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THE MONTH IN BUILDING

BUILDING TRENDS. Despite European war, Building's latest statistics underline healthy trends. September contract volume remained unchanged. Presaging the seasonal slump, permit volume declined in September. (See table, right.) FHA's October mortgage insurance business held its own. In step with increased industrial production and payrolls, wholesale and retail building material prices rose to new 1939 highs. Other significant trends summarized from page 482: building trades employment, down; building wage rates, up; mortgage recordings, down; foreclosures, down; real estate bond prices, up.

BUILDING G-MANNED. Recently, the much-touted anti-trust investigation of the building industry has turned from fancy into fact:

In Cleveland, grand jury indictments have been obtained against four labor union officials and five officials of glazing companies. Charge against them is the familiar anti-trust one: Unlawful combination and conspiracy in restraint of trade. The laborites are connected with an AFL's painters, decorators, paperhangers, and glaziers' union.

In Pittsburgh, electrical contractors are charged with a conspiracy to defraud the U. S. in connection with bids for public project contracts.

In Washington, D. C. the District Court has issued indictments against a teamsters union, charging it with attempts to block construction in order to gain control over the operation of concrete-mixer trucks.

In New York City Federal investigators have stepped into a three-county inquiry of alleged local building rackets. Already obtained is the indictment of William J. Flynn, one-time Bronx Commissioner of Public Works, and six officials of AFL's Plumbers and Steamfitters Union on charges of extortion and conspiracy.

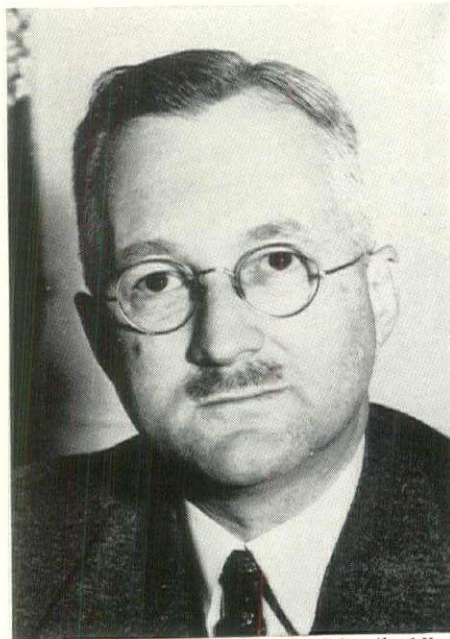
In St. Louis four AFL leaders were indicted on the basis of a 25-year-old dispute involving carpenters and machinists. One leader is William L. Hutcheson, president of the carpenters' union, vice-president of AFL.

In addition, grand juries at mid-month were actively investigating the building scene in five other of the country's largest cities (Chicago, Detroit, New Orleans, St. Louis, and San Francisco). New cities are daily being added to the list, will soon push the total up to 30.

With all this evidence of progress, the Department of Justice is mightily pleased even though it is far from sure that its indictments will stick. However, Trustbuster Thurman Arnold has more than once stated that, stick or not, his indictments will probably result in a general reduction of building costs. Also satisfying to the Department is the fact that not all the indictments involve labor unions. Bad politics would be the impression that the proceedings are against Labor alone.

But, contrary to Labor's opinion (ARCH. FORUM, Nov. 1939, p. 4), Labor is not immune from prosecution under the anti-trust act. Said Thurman Arnold fortnight ago: "... such boycotts, strikes or coercion by labor unions as have no reasonable connection with wages, hours, health, safety, speed-up system or the establishment and maintenance of the right of collective bargaining . . . will be prosecuted."

REALTOR ROUND-UP. Month ago in Los Angeles 1,700 delegates met for



NAREB'S NEWTON C. FARR

the National Association of Real Estate Boards' 32nd annual convention.

Time-honored convention custom is an optimistic presidential review of the year and an equally optimistic preview of prospects. No exception was the address of Retiring-President E. L. Ostendorf, and with good cause. He spoke before the largest gathering of realtors since the pre-depression year of 1929, and he could point to the humming activity in real estate offices the country over. Said he: "So sound is the foundation of present realty recovery that not even a European War can stop it."

PERMITS

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

	Monthly data			First nine months	
	Sept. 1939 (millions)	Comparison with		1939 (millions)	Comparison with 1938
		Aug. '39	Sept. '38		
Residential	\$87.3	-24.8%	+ 2.4%	\$852.7	+32.6%
Non-residential	57.9	+30.0	+18.9	455.6	+15.8
Additions, repairs	28.8	-12.3	+11.9	264.3	+10.3
TOTAL	174.0	-10.0	+ 9.0	1,572.6	+23.2

Elected 1940 NAREB president was Chicago's Newton C. Farr, vice president the past year of NAREB's Great Lakes region. Educated a civil engineer, President-elect Farr has been in real estate since 1912, heads his own firm—Farr and Co.

Primary concern of convention delegates was Government in Building. Adopting much the same position as in their 1938 convention (ARCH. FORUM, Dec. 1938, p. 484) they applauded the Federal Housing Administration, condemned the U. S. Housing Authority. To FHA bouquets, however, they added two suggestions. First, they are resolved that all mortgages on existing dwellings should be insured under the same terms as mortgages on new construction. (The last regular session of Congress limited insurance of existing dwellings to 25 per cent of FHA's total business). Second, they want the insurance of large scale rental projects extended to cover total rather than construction costs.

Summing up their dislike of USHA in another resolution, NAREB delegates suggested that wherever possible its operations be confined to the rehabilitation of slum property, that the projects be rented only to the lowest income groups, and that they pay local taxes just like private properties. Spur to the convention discussion of slum rehabilitation was the presence of Philadelphia Remodeler Arthur W. Binns.

Other convention highlights:

► Resolution approving the Justice Department's anti-trust investigation of the Building Industry (see column 1) following a progress report by Trustbuster Corwin Edwards.

► Report of the Committee on Commercial Districts recommending immediate action against further deterioration of business districts values.

► Speech by Chicago Title & Trust Co. President Holman D. Pettibone on war and real estate, which concluded that as long as U. S. remains neutral, real estate will remain on an even keel.

BUILDING CENSUS. New Year's bells and whistles will be the signal for 12,000 industrial enumerators to deploy throughout the U. S. and its possessions, begin gleaning for the U. S. Census Bureau more factual information on America's re-

"What is this Masonite Tempered Presdwood?"

A building board? Yes.

For walls and ceilings? Yes. Built-in furniture, too.

Does it provide permanent beauty? Yes.

Is it easy to install? Yes.

Will it save us money? Yes.

Well, let's see it. Here goes!

Home is like this when Tempered Presdwood is used for living room walls. The exposed mirror over the fireplace can be cut or saved to any size or shape. Tempered Presdwood makes the same lighting arrangement possible over the bookshelves. The walls are sure-fire. The ceiling white.

Game for anything is this transformed collar with Tempered Presdwood walls. grooved in modern vertical patterns. The built-in bar and seats are Tempered Presdwood. Excellent for use where there is apt to be dampness, because Tempered Presdwood is definitely moisture-resisting, will not warp when properly applied. It can be painted any color, or used in its natural warm-tanned finish.

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THE MONTH IN BUILDING

sources and business activities than has ever before been collected. Such will be the initial phase of a vast Decennial Census program which at later dates will include population, agriculture, occupation, unemployment, and housing.

While a detailed inventory will be taken of each and every (about 3 million) business enterprises, of particular interest to Building is the Census' coverage of the Nation's 25,000 architects and 200,000 general contractors, operative builders and special trade contractors, as well as its several thousand building material and equipment manufacturers. With the advice and assistance of leading contractors and builders, the Census Bureau has compiled a series of vital and pertinent questions to be incorporated in the special questionnaire for their branch of the industry. Each of the other Building battalions—the Government even includes mining and quarrying—will be asked its own equally probing but equally intelligent questions.

In general, queries on the construction schedule are of routine nature and have been carried over almost verbatim from the previous Business Census. They cover kind of business, work performed during 1939, and work performed by location, proprietors, firm members and members of family actively engaged in the company's work. Also, a question which, in the light of the times, has gained considerable significance: Employment and payrolls, with the charting of average employment on the 15th of each month.

Of considerable interest to architects will be the additional Census information concerning contracts or orders received, involving a breakdown of structures according to one- and two-family houses, apartments, industrial buildings, factories, mills, warehouses and commercial structures, office buildings, churches, schools, public buildings and all the rest. Still another section will be devoted to the volume of repairs and alterations. The Census will also uncover the up-to-date ratio between work done within and without the city limits. Census figures for 1935 showed that 42.5 per cent of construction work was done outside of the city in which the architectural firm's offices were located.

Information gathered from 103 enumeration areas will be relayed to the Census Office in Washington. When all reports are in, the figures will be compiled and published according to States, counties and cities of 2,500-and-more population. There will be a special compilation of sixteen metropolitan centers.

In its 1935 survey, the Census Bureau recorded 75,047 construction establishments with an aggregate turnover of \$1,622,862,000. Sixty-one per cent of this work was in buildings; the remaining 49

per cent, in highway and heavy construction. The population census of 1930 listed 22,000 architects (379 of whom were females), showed an increase of 3,500 over 1920.

The foregoing synopsis of the Census' first phase underlines the tremendous size and significance of the Bureau's 1940 undertaking—a task so complex that it can be successfully accomplished only with the utmost cooperation of everyone in Building. To assist in the rapid completion of this valuable service to the industry, THE FORUM earnestly urges that prompt cooperation be given the Bureau's enumerators. To assist Building, once it has done its part, THE FORUM promises to report and interpret the final statistics as soon as (or perhaps before) they are publicly available. Long handicapped by inadequate knowledge about itself, Building stands to gain much from the 1940 Census. Its unbiased figures will cast an interesting light in many of the industry's dark corners.

COST ROLL CALL. During last August, a five-room frame house could be built for \$5,000. Today, exactly the same house would cost \$85 more. Such are the national average dimensions of the building price rise attributable to the European War. Although the average cost increase is small, it looms large on the building horizon as a possible harbinger of future increases, needs watching to see which way it goes. To help in such tabs-keeping, THE FORUM this month does more than present the average picture. On page 475 is THE FORUM's Building Cost Index which covers local cost variations in 80 cities well spotted throughout the country. The local trends which it underlines are both more startling and more comforting than the national average. Although costs in many a city have shot far above the average, some cities actually have gone against the trend and have reported a decline in costs. Thus, a uniform price rise for building is not by any means a fact.

Behind the current price trend are materials and labor, with the former playing the leading role. A characteristic of labor costs is that they respond less quickly to an external stimulus than materials, tend to lag behind at first. Wholesale building material prices, according to the Labor Department's index, rose 5.2 per cent during September and October. Dominant factor was the cost of lumber, which moved up 7.2 per cent. However, almost all types of materials contributed. Sole exceptions: plumbing and heating and structural steel, which remained unchanged.

Important in the lumber price rise is the fact that available stocks were low when the buying wave started. In Septem-

ber, for example, stocks of oak flooring were at the lowest point of the past two years, stood 30 per cent below the level of January 1939. In contrast, the ample supply of most other materials has been a restraining factor in general price rises.

Due to a considerable lag between buying and export, it is not yet possible to draw comparisons between the volume of exports and prices. September exports of lumber and copper were down from August, while exports of steel, cement, plate glass and paints were all up sharply to new two-year highs.

MISFIRE. By loudly proclaiming that now is the time to build, the Federal Housing Administration, in effect, is either endorsing present building conditions and costs or, if it actually believes that current costs are too high, it is grossly misleading the public. At least, that is redoubtable FH Administrator Stewart McDonald's opinion. Hence, when he got wind of a proposed series of broadcasts on ways and means of building cost reduction by Harry Hopkins' Industrial Economics Division (the so-called "spark plug boys"), he showed fight. Confronting Under-secretary of Commerce Edward J. Noble, Administrator McDonald claimed that "the boys" were arbitrarily assuming that costs are guilty and were setting out to prove them so. He suggested research first, then talk, threatened to carry the controversy to the White House unless the proposed broadcasts were canceled.

Not wishing to press an inter-departmental squabble with powerful and popular FHA, Commerce took the hint, is now revamping the plans of its Industrial Economics Division. It must stick to research, or compromise with FHA. Chances are it will take the latter course.

UNKNOWN BUILDER. Depending upon observers' points of view, the Federal Government has helped—or headached—Building by the creation of a long string of alphabetical agencies: FHA, USHA, HOLC, FSA, FNMA, FHLBB, FSLIC, etc. Important but less familiar to Building than any of these is the non-alphabetical Public Buildings Administration, once a branch of the Treasury Department's Procurement Division, now—under Roosevelt II's Reorganization Plan No. 1—a part of the Federal Works Agency. It has built 40 buildings in six years, has paid private contractors many million dollars for the work, and thus deserves to be better known.

Biggest among the Public Buildings Administration's undertakings are these recent buildings—all of them in Washington, D. C.: Department of Interior, at a cost of

(Continued on page 34)

INDIVIDUALITY IN APPEARANCE WITH PRACTICAL EFFICIENCY!

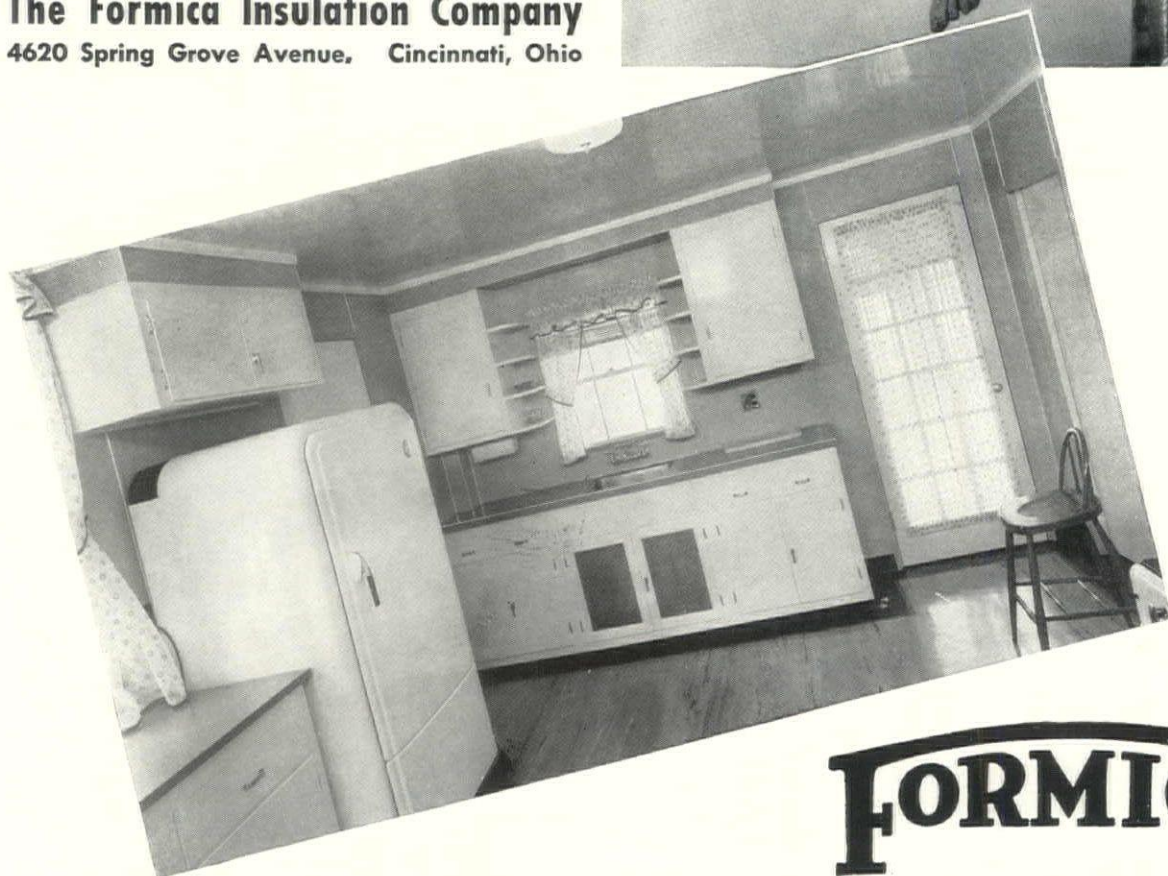
A BATHROOM whose walls are covered with Formica may be entirely individual and unlike any other bathroom anywhere. Inlays in color or metal in the Formica sheets make the widest range of decoration possible.

At the same time these handsome and modern walls are thoroughly practical. They are not spotted by liquids; they are never cracked by shifting walls; they are very easy to keep clean; the color is stable.

Such bathrooms have been used in the first class accommodations of some of the world's finest ships, like the Queen Mary, the Queen Elizabeth (now building) and the Nieuw Amsterdam.

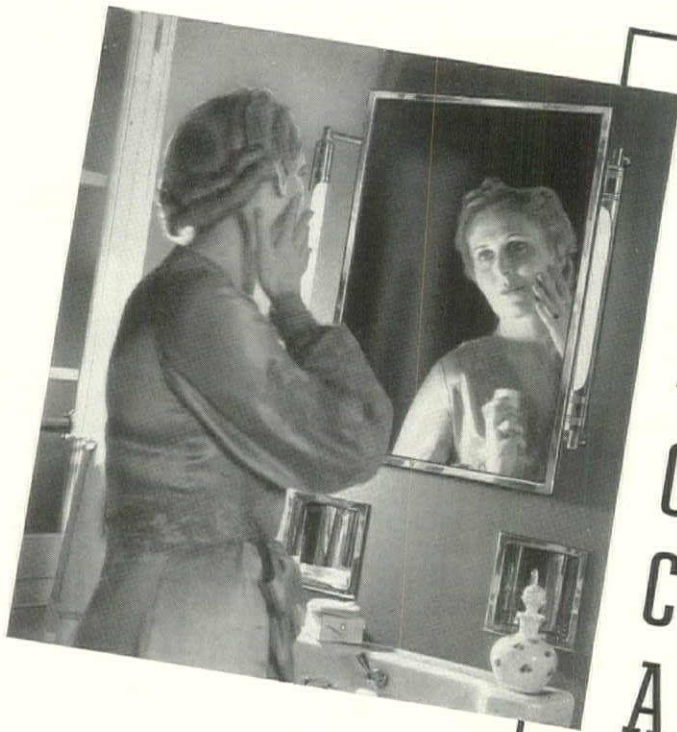
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PARKCHESTER
 METROPOLITAN LIFE'S
 50-MILLION-DOLLAR
 PARK-APARTMENT DEVELOPMENT
 CHOOSES 12,273
 CABINETS OF
 ARMCO STEEL

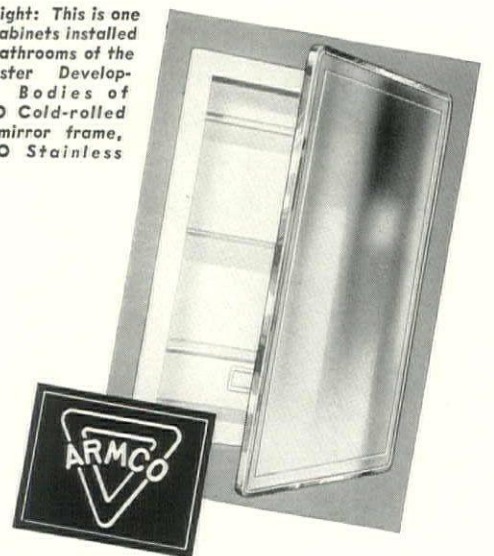


PARKCHESTER is a town within a town—a modern community planned for 40,000 persons . . . the largest single housing plan ever carried out in this country. Naturally, every care was taken by the Board of Design to make it an attractive, practical and enduring project.

An indication of this effort is the choice of metal bathroom cabinets. Wisely, the manufacturer used ARMCO Prime Cold-rolled Steel for the bodies, and ARMCO Stainless Steel for mirror frames. Metal is modern. More than that, when a high-quality metal has been formed into a cabinet and handsomely finished, the cabinet is easy to use, easy to clean—dust-proof and vermin-proof—good for the life of the building.

For use in house or apartment, your choice of cabinets of prime ARMCO Steel for kitchen and bathroom will be well justified. Shall we put you in touch with reputable cabinet manufacturers who use ARMCO metals? The American Rolling Mill Company, 2021 Curtis Street, Middletown, Ohio.

Lower right: This is one of the cabinets installed in the bathrooms of the Parkchester Development. Bodies of ARMCO Cold-rolled Steel; mirror frame, ARMCO Stainless Steel.



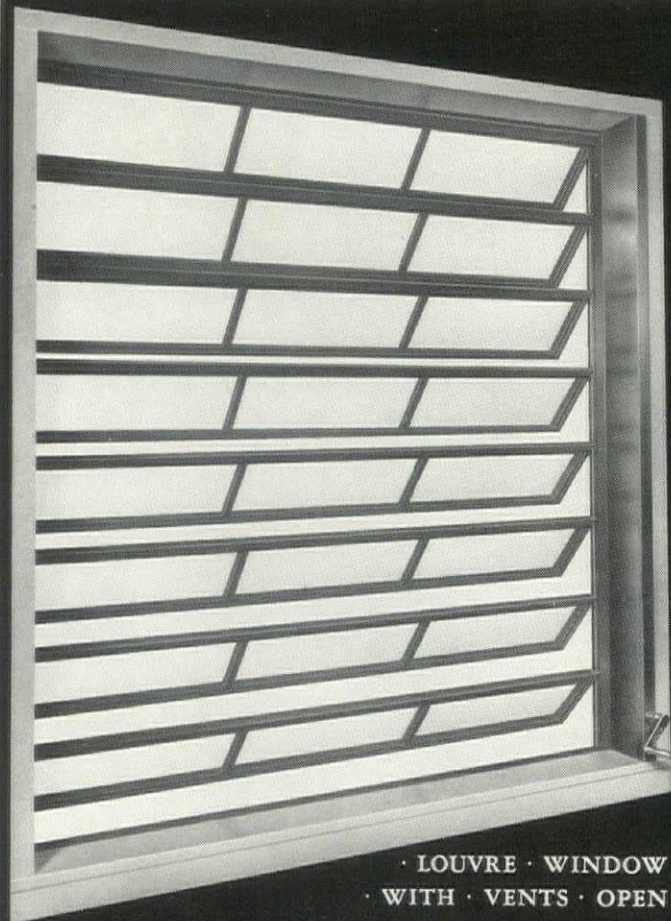
ARMCO ARCHITECTURAL SHEET METALS

HOPE'S LOUVRE WINDOW

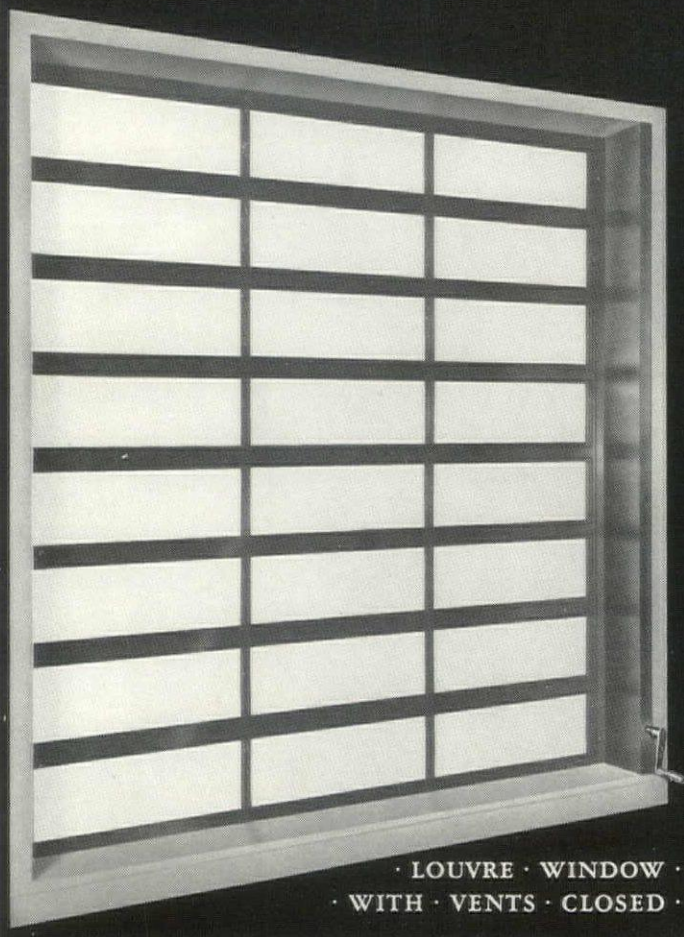
Features

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Jamestown, New York

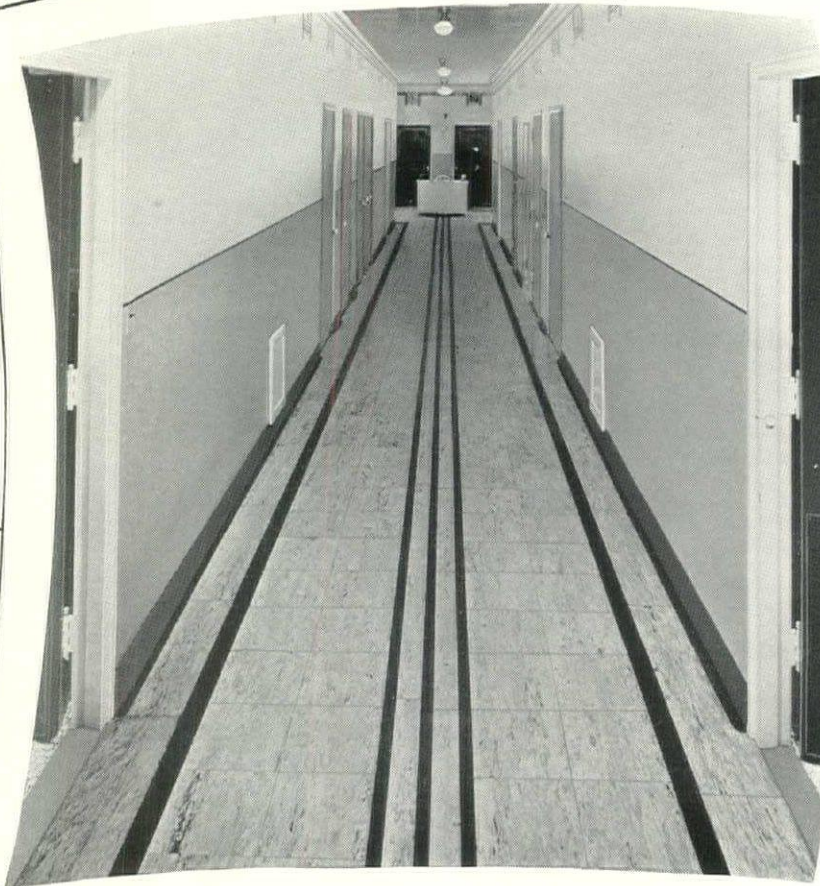


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· WITH · VENTS · OPEN ·



· LOUVRE · WINDOW ·
· WITH · VENTS · CLOSED ·

**FOR THE
PROPER
PERSPECTIVE
ON FLOORS**



This quiet, sanitary floor of Armstrong-Stedman Reinforced Rubber Tile assures underfoot comfort and quiet in the Shriners' Hospital for Crippled Children, Chicago. The field is Escalette No. 620, with feature strips of special plain blue.



...consider **THESE IMPORTANT ADVANTAGES OF ARMSTRONG-STEDMAN RUBBER TILE**

HOSPITAL flooring has a difficult job to do. It must look well, be always fresh and clean, yet work hard. That is why you find floors of Armstrong-Stedman Reinforced Rubber Tile in so many of the country's finest hospitals.

This flooring is extra resilient and therefore extra quiet. Beautiful designs are easily achieved, thanks to a choice of 56 plain, marble, paisley, and two-tone effects. These lasting colors run through the full thickness of the material.

The durability of this rubber tile is due to invisible reinforcing that helps it to resist denting and prevents buckling or crazing. The rich, smooth surface is kept clean and

sanitary with just a daily sweeping and an occasional washing and waxing. It never needs troublesome and expensive refinishing.

An Armstrong-Stedman Rubber Tile Floor can be installed right over old floors, with a rubber cove base for added ease of cleaning.

Why not let us send you color-illustrated "New Beauty and Comfort in Floors?" It will give you the

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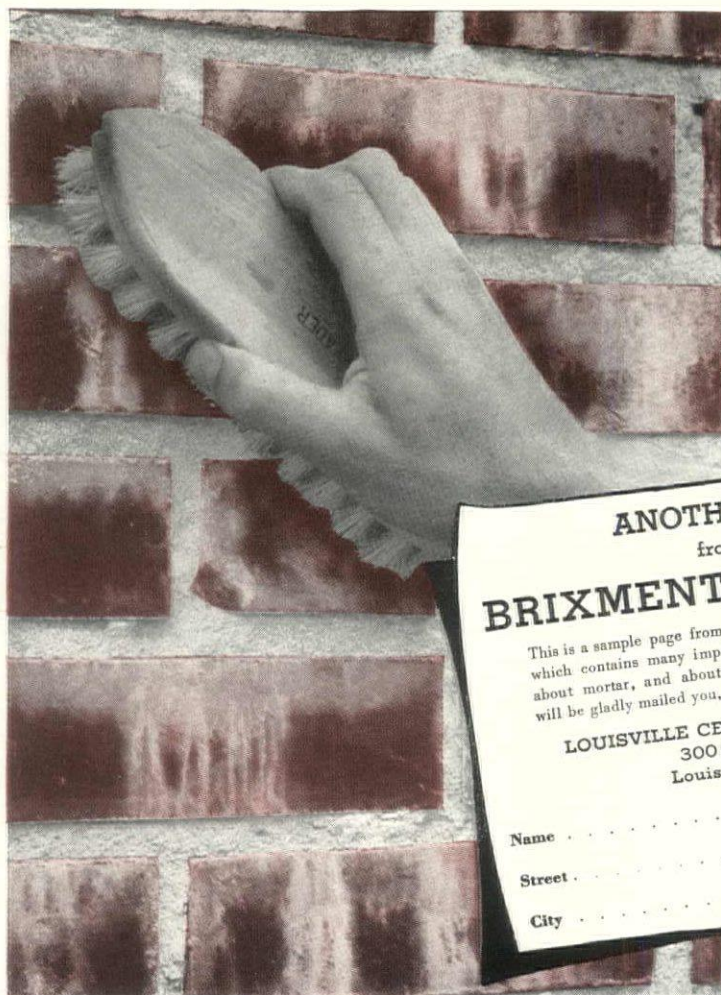
For hospitals, Armstrong manufactures the only complete line of resilient floors—Linoleum, Rubber Tile, Cork Tile, Linotile (Oil-Bonded), and Asphalt Tile. Our Architectural Service Bureau can offer unbiased suggestions.



RUBBER TILE • LINOTILE (OIL-BONDED) • ASPHALT TILE

Armstrong's **LINOLEUM**
and **RESILIENT, NON-CERAMIC TILES**

CORK TILE • LINOWALL • ACOUSTICAL CEILINGS



ANOTHER PAGE
from the
BRIXMENT HANDBOOK

This is a sample page from the Brixment Handbook—a book which contains many important, yet often little-known facts about mortar, and about brickwork in general. Your copy will be gladly mailed you, on receipt of this coupon. Address:

LOUISVILLE CEMENT CO., Incorporated
300 Guthrie Street
Louisville, Kentucky

Name

Street

City

BRIXMENT Helps Prevent Efflorescence!

Efflorescence—the white scum that sometimes appears on the face of brickwork—is the result of using brick, sand, or other mortar materials which contain soluble salts. When reached by water, these salts dissolve, and are drawn in solution to the surface of the wall.

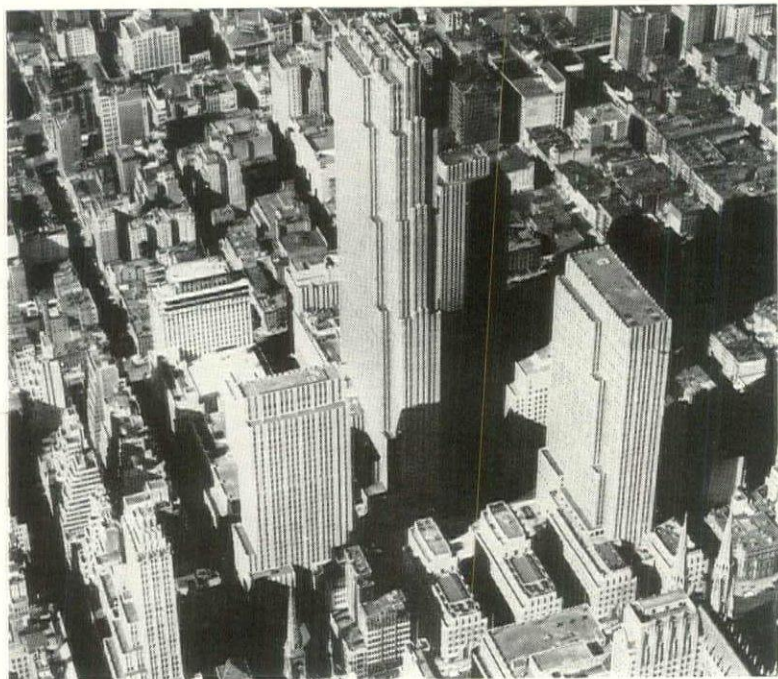
The use of Brixment for mortar has proved to be a *most effective* way of eliminating efflorescence. In the first place, Brixment itself does not contain enough soluble

salts to cause efflorescence. Moreover, even if such salts are present in the brick or the sand, the waterproofing in Brixment tends to keep them from coming to the surface of the wall. (See page 8.)*

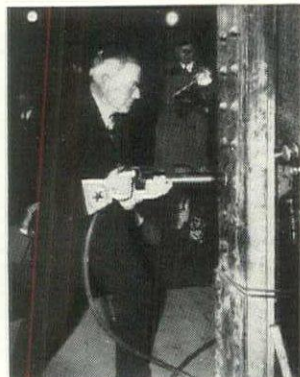
This is the reason why so many manufacturers of face brick endorse the use of Brixment with their products. If you have been having trouble with efflorescence, the *best precaution* you can take is to use Brixment for mortar.

* See further details in the Brixment Handbook.

FORUM OF EVENTS



Wide World



Wide World

EVOLVING MID-TOWN NEW YORK

A SILVER RIVET guided into place by John D. Rockefeller, Jr. celebrates the completion of Rockefeller Center's 14th and last unit—a 20-story office building on 6th Avenue at 48th Street. Speculation now centers on the future of El-shorn 6th Avenue, the prospect for "Rockefeller" Centers in other cities.

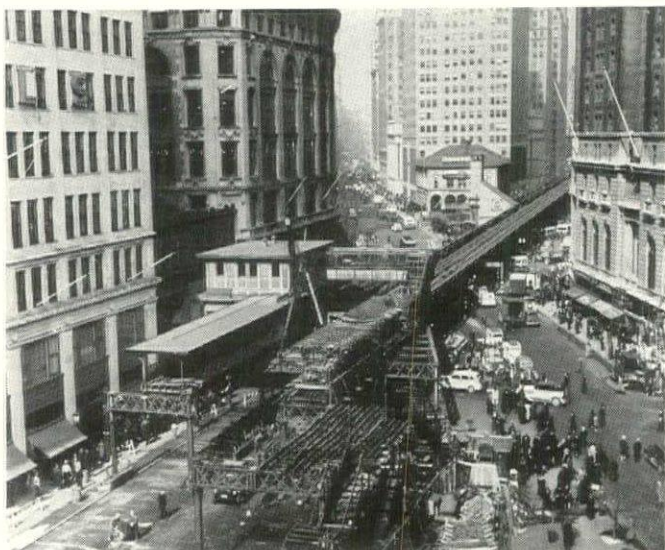
TIFFANY & CO., in business 102 years, has moved north four times, is moving again. McKim, Mead & White designed their 37th St. building in 1905—a Fifth Avenue show place. For the S. E. corner of 57th St. Cross & Cross have designed the building pictured at the far right.



Wurts Bros.



International Commercial



Robert H. Knudtsen



W. H. Schaper

SIXTH AVENUE EMERGES. Above is the first prize winner in a photographic contest to dramatize the passing of the El. At right, still looking up to Herald Square, the Avenue enters competition with Fifth Avenue and has called in architectural advisers under Harvey Wiley Corbett.

*"This upstairs telephone
is such a
convenience"*



MRS. AMERICA will thank you for the convenience of an additional telephone upstairs that will save her dozens of stair-climbing steps every day. And conduit, of course, is the practical way to provide for it.

Modern materials and construction make it doubly necessary to include conduit *while the house is under construction*. It is virtually impossible to fish wires and conceal wiring within walls as they are now generally constructed unless conduit is provided for the wires.

Conduit can be made an integral part of the house—with little effort and at little cost. A few lengths of pipe terminating in outlet boxes are usually sufficient for the average home. Your telephone company will be glad to co-operate with you, without obligation, in planning efficient, economical conduit layouts. Just call your local business office and ask for "Architects' and Builders' Service."





1916: One of the milestones in the 25 years between Wright's Unity Temple and Saarinen's answer to the Chicago Tribune. Sioux City Court House. William L. Steele; Purcell & Elmslie, associated architects.

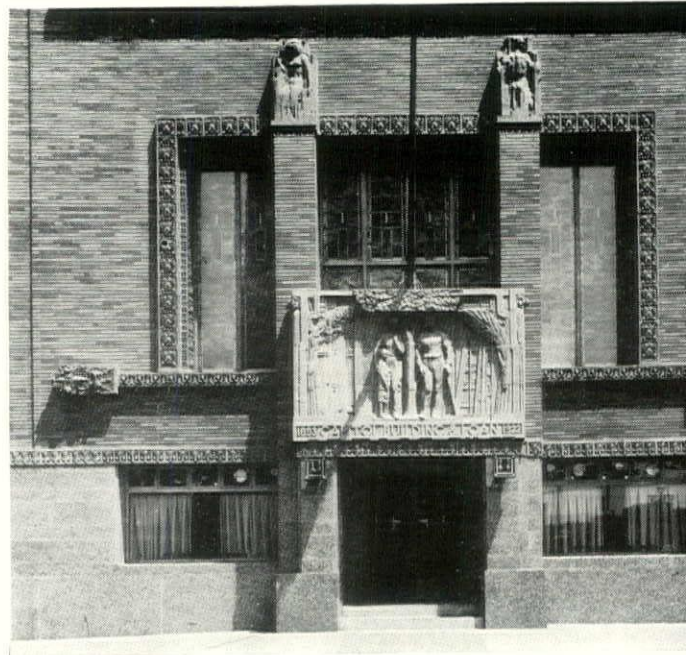
EARLY MODERN IN THE MIDDLE WEST

A glance about us today confirms our realization that, architecturally, we have turned a sharp bend in the road. Somewhat vaguely we credit the early change of direction to the "Chicago Prairie School"—Sullivan, Elmslie, Wright, Tallmadge, Purcell, Griffin, Maher, Maybeck and their fellow enthusiasts. Much of the evidence of that epochal change in philosophy has been lost in the haze of nearly half a century. Some of it is brought to these pages through a casual rifling of old photographic files. More of it could well be the goal of a comprehensive task of research, for a definitive history of American architecture in the twentieth century.

Today, with eclecticism put definitely behind us, our most difficult hurdle is the inertia of an overcautious public; yet a quarter century ago these Midwest pioneers not only designed buildings that were far in advance of their time but got them built.



1912: Polychrome terra cotta with pale buckskin brick, Winona, Minn. Purcell, Frick & Elmslie, architects.



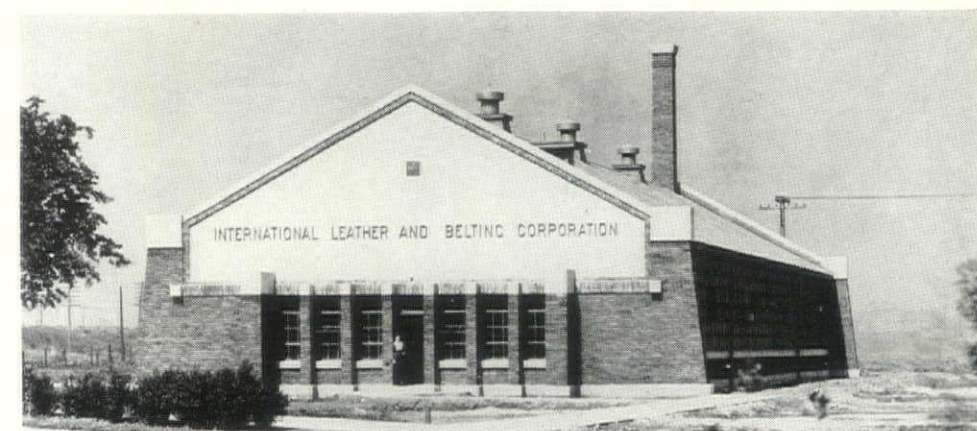
1922: Entrance detail, Capitol Building and Loan Building, Topeka, Kan. George Grant Elmslie, architect.



1916. A private banking house in Mitchell, S. D. For it Purcell & Elmslie designed an air conditioning system which, except for technical installations, must have been a pioneer.



1912: Perhaps the first instance of carrying window display function beyond the window itself. Edison Shop, Chicago. Purcell, Frick & Elmslie, architects.



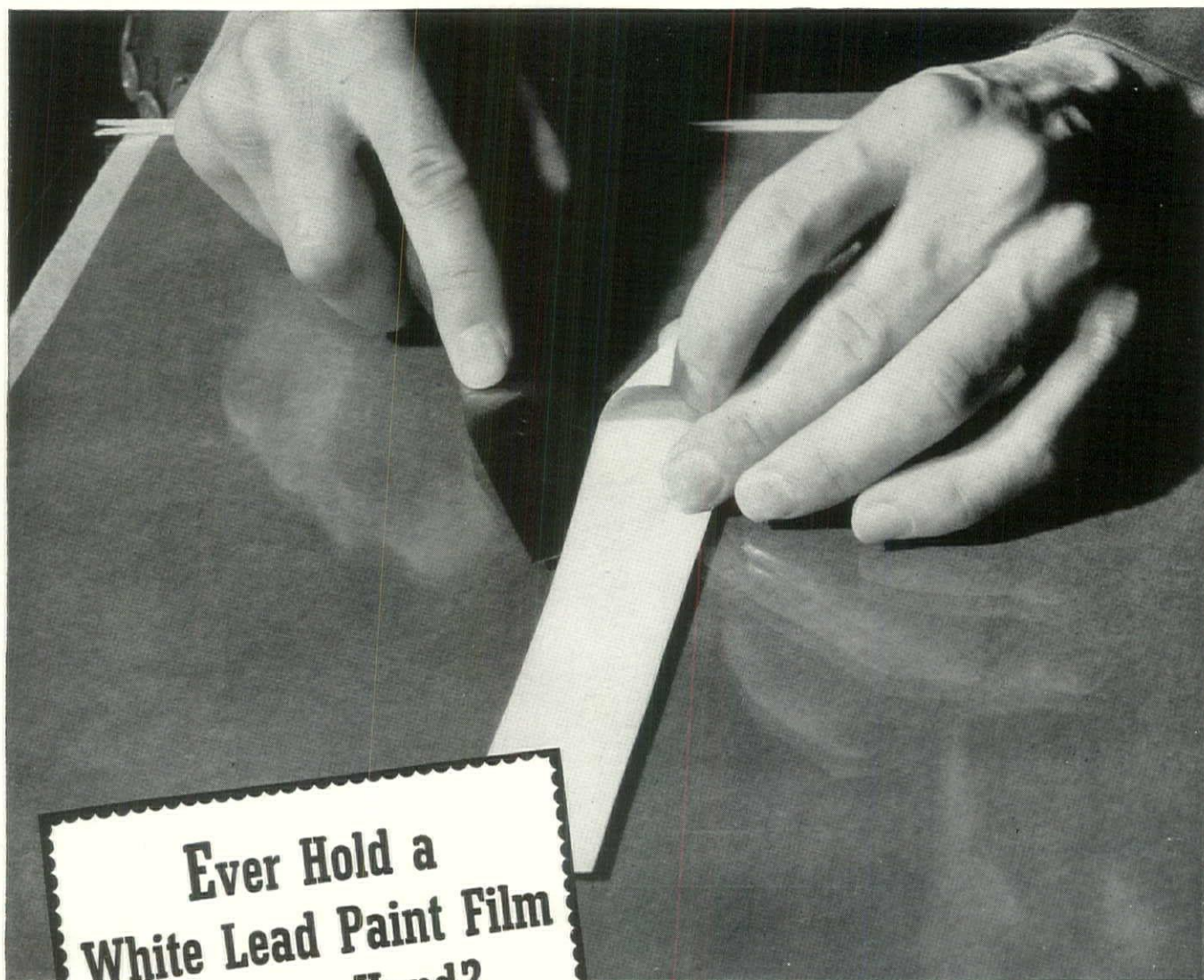
1918: Possibly the first use, here or abroad, of unbroken continuity of window (at right in shadow). Duplicate units built in Chicago and New Haven. Purcell & Elmslie, architects.



1924: A Chicago effort to convey a cubic quality to the angular vision of the passerby. Herman V. von Holst, George Grant Elmslie, associate architects.



1924: The ends of reinforced concrete girders spanning banking room are sculpturally emphasized. Second National, Aurora, Ill. George Grant Elmslie, architect.



**Ever Hold a
White Lead Paint Film
in Your Hand?**

HERE'S a way to demonstrate to yourself the tough, elastic properties of white lead paint.

Brush a layer of this paint on a piece of glass.

Let it dry—and then peel it off.

The white lead film will be tough, elastic—*rubbery*. You can actually stretch it, fold it, bend it.

You'll see why it *gives* with every change in weather, why it doesn't crack and scale and keeps moisture away from wood.

Of course you knew all this from your experience.

But here you have a proof of the pudding *before* the eating—a definite, tangible demonstration you can see, *feel* and *understand*.

• • •

We shall be glad to send the booklet, "What to expect from white lead paint," upon request.

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*bring beauty,
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long life to the*

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IN PARKCHESTER**



● In Berloy* Steel Kitchen Cabinets, Metropolitan Life Insurance Company found the basis for their kitchens of tomorrow in the famous \$50,000,000 Parkchester development. Modern simplicity and lustrous beauty delight the eye. Efficient design provides convenience and utility of space. Sturdy steel construction and tough, chip-proof, mar-resisting, high-baked enamel finish assure lifetime service, economy and satisfaction.

Every Berloy Steel Kitchen Cabinet affords the features mentioned above—whether it is one of the complete Berloy line of standard cabinets or a special cabinet fabricated to specifications—whether it is ordered for a small resi-

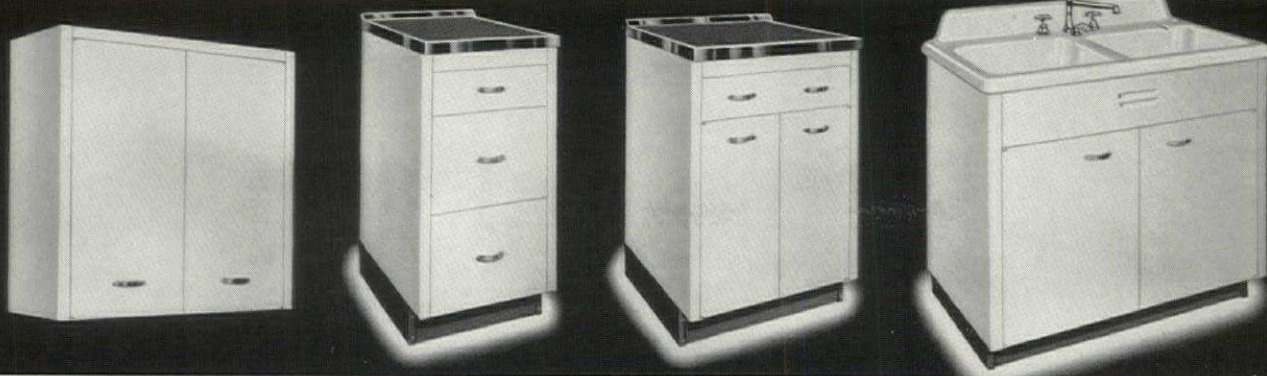
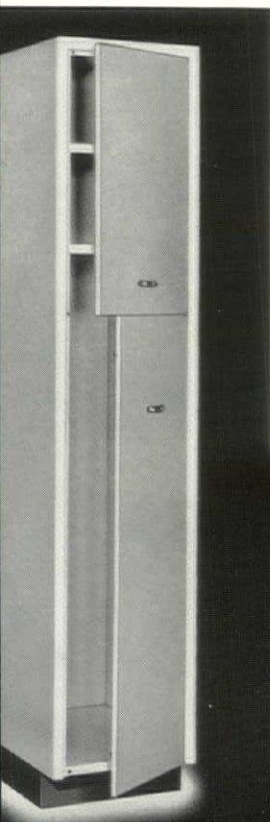
dence or for a huge multi-family project.

For your convenience, Berloy Steel Kitchen Cabinets are stocked in principal cities. Ample production facilities assure prompt delivery of any quantity. A nearby Berloy sales representative is ready to assist you in every way possible. Detailed data is published in Sweet's. And your request to us for further information or literature will receive prompt attention.

When plans call for a modern kitchen, investigate Berloy—the cabinets for kitchens of tomorrow.

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REPUBLIC STEEL CORPORATION
CANTON, OHIO**

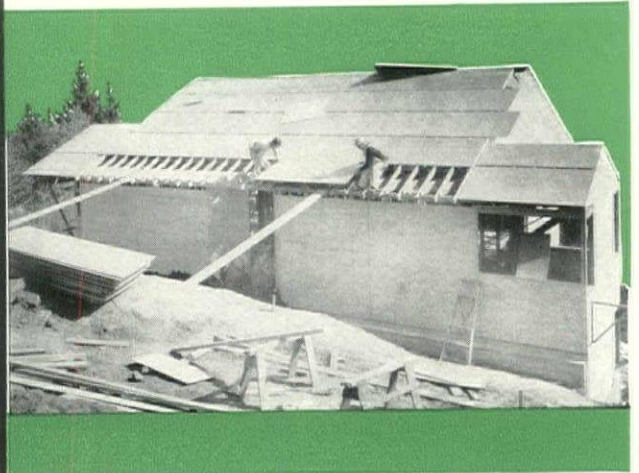
*Reg. U. S. Pat. Off.



FIVE OF THE MANY STANDARD STEEL KITCHEN CABINETS IN THE COMPLETE BERLOY LINE

DOUGLAS FIR PLYWOOD does all four of these jobs!

1. Insulates for greater comfort.
2. Protects against condensation.
3. Deadens and absorbs sound.
4. Builds more rigid houses.



On this Portland, Oregon, home, 5/16" Plyscord was used as wall sheathing, 3/8" as roof sheathing and 5/8" as sub-flooring. (The 5/8" Plyscord was used first as concrete form material.) This house is 40% more rigid than if diagonal board sheathing had been used. Cutting, fitting and nailing were minimized. The 5/8" Plyscord sub-floor, for example, went down in just half the usual time. Richard Sundeleaf was the architect.

dri-bilt WITH PLYWOOD is the better way to build!

INSULATION

Wood is a natural insulator—and so is Douglas Fir Plywood, which provides insulation against wind as well as cold. A 5/16" panel of Douglas Fir Plywood with an air-space provides about the same insulation as a 7/16" fibre insulation board. Because plywood wall lining is air-tight, it creates a true dead air-space.

VAPOR BARRIER

Douglas Fir Plywood wallboard (Plywall) with 2 coats of asphalt paint on the back, or with glossy-surfaced, asphalt-impregnated building paper weighing 50 lbs. per roll of 500 sq. ft. between the Plywall and studding forms a vapor barrier 7 to 10 times as effective as some materials which are claimed to act as "seals" against vapor. See test data below. Plywood is such an efficient barrier because asphalt paint on its smooth surface becomes an unbroken film. (Note: Always place vapor barriers on inside walls, not outside walls.)

ACCOUSTICAL PROPERTIES

Douglas Fir Plywood walls and partitions compare favorably with other standard construction from the standpoint of sound insulation—are definitely superior from the standpoint of sound deadening and sound absorption. This is proved in recent tests by Dr. Paul E. Sabine, at Riverbank Laboratories, Geneva, Ill.

GREATER STRENGTH

Dri-Bilt with Plywood means better building construction through the use of the proper grades of these big panels for sheathing, sub-flooring, interior walls and ceilings, cabinetwork, exterior siding and concrete forms. Dri-Bilt houses are warmer, windproof... stronger, too. Government tests at U. S. Forest Products Laboratory show that 5/16" Plyscord sheathing makes houses 5.9 times as rigid as horizontal board sheathing. For more information, consult Sweet's Catalog or write Douglas Fir Plywood Association, Tacoma Building, Tacoma, Washington.

HERE'S ACTUAL DATA

Comparisons shown below are taken from actual Government reports)

Plywood WITH 2 COATS OF ASPHALT PAINT
ONLY 3 DROPS OF WATER

MOIST AIR

Insulation Fibre Board
185 TO 240 DROPS OF WATER

MOIST AIR

Lath and Plaster
79 DROPS OF WATER

MOIST AIR

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

Comparative Resistance of Various Materials to Vapor Transmission

(From Tests at U. S. Forest Products Laboratory)

NOTE: The lower the figure, the more effective the vapor barrier.

Material	Loss in grains per sq. ft. per hour
A. Plywood, 1/4-in. Douglas fir, 2 coats asphalt paint	0.308
B. Plywood, 1/2-in. Douglas fir, 5-ply	1.920 to 1.975
C. Plywood, 1/4-in. Douglas fir, soybean glue, plain	3.080 to 4.620
D. Insulating Sheathing, surface coated (asphalt both sides and aluminum paint on one side)	2.190 to 3.050
E. Plaster-Wood lath	7.900
F. Insulated lath and sheathing-board type (1/2 and 3/4 in.)	18.50 to 24.65
G. Plaster, fibreboard or gypsum lath	14.20 to 14.80



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EXT.-D.F.P.A.



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Real Lumber
MADE LARGER, LIGHTER
SPLIT-PROOF
STRONGER



\$ 15,000 in prizes

PROGRAM OF
COMPETITION

4

THE LAST IN THE SERIES

incorporating the use of a versatile building material

INSULUX GLASS BLOCK

THE PROBLEM: A Newspaper Plant

THE PRIZES: Eight, totaling \$2,500 plus \$5,000
on a scored point system

THE JURY: Eight eminent Architects

CLOSING DATE: March 18, 1940

REGISTRATION is necessary—see inside

OPEN TO: Architects, Architectural Designers
and Architectural Draftsmen in the Western
Hemisphere

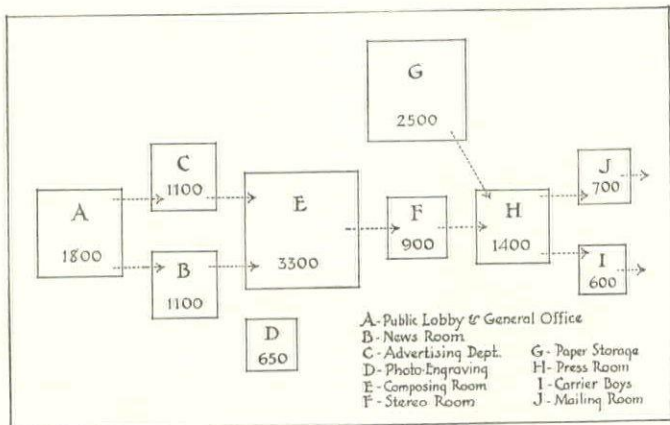
CONDUCTED BY THE ARCHITECTURAL FORUM FOR OWENS-ILLINOIS GLASS COMPANY

THE PROBLEM

The *Evening Banner*, a newspaper with a circulation of 24,000, serving a busy city of 100,000 along the mid-Atlantic seaboard, needs a new plant. Its publisher owns a level corner site at the intersection of two busy streets. The frontage is 100 ft. facing S.W., the depth 128 ft. facing S.E., a side street. Basic requirements are these: the building must have personality, must proclaim to all the importance of the newspaper in the life of the community; and it must shelter four very dissimilar activities—the receiving and storing of newsprint and other supplies, the office functions of gathering and preparing news and advertising, the manufacturing processes of typesetting, casting and printing, and the rapid delivery of the completed newspapers. In order to save the architects the technical research involved in setting up interdepartmental relationships and space requirements, the client has prepared the accompanying diagram; provision for expansion is included in these areas.

The client has an open mind with regard to the form of the building; it might be of one or two stories, wholly or in part, with or without mezzanine. A basement seems unavoidable, and this can extend out 10 ft. under sidewalks if necessary.

Two-story buildings surround the site. The client has in mind some sort of tower or other attention-arresting feature, capable of being illuminated at night, provided



The figures represent square feet of floor space required for the principal departments, not including executive offices, auxiliary rooms, toilets, etc. Squares are all drawn at one scale, and the arrows indicate the flow lines.

such a feature can be integrated as a logical and effective element.

Air conditioning of pressroom and newsprint storage space, to maintain a constant temperature and humidity, is an immediate necessity; he believes that for the other space units the combination of glass block and window would make practicable a limited operation of air conditioning equipment for seasonal periods.

There are no city restrictions as to building line, height or setbacks.

SUBJECT:

A NEWSPAPER PLANT in which appropriate and possibly new uses are to be developed for Insulux Glass Block.

Closing date:
March 18, 1940

Noise and vibration in the mechanical section should be prevented from disturbing the relative quiet of the offices.

The width of press, its platform and space on either side should be about 24 ft. which will make of the pressroom a rectangle more than twice as long as its width. This room will require a ceiling height of 25 ft.

Five trucks are used for delivery, and these would preferably, but not necessarily, be housed on the site. Their sheltered loading platform should be contiguous to mailing room and carriers' room, and the rapid outflow of papers through these points should not be impeded. Incoming shipments should find a short route to storage. The client wishes to avoid blocking of streets with his trucking.

Showers and lockers are obvious needs of the mechanical staff. In addition to a boiler room and its fuel storage, there will be needed a small control room for electric power.

THE PRIZES: For this, as in the three preceding competitions there will be awarded eight cash prizes as follows: First Prize, \$1,000; Second Prize, \$750; Third Prize, \$250; Fourth Prize, \$100; Fifth Prize, \$100; Sixth Prize, \$100; Seventh Prize, \$100; and Eighth Prize, \$100. Checks will be mailed to the prize winners by THE ARCHITECTURAL FORUM within one week after the judgment.

GRAND PRIZES. Competitors have been encouraged to continuous participation in this series through an offer of Grand Prizes. These do not call for a final competitive

PRIZES:

\$2,500 in eight awards plus \$5,000
in Grand Prizes awarded at the
end of the series on a scored point
system.

This competition has been approved as a Secondary Competition by the Special Committee for Secondary Competitions for the territory of the New York Chapter, American Institute of Architects. Full participation is permitted to all Institute members.

effort but will be awarded automatically on the basis of points scored in the four quarterly competitions. A winner of a First Prize in one or more of these is given 100 points credits for each; Second Prize brings 80 points; Third, 63; Fourth, 49; Fifth, 38; Sixth, 30; Seventh, 25; and Eighth, 23 points.

Immediately after the awards have been made for this competition, Grand Prizes will be awarded in the following amounts: First Grand Prize, \$1,500; Second Grand Prize, \$1,250; Third Grand Prize, \$1,000; Fourth Grand Prize, \$750; and Fifth Grand Prize, \$500. In the event of ties in the scores for Grand Prizes, duplicate prizes will be awarded. Checks will be mailed to the Grand Prize winners by THE ARCHITECTURAL FORUM immediately after the scores have been computed.

1. AUTHORITY

Owens-Illinois Glass Company has delegated to THE ARCHITECTURAL FORUM authority to conduct a competition for the purposes above outlined, including the publication of the premiated designs; and has appointed as Professional Adviser, Henry H. Saylor, A.I.A., 9 Rockefeller Plaza, New York, N. Y.

2. COMPETITORS

This competition is open to all architects, architectural designers and architectural draftsmen in the Western Hemisphere, except employees of Owens-Illinois Glass Company and of THE ARCHITECTURAL FORUM. A competitor may submit as many drawings as he likes, and is eligible to win any number of awards.

3. JURY OF AWARDS

The following architects have agreed to act as a Jury in Competition No. 4, and their decisions shall be final. (Any Juror in this series is eligible to compete in any of these competitions except that one for which he is serving as a judge.)

FREDERICK L. ACKERMAN,
New York

WALLACE K. HARRISON, New York

GEORGE HOWE, Philadelphia

ELY JACQUES KAHN, New York

WILLIAM F. LAMB, New York

HENRY R. SHEPLEY, Boston

EDWARD D. STONE, New York

RALPH WALKER, New York

4. EXAMINATION OF DESIGNS

The Professional Adviser will examine the designs to ascertain whether they comply with the mandatory requirements of the program, and will report to the Jury any instances of failure so to do. The Jury will satisfy itself of the accuracy of such report, and will place out of competition and make no award to any design which does not comply with these mandatory requirements. The Jury for Competition No. 4 will meet in the City of New York within three weeks after the closing date, and carefully study the program and the eligible designs, and will make the awards before opening the envelopes which contain the names of the competitors.

5. REPORT OF THE JURY

Announcement of the awards, as detailed above, will be made in a later issue of THE ARCHITECTURAL FORUM, and to the successful competitors by telegraph immediately after the judgment.

6. EXHIBITION AND PUBLICATION

No drawings will be exhibited or published until after the awards of the Jury in each competition. All prize-winning designs will be published, with the names and addresses of their authors. Owens-Illinois Glass Company shall have the right also to publish additional designs other than those awarded prizes, accompanied by the names and addresses of their authors. As it is the intention of the Company to exhibit the prize-winning designs, and possibly many of the others, in cities throughout the country, covering an indefinite period of time, no drawings will be returned, except as follows: any competitor, other than a prize winner or one whose drawing has been selected by the sponsor for exhibition, who prefers the return of his drawing may enclose in the envelope containing his name and address a request to return by express, collect, insured for \$50. Neither Owens-Illinois Glass Company, nor THE ARCHITECTURAL FORUM, nor the Professional Adviser, however, accepts any responsibility for their safe return beyond that of exercising reasonable care in packing and shipment.

7. COMMUNICATIONS

Every intending competitor is required to register his intention to enter the series of competitions (the registration does not obligate him to submit an entry), advising the Professional Adviser at the New York address by mail, giving name, address and classifying himself as an architect, an architectural

designer, or an architectural draftsman. Acknowledgment of this entry will be made by sending printed titles to be pasted on the mounts, and a booklet giving technical information about Insulux Glass Block. Those who have already registered for Competition No. 1, No. 2 or No. 3 need not register again. It will be impossible to answer requests for additional information or for interpretation of the terms of the program.

8. ANONYMITY (Mandatory)

The name or names of competitors shall not appear on the drawings; the only mark of identification shall be a nom-de-plume or device placed in the lower right corner of the mount, below the border line. On an opaque white envelope, pasted securely on the back of the mount, this same nom-de-plume or device shall appear, and sealed in the envelope shall be the name and address of the competitor; if an entry is the joint work of more than one designer, the name and address of each shall be enclosed, also instructions as to how, in the event of an award, a check shall be drawn. No competitor shall directly or indirectly reveal the identity of his design or hold any communication regarding the competition with Owens-Illinois Glass Company, or with any member of the Jury, or (except as provided in Section 7) with the Professional Adviser. It is understood that in submitting a design each competitor thereby affirms that he has complied with these provisions in regard to anonymity, and agrees that any violation of them renders his entry *hors concours*. The Professional Adviser will number the drawings as a further means of identification by the Jury; the sealed envelopes shall be opened by the Professional Adviser after the Jury's selection has been made, and in the Jury's presence.

9. DELIVERY OF DRAWINGS (Mandatory)

Drawings submitted in Competition No. 4 shall be securely wrapped, flat, addressed as follows: **Professional Adviser, Insulux Competition No. 4, c/o THE ARCHITECTURAL FORUM, 9 Rockefeller Plaza, New York, N. Y.**, and forwarded to this address not later than midnight March 18, 1940. All entries must reach the Professional Adviser with all charges paid, **including duty levied on those from outside the United States.** Post Office date stamps or express company dated receipts indicating receipt of the drawings on or before the above date and hour, will be accepted as evidence of compliance with this provision, except that no drawing received after the judg-

ment has started will be considered. Entries delivered by hand must be at the above address on or before the date and hour given.

10. DRAWINGS (Mandatory)

The design of each competitor shall be presented on one sheet of white illustration board 20" x 30" over all; the arrangement of drawings on the board shall be such that the 30" dimension is the vertical; all shall be inside a single line border 1" inside of each edge. A printed title (see Section 7) is to extend across the bottom just inside the border line.

Undiluted black ink only shall be used throughout, and the use of air brush or fine spatter work is prohibited; the lines and incidental lettering should be capable of reduction without loss of legibility when the board is photographed down to a height of 10". The following drawings are required, no more, no less.

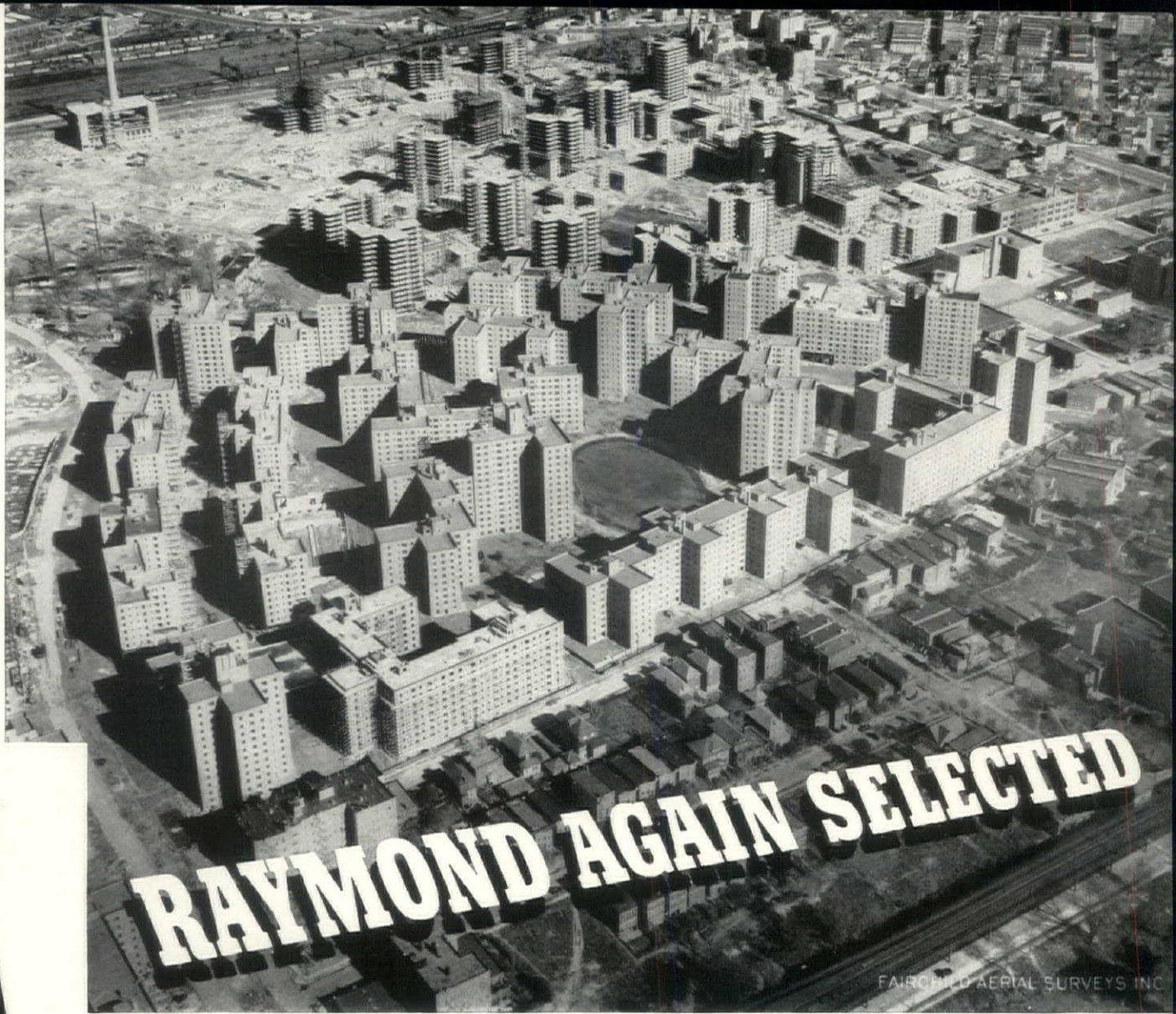
- a) Plot plan at $\frac{1}{32}$ in. scale. Or, main floor plan may show plot boundaries.
- b) Plans of basement and other floor or floors at $\frac{1}{16}$ in. scale. Indicate departments, but it is not necessary to indicate machinery, minor equipment, desks, etc.
- c) A pen-and-ink rendered perspective of the building; assume the picture plane as passing through the nearest corner of the building proper, and the vertical dimensions thereof shall be drawn at $\frac{1}{8}$ " scale; choose a viewpoint that will accent the principal elevation and which will show also the other street front.
- d) One or more details in axonometric or perspective, indicating the essential construction as it applies to glass block.
- e) Prepare an adequate, but brief typewritten statement explaining why Insulux was used where shown and why the particular face design or designs were selected. Place this typewritten statement in an envelope bearing on its face the word "Statement" and the nom-de-plume or device mentioned in Section 8. If the entry is sent by express or delivered by hand, attach this envelope to the back of the mount. However, if the entry is sent by mail, to avoid the necessity of paying first class postage on the drawing, this envelope may be enclosed in another envelope, and mailed separately to the Professional Adviser at the New York address. If name and address of sender is required by postal or express authorities, to preserve anonymity use the name and address of the Professional Adviser.



The awards in Competition No. 3, judged in Detroit December 5 and 6, together with the jury's report, will be published in the January Issue of THE ARCHITECTURAL FORUM.

OWENS-ILLINOIS GLASS COMPANY





This time for the World's largest single housing development

• The Parkchester apartments, occupying a site of 130 acres in the Bronx, New York City, are now under construction for the Metropolitan Life Insurance Company. The project includes 48 buildings, 46,465 rooms, 5 garage buildings, 2 theatres. • Open end piles to rock proved to be the economical foundation support and were installed by Raymond. • Why Raymond? The answer is organization, equipment, experience and Raymond's known reputation for *getting things done and done right*. • 42 years of successful experience counts.

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BOOKS

Duncan Phyfe and the Regency. . . .

A study of land in America. . . . Modern U. S. painting. . . . Residential architecture in Southern California.



GOVERNOR CLINTON'S CHAIR, BY DUNCAN PHYFE

DUNCAN PHYFE AND THE ENGLISH REGENCY, by Nancy McClelland. William R. Scott, Inc., New York. 364 pp., illustrated. 9 x 12½. \$15.00.

Unquestionably the greatest of the early furniture makers of America was Duncan Phyfe. Born in Scotland, he came to this country at the age of sixteen, in 1784, and after a six-year apprenticeship in Albany he set up a shop in New York under the misapprehension that the city was to remain the nation's capital. In spite of the initial error he remained for sixty-two years, to turn out work that has yet to be equaled by any of his successors. Strongly influenced by contemporary design in Europe, as were all American craftsmen of the period, he nevertheless gave to the Regency style a flavor that was distinctly new and highly individual. Such pieces as the chair above have few superiors in the history of furniture.

Much has been written on Phyfe, and his work has long since been given due recognition. The merit of the present study is that it presents a great number of his best pieces in excellent photographs, and recognizes his position as an inheritor of the European tradition. A large portion of the book has been devoted to the Regency period, to Thomas Hope, to the Classical Revival in America, and to Phyfe's immediate background. There is a complete index and bibliography, and a section containing documents related to Phyfe's life and work.

REVOLUTION IN LAND, by Charles Abrams. Harper & Brothers. 320 pp. 6½ x 9½. \$3.00.

Our times appear to be somewhat out of joint, and the few years past have seen a steady stream of books, all devoted to variations on this lugubrious theme. The most recent to be issued, with the enthusiastic approval of no less a critic than Lewis Mumford, is Charles Abrams' sober study of the decline and fall of land in America. Unlike many of its predecessors, this book is worth serious examination, if only because, in some 300 pages of dispassionately written text, the author has presented a body of fact that would take months of individual research to duplicate.

The story traces the status of rural and urban land from Colonial times to the present. That history includes the phenomenal growth of mortgage debt, the appearance of the "scissors" of high industrial prices and low agricultural prices, the growth of tenancy, the inability of land interests to avoid the imposition of crushing tax burdens, and the crash of speculative land values in face of decelerating population growth. Boiled down still further, it is a study of the developing antagonism between land and industrial capital, with the victory of the latter. The story is not unfamiliar, but it would be difficult to find a recent book in which it has been told more completely or more lucidly.

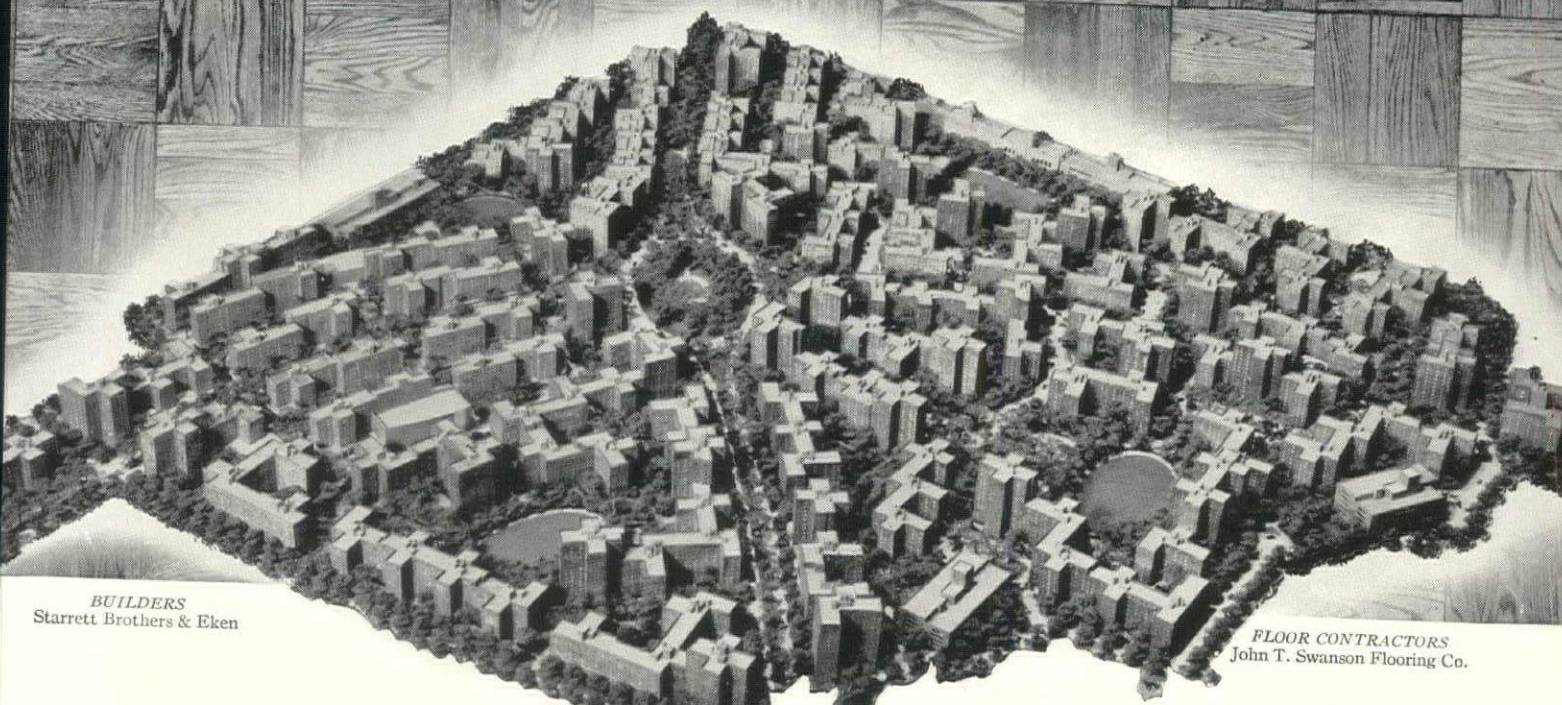
A later section of the book outlines the evolution of economic theory from the physiocrats, originators of "laissez faire," through Adam Smith, Ricardo and other nineteenth century economists, down to Henry George. The development of ideas through two centuries has been admirably presented as an organic part of the story of land. Perhaps the most interesting of the historical summaries is the one dealing with legislation after 1929. Here the growth of federal intervention in private fields is traced step by step through the various experiments of the New Deal, and while the bulk of the measures adopted are dismissed as wasteful palliatives, the expansion of the federal power is viewed as an inevitable, irresistible trend.

It is partly on the basis of this trend that Mr. Abrams presents his solution: nationalization of the land, social control over production, shift of land taxes to an income or rental value basis, government control of lending institutions, equitable balance of farm and industrial prices through government pressure, and recovery through public construction, chiefly housing, on a huge scale. At this point one can hear the cry of "socialism" from the conservative, but the answer is not quite so simple. On the question of land nationalization, for instance, Mr. Abrams claims that we have already started the process (quite involuntarily) through HOLC, FHA and other agencies; if this is what we are doing, why not do it economically and efficiently? Impressively documented as many of his contentions are, however, the author's own arguments provide many answers to the contrary. The major point in the book is that the primacy of land in the modern economy has disappeared, and that the ills which beset it are to be found in the industrial mechanism. It would seem, in consequence, that nationalization of land would be a measure more drastic than effective. The proposals of control over production (used chiefly in the sense of restriction) have long since been realized in the fascist economies without spectacular success. And even the quite respectable program of "recovery through construction" is weakened by the author's own contention that no cyclical

(Continued on page 56)

LARGEST

Flooring Order **EVER PLACED!**



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FLOOR CONTRACTORS
John T. Swanson Flooring Co.

7,000,000 FEET

BRUCE BLOCKS

TO BE USED IN

"PARKCHESTER"

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*12,000-Family Housing Project
of Metropolitan Life Insurance Co. Selects Bruce
Block Flooring for Durability, Economy and Beauty*

Bruce Blocks have received the highest tribute ever paid any flooring material! Over 7,000,000 sq. ft. (enough flooring for almost 10,000 average size homes) are being used in "Parkchester," the vast garden apartment community being financed and operated by the Metropolitan Life Insurance Co. in East Bronx, New York.

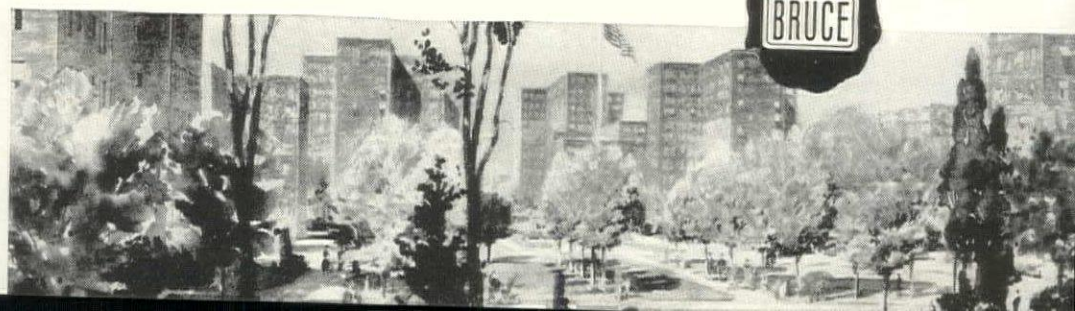
This specification of Bruce Blocks dramatically proves the superior features and extra value of this modern hardwood flooring. It confirms the judgment of thousands of architects, builders and owners who are choosing Bruce Blocks for modern buildings of all types and sizes. More than that, it recognizes the dependability of the Bruce trademark, the uniformity of Bruce manufacture, which mean lasting satisfaction with beauty and utility for owners and tenants.

In Bruce Blocks, the building industry is offered all the advantages of hardwood—the finest of flooring materials—in a form adapted to the requirements of present-day construction. Ask Bruce for full information.

*Planning and execution of the work is under the general direction of
of Design. Shown in the picture (left to right) are Chairman
H. Shreve, architect; Robert W. Dowling, builder; Andrew J.
Elder; Irwin Clavan, architect; George Gove (facing Mr. Shreve),
Housing Projects, Metropolitan Life Insurance Company;
D. Clarke, city planning and landscape engineer; and Russell
r, builder. Henry C. Meyer, Jr., engineer, member of the Board,
is not in the picture.*



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LETTERS

Plus

Forum:

Exactly how are we to interpret the editor's note answering Mr. Hill's question about "PLUS?" Your phrase "current difficulty of getting foreign material" needs, in my opinion, much explanation, as I am not aware that we must get material from Europe in order to have a progressive publication dedicated to the contemporary movement in architecture and other arts. Even in the darkest days esthetically in this country, a few men clung to their principles and through their work and writing influenced the world—and in recent years the ranks of native Americans who work from a rational, experimental viewpoint have been greatly augmented.

Equally important is the fact that nearly all the men who made Europe lead the world in the decade before Hitler are now in this country helping us to continue our sound tradition which has never been allowed completely to die.

Until everyone originally listed as collaborators in PLUS has been called upon for work, and until numerous others not listed have been called upon, no justification can exist for complaint about lack of material. Plus has served as a much needed meeting ground of progressive architects, painters, critics and historians: articles such as those of Giedion, Moholy-Nagy, Sweeney, Leger, Ozenfant, Gabo and Neutra have constituted a fine start—we should hear from them again. We should also hear from all other listed collaborators, as well as from Gropius, Breuer, Mies van der Rohe, Peterhans, Hilberseimer, Kepes, Bayer, Feininger, Archipenko, Helion (all in this country), and many others.

Why not an issue devoted to the work at Harvard, prepared by Gropius, Giedion, Hudnut and Breuer—the work at the School of Design by Moholy-Nagy, Keck, Kepes and Wolff—the accomplishments at Armour of Mies van der Rohe, Hilberseimer and Peterhans—of Albers and Shawinsky at Black Mountain College? Further suggestions—progressive tendencies in the Federal Art Project, as a clarification of the relationship between painting and architecture (Transition, No. 25, printed an excellent address by LeCorbusier on painting and architecture which might also be available for republication)—articles by Director Barr of the Museum of Modern Art and Rich of the Chicago Art Institute—much of Sullivan's writing has never been published or is long out of print: shouldn't it be published? And

need I say that Wright is still very much a part of the American scene and that what he contributes will be significant? Likewise, stimulating thoughts may be expected from Lewis Mumford.

It is to be hoped that the opportunity to continue such important work in the integration of the arts will not be allowed to lapse—I believe America equal to the task of continuation.

ROBERT BRUCE TAGUE

Chicago, Ill.

In the integration of the Arts THE FORUM too believes. As evidence of a vital American architecture each issue of THE FORUM bears witness. PLUS, an independent magazine within a magazine, concerned itself almost exclusively with work of European colleagues. Should PLUS collaborators, American as well as European, be moved to move, Forum editors would be interested, perhaps be moved to move again.—Ed.

F.L.W.'s Suntop Homes

Forum:

... My neighbors' objections, and my own as Chairman, are a matter of public record. It will be found that no approval was given at the hearing and that none has been given since.

Our disapproval, for the information of all concerned, will again be voiced most vigorously at a public hearing which is to be held by the Commissioners for the purpose of considering proposed changes in the existing zoning ordinance which have been applied for so that, if approved, they could build more of those "Desert" homes.

This, I believe, should be conclusive proof as to the neighbors' feelings in the matter. . . .

J. V. ESPOSITO, *Chairman*
Neighbors' Committee
Ardmore, Pa.

Apparently misinformed, THE FORUM stated that Chairman Esposito and neighbors had given their approval to the Frank Lloyd Wright-designed Suntop Homes (Aug. 1939, p. 142). Undaunted by neighbors' grievances, real or fancied, are Suntop residents. Present apartments are all tenanted and 12 more families await completion of more units.—Ed.

"Clocked" Processes

Forum:

In an address before the recent convention of the Structural Engineers Association of California the speaker said: "Has not the time come when engineers will apply themselves to the actual job technique? By careful studies of plant layout, construction methods and equipment and time-cost studies cannot the engineer find ways to construct the works which he has

designed in a more economical manner? Trial and error methods in construction can be superseded by planned procedure based upon sound engineering analysis."

That this idea is reaching a crescendo among building's "outside" critics, is evidenced in the deluge of printer's ink which has been loosed against building's shortcomings by *Colliers' Flynn*; *Satevepost* on Thurman Arnold; *Reader's Digest* "Labor and National Unity;" *Liberty's* recent "Graft, the New Landlord." That Building's methods are responsible for today's unnecessary costs is—as you know—the essence to which all these popular critics return.

... This is to suggest, most strongly, that you give thought to the opening of a new department—a new phase of "applied service" to FORUM readers, that you recognize the importance of and accept the responsibility for leading this pressing new chapter of Building's advancement—Applied Techniques and the Effects on Costs.

I do not advocate this course as a "barker" for pet "systems," theories or stunts. It should not be opened to any claims or statements which have not been competently proved and supported with such usual technical documentation as is required by industrialists in other fields. Assumptions, such as the customary, indolent conclusion that "if one building or one operation can be done for so much, 1,000 units *should be* done for blank percent less," should be shunned like the snares and delusions that they are.

... But where a shop method or a job operation shows economies, and there are gadgets, tools or templates involved, whose performance has been justified, such adjuncts could and should be a part of the "story" and might be sufficiently illustrated to permit their duplication by the reader.

... At first blush, the tendency is to think that to gather *authentic* material on enough comparable craft methods and processes, together with a complete, documented mathematical conclusion in each case, to justify or fill a FORUM department would be a rather slow and uncertain process. But a little thought forces the conclusion, as obvious, that the processes of the construction shop and field can be just as accurately "clocked"—down to their smallest factor or component—as can those of any other productive activity of man.

The comparative time-and-cost observations upon which you based, for instance, your stories on precut framing (Dec. 1939) and Victorville Townsite (March 1939) have "stood" in the records of many subsequent operations. That is, each of the

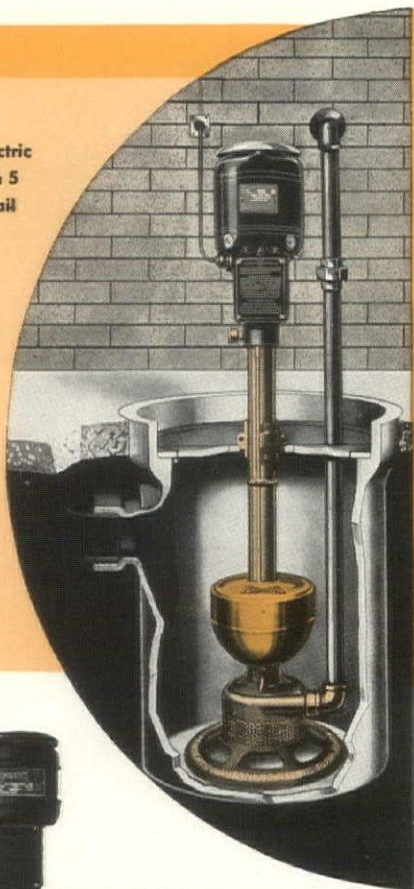
(Continued on page 50)

Why Penberthy Pumps PREDOMINATE

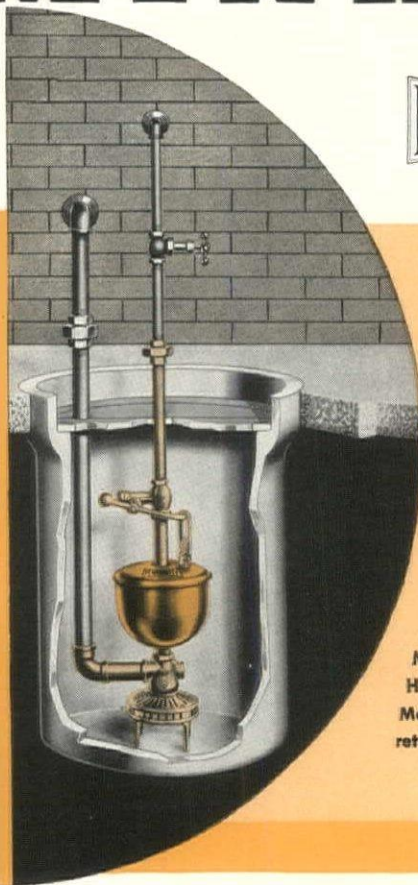
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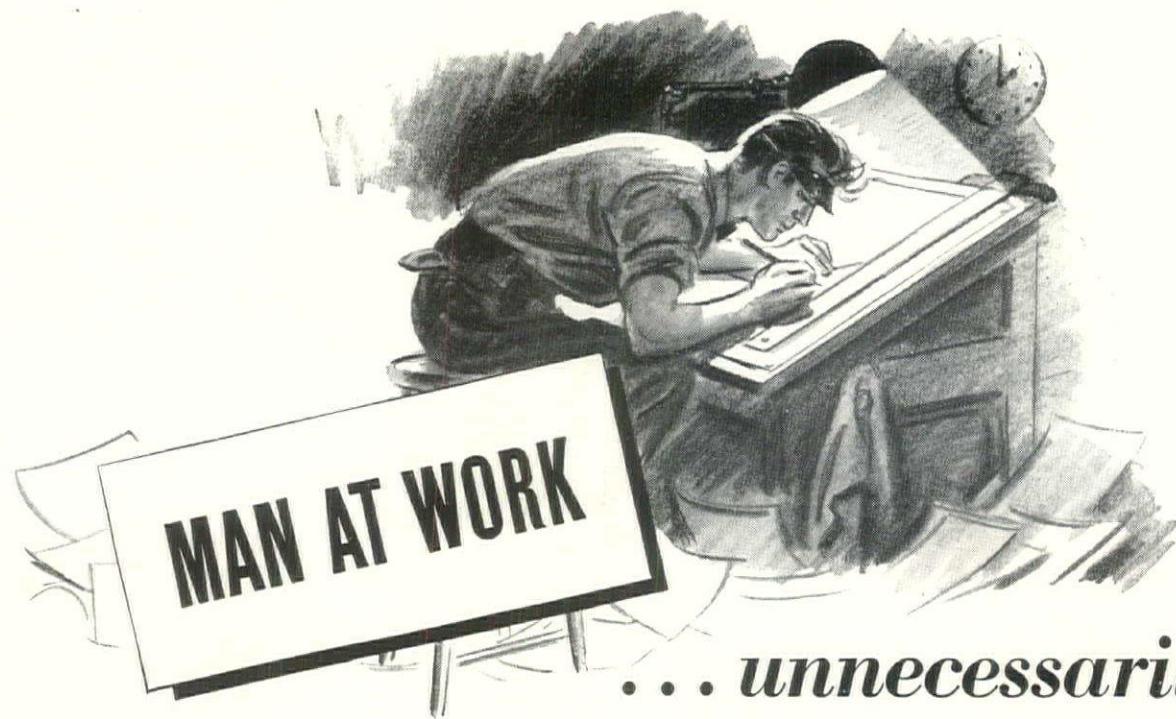
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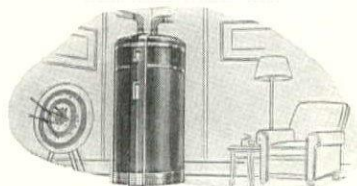
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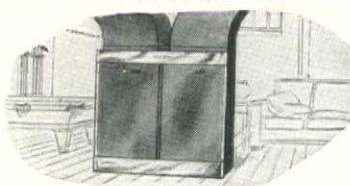
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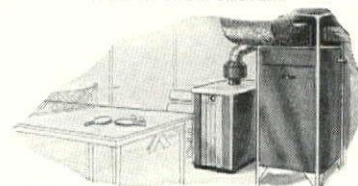
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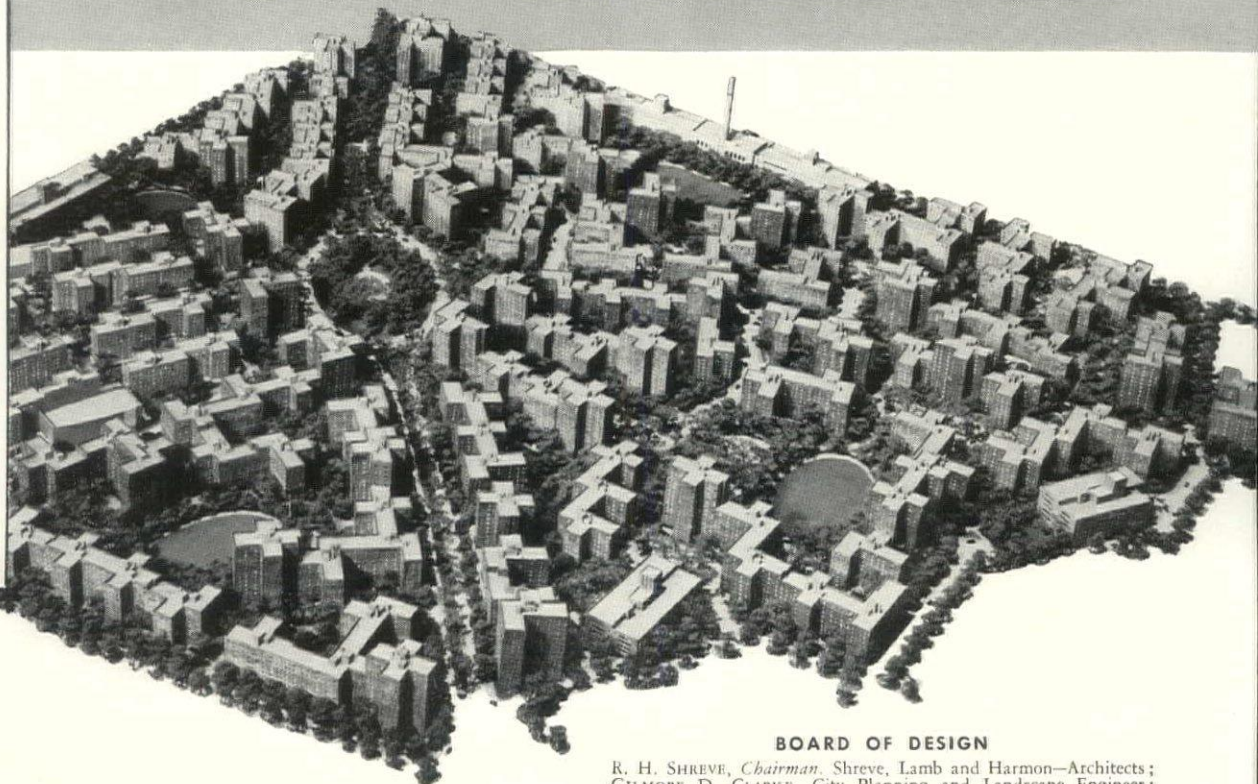
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Starrett Brothers and Eken, Inc.—Contractors; ANDREW J. EKEN,
President, Starrett Brothers and Eken, Inc.—Contractors; GEORGE
GOVE, *Manager of Housing Projects*, Met. Life Insurance Co.; HENRY
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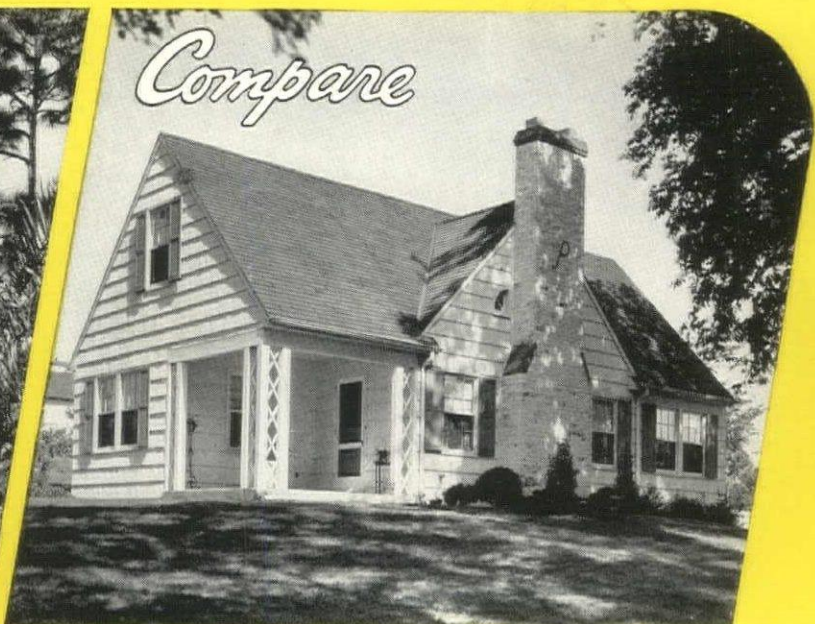
Compare



Assume this cottage requires 2 branch circuits for lighting and appliances. Compare these costs.

Dead front switch with fuses	\$2 ⁹⁰
<input checked="" type="checkbox"/> MULTI-BREAKER	\$2 ⁶⁵

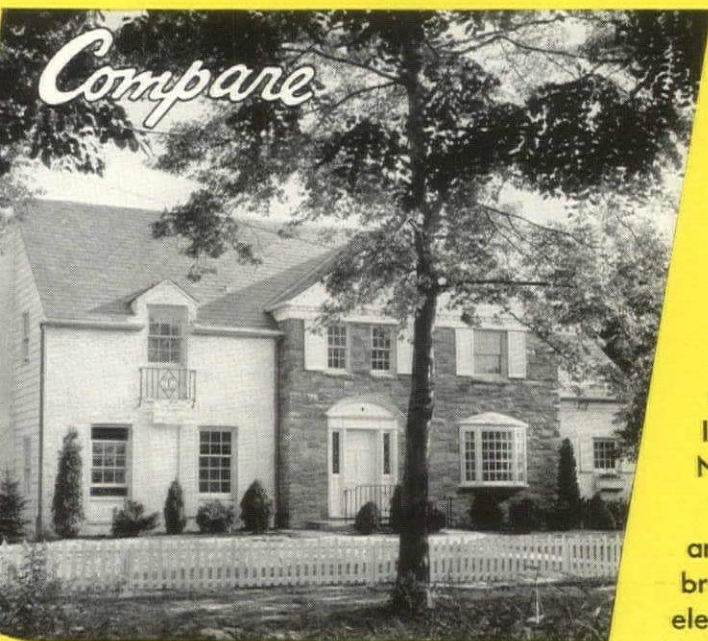
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This size house probably will require 6 circuits, 3 for lighting and 1 each for appliances, range and water heater.

Cost of service distribution center with fuses	\$16 ⁰⁰
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Compare



A house of this size probably will require 5 lighting circuits, 1 appliance circuit, 1 range circuit and 1 separately metered water heater circuit.

Cost of service distribution center with fuses	\$18 ⁶⁰
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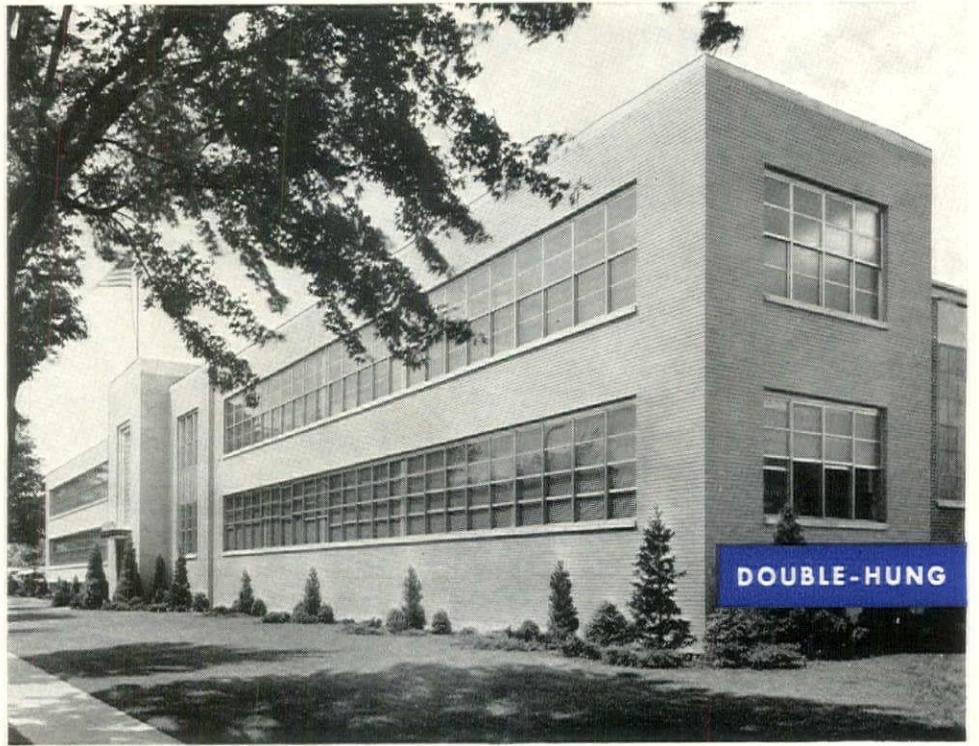
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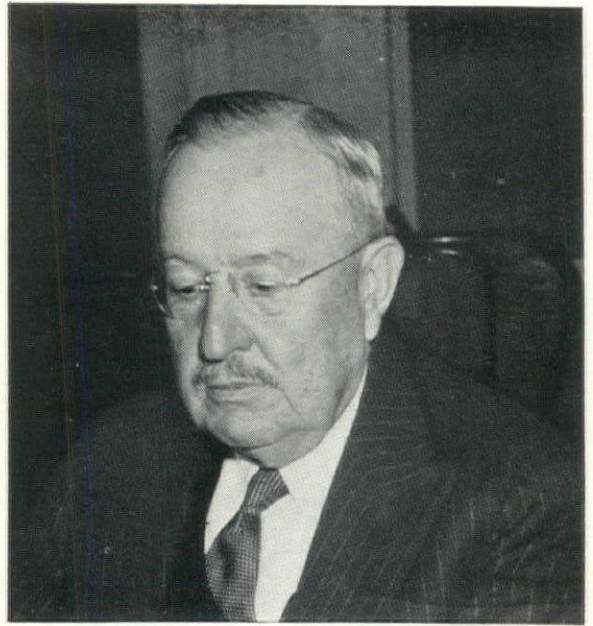
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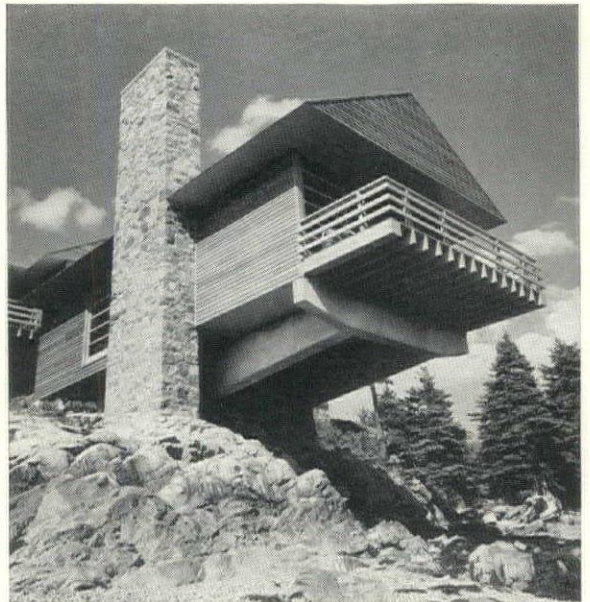
Illustrations show Sealair Double-Hung Windows No. (121) installed in office building of Monarch Machine Tool Co., Sidney, Ohio, Schenck & Williams, Architects—and Sealair Casements in LIFE House, Chicago, Illinois. Other recent installations include residences of all types, and such buildings as Abbottsford Apartments, Milwaukee; Texas A. & M. College (12 buildings); U. S. Naval Air Station, Alameda, Cal.; Central School, Glencoe, Illinois.

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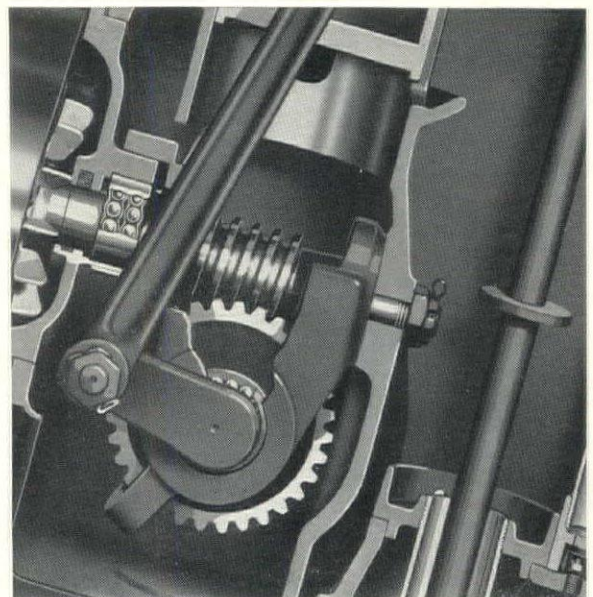


MAN OF THE MONTH . . . he put idle dollars into better living (page 412)



BUILDING OF THE MONTH . . . to tame the rock-ribbed coast of Maine (page 446)

Schnall



PRODUCT OF THE MONTH . . . city convenience for country cousins (page 469)



... a street controlled the planning



... of an organized heap of bricks, concrete and steel

METROPOLITAN'S PARKCHESTER

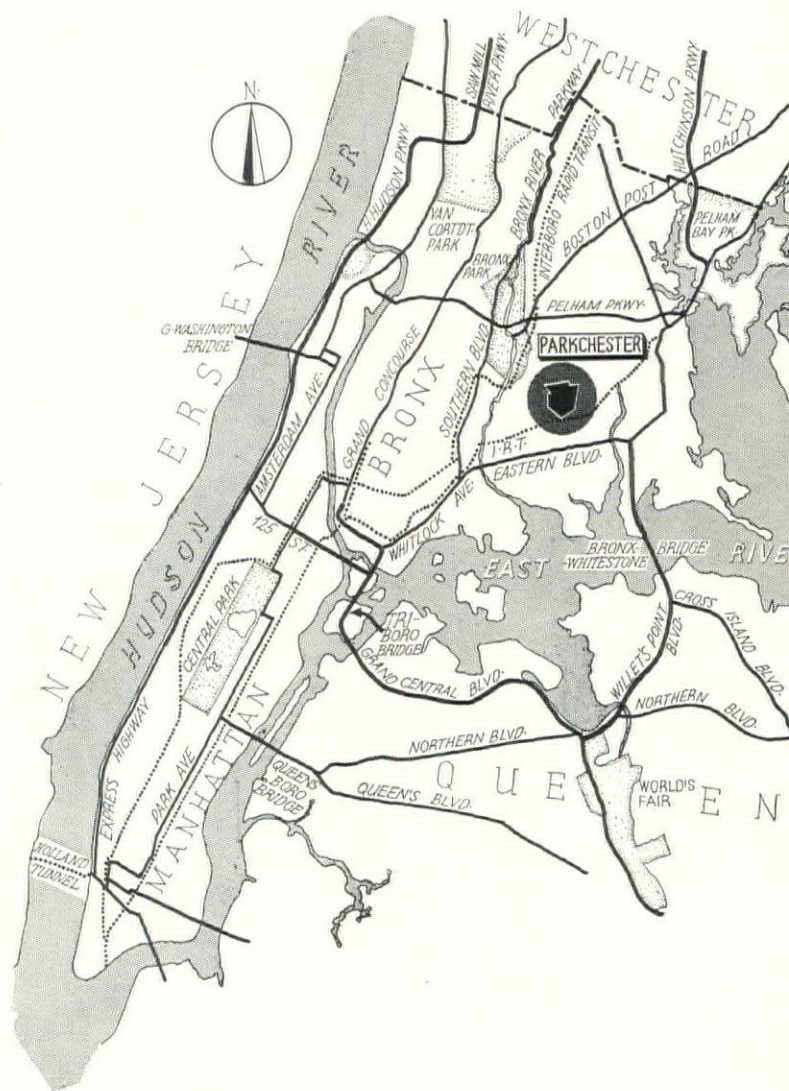
Private enterprise builds a city for 42,000 people, trades modern living for low rents, crooks a finger at idle investment millions.

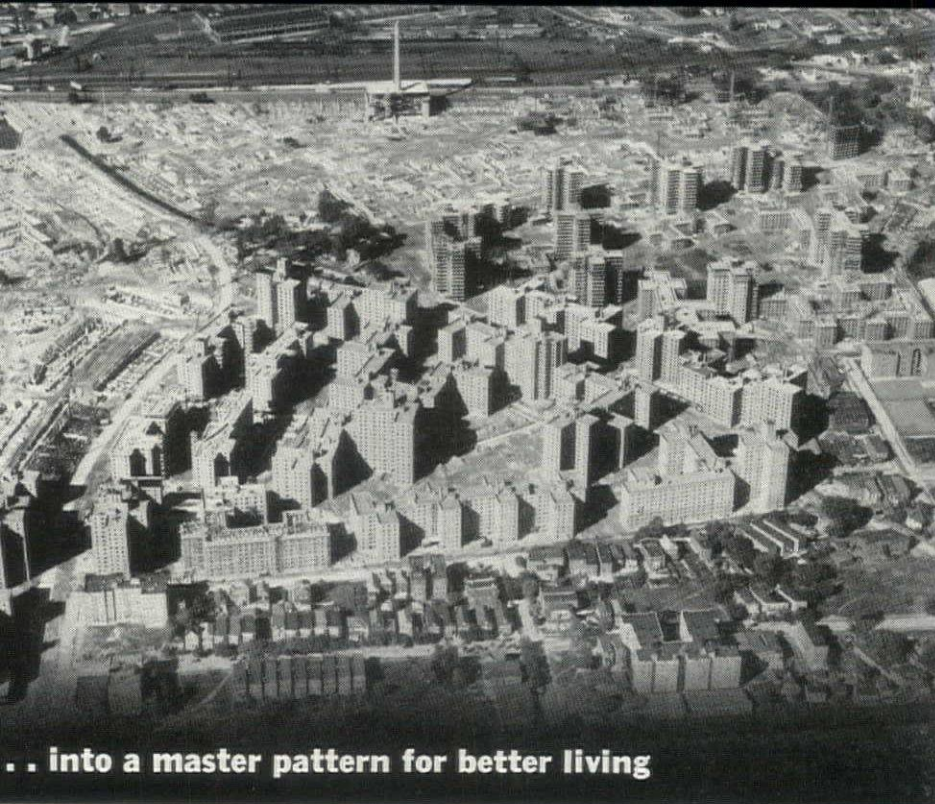
BOARD OF DESIGN:

- Gilmore D. Clarke, Town Planner
- Irwin Clavan, Architect
- Robert W. Dowling, Builder
- Andrew J. Eken, Builder
- George Gove, Owner's Representative
- Henry C. Meyer, Jr., Engineer
- Richmond H. Shreve, Architect, Chairman

BUILDERS: Starrett Bros. & Eken, Inc.

OWNER: Metropolitan Life Insurance Co.





. . . into a master pattern for better living

Fairchild Aerial Surveys



. . . of sound, conservative design

Rolf Tietgens

Parkchester is 129 acres of moderately rolling land—once the property of the Siwanoy Indians, in 1863 the property of the New York Catholic Protectory, in 1938, and probably forever, the property of the Metropolitan Life Insurance Co. Today it is the scene of the world's most imposing residential building operation—scheduled for completion in the spring of 1941. Parkchester will be 51 individual but interrelated apartment buildings ranging in height from seven to thirteen stories. It will be 12,273 well-planned dwelling units ranging in size from two to five rooms and renting for about \$13 per room per month including utilities. It will be called home by some 42,000 people—a community the size of St. Petersburg or White Plains or Battle Creek. It will go far toward solving part of the housing problem, cutting a fat chunk out of the housing market's \$1,800 to \$4,500 income group. It will be, among other things, an organized heap of 110,000,000 bricks, 120,000,000 pounds of structural steel, 15,000,000 sq. ft. of flooring. It will be \$50,000,000 split roughly 45-55 between building labor and building material and equipment manufacturers. It will be one of 100,000 separate items in Metropolitan Life's bulging investment portfolio. It will be the realization of one of Metropolitan Chairman Frederick H. Ecker's pet business and sociological dreams. Finally, it will be of direct interest to one out of every three people in the urban U. S., for that many people (some 29,000,000) are insured by the Metropolitan's mutual organization.

Such is the statistical meaning of Parkchester—the world's largest housing project in New York City's most belittled borough—The Bronx. Last month with the planting of half-grown oaks, sycamores and maples, a quarter of it was taking final form in preparation for spring occupancy. Today, its story can be told. It is a big story, for like its owner-company and the city of which it is a part, Parkchester in significance as well as bulk is BIG.

OWNER

One reason for the record-breaking size of Parkchester is the record-breaking size of its owner and the ponderous problems heaped on its head. The Metropolitan is the largest life insurance company in existence, looks up to only one other company in the entire world—American Telephone and Telegraph. Since 1915 when the Met was mutualized, its assets have multiplied tenfold to a total of \$5 billion. Obviously, such a surge in assets has brought with it increased investment problems. Today the Met has \$1 billion in Government bonds, \$1.7 billion in municipal and corporate securities, \$88 million in preferred stocks and close to \$1 billion in real estate mortgages. And, its assets are still increasing at a rate of \$200 million per year.

That, however, is only part of the problem, for, compared to the pre-depression era, today's investment pickings are slim. The volume of security offerings is low, and their interest rates are lower still. Back in 1928 and 1929, the Met's investments were earning net interest close to the life insurance company average (42 companies) of 5.0 per cent. Last year its increased volume of investments netted \$167 million, or only 3.5 per cent. Handsome beside this comparatively low figure is the expected net return of the new housing project.

Other life insurance companies which have to cope with smaller editions of the same problems are investing in rental housing but in an entirely different way. Since enactment of the National Housing Act in 1934, the Met's two biggest competitors, the Prudential and the New York Life, have been gobbling up FHA-insured mortgages on large scale rental housing projects. Today these two companies hold \$45 million of the \$100 million of mortgages which FHA's rental housing division has thus far insured. And, much of the balance is in the portfolios of lesser life insurance companies. Interestingly, the Met's portfolio is conspicuously bare of these mortgages, which produce a return of slightly less than 4 per cent. Apparently, the Met prefers to forego FHA insurance in favor of direct housing investment wherein it may know firsthand the allocation of every dollar, may even take a hand in the allocation.

This preference was as apparent in 1922 as it is today. In that year, with the benefit of State enabling legislation, the Met invested \$7.5 million directly in the construction and operation of three housing projects in New York City's Borough of Queens. Completed in 1925, the five-story walk-ups covered 50 per cent of the sites, and the admittedly small rooms of the 2,125 apartments rented for about \$9 per month. Weighty factor behind this comparatively low rent was the State's decree that the projects' land be tax-exempt for a decade. Immediately after completion, the Met's Queens projects were 100 per cent tenanted and for several years produced a net return of about 6 per cent on

the capital investment. During Depression, however, frequent vacancies, the expiration of tax exemption and a modernization program shaved the return considerably. In 1935 the picture brightened. Last year with the average rental at \$8.37 per room per month, the projects were again producing a satisfactory net return.

Since the Queens projects have lived up to financial expectations, they have crystallized the Met's convictions as to the wisdom of direct housing investment. Two years ago when the New York State Legislature was debating a modification of the insurance code to permit life insurance companies directly to invest up to 10 per cent of their assets in low rent housing, the Met put fire under the boiler by announcing that it was prepared to invest \$100 million if and when permitted. On February 17, 1938, the amendment was passed. Within a month and a half, the fast-moving Met proved that it was not bluffing, announced that it had already selected a site for a housing project to cost half of its \$100 million promise and that the wheels of progress were already turning.

BOARD OF DESIGN

First turn of the wheels was the selection of a Board of Design to plan the development in collaboration with the insurance company's staff. Chairmanned by Architect Richmond H. Shreve of Shreve, Lamb and Harmon, this group of experts includes Builders Andrew J. Eken and Robert W. Dowling of Starrett Bros. & Eken, Engineer Henry C. Meyer, Jr. of Meyer, Strong and Jones, Town Planner Gilmore D. Clarke of Westchester County (N. Y.) Parkways and Architect Irwin Clavan as production manager. Also serving on the Board as the owner's representative is George Gove, one-time secretary of the New York State Board of Housing, now the Met's manager of housing projects.

Decision to place the project's development in the hands of a board arose from the Met's desire to surround the entire problem with a coordinated group of experts. Decision to place the problem in the hands of this particular Board arose quite logically. Architects Shreve and Clavan and Builders Starrett Bros. & Eken had teamed up before (in 1930), helped build in record time the 102-story \$52,000,000 Empire State Building.* (ARCH. FORUM, Jan. 1931, p. 1, et seq.) Furthermore, these members of the Board of Design had more recently (in 1936) participated in the design and construction of Williamsburg Houses, Brooklyn New York's \$12.5 million PWA housing project whose 1,622 dwelling units have always been 100 per cent tenanted at about \$8.50 per room per month. (ARCH. FORUM, May 1938, p. 356.)

* Interesting side-light: The Met holds the mortgage on the Empire State Building.

Serving more or less as a Board of Directors with Metropolitan's Chairman Frederick H. Ecker as the "chairman ex-officio," the Board of Design began planning a housing development that would fit the Met's exacting specifications. First and foremost, Parkchester had to fit President Leroy A. Lincoln's description of every Metropolitan investment: "... safety is always the first consideration. With this qualification the company properly attempts to obtain as fair a rate of interest as possible. Its investment specialists follow sound conservative principles. . . ." Secondly, Parkchester had to fit into the Met's master plan for better U. S. living conditions—the largest, healthiest quarters that could be provided at the comparatively low rent scale. Necessary corollary to these indoor aids to living was the requirement that ample outdoor recreational facilities be provided. Finally, the Met handed the Board of Design 129 acres of the Bronx.

SITE

A "natural" for any urban housing project, this 129-acre site was situated in a highly—but poorly—developed residential district, yet was itself only sparsely developed. It had been owned for 75 years by the New York Catholic Protectory, a combination orphanage and reformatory, which had dotted the property with a handful of dormitories and out buildings. Still more important from the low cost, low rent standpoint, the property was for sale at the bargain price of about \$4 million—about \$31,000 per acre or 71 cents per sq. ft.*

Parkchester is eight crow-flight miles from the Rockefeller Center of Manhattan, nine to ten automobile miles and 30 subway minutes. (The latter measure may be slightly shortened by a possible alteration of train schedules to meet Parkchester's transportation demands.) Despite somewhat mediocre transit facilities, the site is undoubtedly the best available for the purpose and price. Other alternatives would probably have put Parkchester in the World's Fair section of Queens where cheap undeveloped land is scarce, comes in small parcels, is cut up by city-owned streets and suffers from equally poor subway service. During the five years prior to the announcement of Parkchester, the Met off and on had toyed with the idea of building a huge housing project, had considered all available unimproved sites from every angle, had even drawn up rough plans for the development of each site and had obtained construction cost estimates on them all. Thus, the final choice of the Parkchester site was based on no snap judgment.

As shown in the air view opposite, the site is bounded by structures of every classification—single-family detached houses, walk-up tenements, six-story ele-

* Average apartment house land runs about \$1 per sq. ft. in the Bronx.

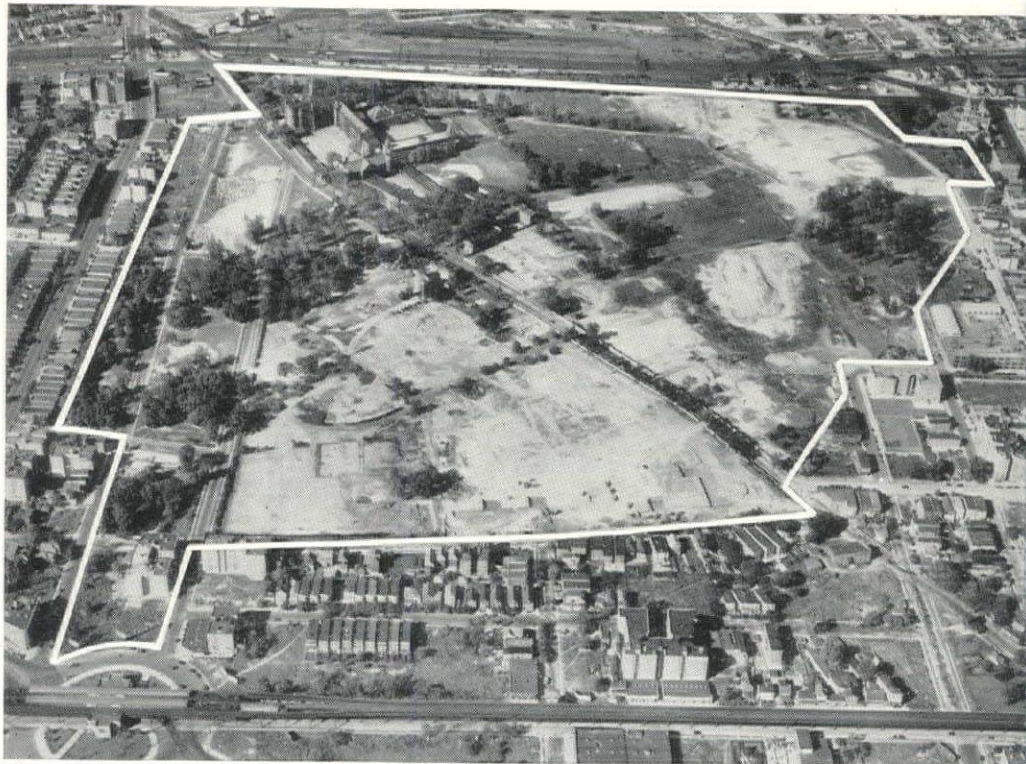
vator apartments, commercial buildings of the taxpayer variety, a couple of factories, a public school, a church and on the north side by the New Haven Railroad's four-track right-of-way and freight sidings. In short, Parkchester's surroundings cannot be called attractive, but neither can they be called slums.

LAND PLANNING

When the Bronx site was placed in the Board of Design's hands, it had one outstanding feature which was to control the project's planning and appear predominantly in the final solution—an unkempt, unpaved street, Unionport Road bisected the property diagonally, between the northwest and southeast corners, and since the record of its ownership had long since been lost, its course could not be easily altered. First step in Parkchester's land planning was thus almost predetermined. Logical in the face of this condition were succeeding steps: 1) to widen Unionport Road to 110 ft., 2) to cross it with another diagonal boulevard connecting the opposite corners of the site, 3) to immodestly dub the latter "Metropolitan Avenue."

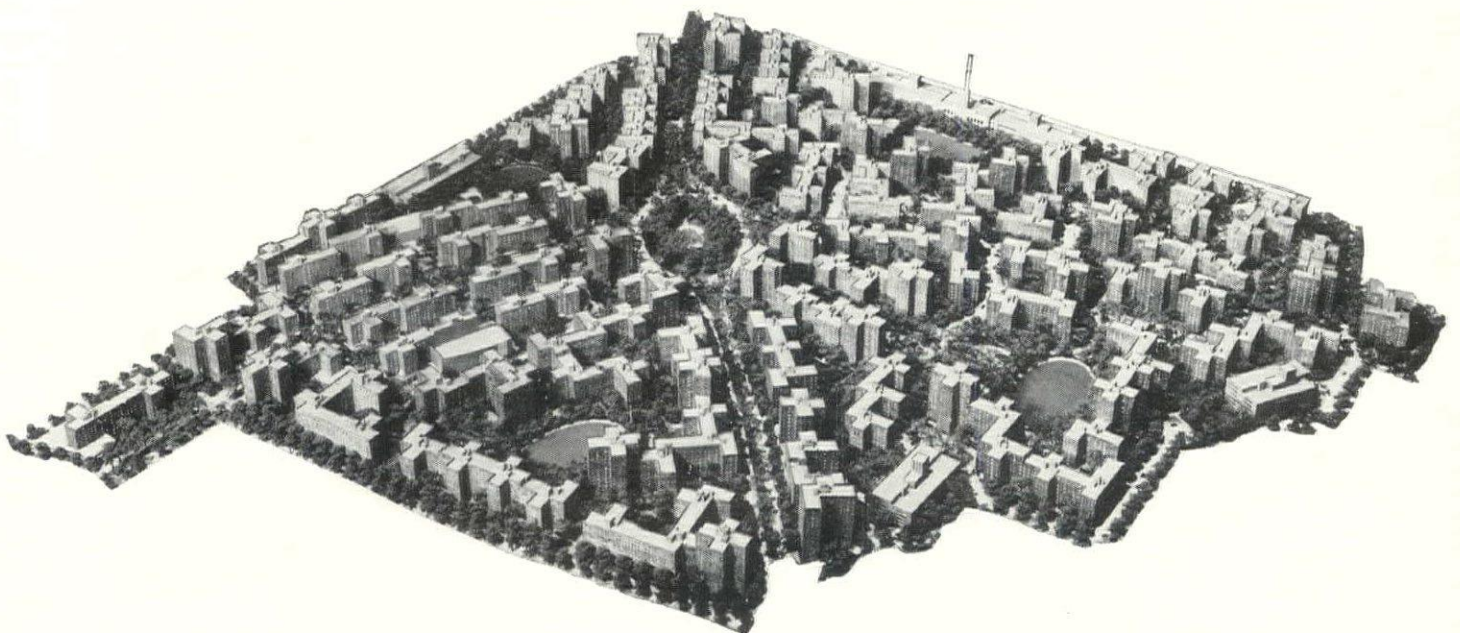
While dividing the site into four quadrants with main traffic arteries would seem to violate every rule of modern community planning, Parkchester's layout must be considered in the light of its tremendous scale. Actually, each quadrant is a residential project, and the size of anyone of three of them has never been equaled in the U. S. by either Government or private enterprise.* Three other factors

* Biggest Government project to date: New York City's uncompleted USHA project, Queensbridge, with 3,149 dwelling units; biggest private enterprise project: Metropolitan Life's 1922 three-site project also in New York City, with 2,125 dwelling units.



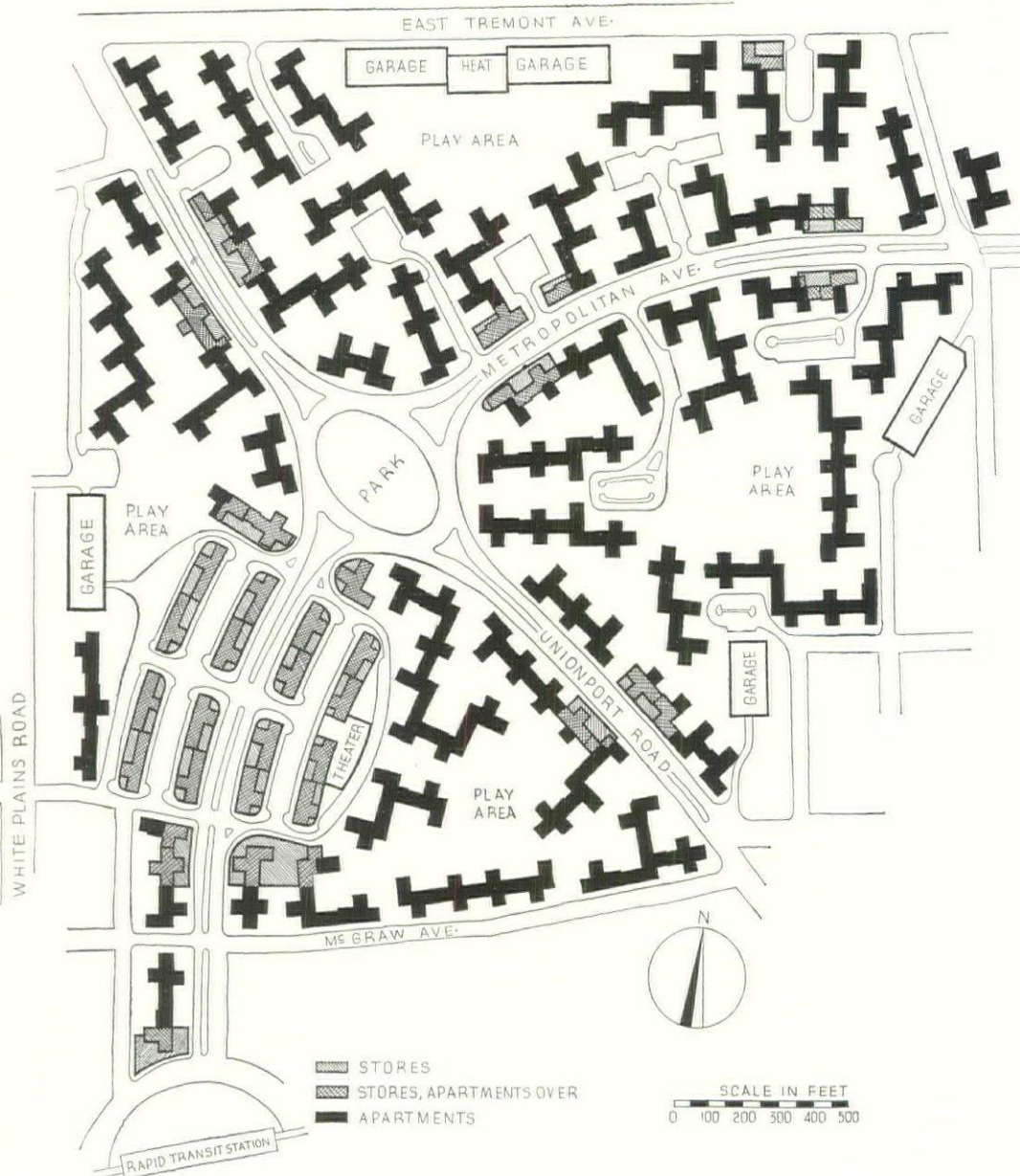
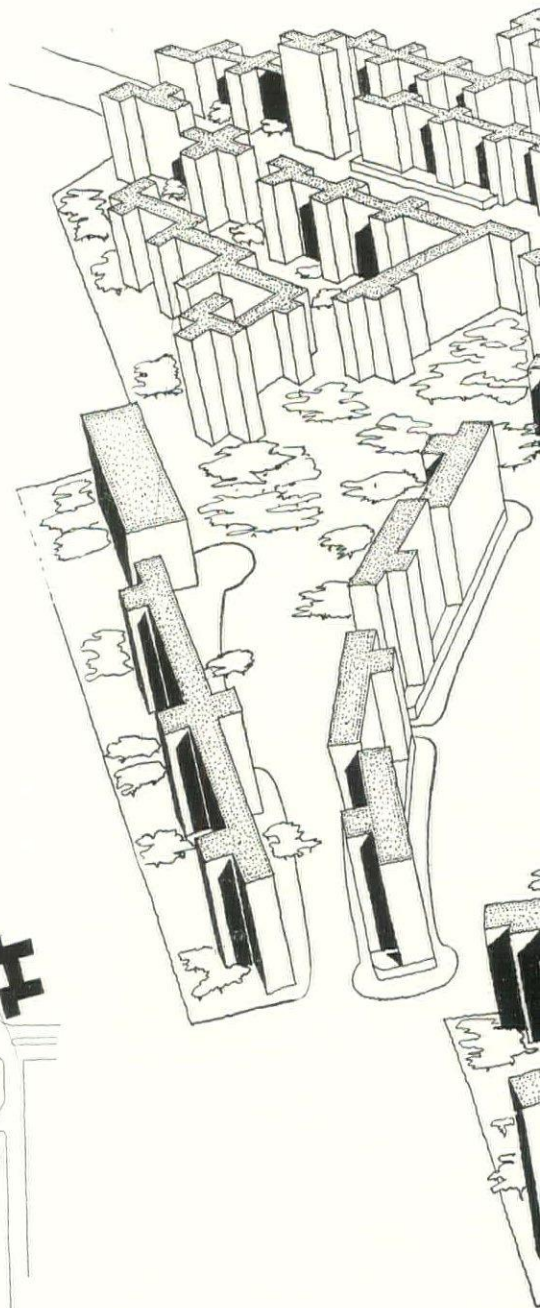
Fairchild Aerial Surveys

PARKCHESTER'S 129-ACRE SITE when purchased was dotted with a few orphanage and reform school buildings, all of which were promptly demolished. Unionport Road, bisecting the property diagonally, was the only landmark left alone. Converted into a 110 ft. boulevard, it appears predominantly in the scale model of Parkchester, below, which awed many a visitor in the Metropolitan Life Insurance Company World's Fair exhibit. When completed in the spring of 1941, the project will have some 4,000 trees and a landscaping bill of about \$300,000. Due to the maintenance problem they create, shrubs will be conspicuously absent. For a key to the model, see the plot plan on the following page.





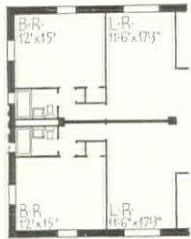
COMPARATIVE DENSITIES: Above—the way it might have been—with streets originally planned by the city and developed to the maximum coverage permitted under present zoning ordinances; number of apartments, 24,800; families per acre (gross), 183; persons per acre, 640. Below—the way it is—plot plan of the same site as adopted by Parkchester's Board of Design; number of apartments, 12,273; families per acre (gross), 95; persons per acre, 320.





Fairchild Aerial Surveys

FIFTY-ONE INDIVIDUAL BUT INTERRELATED BUILDINGS will be the completed Parkchester. Those buildings (in the south quadrant) that are nearing completion for spring occupancy and those under construction in the east quadrant are shown in the air view above. The remaining buildings are sketched in their approximate relation to the others. Showing off Parkchester to better advantage than either its plot plan (left) or its model (page 415), this composite photograph-sketch amply illustrates the project's random, open planning. Only 27.4 per cent of the 129-acre site is covered with buildings. Note the large open areas in the center of each quadrant, the concentration of tall buildings around these areas, at the site's center and at its four corners. Disguised above but readily apparent in the plot plan (left) is the commendable exclusion of through traffic from each quadrant.



WING PLAN A



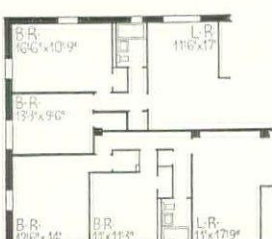
WING PLAN B



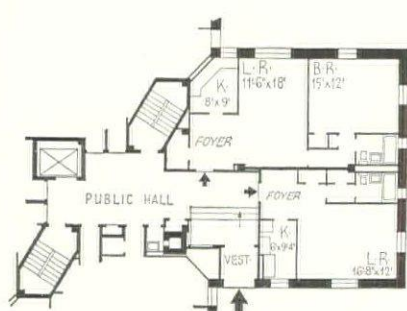
WING PLAN C



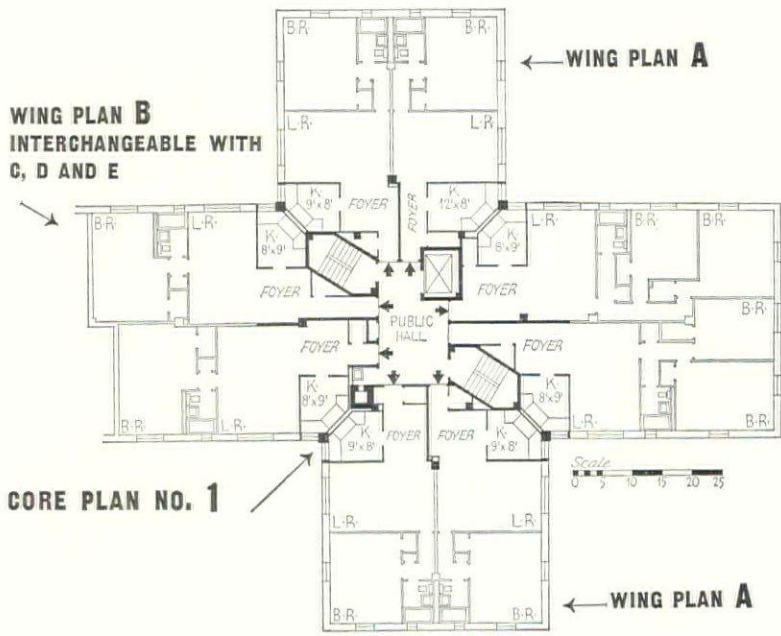
WING PLAN D



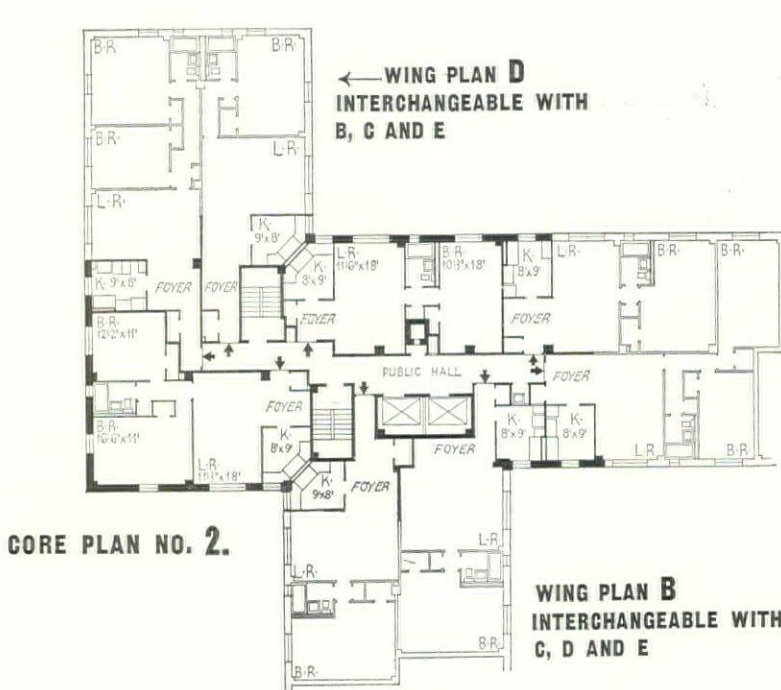
WING PLAN E



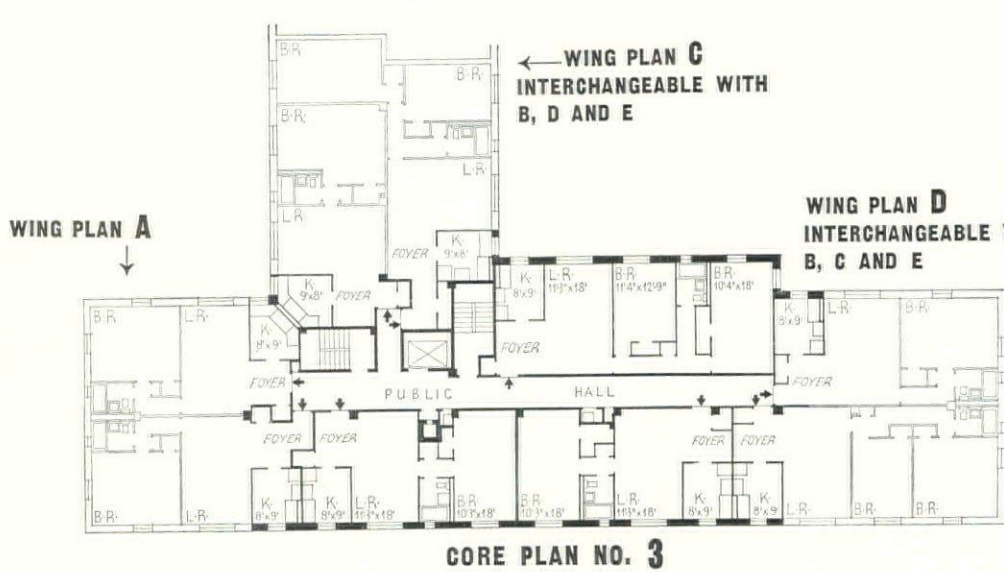
Core and wing plan variation—two-room, first-floor apartment.



CORE PLAN NO. 1



CORE PLAN NO. 2.



CORE PLAN NO. 3

are offered as justification of this X street pattern: 1) the site is too big to leave wholly undivided, 2) the adopted plan necessitated the least possible length of paving—about one and one-quarter miles as compared to five miles on the city-approved grid pattern (page 416), and 3) traffic on the two streets will not be heavy and will be retarded by the oval at the project's only intersection.

To the credit of the Board of Design is the fact that no through traffic is admitted to any of the individual quadrants. All intraquadrant roads are for delivery service and parking purposes; most of them are dead ends. Also in these quadrants are heavy duty paths closed to public vehicles, but which may be opened to moving vans, milk wagons, fire trucks and ambulances. All roads and paths are "black-topped" to minimize glare and noise.

Instead of following customary procedure and permitting the city to furnish all utilities and to recoup the cost through property assessments, the Met itself did all the work. Parkchester's public streets, sewers, water mains, etc., were laid out by the Board, approved by the city, installed under private contracts and paid for. When completed, they were turned over gratis to the city which will assume the responsibility of their maintenance and repair. Advantages of this departure from tradition are many: the Met got what it wanted, knew what it was getting, avoided the red-tape delays that go with city construction, and could account for every dollar that it spent.

Due to the inadequacy of nearby facilities, it was necessary to provide Parkchester with its own shopping center. Estimating that approximately 6,000 linear feet of store frontage (200 stores) would serve the 12,273 tenant families and whatever outsiders would be attracted to the community's new stores, the Board concentrated the best part of it in the first and second stories of buildings occupying the southwest corner of the site. In addition, the first floors of several other buildings in five outlying parts of the site were set aside as small scale shopping centers. (See plot plan, page 416.) The adequacy of nearby elementary and high schools—existing and projected—made unnecessary the provision for educational facilities within the project.

With the layout of streets and the central shopping district, pattern in Park-

chester ceased. Informality keynotes the layout of residential buildings—some of them flank the diagonal boulevards, a greater number have only one end facing the traffic, still others are set within the quadrants. There are no backyards, no closed courtyards, only a few rectangular enclosures. Wherever possible and economical, consideration was given orientation to light and air, and buildings were spaced far enough apart (at least 60 ft.) to minimize noise.* Sight of these factors, however, is frequently lost to the observer in the tremendous horizontal and vertical scale of the project. Particularly commendable was the segregation of large areas (bigger than football gridirons) in the center of each quadrant for the provision of organized recreational facilities and landscaped lawns. A two-and-one-half acre park with a formal garden and fountain pool was scheduled for the traffic oval at the intersection of Unionport Road and Metropolitan Avenue.

Other elements entering into the land planning: a theater of 2,000 capacity in the shopping center, a central heating plant strategically located near the railroad track border of the North quadrant and flanked on either side by five-story ramp garages, another garage in the West quadrant and two more in the East. The South quadrant is without garage, will use one of the East's. (Total garage capacity: 3,500 comfortably, 4,500 uncomfortably.)

Thus planned, Parkchester's 129 acres are reasonably divided according to use: only 35.5 acres or 27.4 per cent are occupied by buildings, 27.4 acres or 21.2 per cent are covered with major and minor streets, and the largest part—66.6 acres or 51.4 per cent—is made up of landscaped and recreation areas. Thus, in all, about 73 per cent of the 129-acre site is open.

DESIGN

More interesting than the project's layout is the design of its component parts. Reason: although only a handful of Parkchester's 51 buildings are exactly alike, design standardization was carried to a highly economical extreme. Actually, the project rises from small basic floor plans

* Note that most Parkchester buildings have their narrow ends (not their broad sides) facing north.

—each of which is comparable in over-all dimensions to the floor plan of any good-sized private residence.* (See opposite.) Building design centers around the development of three different core plans containing the service elements of buildings—stair wells, elevator shafts, public corridors, incinerators, slop sinks, etc.—and the kitchens and foyers of those apartments which are to adjoin them. Two of the basic core plans also contain two or three complete dwelling units.

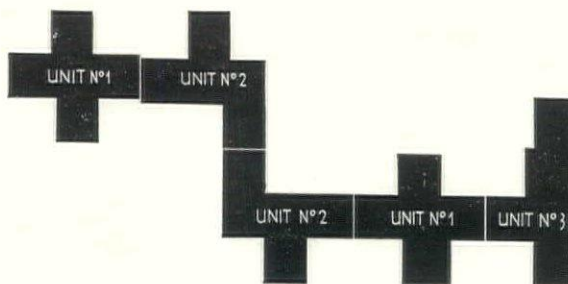
Phase No. 2 of the building design was the development of five basic wing plans to be connected to the cores. Each of them provides for two dwelling units (without kitchens and foyers, which are provided in the core plans) containing either one or two bedrooms. Combination of a core with any of those wings which are adaptable to it produces a building unit. As shown in the sample combinations on page 418, the wing plans must sometimes be reversed to jibe with the kitchens and foyers of the core plan; but, in such cases, the wing plan is not altered—it is still standardization. Three wing plans A, D and E (page 418), are enclosed on three sides by fenestrated exterior walls; they are for use when it is desired to finish off a building unit. The other wing units (B and C) have no windows in their third walls, are used when two building units are to be joined.

Since each building unit is made up of various combinations of three core plans and five wing plans and since each building, in turn, is made up of various combinations of these building units, the sizes and shapes of Parkchester's buildings could have been carried to an astronomical figure. Only the limitations of 129 acres kept the figure down to 51 buildings composed of 171 building units.

More important than mathematical possibilities, however, are the major economies which accompanied this progressive standardization: 1) Design and drafting were simplified. 2) Duplication of room, apartment and public space dimensions facilitated the ordering and installation of materials and equipment. 3) Repetition of the same construction details promoted

* These plans actually served as the basis for about 90 per cent of the project's dwelling facilities. Small variations in them were essential to the design of such elements as two-room apartments and main entrance foyers, five-room apartments, basement terrace apartments, etc.

ECONOMICAL STANDARDIZATION played an important part in Parkchester's design. Most of the project's residential building units spring from the three core plans and five wing plans illustrated to the left. And, only minor changes in these basic schemes were necessary for the exceptions. Thus, in the taller building units both core plans and wing plans are altered slightly to make way for steel skeleton construction and an additional elevator—as shown in core plan No. 2 and its adjoining wings. Due to the many different combinations of these eight plans into various building units, Parkchester's 51 standardized buildings display marked dissimilarity. One of many possible combinations of building units (lifted from the project's East quadrant) is shown to the right.





All photos, Rolf Tietge

PLAY AREA—SOUTH QUADRANT



labor efficiency and made for easy supervision and inspection. Still other noteworthy efforts toward cost reduction are apparent in Parkchester's floor plans: all bathrooms are identical; kitchens follow three standard patterns, are in the majority of cases set back to back against common plumbing stacks; dining rooms are non-existent; public corridor space is minimized (particularly in core plan No. 1) and usable basement space is converted into terrace apartments.

But cost reduction is not the only consideration. Parkchester's apartments have many amenities: ample closet space, one closet conveniently located beside each entrance, large steel casement windows two vertical panels of which open out (in the bedroom an additional horizontal panel at the window's bottom opens in to form a ventilator), cross ventilation in the majority of bedrooms, a steel broom closet in the kitchen, steel over-head and under-sink cabinets in the kitchen, tile floor and wainscot in the bathroom and, most important, unusually large rooms for the rent. Parkchester's average living room has about 225 sq. ft. of floor space; the primary bedroom, 190; secondary bedroom, 130; kitchen, 55; bathroom, 40.

Having served economical purposes in the interior planning, simplicity and standardization were then carried to the exterior. Parkchester's architecture is a simple, frank expression of plan. Sheer brick walls are carried to heights of seven, eight, nine, twelve and thirteen stories depending upon the location of the building unit on the site plan. By and large, tallest units are concentrated for emphasis at the four corners of the project and around the large open spaces where their shadows will fall on the land rather than on adjacent buildings. Other variations in building unit heights break up the monotony that would have otherwise resulted. The natural rolling character of the site adds further to the informal variation of the project's over-all design.

Ornamentation—what there is of it—consists mainly of playful statues (500 accordion players, skiers, girls with umbrellas, etc.) built into the corners of many buildings and small plaques (600 dachshunds, ducks, pigs, etc.) above entrances. (See photos, right.) Most of it is terra cotta, most of it in several colors. Only other ornamentation is in the handling of brick at the top of the buildings and around the entrances. For general effect the project relies solely on the relation of one building to another. And, since the eye can take in only a small part of Parkchester at one glance, the uniformity of its masses is not as overbearing as might be expected. The project is endless repetition in fact, but much less so in effect.

CONSTRUCTION

Every material, every piece of equipment and every construction technique that was used in Parkchester was selected only after the most scrutinous research as

to initial, installation and maintenance costs.* While the Board of Design undertook this research with open minds, most of their decisions led to time-tested materials and practices. Thus, Parkchester's construction is without newsworthy details. Its tall buildings are constructed like skyscrapers on a steel skeleton in accordance with building code requirements; its low buildings are of the less expensive bearing-wall type; cinder concrete comprises the arches, fireproofs the steel.

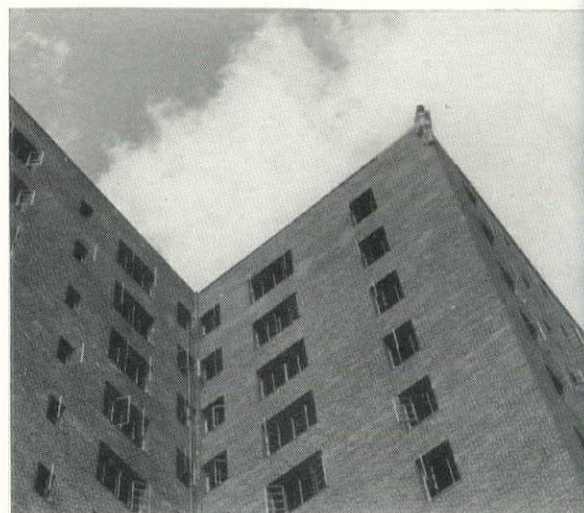
In any large housing project, interest naturally attaches to the economies attendant upon the mass purchasing of material and equipment. Unfortunately, until Parkchester is complete and the Met's bills are totaled, this inquisitive interest cannot be satisfied. Today, the Met will admit only that "very good" prices are being obtained—nothing more. However, an inkling of how good they are appears in the estimated over-all cost of the project (see below). Equally important as wholesale buying in the reduction of Parkchester's total cost is the combination of such economical practices as 1) the design of buildings on the basis of squares—geometric forms which enclose the greatest areas with the smallest perimeters, 2) the provision of living space in all basements (invariably a project's most expensive floor) where the floor is above grade, 3) the use of 2 in. solid plaster partitions which reduce initial costs and expand room sizes, 4) the striking of an economical balance between cut and fill, making it possible in many cases to set foundations at the level of the original grade and 5) the purchase of materials and equipment during a favorable cost market.

Hand-in-glove with its conventional building materials and techniques goes Parkchester's conventional building labor conditions: 100 per cent unionization, prevailing wage rates, a few jurisdictional disputes, occasional but unimportant strikes. No efforts were made to put laborers (4,700 of them at the current employment peak) on a guaranteed annual wage, no anti-wage-increase agreement was negotiated for the duration of construction, no prefabrication was introduced to arouse the ire of labor. The Met is apparently content to string along with traditional labor practices, is admittedly content with the production rate and efficiency of its building labor.

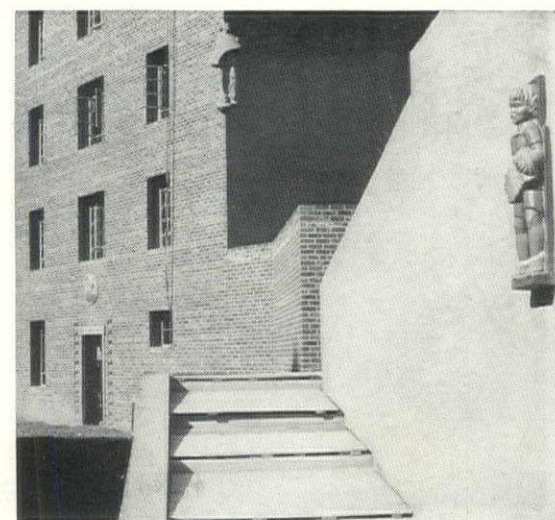
HEATING

Two of Parkchester's three mechanical subcontracts can adequately and simply

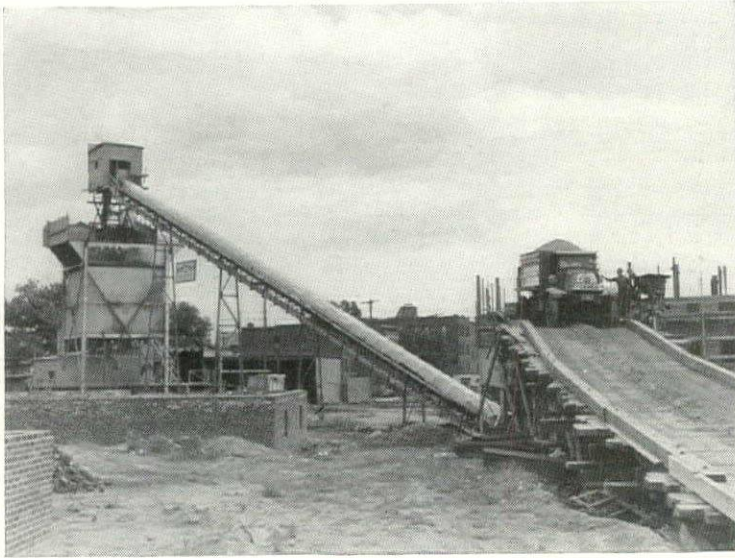
* Specifications were written by the Board of Design and reflect the thinking of the project's architects, engineers, builders, operation and maintenance experts and the owner's representative. Only the material and equipment which met the specifications and could be purchased at the lowest over-all cost (maintenance and operation costs as well as initial costs) were selected.



Rolf Tietgens



Rolf Tietgens

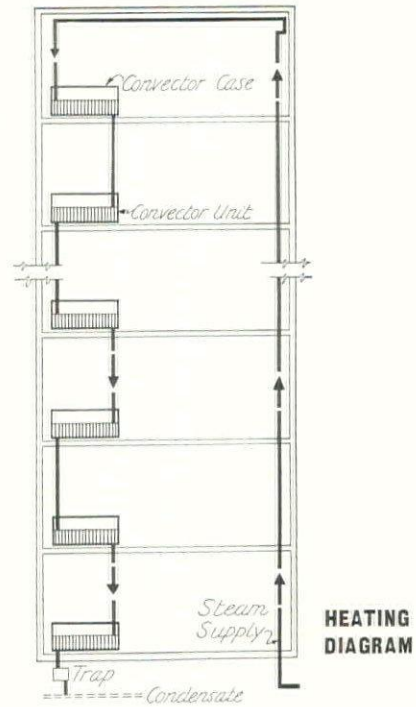


CONCRETE PLANT—AT SITE



FLOOR CONSTRUCTION

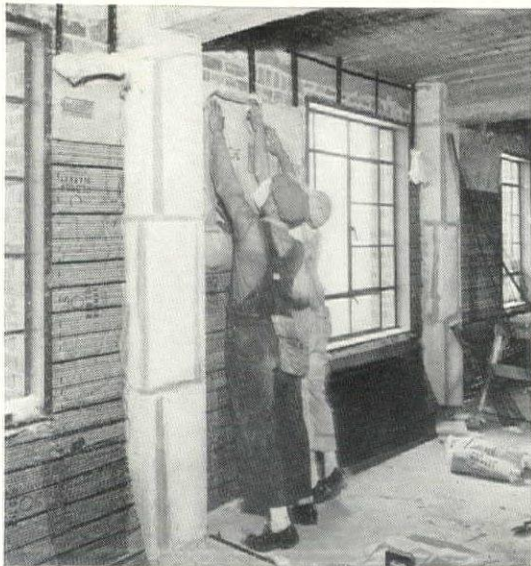
THE HEATING SYSTEM of Parkchester is of outstanding design. From four boilers in its central heating plant steam is distributed through 14,000 ft. of pipe (see below and right) to the heater rooms of 29 buildings which control the local distribution in all 51 buildings. Having been reduced in pressure from 100 lbs. per sq. in. to 5 lbs., steam is then forced to the tops of the buildings, reversing the customary procedure, and thence downward through the convectors of the various apartments (see diagram, right). Absence of valves in this circuit prevents the leakage of air into the system, increases its efficiency. A damper on each convector case is the tenant's only heat control; sensitive mechanism in the heater rooms adjusts the heat supply to indoor and outdoor temperatures. Insulation of all exterior walls (see construction photograph, page 423, upper left) reduced the required capacity of the heating plant, will shave operating expenses considerably, thus will more than pay for itself.



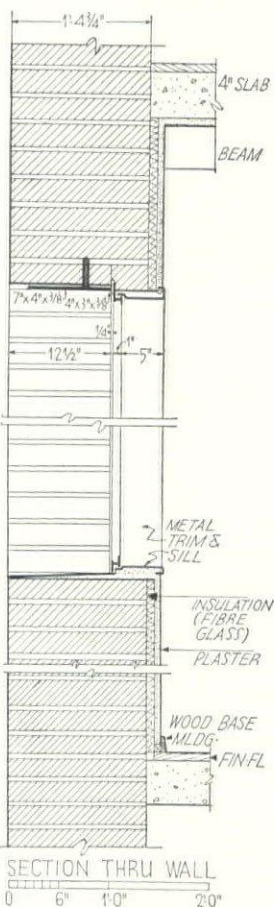
HEATING DIAGRAM



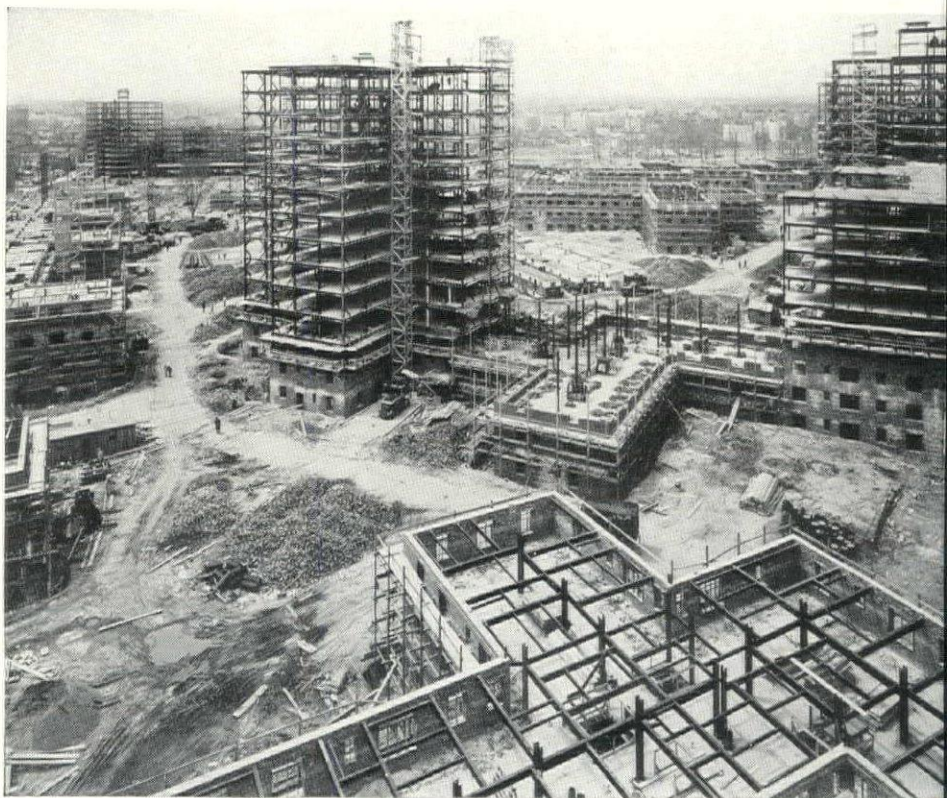
STEAM DISTRIBUTION SYSTEM



INSULATION INSTALLATION



SCALE OF CONSTRUCTION at Parkchester is indicated by the size of its own concrete plant (upper left, page 422). Trucks dump cinders onto a bucket conveyor which takes them to the large elevated hopper. Together with the proper proportions of cement and water they are then dumped into transit-mixing trucks which deliver the concrete. In photograph right, above, note in the foreground the construction of a low bearing-wall building, in the background a tall steel-skeleton building which dwarfs the large piles of bricks around it. Cross section above illustrates construction of a bearing-wall building's lower exterior wall; walls of top five stories have 13 in. of brick as do all steel-skeleton building walls.



Rolf Tietjens

be described as conventional—the electrical and plumbing installations. On the other hand, the heating system with its unique hook-up of valveless radiators is newsworthy in many details, is a shining example of the Board of Design's many efforts toward minimizing installation, operating and maintenance costs.

In the first place, convincing research showed that the provision of 1 in. of spun glass insulation and a vapor stop between the brick and plaster of all exterior walls would more than pay for itself by reducing considerably the heating system's required capacity and its operating cost. (Estimated annual saving: \$40,000.) Thanks to insulation, heat transmission loss is minimized, low wall temperatures are eliminated, absorption of radiant body heat by the walls is lessened and, as a result, Parkchester's space heating requirements are only one and one-half times its hot water heating requirements. The ratio in the average apartment project is two and a half to one.

Heating medium is sub-atmospheric steam, and all of it—for 51 individual buildings—is generated in one central heating plant. Contained in a building measuring 180 x 75 ft., this plant is composed of four oil-fired bent-tube boilers, each producing some 135,000 lbs. of steam per hour at a pressure of 100 lbs. per sq. in. Accessory equipment includes a water storage tank, a de-aerating heater to remove all oxygen from the condensate, turbine driven exhaust fans for the water-cooled furnaces and four underground fuel storage tanks with a total capacity of 256,000 gallons—sufficient to service the plant for ten days during severest winter weather. Oil will be delivered either by truck from the waterfront or by pipeline from railroad tank cars standing on a nearby siding.

But, Parkchester's heating plant may not always be what it is today. If sometime in the future oil costs make it more economical to switch to coal or electricity costs make it more economical for Parkchester to generate its own, the heating plant will be ready for either contingency. Provision has already been made for the future installation of pulverized fuel firing equipment and turbo-generators, and the present boilers can easily produce the 450 lb. per sq. in. pressure which would be required to operate the latter.

Second phase of Parkchester's heating system is the distribution of the steam from the boilers to the 51 individual buildings—undoubtedly the biggest, most difficult problem of its kind ever confronted in a single building project. It is patterned somewhat after the circulatory system of the human body. Serving as the "heart," the central heating plant pumps live steam at 100 lbs. pressure through three main "arteries"—14 and 16 in. welded and insulated steel pipes housed in poured concrete underground ducts or tunnels. (See construction photograph, page 422.) These three arteries feed into innumerable smaller "capillaries" which

step down in diameter to 4 in. in relation to the distance from the heating plant and run in smaller concrete tunnels to the basement heater rooms of 29 buildings. (Several heater rooms serve one or more adjacent buildings.) Altogether, the steam distribution system between central heating plant and buildings required more than 14,000 linear feet of piping, and, of course, the condensate return—brass "veins" in the circulatory system ranging between 1½ and 6 in. in diameter—required a similar length of piping.

By the time the steam arrives at the heater room of a building, its 100 lb. pressure will have dropped to 90 or even 60 lbs., depending upon the load on the heating system. Having been reduced further to 5 lbs. by passing through a pressure reducing valve, the steam is then ready for circulation through the building's heating system—a system whose simplicity and many cost-reducing features have much to commend it. Parkchester's system bears little resemblance to the expensive, complicated traditional system. Steam risers run through the bathrooms and kitchens, rise untapped from the basement heater room to the ceiling of the building's top floor. Thence, the steam drops down an exposed pipe beside the window frame of each room, into one end of the convector, out the other end, and down vertically to the next floor where it enters another convector in the opposite direction. (See detail drawing, page 422.) Continuing this alternating course through successive floors, it finally returns to the basement heater room where it is pumped back to the central heating plant as condensate. Since all ceiling heights throughout the project are identical, it was possible to pre-cut and thread all these 1½ in. pipes in a centrally located shed.

New in design, each convector is actually two small cast-iron, vertically finned convectors hooked up in tandem and housed in a steel enclosure 4 in. wide and extending from the floor to the window sill. Dampers on these enclosures are the only temperature controls in the hands of tenants—there are no thermostats, no valves in the apartments. Through a zone-control system heat in the entire building is adjusted to outdoor and indoor temperatures by sensitive mechanism located in the building's heater room. Also in this room is a hot water heater cut into the steam system. It supplies from 1,500 to 4,500 gals. per hour, depending upon the size of the building, at a maximum temperature of 180°.

COSTS

Since Parkchester is only about 25 per cent complete, any discussion of costs must necessarily be based on preliminary guesses. At this early date the Met estimates that its total bill will come to roughly \$50 million, but does not hazard a breakdown of this figure. Simple mathematics, however, indicates that the total cost (including land) per dwelling unit

will be approximately \$4,100. By itself an uncommonly low figure, it makes interesting comparison with the record of projects being built under the U. S. Housing Authority's program.* The average over-all cost per dwelling unit (comparable with the Parkchester figure) of the 107 USHA projects under construction as of October 20 has been officially estimated at \$4,601—about \$500 higher than the indicated cost of this private enterprise project. Of the two preliminary estimates, USHA's is probably the more accurate; the Met's \$50 million guess may be revised as construction progresses. But, even if it should go to \$55 million (and chances are it will not), the cost per dwelling unit would still be under the current USHA average. Obviously then, Parkchester merits the monicker "low cost housing."

RENTS

Parkchester may also be called "low rent housing"—not low in comparison with USHA's subsidized rents,** but low in comparison with existing housing facilities in its own balliwick. Its clean, new rooms will rent for an average of \$13 apiece, and the rent bill will cover the cost of both gas and electricity, items which are conservatively estimated at \$1 per room per month in the average Bronx apartment. Thus, the net cost of shelter in Parkchester is about \$12 per room per month, an interesting figure when compared to other Bronx averages: \$30 for the best the Borough can offer; \$18-\$28 for a room in a modern six-story, self-elevator apartment; \$12-\$20 for smaller and older self-elevator apartments; \$8-\$12 for quarters in an old four-story walk-up; \$5-\$8 for a cold water flat barely above the quality of a dilapidated slum dwelling which will rent for about \$3 per room.

Claiming that rent-per-room statistics are unconvincing, the Met talks about rents per apartment, describes Parkchester's rental picture like this (dollar figures cover gas and electricity) †:

98 two-room apartments at . . .	\$32-\$34
7,006 three-room apartments at	\$39-\$50
4,607 four-room apartments at . .	\$52-\$60
551 five-room apartments at . . .	\$63-\$69

Variations in rent for apartments of the same number of rooms are accounted for by different room sizes, exposures and elevations. Terrace and upper floor apartments usually command the top figure in each bracket.

Odds are better than good that Parkchester will be "sold out" the day of its

* Since Parkchester boasts better planning, bigger rooms, more extensive landscaping than the average USHA project, it claims a foul when cost-wise comparisons are made.

** USHA projects are built for slum dwellers without any effort to produce an investment return; they will rent for about \$8 per room per month—half of it paid by the tenants, the other half by the taxpayers in the form of rent subsidies.

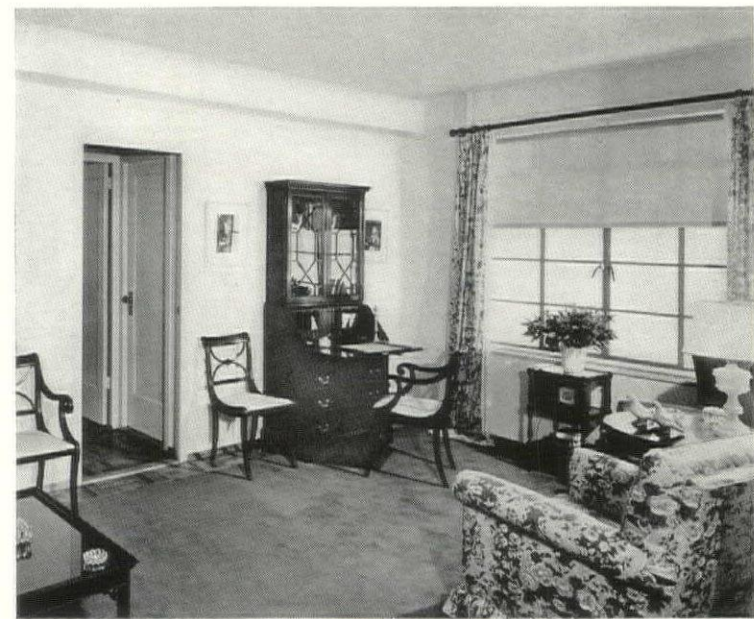
† In addition, there are eleven six- and seven-room apartments, whose rents are as yet undetermined.

METROPOLITAN'S PARKCHESTER

MODEL
ROOMS

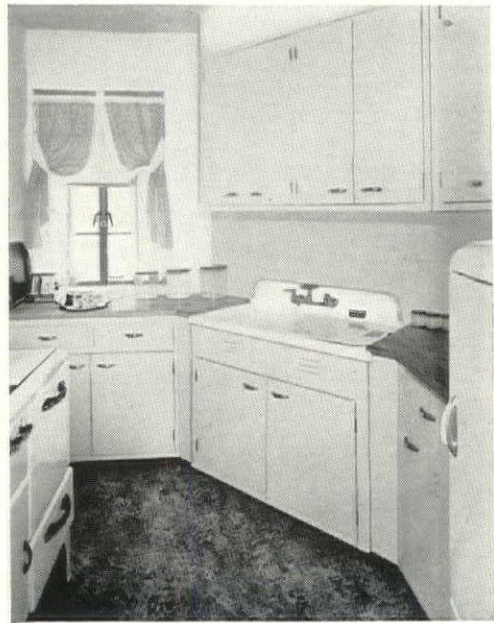


FOYER—LIVING ROOM



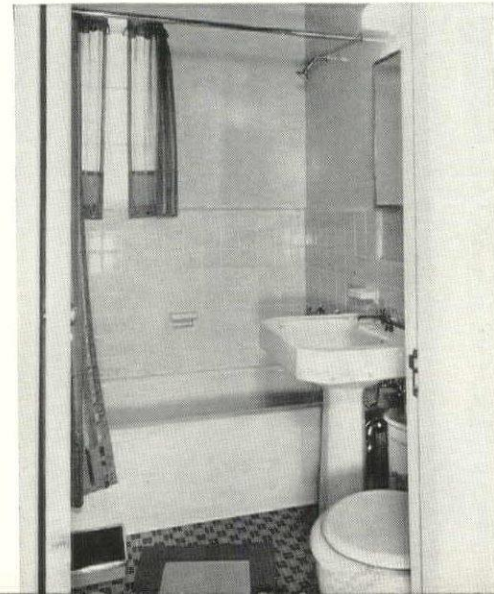
LIVING ROOM

BEDROOM



KITCHEN

BATH



METROPOLITAN'S PARKCHESTER

opening. Newspaper announcements concerning the spring debut of the first quadrangle have already attracted inquiries from some 48,000 families—almost enough to fill the *entire* project four times. With this big flock to draw from, the Met can be fairly choosy. Those families who have inquired are invited by mail on a first-come-first-served basis to visit the rental office near the project, view the furnished model apartment and sign a lease if their character and economic status is up to snuff. While no hard and fast rules govern the procedure, tenant selection will be made generally from those who earn between \$1,800 and \$4,500 and who do not own (or will disown) dogs. Leases are being written upon a \$50 deposit for a term of nineteen months—March 1, 1940 through September 30, 1941. Thereafter, these leases will be renewed for two-year periods—a departure from the local one-year practice to reduce the project's tenant turnover. To date about 50 per cent of Parkchester's inquiries have come from within the Bronx; most of the balance, from New York City's four other Boroughs, from Westchester County to the north, and New Jersey to the west.

PROJECT

Like any product of the building industry—or any industry—Parkchester will be the subject of comment, informed and otherwise. Some will claim that 12,273 families are too many to concentrate on 129 acres—320 persons or about 95 families per acre. Some will claim that the rents are not low enough to merit the term "low rent housing"—the average is \$13 per room. Some will claim that its 171 building units are too high—the average is 9.0 stories. Some will claim that the project could have been improved had its site planning followed a more rectangular pattern—Parkchester typifies the other school of thought which believes in random site planning with due consideration for orientation. Others will disapprove of its small-scale ornamentation.

A realistic septet, the Board of Design is mindful of the controversies its project will engender. And, for the benefit of all potential critics, it emphasizes the three-fold purpose of Parkchester: 1) To provide high grade dwelling facilities, 2) at comparatively low rents and 3) with a reasonable and safe return on the capital invested. There can be no doubt that this purpose is served. Parkchester's dwelling facilities are high grade in planning, size, light, ventilation and equipment. Its rents, in relation to the quality of the apartments and the rents of other New York City dwellings, are certainly low. And, irrefutably, it will produce an adequate and safe return on the Metropolitan's \$50 million investment—really the investment of the mutual company's 29 million policyholders.

Tied up in the successful accomplishment of this three-sided purpose, however,

are certain limitations which must temper any criticism of Parkchester. Decreased density and building heights could only have been obtained at the sacrifice of investment return or by upping the rent scale. Furthermore, bulk (while not necessarily an ingredient of beauty) is an important economical factor in any building operation, producing lower costs and, in turn, lower rents.

Finally, Parkchester cannot be criticized for its avoidance of a philanthropic and paternalistic atmosphere. Reason: while it cannot be called a "money-making" scheme (it could easily command \$15 to \$18 rents), Parkchester and every part of it

is designed primarily to earn enough to sustain the actuarial obligations of the Metropolitan Life Insurance Co. and to amortize the invested capital in a reasonable period of time. But despite the absence of philanthropy and paternalism, this private enterprise investment in housing will also better the living conditions of 12,273 families in the low-to-moderate income group. Nowhere in the U. S.—where living standards are notably higher than in any other nation—will so many people in one group enjoy the excellent living facilities of Parkchester tenants. For, in significance as well as bulk, Parkchester is BIG.

STATISTICAL RECAPITULATION

SITE AREA—in acres	129
Buildings (27.4%)	35.5
Streets (21.2%)	27.4
Lawns, walks, etc. (51.4%)	66.6
BUILDINGS (residential)	51
BUILDING UNITS, total (resid.)	171
7-story	14
8-story	109
9-story	11
11-story	1
12-story	6
13-story	30
APARTMENTS (total)	12,273
2-room (rent: \$32-34*)	98
3-room (rent: \$39-50*)	7,006
4-room (rent: \$52-60*)	4,607
5-room (rent: \$63-69*)	551
6- and 7-room	11
RENT per room (avge.)*	\$13

*Includes gas and electricity

ROOMS, total	42,464
ROOM AREAS—avge. in sq. ft.	225
Living room	190
Primary bedroom	130
Secondary bedroom	55
Kitchen	40
Bathroom	42,000
POPULATION (approx.)	320
DENSITY—per acre	95
Families	320
Persons	5
GARAGES (total cap: 3,500-4,500)	1,279
PARKING FACILITIES—cars	1
THEATERS (cap: 2,000)	200
STORES (approx.)	\$4,000,000
LAND COST (approx.)	\$31,000
per acre	71
per sq. ft. (in cents)	\$50,000,000
COST total (approx.)	\$4,100
per unit (approx.)	

CONSTRUCTION OUTLINE

FOUNDATIONS: Piles—concrete, Raymond Concrete Pile Corp., and spread footings. Walls—reinforced concrete; reinforcing bars, Bethlehem Steel Corp.

STRUCTURE: Type—7-, 8- and 9-story buildings, bearing wall construction; 11-, 12- and 13-story buildings, steel skeleton construction, Bethlehem Steel Co. Exterior bearing walls—(lower stories) 16¾ in. brick; (top 5-stories and all steel-skeleton building walls) 13 in. brick, Denning Point Brick Works; 1 in. spun glass wool insulation, Owens-Corning Fiberglas Corp.; metal lath and 3 coat plaster, U. S. Gypsum Co. Partitions within apartments—2 in. plaster on metal lath, U. S. Gypsum Co.; steel channels at base, Milton Mfg. Co. Other partitions—gypsum tiles, U. S. Gypsum Co. Floor construction—4 and 5½ in. cinder concrete slab; wire mesh, Truscon Steel Corp. Ceilings—2 coats plaster, U. S. Gypsum Co.

ROOF: Covered with 5-ply cork and gravel over reinforced concrete, Koppers Co., Rubber-Oid, Ruberoid Co., and David E. Kennedy, Inc. Coping tile—Robinson Clay Products Co.

INSULATION: Exterior walls—1 in. Fiberglas, Owens-Corning Fiberglas Corp.

WINDOWS: Sash—Fenestra casement, Detroit Steel Products Co. Glass—Pittsburgh Plate Glass Co. Calking compound—Pecora Paint Co.

STAIRS: Steel, abrasive treads, Chicago Architectural Iron Works.

ELEVATORS: By Westinghouse Electric & Mfg. Co. and Otis Elevator Co. Enclosures—Dahlstrom Metallic Door Co.

FLOOR COVERINGS: Corridors—terrazzo. Kitchens—linoleum, Congoleum-Nairn, Inc. Bathrooms—wall and floor tile, U. S. Quarry Tile Co., Architectural Tile Co., Mosaic Tile Co., Wenzel Tile Co. Other apartment floors—Bruce oak blocks, E. L. Bruce Co.

DOORS: Apartments—hollow steel, Diebold

Safe & Lock Co. Rooms—wood, Weisberg, Baer Co. Exterior—Hornell Woodworking Co.

HARDWARE: By P. & F. Corbin.

PAINTING: Interior paints by Pittsburgh Plate Glass Co., Masury Bros. and Thompson Wood & Trim Co. and U. S. Kalsomine Co.

ELECTRICAL INSTALLATION: Conduits—steel, Walker of Conshohocton and Triangle Conduit & Cable Co. Insulated wire—Hazard Insulated Wire Works, The Okonite Co. Switches—Cole Electric Products Co. Interior fixtures—porcelain, Alabaz Div., Pass & Seymour and Birchall, Bryant and Bright Light Co. Exterior fixtures—Bayley & Co. Exterior light standards—Roland J. Simes and George Walters.

KITCHEN EQUIPMENT: Ranges—Slattery Gas Radiator Co. Refrigerators—Frigidaire Sales Corp. Sinks—Kohler Co. Cabinets—steel, Berger Mfg. Co.

BATHROOM EQUIPMENT: All fixtures by Kohler Co. Cabinets—Miami Cabinet Div., Philip Carey Co. Valves—Watrous Imperial Brass Mfg. Co.

PLUMBING: Soil pipes—cast iron, Central Foundry Co. Hot and cold water pipes—brass, Bridgeport Brass Co. Vents—steel, Republic Steel Corp. Pipe covering—R. A. Keasbey. Water heaters—Patterson-Kelly.

HEATING: Boilers—Foster Wheeler Corp. Pipes—steel, National Tube Co. Convectors—cast iron, American Radiator Co. Controls and pumps—C. A. Dunham Co. Expansion joints—Foster Wheeler Corp. Pipe covering—Asbestos Construction Co. Fuel oil tanks—Eastern Steel Tank Co.

SPECIAL EQUIPMENT: Incinerators—Pyrroneel Co., Inc. Mail boxes—Auth Mfg. Co. Radio equipment—Amy Aceves & King. Shades—Arlington Window Shade Co. Screens—Detroit Steel Products Co.

RAMPS: Garage—D'Humy ramp, Ramp Buildings Corp.

STORES

The tremendous importance of construction in the national economy, and the tight

relationship between problems of recovery and problems of low cost housing have tended to obscure in recent years the fact that the architect's activity still covers a wider field than the provision of shelter. Equally obscured has been the fact that design in America has quietly progressed to a point where the European models of a few years back have been definitely surpassed. Nowhere, perhaps, is this progress more visible than in the design of retail shops.

The problem of store design, as any owner would be glad to explain, is one of merchandising, not of Art. The shopkeeper asks nothing of the architect save that he assist him in getting his wares out of his store as rapidly as possible. There is no sentimental relationship between the owner and his store, which is one reason why today's shops are practically 100 per cent modern, while the house still breathes the spirit of 1776.

It is an interesting paradox that only since the architect has grasped the basic importance of design for

merchandising has his commercial work become esthetically satisfying. Nothing in our architectural heritage is more embarrassing than the pompously stylized emporiums of only a few years back.

In this portfolio of recent work a really amazing degree of progress is visible. The arcade of antique vintage has been resurrected with astonishing results. Some of the showcases are handsome enough to be worth putting in showcases. With really exhilarating freedom architects are using skylight glass for lighting fixtures, or cheap roofing for display backgrounds, or quilted leather or any other material that makes sense. Before it really took hold, the terrifying monotony of 1930 Modern has been discarded, leaving its trace only in the spare simplicity of the general design.

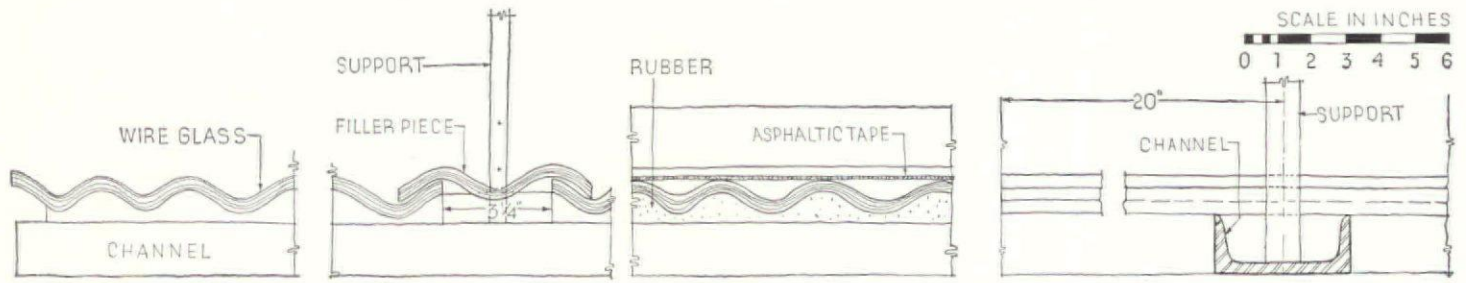
If this optimistic conclusion seems to be based on a portfolio, many of whose pages are devoted to the work of one architect, it is still all to the good, for the suddenness with which Morris Ketchum has emerged from comparative obscurity to a position as one of the most brilliantly imaginative designers in this field is in itself evidence of the willingness of the merchandiser to take the best the architects have to offer.

MORRIS KETCHUM, JR., ARCHITECT. VICTOR GRUENBAUM, ASSOCIATE

Ezra Stoller



LEATHER GOODS SHOP MORRIS KETCHUM, JR., ARCHITECT. VICTOR GRUENBAUM, ASSOCIATE



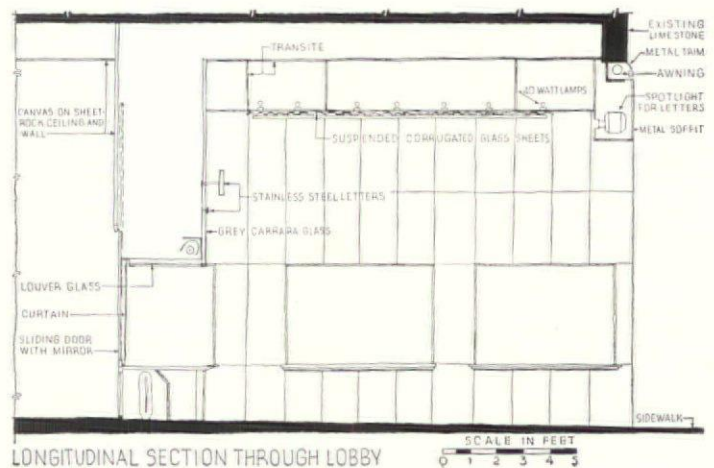
SECTION AT END SECTION AT CENTER SECTION OF CENTER SUPPORT
 DETAILS OF CORRUGATED GLASS CEILING

CROSS SECTION OF CHANNEL SUPPORT

LEDERER DE PARIS, INC. NEW YORK CITY



All photos, Ezra Stoller



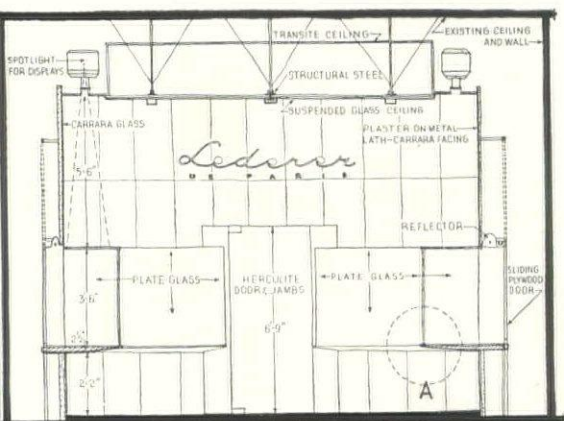
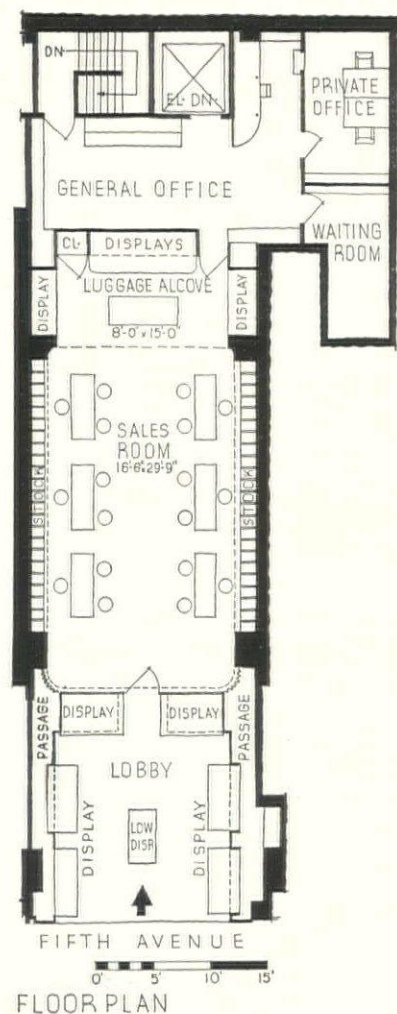
LONGITUDINAL SECTION THROUGH LOBBY

The Lederer shop represents a modern, and highly original interpretation of the old arcade type of retail store. Set in a typical Fifth Avenue block of flush shop fronts, this shop gains tremendously because of the contrast afforded by the recessed display space. The store sells all types of leather goods, but features matched sets of gloves and pocketbooks; it was felt that this combination of merchandise was best shown by separate rather than continuous cases. The exterior color scheme—gray, green and black—is standard for the firm. Colors of the interior are yellow on the walls and ceiling, dark green for stock boxes and rear niche, a light green carpet and white metal trim. Lighting is chiefly direct, with ceiling spotlights for the exterior showcases, and concealed toplighting for those inside.



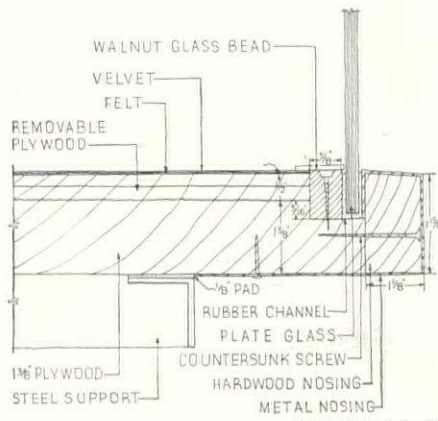
CONSTRUCTION OUTLINE

EXTERIOR: Carrara, suede finish, Pittsburgh Plate Glass Co. Lobby ceiling—corrugated skylight glass, Pennsylvania Wire Glass Co., with Transite surround, Johns-Manville Corp.
SHOW CASES in lobby: Glass-plate, Pittsburgh Plate Glass Co. Air vents for circulation.
FURNISHINGS: Chairs and sales stools—New Furniture, Inc. Upholstery—Fabrikoid, E. I. Du Pont de Nemours & Co. Curtains—J. H. Thorp.
FLOOR COVERINGS: Lobby—tile. Carpet—Alexander Smith Carpet Co.
WOODWORK AND METAL TRIM: Lobby door—Herculite glass, Pittsburgh Plate Glass Co.; trim—American Bronze Co. Interior doors—"Sturdibilt," M. & M. Woodworking Co. Display cases, sales counters, etc.—built by F. A. Poscher. Counter tops—plate glass, Pittsburgh Plate Glass Co.
HARDWARE: By American Bronze Co., Oscar C. Rixson Co., J. Schoemer & Co., Lucite handles by E. I. Du Pont de Nemours & Co.
PAINTING: Walls and ceilings—Dutch Boy, National Lead Co.
ELECTRICAL INSTALLATION: Lighting fixtures—Birchal Bros. and Century Light Co. Display sign—American Bronze Co. Time clocks—Westinghouse Electric & Mfg. Co.
HEATING AND AIR CONDITIONING: Warm air system. Air conditioning—year round system, Standard Air Conditioning Co. Radiators—American Radiator Co. Thermostats—Standard Air Conditioning Co.



CROSS SECTION THROUGH LOBBY

SCALE IN FEET
0 1 2 3 4 5



DETAIL "A"

SCALE IN INCHES
0 1/2 1 2 3 4

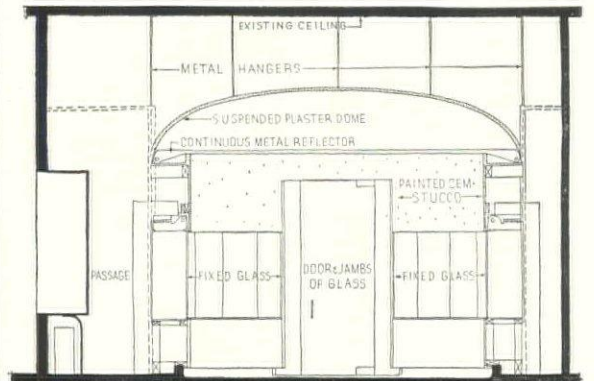
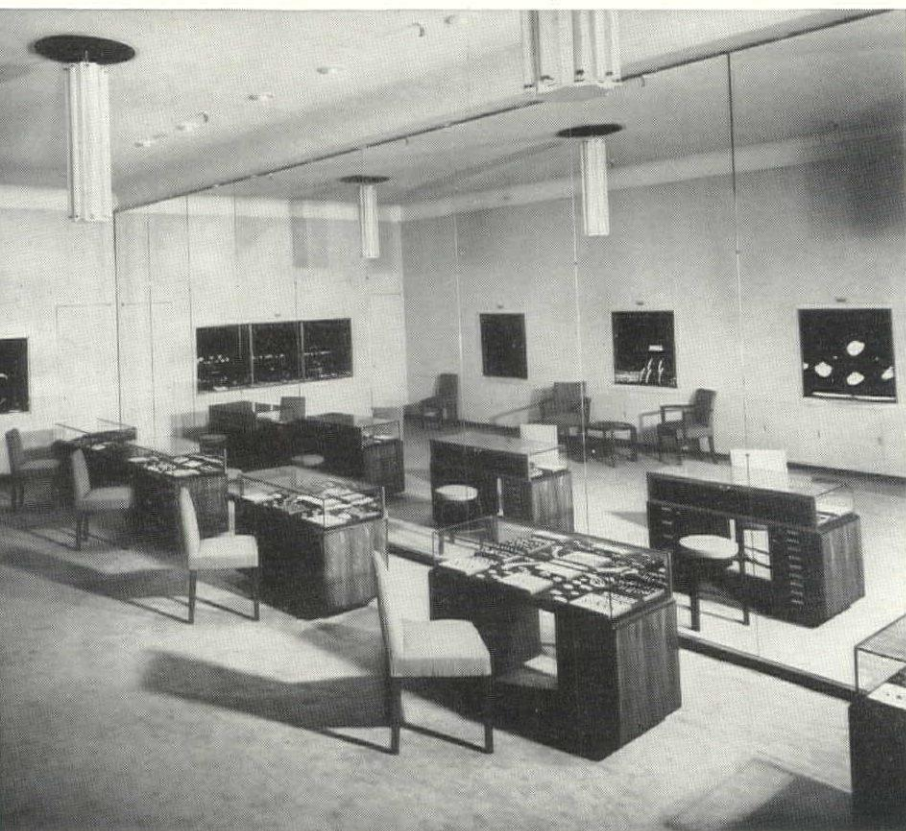
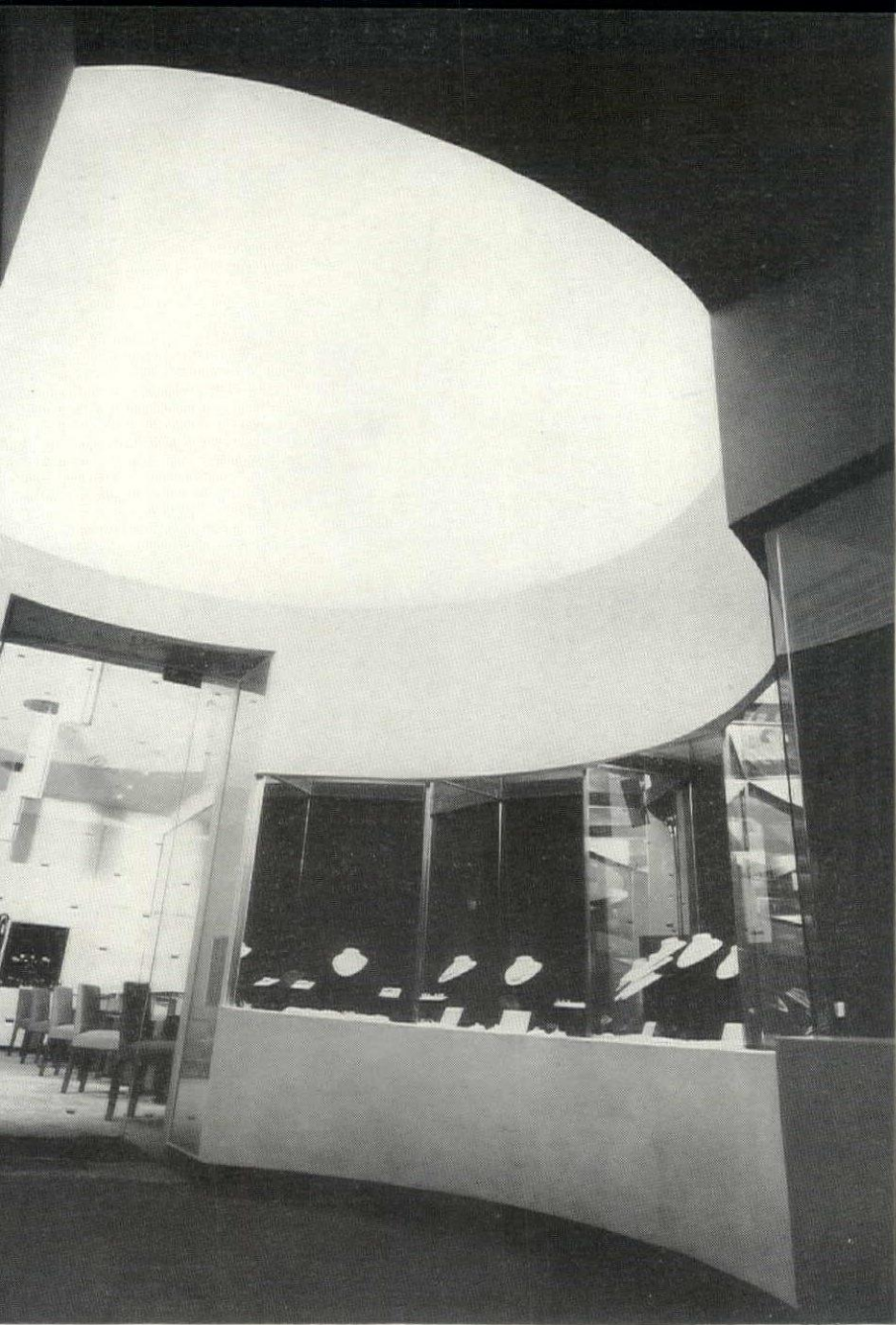


All Photos, Underwood & Underwood

CIRO OF BOND STREET, INC. NEW YORK CITY

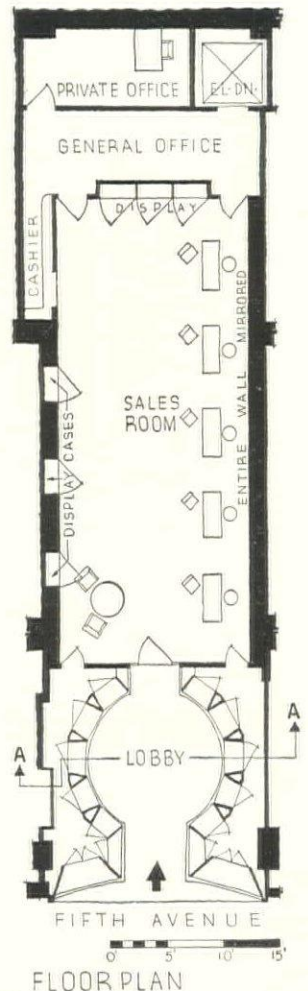
Like the preceding example, which it adjoins, this shop is based on a variation of the arcade scheme, with the special display cases required for showing costume jewelry. The exterior reflects the luxurious simplicity demanded by the merchandise, while the circular lobby provides ample display space. As the objects exhibited are invariably small, the architect has thoughtfully provided toe space to permit close-range window shopping. Within the shop the note of luxury is maintained by the use of individual sales counters, small recessed wall cases, and by the mirror which occupies an entire side wall. The exterior is of cream-colored stucco, with a reddish brown toe space, and gold lettering and trim; all display cases are lined with midnight blue velvet. Ceilings are white, interior walls a deep beige, carpet light golden brown; furniture is walnut with pink upholstery. An interesting feature is the door of tempered plate glass, covered with a pattern of gold coronets, the firm's trademark.





SECTION "A-A"

SCALE IN FEET
0 1 2 3 4 5



FLOOR PLAN

CONSTRUCTION OUTLINE

EXTERIOR FINISH: Cement plaster, painted with cement paint.

SHOW WINDOWS: Mirrors, Pittsburgh Plate Glass Co. Glass—plate, Pittsburgh Plate Glass Co. Frame—American Bronze Co.

FURNISHINGS: Chairs—Modernage Furniture Co. Stools—New Furniture, Inc.

FLOOR COVERINGS: Lobby—Monocork, Armstrong Cork Co. Carpet—Alexander Smith Carpet Co.; Ozite Carpet Cushion Co. pad. Linoleum—Congoleum-Nairn Co.

DOORS AND METAL TRIM: Lobby door—Herculite glass, Pittsburgh Plate Glass Co.; trim by American Bronze Co. Interior doors—"Sturdibilt," M. & M. Woodworking Co. Display cases and sales counters—built by F. A. Poscher.

HARDWARE: By Oscar C. Rixson Co., J. Schoemer & Co., American Bronze Co., Lucite handles by E. I. Du Pont de Nemours & Co.

LIGHTING FIXTURES: Birchall Bros. and Charles A. Lindenthaler. Spot lights and time clocks—Westinghouse Electric & Mfg. Co. Display sign—American Bronze Co.

HEATING AND AIR CONDITIONING: Warm air system. Air conditioning—year round system, General Electric Co. Radiators—American Radiator Co. Thermostats—General Electric Co.



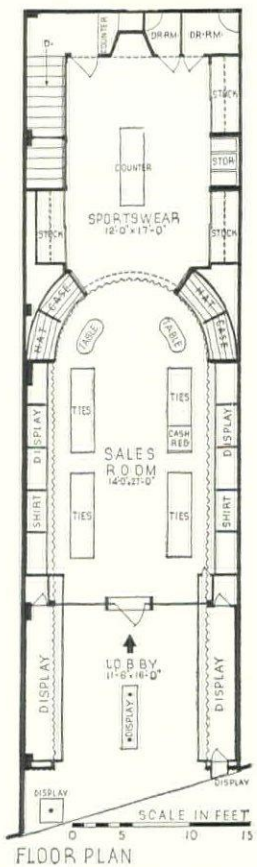
Ezra Stoller

ED STECKLER, INC. NEW YORK CITY

The architect was given a free hand by the owner in establishing a scheme, and the result is a radical solution of a common problem. There is no show window in the conventional sense, the shop being completely open to the street, from wall to wall and sidewalk to ceiling, with a screen of corrugated asbestos as the background both outside and in. The advantage of a design of this sort lies not only in its novel appearance, which has attracted a great deal of attention, but in the fact that the entire shop functions as a show window. Particularly worthy of attention are the display cases at the front of the store. Colors are cream on walls, copper on ceiling and all metal trim, and reddish brown on the floor.

CONSTRUCTION OUTLINE

ENTRANCE LOBBY: Walls—corrugated Transite on metal lath, Johns-Manville Corp., and Carrara glass, Pittsburgh Plate Glass Co. Glass partition—plate, Pittsburgh Plate Glass Co. Copper letters, Robbins-Goldhammer Sign Co. Door frame—copper-plated bronze, Superior Bronze Co. Door—Herculite glass, Pittsburgh Plate Glass Co. Interior partitions: Sales room—corrugated Transite. Sportswear department—mahogany plywood, U. S. Plywood Corp. Ceilings—plaster on lath. **FURNISHINGS:** Chairs and tables—New Furniture, Inc. **FLOOR COVERINGS:** Lobby and sales room—Monocork, Armstrong Cork Co. Carpet—Alexander Smith Carpet Co. **WOODWORK AND METAL TRIM:** Interior doors—"Sturdibilt," M. & M. Woodworking Co. Display cases and sales counters—built by Green-O-Son Store & Equipment Corp. **HARDWARE:** By Russell & Erwin Mfg. Co., Oscar C. Rixson Co. and Superior Bronze Co. **PAINTING:** Transite walls—Rubalt P. E., Alfred Hague & Co. Ceiling—copper metallic paint. **LIGHTING FIXTURES:** Lighting Distributors, Inc. Display sign—Continental Sign Co. **AIR CONDITIONING:** Warm air system with year round air conditioning system, unit heaters and thermostats, Carrier Corp. Anemostat air diffusers—Anemostat Corp.



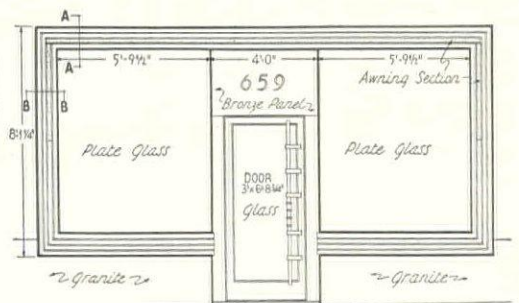
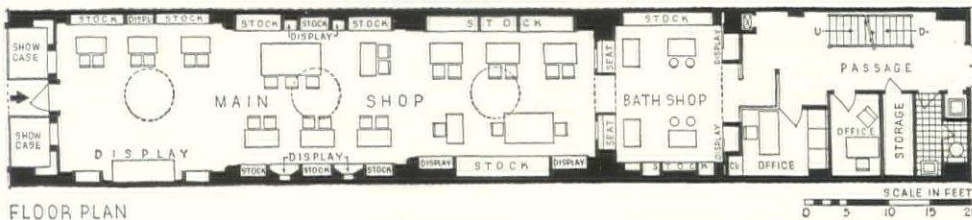
LINEN SHOP PAUL T. FRANKL, DESIGNER. MORRIS KETCHUM, JR., ASSOCIATE

MOSSE, INC. NEW YORK CITY

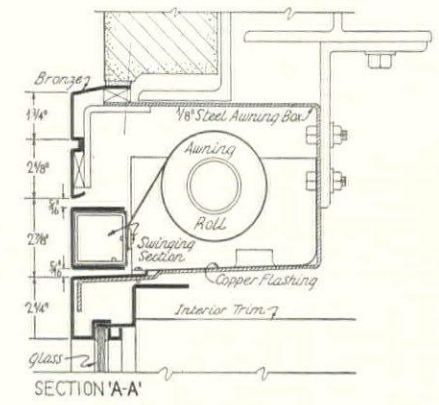
The shop front illustrated here is one of the most handsome and ingenious designs yet produced in this field. By combining into one unit the display window, door, and awning, leaving the sign as a detached element, the designers have succeeded in using a large part of the wall of the building as shop front. In consequence the display has an importance out of all proportion to its size. The design also suited the desires of the owner, an old established firm with a conservative clientele. Monotony has been avoided within the shop by a rhythmic arrangement of the various sales units, and by the creation of a separate bath shop at the rear. Restraint is the outstanding characteristic of this excellent shop, and is evident in the gray granite and bronze exterior, and in the interior color scheme of beige and tan.

CONSTRUCTION OUTLINE

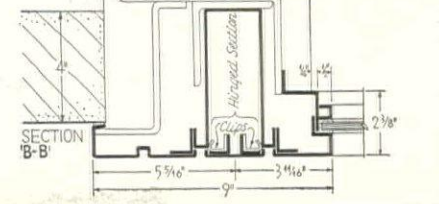
EXTERIOR (new finish)—polished granite veneer, Swenson Granite Co.
SHOW WINDOWS: Bronze work and awning frame—General Bronze Co.; awning—N. Y. Awning Co. Interior finish—Prima-Vera Formica, Formica Insulation Co. Glass—plate, Pittsburgh Plate Glass Co. Floodlights and niche fixtures—Curtis Lighting Co. Pin point spot lights—Kliegl Bros.
FURNISHINGS: Display tables—Zebra, Luan and magnolia woods, U. S. Plywood Co.
FLOOR COVERINGS: Linotile and linoleum, Armstrong Cork Co.
WOODWORK AND METAL TRIM: Bronze trim, General Bronze Co. Interior doors—"Sturdibilt," M. & M. Woodworking Co. Display cases and cabinet work—built by F. A. Poscher. Trim—aluminum, Albert Voight & Co.
HEATING AND AIR CONDITIONING: Complete year round system with winter heating, General Electric Co.



ELEVATION



SECTION 'A-A'



SECTION 'B-B'





Ezra Stoller

LE BAS-LILLIAN, NEW YORK CITY

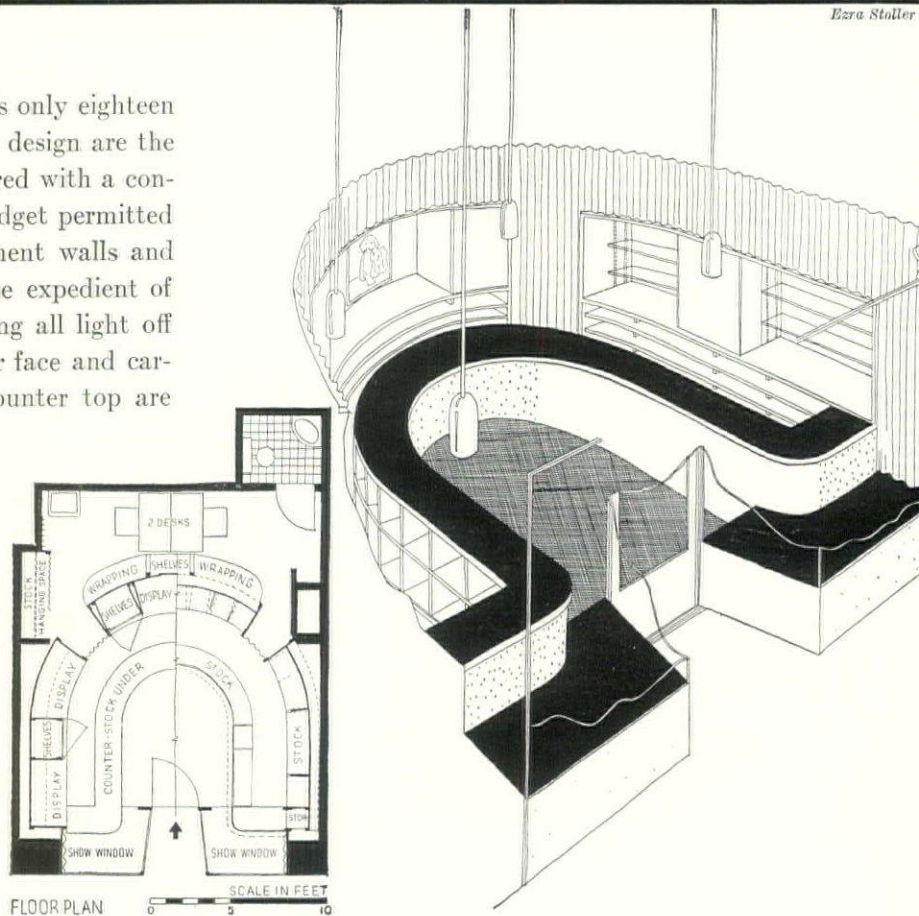
This is the smallest shop in the portfolio, and is only eighteen feet square. Elements of a simple but effective design are the curved counter, display cases, and a wall covered with a continuous curtain of pink rubber. A restricted budget permitted no changes in the existing front. The permanent walls and ceiling were eliminated from the design by the expedient of painting them a dark wine red, and by keeping all light off them. The same red is repeated in the counter face and carpeting in the show windows; the floor and counter top are black. The cost was under \$1,000.

FINISHES AND EQUIPMENT

INTERIOR FINISH: Walls—hung with rubber curtain, Arundell Clarke, Ltd.; upper section plaster painted with cold water paint.

FLOOR COVERINGS: Sales room—linoleum, Congoleum-Nairn Co. Show window—carpet, Alexander Smith Carpet Co.

ELECTRICAL INSTALLATION: Wiring system and lighting—General Electric Co. Panel board control and time clocks—Westinghouse Electric & Mfg. Co. Fixtures (drop lights)—Charles A. Lindenthaler.



JUNIOR LEAGUE, GROSSE POINTE, MICH.

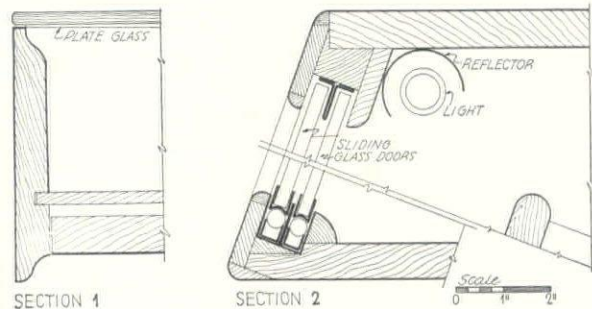
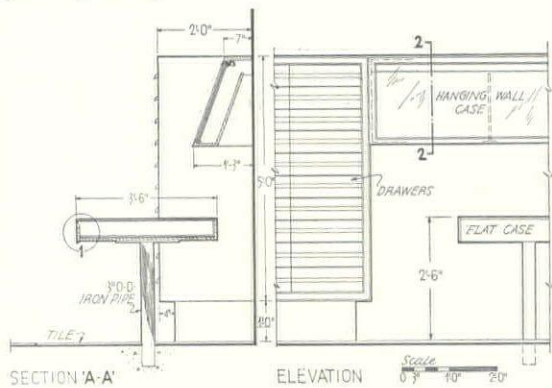
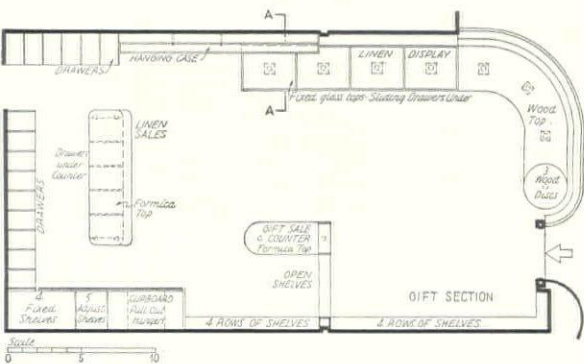
Run as part of a charitable venture, this shop presented the double problem of minimum cost and effective merchandising appeal. Goods sold required three types of cases for linens, and shelves for various kinds of giftware. The illustrations at the right show the furniture produced to meet these requirements, admirably designed for appearance as well as low cost. As in other examples of shops in these pages, the show window has been conceived primarily as a means of providing a view of the interior. The color scheme is rose, white and dark gray, with accents of black inside display cases.

FINISHES AND EQUIPMENT

PAINTING: Ceilings and walls—casein paint. **WOODWORK:** All exposed areas with exception of white maple edges and drawer pulls are fir panel with basket weave texture, called Embossed Westboard, Washington Veneer Co. **COUNTER TOPS—**Formica, Formica Insulation Co. **CASES—**on lacquered iron supports set 6 in. into concrete floor; show window has three wooden disks supported on one pipe running from floor to ceiling for display of small objects; show window has three wooden disks supported on one pipe running from floor to ceiling for display of small objects. **FLOOR COVERINGS—**Kentile, David E. Kennedy Co. **MURAL—**by Alexander H. Girard.

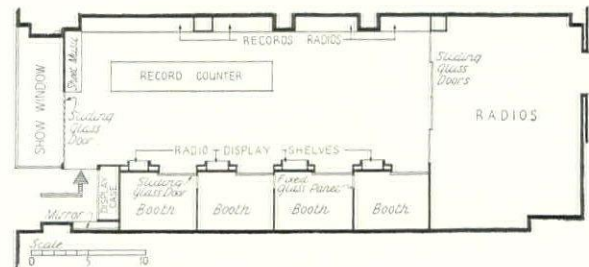


Elmer L. Astford photos





All photos, Robert M. Damora



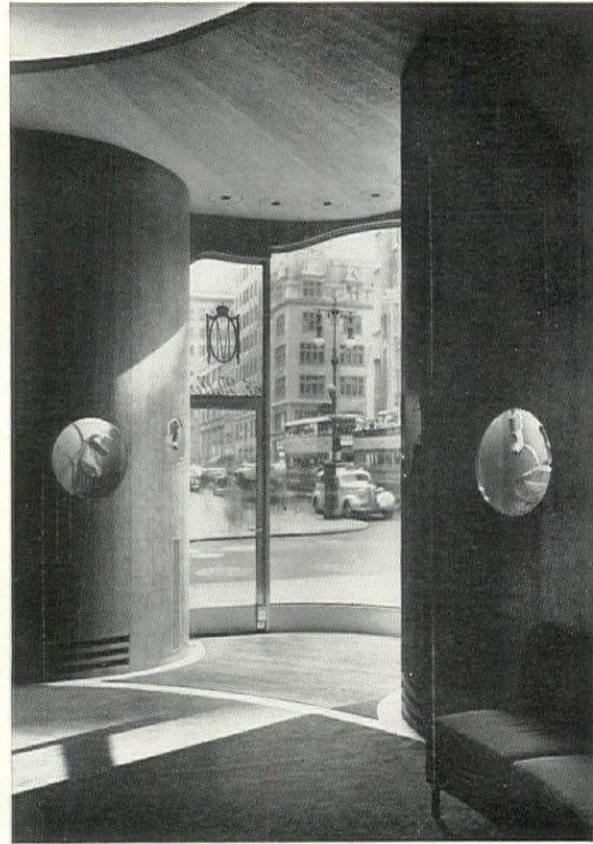


LEHMAN RADIO SALON, INC. NEW YORK CITY

An inexpensively executed small music shop, in which space had to be provided for the sale of sheet music, records, and radios. The main departure in design from conventional practice was the arrangement of listening booths as an integral part of the shop, with display niches in the front wall of each booth. As the radios are varied in size, and all fairly bulky, it was necessary to provide a means of grouping the merchandise to keep the interior from looking too cluttered. Sliding plate glass doors in the booths save wall space in a narrow shop, and similar doors are used at the rear so that radio sets may be demonstrated without disturbing other customers. Colors are warm yellow on the ceiling, gray-blue carpet, tomato red on the counter top and the natural color of oak paneling.

FINISHES AND EQUIPMENT

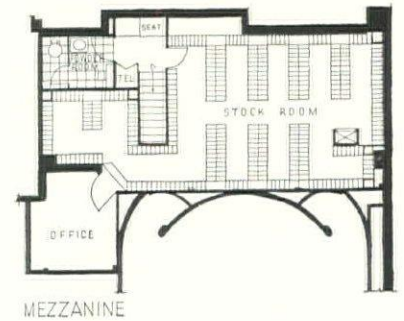
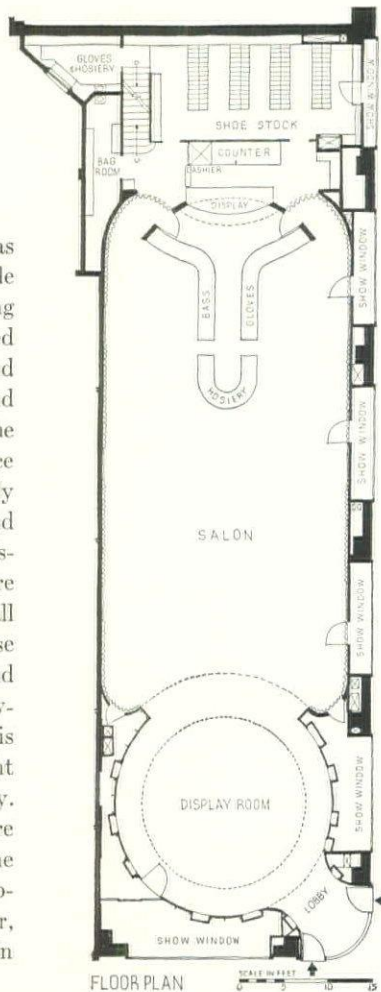
EXTERIOR: Vitrolite, Vitrolite Div., Libbey-Owen Ford Glass Co. Mirror, glass and glass table tops—Pittsburgh Plate Glass Co. Moldings—bronze, Cha Brass & Copper Co. DISPLAY SIGN—bronze—AWNING—Radio Awning Co. GLASS PARTITION—Louvrex, Blue Ridge Glass Co.; remainder of partitions—quartered oak. WOODWORK, DISPLAY CASES, STANDS, etc.—built by A. Bitter Construction Co. Counter tops—linoleum, Armstrong Co. HARDWARE—Richard Wilcox. ELECTRIC INSTALLATION: Wiring system—concealed. Radio antenna—Harvey Hubbell, Inc. General Contractor—A. Bitter Construction Co.



All photos, Samuel H. Gottschalk

I. MILLER & SONS, INC. NEW YORK CITY

In the design of the exterior of this store it was necessary to conform with the owner's inflexible requirement that the character of the building be maintained. The architect's work consisted of removing the old limestone pilasters, and designing new show windows on the ground floor, leaving those above unaltered. Inside, the problem was to convert a long, narrow space into a luxurious and pleasing interior, properly adapted to the display and sale of shoes and accessories. At the entrance is a circular display room, paneled in straight grain oak, where the newest models are displayed in small wall cases; beyond is the main selling space, whose walls are covered alternately with mirrors and curtains of pale pink rubber. The large showcase unit was deliberately projected into this room so that customers trying on shoes might see the various women's accessories on display. A gray-blue carpet extends through the entire shop, providing a neutral background for the bright and varied colors of the upholstery. Provisions for storage include a space at the rear, and additional rooms on the mezzanine and in the basement.



FINISHES AND EQUIPMENT

EXTERIOR: marble, William Bradley & Son. **SHOW WINDOWS:** Glass—plate, Pittsburgh Plate Glass Co. Frame—bronze, Superb Bronze Co. Lighting—Century Lighting Equipment Co. Interior finish—adjustable floor and background. Ventilation—mechanical. **DISPLAY SIGN AND DOORS**—Superb Bronze Co. **AWNING**—Aluminum Awning Co. **FLOOR COVERINGS:** Shop—carpet. Store rooms—cork. **WALLS**—plaster and terra cotta blocks. **WALL COVERINGS:** Draperies—rubber, I. B. Kleinert Rubber Co. **FURNISHINGS:** Display cases, counter tops, etc.—fireproofed oak, Miller-Friedland Co. Furniture—Schmeig & Kotzian; designed by Arundell-Clarke, Ltd. **HARDWARE:** By Sargent & Co. and Yale & Towne Co. **ELECTRICAL INSTALLATION:** Lighting consultant—Edward B. Kirk. Electrical engineer: H. C. Nary. Wiring system—rigid conduit. Switches—Bryant Electric Co. **FIXTURES:** Specially designed bronze, Edward F. Caldwell & Sons. Blown glass display fixtures—Marianna Von Allitch; recessed down lights—Century Lighting Equipment Co. **HEATING AND AIR CONDITIONING:** Complete automatic zone control system, General Electric Co.





VIEW 1.

HALLE BROS. DEPARTMENT STORE, CLEVELAND, OHIO

VIEW 2.

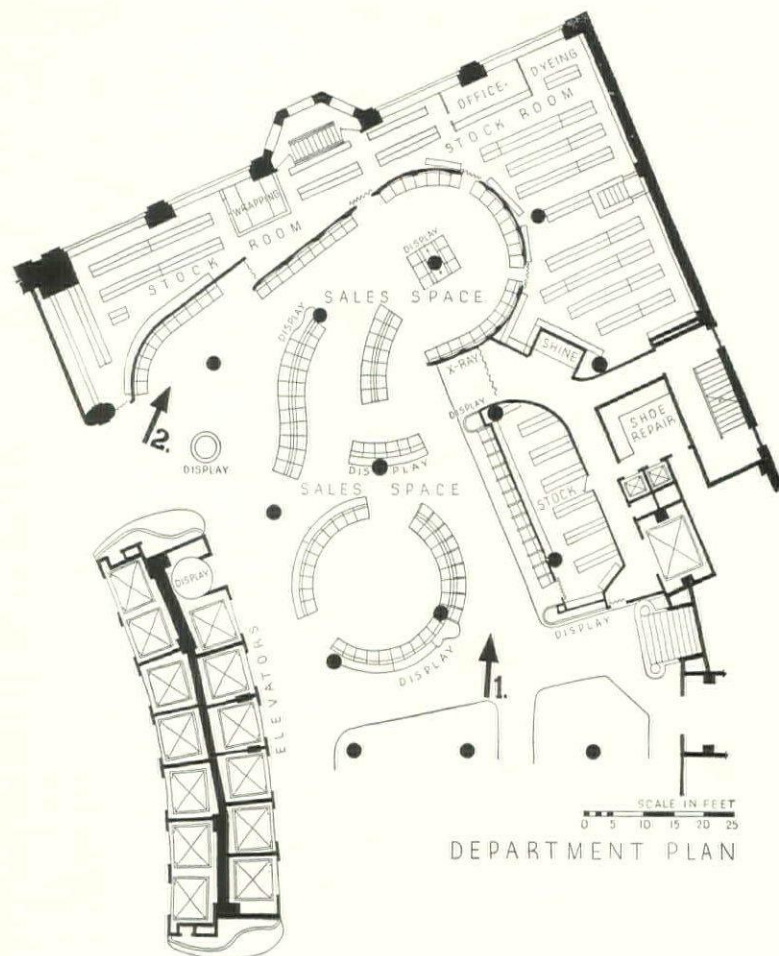


Hedrich-Blessing Photos

This is a department in a large store, so that show window display was not part of the project. The problem, as stated by the designer, was "to provide as high a seating density as possible, consistent with a distinctive appearance in character with the rest of the store, and the solution of the seating was the important point in the job. Straight rows of seats, while providing maximum capacity, were considered too reminiscent of cheaper stores, and irregularly placed chairs were inadequate. The solution was found in an asymmetrical arrangement of straight and curved rows. Good circulation was also achieved in this scheme, better than is possible with straight rows. The other point of note is that leather was used architecturally on the walls." The carpet is violet-gray and dark brown, the two colors being arranged in irregular curved areas. Walls are gold, off-white, blue and pale peach. The chairs are covered in violet-blue and rose; display stands are covered with a rawhide-color imitation leather.

FINISHES AND EQUIPMENT

FURNISHINGS: Chairs—covered in rough texture cloth. Display stands—covered with Rawtex, Asher & Boretz, Inc. **WALL COVERINGS—**gold wallpaper and Masland Duraleather Co. Duraleather. **FLOOR COVERINGS—**broadloom carpet. **DISPLAY LIGHTING AND ILLUMINATION—**direct and indirect, Mazda banks, decorative luminaires, and General Electric Co. spotlights.



DEPARTMENT PLAN



All photos, Ezra Stoller

W. T. GRANT CO., BUFFALO, N. Y.

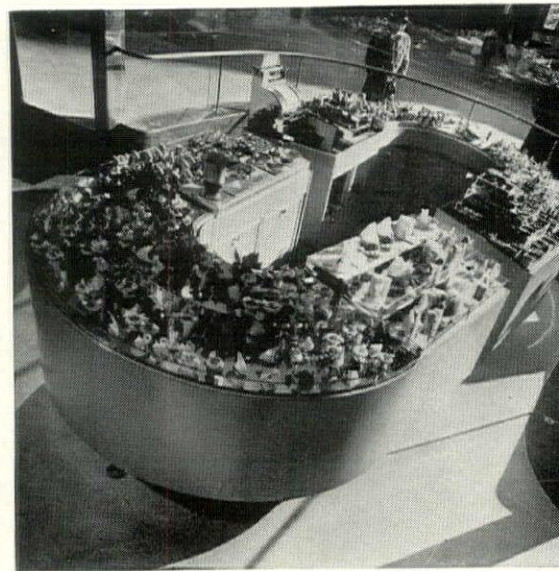
Of recent years there has been a distinct tendency in variety department stores to occupy quarters of increasing size. A recent example, of unusual interest for both size and design, is this new Grant store in Buffalo. With 40,000 sq. ft. of sales space on the first floor and in the basement, the store occupies a prominent corner in the city's main business section. The concentration of interest at show window level, with the upper stories treated as a simply organized unit, seems an excellent solution. The main entrances to the store flank a tremendous curved window, whose func-



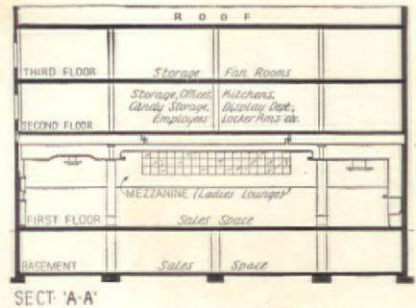
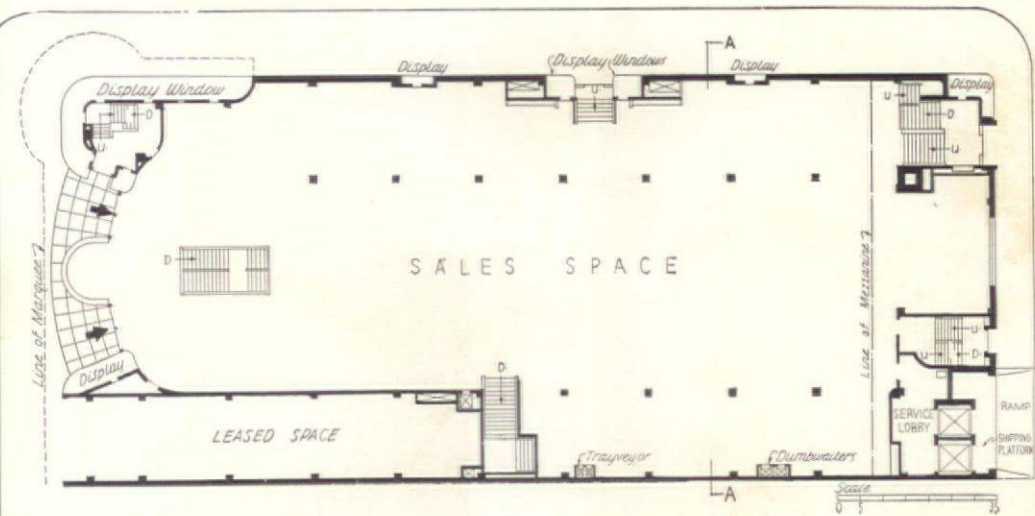
VARIETY STORE



MAIN ENTRANCE

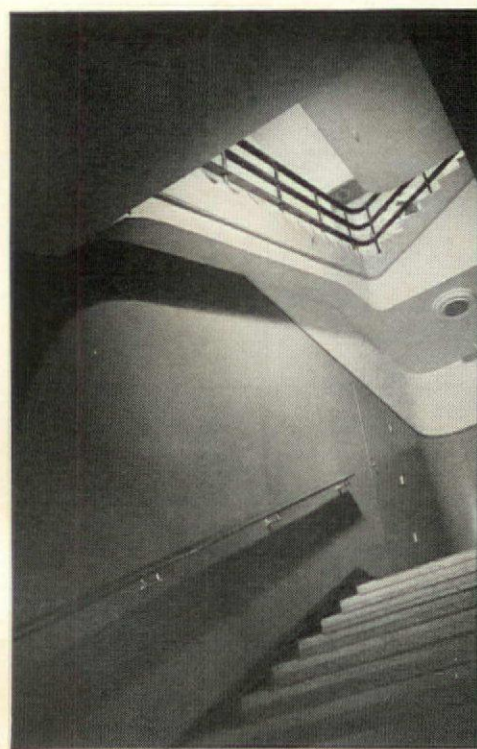


tion is not only display, but to provide a clear view of the interior. Similar examples elsewhere in this portfolio would suggest a trend toward more open shop front designs. Views of the interior indicate the advantages of omitting the hanging signs generally used in establishments of this type; where required there are signs placed against permanent backgrounds, with letters of edge-lighted fluorescent plastics. Another development in the planning of variety stores is the unusual aisle width, adopted so that traffic does not inconvenience purchasers at the various counters. Also noteworthy is the variation in design in the different departments. Those illustrated show the millinery section, and the handkerchief, dress pattern and pet departments, each carefully planned for the utmost efficiency in merchandising. An important part of the store is the luncheonette, located on the first floor and serviced by a kitchen on the second floor. It follows one of the standard plans for units of this kind. Lighting was a vital element of the



SECT. 'A-A'





design. Flush ceiling fixtures, with reflectors and prismatic lenses, give 50-foot candles at counter level with complete absence of glare. Secondary fixtures are ceiling covers at the sides. Colors: exterior, off-white limestone, black granite, gray-blue terra cotta and bronze sign. Interior: ceiling off-white and light gray, walls light and deep coral, floor coral-beige terrazzo with borders of red levanto. The ladies' lounge has walls of gray and off-white, a dark blue linoleum floor, and furniture upholstered in blue and yellow.

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—cut stone, Indiana Lime Stone Co., brick back-up, terra cotta, Seaboard Terra Cotta Co.; inside—plaster. Interior partitions—ceramic glazed tile, National Fireproofing Co. and plaster partitions. Skeleton—structural steel to second floor line, Bethlehem Steel Co., reinforced concrete above.

ROOF: Reinforced concrete covered with 1½ in. Celotex Corp. insulation and Philip Carey Co. roofing.

WINDOWS: Sash—Detroit Steel Products Co. Glass—(1st.) plate, Libbey-Owens-Ford Glass Co.; (2nd. and 3rd.) Reedex, Blue Ridge Glass Corp.; wire glass for stair wall enclosures, Mississippi Wire Glass Co.

ELEVATORS: Two freight and three dumb-waiters, Haughton Elevator Co. Doors—The Peelle Co. Trayveyor—Lamson Co.

FLOOR COVERINGS: Sales floors—Terrazzo, Del Turco Bros., Inc. Offices and rest rooms— asphalt tile, Thomas Moulding Co. Lounge and show windows—linoleum, Congoleum-Nairn, Inc. and Armstrong Cork Co. Rubber base—Wright Rubber Products Co.

WALL COVERINGS: Kitchen and toilet rooms—tile, Marsh Wall Products. Customers' toilet rooms—Vitrolite, Vitrolite Div., Libbey-Owens-Ford Glass Co. Wainscot—Formica, Formica Insulation Co.

FURNISHINGS (lounge): Built-in furniture—Mallin Furniture Co. Settees and chairs—Troy Co. and Royal Chrome Co.

DOORS AND METAL TRIM: Trim and interior doors—Dahlstrom Metallic Door Co. Exterior doors—General Bronze Corp.

HARDWARE: By P. & F. Corbin and Garden City Plating & Mfg. Co.

ELECTRICAL INSTALLATION: Materials by Youngstown Steel Products Co., Westinghouse Electric & Mfg. Co., National Electric Products, Bulldog Electric Products and General Cable Co. Fixtures—Solar Light Co.

PLUMBING—Hot and cold water pipes—copper. Refrigeration piping—Chase Brass & Copper Co. Sprinkler—Automatic Sprinkler Co. Toilet fixtures—W. A. Case & Son Mfg. Co. and Crane Co. Toilet partitions—The Mills Co.

HEATING AND AIR CONDITIONING: Complete exhaust supply, heating, cooling, filtering, humidifying and controls. Compressors—York Ice Machinery Co. Heating specialties—Trane Co. Motors—Westinghouse Elec. & Mfg. Co. Boiler and radiators—American Radiator Co. Oil burner—Johnson Service Co. Tank—Buffalo Tank Co. Anemostats—Anemostat Corp. Grilles—Tuttle & Bailey. Thermostats and regulators—Johnson Service Co. and Minneapolis-Honeywell Regulator Co. Valves—Kennedy Valve Co. Pump—Chicago Pump Co. Filters—American Air Filter Co.



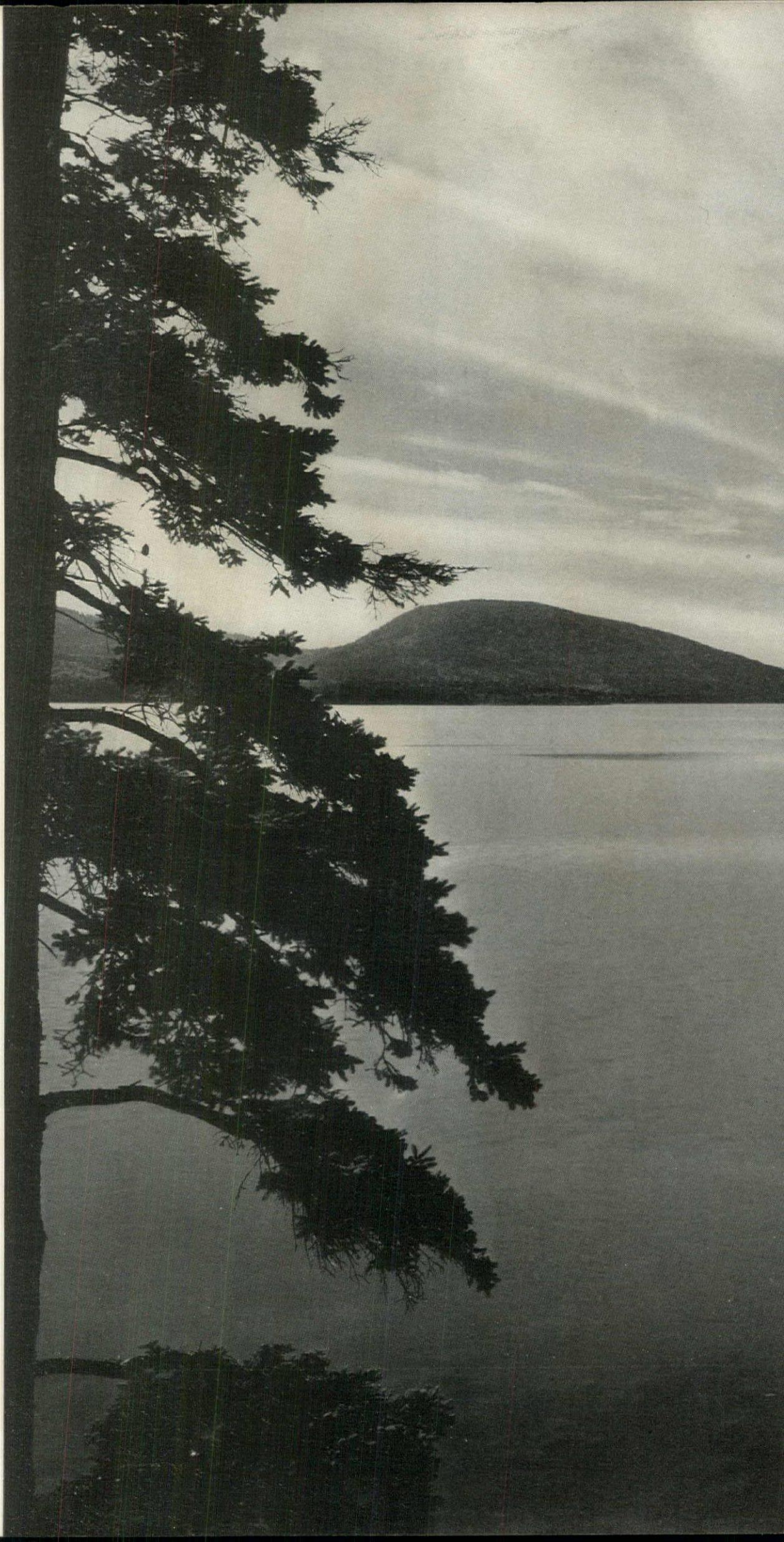
LUNCH COUNTER

LADIES' LOUNGE



Photo Schmitt

SUMMER HOUSE FOR MRS. CLARA FARGO THOMAS, GEORGE HOWE, ARCHITECT

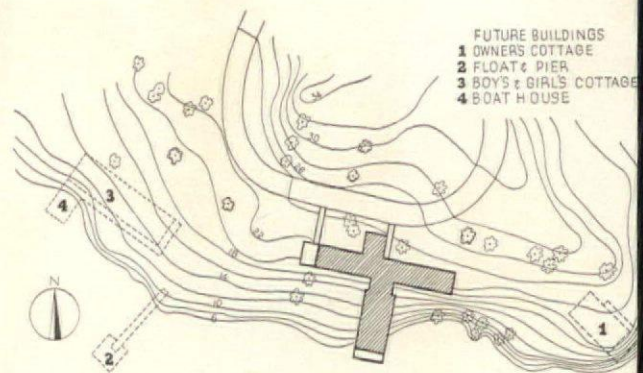
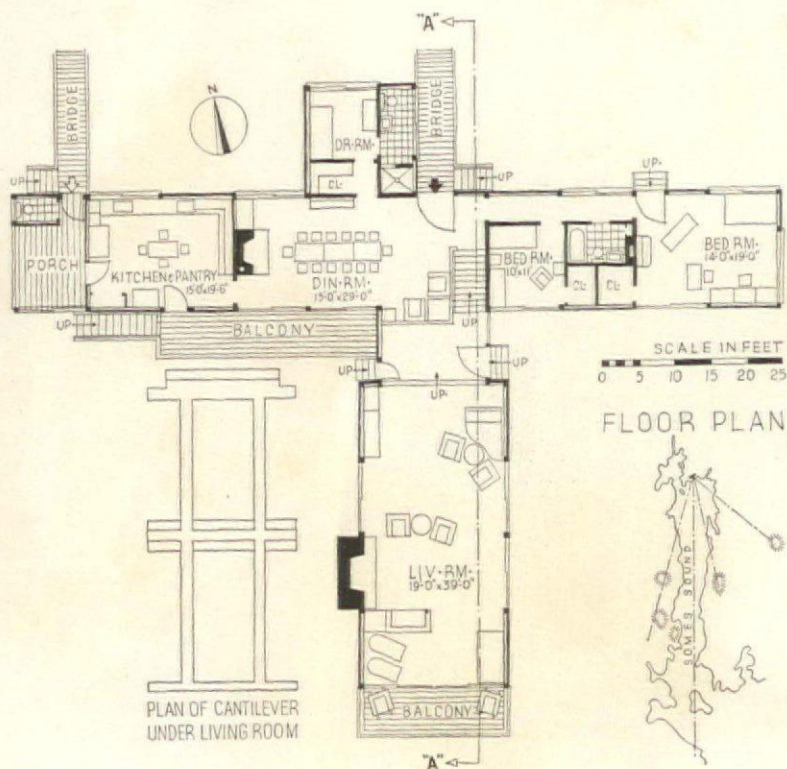






LIVING ROOM OVERHANG AND BALCONY FROM THE SOUTHWEST. AT HIGH TIDE THERE IS TEN FEET OF WATER BELOW THE BALCONY

All photos

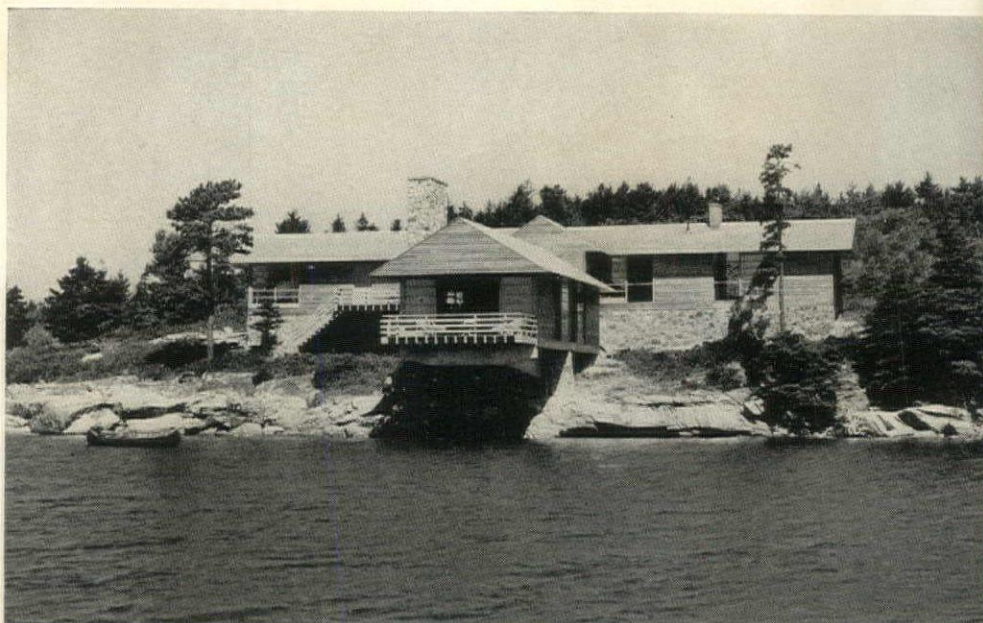


Set on a rocky headland between two shaly beaches, "Fortune Rock" lies at the north end of Somes Sound, overlooking a magnificent view of the Maine coast. Designed with the freedom that summer use allows, the house shows an imaginative and vigorous use of local materials, and is distinguished by an extraordinary degree of feeling for the site and landscape. The house was built entirely by local craftsmen, and everything, with the exception of mechanical equipment, was produced in the neighborhood. Stone for the foundations and the large chimney was collected in the adjoining fields and along the water, and was laid on the rock ledge without excavation.

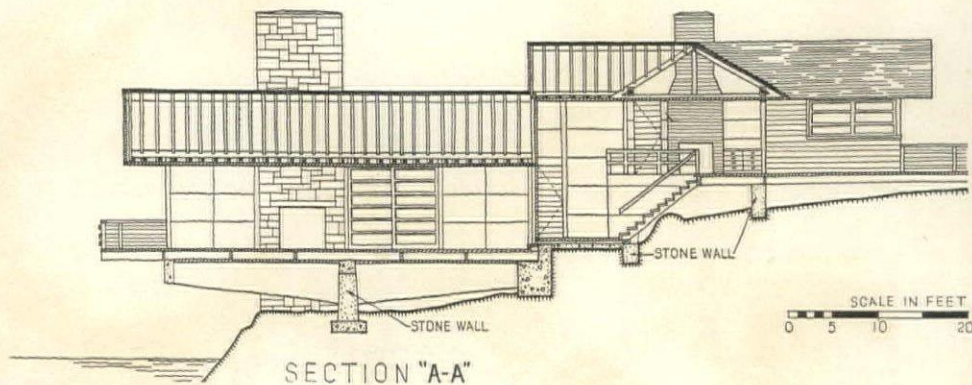
The form of the exterior, according to Mr. Howe, was designed "to recall the broad surface of Somes Sound and to form a link between land and seascape. The overhang of the living room beyond the cliff accentuates the idea, not only in aspect, but also by giving an observer on the balcony the impression of being on the deck of a ship. In color the building, with its variegated granite foundations, oiled cedar clapboards, and silver gray shingles, seems a part of its natural surroundings. The windows and railings are painted a light gray-umber, the underside of the eaves (a continuation of the interior plank ceilings) a pale gray-blue. The broad openings are designed to give the impression that exterior and interior are part of the same space."

The house is one story in height, but the two wings are on different levels. The floor of the main portion is at road level, as shown in the photograph at the right, and is connected with the living room by a two-story stair unit. With all main rooms facing south, the overhangs serve as important protections against the summer sun. Properly oriented for both sun and view, the house is also exposed to southwesterly winds which keep it almost free of insects at all times, so that fly-screens have been dispensed with.

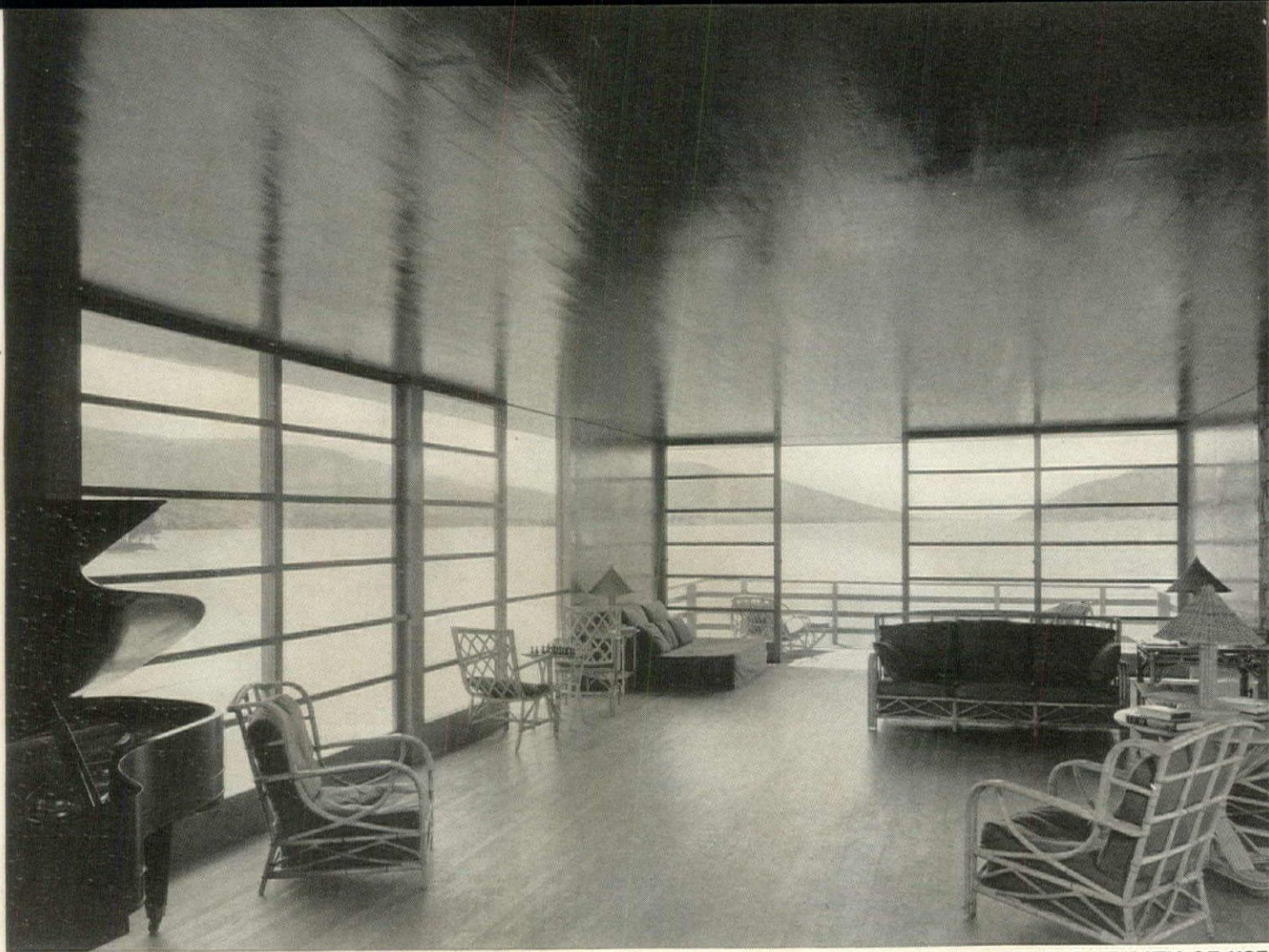
The present building is part of a larger project. There is to be another unit for the owner, and a third, containing a boathouse, which will serve the children and their guests. When the group is complete the present house will be used for older guests, and for general living and dining use.



VIEW OF THE HOUSE TAKEN FROM THE SOUTH, SHOWING HIGH WATER LEVEL

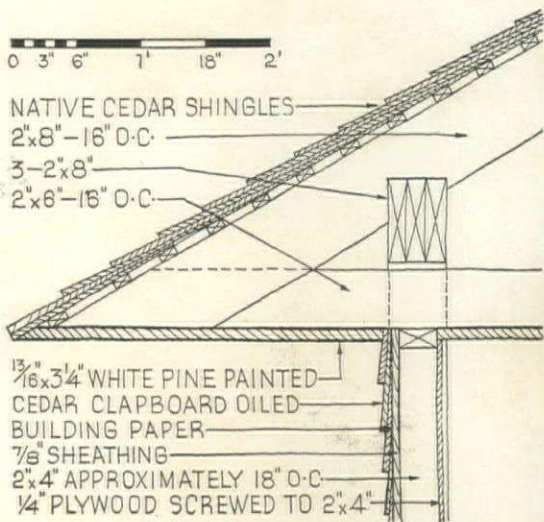


ENTRANCE ELEVATION. THE BRIDGE CONNECTS ROAD AND FRONT DOOR

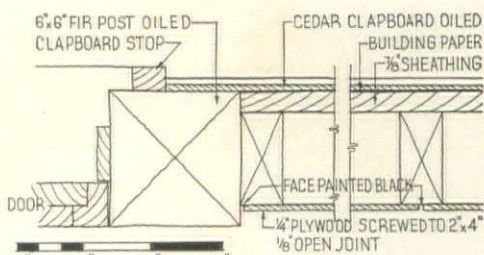


INTERIOR OF LIVING ROOM. THE FLOOR IS BARE AND FURNITURE IS LIGHT FOR THE UTMOST FLEXIBILITY OF USE
LOOKING DOWN STAIR FROM UPPER WING INTO LIVING ROOM. THE MURAL PAINTING IS BY CLARA FARGO THOMAS





LIVING ROOM CORNICE DETAIL



TYPICAL JAMB SECTION



VIEW FROM EAST SHOWING LIVING ROOM ON CONCRETE CANTILEVER BEAM

The most striking single feature of the house is unquestionably the living room, half of which juts out over the water on a symmetrically balanced double cantilever whose other end is anchored in the rock. The architect points out that this structural element is "no trick to astound the observer but merely a direct way of meeting the owner's desire to project her balcony into the heart of the surrounding land and seascape without having the house collapse during the first cold winter or from gradual disintegration." High water comes almost to the bottom of the

foundations and any attempt to avoid the use of a cantilever would have meant the building of foundations subject not only to the action of water, but of ice as well. Construction of the cantilever was facilitated by the proximity of a national park where road and bridge building is going on, which made available technically competent craftsmen. The main interiors are shown on the opposite page, and illustrate the great simplicity and openness achieved by the design. The mural paintings in the stair unit are by the owner, and are in excellent character with the house.



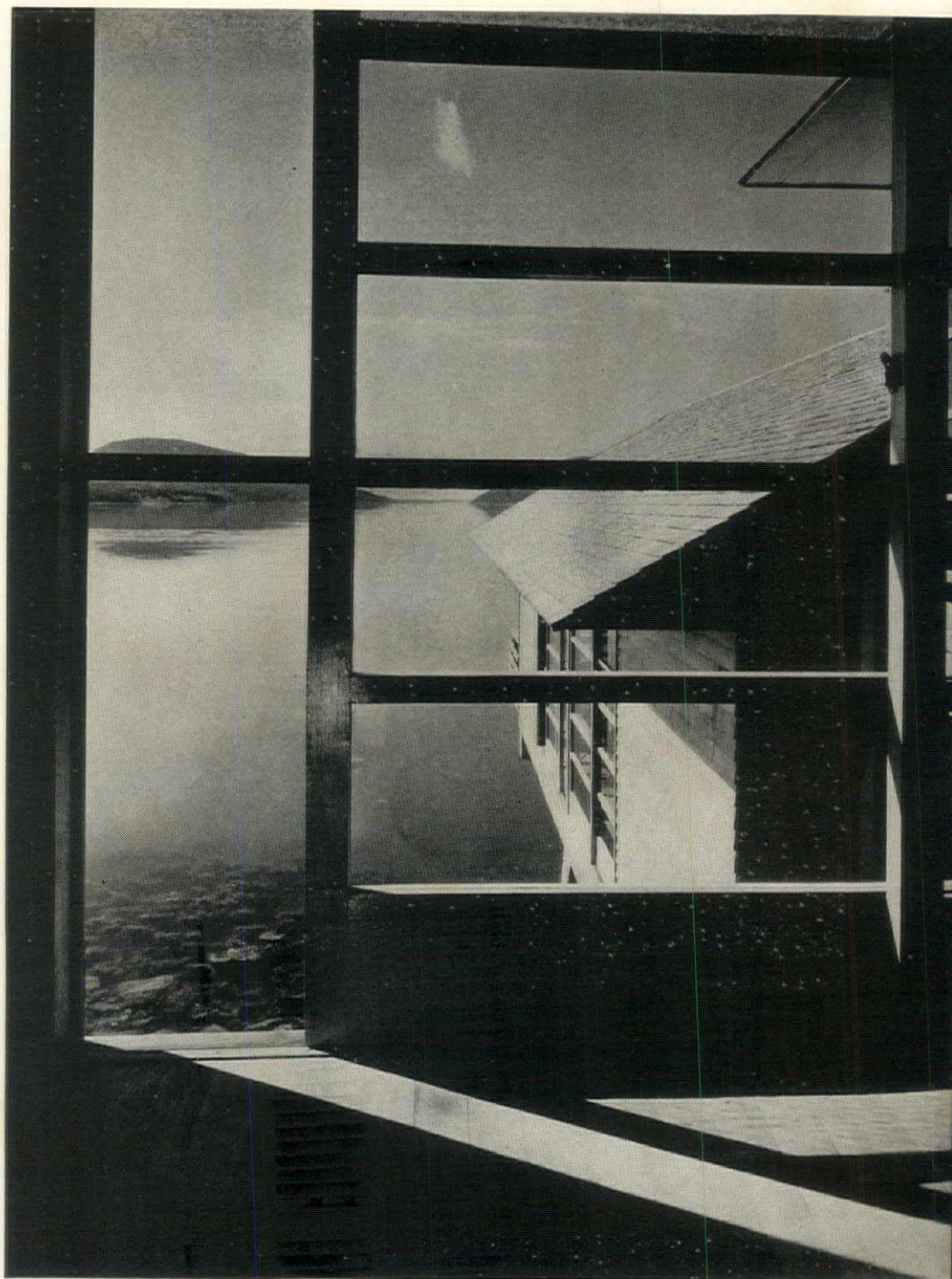
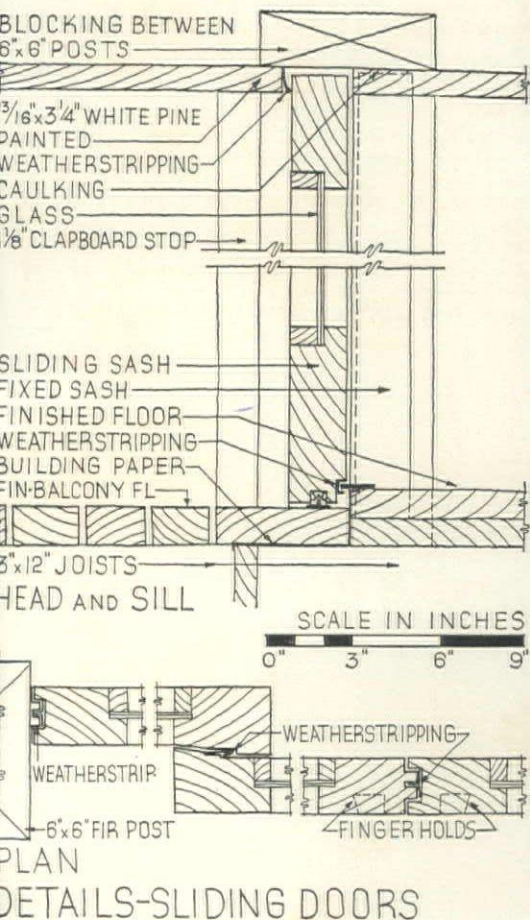
DINING ROOM AND BALCONY, SHOWING SLIDING DOORS. INDOOR DINING FURNITURE DESIGNED BY ALVAR AALTO



KITCHEN. CABINETS AND WALLS ARE FINISHED IN PLYWOOD



DINING ROOM. TABLES PREPARED FOR BUFFET LUN



LIVING ROOM SEEN THROUGH WINDOW OF MASTER BEDROOM. VIEW TO SOUTH

Interior walls are lined with quarter-inch plywood set on studding. This studding is not structural, but acts merely as a curtain between the main elements of the frame, which consists of 6 x 6 in. posts set 10 ft. on centers. It will be noted that the ceilings are carried out flush to the eaves, a treatment made possible by setting the lintels above the ceiling joints; this is illustrated on page 451. Windows and doors are horizontally sliding; the architect states that they were inexpensive to construct and have proved tight under

driving rains. The simplest types of hardware were used; the sliding sash is fastened to the fixed sash by a common double-hung window fastener which eliminates rattling and forms a tight closure.

The problem of outdoor furniture, frequently troublesome in a summer residence, was solved with the same simplicity as the structural problems: all furniture, with the exception of the dining room, is of the light outdoor type, and is easily moved indoors or out as desired.



OWNER'S BEDROOM. NOTE BUILT-IN FURNITURE AND SINGLE GUARD RAIL

CONSTRUCTION OUTLINE

FOUNDATION: Walls—selected field stone, heavy mortar joints.

STRUCTURE: Posts, 6 x 6 in. 10 ft. o.c. with 2 x 4 in. studs, 6 in. cedar siding, building paper and wood sheathing. Interior partitions— $\frac{1}{4}$ in. plywood paneling. Ceilings—wood sheathing, painted.

ROOF: Covered with wood shingles.

CHIMNEY: Stone with terra cotta lining. Dampers—H. W. Covert Co.

SHEET METAL WORK: Copper throughout.

WINDOWS: Sash—wood, mostly sliding. Glass—Pennvernon double strength, quality A, Pittsburgh Plate Glass Co.

STAIR: Treads, risers and rail—oak.

FLOORS: Living room and hall—oak. Dining room and passage—birch. Remainder—yellow pine.

WOODWORK: Cabinets—built-in. Doors—built-up of $\frac{7}{8}$ in. boards with solid edging.

PAINTING: Exterior—treated with boiled linseed oil. Floors—1 coat Minwax, Minwax Co. Interior—1 coat varnish.

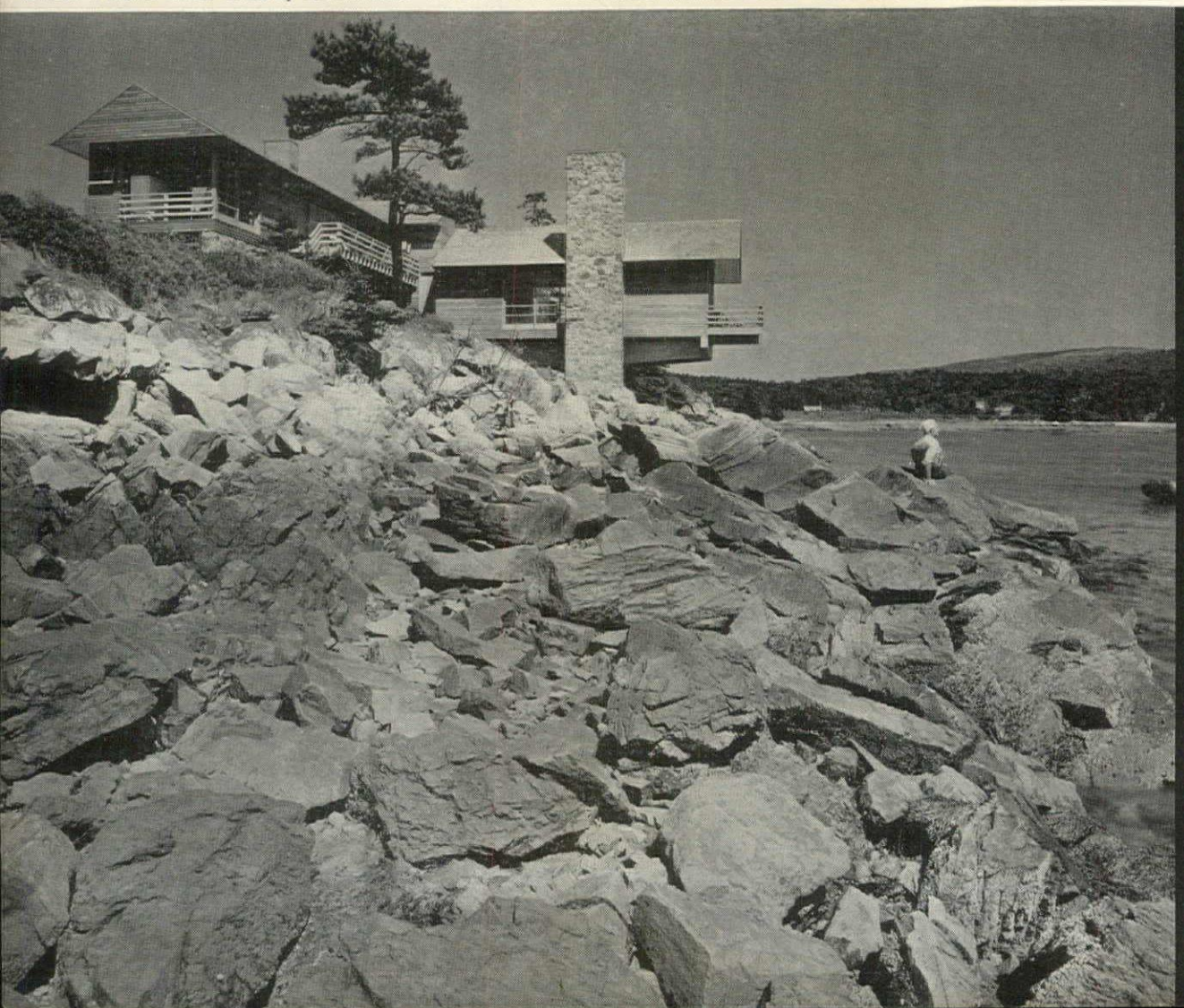
KITCHEN EQUIPMENT: Range and refrigerator—electric. Cabinets—fir plywood, white pine and ash.

BATHROOM EQUIPMENT: All fixtures by Kohler Co.

ELECTRICAL INSTALLATION: Wiring system—BX. Switches—Despard, Pass & Seymour. Lighting fixtures—flush type.

GENERAL CONTRACTOR: JOHN FERNALD

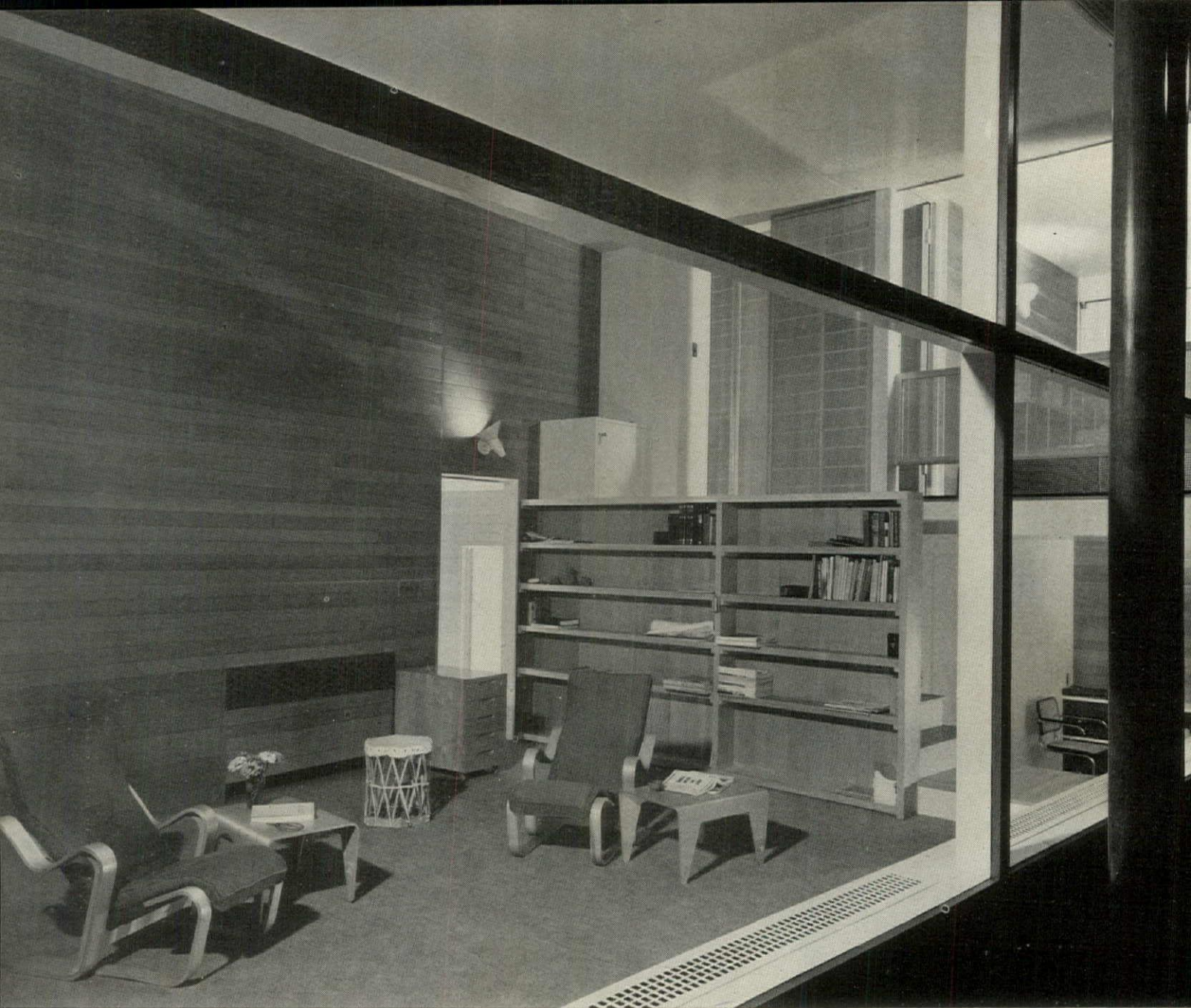
VIEW FROM THE WEST, SHOWING THE SURROUNDINGS WHICH SET THE CHARACTER OF THE HOUSE



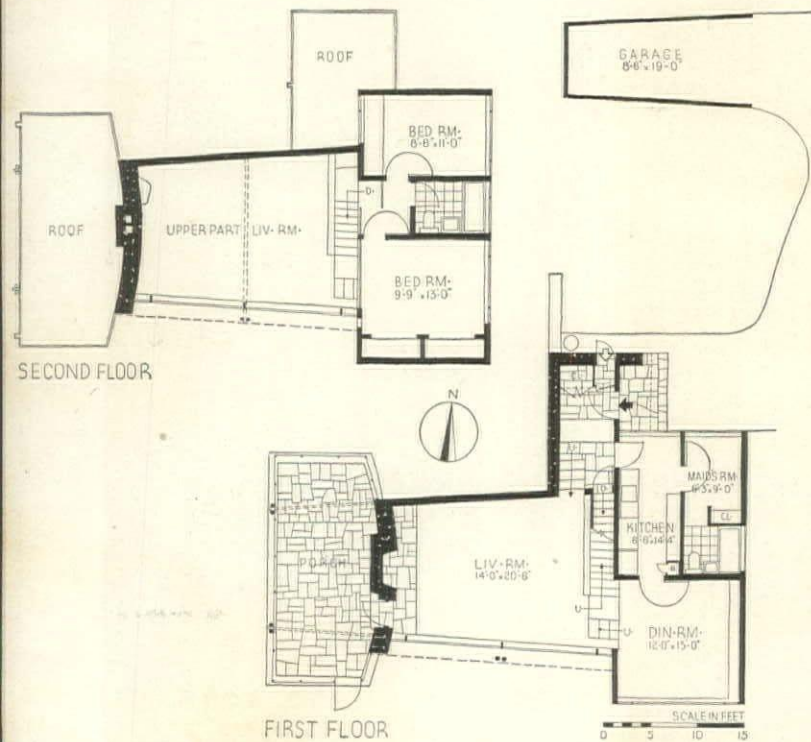
HOUSE IN LINCOLN, MASS.

WALTER GROPIUS AND MARCEL BREUER, ASSOCIATED ARCHITECTS

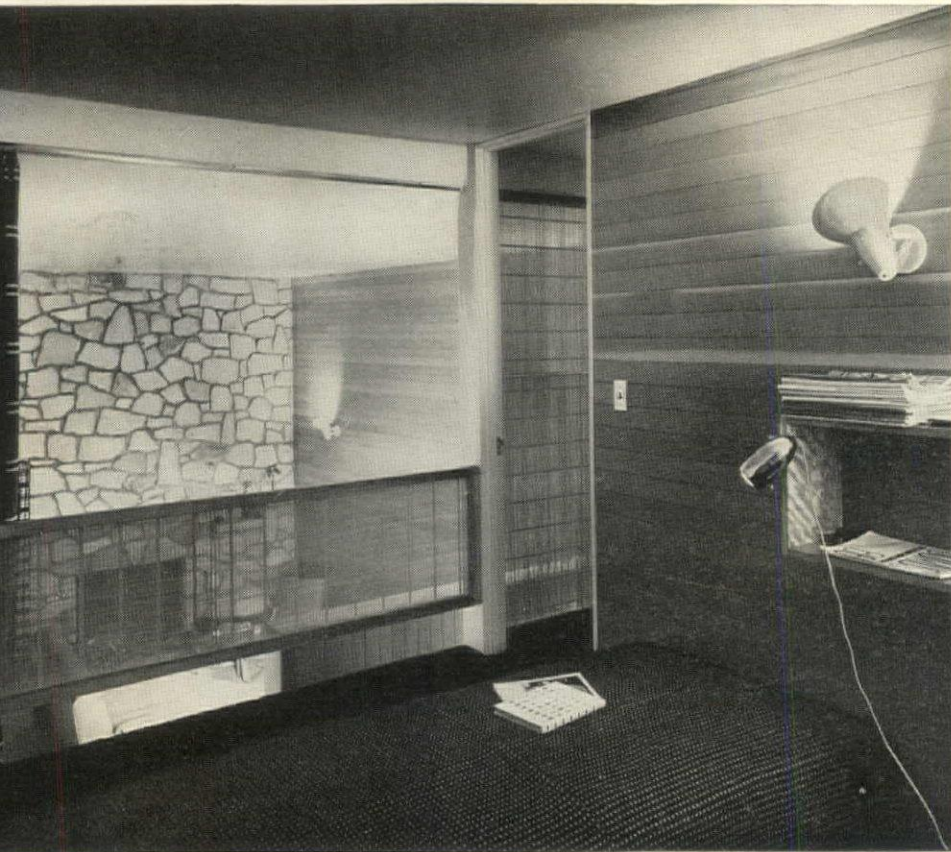




LIVING ROOM

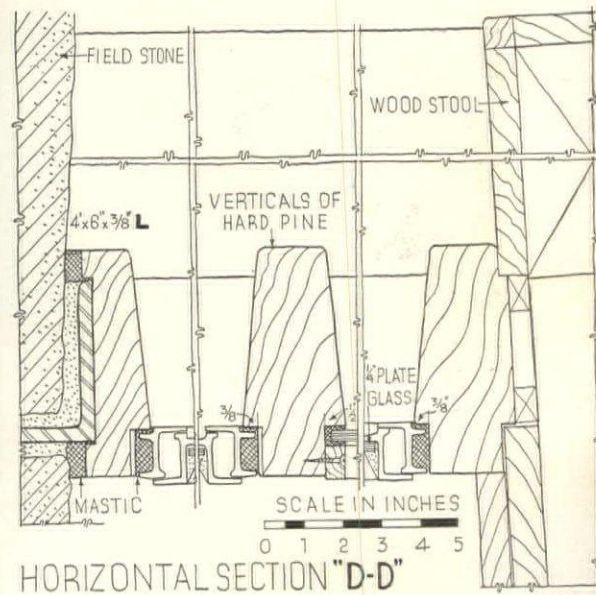
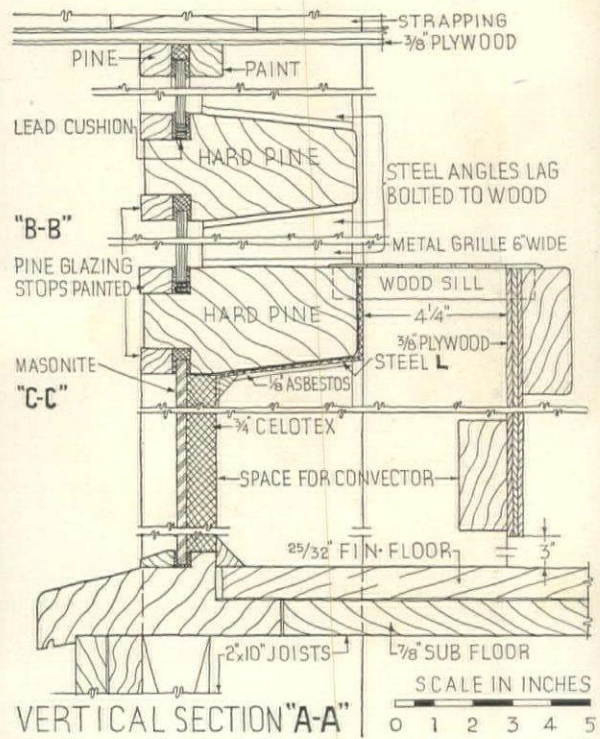
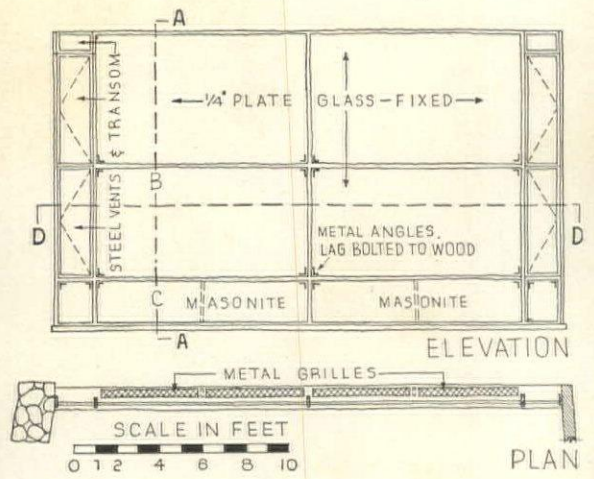


Designed for his own use, and occupied on a rental basis, this house by Marcel Breuer is interesting as a very clear expression of the architect's methods and preferences. The house is arranged in three units: porch, living room and an element containing sleeping, dining and service elements, each of which is very distinctly indicated by the severely geometric wood exteriors. The garage is merely a partly enclosed shed near the house. A two-story living room is the main feature, with sharp differentiations of texture produced by the three walls of glass, wood and stone. As the photograph of the exterior shows, there is no exaggeration in referring to a wall of glass, since this enormous window literally constitutes the entire wall save for space occupied by radiators. The bedroom occupies an open mezzanine at one end of the living room, and is related to

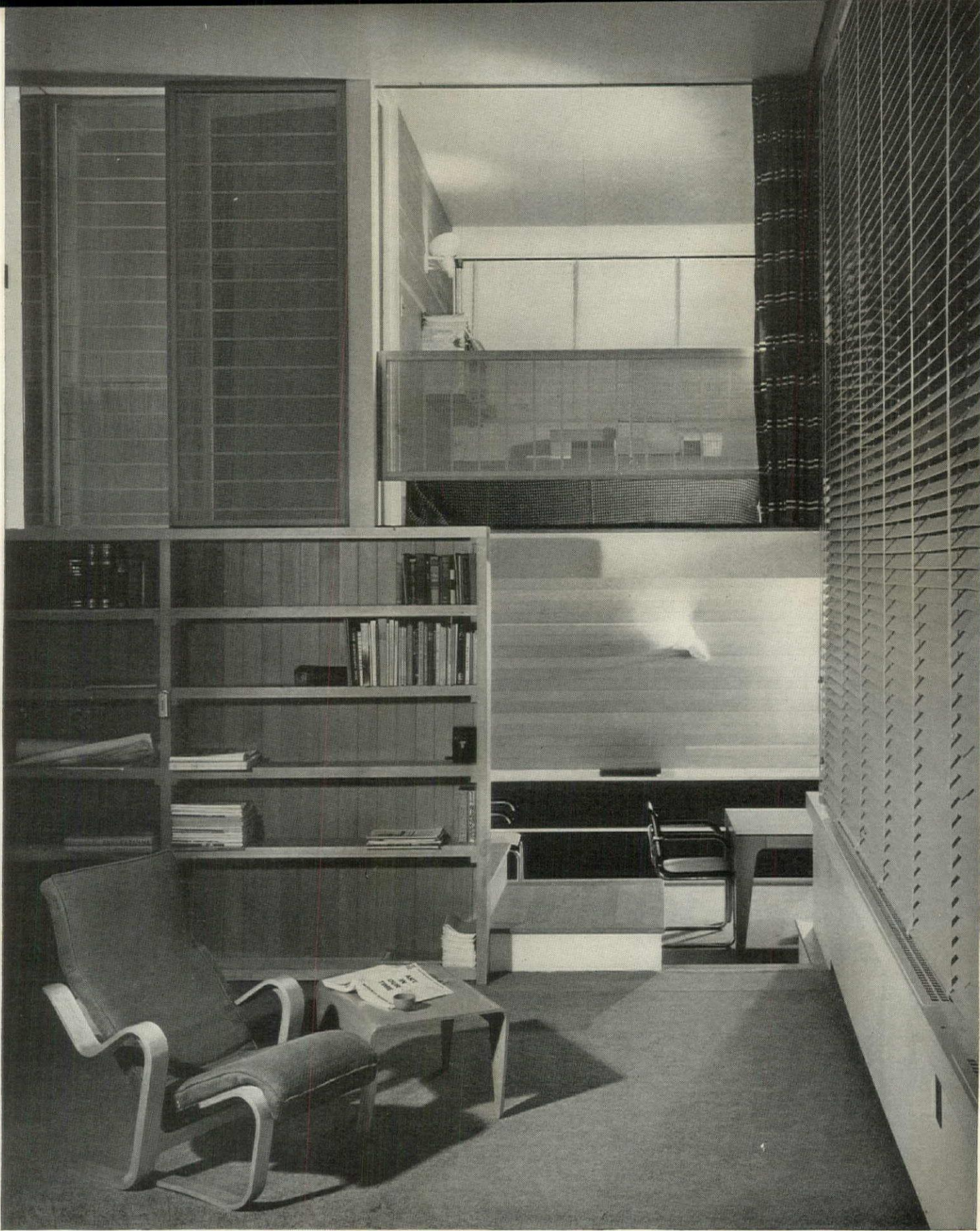


SECOND FLOOR BEDROOM

LIVING ROOM SEEN FROM DINING ROOM



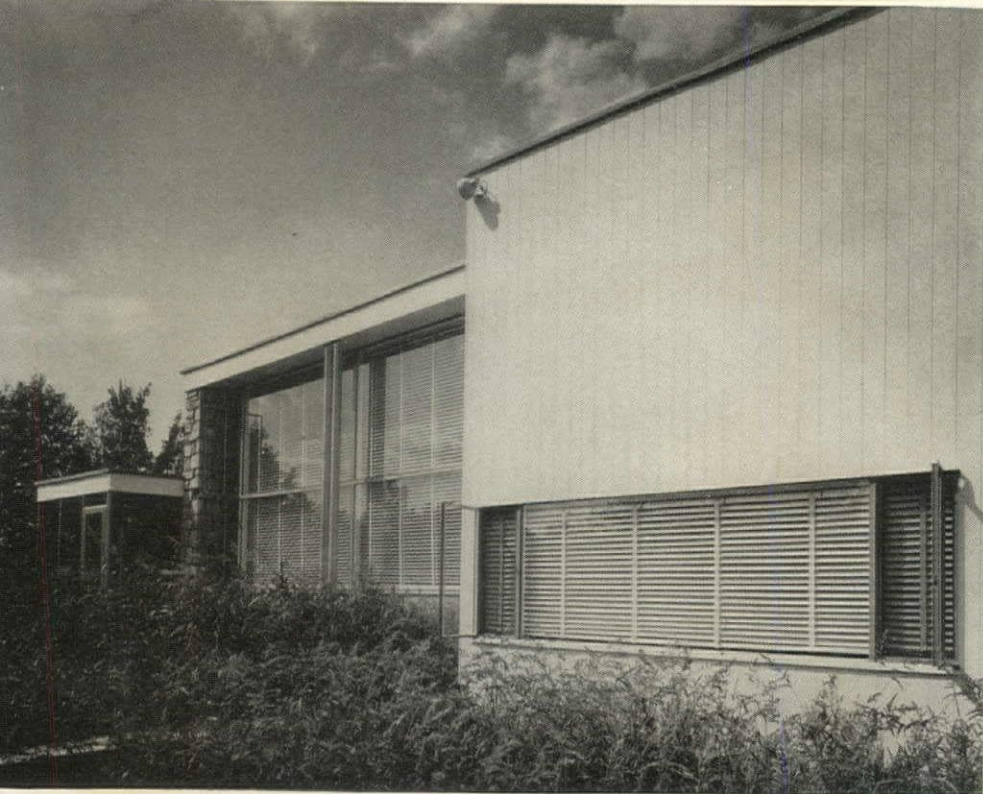
DETAIL OF LIVING ROOM WINDOW



LIVING ROOM LOOKING TOWARD DINING ROOM

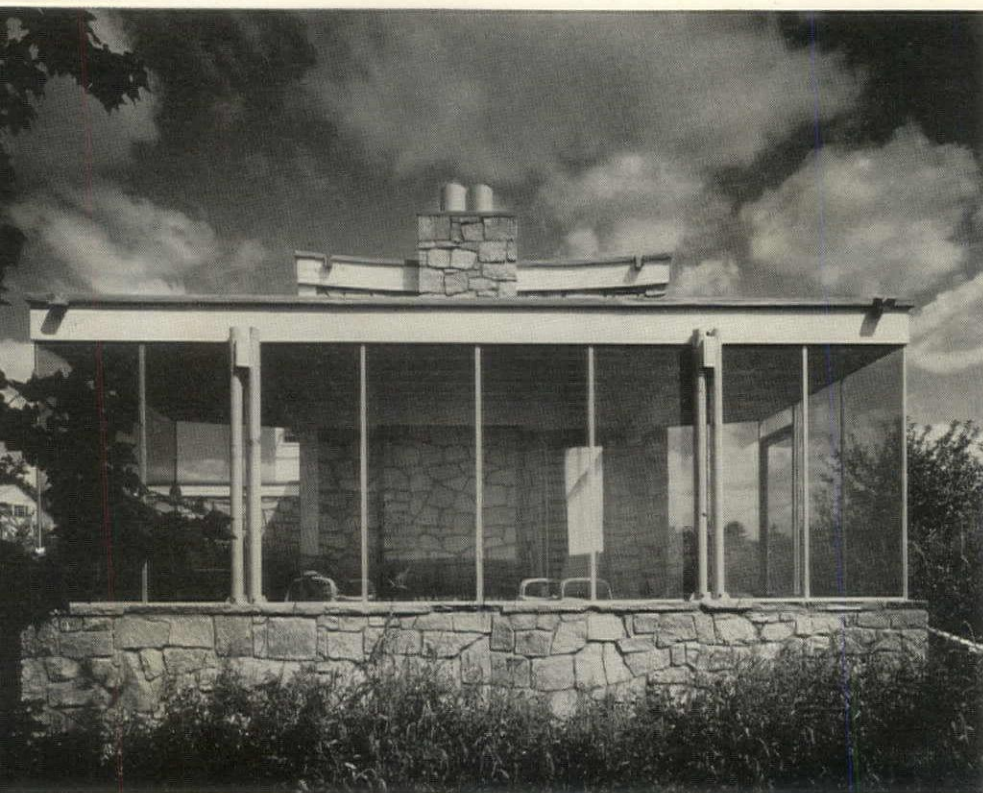
it by a repetition of the wood wall. It can be screened off by a curtain when desired. The lighting consists of wall fixtures of the type more commonly found in show windows; they provide a high degree of flexibility as they can

be tilted and turned in almost any direction. Furniture is all designed by Mr. Breuer; many of the pieces, including the armchairs and tables, are of bent plywood and were commercially produced in England.



SOUTH SIDE

PORCH



CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—T. & G. redwood, 15 lb. asphalt felt, fir boarding, studs, paper, 1/4 in. plywood or 1/4 in. fir. Ceilings—plywood, and fir joists.

ROOF: Covered with 15-year bond, built-up, The Barrett Co.

SHEET METAL WORK: Flashing—copper.

INSULATION: Outside walls and roof—Cabot's Quilt, Samuel Cabot, Inc.

WINDOWS: Sash—casement, Hope's Windows, Inc. Glass—plate, Pittsburgh Plate Glass Co. Screens on porch—(galvanized), Cambridge Screen Mfg. Co., remainder—Hope's Windows, Inc.

FLOOR COVERINGS: Main rooms—carpet. Kitchen and bathrooms—linoleum, Armstrong Cork Co.

DOORS: Rezo, Paine Lumber Co.

HARDWARE: By W. C. Vaughan Co.

PAINTING: Material by E. I. Du Pont de Nemours & Co. and Pittsburgh Plate Glass Co.

LIGHT FIXTURES: Light Control Corp.

KITCHEN EQUIPMENT: Range and refrigerator—Westinghouse Electric & Mfg. Co. Sink—Ryan Mfg. Co. Cabinets—Modern Steel Equipment Co. Fan—Universal Blower Co.

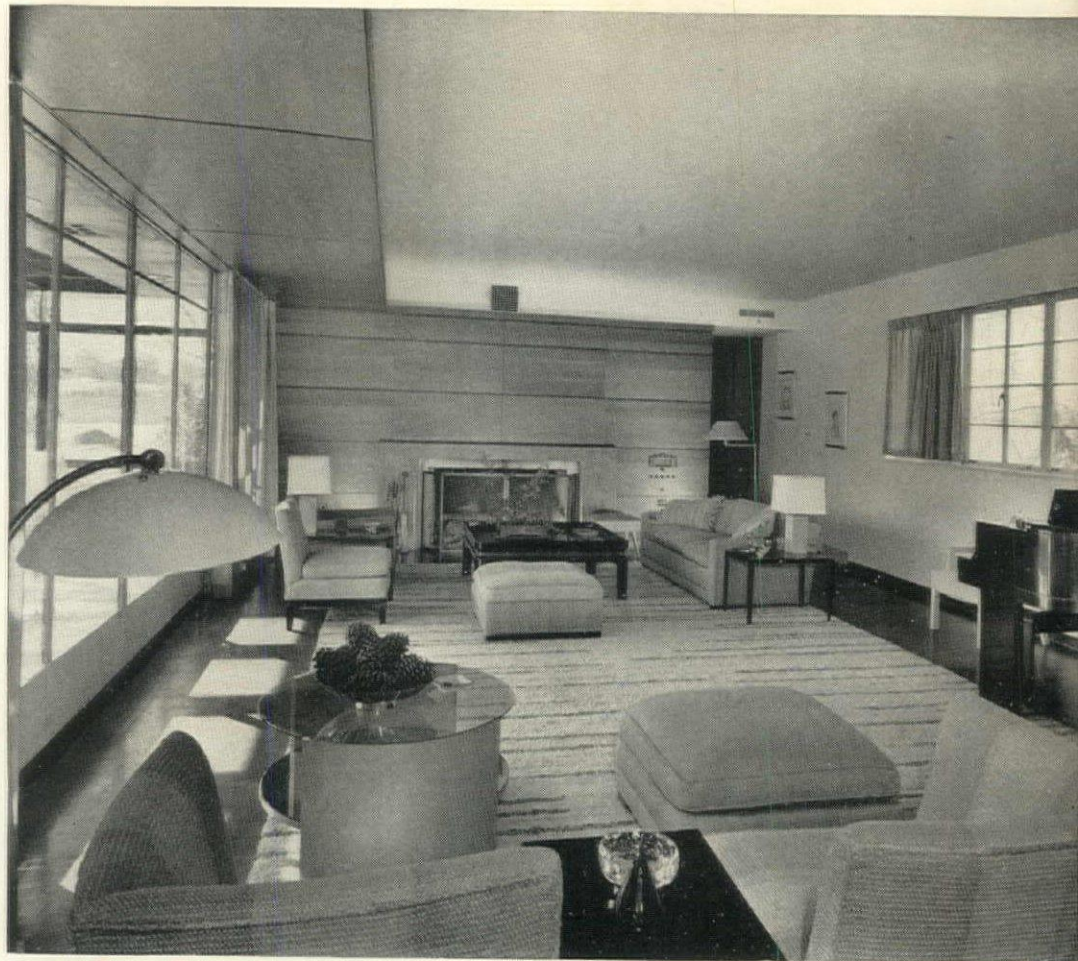
BATHROOM EQUIPMENT: All fixtures by Kohler Co. Cabinets—Charles Parker.

PLUMBING: Hot and cold water—red brass.

HEATING: Forced hot water system. Boiler, radiators and valves—American Radiator Co. Thermostat—Minneapolis-Honeywell Regulator Co. Water heater—Taco Heaters, Inc.

HOUSE FOR H. STANLEY MARCUS, DALLAS, TEXAS

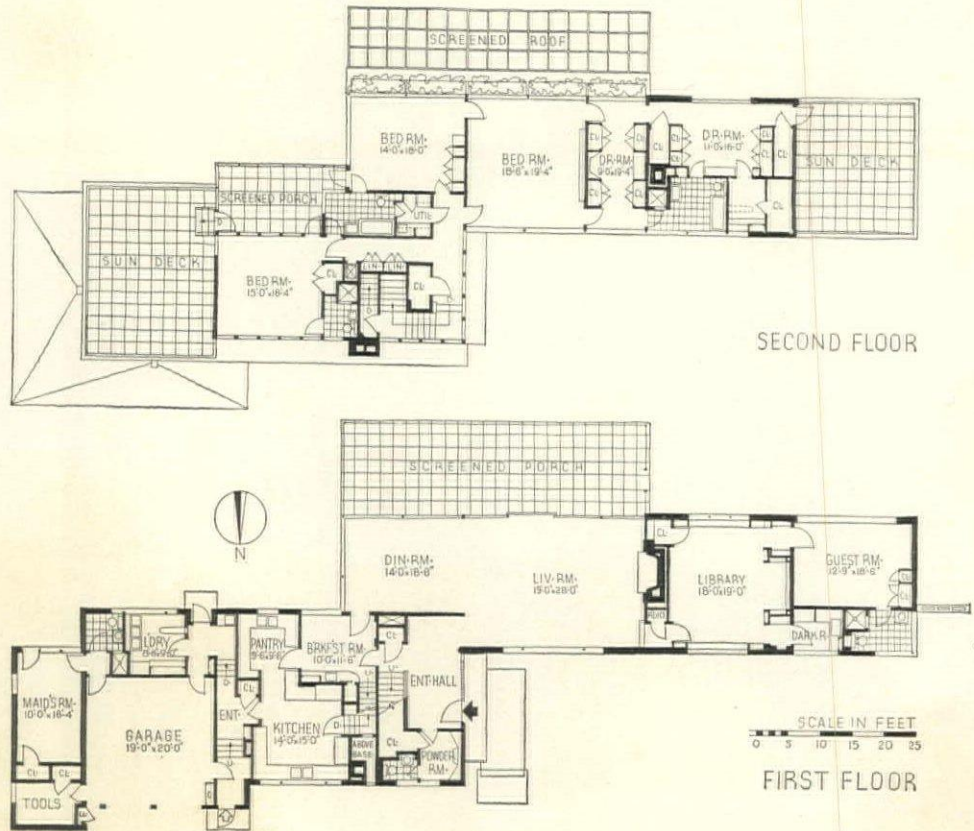




LIVING ROOM

All photos, Parker-Griffith

The influence of the Texas climate is very apparent in this luxurious residence, not only in the generous provision for ventilation and the pronounced overhangs which shelter the windows, but in the low-lying form of the house itself. The horizontality of the design is in part due to the projecting roofs and to the emphasis given by a judicious use of materials; essentially, however, it reflects the elongated plan which has been admirably adapted to the important requirement of through ventilation. The open treatment of living and dining rooms has a double functional justification, in both climate and requirements of flexibility, and the large screened terrace further extends the useful living space. A series of handsome interiors recalls the very personal handling of modern forms characteristic of the exterior.





DINING ROOM

MASTER BEDROOM



CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—4 in. face brick veneer, 1 in. air space, insulating felt, $\frac{7}{8}$ in. storm sheeting, $\frac{1}{2}$ in. Sheetrock, U. S. Gypsum Co., covered by decorator's canvas and backed with Reynolds Metals Co. metallation. Floor construction—concrete slab on fill. Ceilings—Sheetrock, U. S. Gypsum Co., covered with canvas; plaster in living room.

ROOF: Covered with 20-year bonded tar and gravel, The Barrett Co. Deck—covered with Con-Ser-Tex, William L. Barrell Co., Inc.

SHEET METAL WORK: Flashing—galvanized ingot iron. Downspouts—cast iron.

INSULATION: Walls—Metallation, Reynolds Metals Co. Roof—metallation and Johns-Manville rock wool. Sound insulation (kitchen and pantry)—Quietile, U. S. Gypsum Co.

GLASS: Double strength, quality A; $\frac{3}{16}$ in. plate for doors, Libbey-Owens-Ford Glass Co.

FLOOR COVERINGS: Living room, library, dining and breakfast room— $\frac{1}{2}$ in. cork, Armstrong Cork Co. Kitchen—linoleum, Sloane-Blabon Corp. Bathrooms—rubber, Goodyear Tire & Rubber Co.

WOODWORK: Trim—redwood and yellow pine. Doors—birch veneer and redwood. Cabinets—magnolia and quartered oak.

HARDWARE: By P. & F. Corbin.

PAINTING: All material by Cook Paint Co.

KITCHEN EQUIPMENT: Range—Magic Chef, American Stove Co. Refrigerator—Frigidaire Sales Corp. Sink—Standard Sanitary Mfg. Co.

BATHROOM EQUIPMENT: All fixtures by Crane Co.

HEATING AND AIR CONDITIONING: Hot air heating equipped with humidity apparatus and automatic humidifying and temperature control; Moncrief forced air furnace with ducts insulated for future cooling, The Henry Furnace & Foundry Co. Thermostat and humidistat—Minneapolis-Honeywell Regulator Co. Water heater—Crane Co.

THE ARCHITECT'S WORLD

THE CASE FOR THE SKYSCRAPER

By Henry N. Wright

ASSOCIATE EDITOR OF *The Architectural Forum*

Condensed from an address before the 17th Annual Convention, American Institute of Steel Construction, New York, October 17, 1939

It is a fact that the rate of skyscraper construction has been slowed considerably, for a time was virtually at a standstill. After a decade which registered an unprecedented boom in this type of building, with an average volume of \$1,000,000,000 per year, construction of this kind during the '30s averaged but \$300,000,000—a drop of 66 per cent. Around this fact has centered a great deal of opinion—informed and misinformed.

Catchword of one group of these observers has been the term, "Decentralization." According to the vociferous champions of this point of view, most of the evils of the day, from unemployment to swing music, may be attributed—directly or indirectly—to high buildings. The skyscraper, they say, is a dismal flop, untenanted, anti-social, and a white elephant in good times as well as bad.

The alarming thing about it, however, is that the man in the street has been pretty much sold on the idea that urban congestion is produced by the skyscraper, that it is getting worse from year to year, and that nothing could be more disastrous than a revival of office building construction to the rate of the prosperous '20s. This widespread belief, if uncontested, will certainly have an important effect on the character of future urban construction, may even be reflected in ill-considered legislation of a restrictive type.

Is the skyscraper guilty as charged, or is it merely a convenient scapegoat, "picked up" because of its conspicuous presence at the scene of the crime?

The indictment is on two counts, social and economic. In the first count, the defendant is charged with causing street and sidewalk congestion, shutting out light and air, and aiding and abetting the trend toward centralization, which is held to be socially unhealthy. In the second count, he is accused of embezzlement—the upper floors of high buildings are said to steal profits from the lower floors and render the building as a whole uneconomic. In my opinion, both counts are false.

The theory that skyscrapers cause, or even necessarily result in crowding and congestion is an oversimplification. It is

based on so many misconceptions, however, that it requires some patience to dissect. Most easily disposed of is the question of vehicular congestion. Manhattan had its problems of congestion long before it sprouted skyscrapers; its prime trouble spots have always been at points where main arteries of through traffic intersect, and depend more on concentrations resulting from bridges and tunnels, manufacturing districts such as the garment center, and bus and trolley routes than on the height of adjacent buildings. The corner of Park Avenue and 57th Street, which the Police Department calls the worst in the city, is distinguished by the lowest buildings in the vicinity. London, which has no skyscrapers at all, is notorious for such trouble spots.

Similarly, it is well established that concentrations of pedestrians depend more on retail trade and transportation facilities than on building height.



The real question involved, both in the problem of congestion and in the problem of adequate light and air, is not one of height but one of bulk. Bulk which is excessive in relation to existing street and sidewalk systems is not so common as the opponents of the skyscraper would have us believe; where it does exist, its harmful effects are most pronounced in relatively low buildings of large area rather than in the tower-type structures of mid-Manhattan. Nowhere else is there an abundance of light and air, not to mention outlook and other amenities, matching that in thousands of New York's skyscraper offices—nor could such good results have been achieved in any other way.

Actually, it is just beginning to be realized that tall buildings relieve congestion, both vehicular and pedestrian, by taking choking horizontal traffic off the streets and sidewalks and converting it into properly serviced vertical traffic within the buildings themselves. The Starrett-Lehigh warehouse, for example, where proper provision for freight transfer has been made in the original plans, prevents

sidewalk blocking and saves time and money for tenants and city alike.

There remain, of course, those critics who are opposed not so much to the skyscraper itself as to the big city in general. As a theory, this point of view has gained considerable currency in recent years as one of the numerous panaceas for economic ills. In practice, however, its headway has been less impressive: in only one year (1932) did the movement from city to farm exceed the normally-large movement from farm to city, and then by a scant 270,000, as compared with a peak in the reverse direction of more than a million. Apparently, the overwhelming majority of Americans still agree with the late Raymond Hood, architect for many of Manhattan's most impressive buildings, who said:

"Congestion is good . . . New York is the first place in the world where a man can work within a ten minute walk of a quarter of million people. . . . Think how this expands the field from which we can choose our friends, our co-workers and contacts, how easy it is to develop a constant interchange of thought."

In the economic sphere, opponents of high buildings are on no surer ground than in the social. It is true that many—if not most—tall office buildings have lost money. But this is also true of many—if not most—of the low apartment houses erected during the same period—true, in fact, of the real estate picture in general during its most troubled decade. One might, with equal justice, point to the fact that many a high building has returned handsome dividends.

The crux of the matter, however, is the idea that the upper floors of skyscraper office buildings lose money which must be made up from the returns for lower-floor space. Behind this theory is the fact that tall buildings cost more to build and require more elevator space per unit of floor area than lower structures. On the other hand, this is at least partially counterbalanced by the fact that upper-floor space commands a higher rental than that on lower floors, and that space in a high building is often easier to rent because of its advertising value. Still another point

of this kind is that the space occupied by tower elevators on lower floors is usually dark and unrentable. Result of all these considerations is an intricate equation which sets up a law of diminishing returns governing economic height, in which the determining factor is usually ground rent.

For my own amusement, and to check on the truth of the assertion that skyscraper office buildings exceed their economic height, I recently made just such a calculation. Using the balance sheet of a tall New York office building which has been losing money, I attempted to discover what would happen if it were only half as big. I discovered that the lower building would still lose money even if fully occupied at double the present rent, whereas the tall building stood to make a lot of money if this happy state of affairs were only partially achieved.

Few large buildings, tall or squat, are designed without a searching examination of this equation. Ordinarily, it is decided strictly on its merits, within the limits of human fallibility. Calculations intended to prove that a building lower than that actually built in a given case would have proved more economic usually depend on the rentals actually realized being much less than were anticipated.



So much for the negative side of the question. I much prefer the positive approach, and this, it seems to me, has been woefully neglected. It is high time for those of us who understand the problem to take the offensive: to popularize the skyscraper's many, but little-known advantages.

Watchword for such a campaign should be Centralization, but centralization of a new type, Planned Centralization. The need for centralization is axiomatic: despite modern means of communication it is vital to the economic life of the nation that increasingly large numbers of people actually see and talk with one another every day. And it is obviously advantageous that their offices be as near together and their homes as near to their offices as possible without sacrifice of other essentials.

Such centralization is best accomplished by high buildings. In the only example where a consistent attempt has been made to accomplish the same result with buildings of limited height—the Federal Capital—results are most unfortunate. Anyone who has trudged wearily through the miles of corridors of the Commerce and Labor buildings knows how badly suited such structures are to the administration of our highly complex society.

Opposed to this isolated and unsuccessful attempt at centralization in low buildings are countless examples in which the skyscraper form has been chosen principally because of the convenience it affords. This has been done at state capitols, such as Albany and Bismarck; in city halls, like Los Angeles; schools, like New

York's recently dedicated Joan of Arc Junior High School, and in numerous hospitals, among which New York Hospital, New Orleans' Charity Hospital, Los Angeles General Hospital, the Presbyterian Medical Center in New York and the New Jersey Medical Center are outstanding examples. Here the true function of the skyscraper as a "vertical street" with swift transportation and a minimum of wasted corridor space, has been recognized and utilized to furnish the utmost in accessibility and convenience.

This is Planned Centralization. There

is a well-defined trend in this direction in institutional and office buildings in all parts of the country. Best of all, of course, is our own Rockefeller Center, which proves the point that—given proper planning—tall buildings can provide more open space, air, light and outlook, can relieve rather than increase congestion, and can make our cities infinitely more beautiful and convenient than we have so far dared to dream.

There is room for the Rockefeller Center *idea* in most of the cities, large and small, in every part of the country.

HOUSING AND ARCHITECTS

Excerpts from *The Octagon* for September and October, 1939

A CRITICISM

By A. C. Shire

TECHNICAL DIRECTOR, USHA

Two years ago low rent housing by local governments with federal aid was a thin pamphlet fresh from the Government Printing Office. Today it is, among other things, one of the biggest architectural jobs in history. In 120 cities, several thousand architects, engineers, landscape architects, and their assistants of all degrees are working on plans and specifications for nearly 250 projects that will house about 100,000 families. . . .

I acknowledge the importance of the architect's part in the housing movement, but I want to emphasize the fact that this is a new kind of work for architects, that it calls for new lobes, so to speak, in the architectural brain—not to mention a new professional morality and a new relation of responsibility to client and public. I should be negligent of my obligation to the USHA program if I did not strive in every way to induce the architectural profession to give more complete and effective service to housing. To this end I feel it necessary to make certain indictments against the kind of work some—or many—of the local architects have been doing. In this process, I propose to stick a few well sharpened pins into the professional skin—and the more sensitive it proves to be, the better I shall be pleased. . . .

The Act requires "that such projects will not be of elaborate or expensive design or materials and that economy will be promoted both in construction and administration. . . ." and that average construction costs will not exceed the average cost of dwellings produced by private enterprise under similar conditions.

The architect must therefore always remember that he is designing for:

1) Low cost—so that a given sum of money can provide housing for as many families as possible without sacrifice of the other essentials.

2) Low rent—so that this housing can be brought within the reach of the lowest income group.

3) Adequate housing—decent, safe, sanitary, providing the essentials of light, sanitary facilities, and privacy for the individual and the family; social life for the family and the group; pleasant, simple, comfortable surroundings.

The commonest mistake that local authorities and architects make is that they don't know their real clients, the people who will live in the houses—don't know their habits and needs and means. The average tenant of subsidized housing will earn less than \$1,000 a year. Apparently an American architect can't imagine a family income of less than about \$3,000 or \$4,000. Hence the whole tone of his approach becomes unrealistic. When he gets down to brass tacks he is still several economic strata above reality.

When we try to bring to the architect the stern realities of subsidized housing, he is likely to show irritation, as if we were taking the fun out of the job. What hope is there for housing if architects can't break through their accumulated spiritual cobwebs and meet the need for invention and simplification, finding a new kind of design that is consistent with the new human and physical materials they are working with? If they can't supply this vision, who will? It is time that we were more concerned with the real needs of low income families than with charm, symmetry, traditional style, and bourgeois standards.

Are architects interested only in the things that can be photographed for publication? As far as the interior layout is concerned the architect quite willingly accepts the suggestions made by USHA: it saves him the trouble of thinking about the real problem at hand—how to provide for the life of the people who will occupy the project. "Yes, sure, the plans are good enough anyway you suggest, but don't take away my sloping roofs, the canopies supported by wrought iron ornamentation at the house entrances, false chimneys,

architraves around windows, the cupola on my community building. How can you have architecture without these things? Surely you don't want this project to look like an institution?" I can never understand that remark about an institution. Every time I hear it, I go out and look at another institution and every time I find on it all the things the architects want to put on this housing project to keep it from looking like an institution. . . .

And when it comes to laying out the buildings on the site, does the architect strive for economy and livability, the most in terms of usefulness for the least in terms of rent? Does he study his site and aspire to make his plan fit it like the proverbial glove? He does not. He drives around the property once and believes that if it isn't flat it can be made so. He approaches the site plan as a long-awaited ladder to professional glory. Lifting a motif from an English garden city plan—don't architects know about any other kind of city plan except the "Garden City" of the '90s?—he repeats it nine times so that on paper—or from the air—the project will look like a beautiful piece of linoleum. One of the courts falls on a fifteen foot diagonal slope—this gives him a chance to get some charming informal effects with retaining walls and steps, up and down which the tenants, for a century or so, will be privileged to push their baby buggies. . . .

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Low rent is the *sine qua non* of subsidized housing and under the USHA program low maintenance costs are to low rents what eggs are to an omelette. That is a new idea to most architects; they have been used to thinking of maintenance as a small item compared with interest and taxes. Thus here again, the architect is under the distressing necessity of having a new idea. He must think of things in terms of the care they need. And he must see that the maintenance money is spent for things that will make life easier for the tenants. For example, anything that requires periodic painting adds to the rent, and the more elaborate it is the more it costs to paint it, and hence the more it adds to the rent. Naturally, therefore, there should be a minimum of trim and that minimum should be simple. What good is a five-member cornice to a woman who has to cook, wash, and otherwise care for a five-member family? . . .

That family wants to look out on trees and shrubs, grass and flowers. But they don't want to watch gardeners cutting the grass, pruning the shrubs, weeding the flower beds, when their rent is helping to pay those gardeners' wages. . . .

It is not just a lack of definite knowledge of costs, but a lack of definite interest in cost that appears in most of the projects submitted. This probably stems from private practice in which a few dollars saved are a few dollars that remain

in the client's pocket. Whereas a few dollars saved in each of many hundred dwelling units in a project are used to provide more dwelling units. . . .

What is the explanation? Is this business of designing for low costs and low rents so different from all the architect's previous training and experience that he has not yet acquired the essential technique? If this is true perhaps a new type of technical education for architects is necessary.

A REPLY

By Frederick L. Ackerman

Such a sweeping indictment of a professional group as that made by Mr. Shire suggests that he may be writing under guidance of a somewhat biased point of view. . . .

For Mr. Shire makes no reference at all to a very considerable amount of work of a serious technical nature which was done by members of the architectural profession in the interest of a matter-of-fact re-statement of the problem of housing, and also in the working out of such half-way solutions as it might be possible to find within the framework of our debt economy. As I run over the list of those who volunteered to act as pioneers in this field, seeking rational solutions within the frame of aims expressed by Mr. Shire, the small list seems to be made up almost exclusively of architects; engineers were conspicuous by their absence. There was no compensation to be derived from this pioneering work, which was confined largely to finding "solutions" within the technical fields of design and construction, since they could not be applied under the reign of "business-as-usual."

But what impels me to find fault with Mr. Shire's statement is the absence of any reference to a genetic account of housing in the U. S. and to the casual circumstance which give rise to the recent drift toward a more matter-of-fact technique of design. From this statement one gains the impression that the architect has played no part at all in this work: this is not so.

Mr. Shire singles out as conspicuous examples of misguided men "the 1920 style architect." But it should be recalled that it was during the 1920's that a considerable number of architects, grown inexpressibly weary of working under the canons of conspicuous waste and competitive spending, took up the rather thankless task of attempting to re-state the problem of housing in terms of a matter-of-fact approach. Naturally there are few examples of accomplishment during that period, for the 1920's offered practically no opportunities of translating rational aims into rational structures. That was the period during which Financial Business rated it safer, more conservative, to loan a few billions to foreign nations for

the launching of housing schemes and preparations for war, etc., than to risk a few dollars in the U. S. in the interest of more and better housing.

But the fact remains, and it can be abundantly documented by our journals of that day, that the profession which Mr. Shire appears to indict had sent its skirmishers well out front, far beyond the line of business-as-usual before Mr. Shire became interested in the problem.

Mr. Shire ends his indictment with an interesting paragraph. . . .

Certainly and emphatically, designing for low cost and low rents is unlike the experience of the architect prior to the years of the depression, except in such rare instances that we may ignore them as having no bearing in the case. How else could it be? Has Mr. Shire forgotten what actuated building during the several decades prior to 1939? Has he forgotten Veblen's "Theory of the Leisure Class" with its discussions of the pecuniary canons of taste, conspicuous waste, competitive consumption, etc.? Has he forgotten the dominating position of the promoter, the speculator, the jerry-builder and the criteria under which a part of the profession prostituted its aims and knowledge? What was there in the preparation of drawings under the injunctions to design the cheapest damn thing that would hold together, to sneak below the minimum requirements of the building law, to crowd the land, to exploit light and air—what was there in all this experience which would prepare him to design for minimum cost-of-use over a 60 year amortization period? The answer is, there was nothing.

And what was there in working under the criteria of conspicuous waste and competitive spending in designing structures for institutions of higher learning, for great banks, for religious institutions, for the would-be and the ultra-well-to-do, and so on and on—what was there in all this experience to prepare him for the advent of subsidized housing for the very poor? Again there was nothing. The wonder is that the profession kept a tiny flame of interest in workmanship and well-building going all through this period, and more the wonder that revolt against this period of misguided effort showed its head before the Great Depression set in.

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And just what had engineering to offer at this same juncture? Well, this is what it had to offer: it accepted the whole complicated muddle of the construction industry, considered as a whole, as the point of departure in its quest for efficiency in providing habitations for all of us. It accepted the inordinately wasteful system of distribution and assumed that it was solving some problem by saving some picayune items in a living unit while the torrent of waste in the production industry as a whole went roaring by. What was there in the experience and training

in the field of the construction industry which prepared the construction engineer competently to deal with this problem of adequate housing for all of us? Again, one may say, nothing much.

If Mr. Shire will pause and look at this matter from a broader angle he will realize that no one is prepared to deal with this problem of housing all of us—that goes for the financier, the banker, the industrialist, the investor, the architect, the engineer, the builder, the “sub” and for building trades labor. That’s the reason

why we are now resorting to subsidized housing to take care of—how large a proportion of our total population nobody knows.

All this is not to imply that Mr. Shire does not experience the troubles which he so clearly describes. It is rather to point out that his troubles are not due merely to deficiencies in “local individuals”; they arise in a broad institutional background. And the fact that we are discussing this matter in this way is probably due to our deep sense of frustration.

FUNCTIONAL COLOR IN HOSPITALS

By Faber Birren

Excerpts from an article in *The Modern Hospital*, November, 1939.

Whenever possible, functions should be served in the use of color to decorate a hospital. While esthetic factors are important, there is still greater need for a careful attention to the emotional and physical comfort of the patient so that color will prove a definite aid to convalescence. Hospital problems are too specialized and too vital to be answered by mere styles or decorative vogues. Permanent values should be sought and a palette developed that will serve medicine and please the patient. . . .

Not so many years ago mental hospitals here and abroad used intensely colored rooms in the treatment of patients. In cases of functional depression and melancholia the patient was confined to a room having red walls, furnishings, window panes and illumination sources. Cases of functional excitation were confined to rooms similarly handled in blue or violet. The medical records of a few decades ago gave hopeful accounts of results. The practice was abandoned with the advent of such therapies as insulin shock and diathermy. Color may afford relief but it is hardly a cure.

The principles involved, however, still apply. There are two distinct regions of the spectrum, warm and cool, and to these regions the emotional reactions of people are different. Red is exciting; blue is subduing. The neutral point lies in the yellow and green region.

As applied to hospital decoration it is obvious that an exciting effect, a subduing effect and a rather neutral result may be expected in order with warm colors, cool colors and yellowish-green colors.

Personal preferences or prejudices aside, pale yellowish and pale greenish colors have an all round utility. Warm tones—buffs, pinks and salmons—appropriately belong in rooms and wards in which the patients are definitely on the road to recovery. These warm hues will bolster the spirit and encourage a desire to get well. Conversely, cool tones—blues, lavenders and grays—appropriately belong in rooms

occupied by chronic disease patients. They are far more restful and relaxing and help to reconcile the mind of the individual to a more prolonged stay. . . .

In the general color treatment of a hospital a variety of the fairest, strong hues should be placed in the entrance, lobby, parlors and rooms for the visitors’ accommodation. Variety in particular (though it must be carefully harmonized) will give the building a cheerful atmosphere. White and smaller areas of red and blue are safe colors to employ. They are universally liked and have a spontaneous charm. To judge from the reaction of most people to any environment that has the stamp of institutionalism, severity is a pose that the hospital will do well to avoid.

In the accommodations for patients and in surgical and service departments, functionalism should hold sway over esthetics. Hospital corridors should be finished in light colors for high light reflection. Walls at the ends of corridors should show touches of color for relief. Floors may be dark, although the curved baseboards should be lighter in tone (more like the walls) to reveal all traces of dirt or litter and to discourage those who may look for a place to discard something. . . .

Hospital rooms should have tinted ceilings either to match the wall or to contrast with it; if the ceilings are high the tone can be deeper than the walls. A room treated in this fashion will tend to rest the patient when he lies in bed and looks up at the dark tone, and he will be agreeably stimulated when he sits up or glances at the brighter walls.

Mottled paint finishes and unconventional wall covering patterns will relieve monotony. They are desirable but not essential. Formal and geometric patterns of any sort should never appear in large areas. They distract the eye and mind and may lead to nervous irritability.

As to draperies and furnishings, psychological tests again reveal that people like either direct contrast or close analogy and are indifferent to other hue arrangements.

Analogous color schemes (predominated by one color or a closely allied group of colors) are perhaps too severe for rooms occupied day and night. Pleasing contrast seems advisable and far superior. . . .

Generally, the most satisfying illumination is yellowish or golden (like the atmospheric tinge of sunset or Indian summer). Delicate orange-pink and magenta also are pleasant. Yellow-greens, greens and blues are usually distressing. Of the cool hues, a soft bluish violet seems to be the only acceptable one.

If monotony is one of the curses of hospital occupancy, these observations may be turned to practical purposes. For example, it is highly desirable to design rooms in soft buffs or grays that can, under the influence of an adjustable artificial light source, be shifted in appearance toward the warm side or the cool side of the spectrum. A hospital interior can thus be given a wider emotional range. Patients with a dislike for warm hues, for instance, could be readily satisfied with a cool illumination. The mere ability to produce pleasant shifts in the atmospheric appearance of a room may prove delightful to the patient and delight in a patient is a salubrious tonic. . . .

THEY SAY—

“Business as usual during alterations to Germany.”—Sign on a chemist’s shop in Lambeth.

“The New York World’s Fair will exert no more influence on the architecture of tomorrow than would a band of musicians on musical tastes if each member were playing a different piece.”—HARVEY WILEY CORBETT.

“The architectural style of a building is relatively unimportant, provided it is beautiful, but the architectural pattern of our cities, towns and villages is of great importance to the nation.”—DEAN WALTER R. MCCORNACK, M.I.T.

“Will sandbags revive a taste for rustication? There is now many a dreary commercial building in England, with its plinths of sandbags, looking like the beginnings of some Italianate palace.”—ASTRAGAL in *The Architects’ Journal*, London, October 5, 1939.

“Why does one love the night, flowers, everything around one, without trying to understand them? But in the case of a painting, people have to *understand*. If only they would realize above all that an artist works of necessity, that he himself is only a trifling bit of the world, and that no more importance should be attached to him than to plenty of other things which please us in the world, though we can’t explain them.”—PICASSO.

THE DIARY

Henry J. Saylor

Tuesday, October 3.—Back in New York for another convention, this time the second annual meeting of the New York State Association of Architects, at Hotel Pennsylvania. Apparently the habit of coming together for business and professional discussion is not instinctive. It has to be fostered over a long period. A.I.A. has been at it for three-quarters of a century now and the going is fairly good. N. Y. State Association, with about 1,600 members out of the 3,000 or so that are registered, drew 64 to its dinner last evening, 52 to its business session and lunch today. Rochester made a bid for next year's gathering and will probably draw a more representative crowd. It would seem, however, that some system of delegate representation should be put into effect—the wholesale invitation to members is a bit too loose.

Matthew W. Del Gaudio contributed a real idea in connection with unification. Instead of plunging into the maelstrom of difficulties involved in several grades of membership in A.I.A., he suggests that matters of National or State political import be handled by a joint committee of The Institute and the State Associations. The scheme has proven its practicality in New York State, where several Chapters and other organizations have found that the aims they have in common can be achieved by their joint committee without any necessity for calling in the minister to tie irrevocable bonds.

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Friday, October 6.—As if in answer to widespread admonition that the architect should assume leadership in civic affairs, The Pittsburgh Architectural Club has persuaded the City Council to name a street in the heart of Pittsburgh's Golden Triangle, "Charette Way."

Washington, Thursday, October 12.—Echoes from Stockholm's recent session of the International Congress of City Planning and Housing come rather faintly through an ether jammed with talk of war. Henri Sellier, former Minister of Health under the Blum government in France, holds to the skyscraper as the solution of public housing. Reinhold Niemeyer, in charge of land planning for the environs of Berlin, favors satellite towns and free-standing privately owned homes.

George L. Pepler of the British Health Ministry, after experimenting with rental apartments in London and Leeds, comes back to what Sir Raymond Unwin has always advocated, the single-family dwelling with a garden plot. Kai Hendriksen, head of the Copenhagen's housing bureau, swears by the row house. Prof. Sverre Pedersen of Norway believes in three-story private dwellings with balconies and side yards. Dr. Paola Cuccimei of Italy reported that most of his country's new building is in the form of three- to six-story apartments. You pays your money and you takes your choice.

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Saturday, October 14.—The jury of architects which passed on the drawings of Insulux Competition No. 2—a problem of remodeling three stores—was not impressed by the attempts to develop a second-floor beauty parlor. Possibly the competitors, in giving more time and study to the restaurant and women's apparel shop facades, considered the beauty parlor a matter of less importance. Whether we like it or not, the so-called beauty industry ranks sixth in the U.S.A. and is grossing \$200 million this year. Some 39 million women patronize our 78,624 beauty shops. There is an architectural problem here, and some group of technical designers will take it over if the architect spurns it.

Tuesday, October 17.—To a luncheon honoring John J. Earley of Washington, following which he answered many questions concerning the technique he has developed in giving an enduring beauty of texture and color to precast concrete slabs. Architectural concrete, meeting needs that were chiefly utilitarian, has been playing the role of the rather drab maid of all work. Brickwork, in its quantitative use, has been likewise subordinated to the strictly utilitarian excepting when in certain times and places craftsmanship has raised its status to that of a fine art. Earley has done this with concrete, and he has done it by learning first the mechanical processes and physical relationship under which concrete takes on its most substantial form, then, holding to those lines, selecting and even making his coarse and fine aggregates to raise concrete to the status of a really beautiful building material.

Thursday, October 19.—For twenty years Philadelphia has had its Art Jury. The charter of the city provides that no work of art shall become the property of the city by purchase, gift, or otherwise unless it and its location shall first have been approved by the Art Jury. There is a pattern here for other cities which would prevent much of the regret that follows too ready acceptance of painting, sculpture, memorials, and the like which have not been expertly scrutinized. Ten men—and Paul Cret happens now to be president of the Jury—serve without compensation. They even pay their own expenses on inspection trips throughout the city. The only two salaries paid are to an executive secretary and to a combination clerk and stenographer, involving, with other minor expenses, an average of \$5,000 per year. In view of the fact that in one year the Jury passed upon close to \$3,000,000 worth of projects, this form of art insurance is absurdly low.

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Monday, October 23.—In building for public use, the Supervising Architect's Office does not often encounter the difficulties recently met in building the post office and court house in Nome, Alaska. Gilbert S. Underwood, one of the consulting architects of the Department, designed the structure for reinforced concrete, but bids within the appropriation could not be had. Thereupon the plans were redrawn for timber construction. The only materials obtainable locally were sand, gravel, and water. Everything else had to be shipped to Nome from Seattle, 2,300 miles distant, and shipping is possible only from June to October. Contrary to the usual practice in temperate climate, the problem was not to prevent the soil under foundations from freezing, but rather to prevent it from thawing. During the summer the upper crust thaws to about eighteen inches in depth, the underlying earth remaining frozen winter and summer. The building was erected upon a floating foundation consisting of a three-inch slab of concrete upon which was laid a timber mat of 2 x 8 in. lumber on edge, laminated and spiked together. At right angles to grain of the timber mat were laid reinforced concrete foundation walls and reinforced concrete beams 2 ft. square in section, 12 ft. on centers, which latter serve as "mud sills" for the building. A gravel

fill between these walls and beams serves to insulate the earth underneath from the heat of the building.

Wednesday, October 25.—Seventy years ago Manhattan was outraged by the fact that a landlord put up the first apartment house in America. "French flats" they were called, and Rutherford Stuyvesant built them at 142 East 18th St. "No house is big enough for two families!" a contemporary writer cried in viewing with alarm these "impious importations." Ill health and loss of moral character were among the immediate consequences predicted. Today the redstone building, designed by Richard M. Hunt, remains virtually unchanged, and its apartments rent for approximately the same price charged by the first landlord—about \$1,200 a year. The building has never been remodeled, and vacancies have been rare. One tenant occupied his flat of eight large rooms for 54 years.

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Friday, October 27.—One does not hear so much today about the recipes for architectural romanticism that were fairly common a generation ago. Out in California, however, I recently ran across an account of an interior decorator who had apparently reverted to the type. In this case nothing would achieve the precious patine of interior woodwork save a rubbing by hand with raw eggs. The patine arrived, but the inhabitants soon departed.

It recalls the legend that when the Philadelphia Art Museum was designed by Wilson Eyre, Frank Miles Day and Cope & Stewardson, it was felt that the desired color and texture for the marble columns in front could be achieved only by a bath of sour beer. And, if I am not mistaken, Myron Hunt of California once advocated the use of cow manure on new tile roofs to achieve a proper measure of moss and color.

Monday, October 30.—One of the English architectural weeklies devotes six pages of its September issue to changes of address—the movement away from London and other office disruptions of World War No. 2.

Wednesday, November 1.—The Chicago Chapter has hit upon a new stimulus to membership. It has organized an atelier, with the temporary name of Chicago School of Architecture, which will be under the directorship of Paul Schweikher. Avoiding any semblance of direct competition with the other architectural schools, it will provide space and equipment which is needed for the continuation of work, study and discussion of architecture and its pertinent subjects. Tempting to the young man in an office who wants to progress, the offer carries with it the condition that all men joining the group must at the same time become Junior Associate Members of the Chapter.

Friday, November 3.—To Princeton for the third holding of the University's Architectural Round Table. Fifteen or twenty architects are invited to leave the theoretical whirl of private practice, come to the Princeton Graduate School for a week-end, and talk with the senior and graduate students in architecture. There are no set speeches, no formality, and apparently there is a mutual joy in the frank discussion of architecture and professional practice between the architects of tomorrow and their elders of today. It is the sort of unrestricted conversational event that many of us had hoped the American Institute Convention might become but hasn't.

★

Princeton, Saturday, November 4.—The first few sessions of the Round Table leaped high into ethereal realms, with the Advisers doing most of the talking and the younger men, I imagined, wondering whether the subject matter would ever come down to the plane of everyday practice, and how one might be expected to get an office job and hold it. Talk of "expensible buildings," whether nobility of architecture could ever be reconciled with present-day economies, the need for architects who could tell bankers, realtors and economists the real facts of life—and so on, far into the night, until I rather expected an emphatic decision on the part of the students to seek, instead of architecture, the more comprehensible vocations of selling apples or driving a taxicab.

However, the break of continuity occasioned by a football victory over Harvard, and an all too short visit by a few of us to Professor Labatut's eighteenth century stone farmhouse, brought relief. Then Edward Stone's impromptu summary of all architectural knowledge—over a beer supper—as an a b c relationship of walls, doors and windows, with incidental tablecloth diagrams, volplaned us back to earth and also to bed.

★

Princeton, Sunday, November 5.—Under the skillful direction of Pope Barney and Stephen Voorhees—retiring and incoming chairman respectively of the Princeton Advisory Board of Architects—and further stimulated by Sherley Morgan, the more immediate problems of the embryo architect were lined up and attacked. Perhaps the most formidable of these was sketched by Pope Barney. Registration laws provide that, to call himself an architect, a man must complete an approved academic training followed by three years in office practice, after which he can be examined as to his qualifications. If, however, the office experience is denied him by economic conditions beyond his or anyone else's control, what then? Students less polite than the Princeton men have charged the profession with the sabotage of the next generation's architectural aid in its selfish avoidance of these apprenticeship respon-

sibilities. To which the profession answers, "Too many on a raft endangers both rescued and rescuers. Isn't our first responsibility to those members of our organization who have already trained with us? Some of these men have already had to leave the raft to keep it afloat." However, Barney, having stated the problem, also provided what seemed an adequate answer—an apprenticeship beginning with two summers preceding graduation, followed by a six-months contractual period with a monetary return that should make the arrangement inviting to both sides. Princeton and some of her alumni architects will try out the scheme, developing the details through experiment. As Stephen Voorhees pointed out with emphasis, however, there is no binding obligation on the profession, legal, moral or otherwise, to provide a man with a living just because he has chosen to be an architect.

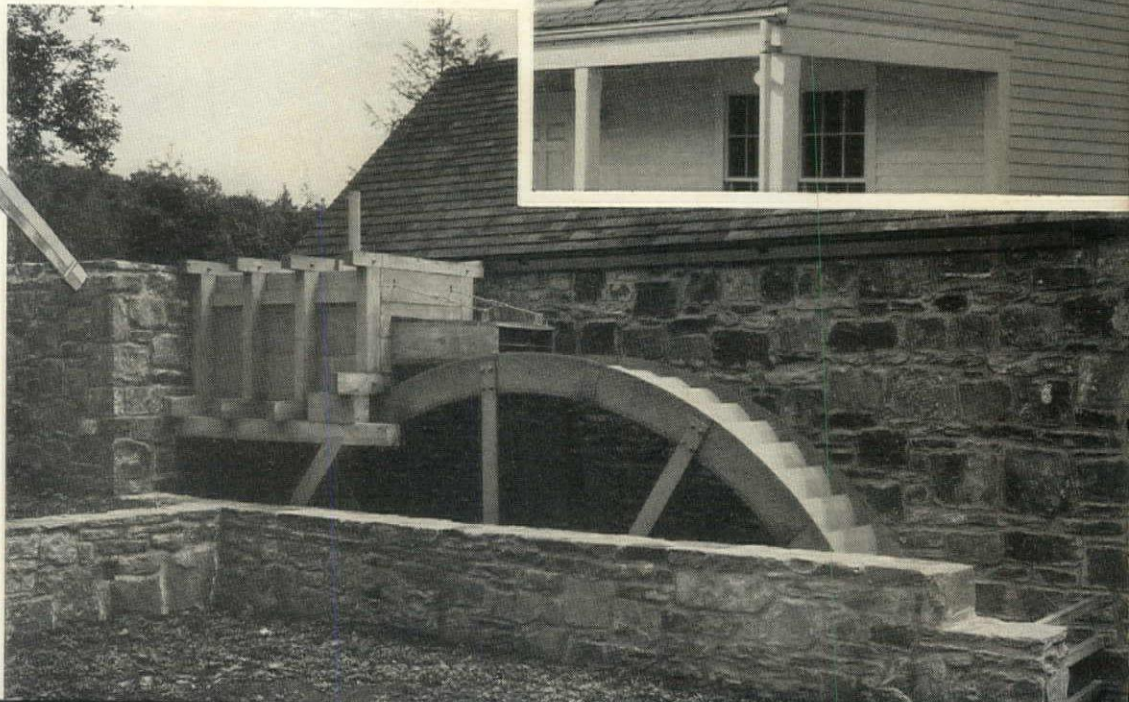
If the architectural school men gained half the benefit and pleasure that we from New York relished in retrospect as we journeyed back home, hoping that we might be invited another year, the Princeton Architectural Round Table must be reckoned a notable success.

★

Wednesday, November 8.—Those who conceived and built the Greenbelt towns imagined many benefits that might accrue to those who would live in them. One of the by-products was perhaps unexpected—an increase of more than three times in the birth rate.

Friday, November 10.—In announcing an exhibition of the work of Pablo Picasso, New York's Museum of Modern Art prepares the public with some advance quotations from the artist's philosophy. Among other things that he has said is: "Art is not the application of a canon of beauty but what the instinct and the brain can conceive beyond any canon. When we love a woman we don't start measuring her limbs. . . ." Which is something of a surprise to me since a good deal of the modern painting that I have seen seems to have come from some such procedure, complicated by the fact that the artist has apparently misread his dimensions.

Wednesday, November 15.—It took eighteen architects, working from 5:30 p.m. last evening to one o'clock this morning to judge the 153 drawings submitted in the Beaux-Arts Institute's first Class A problem of the year. John Root had written the program, for An Explorer's Club, and he certainly gave the students a full size job—combining museum, ballroom, library, bar and grill with the usual club house amenities, on an inside city lot 120 x 180 ft. with its good view to the rear. Among familiar works that appeared in reincarnation were New York's Museum of Modern Art and the French Pavilion at the World's Fair. University of Pennsylvania walked off with the only First Medal awarded.



SUN, WIND, AND WATER are all being pressed into service of today's and tomorrow's home beyond the power lines. Above, at top, recently completed building at the Massachusetts Institute of Technology which will be used for research in solar house heating. Middle picture, overshot water wheel of the type used for home lighting plants, Fitz Water Wheel Co., Hanover, Penna. Left, wind power generator for charging radio batteries, Windcharger Corp., Sioux City, Iowa.

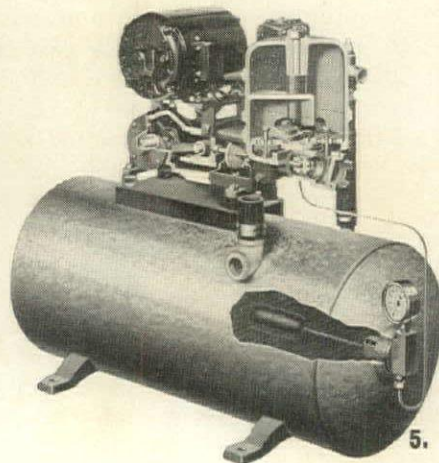
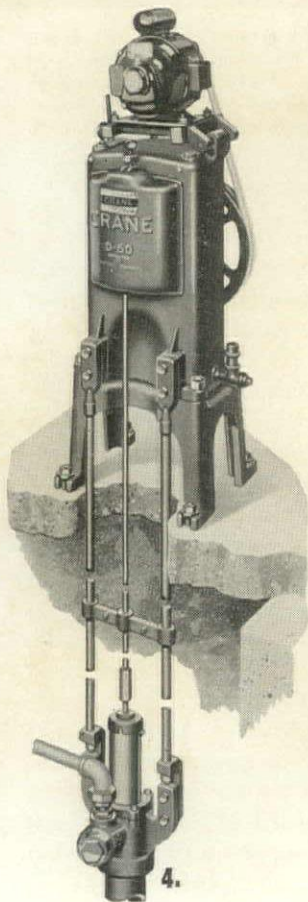
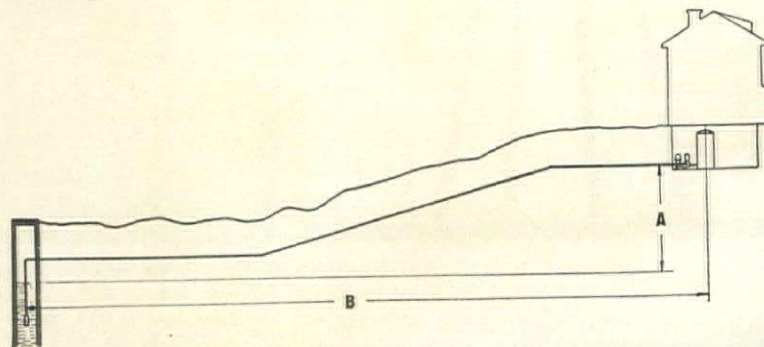
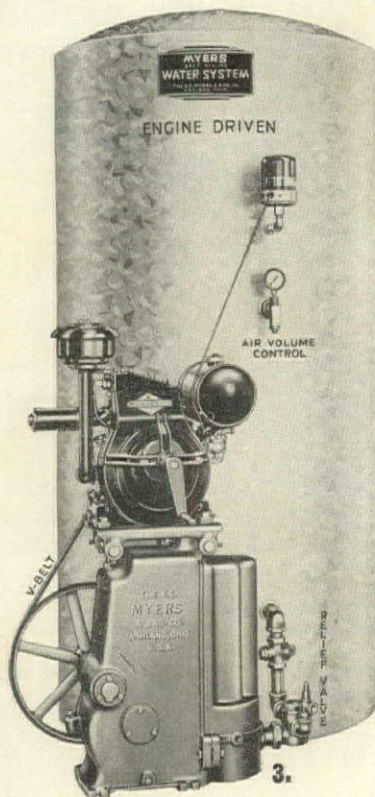
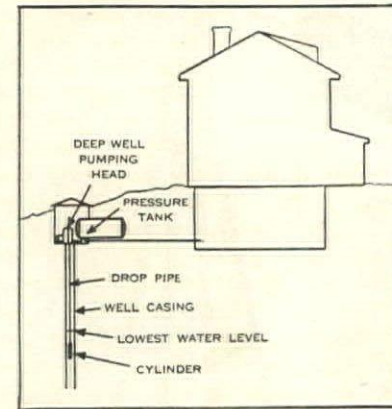
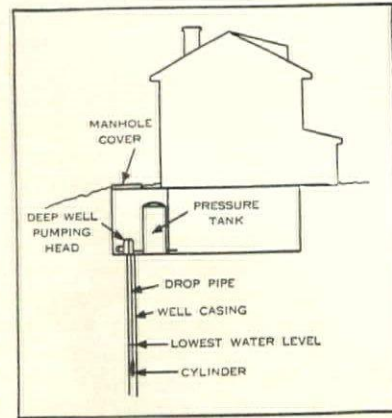
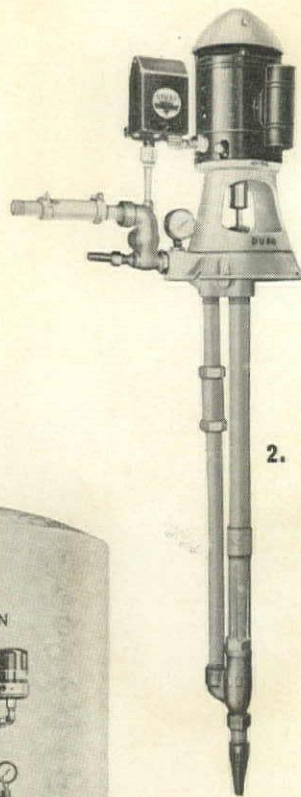
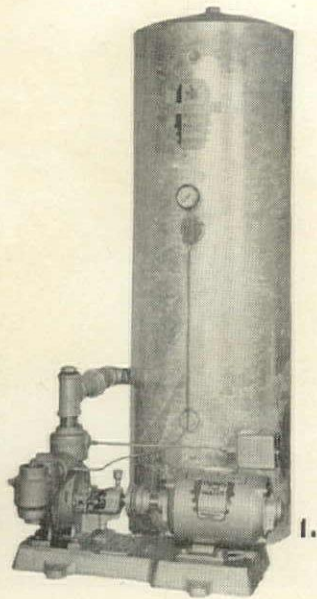
PRIVATE UTILITIES FOR RURAL HOMES

American ingenuity has yet to hit upon an acceptable term for the city man's year-round home-in-the-country, despite its having otherwise served this increasingly popular twentieth century phenomenon remarkably well. Democratically inclined, we shy at calling any but the most pretentious of such establishments "estates," and reject the Englishman's class-conscious "villa" as inaccurate and affected. This deficiency is important because it obscures a distinction in kind which is often thought of as merely a matter of degree: the rural home with its own utilities is a different animal from the house in the suburbs, and reacts to different laws. Thus, however generously the suburban home is provided with land, it remains always a unit in a row with its neighbors—an automatic result of its attachment to an elaborate, *linear* system of utilities and services too costly per running foot to permit much variation beyond a few curves and cul-de-sacs. The position of the rural house, on the other hand, is fixed only in relation to the availability of *point* utilities, and—except for necessary vehicular access—*independent* of neighborhood pattern. Similarly, the suburban house is economically bound

to its neighbors by the fact that a large part of its operating costs and a substantial part of its amortization are paid on an averaging basis as taxes. The rural house is more of an independent economic unit.

The rural home is therefore better suited to the fulfillment of the American ideal of individualism than its suburban counterpart—which probably explains why the urge to own is so much stronger in the case of the former. The logic of linear utilities leads inevitably to row-type housing and consequent obliteration of the landscape, that of point utilities to the free-standing dwelling related to natural features rather than a man-made system of pipe lines.

Naturally, there are deterrents—but they are on the wane. Biggest step in this direction is probably the consolidated rural school, with facilities which often rival—and sometimes surpass—the best the city has to offer. And for adults the radio, and to a lesser extent the movies, place the rural home on a cultural footing with its urban neighbor. With these factors at least partially disposed of, modern means of transportation are afforded an opportunity to develop more fully their potentialities, and the express highway,



WATER SUPPLY has in the past been a determining factor in the location of rural homes—in the best tradition to the extent that many an early American farmhouse was placed so that water from a spring above the house might be run into the kitchen by gravity, a laudable practice even today. The modern artesian well, however, has rendered today's home independent of this factor since such wells may be sunk in one place almost as well as another, and—in any event—modern pumping systems permit a well at some distance from the house. First consideration should be given to the utilization of existing shallow wells for reasons of economy, since this saves both the cost of a drilled well and the additional cost of deep well pumping equipment. Where possible, suction pumps, commonly called "shallow well" pumps, should be used, but it must be remembered that the total effective lift of this type of equipment cannot exceed 25 ft. Friction in the line from well to pump must be taken into account in figuring this and adds roughly about 10 ft. of lift per 100 ft. of horizontal run (indicated by dimension B in the diagram above). Deep wells should be located near the house to save piping, and the pump, which must be directly above the well-head, housed in a well-ventilated, sunken pumphouse to prevent freezing (diagrams at top of page). Pumping equipment is furnished complete with pressure tanks and automatic controls, providing a water supply exactly like city mains. It is available in automatic electrically operated form and in gasoline-powered models which must be started by hand but which shut off automatically. 1. and 2., above, are special types of shallow and deep well equipment, the first a turbine type pump made by Micro-Westco, Bettendorf, Iowa, the second an "ejector" deep-well pump, product of the Duro Co., Dayton, Ohio. 3. is a gasoline-powered deep well pump with a large pressure tank which requires filling only once or twice a day, made by the F. E. Myers and Bro. Co., Ashland, Ohio. 4. shows a so-called anti-freeze set for an electric-powered deep well pump which permits location of the pumping head above the frost line—Crane Co., Chicago, Ill. 5. is a cutaway view of a typical plunger type suction pump, in this case mounted on a horizontal pressure tank, made by the Deming Co., Salem, Ohio.

streamlined commutation train, and cheap individualized transport bring the dream of the decentralized residential community within the realm of practicability.

Concurrently with these developments, the human desire for stability and security, under the stimulus of economic uncertainty, has put still another impetus behind the rural-home idea. Increasingly large numbers of people are attracted to the so-called Productive Home—a place in the country where at least a part of the family's wants may be satisfied by its own effort, independent of the peaks and valleys of the business cycle.

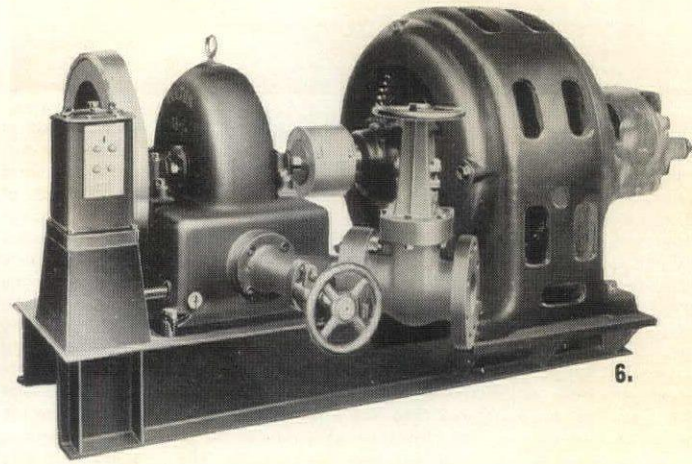
At the basis of the trend toward country living lies, of course, a host of more or less perfect, more or less complicated mechanical devices designed to afford the rural family part or all of the conveniences formerly associated only with urban life. Up to even a few years ago, only the mechanically inclined dared to brave the intricacies of private utilities, and many an abandoned barn was left to rack and ruin through fear of a broken-down lighting plant or the mysteries of the septic tank.

While country life still carries with it responsibilities unknown to apartment dwellers, the perfection of all kinds of mechanical gadgets in recent years has brought most such equipment well within the capacity of grade school graduates. Weekenders who formerly were likely to be pressed into service to help prime the pump are now seldom aware that they have gone beyond the gas mains, and the country gentleman himself rarely gets closer to his water supply than the faucet. Private utilities are beginning to offer their big city brothers serious competition, and the score is surprisingly close, counted either in convenience or cost.

At the point where the hitherto contemptuous urbanite, on a casual Sunday drive, finally happens upon the particular knoll so ideally suited to his and his family's desires, it is likely to be lacking in all or most of the following accustomed amenities, listed in their commonly accepted order of importance:

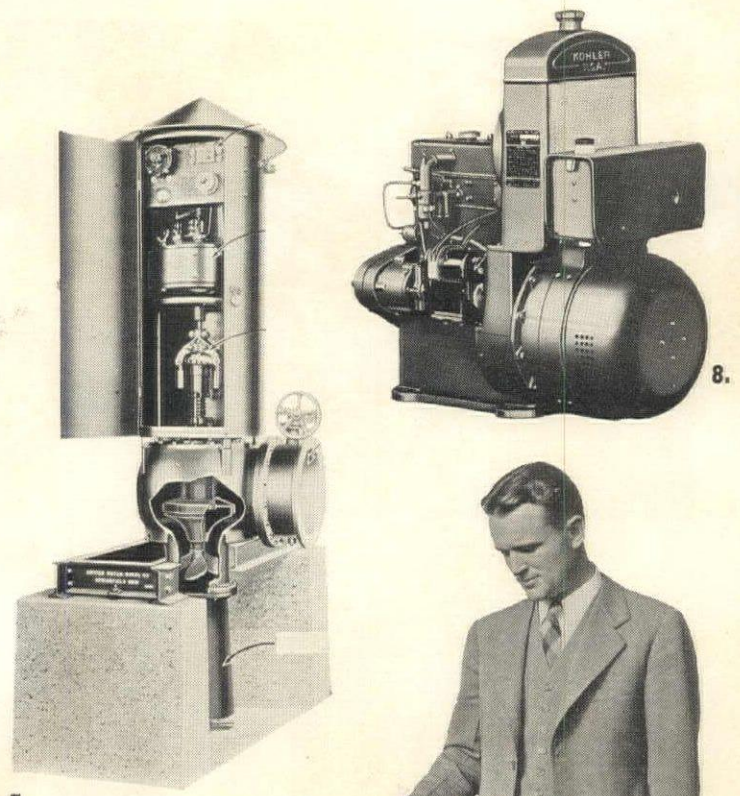
- 1. Running water
- 2. Sewage disposal
- 3. Electric light
- 4. Cooking fuel
- 5. Power or fuel for refrigeration and water heating
- 6. Power for household conveniences
- 7. Systematic refuse disposal
- 8. Communication with the outside

It is doubtful that such a potential home builder will take this into account when making up his mind whether and where to build a country home. Rather, such embarrassing questions are not likely to occur to him until about the time he consults his architect, and by this time they are likely to be fairly urgent. The brief summaries of various aspects of the rural-utilities problem given on this and the following pages are intended to provide a comprehensive guide to the correct answers.



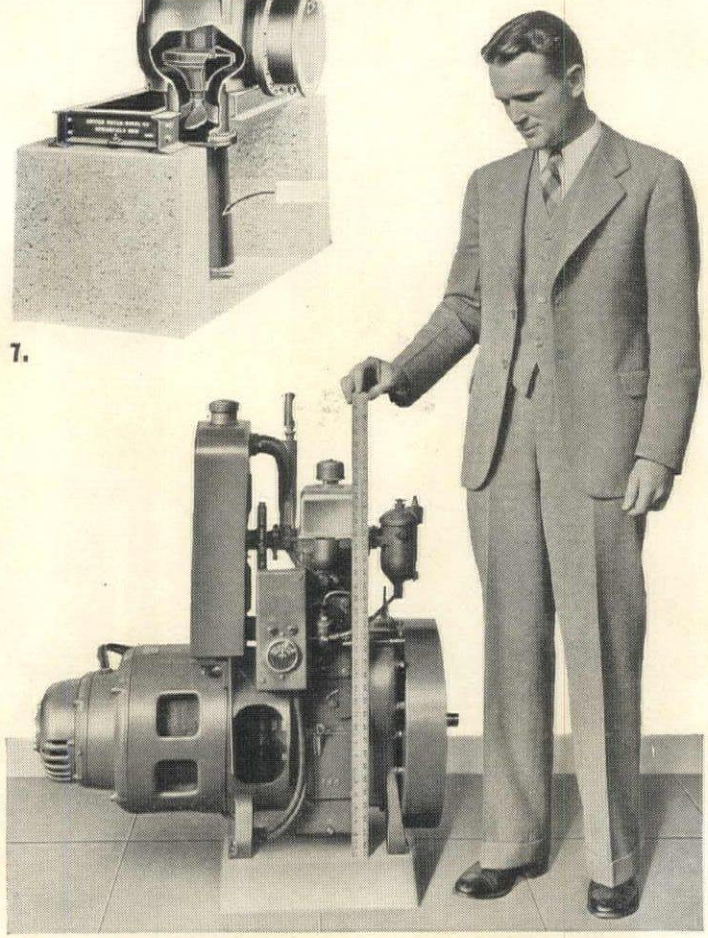
6.

HOME LIGHTING SYSTEMS are now available for use either with or without storage batteries and operated by gasoline or diesel engines, turbines or water wheels. 6. is a horizontal direct-coupled water motor and generator and 7. a vertical combination of the same type, both of which are available for small quantities of water and low heads, and may be automatically regulated to furnish 110 volt AC or DC current. The first is made by the Pelton Water Wheel Co., San Francisco, Calif.,

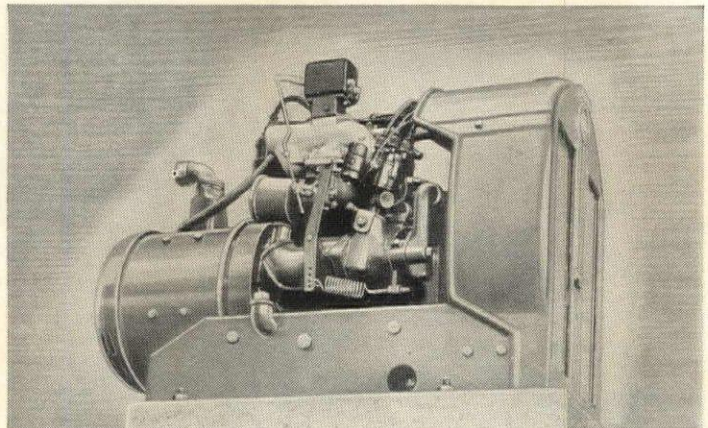


7.

8.

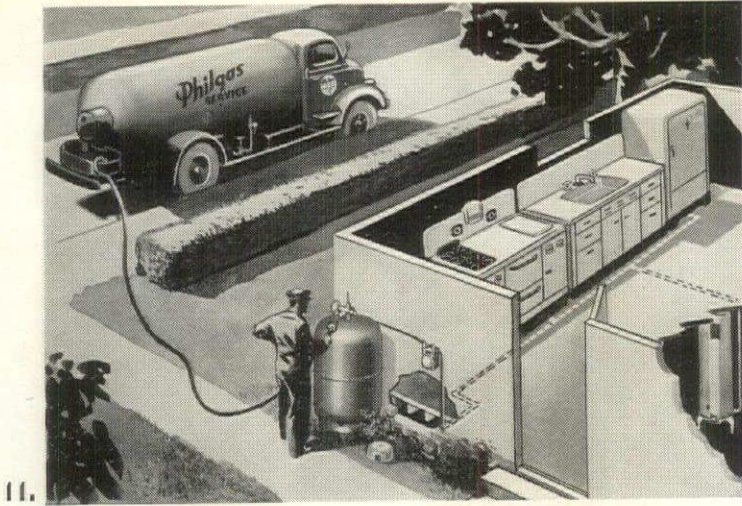


9.



10.

the second by James Leffel & Co., Springfield, Ohio. 8. is a 1,500 watt gasoline-powered automatic lighting plant which operates without batteries—Kohler Co., Kohler, Wis. 9. is a small diesel-powered unit recently introduced by the Atlas-Lanova Division of the Atlas Imperial Diesel Engine Co., Chicago, Ill. 10. shows a gasoline-powered 32-volt battery charging model, manufactured by Delco Appliance Division, General Motors Sales Corp., Rochester, N. Y.



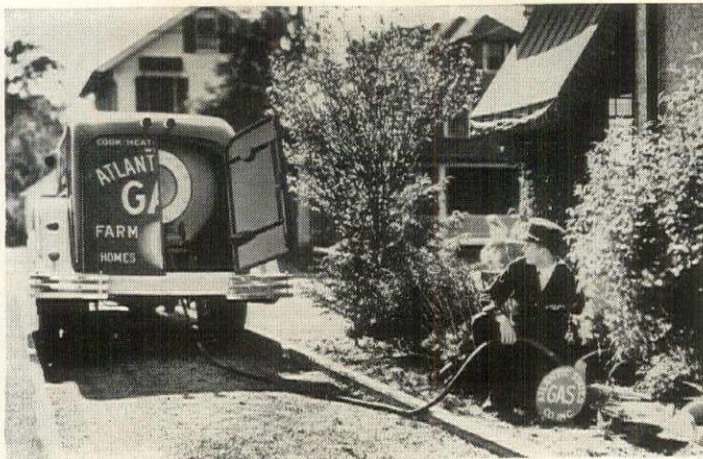
11.



12.

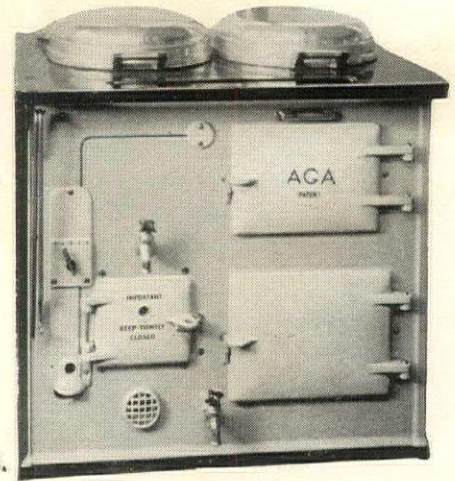


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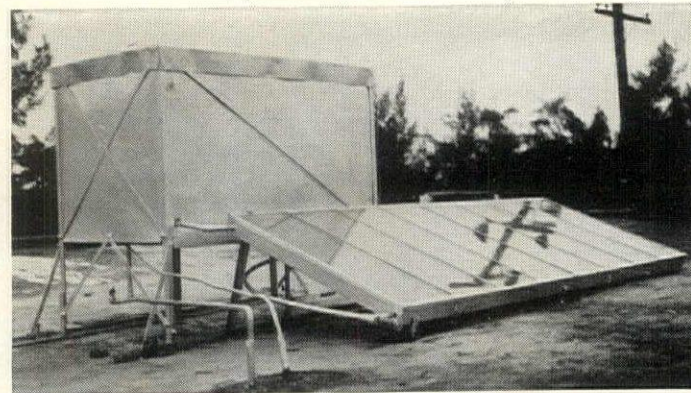
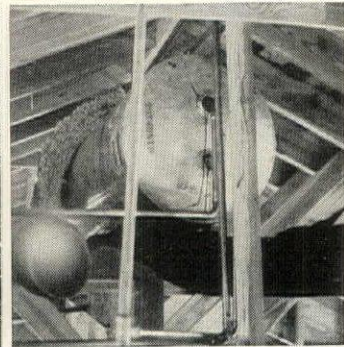
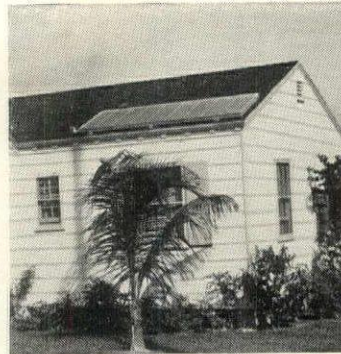
13.

GAS for the rural home is now available in many parts of the country through various gas-delivery systems. 11., 12., and 13. show the equipment of the three largest companies in this field, Philgas Department, Phillips Petroleum Co., Pyrofax Gas Division, Carbide and Carbon Chemicals Corp. and the Atlantic States Gas Co., Inc. For those to whom this type of service is not available the Generated Gas Co. manufactures an electrically powered gas maker (14.) which may be installed in the kitchen or basement and manufactures cooking gas from gasoline. Choice between the various systems is usually determined by their availability and marketing arrangements, since in each case the resulting fuel is indistinguishable from city gas. In some instances, regular gas meters are installed and the consumer has no responsibility beyond a modest installation charge and payment of the monthly bill.



15.

BUCKET A DAY operation is the boast of the Aga cooking stove which recommends itself to rural users because of its inexpensive, readily available coal fuel. This stove, which employs cast iron elements for heat storage and has special recessed cooking pots, is often used even where city gas is available because of its superior cooking claims. Architects are cautioned to provide a special foundation beneath the kitchen floor to support its considerable weight. Aga Stove Co., New York, N. Y.

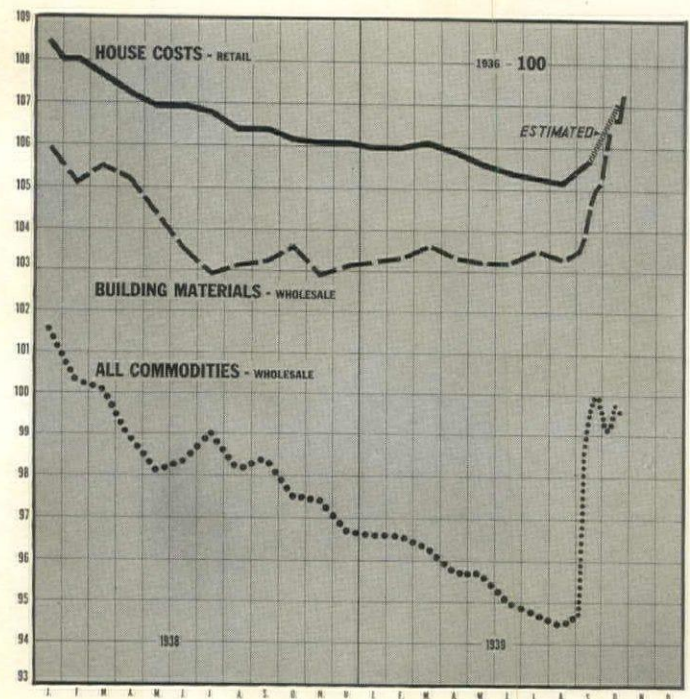


SOLAR energy is now being trapped in glazed boxes on the roof of many a Florida house to provide a liberal supply of hot water for domestic purposes, especially in homes where gas and electricity are not available. The heaters shown above are the standardized products of Pan-American Solar Heater, Inc., Miami, Fla., and consist of an insulated copper-backed box containing a continuous coil of flattened copper tubing soldered to the back to pick up the heat of the sun's rays and transmit it to the circulating stream of water. In order to prevent heat loss through the front of the box, this is double-glazed. For gravity circulation, the tank must be located above the heating coil. Thus, in gabled-roof houses (upper pictures) it is tucked away between the rafters and insulated with a mineral wool blanket to conserve the heat; in flat-roof installations (lower picture) an elevated tank is installed in an insulated box above the coil. Contrary to popular belief, the use of this type of heater, at least during the summer months, is not necessarily limited to sub-tropical climates, the primary requisite being a dry climate, since at this time of the year northern latitudes receive solar radiation over a longer period than do southern. It may therefore be expected that as more is learned about this interesting subject, use of solar heating equipment may spread to other parts of the country, at least as an adjunct to ordinary methods. Standard heating units are made a uniform 40 in. in width, and 98, 111, and 124 in. in length for 66, 82, and 100 gallon tanks respectively. For larger tanks, multiple coils are used.

BUILDING MONEY

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WAR'S EFFECT ON BUILDING COSTS spotlighted

by THE FORUM'S new 80-city index. A timely score card to lower the homebuilder's handicap.

SINCE September's eventful first week, the whole U. S. price structure has been undergoing a major operation. Thus, after a gently downward movement for many months, the trend of both wholesale and retail prices since September 1 has closely followed predictions, has bolted to new 1939 highs. Reasons, of course, are the European War and the U. S. buying spree which it touched off.

Affecting almost every industry, this general price rise has dealt Building no small blow—as is amply proved by the chart above. It shows that the wholesale price of building materials rose less sharply during early September than did general commodity prices, but significantly failed to follow the general curve at the end of that period. Instead of leveling off, building costs continued rising up to October 28, when they were 3.7 per cent higher than at the beginning of September. Even more important, however, is the curve of retail home prices; it went up 1.7 per cent during September and October.

Such increases are important—not so much for their size as for their implications. First, they probably presage further price rises. Second, they offer striking proof that—in the Building industry at least—wholesale prices can be translated into consumer costs more quickly than most people think.

For all its significance, however, the chart above gives only a bare outline of the story. The clear-cut upward movement of the curve representing the cost of home building obscures the fact that behind it are no uniform, clear-cut local trends. Well known to all in Building are the variations in construction costs from State to State and city to city which tend to belie a national trend. Even today when the general cost level is moving upward under the impetus of European War, building costs in some cities are declining; of 25 cities covered during October by the Federal Home Loan Bank Board's regular building cost survey, seven cities went against the tide and showed a decline in costs from July, the previous month reported.

Because such general trends and local aberrations are of more significance today than at any time in recent history, THE ARCHITECTURAL FORUM this month begins the publication of a new table of building costs in 80 of the country's Building centers*. (See The FORUM Building Cost Index, page 475). Dual purpose of this new Index is first to go behind the screen of national averages and show how

local building costs stack up one against the other, and second to offer FORUM readers for the first time a concrete means of translating the cost of a house built in one place into its cost in another.

Building the country over has always been handicapped by the lack of an accurate means of gauging cost variations between cities. For example, it has never been possible to more than guess how much a house presented on FORUM pages would cost in any place other than where it was built. Today, however, application of the FORUM Index and a very simple formula will eliminate a large measure of the guesswork. The Index is, of course, limited to the 80 cities covered by the table. In many places it will not even apply to neighboring towns; only 35 miles separate Baltimore from Washington, yet their costs are 15 per cent apart.

Basis of The FORUM Building Cost Index is the Federal Home Loan Bank Board's regular survey of the cost of building a "standard" house in some 80 cities. Although these cities are divided into three groups and report four times a year in cycles a month apart,* THE FORUM will present all of them every

* Regularity of its publication will depend upon reader response.

* For a full explanation of FHLBB's reporting system, see column 2, next page.

month and will show the latest figure for each city as well as the figures for three months and a year previous.

The FORUM Index for each city is shown as a percentage of the national average for 1936, the year the FHLBB survey was started. Hence, a glance at the figures for any city will indicate how far current costs are above or below the 1936 level, and what the local trend during the past year has been. It will also show how 1938 and 1939 costs in that city compare with those in other cities.

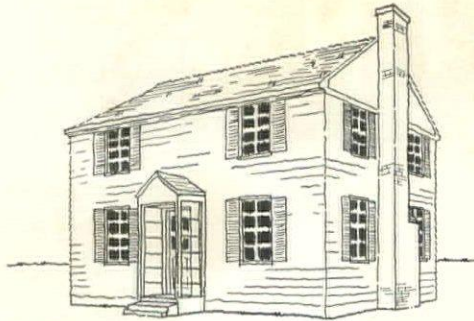
Materials vs. Labor. That costs in a large majority of the cities are well above the level of 1936 is indicated in the chart below. The national average cost of the standard house now stands an even 7 per cent above that base year. Compared with 1937, however, building costs this year still appear to be at bargain levels. Even the sharp rise of the past two months has carried them less than half way back to that well-remembered peak.

Also shown on this chart are separate curves for material and labor costs. That they have exerted a divergent influence on the total is well apparent. It cannot be denied that labor is currently pulling the cost up, that materials are pulling it down. Fortunately for Building, however, these two forces are far from equal; materials used in the standard house cost twice as much as labor and therefore exert twice the influence on the total. That fact is indicated by the position of the three lines on the chart: the total is not half-way between the two, but roughly two-thirds of the way toward materials. A one per cent rise in material costs, therefore, exerts double the influence of an equal rise in labor costs.

October Trends. Although no national index for materials and labor is yet available for October, individual city reports for that month are in. They reveal that, as in September, materials were principally responsible for the upward movement of the total cost. They also reveal, however, that labor costs in some centers have shaken off their lethargy, are now also on the rise.

In the 25 cities reporting in October, total costs were up from July in sixteen cities, down in seven, unchanged in two. Materials alone accounted for cost increases of important dimensions in ten cities whereas labor costs rose sharply in only four cities. Leading the list of those where the trend is up is Atlantic City with an 8.7 per cent rise, and significantly, both labor and materials are responsible. Both factors were also responsible for the biggest decline, 3.9 per cent, in Indianapolis. Labor alone accounted for two other declines of roughly 3 per cent in Detroit and Grand Rapids. Materials, however, were responsible for the 2.5 per cent drop in Kansas City's total cost.

A bird's-eye view of these local July-October trends reveals a general movement toward higher levels.



Included in the cost of the standard house are all fundamental structural elements, an attached one-car garage, unfinished cellar and attic, fireplace, insulation and all essential plumbing, heating and wiring. Costs cover materials, labor, compensation insurance, contractor's overhead, transportation of materials and 10 per cent for profit.

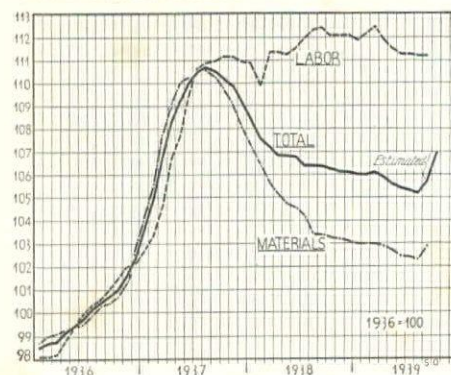
THE STANDARD HOUSE

Nominal basis of the Federal Home Loan Bank Board's regular monthly survey of local building costs is a "standard house." But the house itself is no more than a symbol—as above. Real backbone of the survey is as careful a list of materials and labor used in building a six-room house as a group of Government experts have been able to compile.

Back in 1935 when the idea of a cost study was first formulated, FHLBB outlined the characteristics of an average, medium-sized house such as subdividers have long been building from coast to coast. They then listed all the kinds of materials and labor needed to build that house. But, as the list was destined to be filled out four times a year by representatives in 80 of the country's building centers, it needed considerable condensation. The FHLBB weeded out all low cost items that would not appreciably affect the total cost, and all those not essentially structural. Left, however, was a still sizable list of 110 material items and nine kinds of labor. Since those 1935 beginnings the list has had many a refinement and polish, but is still essentially the same.

Collection. To get their material-labor list filled locally, FHLBB in Washington calls on field men working for one of its alphabetical divisions—the Home Owners' Loan Corporation. These field men visit local contractors, get the actual prices paid for materials in truck-load lots and actual wages paid on the site of current operations (either union or non-union).

HOME BUILDING COSTS



Basis of the FHLBB cost survey and, in turn, The Forum Index is a standard house with six rooms, a total volume of 24,000 cu. ft. On the first floor, living and dining rooms are separated by a central stair hall, and a kitchen and lavatory are at the back. On the second floor are three bedrooms, one bath room. Exterior finish is wide-board siding with brick and stucco as features of design.

Excluded from the cost of the standard house are all items of finish and equipment, such as wallpaper and paint on interior plastered surfaces, lighting fixtures, refrigerator, water heater, range, screens, weatherstripping, window shades, etc. Costs do not include land and land survey, landscaping, walks and driveways, architect's fee, building permit, financing charges, sales commissions, advertising expenses, etc.

Because FHLBB wants cost figures every month, but does not want the field men to make collections that often, they have evolved an overlapping system of reporting. The cities covered by the survey are divided into three groups each with about 25 cities, and each group reports four times a year. But the schedules are staggered so that one group reports in January, April, July, October; the next in February, May, August, November, etc.

Compilation. Each local report as received in Washington consists of a tabulation of unit material prices and hourly wage rates. These costs are multiplied by the quantity of materials and the amount of labor needed to build the standard house. To the resulting material and labor totals are added 5 per cent for compensation insurance, 10 per cent for profit, and 2 per cent for overhead. The sum is the cost of the standard house, and it ranges anywhere from \$5,000 to \$7,000. These sums are the basis of THE FORUM Index (right), but they are shown for each city as a percentage of the 1936 national average instead of in dollars.

Limitations. To make its system of collection and compilation possible, FHLBB has no choice but to use one standard list of materials and labor for all 80 of its reporting cities. It is this uniformity that constitutes the only real obstacle in using the Index to adjust the cost of a house built in one city to its *practical* cost in another city. The Index shows, and with relative accuracy, the cost of exactly the same house in Birmingham as in Boston. But, houses built in the former city frequently are not structurally the same as those in the latter, for a warm climate makes far different demands of a house than does a cold one. Although there are many structural parts affected by regional differences, only two have an important effect on total costs—heating plant and cellar. According to a good rule of thumb, they account for 10 per cent of total house costs. That rule may safely be applied when the FORUM Index is used to translate the difference between costs in the North and South.

FORUM BUILDING COST INDEX

Local home building costs in 80 cities—expressed as per cents of the 1936 national average*

STATE	CITY	LATEST MONTH	PRECEDING MONTH	SAME MONTH 1938	STATE	CITY	LATEST MONTH	PRECEDING MONTH	SAME MONTH 1938
ALA. ²	Birmingham	93.1	96.0	105.9	N. H. ²	Manchester	96.4	98.1	98.1
ARIZ. ³	Phoenix	110.8	109.2	117.3	N. J. ¹	Atlantic City	113.4	104.1	106.7
ARK. ³	Little Rock	94.4	94.6	93.1		Camden	105.4	100.8	100.5
CALIF. ³	Los Angeles	94.6	95.6	103.1		Newark	102.2	99.3	100.1
	San Diego	101.3	103.4	105.5	N. M. ³	Albuquerque	115.7	115.8	120.2
	San Francisco	114.1	114.8	114.4	N. Y. ¹	Albany	.....	105.6	105.7
COLO. ²	Denver	113.4	115.3	118.7		Buffalo	113.1	107.6	113.9
						Utica	104.6	103.1	102.3
CONN. ²	Hartford	105.5	105.6	105.0		White Plains	112.0	110.2	112.7
	New Haven	102.5	101.2	101.6	N. C. ²	Asheville	87.8	88.1	92.0
D. C. ²	Washington	103.7	102.2	105.4		Raleigh	87.7	89.5	95.8
FLA. ²	Tampa	100.8	100.8	100.2		Salisbury	84.0	84.4	85.8
	West Palm Beach	103.1	104.8	104.9	N. D. ¹	Fargo	105.8	101.3	105.4
GA. ²	Atlanta	86.6	87.2	91.5	OHIO ³	Cincinnati	103.8	104.2	105.5
IDAHO ¹	Boise	110.5	111.4	108.5		Cleveland	117.3	117.1	115.8
ILL. ²	Chicago	122.3	123.7	123.0		Columbus	101.6	102.0	107.0
	Peoria	120.0	118.5	116.9	OKLA. ²	Oklahoma City	106.5	105.9	105.3
	Springfield	122.5	122.7	123.1	ORE. ¹	Portland	99.9	97.6	98.6
IND. ¹	Evansville	110.2	103.8	103.8	PENNA. ³	Harrisburg	103.5	103.5	102.7
	Indianapolis	103.5	107.7	104.2		Philadelphia	99.1	98.0	97.9
	South Bend	105.7	100.4	96.8		Pittsburgh	116.4	116.0	117.3
IOWA ¹	Des Moines	113.9	113.6	111.4	R. I. ²	Providence	107.5	108.4	106.8
KAN. ²	Wichita	109.6	108.8	.....	S. C. ²	Columbia	85.3	86.5	88.0
KY. ³	Lexington	100.4	102.1	96.3	S. D. ¹	Sioux Falls	109.4	108.7	116.3
	Louisville	94.5	94.9	93.8	TENN. ³	Memphis	95.2	96.5	95.8
LA. ³	New Orleans	102.0	101.8	106.0		Nashville	89.6	90.3	92.0
ME. ²	Portland	94.9	95.7	95.9	TEXAS ³	Dallas	98.2	98.8	106.4
MD. ²	Baltimore	89.8	90.5	89.6		Houston	106.3	106.8	108.3
	Cumberland	99.0	100.1	99.6		San Antonio	106.1	106.3	109.5
MASS. ²	Boston	114.5	113.6	113.6	UTAH ¹	Salt Lake City	108.4	108.7	106.3
	Worcester	102.6	102.7	.....	VT. ²	Rutland	96.8	98.1	100.3
MICH. ¹	Detroit	107.3	110.6	111.5	VA. ²	Richmond	90.1	89.2	91.4
	Grand Rapids	102.5	105.3	106.1		Roanoke	97.0	96.9	95.8
MINN. ¹	Duluth	109.2	108.5	111.8	WASH. ¹	Seattle	114.1	113.1	113.1
	St. Paul	118.4	118.4	118.1		Spokane	113.6	110.5	113.6
MISS. ³	Jackson	106.5	106.8	109.9	W. VA. ³	Charleston	105.1	105.7	106.7
MO. ¹	Kansas City	107.7	110.5	.....		Wheeling	114.1	113.9	109.2
	St. Louis	109.4	107.7	108.3	WIS. ²	Milwaukee	107.4	108.3	104.0
MONT. ¹	Great Falls	124.5	125.3	.....		Oshkosh	106.7	107.0	106.8
NEB. ²	Omaha	107.4	104.4	105.0	WYO. ¹	Casper	119.2	117.9	116.2
NEV. ³	Reno	118.8	118.6	118.6					

*Based on Federal Home Loan Bank Board statistics covering the cost of building the same typical house in each city. (See pages 473 and 474.)

¹ Latest report—October; preceding report—July; 1938 report—October.

² Latest report—September; preceding report—June; 1938 report—September.

³ Latest report—August; preceding report—May; 1938 report—August.

EXPLANATION. One essential purpose of this table is to provide a concrete means of adjusting the construction cost of a house built in one place to the approximate construction cost somewhere else. Thus, the cost in Portland, Maine, of a house built in Seattle for \$5,000 can be found by applying simple arithmetic to the index figures

for those cities. First, multiply the most recent Portland index (94.9) by the cost of the Seattle house (\$5,000). The result is 474,500. Second, divide that 474,500 by the latest Seattle index (114.1). Result: \$4,159—the approximate cost of the house in Portland.

The Forum Building Cost Index is applicable mainly to medium-to-small houses; it does not apply to the large houses and those replete with gadgets (see page 474). Neither does it apply to costs which include land. If land is included in the total cost, 20 per cent may be deducted to obtain a rough approximation of construction costs. For application in the South the cost of cellar and heating plant may be eliminated from a northern house by deducting 10 per cent.

CONCRETE FOR COSTS, COLONIAL FOR SALES

A potent combination which sold Subdivider Holmes' low cost houses faster than he could build them. Architect Martin again designs for Philadelphia.

Two things the American Public counts as tops in housing are Colonial design and fireproof construction. Combination of the two will sell houses in almost any price range: in the low cost field it may well break records. Hence a fireproof material both low in cost and suited to a Colonial exterior should suit the public to a T, especially when it lends itself to good architectural design. Such a material is concrete block—as is proved by astute Philadelphia Subdivider Joshua M. Holmes, Jr. In his latest subdivision he offers roomy houses of painted concrete block at \$4,500 to \$5,200, an enviable record of 52 sales in six weeks and 46 more at later dates.

Whereas most subdividers first get the land and then think about houses, Holmes reversed the procedure. Early in 1938 he set out to find an attractive small house that could be sold for less than \$5,000. He found what he wanted in the plans of Architect Robert Charles Martin whose forte is modified Colonial and whose experience includes many a concrete block house.* Finding low-priced land, however, was not so easy. After thoroughly combing the countryside, he purchased 60 acres (eleven miles from the city's center) known as Fox Chase Manor. With his houses already planned, he lost no time in starting construction; land was purchased in September, 1938, and the first house was completed one month later.

When Holmes purchased the plot it was subject to a street layout adopted by the township's unimaginative commissioners back in 1925. They had planked a gridiron pattern right across the property, had disregarded a deep gully and winding stream at one end of the tract. Subdivider Holmes had that part of the property replatted as shown below. (Township officials are currently mulling the idea of turning the gully into a wild life sanctuary.) But he left the balance unchanged, with the unfortunate result that most of the houses run in

uninteresting rows in the true Philadelphia fashion. In fact, Holmes has concentrated his building in the rectangularly platted area, has offered the lots around the park for sale. Thus he sidesteps the difficulty and expense of building along irregular contours, among many trees. To keep the subdivision's character up to par, however, he demands a say as to the type of house built in that wooded area.

Houses. While the Manor's land planning is not much to talk about, its houses are. Architect Martin designed only two basic floor plans for Fox Chase Manor, but potential purchasers are probably never aware of it. Reason: the two basic plans are subject to a generous variety of exterior treatments. Houses on standard lots 50 x 100 ft. range in price from \$4,450 for a story and a half in concrete block to \$5,420 for two stories in brick veneer. (Thus far, only 15 per cent of the purchasers have changed Holmes' standard concrete block specifications in favor of more expensive brick.) With profit included in the first two items, the cost of the cheapest hot-air-heated house breaks down like this: land, \$500; construction, \$3,800; landscaping, \$50; overhead, \$100.

For those who are not satisfied with a stock model, there is a long list of "extras" to suit the fancy of any purchaser. Some of them:

Land (per front foot)	\$ 10
Air conditioning	300
Hot water heat	200
Fireplace	100
Weather stripping	50
Screens and screen doors.....	63
Bay window	50
Additional garage with half lot.....	600
Longer house (per foot).....	100

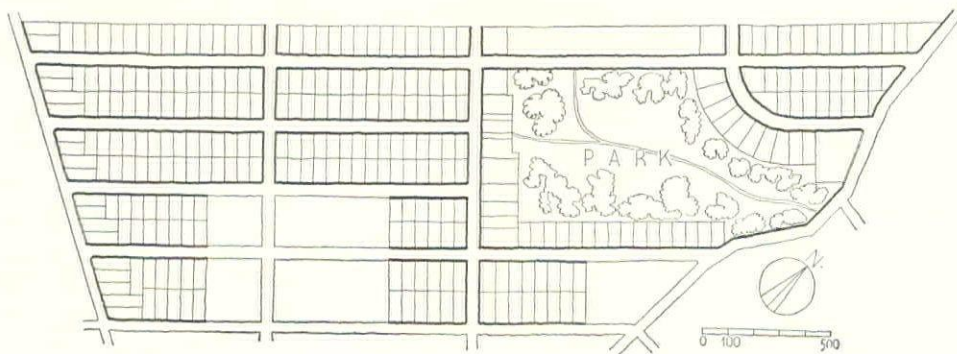
Construction is handled by Holmes' own organization—with the subcontracts farmed out. Following the usual practice of semi-speculative builders, houses are built in blocks of ten to twenty at a time—a new group is begun when advance sales seem to warrant it.

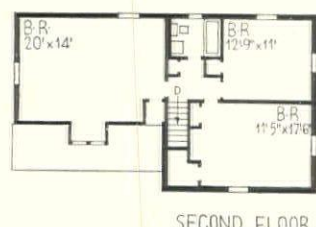
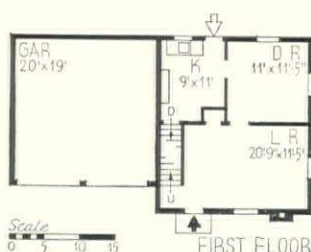
Sales. A record of 52 sales in six weeks at an advertising cost of less than \$20 a house is a mark for any subdivider to shoot at. But Subdivider Holmes does not get all the credit; the business of building took so much of his time that he entrusted his sales program to well-known local realtors Heyer-Kemner, Inc. Using a potent combination of Sunday newspaper advertising and two model houses, he opened the project with a flourish on October 15, 1938. On that day alone, 3,000 visitors trooped through the furnished models, bought 52 houses. Result: Holmes had to call off his aggressive sales program temporarily so that construction could catch up with orders. Wise to the ways of the public, however, he did not let Fox Chase Manor drop entirely from the real estate picture. He continued the newspaper advertising at intervals throughout the winter, then blossomed out in another sales drive in the following spring.

Owners. Because houses in Fox Chase Manor can be financed under FHA insurance for as little as \$31 a month, most of its purchasers are young couples from comparatively low income groups. They come from the ranks of civil engineers, school teachers, small business men, automobile dealers, salesmen and skilled mechanics. As an elementary school adjoins the property and high schools are also accessible, families with children are the rule rather than the exception. Ninety-eight per cent of them chose FHA-insured mortgages, most of which have been financed by Philadelphia's Northeast National Bank. Further, 57 per cent of the purchasers chose house plans of the general type shown on page 477, left. The basic house of that type sells for the minimum price: \$4,450. The remainder of the purchasers chose variations of that at the right.

Developer. Joshua M. Holmes, Jr., has a background in building that extends well beyond his earning years; his father was in the business in and about Philadelphia for over 40 years. Together they were responsible for a 67-house subdivision titled Holmescrest, where prices ranged from \$10,000 to \$40,000. At present, Holmes, Jr. is extending this development, but is keeping prices down near the \$10,000 end of the earlier price range. In addition, he opened a 65-acre wooded tract last summer, named it Custis Woods, is building twenty houses to be priced at \$8,000 to \$11,000. Thus, with his eggs in three baskets, Subdivider Holmes is well equipped to capitalize on any shift of the market between \$4,450 and \$10,000.

* Architect Martin designed the houses in nearby Sunnybrook, subdivision of \$3,490 concrete block houses (ARCH. FORUM, Nov. 1938, p. 414).





Steep roofs are the style in Fox Chase Manor houses; they emphasize the pleasant contrast of brown cedar shingles and white concrete blocks. The two houses above are variants of the two basic plans. Their prices: \$5,100, left, and \$5,200, right. Extras which pushed these totals above the minimum are the bay-window (\$50) on the house to the left and an additional garage (\$600) on both. Some families chose a double garage because they wanted the larger bedroom space above it, even though the basic bedroom (10 x 15 ft.) is better than minimum. While the full second floor on the house at right affords more generous sleeping room than its neighbor, the two first floors offer almost identical accommodations.



CONSTRUCTION OUTLINE

FOUNDATION: Walls—Monolithic concrete on reinforced concrete footings. Cellar floor—4 in. cement concrete.

STRUCTURE: Walls—8 in. cinder concrete blocks, Bethayres Concrete Products Co., furring strips, National Gypsum Co. rock lath and plaster. Interior partitions—wood studs, rock lath, plaster and wallpaper. Floor construction—wood joist, sub-flooring and oak finish.

ROOF: Covered with No. 1 cedar shingles, Schafer Lumber & Shingle Co.

CHIMNEY: Cinder concrete block, Bethayres Concrete Products Co., terra cotta lining.

SHEET METAL WORK: Flashing—galvanized tin; remainder—16 gauge copper.

INSULATION: Garage ceiling—4 in. Gimco, General Insulating & Mfg. Co.

WINDOWS: Sash—double hung, Curtis Cos., Inc. Glass—single strength, quality B, Lustra, American Window Glass Co.

STAIRS: Treads—oak. Risers—white pine. **FLOOR COVERINGS:** Main rooms—hardwood. Kitchen—linoleum, Armstrong Cork Co. Bathrooms—ceramic tile, Franklin Tile Co.

WALL COVERINGS: Main rooms—wallpaper. Bathrooms—tile. Kitchen—Sanitas, Standard Coated Products Co.

WOODWORK: All material by Curtis Cos., Inc.

HARDWARE: By McKinney Mfg. Co. **PAINTING:** All paint materials by Sherwin-

Williams Company.

ELECTRICAL INSTALLATION: Wiring system—BX. Fixtures—Beaconlite Sales & Service Co.

KITCHEN EQUIPMENT: Range—Magic Chef, American Stove Co. Sink—laundry combination, Standard Sanitary Mfg. Co. Cabinets—Curtis Cos., Inc.

BATHROOM EQUIPMENT: All fixtures—Standard Sanitary Mfg. Co. Seat—Bemis Mfg. Co.

PLUMBING: Soil pipes—cast iron, Williamstown Foundry Corp. Hot and cold water pipes—copper, Mueller Brass Co.

HEATING: Coal fired warm air furnace, L. J. Mueller Co. Water heater—copper coil, Mustee Heater Co.

LIVING COSTS X-RAYED in ten-city survey.

Shelter ranks third, averages \$204 a year in North, \$189 in South.

THE fact that the month-by-month cost of shelter is lower in the South than in the North is an obvious truism well known to all in Building. But how much lower it is and how shelter costs stack up beside other costs of living are facts obscured by hearsay and lack of accurate information. A stab in the right direction is the recent comparison by the U. S. Department of Labor's Bureau of Labor Statistics of the cost of living in five small Southern cities with that in five small Northern cities.

The study does not show actual expenditures in the ten cities, but expenditures necessary to achieve the "same level of well-being." Thus, only those items are included in the basic budget that are consumed in both regions, with due allowance made for differences in volume of consumption.

Most important conclusions: 1) Housing and fuel, light and refrigeration are the only categories that average higher in cost in the North than in the South. 2) The fuel, light and refrigeration category, with a 50.6 per cent difference between the Northern average cost and the Southern average cost, stands a good cubit above any other item as responsible for variations in the total cost of living. 3) Variations in the cost of shelter between the cities of either region are greater than the variations in any other category in the cost of living.

These conclusions underline the difficulty of making generalizations about housing. And, due to the study's necessary limitations, whatever generalizations can

be made must be qualified. In particular, they do not truly mirror one factor that accounts for a large part of North-South living cost differences: the selection of goods of equivalent quality but of lower regional cost. Thus, the essential reason why a Southern worker buys more hominy grits, rice and pork than bread and beef is that he can buy them cheaper. A further limitation is that the study covers only small cities.

To calculate living costs, the Bureau followed this tortuous procedure: First, they set up a Southern budget, using items that are commonly consumed in both regions. Then they computed the cost of that Southern budget in the North, adjusting for differences in consumption volume. Second, they repeated the same process on the basis of a Northern budget, again using items consumed in both regions. Obviously, neither of these two separate comparisons gives a fair picture of regional differences; each is weighted in favor of the region on which it is based. To find a composite, the Bureau averaged the two, arrived at what they consider a fair comparison.

Shelter Costs. In its study, the Bureau of Labor Statistics discovered a very interesting fact: comparing the North and South, the only two categories in the cost of living that must be varied in volume to achieve the same standard of well-being are shelter and fuel, light and refrigeration. Thus, a house in the South needs less heat and insulation than one in the North.

Although it is popularly believed that Southerners can save on clothing, the Bureau says no. Southerners spend for summer suits what they save on overcoats.

Average cost of shelter per annum is \$204 in the North and \$189 in the South (\$17 and \$15.75 a month, respectively). These figures reflect a generally lower level of housing costs in the South, but they do not show the wide variations between cities. As the chart (left, below) shows, one Southern city has higher shelter costs than any city in the North, and vice versa.

Fuel Costs. Although cost of fuel, light and refrigeration represents only 8 per cent of the average cost of living in all the cities surveyed, variations in that category had greater effect on North-South differences in living costs than any other item. Fuel, of course, was principally responsible.

Expenditures for fuel were based on products customarily used in each locality. In Sherman, Tex., and Hattiesburg, Miss. low priced natural gas has virtually eliminated the use of coal, while in Chillicothe, Ohio, in the heart of the bituminous region coal is the lowest priced fuel. It was found that variations in fuel prices were higher in the North than in the South, and that Southern workers consume only half as many thermal units of fuel as Northern workers (see center chart, below).

Tending to reduce the effect of fuel cost variations on the total cost of fuel, light and refrigeration was the fact that the cost of electricity was in every case higher in the South than in the North.

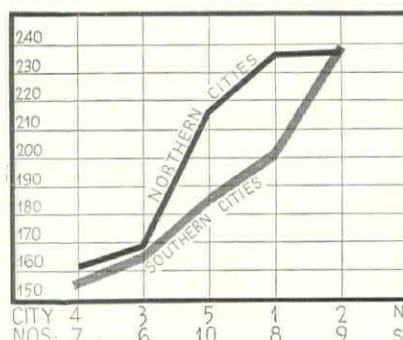
Living Costs. Charted below (right) is a summary comparison between Northern and Southern living costs. As significant as are the variations between cities in the small sample covered, it is nonetheless evident that in a majority of cases it costs more to live above than below the Mason-Dixon Line. Vertical bars at the right of the charts indicate how much more it costs on the average: just \$37 to achieve the same level of well-being.

As would be expected, the biggest item of expenditure is for food. In both areas roughly one-third of the total cost goes for that purpose. Second biggest item (28.30 per cent) is the miscellaneous one. Third is shelter, at 16 per cent.

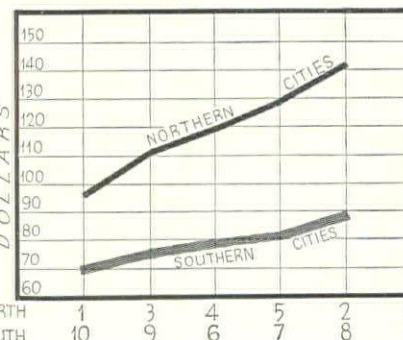
COST OF A WAGE EARNER'S LIVING

Region and City	Total	Food	Clothing	Shelter	Fuel, light, and refrigeration	Furniture, furnishings, house equip.	Miscellaneous
NORTHERN CITY AVERAGE	\$1,263	\$409	\$119	\$204	\$119	\$54	\$358
1. CHILlicothe, OHIO	1,288	407	127	235	96	56	367
2. DOVER, N. H.	1,357	449	112	237	142	54	363
3. HANOVER, PA.	1,176	395	108	169	111	53	340
4. HOLLAND, MICH.	1,202	387	127	162	119	50	357
5. LITTLE FALLS, N. Y.	1,291	406	123	216	129	55	362
SOUTHERN CITY AVERAGE	1,226	412	121	189	79	56	369
6. HATTIESBURG, MISS.	1,220	408	124	165	78	59	386
7. SHERMAN, TEX.	1,183	393	124	156	81	55	374
8. STATESVILLE, N. C.	1,272	421	128	201	88	57	377
9. SUMTER, S. C.	1,243	413	111	238	76	52	353
10. THOMASVILLE, N. C.	1,211	425	120	185	70	56	355

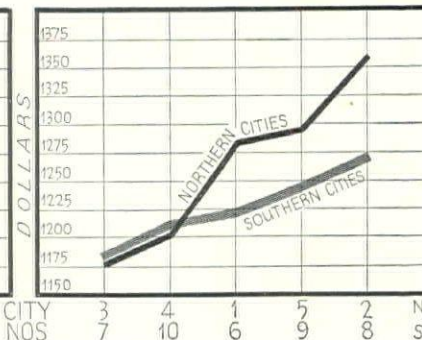
SHELTER



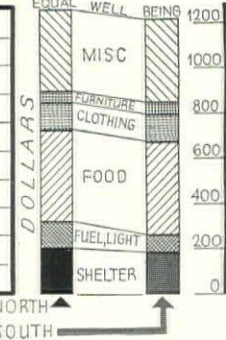
FUEL, LIGHT & REFRIG.

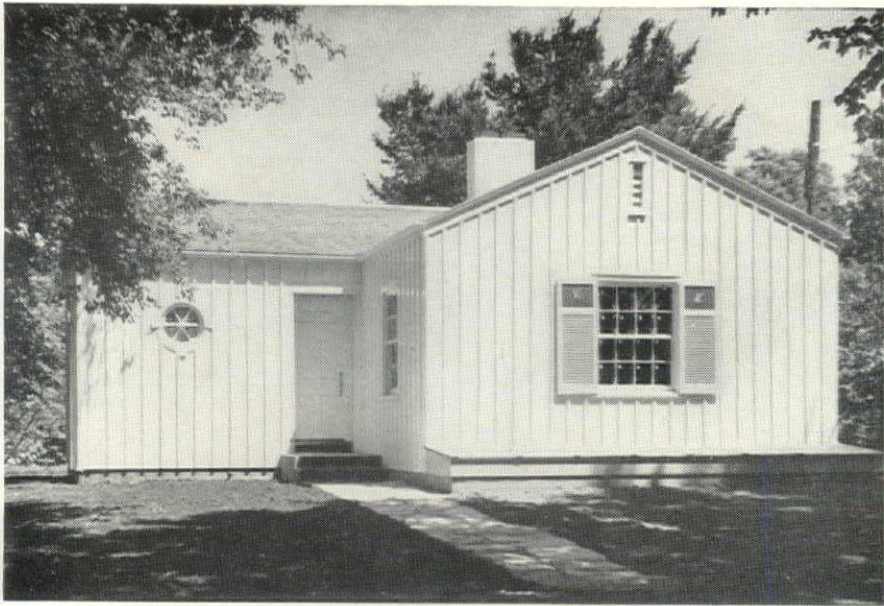


TOTAL LIVING COST



AVERAGE



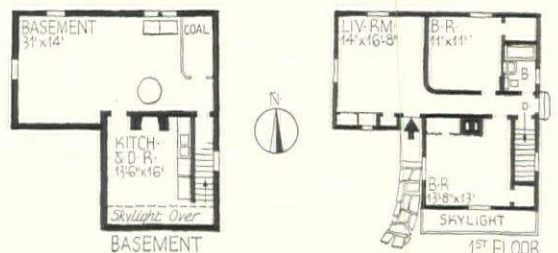


A SWEDISH DESIGN WITH LIVING SPACE & COST IN BASEMENT

SINCE room size and relationship are tightly tied to dollars and cents, most attempts to design a radically different low cost house fall many feet short of their goals. Noteworthy, therefore, is almost any small house which varies from everyday pattern. Such a house is that designed by Chester Sig Anderson of St. Charles, Ill.—so different from tradition that one must go all the way to Sweden to find a precedent. With a handsome kitchen-dining room in its well-lighted, well-insulated basement, Designer Anderson's five-room house is an interesting solution to the problem of providing increased living space at decreased cost. Its 1,250 sq. ft. of floor area—820 sq. ft. of it for essential living facilities—cost only \$3,791.

That Anderson should go to Sweden for his design ideas is logical; he himself is of Swedish extraction. He knew that the economical Swedes frequently place their kitchens and dining rooms in the basement and sometimes cut plumbing costs still further by putting their bathrooms on the lowest floor. Such is the background of Anderson's latest speculatively built house in his small home town. Although not daring to go whole hog and demote the bathroom to the basement, he did gamble a basement kitchen-dining room against a lower and therefore more attractive cost.

Realizing that the public was to decide the bet, Anderson took two precautions against the natural public reaction to basement living—that it is apt to be too dark and dank. First, part of the kitchen was roofed with a sizable skylight. Second, the interior of the foundation walls was thoroughly insulated, then sheathed with knotty pine. Running the full 16 ft. width of the basement wing, the skylight was made possible by extending the foundation walls 3 ft. beyond the rest of the house. Thus, the area of this mullioned glass is 48 sq. ft. To prevent shattering,



the skylight is built of wire glass; to keep it from leaking it is copper flashed on the exterior. If the latter protection fails, seepage will be collected by interior copper gutters. Major shortcoming: Since this horizontal window is permanently fixed in place, basement ventilation depends upon a stairway window, leaves much to be desired.

Not just a gadget, Anderson's skylight appears (much like a cold frame) at the south end of the house where it will command the best and the most of the day's sunlight. And, since this end happens to be the facade, the skylighted kitchen-dining room is not only the controlling element of the house's plan but also becomes an important feature of its simple exterior design.

Interesting interior and exterior design, however, is not enough. Only logical justification for rooms in a bungalow's basement is that they save money, and such is the claim of Designer Anderson. He enthusiastically contends that his kitchen-dining room is \$1,000 cheaper in the basement than in its traditional location. Impartial analysis of the comparative plumbing, excavation and masonry wall costs contradicts his dollar estimate—even when a full basement is assumed to be mandatory. Nevertheless, his unique room arrangement probably produced more space for his money.

All told, the so-called "Swedish Economic House" cost \$4,441. The breakdown for land, materials, equipment and all-union labor:

General building contract	\$2,613
Plumbing	538
Furnace	148
Painting and papering	289
Electric wiring	77
Hardware	56
Linoleum in kitchen	34
Insulation	36
<hr/>	
Total construction cost	\$3,791

Land	550
Improvements	100

To this list will be added \$150 for profit when the house is sold. While in search of a purchaser, Designer-Owner Anderson is renting his small house for \$40—just enough to cover his \$38.25 monthly payment on an eleven-year mortgage held by a local savings and loan association. The tenant also pays an average of \$3 per month for gas and electricity, \$5 for fuel.

For sixteen years a St. Charles decorator and designer, Chester Sig Anderson has high hopes for the future of his Swedish Economic House, plans to design and build others as soon as his No. 1 model has overcome public prejudice against basement living. He finds encouragement in the comparatively recent acceptance of the basement recreation room (to which, incidentally, the skylight might be a happy addition), trusts that dollar-wise Americans, like Swedes, will soon take to basement kitchens and dining rooms.

AVERAGE HOUSES

FIRST and weightiest query posed by would-be home-builders is "How much will it cost?" Depending upon the situation, the questioned architect or contractor usually resorts to one of two practices before offering his reply. Either he scratches his head and makes a reasoned guess based upon a combination of experience and horse sense, or he scratches his pencil and makes a meticulous cost estimate of each item entering into the construction of the house. As a helpful auxiliary to both practices, THE FORUM presents herewith a statistical analysis of the amounts of materials which go into average houses varying in volume from 6,000 to 34,000 cubic feet. It is called "Average Construction Quantities."

Like the tabulation of average costs (ARCH. FORUM, Nov. 1937, p. 446), Average Construction Quantities is the achievement of Paul I. Thomas, civil engineer and appraiser in the office of New York's Adjuster Prentiss B. Reed. But, unlike his cost table, which was based upon one hypothetical house, the quantitative figures were determined only after Thomas had gone through some 300 typical house plans with a fine tooth comb, tabulated the average dimensions according to volumes.

One initial result of this combing was justification for certain assumptions upon which quantity estimates for all types of residences were subsequently based: 1) That the length of the average house is two times its width. 2) That the distance from the under side of the sill to the top of the plate is 10 ft. in a one-story house, 19 ft. in a one-and-a-half-story house, 20 ft. in a two-story house. 3) That for every 100 sq. ft. of living floor area there are 10 linear ft. of partition wall. 4) That for every 10 ft. of partition wall there is one interior door. 5) That for every 10 ft. of perimeter there is one window. 6) That gable areas, dormers, cornice areas together are equal to 20 per cent of the

wall area between sill and plate. 7) That ceiling heights for both first and second floors are 8 ft.

Next step was determination of formulæ which would produce the desired quantities. Basic among them are the following six for one-story houses (symbol "A" denotes length times width or area of a horizontal section through the house):

Perimeter = $6 \sqrt{A/2}$; Exterior wall area = $72 \sqrt{A/2}$; Partition area (one side) = $4/5 A$; Linear feet of partition = $A/10$; Roof area (45° pitch) = $A/.707$; Interior wall and ceiling area = $13/5A + 72 \sqrt{A/2}$.

Since all of these formulæ contain but one unknown, A, application of them is comparatively simple. For example, in calculating the number of board feet of exterior wall studding in a dwelling the procedure was this: Assuming studs are 2 x 4's and are 16 in. on centers, there is about one stud per linear foot, including allowance for waste, door and window heads, etc. And there is 2/3 of a board foot in a linear foot of 2 x 4. Therefore, total board feet of exterior wall studding is equal to 2/3 of $72 \sqrt{A/2}$ (formula for exterior wall area, above) or $48 \sqrt{A/2}$. With the help of this and about 95 other formulæ, Engineer Thomas produced his mathematical estimates.

Presented on the facing page are summary tables of the Thomas statistics for average one-, one-and-a-half-, and two-story dwellings of the most common volumes. It is to be noted that the volumes shown do not include basements (for which a separate table, below, is used) nor open attic space. While statistics for intermediate volumes may not be determined exactly by simple interpolation, a reasonably accurate estimate may be obtained by such procedure. Again, it is to be emphasized that all figures shown are mathematical approximations of construction quantities under average conditions.

BASEMENTS

VOLUME CUBIC FEET	POURED CONCRETE		CEMENT BLOCK 8" x 16" UNITS	COMMON BRICK	
	8" CUBIC FEET	12"		8" UNITS	12"
3000	438	656	738	9225	13838
4000	506	760	855	10688	16032
5000	566	848	954	11925	17887
6000	618	928	1044	13050	19575
7000	667	1000	1125	14062	21093
8000	714	1072	1206	15075	22613
9000	758	1136	1278	15975	23962
10000	800	1200	1350	16875	24312
11000	838	1256	1413	17062	26493
12000	874	1312	1476	18450	27675
13000	912	1368	1539	19238	28857
14000	950	1424	1602	20025	30038
15000	982	1472	1656	20700	31050

CONSTRUCTION QUANTITIES

ONE-STORY DWELLINGS

VOLUME CUBIC FEET	FRAMING ¹				SHEATHING ²		MASONRY WALLS					Openings ³		ROOFING ⁴		WALL FINISH ⁵		FINISH	TRIM ⁶		
	AVERAGE		LIGHT		Frame	Masonry	4"	8"	12"	Hollow Tile 12"x12"	Cement Block 8"x16"	Doors	Win- dows	45° Pitch	55° Pitch	IN- TERIOR	EX- TERIOR	FLOOR	INTERIOR	Base	
	Frame	Masonry	Frame	Masonry																BOARD FEET	BOARD FEET	UNITS	UNITS	SQUARE FEET	SQUARE FEET	SQ. FEET	Base	Mold.	Pict.	Mld.	LINEAR FT.
6000	3585	2550	3056	2020	3896	2400	7378	14756	22134	1039	1143	8	10	852	1020	2804	1247	600	224	179	
8000	4600	3400	3892	2692	4928	3200	8520	17040	25560	1200	1320	10	12	1144	1350	3427	1440	800	280	224	
10000	5590	4250	4707	3367	5932	4000	9526	19052	28578	1342	1476	12	13	1428	1700	4210	1610	1000	334	267	
11000	6080	4675	5108	3703	6427	4400	9999	19980	29970	1407	1548	13	14	1571	1870	4549	1689	1100	361	289	
12000	6570	5100	5510	4040	6917	4800	10437	20874	31311	1470	1617	14	15	1704	2040	4884	1764	1200	387	311	
13000	7055	5525	5907	4377	7403	5200	10863	21726	32589	1530	1683	15	15	1857	2210	5216	1836	1300	413	330	
14000	7535	5950	6298	4713	7886	5600	11271	22542	33813	1588	1747	16	16	2000	2380	5545	1905	1400	439	351	
15000	8020	6375	6695	5050	8366	6000	11666	23332	34998	1643	1807	17	16	2142	2550	5872	1972	1500	464	371	
16000	8500	6800	7086	5387	8844	6400	12049	24098	36147	1697	1867	18	17	2288	2720	6197	2037	1600	490	392	
17000	8975	7225	7473	5723	9319	6800	12420	24840	37260	1749	1924	19	18	2428	2890	6519	2099	1700	515	412	
18000	9450	7650	7860	6060	9792	7200	12780	25560	38340	1800	1980	20	18	2572	3060	6840	2160	1800	540	432	
19000	9925	8075	8247	6397	10263	7600	13130	26260	39390	1849	2034	21	19	2714	3230	7159	2219	1900	565	452	
20000	10400	8500	8633	6733	10732	8000	13474	26948	40422	1898	2088	22	19	2856	3400	7477	2277	2000	590	472	
22000	11345	9350	9403	7407	11666	8800	14129	28258	42387	1990	2189	24	20	3142	3740	8108	2388	2200	639	511	
24000	12275	10200	10155	8080	12593	9600	14757	29514	44271	2079	2287	26	21	3408	4080	8734	2494	2400	688	550	

ONE-AND-ONE-HALF STORY DWELLINGS

8000	3440	2983	2835	1965	3714	2190	6394	12788	19182	928	1021	8	8	601	715	3070	1218	842	213	171
10000	4170	3103	3450	2480	4433	2736	7130	14260	21390	1035	1139	10	10	751	895	3672	1358	1052	255	204
12000	4880	3703	4046	2976	5154	3282	7865	15530	23595	1141	1255	12	12	901	1071	4274	1498	1262	297	238
14000	5613	4348	4627	3477	5846	3834	8452	16954	25356	1227	1350	13	14	1053	1251	4852	1610	1474	336	269
16000	6320	4967	5203	3973	6533	4380	9040	18080	27120	1312	1443	15	16	1203	1428	5427	1722	1684	376	301
18000	7018	5578	5768	4468	7201	4926	9555	19110	28665	1387	1526	16	18	1353	1610	5986	1820	1894	414	331
19000	7374	5900	6057	4717	7545	5200	9849	19698	29547	1429	1572	17	19	1428	1698	6276	1876	2000	434	347
20000	7729	6211	6343	4963	7887	5472	10143	20286	30429	1472	1619	18	20	1503	1790	6565	1932	2106	455	365
21000	8082	6520	6631	5211	8231	5746	10437	20874	31311	1515	1667	20	21	1579	1878	6850	1988	2210	474	379
22000	8424	6829	6911	5461	8557	6019	10658	21316	31974	1547	1702	20	22	1654	1968	7125	2030	2316	492	394
23000	8755	7138	7176	5706	8861	6288	10864	21708	32542	1578	1735	21	23	1729	2055	7382	2058	2420	510	408
24000	9113	7452	7467	5957	9204	6566	11098	22196	33294	1611	1772	22	24	1804	2148	7671	2114	2526	530	424
26000	9786	8059	8013	6443	9851	7104	11539	23078	34617	1675	1843	23	26	1952	2321	8208	2198	2732	567	454
28000	10482	8709	8577	6947	10511	7658	11980	23960	35940	1739	1913	25	28	2105	2505	8763	2282	2946	605	484
30000	11175	9316	9134	7444	11165	8208	12421	24842	37263	1803	1983	27	30	2255	2680	9314	2366	3158	642	514

TWO-STORY DWELLINGS

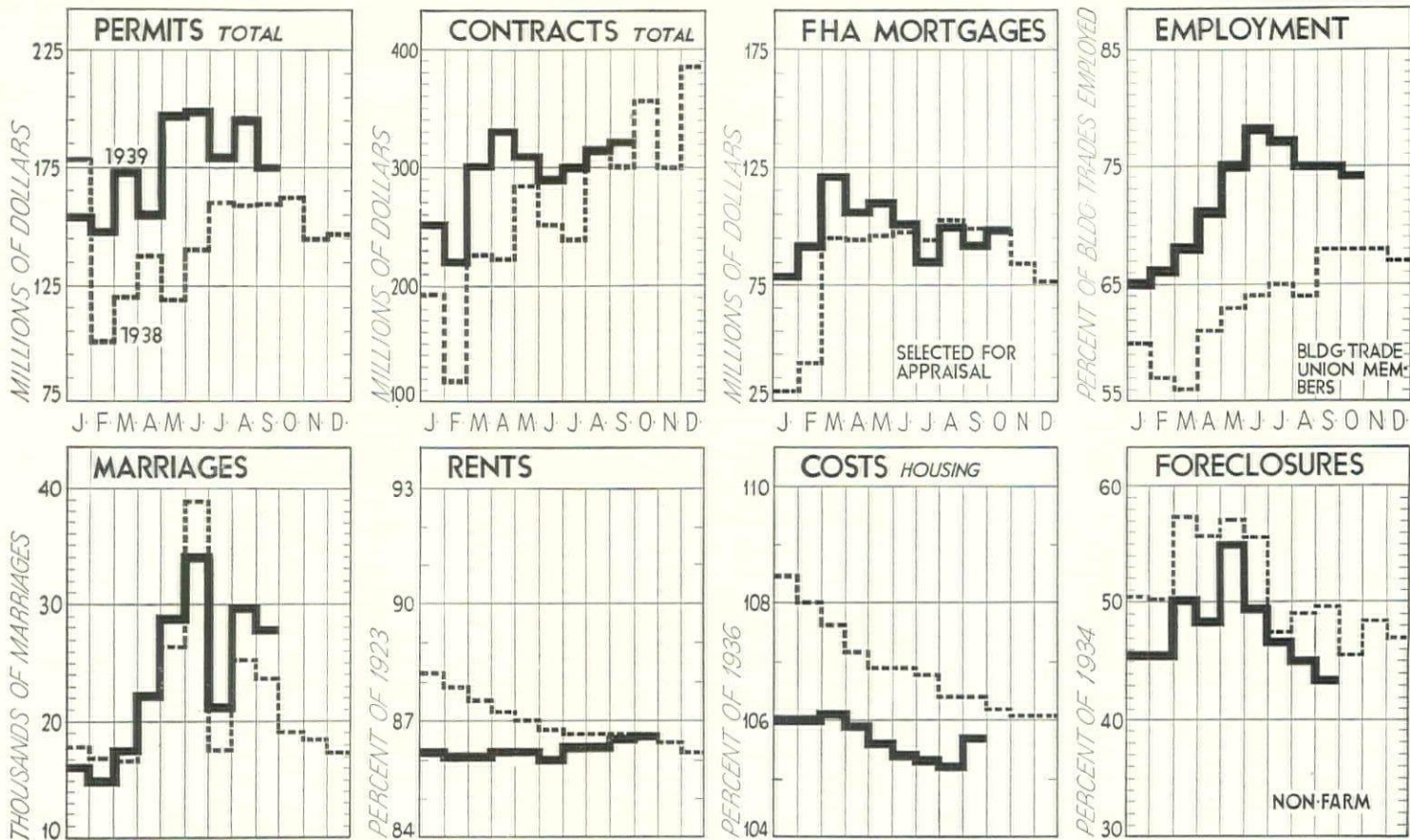
12000	5434	3700	4620	2990	5938	3192	13118	26236	39354	1874	2061	14	21	852	1020	5408	2288	1200	344	275
14000	6183	4317	5242	3488	6677	3720	14224	28448	42672	2032	2235	16	22	1000	1190	6104	2464	1400	392	314
16000	6933	4933	5866	3986	7421	4253	15204	30408	45612	2172	2389	18	24	1144	1360	6800	2640	1600	440	352
18000	7666	5550	6474	4485	8136	4783	16156	32313	48468	2308	2539	20	25	1286	1530	7474	2794	1800	487	390
20000	8401	6167	7084	4984	8851	5314	16982	33964	50946	2426	2669	22	27	1428	1700	8148	2948	2000	534	427
22000	9133	6783	7690	5481	9565	5845	17808	35616	53424	2544	2798	25	28	1571	1870	8822	3102	2200	581	465
23000	9491	7091	7987	5731	9914	6112	18144	36388	54432	2592	2851	26	29	1643	1955	9148	3168	2300	604	483
24000	9850	7400	8283	5980	10246	6365	18606	37212	55818	2658	2924	27	29	1704	2040	9474	3234	2400	627	502
25000	10207	7709	8579	6229	10603	6643	18942	37884	56826	2706	2977	28	30	1776	2125	9800	3300	2500	650	520
26000	10567	8017	8876	6479	10947	6908	19278	38556	57834	2754	3029	29	31	1857	2210	10126	3366	2600	673	538
27000	10924	8324	9171	6727	11289	7171	19740	39480	59220	2820	3102	30	31	1929	2295	10452	3432	2700	696	557
28000	11281	8633	9470	6981	11635	7440	20062	40124	60186	2866	3153	31	32	2000	2380	10776	3496	2800	719	575
30000	11984	9250	10045	7475	12301	7971	20720	41440	62160	2960	3256	33	33	2142	2550	11408	3608	3000	764	611
32000	12701	9867	10638	7974	12991	8503	21518	43036	64654	3074	3381	35	34	2288	2720	12060	3740	3200	810	648
34000	13399	10483	11212	8471	13655	9035	22162	44324	66486	3166	3483	37	35	2428	2890	12690	3850	3400	855	684

¹ Includes sills, studs, joists, rafters, bridging, catting, etc.
² Includes exterior walls, rough floors and roof boards.

³ Includes exterior doors.
⁴ Use roof area in conjunction with exterior wall area to determine quantity of insulating material required.

⁵ Openings not deducted.
⁶ Add sets of door and window trim shown by number of openings in foregoing column. Excludes trim for closet openings.

TRENDS IN THE BUILDING INDUSTRY



	LATEST MONTH*	PRECED. MONTH	CORRES. MO. 1938	CUMULATIVE 1939	1938		LATEST MONTH*	PRECED. MONTH	CORRES. MONTH-1938
PERMITS—residential (000,000) ¹	\$ 87.2s	\$116.0	\$85.1	\$852.7	\$643.5	INSURANCE CO.—real estate held (000,000) ¹⁰	\$1,746.0ju	\$1,746.0	\$1,797.0
non-residential "	58.0	44.6	48.7	455.6	393.3	COSTS—wholesale materials (% of 1926) ¹¹	92.8o	90.9	89.8
alterations "	28.8	32.8	25.7	264.3	239.6	housing—labor (% of 1936) ¹²	111.2s	111.2	112.4
total "	174.0	193.4	159.6	1,572.6	1,276.4	materials "	102.9	102.3	103.4
CONTRACTS—residential (000,000) ²	\$129.7s	\$127.1a	\$99.6	\$1,010.7	\$686.3	total "	105.7	105.2	106.4
non-residential "	82.4	69.9	92.0	757.4	685.6	RENTS—new leases (% of 1923) ¹³	86.6o	86.5	86.6
engineering "	111.1	115.3	109.3	866.7	776.2	FORECLOSURES—non-farm (% of 1934) ¹⁴	43.5s	45.1	49.5
total "	323.2	312.3	300.9	2,634.8	2,148.1	metropolitan (% of 1926) ¹⁵	136.0s	146.0	157.0
DWELLING UNITS—total (000) ³	23.4s	31.0	23.3	232.6	175.3	INTEREST RATES—N.Y.C. mortgages (%) ¹⁶	4.46o	4.57	4.57
FHA—mortgage selections (000,000) ⁴	\$ 99.3o	\$91.7s	\$97.4	\$975.9	\$849.5	BOND PRICES—real estate ¹⁷	\$310.0o	\$305.0	\$328.0
mortgage acceptances "	74.2	62.8	64.7	619.7	538.9	STOCK PRICES—bldg. materials (% of 1926) ¹⁸	85.3o	85.0	98.5
rental housing m't'g's. "	1.6	1.0	3.3	47.1	39.8	WAGE RATES—common bldg. labor (per hr.) ¹⁹	\$0.685n	\$0.685	\$0.682
modernization loans "	21.8	14.9	22.4	186.3	130.9	skilled bldg. labor (per hr.)	1.46	1.44	1.43
MORTGAGES—						EMPLOYMENT—bldg. unions (% of total) ²⁰	74.0o	75.0	68.0
bldg. & loan assns. (000,000) ⁸	\$104.5s	\$112.5a	...	\$868.2	...	COST OF LIVING—(% of 1923) ²¹	85.6	84.5	85.9
insurance cos. "	28.1	30.8	...	245.7	...	PAYROLLS—factory (% of 1923-25) ²²	89.9a	84.4	77.3
bank and trust cos. "	74.6	80.1	...	678.3	...	PRODUCTION—industrial (% of 1923-25) ²³	111.0s	98.0	91.0
mutual savings bks. "	13.5	13.8	...	99.7	...				
individuals "	53.0	58.8	...	493.6	...				
other mortgagees "	43.5	49.5	...	406.2	...				
total "	317.2	345.6	...	2,790.9	...				
MARRIAGES—38 cities (000) ⁹	31.8s	29.4	23.7	217.6	214.9				

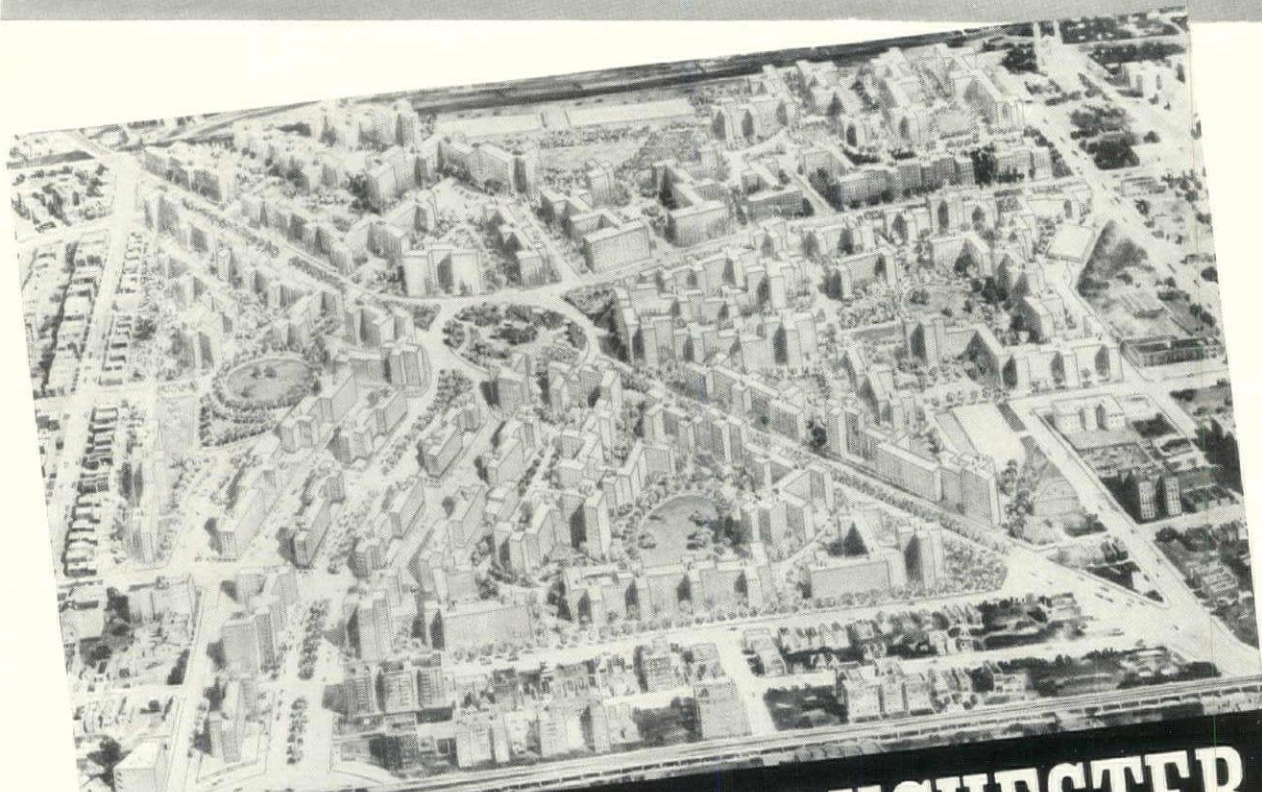
FOOTNOTES:

- 1—Valuation of building permits in some 2,100 communities; source, U. S. Department of Labor.
- 2—Valuation of contracts awarded in 37 States; source, F. W. Dodge Corp. via U. S. Dept. of Commerce.
- 3—Number of dwelling units covered by permits. See footnote No. 1.
- 4—Home mortgages selected for FHA appraisal under Title II, Section 203; source, FHA.
- 5—Home mortgages accepted for insurance under Title II, Section 203; source, FHA.
- 6—Large scale rental housing mortgages becoming premium paying under Title II, Section 207; source, FHA.
- 7—Property improvement loans insured under Title I; source, FHA.
- 8—Non-farm mortgage recordings of \$20,000 or less based on

- 500 counties (48 States); source, FHLBB.
- 9—Number of marriages recorded in 38 largest U. S. cities; source, ARCHITECTURAL FORUM.
- 10—Total real estate holdings by member companies of the Assn. of Life Ins. Presidents.
- 11—Composite index of wholesale building material prices; source, U. S. Department of Labor.
- 12—National averages based on six-room house of 24,000 cu. ft. unfinished; source, FHLBB.
- 13—Rates at which new rental contracts are made; source, National Industrial Conference Board.
- 14—Foreclosures in some 1,500 non-farm communities; source, FHLBB.
- 15—Foreclosures in metropolitan communities with population in excess of 100,000; source, FHLBB.

- 16—Average interest rate on all recorded New York City mortgages of \$10,000 or more; source, N. Y. Mortgage Conference.
- 17—Average price of 200 hotel, office building and theater bonds; source, Amott-Baker & Co.
- 18—Average price of twelve building material manufacturers' stocks; source, Standard Statistics Co.
- 19—Source, Engineering News-Record.
- 20—Trade Union members employed; source, American Federation of Labor.
- 21—Covers clothing, food, fuel and light, housing and sundries; source, NICB.
- 22—Source, U. S. Dept. of Labor.
- 23—Combined unadjusted index; source, Federal Reserve Board.

18 ACRES OF NAIRN LINOLEUM



CHOSEN FOR PARKCHESTER

12,256 kitchens in world's largest housing project will have smooth, sanitary, long-wearing Nairn floors

Architect, contractor, and owners of Parkchester agreed that 86,000 yards of Nairn Linoleum—18 acres!—should be installed in the kitchens of this modern development. The pattern chosen was a standard Sealex Veltone design, with rich marbleizing.

And it's easy to understand the choice! Here is an economical floor—inexpensively installed

despite the fact that the kitchens were of irregular contour. Here is a floor that will stand up under years of punishing foot-traffic. And a floor whose smooth, sanitary surface is easy to keep clean and attractive looking!

Nairn Linoleum Floors, installed by authorized contractors, carry a guarantee bond fully covering the value of workmanship and materials. Write us for complete information for your A. I. A. files now.

CONGOLEUM-NAIRN INC., KEARNY, N. J.

NAIRN
TRADEMARK REGISTERED
LINOLEUM
Floors and Walls

MONTH IN BUILDING

(Continued from page 4)

cent buildings—all of them in Washington, D. C.: Department of Interior, at a cost of \$13 million; Bureau of Engraving and Printing, \$6.3 million; Federal Trade Commission, \$3.8 million; extension to the Archives, \$3.6 million; Internal Revenue, \$1.9 million; Procurement Division, \$1.8 million. But the agency does not always stick to million dollar jobs, frequently steps low enough to build an animal house for Washington National Zoological Park, to provide a new base for a statue, or to repair or modernize an existing Government building.

More impressive than its past tasks is the Administration's list of Washington buildings presently under construction: General Federal Office, \$3.5 million; Government Printing Office Annex, \$5.0 million; and its record-breaker, the Social Security and Railroad Retirement Board Building, at \$14.3 million. In the blueprint stage is the proposed War Department Building whose cost will go higher than \$10 million. Within the next year or two, when all these buildings are complete, the Federal Government's Public Buildings Administration will certainly be better known.

BACKLOG. Note by the U. S. Chamber of Commerce on a seldom-acclaimed phase of building activity: Between 1932-35 more money was spent on the maintenance and repair of residential properties than on new home construction. Subsequently, the maintenance and repair volume fell, but still represents a sizable part of Building's income. In 1936 it was 69 per cent as much as new construction, in 1937 it was 57 per cent and in 1938, over 60 per cent. A good \$800 million will be spent to keep the Nation's homes in repair during the current year.

Also from the U. S. Chamber of Commerce comes the construction industry's first 1940 forecast. Thus, at mid-month the Chamber's analysts put their heads together, collectively predicted that total construction activity, including maintenance and work relief, would next year reach a valuation between \$10 billion and \$12 billion, as compared with the \$9.5 billion estimated for 1939. Going still further out on the prognosis limb, they announced that there is every likelihood that their 1940 forecast will hold good for several years. However, they predict no repetition of the 1926-1928 boom when the total valuation averaged \$14 billion.

PREVIEWED LOTS. Flushed by its four-year success at selling the country's more expensive homes by means of a na-

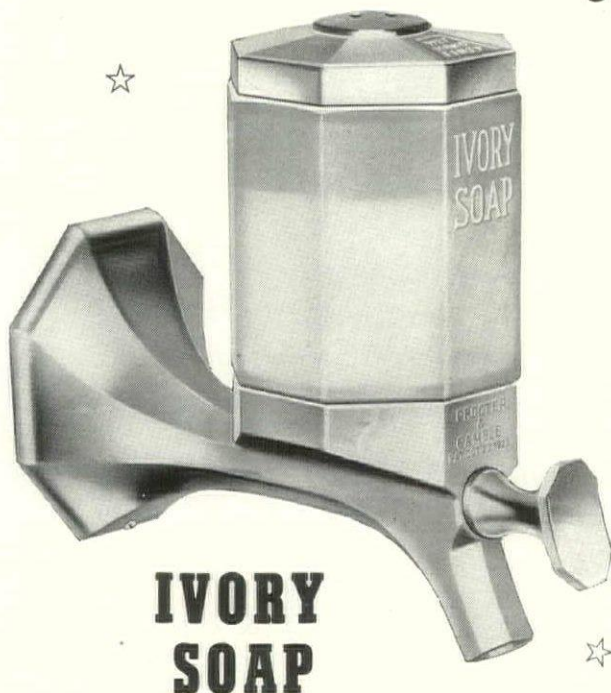
tion-wide brokerage system, Previews Inc. has recently expanded its activities to include the sale of lots. To their list of properties were added 31 lots in Philadelphia suburban subdivision Devon Park. They will be sold, as are all Preview listings, through local real estate brokers. Previews has made their sale attractive to these brokers by proudly boasting that the stingy commission usually paid on lot sales has been upped to a full 5 per cent brokerage fee.

The method of listing and merchandising houses used by Previews is to give each of their cooperating brokers photographs of the properties on file. Some absentee purchasers have been enticed by means of color movies. These methods, however, would hardly apply to the sale of lots—for bare, unbuilt-upon subdivisions are seldom photogenic. Instead, Previews Inc. developed an unpretentious brochure describing the property and the types of houses that might be built thereon.

Selling gags: The lots vary in size from one third to one half acre, are called "Junior Estates." In explaining FHA financing costs, the monthly payment to principal is considered as "savings," and is subtracted from the total monthly costs. As a result, "net costs" of the proposed houses are almost halved.

(Continued on page 36)

DESIGNED for the Public Washrooms of TODAY—and TOMORROW



IVORY SOAP DISPENSERS

Here is a soap dispenser in keeping with the modern trend toward refinement in public washroom appointments. It effectively combines the elements of good design with the best in utilitarian features.

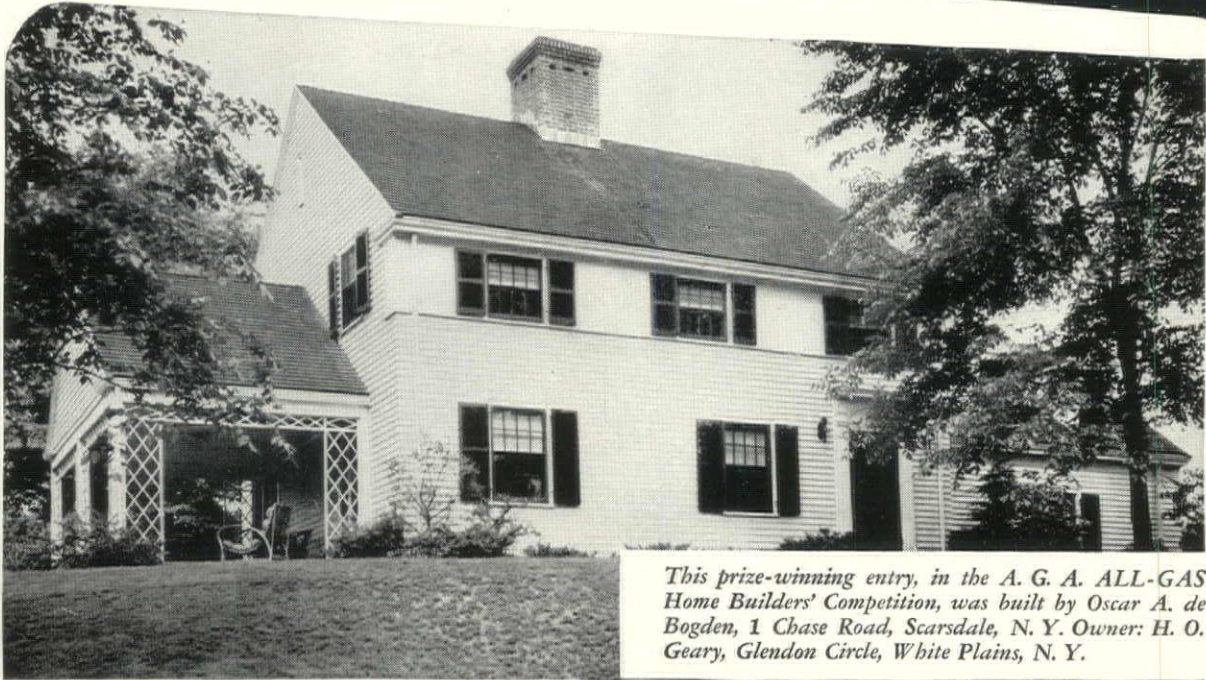
The Ivory Soap Dispenser has no parts to rust or tarnish or corrode. It is easy to install . . . easy to refill . . . low in first cost and in cost of up-keep. It delivers one of America's best known, best liked toilet soaps—pure, gentle Ivory Soap—in fine, free-flowing flakes or granules.

Whether you're designing washrooms for a new building or planning a modernization job, you'll find Ivory Dispensers equally suitable. A descriptive circular is yours for the asking. Or see Sweet's Catalog for detailed specifications.

PROCTER & GAMBLE

Industrial Sales Dept.

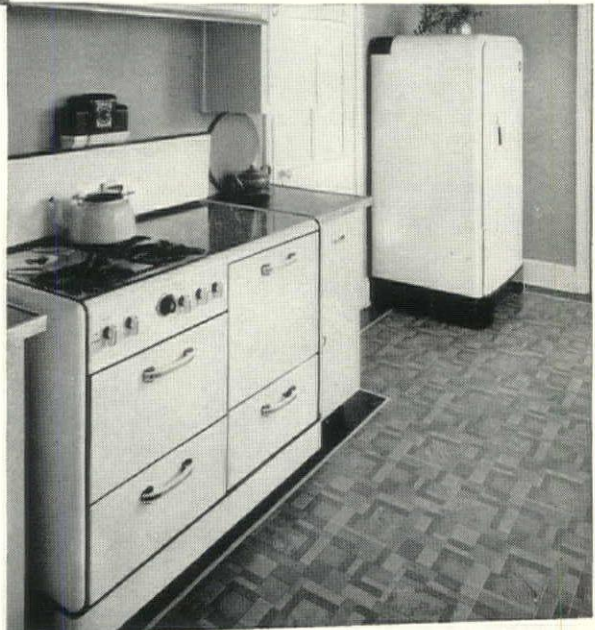
Gwynne Bldg., Cincinnati, Ohio



This prize-winning entry, in the A. G. A. ALL-GAS Home Builders' Competition, was built by Oscar A. de Bogden, 1 Chase Road, Scarsdale, N. Y. Owner: H. O. Geary, Glendon Circle, White Plains, N. Y.

GAS COMPLETES THE PICTURE OF THIS PRIZE-WINNING HOME

All-Gas kitchens like this give housewives that "I-want-to-move-in" feeling...and a very grand feeling it is, because it turns prospects into purchasers!



HOMES used to be sold on their "good looks," but today buyers are being swayed more and more by modern living comforts and conveniences.

This is the reason *Gas*, and *Gas Appliances*, so often "complete the picture" that makes the sale . . . Gas, because everyone recognizes it as the up-to-date fuel! Gas Appliances, because they are so sleek and handsome in appearance—so compact, so perfectly adapted to smooth living!

Thus it is something more than just *good design*—it is sound sales psychology to equip houses with Gas for the four big jobs of cooking, water-heating, house-heating and refrigeration. The proof of this you'll find in any test you care to make. "All-Gas Homes" sell faster, easier and at a better profit than those lacking in these up-to-date "comforts of home."

For full information on gas appliances consult your local gas company

AMERICAN GAS ASSOCIATION

LET

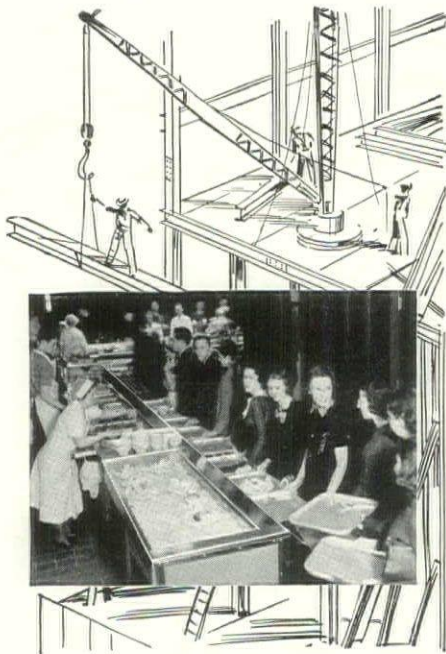
Gas

DO THE 4 BIG JOBS

COOKING
WATER HEATING
REFRIGERATION
HOUSE HEATING



Be sure the gas appliances you specify bear the Approval Seal of the American Gas Association Testing Laboratories.



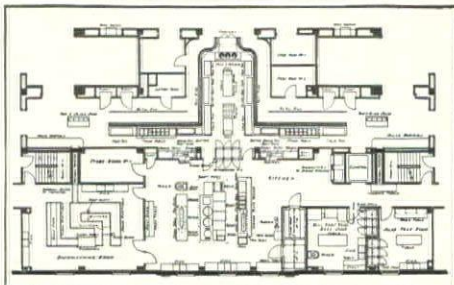
PLANNING ENGINEERING DESIGN

IT IS just as important that the food service departments are properly designed and definitely specified as it is to engineer the structure itself to withstand the loads and stresses to which it will be subjected. The installation of food service equipment requires the coordination of steam fitting, plumbing, electrical work, ventilation. In this, John Van engineers can be of great assistance.

LEADING ARCHITECTS realize the importance of such problems as proper allocation of departments, relative areas, provision for service lines, and use of proper materials, and include such data in the early planning stage.

Have you such a problem on the boards?

The John Van Range Co.
EQUIPMENT FOR THE PREPARATION AND SERVING OF FOOD
328 EGGLESTON AVE., CINCINNATI, OHIO



(Continued from page 34)

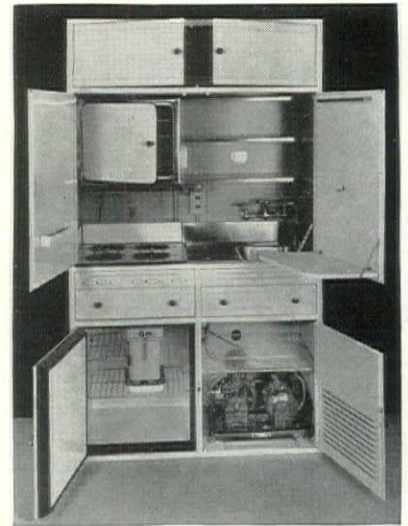
Optimistic about the success of their venture in wholesaling lots, Previews has since added subdivisions in other sections of Philadelphia to their lists, hopes to add more in the future.

EARNINGS

Quarter ending Sept. 30	1939	1938
Acme Steel	\$443,184	\$110,007
Air Reduction	1,291,816	962,273
Allegheny Ludlum Steel	327,772	352,180*
Allis-Chalmers	943,450	505,160
Alpha Portland Cement	809,769	109,866
American Cyanamid	1,189,723	875,631
American Rolling Mill	600,793	556,994*
American Steel Foundries	75,191	543,533*
Babcock & Wilcox ¹	500,203*	3,025,719*
Bethlehem Steel...	5,377,470	446,866
Brunswick-Balke- Collender	1,235,593	602,488
Bridgeport Brass..	87,067	19,612*
Climax Molybdenum ...	3,094,540	2,200,350
Continental Steel..	198,138	192,360*
Detroit Steel	106,815	24,582
Electrolux	294,389	301,435
Flintkote ³	532,775	436,986
Florence Stove	422,068	331,505
Formica Insulation ⁴	158,290	22,307
Holland Furnace ..	640,560	640,632
Inland Steel	2,587,750	1,098,245
Johns-Manville ...	1,472,255	882,366
Jones & Laughlin Steel	1,129,001	1,922,237*
Lehigh Portland Cement ¹	2,062,255	487,232
Libbey-Owens-Ford.	1,247,702	850,586
Lone Star Cement.	967,201	805,585
Masonite ²	1,163,050	1,144,274
Midland Steel	248,266	37,263
Minneapolis-Honey- well Regulator..	779,555	576,734
National Gypsum..	519,339	355,505
National Radiator ¹	153,928	1,045,223*
National Steel.....	2,903,881	1,813,997
Otis Elevator	841,520	481,623
Owens-Illinois Glass ¹	7,465,253	5,085,996
Penn Dixie Cement ¹	355,011	42,213*
Pittsburgh Steel...	85,093	274,132*
Reliance Steel	120,473	25,009
Republic Steel	2,815,339	2,387,556*
Revere Copper & Brass	331,505	539,801*
Reynolds Metals ..	324,275	225,579
Ruberoid	293,871	345,773
Sherwin-Williams ² .	4,463,992	2,228,361
Stone & Webster ..	273,368	192,021
Tilo Roofing ³	156,871	196,904
Truscon Steel	181,832	280,993*
U. S. Gypsum ...	2,613,003	1,607,725
U. S. Steel	10,420,445	5,847,791*
Westinghouse Elec. ¹	11,909,761	9,612,711
Wheeling Steel	1,639,647	606,908
Yale & Towne	222,213	175,522*
Youngstown Sheet & Tube	765,066	727,546*

* Net loss
1—12 mos. to Sept. 30 3—12 wks. to Oct. 7
2—Yr. to Aug. 31 4—9 mos. to Sept. 30

Bigger Returns from Your Investment



Patented and patents pending

This beautiful, complete, all-steel Pureaire Kitchen, needing less than 8 sq. ft. of floor space, can cook the finest meal you ever ate without allowing a whiff of odor to escape into the room. . . . Easily installed, Pureaire costs no more than the separate kitchen units which it displaces. . . . But the big savings Pureaire creates are in RETURNS PER DOLLAR on your investment. For Pureaire actually ADDS A ROOM to any apartment. Or enables you to successfully compete with ONE ROOM LESS. . . . Figure it out for yourself! See how Pureaire eliminates the separate kitchen—or frees that space for other uses. . . . No wonder Pureaire owners from coast to coast unite to praise it. And keep building more attractive Pureaire-equipped properties. . . . Investigate! Today!

THE PARSONS COMPANY
Detroit

PARSONS
Pureaire
KITCHEN

Whatever your problem
in store front design ...

GLASS can meet the Challenge!

GLASS provides the architect with countless store front design possibilities. It is being employed in ever-widening range to achieve effects that are possible with no other medium. For fronts that are gay and bright or dignified and subdued, for the small store in the middle of the block or the important corner location with large frontage, architects the country over are using glass to

create distinctive, customer-winning effects. Thousands of Pittco Store Fronts everywhere testify to the versatility of glass. The consistent excellence of Pittco Products, their nation-wide availability in identical quality, make this line of products the ideal choice for architectural expression in store front work. We invite you to mail the coupon for complete, free information about them.

HERE PITTCO PRODUCTS demonstrate their versatility. Architect R. J. Bennett Beistle has made use of a wide range of Pittco Products in planning the front for this corner building and grille in Oklahoma City. Note how liberally PC Glass Blocks have been applied, and the stand-out effects achieved through their use.



PITTCO STORE FRONTS
PITTSBURGH PLATE GLASS COMPANY
"PITTSBURGH" stands for Quality Glass

Pittsburgh Plate Glass Company
2257-9 Grant Bldg., Pittsburgh, Pa.

Please send me, without obligation, your new book
entitled "How to Get More Business."

Name _____

Street _____

City _____ State _____

ON THE THRESHOLD OF THE NEW YEAR!

OUTSTANDING INSTALLATIONS IN 1939

ALBANY—Stations WOKO and WABY
ATLANTA—Industrial Life and Health Insurance Company
BAKER, ORE.—Elks Temple
BALTIMORE—Emerson Hotel
BIRMINGHAM—Protective Life Ins. Co.
BOGOTA, COL., S. A.—Banco Frances Italiano
BOGOTA, COL., S. A.—Teatro Colombia
BOSTON—Thompson's Spa
BUFFALO—W. T. Grant
CHICAGO—Park Bd. Administration Bldg.
CINCINNATI—John Shillito Co.
CLEVELAND—Mills Restaurant
DETROIT—Detroit-Leland Hotel
FAIRMONT, W. VA.—Robinson Grand Theater
HOUSTON—Alabama Theater
INDIANAPOLIS—Board of Health Bldg.
INDIANA, PA.—State Teachers College
JACKSON HEIGHTS—North Beach Airport
JUNEAU, ALASKA—Baranof Hotel
LANSING—Gladmere Theater
LOS ANGELES—I. Magnin
LOS ANGELES—The May Company
MADISON—Wisconsin Union Theater
MERIDEN, CONN.—Undercliff Sanatorium
MINNEAPOLIS—5 Bldgs., Univ. of Minnesota
MUSCATINE, IOWA—Muscatine High School
NEWARK—Carteret Building & Loan Co.
NEW YORK—Morris Plan Industrial Bank
NEW YORK—Rockefeller Center Offices
NEW YORK—New York World's Fair, 27 installations
OMAHA—Station KOWH
OMAHA—Union Pacific Ticket Office
PITTSBURGH—Benedum Trees Oil Co.
PHILADELPHIA—Aluminum Company of America
PHILADELPHIA—Phila. Savings Fund Society
ROCHESTER—Rochester Automobile Club
SACRAMENTO—State Office Building
SAN BERNARDINO—Arrowhead Springs Lodge
SAN FRANCISCO—Federal Reserve Bank
SPOKANE—Davenport Hotel
ST. LOUIS—Esquire Theater
TOPEKA—Pelletier's
WASHINGTON, D. C.—Hines Funeral Home
WORCESTER, MASS.—County Inst. for Savings



flexwood

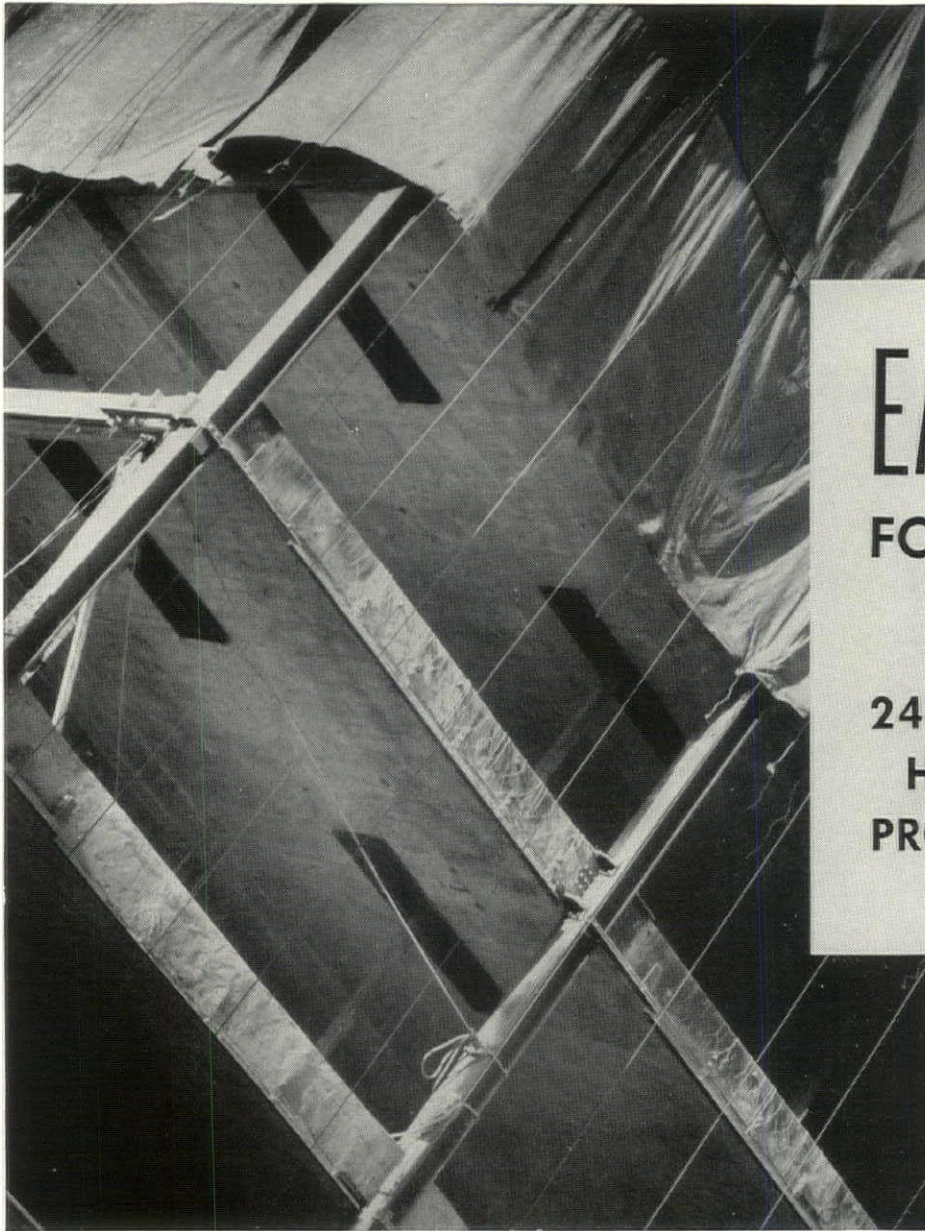
[WOOD IN FACILE FORM]

In view of the fact that architects have come to rely on Flexwood when their designs call for rare and exotic wood treatment, we wish to assure the profession that despite the unsettled condition of overseas shipping due to the War there will be no shortage of exquisite woods in the Flexwood line. With the exception of Harewood, ample stocks of the popular woods of England, Africa, East India and Asia are now in this country. During 1939 we introduced several unusual and beautiful South American veneers which have found ready acceptance and an adequate reserve of these woods is available.

In expressing our appreciation to the architects and designers who have made Flexwood "the modern method of wood treatment," we would like to repeat that when the luxury obtainable only with genuine wood treatment is desired, and when time and economy are imperative, Flexwood is the logical choice.

**Flexglass, the new design medium, glass that bends, will be introduced in 1940.*

UNITED STATES PLYWOOD CORPORATION, 103 PARK AVENUE, NEW YORK, N. Y.
Manufacturers of Flexglass*, Weldwood, Armorply and Weldbord



EAR-MUFFS FOR CONCRETE

'INCOR'
24-HOUR CEMENT
HALVES HEAT-
PROTECTION COSTS

TARPAULINS in place, salamanders inside the structure—concreting proceeds as usual, even in dead of winter. But it pays to remember that the quicker concrete hardens the sooner you can discontinue heat-protection and thereby lower the cost.

'Incor' 24-Hour Cement saves money on cold-weather work because it gains strength faster and the concrete is safe from freezing sooner. Heat mixing water and aggregates as usual; then, with 'Incor', simply provide heat-protection for 24 hours after concrete is placed. When temperatures are below 20°, provide protection for 48 to 72 hours. 'Incor' saves at least two days' heat-curing cost on each pour.

And 'Incor's' dependable high-early-strength also makes it possible to re-use forms sooner; faster completion means earlier use, often at lower cost.

Specify 'Incor'* 24-Hour Cement for winter work. Write for copy of "Cold Weather Concreting." Lone Star Cement Corporation, Room 2295, 342 Madison Avenue, New York.

*Reg. U. S. Pat. Off.

LONE STAR CEMENT CORPORATION

MAKERS OF LONE STAR CEMENT • • • 'INCOR' 24-HOUR CEMENT

AWARDS

To WILLIAM D. SMITH, civil engineer with U. S. Forest Service, Portland, Ore., first prize of \$500 in a timber bridge design contest sponsored by American Forest Products Industries, National Lumber Manufacturers Association, and Timber Engineering Co.

Fifteen hundred dollars in cash prizes were offered, and the contest was open to

architects, engineers, and students in the U. S. and Canada. First student prize, \$200, was won by Daniel Burnett, Vancouver, B. C.

Additional prize winners: Professional Class, second prize, \$200, to E. H. McBroom, Sacramento; third, \$100, to W. C. Brooke, Tenafly, N. J.; fourth, \$50, to E. George Stern and Harry Benkert, State College, Pa.; fifth, \$50, to G. O. Dolan, Portland, Ore.; sixth, \$50, to Neal B. Mit-

chell, Salem, Mass.; seventh, \$50, to Ole Rahm, Superior, Wis.

Additional student prizes: second, \$100, to Alfred Ackenheil, Pittsburgh; third, \$50, to Eric S. Sutherland, Winnipeg.

Sixteen additional prizes of \$10 each were awarded.

To 74 AMERICAN ARTISTS, declared winners and runners-up in the Forty-eight State Mural Competition. Winners will share in more than \$38,000 of contracts to depict American life on the walls of a new post office in each State in the Union. In June last the Section of Fine Arts, Public Buildings Administration, opened the competition to every American artist. Nearly 1,500 designs were entered and judged by a jury consisting of Maurice Sterne, chairman, Henry Varnum Poor, Edgar Miller, and Olin Dows. The winning designs were immediately put on exhibition in the Corcoran Art Gallery, Washington.

Winners by States, and the post offices in which the paintings are to appear, follow:

Alabama: Robert Gwathmey, Pittsburgh, Pa., for Eutaw;

Arkansas: Joseph P. Vorst, St. Louis, Mo., for Paris;

Arizona: Seymour Fogel, New York, for Safford;

California: Lew E. Davis, Phoenix, Ariz., for Los Banos;

Colorado: John Frazer, Pittsburgh, Pa., for Littleton;

Connecticut: Alton S. Tobey, Hartford, Conn., for Hartford;

Delaware: William H. Calfee, Washington, D. C., for Selbyville;

Florida: T. I. Laughlin, New York, for De Funiak Springs;

Georgia: Elizabeth Terrell, New York, for Conyers;

Idaho: Fletcher Martin, Hollywood, Calif., for Kellogg;

Illinois: Edmund D. Lewandowski, Milwaukee, Wis., for Hamilton;

Indiana: Joseph Meert, Kansas City, Mo., for Spencer;

Iowa: Marion Gilmore, Ottumwa, Iowa, for Corning;

Kansas: Joe Jones, St. Louis, Mo., for Seneca;

Kentucky: William E. L. Bunn, Muscatine, Iowa, for Hickman;

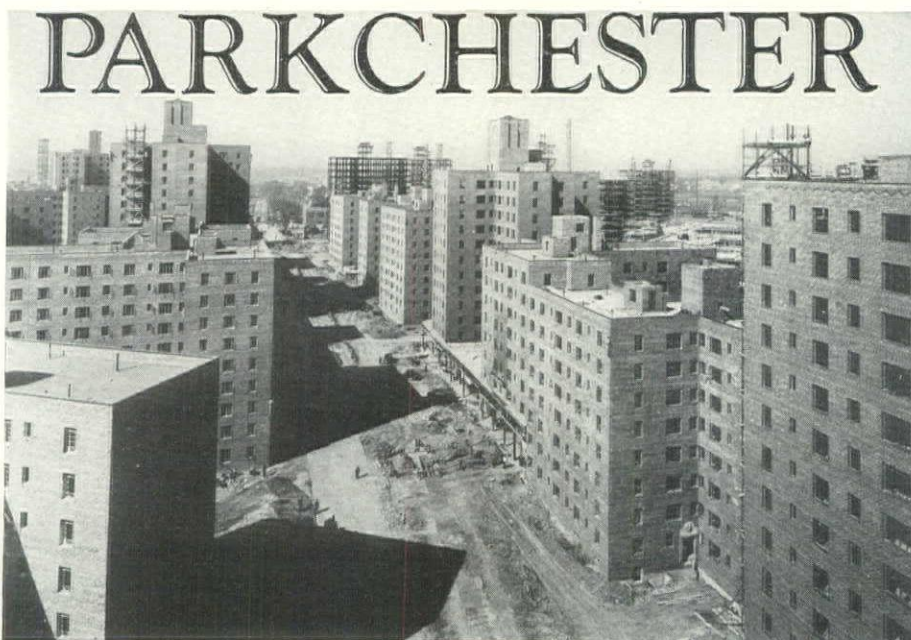
Louisiana: Laura B. Lewis, New Orleans, La., for Eunice;

Maine: Barstow Greenbie, Castine, Me., for Dover-Foxcroft;

Maryland: Alexander Clayton, Chevy Chase, Md., for Elkton;

Massachusetts: Jean Watson, Germantown, Pa., for Stoughton;

(Continued on page 42)



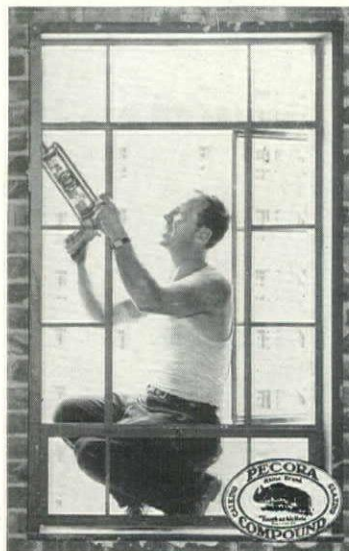
PECORA is proud to be identified with the products utilized in this vast project sponsored by Metropolitan Life Insurance Company and conceived by its Board of Design, with Starratt Brothers & Eken, Inc. as General Contractors. Once again Pecora Calking Compound has been selected to do its full share in making weather-tight and more enduring, a national landmark. For 31 years, architects and builders everywhere have learned to depend upon Pecora Calking Compound, for experience has proved that when properly applied, this material will not dry out, crack or chip. No other compound can surpass Pecora in permanence. No other compound can offer more uniform high quality.

Pecora invites your specification wherever the use of calking compound is indicated for weather protection, for temperature regulation, and for fuel saving.

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Applying Pecora Calking Compound to one of the 66,000 windows.

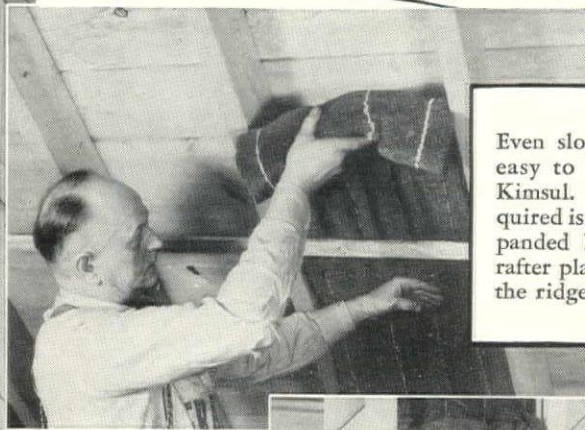
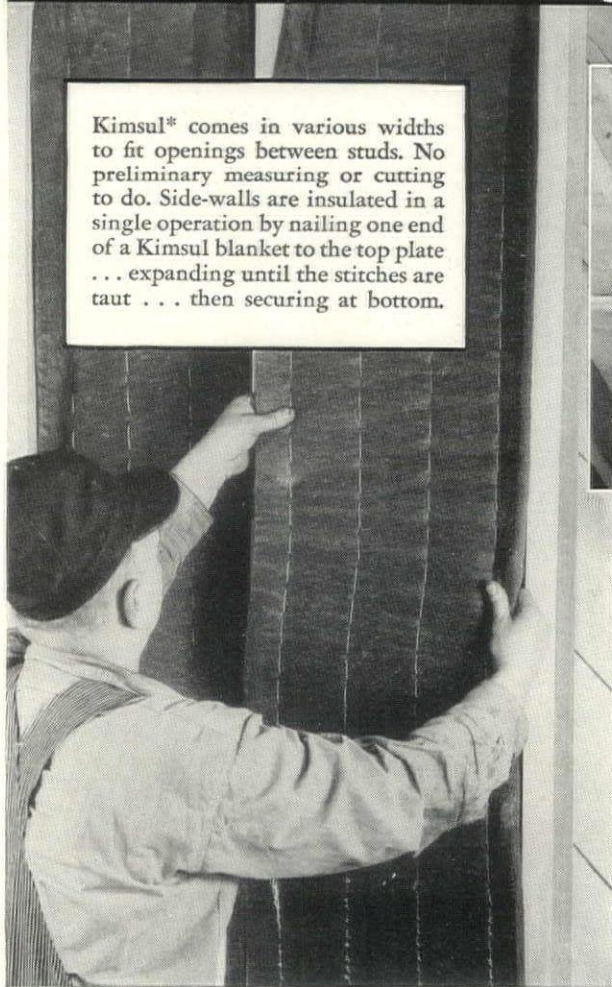
PECORA CALKING COMPOUND

ALSO MORTAR STAINS • SASH PUTTIES • ROOF COATING • PECOMASTICS

Look!
Installing KIMSUL
is usually a
"One Man Job"

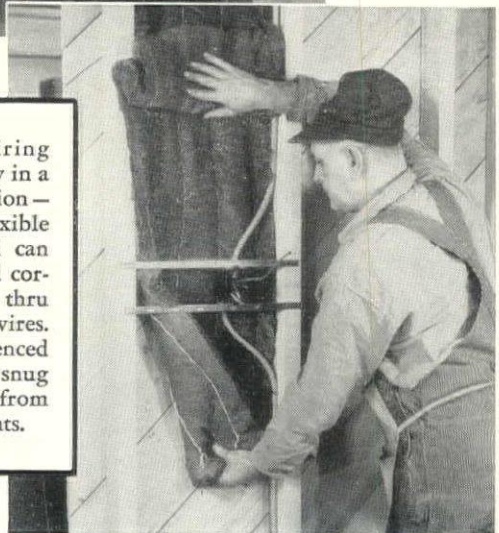
Presstitched
KIMSUL
REG. U. S. & CAN. PAT. OFF.
Expanding Blanket
INSULATION

Kimsul* comes in various widths to fit openings between studs. No preliminary measuring or cutting to do. Side-walls are insulated in a single operation by nailing one end of a Kimsul blanket to the top plate . . . expanding until the stitches are taut . . . then securing at bottom.



Even sloping roofs are easy to insulate with Kimsul. All that is required is to fasten an expanded blanket to the rafter plate, pull taut to the ridgepole, and nail.

Piping and wiring cause no difficulty in a Kimsul installation—because, being flexible as cloth, Kimsul can be drawn around corners and woven thru or under pipes or wires. Even an inexperienced man can install a snug job that is free from heat leaking joints.



As these photographs show, no special tools, nor special skill are required to apply Kimsul. A saving in construction costs which you can't afford to overlook! But even more important, Kimsul

applied this easy way provides as perfect a job as you or your customer could ask for! One in which heat leaking joints are minimized . . . in which the continuous unbroken blanket, essential to real efficiency, is obtained.

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Ask for these
INSULATION BOOKS

"Controlled Insulation Value" and "Greater Comfort" contain many facts about building insulation. If you have not received your copies, mail coupon today.

KIMBERLY-CLARK CORPORATION (Kimsul Division), Neenah, Wis.
Established 1872
NEW YORK, 122 East 42nd St. CHICAGO, 8 South Michigan Ave.
 AF1239

Mail me copy of booklet describing Kimsul, also a full sized sample.

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Address _____

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PLEASE CHECK: ARCHITECT BUILDER DEALER



*They wouldn't miss it
for anything!*

Architects, engineers, specification writers, realtors, investors and building managers may devote 5 days at the International Heating & Ventilating Exposition to great advantage. They know that business and professional progress depends on adopting what's new and good in heating, ventilating, air conditioning.

Over thirty thousand visitors will learn what more than three hundred exhibitors have perfected for modern installations. They'll see these products with their own eyes, watch demonstrations, make comparisons, ask questions, get useful answers, meet and make friends. Of course they wouldn't miss this great exposition.



Note the date and be there too. Admission is by registration. You are cordially invited to attend.

6th INTERNATIONAL HEATING & VENTILATING EXPOSITION

The Air Conditioning Exposition

LAKESIDE HALL, CLEVELAND, OHIO

JAN. 22 - 26, 1940

Auspices American Society of Heating & Ventilating Engineers
Management, International Exposition Co.

104

FORUM OF EVENTS

(Continued from page 40)

Michigan: James Calder, Detroit, Mich., for Grand Ledge;
Minnesota: Don Humphrey, Hartland, Wis., for St. Paul;
Mississippi: Stuart R. Purser, Pineville, La., for Leland;
Missouri: Fred Conway, Webster Grove, Mo., for Jackson;
Montana: Mordi Gassner, New York, for a building to be selected;

Nebraska: Philip von Saltza, Salem, Mass., for Schuyler;
Nevada: Adolph Gottlieb, Brooklyn, N. Y., for Yerington;
New Hampshire: Philip von Saltza, Salem, Mass., for a building to be selected;

New Jersey: Avery Johnson, Denville, N. J., for Bordentown;

New York: Mary Early, New York, for Delhi;

New Mexico: Boris Deutsch, Los Angeles, Calif., for Hot Springs;

North Carolina: Alan Tompkins, Stratford, Conn., for Boone;

North Dakota: Eduard Buk Ulreich, New York, for New Rockford;

Ohio: Richard Kenah, Washington, D. C., for Bridgeport;

Oklahoma: James B. Turnbull, Maplewood, Mo., for Purcell;

Oregon: Jack Wilkinson, San Francisco, Calif., for Burns;

Pennsylvania: Lorin Thompson, Jr., Pittsburgh, Pa., for Mercer;

Rhode Island: Paul Sample, Hanover, N. H., for Westerly;

South Carolina: Lee Gatch, Lambertville, N. J., for Mullins;

South Dakota: M. E. Ziegler, St. Genevieve, Mo., for Flandreau;

Tennessee: David Stone Martin, Knoxville, Tenn., for Lenoir City;

Texas: Ethel Edwards, New Orleans, La., for Lampassas;

Vermont: Barse Miller, La Canada, Calif., for Island Pond;

Utah: Jenne Magafan, Colorado Springs, Colo., for Helper;

Virginia: William H. Calfee, Washington, D. C., for Phoebus;

Washington: Richard Haines, Minneapolis, Minn., for Shelton;

West Virginia: Richard Zoellner, Cincinnati, Ohio, for Mannington;

Wisconsin: Charles Thwaites, Milwaukee, Wis., for Chilton;

Wyoming: Manuel A. Bromberg, Colorado Springs, Colo., for Greybull.

EDUCATIONAL

METROPOLITAN MUSEUM OF ART, New York. A series of free illustrated lectures on Sundays at 3 p.m. on the subject of contemporary design: January 7, French; January 14, 1940, English; January 21, Scandinavian; January 28, American.

PRATT INSTITUTE, Brooklyn, announces two new design critics in its architectural faculty. 1) Perry Coke Smith, a partner in the firm of Voorhees, Walker, Foley & Smith. Graduated from Columbia in 1923; held the McKim Traveling Fellowship in 1923-24; served as undergraduate instructor and later as a design critic in the extension division at Columbia; in 1928-29 a patron of the Atelier Corbett-Smith; in 1930 design critic at Princeton. 2) Richard Marsh Bennett, a graduate of Harvard and the Harvard Graduate School; held Julia Amory Appleton Traveling Scholarship from 1931 to 1933; taught at Rensselaer Polytechnic Institute from 1934 to 1936; at present a member of the Columbia University faculty and

(Continued on page 44)



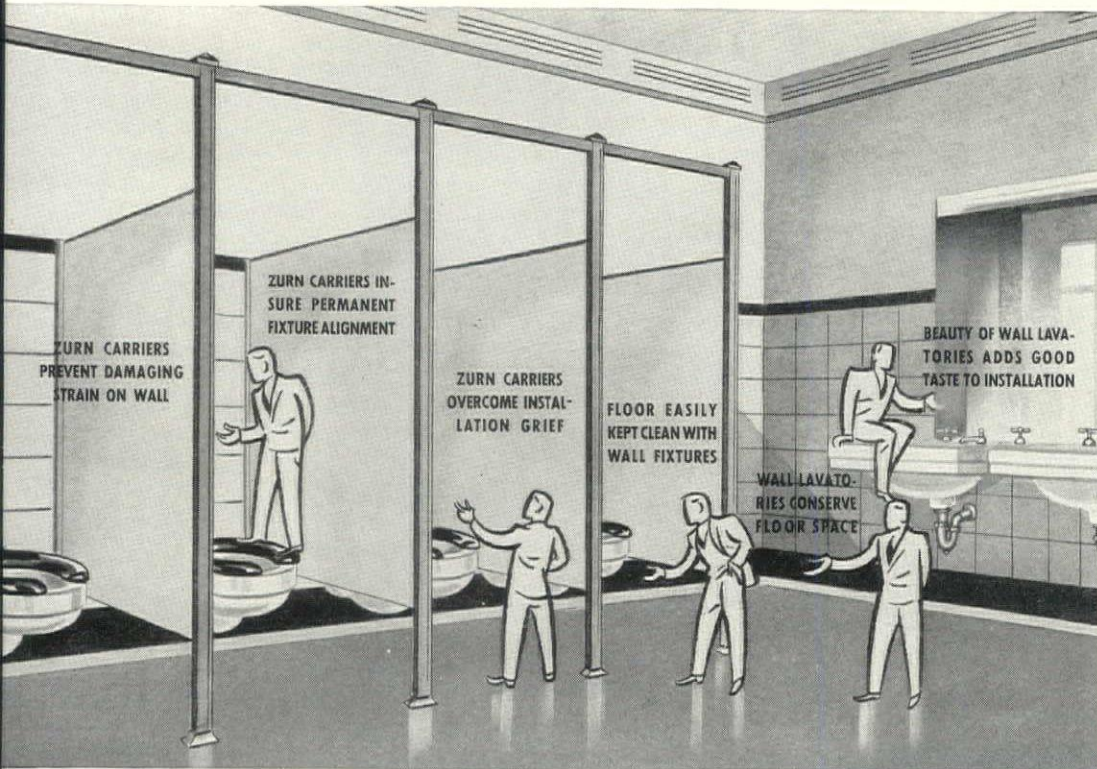
MODERN STYLING AND BEAUTY of wall fixtures justifies use in residential bathrooms as well as in toilet and washrooms in all other types of buildings.



EXTRA ROOM YOU CAN USE. Wall lavatories and sinks release additional unobstructed floor space for the placing of wastebaskets, towel receptacles, hampers, supply cabinets, etc.



AID TO SANITATION. Wall fixture installations in toilet rooms and washrooms encourage cleanliness. Floors are easier to clean and keep clean.



NO DAMAGING STRAIN ON THE WALL. The cantilever construction of Zurn Carriers (similar in principle to that supporting huge bridges) relieves the wall of damaging strain.

ZURN ENGINEERED CARRIERS
for All Types and Makes of Wall Fixtures

WALL FIXTURES Offer You More *Style, Sanitation, Convenience* AND NOW INSTALLATION GRIEF IS OVERCOME BY ZURN CARRIERS

● On toilet room and washroom installations you can get the utmost in sanitation and convenience only by specifying wall fixtures.

Every installation you plan can be just as you want it to be . . . permanently, and without risk of damaging strain on the wall, installation difficulty or other grief. Zurn Engineered Carriers overcome the risks usually traceable to the inadequacy of ordinary carriers and haphazard methods of supporting wall fixtures.

Specify wall fixtures on jobs where multiple fixtures are required. Then, guarantee the

permanency and continuing satisfaction of that installation by specifying Zurn Carriers to support all wall fixtures used. There is a type of Zurn Carrier for supporting every make and type of wall fixture. The basic line includes 25 different types of Zurn Carriers.

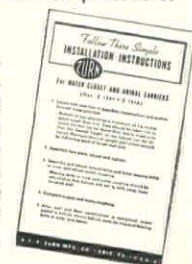
Do you have a copy of our Catalog No. 39, "Carriers for All Makes of Wall Fixtures"? If not, attach the coupon to your business letterhead and we'll send your copy immediately. It is the *only complete and authoritative volume* on this subject—your plumbing file is incomplete without it!

J. A. ZURN MANUFACTURING COMPANY • Sales Office and Factory: Erie, Pa.



NO INSTALLATION GRIEF. Simple, positive and permanent adjustments compensate for structural variations in floors and walls. Step by step instructions insure correct installation procedure.

GRIEF INSURANCE FOR ARCHITECTS! Step-by-step installation instructions for wall fixtures—the most complete ever published—come with every Zurn Carrier. Shows plumber how to do job right—prevents possibility of trouble backing up to you.



**BUILDING DRAINAGE PRODUCTS
ROOF TO BASEMENT**

J. A. ZURN MANUFACTURING CO., Erie, Pennsylvania
Please send me without obligation a copy of the Zurn Carrier Catalog.

NAME _____

ADDRESS _____

CITY AND STATE _____

FORUM OF EVENTS

(Continued from page 42)

a visiting lecturer at Vassar; in association with Caleb Hornbostel he won the recent Wheaton College Competition.

UNIVERSITY OF TEXAS, Austin. Hugo Leipziger has become a member of the Department of Architecture. Graduated from the Art Academy of Breslau in 1924; as regional director of the semi-official German housing authority, designed and supervised large-scale low-rent housing projects throughout Germany totaling about 6,000 dwelling units; following 1933 practiced privately in Paris, returning to Berlin for one year in 1935; since then has worked in Australia and New Zealand, and served as adviser to the Housing Commission in Victoria.

ARMOUR AND LEWIS, Chicago. The Armour Institute of Technology and the Lewis Institute are to consolidate to form a greater technological center for Chicago, to be called Illinois Institute of Technology. Consolidation will be completed by September 1940. For the time being, both Armour and Lewis plants will be operated, but the complete development contemplates the acquisition of a new campus.

COMPETITIONS

THE ILLUMINATING ENGINEERING SOCIETY announces its Ninth Annual Prize Competition in conjunction with the Beaux-Arts Institute of Design. Prizes: \$300, \$200, and ten mention prizes of \$50 each. Subject: A Specialty Shop, of which program is now available. Closing date: January 15, 1940, the judgment to be on or about February 3, in Cleveland, Ohio. Any student of Class A grade in an architectural school, or any architectural draftsman is eligible upon sending his name and nominal registration fee of \$2.50 to The B.A.I.D., 304 East 44th St., New York, N. Y. Practicing architects are not eligible.

JAMES HARRISON STEEDMAN MEMORIAL FELLOWSHIP IN ARCHITECTURE. Open to all graduates, between ages 21-31, of recognized architectural schools who have had at least a year's practical work in the office of a St. Louis architect. Offers \$1,500 for a year abroad, normally—this time on consultation with Governing Committee. Application forms upon application to Secretary, School of Architecture, Washington University, St. Louis, Mo., and these must be returned not later than January 31, 1940.

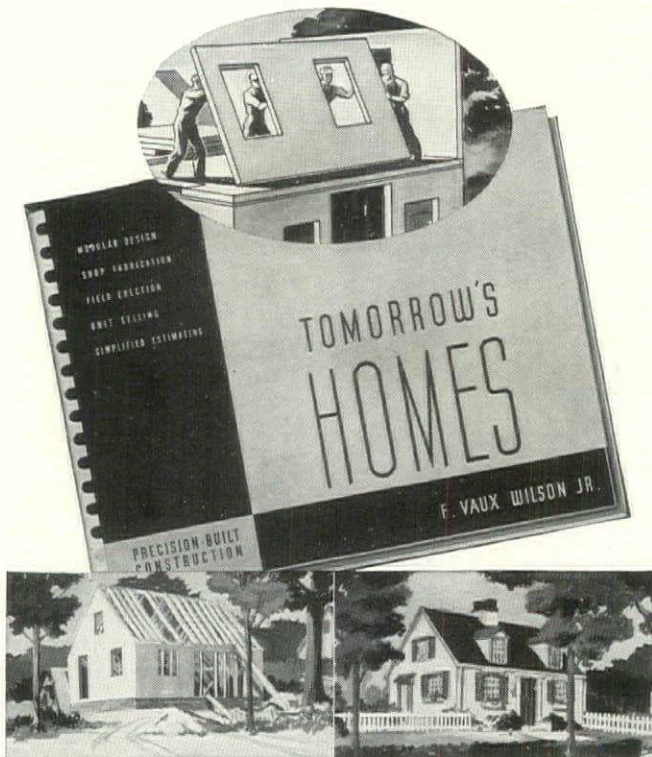
INSULUX GLASS BLOCK COMPETITION No. 4—A Newspaper Plant. \$2,500 in prizes; closing March 18, 1940. (See pages 17-20).

CALENDAR

December 6-8, Forty-fourth Annual Congress of American Industry, Waldorf-Astoria Hotel, New York.

December 11-12, National Educational conference on plastics as applied to the design and decoration of interiors, sponsored by *Interior Design and Decoration*, Waldorf-Astoria Hotel, New York.

January 22-26, 1940. Sixth International Heating and Ventilating Exposition, Lakeside, Cleveland, Ohio, held under the auspices of the American Society of Heating and Ventilating Engineers, in conjunction with their annual meeting and the national meeting of the National Warm Air Heating and Air Conditioning Association.



...This book tells how the **BEMIS MODULE** *simplifies design problems*

EXPLAINS THE PRECISION-BUILT SYSTEM OF CONSTRUCTION... TELLS HOW TO FABRICATE IN THE SHOP... HOW TO ERECT... HOW TO ESTIMATE... HOW TO SELL HOMES

\$3,000,000 of architect-designed Precision-Built Homes have been erected within the past 3 years!

TOMORROW'S HOMES — just published — gives you the whole story. It shows the architect the way to new business; shows how to save time in planning, drafting, estimating and supervising the job. (The finished house—any size, any type—is ready for occupancy, 30 days after your design is approved.)

The Bemis 4" module is the smallest, nominal, structural dimension occurring in the wood frame house. The use of this module in the Precision-Built method, means standardization, integration, the simplification of the architect's designs, the saving of many hours in both drafting and detailing.

Yet it does not in any way re-

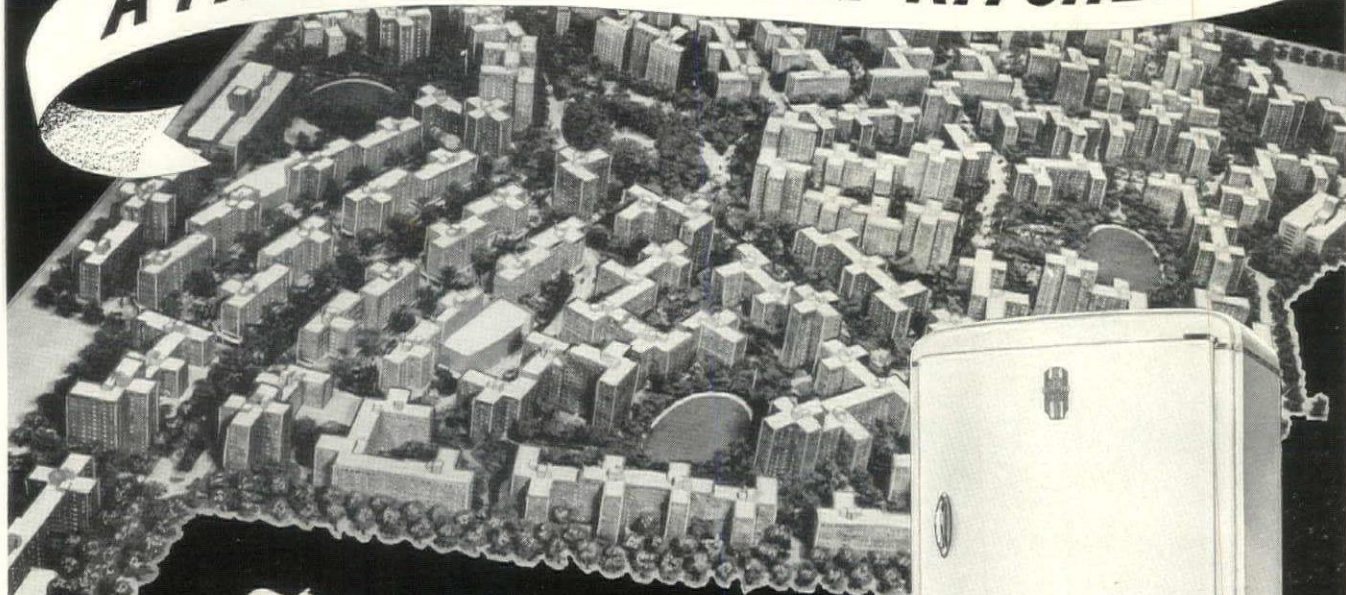
strict your flexibility of design!

Precision-Built Homes are built of standard materials and with quality construction throughout. They are doubly insulated; they stay "new" longer; they are eligible for F.H.A. Insured Mortgage Loan.

We invite you to write for a copy of TOMORROW'S HOMES (which is *privileged* to architects *without charge*). This book describes the principles of Modular Design and Precision-Built construction. It is profusely illustrated with photographs, working details, rafter tables, area, lineal foot and cubic yard tables. It shows you how to simplify design, cut costs, save time, build low-cost houses *at a profit*. We invite you to write for your copy, using your firm's letterhead. Only one copy to a firm.

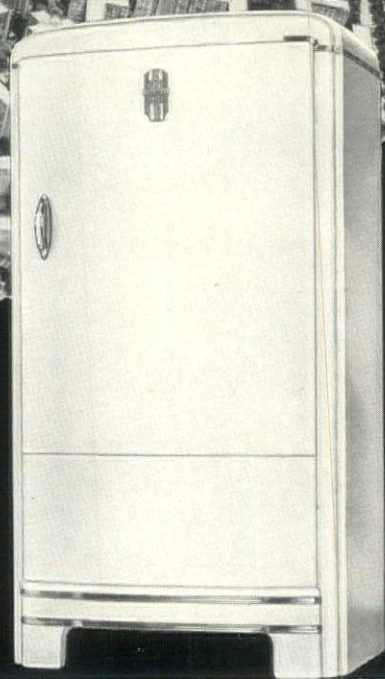
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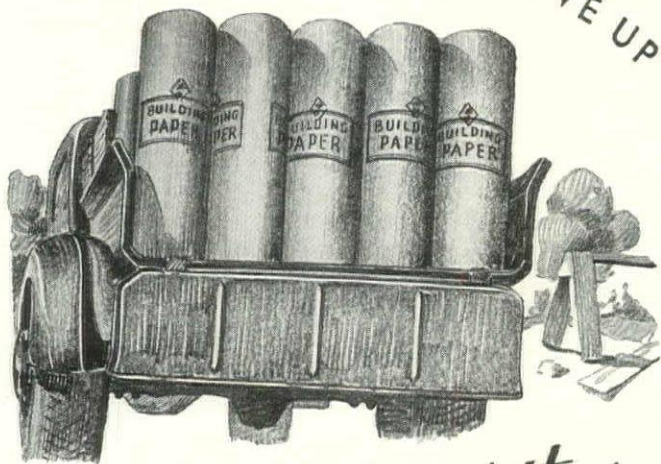
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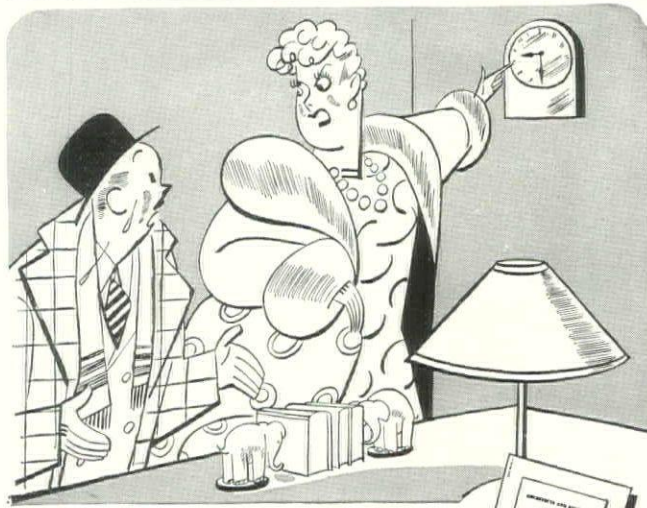


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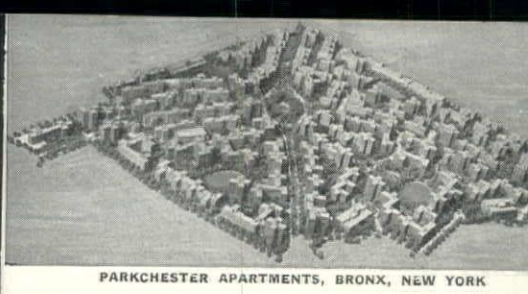
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Costs in Public and Private Housing Projects



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*COLLEGE COURT, LOUISVILLE, KY.



*UNIVERSITY HOMES, ATLANTA, GA.



*DREW JACKSON COURTS, NASHVILLE, TENN.



*WILLIAMSBURG HOUSES, NEW YORK

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*LAUDERDALE COURTS, MEMPHIS, TENN.



*BAKER HOMES, LACKAWANNA, N. Y.



*STANLEY S. HOMES VILLAGE, ATLANTIC CITY

LETTERS

(Continued from page 26)

"break-down" factors when compared with its isolated or integrated counterpart—in whatever subsequent combination with other factors or elements—has substantiated the "sampling" of the various operations by the "clocking" and averaging methods which first supported the new techniques. . . .

PAUL DEHUFF

Los Angeles, Calif.

What do other FORUM readers think of job-clocker DeHuff's suggestions?—Ed.

Dairy

Forum:

It was not vacations that kept me from entering Competition No. 2 (Insulux Glass Block), but since I was expecting a baby at that time I could not keep my mind on store fronts. However, now that I have my big baby boy here at home, and you chose a Dairy for your third competition, I want you to know that the subject of your competition is uppermost in my mind all the time. With my little boy yelling for me all he is worth, maybe I'll be able to solve my Dairy problem as well as he solves his.

E. K. MAHLUM

St. Paul, Minn.

Credits

Forum:

. . . The August issue of ARCHITECTURAL FORUM has come to my desk in the absence of Mr. Place from the city and it is with some surprise—but no embarrassment—that I notice Mr. Place's name completely eliminated in the descriptive article on the Museum of Modern Art. Mr. Place was the chief mechanical engineer for this building and for the past eight years has been retained in this same capacity for Rockefeller Center and it would not have done you any harm to have mentioned his name in connection with this wonderful building. Frankly, I think your editorial department was most delinquent in this particular connection, since they concentrated in extraordinary detail on page 128 to include all the contractors and subcontractors who executed the construction of work which he designed. . . .

E. M. NOONAN, Secretary

New York, N. Y.

To justly-famed Engineer Clyde R. Place, due apologies for a regrettable omission.—Ed.

Forum:

. . . May I call your attention to an error in the placement of cuts or titles, found on page 14 of October FORUM, illustrating the Second Regional Competition held by Public Buildings Administration? In

the design submitted by Mellenbrook, Foley & Scott and the design submitted by my associates and myself the front elevations are transposed, the plans themselves being properly credited.

PAUL GERHARDT, JR.

Department of Public Works
Chicago, Ill.

To Architect Gerhardt, his associates, his competitors and to all whom it may concern, our apologies; to our printer who transposed the cuts and wangled indistinguishable proofs past us, our rebukes.—Ed.

Hearts & Flowers

Forum:

The plant portrait of Stalin in your November issue (p. 12) is possibly justified as an example of current architectural expression in the great State of Communist Russia.

When one considers the eternal vigilance with which perennial seeds of protest must continue to be uprooted and purged in order to preserve even temporarily these self-portraits of the contemporary great, it will be refreshing for those of us in this part of the world to reflect on those portraits first carved in our hearts—now carved for the ages in granite and rock in the Black Hills of South Dakota.

We forgive you, FORUM, if only because you have driven us back to our knees this Thanksgiving Day.

HENRY TRIMPER

Minneapolis, Minn.

THE "OVERHEAD DOOR" WITH THE MIRACLE WEDGE

Trade Mark

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ONE

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MANY

ANSWERS:

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... THINK OF BIGELOW



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is "sweet music" to
architects and builders

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You'll make a mistake to flirt with "unknowns" when painters, architects, owners and builders everywhere have demonstrated the superiority of Mural-tone ... made by the oldest exclusive water paint manufacturer in the country. Send for facts. The Muralo Company, Inc. (Founded 1894), 574 Richmond Terrace, Staten Island, N. Y. Branches: Atlanta, Boston, Chicago, San Francisco, Los Angeles.

... and it
cuts costs
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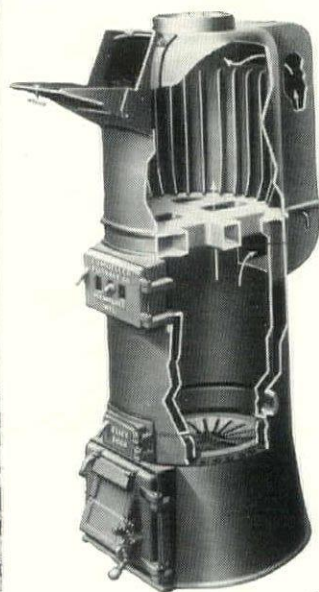
PRODUCTS and PRACTICE

(Continued from page 472)

INCINERATORS



17.

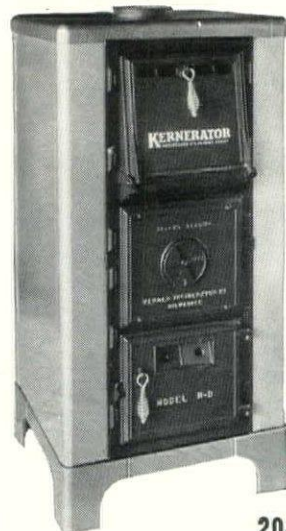


18.

COMBINATION incinerators and water heaters appeal to the rural user because of the fuel saving which they effect. Above are two such units for gas and coal fuel. At left (17.), the "Combo" gas-burning incinerator-water heater which employs a short copper coil for quick heating of the water and utilizes heat escaping from the top of the coil unit to ignite garbage. The tank, an integral part of the unit, is placed over the incinerator so that the heat of flue gases is utilized—Combo Corp., Rochester, N. Y. At right (18.), is a sectional view of the garbage-burning hot water supply boiler made by the L. J. Mueller Furnace Co., Milwaukee, Wis.



19.



20.

PORTABLE incinerators may be installed in the rural kitchen for maximum convenience in operation, and are available housed in attractive cabinets for this purpose. At left (19.) is a self-fired residential unit manufactured by the Ewing Incinerator Co., Chicago, Ill., which works according to the "dual draft" principle (above and below fire) and is fitted with automatic dampers to maintain an even rate of combustion. Flue outlet is at the back with a suspended, vertical, cast-iron grate to prevent the escape of partially burned materials, charging door at top. At right (20.) a coal-fired unit with charging and firing doors at the front, flue outlet at top—Kerner Incinerator Co., Milwaukee, Wis. Both of the above units may be fitted for gas firing where this fuel is available.

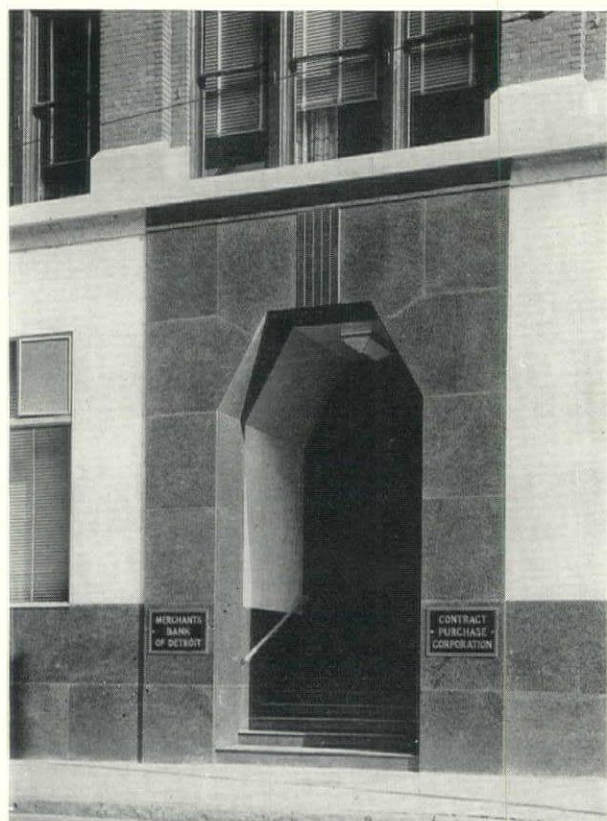
(Continued on page 54)



MEETING THE DEMAND
FOR A
DARK STONE

**MODERATE IN COST
NEGLIGIBLE IN UPKEEP!**

O'Dell and Rowland, Architects, selected Virginia Tremolite for the re-modeling of The Murphy Building in Detroit because they wanted a durable, dark stone which could be installed at moderate cost and be free from maintenance charges. Having great toughness and density, Virginia Tremolite can be cut into sections as thin as $\frac{7}{8}$ " for facings, bulkheads and spandrel panels. The stone polishes naturally to a rich, deep satiny finish, not reflective or mirror-like. A request on your business letter-head will bring you samples, conveniently boxed, showing the range of stones, including black and mottled dark blues and greens. Please address Alberene Stone Corporation of Virginia, 419 Fourth Avenue, New York. Quarries and Mills at Schuyler, Virginia. Sales offices in principal cities.

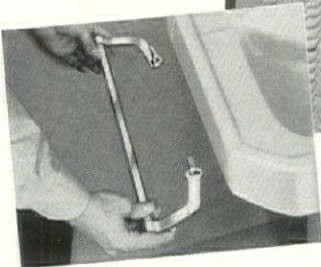
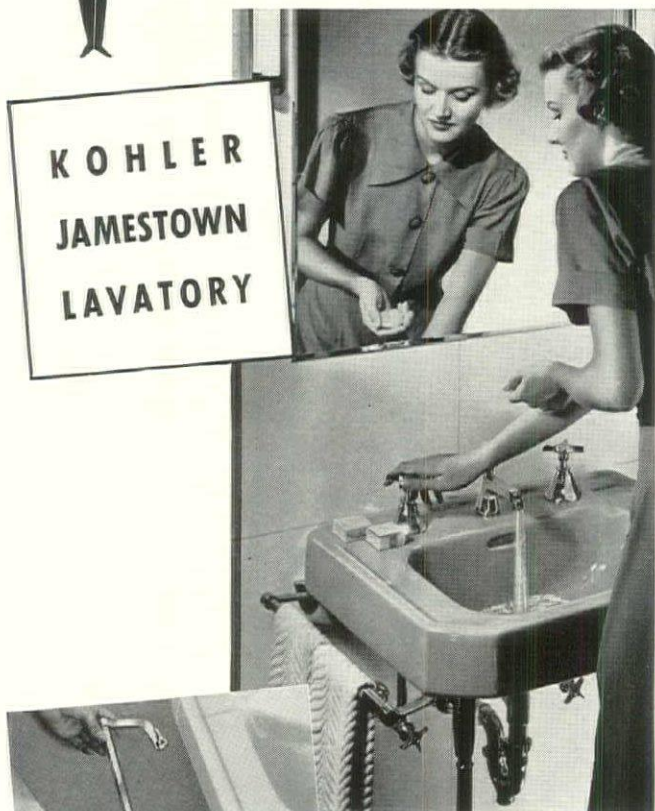


Virginia Green
TREMOLITE
FROM THE ALBERENE QUARRIES

INTRODUCED IN MARCH



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• **WALL-FREE TOWEL BARS!** Another important Jamestown feature. They make the Jamestown easy to install for replacement purposes and eliminate danger of splitting bathroom walls.

• Public opinion has quickly approved the Jamestown vitreous-china lavatory with its flat, shelf-space top, its straight sides and cut corners; its large, deep basin; its anti-siphon fitting.

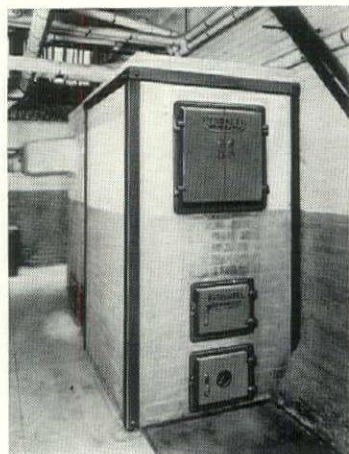
There are eight variations for your selection — on metal legs as shown, on gracefully formed pedestal, on wall hanger — each with combination or compact Centra fitting — in three popular sizes. Black or white, or in any of eight Kohler colors. All of them match other Kohler fixtures ... in beauty, design, usefulness.

Kohler quality builds prestige for you; assures lasting plumbing satisfaction for your clients. They will long be grateful that you chose Kohler. Write us for full details on the Jamestown, and the rest of the quality Kohler line—for bathroom, kitchen, laundry. Kohler Co. *Founded 1873.* Kohler, Wis.

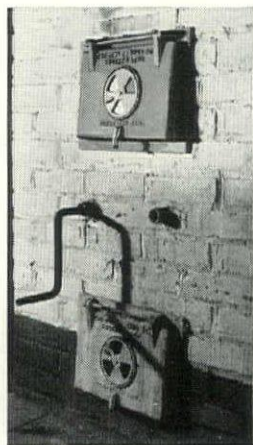
KOHLER OF KOHLER
PLANNED PLUMBING AND HEATING

PRODUCTS and PRACTICE

(Continued from page 52)



21.



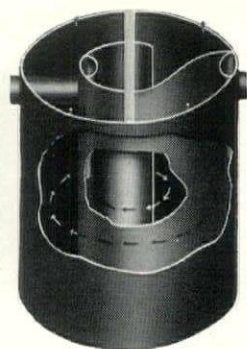
22.

BUILT-IN incinerators may be installed in the chimney in basement or kitchen at little added cost. At left (21.) is a coal-fired, basement-fed unit of large capacity and simple design, made by the Pyroneel Co., New York, N. Y. At right (22.) is a flue-fed, self-fired unit which may be equipped with a gas burner where desired, product of the Donley Brothers Co., Cleveland, Ohio. Incinerators of this type are largely constructed by the mason on the job using metal parts furnished by the manufacturer and following his detailed directions.

SEPTIC SYSTEMS



23.

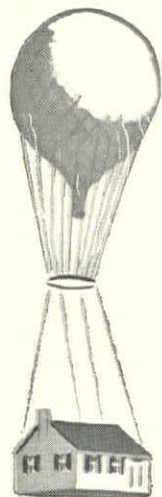


24.

ALL STEEL. prefabricated septic tanks are now available which relieve the architect and contractor of responsibility for successful operation since this is assumed by the manufacturer. At left (23.), is a tank made by San-Equip, Inc., Syracuse, N. Y., who also manufacture an all-metal drain pool which replaces the ordinary leaching bed. At right (24.), is a round tank of simple design made by the Kaustine Co., Perry, N. Y.

MANUFACTURERS' LITERATURE

Complete data on sizes, capacities, and installation requirements of the various items shown in this article may be obtained direct from the manufacturer or by addressing your inquiry care of THE ARCHITECTURAL FORUM. In most instances, each of the manufacturers represented makes a comprehensive line of equipment, including all of the types illustrated, in a variety of sizes suited to all requirements. Advisory service is usually furnished to aid the architect and home owner in the solution of the problems raised by unusual conditions of installation. Information on costs is best obtained from the manufacturer's local representative.



TRIAL BALLOONS OFTEN BURST

Your typical architect is complex — an open minded progressive and a cautious conservative combined in one and the same man. A progressive — because he looks with an interested eye and an inquiring mind on new methods, new materials, new trends in design. A conservative—because he waits until he receives conclusive proof that the new way is a better way. He refuses to attach his clients' houses to trial balloons.

Paint is a product which architects have learned to consider carefully. Through experience they have found out that the durability of a paint cannot be demonstrated in a few short years. A paint has not proved itself thoroughly until it has stood up not only as a first painting but also under successive repaintings.

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By specifying Dutch Boy White-Lead you secure that combination of beauty and durability which is a fundamental objective of good architecture.



This is the slogan of the national advertising campaign on white-lead now being conducted by the Lead Industries Association. The purpose of this campaign is to promote a wider understanding of the advantages of white-lead paint.

NATIONAL LEAD COMPANY

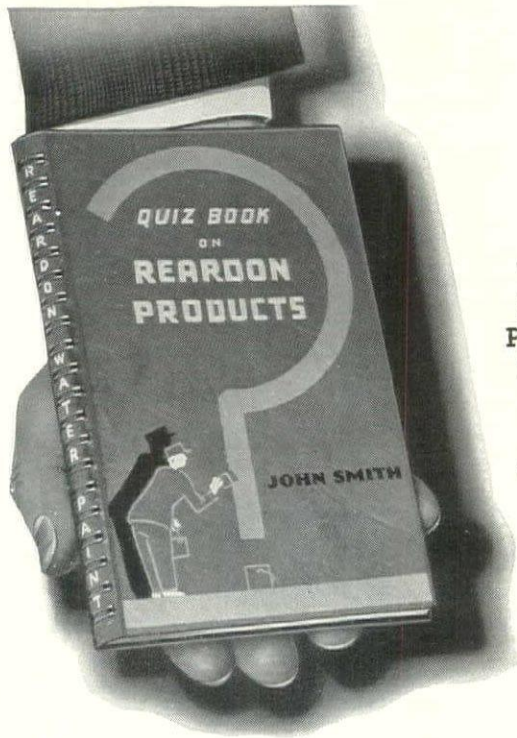
111 Broadway, New York; 116 Oak St., Buffalo; 900 West 18th St., Chicago; 659 Freeman Ave., Cincinnati; 1213 West Third St., Cleveland; 722 Chestnut St., St. Louis; 2240 24th St., San Francisco; National-Boston Lead Co., 800 Albany St., Boston; National Lead & Oil Co. of Penna., 316 Fourth Ave., Pittsburgh; John T. Lewis & Bros. Co., Widener Bldg., Philadelphia.



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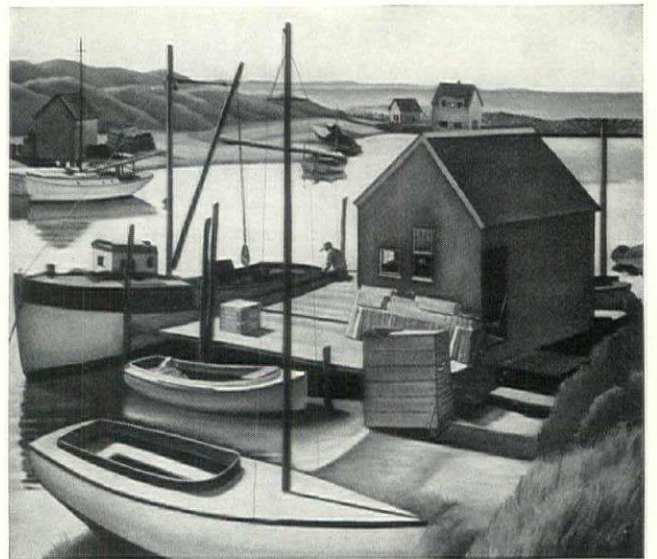
(Continued from page 22)

recovery, however brilliant, can solve the basic problem of increasing technological unemployment.

The entire field covered by this study is, of course, subject to endless controversy, and Mr. Abrams' contribution is tremendously stimulating and informative. It seems unfortunate, however, that the reader's uneasy suspicions as to the soundness of his solution should be aroused by the very facts so effectively presented by the author.

MODERN AMERICAN PAINTING, by Peyton Boswell Jr. Dodd, Mead & Co. 200 pages, 86 plates in color. 12 x 15. \$5.00.

This book contains 86 large color reproductions, all taken from the plates originally used in LIFE, and it represents a continuation, in permanent form, of the magnificent job



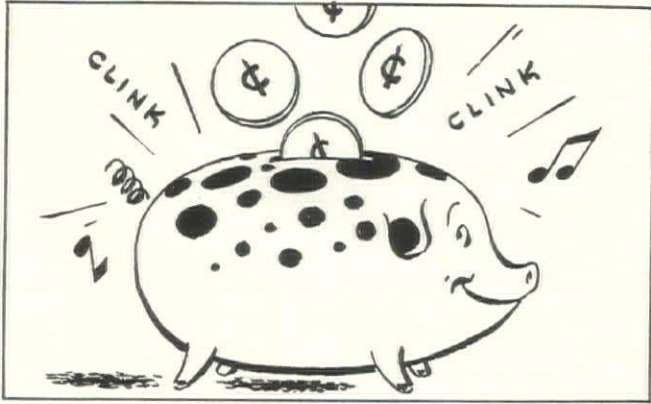
NEW ENGLAND HARBOR, BY EDNA REINDEL

of art education begun by this magazine. Virtually every American painter of note is included in the collection, and the reproductions are of excellent quality.

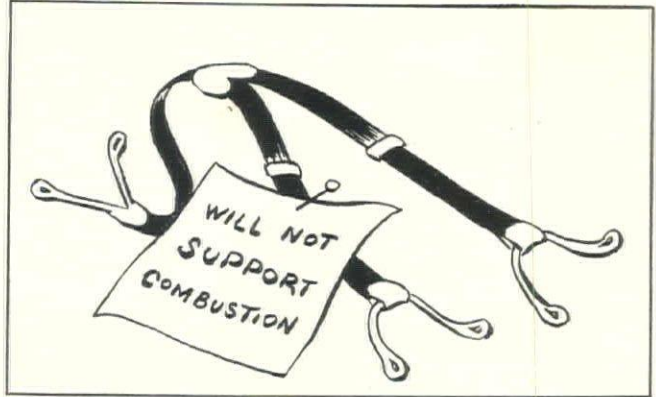
RESIDENTIAL ARCHITECTURE IN SOUTHERN CALIFORNIA, edited by Paul Hunter and Walter L. Reichardt. Southern California Chapter. The American Institute of Architects. 111 pp., illustrated. 9½ x 13. \$3.00.

In the introduction to this book it is stated that "the representative houses included herein cannot be considered as a complete pictorial review of the work of architects in this region. It is rather an indication of the trend in residential design and a record of the changes that have occurred in the past twenty years in owners' requirements and the architects' solutions." Viewed within these limits, the book presents an interesting story of local architectural development. It begins with a few examples of Mediterranean precedents, and shows a number of houses based on them. Similarly treated are the native tradition in California and Monterey and New England styles. Modern houses are shown in a chapter on contemporary developments, and include work by Harwell Harris, Neutra, Lloyd Wright and others. About 90 houses are shown, many with plans, and each section of the book is prefaced by a brief essay on some phase of stylistic influence on California work.

A page of ready reference on air filters



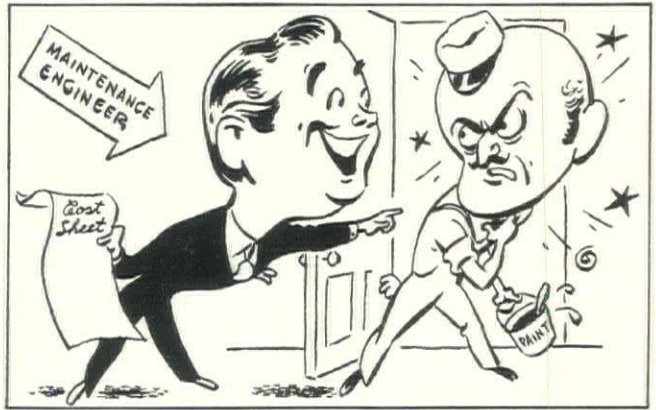
1 When you specify Dust-Stops® in an installation, you are saving money for your client. For Dust-Stops cost approximately 1 cent per CFM to install (including frames); and approximately 1/10th of a cent per CFM when filters need changing. Think what a saving this is over permanent and mechanical installations!



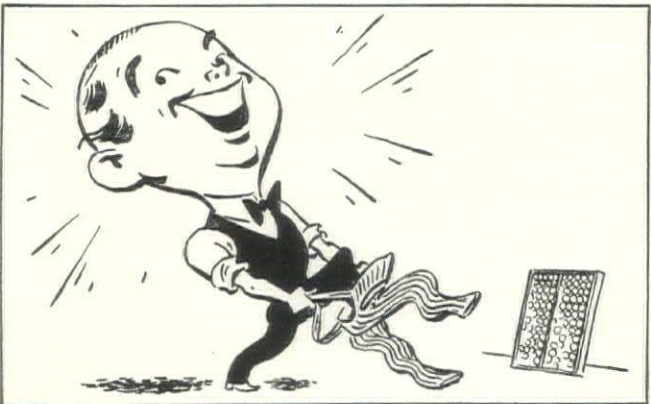
2 Here's something that's a great comfort for you and your client to know about Dust-Stops: They are safer, because the all-glass filtering medium, Fiberglas®, and the patented adhesive will not support combustion.



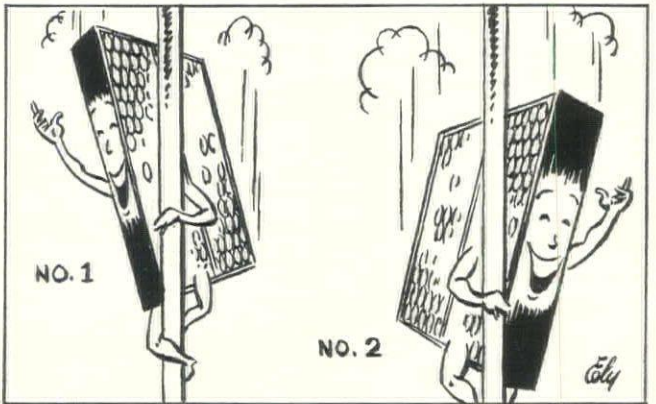
3 Even most hay fever pollen is strained out by Dust-Stops. They stop virtually all "nuisance" dusts. Capacity: 2 CFM per square inch of area at 300 FPM. Resistance (in water gauge per inch of depth): .045 to .050 inch clean, and .11 to .12 dirty.



4 "Bleeding" just doesn't happen, when you use Dust-Stops. The filtering adhesive on these filters will not deposit tiny droplets in the ducts or on the walls. Naturally, the fire-hazard from oil in the duct system just doesn't exist.



5 Changing Dust-Stops is as easy as changing a pair of overalls. Being a replacement filter, Dust-Stop eliminates cleaning, recharging, draining, expert supervision, and the need to keep a supply of "spares." They fit all types of "L"- and "V"-frame assemblies.

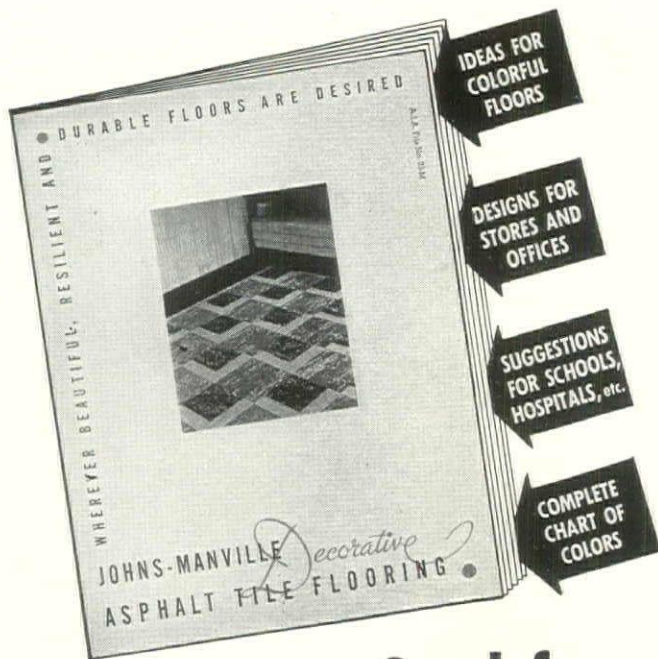


6 Your clients never have to wait to get a fresh supply of No. 1 (1-inch) and No. 2 (2-inch) Dust-Stops. Air-conditioning manufacturers, dealers, and jobbers of this equipment have them on hand. Consult us for special problems and technical data. Write: Owens-Corning Fiberglas Corp., Toledo, Ohio.

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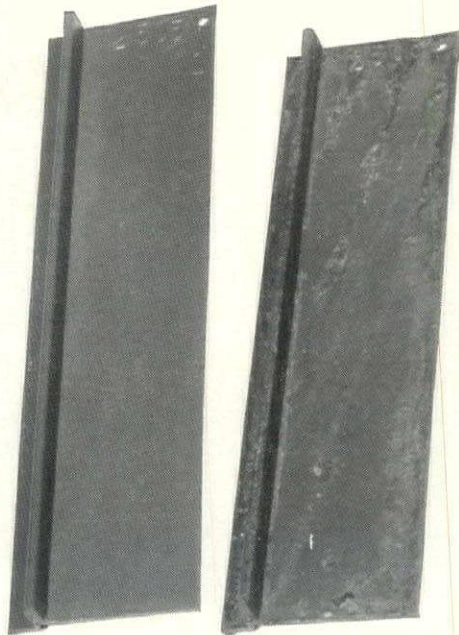
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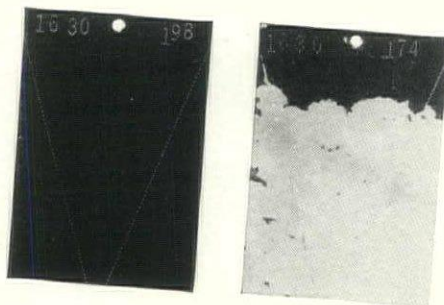
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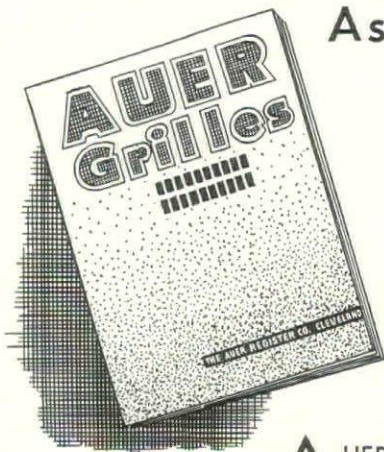
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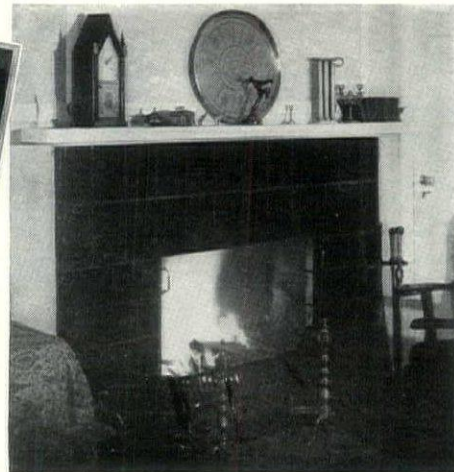
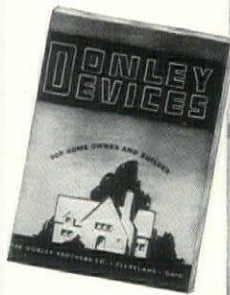


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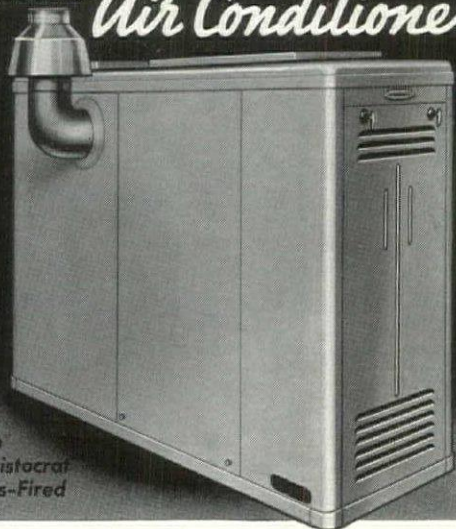
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State of New York } ss.
County of New York }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Henry A. Richter, who having been duly sworn according to law, deposes and says that he is the Business Manager of THE ARCHITECTURAL FORUM and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, Time Incorporated, Time & Life Building, Rockefeller Center, New York, N. Y.; Editor, Howard Myers, Time & Life Building, Rockefeller Center, New York, N. Y.; Managing Editor, Ruth Goodhue, Time & Life Building, Rockefeller Center, New York, N. Y.; Business Manager, Henry A. Richter, Time & Life Building, Rockefeller Center, New York, N. Y.

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(Signed) Henry A. Richter,
Business Manager.

Sworn to and subscribed before me this 28th day of September, 1939.

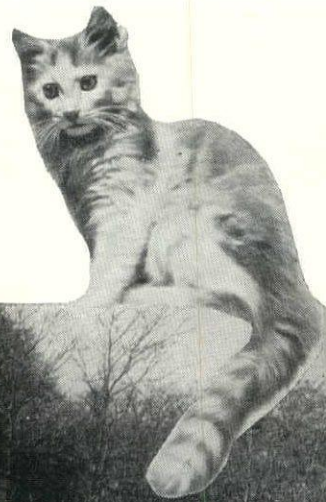
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MURIEL H. PARTRIDGE,

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(My commission expires March 30, 1941)

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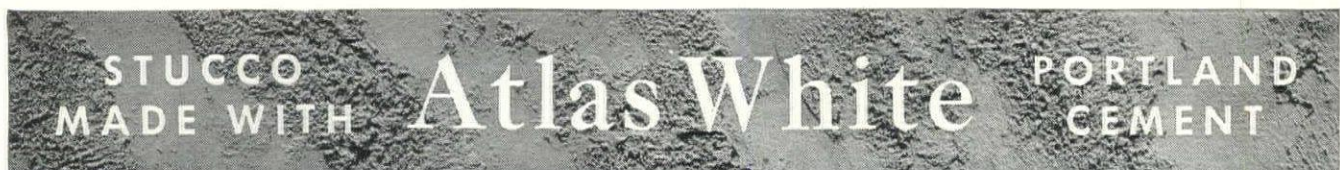
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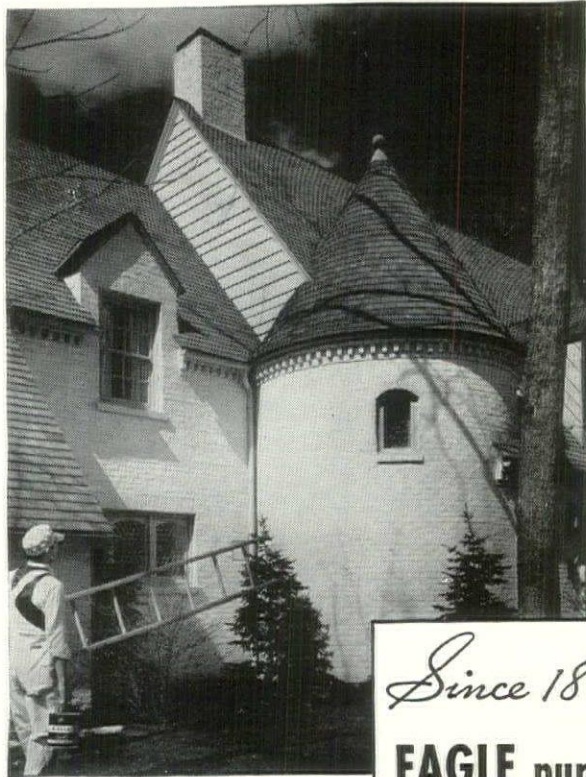
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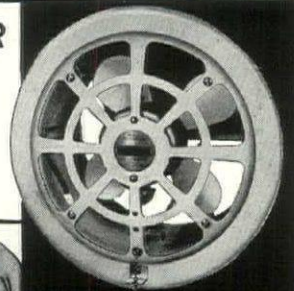
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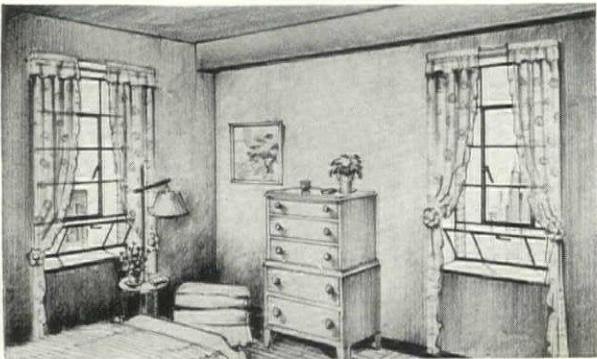
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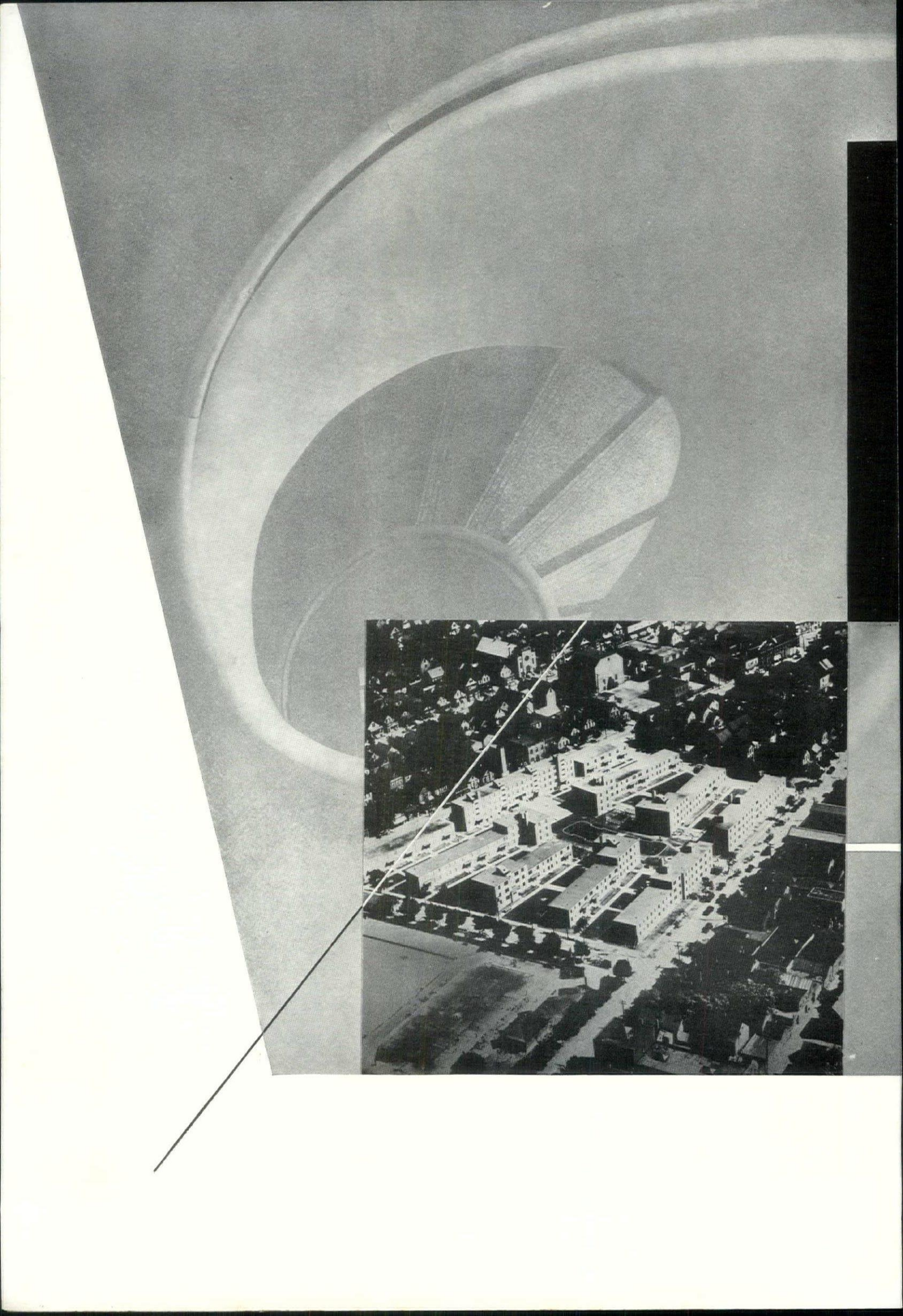
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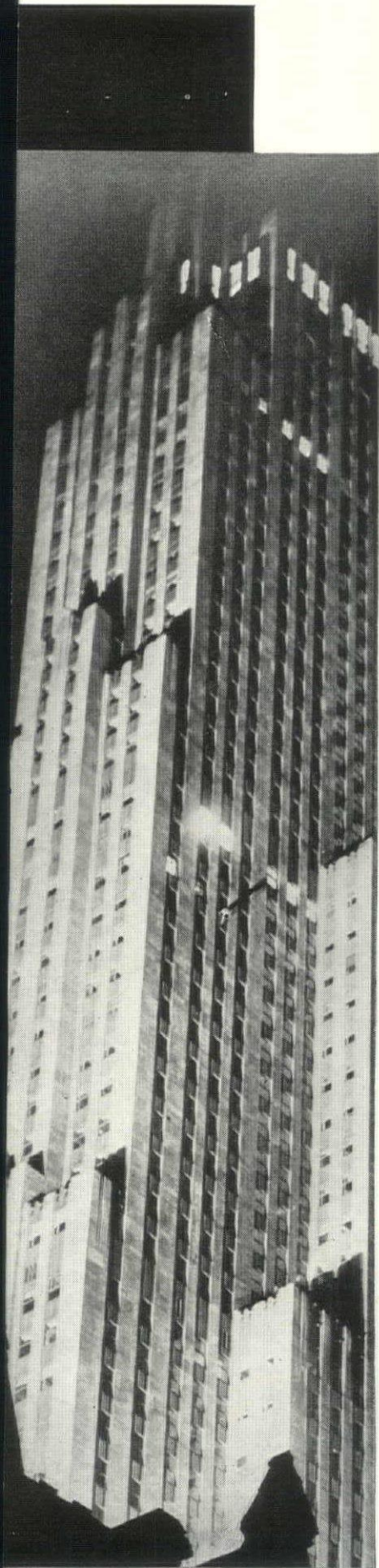
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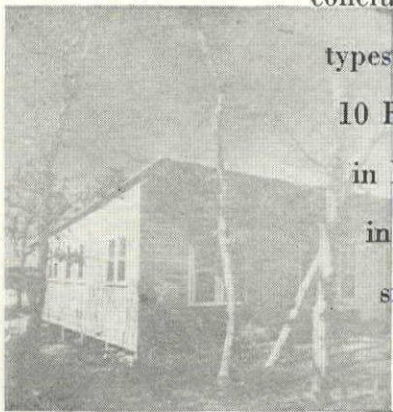
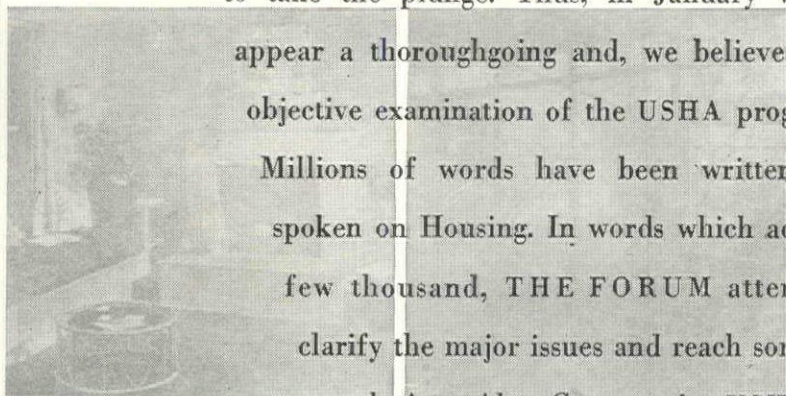
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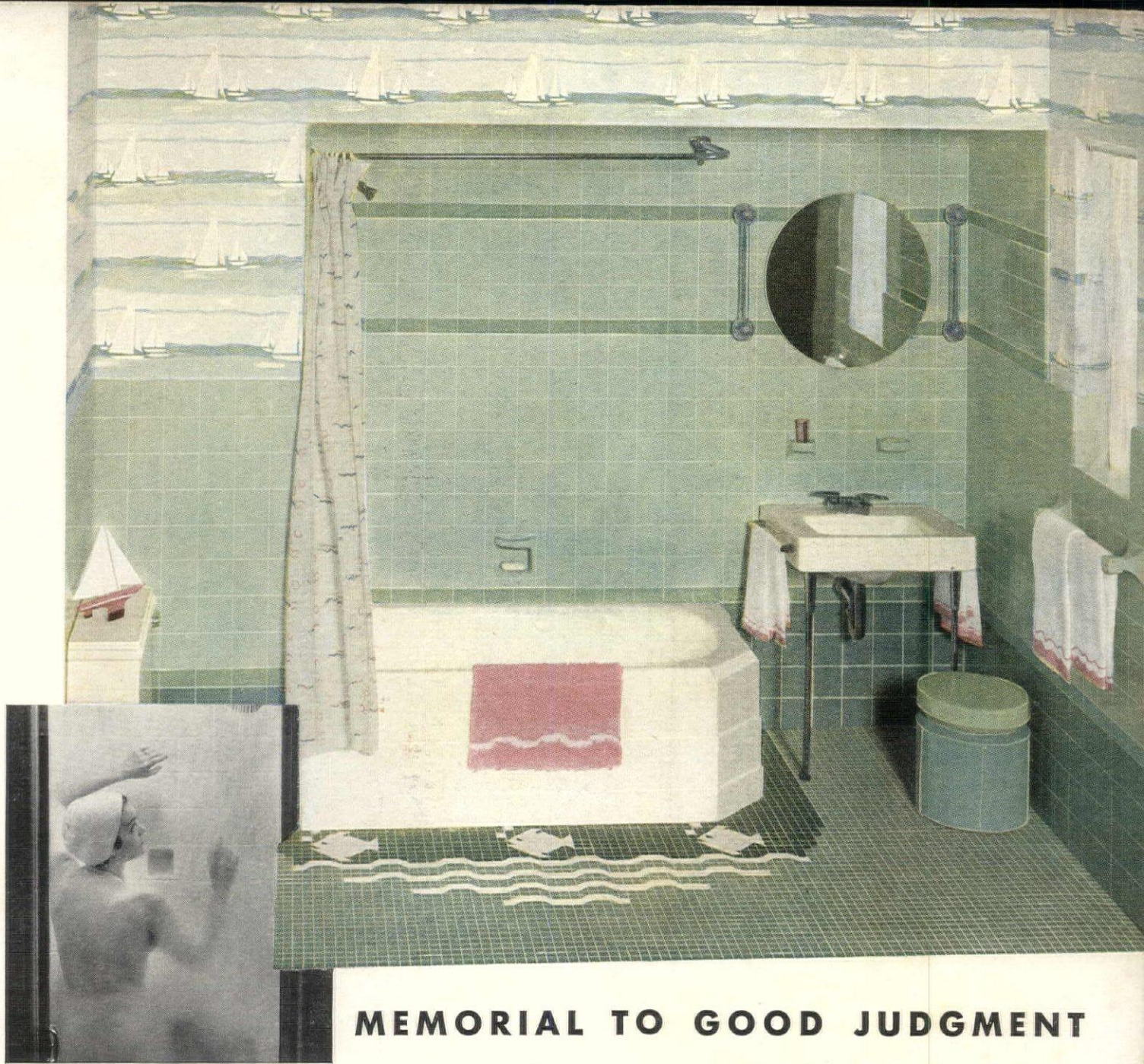
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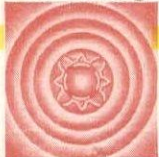
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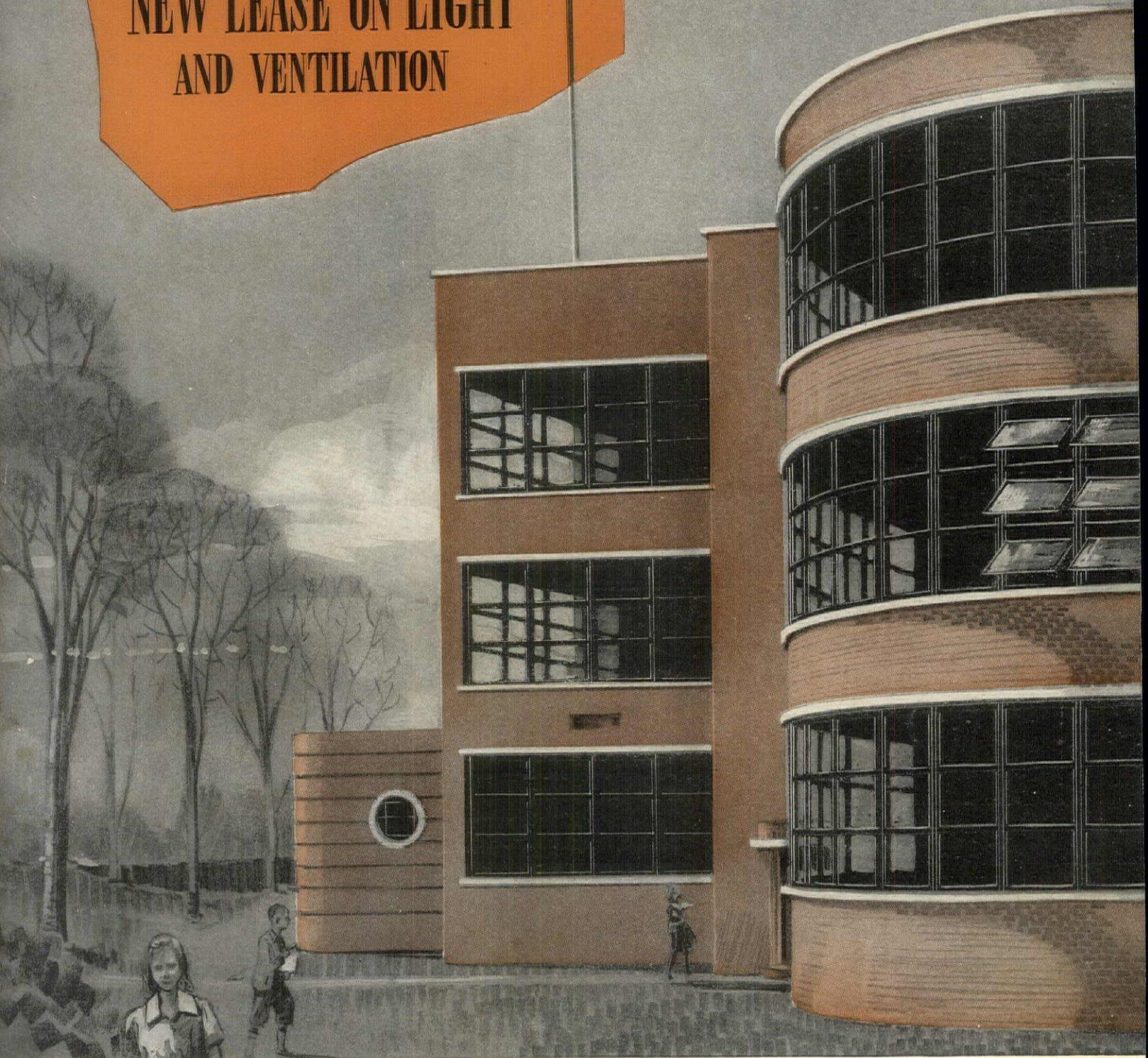
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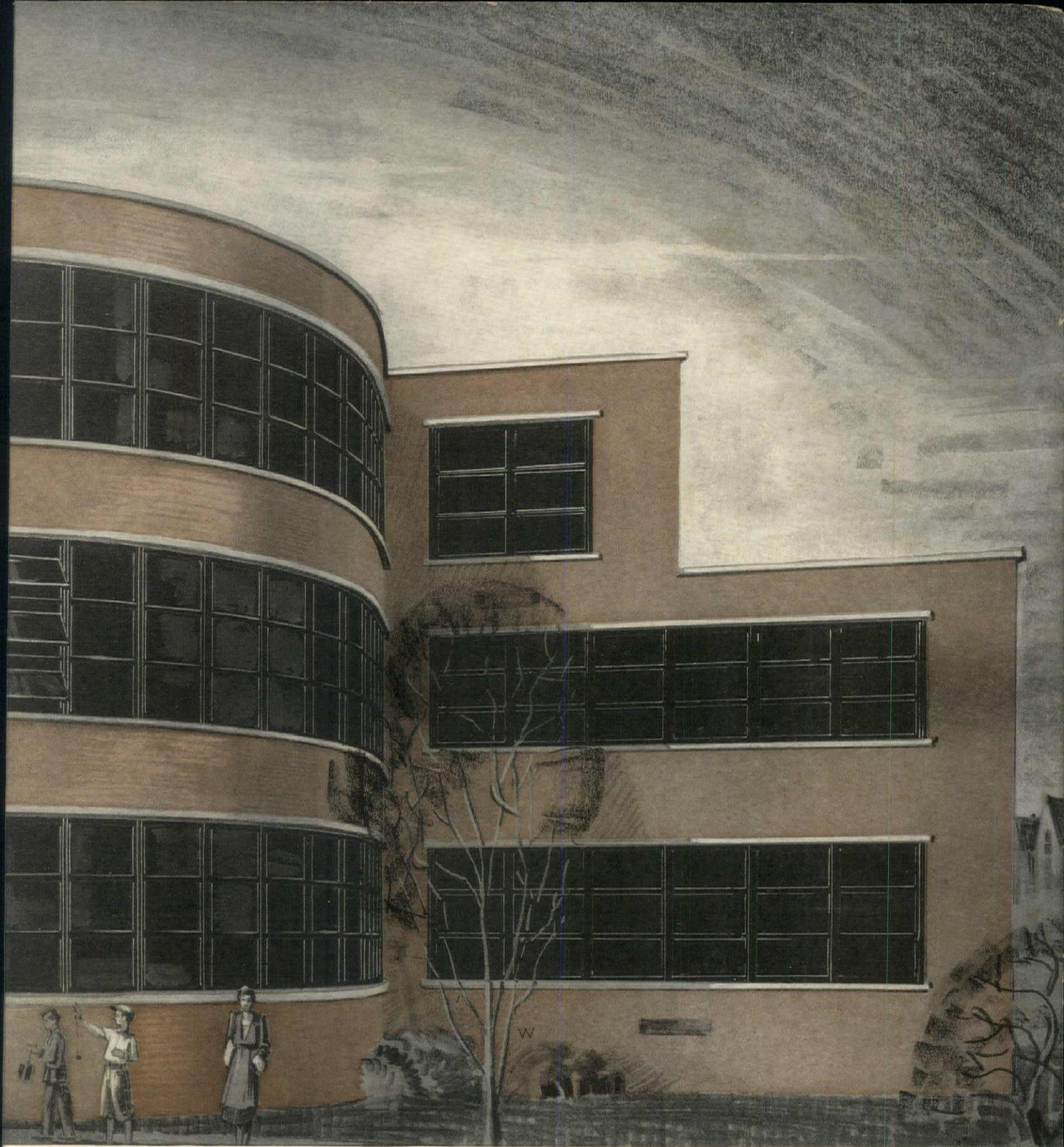
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Truscon Donovan Steel Windows are available in either manually controlled or mechanically operated types and in a wide range of standard unit sizes and designs to meet practically every condition or architectural requirement.

Complete specifications and technical information on request.

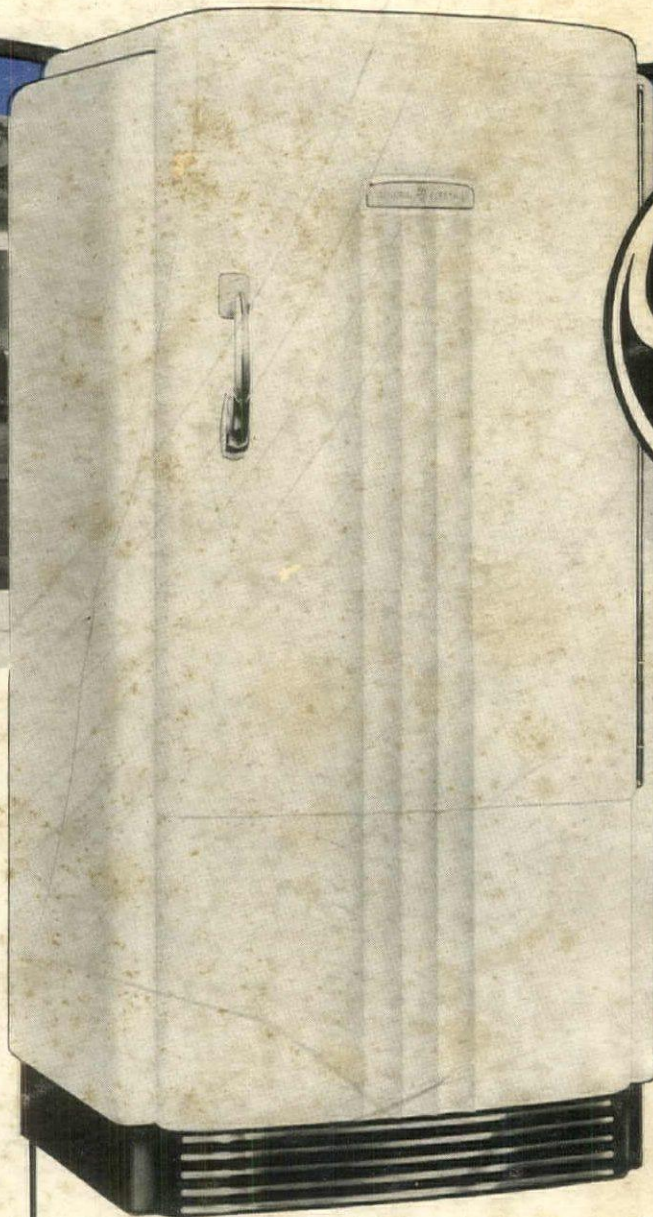
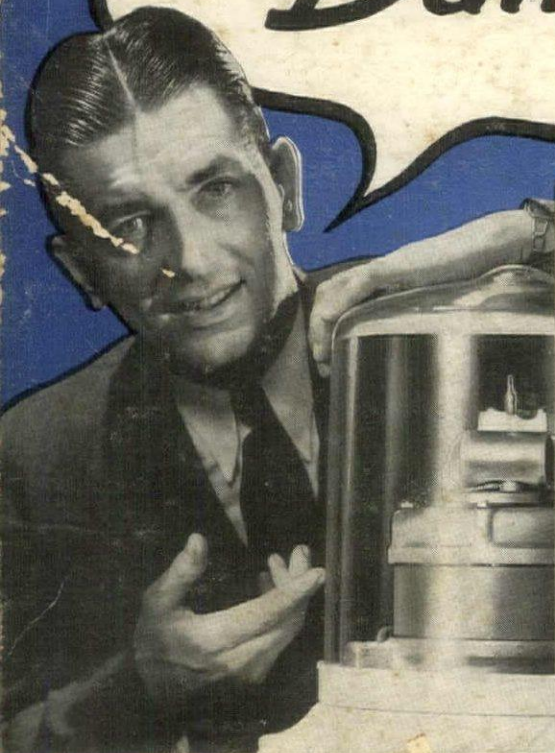
Or refer to Truscon's 80-page Catalog in 1939 "Sweet's."

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