supplemented by a complete table setting forth the surface, underwriter's rating, materials used and weight per 100 square feet for the many types. Description of materials including asphalt or other waterproofing agent and type of felt used. Johns-Manville. For further data see 2d Cover. **A. 533**

Selling Organization

Manufacturers prepared to produce mineral wool of very long fiber. Selling organization wanted. Outstanding opportunity for concern with live sales organization. Could be in production in three months. Address Box G. O., ARCHITECTURE, Charles Scribner's Sons, New York, N. Y.

Metalflush

Gravity type hardware is nothing new as far as metal partitions are concerned, however, the modern Metalflush 1936 hardware *is* new. Differently styled, modern in line and applicable to any thickness of marble, it can be used on wood doors as well as on the Mills Company's own doors. File 28A3 describes and illustrates compartments for toilets, showers, dressing-rooms, etc., with specifications, also the new hardware. The Mills Company, Cleveland. **G. 445**

Tego-Bonded Plywood

Plywood and veneer, durable and resistant to exposure, are being made with Tego Glue Film and commercially used for numerous structural purposes. Tego is a dry resinous film forming a fused joint between layers of wood or other material after a hot pressing operation. The resultant plywood is flat, waterproof, resistant to mold, and suited to extreme exposure, according to the Resinous Products and Chemical Company. **G. 446**

New Pitch for Steep Roofs

Having demonstrated, throughout a long period of years, its exceptional qualities for built-up flat-roof construction, coal-tar pitch now enters the lists as a steep-roof material. Rigid laboratory tests of sundry description, and practical application on numerous commercial jobs, have demonstrated that this product combines all well-known waterproofing and enduring qualities of coal-tar pitch with unusual pliability and stability. The Barrett Company, New York. **G. 447**

Pierce American Boilers

For oil, gas or stoker firing, illustrated. Features, dimensions, diagrams and tables included in latest information sheet of the Pierce, Butler Radiator Corp., Syracuse. **G. 448**

Silicrete

A concrete finish made from cement and a graded all quartz aggregate in which the particle shapes are of naturally occurring subangular character, accurately graded and all passing a three-eighths-inch mesh screen. Illustrations, wearing qualities, uses, specifications, installations. Industrial Silica Corp., Youngstown. **G. 449**

Mirro-Glo

Unusual new gas heater, modern in design and execution, designed by Harold Van Doren. It is a balanced unit of blue mirror glass, chrome metal and specially heat-resistant fire-clay. All surfaces easily cleaned with soap and water. Utility Gas Appliance Corp., Columbus. **G. 450**

Self-Contained Air Conditioners

A series of entirely self-contained, independent, air-conditioning units that may be located anywhere. Units for central plant air-conditioning systems, for heavy-duty industrial service, for home use, or for railroad car service. Diagrams, specifications, illustrations. De La Vergne Engine Co., Philadelphia. **G. 451**

Residence Casements

File 16E1, metal casements and screens for homes, apartments and housing developments, suitable for all climates. Specifications, sections, details, hardware, installation photographs. J. S. Thorn Company, Philadelphia. **G. 452**

Automatically Controlled Heat

Bryan Copper Tube Boilers, high degree of economy and efficiency with oil, gas or coal. Illustrations, construction details, specifications. Bryan Steam Corp., Peru, Ind. **G. 453**

Oxwelding Brass and Bronze

Excellently illustrated booklet divided into two sections—one devoted to technique of fusion welding brass and bronze, especially for ornamental work; the other containing illustrations on welding of commercial yellow brass pipe, joint design and welding techniques. Three tables give data on welding time, material consumption and tensile strength of welds in various positions. Linde Air Products Co., New York. **G. 454**

Better Bilt Doors

Specifications, hardware, points of superiority, accessories, sizes, sections, diagrams. Better Bilt Door Co., manufacturers of overhead type doors, Philadelphia. **G. 455**

Better Hardware in Brass and Bronze

From its cover right on down through every page, the company has taken the utmost care to emphasize quality, character and finish of their hardware. Finishes, prices, weights and measurements, index. Greene Tweed Hardware Division of the Slaymaker Lock Company, Lancaster. **G. 456**

Electrical Wires and Cables

Description of manufacture, specifications for various types of wires, cables and cords, copper conductor data, sizes and tables, also installation photographs. Crescent Insulated Wire & Cable Co., Trenton. **G. 457**

Cassein-Lithopone

New flat wall finish described in The Du Pont Magazine. Designed to fill the gap between non-washable cold-water paints and more expensive flat wall paints. Dries in two hours and gives a dull, washable coating. May be applied successfully over fresh plaster. White and nine pastel shades available. E. I. Du Pont De Nemours & Co. **G. 458**

Helyx

Heavy Duty Drive Screw Nails for quick, inexpensive attachment of wood sleepers to eye beams or other steel members. Thread runs full length of shank. Drive like a nail, turn and hold like a screw, but no screwdriver necessary. Floor Screw Nails thread their way through hardwood flooring, sub-flooring and joists. The Hillwood Manufacturing Co., Cleveland. **G. 459**

The Electric Furnace-Man

Brings you modern "automatic anthracite"—maintaining uniformity of temperature from floor to ceiling. For every type of heating plant. Ratings, diagrams, descriptions. A product of Electric Furnace-Man, Inc., New York. **G. 460**

Venetian Blinds

Patented cord lock. Worm-geared tilting device. New Fascia Board a feature. Diagram, specifications, uses of Patterson Venetian Blinds, manufactured in Indiana. **G. 461**

Simp-l-on Furring System

Damp plaster walls eliminated by ingenious system invented and developed by an architect as the result of unfortunate experiences with leaky masonry walls and dissatisfaction with other types of furring. Detailed explanation of various parts which form the system, cost, plans, etc. Simplon Products Corp., New York. **G. 462**

Universal Cooler

New DeLuxe Household Refrigerators. Reduced refrigeration cost, say the makers. Various models illustrated and described with the new Down-Draft "Double" Cooling feature. Universal Cooler Corp., Detroit. **G. 463**

Prevention of Termite Damage

Information given in this pamphlet was derived largely from publications and statements issued by the United States Bureau of Entomology, and deals with the methods of preventing termites in old buildings, what to do to the ground and the lumber to prevent them in new buildings, and a discussion of the various protective agencies. The Wood Preserving Corp., Pittsburgh. **G. 464**

Insulating Firebrick

True insulating firebrick, a refractory containing the low conductivity and weight of an insulator, yet suitable for direct exposure to furnace gases at high temperatures. There are now five types, described, pictured, tabled in a new folder issued by the Babcock & Wilcox Company, New York. **G. 465**

Saving Your Eyes

Covers complete line of new Chase "Even-Glow" scientific lighting fixtures for residential use. Prices, finishes. Chase Brass & Copper Co., Waterbury. **G. 466**

Solus

Oil and Gasoline Separator for garages, filling stations, airports, cleaning establishments, dye houses, paint factories, manufacturing plants, engine rooms, etc. Explosion-proof, corrosion-proof, leak-proof, frost-proof, vibration-proof, fool-proof. Operation information, cross-sectional diagram. The Central Foundry Company, New York. **G. 467**

This Thing

Called Automatic Heating and Air Conditioning. A comprehensive account of the elements which play a part in both automatic heating and air conditioning in commercial, industrial and residential construction. Minneapolis-Honeywell Regulator Co., Minneapolis. **G. 468**

Automatic Heating with Oil

Complete, non-technical discussion of the many problems facing the purchaser of heating equipment. Fifty-eight illustrations. Subjects covered are "Fuels and Combustion," "Heating Plants," "The Distribution of Heat," "The Boiler," "The Controls," and "The Hot Water Supply." General Electric Co., Bloomfield. **G. 469**

Heat-Saver Fireplace

Complete fireplace unit, ready to install by connecting with the flue and finishing with any type of decorative facing. Employs convection principle, supplementing direct radiation with circulation of air heated against metal surfaces and discharged through registers. Detail and specification sheet also contains inlet and outlet grilles. Donley Brothers Co., Cleveland. **G. 470**

Weisway Cabinet Showers

Illustrated and descriptive catalog. Price list covering seven models of cabinet showers in vitreous porcelain or baked enamel with Foot-Grip-No-Slip vitreous porcelain receptor floor. Specifications, constructions, designs, finishes, colors, equipment, accessories, sizes, weights, details and suggested applications in homes of every size, apartments, hotels, boats, institutions and for industrial use. Henry Weis Mfg. Co., Inc., Elkhart, Ind. **G. 471**

New Copper Convectors

Departing from traditional style of copper convector enclosures which have remained practically unchanged since that style of radiation was introduced, four new types of convectors offered—Concealed, Recessed, Floor and Wall Types—with wide selection of grille designs available. Heating section all-copper fin and seamless copper tube assembly. The "split system" also included. Modine Mfg. Co., Racine, Wis. **G. 472**

Eastman Glass

An entirely new medium of decoration with ornamented glass for homes, churches, offices and theatres, for treating French doors, for windows, for arched panels, for illuminated ceilings. Colorful, distinguished, less expensive than leaded glass. File 20a7, in color. Eastman Decorators, Inc. **G. 473**

Oriental Rugs

Booklet showing photographs of some Oriental Rug installations in the principal private offices of the Equitable Trust Company of New York in their new building. Some private installations shown, also. H. Michaelyan, Inc., New York. **G. 474**

Win-Dor Extension Hinges

For casements, designed to extend sash 4 inches away from frame when casement is opened, permitting room for cleaning outside surface from the inside of room. Greatest amount of ventilation offered. Hinge of strong steel designed to reinforce corners of sash. The Casement Hardware Co., Chicago. **G. 475**

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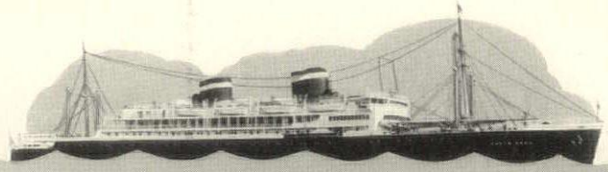
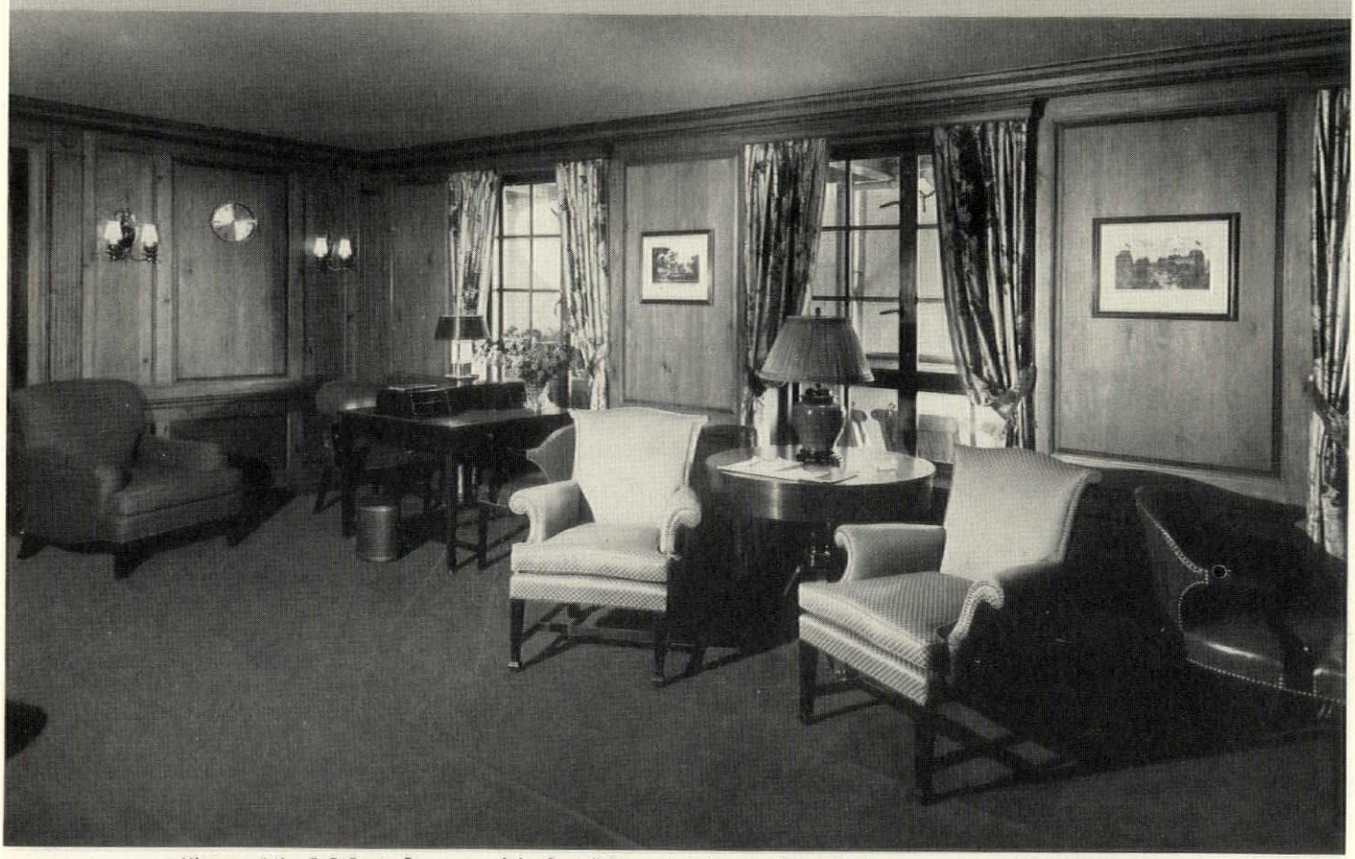


CARPET COUNSEL goes to Sea with Gibbs & Cox

Naval Architects and Marine Engineers



Library of the S. S. Santa Rosa • John Russell Pope, A. I. A. • Elsie Cobb Wilson, Inc., Interior Decorator

All four Grace Line California ships—the Santa Rosa, Santa Paula, Santa Lucia and Santa Elena—were designed by Gibbs & Cox and carpeted by Bigelow.

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The BIGELOW WEAVERS

BRANCH OFFICES AND SHOWROOMS IN 25 CITIES

The BULLETIN-BOARD

(*Continued from page 14*)

ning adviser to the cities of Hameln, Leipzig and Muenster, at the same time editing two architectural reviews in Berlin. In 1931 he advised the cities of Buenos Aires and Rosario, Argentina, in matters of city planning.

Dr. Hegemann finally came to settle in this country in 1933—one of many intellectual fugitives from Germany. Since February, 1935, Dr. Hegemann has been Associate in Architecture at Columbia University, and, since coming here, has been Visiting Professor of City Planning at the New School for Social Research. Dr. Hegemann was the author of a number of books, his latest one, "City Planning Housing," having been published on April 1.

EDWARD H. HOYT, 1868–1936

EDWARD H. HOYT, architect, practising for more than forty years in Boston, died on March 20. He was born in Ossipee, N. Y., educated in the Boston schools, and received his architectural training in the offices of Peabody & Stearns, Cabot & Chandler, and other firms. For many years he was associated with the firm of Wheelwright & Haven; in his latter years, as a partner. On the death of Edmund M. Wheelwright, the firm became Haven & Hoyt. During this period, the firm designed many buildings in New England and the South, among them the Massachusetts General Hospital, the Faulkner Hospital, the Boston Opera House, and the Boston Conservatory of Music.

Mr. Hoyt was a charter member of the Boston Architectural Club, a former vice-president of the Boston Society of Architects, and a Fellow of the American Institute of Architects.

ALFRED J. S. HOLTON, 1879–1936

MAJOR ALFRED J. S. HOLTON, architect, senior partner of the firm of Clinton, Russell, Holton & George, died April 6, at his home in Brooklyn after an illness of four months.

He was born in Belleville, Ontario, and received his early education in that city, coming to Brooklyn in 1897.

He became associated with the firm of Clinton & Russell, and in 1904 was made a member of the firm. Twenty-two years later he became its senior partner.

During the World War, Major Holton served in Washington, first in the Housing Division, and later in the Tank Corps.

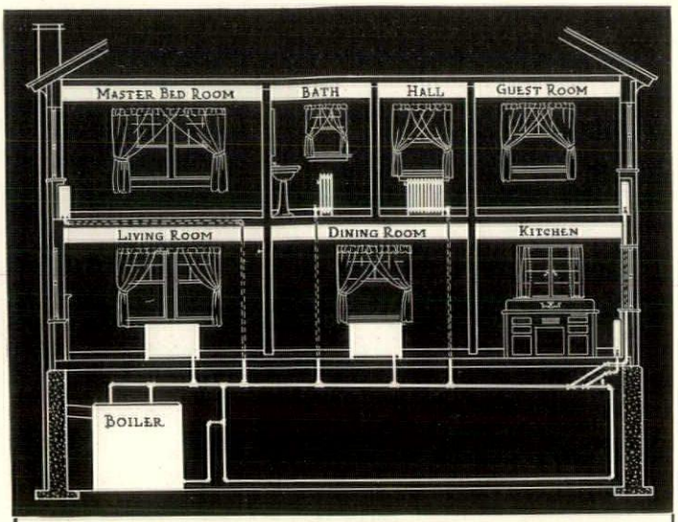
Among the many large structures designed by Major Holton's firm were: 60 Wall Tower Building, Whitehall Building, National Board of Fire Underwriters Building, New Amsterdam Casualty Building, and the Hotel Astor.

ALBERT FARWELL BEMIS, 1870–1936

ALBERT FARWELL BEMIS, known in the architectural world chiefly as the author of "The Economics of Shelter," died at Phœnix, Ariz., April 11.

Mr. Bemis was engaged in business mainly in Boston after his graduation from the Massachusetts Institute of Technology in 1893. Housing particularly, and architectural matters generally, were Mr. Bemis's avocation. In 1932 he contributed $65,000 to the fund for the restoration of Lincoln Cathedral. His work on housing in its broadest aspects is well reflected in the three-volume work published by the Technology Press.

(*Continued on page 23*)



This shows you how simple the Burnham Unit-Air Conditioner System is. The Unit-Air Conditioners are located in the living and dining rooms downstairs and the master bedroom upstairs. Rest of heating done by the Burnham Slenderized Radiators.

A Simplified Radiator System

of Air Conditioning

No one knows better than you architects, that after all is said and done there is no heating that is as satisfactory in so many ways as radiator heat. The only thing it has lacked is air-conditioning.

But now that lack has been fully met in a simple, every-way-practical way by Burnham. With the Simplified Burnham Unit-Air Conditioning System there is no more piping in the basement than with any radiator heating. Still in every way it performs the same satisfactory heating, while also filter-cleaning the air, humidifying it, and keeping it in circulation.

It is done by the Burnham Unit-Air Conditioner located in certain rooms. It takes up no more room than the average grille-enclosed radiator. Can be recessed under the windows. Costs no more than a warm-air system giving an equal performance. Has the advantage of giving both radiant and convected heat. Requires no separate boiler for hot-water supply. Send for Catalog giving facts in detail.

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Send for A. I. A. File 35-b-12 which gives Blackboard details, specifications and drawings. Address Dept. S570.

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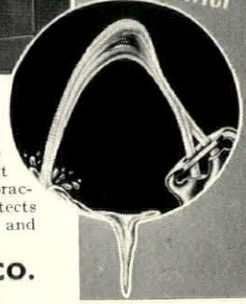

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(*Continued from page 20*)

Mr. Bemis was a life member of the corporation of The Massachusetts Institute of Technology, a former member of the Federal Reserve Bank of Boston, and in 1910 president of the M. I. T. alumni.

HARRY BAILEY COPELAND, 1871–1936

HARRY BAILEY COPELAND, architect of Boston, died April 7, at his home in Malden after a year's illness. Mr. Copeland had practised architecture in Boston for forty years, having secured his architectural education at the Massachusetts Institute of Technology.

ANDREW J. POST, 1871–1936

ANDREW JACKSON POST, builder in steel, died February 25, in New York City, after a short illness. Mr. Post was president of the firm of Post & McCord, and in that capacity directed the steel frames of many important buildings in New York City: Empire State, Chrysler, Metropolitan Tower, College of the City of New York, Hotel Pennsylvania, Standard Oil Building, Barclay-Vesey Building, and some of the Rockefeller Center group.

The firm won a Rockefeller Center steel contract in 1931 with a bid of $15,000,000, for the erection of 125,000 tons of steel, the largest single order for structural steel in building history.

Mr. Post was born in Jersey City, and was graduated in 1892 from Stevens Institute with the degree of Mechanical Engineer. He immediately joined Post & McCord, which firm had been founded in 1877 by his father, Andrew J. Post, and William H. McCord. Mr. Post became president of the firm in 1913.

He was also, among other things, treasurer of the Architects' Building at 101 Park Avenue, a member of the Executive Committee of the New York Building Congress, treasurer of the board of directors of the American Institute of Steel Construction, and president of the Iron League of New York.

PERSONAL

David H. Horn, architect, announces the opening of an office for the practice of architecture in the Rowell Building, Tulare and Van Ness, Fresno, Calif.

The architectural firm of Mundie & Jensen at 39 LaSalle Street, Chicago, Ill., founded in 1867, recently announced a change in its name to Mundie, Jensen, Bourke & Havens. Robert E. Bourke and George Havens, who have been silent partners for many years, have now been made active members; the other members being W. B. Mundie and Elmer C. Jensen.

Bernard H. Prack and Arthur E. Prack, architects, announce the formation of a partnership for the general practice of architecture, under the name of Prack & Prack, and will maintain offices in conjunction with the offices at present maintained by Bernard H. Prack, architect and engineer, in the Martin Building, N. S., Pittsburgh, Pa.

John R. Rochart, architect, former associate of the late Cass Gilbert, announces the establishment of offices at 22 East 40th Street, New York City.

Coggins & Hedlander, architects, announce the removal of their offices to the Chateau Lafayette, Boston Post Road, Greenwich, Conn.

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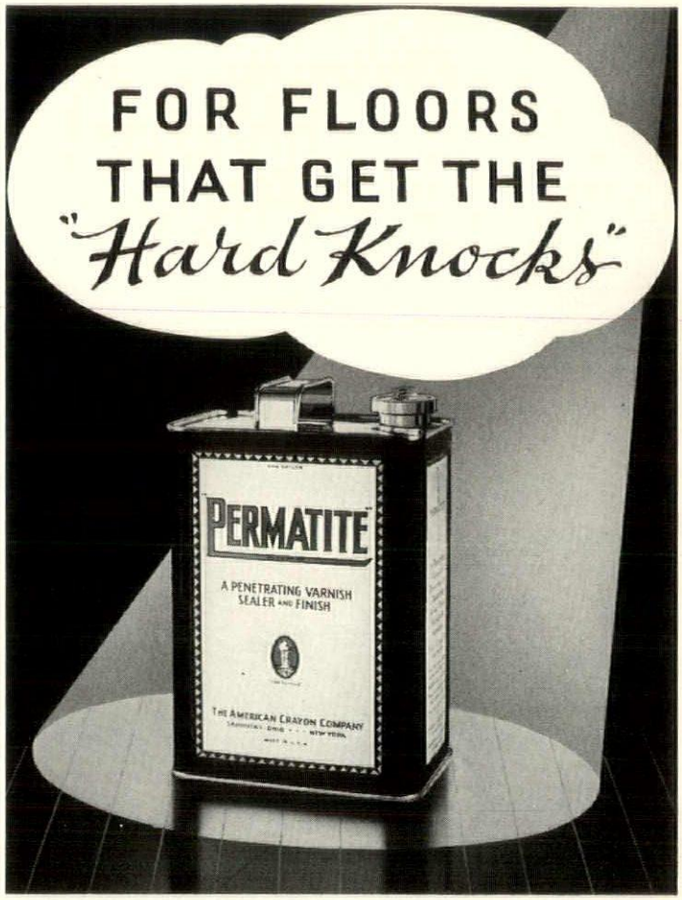

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BOOK REVIEWS

MY LIFE IN ARCHITECTURE. By RALPH ADAMS CRAM. 325 pages, 6¼ by 9¼ inches. Illustrations from photographs and drawings. Boston: 1936: Little, Brown & Company. $3.50.

The architectural profession in this country is not particularly distinguished by its ability to express itself in words. Dr. Cram, therefore, stands out like a great tree in the forest through his ability to put his thoughts on paper. Couple with this fact the extensive and varied experience of his architectural career, and you have a combination that is of compelling interest. Dr. Cram clears up many things that have long been a subject of conjecture. He writes affectionately of Bertram Goodhue and their association together—and how this came inevitably to a cleavage. Again, the change of architects for the Cathedral of St. John the Divine is clarified for many of us who have never known all the facts. Dr. Cram also talks of his own office practice, and how important have been the parts that many men played therein. All in all, it is a well-told history of an epoch in American architecture.

HARVARD CITY PLANNING STUDIES. 9. THE STEADYFLOW TRAFFIC SYSTEM. By FRITZ MALCHER. Preface by THEODORA KIMBALL HUBBARD and HENRY VINCENT HUBBARD. 91 pages, 7 by 9¾ inches. Illustrations from diagrams and plans. Cambridge, Mass.: 1935: Harvard University Press. $1.

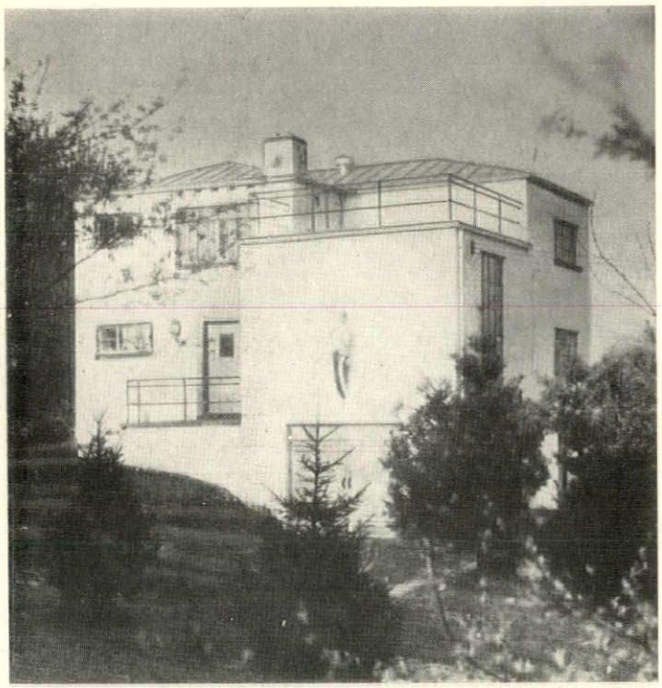
A recent addition to the excellent series from the Harvard University Press is in a way a memorial to Fritz Malcher. Friends and associates of the brilliant Viennese engineer have brought into a logical sequence the fragmentary but vastly important material accumulated in Fritz Malcher's study and practice.

THE SOUL OF ENGLAND. An Illustrated Survey of the Works of Man in the English Country. Foreword by CHARLES BRADLEY FORD. 248 pages, 5 by 7¼ inches. Illustrations from photographs, with color frontispiece. Printed in Great Britain. New York: 1936: Charles Scribner's Sons. $2.

This is a companion volume to "The Beauty of Britain," published a year ago. Whereas that volume sought to give a picture of the unexploited countryside as a picture, this volume deals rather with man's part in the development and preservation of the buildings—from which the English countryside cannot be dissociated.

PRACTICAL COURSE IN MEMORY DRAWING. By E. G. LUTZ. 213 pages, 5 by 7½ inches. Illustrations from drawings in line and wash. New York: 1936: Charles Scribner's Sons. $2.

Mr. Lutz's books on drawing now form a rather impressive shelf. In this volume he attempts to bring to the student the ability of carrying, from mind to pencil point, the visual image, without reference to model or other subject.



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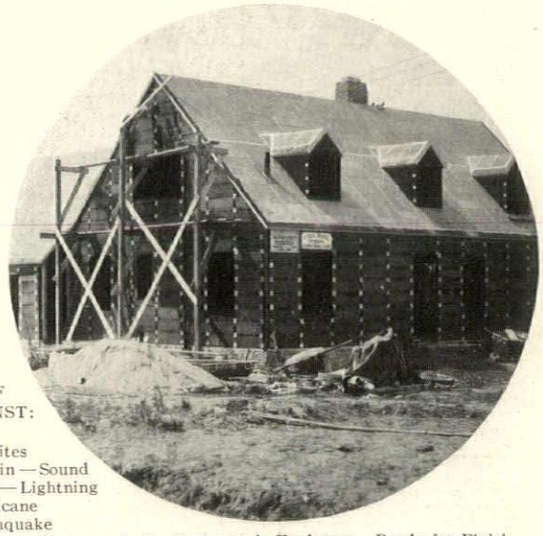

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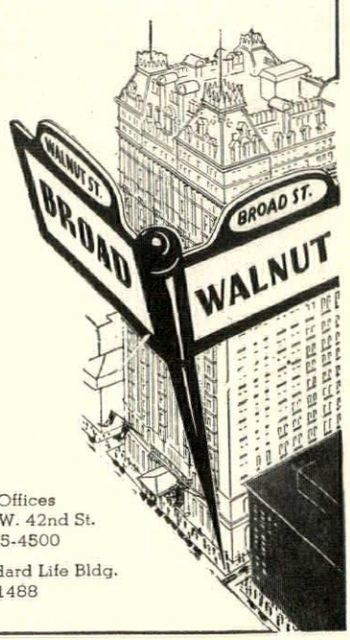

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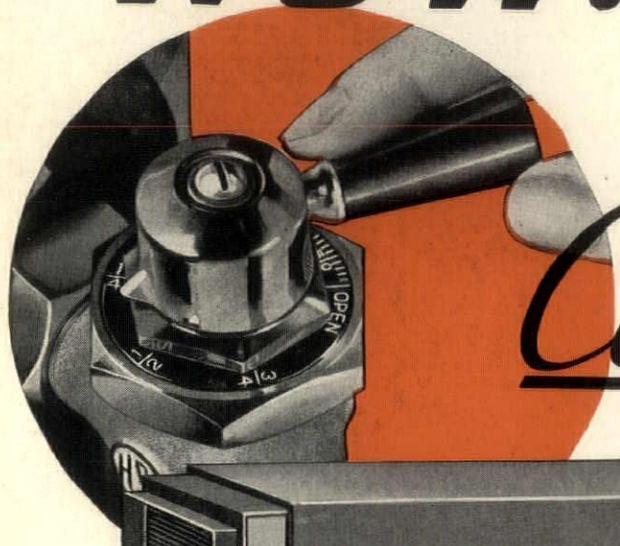

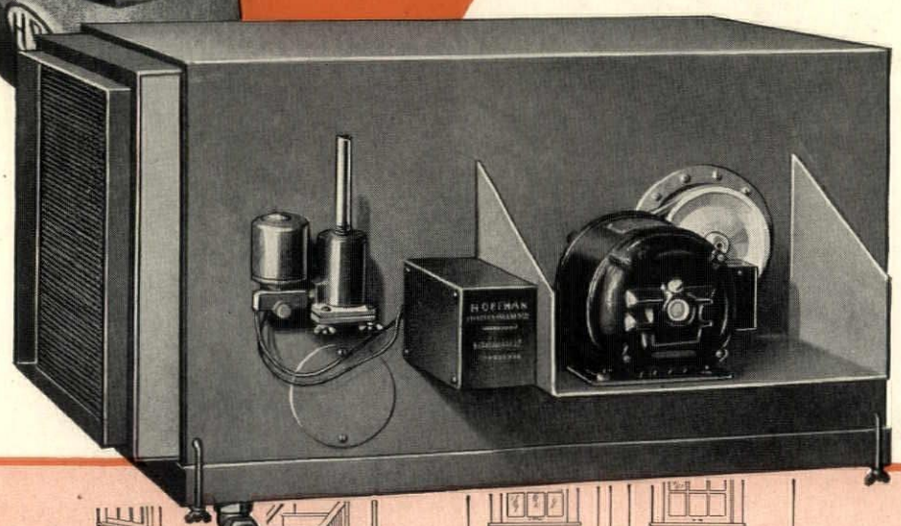

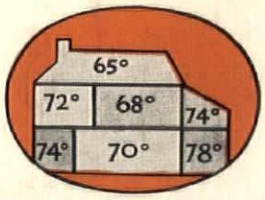

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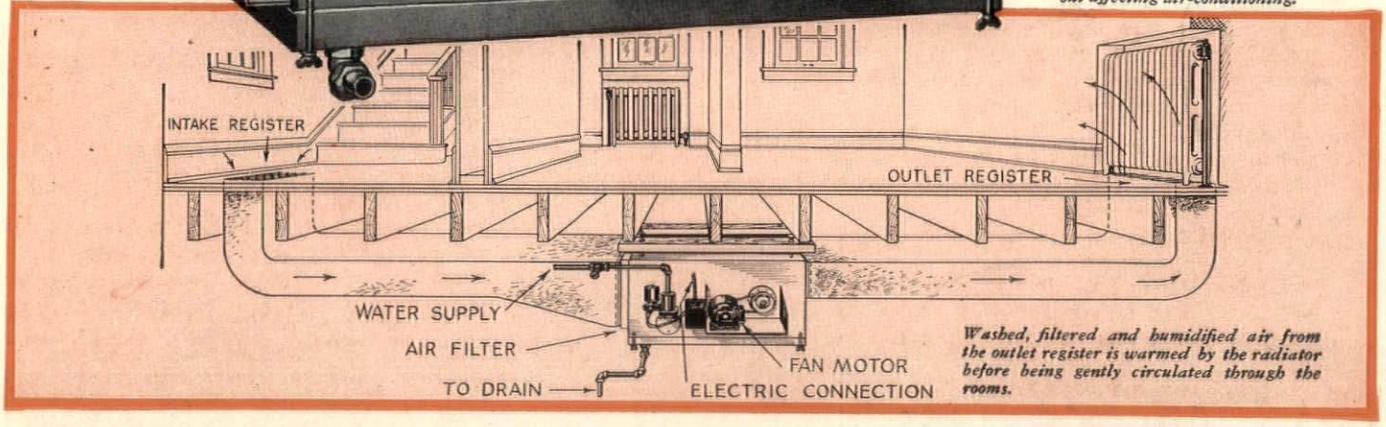

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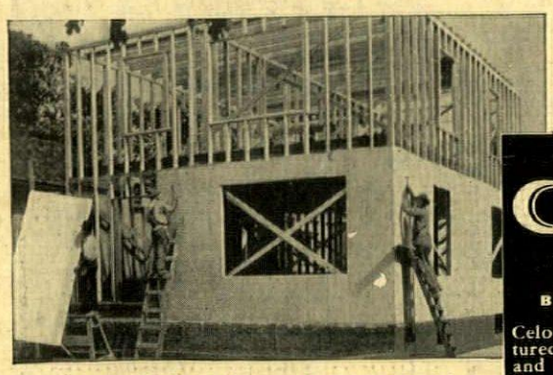

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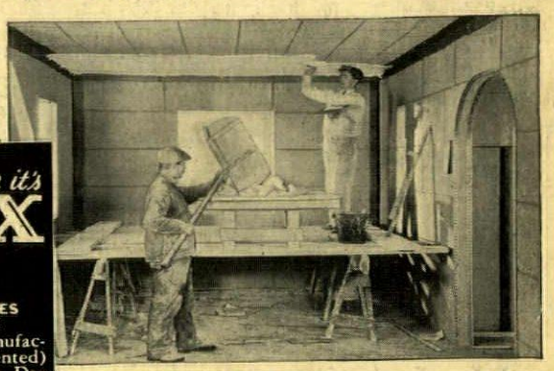

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