

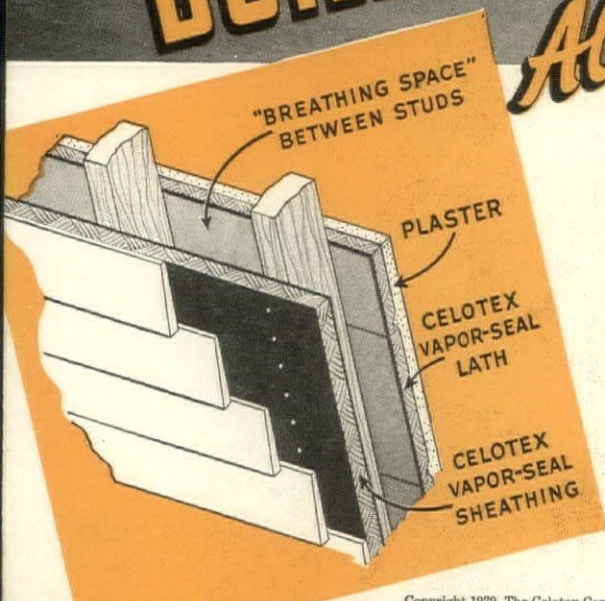
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THE ARCHITECTURAL FORUM

MARCH 1939



Both Celotex Vapor-seal Sheathing and Celotex Lath are used in this attractive Springfield, Mass., home, designed by Architect Marsh Maloney for Ralph E. Froiland.



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MARCH 1939

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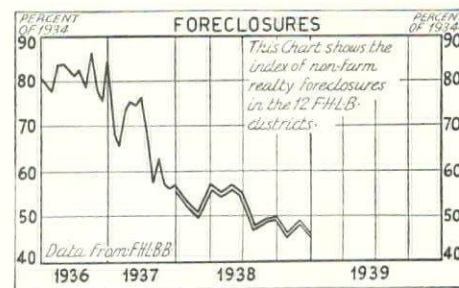
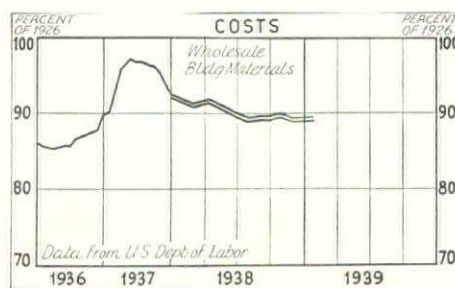
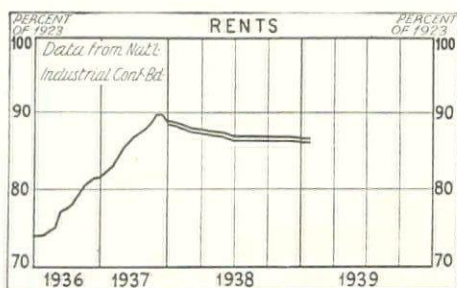
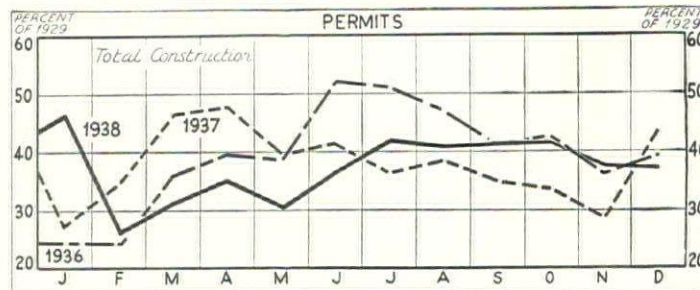
VOLUME 70—NUMBER THREE

THE MONTH IN BUILDING

PERMITS

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

	Monthly data			Twelve months	
	Dec. 1938 (millions)	Comparison with Nov. '38	Dec. '37	1938 (millions)	Comparison with 1937
Residential	\$ 63.4	—14.8%	— 1.4%	\$ 859.2	+17.8%
Non-residential	60.0	+22.5	— 1.1	557.6	+ 1.0
Additions, repairs . .	21.5	— 3.4	—21.0	312.3	—14.0
TOTAL	144.9	— 0.5	— 4.9	1,729.1	+ 5.1



TWENTY-EGHT TIMES. A new record in the annals of Government financing was chalked up month ago as Secretary of the Treasury Morgenthau announced the U. S. Housing Authority's initial \$100 million note issue had been over-subscribed about 28 times. Federal Reserve banks, to which all orders for the notes were directed, reported that subscriptions aggregated \$2,775 million, were thus advised to make allotments on a 4 per cent basis with not less than \$1,000 to any one subscriber.

Bearing interest at $1\frac{3}{8}$ per cent, the tax-free USHA notes mature February 1, 1944, are unconditionally guaranteed by the U. S. Government. While financial experts hold that the money market was particularly ripe for the flotation of these notes, their public reception certainly indicates that USHA will have no trouble in raising the rest of its needed cash.

NO. 1 TENANT. By virtue of the Home Owners Loan Corp.'s 87,000 acquired properties valued at \$470,000,000, Uncle Sam is the Nation's No. 1 landlord. By virtue of his 394,657,721 acres of public domain, conservatively valued at more than \$3 billion, he also ranks as the Nation's No. 1 land owner (see page 226).

As if these two weighty crowns were not enough to furrow Uncle Sam's brow, he has without trying gained title to a third—that of the Nation's No. 1 tenant. And the rental crown has been getting heavier with each successive year. Auditing the books for the last fiscal year, the Federal government found that it had paid a total rent bill of \$21.6 million, or about \$1.8 million per month, for a total of 29.1

million sq. ft. of floor space in privately owned buildings. On the basis of these figures, Uncle Sam pays about 75 cents per sq. ft. per year for his rented space.

In the District of Columbia alone, private landlords reaped a total of \$2.9 million from the Government for 3.2 million sq. ft. of space. The average rate was about 90 cents per sq. ft. per year.

While landlords never have to hound the Government for their rents, Uncle Sam is far from the ideal tenant. In the first place, Government agencies are not permitted to sign leases for more than one year's duration—except in a very few special cases. Most landlords of the type of space the Government requires would like a little more assurance as to the future. Again, Government agencies cannot pay an annual rent in excess of 15 per cent of a space's assessed valuation. This requirement was made to discourage the loading of Government's rent bills (prior to this requirement, investigation revealed that Government was in some cases paying an annual rental exceeding the total cost of the leased property), but it also tends to discourage modernization of premises by owners. If they did make extensive alterations, they would have to consent to tax increases in direct proportion to the amount they raised their rent to compensate for the expenditures.

But, Government will never emerge from the role of a tenant. Nor is it building fast enough to keep up with growth of its employee family. Evidence of this is the fact that the Federal government is renting more space in Washington today than it did before it embarked on its triangle building program.

MONKEY GLANDS. Without major operation in the form of Congressional amendments to the National Housing Act, the Federal Housing Administration's mortgage insurance program would suffer from acute anemia on July 1, 1939. On that date several provisions of the Act are scheduled to expire.

To the rescue last month came Representative Henry B. Steagall and Senator John H. Bankhead with FHA-sponsored bills to give continued life to the Act. Identical in all respects, the bills provide:

1. That the maximum authorized amount of outstanding mortgage insurance be raised from \$3 billion to \$6 billion. Official view is that this provision will take care of the situation once and for all; when the volume of insured mortgages seeks its level, the rate of retirement of existing mortgages will be fast enough to make way for new applications.

2. That the distinction between existing construction and new construction under 80 per cent mortgage provisions be removed. As presently written, the Act states that authority to insure mortgages on existing properties expires July 1. The Administration bills would delete this date, set no other date. Thus, extension would be of an indefinite nature.

3. That authorization of 90 per cent insurance on 25-year (and less) mortgages of \$5,400 or less also be indefinitely extended. This, of course, applies only to new construction.

The bill says nothing about the premium rate on mortgage insurance of \$5,400 and less. Thus, unless some positive action is taken in the other direction, the present $\frac{1}{4}$ of 1 per cent rate will automatically go



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★ Administration building office at Laurel Homes Housing Project, Cincinnati. Frederick W. Garber, architect. David Gordon Building and Construction Company, builders.

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VOLUME 70
Number 3

THE MONTH IN BUILDING

up to the base rate charged on all other mortgages— $\frac{1}{2}$ of 1 per cent. (There is some disposition among the House Banking Committeemen to extend the present rate.)

While mention of Title I covering the insurance of property improvement loans is omitted from the Administration bills, last month also saw the introduction of several unsanctioned bills seeking to prolong its life beyond July 1. When the time comes, FHA will probably not oppose the extension, but will ask that Congress put this phase of its program on a self-sustaining basis by requiring that lending institutions pay a small premium or service charge—something like 2 or 3 per cent of their total volume of such loans. And if Congress wants to extend the program, FHA may likewise suggest that Title I loans on new construction be outlawed or at least discouraged by limiting such loans to three years' duration.

Indicative of the meaning of these bills to Building is the ever-increasing popularity of the FHA-insured mortgage. During January, small home mortgages selected for appraisal totaled \$77,594,030—about \$1 million ahead of December and 159 per cent above that for January 1938. The year-to-year comparison of mortgages accepted for insurance (commitments) is equally impressive: \$42,217,800—118 per cent ahead of January 1938. A month-to-month comparison shows a drop of 17 per cent from December 1938.

Property improvement loans reported during January came to \$15,581,636, as compared with \$18,294,975 in December. (Title I was dormant during the corresponding month of last year.)

Last but not least, FHA's Large Scale Rental Housing Division set a record during January when construction was started on fourteen new projects valued at \$18,000,000. Month ago there were 152 such projects, valued at \$100 million, completed or under construction.

SUNFLOWER SUBDIVISION.

One-time candidate for president of the U. S., Alf Mossman Landon is today, among other things, a budding subdivider. Some years ago Governor Landon purchased a 160-acre tract near the Topeka banks of the Kansas River on which to build a home. Last year the home, a large, many-columned brick Colonial, was completed, and Governor and Mrs. Landon decided that they would like neighbors. To that end they put 120 acres of the land into the hands of Kansas City landscape architects and city planners Hare & Hare, directed them to subdivide it.

As announced last month the sub-

division, dubbed Prospect Hills Addition, contains four owner-built homes in addition to Subdivider Landon's. Plans for the construction and landscaping of these houses (as will all others that may be built) had to meet the approval of Architect W. E. Grover, designer of the Landon house, and of Subdivider Landon himself. And indication is that the Governor may go still deeper into subdividing, permit some speculative building on his estate.

BOOK TUBES. As astronomical as the national budget are the dimensions and capacity of the new \$9 million annex to the Library of Congress. A five-story rectangle two blocks from the Capitol, it will house some 9.6 million volumes, handle them with Rube Goldberg ingenuity. Thus, pneumatic tube carriers (big brothers of those now used in many a department store) will speed wanted books to waiting Congressmen. Pouches with a capacity of eight average size octavo volumes shoot through these tubes at a speed of 25 feet per second, carry books the 700 feet between the two buildings in 28 seconds flat. Electric trams carry larger shipments through a connecting tunnel.

Aside from this delivery mechanism and the 24 book decks each with a capacity of 400,000, the new air conditioned annex includes 172 reading and study rooms, a copyright office, control rooms, a photographic laboratory and an index room which occupies the entire third floor. In its files are 125 million index cards cross referenced and printed in many languages. Also included is a complete printing plant with a capacity of 12 to 15 million cards a year—most of which are to go to 6,500 subscribed libraries throughout the country.

Though smaller than its parent—9.5 million cu. ft. to 13 million—the Annex uses its volume to better advantage, holds twice as many tomes. The combined capacity is about 15 million—the largest in the world.

BANK BUST. February stands a good chance of being Banking's saddest 1939 month. Reason: on the fourteenth of that month the New Jersey Title Guarantee and Trust Co., one of the State's largest banks, bolted its doors, threw up the sponge. Scapegoat: unsatisfactory asset position totaling \$31,298,478 and including some \$10,000,000 of real estate.

Collapse of the six-branch institution serving West New York, N. J. brought to the Federal Deposit Insurance Corp. its largest task in its six-year history. It will have to pay off all accounts in the

closed bank of not more than \$5,000 which means that FDIC will reimburse about 36,600 of the bank's 37,000 depositors to the tune of \$18 or \$19 million. (Last year the agency paid off only \$10,785,000 to depositors in 55 closed banks.)

To the relief of the unfortunate 400 larger depositors, FDIC Chairman Leo Crowley announced that other local banks might make them loans of 25 or 30 per cent, accepting as collateral their claim on the closed bank. Among the heaviest potential losers are the Reconstruction Finance Corp., \$1,732,496; the State of New Jersey, \$200,000, the Community of West New York, \$365,000.

Stating that he had no suspicions of "wrong doing," Chairman Crowley attributed failure to the bank's "excessive position" in real estate, and a look at the December 31, 1938 balance sheet indicates the extent of this position: \$10.8 million in mortgage loans, \$4.8 million in mortgages and trust funds to secure mortgage certificates and \$5.9 million in banking houses and other real estate.

As trustee, State Commissioner of Banking Louis A. Reilly will prove the bank's assets, liquidate them at as high a price and as fast as possible.

Repute of the bank is indicated by the New Jersey bigwigs who have served it: Governor A. Harry Moore as one-time director and former U. S. Senator John Milton as special counsel, Walter R. Gardner as president. Mr. Gardner, a chevalier of the French Legion of Honor, was judge of New Jersey's highest tribunal from 1914 to 1925.

EARNINGS. First batch of 1939 earning reports to come from the companies which supply Building with its staples reflect the devilments of Recession. Thus, while most of the twelve reporting companies were still on the profit side of the ledger, three of them dipped into the red ink bottle and none could boast as good a year as 1937.

Year Ending Dec. 31	1938	1937
Aeme Steel	\$375,871	\$1,898,091
American Steel Foundries	1,750,235*	3,617,761
Bethlehem Steel	5,250,239	31,819,596
Continental Steel ...	630,000	814,553
Flinkote	811,818	1,005,423
Minneapolis-Honeywell	1,003,289	2,929,249
National Steel	6,661,651	17,801,893
Owens-Illinois Glass..	5,382,000	9,351,627
Pittsburgh Coal	3,179,765*	1,036,330
Reliance Steel ¹	60,502	28,286
Republic Steel	7,997,825*	9,044,147
Westinghouse Elec. & Mfg.	9,052,773	20,126,408
¹ —quarter ending Dec. 31		
*—net loss		

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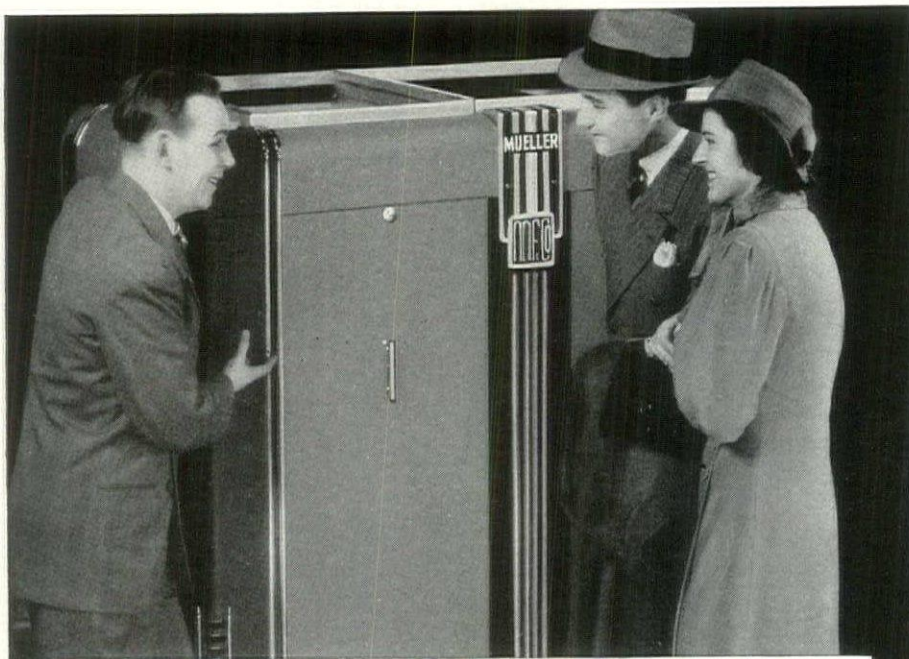
THE lobby of the Railway Exchange Building, St. Louis, was recently modernized very attractively by the use of a Formica ceiling in two shades of blue, one of which was polished and the other satin finish. The work was specified by Mauran, Russell, Crowell & Mullgardt, St. Louis, and installed by the Westlake Construction Company. The owners and tenants liked it so well that another lobby on the Olive street side of the

building will shortly be worked over in the same way . . . Formica offers a means of getting color, and a smooth, modern surface into buildings of obsolete design in a very permanent material that can be very simply installed. There is the greatest possible range of colors and effects—and utmost flexibility in design . . . Let us send you the facts, including many photographic reproductions of installations.

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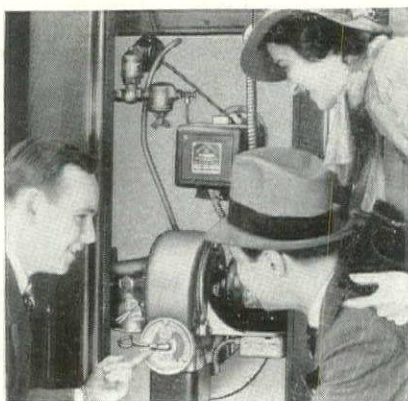
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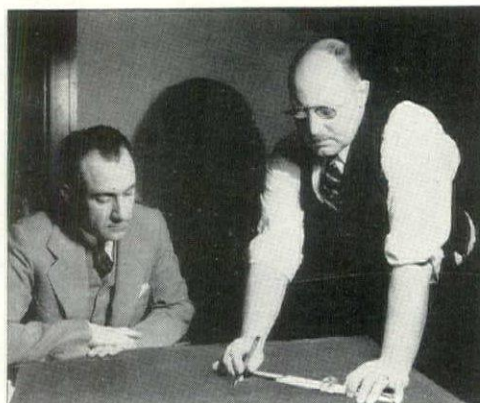
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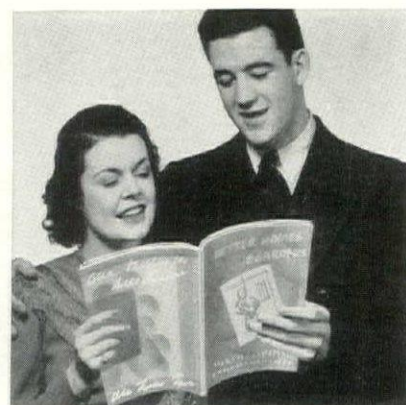
Heat Speeder, Mueller's exclusive steel Gas Furnace Section, transfers heat six to eight times faster than old style units. Mueller also offers Climatrol, Jr. and Flor-Aire for small homes.



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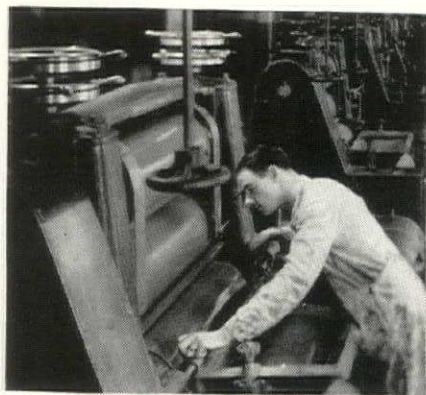
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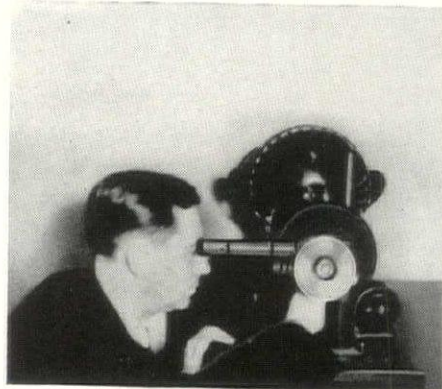
See Sweet's Catalogue for complete information and for addresses of Pittsburgh Branches. Pittsburgh Plate Glass Company, Paint Division, Pittsburgh, Pa.



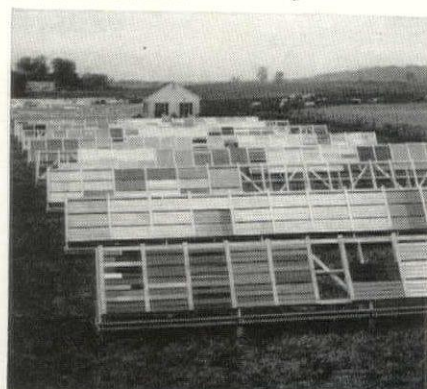
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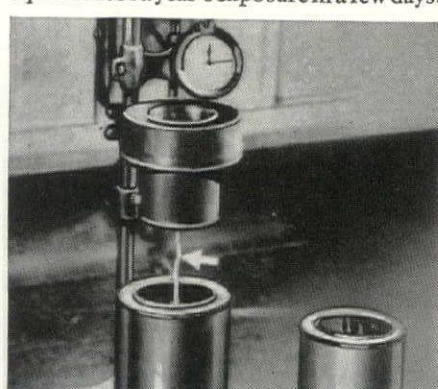
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PITTSBURGH

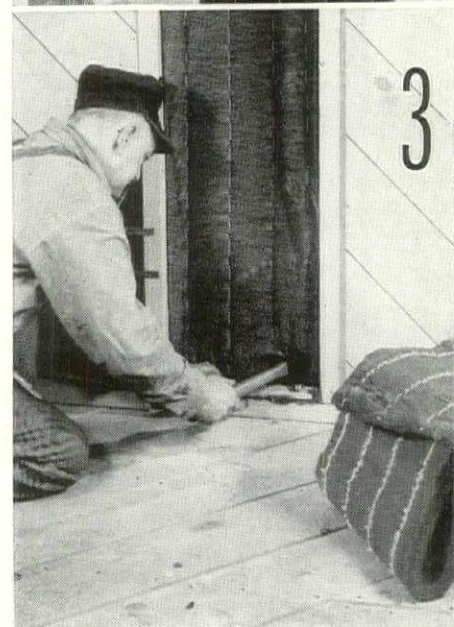


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Provision must be made for year 'round domestic hot water at lowest possible cost



Radiators must be small for easy concealment and system must be extremely economical in operation

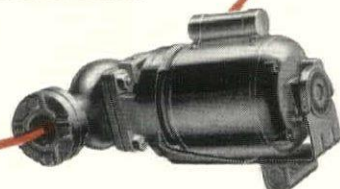
HOFFMAN *Hot Water* CONTROLLED HEAT

MEETS THESE REQUIREMENTS TO THE LETTER!

Never before have you been able to specify *and get* a heating system which so closely approaches your ideal in heating comfort . . . or at so low an operating cost! Hoffman Hot Water Controlled Heat positively smooths out all the variations in room temperature previously beyond control.

These results are obtained by a dual temperature control of hot water *continuously circulated* through the radiators. The circulating water is accurately and automatically regulated to the degree which *exactly* compensates for the heat loss of the building. Any temperature desired will be maintained to a hair's breadth.

The three basic units of Hoffman Hot Water Controlled Heat are adaptable to any type of automatically-fired hot water boiler. By designing the system for high BTU emissions, radiators can be kept small and easily concealed. Besides, the system is made-to-order for indirect domestic water heating — known for economy in producing an ample supply, summer and winter.



For detailed information, send today for Hoffman literature fully describing this unusual system. Hoffman Specialty Co., Inc., Dept. AF-3, Waterbury, Conn.

Hoffman Hot Water Controls, Valves, Traps and Pumps are sold everywhere by leading wholesalers of Heating and Plumbing Equipment.

FORUM OF EVENTS

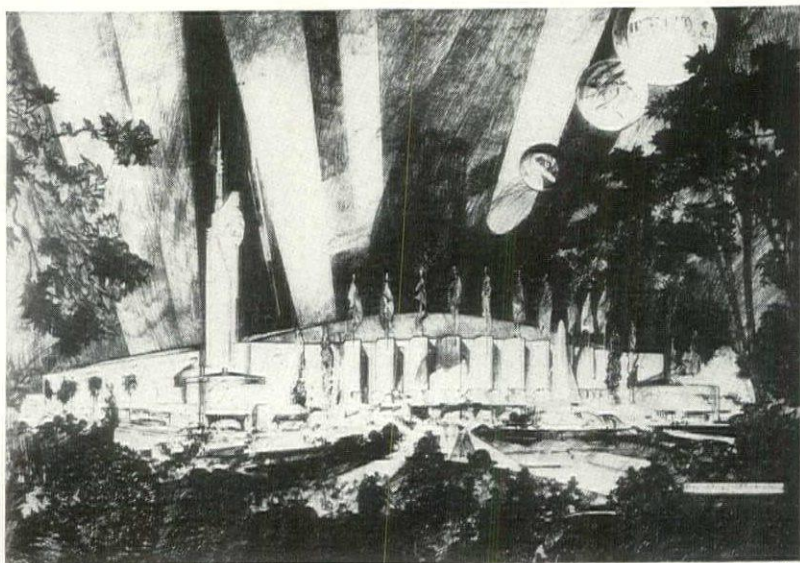


Askeo-Cranbrook



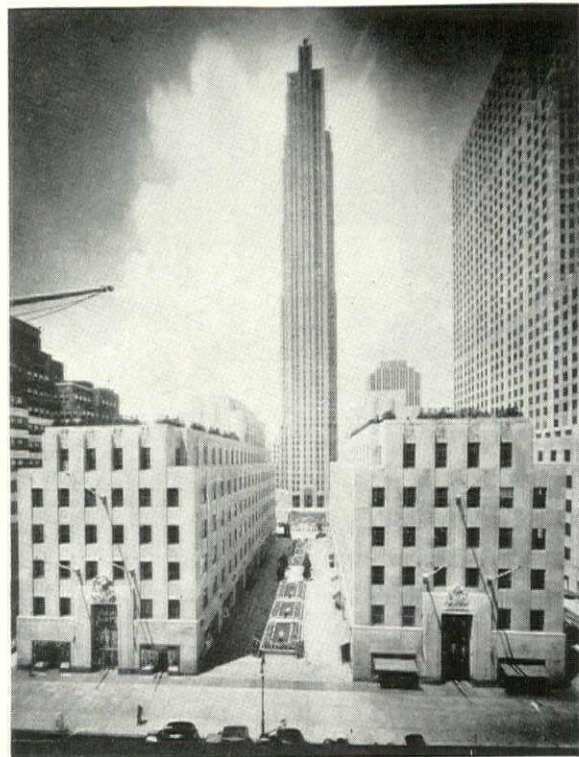
Martin Harris

National Theater (Williamsburg) Competition Winners: First Prize, \$1,000—Eero Saarinen, Ralph Rapson and Frederic James (l. to r. top) of Cranbrook; both Second and Third Prizes, \$600 and \$400—Philip L. Goodwin and Edward D. Stone (r. and l. below) of New York. Further details on page 44.

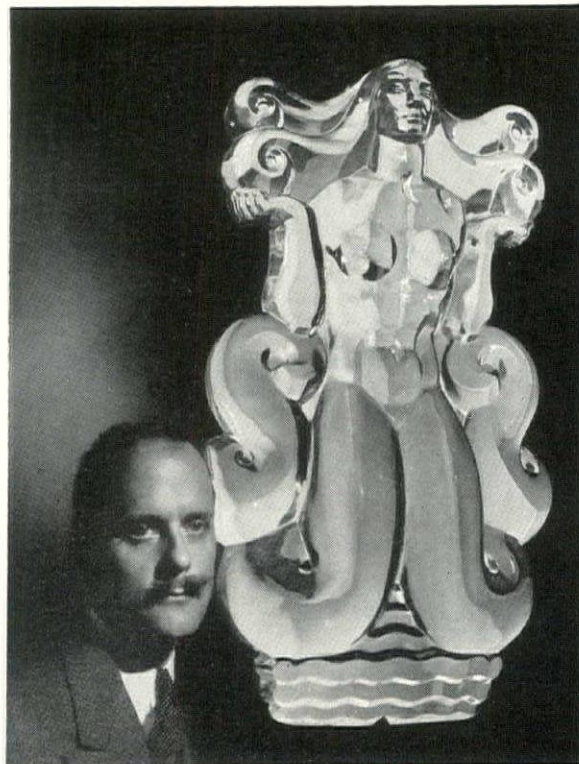


Acme

Madison Square Garden over Hollywood. With Bing Crosby and Walt Disney heading the financial backers, a sports arena to seat 41,000, with compressible interior to accommodate football or wrestling, is planned for September opening—"Hollywood Gardens," Walker & Eisen, architects.



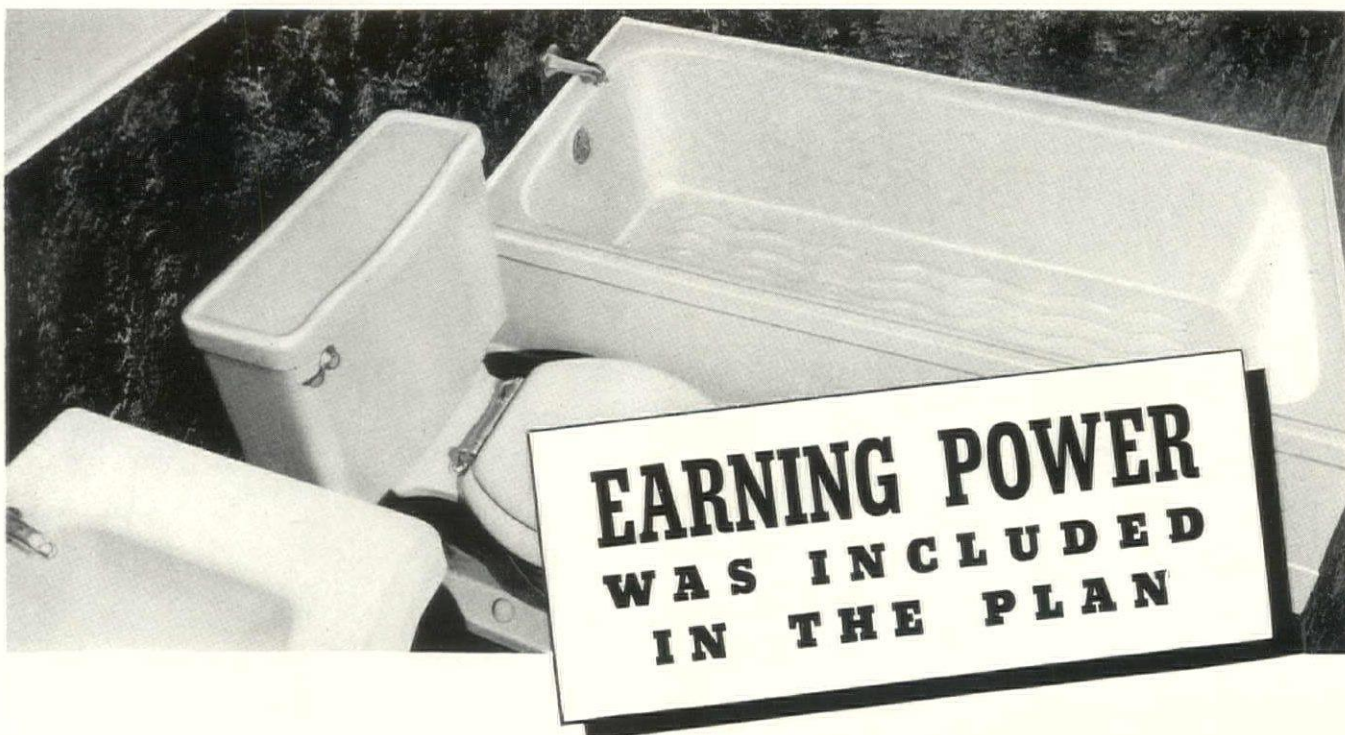
Fifth Avenue bestows palms. After a seven-year lapse New York's Fifth Avenue Association recognizes its best new buildings: First Gold Medal for Rockefeller center (Reinhard & Hofmeister, Hood & Foulhoux, Corbett, Harrison & MacMurray). Second, for Lilly Dache Building (Shreve, Lamb & Harmon; Georges Letellie).



Underwood & Underwood

Three-dimensional plus. Sculptor Sidney Waugh designed, and Corning Glass Works cast, "Atlantica" for the New York Fair. Over three feet high, it is the largest single piece of clear polished crystal glass ever made.

(Forum of Events continued on page 12)



MANHASSET VILLAGE, St. Louis' new 358-family apartment-house project, was an enviable architectural commission. With it, however, went a huge responsibility—the unwritten obligation of making this two-million-dollar enterprise pay a profitable return on the investment.

Important among the many distinctive features designed to attract tenants to Manhasset Village, *and hold them*, are the ultra-modern plumbing fixtures. Formed Metal Plumbing Ware was

selected because of its new-day styling, for the decorative value of its exquisite colors, for the superior high-glaze and acid-resisting quality of its porcelain enamel finish . . . *and also because the base metal beneath all that lustrous beauty is ARMCO Ingot Iron—assurance of basic quality.*

Formed Metal Plumbing Ware weighs only a third as much as conventional fixtures. This lighter weight, especially on multiple installation jobs, permits important savings in construction costs.

If your files do not contain complete information on Formed Metal Plumbing Ware, we shall be glad to supply it. Write us. The American Rolling Mill Company, 501 Curtis Street, Middletown, O.

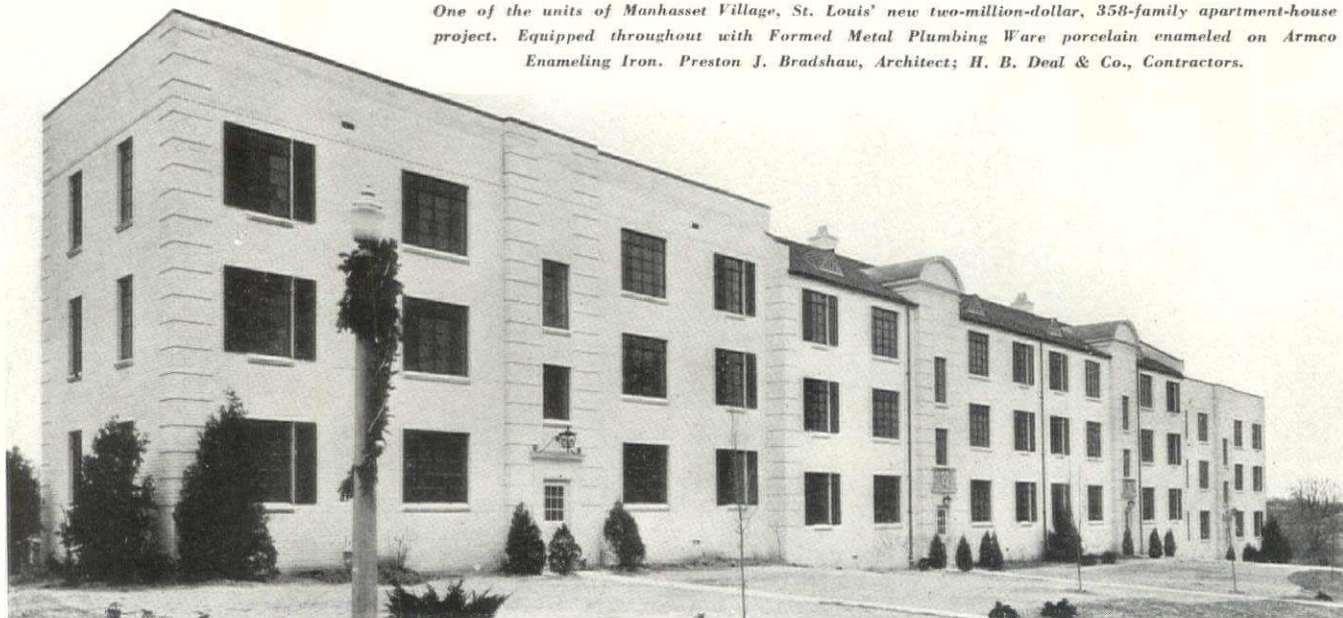
• LISTEN to the ARMCO BAND over N. B. C. every Sunday afternoon, coast to coast.

ARMCO
INGOT IRON



A Name Known to Millions

One of the units of Manhasset Village, St. Louis' new two-million-dollar, 358-family apartment-house project. Equipped throughout with Formed Metal Plumbing Ware porcelain enameled on Armco Enameling Iron. Preston J. Bradshaw, Architect; H. B. Deal & Co., Contractors.



FORUM OF EVENTS

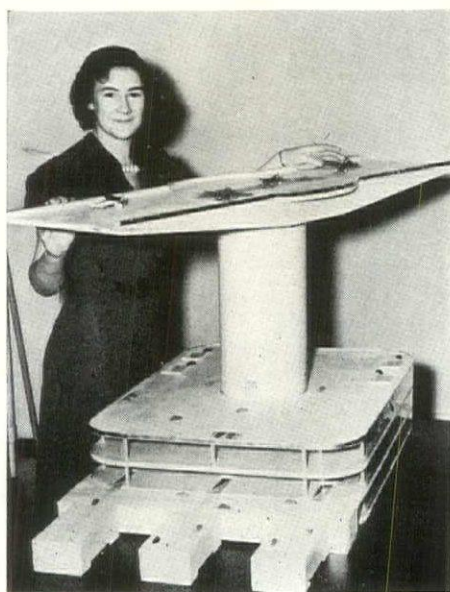
(Continued from page 10)



Clyde Sunderland

Forty-two tons in the air. Pan American Airways' Super Clipper No. 18 circles Treasure Island and the Golden Gate Exposition (opened Feb. 18) as it arrives on its first flight from Hongkong to its new trans-Pacific terminus (lower middle). The Fair will pass, but the airport will remain.

Architecture takes to the air—and vice versa



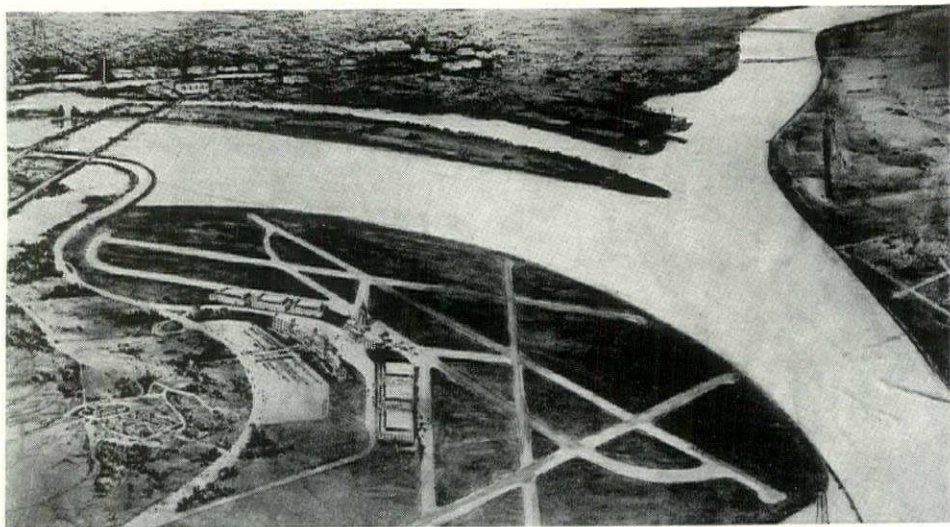
Wide World

Detroit reaches aloft. Topping a 31-story cylindrical building, housing city hall, shops, offices, Designer Wilfred Yapp suggests a pivoted landing platform 540 x 300 ft. Estimated cost, \$7,750,000.



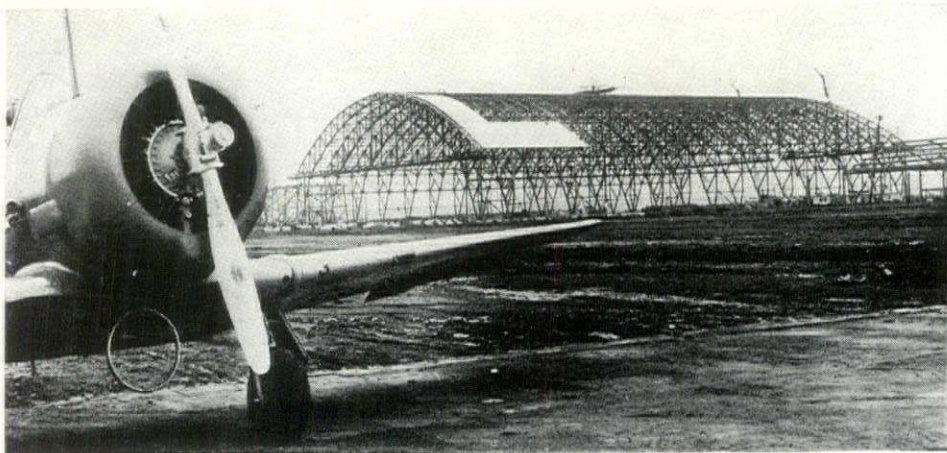
Clyde H. Sunderland

Table for four? Inside the clipper's spacious dining saloon with almost enough room for a floor show.



International News

Land replaces water for air use. Dredges are filling in Gravelly Point on the Potomac for Washington's new \$9,000,000 airport. Curving road at left is the Mount Vernon Memorial Highway.



Aeme

Headquarters U. S. Army Air Corps. Belleville, Ill., has well under way the rebuilding and expansion of a hangar 400 ft. long, 275 ft. wide, to house 100 pursuit planes or 25 flying fortresses.

(Forum of Events continued on page 44)

Penberthy

**A DISTINGUISHED NAME . . .
A DISTINGUISHED PRODUCT**

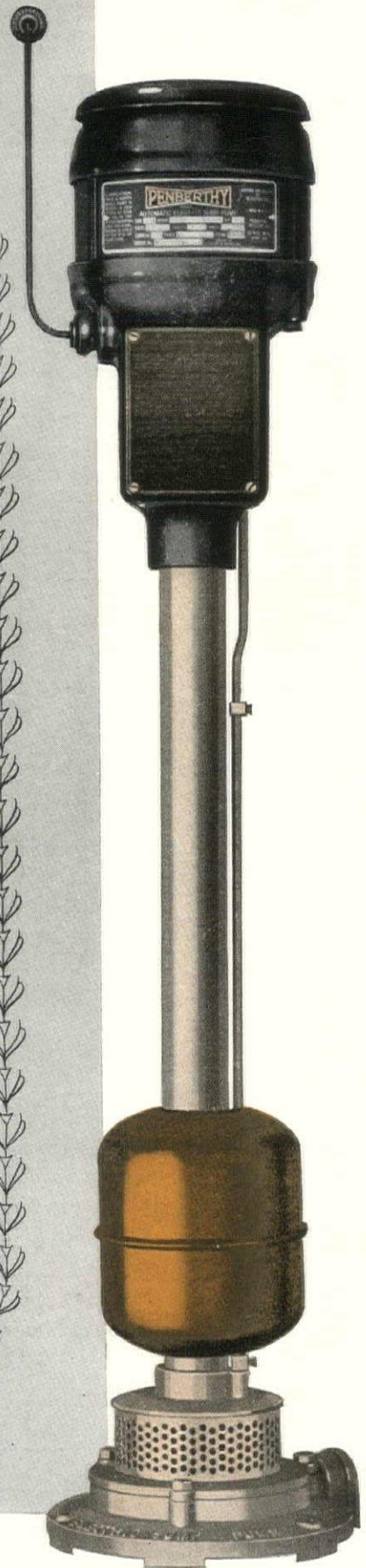
*Constructed of Copper
and Bronze Throughout*

THE name "Penberthy" has been distinguished for fifty-two years as representative of highest quality products.

Penberthy Automatic Electric Sump Pumps are distinguished for their dependability and long life wherever seepage water accumulates.

Penberthy Automatic Electric Sump Pumps are available in six sizes.

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BIGELOW CARPETS

*ride
the 20th Century*

... designed by
Henry Dreyfuss

IT has been our privilege to serve as Carpet Counsel to Mr. Henry Dreyfuss on many projects. One of the most interesting was in carpeting the Dining and Observation Cars of the New York Central's famous 20th Century Limited.

In planning these cars, Mr. Dreyfuss introduced many new ideas that create an atmosphere of beauty and comfort. And the Bigelow carpets—as modern in spirit as this beautiful train itself—do much to enhance that atmosphere.

Whatever your carpet problem may be, put it up to our Carpet Counsel experts. Contract Dept., Bigelow-Sanford Carpet Co., Inc., 140 Madison Ave., New York.

CARPET COUNSEL



Above: Main Lounge in Observation Car. Below: Dining Car.



"I like to
go to school"



TODAY, millions of children feel this way about going to school. They are indeed fortunate in being able to attend modern schools, designed and constructed to assist in the development of alert minds and healthy bodies.

More than steel, stone and brick are required for the modern school building. Into it must go complete knowledge of architectural design and building construction, together with full understanding of educational needs and social requirements.

Only when similar knowledge and experience are incorporated in a product, can Architects and School Authorities be assured of lasting satisfaction. The Herman Nelson Corporation, specializing in heating, ventilating and air conditioning of schools for over 20 years, has made many major contributions to the science of classroom air conditioning. This background of experience and a reputation for intelligent service, have influenced Architects and School Authorities to select the New Herman Nelson Air Conditioner in preference to any other unit for their modern schools.



THE HERMAN NELSON CORPORATION

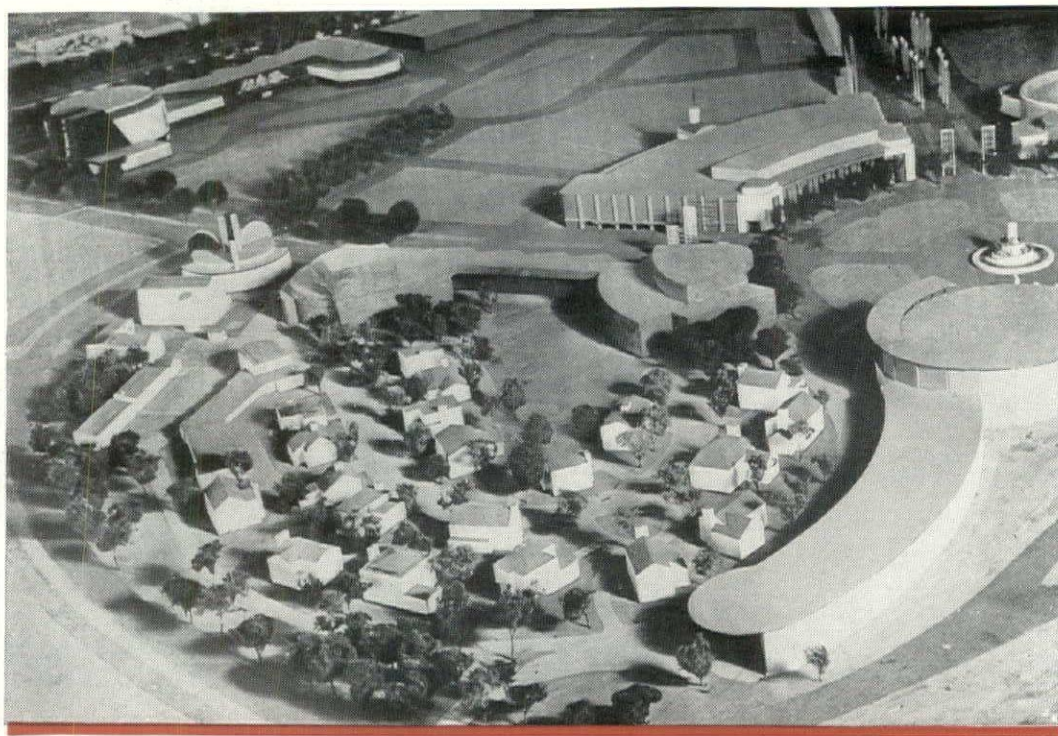
HOME OFFICES AND FACTORIES AT MOLINE, ILLINOIS

Sales and Service Offices in the Following Cities:

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Westfield, Mass.	Roanoke, Va.	Pittsburgh, Pa.	Oklahoma City, Okla.	Denver, Colo.
New York City	Nashville, Tenn.	Johnstown, Pa.	Detroit, Mich.	Salt Lake City, Utah
Watervliet, N. Y.	Memphis, Tenn.	Milwaukee, Wis.	Grand Rapids, Mich.	Spokane, Wash.
Syracuse, N. Y.	Indianapolis, Ind.	St. Louis, Mo.	Saginaw, Mich.	Seattle, Wash.
Buffalo, N. Y.	Chicago, Ill.	Kansas City, Mo.	Cleveland, Ohio	Portland, Ore.
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ANTHRACITE —

*the fuel of tomorrow
for the home of tomorrow*



The "Town of Tomorrow," a feature of the New York World's Fair 1939, will be composed of typical "Homes of Tomorrow." When you see this model town, remember that there is a choice of Anthracite heating equipment to provide any combination of convenience and economy to fit the budget for any type of home.

More than 6,000,000 homes now enjoy the comfort and economy of Anthracite—and the owner of the humblest cottage can enjoy the same luxurious Anthracite heat used in the most palatial mansion.

Today, Anthracite is creating better standards of living. Modern Anthracite heating equipment places the convenience of automatic heat within the reach of mil-

lions who can not afford the costly fuels of other forms of automatic heat. Growth in the use of Anthracite for home heating is making America a cleaner, more healthful and better place in which to live. Pennsylvania Anthracite is truly the fuel for "The Homes of Tomorrow." ANTHRACITE INDUSTRIES, Inc., Chrysler Building, New York, N. Y.

At the great World's Fair at New York in 1939
be sure to see the striking and educational
ANTHRACITE EXHIBIT at the Home Building Center.

Save with
ANTHRACITE
(HARD COAL)
THE ONLY 7 STAR FUEL

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INSIDE . . .
AND OUTSIDE

WALLS

In building and remodeling inside and outside walls,
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"Built With Insulite Modern Materials"

NEW INSULITE EXTERIORS

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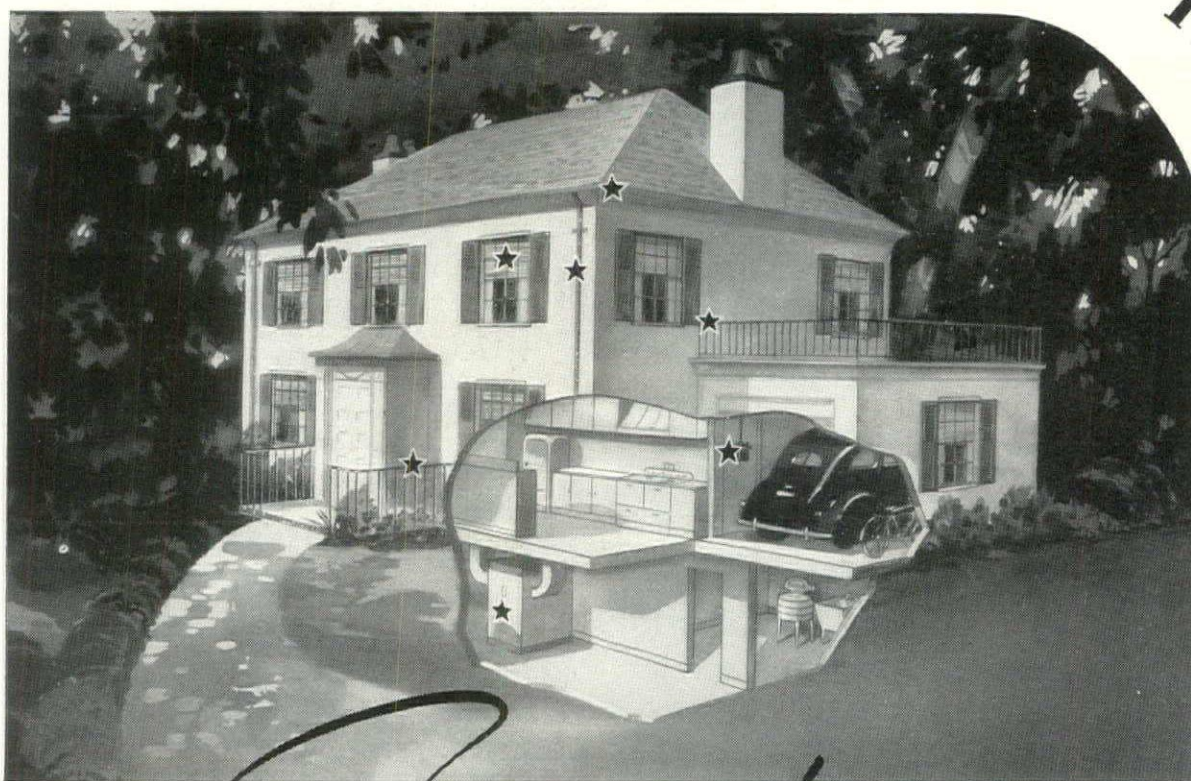
For More Information, Write Dept. AF39

The **INSULITE COMPANY**

MINNEAPOLIS, MINNESOTA

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★ WHERE RUST PROOFING IS VITAL ★ ★ ★



Specify

PARKER PROCESSES

AMONG the many architectural units on which fine appearance and economical maintenance are important are Steel Windows, Screen Frames, Medicine Cabinets, Air Conditioning Equipment, Elevator Cabs and Steel Partitions. Others are Balcony Rails, Switch Boxes, Iron Fencing, Building Hardware, as well as Galvanized Roofing, Shingles, Eave Troughs and Down Spouts.

Wherever paint adhesion and rust prevention are necessary Parker Processes are giving outstanding service. Parker Processes have attained world-wide acceptance as economical and efficient finishing aids on some of our finest iron and steel products. They are part of the finishing systems of many leading manufacturers of architectural materials. In most cases it is possible to buy this type of equipment with a Parker Process as part of standard finishing practice.

Bonderizing or Parkerizing provides a plus quality to iron or steel building accessories that are to be exposed to weathering or humidity.

PARKER RUST-PROOF COMPANY • 2180 EAST MILWAUKEE AVE. DETROIT, MICHIGAN



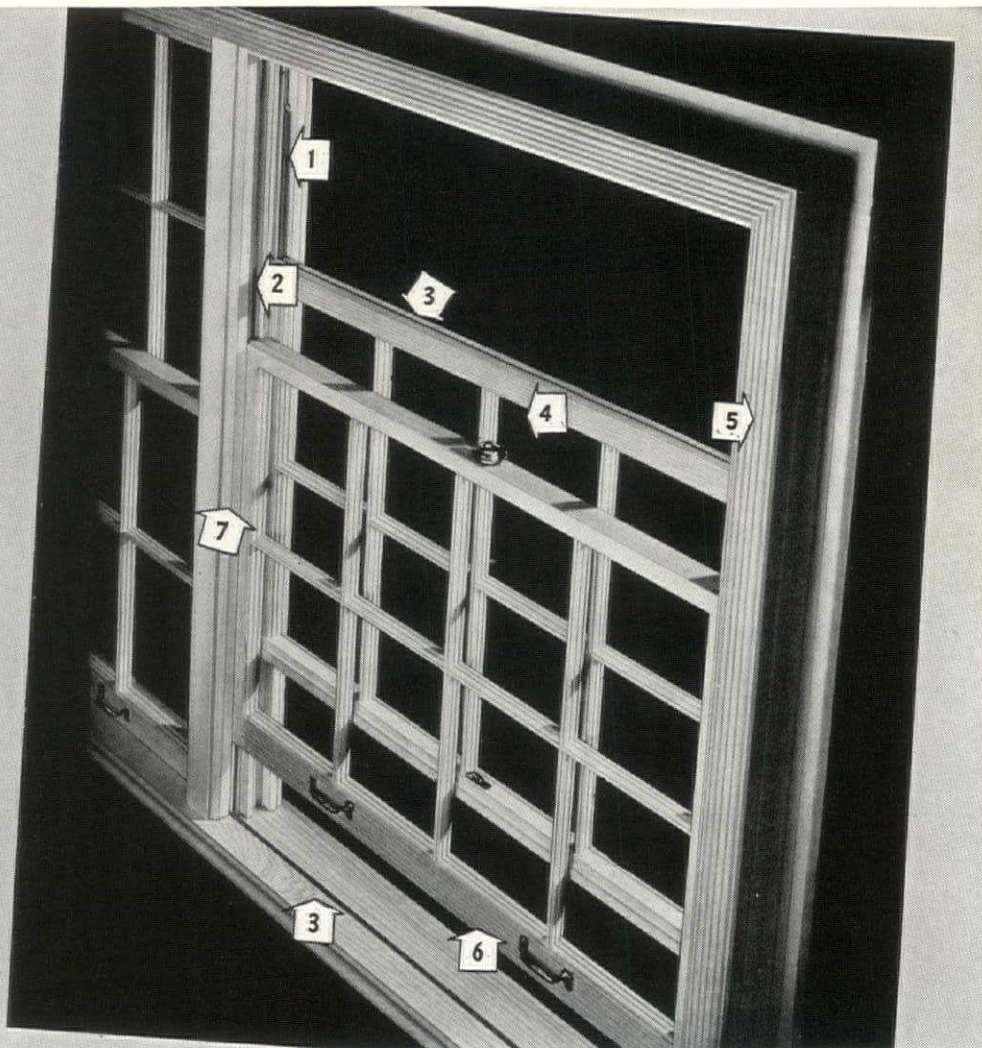
Send for This Book

It gives you the information you want about Parker Processes. It lists the units to which they are regularly applied and names the companies consistently using them in their finishing systems. No cost or obligation.

PARKER
Processes CONQUER RUST
BONDERIZING • PARKERIZING

Every Silentite Window Feature

- 1 Lifetime springs replace weights and cords.
- 2 Sash glides smoothly in Metalane channels.
- 3 Sturdy built-in weather-stripping makes Silentite weather-tight.
- 4 All wood-parts given Curtis toxic dip (not a failure in six years).
- 5 Mitertite trim adds to beauty—no open corners.
- 6 "Pre-fit" sash speeds up installation—lowers cost.
- 7 Narrow mullions admit more light—streamline windows.



... is Proved by Performance

This picture speaks for itself!

When a window won't stick, won't rattle, won't admit unhealthful drafts—*it must be good!*

Here are some of Silentite's important features—points of superiority that ushered *complete window satisfaction* into the architectural world.

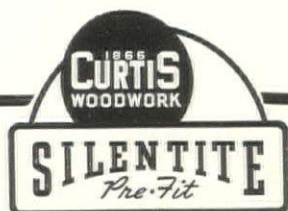
Curtis started the window renaissance with Silentite—and Silentite grows more popular each year. Today, it's America's fastest selling modern window. Seven years of proved performance throughout America, Canada and Alaska

—under every climatic condition—stand behind your selection of this troubleproof double-hung wood window. Besides, Silentite has helped owners save as much as 25% of their fuel bill—year after year.

You don't know modern windows until you know Silentite. Let us give you full details. When you want casements—check the troubleproof Silentite Casement. The Curtis Catalog and details on Curtis Architectural Woodwork are available through your nearest Curtis Dealer. Write for his name.

CURTIS COMPANIES SERVICE BUREAU CLINTON, IOWA

(If you live in Canada, write to Edwards Curtis, Limited, 991 Somerset Street West, Ottawa, Canada)



There is only one Silentite and only Curtis makes it. Its patented features aren't available in any other window.

Curtis Woodwork Is Sold by Reliable Dealers Everywhere

CURTIS MAKES all these Products—Silentite Windows • Exterior and Interior Doors • Frames • Trim • Entrances • Molding • Panel Work • Kitchen Cabinets • Cabinet Work • Mantels • Stairways • Shutters • Screens • Storm Doors and Windows • Garage Doors • Mitertite Door and Window Trim

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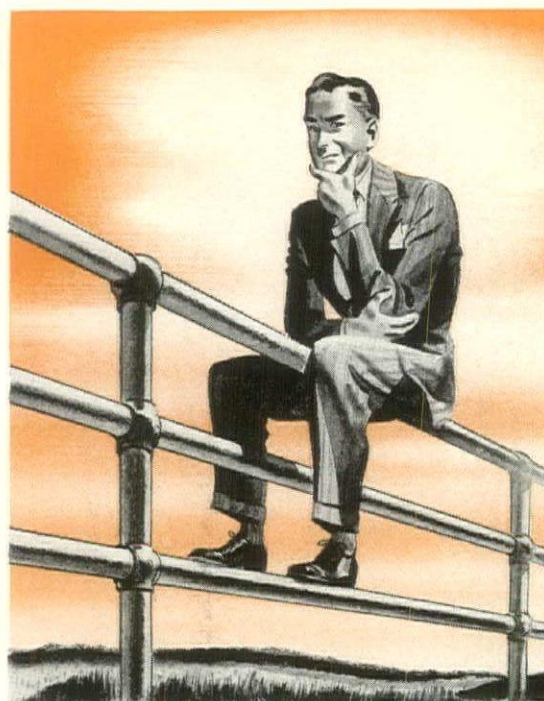
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FOR THE ARCHITECT
who is still on the
fence about

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TONCAN
 COPPER
 MO-LYB-DEN-UM
IRON

It's Time to Repeat these Facts—

WHAT IS TONCAN IRON? A scientifically-refined open-hearth iron alloyed with the correct proportions of copper and molybdenum.

HOW WAS IT DEVELOPED? Thirty years ago it was simply highly-refined iron. Research showed that by alloying copper with the iron an increase in rust-resistance resulted. Continued research showed that additions of copper and molybdenum greatly increased resistance to rust. Such is Toncan Iron today.

WHY WAS IT DEVELOPED? To lengthen the life of metal products—to reduce the world's annual rust-tax bill estimated by authorities at more than three billion dollars.

HOW DOES IT COMBAT RUST? Chemical uniformity minimizes electro-chemical differences and slows rate of solution. Structural uniformity—a fine equi-axed grain structure—contributes additional rust-resistance. Under conditions favoring rust formation, an inert, dense adherent film may be found on the surface of Toncan Iron, protecting the surface beneath.

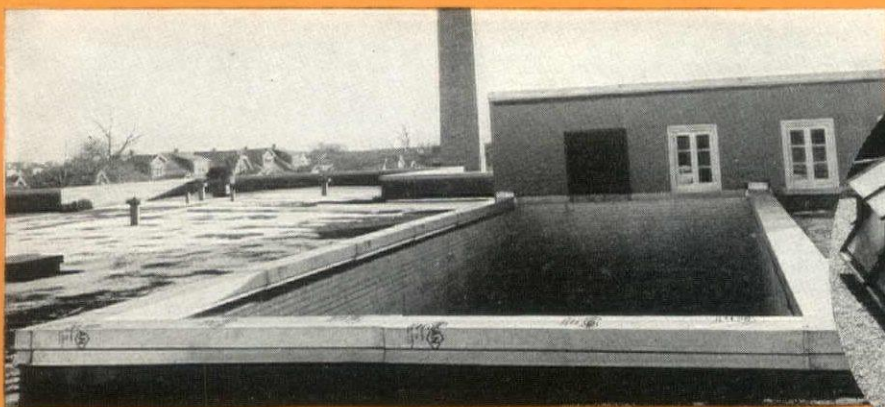
IS IT EASY TO WORK? Yes—it can be cut, bent, formed, threaded and welded more easily than less uniform metals and, unique with Toncan Iron, cold working does not impair its rust-resisting qualities. Because it may be had in bolts, nuts, rivets and welding rod, entire fabricated units may be made possessing uniform resistance to rust. No weak spots to jeopardize useful life.

DOES TONCAN IRON POSSESS THE HIGHEST RUST-RESISTANCE AMONG FERROUS METALS IN ITS PRICE CLASS? Judge for yourself. After seven years of satisfactory experience with Toncan Iron Pipe in the air-conditioning system of Rockefeller Center, this alloy iron pipe was specified and is being used for further extensions of the system. On another building, gutters and downspouts of Toncan Iron lasted more than twice as long as the non-alloy material previously used—and were still in good condition when inspected after fifteen years of service. Dozens of similar records in sheet metal and pipe installations prove the longer life of Toncan Iron. Write for literature.

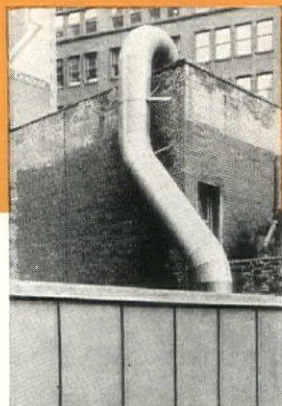
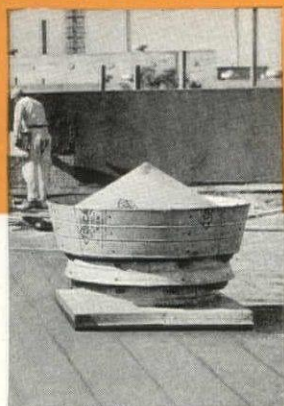
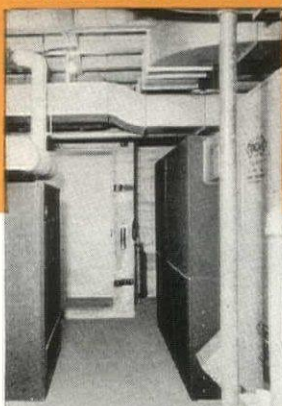
REPUBLIC STEEL CORPORATION

GENERAL OFFICES • CLEVELAND, OHIO

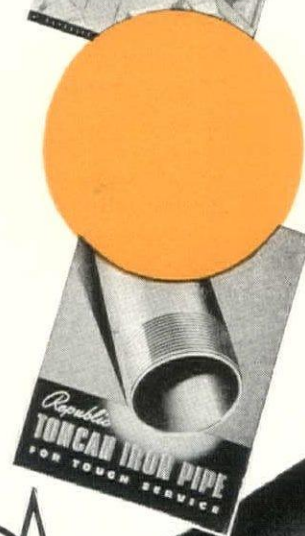
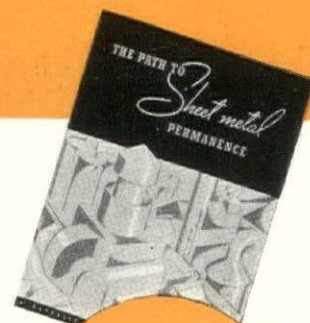
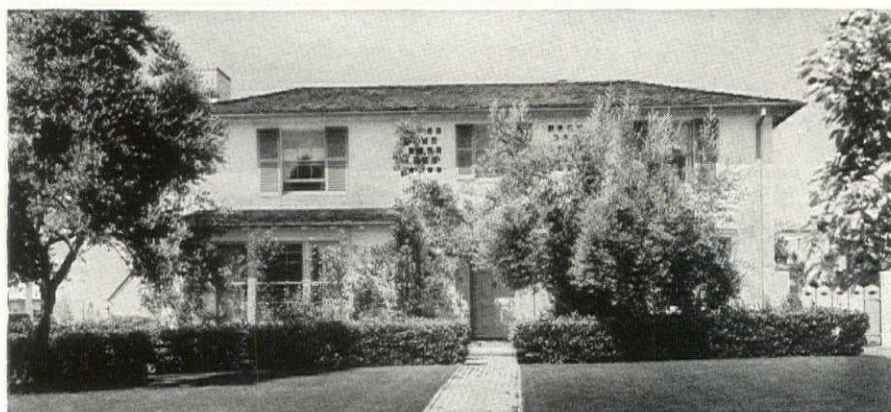
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TONCAN IRON PROVIDES ECONOMICAL BUILDING PROTECTION



EQUALLY SUITABLE FOR INTERIOR AND EXTERIOR APPLICATIONS



**This mark identifies the alloy of refined open-hearth iron, copper and molybdenum
— that grows old slowly**



TONCAN IRON IS AVAILABLE IN

**BLACK, GALVANIZED, GALVANNEALED and ENAMELING IRON SHEETS • BLACK and GALVANIZED PIPE
• PLATES • WIRE and WELDING ROD • NUTS—BOLTS—RIVETS • BARS • ROOFING • GUTTERS and DOWNSPOUTS**

LETTERS

nonPLUSed

Forum:

After an earnest attempt to wade through a typographical nightmare and reading the laudatory letters in praise of Plus, it seems to me that it is about time some conservative old coot like the writer (age 37; winner of the Booth Traveling Fellowship from the University of Michigan in 1925; former junior designer for James Gamble Rogers, and now President of the Michigan Society of Architects), broke up your phalanx of foreign "yes" men with an emphatic "NO"!

KENNETH C. BLACK

Lansing, Mich.

Forum:

When I opened THE FORUM of February, 1939, it served to recall to mind a book. In my copy of "Reason in Science," one of a series of five making up "The Life of Reason," by Santayana, there are scattered groups of pages near the end of the book which had received the benefit of two printings, the letters of the second being offset by about half the width of them and at an angle of 45°. These scattered pages occur between headings such as "The Dignity of Post Rational Morality" and "The Soul of Positivism in All Ideals." I have never quite understood what Santayana was driving at in this volume and my mind gets a little woozy toward the end of it. (I think his was woozy too.) But when I tried to read these pages, twice printed and offset, I felt dizzy and got an ache in my physical head.

I don't like graphs superimposed over pictures and I don't like plans superimposed over text, and pictures that run askew in relation to the edges of the paper, and over-emphasis upon trivialities because they may be decorative—in fact, I don't like it at all. I like to know where an article starts without searching laboriously for the beginning of it, and I like to be sure when an article comes to a close. If there is text that relates to an illustration, I like to feel certain about the correlation . . .

FREDERICK L. ACKERMAN

New York, N. Y.

Forum:

Stimulating may be a good word to apply to Plus—but stimulating like a walk through Coney Island. There is much yapping in the ears and flashing in the eyes. To enter this wax museum or jar your kidneys on that contraption. Coney Island for pleasure. Plus for enlightenment.

And when you leave the streets of one or close the covers of the other you are in the same frame of mind—a sensation of rapid dizziness. And not a single worthwhile memory.

What is wrong? The world of art has never had a Thomas Jefferson. Since the Renaissance mankind has been fed on the sophistry of self-expressionism and individualism. Art for five centuries has stood at loggerheads with every respectable principle of democracy. After all, who cares what is in the mind of some one evangelist? What men need is a genius to interpret and tell them what is in all minds! Democracy in art.

Plus is an aristocracy of single minds working apart, where it ought to be a communion of all minds working together. How else for art to get anywhere in a democracy?

FABER BIRREN

New York, N. Y.

Forum:

Referring to the February issue of your magazine, pages 19-21, what is it? . . . I consider this an insult to my intelligence. I feel that a subscriber is entitled to expect something worthwhile when he spends good American money.

CLARENCE H. HIGGINSON

New York, N. Y.

Plus, now appearing as a section in THE FORUM, is edited without restriction by eminent, independent architects, artists and technicians known as the Plus Group. Cheers and jeers followed the debut of Plus in the Dec., 1938 issue and its second appearance in Feb., 1939. Reader reactions will determine the size and frequency of Plus.—Ed.

Main Street

Forum:

. . . I would like to take this opportunity to express, once more, appreciation for your magazine and for the excellent editorial work you do. The February issue with the study on Bridgeport has my full commendation. The method of presentation is exemplary.

WALTER CURT BEHRENDT

Technical Director

Buffalo City Planning Ass'n., Inc.
Buffalo, N. Y.

Real Reason

Forum:

. . . I opened my new copy of THE FORUM and found your excellent article on the subject of radiant heating (Arch. Forum, Jan.). I would appreciate it very

much if you could send me a half dozen reprints or tear sheets which I could distribute to my heating engineers for their further study.

I am keeping the article on hand for reference and discussion, particularly the statement that, "the real reason for the delay in America's acceptance of the radiant heating technique; the failure of technicians to comprehend what changes are—and especially what changes are not—implied in the application of the radiant method; the inertia of an established way of doing things." I am most heartily in accord with this statement.

A. C. SHIRE, Technical Director

U. S. Housing Authority
Washington, D. C.

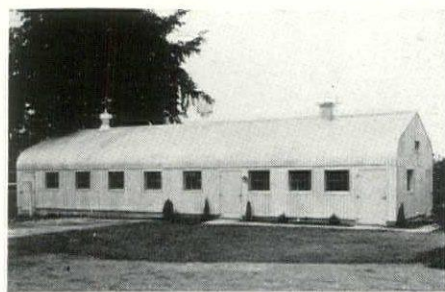
Non-electric Reproduction

Forum:

There has been much use of the name "Chicken Coop" with reference to the modern house.

I wonder if many of these critics know what a chicken coop really is. If not I will enjoy the privilege of enlightening them.

A chicken coop or chicken house is a scientifically designed building so constructed, heated, ventilated and lighted as to produce the healthful and pleasing living conditions necessary for the propagation and keeping of healthy stock.



An up-to-date, iron-clad, streamlined poultry house manufactured by the James Mfg. Co., Port Atkinson, Wis., to "provide an environment under which poultry produce and reproduce at their best."—Ed.

Until Mr. Wright and his ilk came along human living quarters were not given nearly the same amount of designing consideration as that accorded to poultry and farm animal's abodes.

I certainly hope that Mr. Wright will be accorded enough "Pot Boiler" fees to keep him going until he can see his work appreciated by the cubicle minded, door slamming public.

R. M. PRAY

Klamath Falls, Ore.

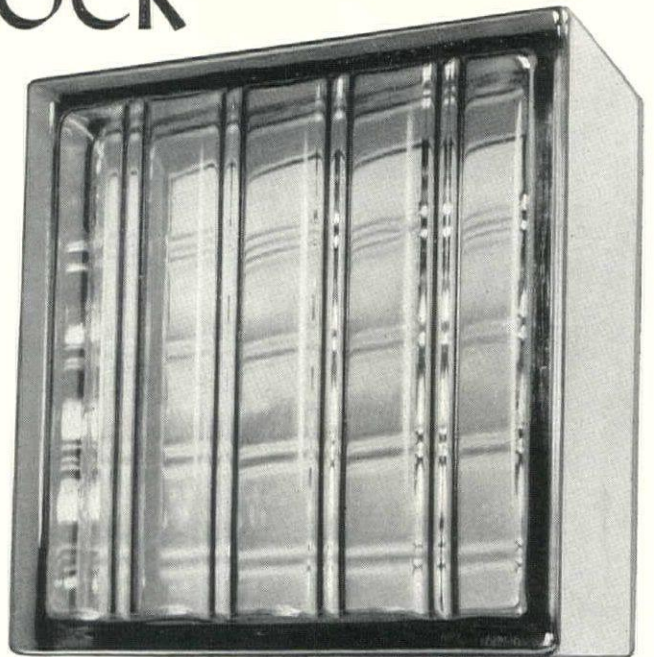
OWENS-ILLINOIS GLASS COMPANY

announces a series of **4** **COMPETITIONS**

for the further development of a versatile material

INSULUX GLASS BLOCK

\$15,000 IN PRIZES



CONDUCTED BY THE ARCHITECTURAL FORUM

Twentieth-century invention has put into the hands of America's designers a new material of vast potentialities. Even in its infancy its fields of usefulness have gained wide recognition among architects, while the public has welcomed with enthusiasm this newcomer among the elements with which man builds. Nevertheless it is a fact, well documented by historic examples, that any building material reaches the zenith of successful use only in the hands of those who have striven hard to understand both its capabilities and its limitations—those who have used it not only freely but also sympathetically. The stone masonry of France, the mosaic tile of Persia, the brickwork of Holland—these are majestic peaks in the history of the building crafts. America has lifted more than one material to these conspicuous heights; unquestionably, glass block “has what it takes” if our designing skill keeps pace with its phenomenal growth in use.

Owens-Illinois Glass Company, makers of Insulux Glass Block, believes that it has a responsibility in connection with the development of this new material and its proper techniques of use. That responsibility must see to it that intelligence and ingenuity are stimulated in the use of this material. This series of four competitions, each with its cash prizes totaling \$2,500, capped by final awards in the amount of \$5,000, is intended to help develop the *proper* use of glass block.

The four subjects selected from among many possibilities to draw out the designers' skill are: 1) a Small House; 2) a Group of Three Stores; 3) a Dairy; and 4) a Newspaper Plant. Competitors are encouraged to continuous participation in this series through an offer of Grand Prizes. These do not call for a final competitive 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 credit for each; Second Prize brings 80 points; Third, 63; Fourth, 49; Fifth, 38; Sixth, 30; Seventh, 25; and Eighth, 23 points. Thus a competitor who might capture one Third Prize and one Fifth Prize would, in the award of Grand Prizes, rank ahead of the winner of one First Prize.

Programs for Competitions II, III and IV will be announced in future issues of THE ARCHITECTURAL FORUM. Competition I will be judged in Chicago; the others will be judged successively in San Francisco, Cleveland, and New York, the Jurors in each case being selected from the areas about these centers.

THE PRIZES: For each of the four 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 each judgment.

Immediately after the awards have been made for the Fourth Competition, Grand Prizes will be awarded on a scored point system as outlined above and 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.

COMPETITION NO. 1.

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.

THE PROBLEM

A progressive young man has decided to enter the business of building houses for sale. In order to subject his ideas to a realistic test of public approval, he plans to erect one house before starting a large-scale building program. He believes thoroughly in the value of architectural service and sets forth the following outline of his requirements.

The site is in the outskirts of a Mid-Western city, a level plot with the size, orientation and restrictions

SUBJECT: A SMALL HOUSE

\$2,500 IN PRIZES.

Competition closes May 22, 1939.

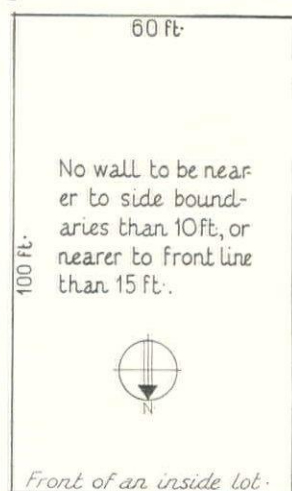
indicated in the diagram reproduced on following page.

For this first house a pitched roof, not a flat one, is required, though of course, this restriction does not prohibit flat decks on porches, garage wing or the like.

In this particular locality it is customary to include a basement, but its inclusion is not a mandatory requirement of this program.

Economy might suggest two stories rather than one, but there is nothing against a one-story solution if it meets the site limitations.

The cost of the house is not rigidly limited; the Client relies on the designer's good sense in not urging an expenditure on a scale unsuited to a home of modest size.



To focus the problem to greater sharpness, however, he directs that the cubage—as figured according to the method detailed below—shall not exceed 24,000 cu. ft., including the garage. Since the house is to be sold to an unknown buyer, the Client assumes an average American family of four—father, mother, son and daughter in their teens. The family presents no special requirements.

Three bedrooms and two baths are needed, with some provision for guest space through dual use of a den, library or sitting room. A first-floor lavatory should be included, and garage for one car. The Client has no objection to a combined living and dining room. Maid service is to be of the occasional and by-the-day sort.

The Client—and at this point our mental picture of him merges into that of our Sponsor—looks eagerly for intelligent, logical and ingenious uses for Insulux Glass Block, but he is certain to be far more pleased with fitness to purpose and attractive results than with anything so banal as mere quantitative use. The problem is two-fold: to design a house, and to explore the possibilities of glass block. The Jury will judge the drawings first as *houses*, and from the successful examples will then select for prize awards those that show the most appropriate uses of glass block.

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 and the three additional ones that complete the series are open to all architects, architectural designers and architectural draftsmen except employees of Owens-Illinois Glass Company and of THE ARCHITECTURAL FORUM. A competitor may submit as many drawings as he likes in any or all of the four competitions, and is eligible to win any number of awards.

3. JURY OF AWARDS

The following seven architects, all of Chicago, have agreed to act as a Jury in Competition I, and their de-

cisions 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.)

GEORGE WALLACE CARR WILLIAM PEREIRA
C. HERRICK HAMMOND JOHN WELLBORN ROOT
GEORGE FRED KECK PAUL SCHWEIKHER
ALFRED SHAW

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 I will meet in the City of Chicago 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 the July 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, who prefers the return of his drawing to its possible exhibition as outlined above, may enclose in the envelope containing his name and address the necessary stamps or 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 by mail, giving name, address and classifying himself as an architect, an archi-

tectural 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.

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 should 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 I shall be securely wrapped, flat, addressed as follows: **Professional Adviser, Insulux Competition I, c/o THE ARCHITECTURAL FORUM, 230 North Michigan Avenue, Chicago, Ill.,** and forwarded to this address **not later than midnight May 22, 1939.** 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. Entries delivered by hand must be at the above address on or before the date and hour given.

10. CUBAGE (Mandatory)

Attached to each design submitted, but detachable, shall be a diagram at $\frac{1}{8}$ " scale drawn on tracing linen, showing the computation of volume; this latter to be calculated as the space enclosed by outside planes of the walls, roof surface and a horizontal plane one foot below grade; to this shall be added any cellar or basement space figured to outside plane of walls and down to its

floor level. Compute covered porches at half their volume; terraces, steps, etc., not taken into account.

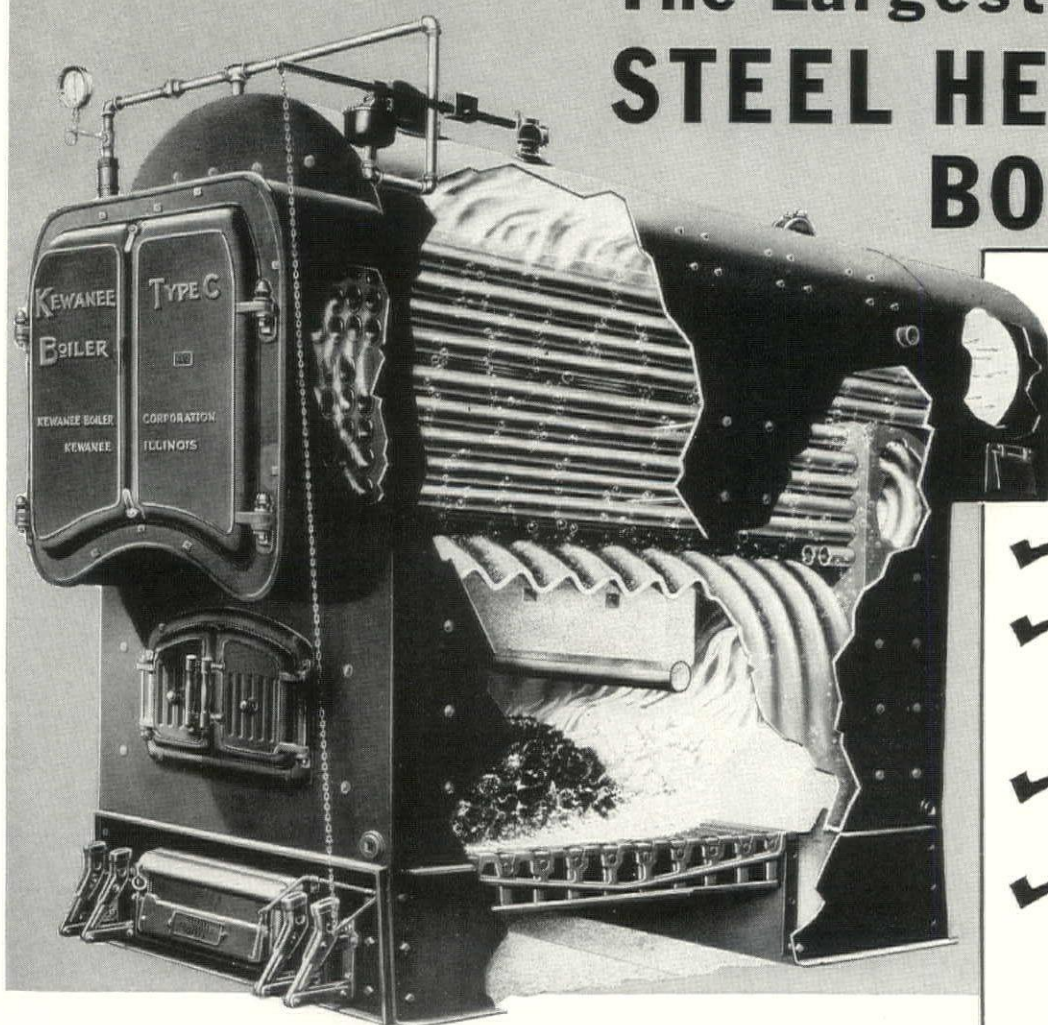
11. DRAWINGS (Mandatory)

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, and 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) Floor plan or plans at $\frac{1}{8}$ " scale. Indicate principal furniture elements. On the ground floor plan show the relationship of house to lot, with paths, driveway and other essential elements, but with no emphasis on detailed indication of landscaping.
- b) One exterior rendered perspective of the house; assume the picture plane as passing through the nearest corner of the house proper, and the vertical dimensions thereof shall be drawn at the scale of $\frac{1}{4}$ " equals 1'.
- c) Two exterior elevations not shown in the above perspective, at $\frac{1}{8}$ " scale. The design and texture of materials including Insulux may be rendered (with the above restrictions as to black ink) as the designer elects, but at this small scale there should be no attempt to approach a photographic representation. (See Section f concerning tabulation of glass block face designs selected by competitor.) Include no entourage on these elevations; one human figure shall be drawn on each elevation to show scale.
- d) One exterior detail in which Insulux Glass Block is used, in axonometric or perspective, indicating the essential construction details for the glass block.
- e) One interior detail in which Insulux is used, in axonometric or perspective.
- f) Prepare an adequate but brief typewritten statement explaining why Insulux was used where shown and why the particular face design or designs were selected; follow this with a tabulation by locations, of glass block designs and series numbers, from the manufacturer's catalogue. Place this typewritten statement in an envelope bearing 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, this envelope shall be enclosed in another envelope, and mailed separately to the Professional Adviser at the Chicago address.

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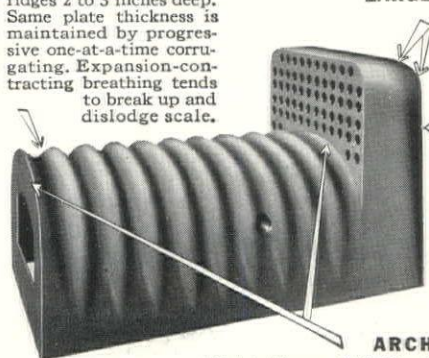
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BOOKS



HOUSE AND STUDIO: F. HAUSBRAND, ARCHITECT

KLEINE LANDHUIZEN IN HOLLAND, by F. Hausbrand. "Kosmos," Amsterdam. 91 pp., illustrated with photographs and plans. 9 x 11. F. 4.90.

"When you take up this book for the first time and turn over its pages," remarks the author, "you are perhaps surprised that such a variety of architectural forms is possible for so comparatively simple an object as the small country home. You may think that this variety is due to a certain incompleteness, some imperfection that is inherent in our times. But would it not be even more surprising if you found in the art of architecture a unity which is so conspicuously absent in almost all other arts?"

It is true that when one glances through this collection of small country houses, there is considerable variety; the most sweepingly modern designs are found next to illustrations of cottages with thatched or tile roofs. But what is really astonishing is not this mixture of local styles, which could be repeated in any country, but the enormous range covered by the houses which fall into the category of "modern." And this, as the author suggests, is not the result of any indecisive approach, but rather the result of several decades of steady experimentation with new forms and materials. The same trend toward variety, although less advanced, can be noted here. Five years ago, the few modern houses to be found in the country were almost invariably in the International Style; today a vastly greater volume of such work shows many modifications, all of which testify to the flexibility and essential soundness of the contemporary approach.

For this reason this book of small country houses should be of interest. There are superlative examples of modern domestic work, and interiors in particular which for clean simplicity and delicacy of treatment have few equals. There are examples, such as the one shown above, which combine native brick and tile with the thinnest of steel sash. The traditional houses, while of less immediate interest, show a similar variety of form. Building costs are given approximately, and run from \$1,500 to about \$8,500, although it is doubtful if the houses could be repeated here for these prices. There is an English translation of the introduction, although captions, unfortunately, are only in Dutch.

HISTORICAL COLOR GUIDE, by Elizabeth Burris-Meyer. William Helburn, Inc., New York. 30 plates. 9¼ x 7. \$6.00.

An interesting and unusual reference book whose thirty color charts are taken from painting, stained glass windows, carpets, manuscripts, costume designs and other sources. The historical examples cover the main periods from pre-Egyptian times to the present day. A brief preface explains the reason for studying historical material and gives a few recommendations on the use of the charts. In addition, a page of text accompanies each chart describing the prevailing color schemes of each period. To insure accuracy in the indication of colors, the Munsel system of notation is used.

RENAISSANCE ARCHITECTURE OF ENGLAND, by A. Thornton Bishop. John Wiley and Sons, Inc., New York. 112 pp. 12 x 9. \$6.00.

A lively and informative history of English architecture from the early Renaissance through the late Georgian period. Of particular interest is its relation of social changes and architectural developments. Beautifully illustrated with pencil drawings.

A MINIATURE HISTORY OF THE ENGLISH HOUSE, by J. M. Richards. The Architectural Press, London. 72 pp. 9 x 6. 3s.6d.

Pocket-sized history of English domestic architecture. Very good for quick reference or for getting a general grasp of the entire field. Illustrations are well selected and reproduced.

THE MINOR ARCHITECTURE OF WORCESTERSHIRE, by W. M. Ingemann. John Tiranti, Ltd., London. 48 plates. 12½ x 9½. 21s.

A collection of photographic illustrations with a few pages of introductory text. Examples shown include many charming small buildings, chiefly of the pre-Georgian period. Unfortunately, the reproductions leave much to be desired.

FUNDAMENTALS OF HOUSING STUDY, by Joseph Earl Davies. Teachers College, Columbia University, New York. 355 pp. 9¼ x 6½. \$2.85.

An analysis of recent literature on housing, presented as a source book for use by study groups. A very valuable compendium of current opinion with an excellent bibliography.

ARCHITECTURAL DRAWING FOR HIGH SCHOOLS, by Harvey W. Waffle. Bruce Publishing Co., New York. 324 pp. 10 x 7½. \$2.20.

A textbook for use in elementary classes in architectural drawing. It gives sufficient information to enable the student to make working drawings. Illustrations show a great number of construction details in wood and masonry as well as conventional indication on drawings, stock sizes, etc. It is unfortunate that the drawings in the historical section are extremely poor and that the examples of modern residences presented as models for emulation are in the worst possible taste. Taken as a whole, however, a useful book for class use or home study.

ROOFING: ESTIMATING—APPLYING—REPAIRING, by James McCawley. Privately published, New York. 379 pp. 9 x 5½. \$3.00.

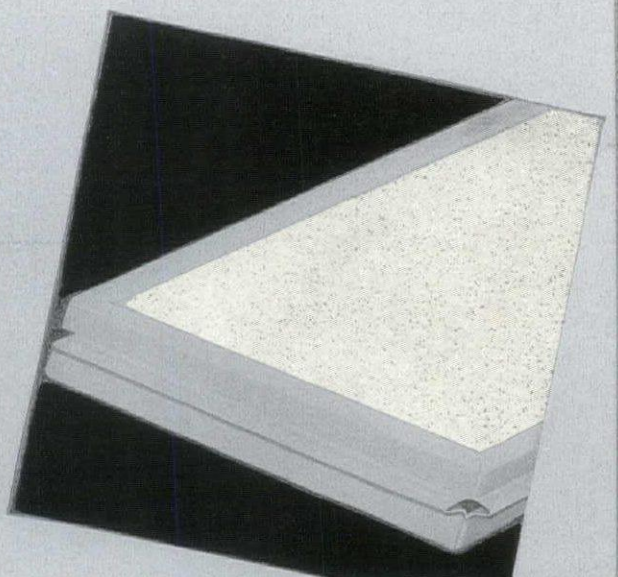
A handbook describing the practical application of roof coverings. It deals with the uses of asbestos, asphalt, coal tar, metal, slate, tile and thatch. An interesting section is the historical sketch which presents a great deal of scattered information on the origin and early uses of present-day roofing materials.

(Continued on page 60)

NEW HOME OF Reader's Digest

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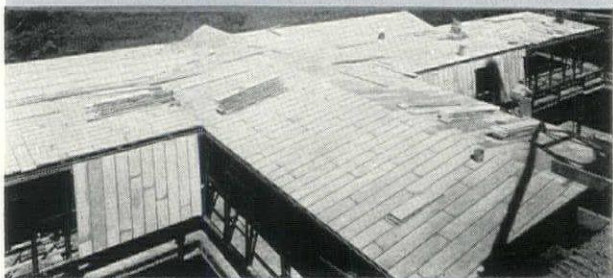
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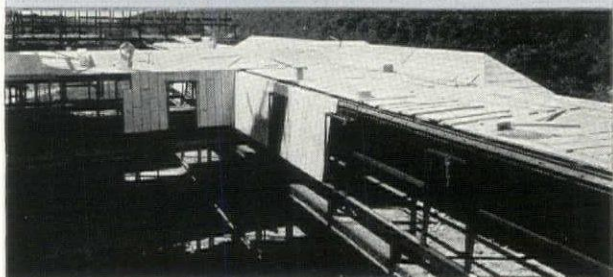
GYPSTEEL PLANK



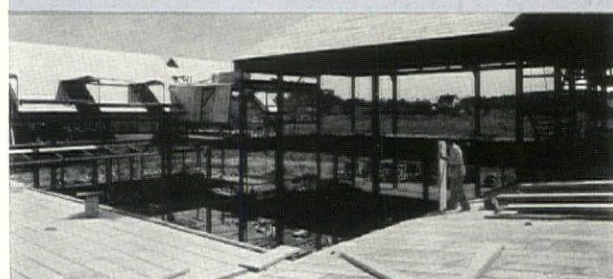
These photographs of the new Reader's Digest building illustrate the adaptability of PLANK to modern construction methods.



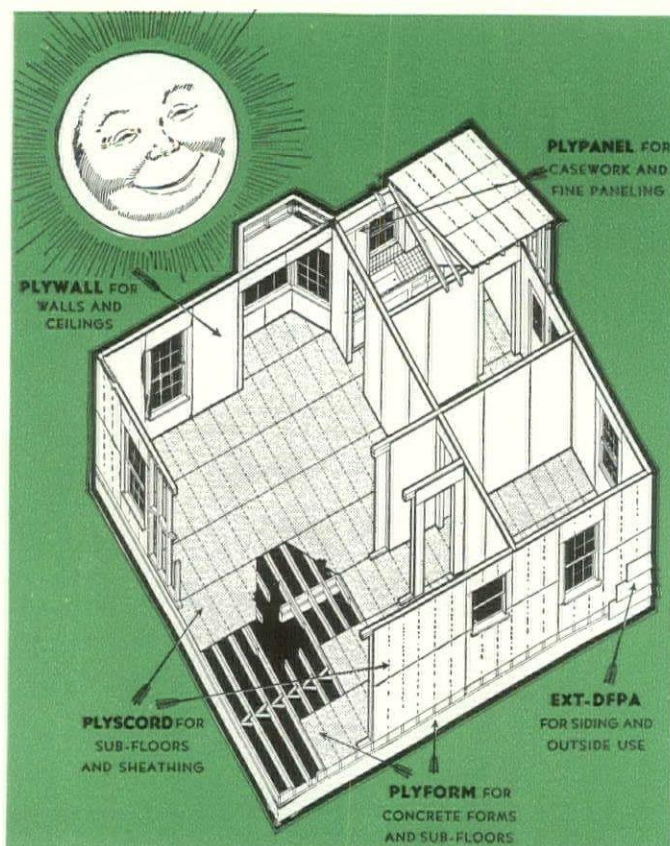
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PLANK is adaptable. Note how easily it can be fitted around windows and other openings.



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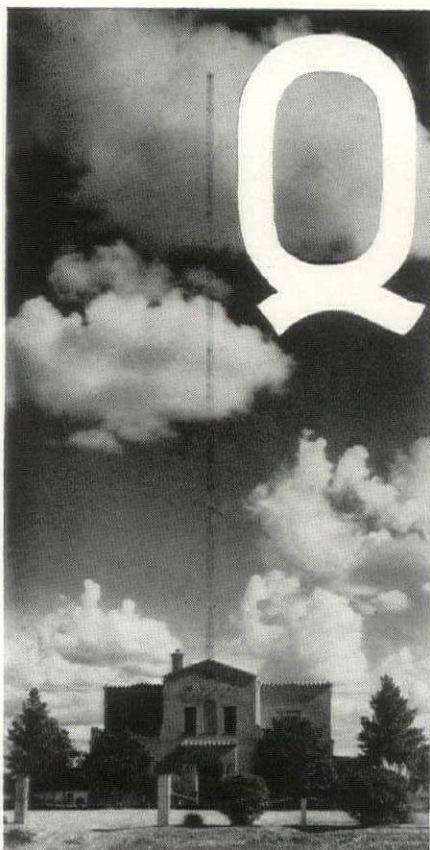
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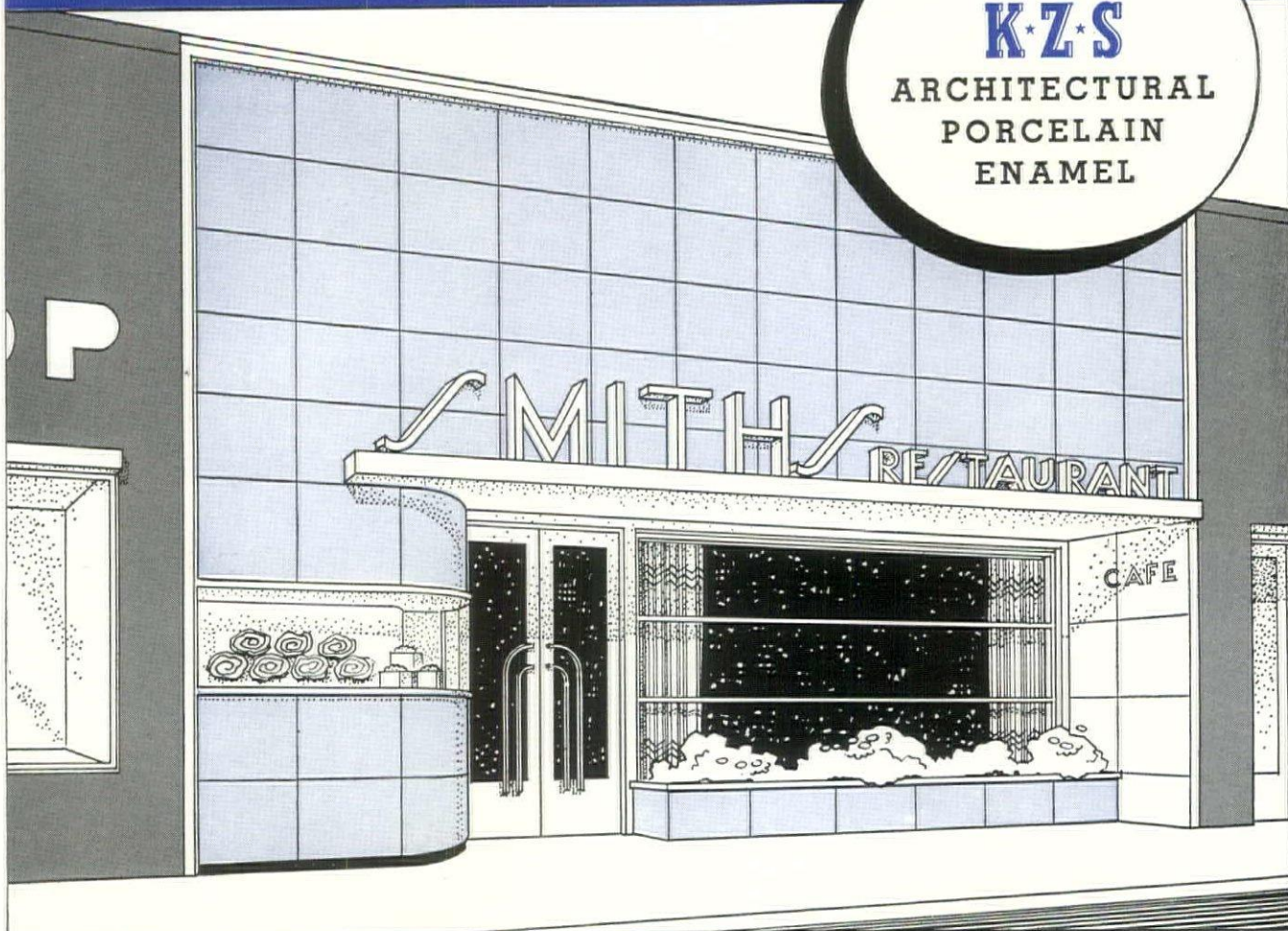
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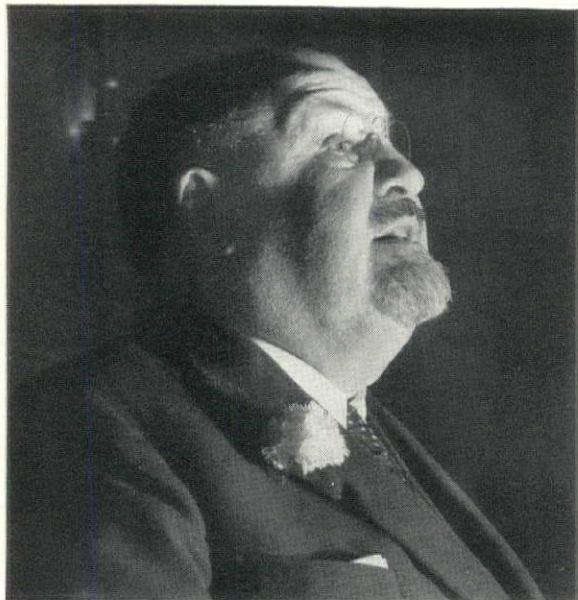
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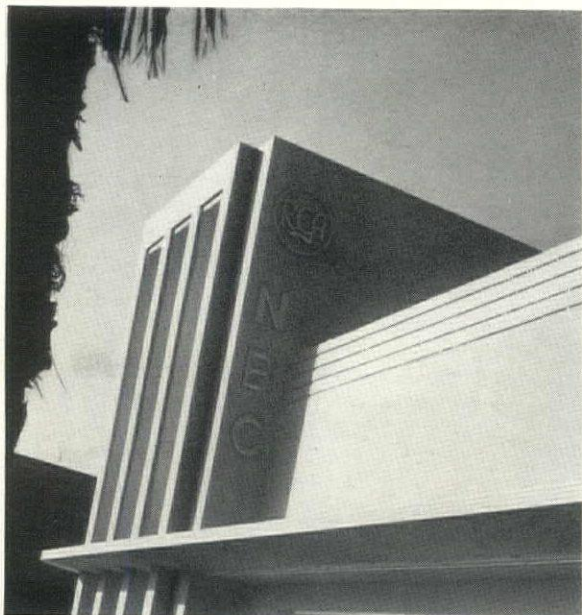
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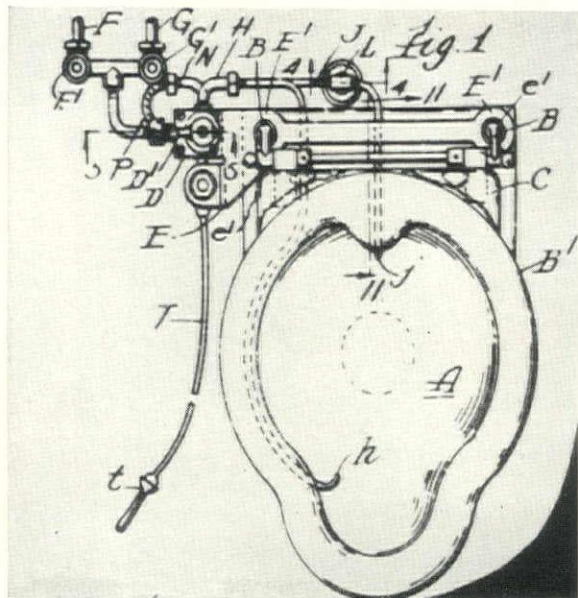
MAN OF THE MONTH . . . he brought together scientists and shelter (page 154)

Hagel & Mieth

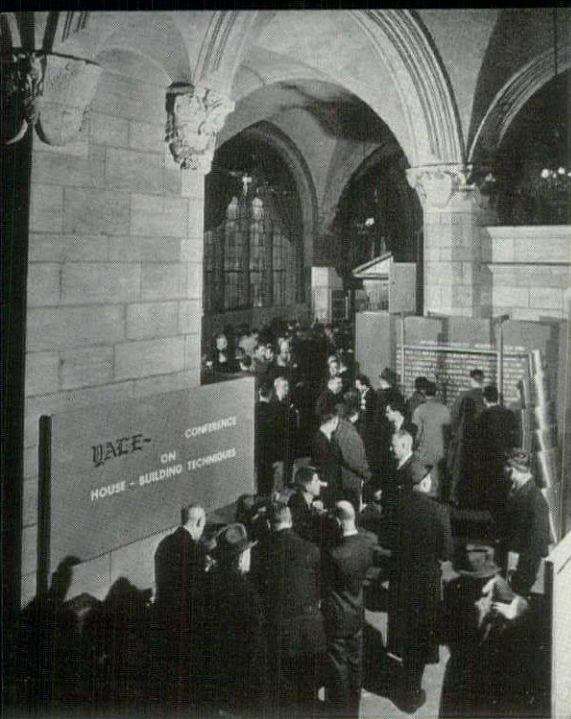


BUILDING OF THE MONTH . . . Hollywood takes it away (page 161)

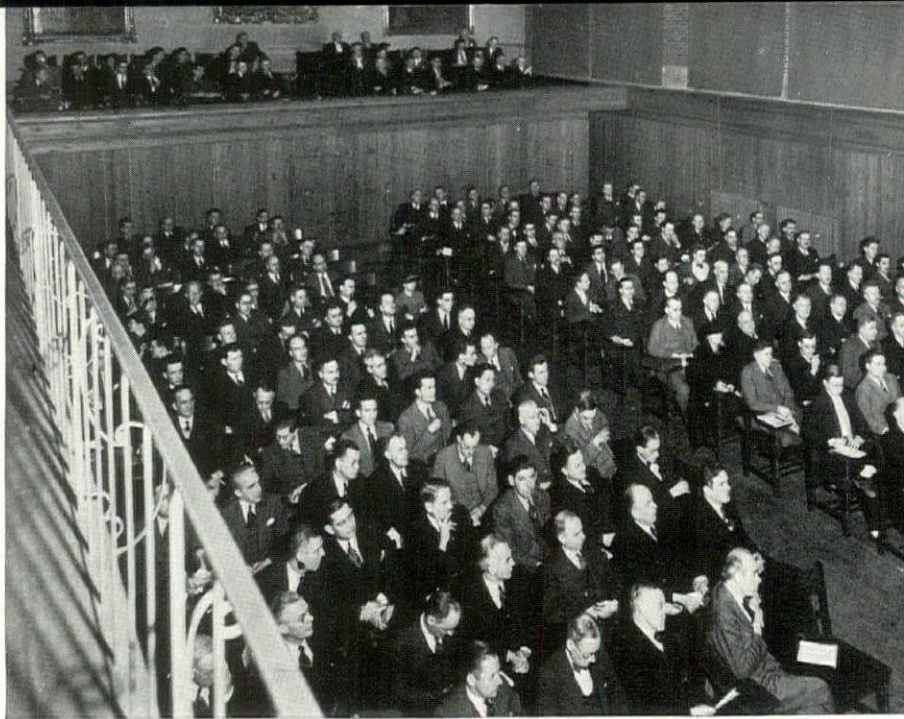
Maynard L. Parker



PRODUCT OF THE MONTH . . . U. S. makes it, Europe takes it (page 217)



The conference opens: guests arriving at the Yale Gallery of Fine Arts for registration.

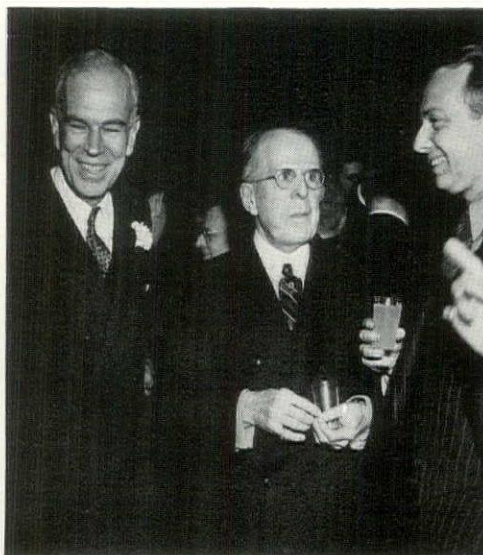


With double the number of expected arrivals, the conference overflowed the meeting hall. Represented: architects, manufacturers, educators, engineers, builders.

All photos, Hegel



Round tables were popular, discussed wood, glass, metals, plastics, plumbing, lighting, heating, finishes, concrete, and kitchen planning.

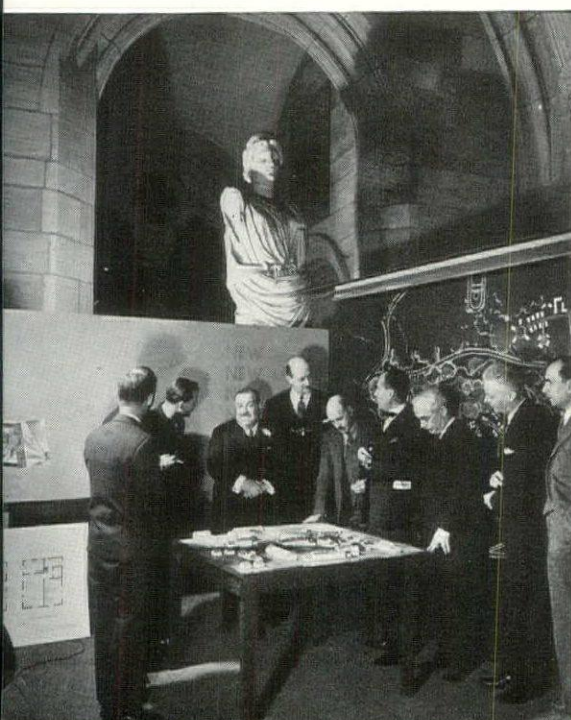


Professor Frederick Godley of Yale, Weyerhaeuser's George F. Lindsay and Professor John Ely Burchard of MIT reviewing the results of the first day.



Albert Mayer, William Lescaze, Conference Chairman W. K. Harrison, Henry R. Luce speaking at the dinner; Yale President Seymour at the

Dean Meeks of Yale with deans and professors from Kansas State, Columbia, Princeton, Bennington, Harvard, Pennsylvania, Michigan, and Carnegie.



The YALE-LIFE CONFERENCE on House Building Technics

Held at Yale University last month was the first major conference on housing to deal exclusively with problems of technique. The significance of this drastic restriction of the usual range of discussion might be interpreted in as many ways as there are attitudes toward the housing question. Out of this meeting, however, emerged two indisputable facts, both reiterated by speaker after speaker. The first is that whatever the basic trouble with housing may be, it is not due to a lack of technical progress. Said Beardsley Ruml: "It is entirely conceivable that all of the savings which can be secured . . . may be swallowed up in increased prices for land." John Ely Burchard: "This reality is that the problem of doing the same sort of thing with shelter as has been done with other articles is fundamentally a problem of merchandising and not of technology." Others amplified this approach. A more surprising outcome of the discussions was the fact that while the 200 specialists present showed substantial agreement on the virtues of standardization, prefabrication of parts, integration of structure and equipment, and modular planning, there was little concrete evidence that the building industry was, except in isolated cases, doing anything about it.

If the significance of the conference is to be measured in anything but words, it would seem that Building's indispensable next step would be the creation of some machinery for coordinated research, and for promoting the general acceptance of cooperatively established standards.

Below are excerpts from a number of papers presented at the conference. As in all such condensations of factual reports, there is the danger of presenting ideas taken out of context, and the unavoidable omission of valuable technical data.

HOUSING AND THE ECONOMIC SCENE BEARDSLEY RUMML, Treasurer, R. H. Macy & Co.

The need for housing in the United States is estimated in millions of units. I can't say that I am prepared to challenge the figure, but there are some questions I'd like to ask about it. For instance, what is a housing shortage? It isn't like a shortage of wheat or cotton, produced by drought or other natural causes, nor does it appear to be a shortage due to lack of architects or builders.

Just what then is the housing shortage? Undoubtedly, the majority of families, with the exception of those who are absolutely destitute, can buy or rent some kind of living at a price they can afford to pay. For many families, however, the shelter would not be adequate for family needs or desires. So the shortage is not really the same type of physical shortage that followed the war. It's a shortage based on industry's failure to produce better housing than now exists at the same or lower prices and rentals now paid. The conclusion, then, is that the housing problem is in large measure one of cost.

The price of housing is based on a series

of controlled prices and artificial costs—materials, labor, land, and financing. And until such time as competitive efficiency in building is restored all along the line, there can be no real increase in the value of housing received per dollar cost.

I would like to turn your attention for a moment now to another broad consideration of some importance. I refer to conditions which are known to prevail to a considerable degree in the construction industry, in the supplying industries and the builders. As we know, there are numerous relationships between suppliers themselves, between suppliers and their dealers, and between trade union organizations and the suppliers and builders, which have the effect of holding up the prices of many commodities and services which go into the building of homes. Some of these combinations have been prosecuted both under the criminal laws and under the laws prohibiting restrictions of trade. There are, however, many cases where the results achieved in the way of higher prices and higher costs have been secured without any criminal violations. I call these to your attention particularly in view of the fact that we are all struggling

to maintain the virtues of competitive private enterprise and individual initiative. I also wish to remind you that the problem of land control in community building, such as I have suggested previously, is closely related to the problem of land values. It is entirely conceivable that all of the savings which can be secured in the lowering of financial charges, the decline in prices of materials, and any decline in labor costs can be swallowed up in increased prices for land. This raises a series of fundamental considerations which are closely related to the taxation of real estate. Historically, many of our difficulties in the development of our American economy have been traced to the ability of landowners to collect on their monopoly position. Likewise, our tax theories, which have rested on the ability of real estate to pay, have been influenced to a certain extent by the same type of philosophy. It seems to me that our tax practices have in a sense stimulated the development of real estate and its effective use. Nevertheless, a continued and re-emphasized study of these problems seems to be imperative if we are really going to get at the roots of low cost housing.



Left: the Integration exhibit, which displayed examples of dry finishes, pre-cut framing, modular construction, and pre-fabricated elements.

Below: 1. and 2. prefabrication exhibit; 3. cross-section of house; 4. Yale architectural students assembling a plumbing display; 5. the radiant panel-heated room; 6. arrival of Buckminster Fuller's prefabricated bathroom.

LOWER COSTS THROUGH MASS PRODUCTION

R. H. SHREVE, Shreve, Lamb & Harmon, Architects

There is no experience record in the United States in the construction field which may be taken as a basis for discussing the possibility of securing lower costs in house building through mass production. There is some information to be gained by a review of the situation in this field in England and there is perhaps something more to add to our review of the subject by comparing that English situation with related experience in the United States.

There are differences of opinion concerning the homes built in England as to their future usefulness, as to the quality of construction and as to the soundness of the community planning, but there can be no question that in this great construction movement the promoters attained low cost through mass production. No agency

in the United States, whether Government or private, has yet completed any large scale housing project which can be designated as mass construction comparable to the English program or that can be said to show a cost markedly lower than normal cost by virtue of quantity purchases.

Efforts have been made by builders in the United States to broaden their operations to such a scope as to permit savings derived from quantity purchases or quantity production. These efforts have been in some small measure effective through the use of prefabricated elements of the structures, through direct buying, through packaging of materials making possible economies in handling breakage and installation, and through the continuous use of forms and construction equipment in repetitious operations. None of these efforts has been strikingly effective. The greatest of the projects of this type is now in course of development and construction

in the Bronx section of the City of New York, where the Metropolitan Life Insurance Company is constructing, through a single operation, homes for more than 10,000 families.

This effort at mass production, the greatest of its kind ever attempted in the United States, carries the promise of a most favorable outcome. At the end of the short time within which the development may be completed it can be determined to what extent something has been gained in this effort to lower costs through mass production.

LARGE SCALE HOUSING

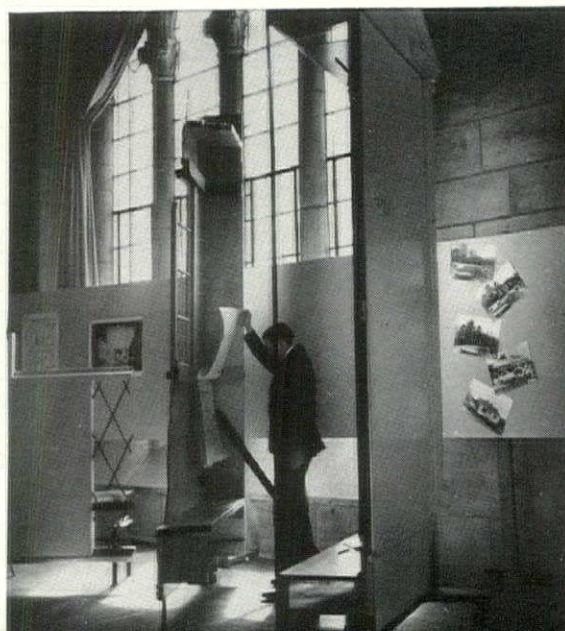
MILES L. COLEMAN, Assistant Administrator, Federal Housing Administration

The market that I conceive as being the proper and attainable aim of industrialized housing operations is one composed of urban families with incomes ranging from an upper limit of \$2,500 down at least to a level of \$1,000 a year, and capable of

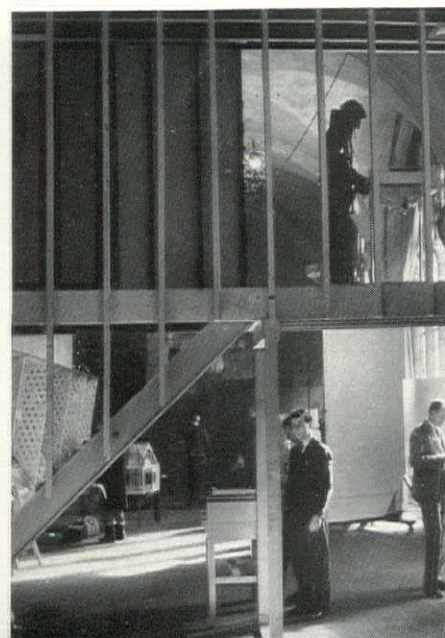
1.



2.



3.



occupying dwellings rented at from \$15 to \$40 a month. This is a potential market of probably 5 million families, for whom the last generation saw few new homes built. We have, therefore, from the point of view of an expanded production, what we need: a market that, on the one hand, can be exploited only through standardization; and one, on the other, that will accept a standardized product.

In dealing with large scale housing enterprise, standardization must begin with the family unit, since the family unit is the element of design from which the larger design of the project is built. For practical purposes, three basic family units will be found all that are likely to be necessary in the design of any project. These three will be based upon the normal family variations and may be described as one-, two-, and three-bedroom units. Different locations and other circumstances will dictate the proportions in which these units will be used; but, properly proportioned, they will nearly always do the job.

Standardization of the product also permits the standardization of the equipment required for production. Scaffolding, ramps, forms, and similar items may be made of uniform pattern and used repeatedly. Jigs may be set up to increase the accuracy and reduce the time of producing certain types of work. Such lists might be further amplified if time permitted; but so much as has been given should be sufficient to open vistas to the possibilities of industrialized operation and economy that standardization affords.

From what we have been able to observe, we can see that these economies may be very real. We have, as I stated at the outset, been able to watch the growth of several organizations as they have been feeling their way along the lines of development indicated; and we have seen their costs diminished and their markets broadened as the degree of standardization of their product and their methods of production have increased.

It is in the further development of such organizations that I believe the hope of the full realization of the benefits of standardization lies; as I likewise believe that it is only through the adoption of the principles of standardization that such organizations can be made feasible.

CONTEMPORARY DESIGN: NEW DIRECTIONS

RALPH T. WALKER, President, Architectural League of New York.

In looking over the titles of the other papers to be heard here I came to the conclusion that perhaps the most important modern building technique had been forgotten, that is: one devoted to the development and satisfaction of the human spirit and the creation of good living in relation to the backgrounds on which we build. There is too much calm assumption in modern times that these will be supplied by the mere use of new materials and more comforts. Modern good living does not mean to me a dependence upon new materials or methods.

The following objectives should be achieved, whether the machine successfully meets the general problem of housing or not. Their attainment is just as much a part of the *moral backbone* of the contemporary designer as should be a lack of prejudice in regards to new ways of material accomplishment.

1. Generous space for family life.
2. A relation of shelter to land, which will offer the opportunities of greater individual use.
3. The development of more ascendant proportions rather than those of political or economic defeatisms.
4. The development of a community life, normal in size and with opportunities for individual responsibilities.
5. The steady development in the desire for beauty in the city, in the lot, and in the building with all its accessories.

To some practical men, and to some engineers (whose ways have heretofore ruled the world) these objectives in part may seem nonsense, but to a humanist they have meaning.

The major problem in designing for good living is to produce more space per family rather than less, and for industry to produce cheaper, more fool-proof and more easily replaced machinery of comfort.

There is a definite distinction between the word house, i.e., shelter, and the word home, i.e., an entire range of emotional and esthetic responses. The house may in part be considered a machine, but the home can only be achieved through a set of stimuli other than those of machine quantities.

THE PROMISE OF PREFABRICATION

GEORGE W. TRAYER, Chief, Division of Forest Products, U. S. Dept. of Agriculture

We may sum up the principal requirements of a material for house prefabrication substantially as follows:

1. Low cost. I put this first and foremost because expensive materials can never make a low cost house.
2. Suitable strength and stiffness, including a degree of shock resistance.
3. Ease of fabrication. If costs are to be minimized, excessive labor and power consumption and expensive equipment for fabrication must be eliminated. Again, ease of fabrication makes possible manufacture at small plants, with low overhead, and so scattered as to hold transportation costs within reasonable bounds.
4. Precision of manufacture.
5. Lightness. Not only is lightness desirable from the standpoint of shipping costs, but it is also an important factor in ease of erection.
6. Low thermal conductivity. Regardless of the properties of the material itself, the finished wall, floor and roof units must have satisfactory insulating properties, and must be free of direct exterior to interior conduction paths.
7. Durability. Durability is a relative term, as no structural materials are everlasting. The exterior materials should afford protection against the weather, as well as resistance to exterior forces. Interior materials must resist the hazards of occupancy.
8. Natural beauty or adaptability to decorative treatment.
9. Fire resistance.
10. Sound resistance.

I have so far purposely avoided the question of relative costs of conventional and prefabricated construction. I wish I could give you the answer. It would at once serve as a barometer in aiding to appraise the future of prefabrication.

I think it is obvious that with building costs varying as they do in different sections of the country, there will be no fixed marginal difference. My own estimate, not based on substantial figures, is that savings will in general not exceed 25 per cent of the structure cost under the most favorable conditions.



NEW MATERIALS

RAYMOND V. PARSONS, Research Engineer, Johns-Manville

When some naïve public housing enthusiast makes disparaging comparisons between the housing and automobile industries, I have the urge to point out to him that in the motor industry's contribution to shelter, the sedan or coupe body, they have yet to produce housing under 50 cents per cubic foot, though it is produced under ideal conditions, in a nice cosy factory, on an assembly line basis.

What we housers need to worry about is how to supply housing for that 66 to 70 per cent of the nation who cannot pay over \$30 a month rent or rent equivalent. We have got to begin thinking of our job in terms of housing—not houses. A house must have a site, and it must be connected through utilities and lines of communication and transportation to a community. So that \$30 a month and less must take care of all the costs that raw agricultural land has acquired in the past through being held out of use pending its improvement for housing; for its improvement for housing; it must take care of the costs that congestion in urban centers has added—the cost of restrictive building codes and regulations, the cost of government, and the expenses and profits that speculation has added along the line. And then we find that there is not enough left with which to build the house. Our market says scornfully, "Private enterprise cannot or will not build housing that we can afford to buy." The late Henry Wright was certainly facing facts when he said that there was no magic of T-square and triangle that could place low-cost housing on high-cost land.

In the last analysis, about 88 per cent of all the houses built in America are wood frame houses, though they may be finished with clapboards, shingles, brick or stone veneer, or stucco. And in building those houses, we invariably go through the same motions and utilize the same materials up to a point where we have spent about 47 per cent of our building dollar.

Now if we could divide our walls, floors and roof into modular units and multiples of modules, and then go through nearly all the construction acts outlined in a nice, cosy building, protected from the weather, and used materials that had previously been stabilized against appreciable movement under temperature and humidity changes, that would certainly make sense. And if, instead of using nails and depending upon friction to hold our housing units together, we could get a continuous waterproof bond between them, then we could increase our strengths immensely, and so we could use smaller units of material structurally. If we used the same labor to manufacture our units in the factory and to assemble them on the building site, we could keep our labor employed the year round—in the factory in inclement weather, and on the site in good weather. Then we would have legitimate grounds

for obtaining a lower hourly wage rate from organized labor, and effect a further reduction in labor costs.

All of this technique is available for use by anyone who is not too choosy about utilizing information he has already paid taxes to acquire, for it was developed in the Forest Products Laboratory at Madison.

The February, 1938 Architectural Forum presented a very competent survey of the economies that can be realized on large scale operations even without eliminating speculative profits. These economies were estimated to run between thirty-five and fifty per cent of the costs of individual houses placed on individual lots. Is it too much to expect that the larger saving may be confidently obtained under the Garden City plan of operation and the plywood shell technique? Houses are now being built in all parts of the country to sell with lot for \$4,000 for four or five rooms. If we can build for fifty per cent less, or \$2,000, such houses could rent for about \$20 per month, or from \$4 to \$5 per room per month.

I see that I have built this little story all around plywood, but I am sure you will appreciate that I am referring to it more in the way of an illustration. Undoubtedly steel and perhaps concrete or some composition might be used to equal advantage. I have drawn the picture in terms of plywood because enough work has been done in the field with this material to establish its economies and soundness as a construction material.

RESEARCH PROGRAMS FOR SHELTER

J. E. BURCHARD, Director, Bemis Foundation, Massachusetts Institute of Technology

It is easy to make a good case against the methods of research we have all been following in house synthesis; easy to show that we, who would not try to solve a chemical problem without the benefit of chemists, have been all too willing to leave the solution of this problem to the amateur; easy to specify in detail the sort of mistakes which have been made. But I choose here to criticize us on a broader ground; on the ground that we have ignored a vital reality.

This reality is that the problem of doing the same sort of thing with shelter units which has been done with many other articles is fundamentally a problem of merchandising and not a problem of technology; that given the will and the power and the merchandising ability, there are any number of solutions already proposed which are technologically satisfactory for a start; that on the other hand without this ability and power and will the finest technological solution which the combined engineering brains of the nation might contrive would yet remain an academic solution.

By now it must be fairly clear that there are, broadly speaking, three ways in which the problem of shelter construction may be attacked. One has already attained

substantial success, the other two remain so far theoretical, but I think it is not being too credulous to believe that they also are possible.

The first approach is that of building a great number of units on a single site and substantially at the same time. That economies can be obtained in this way has been shown so often that there can no longer be doubt.

Oldest of the three approaches is that which has usually been called prefabrication, but which I would prefer to call *self-contained integration*. This approach presupposes a company of great financial resources, of purchasing power, with ample machinery, with able sales forces, producing and merchandising detached houses in much the same manner that a refrigerator or a radio, or yes, even an automobile is produced and merchandised. A great many hypothetical reasons can be advanced why such a company might not succeed. The fact is, however, that no company of the requisite degree of power has displayed any serious interest in doing anything in this field.

But I wish to state my conviction about this approach without any reservation whatsoever. It is that whenever such a corporation does exist, ready and eager to go into this business, and whenever such a corporation forms sound judgments as to what it wants to merchandise, technology will be ready.

So it seems to me it is time for us to recognize that the frontal assault by private industry on the problem of producing shelter by more modern and hence less costly methods cannot begin until private industry is ready to make the attack either through self-contained or through cooperative integration. The problem is evidently not one for research.

But that does not mean that research in the production of shelter should cease. It does mean that perhaps it ought to have a slightly different orientation.

It seems that the crying need for shelter research is for a coordination of programs. For some of the studies, joint resources of man power and even of financial power are imperative. All studies of the questionnaire type would be made more effective through joint criticism of technique. Mutual exchanges of information, free and friendly consultation and criticism, would eliminate superficialities and superfluities and result in some sort of orderly progress. More knowledge of what the other man is doing and thinking would take housing research out of the hush-hush atmosphere which now envelops it and into the free and stimulating air of constructive and cooperative thought.

Shelter research needs a coordinated program with specific objectives each of which is at the time it is conceived a simple and direct objective attainable in a reasonable space of time and without fantasy. Such programs can only be developed through a controlling mechanism which has already proved effective in

other research problems which call for cooperation. The controlling mechanism is that of a research council, a council which without shaking any big stick is none the less able to reconcile divergent views in the interest of a coherent program, a council which, meeting frequently, will plot annual programs within the capacities of existing research resources and research personnel, programs coordinated to avoid repetitions and so devised that the progress from objective to objective can be hopefully planned in advance.

Such a council, operating as outlined, might make research in shelter mean something—might bring it to the point where on the dawn of the great day shelter research would be ready; and if the day should never dawn it would in any event have released us from the uncongenial roles of woodpeckers pecking away at the trees of a petrified forest.

HEATING and VENTILATION of the House

DR. C. E. A. WINSLOW, Professor of Public Health, Yale University

One of the most fundamental objectives of the dwelling is the maintenance of a localized atmosphere favorable to human health and comfort.

The desirable environment, from the standpoint of heat loss, depends directly on the heat produced in the body and this heat may be five times as great when a man is exercising violently as when he is reclining and at rest. Furthermore, the weight of clothing worn is a vital factor in the picture. Thus, with moderate relative humidity and minimum air movement, an air temperature of 80°F has been found ideal for the lightly clothed subject at rest in a reclining position. The temperature actually maintained will, of course, be largely a result of operating practice and the architect, if his heating design be reasonably controllable, is not responsible for the overheating which constitutes so serious a menace in many American homes. It is his task to provide facilities which will permit the maintenance of a temperature of 70° at knee height under ordinary minimum winter conditions.

For simplicity, we have been speaking of air temperature alone. It is, however, of the first importance to remember that this is only one of four distinct factors which govern heat loss from the body. These four factors are the temperature of the air, the movement of the air, the relative humidity of the air and the mean radiant temperature of surrounding surfaces.

There is a common belief that dry air in itself exerts a harmful effect upon the skin and mucuous membranes; but there is no convincing evidence that the increase of atmospheric moisture which can actually be introduced by humidification into the air of occupied rooms has any effect upon health and comfort. All controlled experiments on this point have yielded negative results. Ventilating engineers' standards

of ventilation permit a range in relative humidity. All in all there seems no adequate justification for artificial humidification in the ordinary dwelling.

From the standpoint of winter heating, air temperature and wall temperatures are the two problems of the architect.

We have so far considered only the problem of keeping our homes warm in winter. The converse problem of keeping them cool in summer is physiologically, perhaps, as important. It has been, on the whole, strangely neglected for it is generally assumed that man must be protected against the cold of January but that the heat of August is an inevitable dispensation of divine providence.

The physiological responses of the body under conditions warmer than the optimum are quite different from those which are manifest in the cold zone. Here, the major defense of the body is evaporation and, as we have seen, the secretion of sweat is delicately adjusted to maintain thermal equilibrium over a considerable range of environmental conditions. This type of adaptation—while thermally effective—is accompanied by a marked sense of discomfort; and it has a rather sharp upper limit beyond which the sweat runs off without evaporating and exerting its cooling effects upon the body surfaces. For the lightly clothed body, at rest in a semi-reclining position, this limit is reached at 127°F in perfectly dry air and at 88°F with air completely saturated with moisture.

In this zone the relative humidity of the atmosphere is of prime importance, along with air temperature, air movement and wall temperature. There is no very practical method of cooling walls, but summer comfort can be promoted by modifying either one of the other three factors involved.

It is reasonable to believe that more careful analyses of the thermal factors involved and our physiological response to these factors may open the way to an art of air conditioning which will aim at an active sense of physical well-being and not merely at the avoidance of conditions harmful to health.

SHELTER AND MOBILITY

CORWIN WILLSON, Engineer and Designer

The motorcar is our most popular outer-garment. But as shelter the motorcar has little value, except to lovers. The trailer, our second step toward industrialized shelter, has no value in motion. The third step we now are facing is the redesign of our motorcars so that they will be of great value parked. The trend in design today is toward the more dynamic—which means toward the more abundantly useful. Without greatly increasing overall length, the motorcar can be adapted to sleep and feed its occupants in decency and comfort. Remove the necessity of so much costly die-work by the reduction of snooty compound curves and by automatic welding and the saving thus achieved can provide the increase in body size and utility without increased cost. Obviously discussions of

our housing problem will become a little less medieval when every family can eat and sleep—in a pinch—in its motorcar. The first job of housing research, as I see it, should be the bringing together of those controlling investment funds, those controlling the production of metals, rubber, glass, insulation materials, wood products, plastics, oils, paints and chemicals and those now building motorcars, railroad coaches, buses, trucks and trailers into a round table discussion of the facts I have here touched on briefly. Today we are in the midst of a painful period of transition wherein our industrialism is striving to shed its swaddling clothes and become adult enough to create a culture suited to its needs.

I believe we can begin to put a sound foundation under housing research by an acceptance of the following assumptions:

1. The design of mass shelter should be adapted to the rapidly changing realities faced not only by the individual average consumer but by the entire nation.

2. The chief of the individual mass consumer's realities in 1939 are: low uncertain incomes and increasing technological leisure.

3. Our chief national need is for more work for hungry machines, cheaper prices, a revitalizing of what underlies our existing unemployment and stagnation.

4. To push these two needs into the same twin bed, we should begin to intrigue the mass consumer into wanting to own and enjoy within whatever income level represents our present state of social wisdom the kinds of shelter which most consistently and in greatest volume can keep the wheels of industry turning—this making possible the three-dimensional reconstruction of our present obsolescence in ways that cannot help but benefit everyone in America—including every interest represented here.

5. Existing types of shelter automatically divert nearly three-quarters of the consumer's dollar into the pockets of those primarily intent not in reconstructing the world anew and keeping wheels spinning, but in protecting their old investments.

6. An industrialist can understand that our national health depends on and demands an accelerated rate of obsolescence—the destruction of the old to make way for the new, and slum-clearance cannot scratch the surface.

7. Hence, the mass-consumer is learning how to escape from our present urban oligarchical hind-sightedness in ways which, unless stopped, will topple our existing system.

8. We must design wholly new types of shelter having a sounder relationship to present technological and social trends, new types the consumer can be made to want strongly enough to make the effort to acquire them, instead of being handed the old kinds on a subsidized platter.

9. To make such new types of shelter better AND cheaper, the outer shell, interior arrangements, furnishings and appurtenances should be designed as one organic

unit, sold, delivered and serviced as such. 10. Since to be cheap, such types of shelter must be of limited dimensions, we must add some new quality to enhance the occupant's sense of power and pride even when used at third-hand.

11. As this quality is mobility, we should induce the industries most skilled in this field to analyze the problems and find the solutions which soonest will insure the successful industrialization not of homes only but of all kinds of mass shelter.

12. Thus breaking with the static, aristocratic, handicraft class traditions, mass shelter, under infinitely various externals, takes on the character of a super-vehicle, parked most of the time or in motion most of the time and devoted not primarily to pretentiousness or to the piling up of tribute but to the simple need of the mass consumer for a good outer garment for everyday use.

NEW DEVELOPMENTS IN STEEL FOR LOW COST HOUSES

L. A. ESTES, Manager, Commercial Division, Carnegie-Illinois Steel Corporation

The weight of steel products in an average house is given by the American Iron & Steel Institute as approximately 2,380 pounds. A major problem in the steel industry is to increase the desirability and economy of using more steel products in the average house. This has been accomplished to a remarkable extent in the 300 houses comprising the first unit of Colonial Village, a project at Clairton, Pennsylvania, near Pittsburgh. This project, designed and constructed by Gilbert-Varker, Inc., uses approximately 7,000 pounds of steel per house. In this development, there were no subsidies for the use of any material, and no instructions to the contractors that certain products must be used, regardless of cost or suitability. Steel products to merit consideration had to be acceptable in price and equal or superior in use to other materials. Time does not permit a discussion of the many interesting features of these houses. For a more extended description, you are referred to the December issue of ARCHITECTURAL FORUM.

Substantial progress has been made during the year by companies and individuals sponsoring steel floor, wall, and roof systems, and all-steel houses. The ease of erection of the H. H. Robertson steel flooring, and the flat ceiling and the relatively small depth of the floor create definite savings. The unusual connections between joists and studs in the MacIntosh system have resulted in bids based on this construction at but slightly more than for wood frame. Assembly line production and speedy erection of Harnischfeger panels have created a definite market for these units as construction material. Scott, in association with Globe-Wernicke, has an interesting all-steel design which, so far, is being developed for industrial uses, but which can readily be adapted to residence purposes. Blaw-Knox built an attractive

sample house in the Pittsburgh district last year, and has turned down orders since then, preferring further study of details prior to entering on volume production. Le Tourneau builds three, four, or five-room houses complete in the shop, and so solidly constructed that the entire welded structures have been floated across the Mississippi River to destinations on the other side. Austin, Mills, Stran, Truscon, Steeltex, Insulated Steel, Columbian, Butler, Edwards, and many others are all working toward the definite goal of capturing a share of the market for houses. The increased acceptance of steel products in housing has heightened the importance of the architects in selecting and appraising such material. The steel producers and fabricators were at first inclined to build houses out of sections and shape which were convenient to make; and the guidance of architects and independent engineers has been of immeasurable assistance in pointing the way to new designs and new usefulness for steel.

THE RESEARCH APPROACH

ROBERT L. DAVISON, Director, John B. Pierce Foundation

I should like to discuss briefly three different approaches to the technical problems of building: pure research, applied research, and the evolutionary approach. Due to limited time, I shall not attempt to define these approaches but shall give illustrations of each type.

1. PURE RESEARCH

The work of Professor J. D. Bernal (a crystallographer at the University of Cambridge, England) is an excellent example of the pure research approach to housing. He asked himself: "What molecular structure would make an ideal building material?" Among the qualities set up as desirable was a crystalline structure which would not have cleavage planes between groups of molecules, would be transparent to high temperature radiation from the sun and opaque to heat from comparatively low temperature sources, such as might occur within the building. He had many other qualities which he considered desirable such as lightness, tensile strength, elasticity, etc. He finally found a crystalline form in the joint of bamboo which closely approximated his theoretical ideal—a sort of vegetable silica. This type of research may eventually lead to a technical solution of the housing problem.

2. APPLIED RESEARCH

I should like briefly to review some of the materials, combinations of materials, and methods I have considered in my search for materials at all approximating the desiderata.

Aerated rubber is a good illustration of many of the qualities we desire. It's a light, waterproof, homogeneous material with non-interconnecting air cells. It is impractical for housing because it is too inflammable, inflates under heat, the sur-

face skin is not thick enough, has an odor, and costs too much.

Considerable work is now being done on the development of fire-resisting fiber boards composed of mineral wool asbestos fiber and other inorganic materials. Marine panel is a very promising material that might go a long way toward solving our problem if it could be bought at a reasonable price.

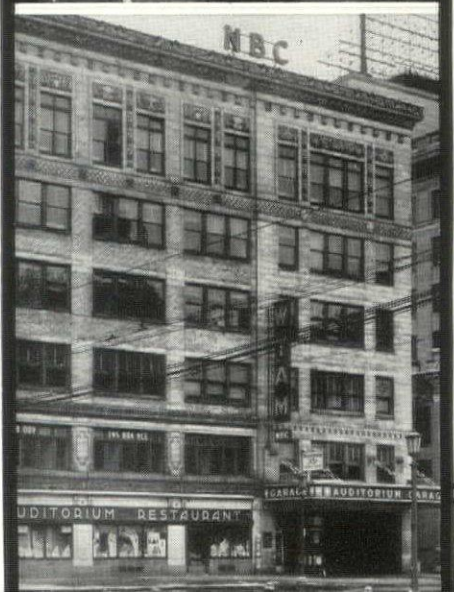
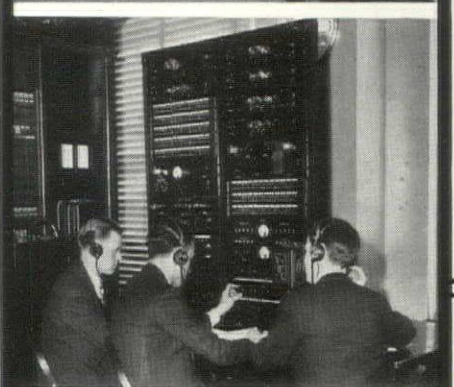
3. EVOLUTIONARY APPROACH

The work of the National Small Homes Demonstration technical committee, whose work I have been asked to describe here today, is conducted almost exclusively within the present frame of existing agencies, materials, methods and practices. The National Small Homes Demonstration set as its objective for 1939 two standardized houses—a four room to sell for \$2,000 and a five room and garage to sell for \$2,500 both exclusive of land. We hope to accomplish this objective (1) through standardization in plan, (2) through standardized space relationships for equipment, (3) by budgeting various elements of the house, (4) by adapting certain practices used in mill and factory construction to dwelling house construction, (5) through added efficiency only possible through very detailed study of all construction details, and last but not least, (6) through demonstrating to builders and developers throughout the country that it is possible to build lower cost houses than they have in the past.

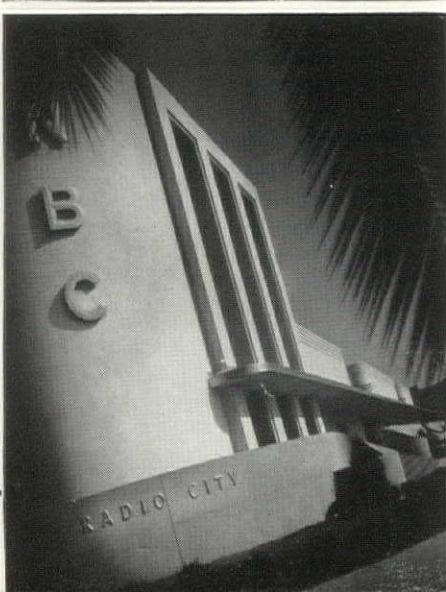
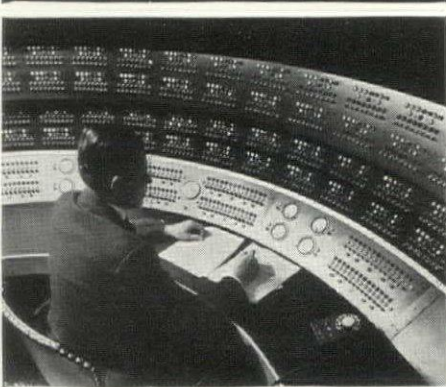
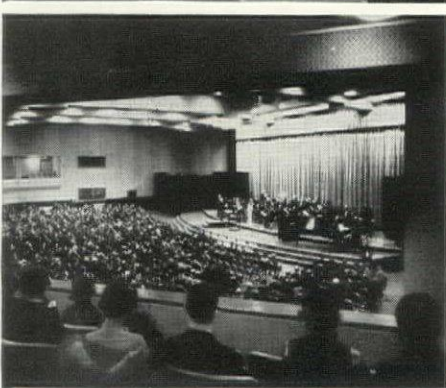
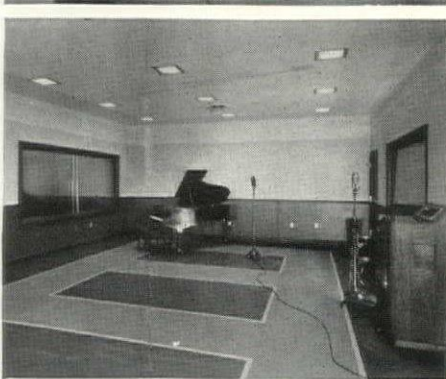
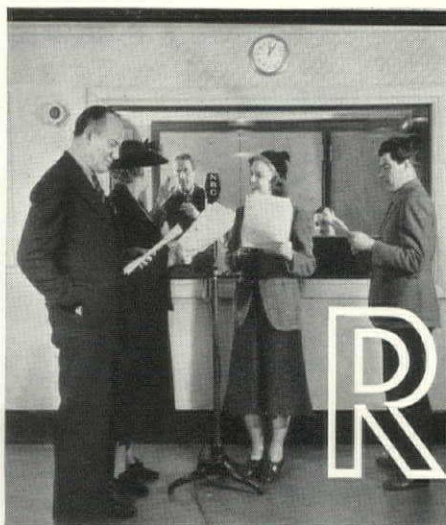
In the shell of the house with the exception of the items which I shall mention, we are following traditional construction methods. The most radical departure in the entire house is the substitution of 2 in. plank floor with 5 ft. span over beams (such as used for many years in mill construction) for the ordinary 1 in. subfloor over joists spaced on 16 in. centers. This effects a combined saving of 25 per cent in the costs of material and labor when utilized for the first floor.

Other items of saving in the shell of the building are all of a minor nature but the sum total of dollars saved here and there can soon amount to an appreciable percentage on a \$2,000 or \$2,500 house. I feel that although this may not strictly be referred to as research it will be of considerable value in stimulating the building of houses in the low income group. From my standpoint the greatest value will be the stimulation of the building industry to consider the problem of ways and means of reaching the low cost housing market. Once this is accomplished I believe industry will discover that they will have to do real research if they are to reach the dollar volume they had during 1920-29. What the building industry really needs is a centralized disinterested research organization which will stimulate and correlate the three types of research in active cooperation with non-commercial, commercial, and Government agencies.

1921-30



1931-39



RADIO

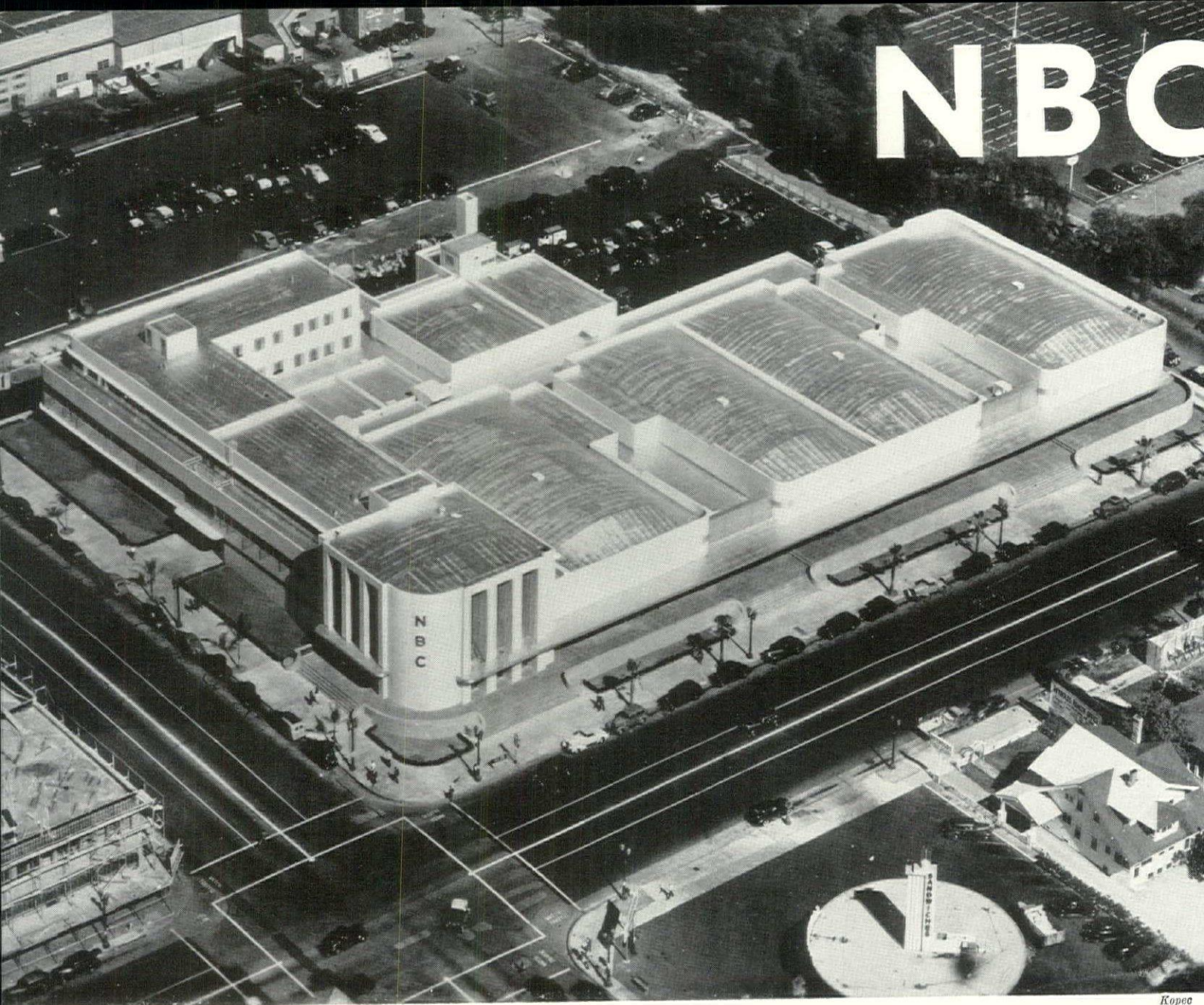
Any earthworm with a modicum of foresight will begin right now to tunnel his way out of the ground at Sunset Boulevard and Vine Street, Hollywood. Here, using for the moment only half of a five-acre plot, NBC has built its newest and best broadcasting studio. In the undisturbed part of that soil the little earthworm had better get set; the scoop shovel will be after him—if not started by the growing needs of broadcasting sound, then by those of television.

Radio broadcasting, starting from scratch barely more than a decade ago, has become a major industry. NBC itself first came on the air in 1927, with the merging of two stations, WJZ and WEA. Since that time the personnel had no more than sat down in a new home when they needed bigger and better quarters. In that first year, 1927, there were six million families of radio listeners; today that six has grown to 27½. Along about the beginning of 1936 NBC built the most modern broadcasting center it could devise, in Hollywood. Outgrown almost before it was occupied, it has been abandoned and another one built.

There is only one little fact that stands in the way of the continued geometrical progression that has marked radio broadcasting up to now—the fact that there are just 24 hours in a day. And at the moment there does not appear in the offing any means of getting hold of more.

Only yesterday a broadcasting studio was a studio. When one period of entertainment came to an end another voice, under the announcer's barrage, jumped hastily into the breach and carried on. Today the number of studios provided in one station must accommodate rehearsals to the extent of six times the broadcast period. Sustaining programs need for rehearsal more than four times their actual time on the air; commercial programs, ten times. Eight studios are kept busy for continuous broadcasting, though this number usually is reduced for the smaller stations by taking some program material from the networks or from transcription. The small stations have an important role in broadcasting but the country genuflects to Hollywood and acknowledges her the entertainment center of the Western world.

Photos by H. A. Atwell, Beitt, Kellers, Wurts Bros., Maynard Parker



Kopco

HOLLYWOOD 1935



For its new Hollywood Studio NBC's engineers had a clean slate, few fetters. Former building operations had not been so easy, what with the necessity for utilizing office building space in certain cities, for fitting elaborate equipment into a taxpayer, or for making over a two-story banking room. Here for the first time the ideal arrangement could be approached, with ample space on the ground level. Four auditorium studios, each planned for an audience of 350 guests, were located to give public access from Sunset Boulevard. "Talent" and operating staff were well screened from the public in their own circulation flow, even to the extent of private automobile approach and parking. Along one end of the five-acre plot, on Vine Street, a three-story office wing provides space for executive and administrative functions.

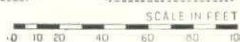
Sound, the soul of a broadcasting plant, can also be its greatest enemy. Protection of it and also *against* it is the designer's first thought. In this new Hollywood Studio, because of ample ground space and the presence of few extraneous noises, the problem was simplified. Vibration and conductivity could be met before they came into existence. Separate foundations were built for each of the larger auditoriums, as may be noted on the basement plan opposite. For only one studio was the customary commercial sound insulation used, because of its location over the air conditioning plant and also because it contains an organ.

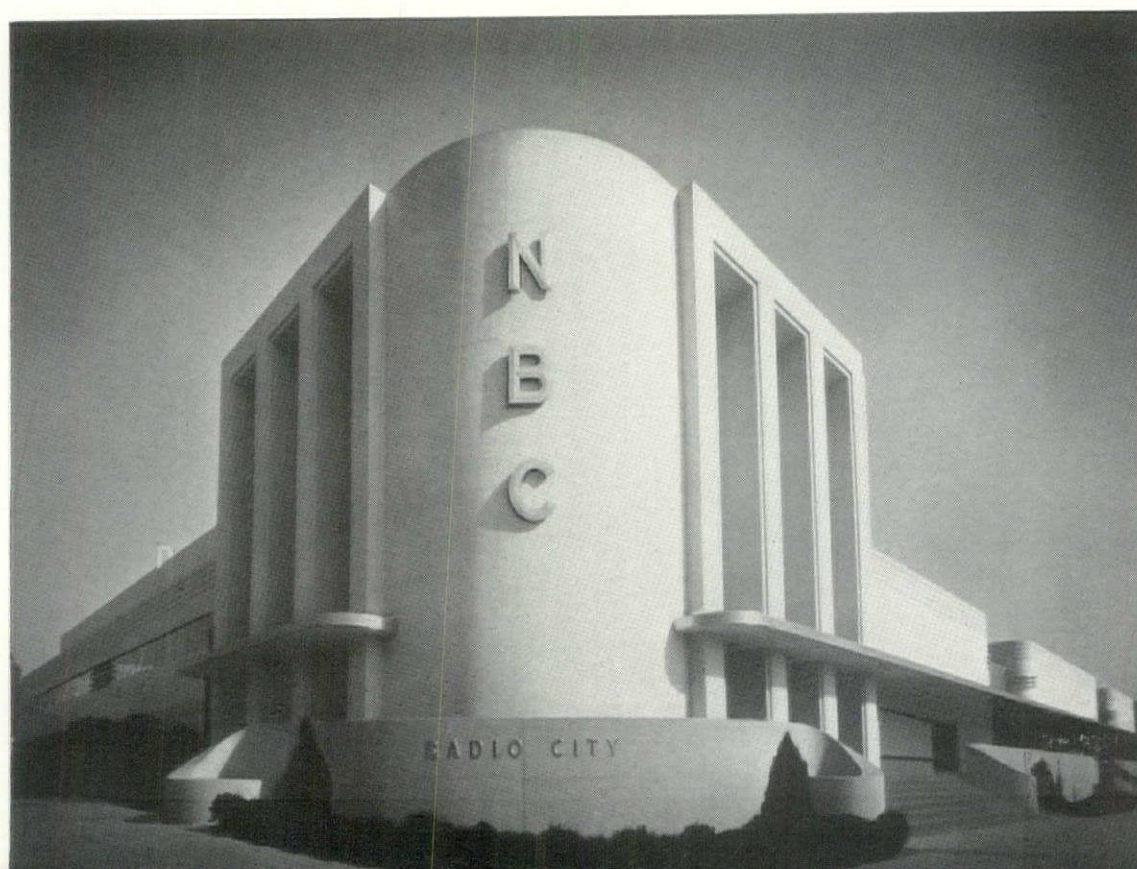
Designed by O. B. HANSON, NBC Chief Engineer, in cooperation with THE AUSTIN COMPANY



PUBLIC CIRCULATION

***** ARTIST & EMPLOYEE CIRCULATION





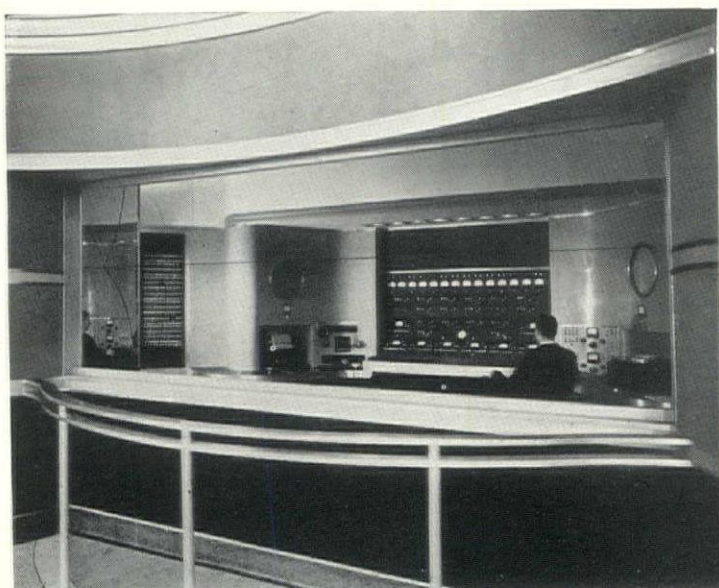
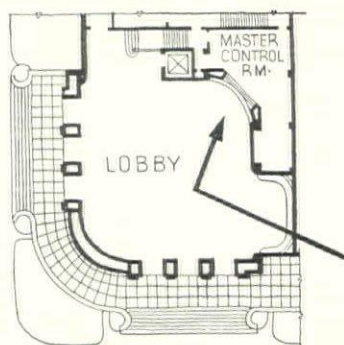
NBC BROADCASTING STUDIOS, HOLLYWOOD, CALIF.

Building is of reenforced concrete, used with particular care as to precision of forms. On the exterior it has been given a blue-green color, chosen over the usual white or buff because it reduces the glare of sunlight and also blends with the green of grass and palms and the intense blue of Pacific Coast sky. The terrace wall is a deeper green, its floor of red cement, and the steps of reddish terra cotta tile. Flat roof domes, seen only from the air, are painted aluminum to reflect as much of the sun's heat as possible and lighten the air conditioning load. Scale is not readily grasped in the main lobby; it measures 50 x 50 ft. with a ceiling height of 40 ft. Diagonally opposite the main entrance, over a window looking into the master control room. Edward Trumbull has painted a mural symbolic of radio's far-flung activities.

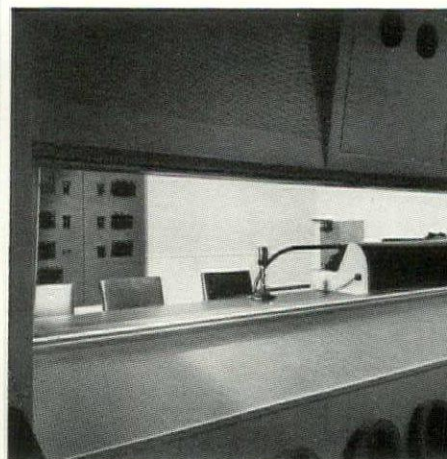
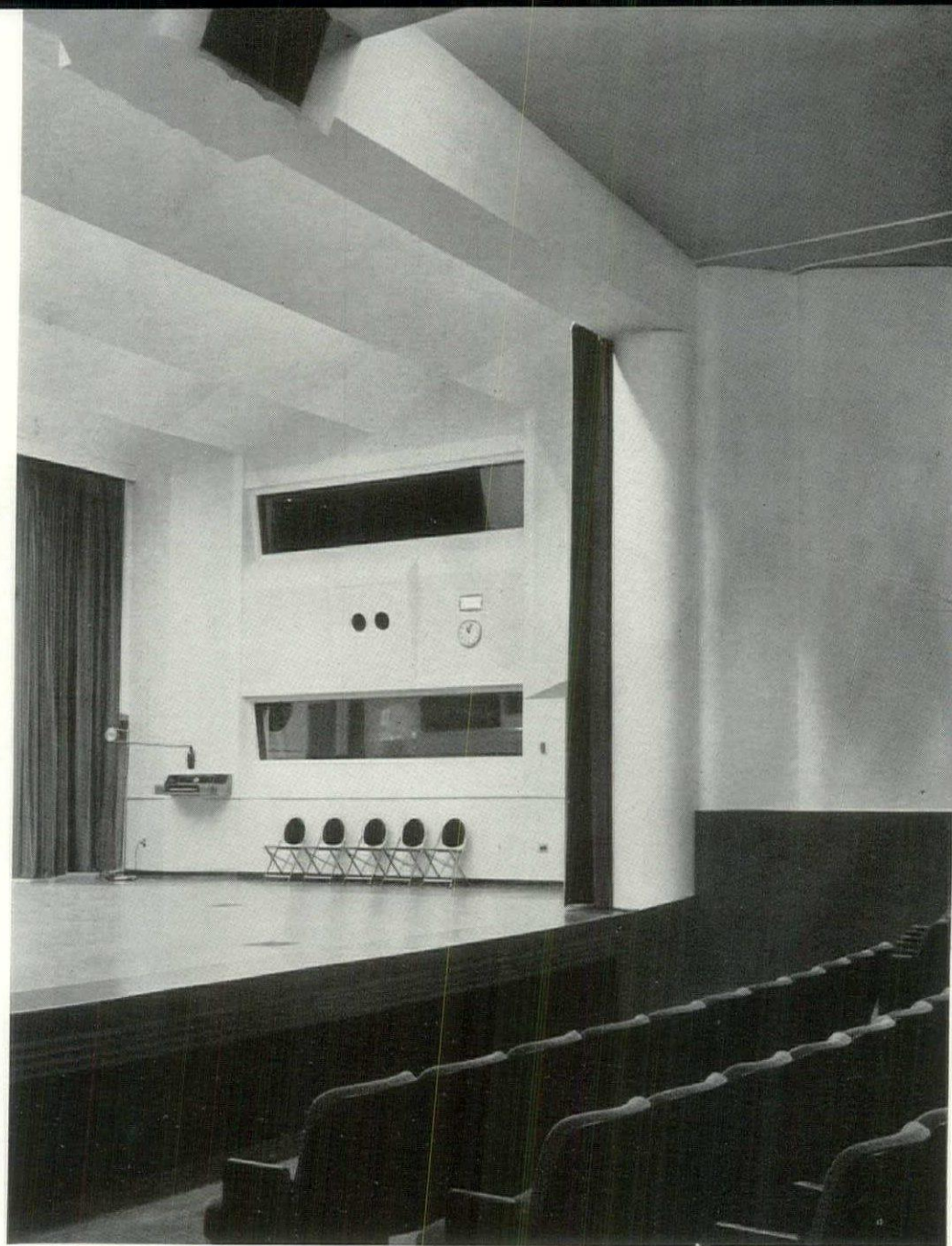


MAIN LOBBY

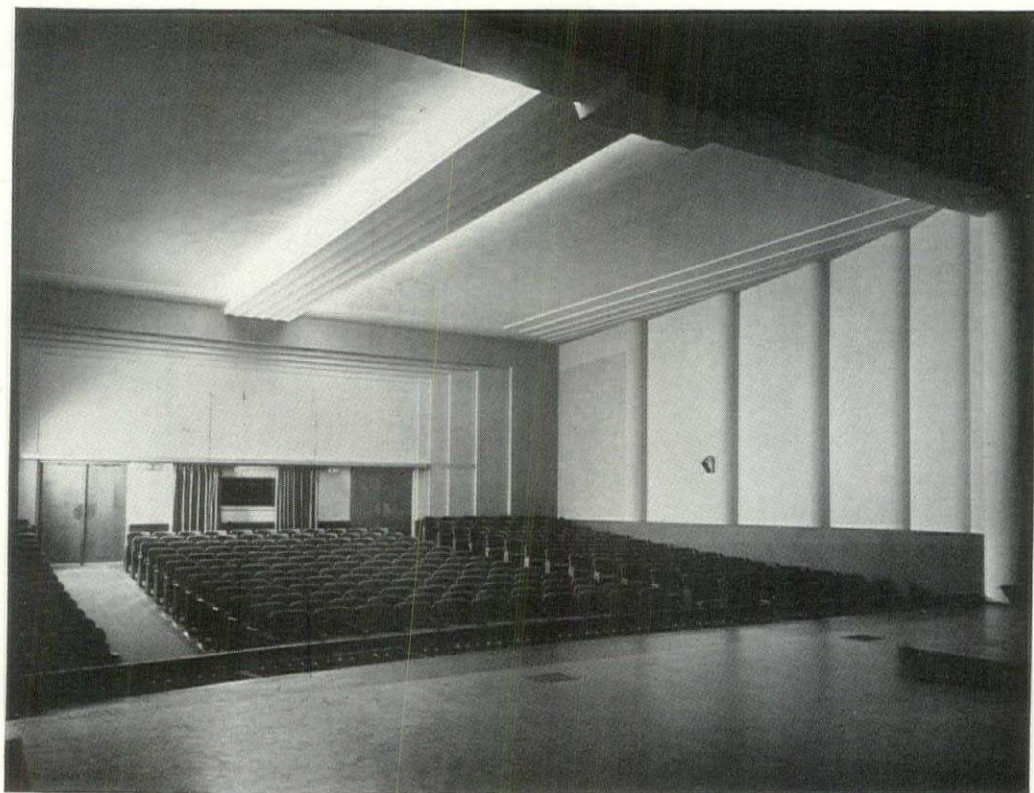
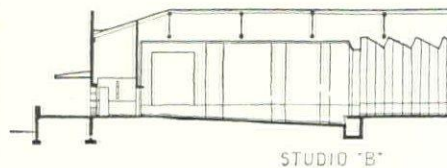
All photos, Maynard L. Parker



MASTER CONTROL



CONTROL

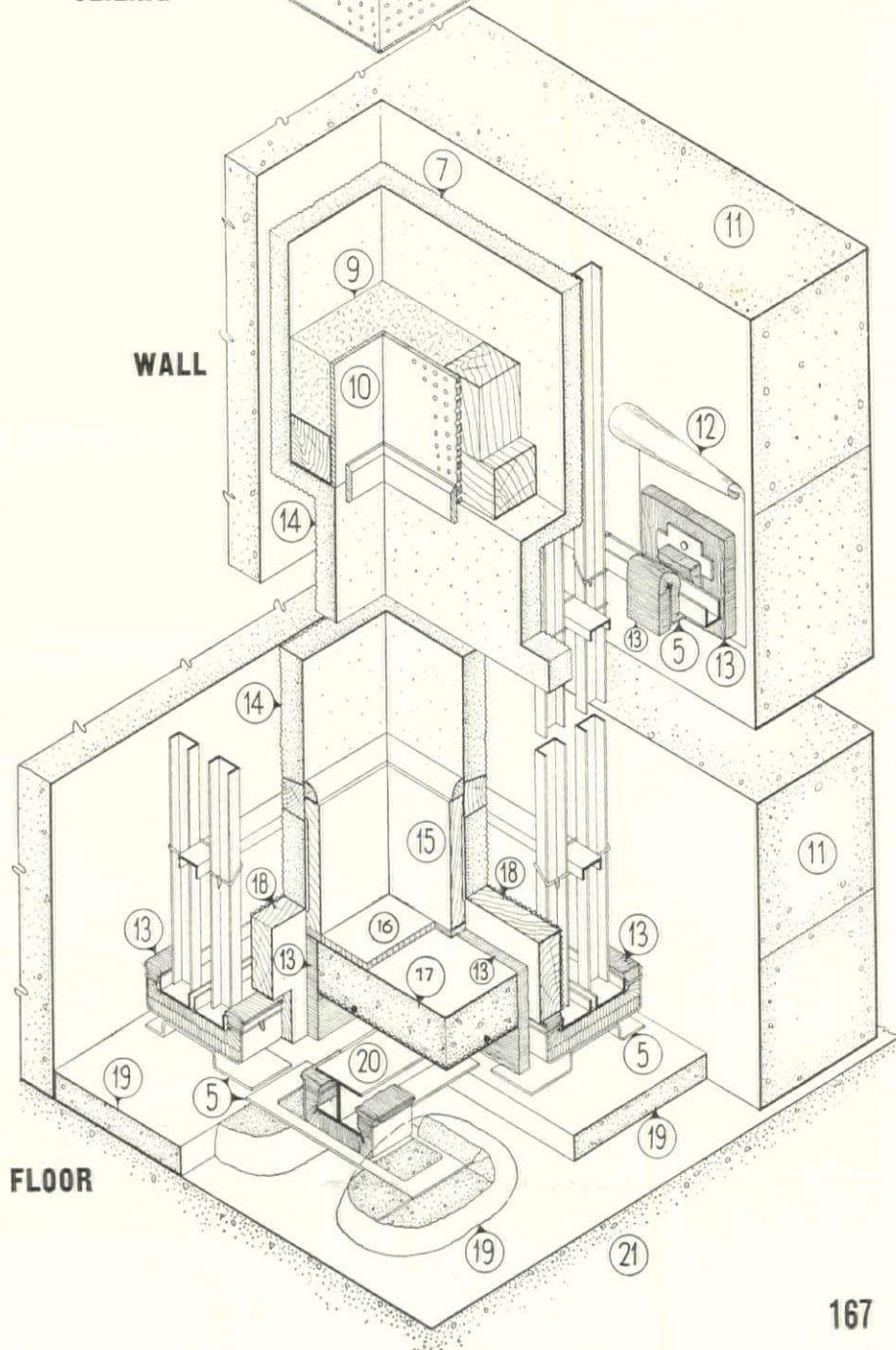
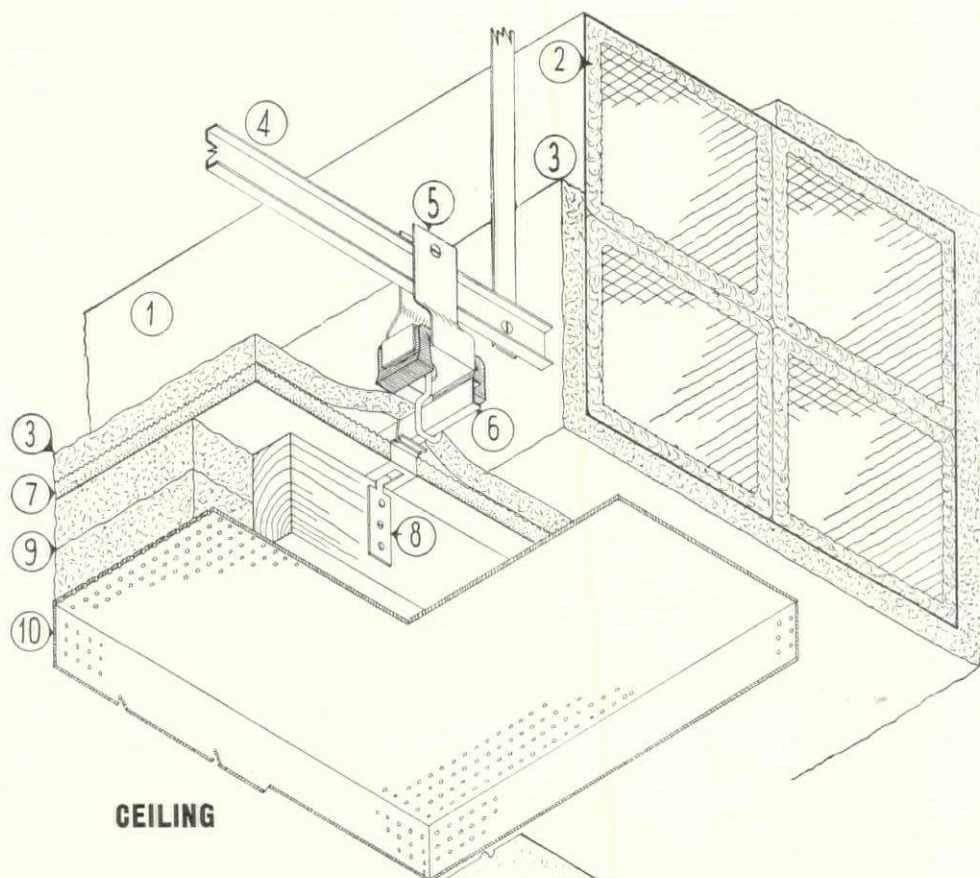
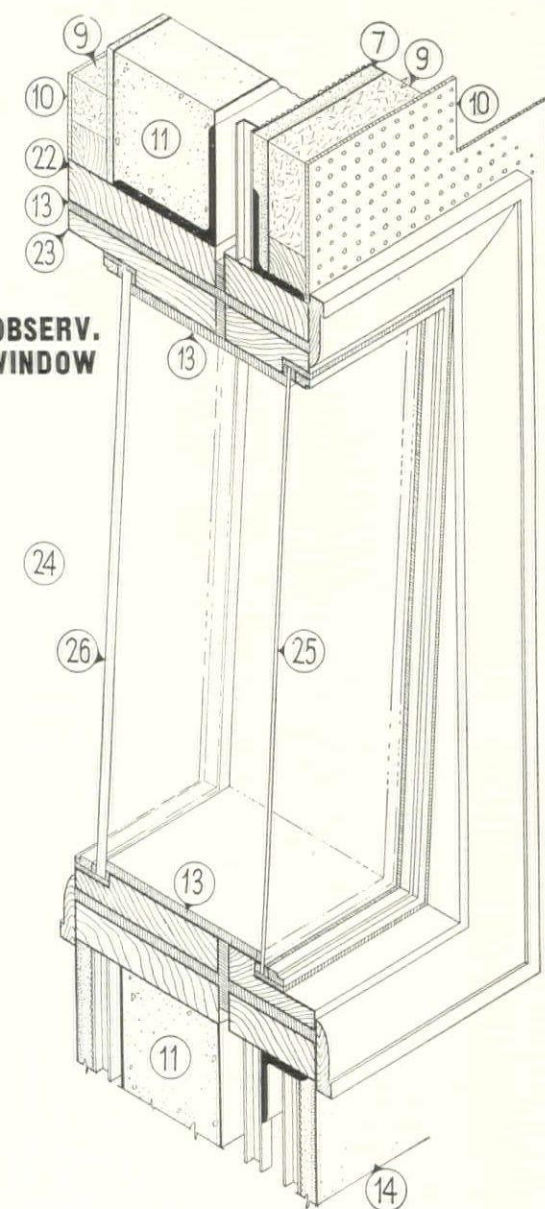


AUDITORIUM STUDIO. At one side of the stage are the soundproof windows to control room, below, and client's room above. The tilting of these panels, originally devised to help in preventing sound transmission, is no longer needed for that purpose. (See section of transparent partition opposite with its elaborate provision for sound insulation; the tilting remains, however, to lessen reflected images.)

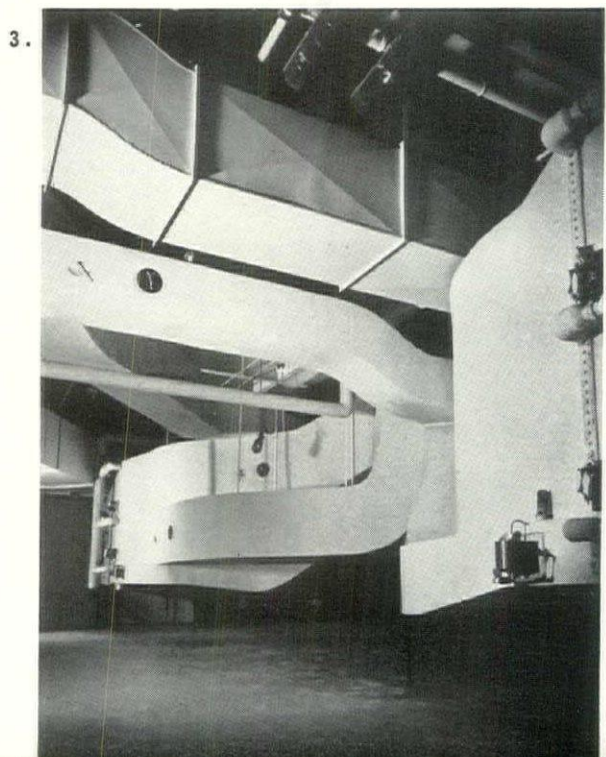
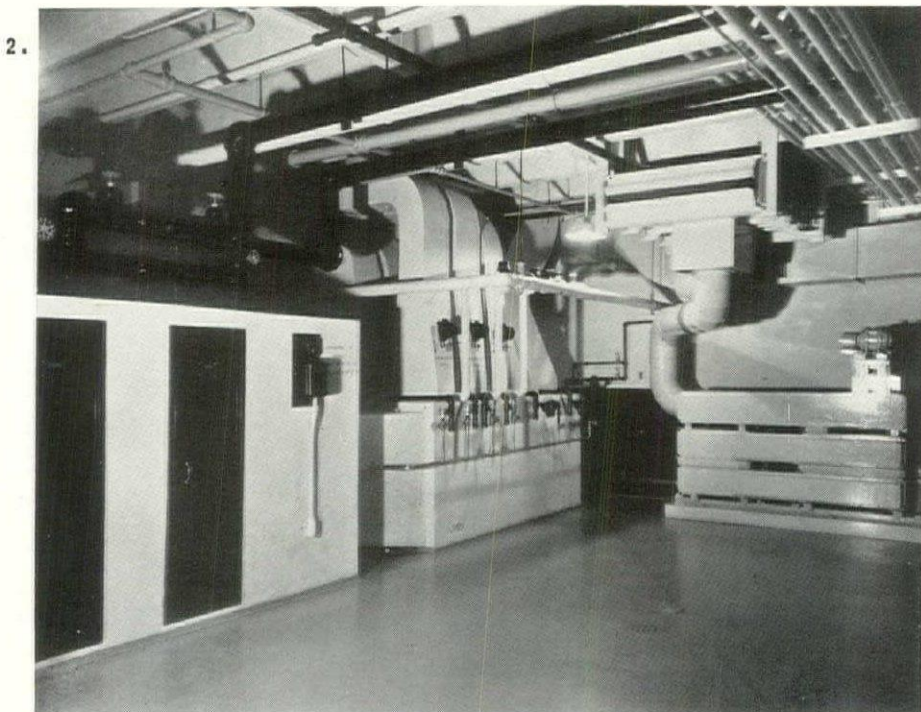
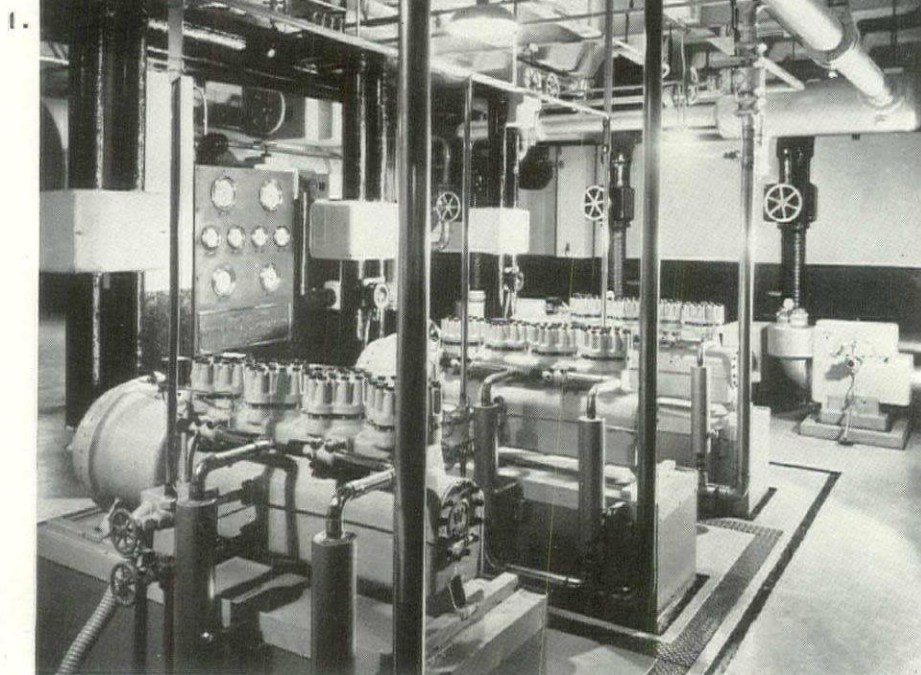
DETAILS. Methods of intercepting vibration and sound disturbances have reached an acceptable standardization with NBC engineers and are used in all their recent operations in studio design. The more important of these details are shown on the facing page.

DETAILS FOR SOUND INSULATION AND ACOUSTICAL TREATMENT

1. AIR DUCT
2. CABOT'S QUILT
3. ROCK WOOL BLANKET
4. HANGER
5. ISOLATOR
6. FURRING CHANNEL
7. WIRE LATH & PLASTER
8. ADJUSTABLE HANGER
9. ROCK WOOL
10. PERFORATED TRANSITE
11. CINDER BLOCK
12. WATERPROOF PAPER
13. FELT
14. PLASTER WAINSCOT
15. WOOD BASE
16. LINOLEUM
17. FLOATING SLAB



18. BLOCKING
19. GROUTING
20. JOIST
21. SLAT
22. WOOD BUCK
23. WOOD FRAME
24. CONTROL ROOM SITE
25. 1/4" PLATE GLASS
26. 3/8" PLATE GLASS



Designed by O. B. HANSON, NBC Chief Engineer, in cooperation with THE AUSTIN CO., Engineers and Builders.

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—8 in. concrete. Columns—steel or reinforced concrete. Floor construction: First floor—reinforced concrete beam and girder. Third story section—wood floor joist on steel frame. Ceilings—plaster on gypsum lath, U. S. Gypsum Co.

STRUCTURAL STEEL: Frame—welded and fabricated by The Austin Co. Canopy and lobby roof—steel, H. H. Robertson Co.

ROOF: Auditoriums—wood bowstring type truss, Summerbell Roof Structures. Wood rafters, sheathing covered with Canite insulation board, composition roofing and spray coating of Sta-cool aluminum paint, Pioneer Division, The Flintkote Co.

SHEET METAL WORK: Flashing—galvanized steel. Roof boxes—Josam Mfg. Co.

INSULATION: Sound—furred walls on felt isolators, Johns-Manville, U. S. Gypsum Co. Concrete walls at floor junction on fill—separated by premolded isolation joint, Elastite, Philip Carey Co. Floors carried on adjacent wall—on concrete brackets resting on Mundet Co. cork. Ceilings of studios—3 in. Thermofill, U. S. Gypsum Co. Broadcasting rooms—perforated hardboard backed with 1 or 2 in. rock wool. Main lobby and corridor—Rockcoustle, Johns-Manville; Fabricoustic—Fabricoustic Co.

WINDOWS: Sash—steel casements, Truscon Steel Co. Glass—polished plate and clear, Libbey-Owens-Ford Glass Co.; obscure—Blue Ridge Glass Corp. div. of Libbey-Owens-Ford Glass Co.; curved plate in Master Control room, Invisible Glass Co. of America. Glass block—Owens-Illinois Glass Co.

ELEVATORS: Westinghouse Electric & Mfg. Co.

FLOOR COVERINGS: Asphalt tile and linoleum. Ceramic and glazed tile—General Tile Co. Terrazzo—Consolidated Terrazzo Co. Carpet—Alex Smith Co. and Archibald Holmes.

WALL COVERINGS: Wainscot and sections of base—rubber, Goodyear Tire & Rubber Co.

WOODWORK AND TRIM: Main lobby—aluminum and ornamental metal, Washington Ornamental Iron Works. Offices—metal trim, Superior Metal Trim Co. Exterior doors by Metal Door & Trim Co., California Fireproof Door Co., Kinnear Co. and Dalstrom Metallic Door Co. Interior doors by Roddis Mfg. Co., Kirkhill Rubber Co., Riverbank Insulating Door Co., Wheeler Osgood Co. Garage doors—Overhead Door Co.

HARDWARE: Equipment by Yale & Towne Mfg. Co., P. & F. Corbin, McKinney Mfg. Co., Oscar Rixon and Norton-Lasier Co.

PAINTING: Paints by Sherwin-Williams Co. and U. S. Gypsum Co.

ELECTRICAL INSTALLATION: Wiring system—conduit, National Wire Co. Switches—Bryant Electric Co. Switchboards—Square D Mfg. Co. Fixtures—Dowling Lighting Co., Light Control Co. and Holophane Co. Broadcasting equipment—RCA.

PLUMBING: All fixtures by Standard Sanitary Mfg. Co. Hot water pipes—brass, Chase Brass & Copper Co. Electric heaters—Thermador Electrical Mfg. Co.

HEATING AND AIR CONDITIONING: System by Western Air & Refrigeration, Inc. All broadcasting studios air conditioned, filtered, cooled or heated, humidified or dehumidified, depending upon conditions. Refrigerant—Kinetic Chemicals, Inc. Compressors—Westinghouse Electric & Mfg. Co. Fans—American Blower Co. Vacuum pumps—Nash Engineering Co. Filters—Owens-Illinois Glass Co. Grilles—Tuttle & Bailey Mfg. Co. and Anemostat Corp. Radiators—Young Radiator Co. Boiler—Pacific, automatic gas fired, U. S. Radiator Co. Motors and starters—General Electric Co. Valves—Erick Co. Indicators—Minneapolis-Honeywell Regulator Co. Isolators—Goodrich Rubber Co.

BASEMENT:

1. COMPRESSOR AND PUMPS

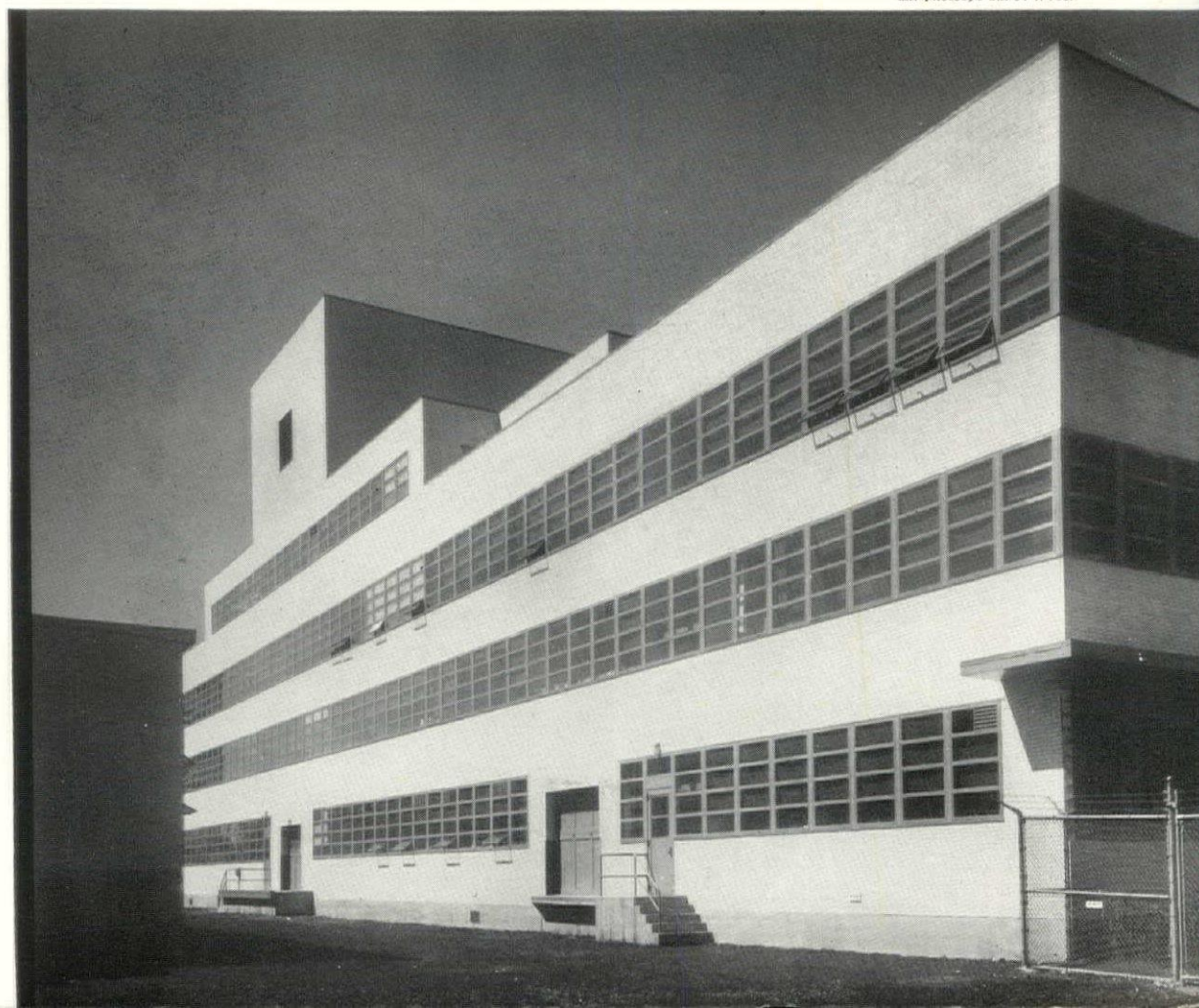
2. FAN HOUSING, HEATER AND ORGAN BLOWER

3. AIR DUCTS



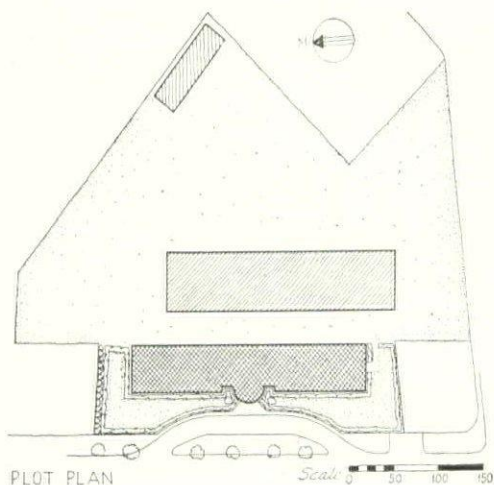
B. B. CHEMICAL COMPANY, CAMBRIDGE, MASS.
COOLIDGE SHEPLEY BULFINCH & ABBOTT, ARCHITECTS

All photos, Paul J. Weber





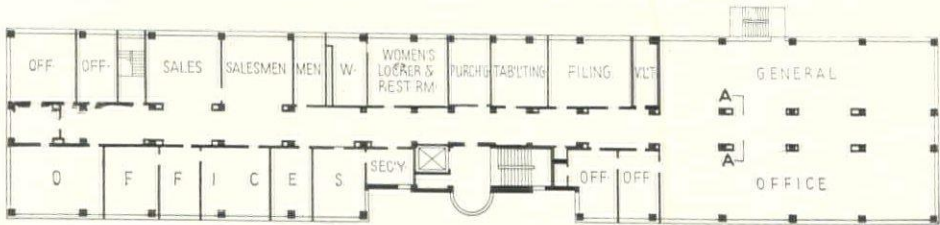
LABORATORY



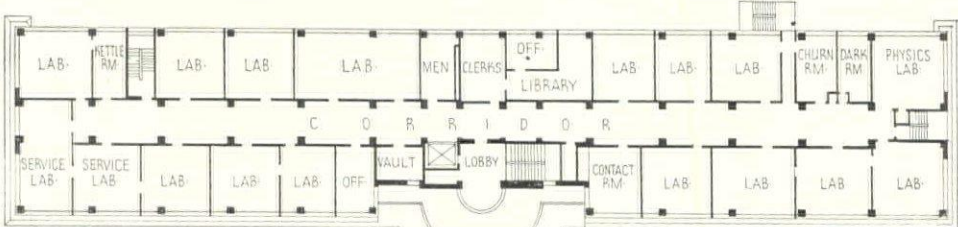
The B. B. Chemical Company is a subsidiary of the United Shoe Machinery Company, and does all its experimental work in developing new cements, leather finishes, and in testing new machinery. The site selected by the owners is on the Cambridge side of the Charles River, on a proud thoroughfare, near the new buildings of Harvard University, and it was required that the design be modern but also in harmony with the adjacent structures. Buildings in the group consist of a laboratory and administration unit at the front of the property, an experimental manufacturing building for testing purposes and a small building at the rear for experiments with inflammable materials. Provisions have been made for doubling the size of the latter two. The architects comment: "Great flexibility was required in the design of the laboratory building, both to provide for future changes, and to make its sale possible if desired. The owners expected more than a bare factory building, and were willing to pay more. Costs were kept down by using \$79 brick on the front and sides of the main building, and \$9 sand lime brick on the others. Other economies were effected by the use of a constant glass size throughout, which reduced specially designed windows to the price of ordinary factory sash." Cubage: 1,115,297.



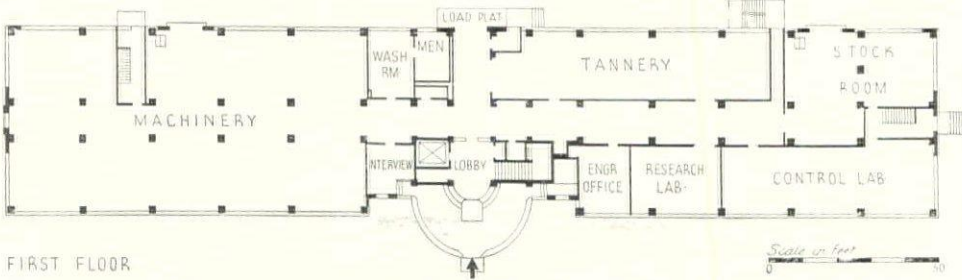
OFFICE



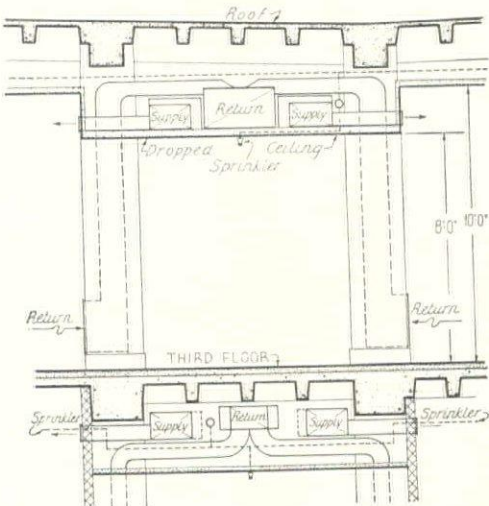
THIRD FLOOR



SECOND FLOOR



FIRST FLOOR



SECTION 'A-A'

Scale in feet



CONSTRUCTION OUTLINE

FOUNDATIONS: Concrete piles and reinforced concrete walls. Basement floors—reinforced concrete carried to pile footings.

STRUCTURE: Exterior walls—faced with Hytex brick, Hydraulic Pressed Brick Co.; rear elevation faced with sand lime brick, Atlantic Brick Co. All exterior walls backed with brick and furred with cinder block tile, Atlantic Brick Co. Third and fourth floor walls plastered, remainder unplastered. Interior partitions—cinder block. Floor construction—concrete grid system, Grid Flat Slab Corp. Columns—reinforced concrete.

ROOF: Covered with 5-ply tar and gravel on 1 in. cork insulation, Barrett Co.

SHEET METAL WORK: Flashing—lead coated copper, Revere Brass & Copper Co. Exterior trim—aluminum, Aluminum Co. of America.

WINDOWS: Sash—steel projected, factory type; galvanized in laboratory and factory, Campbell Metal Window Corp. Glass—selected quality, 3/16 in. drawn, Pittsburgh Plate Glass Co. Glass block—Owens-Illinois Glass Co.

STAIRS AND ELEVATORS: Main stairs—reinforced concrete; others steel with concrete treads. Treads—Feralun, American Abrasive Metals Co. Elevators—combination freight and passenger, self-leveling and fully automatic.

FLOORS: First floor—cement finish. Main lobby—Serpentine soapstone, Alberene Stone Corp. of Virginia. Remainder—asphalt tile laid with Bostik waterproof cement, B. & B. Chemical Co.

WALL COVERINGS: Third floor, 2nd floor corridor, main stair and elevator lobby—plastered; remainder—cinder blocks, painted.

WOODWORK AND TRIM: Trim—steel bucks and frames. Interior doors—birch veneer, Hardwood Products Co. Fire doors—steel and kalamein, Phillips Mfg. Co. Exterior doors—steel, factory type; bronze in main lobby; shipping doors—steel, Kinnear Mfg. Co.

HARDWARE: Interior and exterior—bronze, Yale & Towne Mfg. Co.

PAINTING: Interior: Cinder block walls and ceilings—Sunflex; plaster walls—Lithapone, National Gypsum Co. Acoustic ceilings—unpainted tile.

ELECTRICAL INSTALLATION: Switches—Arrow-Hart & Hegeman Electric Co. Distribution of converti-fuse type panels—Westinghouse Electric & Mfg. Co. Laboratory panels—current for each laboratory supplied by separate panel with main circuit breaker. Flexible power bus—Trumbull Electric & Mfg. Co. Moisture-proof wiring—Simplex-Anhydrex, Simplex Wire & Cable Co.

PLUMBING: Soil and waste pipes—cast iron, Somerville Iron Works. Water pipes—iron size copper, Revere Brass & Copper Co.; steel pipes for chemical waste—National Tube Mfg. Co. Valves—Reading, and Pratt & Cady. Hot water storage tank—Enterprise Mfg. Co. All toilet fixtures by Standard Sanitary Mfg. Co.

HEATING AND AIR CONDITIONING: Vacuum two-pipe system with direct radiation and unit heaters. Air conditioning—all offices conditioned in wetted surface dehumidifier, B. F. Sturtevant Co. air cleaned by oil air filters. System arranged in two zones; return air discharged through laboratories located below offices, providing ventilation and partial air conditioning; well water utilized as the cooling medium. Radiators—convactor type, Shaw Perkins Co. Valves—Warren Webster Co. Thermostats—Minneapolis-Honeywell Regulator Co. electric controls.

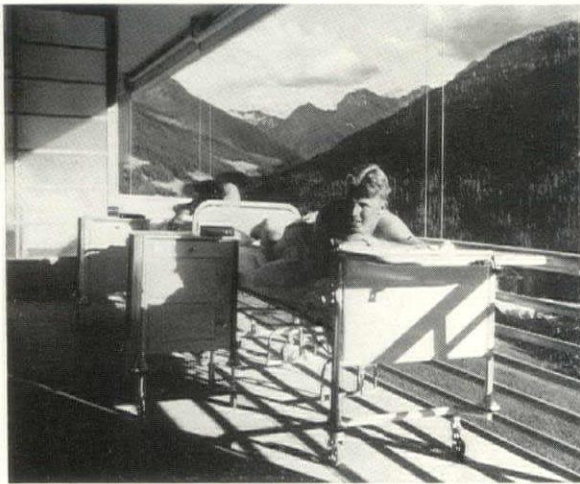


PLANNING TECHNIQUES No. 11.

TUBERCULOSIS SANATORIA



SANATORIUM AT DAVOS, SWITZERLAND. RUDOLF GABEREL
ARCHITECT



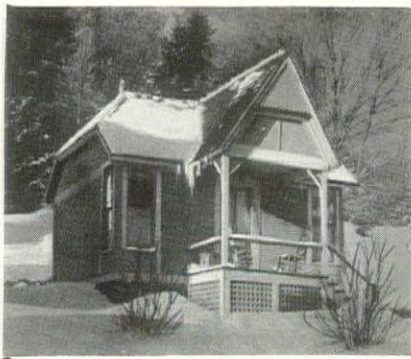
Good sense calls for increasing the present \$10 million-a-year rate of sanatorium construction at least three and one-half times for the next four years.

According to Dr. Thomas H. Parran, head of the U. S. Public Health Service, we stand in immediate need of about 40,000 more "beds" for the treatment of tuberculosis, or almost half again as many as the National Tuberculosis Association estimates are now in use. At the present construction-rate of about 3,000 new beds a year, these would take almost 15 years to provide. Thus while tuberculosis remains a major public health problem—affecting large numbers of people, incapacitating many for long periods, and accounting for a considerable percentage of all deaths in the most productive age-group—our efforts to control it will be incomplete until an expansion of our present inadequate sanatoria building program takes place.

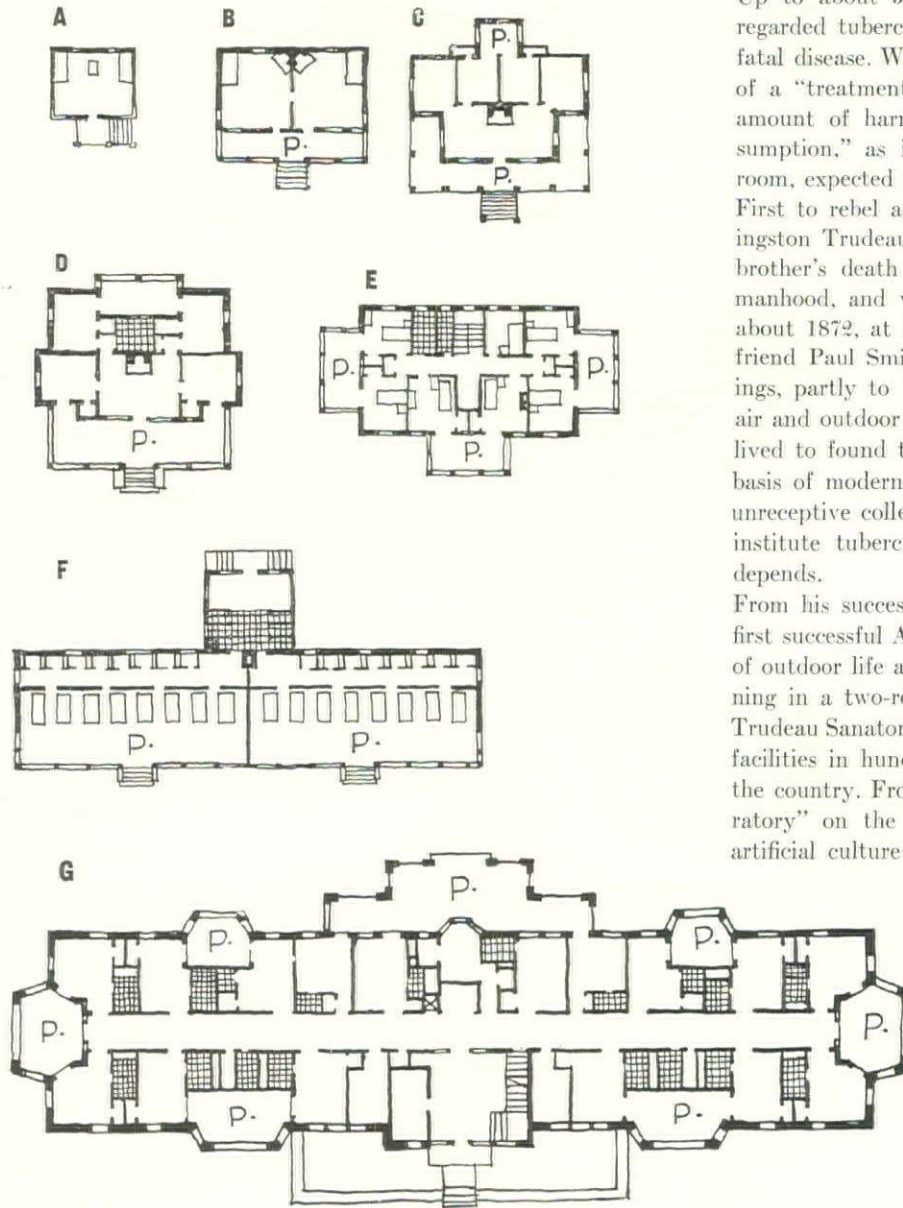
Dr. Parran's figure is based upon an estimate of the

number of cases of tuberculosis now receiving no treatment which are active centers of infection. Others arrive at about the same figure by multiplying the number of annual deaths from the disease by 2, a formula now regarded as conservative, although as late as 1928 one bed per death was felt to be enough. Both methods of calculation are amply justified from a purely selfish community standpoint by the well-established relationship—in inverse proportion—which always exists between the incidence of tuberculosis and facilities available for its treatment, and the monetary cost of each to the public at large.

To meet this need, the National Tuberculosis Association has worked out a program calling for increased federal aid to States and localities, particularly in supplying funds for construction. Already, as a part of its pump-priming activities, PWA has provided more than \$25 million for about 6,500 beds in some seventy projects. W.P.A. has contributed fewer beds but a large amount toward increased service facilities. The Association suggests shifting allocation of funds from PWA and WPA to the Public Health Service, emphasis from stimulating economic recovery to control of the disease. Underlining the need for increased facilities in States where present accommodations are at a minimum, it asks that construction grants be upped to an annual \$28 million for a six-year total of \$112 million, and further that an additional \$65 million be provided for maintenance and case finding during this period. Whether or not its scheme will be adopted in exactly this form is as yet undecided, but it seems certain that it will act as a powerful incentive to sanatoria building.



"LITTLE RED"



Well intentioned resistance to the Association's program will probably arise out of three still-popular misconceptions: 1) failure to recognize the disease as a public menace because of its infectious nature, 2) belief that its treatment does not require well built permanent buildings, and 3) the theory that the need for tuberculosis sanatoria is on the wane and will soon disappear altogether. Each of these misconceptions grows directly out of beliefs prevalent at some stage in the complex and often confusing history of tubercular treatment. And since all three bear an important relationship to the proper architectural solution of the sanatoria problem, an understanding of the main stages of this history is an essential part of the equipment of the architect who hopes to solve it.

HISTORY

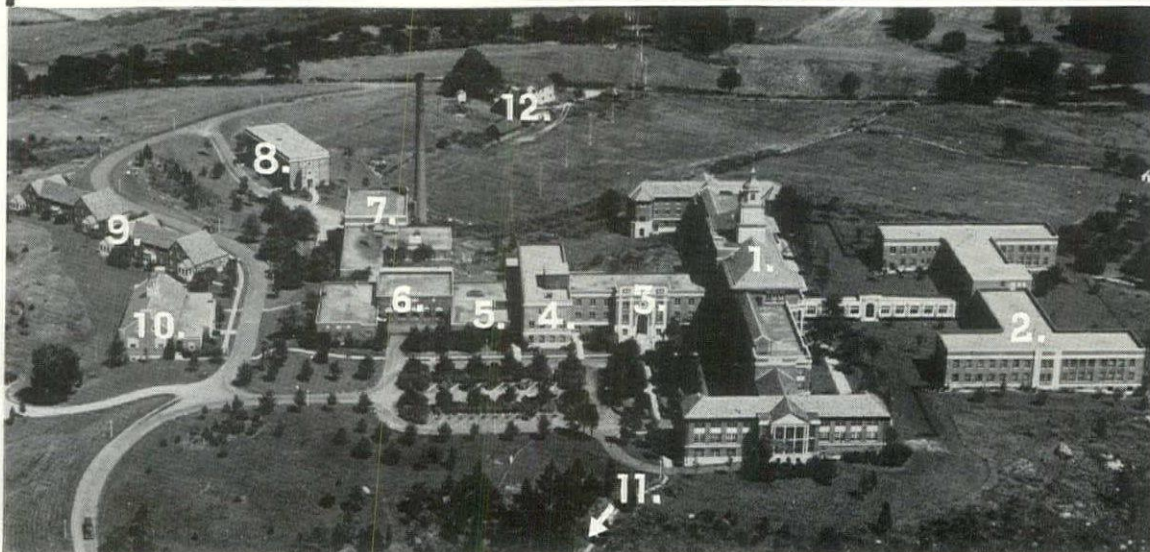
Up to about 50 years ago, the medical profession in America regarded tuberculosis as an hereditary, non-infectious, necessarily fatal disease. Wrong on all three counts, this theory was the basis of a "treatment" which did little good and often a substantial amount of harm, and those unlucky enough to contract "consumption," as it was then called, were kept in a warm, close room, expected to die, and normally did.

First to rebel against this course of treatment was Edward Livingston Trudeau, a New York doctor who had watched his elder brother's death accelerated by precisely these methods in early manhood, and who—upon developing an active case of his own about 1872, at 25—went instead to the Adirondack Camp of his friend Paul Smith, mostly to end his days in pleasant surroundings, partly to indulge a theory of his own that plenty of fresh air and outdoor exercise would prolong them. It did. Dr. Trudeau lived to found the American sanatorium movement, which is the basis of modern treatment of tuberculosis, to demonstrate to his unreceptive colleagues the infectious nature of the disease, and to institute tuberculosis research on which most present progress depends.

From his success with his own case, Dr. Trudeau developed the first successful American treatment of tuberculosis—a prescription of outdoor life and exercise in a high altitude. From a tiny beginning in a two-room shack affectionately known as "Little Red," Trudeau Sanatorium at Saranac Lake became the model for patient facilities in hundreds of similar institutions scattered throughout the country. From the home-made incubator set up in the "laboratory" on the back porch of his own cottage came the first artificial culture of the bacillus of tuberculosis, the first positive

demonstration of the infectious character of the disease. And from the practice, which gradually grew up at Trudeau, whereby patients discharged as "arrested cases" returned to Saranac Lake for periodic check-ups and supplementary "cures," there arose the modern concept of the diagnostic clinic, third pillar of the modern sanatorium.

MIDDLESEX COUNTY SANATORIUM,



Waltham, Mass, James Ritchie & Associates, Architects.

1. Admission Bldgs. infirmary, ambulant, and semi-ambulant patients.
2. Ward Building.
3. Administration and Clinic.
4. Surgical wing.
5. 6. Kitchen and Dining.
7. Power House and Laundry.
8. Service staff dormitory (men).
9. Service staff dormitory (women).
10. Recreation Building.
11. Nurses Home and Doctor Suites.
12. Residence.

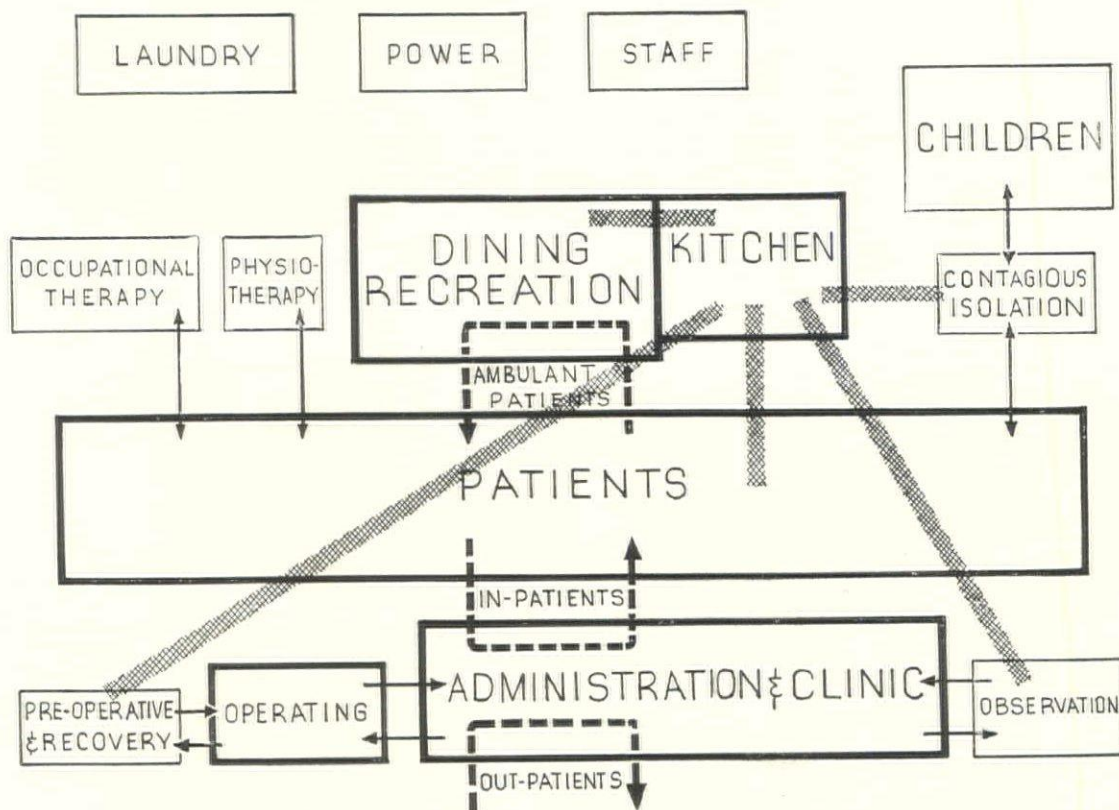
THE MODERN SANATORIUM

Thus, even in its early stages, Trudeau Sanatorium at Saranac Lake contained the essential features of the modern institution for the treatment and control of tuberculosis. However, profound changes have taken place since the days of "Little Red" which have brought with them radical changes in physical form. Institutionally, the most important of these has been a change in purpose. In the early days, when sanatoria were few, an effort was made to restrict their occupancy to incipient cases of the disease. Many sanatorium boards wrote this restriction into their charters, only to be forced to abandon this position as experience showed that there was little hope of tuberculosis being recognized at this early stage in a sufficient number of cases. Medically, the most important change was from the exercise theory to the modern rest cure, a revision of Dr. Trudeau's fundamental prescription to rest, fresh air, and good diet. Architecturally, the combined effect of these two changes has been tremendous: it accounts for the transition from the cottage plans at the top of the page opposite to the giant institution shown in the air-view at the bottom.

The cottage plan (shown in its various stages in plans A to F, opp.) was a logical development of the Spartan regime so much in favor during the first phase of the sanatorium movement. Complete absence of plumbing facilities in plans A to C indicates to what lengths this theory, and the principle of keeping costs to a minimum, was carried. The development of porches shows the pioneer emphasis on outdoor sleeping (plan E) as an important part of the cure. What is now recognized as the scheme's greatest advantage—segregation of patients—was largely an accidental by-product of the fact that, in Dr. Trudeau's own words, it was "easier to get . . . patients to give a little cottage which would be their own individual gift, rather than a corresponding sum of money toward the erection of larger buildings." Despite this fact, the typical Trudeau cottage gradually evolved in the direction of larger and more elaborate buildings, as represented by plan F, a ten-patient unit which was the standard after about 1910. Meanwhile, however, a more significant change was taking place. Increasing numbers of patients requested sanatorium treatment who were in advanced stages of the disease and required a degree of hospitalization which could not be achieved in cottage-type

buildings except at great expense. In addition, it was gradually realized that effective control of tuberculosis hinged on isolating all known cases, including so-called "hopeless" cases, from the healthy population. This need produced considerably larger and more elaborate buildings of which the type shown in plan G (Mary Lewis Reception Hospital, Loomis Sanatorium, Liberty, New York—Scopes and Feustmann, Architects) was a forerunner (1906). Still evident in this plan is the emphasis on outdoor sleeping, and patients' rooms connect directly with porches so arranged that in all but two cases rooms have outside light. Presence of utility rooms, central office, and rooms for nurses, however, indicates the greater degree of comfort and service for which the unit was designed (private baths shown on the plan were added in 1931). From this point onward the tuberculosis sanatorium began to partake more and more of the physical characteristics of a general hospital, and as provision for absolute rest became an ever more important part of the treatment larger and larger buildings were employed in order to reduce the cost of providing the required attention.

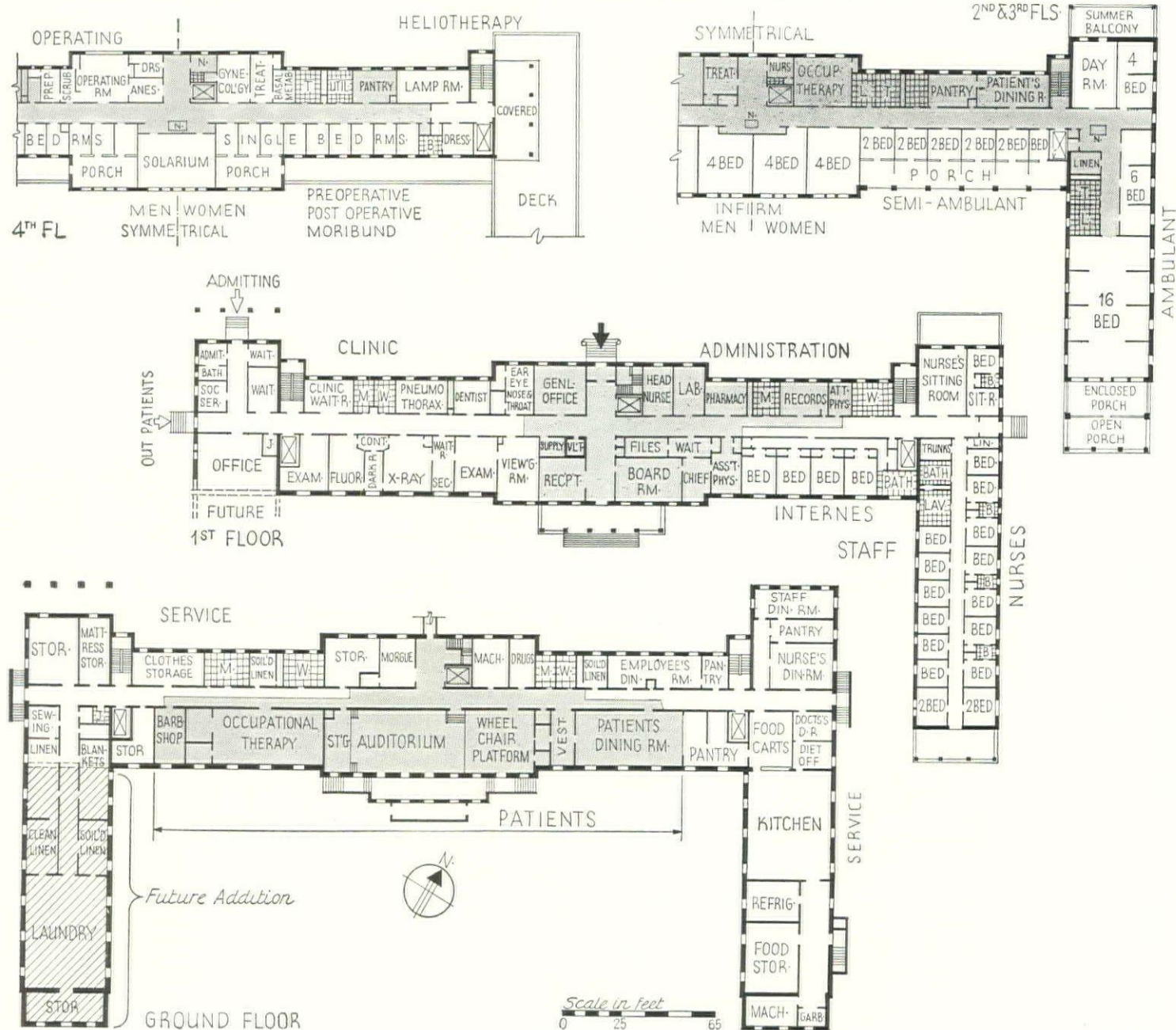
Advent of the X-ray as a factor of tremendous importance in diagnosis and examination of the tuberculous, the necessity for a periodic check-up of discharged patients, and belated recognition of tuberculosis as a public health problem, have vastly increased the clinical and laboratory work connected with its treatment, and consequently have added a major unit to the sanatorium: the clinic. Modern sanatoria are as much public health centers for the control of the disease as hospitals for its treatment. This has been recognized in planning by the separation of clinical facilities from patient's housing, provision for distinct "out-patient" entrance and circulation, etc. The complexity of the planning problem which such an institution as a whole presents is indicated by the schematic diagram below, discussed, item by item and in detail, on the pages which follow. Not an attempt to create "tuberculosis experts" overnight, the analysis presented by no means exhausts the multiplicity of problems which arise in the design of each separate institution and which depend for their final resolution upon the desires of the physician in charge, nor does it profess to give a final answer where the question involved is still in a state of flux. Rather it is an effort to provide a sound foundation for an approach to these problems on the basis of best current work.



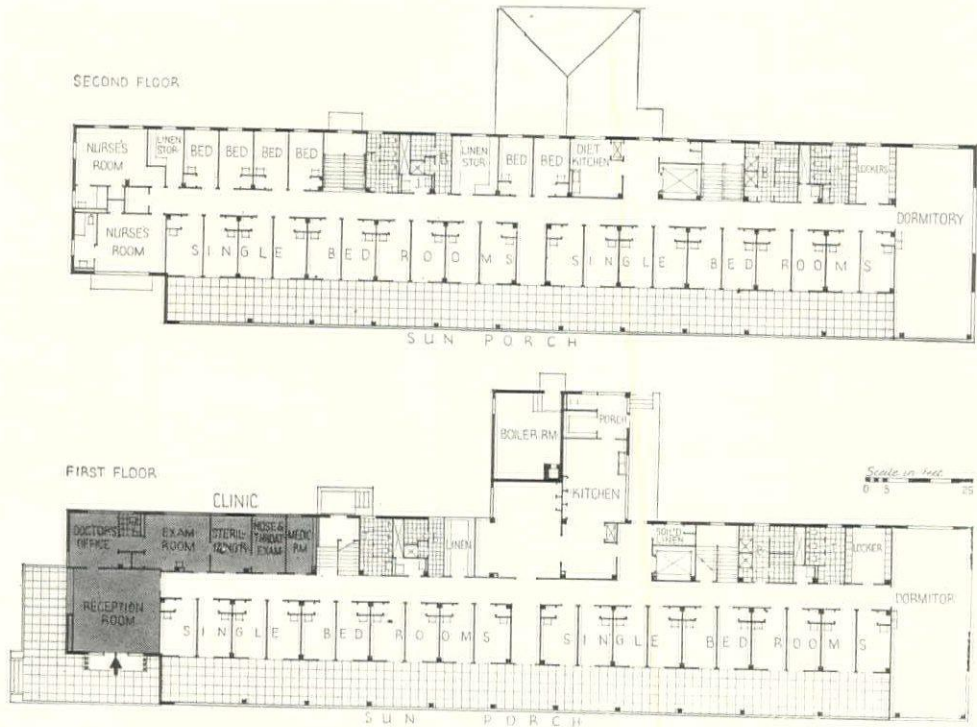


An outstanding example of compact, well organized planning, this building combines all of the complex units of the modern sanatorium in a single simple shape. Provision of nurses' and staff quarters on the ground floor, unusual in buildings of this type, undoubtedly saved money as compared to the additional cost of separate structures, and has not interfered with the arrangement of the balance of the plan. Layout is exceptionally up-to-date in its provision of segregated rooms for pre-operative and post-operative care, and allowance for future observation rooms in connection with the clinic. Note also the provision of balconies on the north side of the building for summer use, location of rooms for infirm patients near the center of patient-floors for easy care.

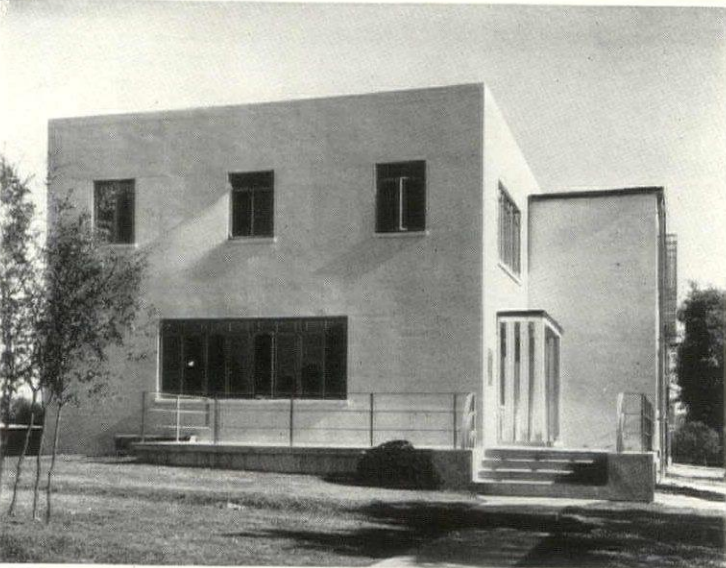
ROOSEVELT HOSPITAL, MIDDLESEX COUNTY, N. J. JOHN NOBLE PIERSON & SONS, ARCHITECTS



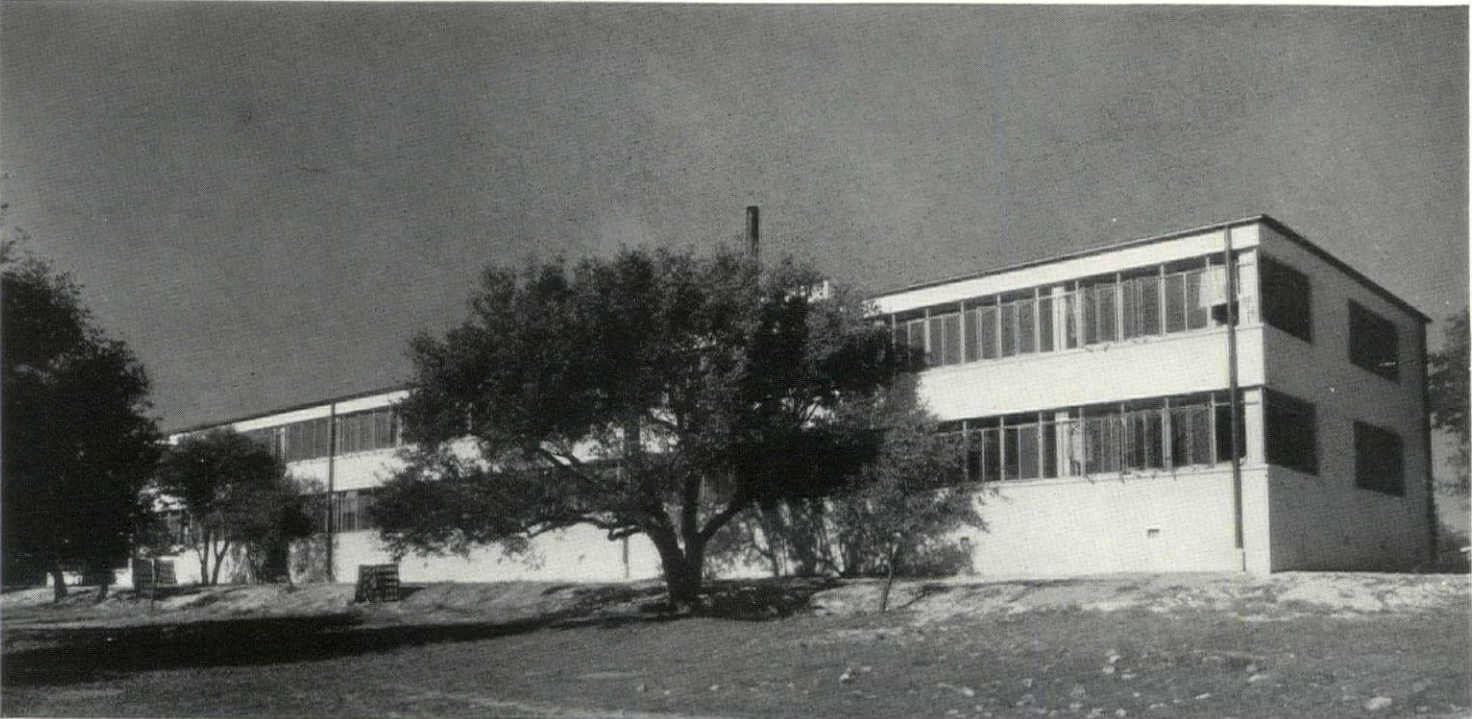
TUBERCULOSIS SANATORIA



STATE SANATORIUM FOR NEGROES, KERRYVILLE, TEXAS. C. H. PAGE, ARCHITECT



Illustrating the modern sanatorium in its smallest, simplest form, this attractive, well-designed unit nevertheless contains all of the essential facilities for tubercular treatment. Unusual in the use of modern architectural treatment, which has so far been largely avoided in this type of building because of its supposed "institutionalizing" effect, it constitutes a dramatic demonstration of modern's superiority in providing all-important light and air, cutting building costs through the elimination of frills.



Wheeler Co. Photos

CLINIC AND ADMINISTRATION

Heart of the institution for the treatment and control of tuberculosis is the section devoted to clinical, research, and administrative functions: X-ray examination, social service records and case histories, offices, and laboratory. In the upper plan at the right these have been arranged over one another on adjoining floors, a common practice, while in the plan below they are grouped together on a single floor. Comparison of the two plans will disclose many points of similarity establishing a norm. In the same way, differences in the facilities provided disclose variations likely to occur in differing institutions.

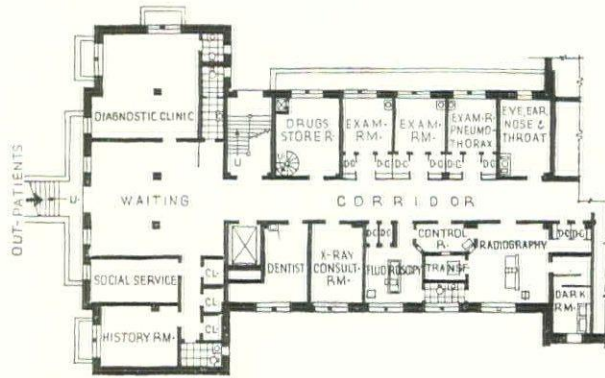
The upper layout is for a considerably larger institution than that shown below; consequently is somewhat more elaborate, especially in regard to administrative facilities. In addition, it has an exceptionally large laboratory section, probably handles county bacteriology work outside the realm of tuberculosis, generous facilities for waiting, etc., indicating a heavy out-patient load.

In the lower plan these facilities are considerably simplified. Essentials such as X-ray and fluoroscopy rooms, remain about the same, but other spaces are smaller and fewer in number. Another difference includes the incorporation of operating room, normally placed elsewhere—in the clinic proper, for the convenience of doctors. Both plans make provision for treatment of patients' eyes, ears, teeth, and nose and throat troubles which—while no more likely to arise in the tuberculous than in others—still occur from time to time and require the same attention in sanatoria as elsewhere.

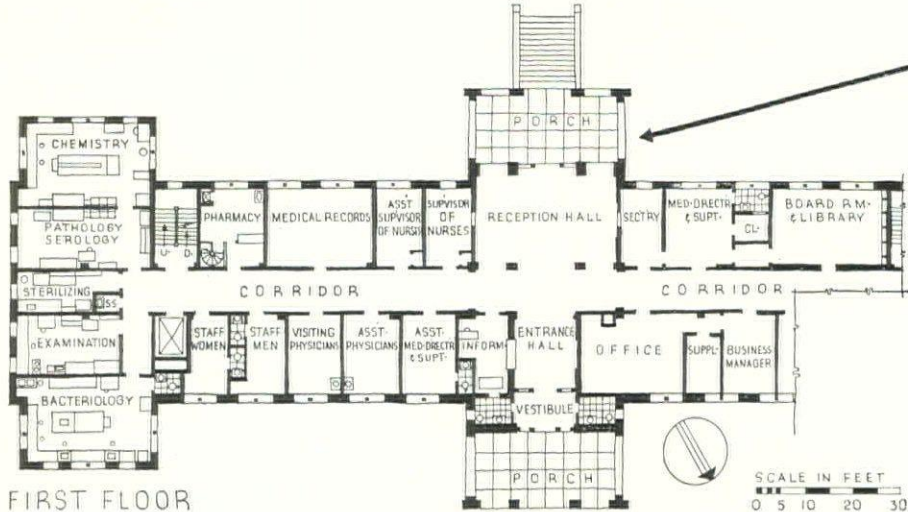
(X-ray layout is discussed in detail on page 184.)

BERGEN PINES, BERGEN COUNTY HOSPITAL, RIDGEWOOD, N. J.

CORNELIUS V. R. BOGERT, ARCHITECT

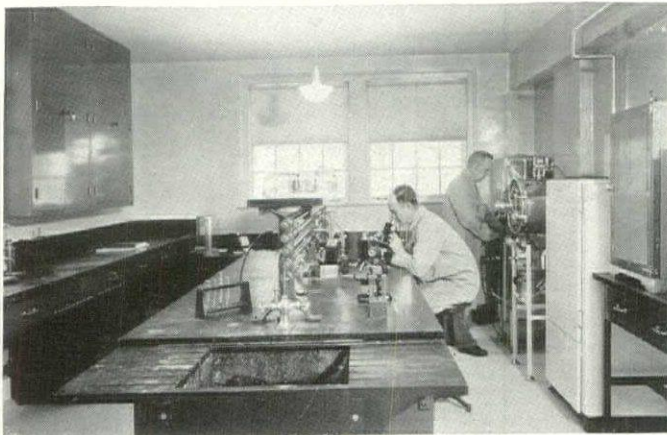


GROUND FLOOR

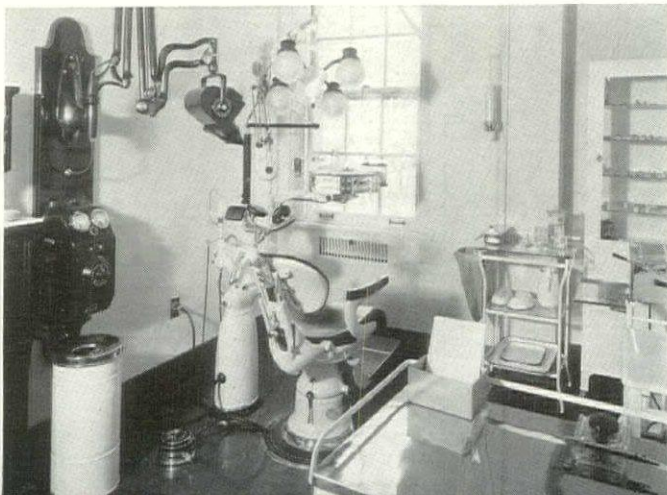


FIRST FLOOR

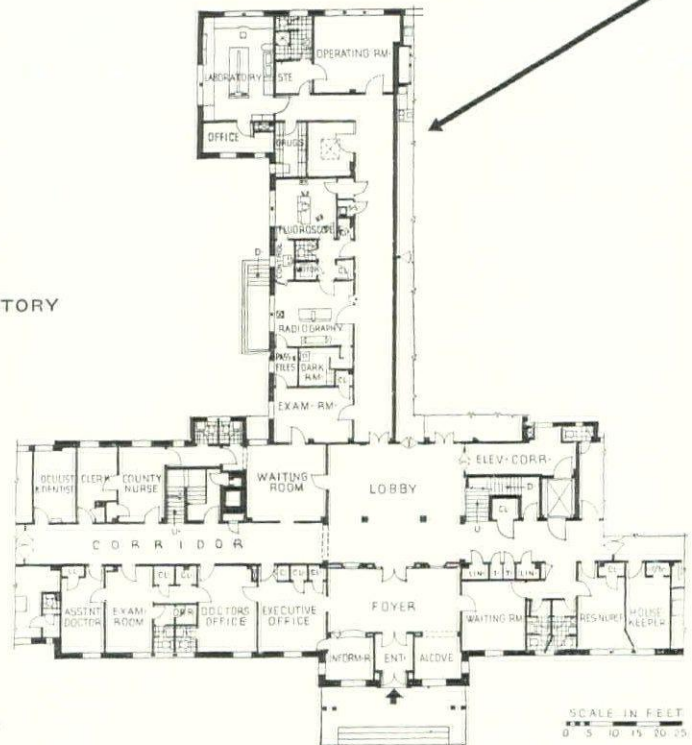
SUMMIT PARK SANATORIUM, ROCKLAND COUNTY, N. Y. FREDERIC W. MELLOR, ARCHITECT

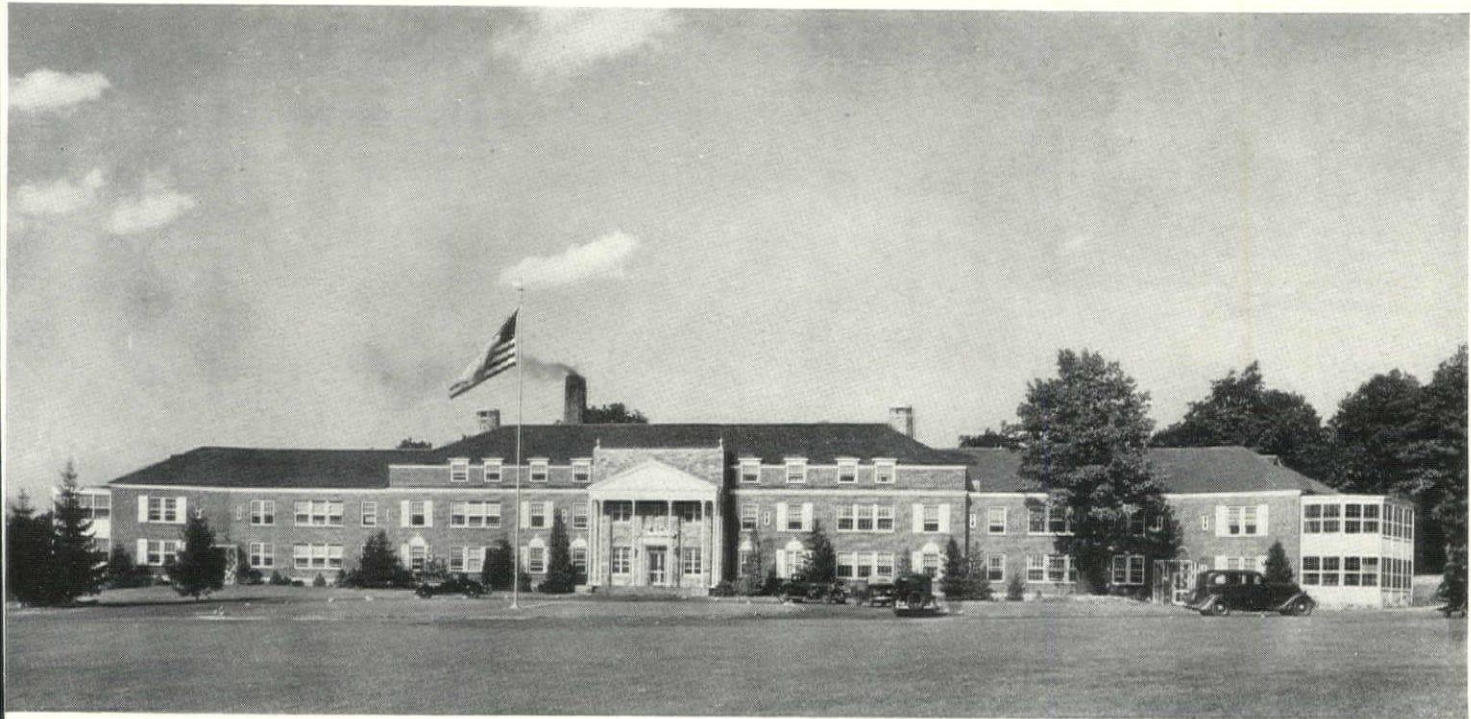
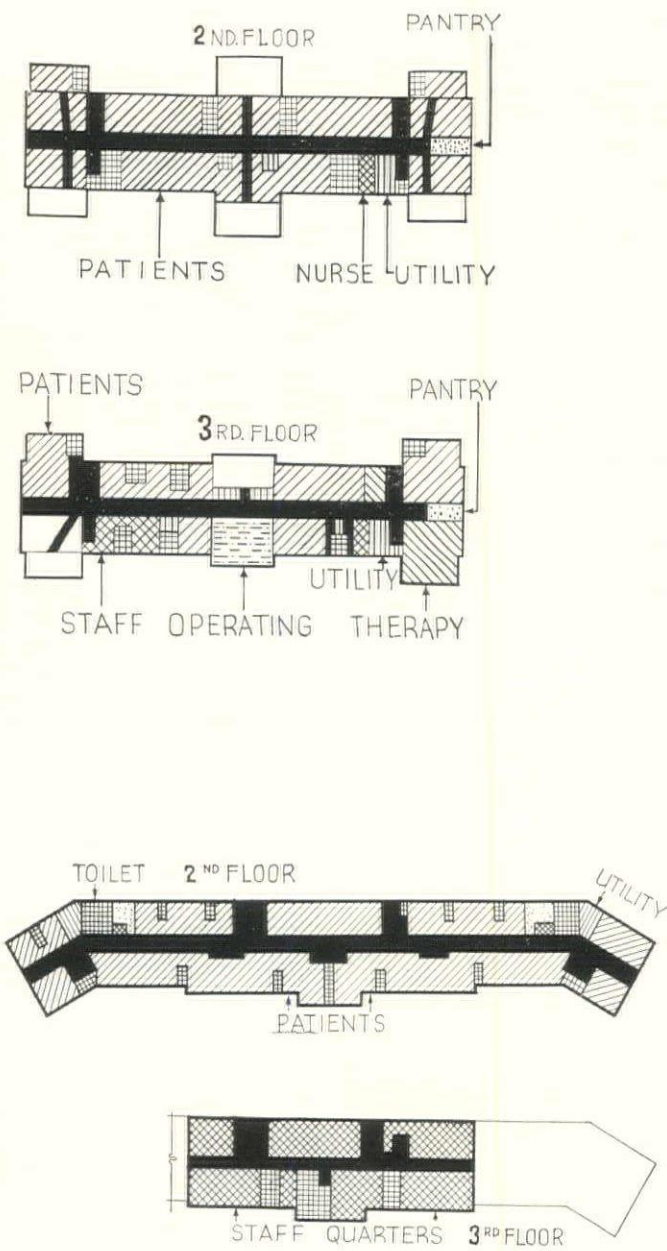
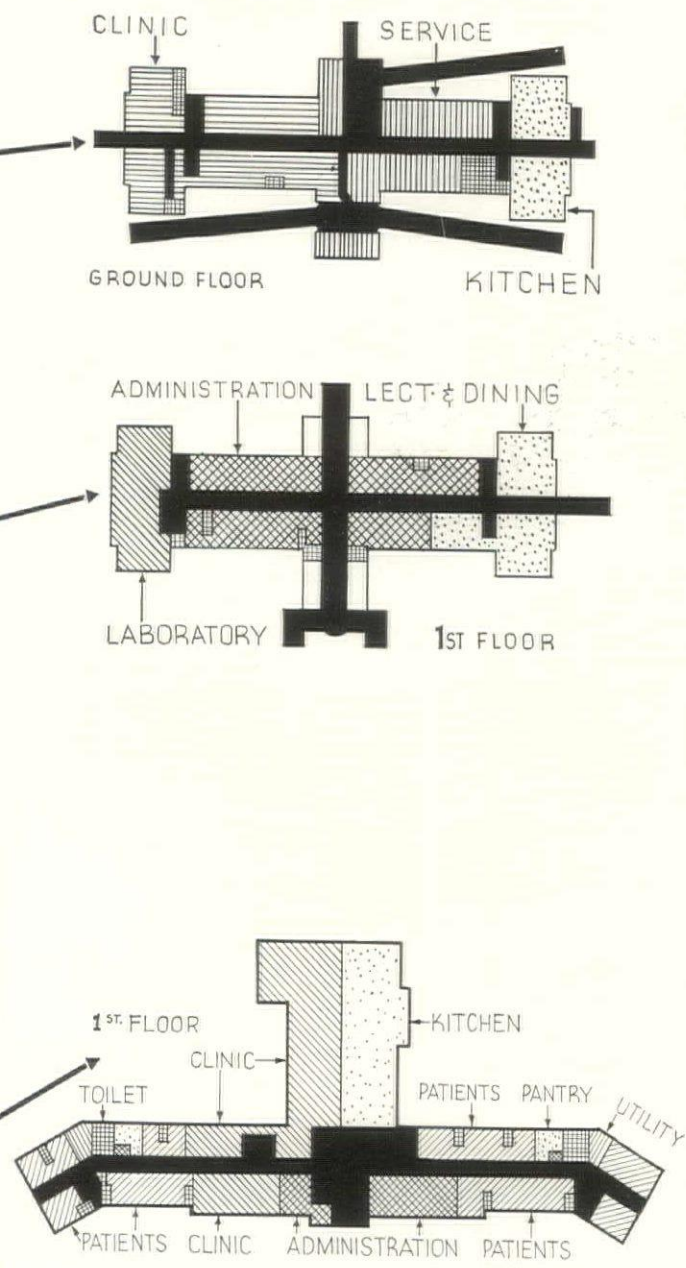


LABORATORY



DENTAL ROOM





F. E. Crum

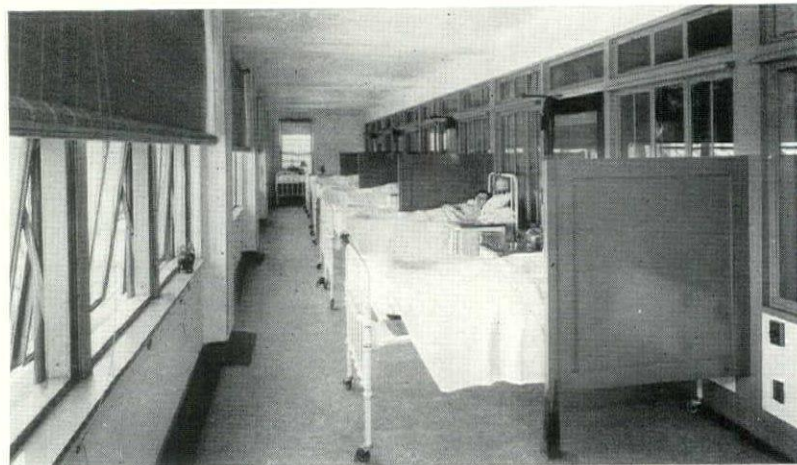
PATIENTS' FACILITIES

The plans on the opposite page show typical patients' floors in two large sanatoria. Each is for infirm and semi-ambulant patients only, provision for ambulant patients being made elsewhere in both institutions. Shaded areas indicate corridor and service facilities, the latter at a minimum since no treatment or patients' dining rooms are required for this type of patient. (For a typical floor for ambulant patients, see page 176.)

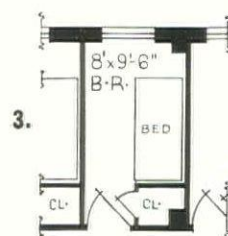
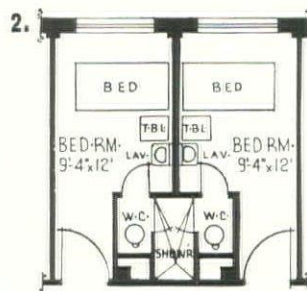
Food in both cases is brought up from the kitchen in heated trucks by way of the elevator, served onto trays in the adjoining pantries. Although the buildings are of about the same length, the upper plan provides two such centers, the lower but one.

Patients' rooms differ even more widely. These are detailed at the right (1 and 3), together with two other arrangements for ambulant patients (2 and 4). The latter indicate two ways to provide the toilet facilities needed by ambulant patients, all four taken together the lack of unanimity which exists on the question of open porches vs. glazed porches vs. no porches at all.

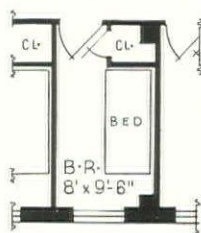
The factors involved in this controversy are technical rather than medical. It is now conceded that outdoor sleeping is of no direct therapeutic significance in the treatment of tuberculosis, all that is required is plenty of fresh air. Naturally, for patients confined to their beds all day, a more than usual amount of air at night is desirable, and the opportunity for a change-of-scene afforded by transferring the bed to the porch in the daytime of considerable psychological value. In addition, it is pointed out that unless a sleeping porch is provided, adequate ventilation at night and during the day may chill the room to a point where it is hard to warm up for routine day use.



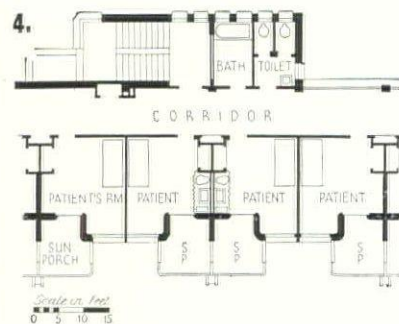
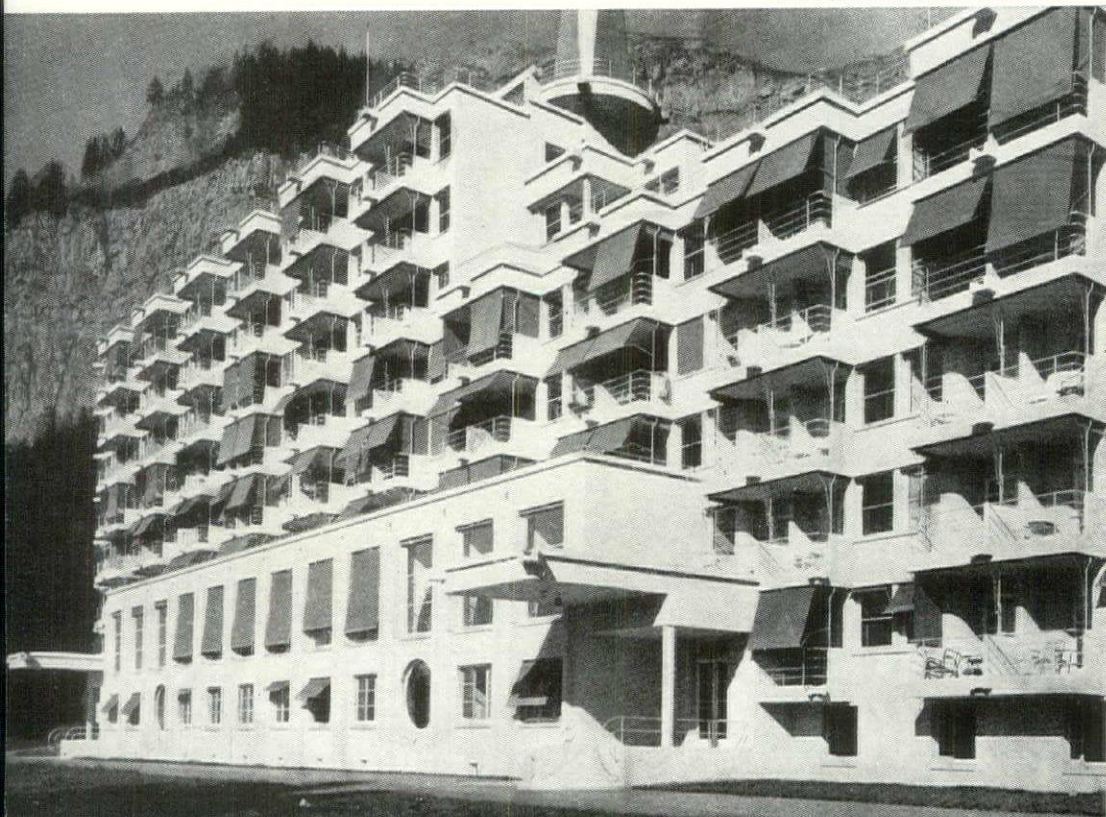
John H. Baker



CORRIDOR

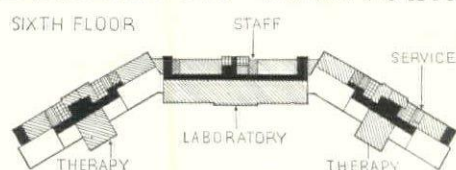


Courtesy, L'Architecture D'Aujourd'hui

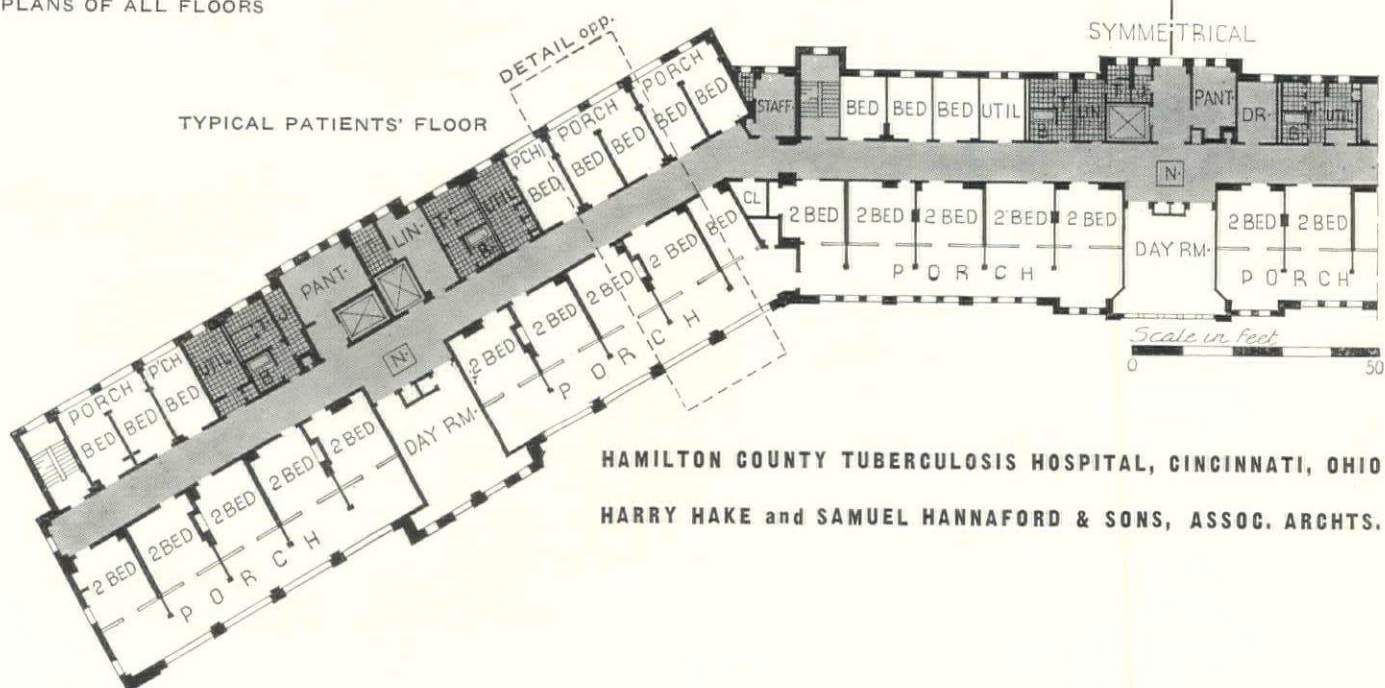


1. Hamilton County Tuberculosis Hospital, Cincinnati, Ohio. Harry Hake and Samuel Hannaford & Sons, Associated Archts.
2. South Carolina State Sanatorium, State Park, S. C. James B. Urquhart, Archt.
3. Kenney Memorial Building, State Sanatorium for Tuberculosis, Norton, Kansas. Tom I. Nall, State Architect.
4. Sanatorium Geoffroy de Martel de Janville, Passy, France. P. Abraham & H. Le Mème, Archts.

TUBERCULOSIS SANATORIA

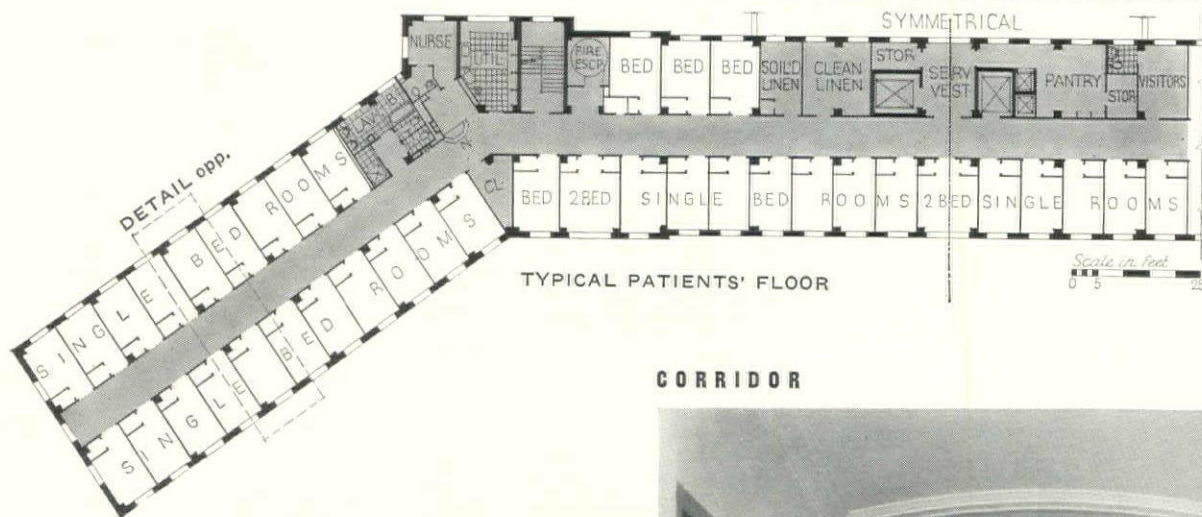


KEY PLANS OF ALL FLOORS

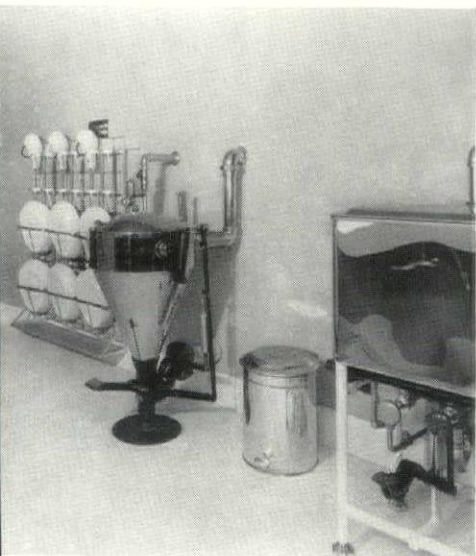


HAMILTON COUNTY TUBERCULOSIS HOSPITAL, CINCINNATI, OHIO
HARRY HAKE and SAMUEL HANNAFORD & SONS, ASSOC. ARCHTS.

STATE SANATORIUM FOR TUBERCULOSIS, NORTON, KANSAS. TOM I. NALL, STATE ARCHITECT



UTILITY ROOM

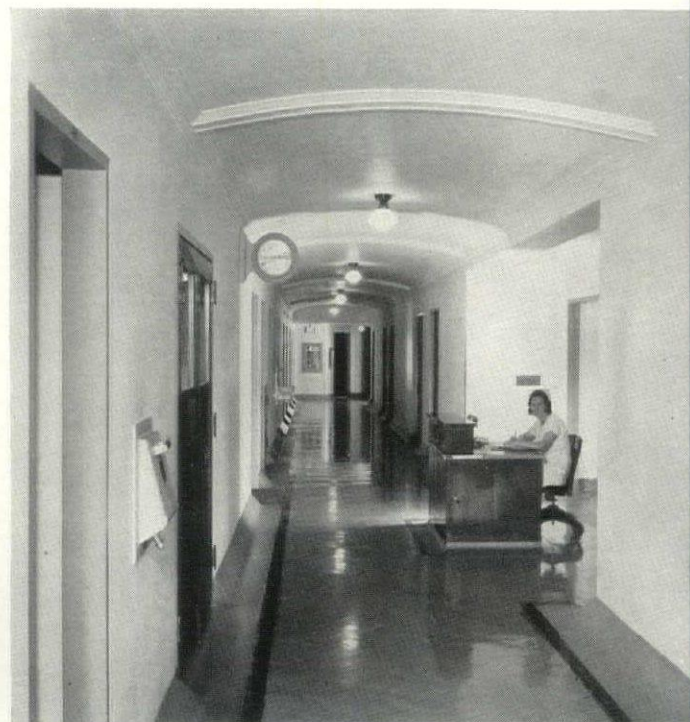


SUMMIT PARK SANATORIUM, ROCKLAND COUNTY, N. Y.

NURSE'S STATION



CORRIDOR

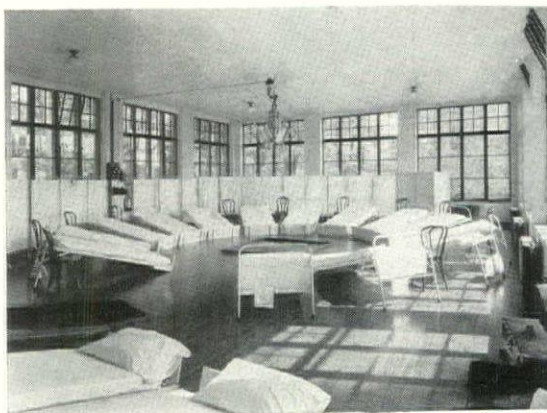


HAMILTON COUNTY TUBERCULOSIS HOSPITAL

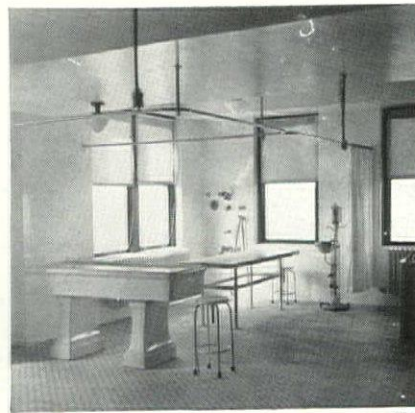
John H. Baker

PHYSIOTHERAPY

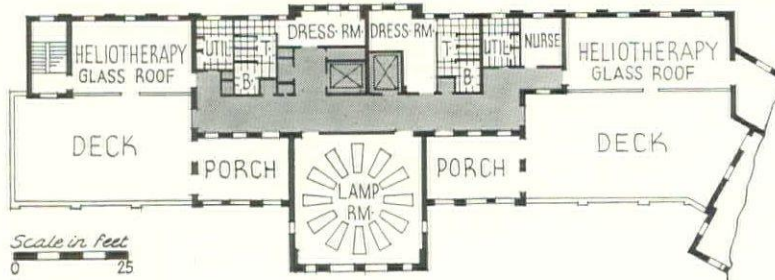
Facilities for physiotherapy found in sanatoria commonly include massage, baths, and heat cabinets, which occupy a room set aside for this purpose convenient to the patients' rooms, and lamp rooms, sun rooms, and open decks for heliotherapy. The latter are usually located on an upper floor adjacent to a roof space, but are not assigned the importance which architects, reared on pictures of Alpine sanatoria, commonly suppose. Some doctors, in fact, prefer to use sun lamps entirely, and do not consider even these of much importance, although most regard them as necessary for patients confined indoors.



O. R. Forster Co.



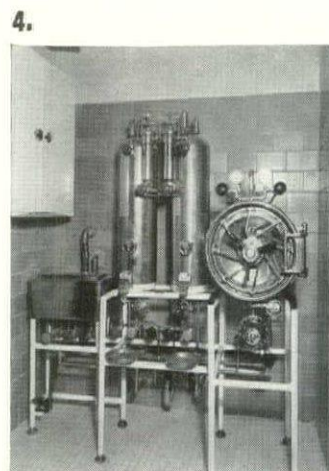
Roth



3.

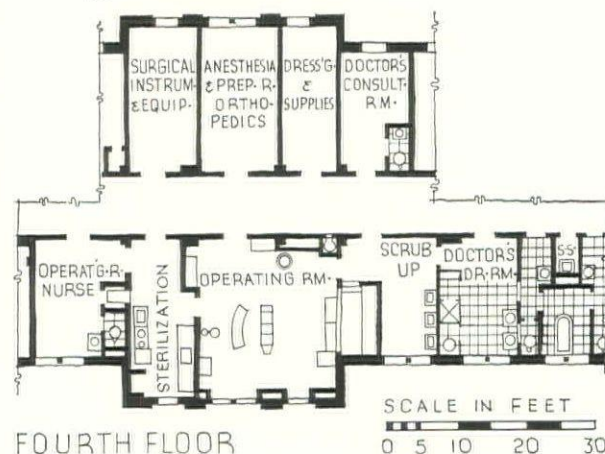
OPERATING

For the small amount of surgery usually involved in the treatment of tuberculosis, minimal operating facilities are usually regarded as sufficient. Major and minor operating rooms are often provided, however, for convenience, since otherwise the major operating room would have to be cleaned after minor surgery and no emergency room would be available while it was in use. Equipment is identical to that commonly found in general hospitals. Detail plans at the right show an excellent arrangement for major and minor operating rooms on adjoining upper floors of a medium-size sanatorium.

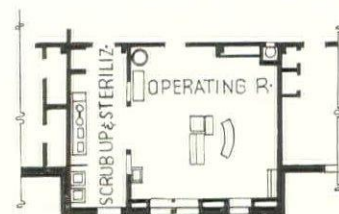


4.

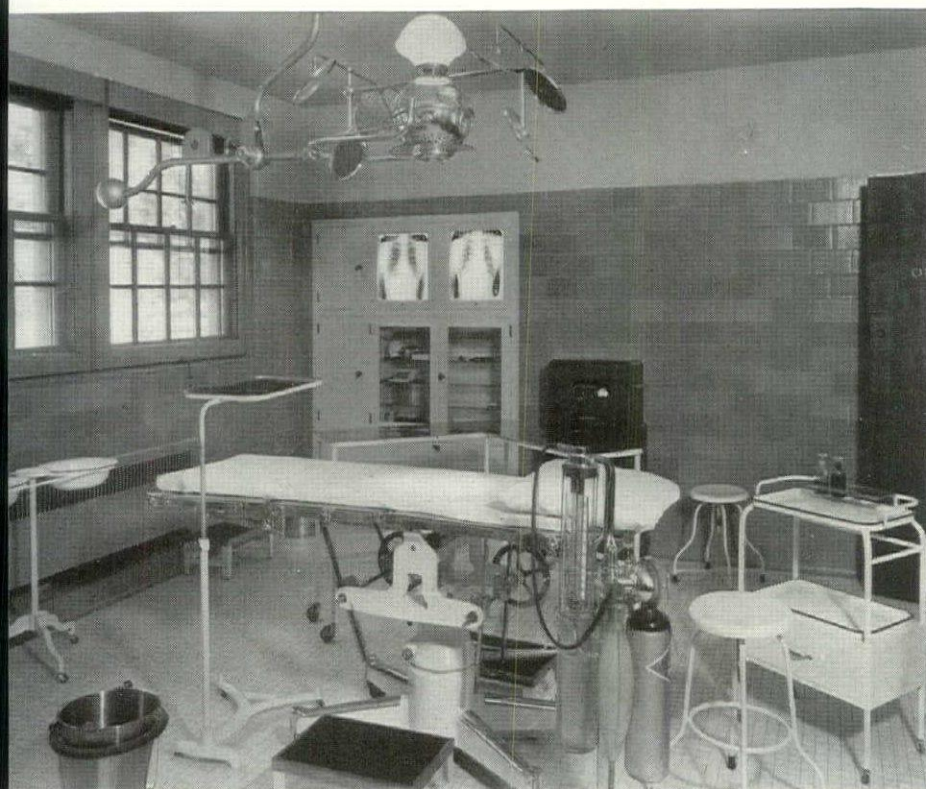
5.



FOURTH FLOOR



THIRD FLOOR



6.

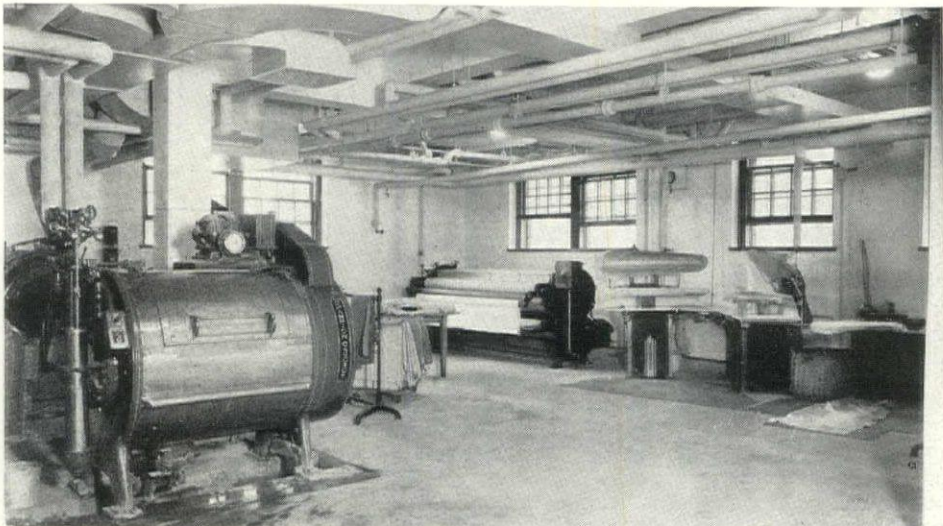
1. Lamp room, Wm. H. Maybury Sanatorium, Northville, Mich. Planned by City of Detroit Department of Health.
2. Physiotherapy and Hydrotherapy room, Bergen Pines County Hospital, Ridgewood, N. J., Cornelius V. R. Bogert, Archt.
3. Sixth floor of Hamilton County Tuberculosis Hospital, Cincinnati, O. Harry Hake and Samuel Hananoford & Sons, Archts.
4. Sterilizing room, Summit Park Sanatorium, Rockland County, N. Y. Frederic W. Mellor, Archt.
5. Operating rooms, Bergen Pines County Hospital, (above)
6. Operating room, Summit Park Sanatorium.

KITCHEN AND SERVICES

While the kitchen is no longer regarded as the "dispensary of the sanatorium," an adequate diet is still an essential part to the treatment. Facilities for food preparation for a patient and staff population of several hundred require a liberal allowance of well-planned space, particularly since—for reasons of economy—institutions of this type must buy in bulk and need plenty of space for storage.

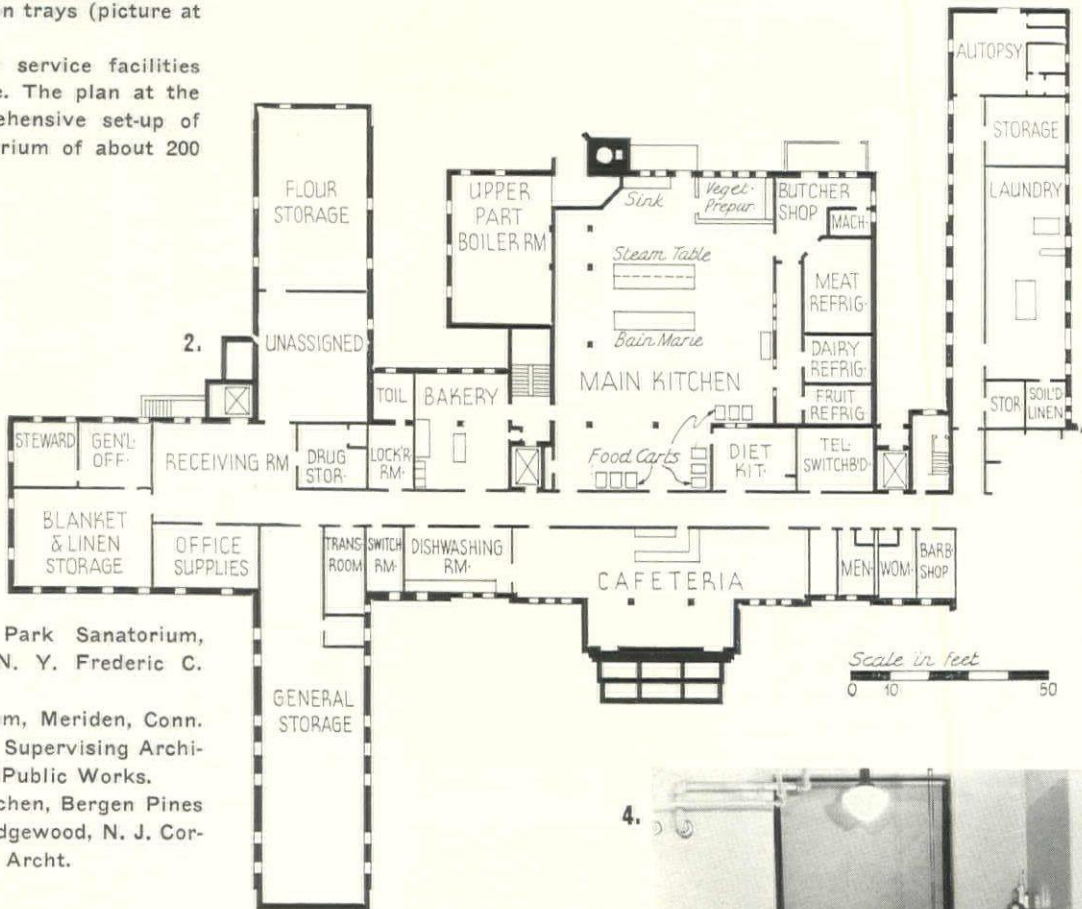
In most such institutions, the main kitchen is devoted solely to the preparation of food; dishwashing, serving, etc., being done elsewhere. This is accomplished by loading prepared food onto electrically heated food carts (picture below) which are transferred to pantries adjoining the various dining rooms and on patients' floors, where it is served onto plates and assembled on trays (picture at right, below).

Laundry, and other service facilities are on a similar scale. The plan at the right shows a comprehensive set-up of this type for a sanatorium of about 200 beds.

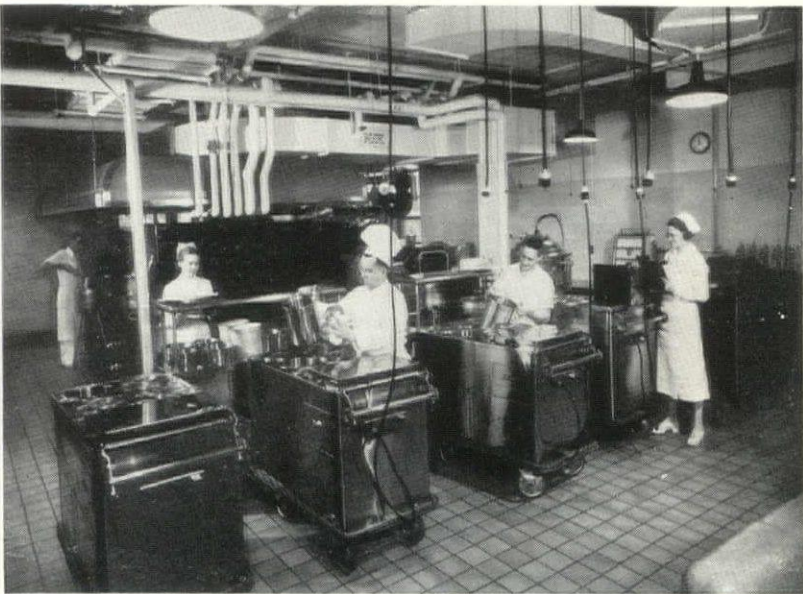


1.

F. E. Crum



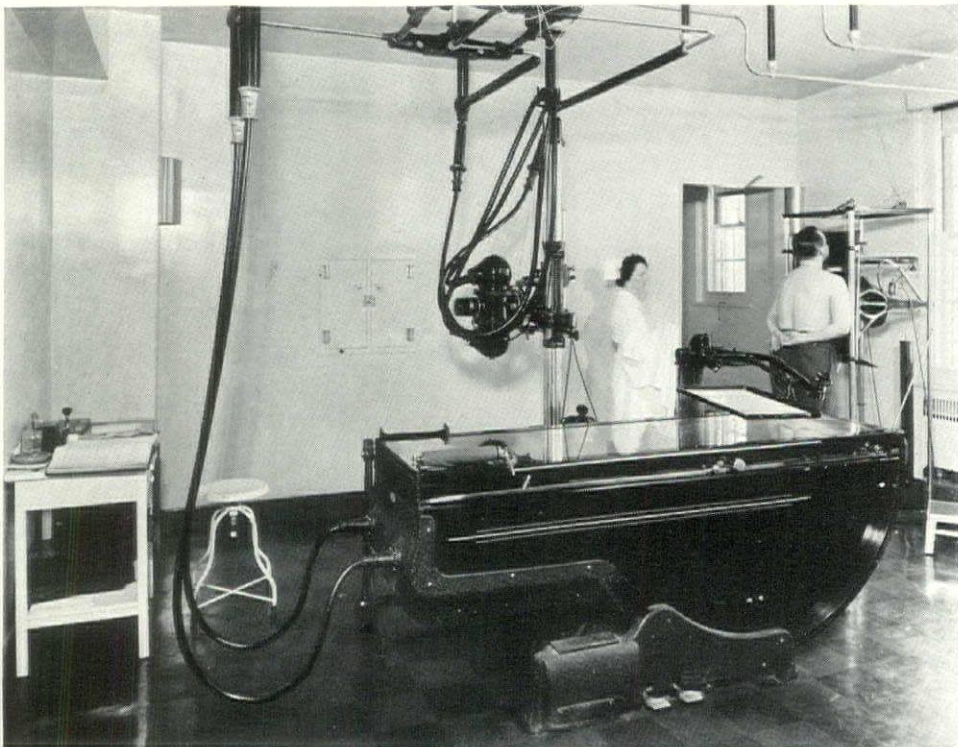
1. Laundry, Summit Park Sanatorium, Rockland County, N. Y. Frederic C. Mellor, Architect.
2. Undercliff Sanatorium, Meriden, Conn. Frederick J. Dixon, Supervising Architect. Department of Public Works.
3. Kitchen, 4. Diet Kitchen, Bergen Pines County Hospital, Ridgewood, N. J. Cornelius V. R. Bogert, Archt.
- 3.



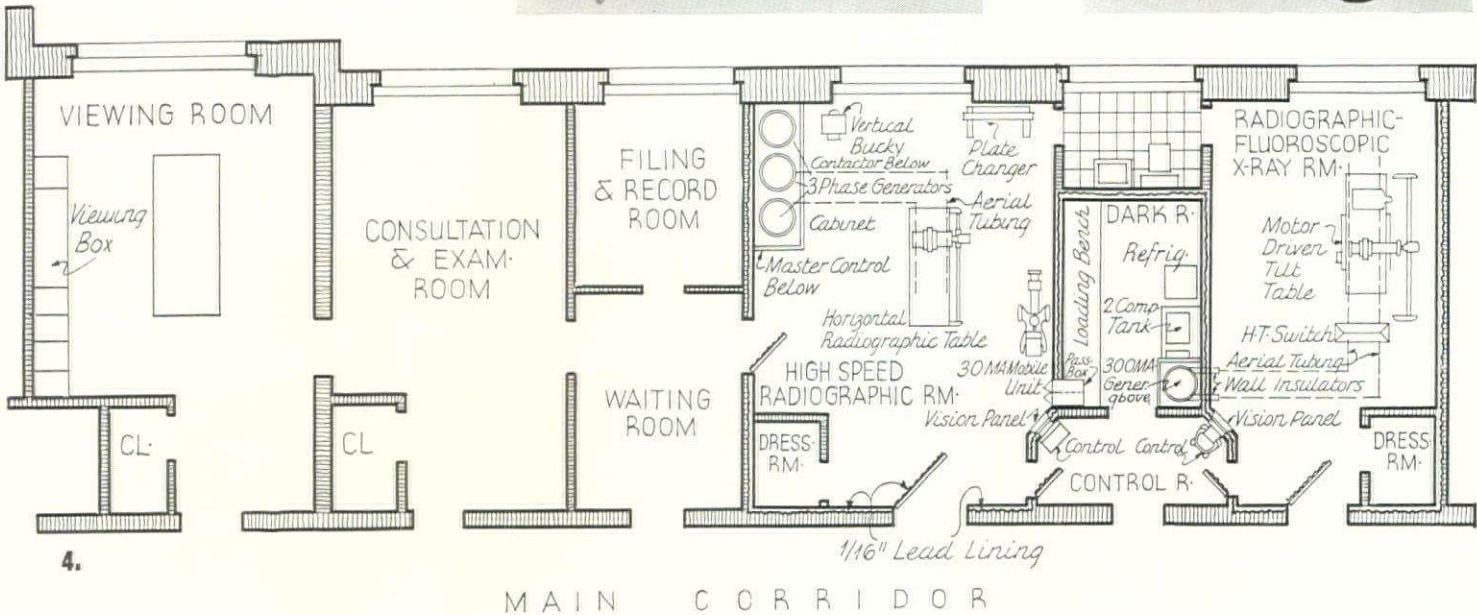
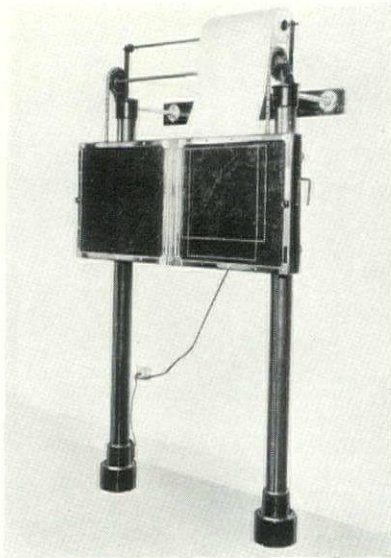
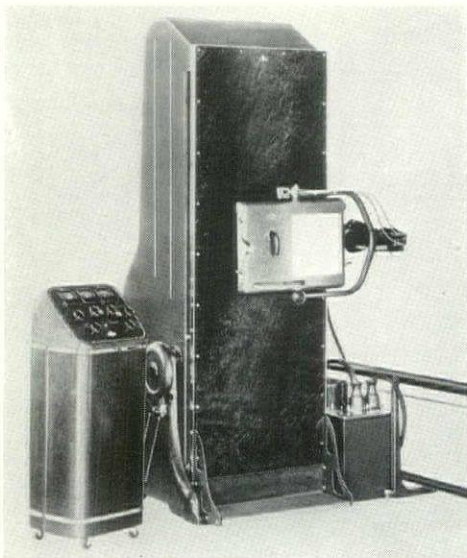
Hough-Dumont Photos

X-ray diagnosis and examination are of tremendous importance in the treatment of tuberculosis. The functions of the X-ray unit are therefore a major part of both in-patient and out-patient work in the clinic, and its planning an exacting problem. On clinic days, such a unit may handle forty to fifty individual patients, whose necessary dressing and undressing before and after examination must not interfere with the steady flow through the X-ray and fluoroscopy rooms. In planning the unit, primary consideration must be given to circulation.

In this respect the unit shown below, while it gives a good idea of the disposition and size of the necessary equipment, and shows an excellent room layout for circulation of patient and doctors, and dark room activities, might prove inadequate for an institution with a heavy out-patient load, since only one dressing room is provided for the fluoroscopy room and neither this nor the all-important toilet has separate communication to the outside corridor, a device which speeds up the flow of traffic. It also lacks a vestibule between the fluoroscopy room and the corridor, which some doctors demand in order to provide a light-trapped entrance for this room, which must be kept in darkness during examinations.



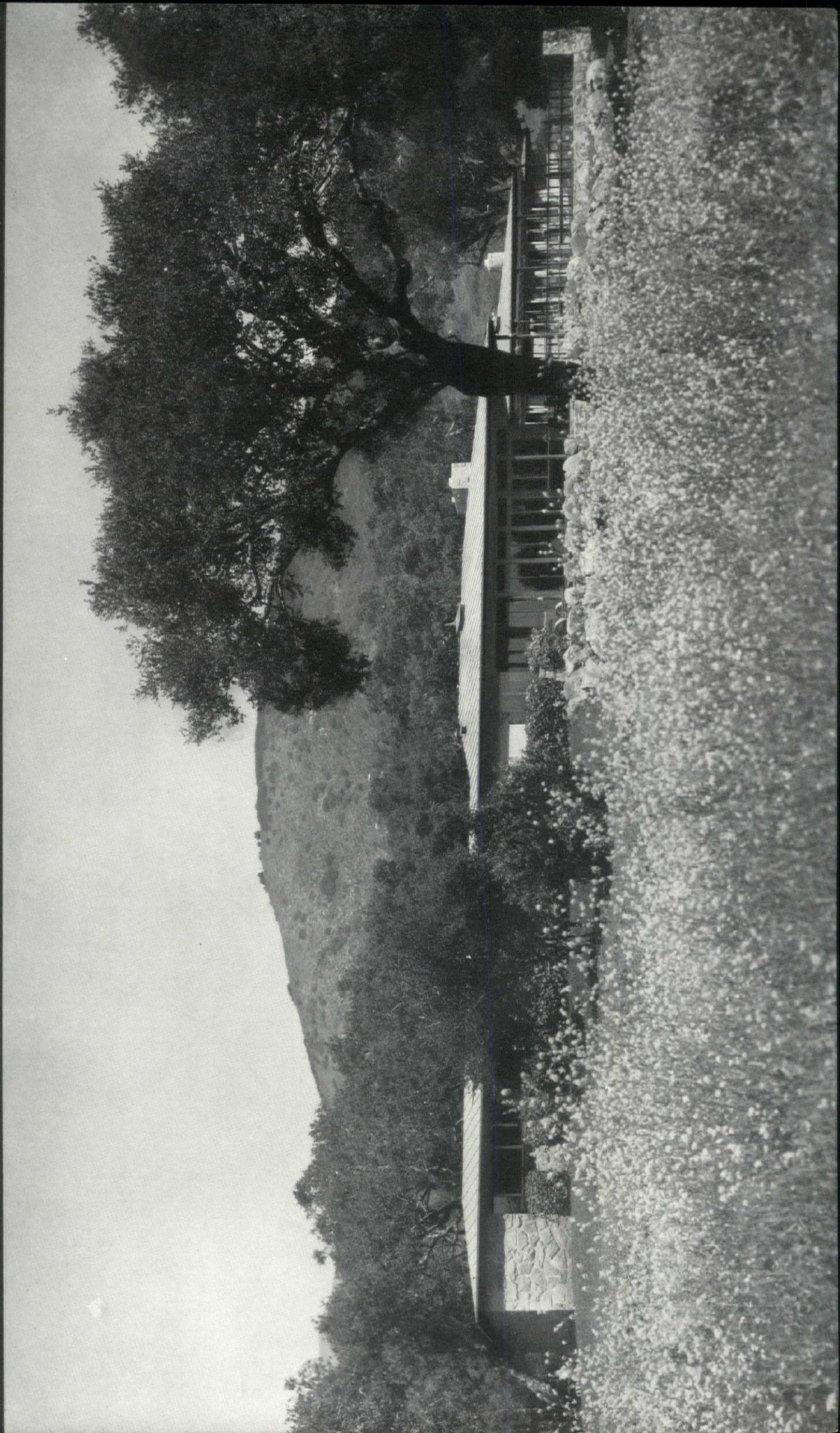
1. Radiography room showing diagnostic table with radiographic-fluoroscopic range, and balanced cassette changer. Summit Park Sanatorium, Rockland County, N. Y. Frederic C. Mellor, Archt. Equipped by General Electric X-Ray Corp.
2. Diagnostic table in vertical position for vertical fluoroscopy and spot film radiography.
3. Plate changer for vertical X-ray.
4. X-Ray Department, Roosevelt Hospital, Middlesex County, N. J. John Pierson & Sons, Archts. 2., 3. and 4. Equipment by Picker X-ray Corporation.

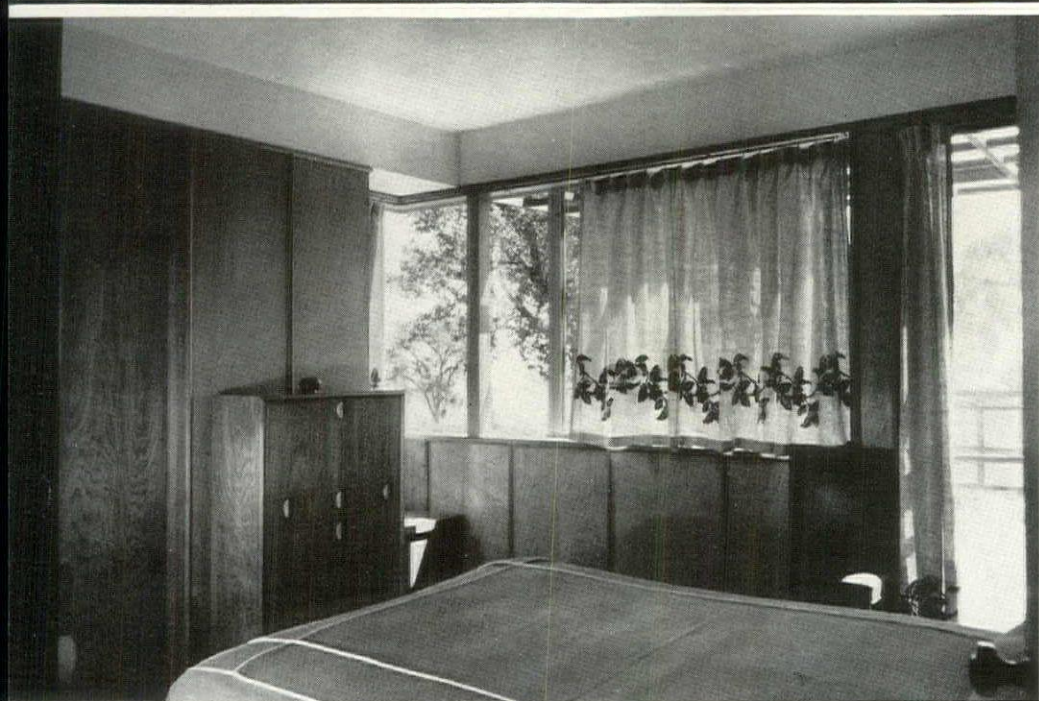


Scale in Feet
0 5 15

HOUSES

RANCH HOUSE FOR STEWART MEIGS, CARPINTERIA, CALIF. WILLARD HALL FRANCIS, ARCHITECT





A trend in residential architecture which is appearing with increasing frequency is the tendency to mix certain features of traditional building with others derived from modern work. Far from indicating a retreat this development indicates a new freedom and flexibility in the approach to the problem of the contemporary house. It ignores the dogma of the flat roof, shows a healthy interest in the textures of natural materials and approaches the site with a certain modesty. As shown by the excellent example illustrated here, this does not mean sacrificing any advantages of the open plan, large glass areas, or extensive outdoor living facilities. The plan, which is organized in three main units for service, living and sleeping quarters, gives ample privacy combined with flexibility of use. The three illustrations on the left (reading from top to bottom) show the living room, a bedroom and the dining space. Cost: approximately \$40,000.

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—Douglas fir studs, 1 in. sheathing, stucco and siding on exterior; inside—plaster. Interior partitions—U. S. Gypsum Co. lath and plaster.

ROOF: Covered with Anaconda Economy 10 oz. copper roofing, American Brass Co.

CHIMNEY: Lining—terra cotta. Fireplace, Heatilator Co.

INSULATION: Ceiling—4 in. rock wool, Johns-Manville. Weatherstripping—bronze, Chamberlin Metal Weather Strip Co.

WINDOWS: Sash—steel casements, Truscon Steel Co. Glass—plate, Libbey-Owens-Ford Glass Co. Screens—integral with sash, Truscon Steel Co.

FLOOR COVERINGS: Living room—quarter sawed oak. Bedrooms and halls—Douglas fir, T. & G., carpet. Kitchen and bathrooms—linoleum.

WALL COVERINGS: Living room—Ailon magna-lia. Library—mahogany. Bedroom—birch. All material by U. S. Plywood Corp.

HARDWARE: Knobs—solid bronze; chromium plated in kitchen and baths, Yale & Towne Mfg. Co. **PAINTING:** Interior—sizing coat, 2 coats special flat wall finish, Boston Varnish Co. Floors—filled, stained and 2 coats wax. Exterior—2 coats raw linseed oil for siding; 2 coats Bondex, Reardon Co., for stucco.

ELECTRICAL INSTALLATION: Wiring system—steel tube circuits controlled with Square D. multi-breakers. Switches—General Electric Co.

KITCHEN EQUIPMENT: Range and refrigerator—gas. Sink—Monel Metal, International Nickel Co. Dishwasher—General Electric Co. Cabinets—steel, Whitehead Metal Mfg. Co.

BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co. Cabinets—Hall-Mack, Hallenscheid-McDonald Co.

PLUMBING: Hot and cold water pipes—copper, Bridgeport Brass Co.

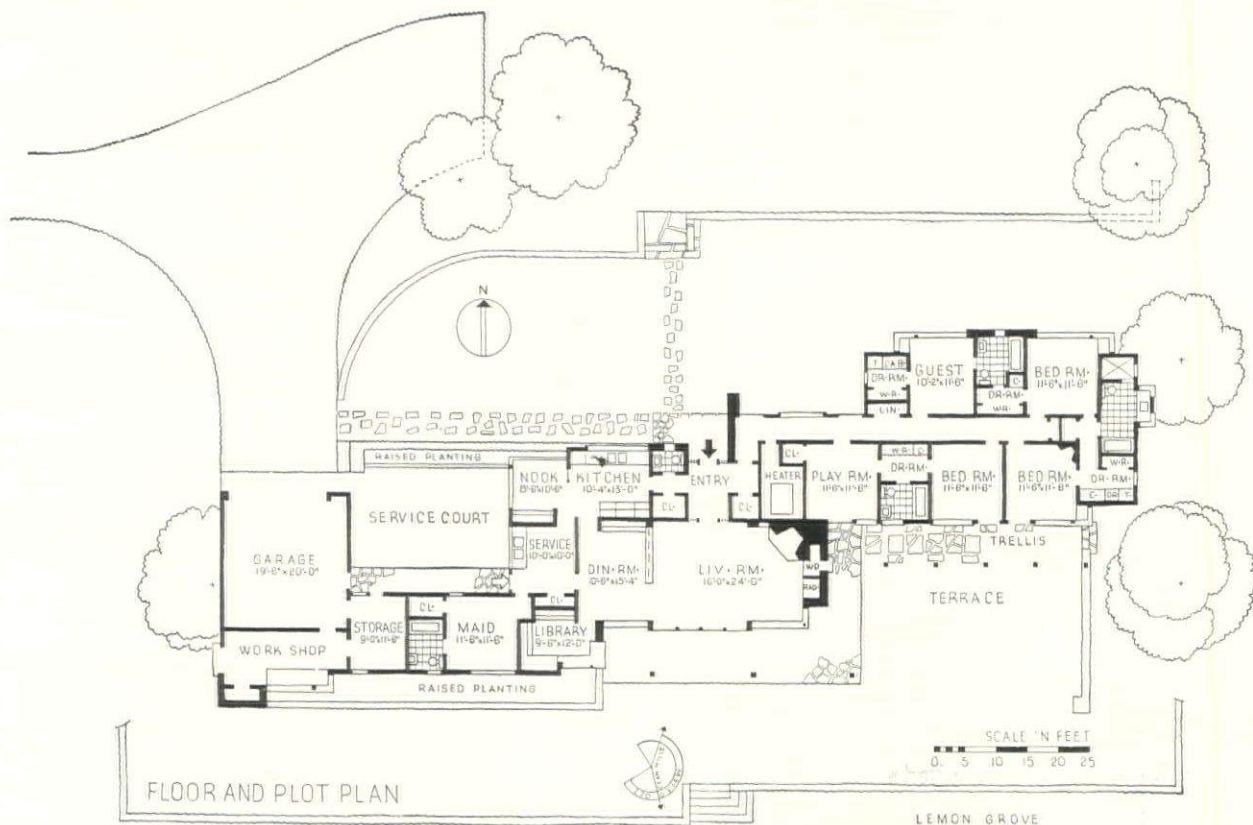
HEATING AND AIR CONDITIONING: Warm air forced draft system, Pacific Gas Radiator Co., thermostatically controlled; filtering and ventilating in conjunction with furnace. Two Crane Co. copper tanks for hot water.

Photo, Robert Clark



TERRACE ON SOUTH SIDE

Robert Clark



HOUSE FOR JEROME ROBERT CERNY, LAKE FOREST, ILL.



Hedrich-Blessing Photos

A certain richness of detail and a very personal interpretation of traditional forms are characteristics of Mr. Cerny's residential work which is well illustrated by this house designed for his own use. Essentially a standard Colonial pattern, the exterior has been transformed by the two large bays, a very ornate cast-iron trellis and a vigorous doorway, all combined with skill and taste. The plan is a model of its kind: compact, but generous in room sizes, it wastes no circulation space, has a good arrangement of service elements, and is well studied for natural lighting and ventilation. Cubage: 60,000.

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—Illinois common brick painted, wood sheathing, 2 x 6 in. studding, Reynolds Corp. metal aluminum foil, U. S. Gypsum Co. rock lath, 1 in. finish plaster.

ROOF: Covered with hand-split wood shakes.

CHIMNEY: Clay flue tile. Dampers—Colonial Damper Co.

SHEET METAL WORK: Flashing—copper. Ducts—Toncan metal, Republic Steel Corp.

INSULATION: Outside walls—aluminum foil, Reynolds Corp. Ground floor—Thermo fill, U. S. Gypsum Co. Attic floor and roof—mineral wool. Sound insulation—acoustic plaster, U. S. Gypsum Co.

WINDOWS: Sash—wood, double hung. Glass—double strength, Libbey-Owens-Ford Glass Co.

FLOOR COVERINGS: living room—random plank oak. Bedrooms and halls—oak. Kitchen and bathrooms—rubber tile, Ritex, Charles Mauter.

WALL COVERINGS: Living room—special antique hand blocked paper, William Quigley, Inc. Bedrooms—wallpaper, Warner Bros.

HARDWARE: All material by Yale & Towne Mfg. Co.

PAINTING: Interior: Walls—paper and flat paint, Stresen-Reuter Co. Ceilings—casein paint. Floors—varnish, Pratt & Lambert Co. Exterior walls—double white, Samuel Cabot, Inc.

KITCHEN EQUIPMENT: Range—General Electric Co. Refrigerator—Norge Corp. Sink—Standard Sanitary Mfg. Co.

LAUNDRY EQUIPMENT: Sink, washing machine and drier—Crane Co.

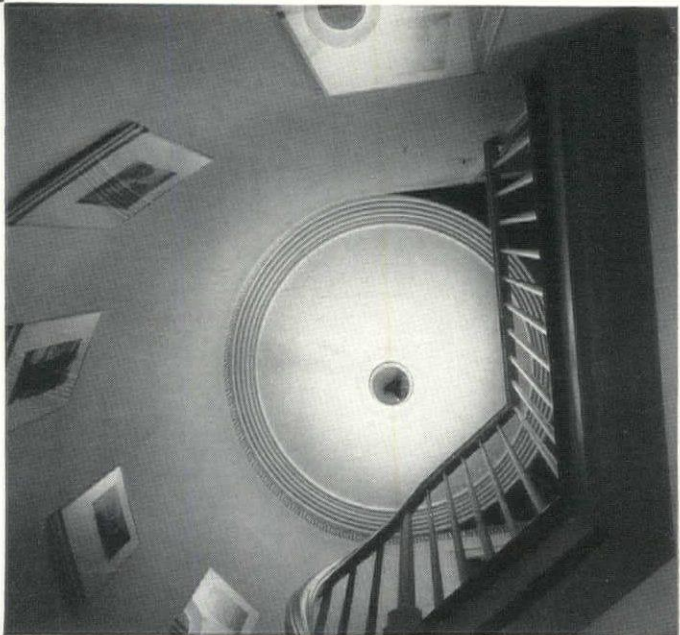
BATHROOM EQUIPMENT: All fixtures by Crane Co.

PLUMBING: Pipes—A. M. Byers Co.

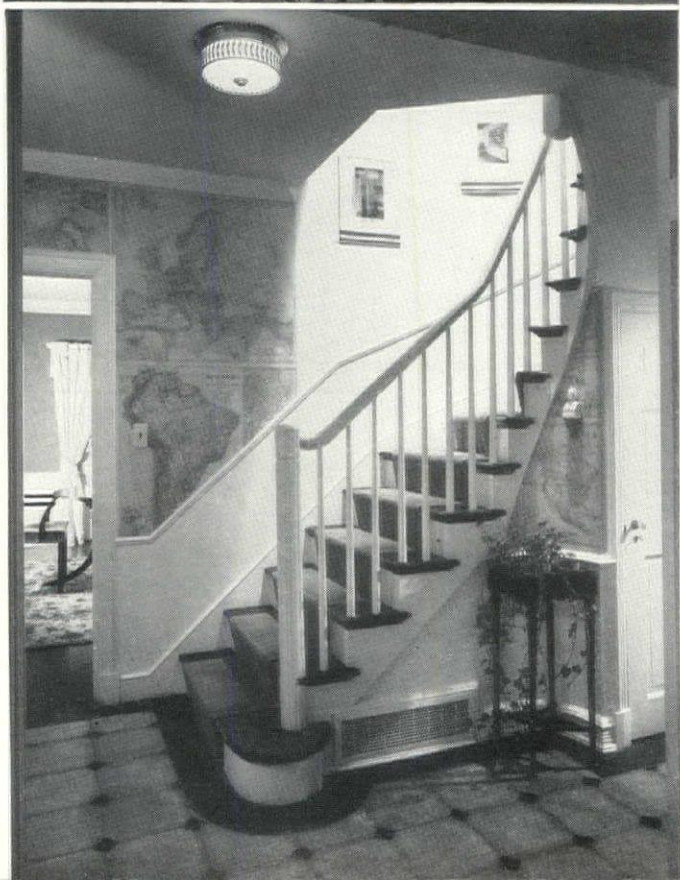
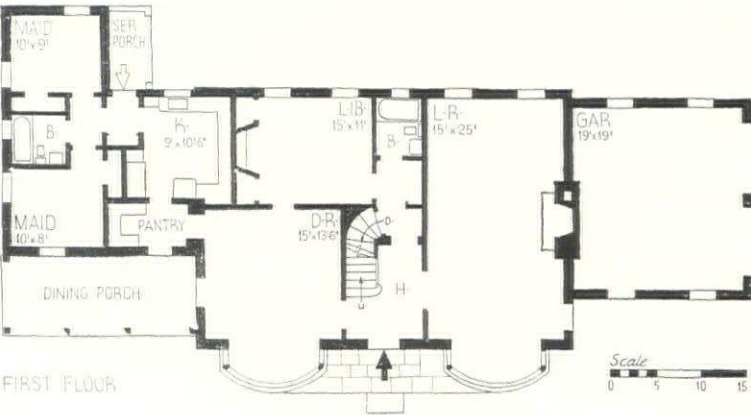
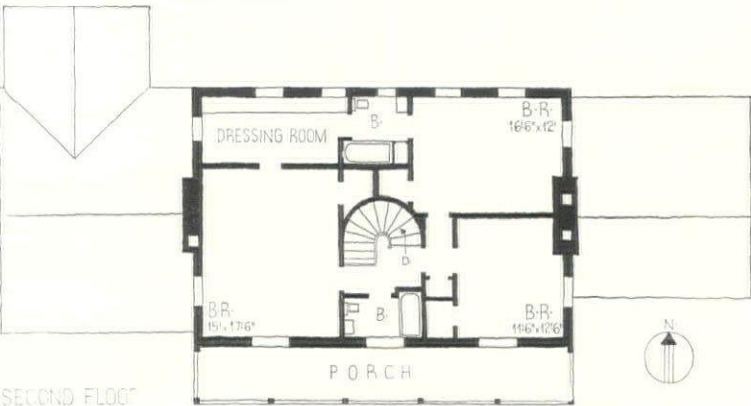
HEATING AND AIR CONDITIONING: Completely air conditioned, Thermostat—Minneapolis-Honeywell Regulator Co. Hot water heater—Hot Point, Edison-General Electric Appliance Co.



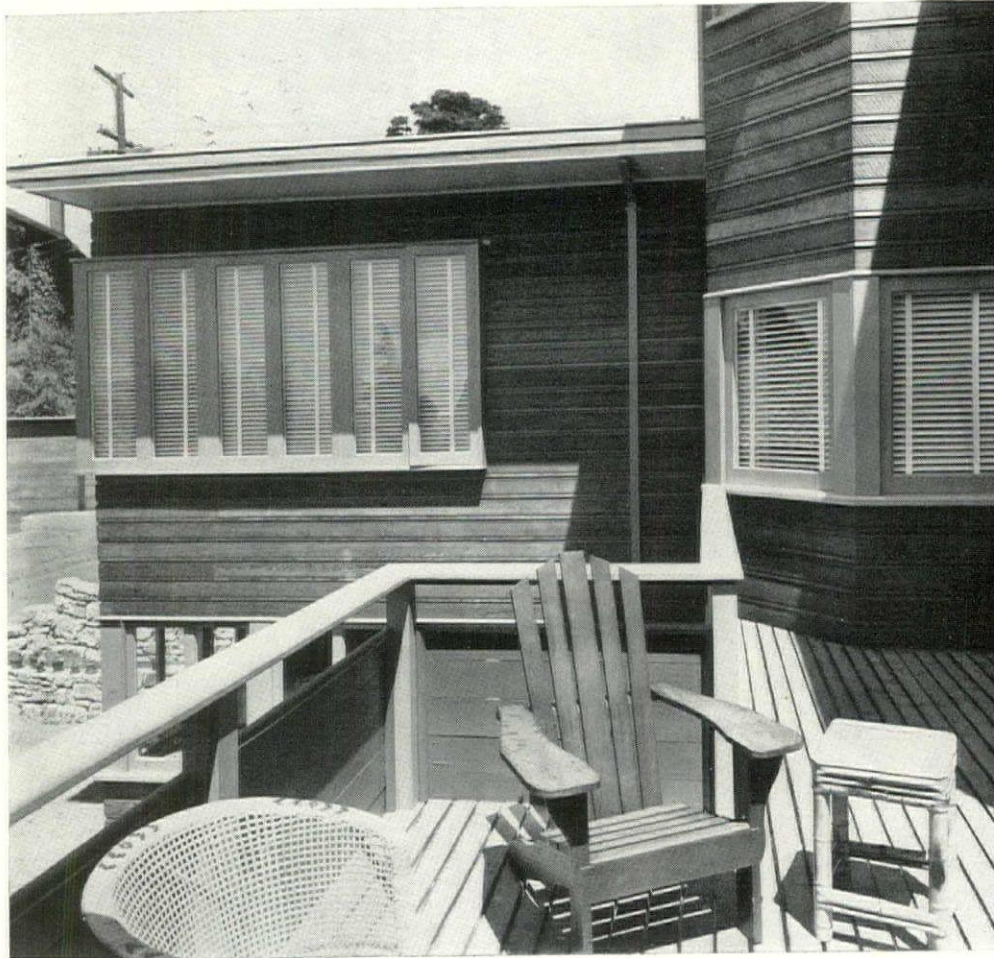
LIVING ROOM



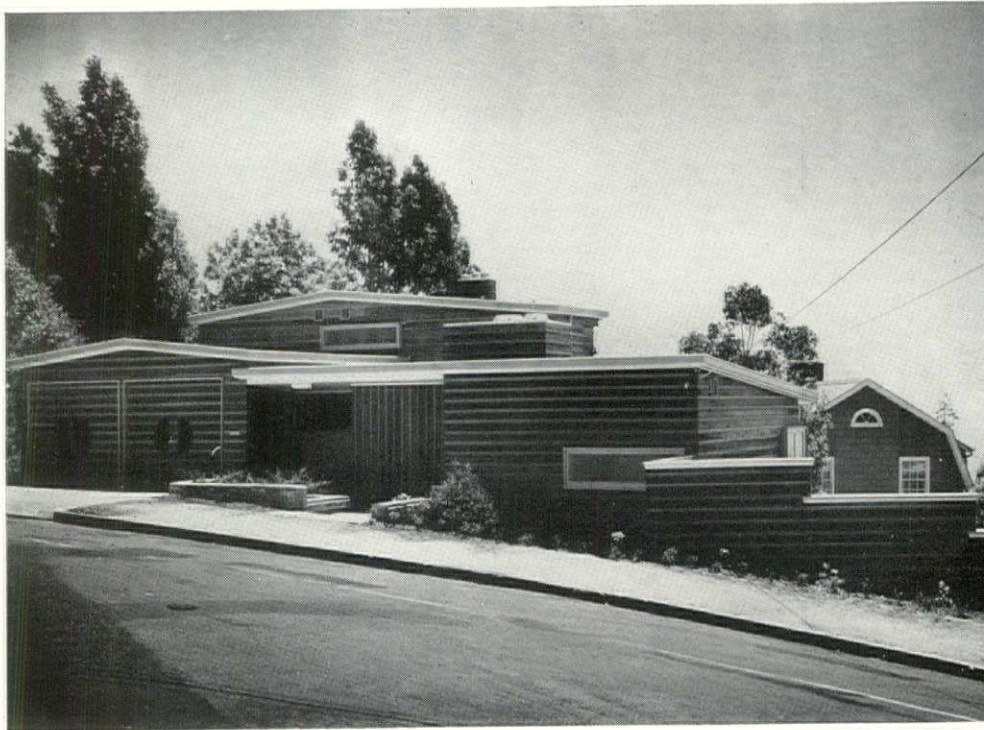
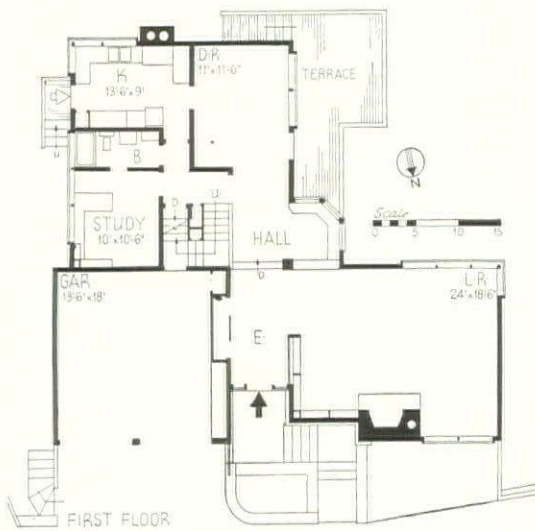
STAIR HALL



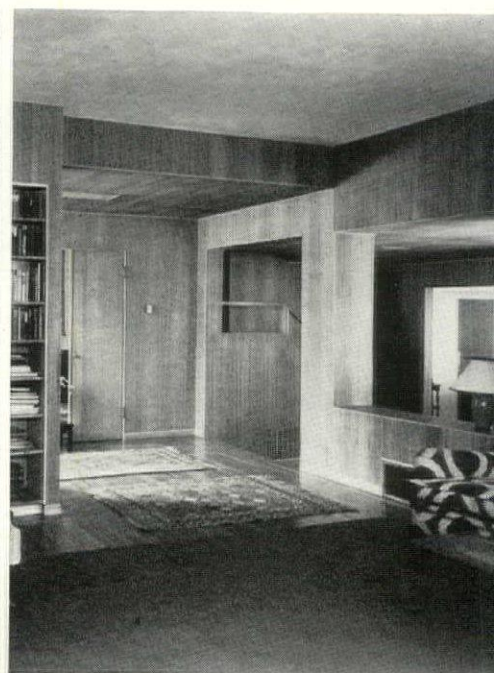
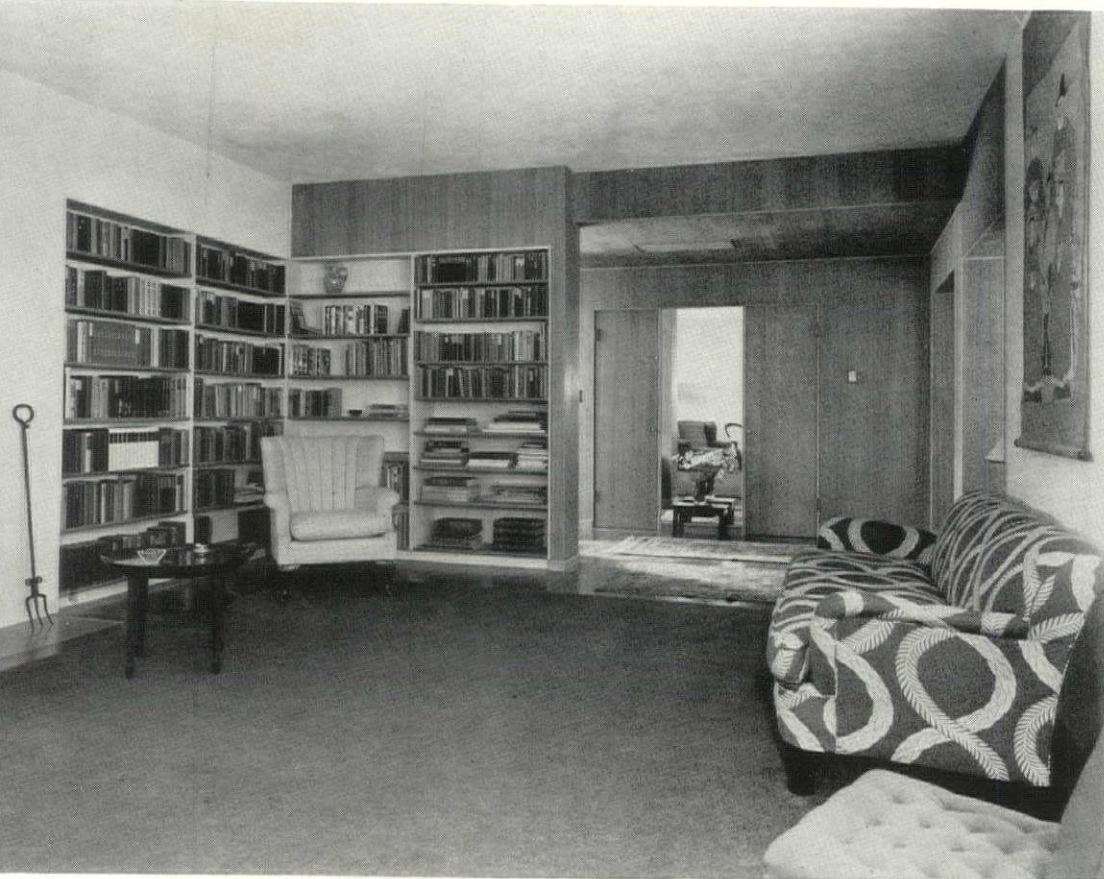
HOUSE FOR JOSEPH HENRY JACKSON, BERKELEY, CALIF.



TERRACE



An interesting use of textured siding to give interest to the exterior. Designed for a very irregular site, the house takes advantage of the slope to get three levels above ground. Particularly generous are the living facilities, which include a large living room and a playroom of equal size on the floor below. The kitchen fenestration is an ingenious arrangement to obtain maximum wall space for cabinets. Cost: about \$15,000.



LIVING ROOM

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls — Western frame, Oregon pine studs and joists, Earthquake diagonal and A braces; Sisalkraft Co. paper under exterior rustic siding. Basement plates, redwood, creosoted. Inside—wood and plaster finish.

ROOF: Covered with dry sheet and 4-ply felt, tar and gravel, Paraffine Companies.

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

WINDOWS: Sash—wood, casement and projected. Glass—double strength, quality B; on street side—washboard glass, thick ribbed and satin finish, Libbey-Owens-Ford Glass Co.

STAIRS: Main stair—vertical grain Oregon pine, stained and carpeted.

FLOOR COVERINGS: Main rooms—hardwood, Broadloom carpet. Kitchen and bathrooms—linoleum. Showers—tile, Gladding, McBean & Co.

WALL COVERINGS: Living room—wallboard, mahogany ribbon cut, natural finish.

WOODWORK: Trim and cabinets—white pine; bases—V-grain, Oregon pine. Interior doors—flush, Oregon pine or mahogany finish.

HARDWARE: All material by Schlage Lock Co.

PAINTING: Bathroom and kitchen walls—3 coats semi-gloss. Floors—stained and waxed. All paints—W. P. Fuller & Co.

ELECTRICAL INSTALLATION: Wiring system—knob and tube. Switches—Bakelite Co. and General Electric Co.

KITCHEN EQUIPMENT: Range—gas fired. Refrigerator and washing machine—General Electric Co. Sink—double compartment, Standard Sanitary Mfg. Co. Cabinets—drawers on roller bearings.

BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg Co. Shower doors—plate glass, Libbey-Owens-Ford Glass Co.

PLUMBING: Cold water pipes—galvanized iron. Hot water pipes—Mueller copper tubing, Mueller Brass Co.

HEATING: Warm air, Pacific, gas-fired.

KITCHEN



HOUSE FOR CHARLES COWAN, SEATTLE, WASH.



McBride & Anderson Photos

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—Royal cedar shingles, cedar boards and battens and hard burned common brick, 2 x 4 in. studs plastered inside.

ROOF: Covered with handsplit cedar shakes.

CHIMNEY: Hard burned brick. Damper—Majestic Co.

SHEET METAL WORK: Flashing—16 oz. copper. Gutters and leaders—26 gauge Armco iron, American Rolling Mill Co.

INSULATION: Roof—2 in. Thermofill, Celotex Corp. Weatherstripping—interlocking thresholds, Chamberlin Metal Weather Strip Co. Sound insulation—Cabot's Quilt in all bathroom floors, Samuel Cabot, Inc.

WINDOWS: Sash—steel casement. Glass—single strength, quality A, Libbey-Owens-Ford Glass Co. Glass blocks—Insulux, Owens-Illinois Glass Co. Screens—roll screens, Chamberlin Metal Weather Strip Co.

WALL COVERINGS: Dining room and bedrooms—wallpaper, Imperial Paper & Color Co.

WOODWORK: Trim, cabinets and doors—fir. Garage doors—swing-up hardware, Stanley Works.

HARDWARE: Equipment by Yale & Towne Mfg. Co.

PAINTING: Interior walls—lead and oil. Ceilings—Vello, Lauck Paint Co.

ELECTRICAL INSTALLATION: Wiring system—knob and tube. Switches—Harvey Hubbell, Inc. Fixtures—Dwyer & Co.

KITCHEN EQUIPMENT: Sink—Standard Sanitary Mfg. Co. Ventilating fan—Western Blower Co.

BATHROOM EQUIPMENT: All fixtures—Crane Co. Seat—C. F. Church Mfg. Co. Cabinets—American Glass Co.

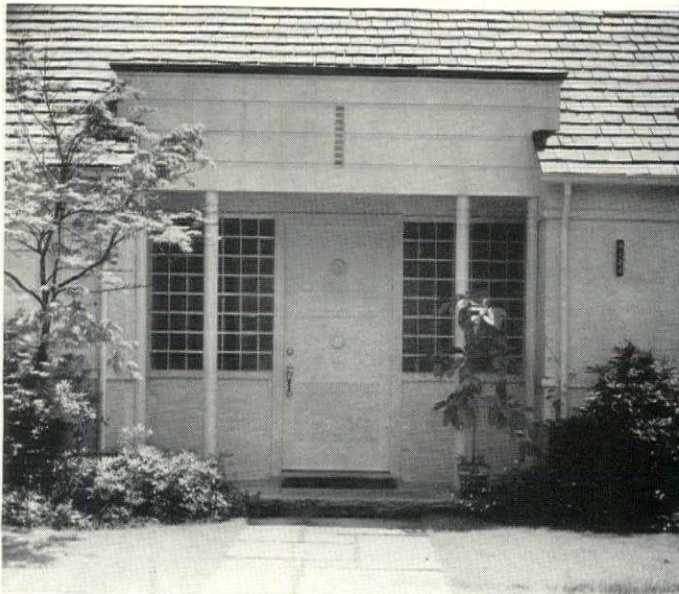
PLUMBING: Soil pipes—cast iron. Hot and cold water pipes—galvanized iron.

HEATING AND AIR CONDITIONING: Forced warm air system including filtering and humidifying. Thermostat—Minneapolis-Honeywell Regulator Co.

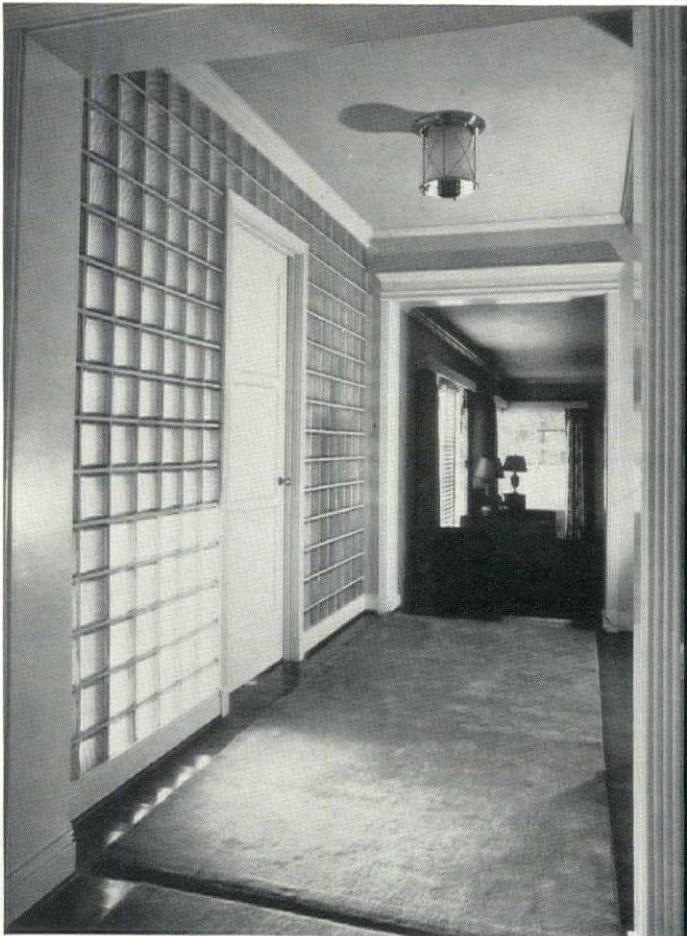
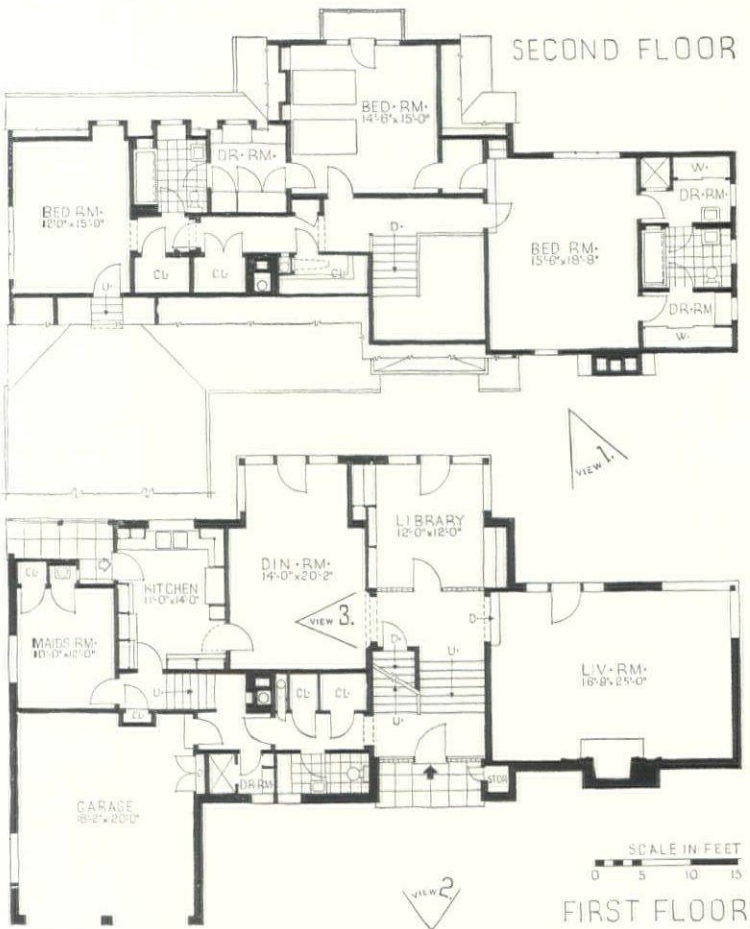
A plan with staggered levels turned the problem of a sloping lot into a definite advantage. On the entrance level are concentrated the coat closets, lavatory and garage entrance; to the living or bedroom floors it is only half a flight of stairs. Moreover, the arrangement makes possible a low street elevation with few windows while the rear is fully open to the view. The intelligent use of glass block and the generous rear windows suggest the extent to which traditional design is being modified by new materials and the influence of the modern school. Cubage: 49,620. Cost: \$16,070, at about 33 cents per cubic foot.



VIEW 1.

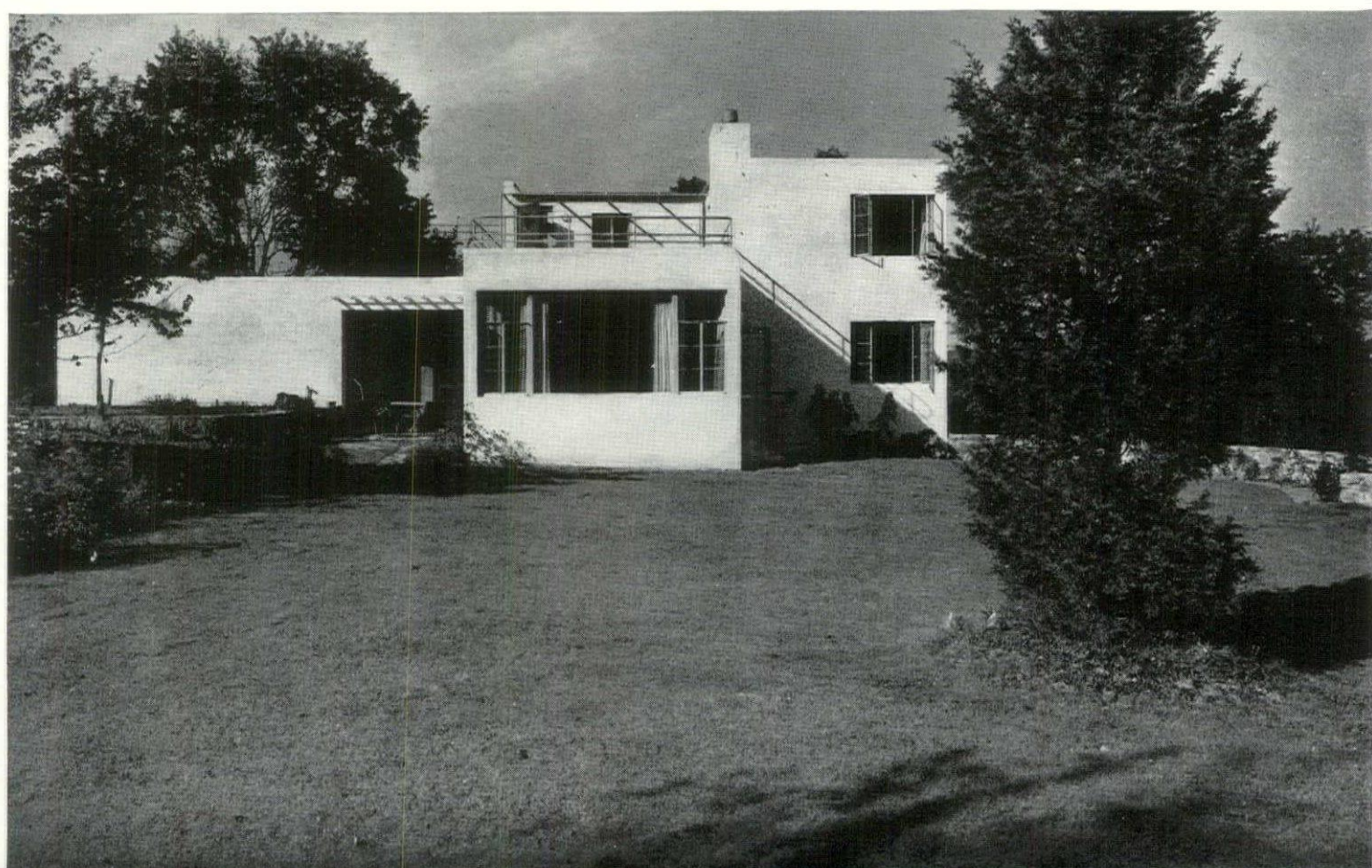
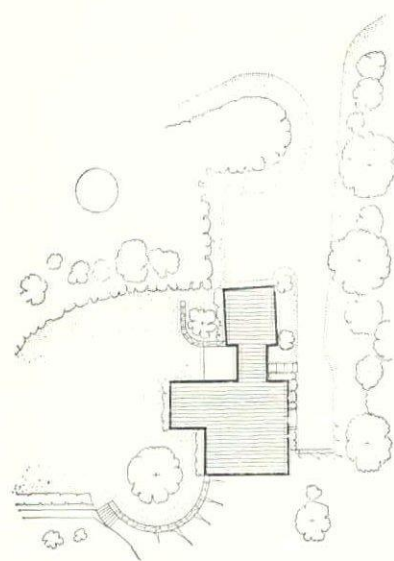
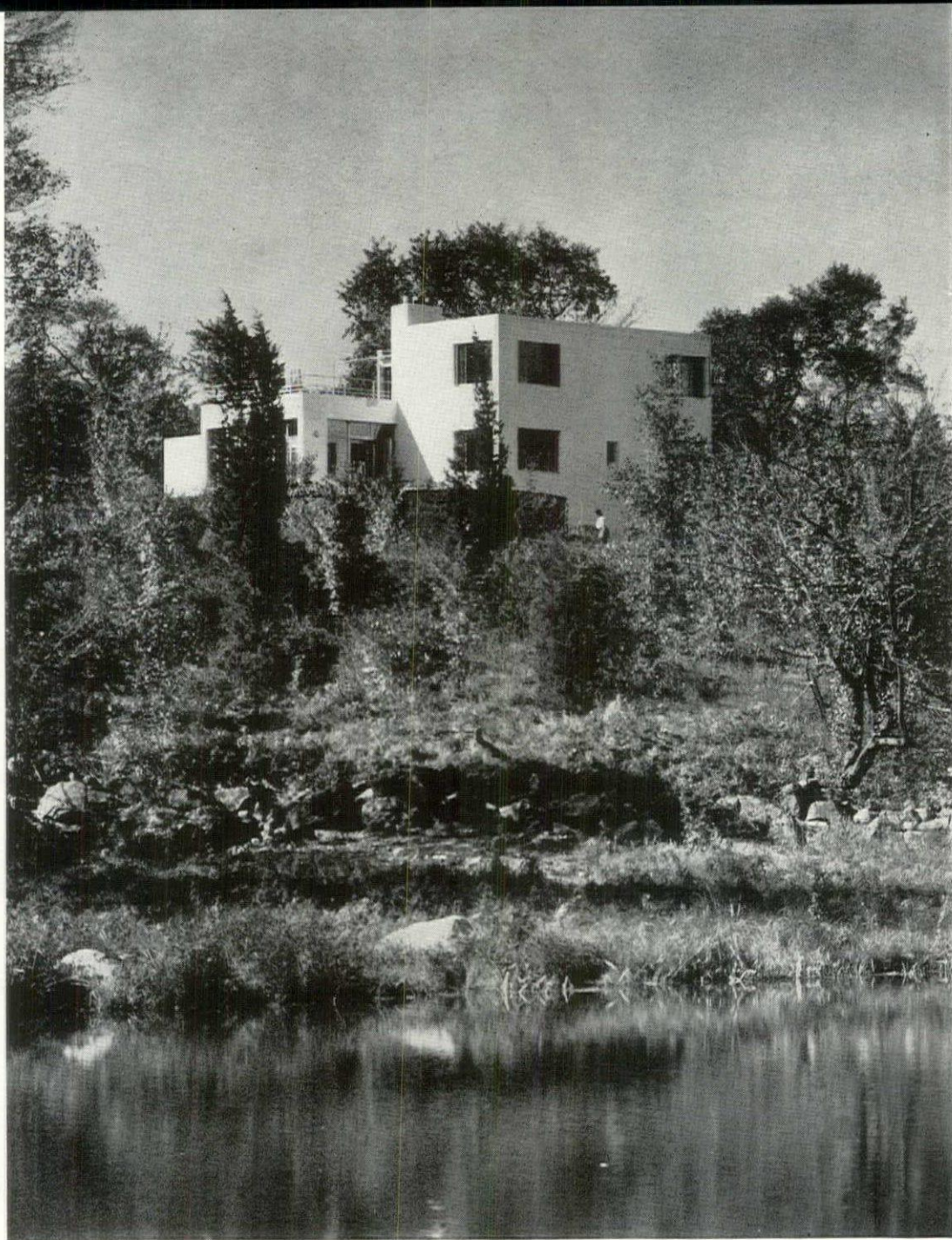


VIEW 2.



VIEW 3.

HOUSE IN





LIVING ROOM

John Gass Photos

The effect of structure is strongly indicated in both the plan and exteriors of this house. Built largely of precast concrete units, its external walls consist of cinder block painted, while the rectilinear character of the design further shows the influence of this material. In plan it will be noted that a bearing wall runs up the center, with approximately equal spans on either side to make best use of the precast concrete floor joists. The pleasantly open treatment of the walls of the living room was made practicable by placing the room so that it carries no second floor loads save for the roof deck. The plan is very compact, providing five bedrooms of good size, a basement studio and a separate dining room in a comparatively limited area. Cubage 41,000. Cost: \$18,000, at 44 cents per cubic foot.

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—two rows 4 in. cinder blocks, outer hollow, inner solid, separated by 2 in. air space, tied by 3/16 in. round galvanized steel wire; garage 8 in. hollow cement blocks. Interior partitions—2, 3, 4 and 8 in. cinder cement blocks, no wall finish. Floor construction—8 in. Floroform, Bedford Hills Concrete Products Co.; no ceiling finish.

ROOF: Covered with 2-ply, 15 lb. felt, built-up, Barrett Co. Decks—covered with 1/2 in. Celotex, Celotex Co., 3-ply built up, Barrett Co. and 1/4 in. Fibrex, Metropolitan Roofing Supplies Co., Durex paint.

CHIMNEY: Cinder blocks and brick, terra cotta lining. Damper—H. W. Covert Co.

SHEET METAL WORK: Flashing—copper and Metropolitan Roofing Supplies Co. Fabrikote. Gutters—copper. Leaders—copper, interior cast iron.

INSULATION: Outside walls—2 in. air space. Roof—3/4 in. Cabot's Quilt, Samuel Cabot, Inc. Ceilings—1/2 in. Celotex, Celotex Corp. Weatherstripping—interlocking zinc, Chamberlin Metal Weather Strip Co.

WINDOWS: Sash—Fenwrought casements, Detroit Steel Products Co. Glass—Pennvernon double strength; one 1/4 in. polished

plate, Pittsburgh Plate Glass Co.

FLOOR COVERING: All floors—Tile-Tex, Tiletex Co.

WOODWORK: Steel door bucks. Cabinets—birch veneer, Kitchen Maid Corp. Doors—flush, birch veneer, Rodd's Lumber Corp. Garage doors—flush type, overhead, Stanley Works.

PAINTING: Interior walls and ceilings and exterior walls—cement paint, Artstone Rocor Corp. Sash—lead and oil.

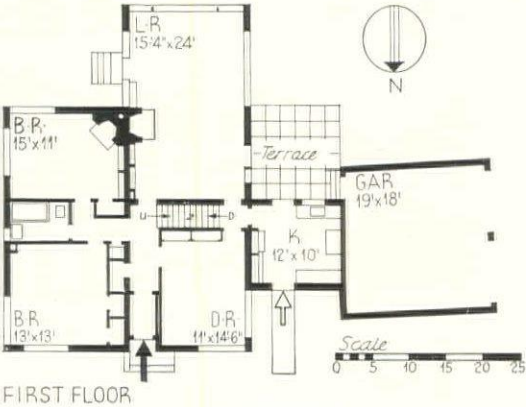
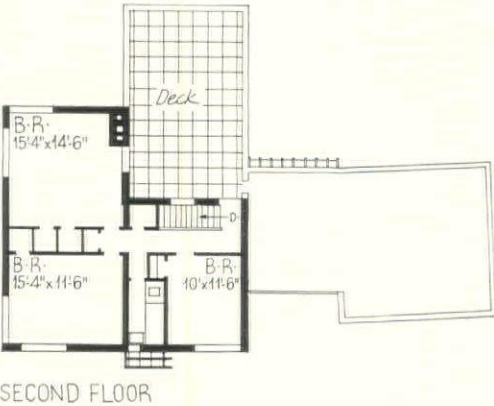
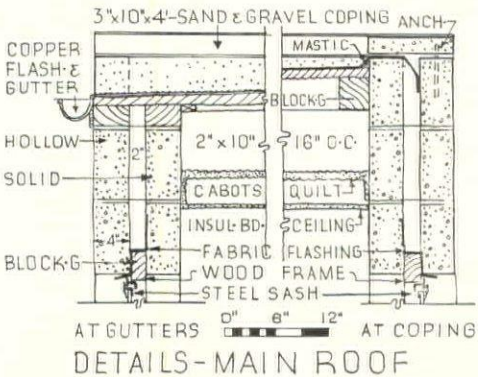
ELECTRICAL INSTALLATION: Wiring system—BX. Switches—toggle, Hart & Hegeman Electric Co. Fixtures—Condi-Lite Co. built-in, Kurt Versen.

KITCHEN EQUIPMENT: Range—General Electric Co. Refrigerator—Frigidaire Corp. Sink—Standard Sanitary Mfg. Co. Cabinets—Kitchen Maid Corp.

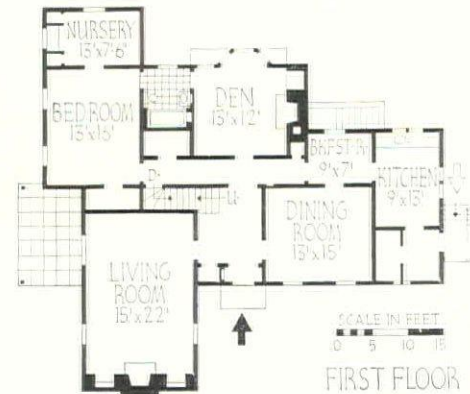
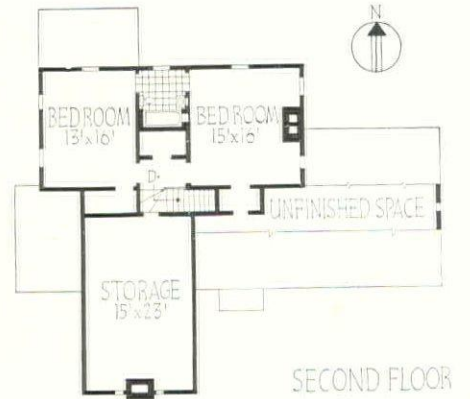
BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co. Seat—C. F. Church Mfg. Co. Cabinets—Jenkins Mfg. Co.

PLUMBING: Soil pipes—cast iron. Hot and cold water—brass. Pump—F. E. Myers & Bro. Co.

HEATING AND AIR CONDITIONING: Warm air system, filtered, humidified, Gar Wood Industries. Thermostat—Minneapolis-Honeywell Regulator Co. Hot water heater—Gar Wood Industries.



HOUSE FOR FRANK S. SNYDER, WINSTON-SALEM, N. C.



Barber Photos

LUTHER LASHMIT, ARCHITECT

The problem, as stated by the architect, was to provide three bedrooms, a den arranged for use as a bedroom, generous storage space, and a separate two-car garage with servant's quarters. The master bedroom is on the ground floor, with adjoining nursery; the latter will be converted into a dressing room when no longer needed for its present use. Storage space, as requested by the owner, is more than ample, occupying the entire area above the living room. Cubage: 54,500. Cost: \$11,000 at about 20 cents per cubic foot.

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—10 in. siding, building paper, sheathing, N. C. pine studs; inside—U. S. Gypsum Co. rock lath and plaster.

ROOF: Covered with felt and Buckingham slate.

CHIMNEY: Lining—terra cotta. Dampers—H. W. Covert Co.

SHEET METAL WORK: Flashing, gutters and leaders—Toncan iron, Republic Steel Corp.

INSULATION: Roof—rock wool.

WINDOWS: Sash—white pine, double hung. Glass—double strength, quality A, Pittsburgh Plate Glass Co. Screens—galvanized wire, wood frame, top hinged.

STAIR: Treads—oak. Risers—pine. Rail—birch.

FLOORS: Main rooms—red oak. Kitchen and bathrooms—pine covered with linoleum.

WOODWORK: Trim and cabinets—white pine. Shelving—N. C. yellow pine. Doors—white pine, Curtis Companies.

HARDWARE: Interior and exterior—Mortise locks, brass trim.

PAINTING: Interior: Trim and sash—enamel, Pratt & Lambert. Floors—stain, shellac and wax. Exterior: Walls and sash—Double White, Samuel Cabot, Inc.

ELECTRICAL INSTALLATION: Wiring system—non-metallic sheathed cable. Switches—toggle.

KITCHEN EQUIPMENT: Range—electric. Refrigerator—Kelvinator Corp. Sink—Standard Sanitary Mfg. Co.

BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co.

PLUMBING: Soil and vent pipes—cast iron and steel. Water pipes—Streamline copper, Mueller Brass Co.

HEATING: Two pipes steam system. Boiler—Kewanee Boiler Corp. Coal stoker—Butler Mfg. Co. Convectors—Trane Co. Hot water heater—internal boiler coil.

HOUSE FOR CHARLOTTE R. MARBUT, DENVER, COLORADO



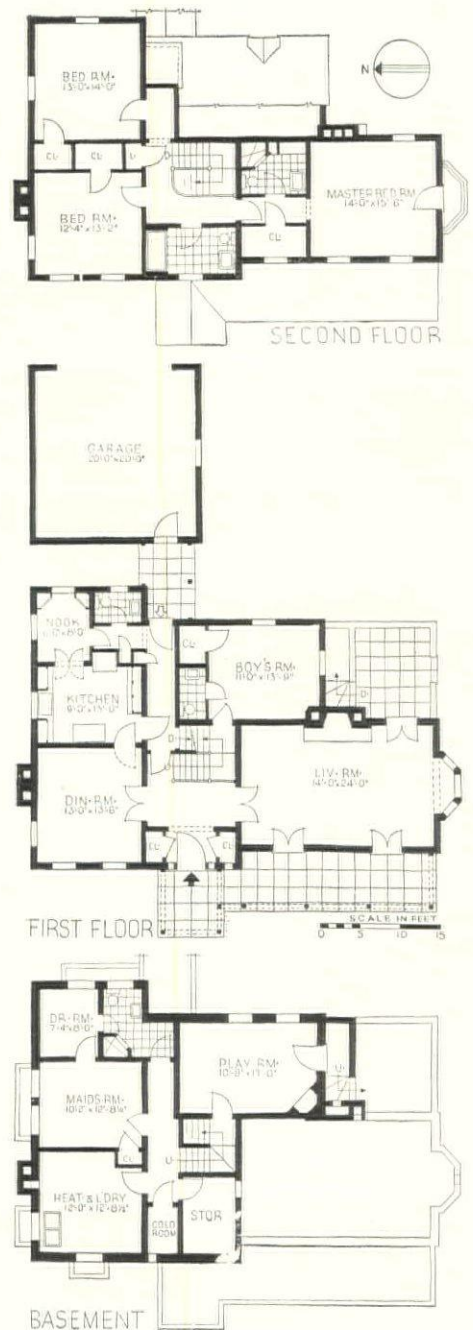
Hyskell—Denver

RAYMOND HARRY ERVIN, ARCHITECT

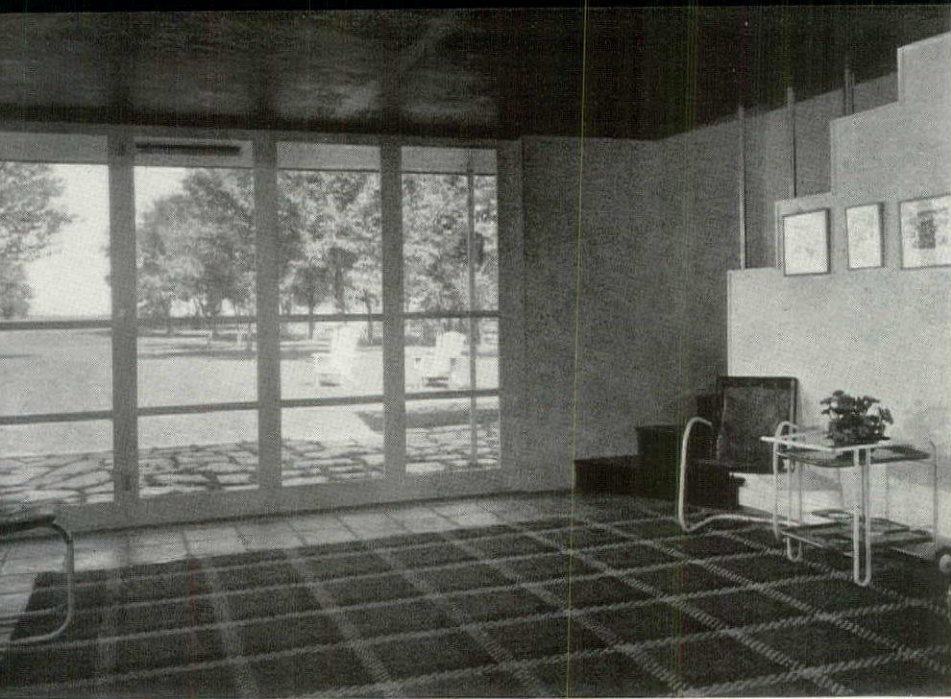
An advantage of the L-plan, as shown here, is the efficient second floor plan made possible, with corner ventilation in all bedrooms, and small area for circulation. A variant in this instance is the boy's room on an intermediate level, an arrangement which permits the placing of windows above ground in the playroom. Cubage: 39,000. Cost: \$14,500, at about 37 cents per cubic foot.

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—painted sand brick; inside plaster.
CHIMNEY: Damper—Peerless Corp.
INSULATION: Roof—Spray-O-Flake Co.
WINDOWS: Sash—double hung, wood. Glass—quality A, Libbey-Owens-Ford Glass Co.
FLOOR COVERING: Living room—random width white oak, pegged. Kitchen—linoleum. Bathrooms—tile, American Tile Co.
WALL COVERINGS: Living room—wallpaper and vertical wood boarding. Bedrooms and halls—wallpaper.
WOODWORK: Trim and cabinets—white pine. Doors—6-panel pine, Colonial. Garage doors—fir, Overhead Door Co.
HARDWARE: Yale & Towne Mfg. Co.

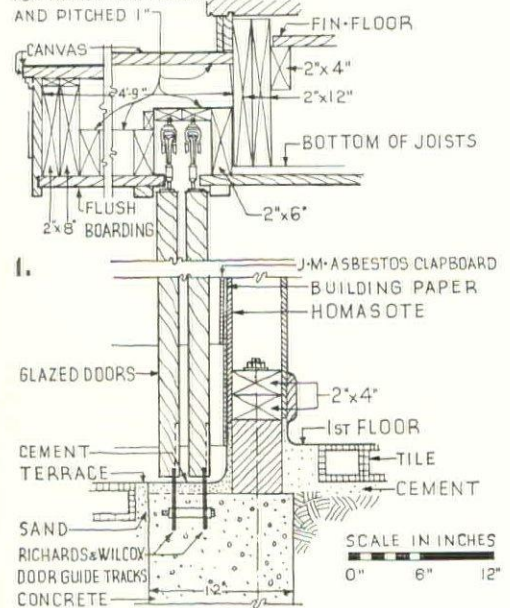


PAINTING: Interior: Walls and ceilings—3 coats lead and oil on unpapery sections. Floor—fill, 1 coat Seal-O-San, Huntington Laboratories, 2 coats wax. Exterior: Walls—2 coats white Bondex, Reardon Co.
ELECTRICAL INSTALLATION: Switches—toggle type, Harvey Hubbell Co. Fixtures—Sechrist Mfg. Co.
KITCHEN EQUIPMENT: Range—gas. Refrigerator—electric. Sink—flat rim, 2-compartment, Crane Co. Laundry sink—2-compartment, Chicago Granite Mfg. Co.
BATHROOM: Fixtures by Crane Co.
HEATING AND AIR CONDITIONING: Forced warm air, gas-fired; furnace, and air washer, Public Service Co. Thermostat—Minneapolis-Honeywell Regulator Co. Hot water heater—55 gal., Crane Co.



HOUSE FOR

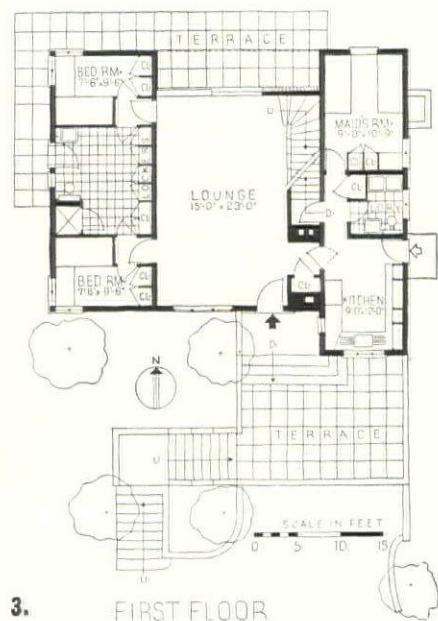
2"x6" 12" O.C. NOTCHED
FOR HARDWARE TRACKS
AND PITCHED 1"



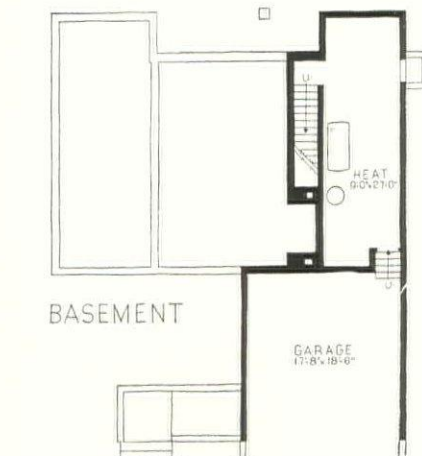
SECTION THROUGH BASE AND HEAD OF
SLIDING DOOR IN LOUNGE



SECOND FLOOR



FIRST FLOOR



BASEMENT

1. LOUNGE 2. LIVING 3. DINING

WILLIAM R. HUNTINGTON
ARCHITECT

A departure from customary standards of planning is shown in this example, where a maximum of space has been devoted to general living facilities and a near-minimum to bedrooms. Intended primarily for summer use, the house divides the living space between the two floors, an arrangement which makes excellent provision for week-end entertainment without sacrificing the privacy of the family's own quarters. The large locker and shower room opening directly off the lawn is a great convenience in a seaside residence; the bedrooms which flank it are equipped with bunks, and are used by the children and guests. Cubage: 33,000. Cost: \$11,000, at about 33 cents per cubic foot.

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—Johns-Manville asbestos clapboard, insulating board and sheathing, 4 in. wood studs, 16 in. o.c. Inside—1/2 in. Homasote, painted, Homasote Co. Floor construction (first)—hollow terra cotta tile, smooth surfaced, laid in cement on 2 in. cement bed, 3 in. sand fill; (second)—1 x 4 in. fir wood on joists. Ceilings—Homasote, Homasote Co.

ROOF: Covered with Con-Ser-Tex canvas, grade I, Wm. L. Barrell Co.

CHIMNEY: Lining—terra cotta, flue. Fireplace—Heatilator Co.

SHEET METAL WORK: Flashing, gutters and leaders—copper.

INSULATION: Outside walls—insulating board sheathing. Roof—4 in. rock wool, Johns-Manville.

WINDOWS: Sash—stock wood casements, Andersen Corp. Glass—double strength, quality A, Libbey-Owens-Ford Glass Co. Screens—wood frame, copper mesh.

FLOOR COVERINGS: Kitchen and bathrooms—linoleum.

WOODWORK: Trim and cabinets—pine. Doors—flush panel, birch faced, Johns-Manville.

HARDWARE: All equipment by Schlage Lock Co.

PAINTING: Interior: Walls and ceilings—2 coats Miralith, Mitchell Rand Co. Trim and sash—lead and oil.

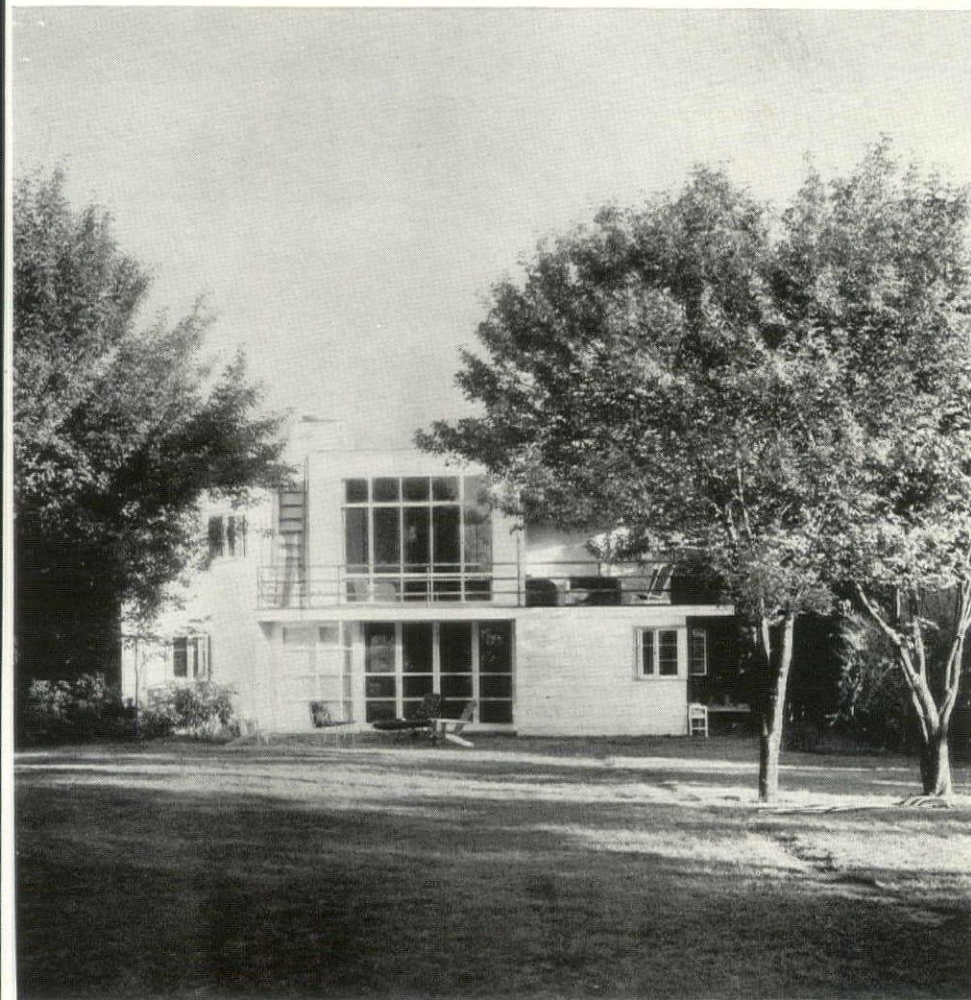
ELECTRICAL INSTALLATION: Wiring system—BX. Switches—Hart & Hegeman Electric Co. Fixtures—Kurt Versen.

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

BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co.

PLUMBING: Soil pipes—cast iron. Vent pipes—galvanized wrought iron, A. M. Byers Co. Water pipes—copper tubing.

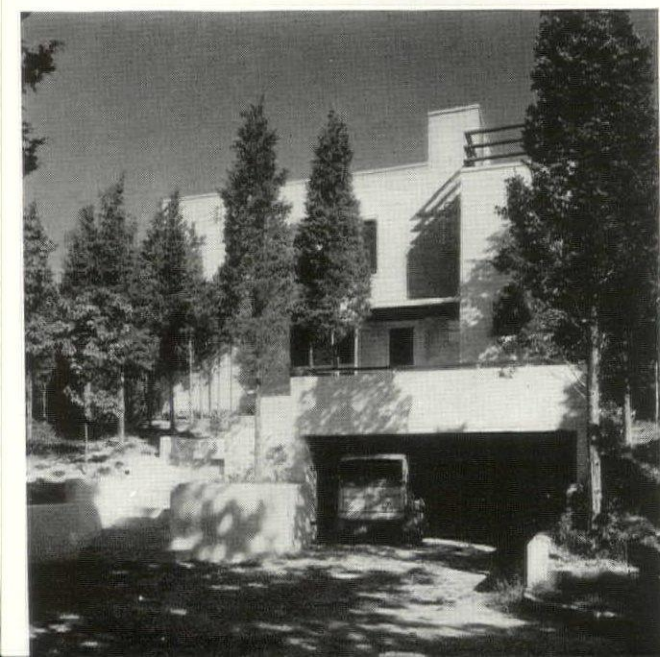
HEATING: Ducts only installed at present for hot air system, Holland Furnace Co. Hot water heating—oil, automatic, 32 gal., Loch-invar Corp.



Charles E. Knell Photos

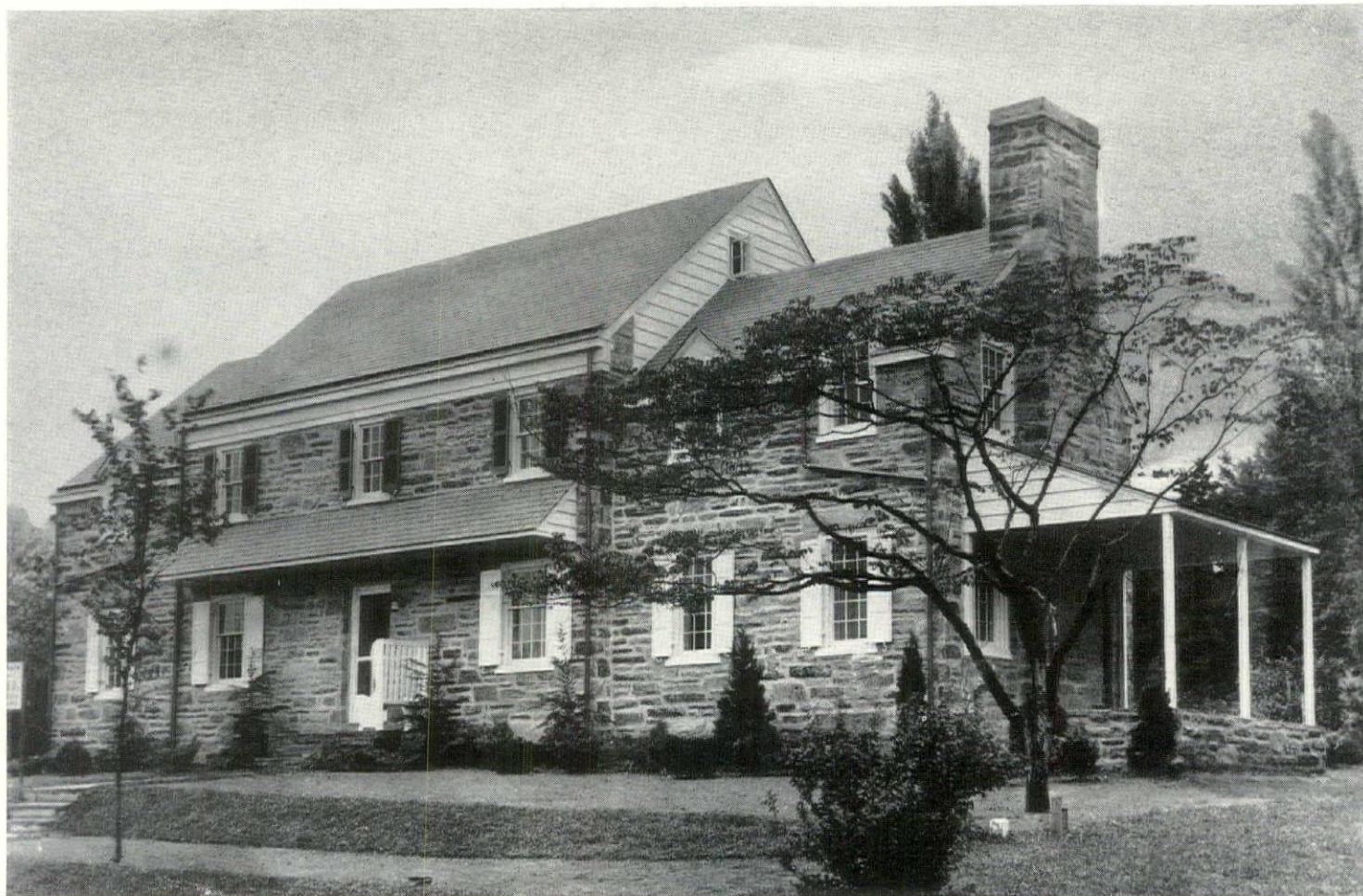


NORTH SIDE



SOUTH SIDE

HOUSE FOR SHERMAN R. REED, JR., WYNNEWOOD, PENNA.



JOHN B. THOMSON, ARCHITECT

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—stone and 10 in. siding; stone walls furred with 2 x 5 in. studs 16 in. o.c. Inside—U. S. Gypsum Co. plaster on rock lath.

ROOF: Covered with No. 1 Bangor slate, 2 x 6 in. rafters, Bangor Slate Co.

CHIMNEY: Stone, terra cotta flue linings. Dampers—H. W. Covert Co.

INSULATION: Outside walls and attic floor—rock wool, Johns-Manville. Weatherstripping—zinc interlocking type, Chamberlin Metal Weather Strip Co.

WINDOWS: Sash—wood, double hung. Glass—quality A, double strength, Hires-Turner Glass Co.

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

WALL COVERINGS: Kitchen and bathrooms—tile, Franklin Tile Co.

HARDWARE: All equipment by P. & F. Corbin.

PAINTING: Interior: Floors—fill, varnish and wax. Sash—3 coats enamel finish. Exterior walls—3 coats lead and oil.

ELECTRICAL INSTALLATION: Wiring system—BX cable. Switches—Arrow Hart & Hegeman Electric Co.

KITCHEN EQUIPMENT: Range and refrigerator—Westinghouse Electric & Mfg. Co. Sink—Standard Sanitary Mfg. Co. Cabinets—Curtis Companies. Laundry sink—Monel Metal, International Nickel Co. Ventilating fan—ILG Electric Ventilating Co.

BATHROOM EQUIPMENT: All fixtures—Standard Sanitary Mfg. Co. Seat—C. F. Church Mfg. Co. Shower—Keystone Co.; plate glass door.

PLUMBING: Soil pipes—wrought iron, Reading. Hot and cold water pipes—copper, Anaconda, American Brass Co.

HEATING: Forced hot water system. Boiler—Capital, U. S. Radiator Corp. Oil burner—Delco-Frigidaire Corp. Radiators—convactor type, cast iron, Crane Co. Hot water heater—summer and winter hook up, Bell & Gossett.



A conventional design in the traditional local manner, somewhat complicated, however, by the necessity of satisfying modern living requirements within the limits of a predetermined exterior. An effect of spaciousness has been created on the first floor by the use of a large hall as a link between the three main rooms; the openness of this arrangement was made possible by the supplementary service stair to the bedroom level. Cubage: 48,000. Cost: \$15,800, at about 33 cents per cubic foot.

THE ARCHITECT'S WORLD

THE CASE FOR THE CIVIL BUREAU

By Howard Dwight Smith

PROFESSOR OF ARCHITECTURE AND UNIVERSITY ARCHITECT, OHIO STATE UNIVERSITY

From an address before the National Public Housing Conference, New York City, January 27, 1939

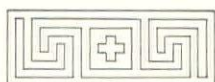
Use of the term "socialized architecture" is likely to arouse the same feeling of sympathy or antagonism as is currently aroused when the term "socialized medicine" is used. In fact, for the sake of brevity in establishing a common understanding of terms we may assume that the current conceptions or misconceptions concerning the term "socialized medicine" will apply equally to the term "socialized architecture." In both areas high feeling and differences of opinion hinge largely upon fundamental definitions of method rather than upon a fundamental social objective. Let us consider for the moment that by the practice of "socialized architecture" we refer to that form of advice in esthetics and in technical service rendered by the professionally competent with first consideration for human needs rather than for personal or professional gain.

I think it is fair to speculate that if some means were provided to meet fully the low cost housing need in America in the next five years, the architectural service required by it would tax the planning and administrative capacity of the competent architects of the country to near the straining point.



Whether the housing need may be better met by a realignment of incomes is not a subject for this discussion. Nor the problems of building costs, land costs, finance and administrative costs. But as an architect I am prepared to admit almost complete failure of the architects of the country to perform very significant service in the low cost housing field—particularly as regards quantity.

Perhaps it might be a disinclination on the part of the profession to devise new means, or to revise traditional means, of rendering architectural service to meet the new problem which is presented in such gigantic proportions. I very much fear that too few of us in the profession have been able to resist the temptation for profit set before us by recovery propaganda. We, like owners of land, lenders of money and mongers of materials have too readily looked upon the plight of the needy as a means to profit rather than as



an opportunity for human service. The bold statements of Dean McCornack, in his several reports as Chairman of the American Institute of Architects' Committee on Housing, very rightly challenge the profession and warn the architects that unless they themselves take the initiative in the field, some agency—governmental or otherwise—will be justified in stepping in.

In another real sense architectural service has failed to solve the social problems in low cost housing. I refer to housing projects executed with the laudable objective of raising living standards, but where experience indicates that not sufficient consideration had been given local needs and standards. Simply for the sake of example, and not for isolated ridicule, reference may be made to the interesting resettlement projects in the Tennessee Valley. There, you will recall, rather ingeniously designed cottages, not inappropriate to the locality, were literally brought down over the heads of the native population, establishing a standard of living not of its own making and beyond its capacity to use or to appreciate. In this experience, social worker, civil administrator and technical expert all participated.

What may we expect by way of solution to the problem? I shall have the temerity to suggest in the first instance an ideal solution, but one which may be slow of accomplishment. Let us consider that in its most social sense, architectural service is best rendered when the architect's own personality is completely merged with, and lost in, the study and solution of his clients' problem. We may then realize that the architect will do for the client, in whatever field he may be serving, what the client would do for himself were he esthetically and technically equipped or competent. Does this not suggest, therefore, the bringing of architects and architectural service out of the very soil and strata which is to be served? Does this not suggest the submergence of the professionally competent as the servants

of the group actually to be served? Is this too Utopian or too idealistic to be accomplished? I think not. It suggests the kind of unselfish service rendered by a St. Francis of Assisi, at once practical and ideal, but thoroughly self-sacrificing.

Through the classrooms and laboratories of our own public-supported institution have passed young men of lowly origin, of high social ideals and of highly developed ability, who would welcome the opportunity to be of public service in such a manner. They would ask in return only a modicum of material reward—if only they could serve and enjoy the rewarding thrill which comes of creative effort effectively rendered. And so I make this first ideal plea for the career architect in the low cost housing field, a man who, like the medical missionary, becomes in a real sense the social-civil servant, living close to his field of service, if not indeed actually in it.



There is a distinct feeling that the performance of professional service by a government bureau, such as the Supervising Architect's Office, is an undue, if not unfair, encroachment upon the field of the private practitioner. There are indeed arguments on both sides of the issue. Esthetic regimentation or State-dictated architecture and the loss of opportunity for private profit are the architects' points, while the Government advances a general lack of appreciation of the detailed needs of Government buildings and the high professional fees involved as its points of emphasis. In theory, the use of the bureau or department in public service for supervising the construction of public buildings has much to commend it. Some application of the idea is worthy of consideration in seeking to solve the problems of planning and supervising the construction of low cost housing. But surely bureaucratic authority over purely local problems should not be Federally centralized, particularly if we accept the thesis previously inferred that the most expressive art grows from the soil.

The civil bureau idea is already more widely used than is generally recognized. And I think there is possibility of a much

more widespread application of the principle in areas not now adequately or properly covered by private practice. It would seem quite possible to establish many of the promising young men of the profession, highly trained and with a modicum of experience, as responsible heads of local civil service organizations, charged with the architectural service in public and semi-public work. Such civil service could reasonably be subsidized to perform architectural service in low cost housing which cannot be performed, or at least is not being performed, by the profession in any manner whatsoever.

To pursue the suggestion further, it seems to me quite possible to establish local boards of "elder statesmen," if you please, for the guidance and the inspiration of younger civil servants. On this point, however, I have some misgivings. Older generations seem never quite to appreciate fully the power of youth, but I am inclined to feel that the naïveté of fresh approach may fully compensate for errors due to lack of experience.



This suggestion of a "career" for young social-minded architects is certainly not revolutionary in democratic thinking. Professional careers in the civil service have for a century and a half been accepted in the field of public education, a field where policy-making boards spring from local soil and a field in which certain central-

ized—even Federalized—guidance and standardization based upon common experience is considered helpful. The parallel between public education and public architecture could be pursued much further.

The difficulties which need to be overcome and which are advanced as arguments against the development of architecture in the civil service are, of course, not unique: 1) Lack of incentive for personal achievement; 2) softness due to lack of competition; 3) possibility of political manipulation. All these are already met in education, highway construction and the legal phases of the public service.

And herein, it seems to me lies the greatest opportunity and the greatest value in the bureau type of civil service. It provides continuous sympathetic study of problems, problems which are themselves always changing, by an organization which may benefit by continuous contact with local requirements and local point of view.

If this be socialized architecture, I hope we may make the most of it. I prefer to think of it as Architecture in Public Service. It seems to me to offer hope of progress and a happy way out of some of our most serious problems by expanding its present application to the large untouched areas of public, as well as private architecture, of which low cost housing currently presents the most prodigious problem.

GROUP PRACTICE



By Hugh Cabot, M.D.

Condensed from a paper read before the Group Health Association in Washington, D. C.

Parallels of architectural and medical practice and divergences between them are discernible in this sympathetic analysis. Dr. Cabot wishes it clearly understood that the opinions here expressed are his own and in no way reflect the opinions of The Mayo Clinic, of which he has for the last decade been a member.—EDITOR.

The grouping together of physicians of varied qualifications is the direct and necessary consequence of their desire to improve medical service and to keep more or less in step with the advance of medical science. Had medical science remained static during the last half century, "group medicine" would be unknown. Had medical science made none of its far-reaching contributions during this period, we should still be living in "the good old days" to which we often refer and for which many of us honestly yearn. These were the days of the "general practitioner" and the "family physician." These were the days of the little black bag which contained equipment

quite satisfactory as an aid to a sound offering of medical service for that day. The surgery which our grandfathers were called upon to do was largely what we call the surgery of necessity—operations which had to be done to save life or limb—not what today constitute probably 90 per cent of surgical operations, namely those undertaken only after careful study and accurate diagnosis, and for the purpose generally of relieving function, less commonly of saving life. Medicine today is an infinitely complicated business, the growth and progress of which stems directly from the extraordinary progress of science in all its fields which has gone on so rapidly during the last half century.

Now the change, of which group practice is the necessary and probable consequence, began, roughly speaking, about the turn of the century with the development of specialization. The earlier specialists were those in diseases of the eye, ear, nose, and throat. Then surgery began to divorce itself from the general practice of medicine.

Next it appeared that perhaps an unnecessarily large number of children, having been brought into this world through no fault of their own, remained only long enough to take a passing glimpse of it. The development of pediatrics as a specialty is directly responsible for most of the increased longevity of our present population, which we think of as a blessing but which may be the reverse. From that time on—namely, from about the turn of the century—the subdivision of medical practice into specialties has gone forward apace. Specialization in medicine has been the largest single factor in the advancement of scientific medicine. This has today brought about a situation in which a useful knowledge of the diagnosis and treatment of disease has become quite beyond the grasp of any single human mind. Yet we find the pundits of organized medicine still telling the public that the general practitioner can diagnose and treat successfully 85 per cent of all the ills to which the flesh is heir. This I say to you is sheer stark nonsense. The position of the general practitioner more or less isolated, as he so commonly is, is inevitably becoming more and more precarious. Insofar as he is isolated, either geographically or intellectually, he is lagging behind the pace set by the times.

More than 40 years ago the craving of the progressive physician for close contact with his more specialized brethren had been somewhat satisfied by the organization of the great charity hospitals, often referred to today as the voluntary hospitals. There at that time, and perhaps even today, was to be had the best article of medical service available. Many of these hospitals were teaching hospitals, a fact which was entirely to the advantage of the patient since there is no critic so searching and so heartless as the undergraduate student of medicine. In these institutions were associated together the consulting physicians, the consulting surgeons, and an increasing group of specialists which today has become enormous. Furthermore, they had at their hand the best that the laboratories had to offer. This was the beginning, and a very good beginning, of group practice.

Now mark you, here was a situation which came about purely through the human craving of physicians to take advantage of the specialized knowledge of their brethren. It had no financial aspects because, forsooth, all of these patients were being looked after at the expense of benefactors or of the community. There was no worry about consultation fees or about the cost of laboratory procedures.



A not much later date saw the beginnings of private group practice. For this practically the whole credit should be given to two young gentlemen living in southern Minnesota, in that day utterly unknown, today perhaps the best known physicians in the civilized world—Will and Charlie Mayo. From them came the inspiration.

To them we may credit the ideal of grouping together experts in many fields so that, by their joint effort, they might offer a first class article of medical care. From relatively small beginnings, their clinic grew to its present enormous proportions. One must give them credit not only for having great skill in their own persons but for having great judgment in the selection of their assistants and associates, for group practice in any form requires a cooperative spirit which has not always been the outstanding characteristic of the great individualists whose names are best known in the practice of medicine.* The theory of private group practice is the banding together of a larger or smaller group who pool their earnings, accept fixed salaries, and undertake to carry on a cooperative venture with the assistance of non-professional people who may perchance enable them to avoid the bankruptcy courts. Though it is impossible to know what may have lain in the minds of those who initiated this great venture, it is probably true that they were more particularly concerned to improve the offering of medical service than to reduce the cost at which the article could be sold.

Be it noted that from this type of organization two benefits may accrue: 1) better service through the closer cooperation of experts in many fields, and 2) a decrease in the cost.

Now the critics of this type of organization will at once point out that such a decrease in the cost of producing this article of medical service has not, in fact, always been passed on to the consumer. In this he will be perfectly correct but he will have told only a half-truth, since the reason why the cost has not been passed on to the consumer in greater amount and with greater certainty is not because the guiding spirits did not wish to do so but because they would at once have had to stand a withering cross-fire from their colleagues under the accusation of unfair trade practices and price cutting. It has thus come about that the diminution of cost has commonly not been passed on as it should have been because the present pattern of medical practice tends to stamp such conduct as unethical.

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Dr. Cabot then discusses group medical practice on a prepayment or cooperative basis, a phase of professional activity that finds at present no parallel in architectural practice, so we skip it.—EDITOR.

A few words about the relation of organized medicine to group practice and to change.

I should perhaps at the outset define organized medicine as the method by which the physicians of this country have grouped themselves together for the purpose of advancing the practice of medicine by keeping themselves abreast of the times. There are an infinity of such medical organizations but they all group themselves

about the great organization of the American Medical Association which is the all-inclusive body.

Now organized medicine has never been cordial to group practice. Twenty-five years ago the criticism was constant and unashamed. Today the outstanding success of certain groups has influenced the organization to be a little less openly critical but I doubt whether their hearts are with the venture. They have been critical of group practice because their component societies complained that it was "unfair competition;" that it was likely to result in under-selling—please note that under-selling means passing on the savings to the patient. As time has gone on, organized medicine has had to recognize that private group practice was an established fact which no amount of criticism and sniping could destroy. But I wonder whether a type of organization which succeeds in delivering an equally good article at a lower cost can properly be criticized as indulging in "unfair competition." If competition is not to result in improving the article and diminishing the cost, then the advocates of a competitive system will be put to it to tell us why we should allow it to continue to exist. I do not think they can have it both ways. Either the purpose of competition is as above stated or competition is only a method of increasing the income of the competitors and is, therefore, opposed lock, stock, and barrel to the ideals of democracy.

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It has frequently been charged against these organizations that they were guilty of breaches of professional ethics. These breaches are chiefly the charge of "unfair competition" but partly the more justifiable charge of improper advertising. Here there is proper ground for debate but it must be clearly established that the ethical standards of organized medicine are not in conflict with the rights, privileges, and ethical standards of the community.

As to some of the standard objections voiced against group practice, I may as well confess at the outset that, as far as I can see, this much vaunted "freedom of choice," about which organized medicine talks so freely, is largely a myth. As a matter of fact, the patient in search of competent medical care has today no freedom of choice such as he has in the purchase of any other kind of goods or service. What this freedom of choice amounts to is freedom of guesswork. Nobody in his senses would buy an automobile which he had to look at through the showroom window and take the salesman's word for it that it has an engine under the hood, and yet every day we select our medical advisers with even less knowledge of their capacity. It is worthy of note that the great emphasis placed upon this interesting dogma of freedom of choice comes almost entirely from the physicians themselves. Throughout my lifetime, patients have flocked to the great voluntary hospital; flocked to such an ex-

tent that organized medicine has tried to stop it on the grounds that this constitutes our old friend—unfair competition. Now nobody suggests that the patient going to a voluntary hospital has any freedom of choice whatever as far as his individual adviser is concerned, but he has exercised the only freedom of choice which is, in fact, open to him—a freedom to select an organization which has established in the community its right to be respected.

Organized medicine has frequently voiced its objection to the employment of physicians upon a salary basis. Precisely how this conclusion is arrived at, is to me obscure. The vast majority of the best brains in the world have, throughout my lifetime, been on salary. It is no use to try to persuade me that a physician, who is entirely freed from any knowledge of or interest in the income of the patient, does not deliver as good an article of service. To me, it is beyond dispute that a salary basis is practically the only method by which he can be regularly expected to give the best that is in him. The practice of graduated fees places human nature under a terrific strain.

So "so long that the memory of man runneth not to the contrary," it has been regarded as improper and unethical for the physician to advertise his skill and accomplishments. With this, no one in his senses will quarrel. It is basic in the standards of any professional group. But too often in relation to the practice of medicine there has been confusion between advertising which tended to exploit the capacities of a particular physician and advertising which tended to bring to the public the facts which they must have in order properly to regulate their lives. Advertising of any brand of medicine is unethical by any standard. Advertising the advantages of sound medicine is, as I think, ethical by any standard.

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Personally I do not look with favor upon the control of the practice of medicine by any political body. I dream at times that one might have a profession in this country, the supervision and direction of which was confided to a wholly non-partisan group whose ideals should be the advancement of medical care, under the stimulus of advancing medical science, which should be not at all concerned with the advancement of particular groups but wholly dedicated to the service of the community.

What organized medicine appears to be asking is that it shall, as a body, be given control of the changes which are to be made as time goes on in the methods of offering medical care to the American people. This is, of course, pure Fascism of the Italian type. Personally I have grave doubts of the wisdom of delegating any such power to any group. I am in sympathy with the view expressed by the Supreme Court of Ohio which said in an opinion on a malpractice suit, "It is obviously a dangerous practice to permit any business, trade, or profession to fix its own standards."

* Nor of architecture.—Editor

I AM A CRAFTSMAN



By Maurice Heaton

Excerpt from *Art Education Today*, annual publication of Teachers College, Columbia University

I call myself a craftsman. I am proud of being one. I am not flattered when you call me an artist or a designer because I like work *in* a material and not *on* a material. I do not resent being called a manufacturer or a business man. But, frankly, I am more than a manufacturer for it is my business to be an artist in the making of my glass. After breakfast I will say to my wife, "I am going to the workshop." To a client I may write, "studio." But I never refer to the remodeled barn that serves as my shop as a factory!

In this workshop I manufacture objects to be useful and beautiful. I do not hire an artist to make designs for my objects; I do not hire helpers to execute blueprints, or a technical expert to suggest and test the efficiency of my objects. Craftsmanship to me is the making and designing of a useful and beautiful object in one creative operation. Whether, in the making, machines are used as tools or the hand is used with tools is of no importance. Whether, in the duplication of objects, part or even all of the work is done by apprentices is of no importance. As one craftsman said to me, you "borrow hands"

and train them to do what your own hands would do.

The important thing is to create in the material. Inspiration for designs will arise from the way in which the material will react to your hand, your tool, or your machine—and not from museums or magazines. Sketches will be made to clarify your conceptions or to convey to your helpers what must be born in three-dimensional stuff.

In repetitive work, the creative effort lessens gradually and another element creeps in: the physical satisfaction of mastering the tool completely, and the re-adapting of the design to the exact rhythm of muscular action. Any pattern or motive that passes this test gains a purity of line, a decorative simplicity no amount of previous planning will achieve.

In other times weavers used to sing to the motions of the loom, and the traditional designs were learned as so many steps in a ritual. Nowadays most of this rhythmic accompaniment is lost, but the same rhythmic muscular action enters into modern work, with or without machinery, with or without creative impulse.

AFTER HOURS

By H. S. Goodhart-Rendel

The president of the R. I. B. A. directs our attention to wider prospects than can be seen from our office windows

Excerpts from the R. I. B. A. president's inaugural address at the British Architects' Conference at Bristol, June 23, 1938

You will no doubt say that utilitarian building is contrived for the physical comfort of man, but I hope you will allow that it has to be architectural before it can get beyond man's body to amuse him, to inspire him, to give him mental content. Utilitarian building is like house-painting: architectural building is like picture-painting. Utilitarian building is like an inventory: architectural building is like a piece of descriptive literature. Utilitarian building is like the clang of dinner bells, architectural building like a chime of church bells. These imperfect analogies from other arts are good enough to show us that architecture, while using useful things, must do with them something more than what is merely useful.

Unfortunately, however, the fashion which gave them birth has left us a third legacy, less direct but more ominous than those of which I have spoken. This legacy is a break in the traditional competence of architects to produce architecture. *Some of*

the exaggeratedly utilitarian designing in all countries has been done by men who know a great deal more than they have chosen to show in it. On the other hand much of it has been produced by a new generation whose powers are limited by the crudities it has never got beyond. In the general movement back to architecture which is taking place in the continents of Europe, very many men must lag behind who, if their architectural sensitiveness had been sharpened by any proper training, should have been able to acquit themselves well. In condemning styles they have seen no deeper than style and have become unconscious slaves of their own styleless stylism.

We architects often complain, and complain rightly, that engineers call on us to disguise the mistakes that they have made before our arrival, but I think that engineers also might complain with full justice that architects often call them in to construct things that never ought to be

constructed at all. Architecture without engineering and engineering without architecture are each only half the subject and cannot be mastered by itself. I hope that as an architect I may be pardoned for holding the view that as things are the architect can do without the engineer more often than the engineer can without the architect but as things are is not as things ought to be. In large undertakings architectural and engineering collaboration from the outset seems to me essential, and in small undertakings I believe that it would be best ideally that an architect and an engineer working in partnership should become the normal unit in the designing service of the nation. Whether such partnership would lead to the eventual merging of the professions, I do not presume to foretell. The division between their functions is no greater than that between the functions of partners in many architectural firms at present, and it is worth remembering that by the modern definition Sir Christopher Wren was a good deal more engineer than he was architect.

If the scope of our planning activities is to be enlarged, as modern tendencies make to seem probable—if from town planning we are to move on to regional planning, to national planning, and possibly (a few years before the millennium) to world planning—it seems to me necessary that we should join hands with the engineers.



The miscarriage of well-meant legislation has brought to this scene new dangers, of which at last the public is becoming aware; and it can be hoped that within the next few years the policy will cease altogether to destroy comfortable cottages that are unfashionable sanitarily and putting in their place houses that few can want—and fewer still can afford—to live in. The social aspect of housing has been, and still is, presented too much by doctrinaires, by people too deeply immersed in their own theories to emerge and examine dispassionately what the people to be housed can tell us themselves of their needs and likes. In consequence, a very great many people have been made poorer and unhappier by expensive enterprises intended to improve their lot, and reforming politicians wonder why they are not quite so popular as they think they ought to be.

Yet when all is said and done, I am not sure that our English villages are not in greater danger from their friends than from their enemies. An old village that has gone old world is a truly deplorable sight. A village in which the pub sign has gone arty, and the paving has gone crazy, and the window-glass has burst out into boils. A village where they deck the maypole, and play Brahms' quartettes in barns.

I doubt if there is any difficult or more responsible task for an architect than building in an old village, but the observation of two rules will, I think, keep us out of a great deal of trouble. The first is—build nothing new to look old, never dare to com-

plicate the currency by issuing false coin; the second is—never put back anything in an old building to what it may have been but is no longer. Possibly I might add a third—choose your materials to harmonize with the old materials about, but not to make a bad match. In doing this, you will remember that harmony in music includes discords, and without it is like an egg without salt.

A bit of Victorianism or a bit of Edwardianism or even a bit of modernism, cannot harm any robust village if the Victorianism, the Edwardianism or the modernism be naked and unashamed. Unfortunately, Victorianism and Edwardianism was much

apt to be ashamed, and to hide its nakedness in garments from the historical costumiers. Nobody would accuse modernism of shame, but its self-assertiveness often makes it unpleasant in any surroundings, old or new. Time, however, if it does not demolish will soften it, and if we allow modern motor cars to fill our streets, it seems to be unreasonable to forbid a modern building to take its station in them. Often the garage with its petrol pumps makes a really valuable link esthetically between the old house next to it and the motor cars that are constantly passing both of them. People who thatch petrol pumps ought to put leaded glazing into their windcreens.

CHARLES ADAMS PLATT



By Royal Cortissoz

Condensed from the Foreword in the catalogue of a memorial exhibition of Mr. Platt's work at the Art Gallery of the American Academy of Arts and Letters, New York, N. Y., open November 11, 1938—April 30, 1939

Charles A. Platt was born in New York on October 16, 1861, the son of a successful lawyer, John H. Platt. His mother was a Cheney, of the clan of silk manufacturers, and among her forebears were John Cheney the engraver, and his brother Seth Wells Cheney, also an engraver but chiefly known for his portraits in crayon. Both were notabilities of South Manchester, Conn., in the earlier nineteenth century, and it is not too fanciful to surmise that from them, in some dim way, there may have descended the artistic impulse which Charles Platt was to obey at an early age.

He began with no consciousness of the gift that was to fit him for an architectural career. He gravitated, instead, toward etching and painting, and under Stephen Parrish he made such progress in the former art that he could produce his first plate, the "Gloucester Harbor," as early as 1881, when he was only twenty. By the following year he was in Paris, continuing to etch but studying painting under Boulanger and Lefebvre.

He advanced as rapidly with the brush as with the etcher's needle, as may be judged from the circumstance that he was accepted at the Salon every year until his return to New York in 1887. At home he was promptly elected to the Society of American Artists. The Society of American Etchers soon welcomed him and it should be noted also that he was elected to the London Society of Painter Etchers. The Academy of Design took him into its fold, and, indeed, all his life long he was the recipient of honors. It was in 1918 that he became a member of the American Academy of Arts and Letters.

As an etcher he employed a firm and vitalized line and achieved picturesqueness without forcing the note. The paintings reveal the same personal quality. He

could deal with the figure, and there is an interior of his, "The Etcher," painted in Paris in 1885, that indicates with what success he could have painted genre if he had chosen to follow it up. But it was with landscape that he won his reputation as a brushman. How well he painted it is suggested by the fact that the "Clouds" which won the Webb Prize at the Society of American Artists in 1891 was singled out for a "Medaille de Bronze" at the Paris Exposition of 1900.



He went on painting for years, frequently having a brush in his hand down to the time of his death in 1933. But throughout the period of his strict devotion to pictorial art the instinct for architecture was steadily gathering impetus. As far back as his Paris days, according to his own statement to me, he was aware of the classical orders, talked with the young architects who were among his comrades, and, in short, studied architecture from the artist's point of view. He was always, too, he said, "at bottom a practical man," and it was inevitable that he should in due time come to tackle practical, concrete issues. His first decisive steps in their direction had, as it happened, almost romantic associations. In the Eighties, while he was still painting, he was lured by the glamour of the historic Italian villas and went south with one of his brothers to study the subject. His "Italian Gardens," published in 1894, was the first book of its kind to be brought out in this country, the first contribution to a cult for the subject that ultimately grew to notable proportions. Characteristically of Platt, its special value resided not so much in his interpretation of a positively poetic theme as in the measured drawings he had

made, in his notes on matters of site and utility; in a word, in his expression of the ideas of one who was "at bottom a practical man."

He was a practical man—as he needed to be—but he was primarily the artist, a traditionalist but in a free, individualized and altogether creative vein. He began to build. Out of a seeming medley of experiences, painting and etching, travel and writing, landscape gardening led him definitely into the designing of houses and the architect in him, an architect of genius, came into port. Using the idioms of the Italian Renaissance, of France, of Georgian England and of Colonial America, he transmuted them into an idiom of his own, the principal constituent of which was a certain spare, lucid grace. A plan, with him, was a simple symmetrical affair and the facades of his houses were conclusively structural in character, flowing from the nature of the plan. But I would emphasize in speaking of his houses their possession of the grace just mentioned, their refined lines, the exquisiteness of their proportions, the embodiment in them of a singular elegance. Simplicity never erred, in his hands, on the side of severity. Nevertheless his restraint was immediately perceptible, excluding superfluous ornamentation, saving a facade from the reproach of coldness by just the sheer beauty of line and mass perfectly organized.

He could use strength when the solution of a problem invited it, as in the Freer Museum at Washington and other monumental buildings, but he seemed most himself when delicacy and a light touch waited upon his mood. The extensive group of buildings he designed for Phillips Academy at Andover is a fairly exciting demonstration of how a modern "Colonial" scheme may have all the dignity in the world and yet be left ineffably gracious.

His art remains gracious, serene, elevated, because it proceeded out of a profound dedication of beauty. That element is never absent from his work. It lies at the heart of his artistic integrity. If he excelled in architecture and in the other arts he practiced it was because he exercised in them, over and above his fine technique, the power of the spirit.

THEY SAY—

"All Renaissance work is not good, and all WPA, PWA and FAP stuff is not bad, even if damned near."—PAUL SAINT-GAUDENS.

"It would appear that we have greatly improved architectural taste in the field of residential work, but the operative builder is realizing the profits of the effort."—EDMUND R. PURVES.

"When a democracy elects leaders, it is their duty to lead, not to stand pat as firmly as they can until such a mass of

indignant pressure is roused that they are bound to budge reluctantly a little way."
—SIR RAYMOND UNWIN.

"Architecture results from the way we behave, what we think about, and the materials we have at our disposal; it is not a fine art separate from everyday existence."—FREDERICK GIBBERD.

"In talking with a fifth year student of a certain famous architectural school, I found he had never heard of a metope, and thought entasis was some kind of a disease."—ASTRAGAL in *The Architects' Journal* (London).

HOUSING AND TAXATION

By William Jay Schieffelin

From a letter addressed to various civic organizations interested in the local housing problem

The housing problem in New York and elsewhere will never be adequately and justly solved, in the opinion of the Citizens Union executive committee, until a rational system of taxation replaces our present method of penalizing progress.

If it were proposed to revive the ancient English exaction of special levies on windows and chimneys, the folly of handicapping housing in this way would be plain to all. But in New York, as in American cities generally, taxes are levied not merely on windows and chimneys, but on the entire dwelling. The result, not generally recognized, is to make housing much more costly to own or rent than it need be.

The other element in urban real estate—building sites—involves excessive costs to the developer or home owner for just the opposite reason. *The lower the percentage of ground rent which taxes absorb, the higher land prices become.* If more of the ground rent were taken in taxes for services rendered by the community, the value of land for use would be maintained, but the cost to the buyer would be lessened. This would greatly stimulate house building, and improvement and real estate and construction activities generally.

For these reasons we believe that our system of real estate taxation ought to be modified over a period of years, so that a steadily increasing amount of the tax would be transferred from improvement values to site values. Such a shift, under a graded tax plan, would lessen the burden on all owners whose dwellings or other structures are assessed at more than the sites on which they stand. *Owners of substandard buildings or vacant land would be given a much-needed spur to property improvement,* and the shelter of a large percentage of New York's ill-housed millions would be bettered without resort to costly subsidy.

During the last twenty years the city of New York has experimented with three methods of stimulating construction or re-

habilitation by partial tax exemption. In each case the results have proved beneficial to special groups. Why not make the benefits general? Why not recast our entire real estate tax system so as gradually

to free buildings and improvements of all kinds from future taxation, thus giving private initiative a better opportunity than it has ever had to provide adequate housing without special subsidy?

A LAYMAN LOOKS AT SPIRES

By Albert Jay Nock

Excerpt from "Letter from a Dutch Uncle" in *The Atlantic Monthly* for May, 1938

The first sight of Antwerp reminds one vividly of the curious fact that almost the scarcest thing in Europe is a church spire that is more than a couple of hundred years old. Generations of incredible enthusiasm, devotion, skill, and labor went into the structure of the mediaeval churches, right up to the point of putting on the spires, and then apparently something happened. Perhaps it was at this point that men ceased thinking in a long-established set of theological terms, and their enthusiasm dwindled. Was it so, do you think? Or if not, what did happen? The cathedral at Malines, begun early in the thirteenth century, has no spire. The great collegiate church of St. Gudule at Brussels, begun in the eleventh century, was designed for two spires, like Notre Dame at Paris, and, like Notre Dame, it has none.

The cathedral at Antwerp, which was designed for two spires, has one and about one third of another. Work on the second one stopped at some time around the middle of the fifteenth century, and was never resumed.

This suggestive circumstance makes one wonder why cathedrals should be built nowadays. They seem illogical. The mediaeval cathedral was an expression of a spiritual activity which was already most intense. The modern cathedral, as well as I can make out, is an instrument for galvanizing a spiritual activity which is extremely feeble and puny, thus putting the cart before the horse. I doubt that this can be done successfully, and I suspect that the modern cathedral will turn out to be more or less of an ornamental folly.

HOUSING AND DELINQUENCY COSTS

By Walter S. Schmidt

PAST PRESIDENT NATIONAL ASSOCIATION OF REAL ESTATE BOARDS

Excerpt from a statement issued by the author

A principal objective announced repeatedly by Government is that by means of its housing, delinquency and disease generated by slums will be largely eliminated. It is directly contrary to the policy laid down by the Government to accept as tenants those very persons amongst whom real delinquency and disease exist. In a country such as our own there is an overlarge percentage of misfits, drifters—dregs of civilization. They are given no place in Government projects. Not only will this humanitarian objective not be reached during this generation, if present policies are maintained, but the argument of "cost saving" to the taxpayer is misleading and fallacious.

The taxpayers will have their expense for delinquency and disease until the people who make slums are built into better citizens. People make slums, and not the housing. This problem is not even being attacked by the program. It has been adopted as sound housing policy to accept as tenants only those who can pay the rents fixed and can show rent receipts from their previous landlords. These are normal "good tenants" and not those who

make the slums. As a result of the fact that savings to the taxpayer are negligible and that Housing Authority buildings are practically tax exempt, cities face collapse of the present tax system. Already movements for homestead exemption have been initiated in cities where Government has constructed tax exempt tenements. Home owners will demand comparative justice as soon as they see sections of the population relieved of contributing their share of tax money in the form of rent.

It is far from a proven fact that it is right or desirable to give to the bottom of our civilization new and better housing than those above can enjoy. If public protection demands it, then certainly the only appropriate action for Government would be to clear obnoxious slums and put back into safe and sanitary, but modest quarters, the people who make them, for the purpose of upbuilding. Even in this type of action, it would seem more logical to subsidize individuals as long as they required it, than to risk disrupting our whole economic system by subsidizing the housing.

THE DIARY

Henry W. Saylor

Wednesday, January 18.—After spending a couple of hours with Egerton Swartwout, I have a deep sympathy for the A.I.A.'s National Committee on Competitions and its problems. Never quite free of the necessity for making difficult judicial decisions, at the moment the members seem to be facing more than their share of these. Here is the Institute in the process of restating in more explicit terms its attitude on various types of competition. While the machinery is being taken apart and repaired, three or four important competitions come up for approval. They may have serious defects as judged by the code now in preparation, but since that code has not yet been made public, its challenge is of uncertain effect. Mix in with this concoction the fact that the Government naturally takes the attitude that when it holds a competition it is under no obligations to ask anybody whether it can or cannot do certain things, and you have a situation in which I should think members of the Competition Committee would yearn for a nice quiet European vacation—say in Spain.

Friday, January 20.—Lunched with Roger Seidenberg and Eugene Raskin, both of whom exercise a supervising eye over the preparation of *The American Guide*, the former in the national field, the latter in New York State. If WPA's activities in the Four Arts Section are not cut short by the economic ax, there are plenty of useful projects ahead that would be of direct benefit to architects.

Saturday, January 21.—The mills of the gods and also those of public opinion grind slowly, but grind exceeding fine. Not many years ago hands were held up in horror over the building of the modern Shakespeare Theater at Stratford-on-Avon. The outcry seems to have died down and faded away, for recently Stratford's Town Council refused to permit alterations in the Tudor style to be made upon a building in Henley Street which is said to be late Georgian. It was proposed to put up a fireproof modification of half-timber work. In the words of the county architect, "No town, whatever its historical associations, can exist if it denies life to the present. Merely copying of old buildings can only tend to create an impression of bogus mock-antique which, in the case of Stratford, would be dangerous."

Monday, January 23.—The way of the inventor is hard. No sooner do we get, after years of distracting window reflections, a means of effecting clear vision in window display, than along comes a new invention. Dr. Katharine B. Blodgett coats glass with a film one-quarter of the wave length of light in thickness, to stop its reflective power entirely, and the old display window comes back into its own.

Tuesday, January 24.—Wesley Bessell heads a committee of the New York Chapter which has ambitions. At a meeting tonight there was opened up to us a vision of educating the world as to what the architect's service to the community is, how it is achieved, and with what results—all through the use of the movies. Willingly, it seems, will the Chapter go ahead with such a program if the committee can also show it what to use for money.



Friday, January 27.—Tragedy swept over the old water mill at Marlboro-on-Hudson yesterday. Fire wiped out Frederick W. Goudy's workshop and the irreplaceable drawings and matrices of 75 or more of the 107 type faces he had designed. A large part of 40 years' work gone up in smoke or melted into a shapeless mass of metal. Before such a staggering loss Frederick Goudy himself is philosophically calm and resigned. Much less so are those among his friends who realize something of the extent to which the American master of typography has carried forward the torch lighted centuries ago by Gutenberg, Caxton and Jenson.

Saturday, January 28.—The foundations are going into the ground for the Thomas Jefferson Memorial at Washington, and it would be interesting if we could know what Jefferson himself might think of this effort to memorialize him. His own request and instructions regarding what was to be put over his grave were specific enough. Among his papers, on the back of an old envelope he had written: "Could the dead feel any interest in monuments or other remembrances of them when, as Anacreon says, 'We shall be just a little dust when the bonds are released.'* The following would be to my manes the most gratify-

ing: on the grave a plain die or cube of three feet without any moldings, surmounted by an obelisk of six feet height, each of a single stone; on the faces of the obelisk the following inscriptions and not a word more:

HERE WAS BURIED
THOMAS JEFFERSON
AUTHOR OF THE DECLARATION
OF AMERICAN INDEPENDENCE,
OF THE STATUTE OF VIRGINIA
FOR RELIGIOUS FREEDOM,
AND FATHER OF THE
UNIVERSITY OF VIRGINIA

Because of these as testimonials that I have lived I wish most to be remembered."

He added the request that the obelisk "be of the coarse stone of which my columns are made, that no one might be tempted hereafter to destroy it for the value of the materials." As a matter of fact, the obelisk was chipped until it was less than half of its original size, making necessary a complete replacement. This, with the burial plot, is under supervision and not likely again to be defaced by vandals or souvenir hunters.

Monday, January 30.—Two hundred or more of the innumerable friends of Kenneth Murchison gathered at the Beaux-Arts Institute of Design this afternoon to talk of his passing. Julian Levi, Whitney Warren, James Monroe Hewlett, Mrs. Bruce Price Post, J. Hunter Field who was his partner for 21 years, and George S. Chappell spoke of him to the rest of us. The Mendelsohn Glee Club of which he was long a member, sang a few of the things for which Ken had written words, music, or both. It was unlike the traditional form of a memorial service in that, woven through it all, was a major note of joy rather than of sorrow—the joy of our having known such a character. George Chappell, Ken's friend for 40 years from atelier days in Paris, spoke of the dual interests that meant most in Ken Murchison's life—his profession and music. As Chappell said, "It is easy to picture Ken rehearsing some celestial orchestra on a distant sphere, freed of earthly restrictions, but nevertheless making perfectly clear to one or two of the second harpists the fact that they are not so hot."

Wednesday, February 1.—With Lawrence Moore to a luncheon meeting of New

* Free translation of the Greek.

York's Building Congress. The meeting brought together several hundred persons to join in honoring the architects and commissioners from foreign lands who are helping to make the New York World's Fair. Rolland J. Hamilton delivered the formal address of welcome, and M. Garreau-Dombasle, deputy commissioner general of France, made grateful response on behalf of the honor guests from 58 foreign countries.



Thursday, February 2.—With Francis Keally into a night train for Toronto where, joined by Robert H. MacDonald of Ross & MacDonald, Montreal, we are to judge the Biennial Architectural Exhibition of the Province of Ontario.

Friday, February 3.—Our hosts of the Ontario Association of Architects escorted us from the train to a breakfast at the University Club which they had patiently awaited for an hour. Then on to The Art Gallery of Toronto where, with copies of the catalogue from which had been neatly blacked out the names of the exhibitors, we went at the job of judging. The task was not an easy one in view of the fact that there are no classifications to subdivide the photographic exhibits totaling somewhat less than 300. Uniformity of size and mounting is maintained, but there are no plans nor sectional drawings. A decision has to be made between, for instance, a public building costing several million dollars and a week-end cottage. Either of these, by reason of its excellence as an architectural achievement, could be placed ahead of the other for honors. This sort of an exhibition, however, certainly appeals strongly to the public, for some 30,000 came to see the last one held here.

After a particularly sumptuous dinner for 50 or 60 officials and their wives, the Governor of the Bank of Canada formally opened the Exhibition. The Association's chairman presented the medals: Gold to Marani, Lawson & Morris (S. G. Davenport, associate) for the Bank of Canada Head Office Building, Ottawa; Silver to Mackenzie Waters for a country house and stable group; and Bronze to Murray Brown for a Postal Station in North Toronto. The last named award seemed to be particularly popular for the reason that this minor public work was, I believe, the only one allotted to a private practitioner by the Province's architectural bureau.

Saturday, February 4.—MacDonald had to return to Montreal last night so was unable to attend with us a luncheon of the Ontario Association today held at the University of Toronto. John M. Lyle presided and, following the increasingly popular "Information Please" pattern, asked Francis Keally some leading questions as to the jury's general observations of Cana-

dian architecture as presented in the Exhibition. This question and answer scheme is a vast improvement on the set speech in that the audience hears discussed the particular things in which it is most interested at the moment, rather than having to listen willy-nilly to what a speaker must get off his chest.

Tonight in the Arts and Letters Club, the Ontario Association of Architects sat down to its 49th annual dinner. George Howe was to have made the formal address, but unfortunately was taken ill and could not be present, which for some unexplained reason shifted that burden to me. Professor Eric Arthur of the University of Toronto and Editor of *The Journal of the R.A.I.C.*, eased me to my feet with a generous introduction, and Dr. John A. Pearson, F.R.A.I.C., F.R.I.B.A., R.C.A., the much beloved dean of Toronto architects, was good enough to reply with all the graciousness that we had so quickly come to expect from our Canadian confreres.

Sunday, February 5.—Since this is ostensibly an architectural diary I have refrained, but with considerable difficulty, from recording the extra-official activities which have filled this Toronto visit to overflowing. Our own South and our own West have achieved formidable reputations for hospitality, and I have surely not lacked frequent evidences of the same. Nevertheless, Toronto is unique in having a closely knit fellowship of architects centering around the University. These men seem to find most of their social life in their own circle. They allow no professional jealousies nor the keen rivalry for new jobs to prevent their enjoying one another's company. And they are as kindly disposed to the outlander; it is the most hospitable group that ever welcomed a guest from within or from without national border lines.

After a lunch at the Hunt Club engineered by Mackenzie Waters—in whose house we had found food, drink and a little sleep during our three days' visit—we moved on to a final tea at the home of the exhibition committee's chairman, Henry J. Burden. A few hours later, with much of the vociferous and tender solicitation usually associated with the departure of a bride and groom, Keally and I were put on the train for home.

Wednesday, February 8.—Under Harvey Wiley Corbett's leadership, there was debated this afternoon at the Beaux-Arts Institute of Design the question of just what should be a modern approach to architecture. William G. Perry of Perry, Shaw & Hepburn, Boston, developed a thesis calling for a maintenance of what the past has given us in dignity, a gracious formalism, and beauty. Walter Teague, while not lacking in appreciation of what has been done before, insisted that the designers of today must work with the

materials and techniques of today to fit the needs of today. Whenever, as so often happens, one brings together a so-called traditionalist and a so-called modernist, hoping for a good scrap, it turns out, as it did today, that these men are not diametrically opposed, but share a broad common ground.

Thursday, February 9.—Walter F. Bogner, of the Harvard architectural faculty, called today and brought an opportunity for a frank discussion of whither are educational systems moving, and why. Professor Bogner agreed that one of the real dangers ahead is the possibility that the public and even some of the profession will appraise Modern as merely another system of external characteristics. Basically of course, Modern is far more significant in that it marks a radical change of viewpoint. It has—or should have—nothing to do with mere forms, whether hackneyed or startling. It denotes a frame of mind, abandoning eclecticism, and approaching a problem armed with all the accumulated wisdom of the past and the products of today's invention.

Saturday, February 11.—Some movements of particular significance in our lives are making progress about us almost without being noticed. For instance, there were—as long ago as January 1, 1938—airports and landing fields in the U. S. to the number of 2,229. Most of these lack really intelligent planning, and, like the best known airports—Newark, Croydon and Bourget, are facing the necessity for a complete rebuilding. We look back upon our building of cities, fully conscious of their haphazard growth and fully conscious of what intelligent planning might have done for them, if taken in time. It will not be long now before we are looking back upon our building of airports and landing fields with the same rearward omniscience.



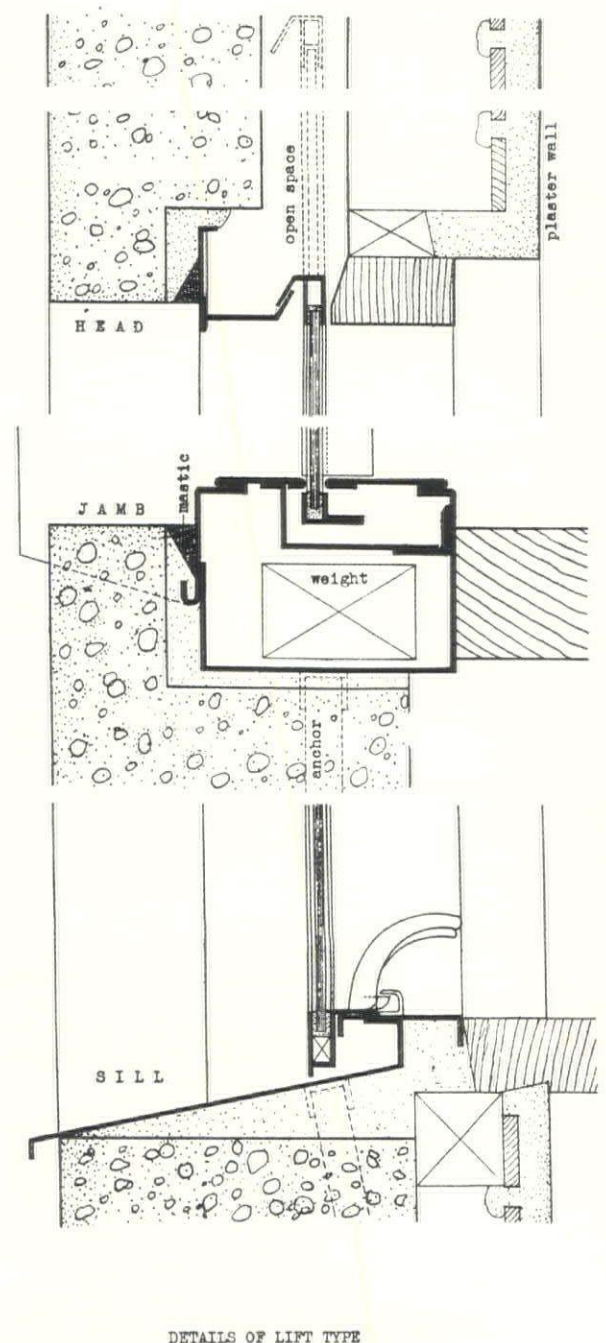
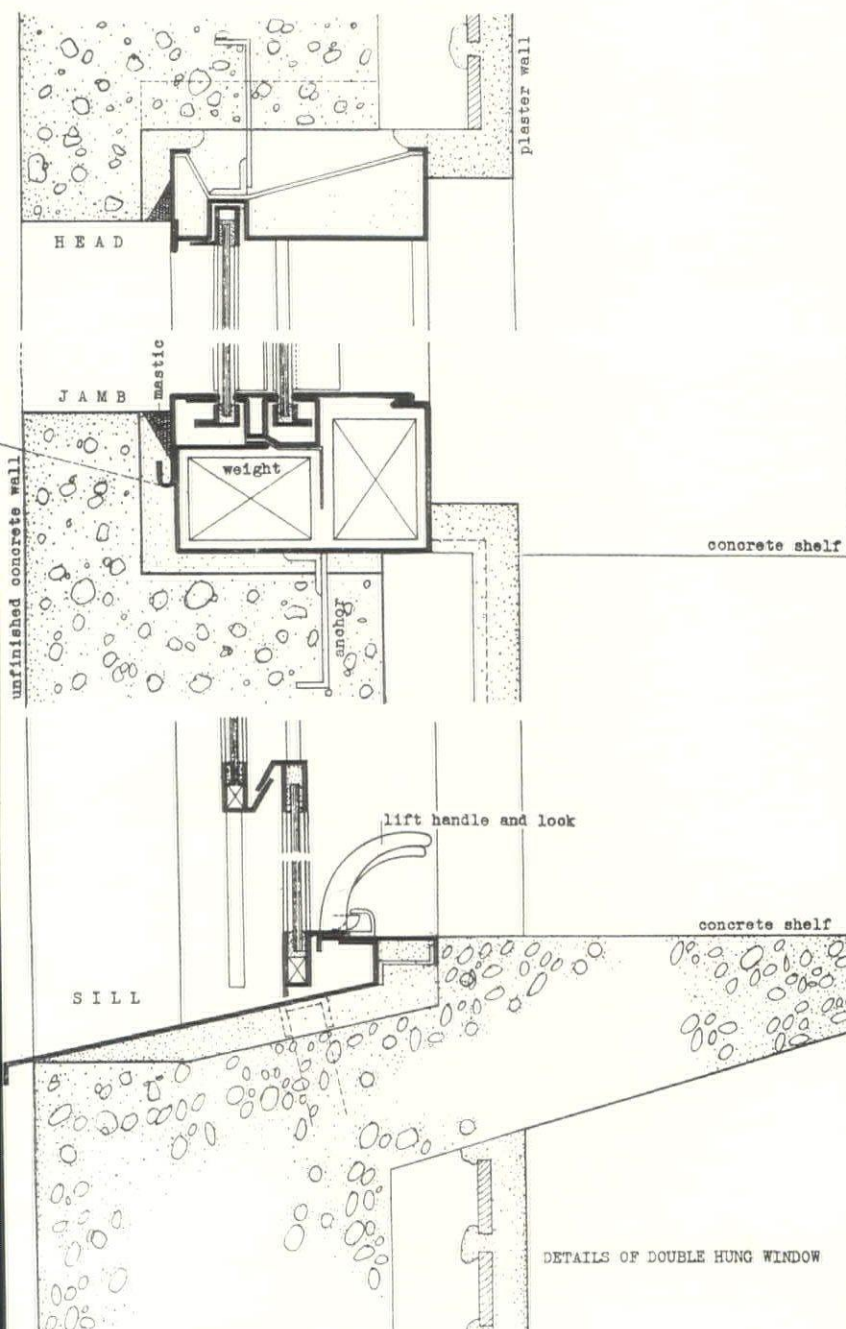
Monday, February 13.—Miss Caroline Hood, who is a niece of the late Raymond Hood, has an interesting job. She talks to women's clubs and similar groups within the larger metropolitan area on Rockefeller Center and its building. It is a wide field she covers, ranging all the way from how the Rockettes are drilled, to how 40-foot trees were planted on the roof terraces.

Wednesday, February 15.—Preston L. Prescott, a sculptor, came in today to show me a new technique he has developed by which large pieces of sculpture are made of white cement and marble terrazzo on a steel and wire-mesh armature. Eighty per cent of weight is eliminated. Builders of our World's Fairs, it would seem, might have welcomed a knowledge of this technique a year ago.

DETAILS

The drawings on this and the following pages are from "Architectural Details,"* a recent book by Antonin and Noémi Raymond which presents details developed during seventeen years of work in Japan. The examples illustrated, taken from actual buildings designed by the architect and his collaborator, deal with sliding doors and windows, elements of importance in realizing the objectives of modern architecture. They clearly indicate the double function of the contemporary architect as both technical innovator and creator of new forms, and in addition show the extent to which the sensitive designer of today can be influenced by the most ancient of local building traditions.

DOUBLE HUNG AND LIFT TYPE WINDOWS



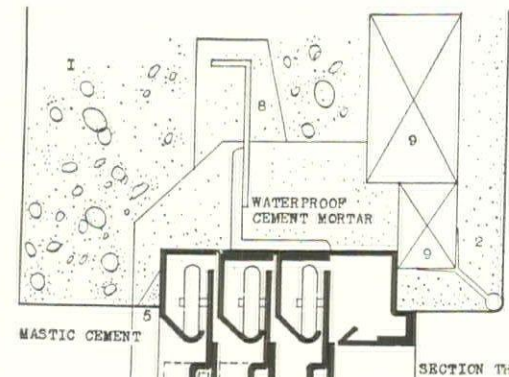
scale 0 5 10 15 20 25 30cm 6" 1.0'

* "ARCHITECTURAL DETAILS" may be purchased through THE ARCHITECTURAL FORUM at \$5 a copy.

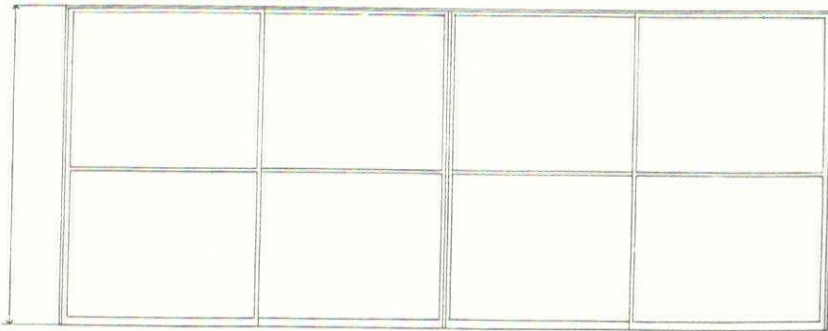
SLIDING STEEL SASH

TYPE GENERALLY USED IN REINFORCED CONCRETE CONSTRUCTION.

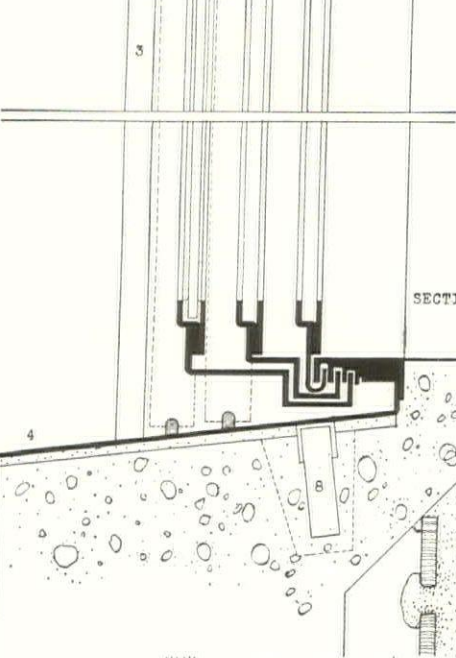
PATENTED BY THE FUJI SASH COMPANY OF JAPAN.



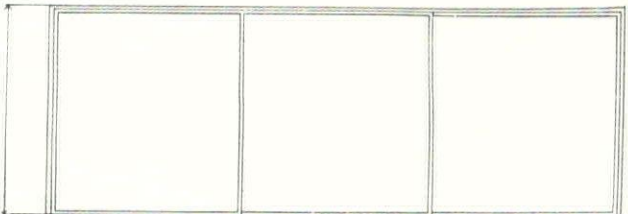
SECTION THROUGH HEAD



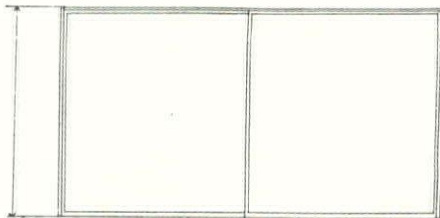
ELEVATION OF 4 UNITS



SECTION THROUGH SILL

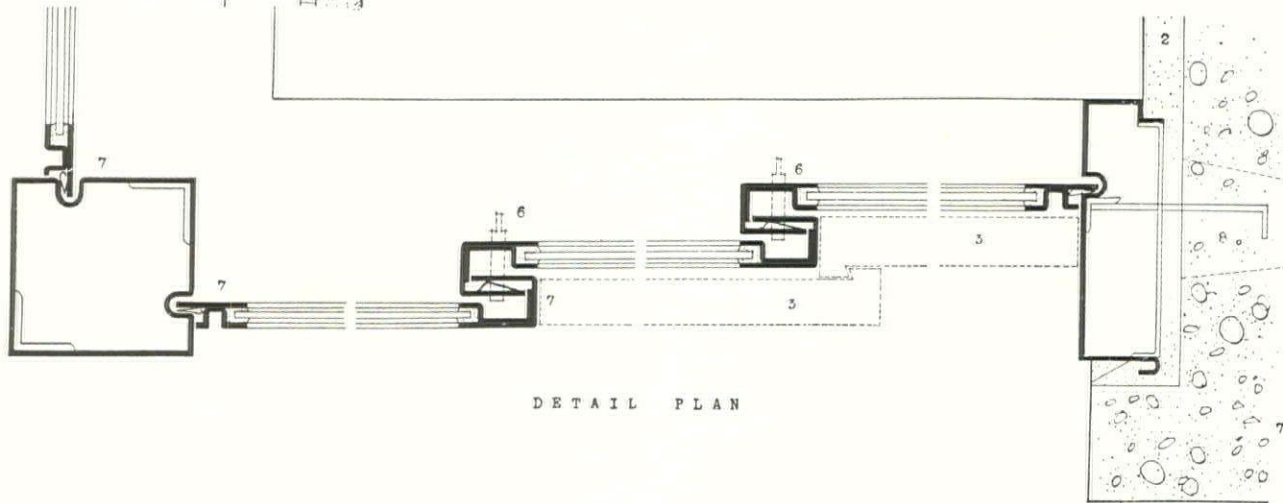


ELEVATION OF 3 UNITS



ELEVATION OF 2 UNITS

- 1. REINFORCED CONCRETE
- 2. PLASTER
- 3. MOSQUITO SCREEN
- 4. WINDOW SILL
- 5. MASTIC CEMENT
- 6. LOCKING KEY
- 7. WEATHER STRIPPING
- 8. ANCHOR
- 9. WOOD BLOCKING



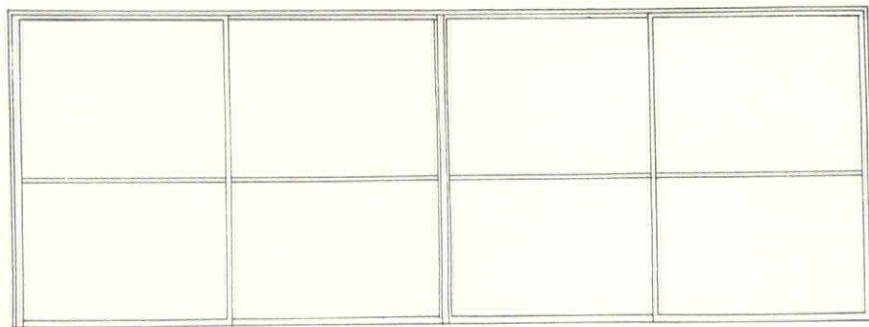
DETAIL PLAN



SLIDING-SWINGING STEEL SASH

SIMILAR IN CONSTRUCTION TO THE SLIDING STEEL SASH PATENTED BY THE FUJI SASH COMPANY OF JAPAN.

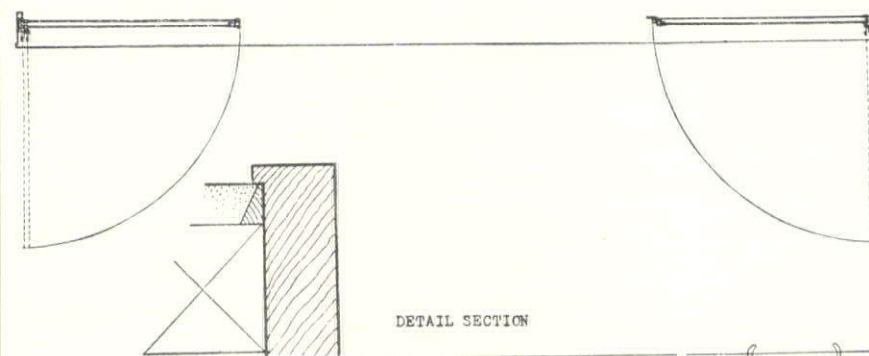
A SPECIAL TYPE WHICH CAN BE OPENED LIKE A CASEMENT SASH TO AFFORD A 100% OPENING



ELEVATION



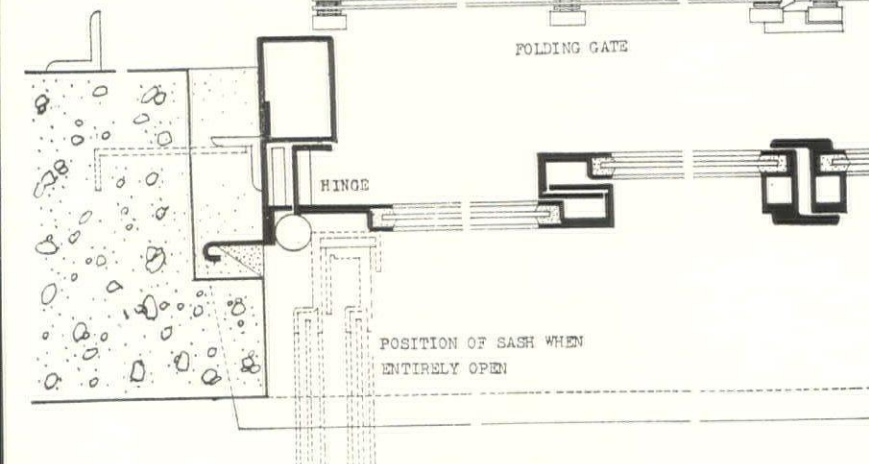
PLAN



DETAIL SECTION



FOLDING GATE



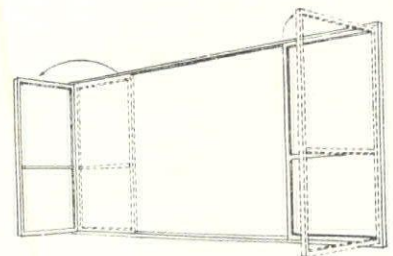
HINGE

POSITION OF SASH WHEN ENTIRELY OPEN

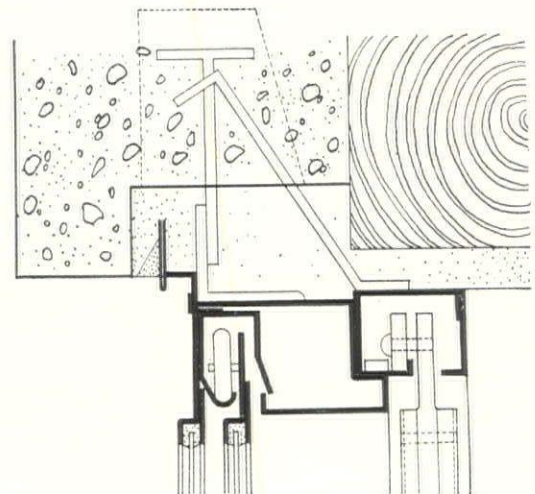
DETAIL PLAN



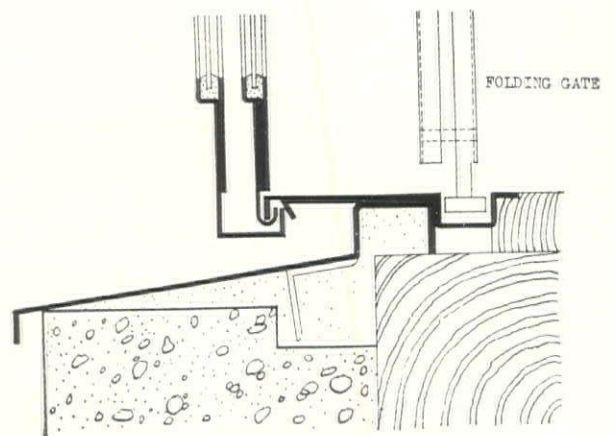
THIS SASH HAS THE ADVANTAGE OF SLIDING IN THE ORDINARY MANNER PLUS THE FACULTY OF ALL SECTIONS OPENING OUT TOGETHER. THE FOLDING GATE IS AN ANTI-BURGLAR PRECAUTION.



PERSPECTIVE

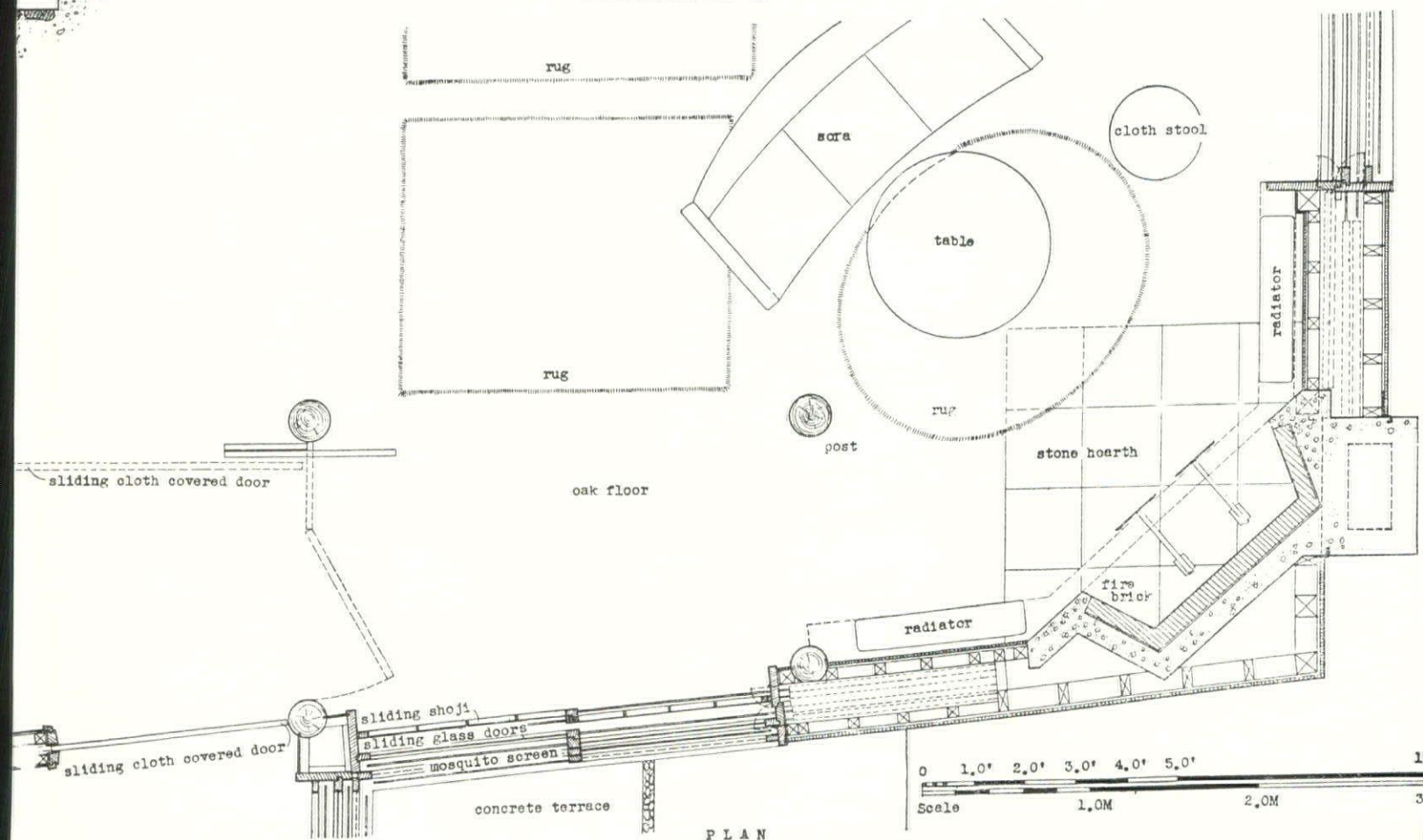
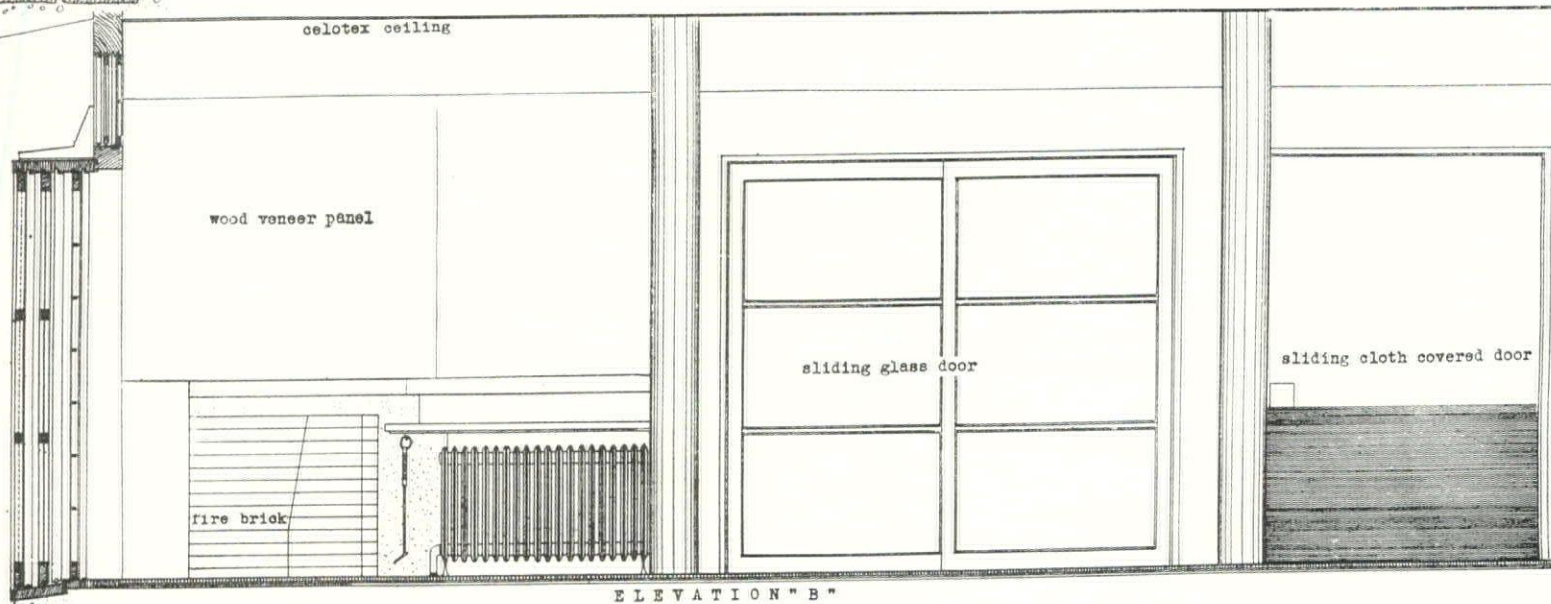
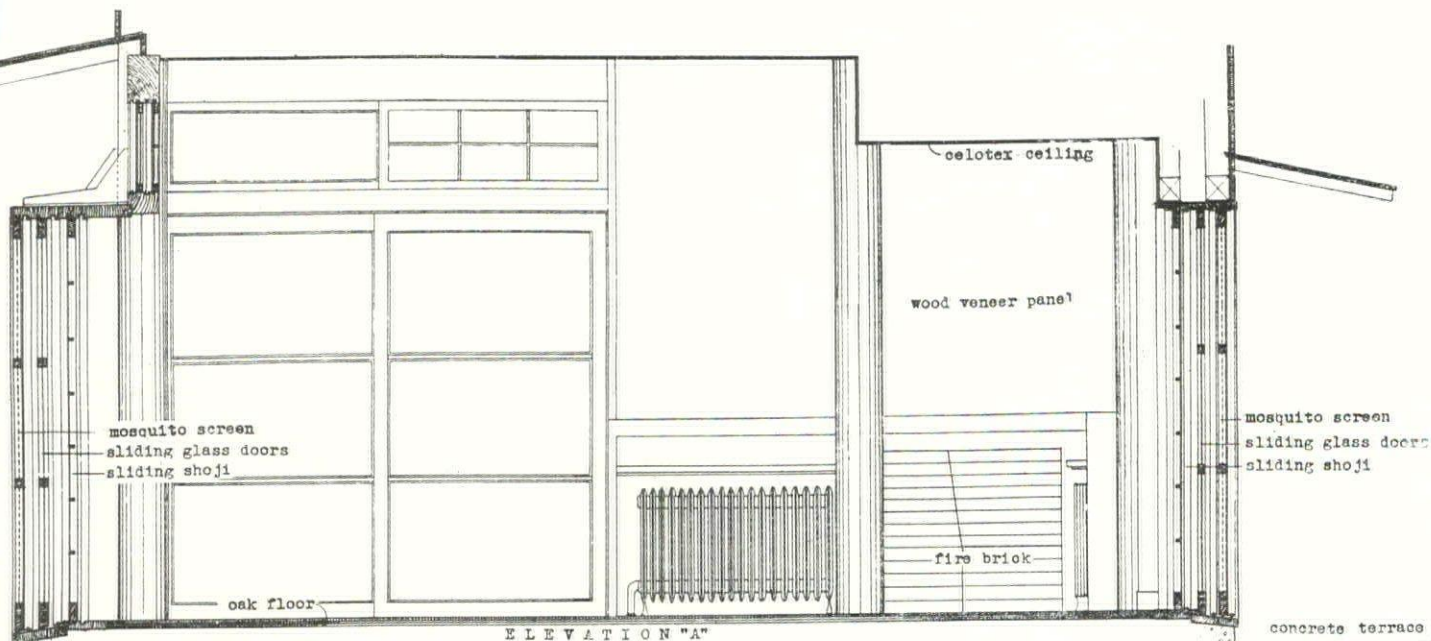


SECTION THROUGH HEAD

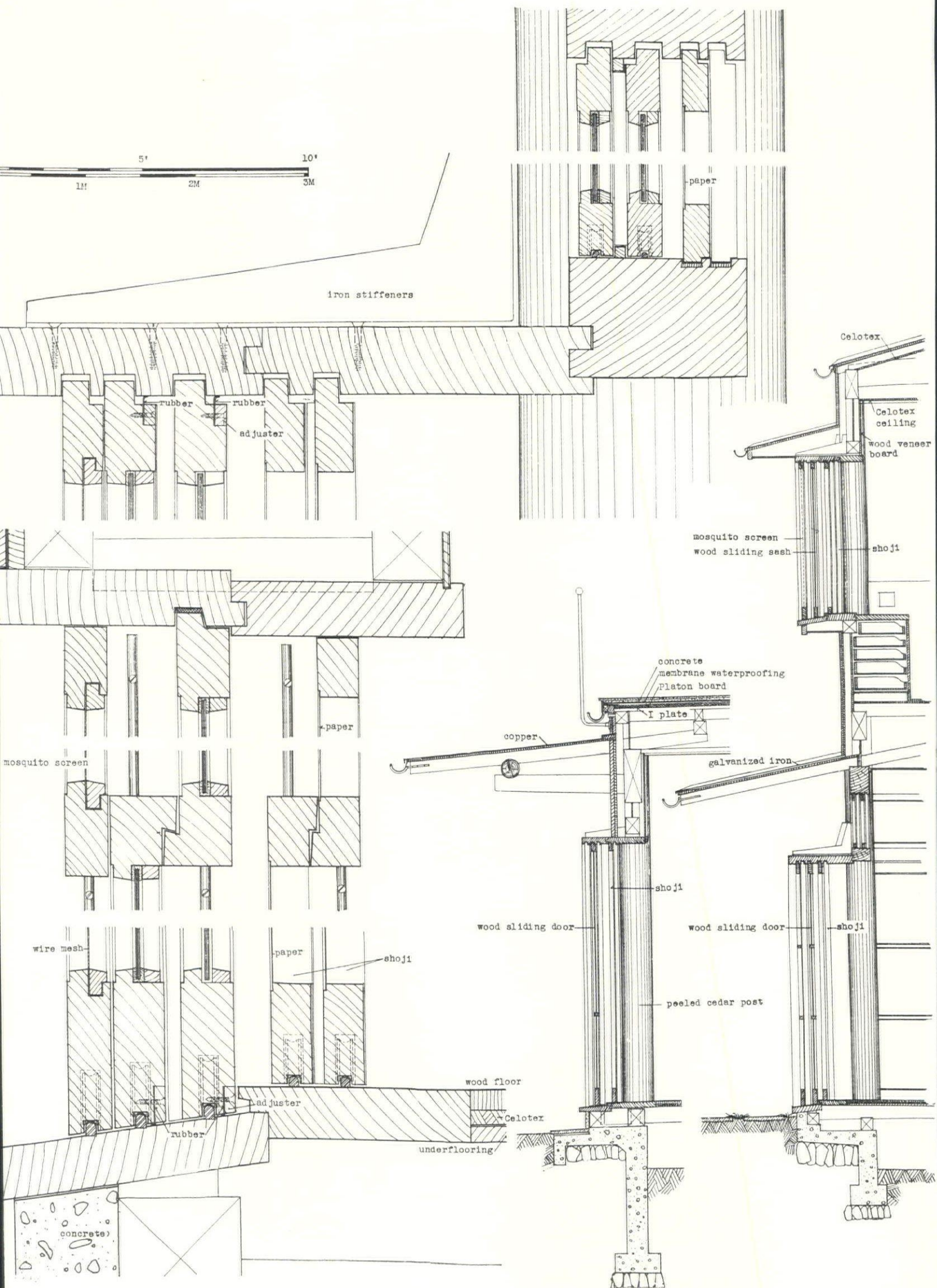


SECTION THROUGH SILL

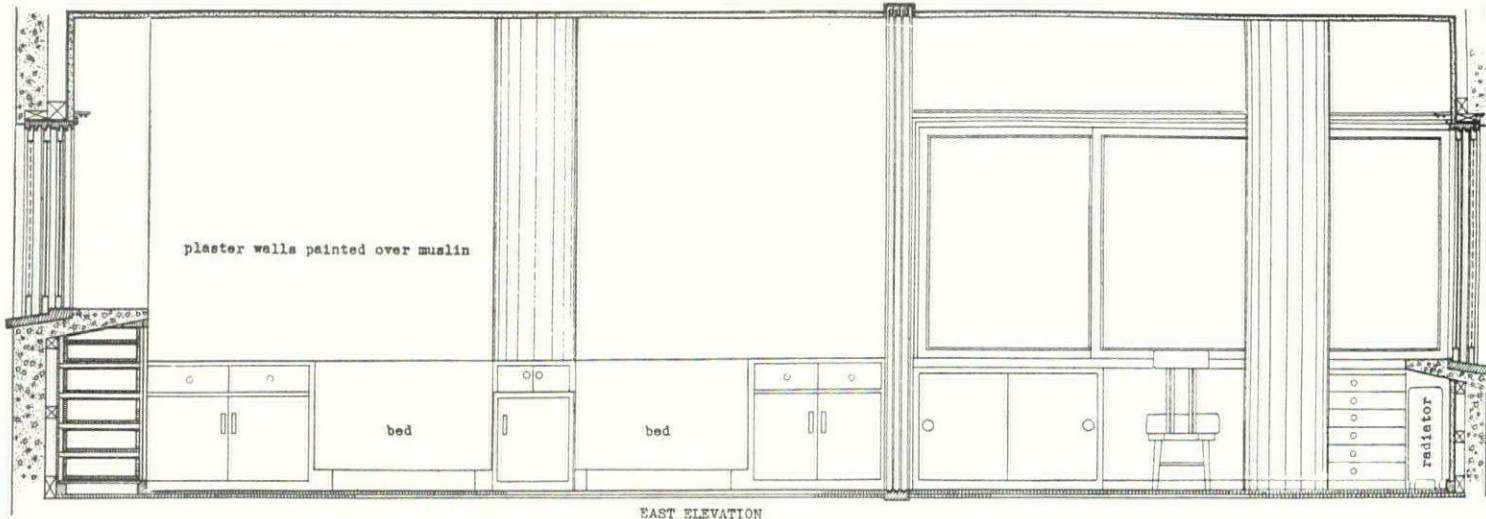
LIVING ROOM DETAILS



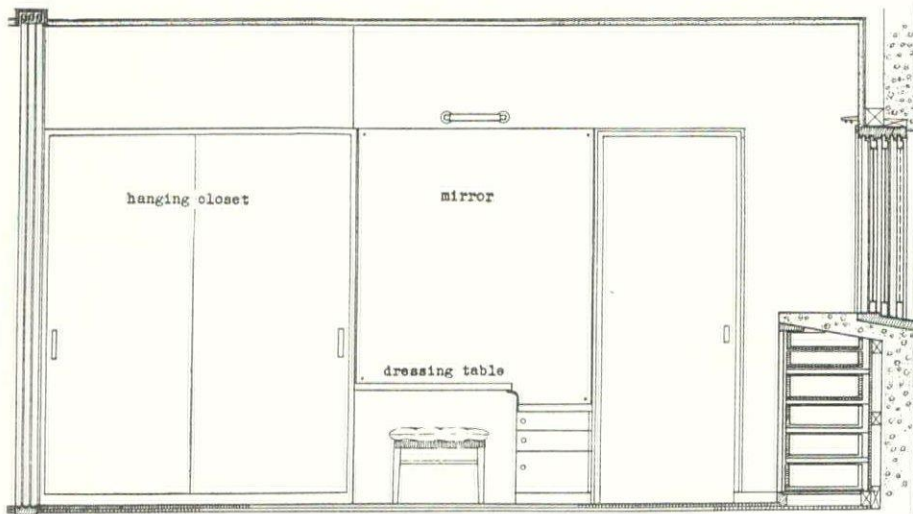
WOOD SLIDING DOORS



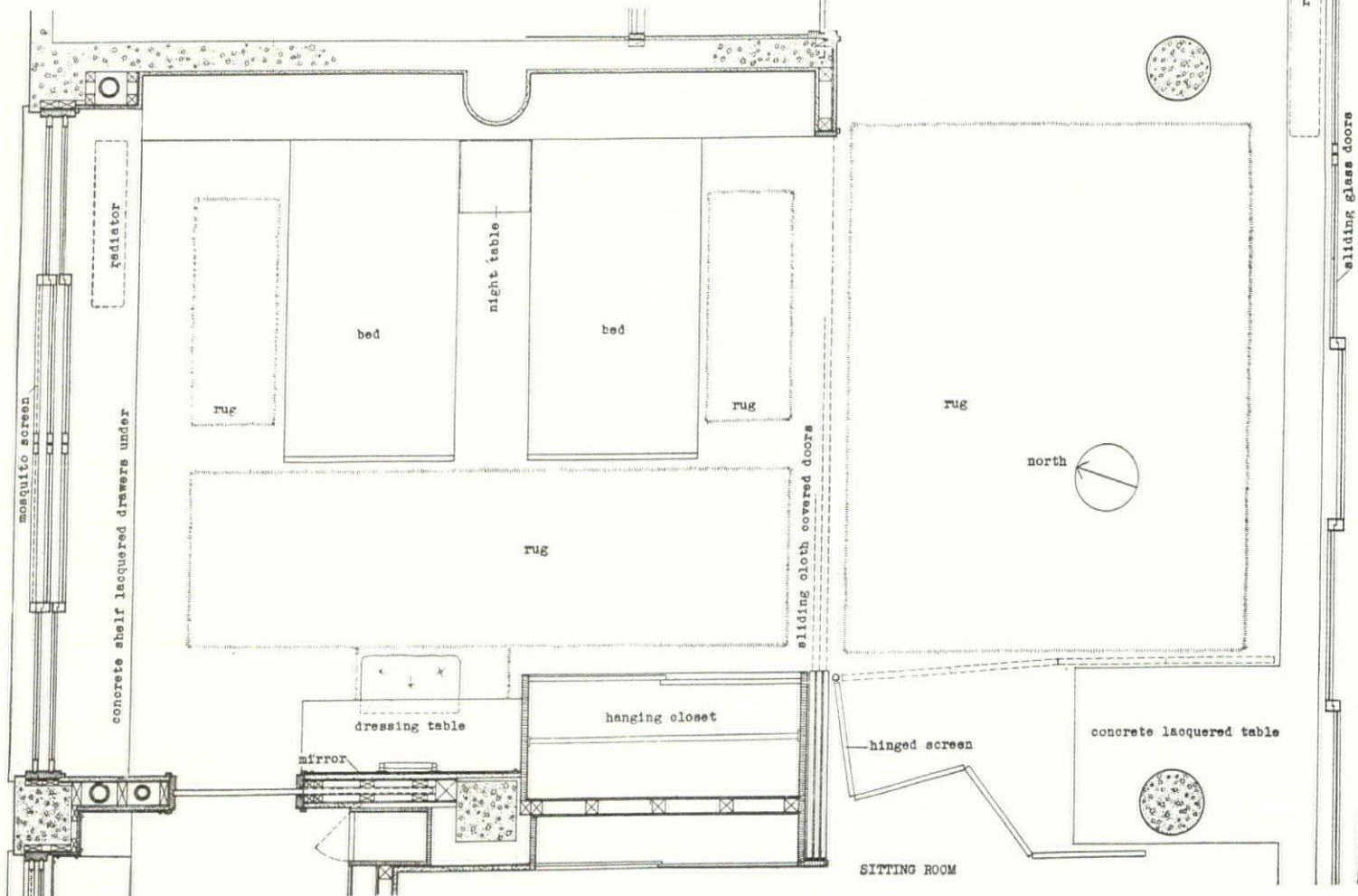
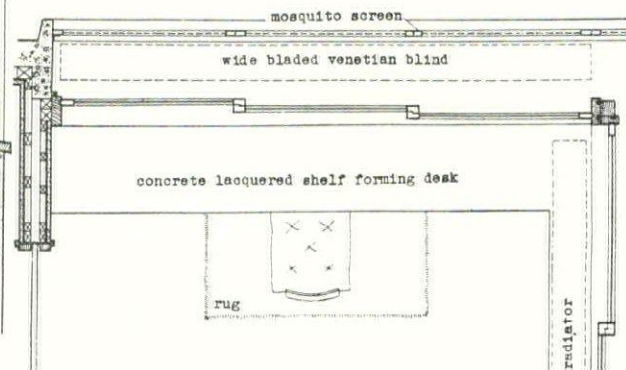
BEDROOM DETAILS



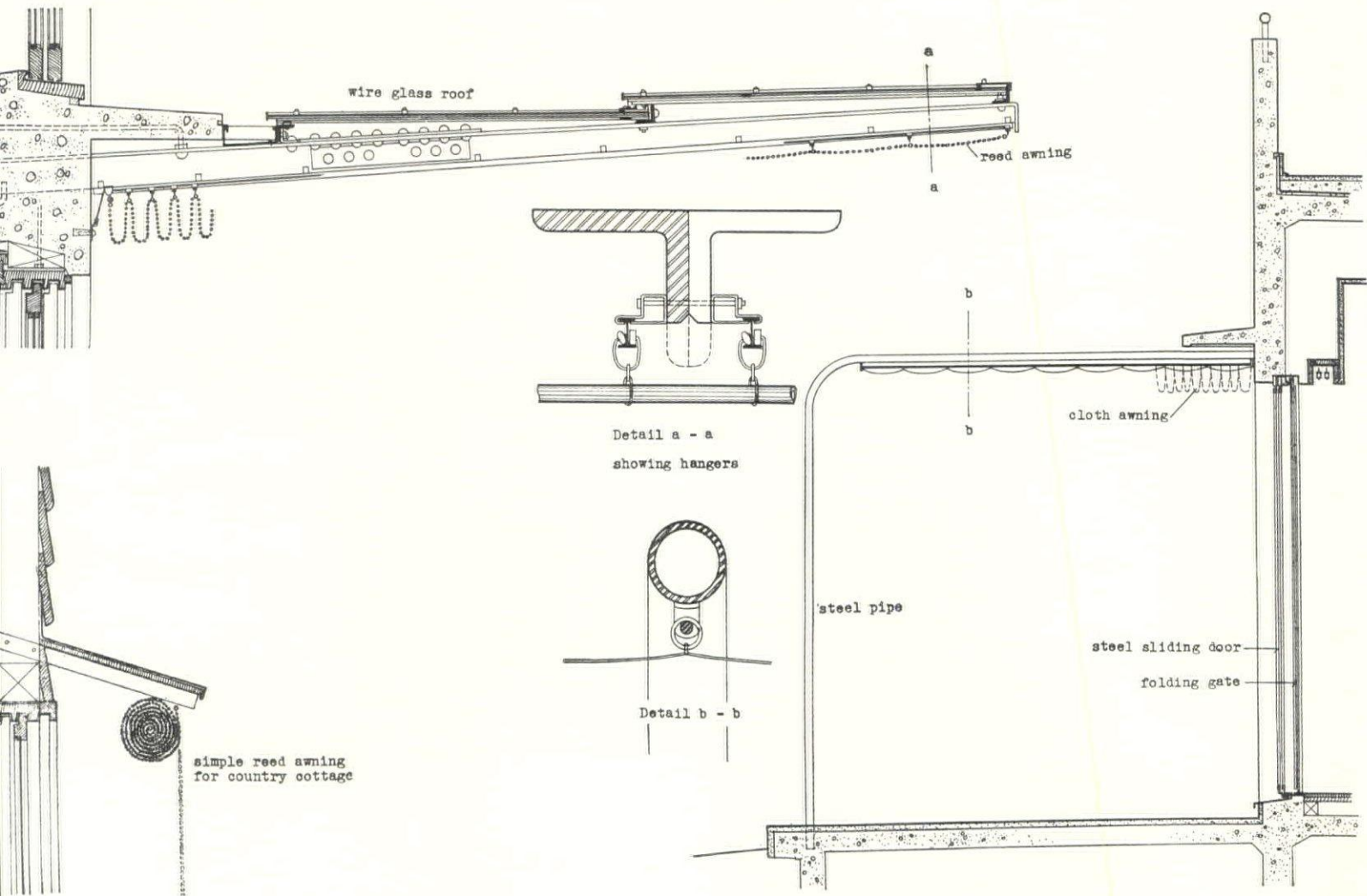
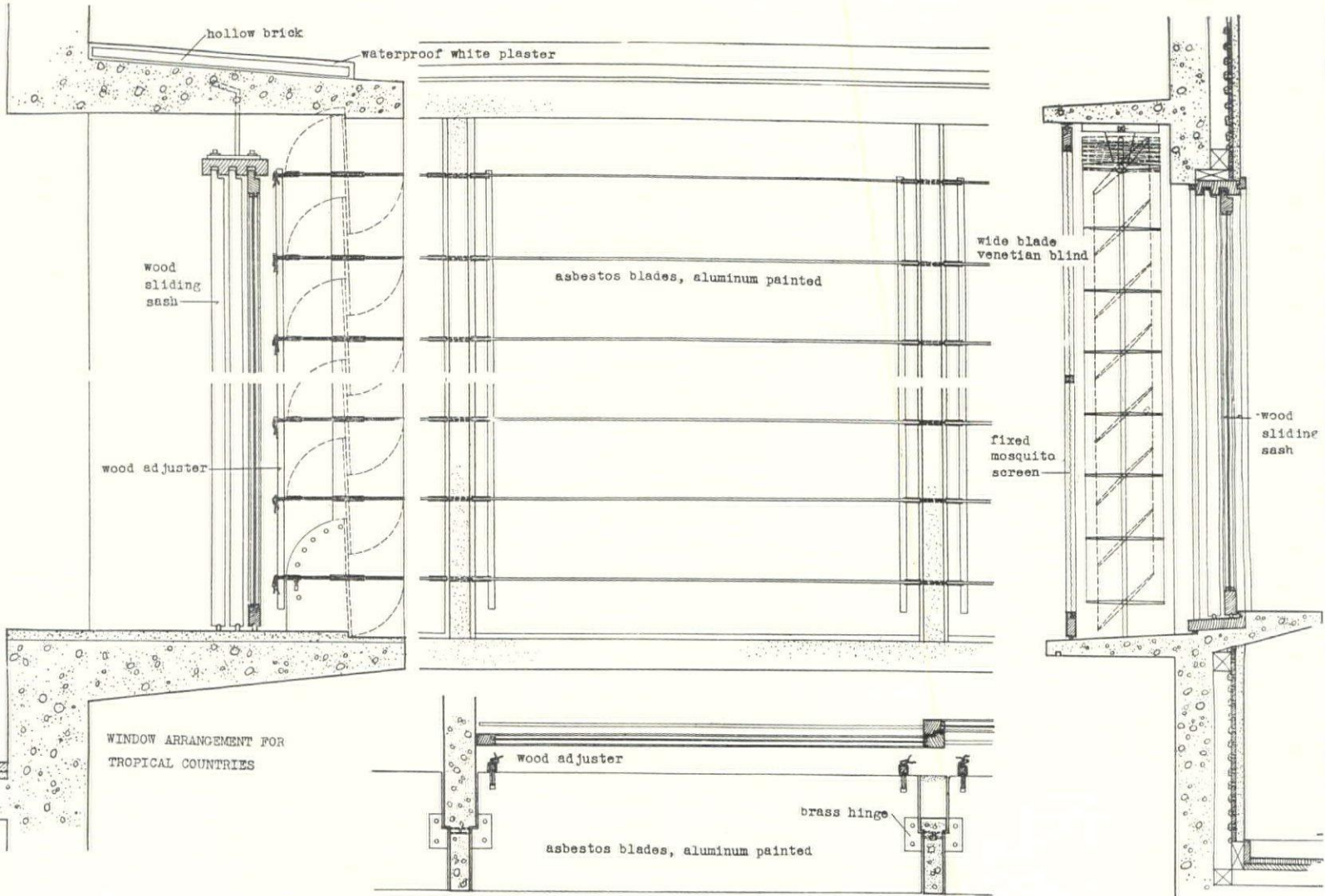
EAST ELEVATION



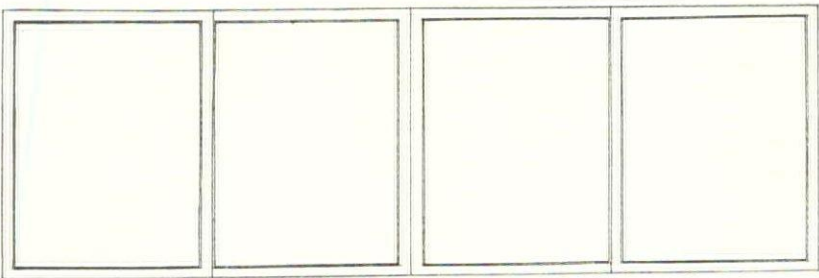
WEST ELEVATION



BLIND AND AWNINGS



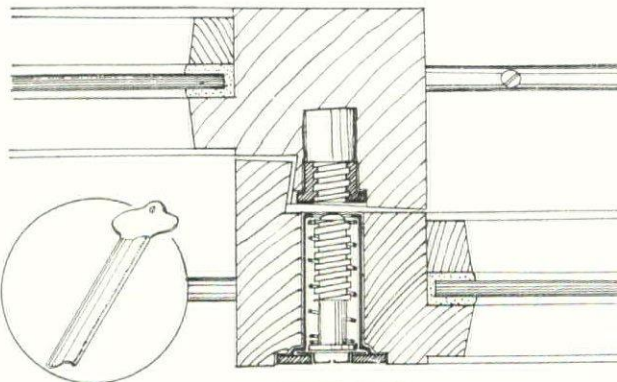
WOOD SLIDING WINDOWS AND SHOJI



EXTERIOR ELEVATION

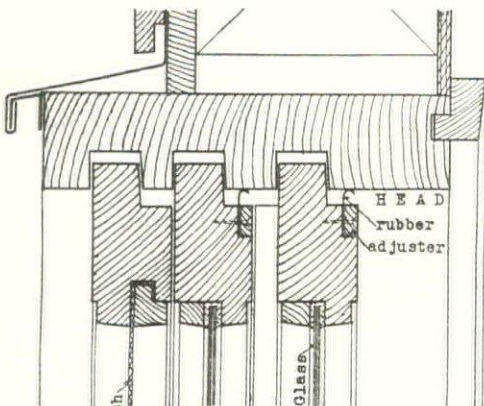


PLAN

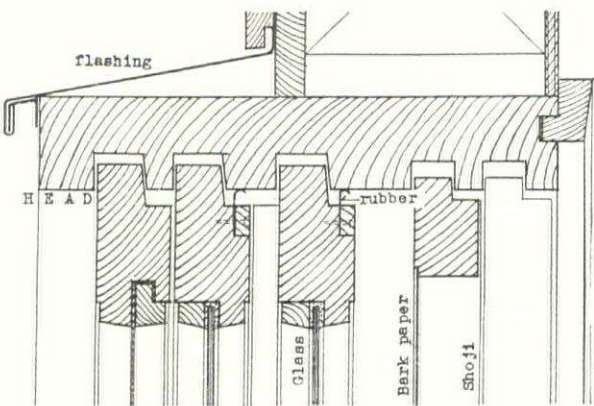


LOCKING DEVICE

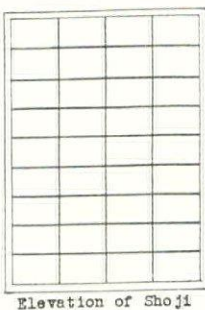
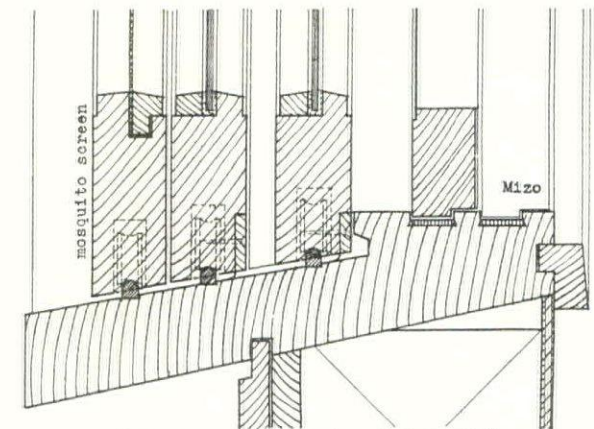
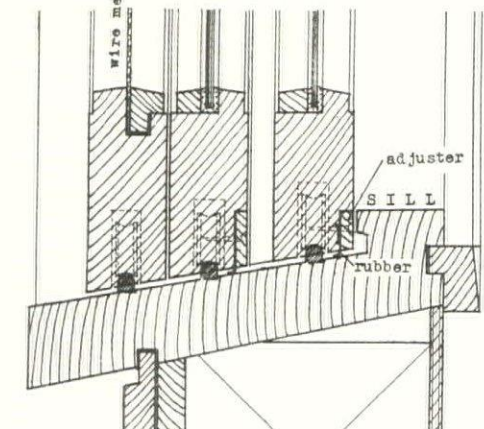
VARIOUS COMBINATION



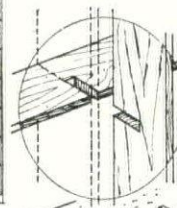
DETAIL TYPE "A"



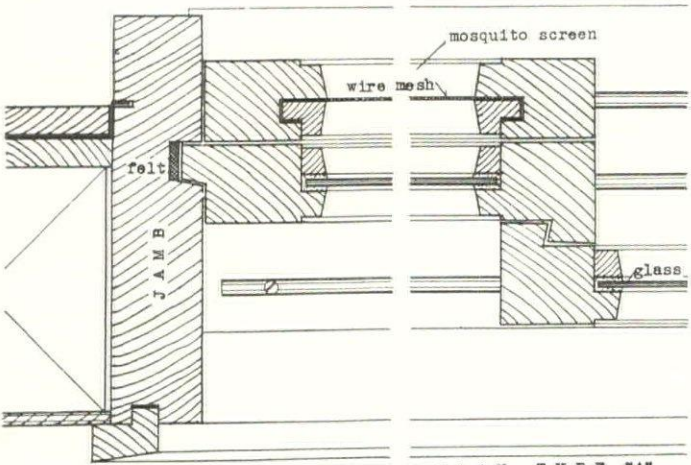
DETAIL TYPE "B" (with shoji)



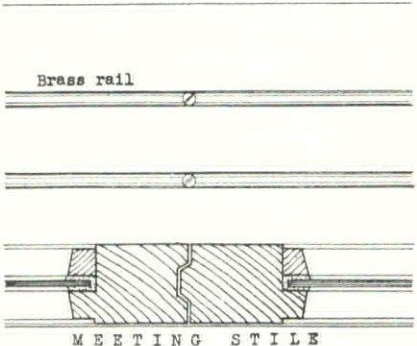
Elevation of Shoji



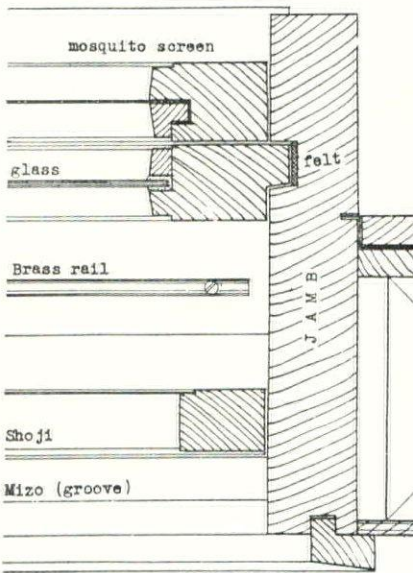
Detail of shoji handle



PLAN TYPE "A"



MEETING STILE



PLAN TYPE "B"



NOTE: SHOJI SUCCESSFULLY REPLACE CURTAINS AND SER GOOD HEAT INSULATION IN WINTER TIME.

PRODUCTS AND PRACTICE



Four bidets of the center jet, transfer valve type; left to right (above): Crane Co., Chicago, Ill.; Standard Sanitary Mfg. Co., New York, N. Y.; and Kohler Co.; Kohler, Wisc.; below: Washington Eljer Co., Los Angeles, Calif.

BIDETS . . . made in America, used everywhere else

bi-det' (bi-det', be'de'), n. **1.** A small horse, esp. for pack or courier service in an army. **2.** A form of sitz bath.—*Webster's New International Dictionary.*

Less than a century ago, the bathtub was regarded as an extravagance and a menace to health, and a number of cities had laws prohibiting its use in order to conserve water. The bidet, which has been manufactured in the U. S. for 50 years, is still regarded as an unnecessary luxury by a nation which describes itself as the cleanest in the world. The reason for this is not so much ignorance as a positive misapprehension regarding its use.

The typical U. S. male would probably be surprised to learn that the bidet is intended for the use of both sexes and for children as well as adults. He is likely—if he has heard of the fixture at all—to connect it with birth control, or at most with feminine hygiene, and to be wholly unaware of its more important function in simple bodily cleanliness. Presumably this is due to our notorious prudishness, since no such difficulty is found in Europe or Latin America where the bidet is in universal use. Whatever the cause the fact remains that spasmodic efforts by fixture manufacturers to develop a domestic market for bidets have always met with failure.

Actually, the principal use of the bidet is for rectal bathing after using the water closet. In addition, it may be used as a "sitz bath," and as a foot bath. If fitted for a rubber hose attachment it may also be employed for enemas and douches, but the Sanger Clinics will tell you it is of no positive value in birth control. The best description of the manner of its principal use is that given by Call in *The Bidet Fixture*, Proceedings of the 18th Annual Meeting, American Society of Sanitary Engineering, 1923:

In using the fixture, a sitting position, astraddle, and facing the valves is taken on the bidet fixture, without the user completely undressing. The waste valve is then closed and the water supply to the flushing rim turned on. This fills the bowl, and the user is ready to bathe. Bathing completed, the waste valve is opened and the bowl drained. Then the hot, cold, or both hot and cold water supplies to the douche (center jet) are turned on and adjusted until the desired temperature of douche is had for final rinsing of the parts being bathed. Rinsing being completed, the water is again turned on to the flushing rim. This flushes the bowl and leaves it in a sanitary condition for the next user.

A particularly clear and complete description of the various advantages of the fixture was formerly included in the catalogue of a principal manufacturer of plumbing equipment:

Through ignorance of its advantages many regard the bidet (pronounced Be-DAY) as a fixture to be used for birth control. This is obviously incorrect because a plain water douche cannot accomplish this purpose. The bidet fixture is an appliance designed to maintain for the user a constant state of cleanliness of the private parts. Its most important use is that of a rectal bath.





Above, top picture: bidet with flushing rim, center jet, and transfer valve, the John Douglas Co., Cincinnati, Ohio; middle picture: bidet with flushing rim only, Eljer Co., Ford City, Pa.; bottom picture: the "Bidoro", combination water closet and bidet (with retracting nozzle), Bidoro Mfg. Co., Bronx, N. Y.

Every person of refinement realizes the natural need for especial cleanliness of the private parts. Obviously the tub or lavatory should not be used for such specific bathing. The bidet provides the only convenient and sanitary fixture for this purpose.

With women, the bidet should be an indispensable bathroom fixture, because proper attention to health requires bathing of the genital organs more frequently than can be accomplished conveniently with the bath tub. It is essential and conducive to health to wash these parts twice daily.

This use for the bidet is also essential for men, because the ordinary tub or shower bath is not sufficient to secure a similar degree of cleanliness. As with women, men, too should bathe these parts twice each day.

Adult persons of cleanly instincts will realize that such bathing is necessary for both men and women at particular times.

Women will find the bidet a very important and convenient fixture for use during their menstruating period. The bidet is the proper fixture for this use. The bidet is particularly desirable in manufacturing plants where a number of women are employed or in department stores, women's colleges and other institutions.

After using the toilet washing with water does much to eliminate the possibility of developing rectal diseases and is also recommended for their treatment.*

The bidet is commonly used as a foot bath. When the waste plug is closed the bowl holds a sufficient body of water for this purpose.

There need be no hesitancy about using the bidet for its different purposes. Being made of Vitreous China and having a flushing rim, it can be kept spotlessly clean and sanitary by simply rinsing with water or wiping with a damp cloth. It will not stain or discolor and its smooth, glassy surface will not retain disease germs.

In addition to ignorance of its functions, several practical objections have retarded the bidet's application. Early models (1895) had almost as much brasswork as china, were consequently hard to keep clean. Also, there was a serious danger of scalding if cold water faucets were turned on elsewhere while the fixture was in use. Finally, it is now recognized that like all fixtures with submerged inlets the bidet presents the possibility of pollution of the fresh water supply unless a vacuum breaker is used on the supply line. Modern installations, however, make a solution of all three of these problems entirely feasible.

Another objection which is often cited to explain the fixture's lack of popularity is the additional space and investment which it requires. This, while a perfectly valid reason for its omission in low-cost housing and in the small house, is certainly no cause for its being left out of luxury bathrooms replete with powder tables and silver-plated plumbing, or even the homes of the comfortably situated.

Modern bidets are made in three types: 1) with flushing rim only, 2) with flushing rim and jet, and 3) combination water closet-bidet. All are made of vitreous china, the first two types having metal valves and pop-up waste and the second furnished with attachments for the jet. The first type has two valves, hot and cold, to control the flow of water to the flushing rim. The second type has either two pairs of valves, one to control supply to flushing rim, the other to control the jet, or one pair of valves and a transfer valve to direct the supply to flushing rim or jet. Both are commonly furnished without thermostat control or vacuum breaker to protect the fresh water supply, and these items must be specially ordered (The Chicago Building Code and, since January 1, 1939, the New York City Building Code requires that vacuum breakers be used on bidet installations). Combination bidet-water closets are now supplied complete with these accessories.

Something like 8,000 fixtures of all types are manufactured each year in the U. S., but less than 400, or 5 per cent of these are used domestically. The balance are exported, chiefly to South and Central America and the West Indies. The majority sold in this country go to wealthy home builders who have lived abroad, foreign embassies, and a few hotels which cater to an international clientele. Whether this number will be expanded to include any sizable number of home owners or institutions seems likely to depend on the nation's architects, since fixture manufacturers have largely abandoned any attempt at consumer-advertising except in their display rooms in principal cities.

* "It is a well established fact that sedentary habits of the modern business man, and particularly of the modern woman, are conducive to constipation and concurrently to rectal diseases such as hemorrhoids, piles, etc. Medicinal authorities are practically agreed that these diseases are due to improper care. The bidet fixture is especially designed to facilitate such care, and is therefore an important and necessary fixture for every bathroom."—*Call. op. cit.*

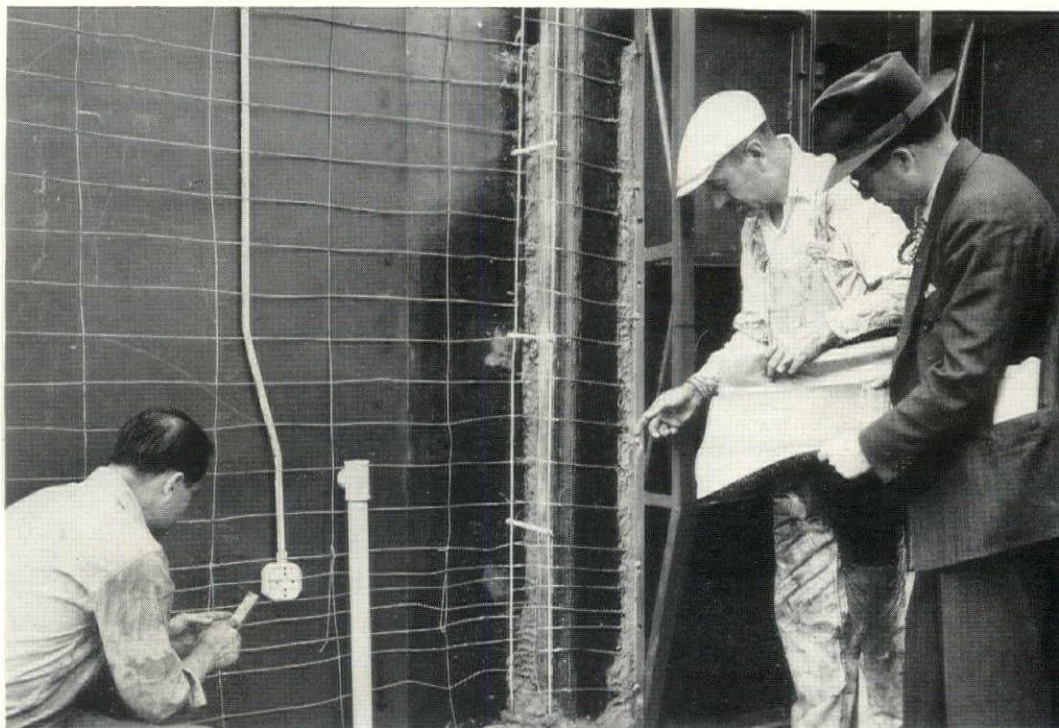
THE INTEGRATED HOUSE

CAST-IN-PLACE CONSTRUCTION

Perennial dream of students of house construction is a machine to mold houses. "Why," they have argued from Thomas Edison onward, "go on repeating the same series of operations every time a house is built when plastic materials can be cast into houses in a mold used over and over again?"

Essentially sound, this idea has encountered many difficulties. First and foremost has been the rock on which so many prefabrication schemes have foundered: the fact that the unfinished structural shell accounts for but a small part of the total cost of a house, must be adapted to the easy installation of the finishes, pipes, wires, and equipment which together account for so much. Second has been the use of solid masonry walls which require furring for satisfactory performance. A noteworthy exception, the method shown on this and the following page promises a solution of both these problems. Developed by Hayes Econocrete Forms, Inc., 2466 Fletcher Drive, Los Angeles, Calif., it casts hollow walls and partitions of vibrated concrete with pipes, electrical conduit, etc., in place, forms window frames and most interior trim, together with finished interior and exterior surfaces, in a single operation. Moreover, its various steps have been simplified to the point where houses may be completed in less than a week.

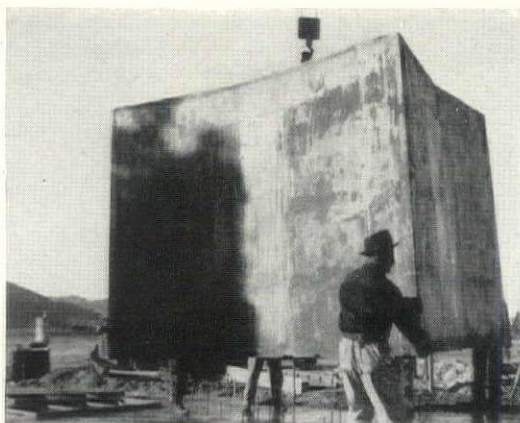
Emphasizing permanence and quality construction, the Hayes organization is building a series of low cost houses near Los Angeles to demonstrate the cost-saving features of their plan. This firm offers welded, all steel forms and equipment to builders everywhere who do a large enough volume of work to justify the necessary investment, also manufacture steel windows, doors, and kitchen cabinets for use with the system.



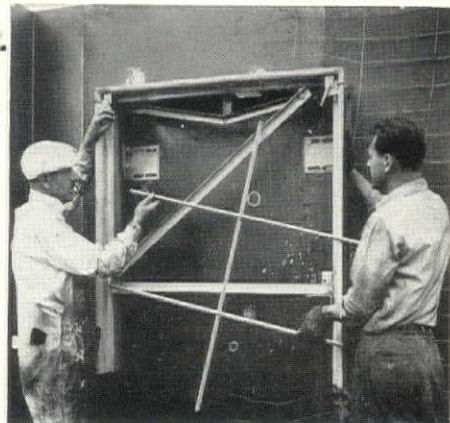
Miles Berné

Picture above is a set-up designed to show various features of the Hayes method rather than an actual stage in construction. Left side shows surface of inside form with inner layer of reinforcing mesh, electric conduit, and plumbing pipe in place; center, typical rib reinforcing, part of one of the collapsing cores which form hollow spaces in walls, and outer layer of mesh; right side, outer forms. Ribs are 24 in. on center, walls 10 in. thick with 6 in. air space.

1.



2.



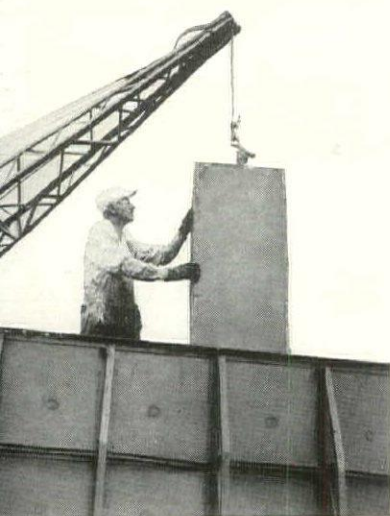
Miles Berné



1. (above): Placing room-sized inside form on foundation slab. 2. attaching window-frame form to outer side of room. 3. Placing outer forms after reinforcing, pipes, etc., have been installed. 4. Pouring concrete from special 50 ft. mixer-crane.

4.

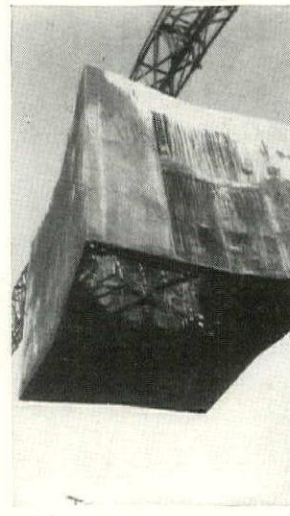




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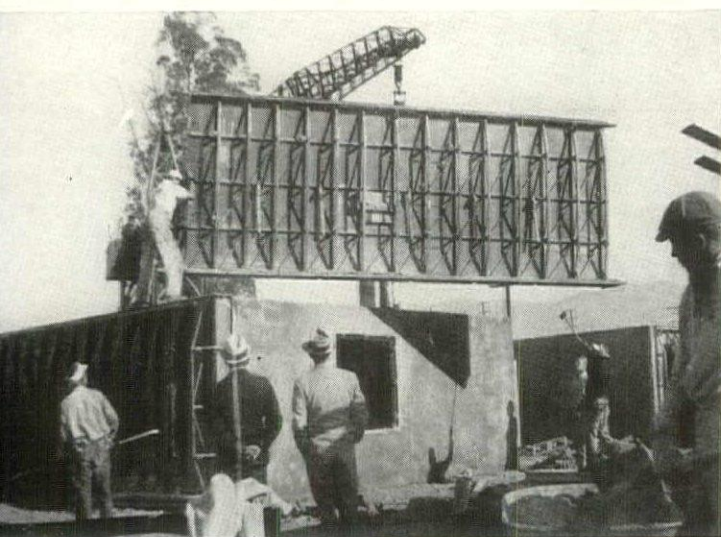


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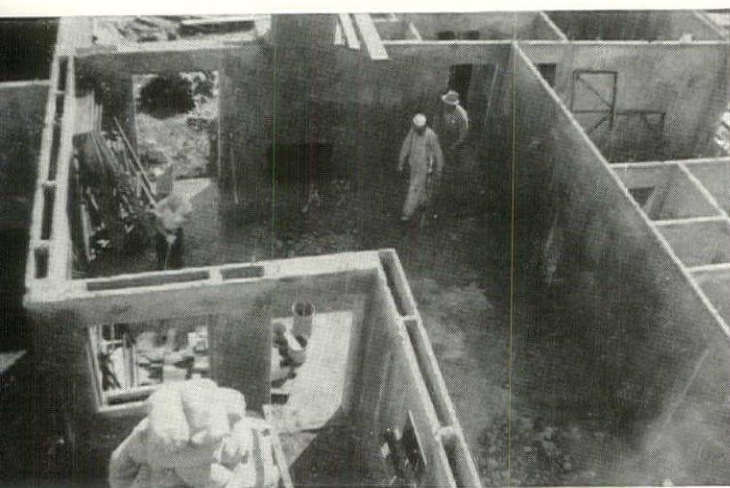


7.

5, Pulling collapsible cores which form air spaces in walls; these have accordion-pleated sides and oiled faces which are drawn together by pull-on lifting hook. 6, Pulling room-sized inside form. 7, This is swung high and put in place on foundation of next house in one operation.



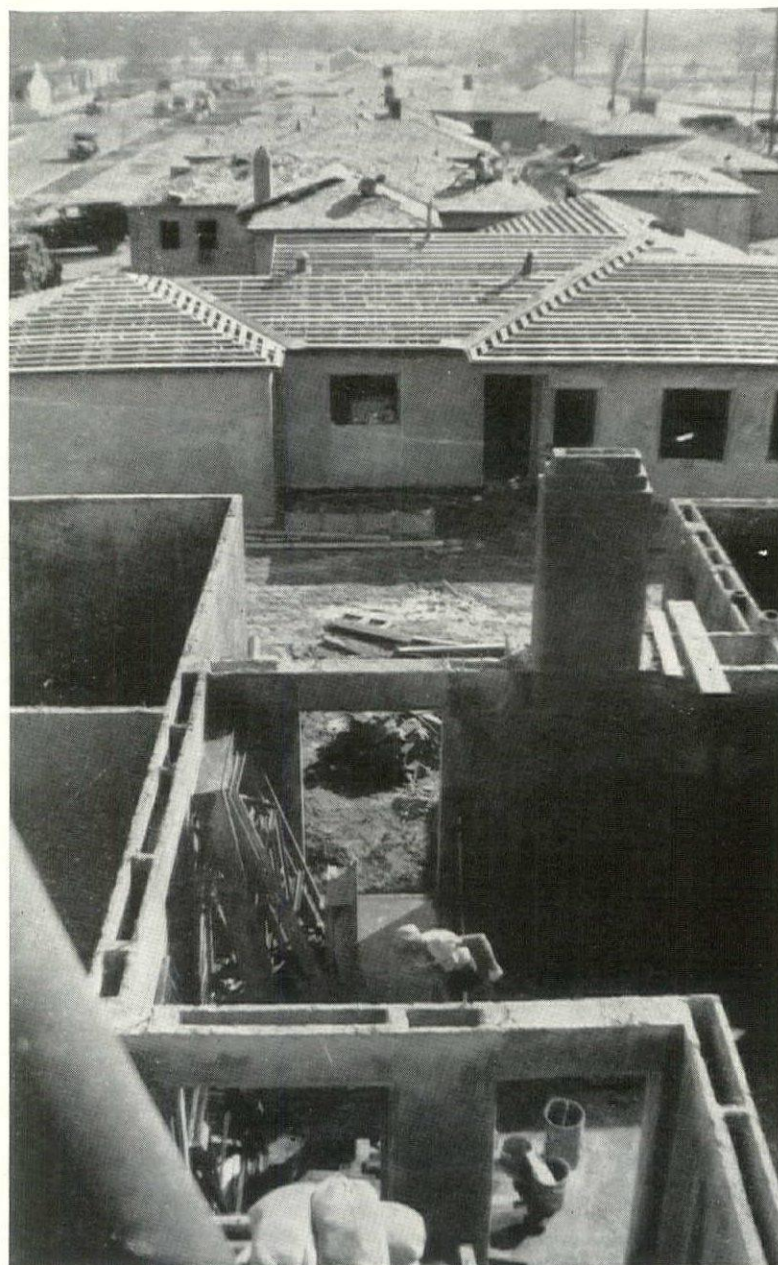
8.



9.

8, Removing exterior forms; these are sectional, but are usually moved in wall-sized units. 9, Completed walls, showing construction of interior partitions, exterior walls, and door and window openings in single operation. 10, General view, showing progressive sequence of house construction.

10.



BUILDING MONEY

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THE NO-DOWN-PAYMENT PLAN APPEARS

"You can pay for it like rent" now means what it says. How the Plan operates . . . a pioneering case history under FHA's Section 210.

WITH introduction of the Federal Housing Administration's long-term amortized mortgage, the house salesman's cut-and-dried chant of costs, qualities and location was fortified with the potent phrase "you can pay for it like rent." But, as each sale has required a down payment in cold cash, the phrase has been a gross exaggeration. Today it is a different story. Thanks to the National Housing Act's year-old amendments and their new type of housing finance, the salesman may include this deal-sealing phrase in his lingo—and without exaggeration. The cash down payment is no longer a requisite to home ownership.

Called the no-down-payment plan, its essence is simplicity itself. First the project must be a rental-sales, release clause project authorized under Section 210¹ of the NHA. In other words, its houses may be either rented or sold and those that are sold may be released from the project's blanket mortgage and individually mortgaged. Instead of requiring a certain amount of cash as a down payment for a purchased house, the builder, as mortgagor, may lease the house for a monthly "rental." (This will probably be equal to what he is charging his regular rent-paying

tenants yet in excess of the monthly carrying charges undertaken by the purchaser who antes a cash down payment.) Then, when these monthly "rentals" have accumulated to the extent that the portion of them allocated to a sinking fund to build up a 10 per cent equity is equal to the customary down payment, the house is released from the blanket mortgage, mortgaged individually under Section 203 of the NHA and deeded to the occupant.² Thenceforth, the occupant, now mortgagor, pays the regular carrying charges until his mortgage is retired.

Legislation. While new in application, the no-down-payment plan is not new in authorization. It came into being in February 1938 with addition of Section 210 to the NHA. In isolated instances it was practiced prior to that, for there is nothing in Section 203 (under which FHA does the bulk of its business) to prohibit a builder of, say, three houses to dispose of one or two of them with the aid of the no-down-payment plan. But, such cases have been so few that they need not enter into a discussion of the plan. (Most builders using Section 203 cannot afford to freeze their capital to the extent required

by the no-down-payment plan; see below.)

An aid to the builder who wishes to erect between \$20,000 and \$250,000 worth of housing facilities,³ Section 210 was devised to open up a vast new field in the middle of the housing market. To date, its effects have been felt largely in the rental housing category⁴; only a handful of single-family houses for rent and for sale have been fostered by the Section. Reasons for this lack of contemplated results: 1) builders' ignorance of the Section and its provisions, 2) stringent restrictions as to the eligibility of builders and projects, and 3) limitations of the Section itself.

Biggest hurdle in the way of operation of the Section and its accessory no-down-payment plan has been reason No. 3 and the interpretation of enabling legislation. According to the letter of the law, the maturity of a blanket mortgage under Section 210 is limited to 21 years.⁵ When the section was written it was felt that this period would be long enough for the mortgagor to pay off his loan, but study and experience has since proved that the period is short for a strictly rental project as well as for a combination rental-sales project. Today, a more liberal interpretation of the Section's wording

1. The no-down-payment plan may also be employed under Section 207; but its use will be far less frequent than under 210. Therefore, the discussion presented herein is limited to the latter section.

2. In effect, the no-down-payment plan is thus an installment-down-payment plan. FHA prefers the latter designation.

3. Under Section 210, the mortgage must involve a principal obligation in excess of \$16,-

000 but not in excess of \$200,000 and not in excess of 80 per cent of the appraised value of the complete property; see table, p. 222.

4. For an example of a rental housing project financed under Section 210, see page 227.

permits some flexibility in the length of the mortgages.

With wheels thus greased, FHA looks for a marked pick-up in the construction of rental-sales projects under Section 210. And, good or bad, the no-down-payment plan is in for a real work-out. Without taking sides in the argument pro and con this new home financing plan, THE ARCHITECTURAL FORUM discusses its many ramifications, cites a newsworthy housing project in Hillside, N. J. as one of the few existing case histories.

Pioneer Project. Already boasting the oldest real estate business in Newark, N. J. and a large finger in the development of such prominent New Jersey suburbs as East Orange, South Orange, and swank Short Hills, Philip J. Bowers & Co. year ago decided to expand their reputation by pioneering a rental-sales project under Section 210. President R. Thomas Bowers called in Architect W. Frank Bower and his associate-son W. Frank, Jr. to design ten two-story, six-room houses based upon one more-or-less standard set of floor plans but differing in orientation and exterior treatment. (That these plans provided for all steel framing is an interesting but irrelevant sidelight—see construction picture, page 223.)

Having approved all phases of the project, FHA, later in 1938, insured a mortgage for \$35,000 assumed by the FHA-minded Passaic National Bank and Trust Company for 80 per cent of the estimated cost.⁵ At the same time, FHA committed itself for a period of eighteen months to insure individual mortgages on any of the houses that may be sold and released from the blanket mortgage. These individual mortgages will be written under Section 203 for 90 per cent of the appraised value of the house—\$5,000⁷—and will also be assumed by the Passaic National Bank and Trust Company.

Prior to these negotiations Builder Bowers set the selling price of his houses at \$5,500 (identical with FHA's valuation) and, on the basis of this, monthly "rentals" at \$60, monthly carrying charges under a 90 per cent mortgage at \$43.18 and regular rents at \$60 per month. If all ten houses are sold, whether for cash or for a 10 per cent down payment, the blanket mortgage will be retired immediately. However, if one or more of the houses are rented or are sold on the no-down-payment plan, the blanket mortgage or at least part of it will remain outstanding. The project's income and expense statement is therefore important and subject to approval by FHA. With taxes on each house amounting to \$144 per year,

SECTION 210 of the National Housing Act states, in substance, that FHA is authorized to insure mortgages (including advances on mortgages during construction) covering property on which is located or is to be constructed one or more multi-family dwellings or a group of not less than ten single-family dwellings, *provided* that the property shall have been approved for mortgage insurance prior to the beginning of construction.

To be eligible, mortgages must—

- 1) Exceed \$16,000 in principal amount;
- 2) Not exceed \$200,000 in principal amount;
- 3) Not exceed 80 per cent of the value of the completed property as appraised by FHA;
- 4) Not exceed \$1,150 per room;
- 5) Not have a term exceeding 21 years;
- 6) Bear interest (exclusive of premium charges) at not more than 5 per cent;
- 7) Contain complete amortization provisions;
- 8) Contain such terms, conditions, and provisions with respect to advances during construction, assurance of completion, recognition of equitable rights of contract purchasers in good standing, release of part of the mortgaged premises from the lien of the mortgage, insurance, repairs, alterations, payment of taxes, default and management reserves, delinquency charges, foreclosure proceedings, anticipation of maturity, additional and secondary liens, and other matters as the FHAdministrator may prescribe.

SECTION 207 differs from Section 210 primarily in that under the former—

- 1) Eligible mortgagors must be private corporations, associations, trusts or cooperative societies which consent to regulation by the FHAdministrator;
- 2) The mortgage has no minimum limit but has a maximum limit of \$5,000,000;
- 3) The mortgage per room may not exceed \$1,350;
- 4) The interest rate may not exceed 4½ per cent;
- 5) The term of the mortgage is limited only by the FHAdministrator's approval.

fire insurance premiums to \$8, Bowers' statement of monthly rental breakdown for the ten houses looks like this:

Rents received	\$600.00
Taxes	\$120.00
Mortgage interest (5%), amortization (3%), insurance (½ of 1%)	230.99
Insurance	6.70
Balance	242.31

From this balance about \$71 (on the basis of \$85 per house per year) must be allocated to the operating and maintenance expenses of the project. This leaves a net balance of \$171.31, but all of it is not clear profit. For, while rents on the new houses are set at \$60 per month, FHA has estimated that they may drop to as low as \$44 per month at the end of 20 years, making Bowers' effective rent (the twenty-year average) \$52 per month. Furthermore, from this net balance a 10 per cent vacancy charge must also be put away to guard against loss of rent and occupancy. The remainder is applied to-

ward dividends, surplus and acceleration of mortgage amortization.

Chances are, however, that Bowers will soon be relieved of his responsibilities as mortgagor, for three of his four different financing methods entail sale of the houses: 1) They may be sold outright for \$5,500 in cash; 2) they may be sold for \$550 down (10 per cent of the FHA valuation) and \$43.18 per month during the next 25 years, the life of the 90 per cent mortgage; 3) they may be sold on the no-down-payment plan entailing the payment of \$60 per month during the "rental" period and the payment of \$43.18 during the succeeding 25 years; and 4) they may be rented in the usual manner for \$60 per month.

Plan. Only the third method, no-down-payment, needs further explanation. Under this plan the purchaser signs a purchase contract with a clause stating his intentions to take title to the house and sign a bond and mortgage for 90 per cent of the purchase price when that part of his accumulated monthly "rentals" reserved for amortization is equal to the 10 per cent cash down payment made by his neighbor. If the house sells for \$5,500 and if the monthly "rental" is \$60, the no-down-payment purchaser will have built up (after taxes, interest at 5 per cent on the unpaid balance, and insurance have been deducted) his required equity in approximately eighteen months.

As mentioned above, upon insuring the blanket mortgage, FHA commits itself for a period of only eighteen months to insure individual mortgages of satisfactory borrowers at 90 per cent of the then appraised value of the houses. Since construction of the ordinary house requires about three months, an extension of these commitments is essential to the operation of the no-down-payment plan. It is logical to expect, however, that the commitments will be extended to cover a longer period, unless the properties have been poorly maintained or the neighborhood has materially deteriorated. Exceptions would be rare, for not only is the project owner financially interested in the project as long as any of the houses are on his hands, but also FHA has made a detailed investigation of the neighborhood and its trends. If FHA deems it unwise to extend a commitment on the basis of the original valuation, it would have to revalue the properties in question, issue revised commitments. Bowers relies on the probability of an extension or upon extra payments by the "tenant" over and above his monthly "rental."

While not owner in fact, the purchaser

5. Under Section 207 the maturity limitation is determined by the FHAdministrator.

6. Changes made in the houses' specifications after the mortgage commitment (such as substitution of air conditioning for steam heating and substitution of steel framing for wood) will

boost the estimated cost of the ten houses from \$44,000 to \$49,500. The difference will be made up by addition of \$5,500 to Bowers' \$9,000 equity.

7. It is important to note that, due to additional construction expenditures (see footnote

6), Bowers has requested FHA to increase its commitments under Section 203 from \$5,000 to \$5,400. For the same reason, sales prices will be upped. However, to avoid complication, all figures presented on these pages refer to the project as originally conceived.

during the "rental" period is considered such, is therefore financially responsible for operation and maintenance. With the down-payment accumulated, the house is released from the blanket mortgage and set up under an individual 90 per cent mortgage and deeded to the purchaser. The builder is completely relieved of the house; and its purchaser, now mortgagor, must pay monthly carrying charges of \$43.18 during the 25-year life of the new mortgage.

Variations. Since FHA is only insuring the blanket mortgage at the project's outset, it is concerned simply with the punctual payment of monies required under that mortgage. How these monies are collected is solely the worry of the project owner, and details of the no-down-payment plan are his problem.

He determines what the "rents" are to be—they may be larger or smaller than the regular rents. The larger they are, of course, the quicker the down payment is accumulated. (The first purchaser of a Bowers' house has voluntarily agreed to supplement the stipulated \$60 per month "rental" with an additional \$50 every three months.)

He may lease a house and write in the contract a clause stating that, if the lessee wishes to purchase at a later date, his past rent payments, less all carrying and maintenance charges, will be applied toward reducing the necessary down payment.

He may permit a no-down-payment purchaser, who believes it is unwise to take deed to the house at the close of his "rental" period, to continue to rent.

Pro and Con. In view of these complexities and variations in the no-down-payment plan, it is small wonder that the average builder knows little about it—especially since FHA has not gone out of its way to publicize it. As to the future, FHA is not likely to shout from the house tops that no-down-payment arrangements are possible under Section 210. It will publicize and boost Section 210, but not the no-down-payment plan. And for a well-taken reason: Section 210 is part of the NHA, the no-down-payment is not. In fact, authorization for operation of the latter is of a negative sort, in that the Act does not prohibit it. Having but little control over the plan and its many variations, FHA fears that it may be carried to unreasonable extremes. Furthermore, some FHA bigwigs hold that an individual without enough cash for a 20 per cent down payment, to say nothing of a 10 per cent down payment or none at all, should not be a home owner.

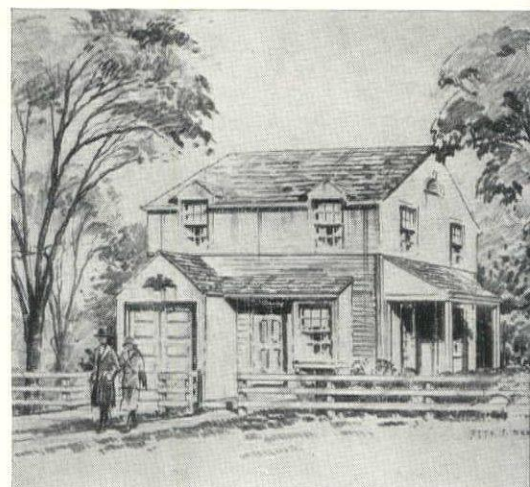
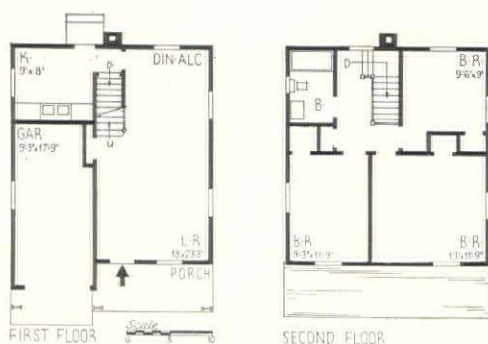
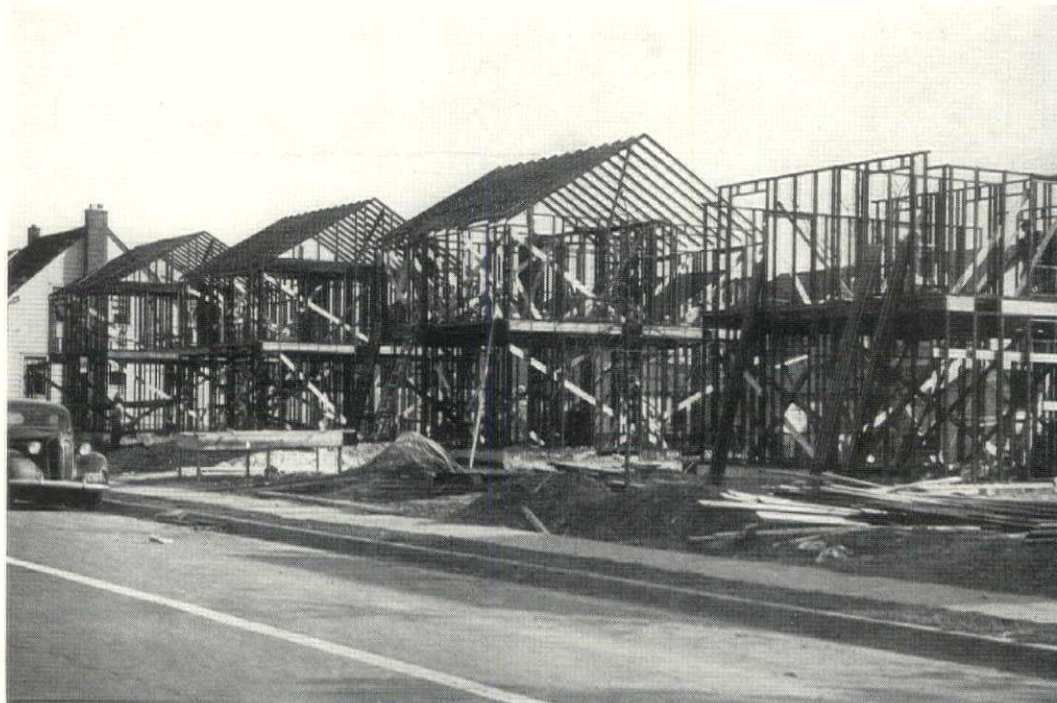
Disadvantages of the no-down-payment plan for the builder are such that they will limit its use. Primary among them is the requirement that the builder's capital be tied up during the "rental" period—for a still longer period if some houses

remain unsold or rented. For this reason only those well established builders who have a large supply of capital on hand can afford to operate under the rental-sales and no-down-payment plans, a condition which tends to lessen the validity of FHA's chief objection—that the no-down-payment plan may run wild. (If FHA thinks the brakes should be applied, it may make the plan impossible of operation by reducing the commitment period from eighteen to, say, six months.)

But, in other respects, the no-down-payment is a definite builder benefit. It provides an additional sales channel for his houses—one that is perhaps more attractive than any other. It brings the

builder's houses within reach of an increased number of individuals, expands his market. And, since it makes construction under Section 210 a more attractive venture, it will undoubtedly encourage the building of houses by groups with the attendant economies and, in turn, lower costs and prices.

For the buyer the plan has but few disadvantages. It is a boon to the individual earning a steady but small income, who for various reasons may be unable to salt away a large portion of it toward the usual cash down payment. Provided he is considered a good risk by the builder, he may move into a house without a penny in his jeans and *pay for it like rent*.

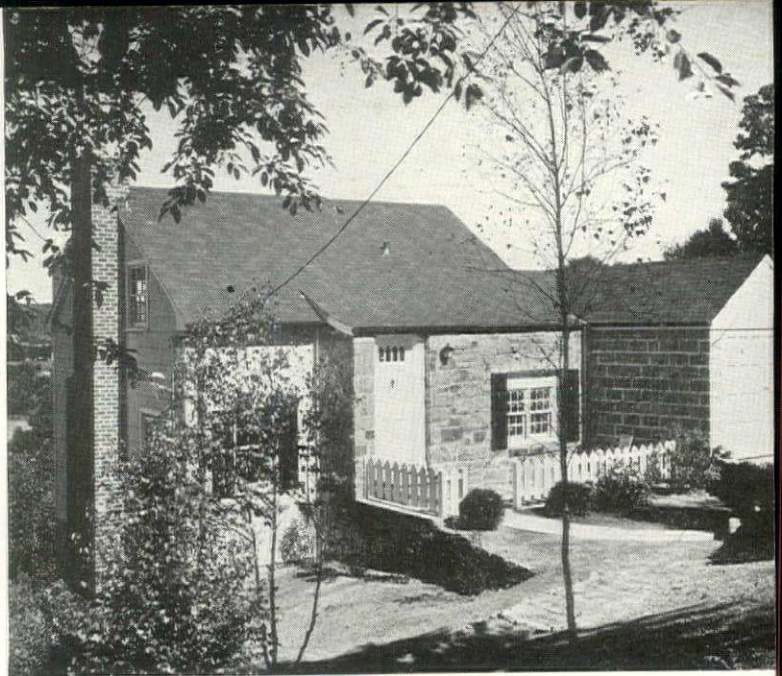
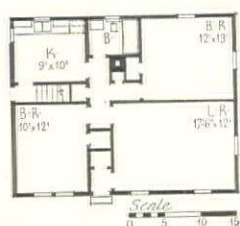


E. L. Martenis

No-down-payment pioneer is the ten-house project of Realtor W. Thomas Bowers situated in Hillside, N. J. Designed by Architect W. Frank Bower and Son W. Frank Jr., the houses are being completely framed by the Stran Steel Division of the Great Lakes Steel Corp.—the first large-scale application of this type residential steel framing on the Eastern Seaboard. While Builder Bowers figures that steel framing is twice as expensive as wood (about \$375 to \$180 per house), it will increase the total cost of the house only about 6 per cent. When complete, the houses will sell for approximately \$5,900 or rent for \$60 per month.



\$5,975



\$7,950



SMALL HOMES SAVE A SUBDIVISION

in White Plains, N. Y. Architect Perry nets key position in AGA's national all-gas campaign, sells 34 houses in ten months.

MANY a subdivision of expensive homes has been Depression-stranded during the past decade and still lies high and dry with little prospect of being refloated. These subdivisions retain their aura of past glory, but few offer inducement for redevelopment. Nonetheless, Architect-builder Lee Perry knew what he was doing when he took over six-years-fallow Westminster Ridge in swank Westchester County, N. Y. He planned to scrap precedent, switch from high priced to low priced homes, follow the highly successful lead of Subdivider David Swope and his nearby Fulton Park (ARCH. FORUM, June, 1938, p. 521).

An aura of affluence was not all that Westminster Ridge offered. It would rate high in beauty with any U. S. subdivision. The land rises and dips like a roller coaster, providing long views of the countryside from many a site; while big trees, winding roads and a private lake serve as snares for any undecided purchaser.

To these natural advantages was added a natural of publicity. As Perry specified that his development be serviced entirely by gas, the American Gas Association turned the spotlight of publicity on Westminster Ridge as show-place for their nation-wide all-gas home campaign. As a

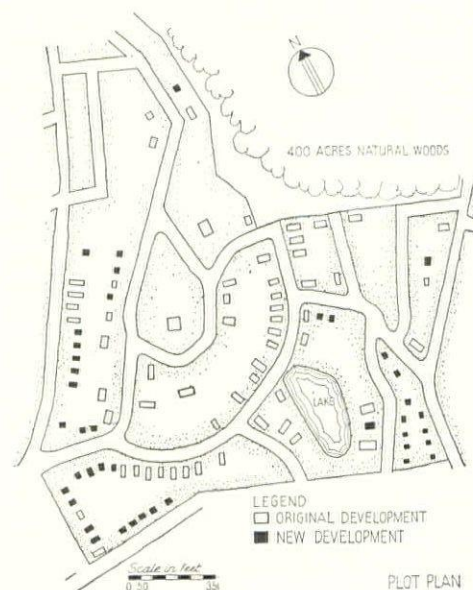
consequence, Perry has built 39 homes during the past year, has sold all but five.

History. Like most beauty spots in that area, Westminster Ridge was once an estate and still supports, in fact, the original house. Twelve years ago local Laundry President Fred P. Stafford developed the subdivision, built a home for himself on six of the hill-top lots. In boom times the project was a great success. Up to 1930 some 50 homes were built, ranging in price from \$15,000 to \$40,000. But here, as almost everywhere, the crash brought building to a standstill. In the two years before Perry took it over, only two or three lots were sold to private owners.

Year ago County Housing Corp. was formed with Architect Lee Perry as its president. First move, of course, was to purchase the 80 vacant lots in Westminster Ridge, well scattered throughout the 40-acre area. With utility lines and roads already installed, Perry had few of the usual subdivider's headaches. Further, the subdivision is well supplied with other services. There is a school across the street; a railroad station only a seven-minute walk away; the center of town, a ten-minute bus ride. But he had headaches of another

kind: the owners of the big houses were loath to see small houses mushrooming up beside them, feared undesirable neighbors. They fought (unsuccessfully in the end) any change in restrictions to permit the construction of lower cost homes. Fortunately, the animus gradually disappeared when the new owners moved in.

To all Westminster Ridgites are available the facilities of a unique lake club and playground. This lake helps set Westminster Ridge apart from the general run of subdivisions, is now being purchased from the original subdividers by the community's lake club. Membership costs \$2 a month, which pays for equipment, beach sand, and a lifeguard's salary. Admission fees help defray the cost of purchasing the lake.





\$8,600



John Gase

Construction. Work was started on the first house in April, 1938, and during the last ten months 39 houses have been completed, about half of them on speculation. Perry designed the houses himself, stuck close to Colonial throughout. The fact that many of the houses had to be built on steep hill-sides necessitated special planning to fit contour variations.

Big problem was to keep total costs down, for he was starting with the disadvantage of rich man's land. Setting price limits of from slightly under \$6,000 to as high as \$9,000 for both house and lot he specified cost-reducing dry-wall construction of wallboard, and on many of the houses, particularly the smaller ones, used oyster-colored asbestos shingles to advantage. Wherever possible, he dormered the houses on the viewside rather than on the street side, thus wrung the last ounce of attraction from the unusual sites. Approved for FHA insurance, these houses were financed by local lending institutions. Carrying charges run from \$45 to \$65 a month.

Future. With only 35 more lots to build upon, Perry sees the finish of his project some time this year. To keep his County Housing Corp. in the building business he has been prospecting for additional fields. His first feeler in new territory was made late last year in Pleasantville where he purchased nine lots, built seven houses, and to date has sold six.

This year he will develop a subdivision in nearby New Rochelle. Covering eleven acres, its 55 lots will all face on one dead-end street. To cash-in on his well-earned good will, he has dubbed it Westminster

Acres. The houses will range in price from \$7,000 to \$11,000.

AGA. Big factor in attracting potential home purchasers to Westminster Ridge has been Perry's tie-in with the nation-wide promotional drive of the American Gas Association, designed to boost the domestic use of gas. In return for acting as a trail-blazer for the home development part of the program, Westminster Ridge benefited from the publicity that the AGA has prepared for cooperating builders and utility companies the country over.

This program, the outgrowth of national competitions for architects and builders, works as follows. Any builder is eligible, need only seek the cooperation of his local utility company. If the builder agrees to build one or more all-gas demonstration homes, it may be possible to make reciprocal arrangements with local utilities to supply equipment at reduced prices and partially to foot the cost of advertising. Publicity is organized and bolstered by AGA, which supplies free advertising mats, newspaper stories, and radio blurbs; also such helpful hints as nabbing celebrities for dedication ceremonies.

That such carefully plotted excitement will produce a yield is evidenced by Perry's sales record; that he counts the all-gas build-up as effective is evidenced by his plans to build gas-serviced homes again in his forthcoming Westminster Acres development. And that AGA's program has a further lure is indicated by Perry's intention to enter his all-gas houses as contestants for the \$10,000 prize money posted for AGA's current Builder's Competition.

CONSTRUCTION OUTLINE

FOUNDATION: Walls—continuous concrete blocks. Cellar floor—4 in. cinder concrete.

STRUCTURE: Exterior walls—asbestos shingles, paper, sheathing, studs. Interior partitions—insulated wallboard, Johns-Manville. Ceilings—plywood.

ROOF: Construction—2 x 6 ft. rafters, sheathing covered with asphalt shingles. Decks—covered with canvas.

CHIMNEY: Lining—terra cotta. Damper—H. W. Covert Co.

SHEET METAL WORK: Flashing, gutters and leaders—Anaconda copper, American Brass Co.

INSULATION: Rock wool throughout, Johns-Manville.

WINDOWS: Sash—double hung, Silentite, Curtis Co. Glass—single strength, Libbey-Owens-Ford Glass Co.

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

FLOORS: Main rooms—oak. Kitchen and bathrooms—linoleum covered.

WALL COVERINGS: All rooms—wallpaper. Bathrooms—Linowall, Armstrong Cork Co.

WOODWORK: Trim and doors—Curtis Co.

LIGHTING FIXTURES: All by Lightolier Co.

KITCHEN EQUIPMENT: Range—Magic Chef, American Stove Co. Refrigerator—Electrolux, Servel, Inc. Sink—Standard Sanitary Mfg. Co. Cabinet—Hygrade Kitchen Equipment Co.

BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co. Cabinet—Columbia Metal Cabinet Co.

PIPES: Soil pipes—iron. Water pipes—Anaconda brass, American Brass Co.

HEATING AND AIR CONDITIONING: System includes filtering and humidifying. Gas fired boiler—Bryant Heater Co. Thermostat—Minneapolis-Honeywell Regulator Co. Hot water heater—Lovekin Water Heater Co. or American Gas Products Co.

400 MILLION ACRES give Government a

headache. The President prescribes a pill.

BOBBING up each year in Congress are an increasing number of bills demanding that something be done to compensate cities and counties for the loss of taxable land purchased and held by the Federal Government. This year, before Congress had a chance to open its mouth on the subject, the President bobbed up, took some appeasing steps. Thus, at mid-January, Congress found in its mail bag an executive order establishing the Federal Real Estate Board to keep tabs on Government-owned land and to study the plight of political subdivisions which would otherwise control this land.

Although the Presidential action made front page news, its beginning dates as far back as December, 1935. At that time in a meeting of the National Emergency Council the President appointed a committee to delve into Government's real estate labyrinth, make an inventory of its holdings. This group, in turn, appointed a second committee to do the dirty work. Chairmanned by Col. Donald Hubbard Sawyer,* then, as now, Chief of the Section of Space Control in the Treasury Department's Procurement Division, Committee No. 2 examined records of the hundreds of Federal departments, bureaus, commis-

* While a representative of the Treasury Department was appointed temporary chairman of Roosevelt's new Federal Real Estate Board, Col. (Officers Reserve Corps.) Sawyer is a likely candidate for the permanent position. One-time newsboy, Sunday pipe organist, later a prominent engineer in both Mid- and Far-West, 60-year-old Sawyer was recently elected the 1939 president of the American Society of Civil Engineers. A thorough background of governmental procedure and his practical thinking qualify him as a candidate.

sions, boards and miscellaneous agencies, some of which had long since given up the ghost.

By last fall the work was done, and on October 3 Col. Sawyer's Committee plunked on the White House desk its report—the first accurate record of the Nation's holdings of land and improvements. Made public for the first time with the President's executive order, the document is jam-packed with enlightening data:

► Government-owned land is equal in area to that of all States east of the Mississippi River except Florida, Georgia, Alabama and Mississippi.

► Government owns part of every State in the union, part of 2,628 of the 3,071 counties and part of 2,965 cities.

► Assessed value of all real estate in continental U. S. now being taxed is \$113,479,208,000; and, if Government holdings were assessed for tax purposes on the same basis as other property, their value would be \$3,282,914,000, or about 3 per cent of the above figure.

► If the District of Columbia is excluded from consideration, the balance of Government's real estate would still have an assessed valuation for tax purposes of \$2,579,288,000.

► On the assumption that \$1.25 per acre is a fair market value for lands in public domain, the fair market value of all Federal real estate with improvements is about \$4,696,062,000.

► Federal agencies have custody of a total of 394,657,721 acres, or more than 20 per cent of American soil.

► The area of all Federal urban property (within areas served by city mail deliveries) is 47,444 acres.

► The percentage of Federal lands in the various States ranges from 82 per cent in Nevada down to 1/10 of 1 per cent in Iowa.

► In four Nevada counties, about 100 per cent of all lands are Government-owned.

► In one South Dakota county the value of Government property is in excess of 800 per cent of the assessed valuation of all other property.

► If Federal property were subject to State and local taxation, the average annual amount of such taxation during the ten year period 1928-37 would have been only about 11 per cent of the average annual amount of Federal aid received.

While the last mentioned finding indicates that the States may not be so badly off as they think they are, Sawyer's committee nevertheless recommended to the President the formation of the Federal Real Estate Board "to study and make recommendations regarding the situation existing in individual communities adversely affected by the purchase of substantial amounts of land and their consequent removal from the regular tax rolls . . . ; to advise with Federal agencies contemplating the acquisition of additional real estate . . . ; to submit recommendations regarding the disposition of lands that are essentially . . . surplus property" and to keep up-to-date the Committee's inventory of Federal properties.

Composed of representatives of seven of the Federal departments and from the Tennessee Valley Authority and the Bureau of the Budget, the new Board will wish most of its work on the Treasury's Procurement Division, which has for some time been doing this sort of work. During the fiscal year ended June 30, 1938, its Space Control Section sold 30 surplus properties for \$806,869, and on that date there remained to be sold some 175 more valued at about \$27 million. But, with all property-owning and property-seeking agencies of the Government directed to advise the Procurement Division of their needs and surplus holdings, work of the Space Control Section will be greatly augmented. Besides buying and selling, it will continue to facilitate inter-agency property transfers without the necessity each time of Congressional authorization, as once was the case. Illustration: without red tape or cost it recently transferred a chunk of the Florida coast from the Lighthouse Bureau of the Biological Survey which was in the market for a bird refuge station.

Establishment of the Federal Real Estate Board holds particular interest for the Nation's realtors, for, while commissions on the sale of Government properties are currently outlawed, there is again before Congress a bill by California's Representative John H. Tolan that would authorize the Government to pay brokerage fees on the sale of its surplus properties. In anticipation of the aid realtors could offer in moving these properties, it is likely that the Board will stump for the bill.

DIVISION OF GOVERNMENT-OWNED LAND AND PROJECTS

Agency	Acres	% of total	Projects ^(a)
FOREST SERVICE	151,897,489	38.49	1,210
GRAZING DIVISION	109,823,489	27.83	176
GENERAL LAND OFFICE	54,659,873	13.85	675
BUREAU OF INDIAN AFFAIRS	52,188,320	13.22	831
NATIONAL PARK SERVICE	12,888,257	3.26	1,014
FARM SECURITY ADMINISTRATION	6,389,655	1.62	600
BIOLOGICAL SURVEY	1,588,981	.40	123
QUARTERMASTER CORPS	1,504,992	.38	526
BUREAU OF RECLAMATION	1,443,726	.37	(b)
CORPS OF ENGINEERS	1,079,471	.28	2,602
ALL OTHERS	1,193,468	.30	7,451
TOTAL	394,657,721	100.00	15,208

a—Does not necessarily represent separate and distinct enterprises; for, where these are located in more than one State, county or city, the portions laying within these jurisdictions are counted as projects.
b—Data not available, included in "all others."

A PAIR OF RENTAL PROJECTS serve Summit, N. J.,

typify the trend. The first in a series on Building's growing child.

STARVED for many years by the apartment builder's habit of vertical construction, the duplex, garden-type apartment is now rapidly taking on pounds of importance. To date the Federal Housing Administration, currently training its promotional big guns on this type of "horizontal" housing, has insured or committed itself to insure 152 such rental projects.

Mindful of the increasing importance of rental housing, THE ARCHITECTURAL FORUM introduces herewith a series of articles covering the latest developments in the field, this month examines two newsworthy projects serving the small suburban town of Summit, N. J. (1930 pop.: 14,556). The larger of the two is Beech Spring Garden Apartments (see pictures below and page 228), an FHA-insured project housing 43 families in six two-story buildings at a base rent of \$14 per room per month. Typifying another trend is Kent Court (see picture, page 229), a smaller but more lavish set-up dispensing with FHA mortgage insurance and housing 29 families in five-room duplex apartments at a base rent of \$15 per room per month. Aim of both projects is to supply Summit's commuters (New York City is but 25 miles distant) with apartment quarters that simulate private residences as nearly as possible.

Beech Spring Garden Apartments. Situated atop a three-and-a-half acre knoll in the borough of New Providence (a weak stone's throw from the Summit line), Beech Spring Garden Apartments mark

the first multi-family venture of Sponsor-Builder Willard E. Closs whose renown heretofore had been confined to palatial local residences. For assistance in this initial stab at rental housing he called on his architect-brother E. R. Closs and associate D. C. Washington.

Rolling character of the site was a boon to Architects Closs and Washington in producing a unique layout for the project. As shown below, the six apartment buildings vary in size, shape and elevation and are somewhat irregularly spaced. Including the two garages, providing neatly concealed storage space for 34 automobiles, the improvements cover less than 20 per cent of the site.

Fulfilling the requirement for home-like characteristics, the apartments were designed largely as duplexes each boasting a front and rear door, a front and rear yard. Counting as two rooms the large combination living-dining room, which features most of the apartments, space was provided for 27 three-room units and for sixteen five-room units. For fire- and sound-proofing purposes each dwelling unit was separated with a plastered concrete block wall, and for purposes of economy as well as novel appearance all joists in first floor ceiling construction were left exposed (see interior view, page 228).

Completed at mid-November, the entire project ran up a bill of \$186,207 (exclusive of land, valued at \$31,725) or \$4,330 per dwelling unit, \$1,157 per room. Break-down of the total figure puts labor and materials at \$176,707, landscaping at

\$3,900, financing, utilities, etc., at \$5,600. FHA insured the project's \$152,000 mortgage, the first in the State under Section 210 of the National Housing Act.

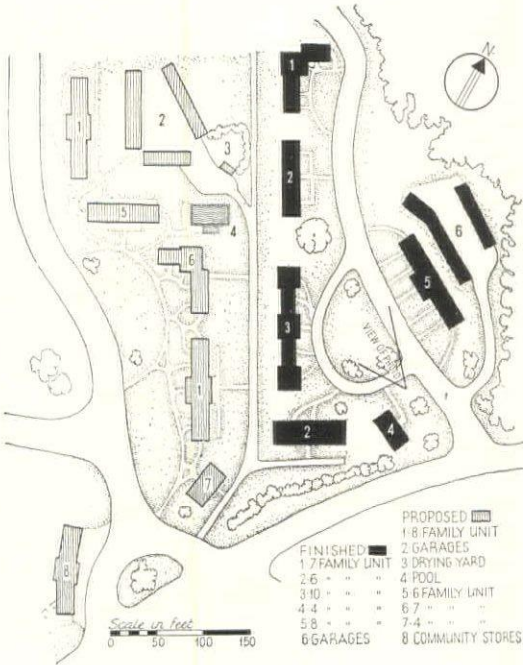
In return for these investments, the New Providence Development Co., headed by Builder Closs, will pocket a net return after interest and amortization of \$5,011 per year. Basis for this tidy sum is the project's annual rental income of \$32,460—three-room flats rent for \$50, three-room duplexes for \$53, five-room duplexes for \$70. From this annual gross must be deducted \$7,245 for maintenance, \$20,204 for operation and other expenses.

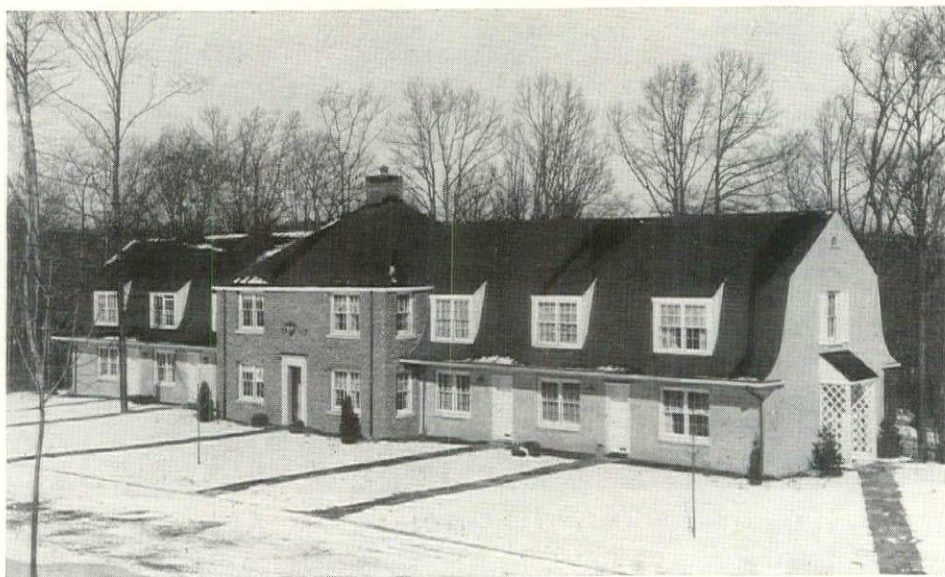
Egged on by the project's success (despite the absence of paid publicity, only three five-room apartments are currently vacant), Brothers Closs and Associate Washington are now planning two extensions. One, outlined on the plot plan below, is sure fire for this spring; the other will be started simultaneously if Builder Closs can put his labor on a guaranteed annual wage plan.

Kent Court. Smaller but more elaborate than the Beech Spring project is Summit's Kent Court which claims to be "the most-talked-about-apartment in the State." And well it may be, for few New Jersey apartments can flaunt such details as thermostatically controlled heat, fireplaces, individual full basements, and stall showers as well as bathtubs.

Designed by Architects Eugene A. McMurray and Emil A. Schmidlin for a trio of prominent local business men cap-

BEECH SPRING GARDEN APARTMENTS—E. R. CLOSS, ARCHITECT, D. C. WASHINGTON, ASSOCIATE





All photos, Bernard Biele



CONSTRUCTION OUTLINE

FOUNDATION: Walls—12 in. poured concrete. Cellar floor—4 in. concrete.

STRUCTURE: Exterior walls—8 in. cinder blocks some portions finished with brick veneer, others stucco, reinforced cinder concrete lintels, 1/2 in. furring, U. S. Gypsum Co. metal lath and plaster. Dividing partitions—8 in. cinder block; interior partitions—2 in. solid plaster. Floor construction—3 x 8 in. joists, exposed on first floor; otherwise covered with Plywood sub-floor and finished with No. 1 common oak.

ROOF: Rafters, 2 x 6 in., covered with 1 x 6 in. roofers, 265 lb. slate surface asphalt shingles, Flintkote Co.

SHEET METAL WORK: Flashing and leaders—copper, Revere Copper & Brass Co.

INSULATION: Second floor ceiling—rock wool.

WINDOWS: Sash—wood, double hung, integral weatherstripping, Pease Woodwork Co. Glass—single strength, quality B, American

tained by Coal and Lumber Dealer Elmer N. Rinhart, Kent Court is aimed at a still higher income bracket than the Beech Spring project. Thus, its duplex dwelling units all comprise five comparatively large rooms and range in rent from \$75 (\$85 with fireplace) to as much as \$100 for preferred locations.

Built on a 200 x 309 ft. plot valued at \$50,000 but reputedly purchased at about half that amount, the four buildings cost \$175,000, or 35 cents per cu. ft. Unit costs invite a comparison with those of the Beech Spring apartments: \$6,035 per dwelling unit, \$1,207 per room. Due to differences in bookkeeping, however, an inter-project comparison of income and expenses is not justified. But, interesting is the fact that Kent Court's rents total \$31,200 per year—only 4 per cent under those of the larger-by-fourteen-families New Providence project. Of this, \$5,130 will go annually for operating expenses and, in later years (every apartment is now leased for a period of from two to five years), three lumps of \$2,000 each must be banked for decorating and painting, for repairs and miscellaneous items, and for depreciation. Also, the project's owners must figure on a 10 per cent deduction for vacancies (\$3,120) and annual mortgage payments of \$12,340 during the fifteen-year life of the loan. Equal to about 75 per cent of the building's cost, this mortgage was made without benefit of FHA insurance. Reason: the project's sponsors were sufficiently equipped with cash, thus able to save the 1/2 of 1 per cent insurance premium which would have amounted to as much as \$650 per year.

While Kent Court has no room for expansion, its completion and rapid-fire tenancy has boomed considerably the business of Architects McMurray and Schmidlin, whose already bulging books listed some 500 jobs designed in 1938. On their drafting boards today are plans for nine other garden-type apartments to be built in as many communities from Syracuse to Red Bank. Orders for most of them are directly attributable to the free publicity earned by New Jersey's "most-talked-about apartment."

Glass Co. Screens—bronze mesh.

STAIR: Treads—oak. Risers—white pine. Stringers—Arkansas pine. Hand rail—wrought iron.

WALL COVERINGS: Bathrooms—Lino-Wall, Armstrong Cork Co.

WOODWORK: Trim doors and cabinets—Woodwork Working Co. Garage doors—Coburn Trolley Track Mfg. Co.

HARDWARE: Material by Schlage Lock Co.

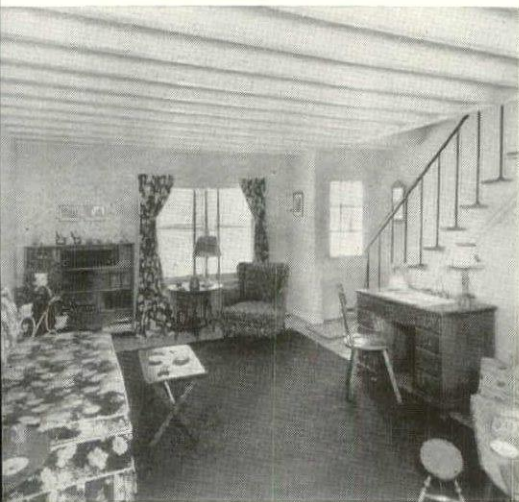
LIGHTING FIXTURES: Lightolier Co.

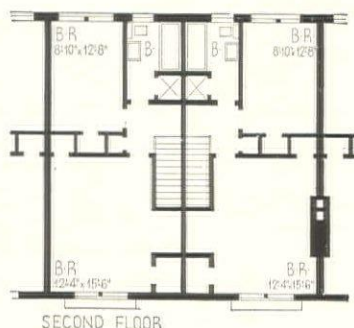
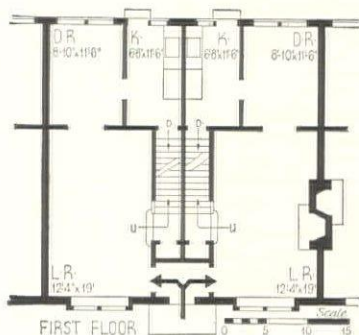
KITCHEN EQUIPMENT: Refrigerator—Frigidaire Corp. Sink—Standard Sanitary Mfg. Co.

BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co.

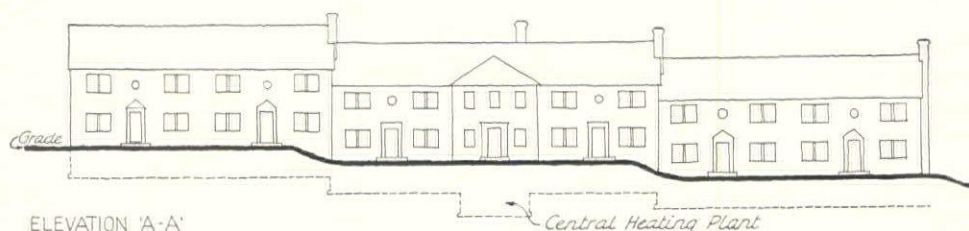
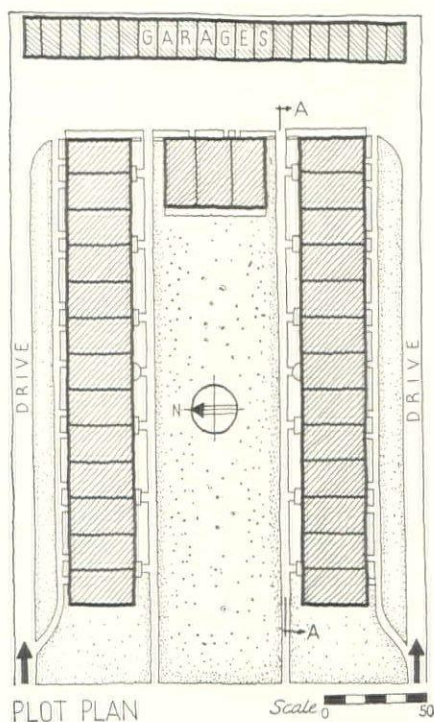
PLUMBING: Soil pipes—Eastern Foundry Co. Water pipes—Streamline copper pipe and fittings, Mueller Brass Co.

HEATING: Forced hot water system. Boiler and radiators—National Radiator Co. Automatic Motor Stoker, Bell & Gossett Co. main copper tube risers and returns and clock control thermostat.





Reclaimed brick for veneering concrete block walls was dictated by a desire for a seasoned exterior appearance—not by a desire for economy. While second-hand brick proved to be 20 per cent cheaper than new brick, it was 25 per cent waste and required 35 per cent more labor. Net result at Kent Court was an insignificant saving of about 2 per cent on the project's \$175,000 construction cost.



CONSTRUCTION OUTLINE

FOUNDATION: Walls—cinder concrete blocks. Waterproofing—Anti-Hydro Waterproofing Co.

STRUCTURE: Exterior walls—selected common brick, waterproof sheathing paper, sheathing, studs, U. S. Gypsum Co. rock lath and 3 coats plaster. Floor construction—2 x 10 in. joists, 16 in. o.c., $\frac{7}{8}$ x 6 in. T. & G. sub-floor. Ceilings—plaster on rock lath, U. S. Gypsum Co.

ROOF: Construction—2 x 8 in. rafters, 16 in. o.c. with $\frac{7}{8}$ x 6 in. T. & G. sheathing, covered with 30 lb. felt and No. 1 Bangor slate, Bangor Slate Co.

INSULATION: Outside walls and attic floor—4 in. rock wool, U. S. Gypsum Co.

WINDOWS: Sash—double hung, Silentite, with screens, Curtis Cos. Glass—Lustra, double strength, American Window Glass Co.

FLOORS: Main rooms red oak. Kitchen—linoleum. Bathrooms—Franklin Tile Co.

WALLPAPER: Imperial Paper & Color Corp.

WOODWORK: All material by Curtis Cos.

HARDWARE: Material by Schlage Lock Co.

PAINTING: All paints by Smith-Corwin, Inc.

Floors—wax, Minwax Co.

ELECTRICAL INSTALLATION: Wiring system—BX. Switches—Westinghouse Electric & Mfg. Co.

KITCHEN EQUIPMENT: Refrigerator—Frigidaire Corp. Sinks—Eljer Co.

BATHROOM EQUIPMENT: All fixtures by Eljer Co. Seat—C. F. Church Mfg. Co.

Shower—Standard Sanitary Mfg. Co. Cabinet—Morton Co., shower doors by F. W. Lee.

PIPES: Chase Brass & Copper Co.

HEATING: Vapor system by Gorton Heating Co. Boilers and radiators—Weil & McLean.

Coal stoker—Motor Stoker Corp. Thermostat—Minneapolis-Honeywell Regulator Co.



HOUSES IN HALF THE TIME spring from new construction

techniques and split-second clocking. A cost victory in Victorville, Calif.

WHEN a number of houses are built consecutively, it is expected that time spent in building each one will decrease as work progresses. But striking is the man-hour comparison of 30 almost identical houses built for the Southwest Portland Cement Co. of Victorville, Calif., the last of which took only half as long to build as the first. This time-saving record reflects not only the gradual acquaintance of workmen with a construction method, but also a noteworthy application of industrial techniques to home building. Responsible was a vociferous exponent of such production methods, Builder Paul DeHuff, backed by the able planning of Architects Adrian Wilson and Erle Webster.

At Victorville were applied three basic methods used by any factory to cut production time: 1) complete rationalization of the product and its parts before work is started, 2) smooth flowing assembly involving a minimum of waste effort, halts and hitches, and 3) tab-keeping of work as a continuous check on efficiency. Parts were pre-cut and delivered to the site of each house. Workmen were divided into small crews, given limited and repetitive operations to perform. And last, but high in importance, Builder DeHuff clocked the progress of his job with the enthusiasm of a tyro efficiency expert, ended up with a detailed record of the man-hours of work needed to complete every part of every house. These records took the guess out of time-saving methods, kept DeHuff's finger smack on the pulse of construction.

Project. Purpose of the 30 houses was to supply low cost quarters for the truck-driver employes of the Southwest Portland Cement Co. Housing facilities of the town of Victorville were inadequate, so perforce those employes were scattered far and wide over the country-side. To relieve this situation, the company sought out Architect Adrian Wilson and his associate, Erle

Webster, put them to designing a minimum house of cement. Plan was to duplicate the result 30 times—in two rows of fifteen houses each—on a stretch of company-owned desert about a mile from Victorville.

Architect Wilson first developed a basic floor plan of four rooms, then provided for its reversal and for changing the position of entrance and fireplace. This gave him four variations. He then designed six roof styles. Result was 24 different exteriors with a minimum of change in the plan.

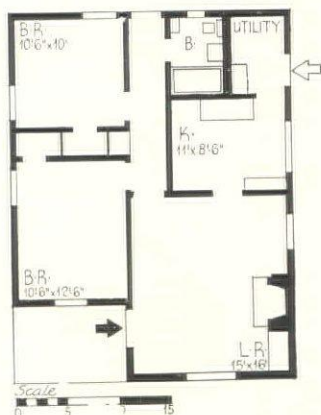
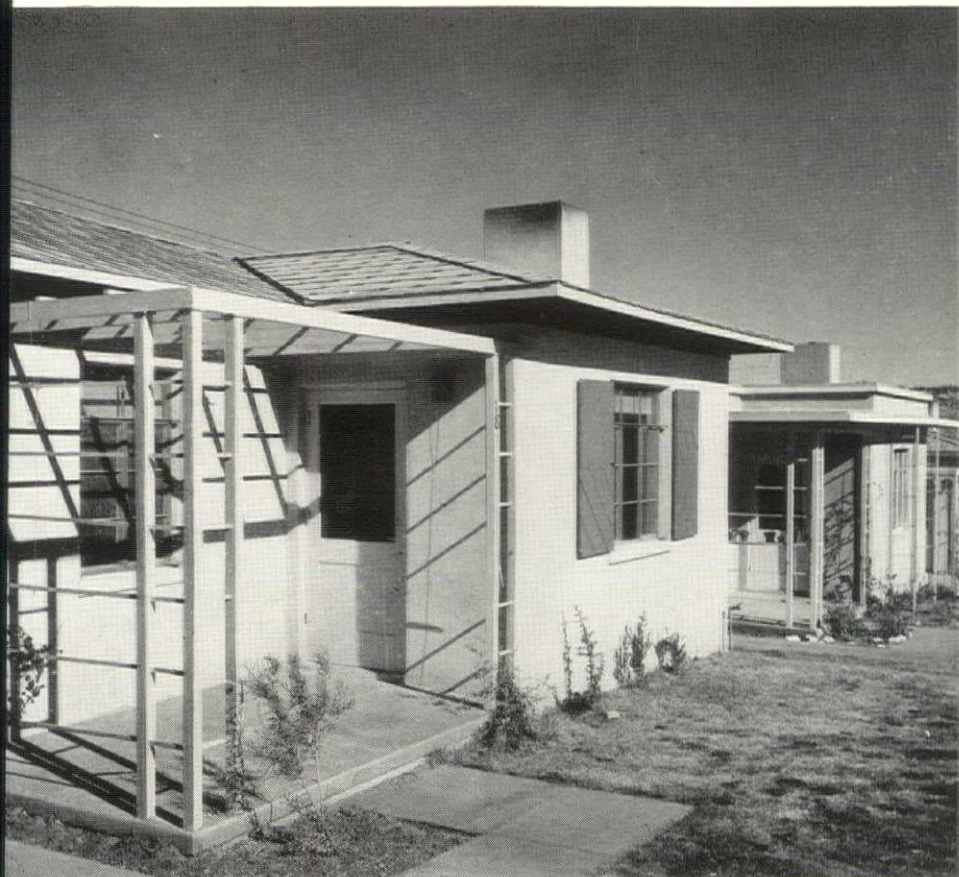
Dry and temperate Mojave Desert climate permitted simplified structure and use of unit gas heaters (supplied by tenants) rather than a central heating plant. In cooperation with the cement company, Wilson devised a system of construction calling for dry-laid cement blocks bonded by reinforced concrete corner posts and studs of concrete poured through holes in the blocks at 24-inch intervals. Cement blocks with interlocking lugs were used, as suggested by General Manager C. C. Merrill of Southwest Portland. They were made at the plant two miles distant. Foundations, window and door frames were also of concrete. No furring was used, both exterior and interior surfaces being plastered with cement mortar and painted in varying bright pastel colors in keeping with desert tradition.

The construction method of Architect Wilson was unusual, but once understood, quite simple. Before starting wall erection, knock-down plank forms were raised and aligned at all house corners. These determined the outside edges of the concrete corner posts; ends of the concrete block walls acted as forms for the inside of those posts and bonded with them. One set of such forms served the entire 30 houses. Wood forms were also used for window and door frames and plywood forms for foundations. Wood templates eliminated waste time in layout by aligning structural parts automatically.

Construction. Work was started in August, 1937, but in the beginning it was under the egis of employes of the cement company, several of whom had foremanned sizable concrete building jobs. They proceeded with orthodox methods of handling and pouring concrete, raising the entire wall dry before pouring the posts and studs. They also poured the mix from wheelbarrows. To do this it was necessary to build a maze of braces and run-ways to wall tops. Their progress was necessarily slow, and the job did not hit its stride. At the end of some 29 days, Southwest Portland made a survey, found thirteen excavations, eleven foundations, eight floors, and the walls of only one house and two garages completed. At such speed they ruefully figured themselves lucky to see the job done within a year, saw their low cost housing climbing into high cost brackets. As a remedy, they hired Paul DeHuff of Los Angeles, gave him free rein to run the show as he saw fit.

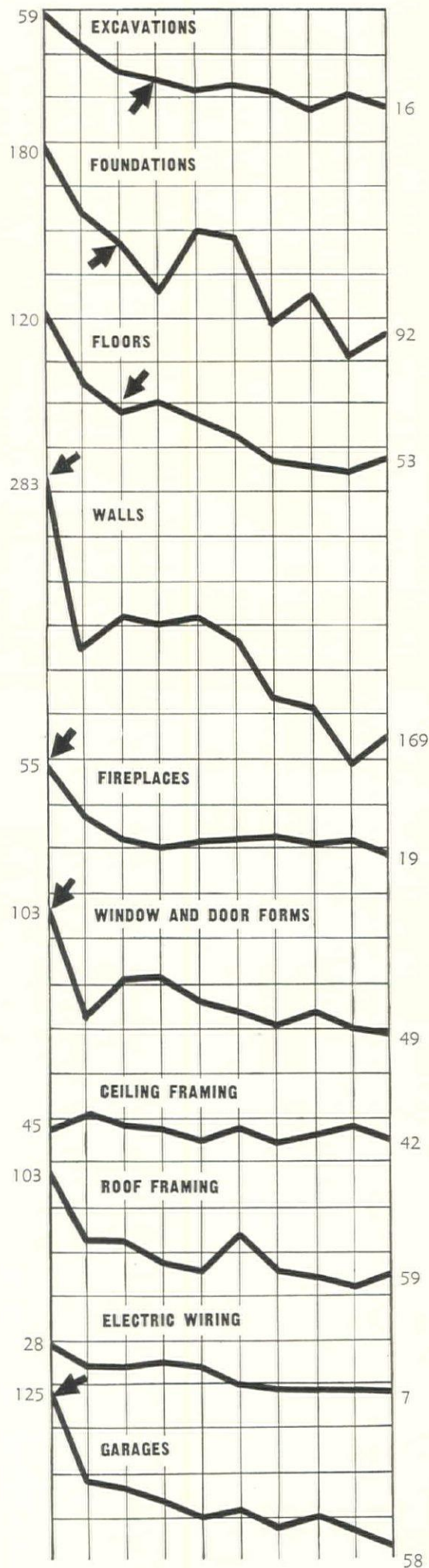
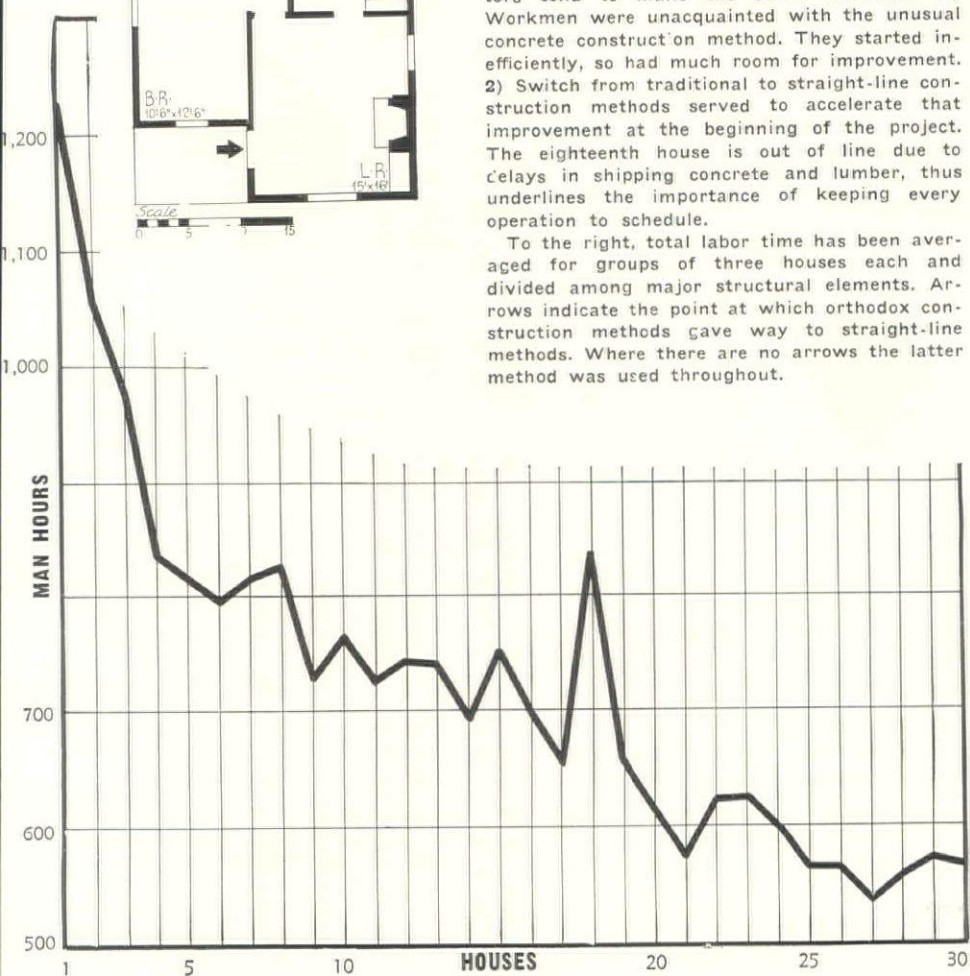
Choice of DeHuff hinged on no past friendship or business dealings. He had simply made himself heard by advocating better integration of construction methods while acting as Vice-Chairman of the Los Angeles Chamber of Commerce Small House Research Committee. Southwest Portland Cement Co. took him up on his advocations, dared him to put them into practice. After studying the job for three days, he took over control on September 1, 1937, immediately hatched his long incubating ideas.

DeHuff figured the total volume of poured concrete used in all work above the floor slab (which obviously involved no construction problem), found it to be something under seven cubic yards per house. His plan of attack was based on a simplified method of pouring this small volume. Instead of raising the walls in one operation, he divided the operation into three parts. After the forms were up, concrete blocks were laid dry to the

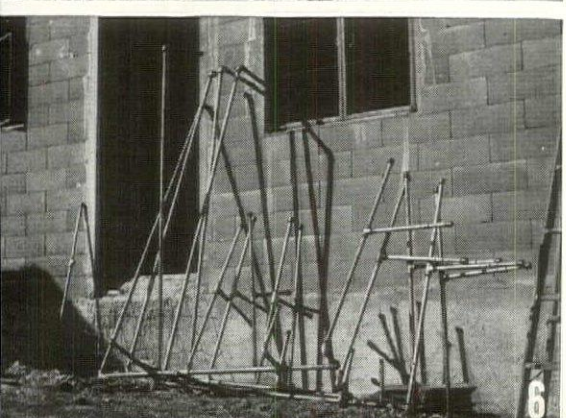
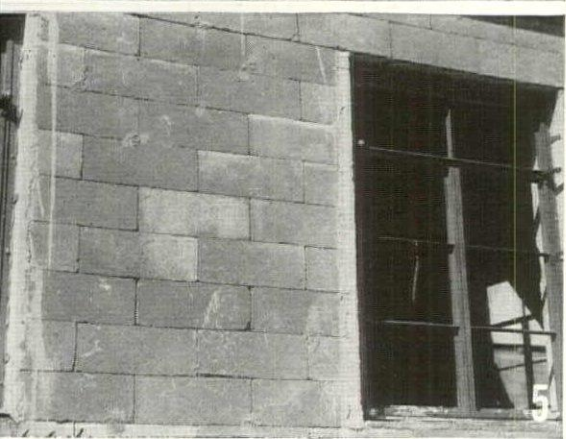
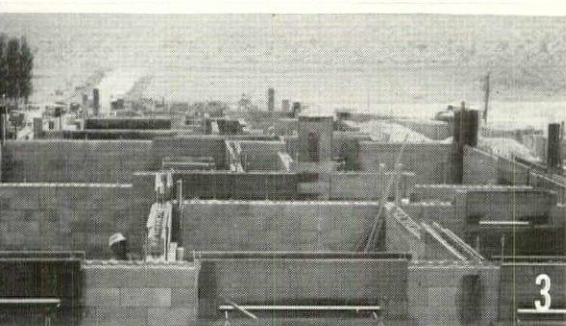
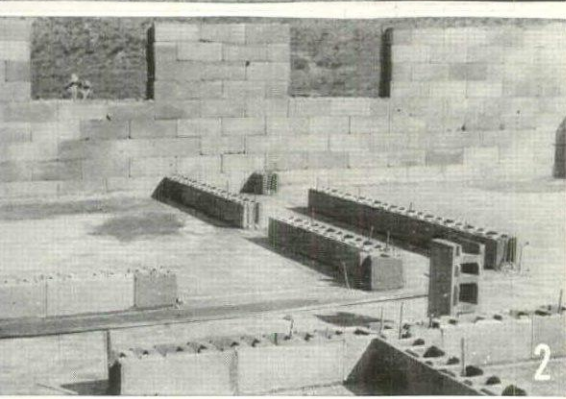


Decrease in total man hours of labor needed to build the basic structure of each of thirty houses is shown below. The rapid decline for the first five houses and the subsequent steadier trend is, in part, an expected building phenomenon. It takes time for workmen to get into the swing of any building operation. But two factors tend to make the curve abnormal: 1) Workmen were unacquainted with the unusual concrete construction method. They started inefficiently, so had much room for improvement. 2) Switch from traditional to straight-line construction methods served to accelerate that improvement at the beginning of the project. The eighteenth house is out of line due to delays in shipping concrete and lumber, thus underlines the importance of keeping every operation to schedule.

To the right, total labor time has been averaged for groups of three houses each and divided among major structural elements. Arrows indicate the point at which orthodox construction methods gave way to straight-line methods. Where there are no arrows the latter method was used throughout.



Vertical: each unit equals twenty man hours.
Horizontal: each unit is a three-house average.



height of the kitchen window sill, and concrete for the posts and studs poured to the top of the blocks. Alignment was made *after* pouring with rubber-headed mallets. When the concrete had set (high early strength concrete was used to speed operations), forms for the windows were laid in place, the blocks built up to window heads and the pouring repeated. Third step, carrying the wall to the plate, completed the process.

This system eliminated the necessity for complicated bracing. To eliminate runways he specified that the concrete be lifted in buckets to the pouring level and directed into the narrow openings through a special funnel which straddled the wall.

Straight Line. Had each house been built separately, this construction method would, if anything, have been worse than the orthodox one. But the men were divided into crews, and each was given a single operation to perform. The work was so integrated that each crew could move from one house to the next with a minimum of interruption. Slight changes in floor plan had little retarding effect on their progress, as every operation was carefully templated and all needed materials pre-scheduled.

To facilitate this "conveyor-belt" method, as much material as possible was cut to size before being hauled to each building and needed only to be dropped into place. Such pre-cutting applied particularly to lumber used in ceilings and roofs, following, in theory, a method developed by DeHuff and later sponsored by the West Coast Lumbermen's Association (ARCH. FORUM, Dec. 1938, p. 475). He was unable to rationalize this method completely in the Victorville project due to the reciprocal purchasing policy of the cement company. Five local lumber companies were each given an order for six houses, made deliveries of uncut lumber at about the time it was needed. This material was cut to templates on a job saw, which was moved from house to house in advance of the framing crew.

As an aid to foremen in installing such pre-cut parts, Architects Wilson and Webster prepared work sheets for each operation, which contained a list and specifications of all materials needed. Each part of the houses was numbered to correspond to numbers on the plan for that operation.

As sub-contracts for all the finish work were let to local firms, straight-line methods were limited to the basic structure and electric wiring. However, proof that they could be carried further was supplied by the plumbing installation. The

plumbing contractor set up a power equipped plant on the job to cut and assemble all parts. He also kept a record on labor costs, found that the last fifteen installations cost only half the first fifteen.

Because the land was owned by the cement company long before the project was started and because much of the construction cost could not be extracted from the company's files without an audit, total cost of the cement houses is of necessity an estimate. Best guess is that each house and garage cost the company about \$2,800. In any case, they will rent for \$25 a month.

Records. Two men were hired at a total cost of \$11 a day to keep records of the work as it progressed, as well as to act as time keepers and to do other clerical work. They surveyed the job four times daily, noted the progress on each house and how much each crew had done. Although there were as many as 150 men working at a time, their records did not get out of bounds. The limited operations each worker performed and the pre-arranged schedule by which they worked made clocking easy.

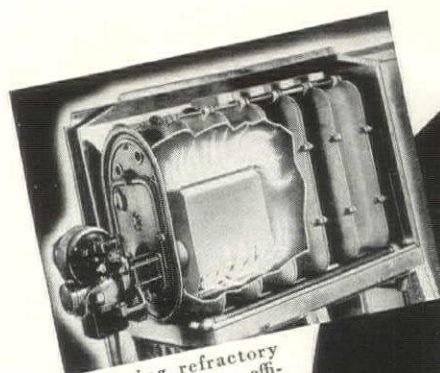
Function of these daily records was to show up any lag in production, any inconsistencies in operation, and to permit an immediate readjustment of all the phases of operation to one another.

Results. That DeHuff produced results is indicated in the fact that the structural shells of the 30 buildings were completed in 60 days from the time he assumed control—only two days to a house. Sub-contractors who followed took another 60 days, so the houses were ready for occupancy by the end of 1937.

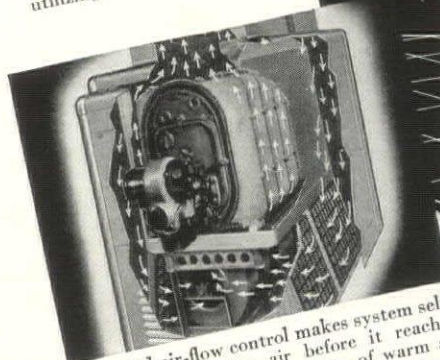
Further indication of the results are the charts on the preceding page, divided into the major construction elements handled by DeHuff. They show the man-hours of labor expended on each house. Obviously, the curves indicate first and foremost the increased efficiency of workmen as they became accustomed to a rather unusual type of construction. This is true even though skilled union labor was used throughout. Weight of this factor does not, however, lessen the importance of factory methods, which served to further depress the curves to an efficient level early in the job—roughly, by the fifth house.

These charts do not, of course, show the cause of fluctuations as would the original tally sheets worked out by DeHuff. Such detailed records are a necessary chaperon in the introduction of more rational building methods, an important aid to integrated building.

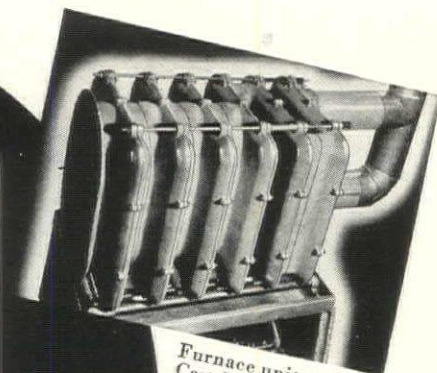
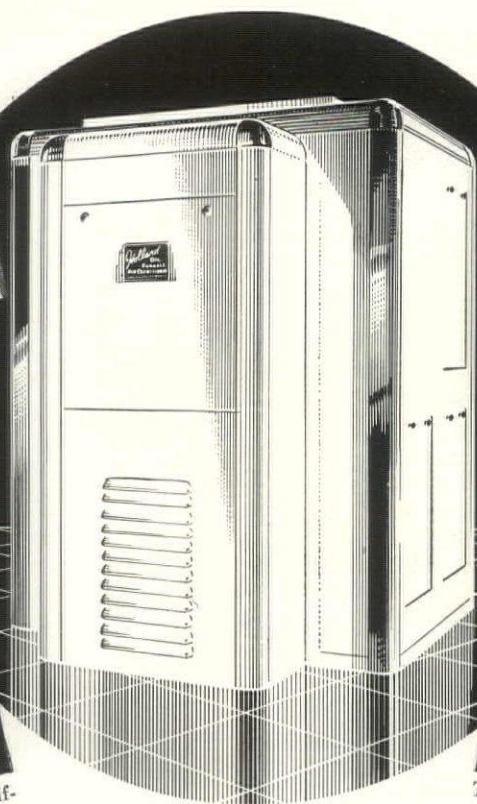
Straight-Line Construction of Victorville's thirty houses: 1. Pre-sized plywood foundation forms are set in place. Foundations are given one day to set before 4 in. reinforced concrete floor slab is poured. Day after that sees topping coat. 2. First course of concrete blocks for interior partitions is set in mortar: atop it, dry-laid courses are held in place by lugs on blocks (visible in picture) and concrete studs poured through blocks. In background is outside wall raised to first of three levels. 3. Walls are raised to second level. Note detachable window forms in foreground, corner forms in middle ground. 4. Pre-cut roofing lessens waste, fits accurately. 5. Steel casement windows are set in integral concrete frames, spaced to fit block module. 6. Pre-cut plumbing is stacked ready for installation.



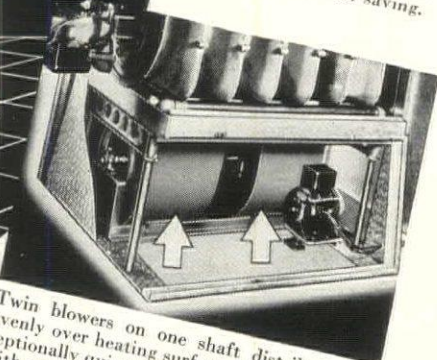
Instant-heating refractory chamber gives maximum efficiency immediately—burns oil in suspension—spreads flame to all parts of combustion chamber, utilizing bottom, top and sides.



Patented air-flow control makes system self-insulating—preheats air before it reaches heating unit—prevents leakage of warm air into basement—another fuel-saving feature.



Furnace unit of Hollandized Cast-Metal heats rapidly and continues to radiate heat after burner stops. Burner does not operate so often nor so long at a time—effects a fuel saving.



Twin blowers on one shaft distribute air evenly over heating surface. Blowers are exceptionally quiet, having no metallic contact with any other part of the system.

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HOLLAND *Automatic Furnace* AIR CONDITIONER

FOR OIL OR GAS

GIVES LOWEST COST WINTER COMFORT

BEFORE a single Holland Automatic Furnace Air Conditioner was sold, Holland engineers had spent many months checking and re-checking performance figures, not only in the laboratory but in actual home installations. As a result, they were firmly convinced that the average installation would certainly cost no more to operate than coal-burning equipment of comparable capacity. This opinion has since been fully confirmed.

Thousands of Holland Automatic Furnace Air Conditioners in use in regions where average prices prevail for all fuels have consistently shown lower

operating costs than the equipment they replaced. In many cases the savings effected by Holland were truly remarkable.

When your specifications call for Holland, therefore, it is positive assurance of a satisfied client. Still more convincing is the fact that the Holland Furnace Company assumes full responsibility to your clients—in fact, fully guarantees perfect heat in every room. If you are not already fully informed about this surprisingly economical unit, why not mail the coupon for complete information?

HOLLAND FURNACE COMPANY

HOLLAND, MICHIGAN

*World's Largest Installers of
Home Heating and Air Conditioning Systems*

HOLLAND FURNACE COMPANY, Dept. AF-3, Holland, Mich.

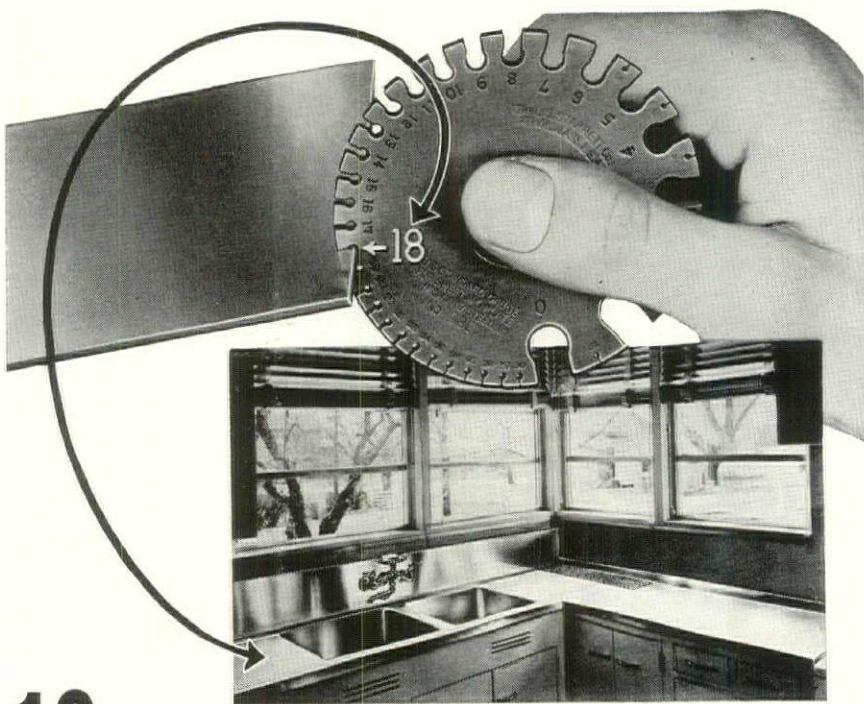
Please mail information on subjects checked below:

- ☐ Automatic Furnace Air Conditioner for Oil or Gas
☐ Coal-Burning Heating and Air Conditioning Systems
☐ Automatic Coal Burner ☐ Automatic Oil Burners
☐ Data Sheets ☐ Have Engineer Call

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Address.....

City..... State.....



18 U. S. Standard Gauge Genuine 18-8 Stainless Steel

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ELKAY "Sturdibilt"
STAINLESS STEEL

Kitchen and Cabinet Sinks

No. 18 U. S. Standard Gauge Genuine 18-8 Stainless Steel means the heaviest, the most sturdy, and the most durable construction ever built into a sink.

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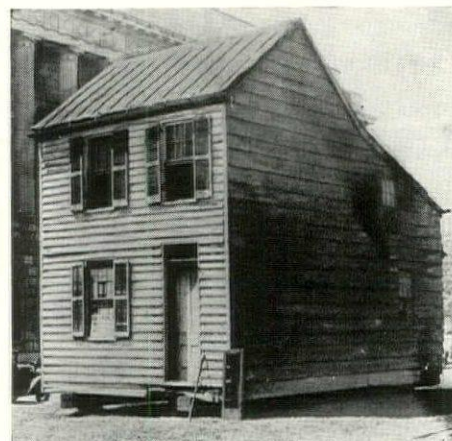
A MODEL REMODELING

entertains Washington, D. C.,
educates 25,000 visitors.

ACCEPTED way to bring a model house and its audience together is to entice the latter to visit the former. Washington, D. C.'s Junior Board of Commerce reversed this procedure, however, and found that the accepted way is not necessarily the most effective. Thus, to give punch to last summer's modernization campaign to "Beautify Washington," they moved an old, decrepit dwelling into the town's most public park, proceeded to remodel it under the public's nose. That the public was interested and intrigued is proved by the 25,000 visitors who inspected the house during the two weeks it was open after work was completed.

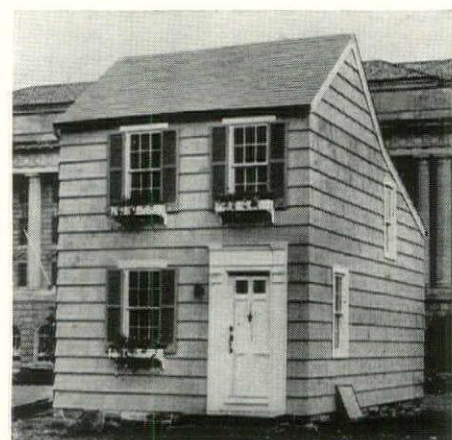
The Junior Board titled their project "The House That Jack Rebuilt," hoped at the same time to show that the "jack" necessary was within the average owner's means. That the original house was a fair test of the remodelers' ingenuity was quite apparent. It looked a total loss both outside and in, but underneath the tatters it was structurally sound. The work therefore centered on resurfacing, decorating and utility installation. To initiate the public into the complexities of such work, the

(Continued on page 36)

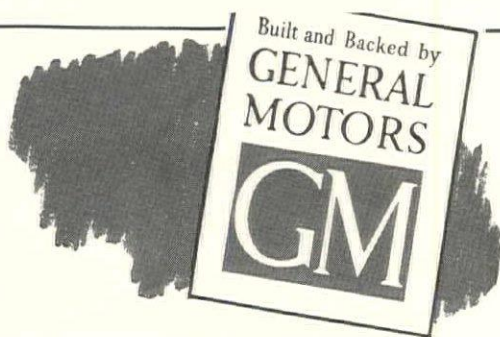


BEFORE

AFTER



Important! Certified Capacity Ratings on DELCO-FRIGIDAIRE AIR CONDITIONING EQUIPMENT



End "Guesswork" Air Conditioning

General Motors makes it possible for you to take the guesswork out of air conditioning. With each Delco-Frigidaire compressor and cooling coil you can get proof of its ability — true *certified* capacity ratings in accordance with the standards established by the American Society of Refrigerating Engineers.

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Only General Motors' vast experience in refrigeration, its complete testing laboratories, and the combination of matched equipment, *designed and manufactured by one organization*, makes possible Certified Capacity Ratings on Delco-Frigidaire Air Conditioning products.

There's a Delco-Frigidaire Air Conditioning Product to Solve Any Air Conditioning Problem

Use Frigidaire Unit Conditioners to efficiently and economically air condition offices and for special departments of larger stores. For bigger jobs, our capable, highly-trained field organization is ready to help you plan an air conditioning system and also analyze the proved investment value of air conditioning for your clients.

Whether your air conditioning problems will be solved with self-contained Frigidaire Unit Conditioners or a duct system, Delco-Frigidaire assures you of installations at the lowest possible initial cost for the highest possible operating efficiency.

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AIR CONDITIONING & HEATING PRODUCTS

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DOOR NEWS

NEW YORK CITY JANUARY, 1939

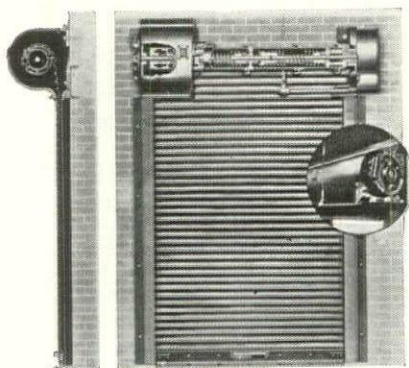
New York City Board of Standards Approves Kinnear "Akbar" Fire Door

Subjected To Three Hour Test Required by City's Revised Building Code

The New York City Board of Standards and Appeals officially approves the Kinnear "Akbar" Fire Door as a fire retardent fully complying with the city's revised building code. To obtain this approval a standard Kinnear "Akbar" Door was subjected to a required three-hour fire test. This was conducted at the Underwriters' Laboratories, in the presence of a committee representing the Board and according to the Board's specified standards.

This test provides further evidence of the efficiency of Kinnear "Akbar" Fire Doors as a fire retardent for interior or exterior doorways. For many years doors identical in design to the one used in this test, have been installed throughout the world. During that time they have successfully passed innumerable tests, both in laboratories and in actual conflagrations.

The report on this latest test and other detailed bulletins will be gladly sent upon request.



THE KINNEAR MFG. CO.

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KINNEAR
ROLLING DOORS

(Continued from page 34)

Board purposely carried out its program one step at a time.

Cooperating with the Junior Board of Commerce were a total of 48 sub-sponsors—local firms of every calling from material dealers to department stores—who contributed all materials and labor, and reduced the Junior Board's remodeling expenditure to zero. Enthusiastic over the town's best building publicity in many a moon, those sub-sponsors outdid themselves in contributing both quality and quantity. That their enthusiasm was justified is illustrated by the experience of the firm that provided the insulation. It handed out some 3,500 pamphlets during the course of only one day's construction.

Cost. Limit of remodeling cost set by the Junior Board of Commerce was \$1,500, so that a FHA-insured modernization loan could be amortized in five years for less than \$25 a month. And the limit was not exceeded; they hit the \$1,500 smack on the nose. Any Washington remodeler wanting to duplicate the job would have to shell out his money as follows:

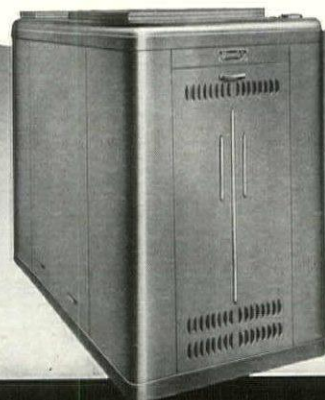
Lumber, millwork and doors.....	\$200
Carpenter labor.....	400
Wall board.....	100
Electric wiring (includ. labor).....	70
Roof (including labor).....	120
Paint (including labor).....	100
Plumbing and bathroom fixtures (including labor).....	300
Hardware and fixtures.....	100
Circulating heater.....	50
Miscellaneous	60
	<hr/> \$1,500

In addition to that total, a local department store splurged \$650 on furniture and fittings, made the House that Jack Rebuilt ready to live in.

To keep the house before the public while it was open for inspection, the Junior Board showed that it had more than one publicity ace up its sleeve. At the opening ceremony a key to the house was given to Miss Washington, the year's beauty, and a local broadcasting station put speeches and a room-by-room description of the house on the air. Also, the Junior Board of Commerce and a member of the local Board of Trade put up a \$100 prize for the best amateur appraisal of the property's worth—assuming that it was located in a nearby suburb rather than in a public park. Proving that appraisers-by-guess may sometimes be right, three Washingtonians out of 203 picked \$3,375 as the value, and so did the professional judges. To pick a single winner the Junior Board turned from appraisal to essays, paid the \$100 to the best writer on remodeling.

After the fanfare had died down and The House That Jack Rebuilt had served its purpose, it was carted off—back to its prosaic lot in southwest Washington.

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MONCRIEF
Winter Air Conditioning



**Heats... Filters... Circulates...
Humidifies at moderate cost**

● Moncrief Air Conditioning Systems are complete, and so reasonably priced that they present amazing value for such high quality air conditioning. Made in a wide range of sizes, they operate economically in small or large homes. Specially designed models for gas, oil and coal (hand or stoker fired). Readily installed in any type of building—new or old—they give the architect a real opportunity to conserve on space requirements since a Moncrief system can be placed in a remote and inconspicuous corner and function with full efficiency. Ducts may be elevated and even entirely concealed in the ceiling. Moncrief Engineering Service simplifies the architect's and the builder's task and is freely available without cost or obligation.

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WASHABILITY

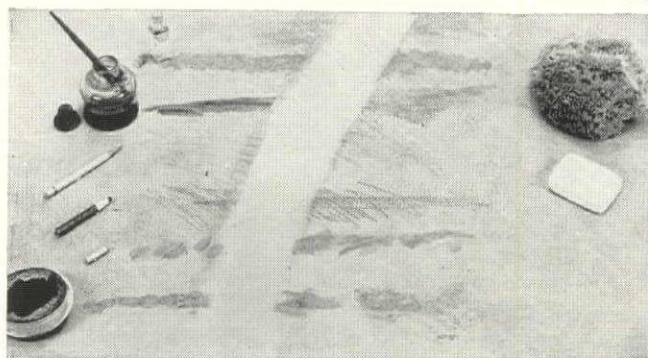
**A CANDIDATE
WITH A
CLEAN
RECORD**



This candidate doesn't indulge in fancy promises. He stands squarely on his record. He points to thousands of walls that have been washed and rewashed again and again. For *real washability* is a big advantage of flat paint made with Dutch Boy White-Lead and Lead Mixing Oil.

Real washability means two things. (1) The beauty of this paint is not destroyed by hard scrubbing. (2) Those scrubbing actually get you somewhere. The test panel at the right shows how stubborn stains and dirt really do "come out in the wash." Walls that can be kept clean do not need to be repainted so often. Therefore, real washability means a real economy for your client.

But there's more to the story of Dutch Boy money-saving than that. This paint has all the durability for which white-lead has long been famous. It mixes quickly, spreads easily and has high coverage—800 sq. ft. per gal. on smooth plaster. Those three qualities mean low first cost. Then add long wear and real cleanability, and you have *long-run* economy also.



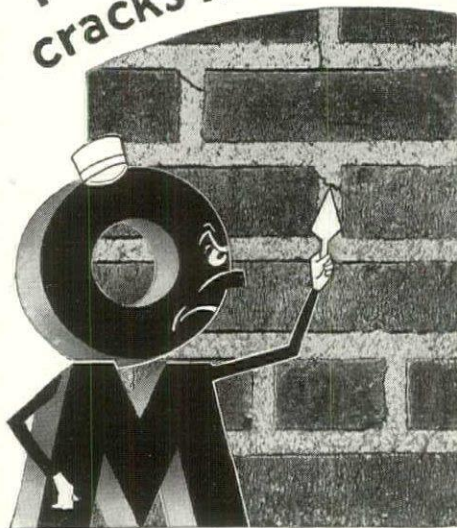
This test panel is a 2' by 3' piece of wallboard, painted with Dutch Boy White-Lead and Dutch Boy Lead Mixing Oil. For a solid week, this panel lay in a busy corridor. The test panel was walked on by hundreds of people daily. Horizontal streaks show how it was then defaced with grease, ink, pencil, crayon, shoe blacking, lipstick, etc. Swath shows marks completely removed by washing with soap and water.



**DUTCH BOY WHITE-LEAD
AND LEAD MIXING OIL**

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 Building, Philadelphia.

"I check shrinkage cracks like these!"



OMICRON MORTARPROOFING is the SURE cure for cracks— principle cause of leaky walls

"O. M." attacks the cause — assures the cure of leaky mortar joints—by reducing the excess mixing water which causes shrinkage cracks. "O. M." also increases workability and bond strength of all mortars.

For over seven years on hundreds of projects, "O. M." has produced weather-tight walls. Scores of leading architects testify to its efficiency. Ask for details.



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Archit. & Engr.—Wyatt C. Hedrick, Ft. Worth, Texas. Builder—W. S. Bellows Const. Co., Oklahoma City, Okla.

Wyatt C. Hedrick, prominent Texas Architect, says, "On many of our buildings, for several years your product, Omicron Mortarproofing, has been furnished . . . results have been very satisfactory . . . we do not hesitate to continue specifying and recommending it."

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THE MASTER BUILDERS COMPANY
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HOME BUILDING COSTS

**go up in twelve cities,
down in seven.**

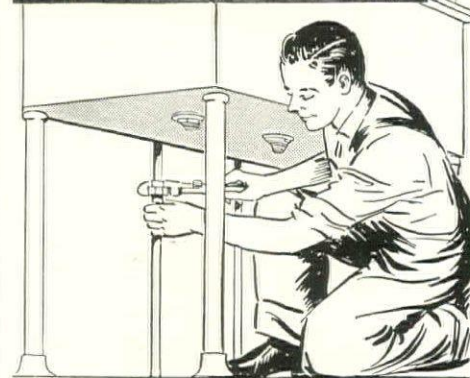
WHILE the trend of construction costs is considerably steadier than a year ago, the monthly index of the Federal Home Loan Bank Board indicates that no positive movement up or down has taken place in recent months. Thus, in January the FHLBB sampled labor and material costs in 25 cities coast to coast, compared them with those of October and found that the trend was upward in twelve cities, downward in seven, unchanged in four. A comparison in the remaining two cities was impossible.

Interesting is the fact that, while cost decreases were outnumbered by increases, the former averaged 6 mills per cu. ft. while the latter averaged only 3 mills. Largest decrease, 12 mills, was reported by Spokane, Wash.; others in excess of 5 mills, by Duluth, Buffalo and Fargo. Only increases of comparable importance were those of 5 mills in Evansville and Des Moines.

FHLBB's Indianapolis District alone returned consistent reports: January cost of building the Board's base house in each of its five reporting cities was higher than in October.

For a description of the 24,000 cu. ft. house upon which costs are based, see ARCH. FORUM, Dec. 1938, p. 485.

FHLBB DISTRICTS STATES AND CITIES	CUBIC FOOT COSTS			
	JAN. 1939	OCT. 1938	JAN. 1938	JAN. 1937
NEW YORK:				
NEW JERSEY:				
ATLANTIC CITY	\$0.241	\$0.246	\$0.247	\$0.256
CAMDEN	.233	.231	.238	.230
NEWARK	.231	.231	.223	.223
NEW YORK:				
ALBANY	.242	.244	.258	.233
BUFFALO	.255	.263	.261	.243
UTICA	.239	.236	.236	.236
WHITE PLAINS	.258	.260	.262	.249
INDIANAPOLIS:				
INDIANA:				
EVANSVILLE	.244	.239	.240	.230
INDIANAPOLIS	.243	.240	.238	.229
SOUTH BEND	.243	.240	.258	.256
MICHIGAN:				
DETROIT	.258	.257	.254	.229
GRAND RAPIDS	.246	.245	.246	.219
DES MOINES:				
IOWA:				
DES MOINES	.262	.257	.261	.256
MINNESOTA:				
DULUTH	.249	.258	.260	.237
ST. PAUL	.272	.272249
MISSOURI:				
KANSAS CITY	.242243	.227
ST. LOUIS	.253	.250	.259	.259
NORTH DAKOTA:				
FARGO	.236	.243	.248	.239
SOUTH DAKOTA:				
SIOUX FALLS	.271	.268	.264	.243
PORTLAND:				
IDAHO:				
BOISE	.253	.250	.247	.249
MONTANA:				
GREAT FALLS	.291292	.274
OREGON:				
PORTLAND	.229	.227	.232	.222
UTAH:				
SALT LAKE CITY	.245	.245	.252	.237
WASHINGTON:				
SEATTLE	.261	.261	.271	.255
SPOKANE	.250	.262	.273	.266

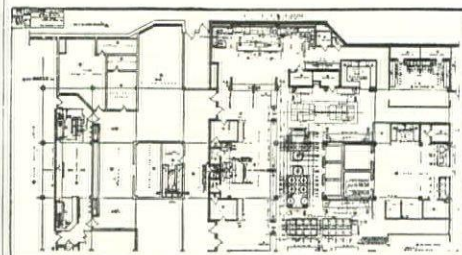


THE PLAN for FOOD SERVICE

LIKE any other part of the plan, be it hotel, institution or school, it is necessary to place the various items of equipment in the several departments so that the least number of steps results with proper flow of traffic between.

Unless provision has previously been made for service outlets (water, gas, steam, electricity, etc.) at the proper points, the exposed piping may be unsightly or even make it impossible to install the desired equipment as intended. It may even increase installation cost or be a source of continual expense in use.

**Have you a food service problem
on any job now on the boards?**



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



*Your clients' -
for better
living!*



New 1939

General Electric Kitchens

**"THE WHOLE ROOM IN A PACKAGE
... COMPLETE FROM ONE SOURCE"**

• General Electric presents, for your approval, an entirely new and even better line of G-E Electric Kitchens, at new lower prices for 1939!

Complete General Electric Kitchens are available in practically any size, any style, any price class. Equipment includes the new 1939 G-E Triple-Thrift Refrigerator; Electric Range; Electric Sink; Top and Base Cabinets with new and exclusive features and appointments; Lights—complete in every detail.

Everything in the kitchen comes from General Electric—in a "package." All appliances and cabinets are matched for perfect harmony of design. All sections are interchangeable for maximum flexibility. Installation is readily made in new or existing homes and apartments. Send for detailed information, to General Electric Company, Specialty Appliance Division, Section CG3, Nela Park, Cleveland, Ohio.

See G-E "House of Magic" at Both Fairs

GENERAL  ELECTRIC



Cabinets

BY GENERAL ELECTRIC

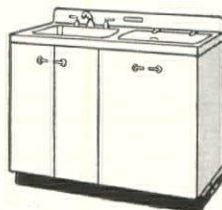
*with these new
exclusive features:*

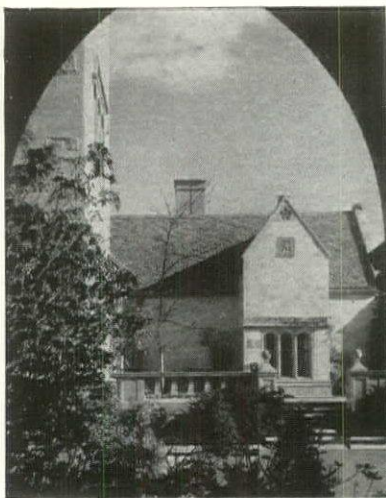
• Automatic Interior Lighting in top and base cabinets • Adjustable, Sliding Steel Wire Shelves • Concealed Spring-Action Hinges • Interchangeable Drawer Sizes

Plus sturdy, welded *all-steel* construction, roller bearing drawer guides, and sixteen (16) time-saving, labor-saving accessories to delight the hearts of modern homemakers.

NEW 1939 G-E ELECTRIC SINK

New styling, new features. Combines the G-E Dishwasher and G-E Garbage Disposall in one attractive kitchen appointment that replaces the conventional sink. Washes dishes, pots and pans, and disposes of food wastes—*electrically!*

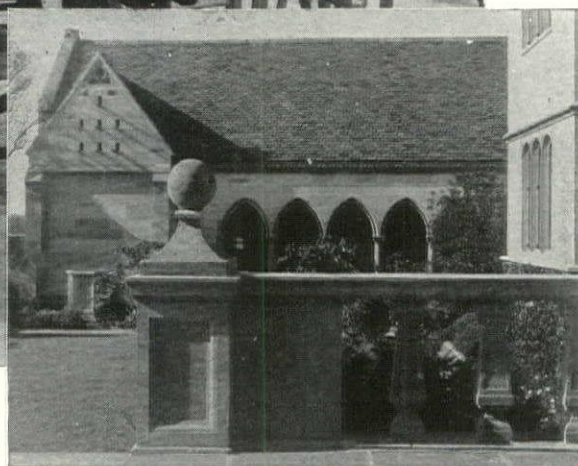




Photos by R.W. Tebbs



A RESIDENCE IN GREENWICH, CONN.
Alfred Hopkins & Associates, Architects, New York City
Braun & Chamberlain, Painting Contractors, Orange, N. J.



AS a beautiful gem is enhanced by an appropriate setting, so is this interior rendered more attractive by the proper finishing materials. There is a distinctive charm about enameled woodwork. The clean-cut simplicity of its beauty is well exemplified here. And because Vitralite, the Long-Life Enamel, is as durable as it is beautiful, no thought need be given to refinishing for years. (This is also true of Vitralite on exterior surfaces).

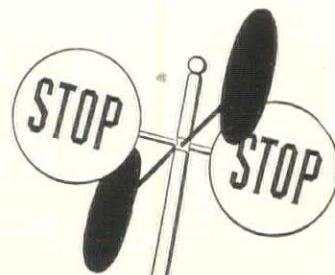
Pratt & Lambert Paint and Varnish

Likewise, Lyt-all Flat imparts a soft, quiet tone to walls and ceiling. It is an ideal combination. To thus interpret and meet the architect's conception in the finished work, is the constant endeavor of the Pratt & Lambert Architectural Service Departments. Whether mansion or cottage, the same interest and co-operation regarding finishing materials, are yours for the asking. Use this service!



Pratt & Lambert-Inc., Paint & Varnish Makers • New York • Buffalo • Chicago • Fort Erie, Ont.

Where traffic is a problem



The answer is a floor of Armstrong's Asphalt Tile

HALLS and corridors call for special floor treatment. Many architects have found the solution in Armstrong's Asphalt Tile, the resilient flooring that withstands heavy traffic.

This low-cost, durable flooring can be installed over any type of subfloor—and it is the only type of resilient floor that can be installed over concrete in direct contact with the ground, on or below grade.

There's plenty of scope for attractive designs when you use Armstrong's Asphalt Tile. Its many plain and marble effects may be combined in a wide range of colorful floors. The marble patterns are especially suited for entries, since tracked-in dirt is less visible against these grainings.

Asphalt Tile is easily cleaned and kept clean. Daily sweeping and occasional washing and waxing keep it neat and serviceable for years. Scuffing feet do not wear off the colors, because they run through the full thickness of the material.

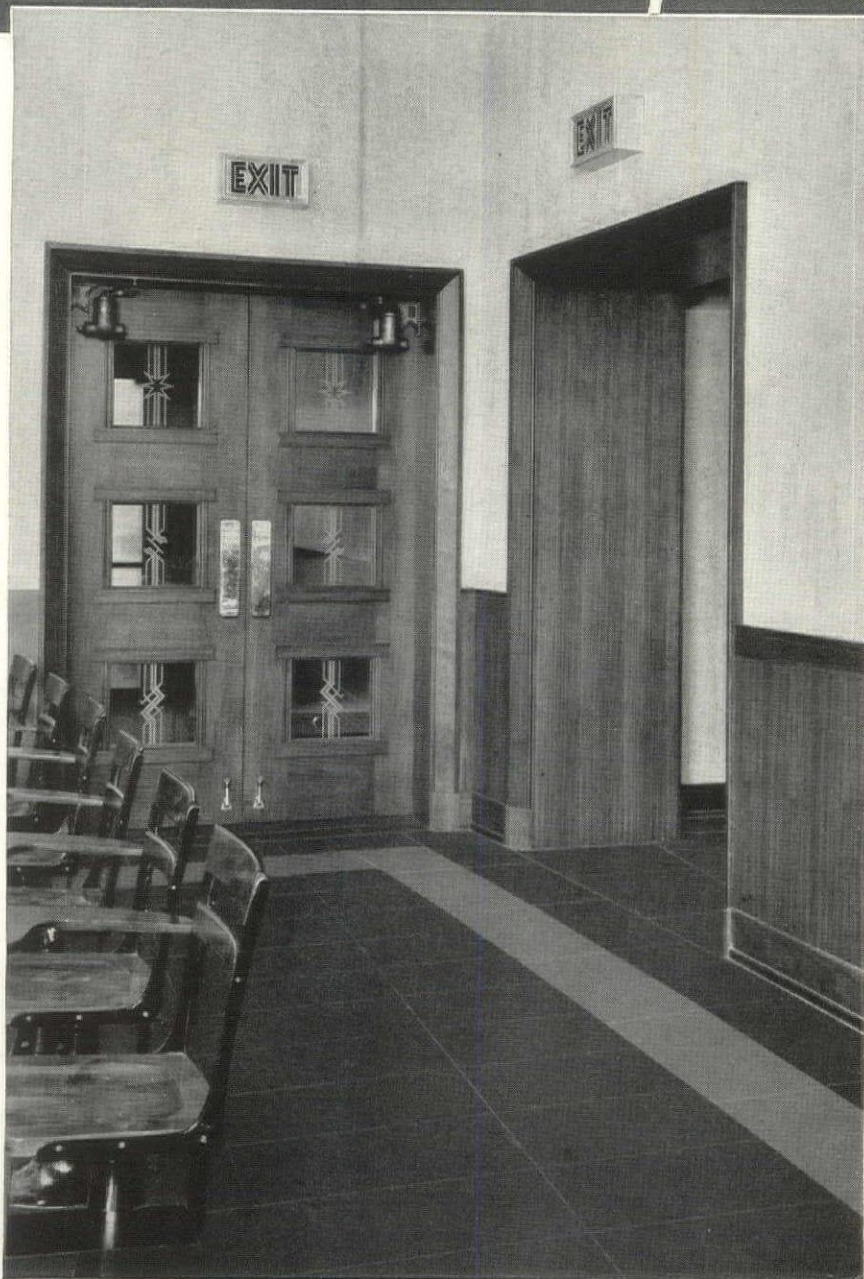
See Sweet's

You'll find complete information about Armstrong's Asphalt Tile in *Sweet's*. Or write for a file-sized copy of color-illustrated "Asphalt Tile Floors." Armstrong Cork Company, Building Materials Division, 1204 State Street, Lancaster, Pa.

Armstrong manufactures the only complete line of resilient floorings: Asphalt Tile, Linotile (Oil-Bonded), Cork Tile, Rubber Tile, and Linoleum. Therefore, our Architectural Service Bureau is in a position to give you unbiased advice on floors for every requirement.



PLANNED FOR TRAFFIC is this entry hall floor in the McCaskey High School, Lancaster, Pa. Architect Henry Y. Shaub specified Armstrong's Asphalt Tile, Corkotastic, and Linowall for many important areas in this school.



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

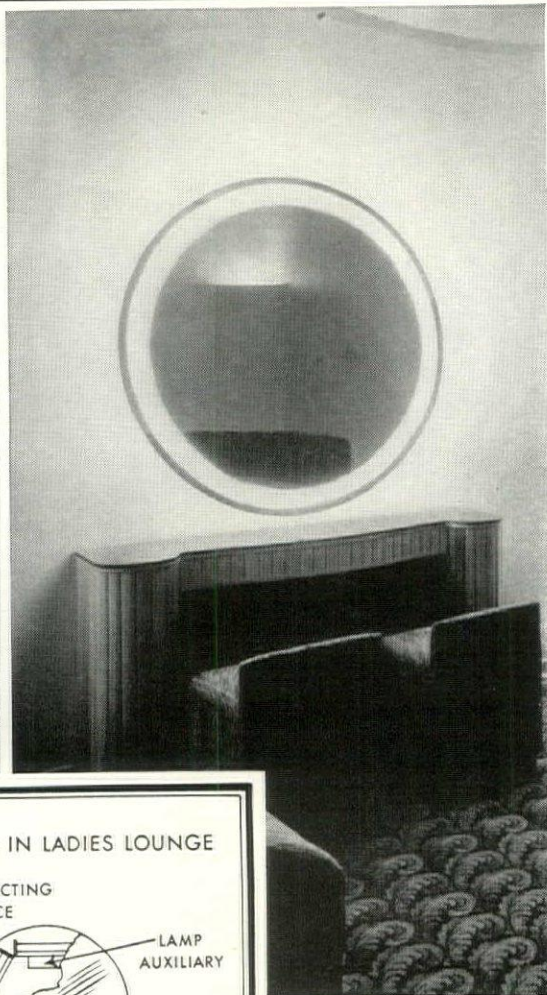
Armstrong's **LINOLEUM**
and **RESILIENT, NON-CERAMIC TILES**

CORK TILE • LINOWALL • ACOUSTICAL CEILINGS

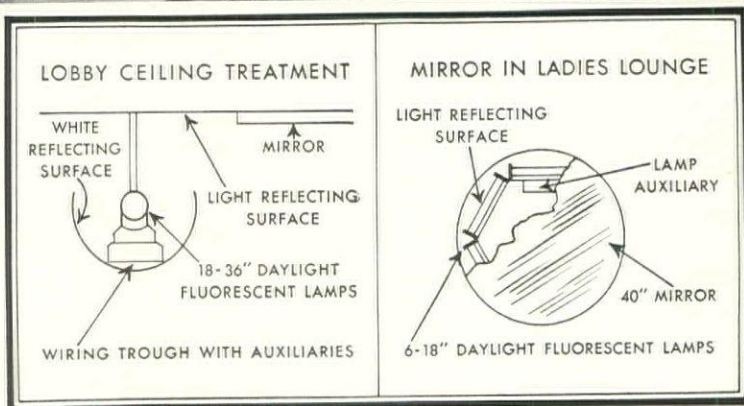
HOW G-E FLUORESCENT MAZDA LAMPS ENHANCE THEATRE ARCHITECTURE



The new Lakewood theatre lobby in Dallas is lighted with daylight fluorescent MAZDA lamps, used in silhouette strip lighting of the mirror ceiling. E. C. Zrenner of the Interstate Circuit, and H. F. Pettigrew, architect, planned this installation.



Daylight fluorescent lamps behind the mirror provide well-diffused light in the ladies' lounge. A wall urn with incandescent lamps can be seen in the mirror.



THE new G-E Fluorescent MAZDA lamps offer architects several distinct advantages in designing theatre lighting. They give several times more light than incandescent lamps of the same wattage and color. And since, for the same amount of light, they are 50 per cent cooler, they put less burden on air conditioning plants.

With the daylight fluorescent lamp, which gives the closest approach to real daylight ever produced at high efficiency, architects can build "indoor daylight" into theatres to enhance the beauty of murals and other architectural designs.

The new Lakewood Theatre in Dallas, Texas, offers a good example of the effective use of fluorescent lighting. In the lobby, daylight fluorescent MAZDA lamps have been used for silhouette strip lighting of the mirror ceiling.

Available in pink, blue, green, red, and gold, in addition to warm white and daylight, G-E Fluorescent MAZDA lamps provide a wide range of lighting application for marquees, foyers, auditoriums, lounge rooms, and displays.

For further information, write to General Electric Co., Nela Park, Cleveland, Ohio.



G-E Fluorescent MAZDA lamps come in 18, 24, and 36-inch lengths and in several wattages. Because they are essentially arc lamps, they require special control equipment which is available.

GENERAL  ELECTRIC

General Electric Co., Dept. 166-AF-C,
Nela Park, Cleveland, Ohio.
Please send me your new free booklet giving
useful information about G-E Fluorescent
MAZDA lamps.

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Company.....
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City..... State.....



Wheels...

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It is no coincidence that America consumes more steel per person than any other nation--and has the highest standard of living. *Steel* makes possible our modern life and its multiple comforts.

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Spikes.

25-7A



YOUNGSTOWN

FORUM OF EVENTS

(Continued from page 12)

COMPETITIONS

TO DEVELOP THE PROPER USE OF GLASS BLOCK. A series of four competitions, held quarterly, sponsored by the Owens-Illinois Glass Company and conducted by *The Architectural Forum*. See pages 23-26 incl. for detailed announcement and program of Competition I, for the design of A Small House. Prizes for each of the four total \$2,500, and a series of Grand Prizes totaling \$5,000 will be automatically awarded to those scoring highest on a point system in the series. Subjects of Competitions II, III and IV are respectively a Group of Three Stores, a Dairy, and A Newspaper Plant. Each will be judged in a different city, by jurors recruited from the areas located about these cities. Competition I closes May 22, 1939 at midnight. Open to architects, architectural designers and architectural draftsmen and approved by the American Institute of Architects.

COMPETITION FOR MEMORIAL DESIGNS. Prizes totaling \$1,500 are offered by the Barre Granite Association, through the National Alliance of Art and Industry, Inc., in the 1939 competition for cemetery

memorials, open to all designers, artists, architects, craftsmen and students. The contest closes on September 1. Entry cards and programs may be had upon request from the Barre Granite Association, Barre, Vt.

POSTER CONTEST. Prizes amounting to \$1,500 are offered by the Devoe & Reynolds Company, Inc., in their second annual poster contest, the subject, "Travel—in America." The Jury will be announced later. Closing date April 30. Application blanks and programs may be obtained from the Devoe & Reynolds Company, Inc., 34 Oliver St., Newark, N. J.

AWARDS

COMPETITION FOR A FESTIVAL THEATER AND FINE ARTS BUILDING AT THE COLLEGE OF WILLIAM AND MARY, WILLIAMSBURG, VA. Sponsored by The American National Theater and Academy. Avowedly educational in its objectives, the competition leads to no contract for subsequent architectural services. It was the subject of a statement by The Committee on Architectural Competitions, A.I.A., published in

The Octagon for December 1938: "The Institute authorities here express their disapproval of the competition and deny the participancy of their members in jury service but do not deny participancy as competitors, this exception being made because of the late issuance of this order." First prize (\$1,000) was awarded to Eero Saarinen, Ralph Rapson and Frederic James of Cranbrook, Mich.; Second prize (\$600) to Philip L. Goodwin and Edward D. Stone of New York; Third prize (\$400) to Philip L. Goodwin and Edward D. Stone of New York. (See page 10)

Citations (\$100 each) to Richard Neutra of Los Angeles; Hugh Stubbins and Marc Peters, Jr. of Boston; Bissell Alderman and William H. Hartman of Cambridge; Henry E. Hebbeln of Cranbrook; and Will Rice Amon of New York. The jury: Lawrence B. Anderson, Assistant Professor of Architecture, M. I. T.; Leslie Check, Jr., director, the Baltimore Museum of Fine Arts; Antonin Raymond, architect, of New York; Lee Simonson, scenic designer and theater consultant; and Roland A. Wank, TVA Chief Architect. Professional adviser, Kenneth K. Stowell, A.I.A., New York.

(Continued on page 48)

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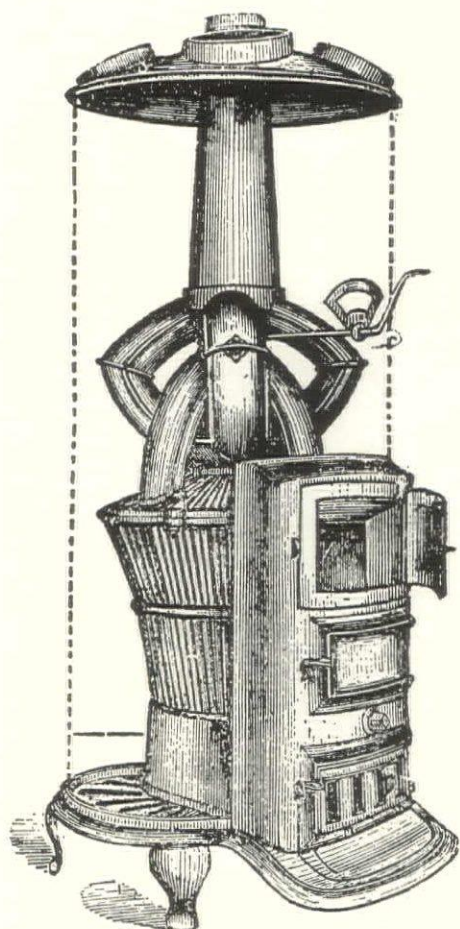
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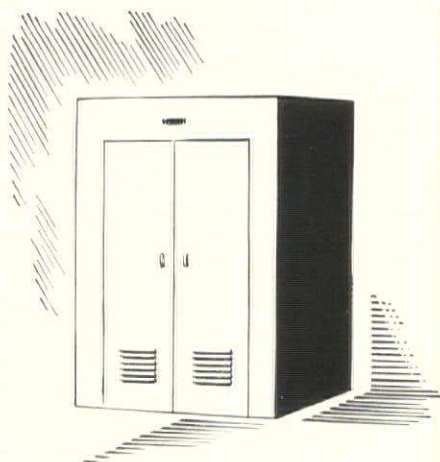


YESTERDAY

YESTERDAY'S architects planned home heating with such queer contraptions as you see above. They were the latest thing in heating equipment at that time.

Today, the latest thing in heating is the bituminous coal stoker—the modern, convenient method of burning the Universal Fuel—Bituminous Coal.

Both yesterday and today, bituminous coal has been the low cost fuel practically everywhere. Heating, after all, is a local problem. To find the right answer to it, you must know the local costs of fuel, the amount of heat needed, the convenience for which your clients wish to pay. When proper consideration is given all of these phases of the problem, either bituminous coal or coke is most likely to be the right answer. And when you add due consideration for future possibilities of rising prices and shortages of supplies, either bituminous coal



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or coke is the logical fuel for convenient, comfort-giving, economical heating.

Modern designing provides for the use of the Universal Fuel in minimum space with maximum convenience. To help you more easily plan for use of the low-cost Universal Fuel, we have prepared a series of modern heating equipment layouts in typical modern basements. These are published in our free booklet, "The 1939 Basement Plan Book," together with plans for the economical heating of basementless houses with the Universal Fuel and plans for coal bin construction of various materials and ingenious design. Use the convenient coupon to send for a free copy of "The 1939 Basement Plan Book," A. I. A. File 30-G.



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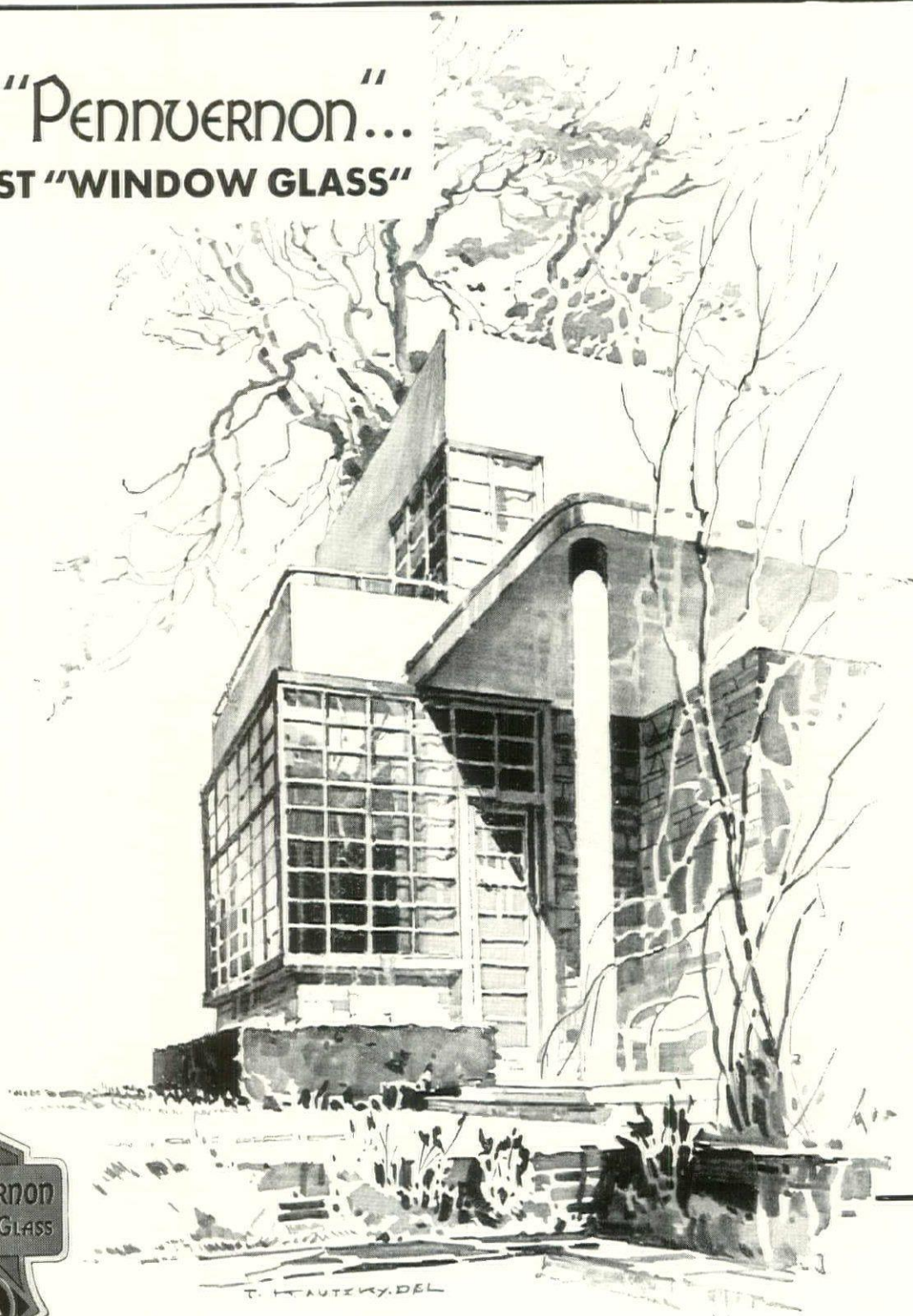
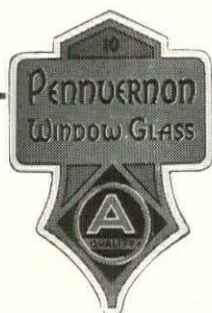
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NOT JUST "WINDOW GLASS"**



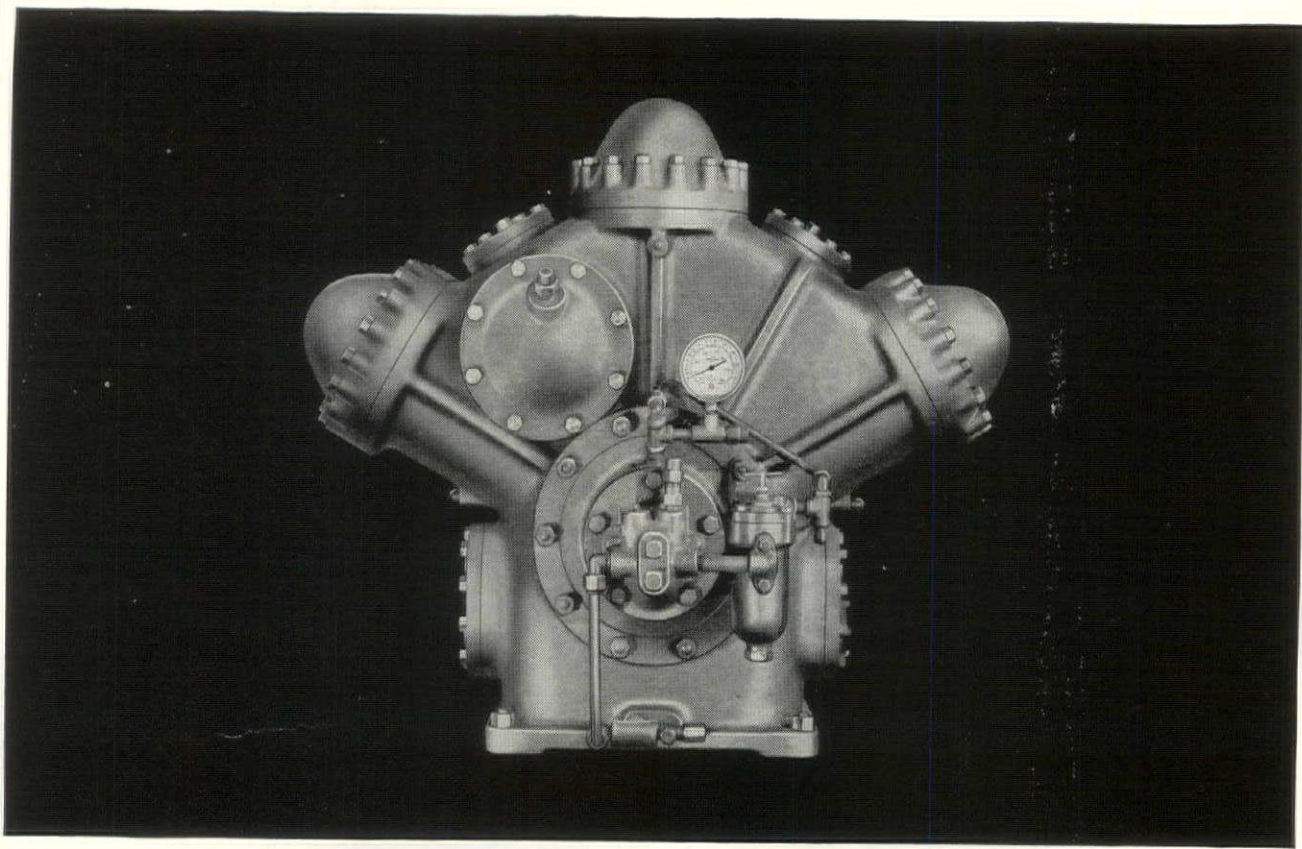
WINDOWS are no better than the glass with which they are glazed. The use of Pennvernion Window Glass insures windows which are exceptionally transparent, which permit clear, satisfying vision and which add to the appearance of a home by their brilliant, reflective surface finish.

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The Revolutionary

YORK "W-TYPE" MACHINE... IS THE BIG NEWS IN AIR CONDITIONING TODAY!



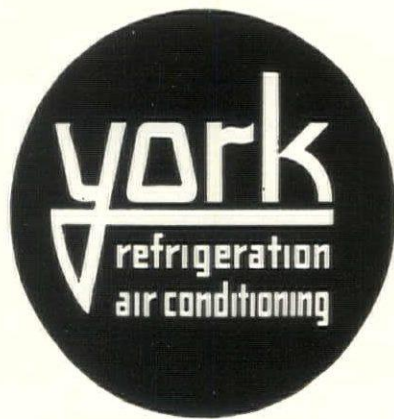
York's new "W-Type" Machine is so compact that it requires scarcely more space than a good sized office desk . . . yet it can produce the cooling effect necessary to air condition an entire office building, hotel or department store!

And this sensational new machine asks no special favors as to where and how it is installed. It is so relatively light in weight and so perfectly balanced that it can be placed on upper floors . . . *without any special foundation!*

The York "W-Type" Machine is statically and dynamically balanced. All cylinders are provided with removable nickel iron liners. Light weight, large free acting valves insure quietness and high efficiency. These, however, are but a few of the many advantages of the York "W-Type" Machine.

For full information about this outstanding development in air conditioning . . . or for consultation about *any* mechanical cooling problem . . . look in the classified section of the phone book for the York Trade-Mark.

York Ice Machinery Corporation, York, Pa. Headquarters Branches and Distributors throughout the world.



HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

FORUM OF EVENTS

(Continued from page 44)

EDUCATIONAL

LESLIE CHEEK, JR., who recently resigned as chairman, Department of Fine Arts, The College of William and Mary, Williamsburg, Va., has been made director of the Baltimore Museum of Fine Arts. President John Stewart Bryan of William and Mary paid a long public tribute to Mr. Cheek in which he said, "The peculiar value of Mr. Cheek's work at The College of William and Mary has been in his perception of the irreplaceable importance of art in college life today."

Edwin Cooper Rust, assistant professor of sculpture, has been appointed to succeed Leslie Cheek, Jr. as head of the Department of Fine Arts.

JOHN STEWARDSON MEMORIAL SCHOLARSHIP. Thirty-ninth competition for the John Stewardson Memorial Scholarship in America is announced. Open only to persons who have studied or practiced architecture in Pennsylvania for at least one year, and who are not less than 22 or over 30 years of age. Full details of the eligibility rules, programs and registration blanks may be had upon application to Edmund R. Purves, The Architects Build-

ing, Philadelphia. Applications are due on or before March 24. The Scholarship carries a stipend of \$1,000 to aid in study at home or abroad.

TIMBER BRIDGE DESIGN CONTEST. Under the joint auspices of the National Lumber Manufacturers Association, American Forest Products Industries, Inc. and the Timber Engineering Company, a contest is open to architects and engineers with a separate classification for students only. Prizes totaling \$1,500 are offered. The problem calls for a design for a highway bridge, span 30 ft. to 70 ft., constructed of timber and employing the timber connector method of construction. Closing date August 15. Jury: R. G. Kimbell, F. J. Hanrahan, L. M. Stevens, J. E. Myer, J. H. Carr, Jr. Details may be had from National Lumber Manufacturers Association, 1337 Connecticut Ave., Washington, D. C.

MISCELLANEOUS

HOUSING AND TOWN PLANNING. An International Congress on the subject of Housing and Town Planning will meet in Stockholm, July 8 to 15, accepting an invitation of the city of Stockholm. There will be

lectures and discussions on the following subjects: House Building for Special Groups; Town Planning and Local Traffic; and Administrative Basis of National Planning. Following the sessions there will be extended study tours offered for choice to those who attend. Further particulars may be had by addressing the Secretary, Mrs. Paula Schafer, International Federation for Housing and Town Planning, 47 Cantersteen, Brussels, Belgium.

PERSONALS

Mario J. Sergio announces the opening of an office for the general practice of architecture at 114 Randolph Ave., Jersey City, N. J.

Antonin Raymond, architect, has opened his office at 11 East 9th St., New York, N. Y.

Henry V. Pope announces the opening of his offices at Delray Beach, Fla.

The Hoffman Specialty Company, Inc., regrets to announce the resignation as of March 1, 1939, of Guy Hutchinson, who has been vice president and general manager of the company for the past seven years. No successor to Mr. Hutchinson's position has as yet been appointed.

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WRITE FOR FURTHER INFORMATION

THE ARCHITECTURAL FORUM announces for April:

LOW COST HOUSE REFERENCE NUMBER

An entire issue devoted to houses costing \$4,000 or Less.

Private enterprise is now building houses in all sections of the U.S. for families with incomes of \$2,000 or under. News today, these houses are certain to be tomorrow's most active building type.

Behind this fact is the important revelation that the Low Cost House is primarily a matter of realistic cost analysis plus skillful interpretation of local conditions through sound architectural design.

The April FORUM covers all phases of the Low Cost House: Plan, Design, Materials and Equipment, Construction Techniques, Finance Methods and Land Improvement — a practical, working text which brings together in one reference volume all significant information available today.

COST REDUCTION—To provide a comprehensive survey of optional methods of cost saving applicable under varying conditions THE FORUM reviews all known methods of cost reduction in materials and labor for Foundations . . . Framing . . . Flooring . . . Roof . . . Exterior Finish . . . Millwork . . . Plumbing . . . Heating . . . Wiring . . . Hardware. In addition there are detailed sections on basic principles of Plan and Design . . . Shop Fabrication . . . Quantity Production . . . Carrying Charges.

50 CASE STUDIES—This reference data is documented with 50 examples of houses recently built in all sections of the U.S. at costs ranging from \$4,000 down. Each house was carefully selected to illustrate noteworthy instances of cost saving and is published with Interior-Exterior Photographs, Floor Plans, Occupancy Cost Data and Sectional Drawings of unusual details.

Do not make up your mind about the Low Cost House field until you have seen this issue.

Only a limited number of copies of the Low Cost House Reference Number will be printed. To avoid disappointment, new subscriptions and renewals should be entered prior to publication of the issue. Simply sign and mail the attached card—it needs no stamp.



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All current subscribers will receive this special issue without extra charge. But to insure receipt of your copy if your present subscription has expired, please use the order card to enter your renewal.

We are anxious to place in the hands of as many interested people as possible this extraordinary demonstration of architectural skill in the field of Low Cost Houses. The attached card provides space where you can list the names of friends and clients to whom you would like us to send an announcement of the Low Cost Reference Number. Your friends will not be plagued nor will your name be used, but your cooperation in suggesting interested individuals will be appreciated.

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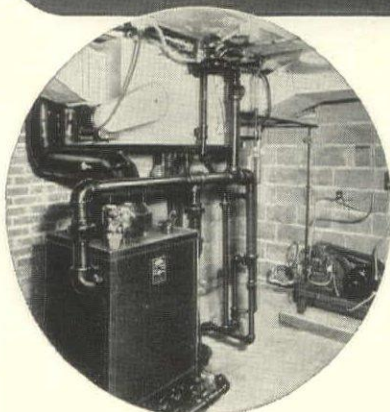
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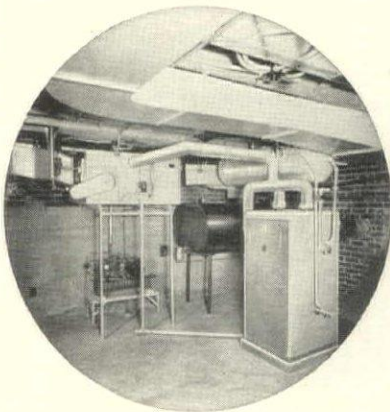
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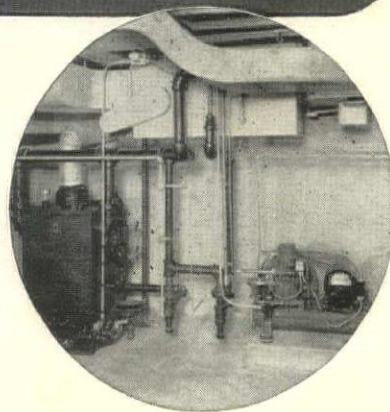
And if you have Kelvinator facts and figures, those clients will probably decide to budget some air conditioning after all.

For Kelvinator presents a complete diversity of soundly engineered yet economical year 'round air conditioning equipment . . . including cooling, heating, dehumidifying, humidifying, filtering and circulating. You can meet every home-owner's needs and every purse.

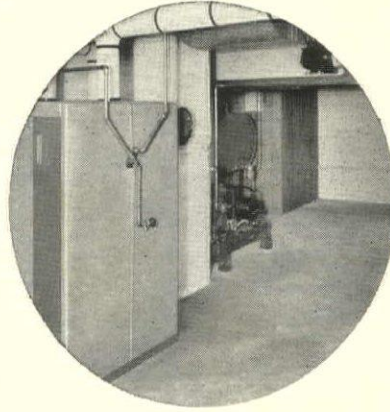
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And from this modest start, right on up. Floor type units with condensing unit remotely installed, special residential conditioners, for year 'round air conditioning—equipment for a single room, home or entire building. Literally, Kelvinator has everything: from the self-contained room coolers to complete Central Systems.

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Residential air conditioning system in connection with Kel-O-Flame oil-fired boiler. Cleveland, Ohio



Kelvinator Air Conditioning embraces: Self-Contained Models including Room Coolers and Store Air Conditioners for "Package" installation—Floor Type Units for installation where duct layouts inadvisable—Suspended Units for installation with or without ducts—Central Systems for larger installations—Complete range, from small rooms to entire building. Oil or gas-fired boilers and furnaces for winter air conditioning.

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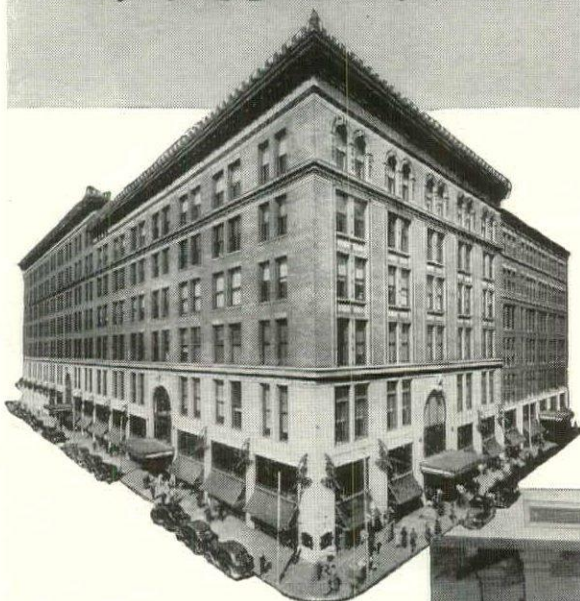
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Secures Complete Low Cost Summer Cooling
—Saves 7% Monthly In Winter Steam Consumption At Joseph Horne Co., Pittsburgh.



1. IN WINTER—"marked savings" in heating costs have resulted since Carrier Air Conditioning was installed, says Building Superintendent, R. W. Robinson. In December, 1936, Horne's used 3,545 pounds of steam per degree day. In the corresponding month a year later, after the Carrier system was installed, steam consumption per degree day dropped to 3,310 pounds, a saving of nearly 7%.

Carrier Works With You!

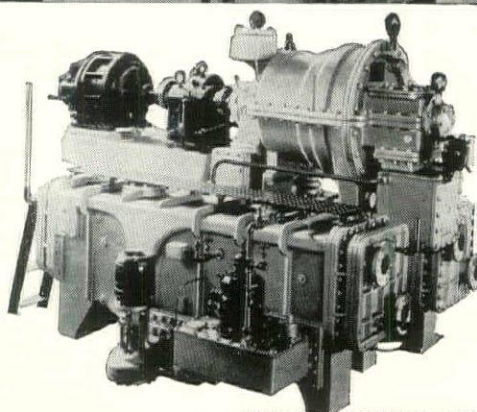
• For 37 years, Carrier has worked closely and successfully with architects and engineers in designing and installing equipment for the handling of air. With its experience throughout 99 countries of the world, Carrier is qualified to help you save money and time in providing the best air conditioning system for your particular job. Whether it is a retail store, hotel, theatre, residence, office building, factory—or even one floor or a single room—Carrier has men and equipment to aid you.

Are power costs a problem? Carrier will recommend and install a Carrier Centrifugal Refrigerating machine that reduces such costs to a minimum. Is water conservation a worry? Let Carrier tell you about the Carrier Evaporative Condenser which saves up to 95 per cent of condenser water consumption.

Consult a Carrier representative when you consider air conditioning. Send in the coupon at the right for further information and the name of the Carrier man nearest you.

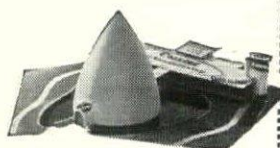


2. IN SUMMER—again Carrier efficiency! Total operating cost of Carrier Air Conditioning system—Summer as well as Winter—is only 4.2 cents per sq. ft. And that includes labor and replacement of filters. Good investment? Right! The increase in business the first Summer for Horne's Carrier Air Conditioned store was 50 per cent more than the average increase for all stores in downtown Pittsburgh.



3. KEEPS COSTS LOW. Two Carrier Centrifugal Refrigerating machines, such as this, enable Horne's to operate its giant air conditioning system at such low cost. Because of the better heat balance provided, waste steam from Carrier Centrifugals can frequently be used to produce store power and hot water—thus providing refrigeration as virtually a byproduct.

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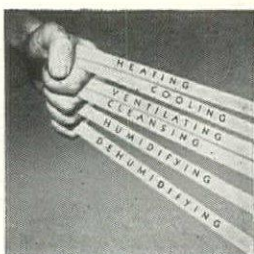
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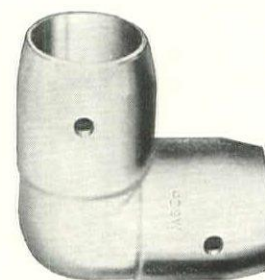
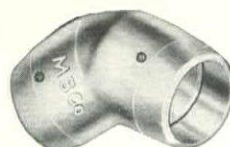
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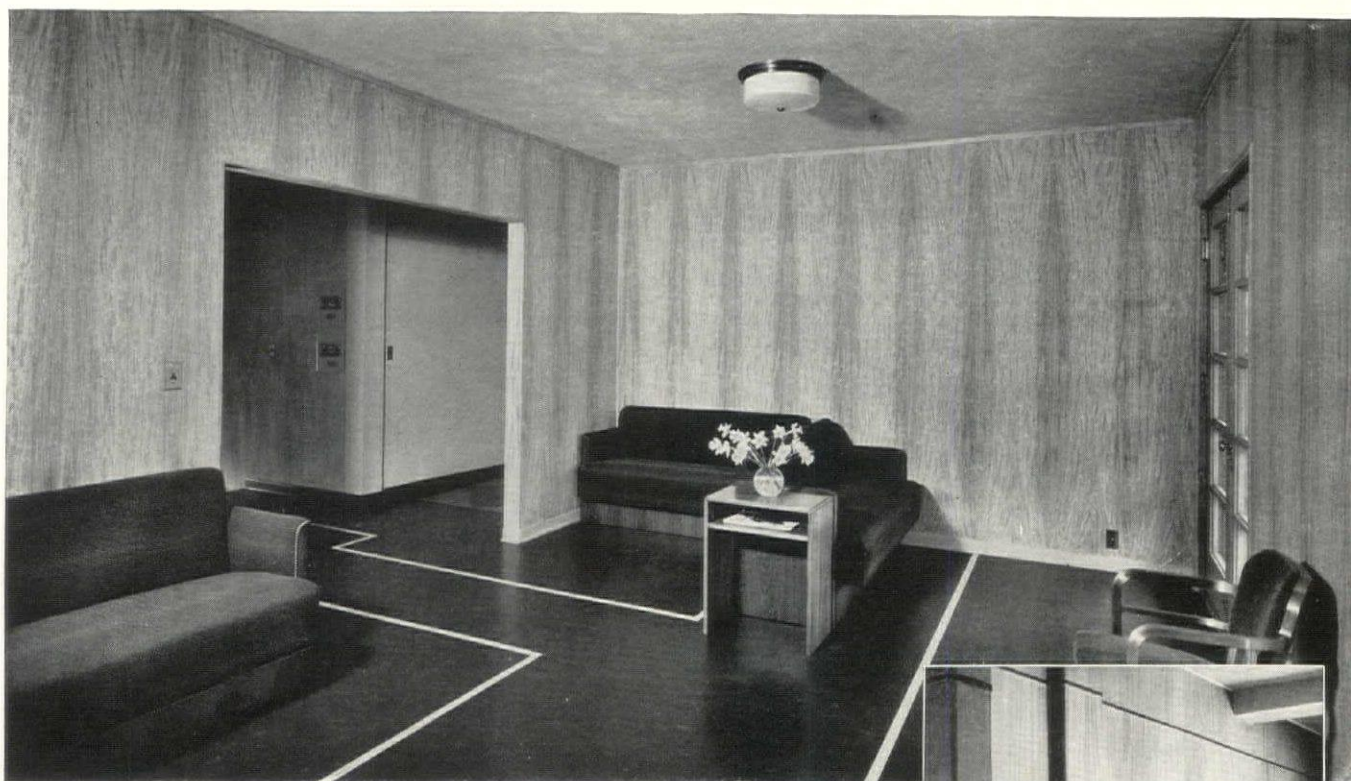
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Modern interior treatments change

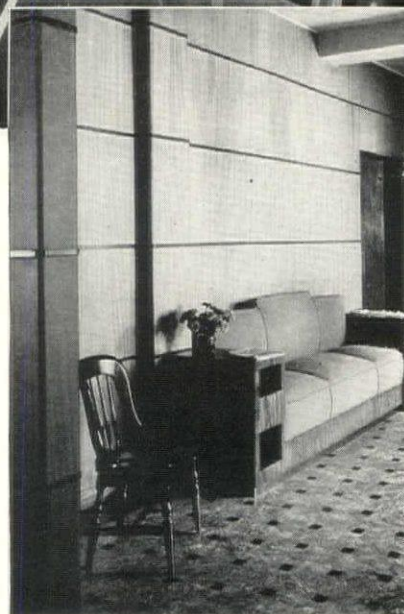


1938 . . . Figured Ribbon Prima Vera Flexwood treatment, second floor Reception Room, Medical Clinical Building, Palo Alto, Cal., Birge M. & David B. Clark, Architects.

flexwood remains!

The speedy pace of modern design is well illustrated by comparing the original Reception Room done in 1932 (right), and the second floor Reception Room added in 1938 (above). Furniture, floor covering, wall treatment are radically different . . . but in '38, as in '32, Flexwood remains the keynote of the decorative scheme. In '38, Flexwood was applied in a sheer, vertical treatment without horizontal moldings. The satisfactory performance of the material over a six year period made it the logical choice for the newer wood treatment. Flexwood places no limitations on creative skill and its cost puts no strain on the normal budget. Samples, and data on Flexwood, are yours for the asking.

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1932 . . . First floor Reception Room, (still in use), showing original Flexwood installation, designed by the same firm of architects. This room and several offices required 8,000 square feet of Flexwood.



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cantilevered stairways

chairs

sliding steel sash

kitchens

bed room details

monolithic concrete stairways

floor types

table designs

dressing tables

bookcases

rattan furniture

andirons

nest tables

dining chairs

entrance gate

wall types

blinds and awnings

MODERN DETAILS Antonin Raymond

wood frame dry construction

roof types

fireplace details

wood and cloth partitions

lighting

ceiling details

hardware

dining room details

reclining sofa

curtains

folding partitions

living room details

storage space

sliding door construction

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THE ARCHITECTURAL FORUM announces its appointment as distributor in the United States for Antonin Raymond's new 118 page portfolio of Modern "Architectural Details."

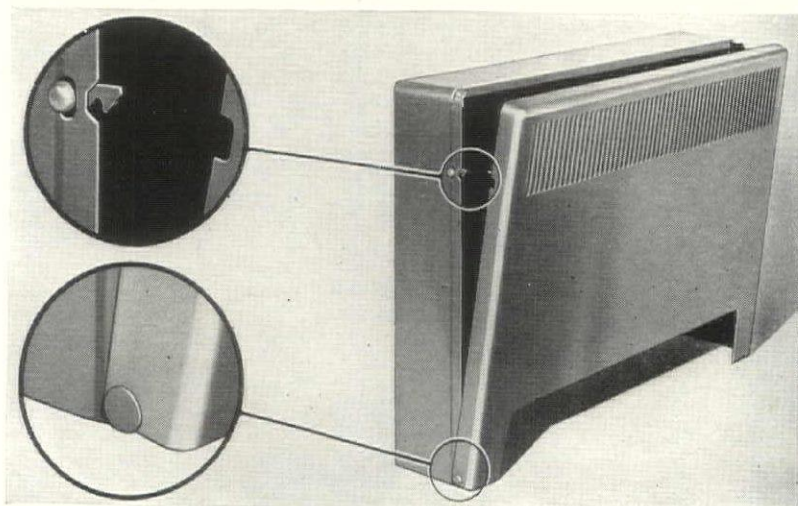
Published by the author, this important work presents architectural elements developed by Mr. Raymond over a period of seventeen years practice in Japan. More than 250 photographic plates and 530 measured drawings reveal original techniques in wood and concrete construction and present dozens of detailed design studies ranging from exterior views and interiors to furniture and fittings.

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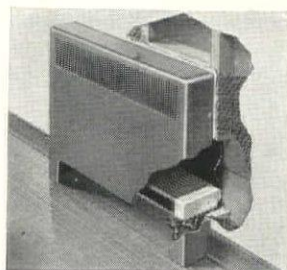
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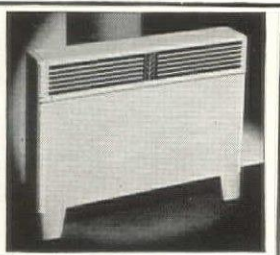


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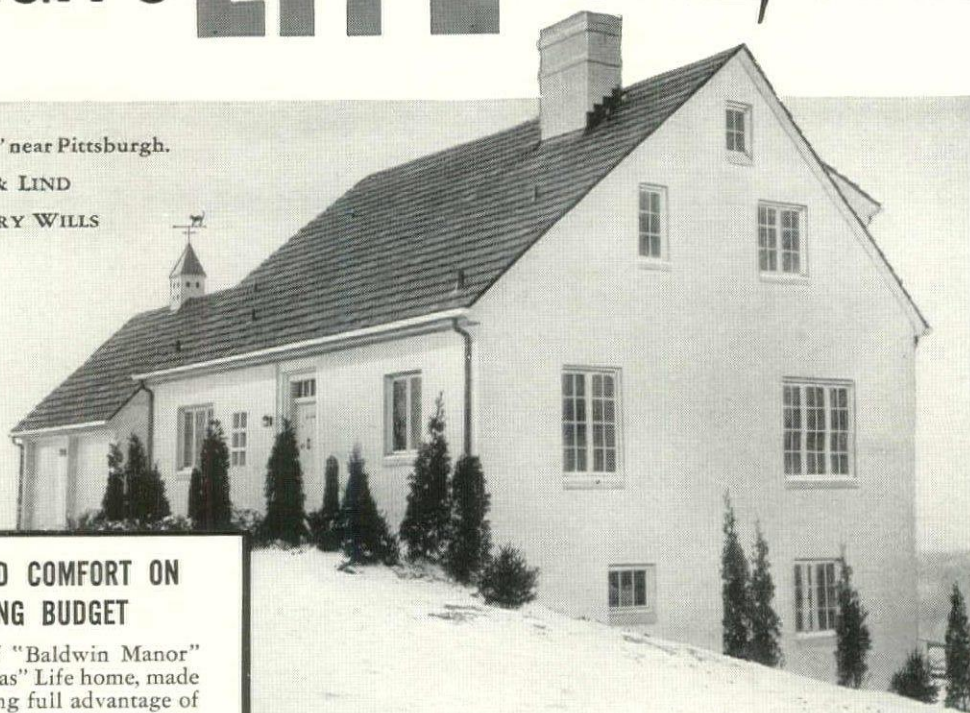
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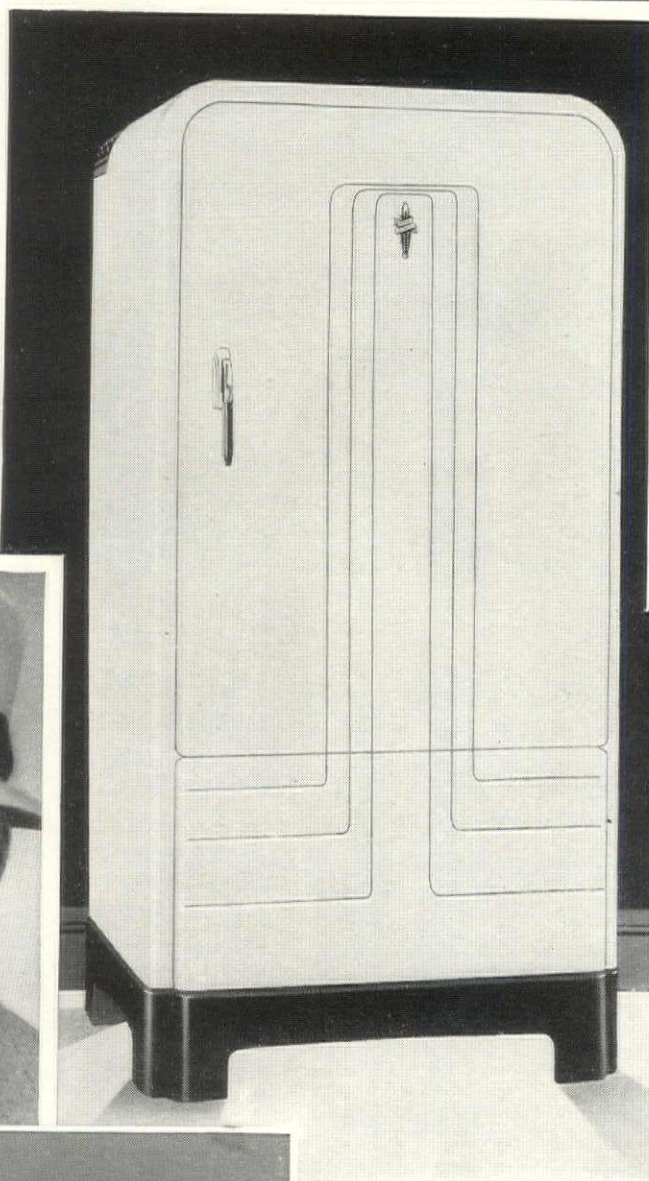
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Gas Refrigerator

Different from all others ...

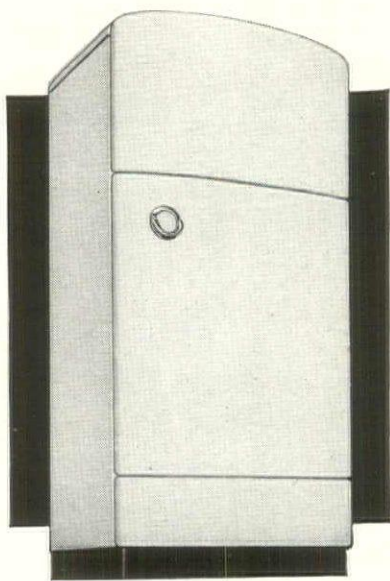
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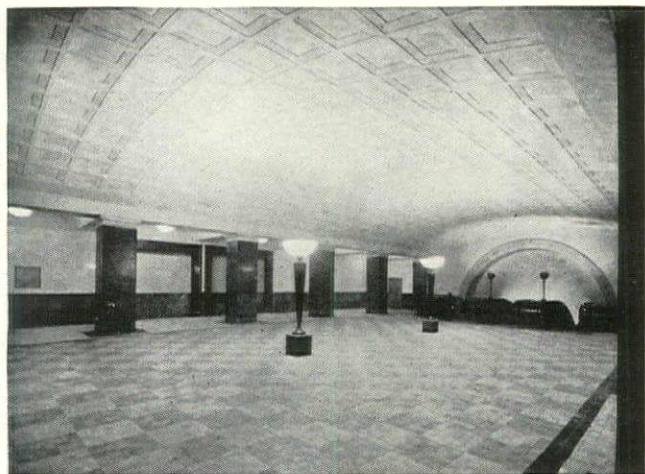
Cold ALONE is not enough!

B O O K S

(Continued from page 28)

THE SEVEN SOVIET ARTS, by Kurt London. The Yale University Press. 381 pp., illustrated. 6 x 8½. \$4.00.

Most current books on the Soviet Union indulge in unqualified criticism or praise; Mr. London in his study of Soviet art has performed something of a journalistic feat by indulging in a little of each. Soviet work in the arts is part of an extensive program for raising the cultural level of a population which was largely illiterate two decades ago, and the book discusses activities in the fields of music, literature, theater, opera, ballet, films, radio, and architecture. Of particular interest is the rather fragmentary section on



SUBWAY STATION, MOSCOW.

architecture. This most noticeable of the arts is apparently going through a phase similar to that of American architecture after the 1893 Fair in Chicago; one difference, however, is the existence of a strong, highly articulate group which is attempting to further the acceptance of modern design. It is unfortunate that more space was not devoted to building, as it is one of the most extensive and least-known of the activities in the Soviet Union. However, the book is of value as a fairly detailed record of artistic endeavor during an exceedingly complex transitional period.

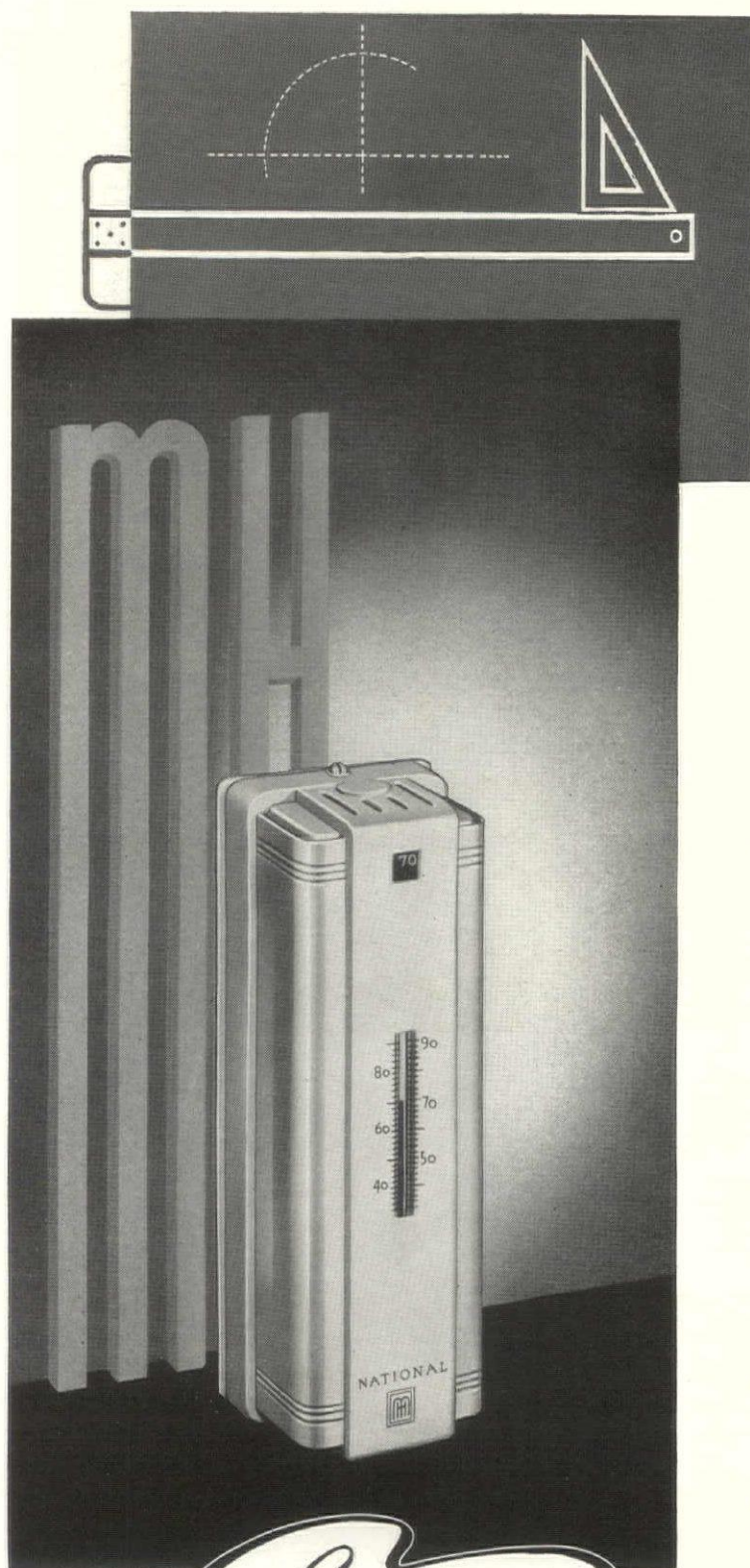
A PORTFOLIO OF ALPHABET DESIGNS, by Irene K. Ames. John Wiley & Sons, Inc. 32 plates. 10 x 15.

The chief merit of this collection of alphabets lies not in its selection, but in the size of the loose-leaf plates which can be removed for study. Unfortunately, only about ten of the plates are worth removing for this purpose, and of these, seven show historic examples. The modern letter designs, which constitute the bulk of the portfolio, are almost without exception in the poorest possible taste.

NEW ORLEANS AND ITS ENVIRONS: The Domestic Architecture, 1727-1870, by Italo William Ricciuti. William Helburn, Inc., New York. 135 plates, 9 x 12. \$10.00.

This collection of photographs and drawings is an excellent addition to the surprisingly meager list of published material on New Orleans. The contents include a number of houses in the Vieux Carré, residences in the Garden District, and plantation houses; details of ironwork, doorways, staircases, cornices, and interiors are shown in separate sections. The photographs are uniformly good and are reproduced at a scale which makes close study possible.

(Continued on page 64)



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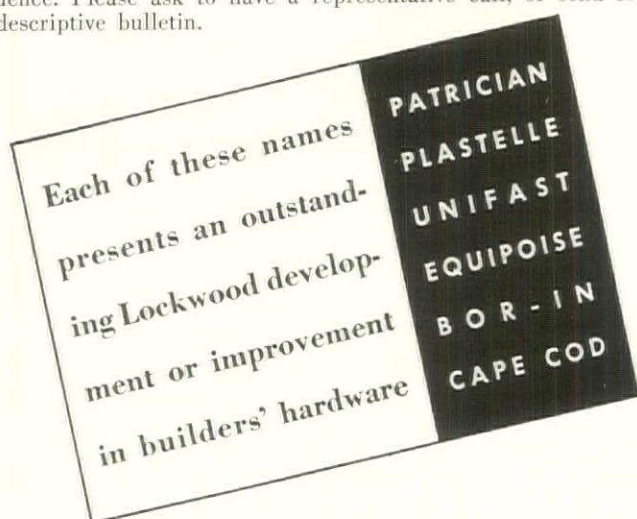
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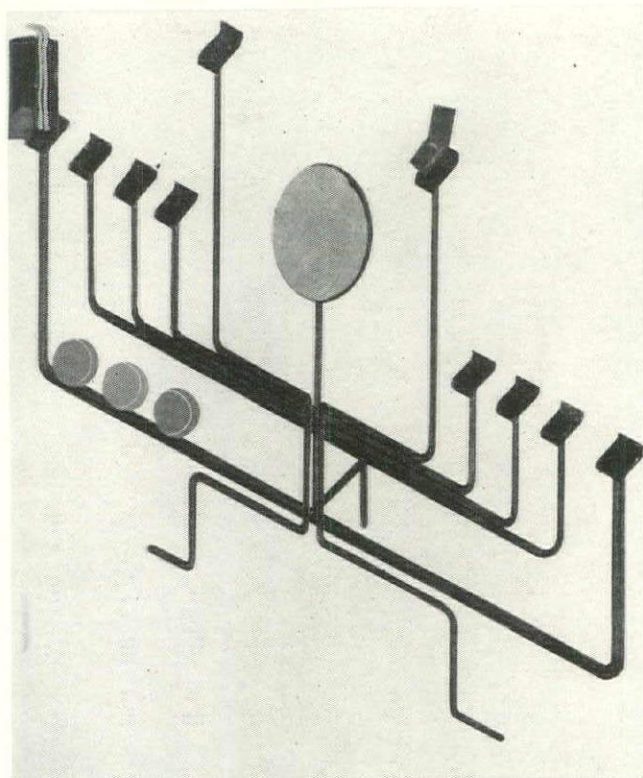
INDEPENDENT LOCK CO., FITCHBURG, MASS.

B O O K S

(Continued from page 60)

CONTEMPORARY ART APPLIED TO THE STORE AND ITS DISPLAY, by Frederick Kiesler, new edition published by Louis Scall, New York, 158 pp., illustrated with drawings and photographs, \$2.50.

Eight years is not a long time in the development of the arts, but enough has happened to commercial design since Mr. Kiesler's stimulating book was first published in 1930 to give it something of the appearance of an historic document. One of the early attempts to survey contemporary art—with reference to the specific problems of store design and display—it shows the Le Corbusier influence in its layout, and has something of the same tendency to indulge in manifestoes. America, according to Mr. Kiesler, discovered Europe in 1918, and discovered modern art at the same time. It was the department store, he claims, which revealed modernism to the public at large through new textile designs, show window and store decoration. The main portion of the book, a kind of



DISPLAY STAND BY FREDERICK KIESLER

manual of shop and display design, is still of considerable value for its analysis of merchandising problems and for the excellent illustrative material, chiefly taken from work abroad. Much text is of the "this is good—that is bad" variety, and the 1938 reader is not likely to admire everything Mr. Kiesler saw fit to approve in 1930. The author's "City in Space" and his "horizontal skyscraper" designs, on the other hand, seem quite as mysterious as they did on their initial appearance. Taken as a whole, however, the book has stood up well: to have produced a pioneering study in the field of store design, and to have it still useful as a guide to action is, after all, no small achievement.

As a service to interested readers, THE ARCHITECTURAL FORUM will undertake to order copies of foreign books or others not conveniently obtainable locally, which have been reviewed in this department. Checks and money orders to be made payable to THE ARCHITECTURAL FORUM.

Architectural Concrete, made with Universal Atlas Cement, helped to build this U. S. Government Post Office at Northampton, Pa. Architect—Louis A. Simon, Procurement Division, U. S. Treasury Dept. Contractors—Mutual Construction Co., New York City.



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Architectural concrete, made with Universal Atlas Cement, provides permanence and fire-safety—usually at a saving in cost. It requires little or no maintenance. It is a practical, economical and enduring material for both engineer and architect.

The coupon will bring you more information on how and where architectural concrete is being used. Fill out the coupon today. Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), Chrysler Building, New York City.



Detail over doorway of Northampton, Pa., Post Office shows a little of the decorative possibilities in architectural concrete.

Universal Atlas Cement Co.
135 East 42nd Street, New York, N. Y.

AP-AC-3

Please send me further information on architectural concrete.

Name _____

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Universal Atlas Cements

Check These Exclusive Features of

**ANCHOR
ELECTRIC
WELD
IRON
PICKET
FENCE**



Before you again write specifications for iron fence and gates let us send you your copy of the new Anchor Weld Catalogue and Technical Bulletin No. 97.

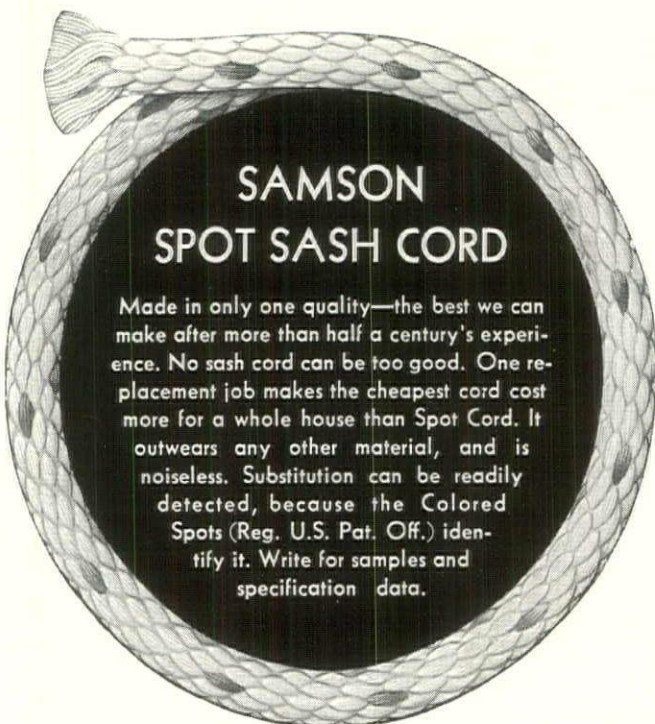
The new Anchor Weld Catalogue shows a large number of representative installations of Anchor Weld Fences and Gates. Technical Bulletin No. 97 shows, by means of detail drawings and carefully written specifications, how you can be sure of obtaining beauty, combined with strength and long life—the three essentials of any good iron fence. It shows

how you can be sure to avoid ugly diagonal gate braces. It brings out clearly why it is not necessary to prop up panels in the center to keep them from sagging of their own weight. Center supports and diagonal gate braces are the two characteristics of weak construction.

Write today for the new Anchor Weld Catalogue showing the many styles and designs available in Anchor Weld fences and gates and for Technical Bulletin No. 97 giving complete specifications. Anchor Post Fence Co., 6635 Eastern Ave., Baltimore, Md.

**ANCHOR
FENCES**

CHAIN LINK
IRON PICKET
RUSTIC WOOD

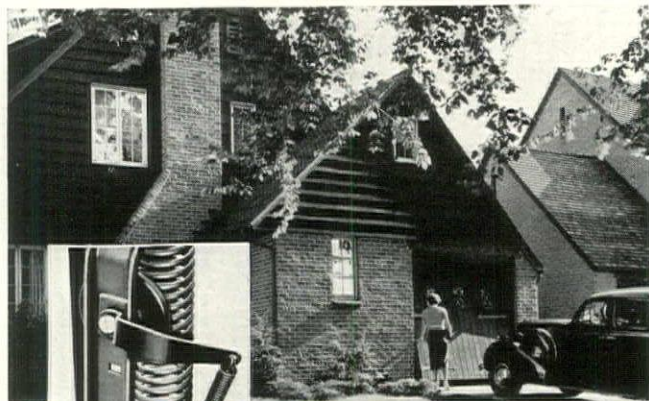


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SPOT SASH CORD**

Made in only one quality—the best we can make after more than half a century's experience. No sash cord can be too good. One replacement job makes the cheapest cord cost more for a whole house than Spot Cord. It outwears any other material, and is noiseless. Substitution can be readily detected, because the Colored Spots (Reg. U.S. Pat. Off.) identify it. Write for samples and specification data.

**SAMSON
CORDAGE WORKS
BOSTON, MASS.**

**NOW Automatic Opening AT
NO ADDITIONAL COST**



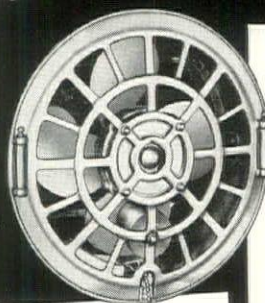
This patented device makes it only necessary to release the latch to open the door overhead.

It was hard to believe that yesterday's streamlined, sweet-running motor cars could be improved. But look at the cars of today! * * * And look at what Frantz has done for garage doors. The new 1939 model "Over-the-Top" Door Equipment now has, in addition to the many advantages that have brought it fame, full automatic opening. Simply loose the latch . . . the door starts, rises, stops without help from hands. This added luxury comes without added cost. Send today for full file data.

**FRANTZ MANUFACTURING CO.
STERLING ILLINOIS**



*You've got to sell **HER!***



THAT'S WHY IT'S SMART TO
EQUIP YOUR HOMES WITH . . .

**VICTOR In-Bilt
VENTILATORS**

It's almost always the woman who has the final "say" in the purchase of a house. And to most women a well planned kitchen is of primary importance—especially a kitchen with the convenience and comfort that only an efficient electric exhaust fan can give. That's why the three models of Victor Ventilators today are helping to sell homes of every size and cost all over the country—why you, too, will find it easier to sell "her" a home equipped with a Victor In-Bilt!

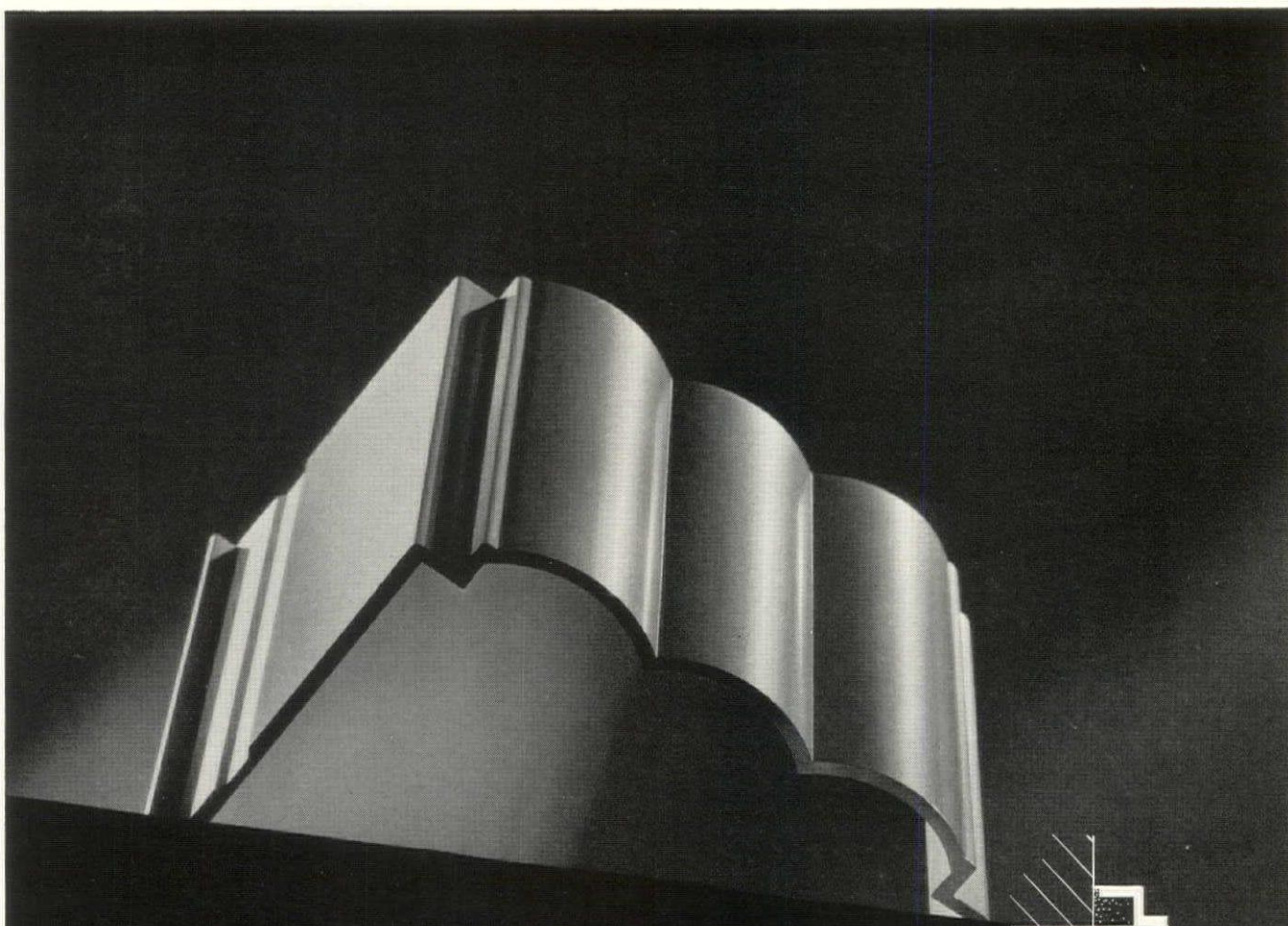
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2952 Robertson Ave., Cincinnati, Ohio**

ONLY VICTOR
offers all of these
Important Features

A Complete Line; a model for every size and type of home—Easy Installation in any type of construction—Automatic Operation—Three-Speed Control—Easy Cleaning—Weather-Tight and Streamlined Shutters.



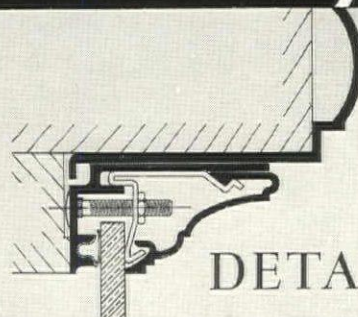
FREE! Complete facts about Victor Ventilators. Write for free ventilation data book today!



LATITUDE IN DESIGN

IN modern store front design, metal plays an increasingly important part. That is why architects find Pittco Store Front Metal such a valuable tool in creating effective, sales-producing fronts. The Pittco line, with its wide variety of beautifully designed mouldings, bars and sash, its unique relationship of styling between members, its sharp, clean contours and graceful lines, offers you exceptional latitude in store front design.

At the New York World's Fair, see the full-size Pittco Store Fronts of the "Street of Tomorrow" in the "Forward March of America Building," and the miniature Pittco Fronts in the Glass Center Building; or, at the Golden Gate International Exposition, see these miniatures in the Homes and Gardens Building.

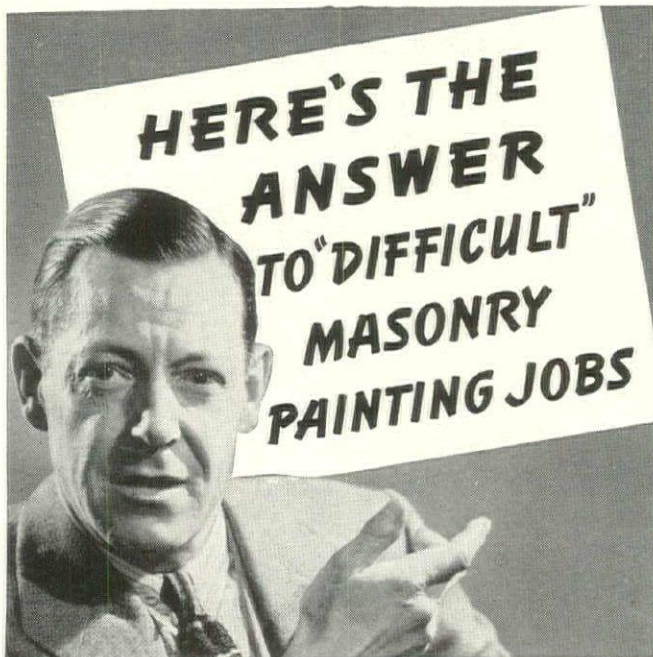


DETAIL:

Half-size section of a typical Pittco moulding, expressing the grace, beauty and distinction characteristic of the entire Pittco line. This moulding was effectively used on the distinctive store front designed by W. G. Clarkson and Co. for W. C. Stripling Co., Fort Worth, Texas.

PITTCO
STORE FRONT METAL

PITTSBURGH PLATE GLASS COMPANY

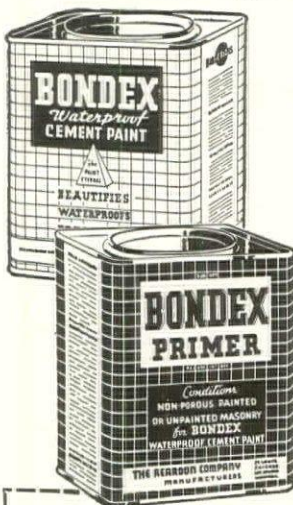


New Team of... BONDEX and BONDEX-PRIMER Makes Any Application Easy

Painting contractors have for years held back from tackling certain types of jobs on painted and non-porous masonry, and have heard too many complaints of failures on such jobs when painted with heretofore available finishes.

Now, you can paint with confidence, using Bondex Waterproof Cement Paint on all types of masonry surfaces—painted or unpainted, porous or non-porous—thanks to the perfection of the new Bondex-Primer.

Development of Bondex-Primer Doubles Opportunities for Using BONDEX



Until Bondex-Primer was introduced, the well-known satisfaction given by Bondex Waterproof Cement Paint was limited to unpainted and porous surfaces—Bondex was not suitable for painted and non-porous applications. Now, there is no limit to the uses of Bondex, as Bondex-Primer prepares even those types of surfaces hitherto unsuitable for Bondex. Bondex—the amazing 3-way paint does 3 jobs at once, as it waterproofs, beautifies and preserves any type of masonry.

Three million readers of the Saturday Evening Post will read about this new development, starting in the issue of March 4th, so send coupon for full information and familiarize yourself now with Bondex and Bondex-Primer.

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St. Louis, Mo. • Chicago, Ill. • Los Angeles, Calif. • Montreal, Que.

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Please send me illustrated folder on Bondex-Primer and Bondex.

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Firm _____
Address _____
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*Smyser-Royer Cast Iron Veranda Design No. 70
as used on his own residence by
Jerome Robert Cerny, Architect, Chicago, Illinois*

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In Underground
Steam Lines



Thousands of satisfactory installations attest the national preference for Ric-wil Underground Steam Systems. Ric-wil Conduit for steam power and heating lines is a sectional system of vitrified Tile (or of Cast Iron or SuperTile). Standard Ric-wil is insulated with patented Dry-paC Waterproof Asbestos, but other loose insulation or sectional pipe covering is optional. Ric-wil with Dry-paC assures over 90% efficiency on the line. Adequate drainage, interlocking units, and wholly closed construction give Ric-wil basic engineering superiority. Ric-wil service is complete and nation-wide.

The RIC-WIL CO.

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NEW YORK CHICAGO

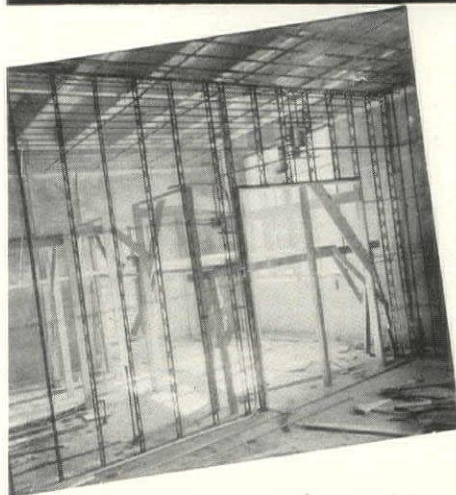
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• Write for complete catalog showing all Ric-wil types, and giving salient points on Dry-paC Insulation.

REG. U. S. PAT. OFF.
Ric-wil
CONDUIT SYSTEMS FOR
UNDERGROUND STEAM PIPES



"Clients like to save money on fireproof hollow partitions — with the **MILCOR** Steel Stud System"



New mechanical efficiency of erection saves construction time and costs . . .

Where fire-safety, exceptional insulation value, effective sound resistance, or earthquake resistance are factors in your design — and where they must be provided at minimum cost — the Milcor Steel Stud solves your problem. Combined with Milcor Metal Lath, it forms a rigid hollow partition that fully satisfies your critical judgment — and your client.

Designed for quick, easy handling — pre-cut or easily cut to length on the job — the Milcor Steel Stud offers these advantages: (1) No confusion of materials — a single unit serves as studding, ceiling runner, and floor track; (2) Embossed truss-design gives maximum strength with light floor load; (3) Amazing erection speed, with no mess to clean up when the job is completed; (4) Easy installation of pipes and conduits; (5) Plaster surfaces retain their original beauty, free from cracks.

Milcor Partition Systems, headed by the Milcor Solid Partition and Furring System, are the big development of the decade in fireproof construction — important to anybody who puts up money for building, public or private, residential or monumental.

Learn all the possibilities of Milcor Partition Systems and their adaptability to your plans. Write for the Milcor Partitions bulletin today.

Easy Erection makes every job a fast-running job — and holds down costs



1 Ceiling runner simply nailed through 3/16 inch hole provided in center of X-shaped member.



2 Floor runner is applied in a similar manner.



3 Shoe is slipped into floor runner and stud.

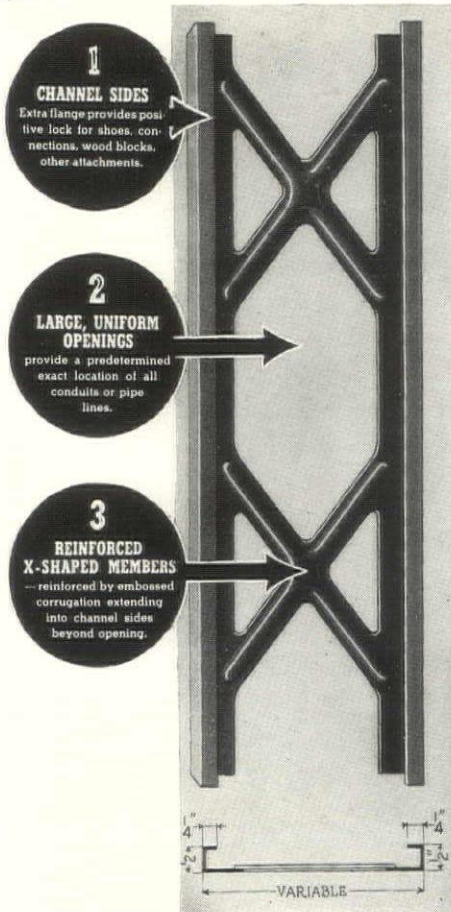


4 Wedged to floor runner by tapping with hammer.



5 Wedged to stud by clips. Operation same for both floor and ceiling runners.

F-66



MILCOR STEEL COMPANY

MILWAUKEE, WISCONSIN

CANTON, OHIO

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DURAY Amazing New Kind of WALLPAPER

GUARANTEED

WASHABLE 3 YEARS!



When you feel DURAY'S rich, velvety surface and see the many smart patterns you'll hardly believe this amazing wallpaper is truly washable... *actually scrubbable*... with plain soap and water. Yet, DURAY'S written guarantee says *it is washable*, for 3 years... a guarantee backed by a million dollar concern.

DURAY is paint-coated... its surface the equivalent of at least 2 coats of fine baked-on enamel. But DURAY is wallpaper. It comes in rolls, is put on walls like wallpaper... is not expensive. DURAY'S surface is impervious to ordinary household dirt. Grime, soot, fingermarks don't penetrate. They wash right off without streaks, rings or watermarks. Rooms keep their fresh new-paper look for years with plain soap and water! DURAY costs no more than any good quality wallpaper. **SEND FOR SAMPLES.**

CLOPAY CORPORATION
1229 Clopay Square
Cincinnati Ohio

Big Users of DURAY

HOTEL McALPIN, N. Y.
TUDOR CITY, N. Y.
HOLLENDEN HOTEL,
Cleveland
70 PARK AVE., N. Y.
—and hundreds of others



Terms of Written GUARANTEE that DURAY IS Washable for 3 Years

The makers of DURAY guarantee in writing that ordinary household dirt, soot, grease, smudge, fingermarks will wash off DURAY'S surface with soap and water without streaking, fuzzing, or watermarking. DURAY'S paint-coated surface is as washable as any surface painted in the ordinary manner, and is guaranteed to be so for 3 years from date of purchase. If years from date of purchase, the DURAY fails to live up to the guarantee, the makers will supply, free of charge, sufficient DURAY to repaper the rooms in which DURAY was used, no matter the size of the rooms, or how many rolls are required.

Send the Coupon

Clopay Corp., 1229 Clopay Square, Cincinnati, Ohio
Please send samples of DURAY the new kind of wallpaper that's guaranteed washable 3 years. I want to convince myself that DURAY is REALLY washable, as you say it is.

Name.....
Address.....
City..... State.....



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ARCHITECTS

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Such recognition is bound to harmonize builder's hardware periods with architect's design.

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SAGER LOCK WORKS
Division of The Yale & Towne Mfg Co.
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A PART OF SAGER RETAIL HARDWARE WINDOW DISPLAY

ASK YOUR ARCHITECT ABOUT

SAGER

Locks

BUILDERS HARDWARE IN *Authentic* RENDERING OF PERIOD AND CONTEMPORARY STYLE...

Keeping Out Of Hot Water By Keeping In It

The New Burnham Yello-Jacket boiler is equipped with a Bilt-in Tankless Taco hot water supply heater.



Does away entirely with a storage tank. Insures freedom from all sediment and stains of basin and tub from rusty water. Gives a continuous supply of piping hot water that's always crystal clear. A tempering valve insures a uniform temperature, preventing any possibility of excessively hot water caused by long intervals between use.

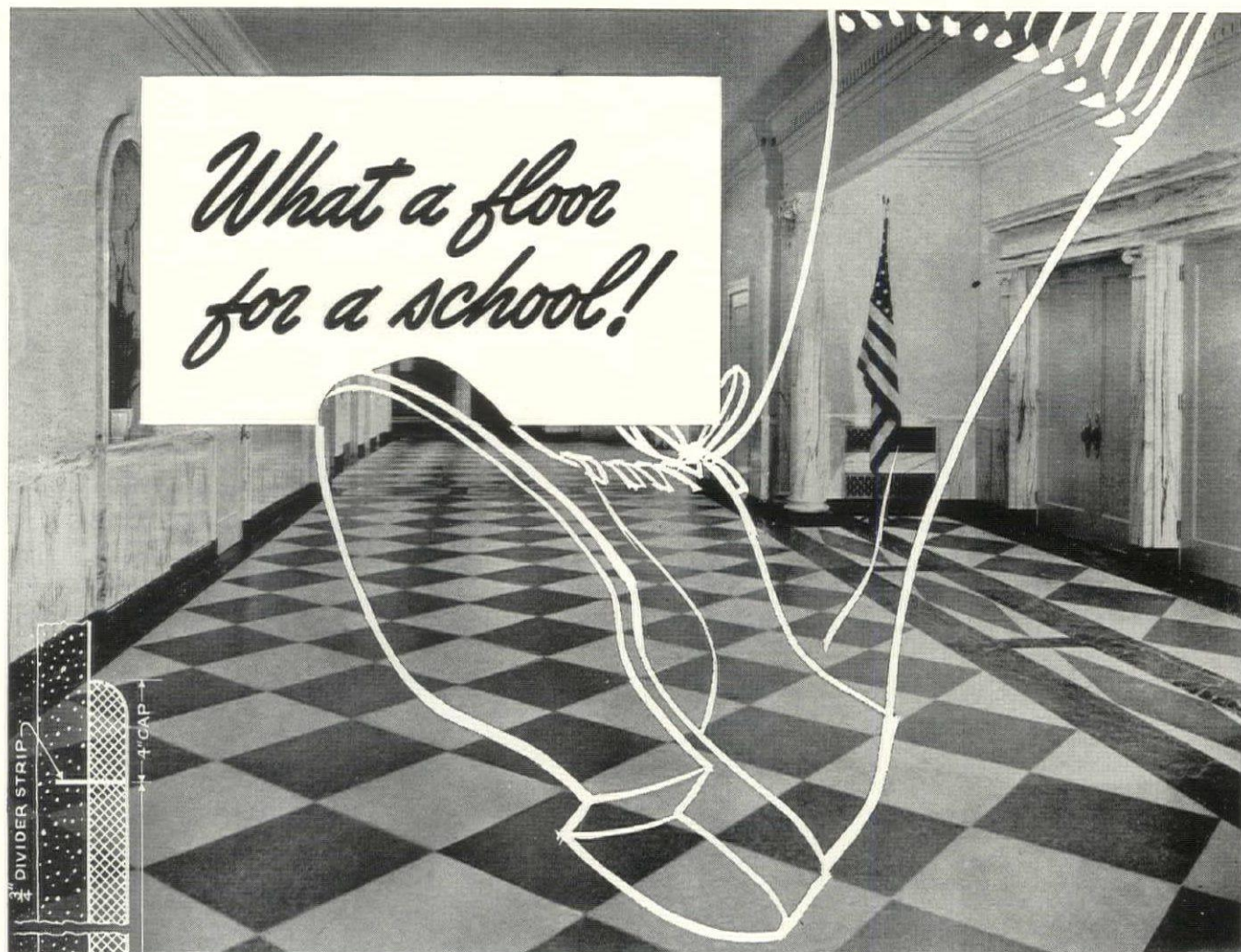
The Burnham Yello-Jacket boiler is the only one made today, having a fully Bilt-in Tankless Taco.

See Sweets

BURNHAM BOILER CORPORATION
Irvington, N. Y. Zanesville, Ohio

Burnham Boiler

What a floor for a school!



Despite Terrazzo's rugged durability, it lends itself to rich, colorful patterns. Note the cheerful school floor above.

SHOES...AN ARMY OF THEM, SCUFFING AT THE FLOORS, KICKING THE WALLS...TERRAZZO RESISTS EVERY ABUSE...ALWAYS LOOKS CHEERFUL.

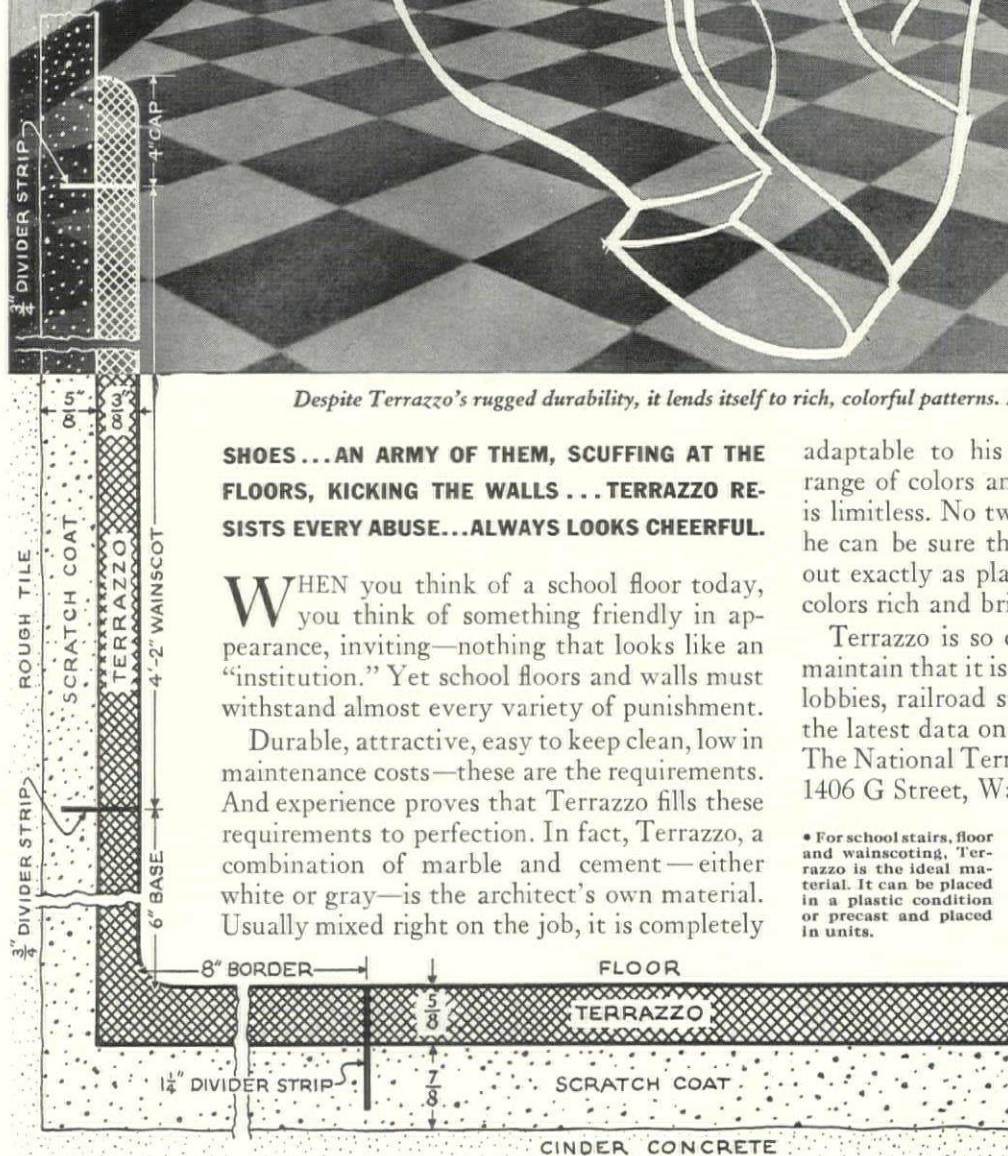
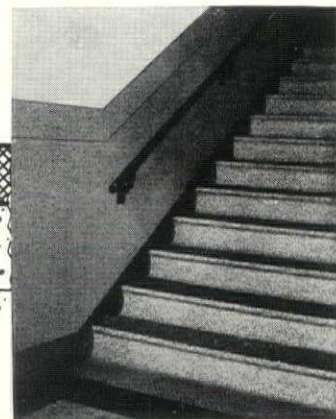
WHEN you think of a school floor today, you think of something friendly in appearance, inviting—nothing that looks like an “institution.” Yet school floors and walls must withstand almost every variety of punishment.

Durable, attractive, easy to keep clean, low in maintenance costs—these are the requirements. And experience proves that Terrazzo fills these requirements to perfection. In fact, Terrazzo, a combination of marble and cement—either white or gray—is the architect's own material. Usually mixed right on the job, it is completely

adaptable to his treatment and design. The range of colors and patterns which he can use is limitless. No two designs need be alike. And he can be sure that the finished job will turn out exactly as planned. Patterns will be clear, colors rich and bright—and permanent.

Terrazzo is so durable and costs so little to maintain that it is used in theatres, stores, hotel lobbies, railroad stations, even for streets. Get the latest data on Terrazzo and its uses. Write The National Terrazzo and Mosaic Association, 1406 G Street, Washington, D. C.

• For school stairs, floor and wainscoting, Terrazzo is the ideal material. It can be placed in a plastic condition or precast and placed in units.



• This cross-section drawing was made from a typical plan for building up a Terrazzo floor, border, base, wainscot and cap, as used in schools and other types of public buildings. The Terrazzo surface is practically impossible to stain or mar, and will stand up for the life of the building, under the relentless daily tread of marching feet.

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION

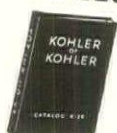
"HERE'S A LAVATORY
THAT SETS A STYLE!"



Illustrated here is the new vitreous-china Jamestown Lavatory. Notice its gracefully curved pedestal and the spacious slab that serves as a shelf. Notice, also, the cleverly built-on towel bars — a feature which eliminates the hazards of puncturing bathroom tile. And also note the all-brass, chromium-plated Kohler mixer fitting, and the gracefully proportioned handles which open and close the valves with a light touch of the hand. Engineered with precision and modern in design, the Jamestown is made for a lifetime of satisfactory plumbing service.

Your clients will appreciate the combination of Kohler fixtures and Kohler fittings. You will too. For a job done right the first time, saves time and money in the long run. If you have not yet received the new Kohler K-39 Catalog, a request for your copy, on your own stationery, will have our prompt attention. Kohler Co. Founded 1873. Kohler, Wisconsin.

FREE!

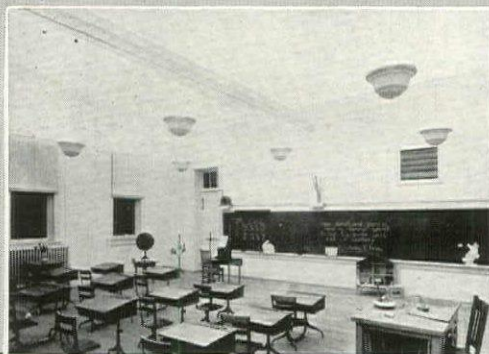


KOHLER of KOHLER
PLANNED PLUMBING AND HEATING

SCHOOL LIGHTING

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*easily
correctly
at low cost*



WITH THE WIREMOLD SYSTEM

Here is the simple, modern, economical way to provide the higher standards of lighting now demanded in schools. Where existing installations are to be modernized, Wiremold Wiring Systems eliminate costly structural changes while giving the architect and engineer complete latitude in layout. Where new installations are being made, Wiremold methods and Wiring systems combine unobtrusiveness with provision for easy extension or changes to meet future needs.

WIREMOLD SERVICE TO ARCHITECTS

Wiremold Wiring Systems are backed by a complete and competent engineering service to assist the architect. Recent data sheets showing typical school wiring projects will be sent on request.

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Quick Service through Electrical Contractors everywhere

HEAT Basement Rooms *this Easier Way!*



FIREPLACE circulates heat

Specify the Heatilator Fireplace for Basement Game Rooms and assure your clients of quick, uniform and low-cost heat . . . plus the charm of an open fireplace. The Heatilator Fireplace actually circulates heat . . . warms every corner of the room. It banishes the problem of ugly pipes and ceiling radiators.

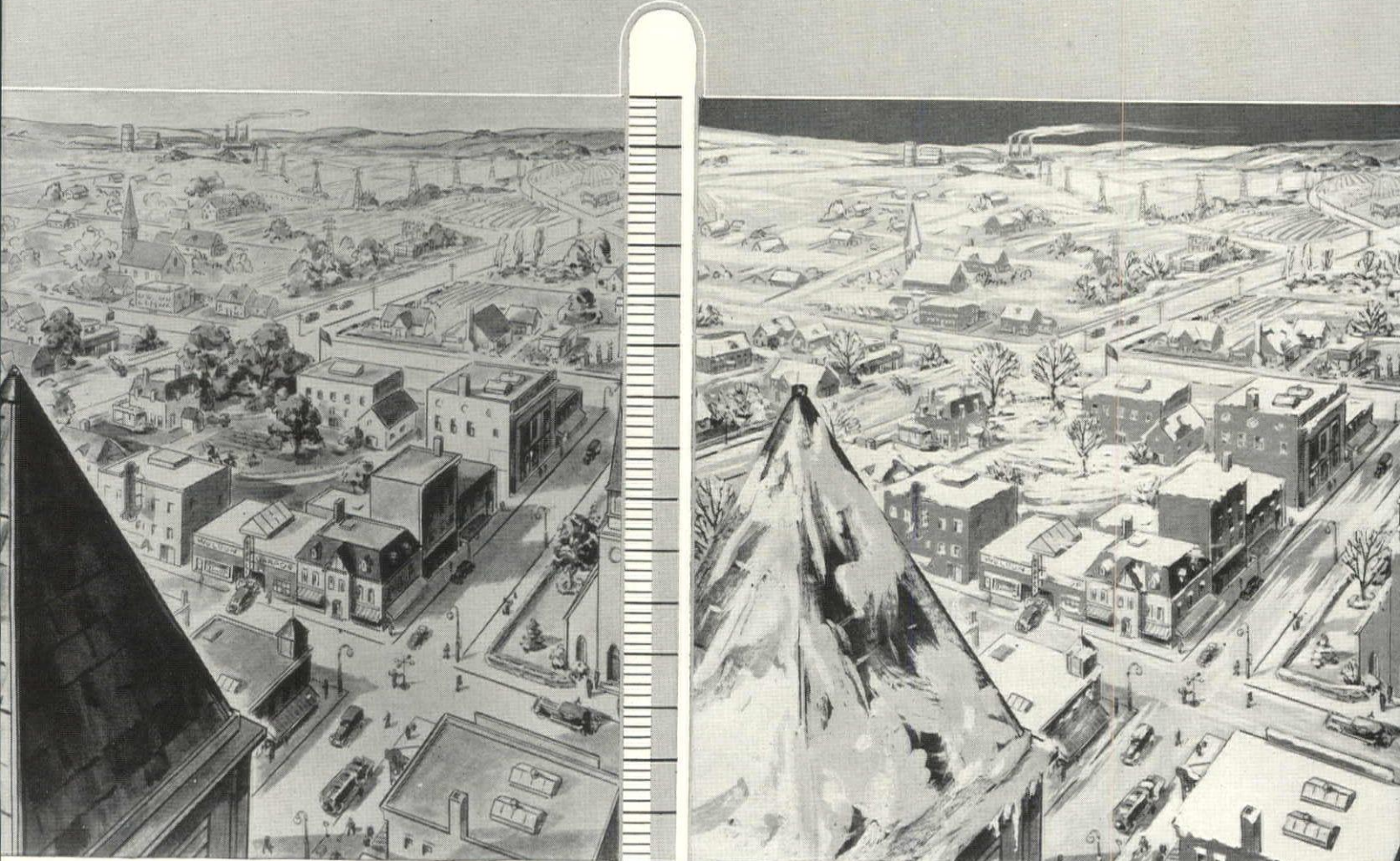
Will Not Smoke

The Heatilator is a steel heating chamber, around which any style fireplace may be built. It serves as a form for the masonry, guaranteeing correct design and a successful fireplace that will not smoke. Thousands in use. WRITE for details.

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HEATILATOR
Fireplace

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At the top in quality and efficiency—at the bottom in price! That's RED TOP* WOOL!

That's why your insulation troubles are over. For now you can specify RED TOP WOOL for most insulation purposes and be competitive with less efficient materials.

New low prices allow you to furnish the greater efficiency of this type of insulation even on jobs where cost is the biggest factor. There's no sacrifice in quality or performance. And you can depend on uniform

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The entire line of RED TOP WOOL products is priced lower. Full-thickness and semi-thickness Strip Wool, Bats and Junior Bats are included. And within 48 hours or less, RED TOP WOOL can be delivered anywhere in the country—another indication of the superior insulation service USG is equipped to offer.

Research, development—then acceptance made these new low prices possible. Ask your USG representative or *write for details*.



RED TOP WOOL

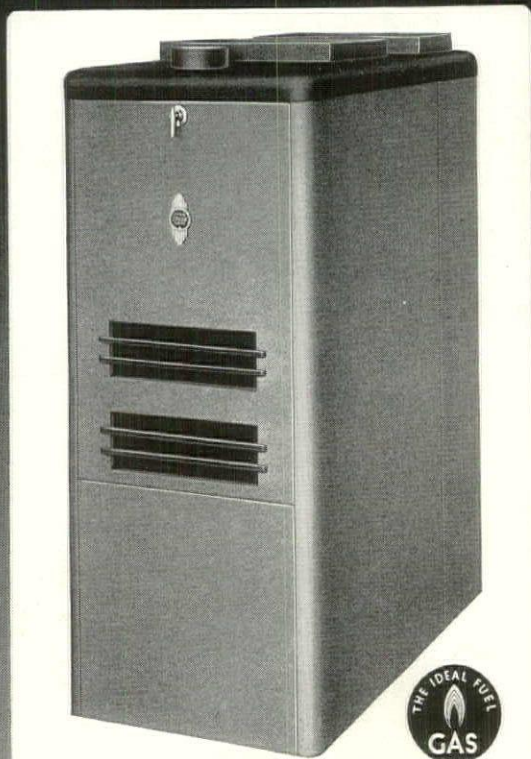
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300 West Adams Street, Chicago, Illinois

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*Trade-Mark Registered

NOW! *Zoned* WINTER AIR CONDITIONING



Here at last, in Payne's new Zoneair Unit, is a gas-fired furnace that gives you all the features of true winter air conditioning—heating, circulating, filtering, ventilating and humidifying—plus zoned control.

Zoned warmth is controlled warmth . . . *where you want it!* It replaces inefficient and bulky heating systems which, at prohibitive cost, so often yield uneven warmth . . . not enough for an entire house . . . too much when diverted to a single room.

Compact ZONEAIR units may be set up in batteries of two or more, each furnace operating independently and furnishing purified, healthful circulating heat to separate suites or rooms at the exact temperature desired.

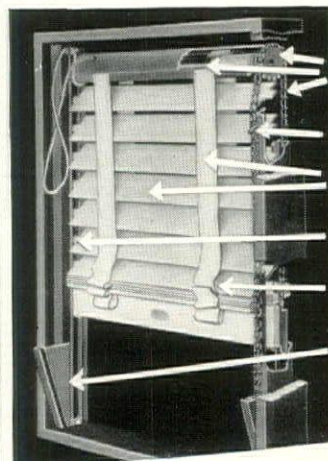
In the new Payne ZONEAIR not a single possible improvement has been overlooked. From every angle this new furnace which introduces a modern, perfected system of economical *zoned heating* sets a new, history making standard.

Write for further information.

Payne

FURNACE & SUPPLY CO., INC.
BEVERLY HILLS • CALIFORNIA

ROCKEFELLER CENTER INSTALLS 13,000 MACKIN Premier BLINDS!



Look at these FEATURES!

POSITIVE LEVEL LIFT! Chain and Sprocket construction assures easy, equal lift. Chain for raising or lowering. No cords and pulleys to get out of order or replace.

INSTANT STOPPING and securing of Blind is provided by Chain Hook.

EASIER TO CLEAN! Entire Blind or slats individually—and tapes—are quickly removable without disturbing mechanism.

NO BLOWING OR FLAPPING! All slats are tenoned—slide up and down in metal grooves which keep Blind neatly in place.

NO HOLES IN SLATS! Mackin construction eliminates necessity for holes. Slats are stronger, more warp-proof.

VENTILATOR BRACKETS simply clip to metal moldings. No screws!

EASY TO INSTALL! Only four screws normally required per Blind.

Mackin Premier Blinds have been accepted and installed by many of the most prominent buildings in the country over a period of many years. This is the best recommendation we know. Mackin Premier Blinds are different! Exclusive features of construction and operation insure greater efficiency—lowest maintenance and cleaning cost—and maximum convenience for tenants. Let us demonstrate their advantages! Send for illustrated folder. Territories still available for selected distributors.

MACKIN VENETIAN BLIND COMPANY
Long Established Makers of Better Blinds
DEPT. F-3, KANKAKEE, ILL.



HAVING ELECTRICAL TROUBLES? WHY NOT USE WADB?*

*Westinghouse Architects' Data Book

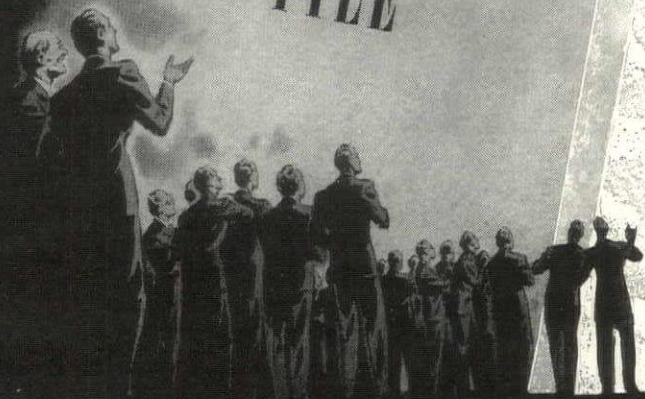
You tell him, brother! If he'd rather struggle overtime with wiring diagrams or other electrical details, than to take short cuts with WADB, that's his hard luck. Personally, we'd use the office copy or look in Sweet's for all the easy-to-use details.

J-94024



Westinghouse

ANNOUNCING NU-WOOD STA-LITE BOARD- PLANK- TILE



The greatest innovation in insulating interior finish since NU-WOOD introduced Tile and Plank

THERE'S a new Nu-Wood product for 1939—the greatest innovation in insulating interior finish since Nu-Wood introduced Tile and Plank. Here's a product that increases Nu-Wood leadership still further and gives YOU new interior finish usefulness! It's NU-WOOD STA-LITE—a unique wall and ceiling covering that combines well-known and approved Nu-Wood qualities with extremely high light reflection value and color permanence.

"Better Sight" campaigns have paved the way for Nu-Wood Sta-Lite . . . and this unique new product fills a long-sought need in homes . . . in business and industrial buildings . . . in a multitude of uses everywhere. It offers additional evidence that Nu-Wood—the best-known interior finish in its field—is forging ahead again in 1939.

Get the facts—learn the complete story of this striking new interior finish. Write us for a sample of Sta-Lite today!

HERE'S THE NEWS ABOUT STA-LITE

- ★ Offering one of the highest light reflection factors available commercially for interior finish. Superiority apparent on sight.
- ★ Permanent color that actually grows lighter with exposure.
- ★ Beautifully textured, matched surface—an outstanding, exclusive feature.
- ★ Maintains insulating, acoustical and decorative features of Nu-Wood interior finish.
- ★ New tongue-and-groove joints which assure easier, more fool-proof application.
- ★ Easily cleaned with a sponge or cloth—excellent paint coverage.
- ★ Ties in with "Better Sight" movement—opens up an entirely new field for Nu-Wood interior finish.

WOOD CONVERSION COMPANY

ROOM 147-3 FIRST NATIONAL BANK BLDG.
ST. PAUL, MINNESOTA

NEW YORK • CHICAGO • DALLAS • TACOMA

BALSAM-WOOL AND



NU-WOOD INSULATION

Preserve the *Beauty*
of DUTCH COLONIAL
HOMES this
old-fashioned way...



(Architects—Weber & Smith)

The architect designed simplicity...informality...practicality into this modern home. And to preserve its beauty the finish is protected with a paint that defies wear and weather...Eagle Pure White Lead in oil. For more than 90 years, architects have specified this long-wearing pigment because it gives lasting beauty to homes. Eagle Pure White Lead in oil creates an elastic paint film that anchors deep into the surface...doesn't crack or scale...wears only by a slow, gradual chalking.



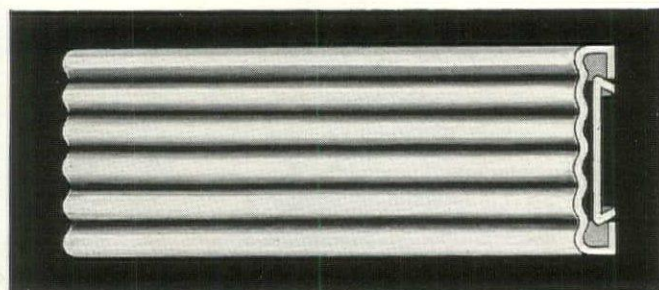
THE EAGLE-PICHER LEAD COMPANY
Cincinnati, Ohio

(Makers of Eagle Enduring Home Insulation—
Thick, Fireproof Mineral Wool)

Insist on



Mouldings



Easy to apply. Offered in a wide variety of shapes and sizes. The full line of HerZim Snap-On, Filler type, Bead Insert, Wallboard, Linoleum Insert Mouldings is shown in detail in Sweet's Architectural Catalog for 1939.

New Supplement Now Ready

Supplement shows Clip-on, Nail-on and Tack-on mouldings, as well as new style end forms. Both catalog and supplement mailed on request.

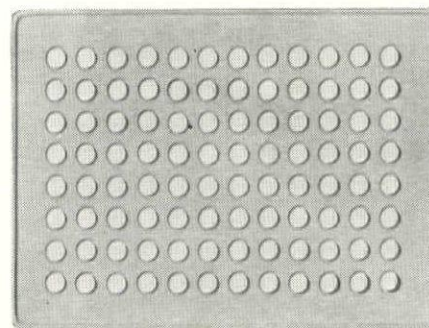
HERRON - ZIMMERS
MOULDING COMPANY

3904 East Outer Drive

Detroit, Mich.

FOR AIR CONDITIONING SYSTEMS

Requiring Grilles For High Velocities



Of all types of perforations, Hendrick's Nozzle Grille is the most efficient in minimizing the noise of air passing through a grille opening. It is particularly recommended for air conditioning systems utilizing high velocities.

Hendrick's Nozzle Grille is generally furnished with $\frac{5}{8}$ " diameter perforations, but can be had in a large variety of sizes, in aluminum, bronze, stainless steel and steel, in gauges up to .078" thick and in sizes not exceeding 48" by 120".

Complete information upon request.

HENDRICK MANUFACTURING CO.
20 Dundaff Street, Carbondale, Pa.

Offices and Representatives in principal cities. See 'phone book. Mfrs. of Mitco Open Steel Flooring, Mitco Shur-Site Treads and Mitco Armorgrids, Hendrick Perforated Metals and Screens.

To Architects

who'd like to side-step sound-transmission worries

YOUR LIST OF WORRIES is long enough when you're planning a big building—so we feel sure you don't want to add to it the countless technical problems involved in engineering a sound distribution system.

YOU DON'T CARE to delve too deeply into decibels, frequencies, acoustical power of loud speakers and so on. What you're interested in is results—a system of which you and your client can be proud. Right?

THEN WE SUGGEST that you do what many leading architects have done: call in Graybar's experts. They've

had years of experience installing Western Electric equipment, designed by Bell Telephone Laboratories.

NEW EQUIPMENT this year is engineered to give you higher quality and greater flexibility than ever before.

FOR "SOUND" ADVICE that will assure you good results without adding any extra worries to your list, just write to Graybar Electric Co., Graybar Building, New York.

Western Electric

LEADER IN SOUND-TRANSMISSION APPARATUS

DOUBLE-WHITE Houses



Wm. L. White
Architect
Exeter, N. H.

H. B. Staats
Architect
New York



Wm. H. Ingemann
Architect
St. Paul

In every neighborhood—every development—and every architectural contest, DOUBLE-WHITE houses *stand out*. Because of its extra whiteness—which lasts for years—Cabot's DOUBLE-WHITE is the first choice paint of careful architects, builders and home-owners.

FREE—The White Book

Shows pictures of many prize winning houses painted with Cabot's DOUBLE-WHITE, Old Virginia White and Gloss Collopakes. Contains full information. Write for your copy today. Samuel Cabot, Inc., 1271 Oliver Building, Boston, Mass.

Cabot's DOUBLE-WHITE
and Gloss Collopakes



Photo courtesy
Architectural Forum

WE WANT
MORE
CLOSET
SPACE

Clothes closets need no longer be neglected. Alert builders and architects on every job—for and installing K-Veniences on every closet, these sturdily built, attractive, modern fixtures actually double the capacity of any closet, regardless of size or shape, and provide for the orderly arrangement of all clothing. There are more than 40 space-saving fixtures in the line, handsomely finished in chrome or nickel and easily attached. Clothing carriers, garment brackets, shoe racks, extension rods, hat, tie, trouser and skirt holders, hook strips, umbrella and cane racks, and many others. See your Building Hardware dealer or write today for new FREE Catalog showing sketches of typical K-Venience installations.

KNAPE & VOGT MANUFACTURING COMPANY
Dept. F-3 Grand Rapids, Mich.



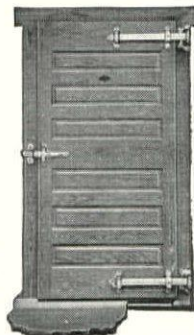
YOU NEED STAMINA

To play 2000 consecutive major league baseball games takes stamina in a man. To hold up under 85 years of service takes stamina in a cold storage door.

A JAMISON-BUILT DOOR stood tests equivalent to 85 years hard plant service and showed *no appreciable wear!* JAMISON-BUILT DOORS have built-in stamina. They're designed for strength to withstand hardest human usage. Insulation stays put. The soft, always-conforming "CD" resilient pure-rubber gasket outwears old types many times.

Wherever cold storage doors are used—including new locker and quick-freezing plants—JAMISON-BUILT DOORS are proclaimed "World Champions", a title earned through rugged performance. Send for free descriptive bulletin to JAMISON COLD STORAGE DOOR COMPANY, Hagerstown, Md., or to branches in principal cities.

Jamison, Stevenson, and
Victor Doors
JAMISON
Jamison Standard Door with
Wedgetight Fastener



(See our catalog in Sweet's Catalog File)

Preview of a future client

contented in his
"Window
Conditioned"
Home !



● When you include "Window Conditioning" in your specifications, you are assured of a client not only satisfied—but grateful. For nothing that adds so little to original cost brings so much in added comfort and economy throughout the years. "Window Conditioning" performs these important functions:

1. Provides more even temperatures throughout the house and minimizes chilly drafts.
2. Reduces fuel bills—often as much as to 30%.
3. Allows the maintenance of the healthful humidity of winter air conditioning without the nuisance of

foggy windows and excessive moisture that drips down and damages woodwork finishes, draperies and rugs.

4. Permits the use of smaller and less costly heating equipment without impairing heating efficiency.

With "Window Conditioning" your clients will be looking through two panes of glass instead of one. Therefore, the quality of the glass in the windows becomes doubly important. L·O·F Quality Glass is noted for its clarity and brilliance—its greater freedom from waviness and distortion. It is, therefore, ideal for "Window Conditioning."

Libbey·Owens·Ford Glass Company, Toledo, Ohio.



LIBBEY·OWENS·FORD
QUALITY GLASS

SPECIFICATION AND BUYING INDEX

The advertising pages of THE ARCHITECTURAL FORUM have become the recognized market place for architects and all others engaged in building. Each month these pages offer the most complete guide to materials, equipment and services to be found in any magazine. A house or any other building could be built completely of products advertised in THE FORUM. While it is not possible for a magazine to certify building products, it is possible to open its pages only to those manufacturers whose reputation merits confidence. This THE FORUM does.

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*Something new
in specifications
all over the Country..*

NAIRN

TRADEMARK REGISTERED

WALL LINOLEUM

SANITARY
WASHABLE



PERMANENT
ECONOMICAL

BECAUSE it has so many advantages that can't be equalled by much more costly materials, Nairn Wall Linoleum provides today's most modern trend in wall and ceiling specifications!

No other material offers such a wide range of unusually effective colors and patterns—from warm marbled designs to delicate pastel tones and interesting striated effects.

And being flexible, you can get smartly rounded effects at corners and openings like those illustrated above.

Equally important, Nairn Wall Linoleum offers re-

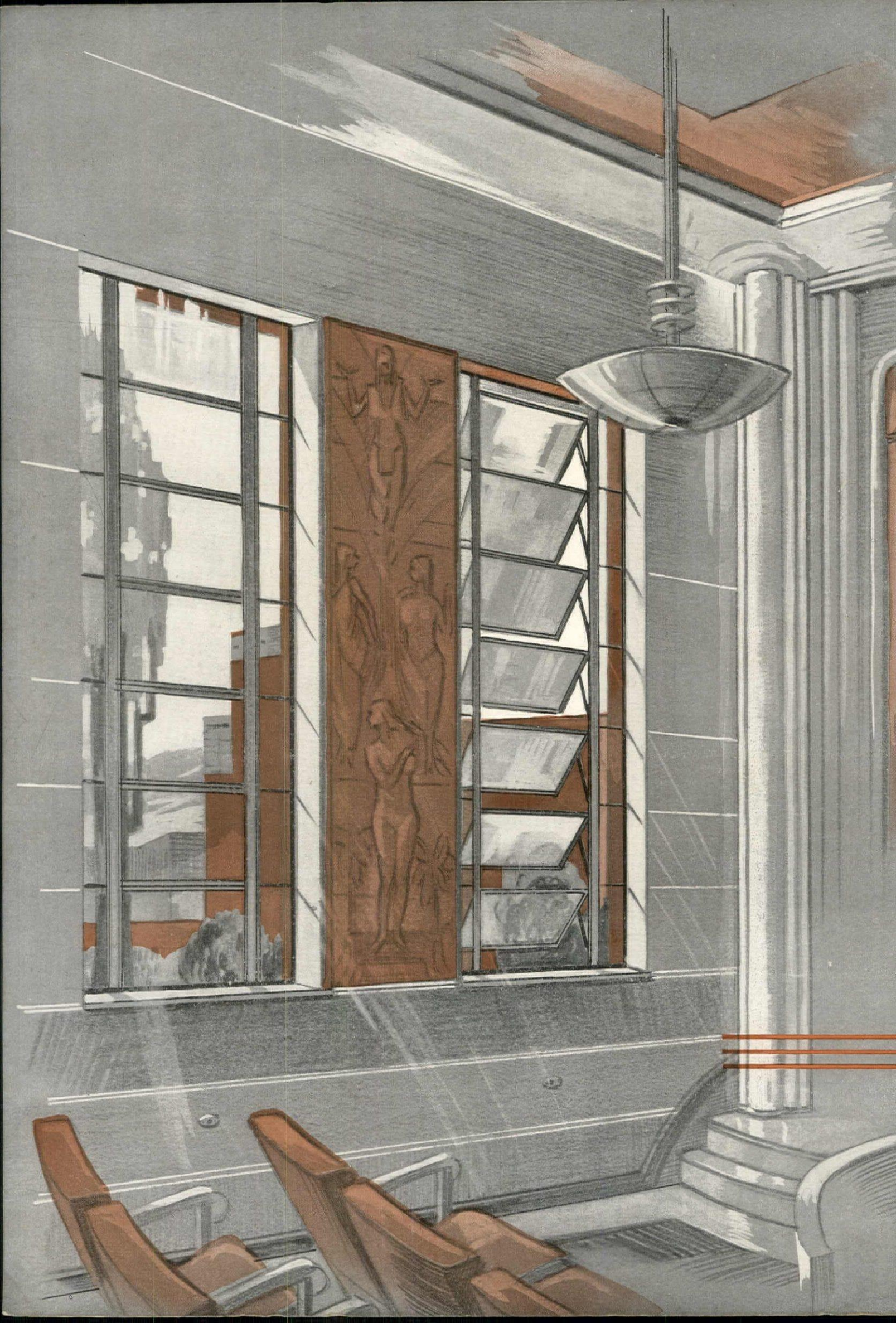
markable, practical advantages that immediately appeal to every woman. It stays permanently beautiful—never needs refinishing! It's perfectly smooth and sanitary—washable and easy to keep clean.

When you specify Nairn Wall Linoleum you insure lasting satisfaction, and freedom from costly maintenance and repair. Installed by authorized contractors it is guaranteed for the full value of workmanship and materials.

Write for Wall Linoleum Sample Book No. B25.
CONGOLEUM-NAIRN INC., KEARNY, NEW JERSEY

[Walls in room illustrated above are Nairn Wall Linoleum "Parchment," No. 7973. Floor and ceiling moulding, Nairn Sealex Linoleum, "Coral," No. 1129. The tub recess is Nairn Wall Linoleum, "Black Onyx," No. 7959. Floor is Personal-ized with Nairn Sealex Insets.]*

*Trademark Registered, U. S. Pat. Off.





Artistry in Steel Windows

● New conceptions of window treatments will be the contribution of creative planners who recognize the possibilities of Truscon DONOVAN Awning-type Steel Windows. • In schools, hospitals, auditoriums, gymnasiums, armories and public buildings, the new Truscon DONOVAN Window provides an almost unlimited scope of application. • These well-known windows combine the advantages of efficient natural lighting, draftless ventilation, more efficient shading, with new features of construction, easier operation and other important and functional developments. • Truscon DONOVAN Awning-type Windows are available in manually controlled or mechanically operated types. In either case, all vents may be moved simultaneously and all operating mechanism is completely concealed

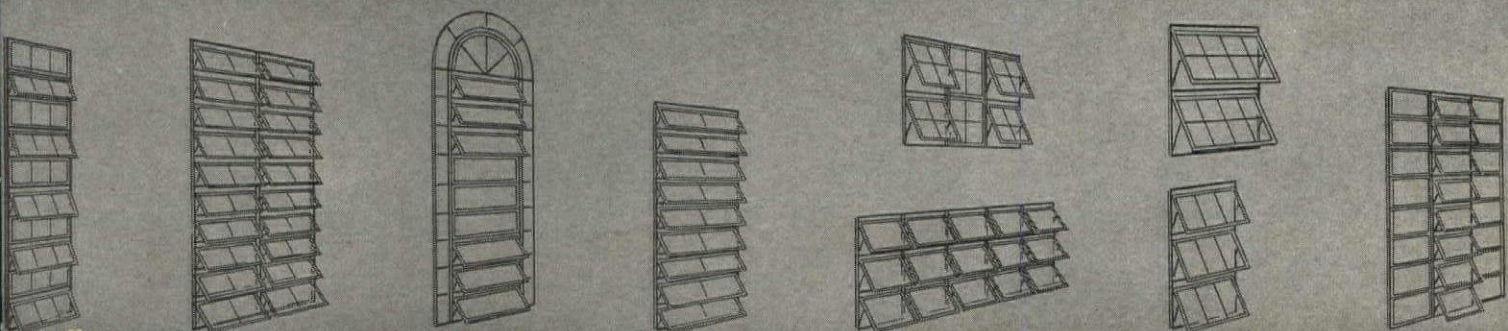
in the window jamb members. The resulting elimination of unsightly arms and shafts affords an improved architectural effect and eliminates all interference with shades, screens and draperies on the interior side. • See 1939 Sweet's for complete specifications and details of the advanced features of the new Truscon DONOVAN Windows, or address your inquiry to the nearest of Truscon's 57 district or branch sales-engineering offices.

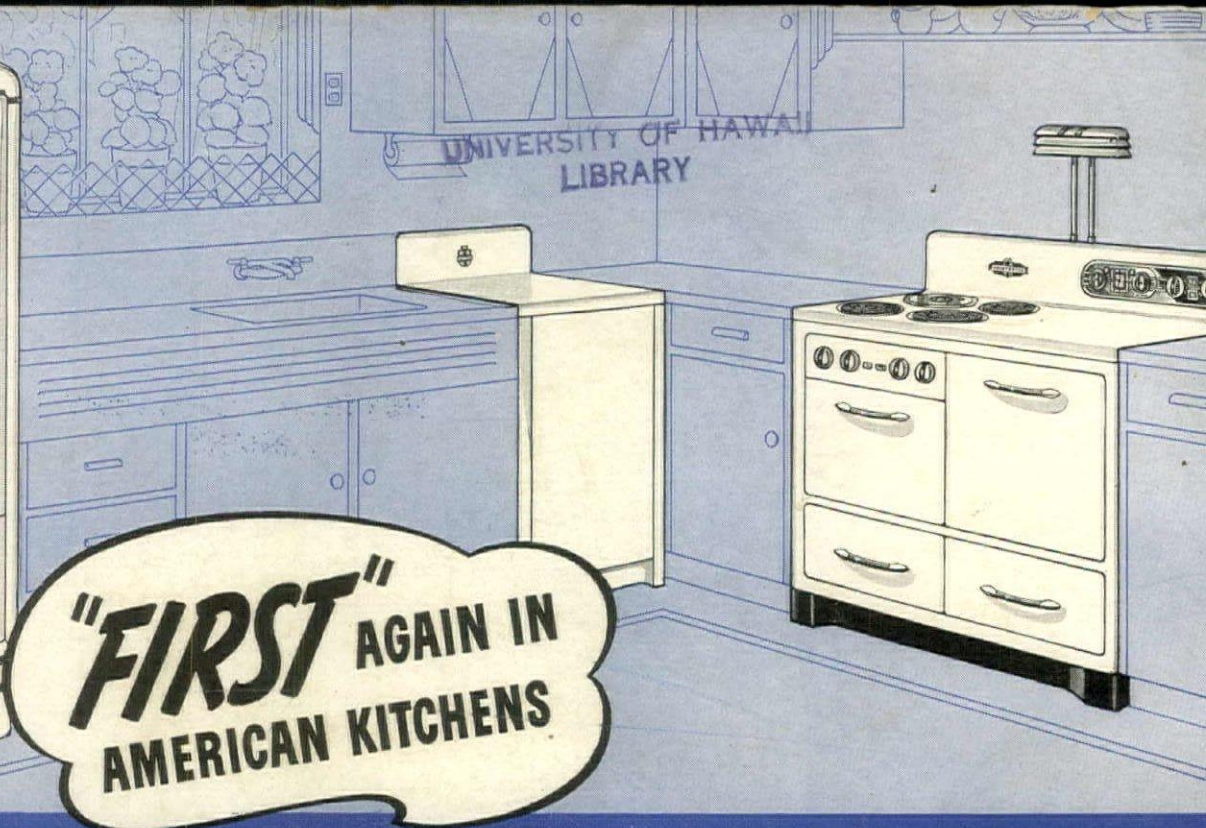
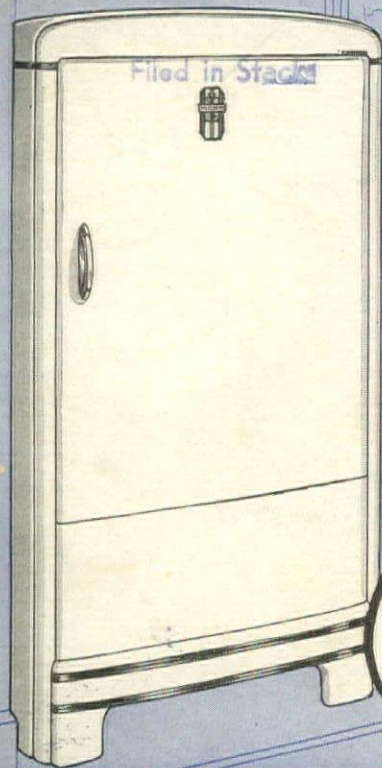
TRUSCON
Steel company

57 SALES ENGINEERING OFFICES • 27 WAREHOUSES
YOUNGSTOWN • • • OHIO
SUBSIDIARY: REPUBLIC STEEL CORPORATION

MEMORANDUM: This is the third of a series of messages relating to current developments of Truscon Steel products for the building industry. Watch for the next . . . in the April issue.

BELOW: TYPICAL DONOVAN WINDOW LAYOUTS





**"FIRST" AGAIN IN
AMERICAN KITCHENS**

World's First "Cold-Wall" Refrigerator ..made only by Frigidaire and General Motors *BUILT ON AN ENTIRELY NEW PRINCIPLE!*

It Saves Food's Vital Juices From Drying Out!

It Preserves Flavor, Color, Nourishment—Amazingly Longer!

● Again—as so many times in the past—Frigidaire and General Motors have put home refrigeration years ahead! Now—for the first time—it is possible to store even highly perishable foods—*prolong their original freshness . . . retain their rich nutritional values . . . save their peak fresh flavor . . . days longer than ever before!*

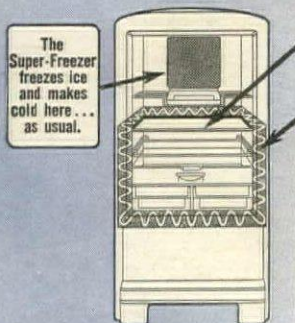
Fresh fruits and vegetables, left-overs—meats, peas, even mashed potatoes—do not lose their attractiveness through wilting, drying, changing color. And they needn't even be covered! For with the new "Cold-Wall" Principle, food is not dried out by moisture-robbing air currents. Odor-and-flavor transfer is also checked.

The new "Cold-Wall" Frigidaire is so far ahead in its revolutionary principle that already it has caused home planners throughout the nation to revise their

conception of modern refrigeration. Here is an amazing development that is destined to mark a turning point in one of the nation's most progressive industries.

Only an inspection of Frigidaire's amazing new models can prove how truly advanced they are. A new "Cold-Wall" Frigidaire installed in a home today means better, safer, more economical food-keeping for years. And it means a definite protection of refrigerator investment for years to come . . . because it's years ahead! Yet, with all its advanced developments, it costs no more than ordinary "first-line" refrigerators. See it now. Consult your classified telephone directory for name and address of your nearest Frigidaire Dealer. Or write to FRIGIDAIRE DIVISION, GENERAL MOTORS SALES CORPORATION, DAYTON, OHIO.

How "Cold-Wall" Principle Works



The Super-Freezer freezes ice and makes cold here... as usual.

1. NEW "DEW-FRESH SEAL"—A SOLID GLASS PARTITION—DIVIDES CABINET INTO 2 COMPARTMENTS, and
2. LOWER COMPARTMENT IS REFRIGERATED DIRECTLY THROUGH THE WALLS BY CONCEALED REFRIGERATING COILS.

● Provides all 3 essentials for keeping foods vitally fresh—1. Uniform Low Temperatures. 2. High Humidity. 3. No Moisture-Robbing Air Circulation. All without adding a single moving part! AND ONLY FRIGIDAIRE HAS IT!

ONLY FRIGIDAIRE has the METER-MISER



CUTS CURRENT COST TO THE BONE . . . for it's the Simplest Refrigerating Mechanism Ever Built . . . and when parts aren't there, they just can't use current or wear. Unseen, trouble-free, completely sealed in a permanent bath of oil. Comes with 5-Year Protection Plan backed by General Motors.

Only FRIGIDAIRE Has Quickcube Trays

Imitated but never equalled—because they're *easier to use*—just lift one lever and cubes are free, two or a trayful, as needed. *Easier to Remove. Built Sturdier. Faster Freezing. Better Looking.* Compare—and you'll want only genuine FRIGIDAIRE QUICKCUBE TRAYS.



For 1939 A New Electric Range By the Makers of **FRIGIDAIRE**

**Designed by 7550 Women to
Combine Low Cost—High Speed
—Sure Results**

America's newest cooking sensation, the electric range that was designed by women—by women! Unites every important cooking and baking advantage because it has been built to the order of women who had seen all kinds of ranges . . . used them . . . and then to Frigidaire the kind of range they wanted. That's why this sensational new range has so many worthwhile features . . . why, in a single year, it has become one of America's favorites.

See this beautiful, modern, economical electric range to realize fully how far Frigidaire and General Motors have advanced the art of electric cooking.

Also . . . New Frigidaire Electric Water Heaters

Designed in two styles. The stunning new "Table Top" model . . . for use in the kitchen, as illustrated—to harmonize with kitchen surroundings, and for use as another working table top. Also upright models in gleaming white Dulux finish for upstairs or basement use. Both typical Frigidaire high quality construction. Both genuine General Motors values in performance and long life.

FRIGIDAIRE • MADE ONLY BY GENERAL MOTORS