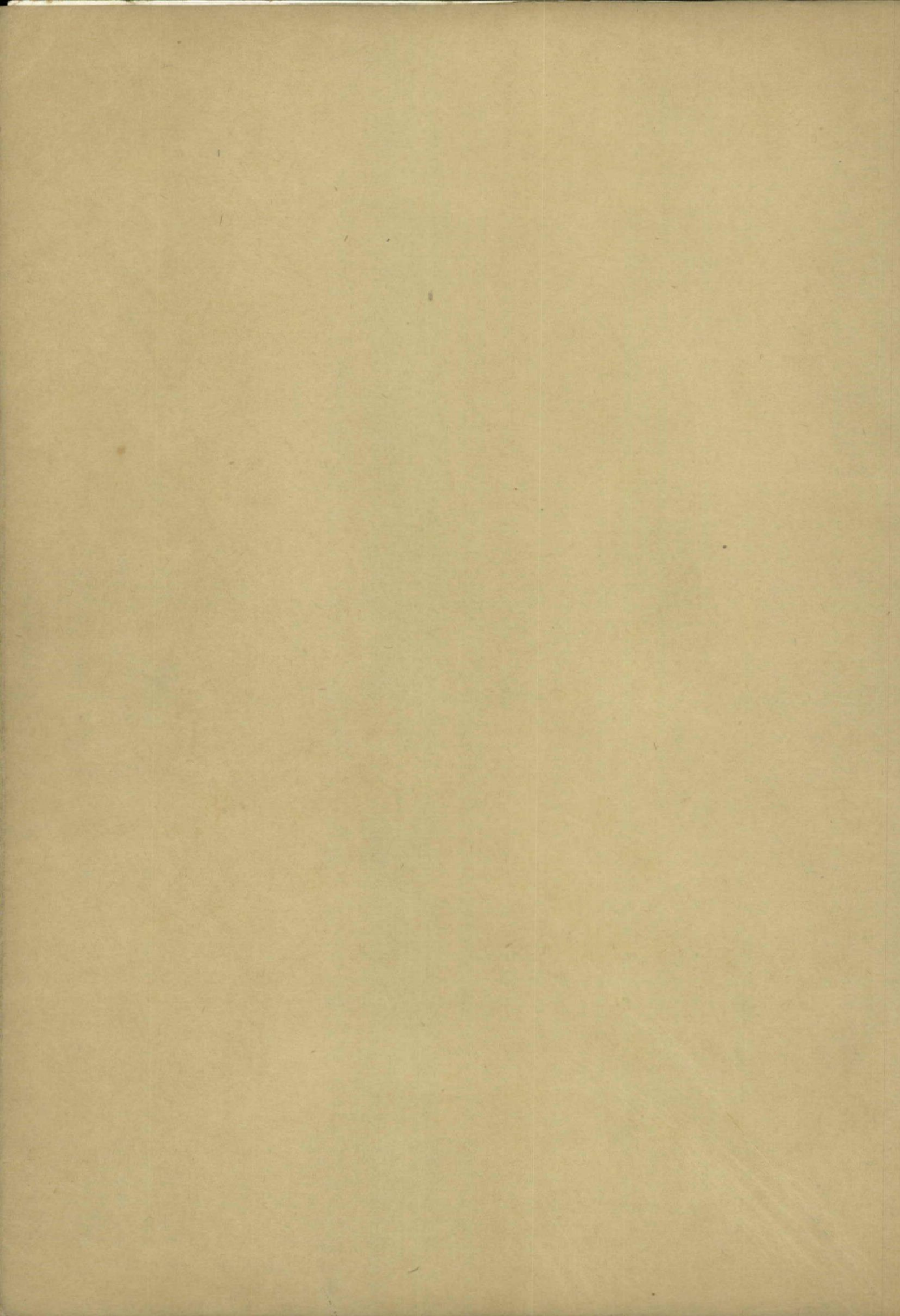


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THE ARCHITECTURAL
FORUM

AUGUST 1941



AUGUST 1941

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Editor, Howard Myers; Managing Editor, Ruth Goodhue; Associates, Paul Grotz, Joseph C. Hazen, Jr., C. Theodore Larson, George Nelson, Henry Wright; Assistants, John Beinert, Anna De Cosis, Richard E. Saunders, Madeline Thatcher, Nadia Williams, THE ARCHITECTURAL FORUM is published by Time Inc., Henry R. Luce, Chairman; Roy E. Larsen, President; Charles L. Stillman, Vice President and Treasurer; Howard Black, Allen Grover, Eric Hodgins, P. I. Prentice, Vice Presidents; David W. Brumbaugh, Secretary. Publication and Subscription Office, Orange, Conn. Subscriptions may also be sent to 330 East 22nd Street, Chicago, Illinois. Executive, Editorial and Advertising Offices, Time & Life Building, Rockefeller Center, New York. Business Manager, H. A. Richter, Advertising Manager, George P. Shutt. Address all editorial correspondence to Time & Life Building, Rockefeller Center, New York. Yearly subscription, payable in advance, U. S. and Possessions, Canada, Cuba, Mexico, South America, \$4.00. Elsewhere \$6.00. Single issues, including Reference Numbers, \$1.00. All copies Mailed Flat. Copyright under International Copyright Convention. All rights reserved under Pan American Copyright Convention. Copyright, 1941, by Time Inc. Printed in U. S. A. VOLUME 75—NUMBER TWO

THE MONTH IN BUILDING

TRENDS. Building has taken a slight breathing spell after a very busy spring. Thus, May building permit statistics (right) show a decline of 9 per cent in both the residential and non-residential categories, and total June construction contracts awarded were off 2 per cent from the preceding month. However, the five-month total of permits was up 36 per cent over 1940, and the half-year volume of contracts was up 57 per cent. Meanwhile, building costs continued slowly up (3/10 per cent in May) led by cement and paint materials; rents also crept up (2/10 per cent in June); foreclosures moved further down.

BOOM TOWN

To make way for ever-growing defense agencies, Government has bought up all available office space in the Capital, has lately been converting private residential projects into office buildings. Result: by comparison, the housing, office and traffic congestion in Washington makes most industrial communities look like picnic grounds on a rainy day. Indeed, the problems throughout the nation which many Government defense agencies have been organized to lick have come home to roost. (For details, see p. 129).

Last month Government took the first step in the long-advocated direction of decentralization: The Federal Home Loan Bank Board was told to begin packing its duds for a one-way trip to New York City. It will soon move into a 20-story building at 2 Park Avenue, address of the Boy Scouts of America.

FHAMENTMENTS

On July 1 FHA's authority to insure loans on second-hand houses and home modernization work was to have expired. In the nick of time Congress woke up, sent extending legislation to the White House one day before the deadline.

An amendment to the National Housing Act, the new legislation continues for three years FHA's Title II used-house financing program, for two years, its Title I modernization and repair program. With a forward look to the time when prosecution of the defense program may require that Government brakes be applied to new construction, (see p. 95 col. 1), Congress also raised the volume of mortgages on existing construction that may be FHA-insured from 25 per cent of its total Title II volume to 35 per cent. If there is no curtailment of private residential construction, another provision in the new law may prove important: Presidential power to boost from \$4 billion to \$5 billion the total amount of FHA Title II insurance that may be outstanding.

At the same time, several important changes were made in the Title I phase of FHA's activities. To encourage the conversion of large old residences into multi-family buildings, the amendment boosts

the maximum authorized amount that may be obtained via a Title I loan from \$2,500 to \$5,000 and, to maintain monthly repayment charges at about the former level, the maximum term of the loans was extended from three to five years.

NABOM RESOLUTIONS

In convention at Chicago six weeks ago, the National Assn. of Building Owners and Managers resolved that:

► It would give "unconditional endorsement and whole-hearted cooperation" to Federal defense plans. NABOM went on record as being opposed to efforts by private builders or promoters to erect non-essential structures in the face of a defense demand for materials and labor.

► Government should use vacant privately owned office space before erecting new public buildings. Both Federal and State officials were reminded that there are about 35 million sq.ft. of vacant office space in the country today.

► The decentralization of civil employes from Washington would help relieve the overcrowded offices and housing (see p. 129). On the local front, NABOM recommended that the State governments halt their current trend toward the construction of State office buildings outside State capitals.



NABOM's President Leo J. Sheridan

PERMITS

(Source: U. S. Department of Labor)

	Monthly Data			First Five Months	
	May 1941 (millions)	Comparison with Apr. '41	May '40	1941 (millions)	Comparison with 1940
Residential	\$138.6	-9%	+14%	\$580.0	+22%
Non-residential ...	96.2	-9	+98	406.5	+93
Additions, repairs.	36.5	+9	+19	146.9	+11
Total	271.3	-7	+35	1113.4	+36

► The program of the National Conference of Real Estate Taxpayers should be pushed. Among other things, it calls for the creation of a Congressional commission to study the coordination, unification and modernization of tax methods.

► The Wages and Hours Law should not be applied to commercial buildings, since they do not involve interstate commerce.

► Leo J. Sheridan (see cut), handsome Chicago realtor and head of the top-notch realty management, leasing and sales organization which bears his name, will be NABOM's new president (succeeding Pittsburgh's Philip C. Hodill) until next year's convention in Detroit.

REDEVELOPMENT

Latest instance of large private co-operative building, an uncommon building technique, was revealed last month when plans were outlined for redevelopment of one of Chicago's largest suburban subdivisions. Fostered by a newly incorporated realty organization, The New American Plan, Inc., the redevelopment involves the platting of approximately 800 acres in Wheaton and Glen Ellyn, Ill. Comprised of 5,600 poorly planned lots, the area was originally purchased by some 2,100 individuals during the depression and has been developed to the tune of only 18 houses. Today, several hundred of these frustrated home owners have agreed to follow the New American Plan, have turned over their properties to the corporation in trust, have received corporation certificates equivalent in value to the anted land.

According to President W. T. Alden, as soon as enough certificates have been issued, the corporation will replan the area with curved streets, begin the erection of 25 five-room demonstration homes designed by Chicago Architects Whalley & Gould to sell for \$3,750 to \$4,750. Since all future homes will be built to order, prospective home builders who own corporation certificates may select their house plans, acquire a site comparable in value to their certificate holdings and use the paper as a down payment to finance

(Continued on page 4)

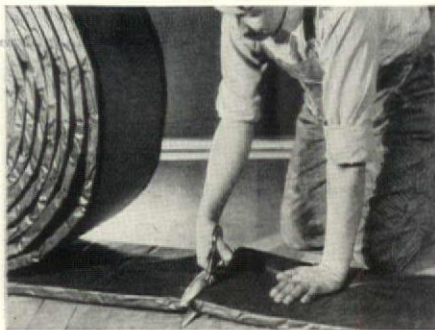
HERE'S HOW TO APPLY

MASONITE* CELL-U-BLANKET*

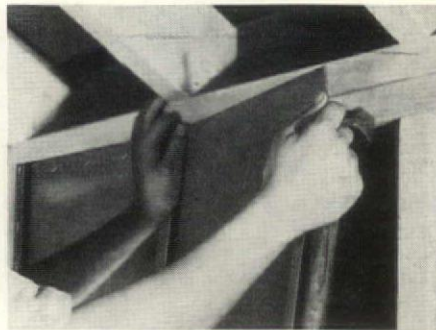
THE NEW VAPOR BARRIER INSULATION IN BLANKET FORM



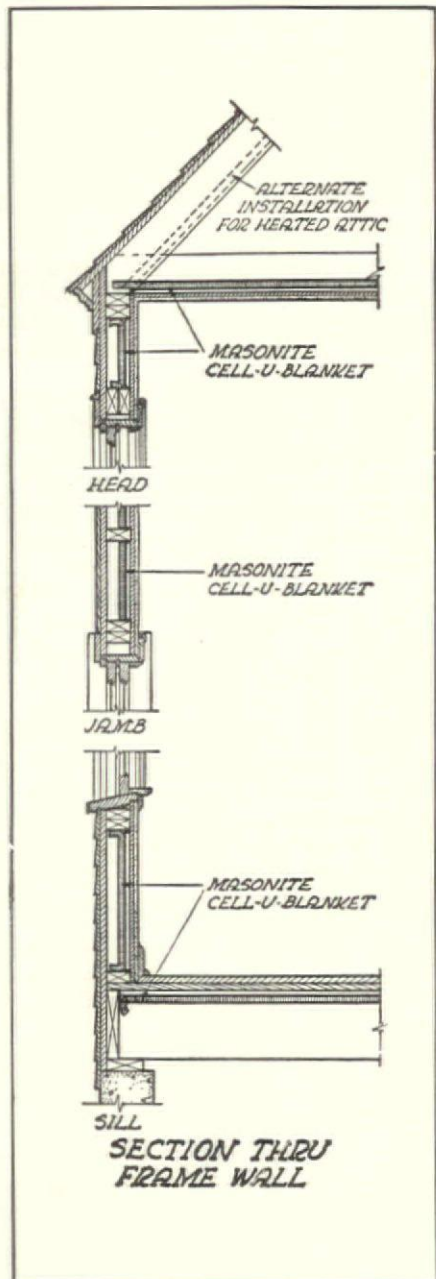
1. A cross-section of Masonite Cell-U-Blanket showing the Cellufoam core and the vapor barrier casing complete with stapling flange.



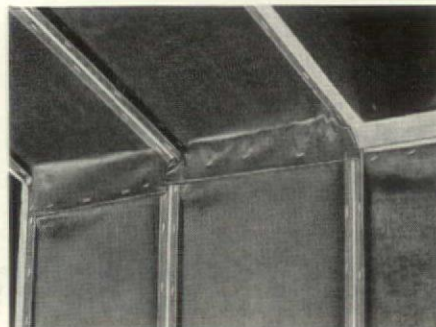
2. Cut Masonite Cell-U-Blanket $3\frac{1}{4}$ inches longer than the dimension between top and bottom plates, using sturdy scissors or snips.



3. Then cut casing approximately 2 inches on both sides, fold back the Cellufoam core. Apply by stapling vapor barrier flange to face of plate.



4. For side-wall insulation, staple flange of Masonite Cell-U-Blanket to face of studs, using $\frac{1}{4}$ -inch-long staples spaced not more than 6 inches o.c.



5. Allow vapor barrier flaps of Cell-U-Blanket to overlap at plates or headers. Staple flanges securely to insure continuous vapor barrier.

Masonite Cell-U-Blanket is a flexible blanket-type insulation with a core of Cellufoam, today's most sensational insulating material. It is designed primarily for application to studs, joists and rafters, as shown above.

Properly applied, Masonite Cell-U-Blanket provides a positive vapor barrier. It is water and wind proof. It is a permanent insulating material that will not shrink, sag or settle. It is so light in weight that a *De Luxe* roll, sufficient to cover 125 square feet of area, weighs less than 30 lbs. It is termite-treated, mould-proofed, rot-

proofed. Authoritative tests show that the heat transmission or "U" factor of *De Luxe Silver Sheen* Cell-U-Blanket is 0.157 B.T.U.s per hr. per sq. ft. per degree F. of temp. diff.

TWO TYPES—There's *Standard* Masonite Cell-U-Blanket, with sturdy asphalt impregnated coverings on both sides.

And there's *Silver Sheen* Masonite Cell-U-Blanket, with a non-metallic reflective surface on the flange side.

THREE THICKNESSES—*Utility*—approx. $\frac{1}{2}$ ". *Efficiency*—approx. $\frac{3}{4}$ ". *De Luxe*—approx. 1".

SIX WIDTHS—For studs, joists and rafters on 12, 16, 20 and 24 inch centers. Also in 33 and 38 inch widths on special order.

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THE MONTH IN BUILDING

their homes through the corporation with the aid of FHA-insured mortgages.

Thus, will an obsolete Chicago subdivision be given a new lease on life; its owners, a despaired-of opportunity to recoup their soured pre-depression investments; the city, a more attractive neighborhood. Perhaps Chicago's New American Plan will contribute something to the solution of the nation-wide redevelopment problem posed by piece-meal land ownership.

GUARANTEED WAGE

Long recognized as a trouble-spot in Building's costs has been the high daily wage demanded by its seasonally employed labor. An encouraging step in lowering labor costs came last month when AFL's Brotherhood of Painters and Decorators put aside its standard wage of \$11.20 per seven-hour day, offered to sign contracts covering maintenance painters on the basis of a \$1,500 guaranteed annual wage.

Statistics compiled by the union show that the annual earnings of the painters under the \$11.20 daily rate rarely exceeded \$1,500, averaged about \$1,200. With a lower day rate and a guaranteed annual wage, office building, hotel and store operators need not pay their year-round painters the same rate as they pay the construction and alteration painters who are usually employed only in the fall. Thus, on the basis of 52 five-day weeks per year, the new \$1,500 annual wage amounts to only \$6 per day.

While this significant step by Labor has been taken outside the field of new construction, it will make interesting study for labor leaders inside. Meanwhile the maintenance painters will be sure of a pay check every week of the year, and building operators may lower their rents to reflect the drop in operating costs.

POST-WAR PWA

To cushion the economic shock of peace and the cessation of the Defense Public Works program (see p. 95) and billions of other Federal emergency construction, FWAdministrator Carmody at June's end announced the establishment of a Public Work Reserve in the FWA. Under the direction of E. C. Smith, Jr., the Reserve will build up a "national shelf of work projects that may be undertaken by local, State and Federal agencies after the reduction of defense activities." Operations will be coordinated by FWA Planning Consultant Jacob Baker with the Government's efforts to provide a six-year works program in cooperation with the National Resources Planning Board.

Pending the appropriation of funds after

the emergency, the Reserve's shelf will be stocked with proposed peace-time projects. They will be primarily in the fields of health, education and recreation but "will include every kind of useful public service a State, county or city sees need for and has hope of being able to maintain." In short, this post-war program will be like the pre-war PWA—a pump-priming operation with work as its No. 1 motive. Encouraging, however, is the fact that it is being planned years in advance, may therefore avoid many of PWA's mistakes.

FHA FRAUD

Title I loans insured by the Federal Housing Administration are supposed to be used for the repair and modernization of houses. In June, a Federal grand jury in New York City charged that 150 FHA-insured loans had been used to finance gasoline stations, a cosmetics shop, a shoe store, a cafeteria, a food market and several other obviously non-residential projects, forthwith indicted 32 persons with conspiracy to defraud the U. S. of at least \$250,000.

Claimed to be the ringleader of the group, 43-year-old Simon Brown is owner of Brooklyn's Brownie Lumber and Supply Co. in which capacity he allegedly vouched that the funds obtained from the four duped Long Island banks were to be used to repair the borrowers' houses. For these services he is said to have received \$100 to \$150 per loan; if found guilty, he will have to pay a \$12,000 fine, cool his heels in jail for a maximum term of seven years. Since the other defendants are charged with conspiracy alone (not violation of FHA's National Housing Act), they face \$10,000 fines, two-year imprisonments.

The banks' penalty will not amount to the full \$250,000, for some of the questionable loans have already been repaid, and more may be recovered through litigation after the trial.

NAREB SURVEY

Every six months the National Assn. of Real Estate Boards samples the opinion of its constituents on building trends. In tune with the times, the results of last month's survey of 211 communities differentiate between the trends reported in defense and non-defense areas, documents the effect of military and industrial expansion on real estate activity, prices, rents and costs:

► Turnover of real estate is more active than a year ago in 71 per cent of all the reporting communities, while realtors in 83 per cent of the defense communities are busier than they were last year. The

Northwest States have enjoyed the biggest filip.

► Only 58 per cent of all the communities indicated that realty prices had advanced during the year, but 70 per cent of the defense communities have seen prices go up. Here again, the Northwest States lead the field.

► While rents for single-family houses have crept up in 62 per cent of all communities and in 81 per cent of the defense communities, about 60 per cent of both groups indicated that the advance was insufficient to justify residential building for investment at today's costs.

► Costs are up everywhere. More newsworthy is the fact that the \$3,000-\$4,000 house now accounts for about half the residential construction volume of the average reporting community. Comments NAREB: "A tremendously significant shift . . . a development of great importance both to defense housing and to the future of American cities."

\$76 BILLION

Two years ago President Roosevelt in his annual message to Congress stated, "If Government activities are fully maintained, there is a good prospect of our becoming an \$80 billion country in a very short time." Today that prediction is close to fact with the Commerce Department's announcement last month that the national income for 1940 exceeded \$76 billion. With the European War and the resultant increase in war exports from \$706 million in 1939 to \$1,492 million and the doubling of defense activity from \$1,290 million to \$2,634 million, national income is now higher than in any time since 1929.

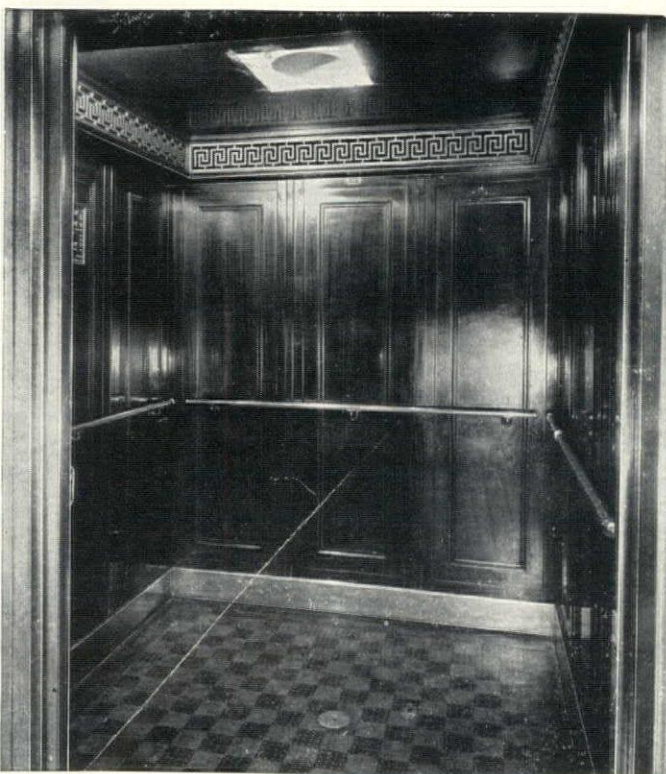
Amounting to \$2,401 million, income from contract construction increased 18 per cent during the year, compared with the overall 7 per cent increase in total national income. Construction's total wages increased \$218 million to a total of \$1,907 million in 1940. Significantly, although the overall wage per employee throughout all industry increased only 2 per cent, wages per employee in construction, influenced by a scarcity of skilled labor, jumped 5.6 per cent—averaged \$1,473 per employee.

Most important influence on the national income and more specifically on contract construction has been the growth of income originating in Government. It accounted for almost 13.5 per cent of 1940's total, and a large part of it was expended for construction activity. Defense housing, Government subsidy of industrial plant construction and the expected enlargement of the cantonment program will increase Government's construction industry disbursements still further in 1941.

Make Your Ancient Elevators MODERN with FORMICA!

IT is surprising what a revolution in appearances is accomplished when old fashioned, out-dated elevator cabs are modernized by the installation of Formica "Realwood" paneling. This remarkable plastic sheet is itself one of the most modern of materials — a plastic in which an actual wood veneer is embedded so that you get the genuine wood grain in a sheet that has all the qualities of a plastic — that is not porous and will not absorb stains, that is very hard and durable, and that weighs only half as much as aluminum.

● One of a battery of 8 old style cabs that were modernized with Formica Realwood paneling.



● How the cabs looked after Formica paneling had been installed by the National Elevator Cab & Door Co.

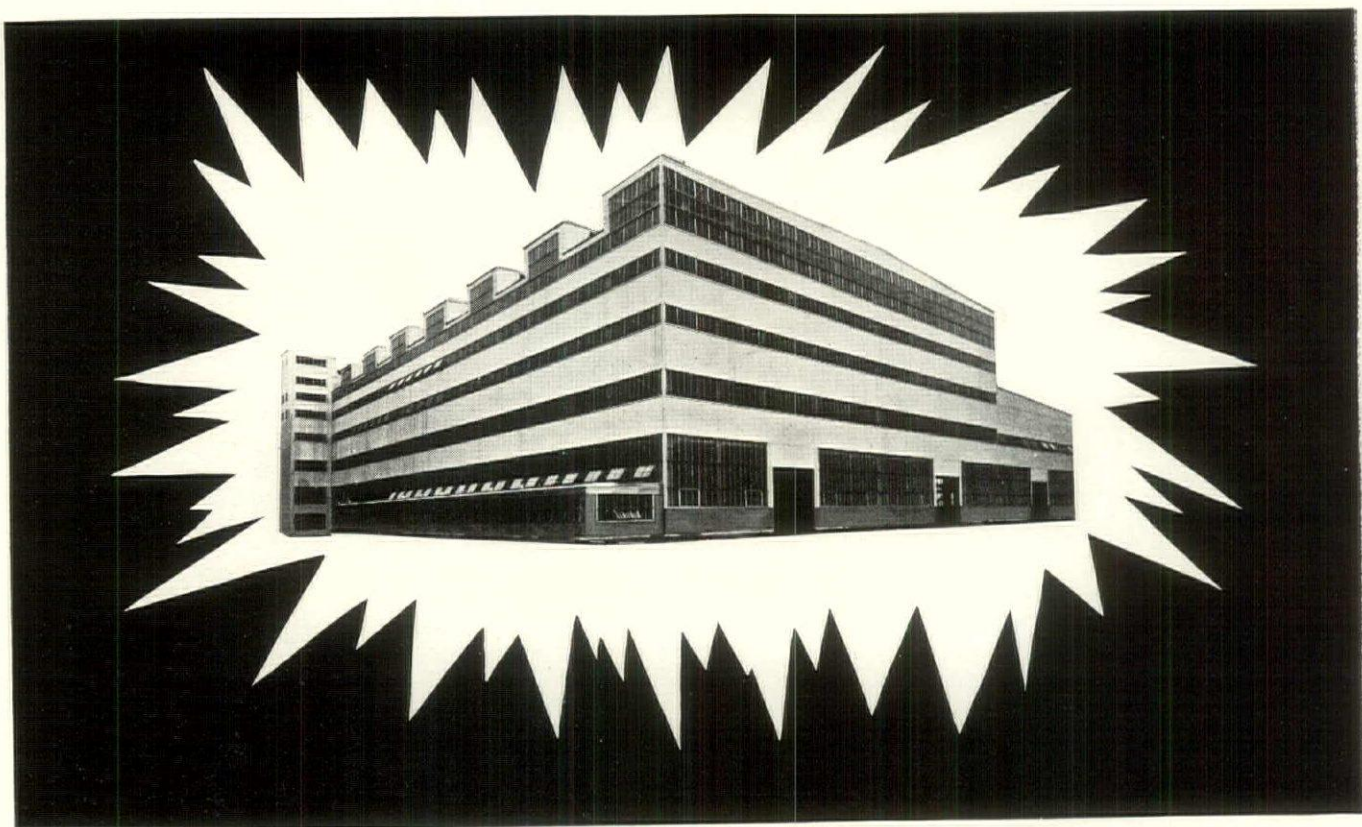
Recently eight old cabs at the Pennsylvania Building, 225 West 34th Street, New York, were modernized in this way by the National Elevator Cab and Door Company — and the results were more than satisfactory. The photographs show the interior of one of the cabs before and after the work was done.

Formica can be rapidly and simply installed at moderate costs. It never needs refinishing, and will stand up under the hard service an elevator cab interior has to take. If your elevator cabs create a bad impression on people entering your building, investigate Formica. Details on request.

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FORMICA

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Corrugated surface diffuses light, gives added strength.

Translucent finish prevents prying eyes from watching plant operations.

Wire mesh construction gives protection against fire and sudden shock.

There can be no "black out" of industry due to power failure with this outstanding glass construction. Make sure Pennsylvania Original Solid Corrugated Wire Glass is specified in your next building.



Write today for free 20-page illustrated booklet of wire glass installations.

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Harmful for
Factories
Power Failures
Cripple Plants,
Say British**

United States enthusiasm for defense factories of the windowless or underground type has rapidly declined in recent months, due to reports from England that such buildings are paralyzed by the bombing of power supply stations.

British experience, according to local industrial sources, has shown that "total blackouts" of factories frequently result in an advantage for the enemy by completely stopping vital defense production.

7 P. C. MORE RENTABLE SPACE FOR EMORY ROTH APARTMENTS *and cost reduced as well!*

MORE rooms for less money? Architect Emory Roth knows the answer. In his mammoth new apartment house in New York City, the exclusive Gold Bond 2" Solid Partition System with metal base increased floor area 7%—speeded up the job—and cut partition costs substantially.

Tried and proved in 28 great U. S. H. A. projects, this Gold Bond complete wall system is now being widely used in top-quality private construction. It's a practical way to increase rentable space . . . cuts material costs . . . saves as much as two days labor per room . . . yet provides effective sound control (a rating of 39 decibels for Emory Roth). Gold Bond's exclusive metal base is easily bent and cut on the job. Nailed to either wood or concrete, clips lock the metal base securely in place, yet permit ready removal for inspection during construction. Using Gold Bond plaster and lime, the entire job is backed by *one* manufacturer.

The 2" Solid Partition System with metal base is just one reason why you *build better with Gold Bond*. There are other outstanding Gold Bond developments, too—like the Floating Wall that fights plaster cracks, and the arch bead that lets you bend graceful, inexpensive arches on the job. The standards for the entire industry are established in Gold Bond's research laboratories and 21 model plants. The result is there's a *better* Gold Bond product for every wall and ceiling requirement . . . with 300 trained field men ready and able to help you select the best materials and methods for your job.

FREE DON GRAF SPECIFICATIONS give complete engineering details and architectural drawings of Gold Bond 2" Solid Partition System with metal base. Write for yours today. METAL PRODUCTS DIVISION, NATIONAL GYPSUM COMPANY, BUFFALO, NEW YORK



THE SECRET'S IN THE METAL BASE! The exclusive new metal base of the Gold Bond 2" Solid Partition System eliminates the need for prefabricated units. Base can be quickly cut and bent on the job to fit difficult angles and complicated conditions.

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FELIX FULD COURT	NEWARK, N. J.
GILMORE HOMES	BALTIMORE, MD.
CHAD BROWN HOUSES	PROVIDENCE, R. I.
HALIFAX COURT	RALEIGH, N. C.
RIVERVIEW COURT	PHENIX CITY, ALA.
TINDALL HEIGHTS ADDITION	MACON, GA.

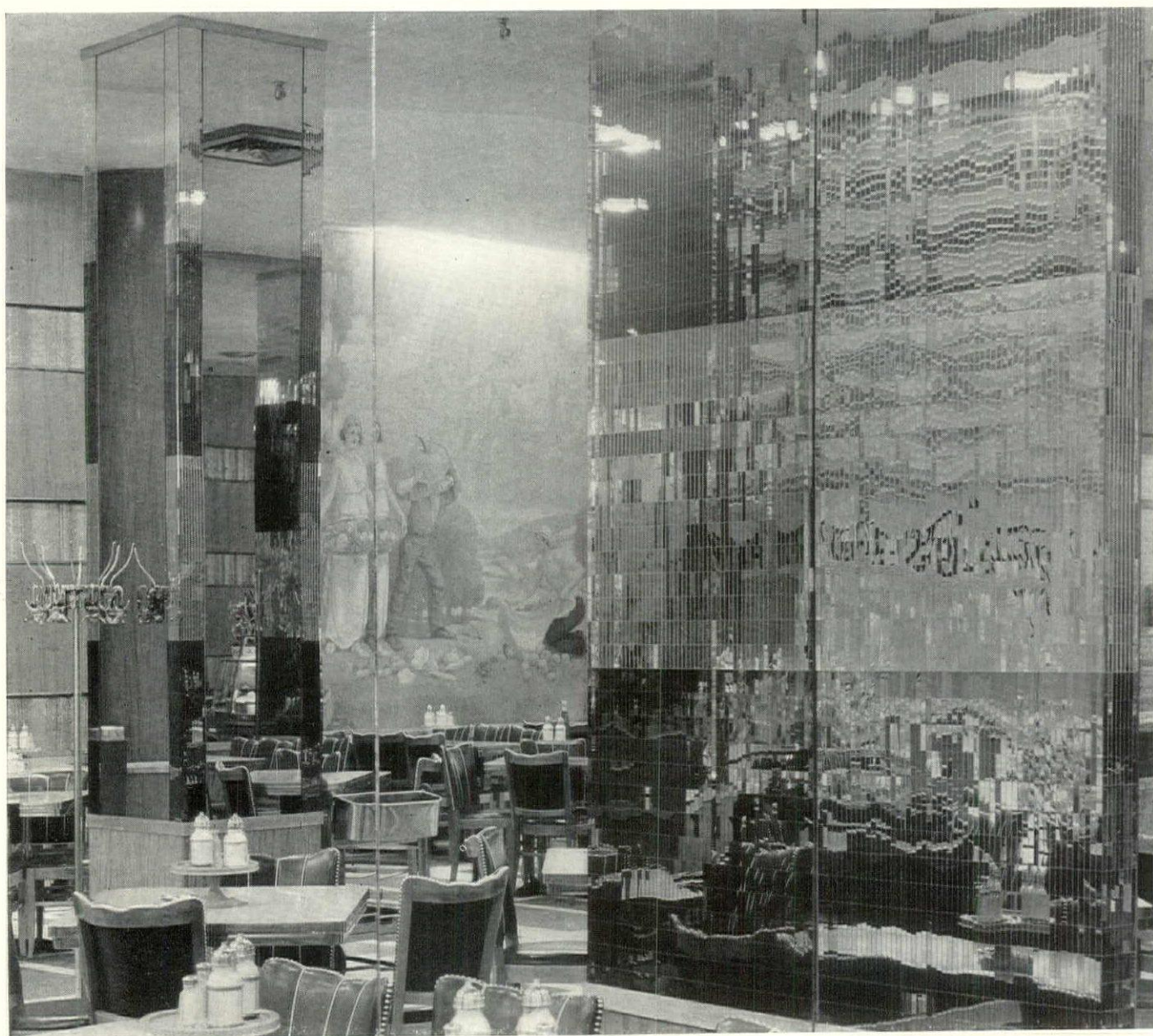
Producing units at:

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ORANDA, VA. . . . SALTVILLE, VA. . . . NILES, O. . . . MOBILE, ALA. . . . NEWBURGH, N. Y. . . . ALEXANDRIA, IND. . . . DUBUQUE, IA. . . . DOVER, N. J.

BUILD BETTER WITH

Gold Bond

Everything for walls & ceilings



Flexglass treatment, Governor Cafeteria, New York; Charles Shilowitz, Architect, Newark, New Jersey; installation by American Store Equipment & Construction Corporation.

FLEXGLASS APPEALS TO DESIGNERS because it removes the final barrier to full, free creative expression in glass. Note how the scintillating panel treatment, using alternate bands of Gun Metal and Peach Mirror Flexglass, is duplicated on the corners of the columns to frame the glass mirrors. Flexglass is new, exciting, exotic...real glass in 30 colors and patterns for indoor and outdoor use, easily and speedily applied to any smooth, hard surface, flat or *curved*. It is the modern beauty treatment for ceilings, columns, panels, fixtures, walls, and fronts. Samples and color card free; distributors in principal cities.



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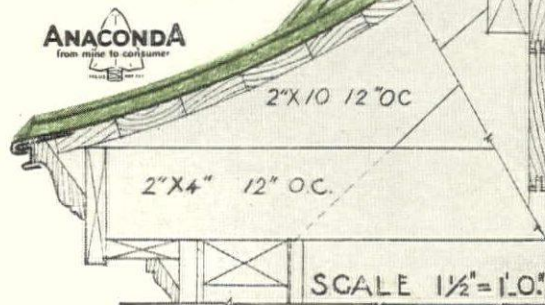
Flexwood and Flexglass are manufactured and marketed jointly by The Mengel Co., Louisville, Ky., and the United States Plywood Corp., New York



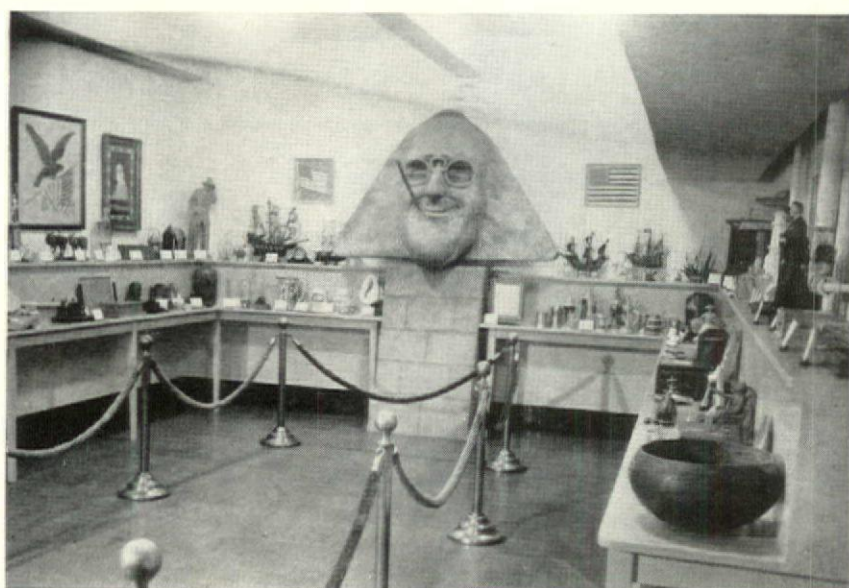
TYPIFYING the manner in which standing seam sheet copper roofing may be used over bays and entrances to impart both warmth and color, and to accentuate the structure's individuality.

Anaconda Copper

THE AMERICAN BRASS COMPANY—General Offices: Waterbury, Connecticut • Subsidiary of Anaconda Copper Mining Company • In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.



FORUM OF EVENTS

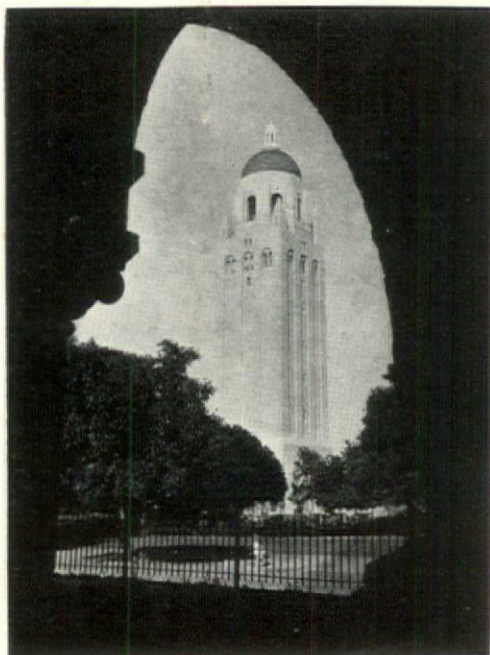


Presidential Library. Built to house the personal papers of the President and assorted reminders of his administration, the Roosevelt Library was recently dedicated at Hyde Park. Designed by Architect William Moore, the building is in the President's favorite style, contains archives, a large display of ship models and pictures, and a roomful of oddities (illustrated at the left), oddest of which is the grinning cigarette-holding Sphinx.



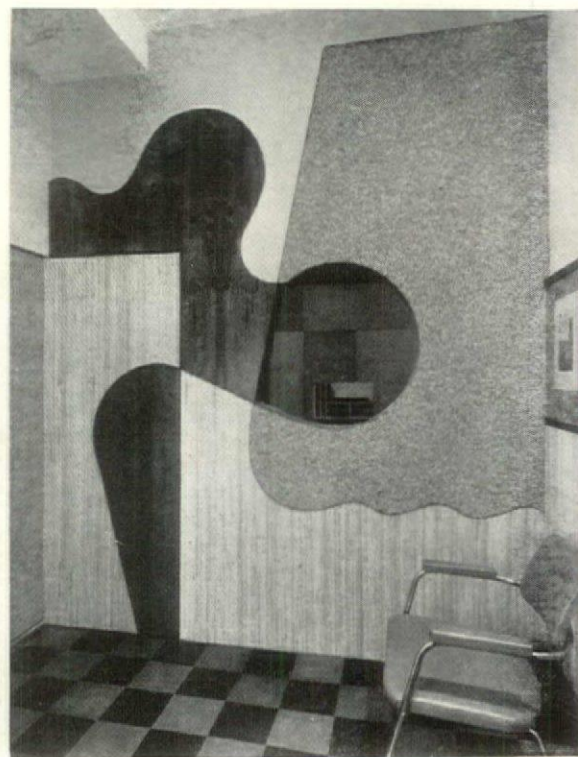
Associated Press Photos

Ex-Presidential Library. Not to be outdone by his political successor, Herbert Hoover now has a library too, a \$600,000 job, complete with tower and red tile dome, on the campus at Stanford University. Most impressive feature is not the building, which suggests the West Coast effusions of the 1920's, but the fireproof vault (left), repository of secret, sealed documents from World War I. Many are not to be opened for ten to 30 years; others may never see the light until some librarian is overcome by curiosity.



Horace Bristol

Office. The New York office of Designer Gilbert Rohde (right and below), claimed by its author as unique among modern rooms. Not indicated in the bewildering display of materials and patterns is the remedy if dandruff should make its appearance.



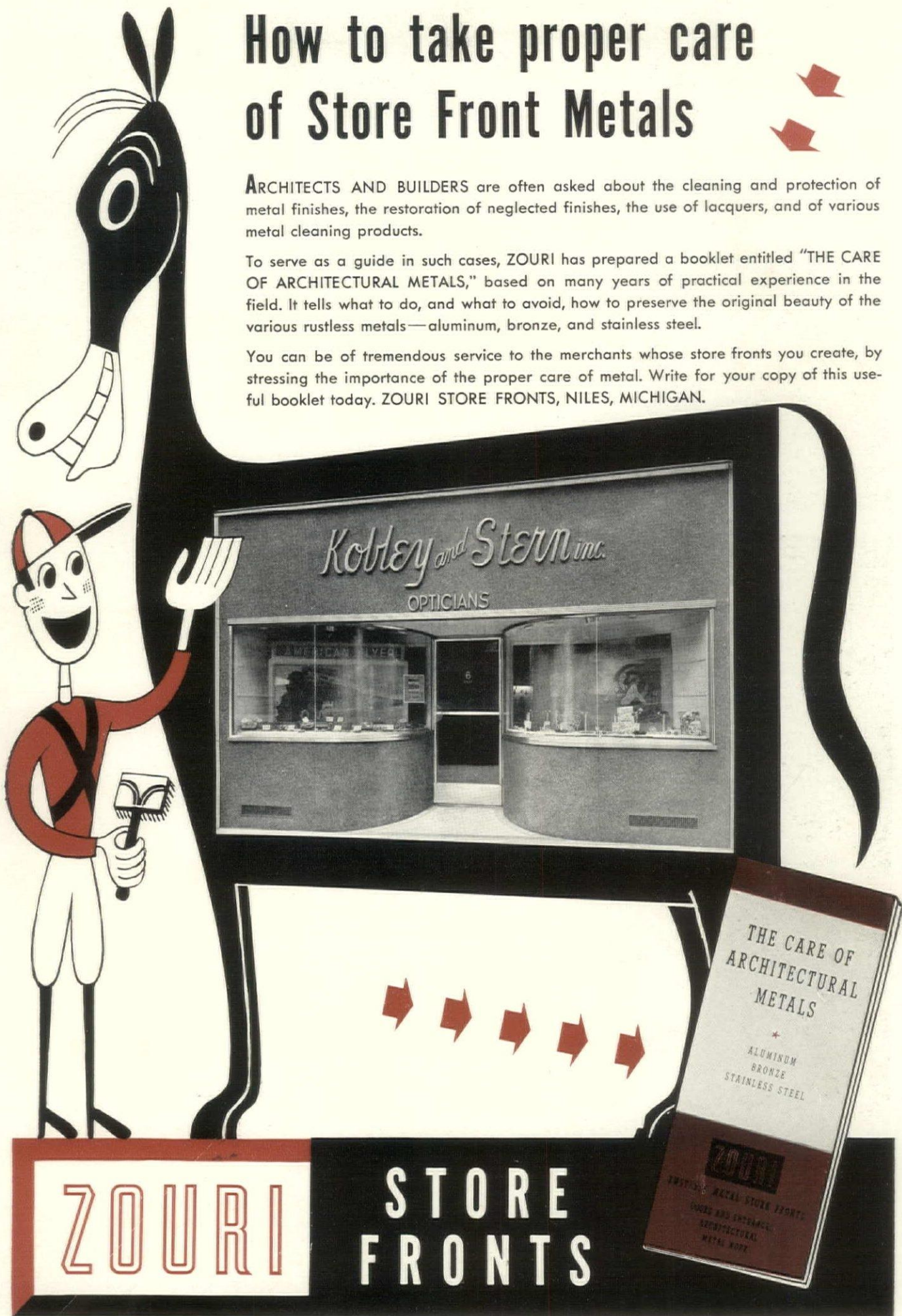
(Continued on page 12)

How to take proper care of Store Front Metals

ARCHITECTS AND BUILDERS are often asked about the cleaning and protection of metal finishes, the restoration of neglected finishes, the use of lacquers, and of various metal cleaning products.

To serve as a guide in such cases, ZOURI has prepared a booklet entitled "THE CARE OF ARCHITECTURAL METALS," based on many years of practical experience in the field. It tells what to do, and what to avoid, how to preserve the original beauty of the various rustless metals—aluminum, bronze, and stainless steel.

You can be of tremendous service to the merchants whose store fronts you create, by stressing the importance of the proper care of metal. Write for your copy of this useful booklet today. ZOURI STORE FRONTS, NILES, MICHIGAN.



The illustration features a large, stylized black donkey with a white face and a long, flowing black mane. A man in a red shirt, white pants, and a red cap with a white 'Z' is standing next to the donkey, holding a brush and pointing towards a store front. The store front is a photograph of 'Kotley and Stern Inc. OPTICIANS'. Below the store front, a series of five red arrows points towards a booklet titled 'THE CARE OF ARCHITECTURAL METALS'. The booklet lists 'ALUMINUM', 'BRONZE', and 'STAINLESS STEEL' and is published by 'ZOURI'. The ZOURI logo is prominently displayed in the bottom left corner.

ZOURI **STORE FRONTS**

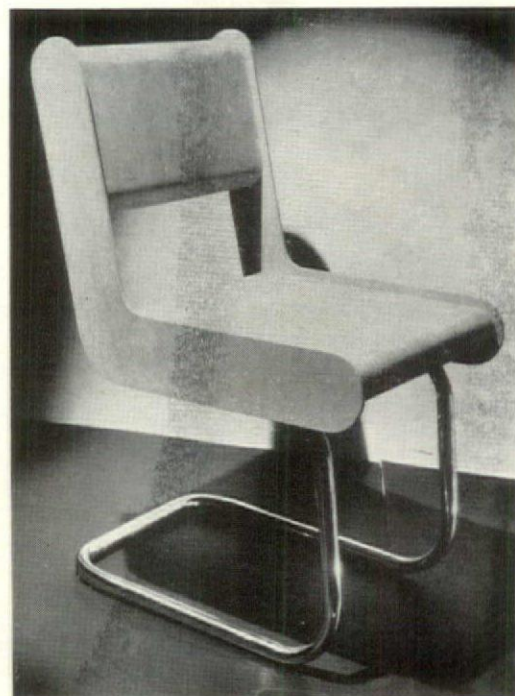
THE CARE OF ARCHITECTURAL METALS
*
ALUMINUM
BRONZE
STAINLESS STEEL
ZOURI
PUBLISHED BY ZOURI STORE FRONTS
NILES AND LANSING, MICHIGAN
ARCHITECTURAL METAL WORK

FORUM OF EVENTS

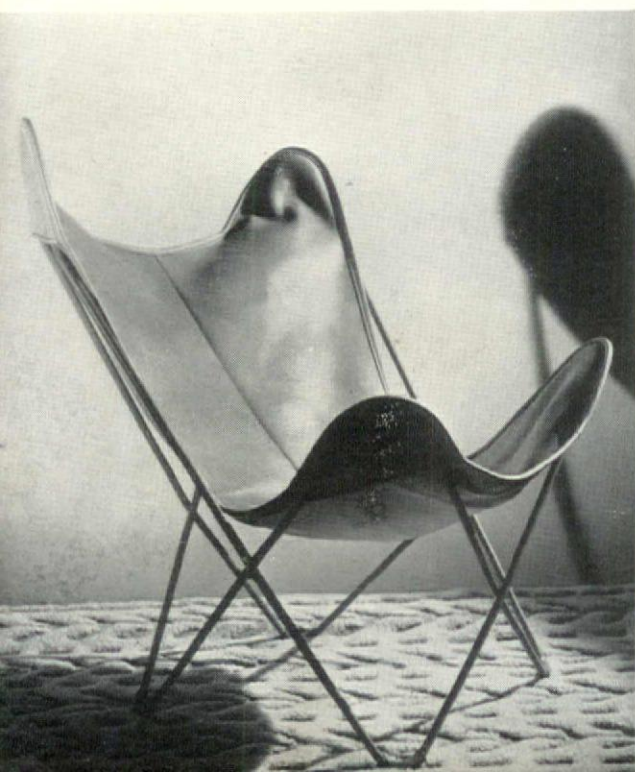
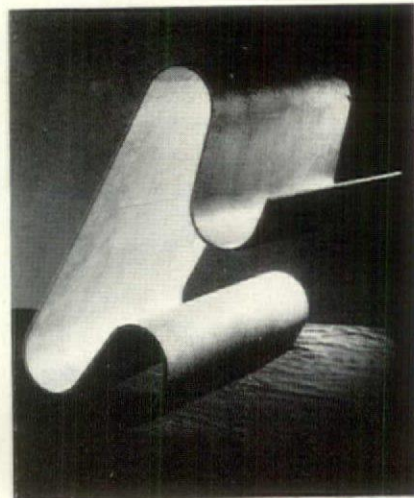
NEW FURNITURE, continued



Furniture illustrated in this section last month emphasized prefabrication of parts, flexibility and demountability. The present examples show experimental pieces developed by the School of Design in Chicago and work by outstanding architects for Artek-Pascoe. Student pieces were designed under the direction of L. Moholy-Nagy, and are concerned chiefly with exploring the possibilities of plywood. Most extreme of the experiments to date is the one-piece chair at the left, which dispenses with all conventional supports and joints. It was designed by N. B. Lerner. The chair at the right, by Charles Niedringhaus, uses resilient "drums" of plywood for seat and back, flat pieces for the sides, metal tube support.



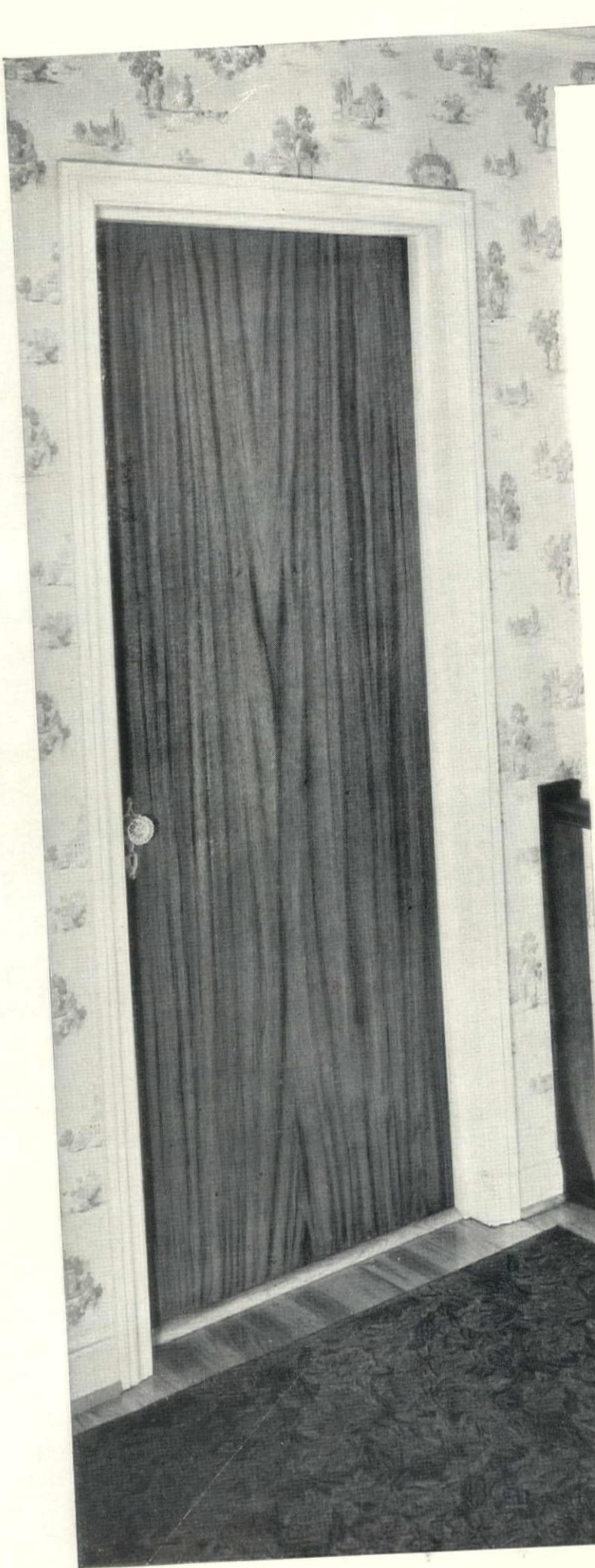
The illustrations below show a metal and plywood chair, with an expanded rubber cushion cemented to the seat and back, upholstery with zipper; the bent plywood piece at the right is the resilient seat of a stool. Both designs are by Charles Niedringhaus. The handsome table at the left, with legs of curved plywood, was designed by Kenneth Evertsen and has been put on the market by Artek-Pascoe.



The three bottom pieces, from Artek-Pascoe, include a metal and leather (or canvas) chair by Jorge Hardoy of Buenos Aires, a lounge bed by Alvar Aalto, and an armchair by Carl Koch.



(Continued on page 14)



*Why are people
turning to*

MENGEL FLUSH DOORS?

SELDOM in the building industry has any product had the spectacular sales-increases now being enjoyed by Mengel Doors. *What is the reason?*

The reason is simply this: Mengel Doors are *better* doors, manufactured by mass-production methods which put them within the budget of practically every job.

Mengel Doors are **BETTER** because their patented, resin-bonded, *sealed* construction enables us to make them light, strong and durable—because their construction permits the use of all standard types of hardware—because their superior veneers make them *more beautiful*—because their flush construction makes them more economical to finish.

These are facts that *one inspection* will prove. Ask your usual door supplier to check them with you. Or, if you prefer, mail the coupon below.

The Mengel Company, Incorporated
1126 Dumesnil Street
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Gentlemen: Please send me, at once, full information about Mengel Flush Doors ☐ . . . Also about Mengel Bord, the new and better hardwood panelling ☐.

Name

Street

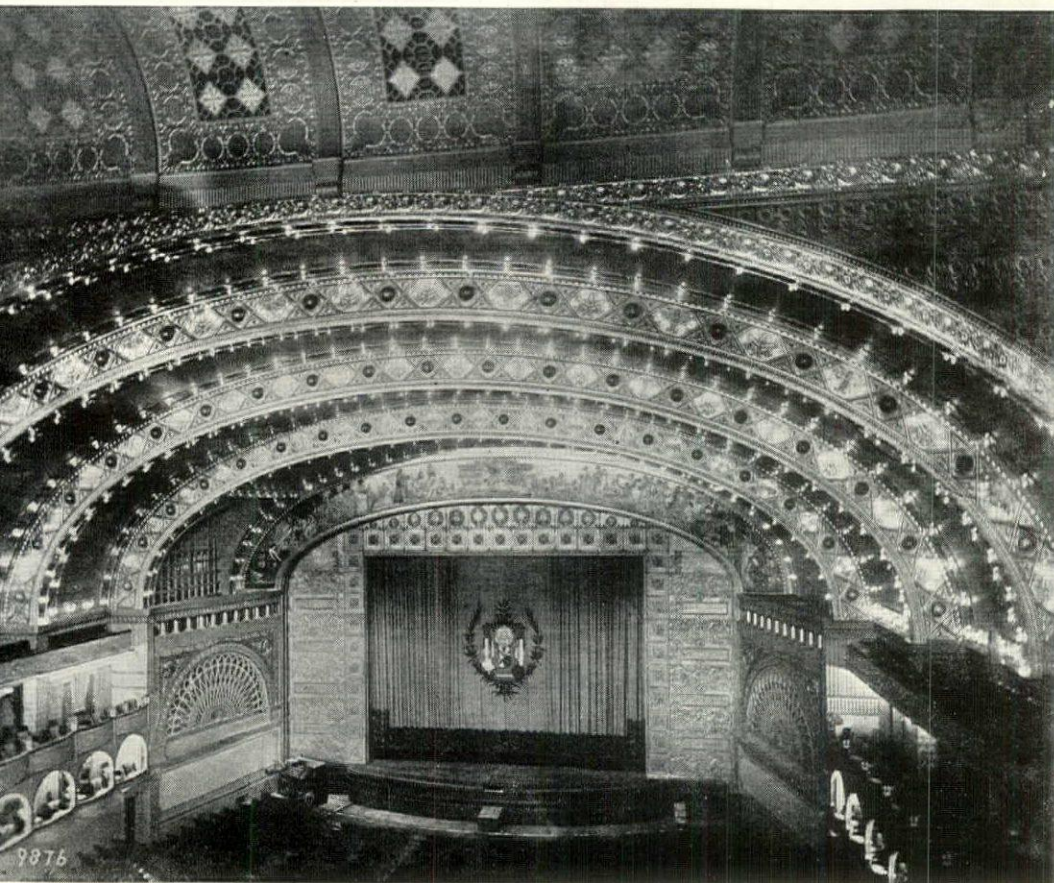
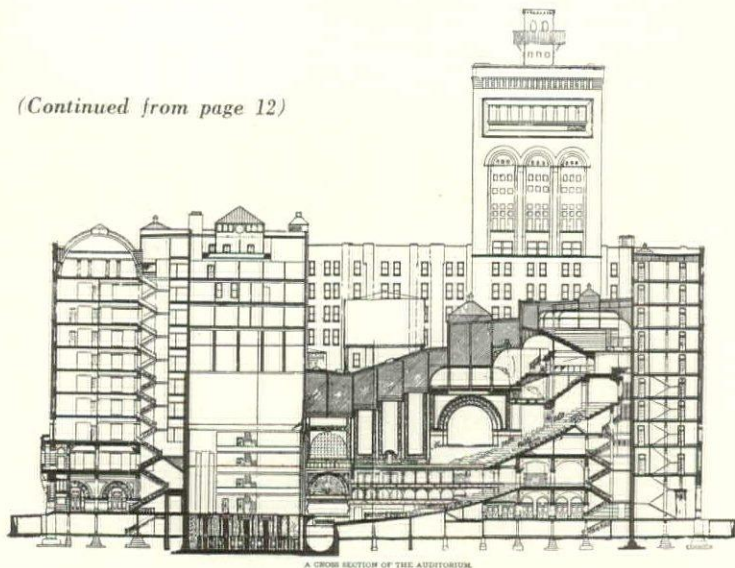
City State

(Continued from page 12)

AUDITORIUM SAVED

On the ninth of December, 1889, the Chicago Auditorium Theater was dedicated to the tune of two verses of "Home Sweet Home," sung by the great Patti (at \$2,100 per verse) and an address by President Benjamin Harrison. Designed by the famed office of Adler & Sullivan, the Auditorium brilliantly justified its impressive beginning, for 52 years stood out as a giant among the great buildings of the Chicago School. Troubles began in 1929, when the Chicago Civic Opera (and a \$180,000 rental) moved to a new building, and came to a head this year when it was announced that the entire building would be abandoned. Apparently awake at last to its unique architectural heritage, Chicago sprang into united action. The press, business, civic groups and architects launched a defense in blitz tempo, formed a non-profit foundation to take over, got a charter, had the assessment and taxes cut to less than one-third, and a masterpiece of U. S. architecture was saved. If this should set a precedent, Chicago's decisive action may yet prove significant as a turning point in America's attitude toward its rich inheritance and may save many a building still menaced by the march of "progress."

Williams & Meyer



Williams & Meyer

Above, a section showing the theater, hotel and offices. The photographs show the building as it is today. Designs were changed after excavation began, with great improvement over the original scheme. (see rendering above at left). The theater interior is a startling anticipation of the latest in auditorium design. "Adler's acoustics," says Frank Lloyd Wright, "were a specialty. There is no house in the world equal to the Auditorium in that respect."

(Continued on page 68)

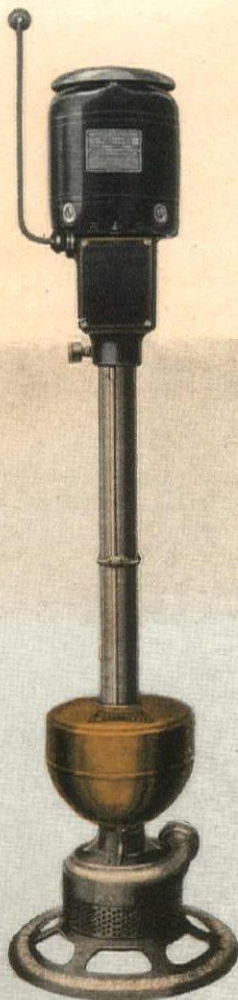
OUTSTANDING PERFORMANCE

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seepage water*

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Made in 6 sizes

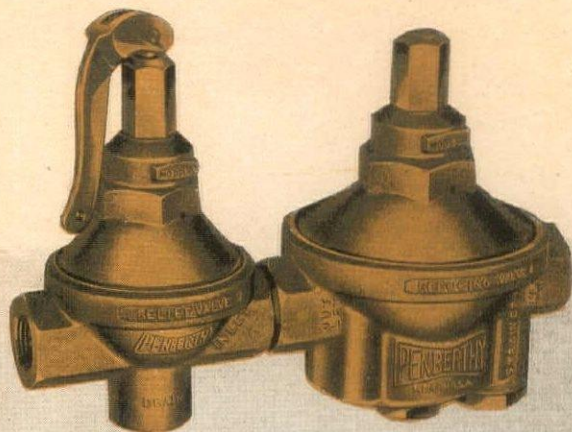


**PENBERTHY AUTOMATIC
ELECTRIC SUMP PUMP**
Made in 6 sizes



Advanced and rugged design, copper and bronze construction throughout, and careful workmanship are responsible for the demonstrated superiority of these Penberthy pumps wherever seepage water accumulates. Leading jobbers stock Penberthy products.

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hot water heating systems*



PENBERTHY PRESSURE AND RELIEF CONTROL
Made in 3 Models



PENBERTHY RELIEF VALVE
Made in 14 Models
including Dead End Type

**PENBERTHY REDUCING
VALVE**
Made in 9 Models



Penberthy Hot Water Heating Specialties are constructed of high grade steam bronze. Their design and workmanship are also of exceptional quality throughout. Your jobber will gladly give you complete information and supply your needs.



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DETROIT, MICHIGAN • Canadian Plant, Windsor, Ont.

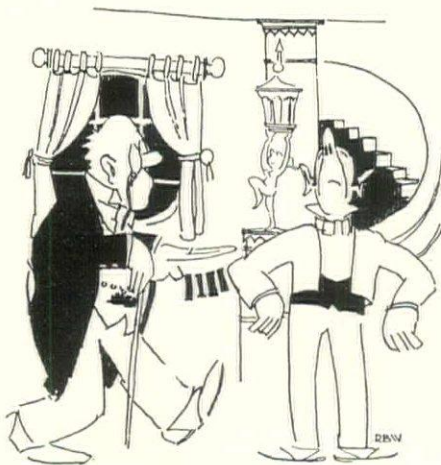
BOOKS

The economics of architectural practice . . .

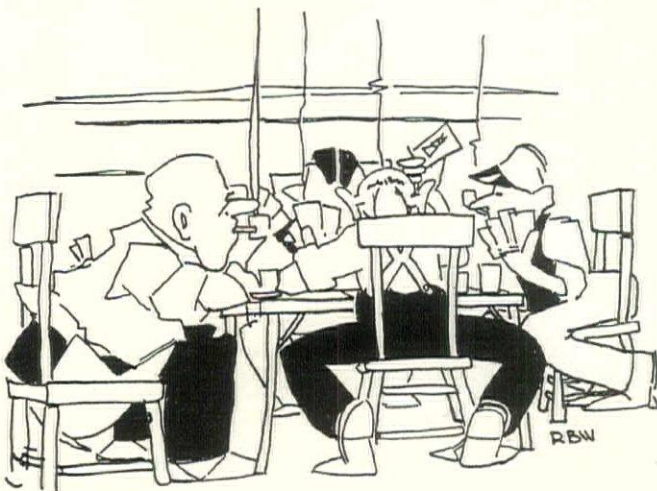
Concrete design and construction . . . History of the house . . . Estimating



IT IS WELL TO FIND OUT AT THE BEGINNING IF THE OWNER'S POCKETBOOK WILL STAND THE STRAIN



RAILROAD PRESIDENTS OFTEN BUY SPECULATIVE HOUSES



SOCIAL ACTIVITIES SHOULD NOT BE WITH COMPETITORS

THIS BUSINESS OF ARCHITECTURE, by Royal Barry Wills, with the collaboration of Leon Keach. Reinhold Publishing Corp. 210 pp., illustrated. 6 x 8 3/4. \$2.75.

"It does no architect any harm," says Mr. Wills, "to attend religious services and even to become a deacon. . . . Perhaps he might be inadvertently guided into paths of righteousness by remembering that it pays to know reputable people." The pages of this guide for the young and for those not too old to mend their ways are littered with similar nuggets of wisdom. An easy, informal and frequently amusing manner of writing makes prospecting a pleasure.

Completely unpretentious in its approach, "This Business of Architecture" is a hard-boiled, hard-hitting document that is worth more than all of the lamentations, official and otherwise, that have emanated from the profession since it first began to suffer from the consequences of its own folly. Mr. Wills' story is to the point, and brief. Architecture has changed from a fashionable practice favored by wealthy dilettantes to a business which retains professional supervision as its inheritance from earlier years. The architect today, while still a professional man, is faced with competition not only within his profession, but from aggressive non-professionals in a variety of fields. While "his back is more nearly to the wall than he realizes, he has the best of arguments for his continued existence will he but galvanize himself into intelligent aggressiveness."

So much for the background. The rest of the book concerns itself with what the architect can do to improve his situation. If anything is needed to convince the reader that the author is seriously concerned with the problems of architecture as a going business, the minimum of space and rhetoric wasted on enumeration of the architect's difficulties should do it.

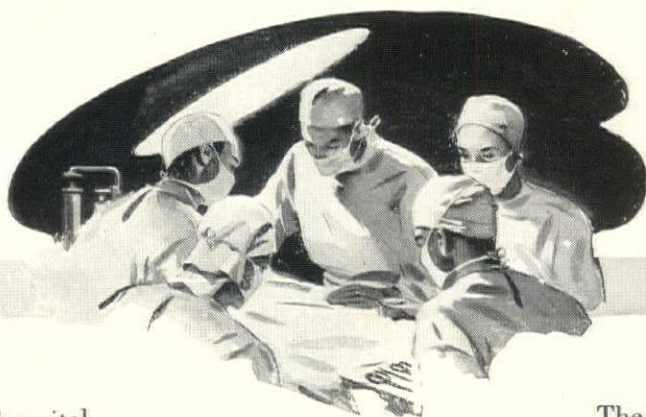
Most fascinating of the various sections in any success book is the chapter on how to get business and this is no exception. In "Stalking and Capture of Clients," Mr. Wills enumerates no less than thirty-five methods of selling, both direct and indirect. Few, if any, are startlingly original, nor, presumably, were they meant to be. The average practitioner, however, would probably be startled to find how few of these time-tried business methods he had ever used. They include lectures, exhibits, mailing pieces, articles in publications, use of photographs and motion pictures, marrying the right girl, committee work, having fun with potential clients rather than with one's competitors, and a variety of others. What gives the list a certain impressiveness is that Mr. Wills has done very well by himself in "this business of architecture" and it is to be assumed that some at least of the many precepts have been successfully tested in practice. Not the least of the virtues of the presentation is the complete absence of the customary pedagogical solemnity. Thus, in the chapter on contracts, the main point is made by quotation of an apocryphal remark of Samuel Goldwyn: "A verbal contract is not worth the paper on which it is written." In the discussion of handling clients, a variety of amusing but painfully real types are listed: the mother-in-law (who usually holds in until after the first conference), the client with a son who has had one or two years of architectural education, the bent-nail-saver ("when in conference with such a client try to make him feel that you are a couple of skinflints standing out against a prodigal world"). In addition to such material as has been indicated above.

(Continued on page 84)

Now...

A STATIC-CONDUCTIVE AND SPARK-RESISTANT RUBBER FLOORING

for hospital operating rooms



EVERYONE familiar with hospital construction has encountered the problem of static electricity in surgery flooring — and knows its hazards.

Goodyear is happy to announce that it has now met this problem with the development of a static-conductive and spark-resistant rubber flooring destined to mark a notable advance in the design

of surgery rooms.

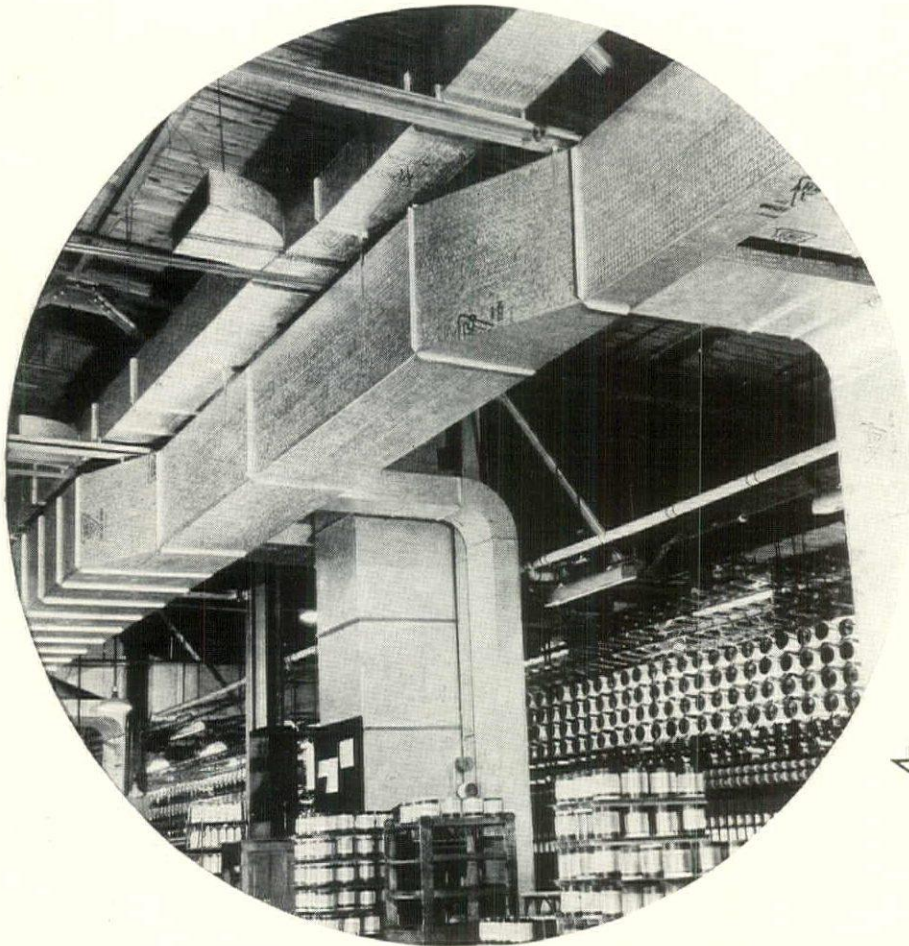
This new flooring is made of the highest-quality compounds. It embodies all the features that have made Goodyear flooring first choice with institutions everywhere.

The cost is moderate—approximately that of standard Goodyear Rubber Flooring.

Goodyear static-conductive rubber flooring is made only in plain black, 3/16" gauge, sheet form.

For complete specification data on the material and its installation, write Goodyear, Akron, Ohio or Los Angeles, California.

THE GREATEST NAME IN RUBBER
GOODYEAR



• 12½ tons of Galvanized ARMCO Ingot Iron were used in the air-conditioning equipment of the Owens-Corning Fiberglas Corporation at Newark, Ohio. Installed by the Huffman-Wolfe Co., of Columbus, Ohio. Designed by Arthur MacGonagle, Consulting Engineer, Pittsburgh, Pennsylvania.



THEIR PRESENT EXPANSION LOOKS TO THE FUTURE

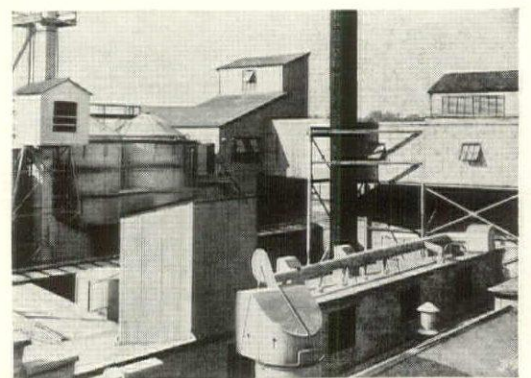


MANY cheap building materials used in 1917 later proved to be short-lived. They increased maintenance costs. So looking beyond the present emergency, industrialists, architects and engineers are building for *permanence!*

An example is the new air-conditioning system at the Owens-Corning Fiberglas Corporation in Newark, Ohio. This installation serves 33,000 square feet of floor space with two fan and air-duct systems. The humidifying is done by a separate system of sprays. Designed for glass textile work, the installation must hold close temperatures and exceedingly close humidities. Also the industrial atmospheric conditions are severe on metal.

For this rigorous service Galvanized ARMCO Ingot Iron was specified. This extra-durable metal has the longest record of actual service of any low-cost iron or steel sheet. Installations made in 1909 remain in good condition. On a cost-per-year basis, ARMCO Ingot Iron is a profitable investment. Its initial cost averages only about 1c per pound more than ordinary galvanized metal.

For complete information on the advantages of ARMCO Ingot Iron in industrial construction, write to The American Rolling Mill Co., 2341 Curtis Street, Middletown, Ohio.

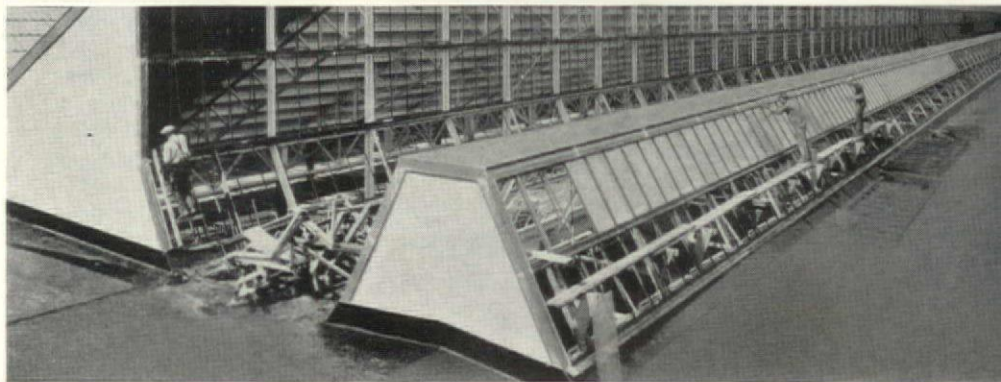


• For long service and low up-keep in an industrial atmosphere, Owens-Corning Fiberglas Corporation used Galvanized ARMCO Ingot Iron roofing and siding.



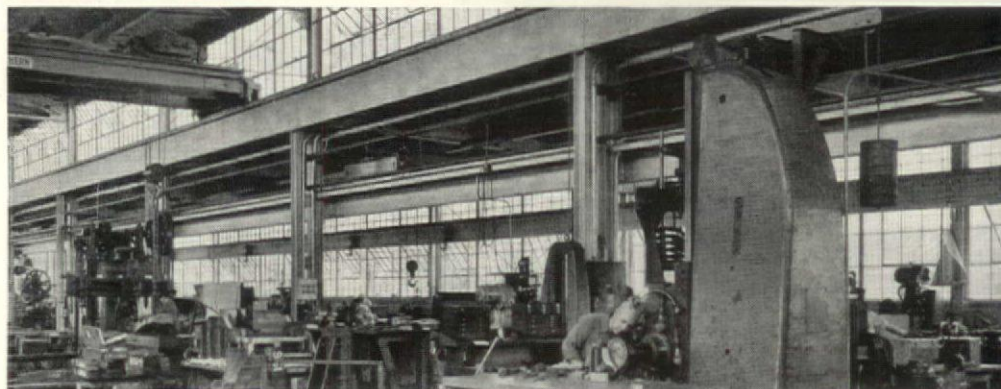
SPEED DEFENSE CONSTRUCTION

Remarkable savings in Defense Plant building time as well as savings in labor, materials and over-all cost can be made when the entire walls are *ready-built* windows. Weeks, even months have been saved by the use of Prefabricated Fenestra Steel Windows, delivered to the job, already fitted, assembled, prime-painted, COMPLETE.

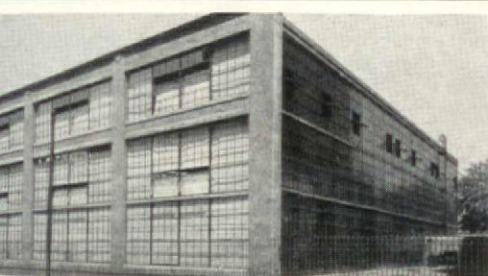


SPEED DEFENSE PRODUCTION

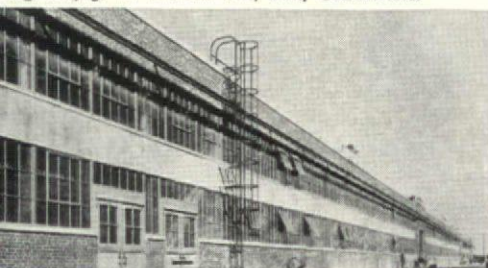
Through correct daylighting and fresh air ventilation assured by Fenestra Steel Window Systems, greater speed in production is attained with increased precision, less spoilage and freedom from accidents. Proper daylighting and ventilation are determined by Fenestra Research *before the building is built.*



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AVENUE 55
May 14, 1940.

Read the
EVIDENCE

Mr. McCray,
Paine Lumber Company,
Oshkosh, Wisconsin.

Dear Mr. McCray:

Our firm has been experimenting recently with the installation and finishing of Rezo doors. I thought you might be interested in knowing some of the results.

Although the carpentry involved in the installation of your doors shows practically no difference compared to the former six panel door that we had been using, there is a substantial saving in the painting of the doors. Figuring it on the basis of a three coat painting job, we found to completely finish the Rezo door, the time was 37 minutes, and on a six panel door, the time was 72 minutes, almost double. There also was a slight difference in the amount of material used, amounting to three-fourths of a gallon of paint less on the Rezo doors for sixteen doors.

Of course the reason that we had given up the six panel door originally was the question of service and maintenance after completion. On practically all of the panel type doors, where they were painted, we found that because of humidity desired in a modern house today, that this caused a contraction and expansion of the panels along the stiles, and practically every panel door job that we had required touching up by painters after completion. This annoyance and nuisance, together with the factor that our client will have lower maintenance cost in the future, was really the basis for our deciding to use Rezo type doors exclusively.

Hoping that this information might be of some interest to you, I am

Yours very truly,
WM. JOERN & SONS

By Charles E. Joern

CEJ:OJ

Mr. Chas. E. Joern is chairman of the taxation committee of the Chicago Real Estate Board—is a member of the Chicago Board of Underwriters and a director of the Chicago Building Congress.

Mr. Joern is nationally known as an important member of the real estate and building industry. His company was awarded the contract to build the LIFE Magazine fostered home in 1939 and also in 1940 in the Chicago Area.

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REZO FLUSH DOORS the ONLY cell-type door, with YEARS of EXPERIENCE

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I PAINT TWO DOORS
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AND USE LESS PAINT

I HAVE TO
CLEAN CORNERS-
24 OF THEM ON
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THAT'S 48 CORNERS
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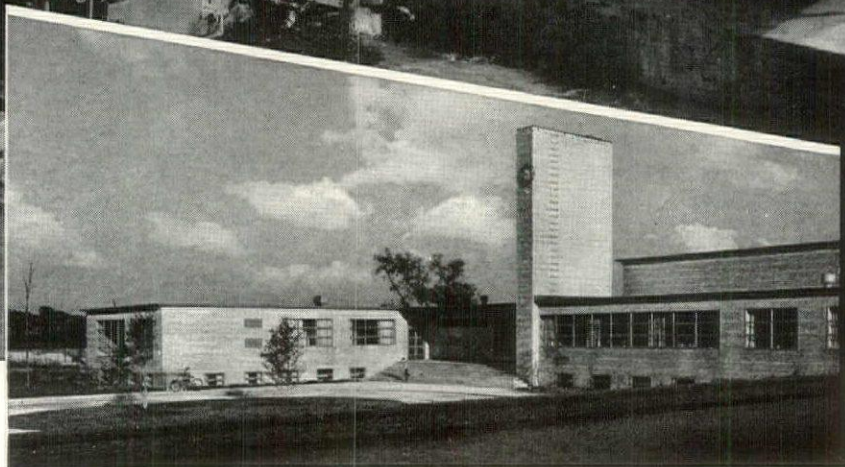
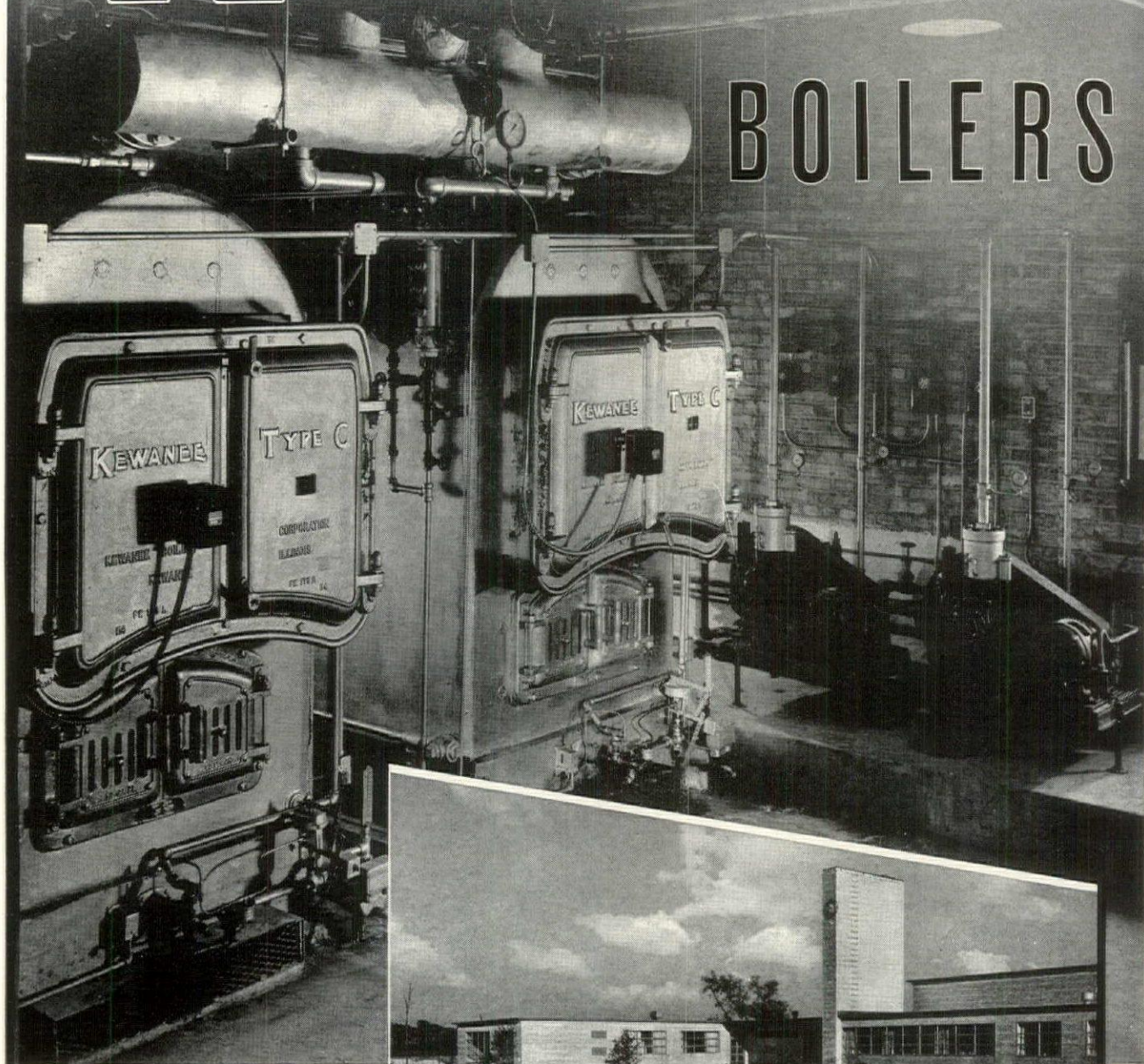
this *Saving* in LABOR
and MATERIAL permits
the use of guaranteed
REZO FLUSH DOORS

at the same installed cost as common multi-panel doors

Manufactured by PAINE LUMBER CO., Ltd., Oshkosh, Wis.

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Type "C" ... with the Corrugated Crown Sheet. Each boiler rated to heat 10,330 square feet of steam radiation, with mechanical firing.

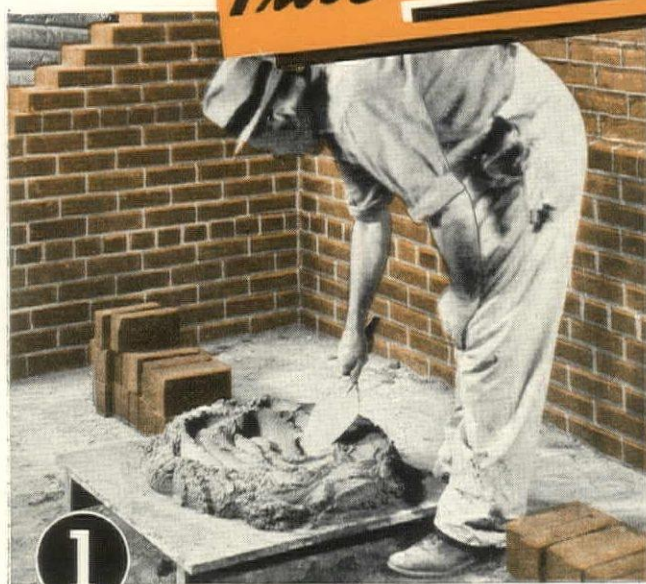
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MAKE THIS TEST -
Prove **BRIXMENT is BEST!**



1

Mix a batch of 1-3 Brixment mortar (above) and a batch of 50-50 cement-lime mortar made with the same proportion of sand (right). Get any competent bricklayer to test



2

them on the board—to spread them on the wall—to lay up a few brick with each of the two mortars. Then ask him *which* has the best workability.

BRIXMENT Assures **More Economical Brickwork**

Aside from the cost of the brick itself, the most expensive item in masonry construction is the bricklayer's time.

Therefore the most economical mortar you can buy is the one that enables the bricklayer to lay the most brick per day. You cannot afford to give your bricklayer any mortar which causes unnecessary work, such as constant retempering, stooping to the board to replace mortar that failed to stick when he threw up the head-joint, etc.

To secure economical brickwork, the mortar must

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The plasticity of Brixment mortar is *ideal*. It approaches that of straight lime putty. It enables the bricklayer to do faster, neater brickwork, with the brick well bedded and the joints well filled.

This is the principal reason why Brixment reduces the cost of brickwork. But in addition, less labor and supervision are required in mixing. No soaking or slaking. No mortar is wasted. And Brixment mortar makes a neater job that costs less to clean down.

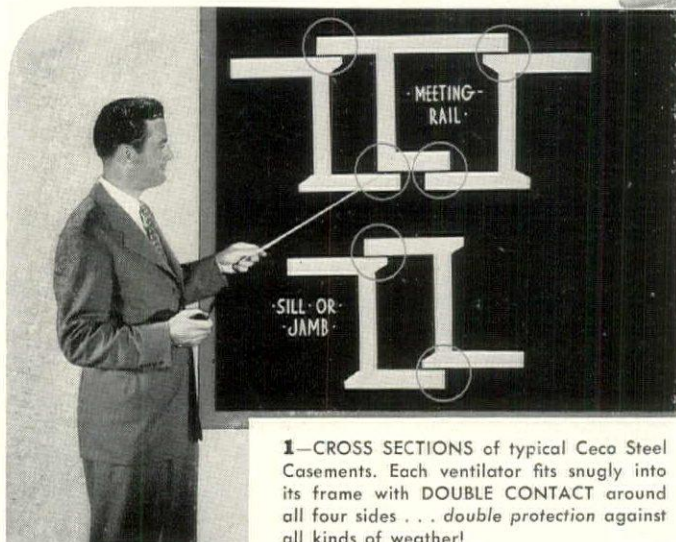
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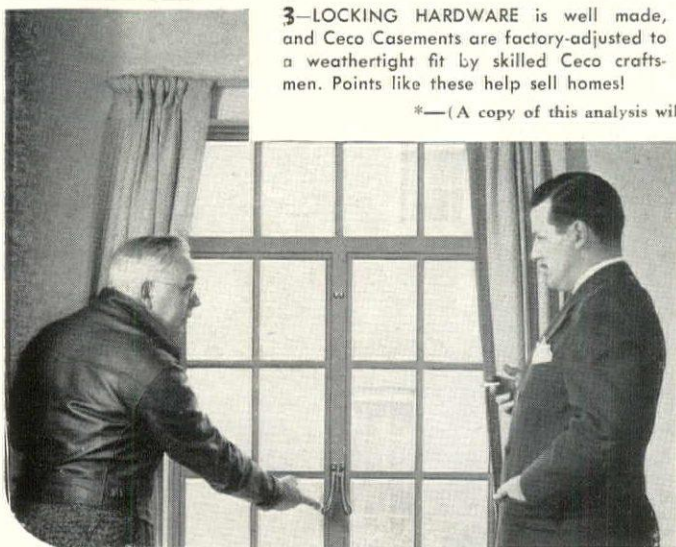
3—LOCKING HARDWARE is well made, and Ceco Casements are factory-adjusted to a weathertight fit by skilled Ceco craftsmen. Points like these help sell homes!



2—LET THE WEATHER GET TOUGH! The people who buy your homes can enjoy snug comfort with Ceco Casements . . . comfort they have never had with ordinary windows.

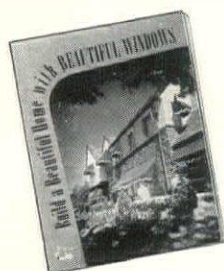
4—A COMPLETE ANALYSIS, using American Society of Heating & Ventilating Engineers' values and formulas, proves heat loss to be **18½% LESS** through steel casements, than through wood double-hung windows.*

*—(A copy of this analysis will be sent to you upon request.)



FREE!

This "BEAUTIFUL WINDOWS" booklet answers many questions important to people investing in homes! Send for your **FREE** copy. Show it to your prospective owners.



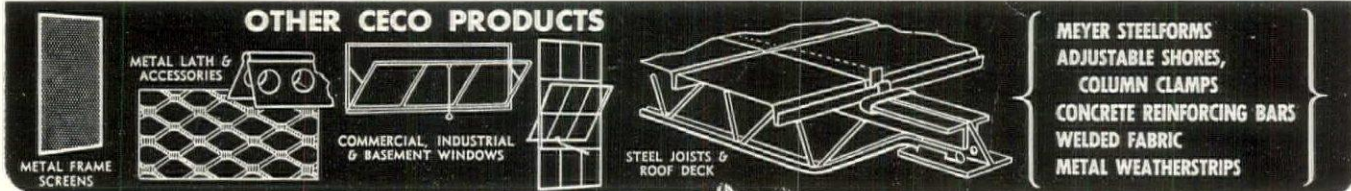
● When a home-owner wants to know about weather protection and comfort, give him the interesting facts about weathertight Ceco Casements. You might also say Ceco Casements *stay tight and snug* because steel never shrinks, rots or wears! Tell him Ceco Casements are **BONDERIZED** against rust! Then add easy opening and closing, better ventilation and more daylight, and you are offering him America's best "buy" in modern, beautiful windows.

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FOR SCHOOLS OF LASTING BEAUTY

specify versatile Douglas Fir Plywood

inside and out!



• Architect Wm. H. Harrison specified Plyform for both the exterior and interior surfaces of the beautiful Lou Henry Hoover School in Whittier, Calif. The J & B Construction Co. was the contractor.

• The photograph below shows clearly the flawless beauty of the interior walls. There was no plastering. Paint was applied directly to the concrete.

There is a grade or type of this "modern miracle in wood" for every building purpose!

• Douglas Fir Plywood is ideal for schools and other public buildings. Used as walls, it takes punishment galore without showing it; is kick-proof; tests 5 times more sound absorbent than traditional wall material; provides excellent insulation; is receptive to any finish; can be quickly erected or taken down.

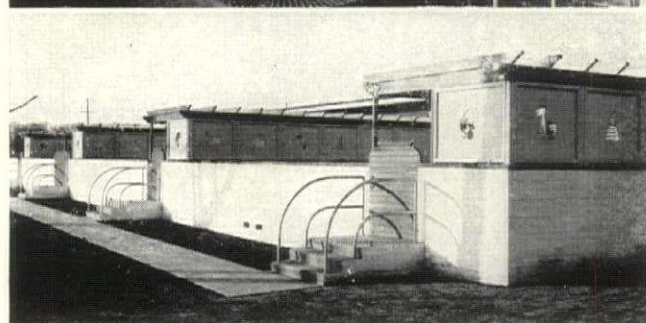
The water-proof type, EXT-DFPA, builds smart, durable, streamlined exteriors that are resistant to high winds and earthquakes.

Used as sheathing, 5/16" Plyscord, the utility grade, makes walls 6 times as rigid as horizontal board sheathing, several times as rigid as fibre board sheathing and 40% more rigid than diagonal board sheathing.

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The concrete form grade of Douglas Fir Plywood, Plyform, has been used on virtually all the outstanding concrete schools in the nation. Plyform forms smooth, flawless concrete at lower cost; minimizes handling, carpentry and finishing; and gives numerous re-uses when handled with reasonable care.

Read the Douglas Fir Plywood section in Sweet's catalog or send for free literature. Consider how this versatile material can serve you and your clients better. Consider its large sizes, strength, light weight, damage-proofness and other advantages in relation to your problem. Then specify by the "grade trade-marks" shown below and be sure the plywood delivered to your job bears them. For they show the exact purpose for which each panel was manufactured in strict accordance with U. S. Commercial Standard CS45-40. Douglas Fir Plywood Association, Tacoma Bldg., Tacoma, Wn.



• The cut-outs around the individual play yards in the Jennie Baker Tucker School, El Monte, Calif., are in panels of EXT-DFPA, the type of plywood made with a water-proof bond for permanent exterior use. T. C. Kistner, architect.

**DOUGLAS FIR
PLYWOOD**

Real Lumber
**MADE LARGER, LIGHTER
SPLIT-PROOF
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**SPECIFY DOUGLAS FIR PLYWOOD
BY THESE "GRADE TRADE-MARKS"**

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TRADE MARK REG. U. S. PAT. OFF.

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LETTERS

POST-WAR PATTERN

The following letters were prompted by publication of the synopsis of the Post-War Pattern series in the June issue (opposite page 408). The first article of this series, has been deferred to next month to permit publication of the article on Priorities, in this issue on page 73.—Ed.

Forum:

... It seems to me to be an excellent article. ... I suggest, however, that you have neglected to mention the rewriting of the Building Codes and Zoning Ordinances, either as one ordinance or as two ordinances, written in relation to one another. I might also suggest that the enforcement of these ordinances should be removed from political influence.

We are rewriting the Building Code and Zoning Ordinance of the City of Cambridge and framing the legislation to prevent political tinkering which has resulted in a tremendous reduction in tax valuation and a corresponding unreasonable increase in the tax rate, because of the fact that the ordinances have been changed to benefit individuals contrary to the public good. Also, an appropriation has been received from the savings banks of New England for a study of the building codes and zoning ordinances of the New England States. ...

... The other item I should like to mention is the organization of powerful city-wide groups whose duty it will be to put city rebuilding into action. I have been talking at great length and with much enthusiasm about the Cleveland plan which is at last nearing consummation. I am also preparing for the Board of Directors of the A. I. A. a nation-wide program based on this local program which will unite all of the elements in the building industry, which will include also the financial and real estate interests in a non-partisan, non-political, and unselfish approach. ...

WALTER R. MACCORNACK

*Massachusetts Institute of Technology
School of Architecture
Cambridge, Mass.*

Forum:

... The problems that you have been tackling and the stuff you have been putting out during the past year are rather electrifying, and THE FORUM's prestige has increased enormously as a result. Your publication is doing a great deal and can continue to do a great deal to benefit our profession. You seem to be the staunchest champion that we have today. ...

... The building industry and building

generally in the past, including even the temporary construction of the Government under the Defense Program recently, has suffered from lack of proper planning. We have plenty of men, architects particularly, whose whole lives, from their school training on, have been devoted to planning and coordinating. They are men of vision and complete technical knowledge, and they have never taken their proper place in the building industry. The Government does not recognize them, the industry itself—speaking in general terms—does not properly recognize them. This is largely their own fault, but entirely aside from that, the building industry in the future should be put on a properly coordinated basis. This means that the planner, the architect, the engineer, the man with the ideas, must be out in front where he belongs, and a good time to start would be the post-war period. ...

FREDERICK A. FLETCHER, *Chairman
Washington Chapter, A. I. A.
Washington, D. C.*

Forum:

... After reading the synopsis, I tried to analyze the thought and could only come to the conclusion "So What?" I found nothing new or original, but just the same old ideas that I have been reading in building magazines for the last several years. You have regrouped the words and phrases, and have done a splendid job. But, where is the new thought? This article might be new and of interest to college freshmen, but not experienced builders. ...

T. E. GRINSLADE

Indianapolis, Ind.

Forum:

... I believe this is the most comprehensive and sensible analysis of the home building industry, past, present, and future which I have ever reviewed. ...

... Belt line, mass production methods, and the great efficiencies and economies which accompany it, must be made applicable to the home building industry. This must be accomplished either by the so-called "factory system" or by belt line schedules on the job.

Home building is just now beginning to attract the attention and skill of real entrepreneurs. This must continue. One of the great weaknesses of the industry in the past, is the absolute lack of real entrepreneur skill. ...

NEAL H. STODDARD

Madison, Wis.

Forum:

... I think that the greatest single cause of high cost of housing is the total lack of organization in the housing indus-

try. If you could create the business your article visualizes you ought to be able to have house building companies—that is, companies which can design and construct houses without employing any one except their own salaried employees. ...

Boston, Mass.

HENRY R. BRIGHAM

Forum:

... Every important building project, whether public or private, should contribute something to the rebuilding of the community in which it is constructed. That means much more community planning is needed than we have had, and it also means that to a greater extent private developers must fit their projects into the community plan. ...

Chicago, Ill.

WALTER H. BLUCHER

Forum:

... Your twelve "correctives" seem to cover the field quite thoroughly, although I think I should change the emphasis somewhat.

I should stress more heavily the need for transferring a larger portion of the building operation from the site to the shop where modern methods of production can be applied far more successfully than they ever can be in the field. This means of course increased standardization of parts and the production of larger scale standardized parts. Work in the field should be reduced as far as possible to assembly rather than construction operations.

Only in this way can the benefits of modern technologies be felt in the building field, with a consequent lowering of costs and increase of speed.

I also think that your point No. 10 should be stressed more heavily. In the housing field, the long life anticipated and prepared for in dwellings is one of our greatest handicaps. A glaring instance is the USHA plan which includes a 60-year amortization period. The present USHA structures should have been obsoleted, condemned and removed long before the year 2000 when amortization is completed.

If the swift advance of modern technologies as applied to dwellings is maintained, the maximum anticipated life of a dwelling should be 25 or 30 years and all plans should be made for replacement after such a period. In fact it would be far better if we could arrange for a replacement at 10 or 12 year intervals. This would result in a great rise in American living standards and a great increase in employment and exchange of wealth.

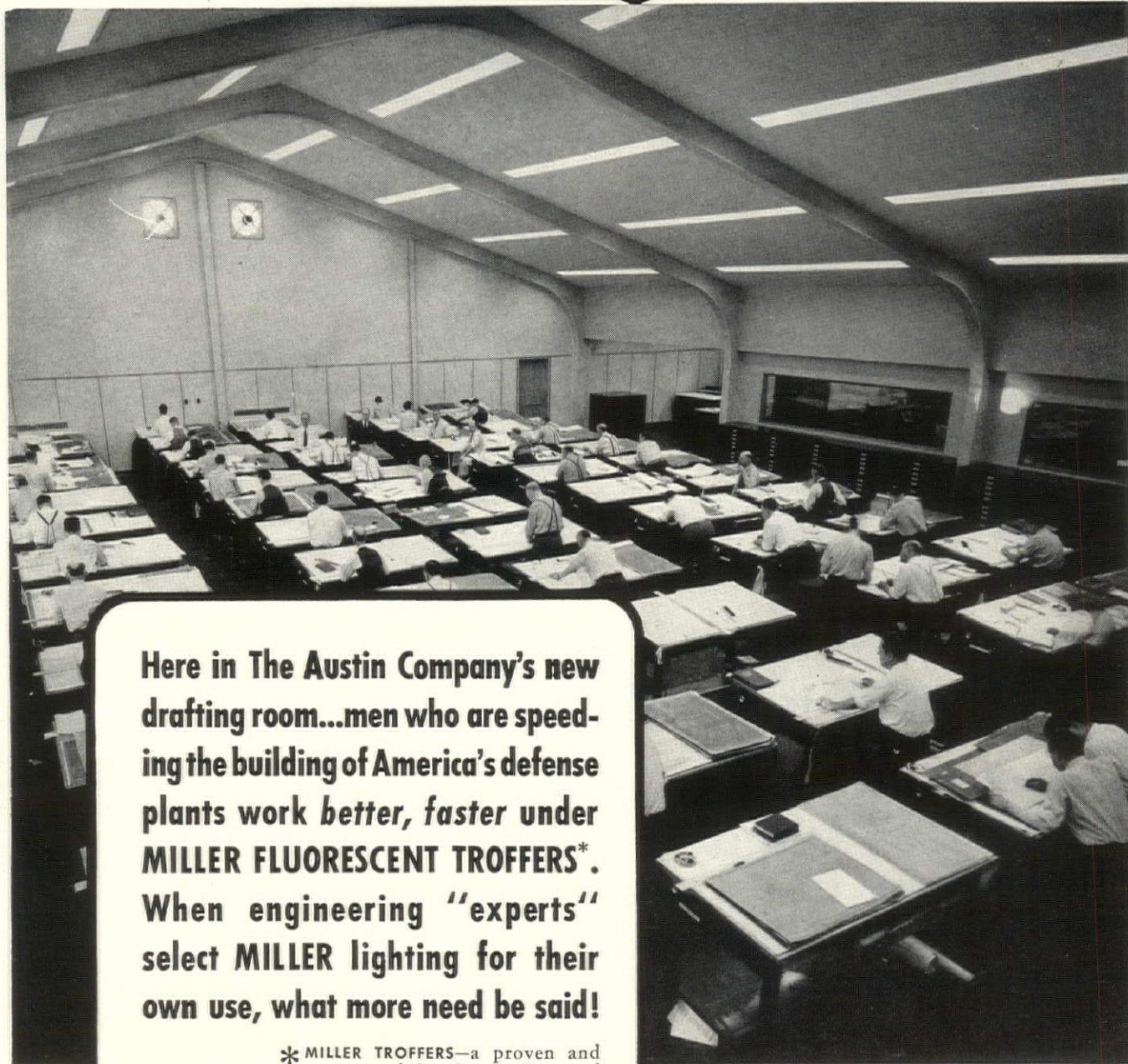
The whole trouble with housing is that houses cost too much and last damn long.

WALTER DORWIN TEAGUE

New York, N. Y.

(Continued on page 60)

There are 24 rows of **MILLER FLUORESCENT TROFFERS** recessed in the plaster ceiling of this 70'x80' room, providing Austin draftsmen with cool, well-distributed, shadowless light to aid their vital work.



Here in The Austin Company's new drafting room...men who are speeding the building of America's defense plants work *better, faster* under **MILLER FLUORESCENT TROFFERS***. When engineering "experts" select MILLER lighting for their own use, what more need be said!

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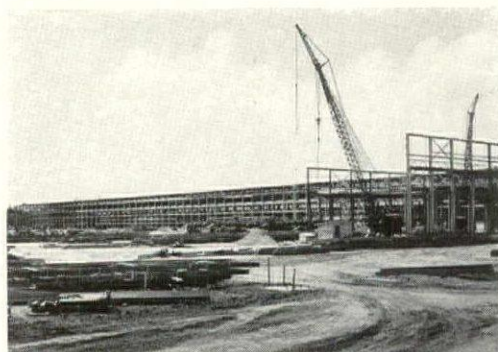
ALUMINUM, DEFENSE, AND YOU

GENTLEMEN, BEHOLD A PARADOX!

ONE POUND OF CIVILIAN ALUMINUM becomes one pound of Defense Aluminum by the simple process of writing the magic symbols AA to A-10 on certain pieces of paper.

THIS DEFENSE ALUMINUM we are making is not special aluminum; it is just good old Alcoa Aluminum in especially *large* quantities.

HOW LARGE? Each pound of civilian aluminum shipped in the average month of 1930-38 has been multiplied into almost four pounds a month for defense. And this was possible only because we started to spend over \$200,000,000 for expansion long before today's needs became generally recognized.



The 2400-foot-long rolling mill being constructed at Alcoa, Tennessee. This new 57-acre plant will bring our sheet rolling capacity up to more than 33,000,000 pounds per month.

HERE'S THE PARADOX: Civilian Aluminum is exactly what we are making; Defense Aluminum is what we are shipping—and a great deal of it.

DEFENSE DOES NOT ASK FOR different aluminum; it could not ask for better aluminum. It asks only more of the same. We are happy to report that defense industries asked for and got from us something like twenty million pounds *more* last month than were forecast in schedules set up six months ago.

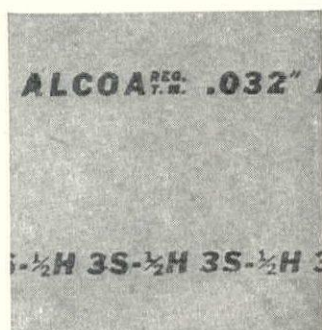
DEFENSE ORDERS specify aluminum in the old familiar way, using the same train of tried and true Alcoa Alloy numbers — 2S-3S-11S-17S-24S-52S-195-356, and all the rest.

They do the same things superlatively well, for Defense, that they have been doing for you.

WHEN ALUMINUM COMES BACK into civilian use, it is going to be very like switching this crack train of Alloys of Alcoa Aluminum right back on your track.

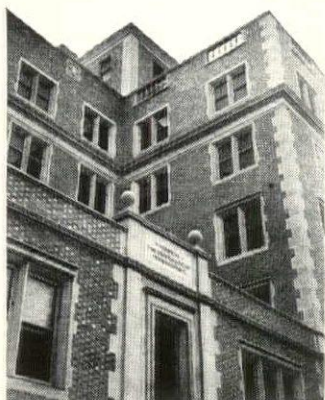
BUT THERE WILL BE SOME SURPRISES aboard. New techniques, new economies, are being sought, found, and already put into use by our busier-than-ever researchers. Probably there will be a new alloy or two. Certainly, there will be many new ways to use the old ones, profitably.

ALUMINUM COMPANY OF AMERICA



★

VALVE DETAILS: HOSPITAL



New Dulles-Agnew Pavilion— Hospital of University of Pennsylvania, Philadelphia, Pa.

Associated Architects: MARMADUKE TILDEN, GEORGE W. PEPPER, JR., ROBERT RODES McGOODWIN and H. BARTOL REGISTER. **Consulting Engineers:** MOODY & HUTCHINSON. **Heating and Piping Contractors:** HUFFMAN-WOLFE CO.—all of Philadelphia.

THIS \$1,600,000 Pavilion was designed to serve primarily for out-patient and wards for gynecology and obstetrics.

Utilizing the most modern facilities available for both hospital and laboratory work, the applications for steam, water, air and gas are varied as well as unusual. Typical is the use of a vacuum system, shown in the diagram, for the aspiration of blood from surgical cavities during an operation. Steam is used at four pressures, as shown in diagram of the condensate returns, for such services as heating, laundering, scrubbing and sterilization.

All this piping is served by a wide variety of Jenkins Valves—from large Iron Body Gates to tiny Bronze Globes. In connection with this, here is an interesting offer:—If you will send your name and address on a post card to Dept. M, 80 White St., New York, we will send you free a gold plated valve charm for your watch chain. Prompt delivery of the Jenkins Valves for Dulles-Agnew Pavilion were obtained from a reliable, local supply house.

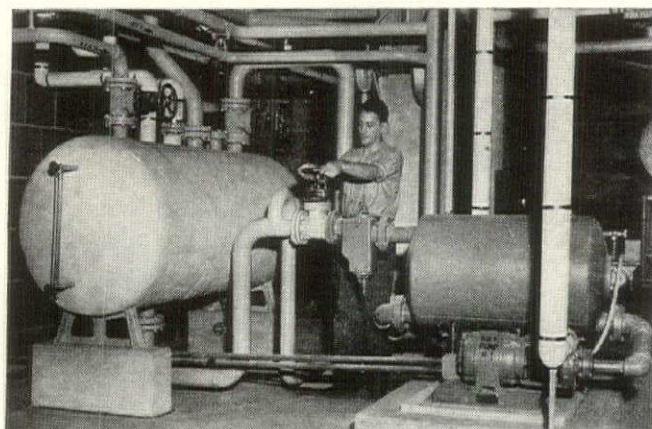
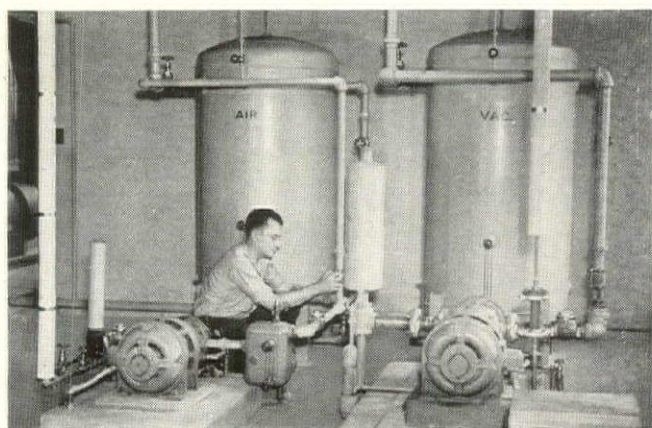
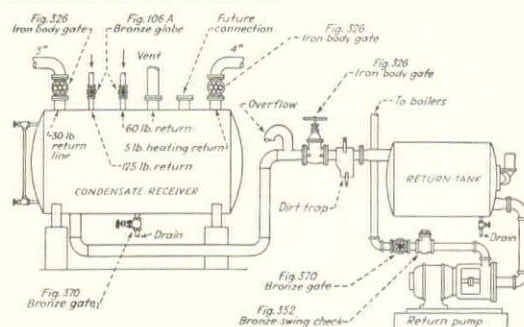
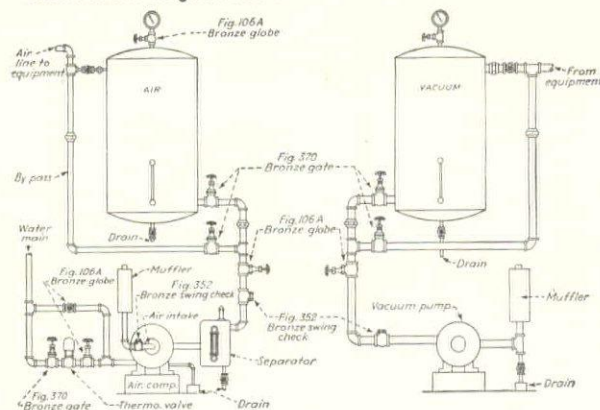
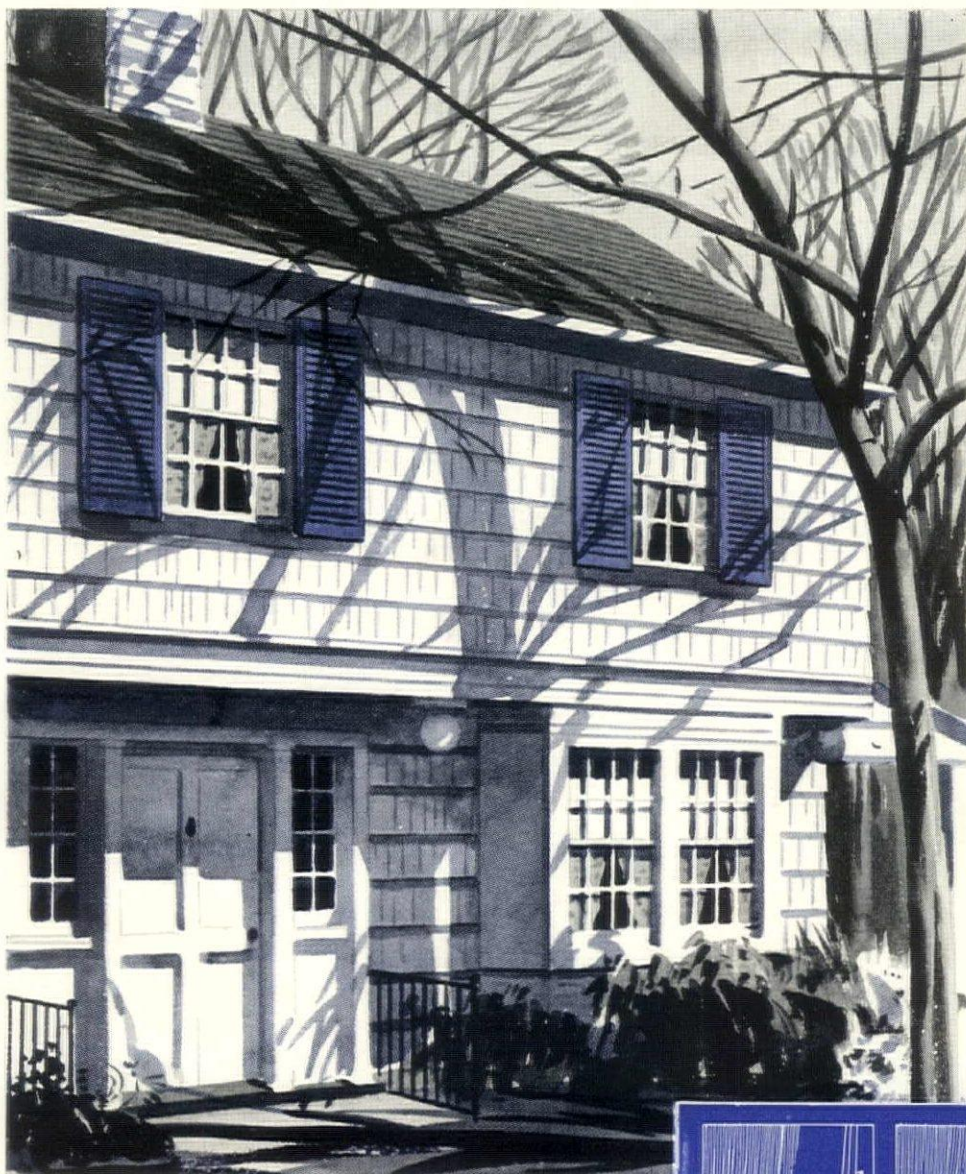


Diagram below shows how condensate lines at four pressures are returned to receiver and pumped back to boilers—and function of the Jenkins Valves.



Detail of air compressor and vacuum systems with proper placing of the Jenkins Bronze Globe, Gate and Swing Check Valves shown in the diagram below.





Exterior walls DOUBLE-COURSED with Red Cedar Shingles

THE deep horizontal shadow lines, the comparative low cost of construction, and the sturdiness of the job have resulted in a great increase in the popularity of this type sidewall. The wide exposure is obtained by so-called "butt nailing," placing 5d small-headed, rust-resistant nails approximately two inches above the butts (see blueprint illustration). Each shingle in the under and completely concealed course may be held in place with a single 3d nail.

The low cost of a double-coursed sidewall is effected by the wide shingle exposure and the use of untreated No. 2 or No. 3 grade shingles for the under course. Exterior walls of double-coursed Red Cedar Shingles are particularly long-lived and trouble-free. They provide excellent insulation because of the recognized insulative properties inherent in Western Red Cedar wood.

We will be glad to send you construction detail blueprints of various types of shingle application, including Double-coursing, and also a copy of the authentic Certi-grade Handbook. Write Red Cedar Shingle Bureau, Seattle, Wash., or Vancouver, B. C., Canada.

CERTIGRADE

Red Cedar Shingles

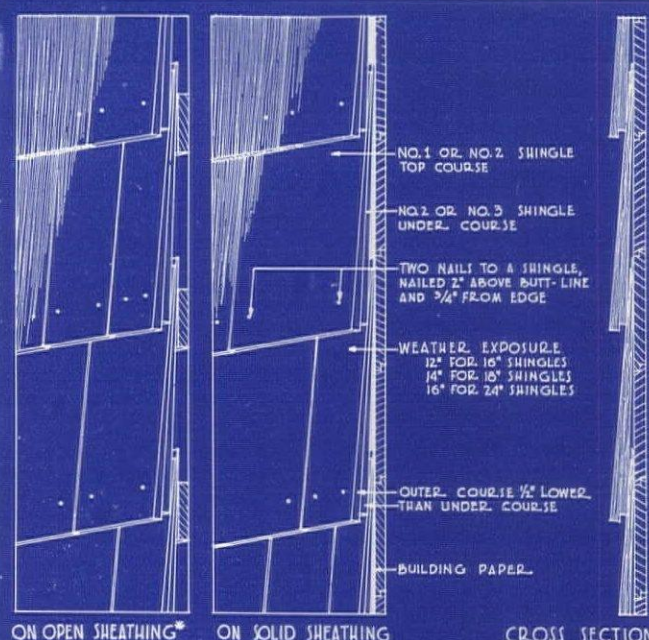
SOLD EVERYWHERE BY LUMBER DEALERS

"The manufacture of shingles for roofs and sidewalls requires a superior wood of unusual mechanical and physical properties.

"The forest specie that meets these requirements completely is the magnificent Western Red Cedar which grows on the North Pacific Coast and attains great dimensions suitable for perfection of manufacture.

"In describing the wood of this wonderful tree, the late George B. Sudworth, Dendrologist for the United States Forest Service, states: 'Great durability under all sorts of exposure is its most important commercial quality.'"

Professor B. L. Grondal
College of Forestry
University of Washington



* WHEN OPEN SHEATHING IS USED, SPACE BETWEEN BOARDS SHOULD CORRESPOND WITH WEATHER EXPOSURE

CONSTRUCTION DETAIL
DOUBLE COURSED RED CEDAR SHINGLE SIDEWALL

WILLIAM J. DAIN A.I.A. ARCHITECT

ARCHITECT'S QUIZ!



HOW WOULD YOU ANSWER THESE QUESTIONS?



**THE CORRECT ANSWERS BY
RECOGNIZED AUTHORITIES**

1 WHY DOES VAPOR ACCUMULATE IN STUD SPACES TO CONDENSE INTO MOISTURE AND FORM FROST?

2 HOW CAN CONDENSATION WITHIN WALLS BE CONTROLLED?

3 WHAT MODERN METHOD OF CONSTRUCTION WILL SCIENTIFICALLY SOLVE THE CONDENSATION PROBLEM IN BUILDINGS?

1. "When vapor accumulates within any section of a wall, in the form of moisture or frost, it indicates that vapor is travelling to that section at a greater rate than it is travelling from it."*

*Bulletin No. 17, University of Minnesota
F. B. Rowley, Director,
Engineering Experiment Station*

2. "Condensation . . . can be controlled by sealing the warm side of a wall, ceiling or floor and allowing the cold side to 'breathe'."*

Building Supply News—April, 1938.

3. "Insulite's Approved Wall of Protection — because Sealed Graylite Lok-Joint Lath, with an asphalt vapor barrier on the stud side, effectively retards vapor travel; and Bildrite Insulating Sheathing outside permits whatever vapor may escape the vapor barrier to pass on to the outside air."*



Sealed Graylite Lok-Joint Lath



Bildrite Sheathing

* A transcription of these and other experts' opinions on the condensation problem will be sent you on request. Address Insulite, Department AF81, Minneapolis, Minnesota.

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ONE WALL SPECIFICATION THAT INSURES **THREE** MAJOR ADVANTAGES TO YOUR CLIENTS —

SAFETY FROM CRACKING!

PERMANENT COLOR BEAUTY!

SUBSTANTIAL SAVINGS!



• Here's a close-up of the Nairn Wall Linoleum pattern used on the walls of this bath—it's "*Delphinium Blue*," No. 7953. This natural color photograph displays realistically the delicate marbleizing, characteristic of Nairn Wall Linoleum patterns.



• This close-up photograph shows the delicate blending of two colors in the Nairn Wall Linoleum pattern, "*Moonstone*," No. 7996, used on the door, door frame and molding strip in the bathroom illustrated.

SAFETY FROM CRACKING! The exceptional flexibility of Nairn Wall Linoleum enables it to absorb all strain of normal settling of a building. This means that the walls of a new house can be permanently decorated as soon as the plaster is dry—without fear of unsightly cracks developing a few months later!

PERMANENT COLOR BEAUTY! The colors of Nairn Wall Linoleum patterns are stain-proof and fade-proof. The material will last as long as the house itself! Waterproof—cleansing may be done with mild soap and water! A truly permanent wall treatment.

SUBSTANTIAL SAVINGS! Costing far less than other types of *permanent* wall treatment, Nairn Wall Linoleum helps you keep down construction costs. Your choice of more than twenty patterns makes possible exactly the decorative effect desired, either with the newest colored fixtures or the less expensive plain white.

▲ **THE IMPORTANCE** of the Color Correlation between Nairn Wall and Floor patterns is effectively demonstrated in this bath. Note how perfectly the Nairn Floor—No. 7388 tones in with the Nairn Walls.

FREE 16-PAGE BOOK "Nairn Linoleum for Floors and Walls." Write Congoleum-Nairn Inc., Kearny, N. J.

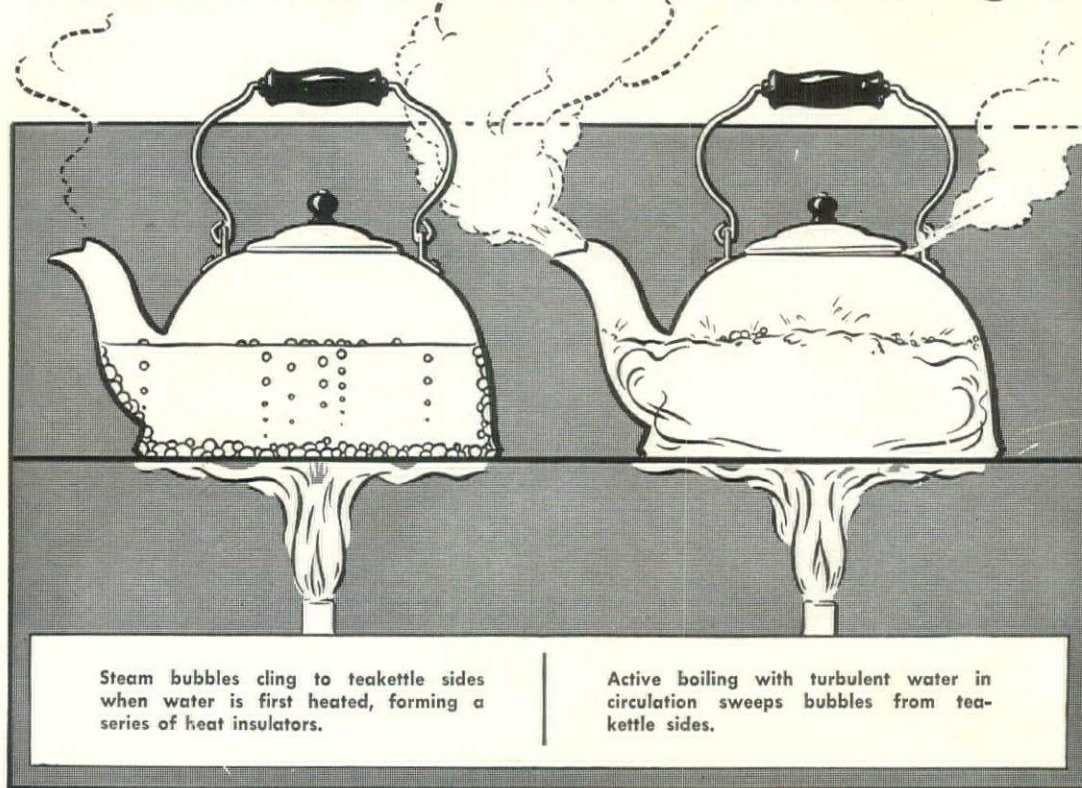
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WALL LINOLEUM

When installed by Authorized Contractors, a Nairn Wall Linoleum installation is fully guaranteed.

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KEARNY, N. J.

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WHEN HEAT is applied to a solid body of water contained in a boiler, steam bubbles form and cling to the heating surfaces, unless there is some force to break them up.

These steam bubbles are perfect heat insulators. They block the passage of heat from the fire to the water within the boiler, slowing up heating and reducing boiler efficiency and capacity.

In Pacific boilers the heating surfaces are continually swept clean of steam bubbles by forced circulation created in the connection between the firebox and

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Besides exclusive forced circulation, Pacific boilers are also known for their greater ease of cleaning; larger, better proportioned combustion chamber; rugged, welded construction. They provide maximum fuel economy, minimum maintenance cost.

There is a Pacific boiler of the right size and type for your next building. Write for a complete file of catalogs.



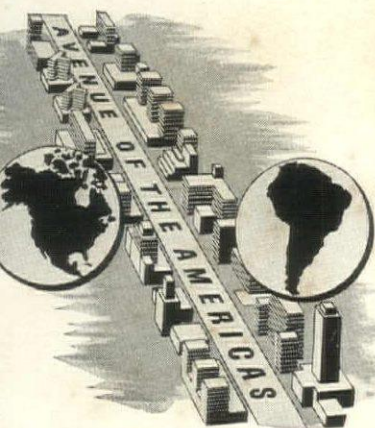
PACIFIC

STEEL HEATING BOILERS

DIVISION OF UNITED STATES RADIATOR CORPORATION, DETROIT, MICH.

STUDY FOR AN AVENUE OF THE AMERICAS

by EDWARD D. STONE FOR THE UNITED STATES GYPSUM COMPANY



Pan-American Solidarity is in the news, both politically and commercially. What would be a more practical expression of the entire idea than a central market place for the Americas?

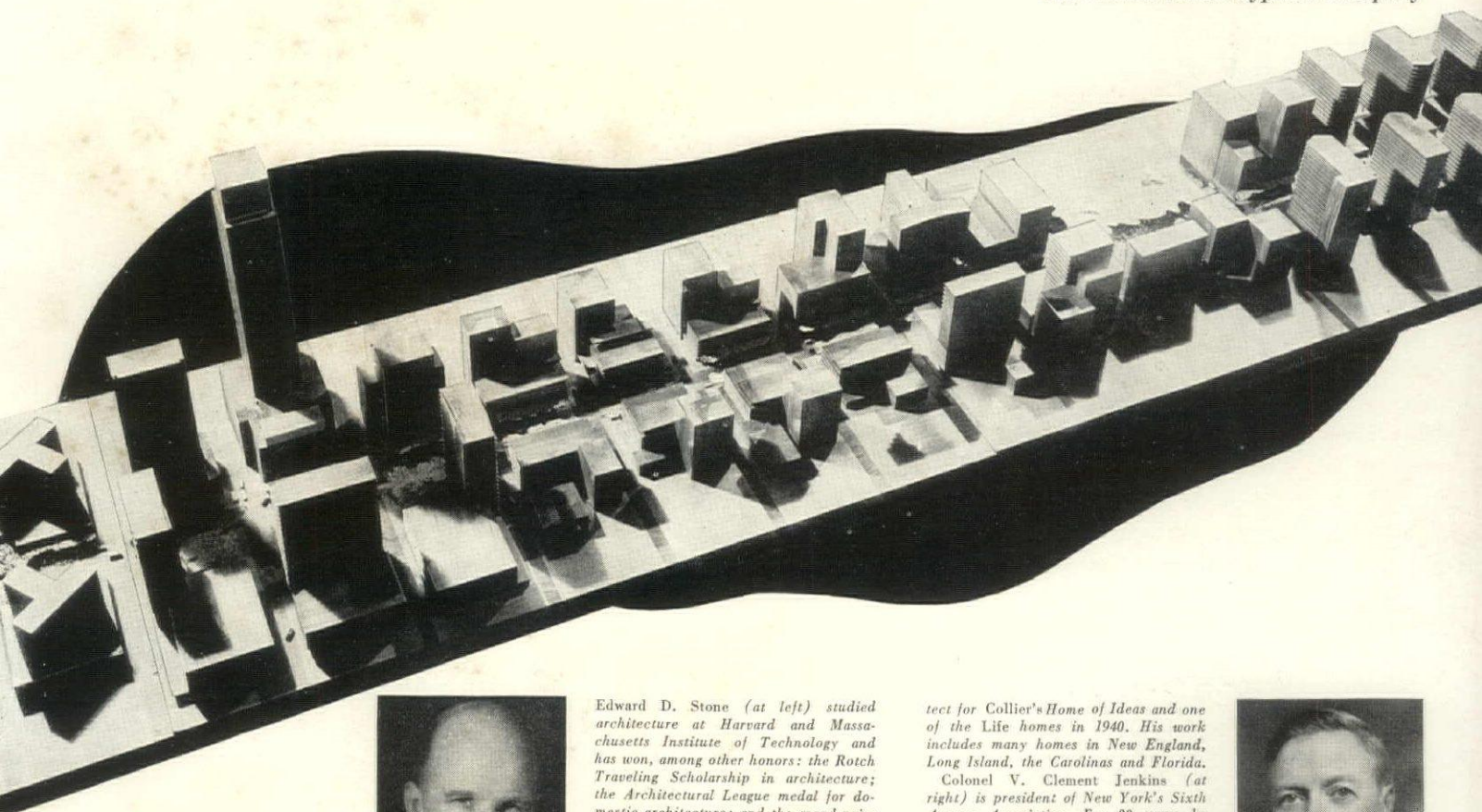
To the vision of a prominent New Yorker we owe gratitude for this study. As President of the Sixth Avenue Association, Colonel V. Clement Jenkins fought an 18-year battle to remove the elevated structure from New York's Sixth Avenue. In 1939 his hope became a reality—the elevated came down!

But Colonel Jenkins' fight had just begun. The removal of one eyesore, created another.

The outmoded buildings of the seventies which lined both sides of the Avenue were revealed in all their ugly unfitness for life today. But Colonel Jenkins visions an avenue of buildings to constitute the commercial capital of the Western Hemisphere. Ambitious? Yes, but both desirable and feasible.

The United States Gypsum Company takes pleasure in presenting Mr. Stone's capable treatment of this stupendous vision as the fourth in its series of solutions to architectural problems. As always, your comments on the design or structural considerations are solicited.

The United States Gypsum Company



Edward D. Stone (at left) studied architecture at Harvard and Massachusetts Institute of Technology and has won, among other honors: the Rotch Traveling Scholarship in architecture; the Architectural League medal for domestic architecture; and the grand prize in House and Garden's competition for 1939. Associated in the design of the Museum of Modern Art in New York and the Foods Building at the recent New York World's Fair, he was archi-

tect for Collier's Home of Ideas and one of the Life homes in 1940. His work includes many homes in New England, Long Island, the Carolinas and Florida.

Colonel V. Clement Jenkins (at right) is president of New York's Sixth Avenue Association. For 20 years he has been one of the Association's most active members. Colonel Jenkins' keen interest in city planning has been a major factor in past Sixth Avenue progress.



ADVERTISEMENT



AN AVENUE OF THE AMERICAS

In this study involving the redesign of some 20 city blocks, we have attempted to provide a framework sufficiently flexible to serve as a pattern on which future studies for the completion of the entire task can be made.

In our conception of the problem, which offers a unique opportunity, both to the property holder and the public, we have tried to secure a practical, economical and feasible solution.

In the beginning we could have advocated the dedication to the city of every other block for park purposes, but feasibility demanded that we consider the large property values and enormous investment in existing structures. Rather than a continuous planting area or series of parks disposed at intervals along the street, we

have retained the sidewalk trees now proposed and suggest, in the interest of variety, that each block or series of blocks contribute their court or open area for both the utility and esthetic effect of light, air and greenery more frequently and effectively disposed.

The familiar conglomeration of one-story tax payers and 30-story skyscrapers should be prevented if Sixth Avenue is to become a true street of the future—an "Avenue of the Americas." Our plan restricts building heights to six stories on the face of the Avenue with the privilege of building higher after suitable setbacks at this level. Constructing these six-story structures would create an immediate improvement—the higher setback portion of the design would follow as the needs for space required.

The necessary movement of trucks and cars is facilitated by providing ample garage space at regular intervals along the Avenue, with entrances sufficiently removed from the traffic artery to avoid congestion and stalling. All deliveries to the buildings would be made through these garages, reducing traffic and parking on the Avenue and facilitating quick delivery for both tenants and their suppliers.

FLEXIBLE DESIGN

Unity in exterior design is achieved by expressing the usually concealed column and beam construction of New York's commercial buildings in the facades; creating an impression of large scale design with full flexibility in fenestration, but without the small scale effect of large walls, perforated with thousands of double-hung windows. The interior design will, of course, be flexible in order that it may be readily adapted to the widely varying demands of occupants.

Page 2

(Continued on Page 3)

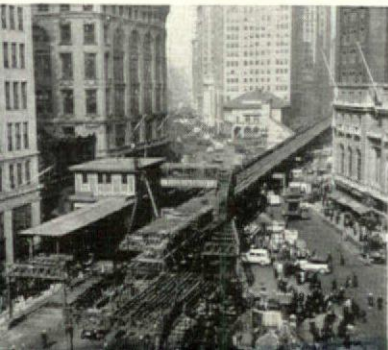
The Elevated goes down—and a new era begins for New York's Sixth Avenue—an era that holds great promise.

Removal of the 6th Avenue "L", for years a landmark, enables the citizens to see the street for the first time.

At 34th Street progress has already modernized the street. But see the next picture.

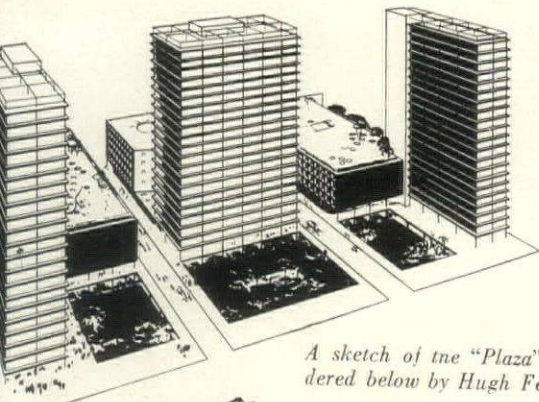
Obsolete buildings house a miscellany of business. To bring order to this chaos is the problem.

ADVERTISEMENT



PLAZA OF THE

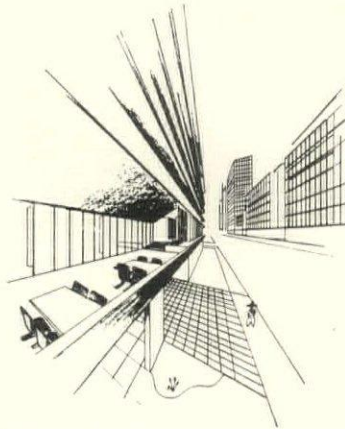
AMERICAS



A sketch of the "Plaza" rendered below by Hugh Ferriss.

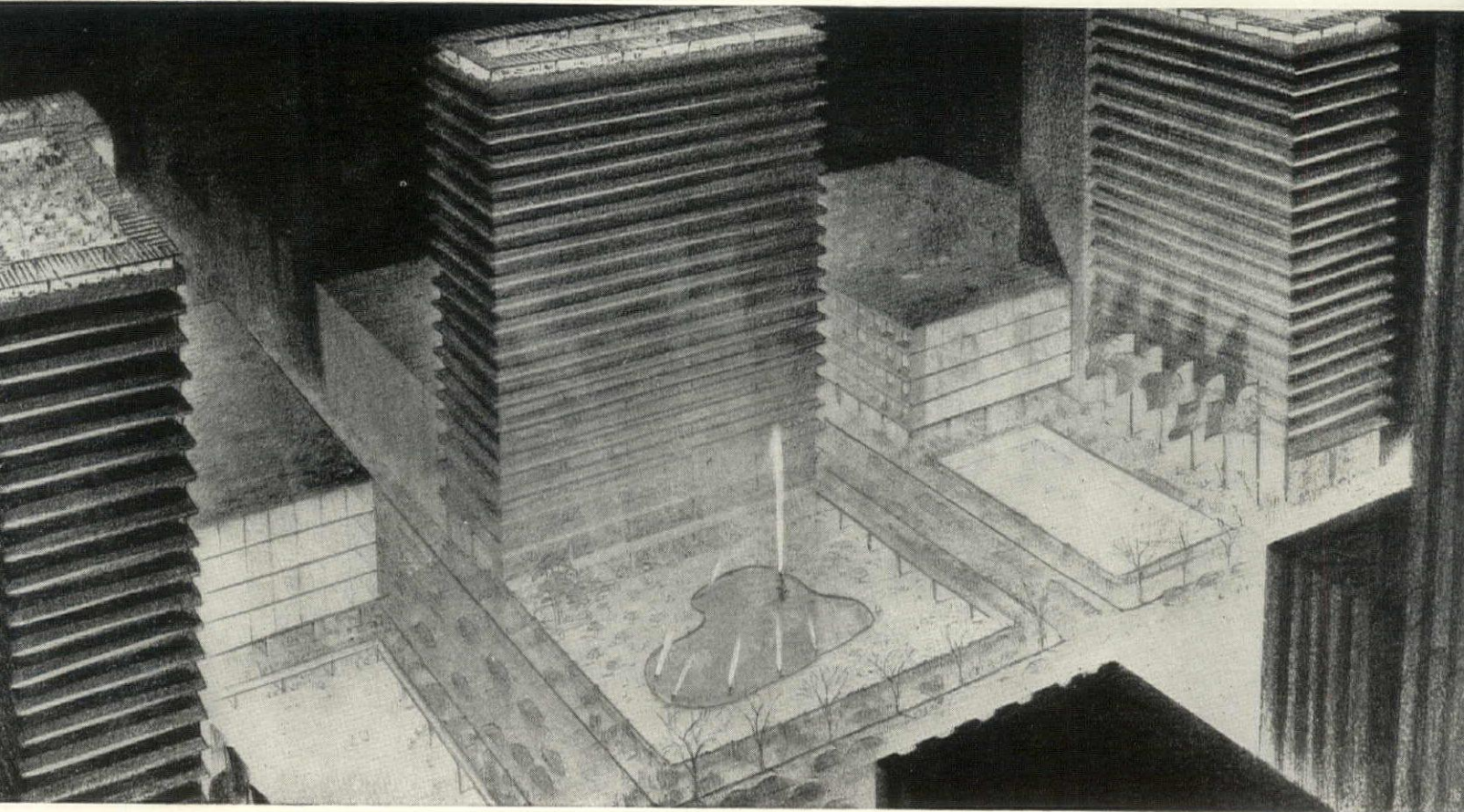
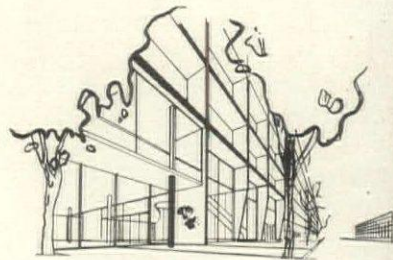


Left—A typical building. Note the interesting display area.



Left—The 2nd floor display area.

Right—Main floor promenade.



AN AVENUE OF THE AMERICAS

(Continued from Page 2)

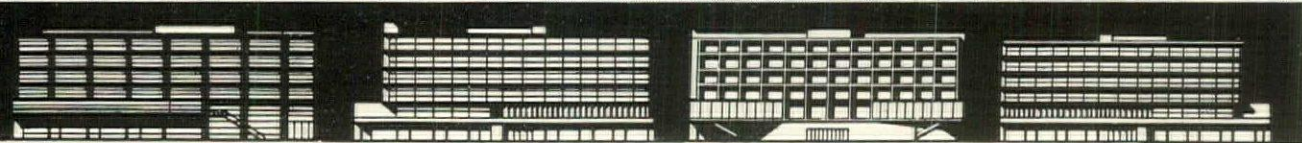
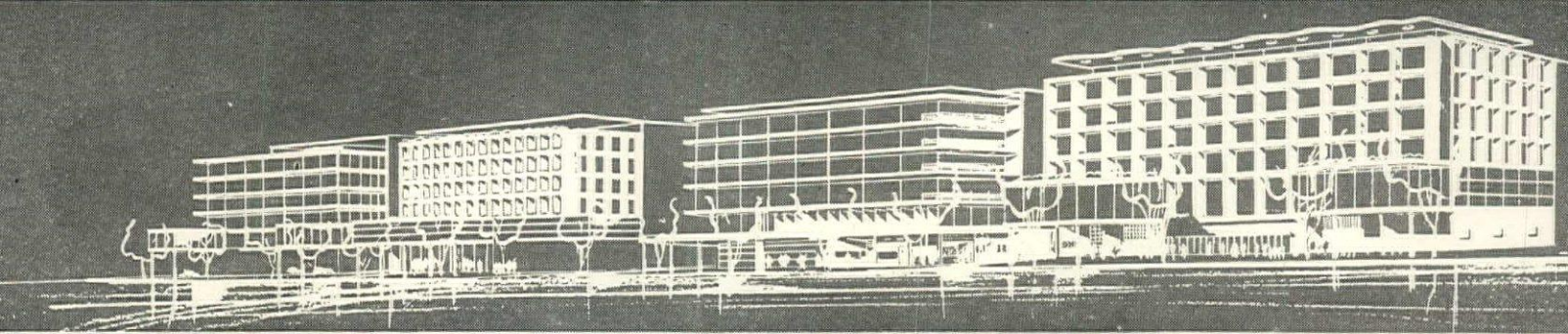
The zoning of the areas for different groups or centers was arrived at through conferences with officials of the Sixth Avenue Association. These suggestions must be considered as general rather than specific. From 57th Street to Rockefeller Center at 51st Street the Avenue is residential in nature. Included in this area, however, is a concert hall, a music museum with studios, a gallery for the exhibition of paintings in the studio building and a health museum and center.

From 51st Street to 42nd Street the buildings of the 21 American Democracies give the Avenue its new name. These structures provide exhibition space for the products of each country, their consular activities, display provisions for travel bureaus and the necessary offices associated with international trade. Hotels, department stores and theatres will be interspersed in proper ratio along this section.

From 42nd Street to 32nd Street we have the merchandising section, devoted to shops, style centers for men and women.

(Continued on Page 5)

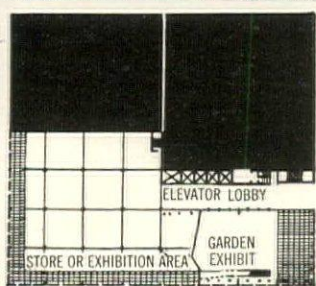
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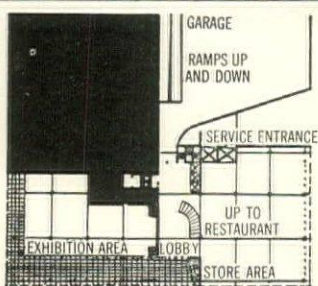
DEMOCRACY CENTER

Above: The Democracy Buildings between 44th and 48th Streets. At the left: elevations and typical 1st floor plans for buildings 1, 2, 3 and 4.

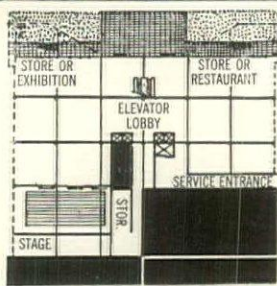
Notice the large amount of floor space devoted to exhibition area.



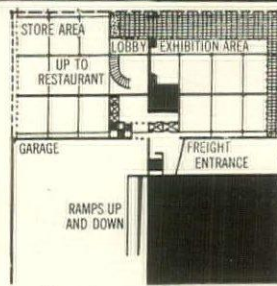
Elevation and 1st floor plan building No. 1.



Elevation and 1st floor plan building No. 2.



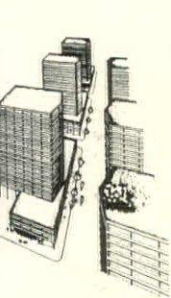
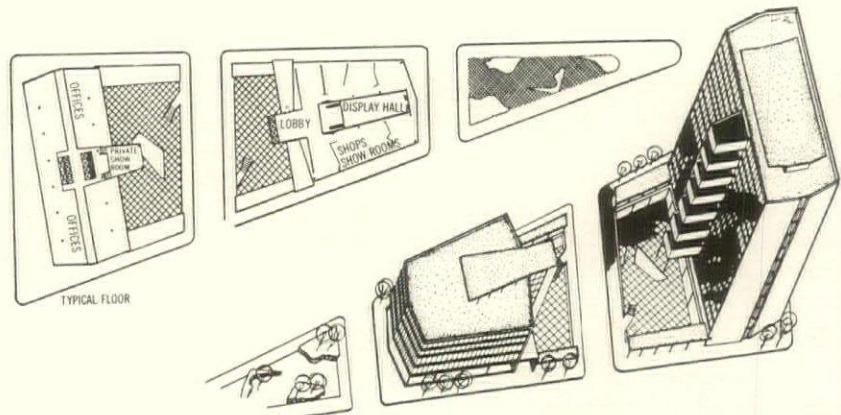
Elevation and 1st floor plan building No. 3.



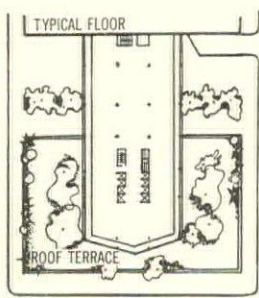
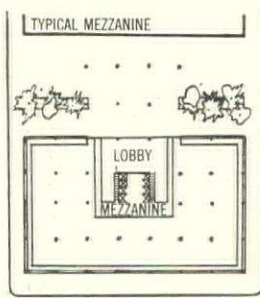
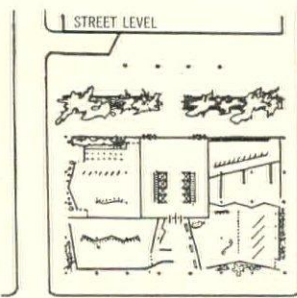
Elevation and 1st floor plan building No. 4.

STYLE CENTER

Designed for the diagonal intersections of Sixth Avenue and Broadway. From 30th Street north to 33rd Street, this Style Center would house shops and offices of men's and women's apparel shops.

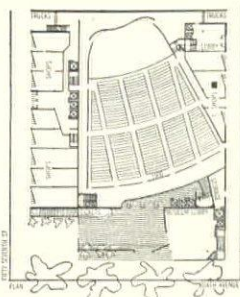


The Avenue of the Americas south from 57th Street.



GARMENT CENTER

From 36th Street to 39th Street a modern, efficient Garment Center to house apparel manufacturers. In this, as in all the Avenue of Americas buildings, there is an abundance of display space on the ground floor; plenty of light and air above street level.



FIRST BALCONY AND STUDIO FLOOR



SECOND BALCONY AND BEDROOM LEVEL

CULTURE CENTER

The Culture Center and residential area between 52nd and 57th Streets. In the group are a music building and concert hall, an art building, a community health building, and 4 apartment-hotels. Two-story studio apartments border the concert hall.

From left to right—ground floor, 1st balcony floor, 2nd balcony floor; latter two with studio apartment floor plans.

ADVERTISEMENT

AN AVENUE OF THE AMERICAS

(Continued from Page 3)

The flexibility in interior design demands a structural frame adapted not only to readily accommodate the various purposes to which these structures will be put when they are built, but to permit low cost alterations in the future to accommodate a constantly changing occupancy. We have, therefore, selected a structural steel design, fully fireproofed with precast gypsum constructions which do an exceptionally good job of fireproofing and are so light in weight that definite economies in supporting steel are possible.

The floor constructions must, of course, vary with the burdens they are to carry. There are available poured and precast gypsum constructions which answer our demands here quite well. Time tested, as they have been in use in New York City for many years, they are not only inexpensive but readily and quickly alterable. The conversion of a one-story space to a two-story space or vice versa is readily effected in such a structure.

INTERIOR PARTITIONS

The interior partitions, of course, have similar requirements. We have chosen Pyrobar Gypsum Partition Tile, both for corridor and room dividing partitions, not only because of its fireproofness and light weight but because of the flexibility with which it can be installed and taken down when occasion requires.

ACOUSTICAL CORRECTION

With the ever-increasing consideration for noise in its health aspect, and its obvious effect of reducing commercial efficiency, we suggest the use of double plate glass windows throughout each structure. They would be permanently installed both to keep street noises out of the buildings and through added heat insulation reduce the cost of maintaining summer cooling as well as winter heating. Treatment of corridor ceilings in the office, hotel and similar structures, with Acoustone will effectively reduce interior noises so readily communicated from one area to another through the corridors.

In our acoustical thinking we select Acoustone for all large office spaces and "Motif'd" Acoustone for important private offices and reception areas. "Motif'd" Acoustone offers subdued patterns in great variety and while made of individual tiles, the joints between tile are not apparent from the floor. In color, "Motif'd" or regular Acoustone will serve well in the theatres, large public rooms, restaurants and hotels, both because of its beauty and high sound absorption.

For interior painting of plaster surfaces, renovation of acoustical materials and renovation of old walls, we choose USG Textolite because it is an excellent flat paint which speeds application time, reduces labor and cost and shows savings up to 50% over older painting methods in any maintenance cycle involving decoration.

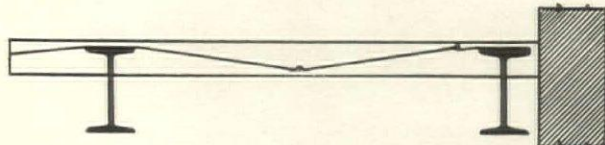
All of these materials except "Motif'd" Acoustone are fully described in *Sweet's*. Information on the latter, a new and most interesting product, is available direct from USG.

EDWARD D. STONE

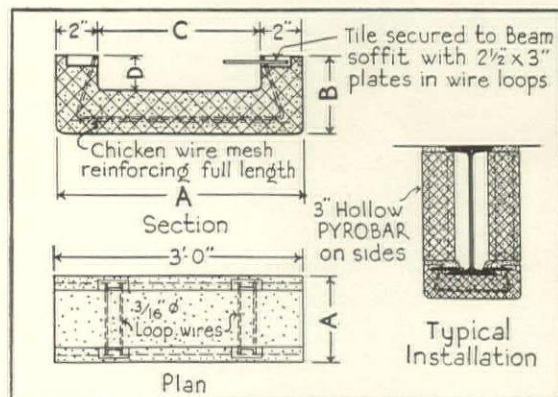
Associated with Mr. Stone in the planning of this study, in the development of the plan perspective drawing, and in the construction of the model illustrated on page 1 were the following students of architecture at New York University: John Bernard, Milton Caplan, Jack Claus, Harry Dykman, Fred M. Ginsbern, Frank J. LaBianca, Harold Leventhal, Edward Post, Eli Rabineau, Ernest Rapp, Francis D. Rogers, Frederic Saphier, Edwin Schwartz, Stanley Sharp (of Mr. Stone's office), Stanley Torkelson and Dan Weisenger.



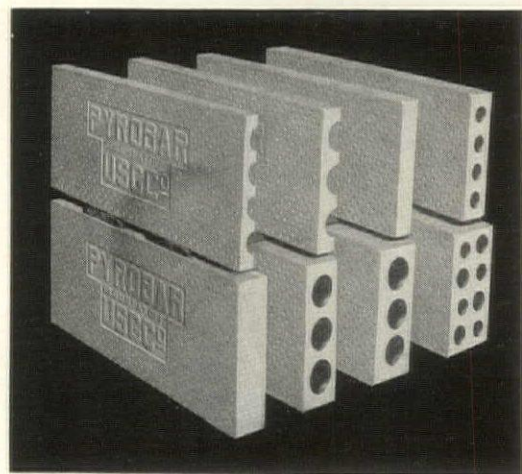
Motif'd Acoustone unit $\frac{1}{4}$ of a 4'-0" square design.



Pyrobar monolithic floor. Beam fireproofing may be cast on when floor is poured or Pyrobar Soffit Tile (below) applied.



Pyrobar Soffit Tile may be plastered or painted, frankly showing the clean, true joints.



Pyrobar Partition and Furring Tile.

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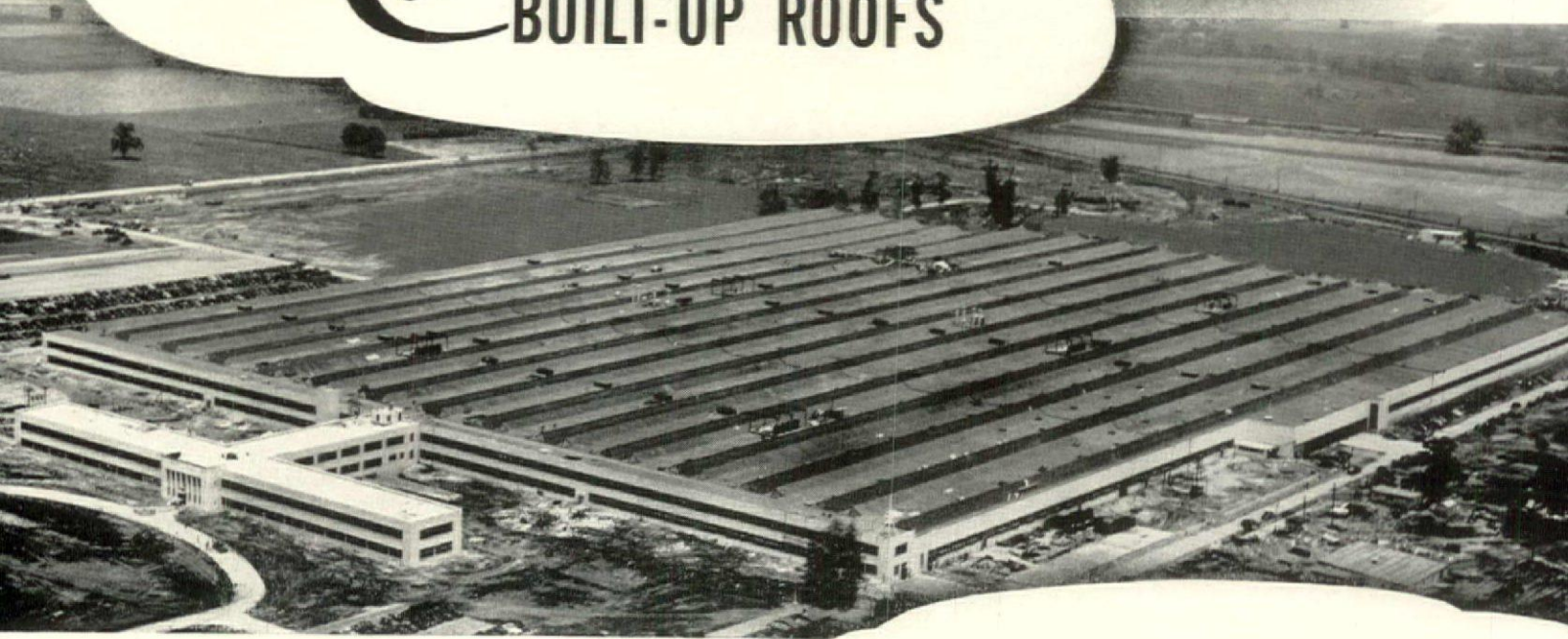
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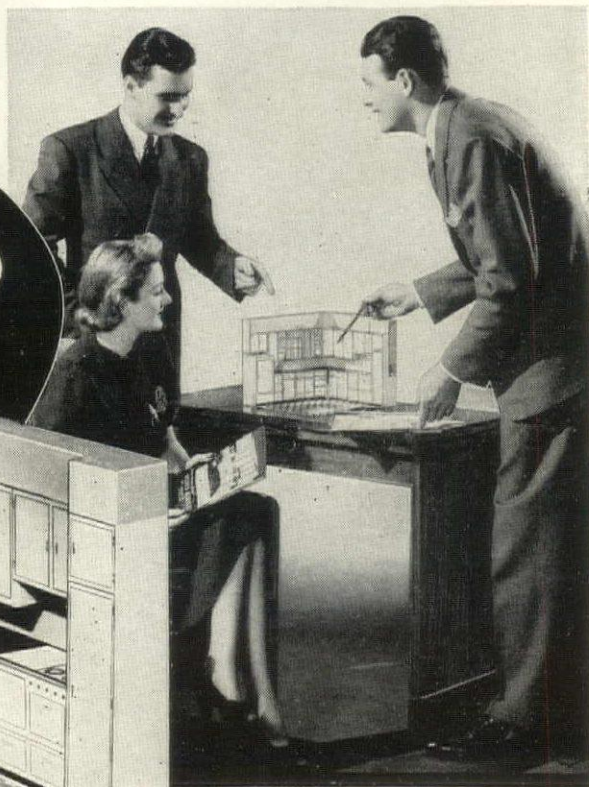
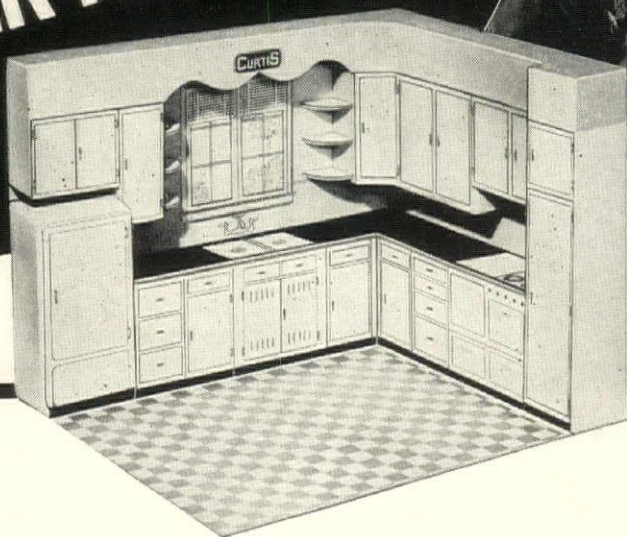
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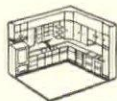


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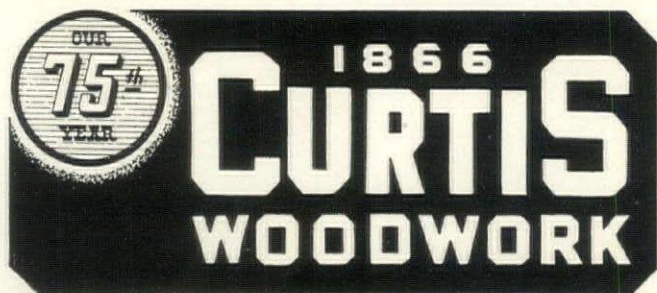


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PRIORITIES

will bring CHANGES long before STOPPAGE to private, non-defense building . . . what these changes are and mean . . . what Building should do about them now

Modern war, and therefore modern Defense, puts an enormous strain on the domestic economy. Creation of a mechanized army and a huge modern navy requires hundreds of thousands of tons of steel, nickel, aluminum, zinc, and copper, vast quantities of rubber, millions of feet of lumber, carloads of chemicals—in fact, all of the essentials of modern civilization in hitherto unprecedented quantities within the shortest possible space of time. New productive facilities must be created; transportation is taxed to the utmost; fuel is needed as never before. Normal, civilian demands do not cease, but on the contrary are increased by the expansion of the national income which results from Defense activity.

Building, like every other industry, is drastically affected. All along the line, Defense begins with Building. An army cannot be raised and trained unless there are cantonments to receive it, cannot be equipped until factories to make the equipment have been built, cannot be effective until the fire power of its guns is backed by powder plants and arsenals to furnish ammunition. Barracks must be built by the thousands, factories by acres, and housing supplied for the newly employed workers of Defense industry.

An idea of the impact of this activity on the building industry is given by the fact that Defense construction has recently totaled over \$250 million a month—more than half the 1939-40 average for civil construction of all types. Building has been called upon to expand its output more than 50 per cent, almost overnight. Even more important, this increase has not been distributed evenly, but has been concentrated in certain areas and particular building types. Industrial construction, for example, is scheduled to reach a peak of \$140 million this month, an increase of 700 per cent over the 1939 average in a class of work distinguished by its uniform use of a relatively small number of basic materials. Cantonment construction, relying heavily on lumber, sheet materials, and millwork, touched an even higher figure last February—and both the cantonment and indus-

trial building programs, now largely completed, are scheduled for repeat performances.

Thus, from within the industry, Defense construction demands have been such as to exhaust reserve supplies of many building materials, and to exceed—in some instances temporarily, in some instances for longer periods—existing productive capacity and the available supply of skilled building workers in certain areas. In addition, Defense demands on Building's sources of supply naturally do not stop with building materials as such. Many of the raw materials from which building products are made are needed in other phases of the Defense and aid-to-Britain effort, often (such as aluminum, stainless steel, and chromium) in quantities which have absorbed entirely the output of present productive facilities. When to these facts is added the probability of transportation bottlenecks and fuel shortages which may affect still other materials, the conclusion is inescapable that the Building industry faces materials and labor shortages of important dimensions—shortages in some cases temporary and localized, but in others general and likely to continue for some time, if not, indeed, for the duration of the emergency.

Nevertheless, it is just as false to exaggerate the priorities problem as it is to adopt a head-in-the-sand attitude. In almost no cases are such shortages likely to be absolute; that is, to cut off civilian supply entirely. In most instances they will arise not out of a complete exhaustion of normal sources of supply for direct defense uses but rather out of a combined military and civil demand which exceeds present productive facilities. This means that if and when predicted shortages do occur, there will still be limited quantities of most materials available for those civilian uses where their fundamental properties are most essential. Particular types of material or equipment are more likely to be hard to obtain than whole general categories. Acute shortages, and government regulation of strategic materials, will develop gradually, as existing reserves are used up.

Moreover, even the most pessimistic prognostications do not place all or even most building materials among those that will probably be short. Many of the most basic materials are described as "abundantly available." And few, indeed, are the materials of modern building for which there are no alternatives in common use. The question of the effect of military priorities on private, non-Defense building is not, therefore, as some have posed it, one of whether non-Defense building will stop, but rather a question of how much it will change.

To estimate with any accuracy exactly when such changes are going to prove necessary is, at least at the present time,

virtually impossible. Nobody knows just how soon—or how late—threatened shortages will actually develop. The important thing is to understand the basic causes behind supply failures, the nature and operation of government controls, and, in general, what steps may now be taken to alleviate the effects of such shortages or to prevent their developing at all. Architects and builders must realize that it remains within their power to control the ultimate result, given sufficient understanding of the problem: that the very "tailor-made" character of Building, so often bemoaned in the past, in this instance provides flexibility to meet changing conditions.

MATERIALS SHORTAGES

Materials shortages arising out of the Defense program may be classified under two headings: primary and secondary. By primary shortages are meant those such as have developed in imported materials like rubber and cork, where the supply has been cut off or curtailed by interruption of normal international trade and



Life—Horace Bristol

LUMBER, despite demands totaling several million board feet for Army cantonments, is not considered a tight spot in the Defense materials picture. Timber stands and saw-mill capacity are more than adequate. Army buying, which in the past is said to have caused local shortages of particular items, will be better distributed as the second cantonment program gets under way. The big question seems to be shipping from West Coast mills, and this is not yet acute. Other materials which are available in abundance are staples like brick, tile, cement, and glass. Provided fuel continues to be available, there will be no general shortage of any of these basic materials, most of which are produced at widely distributed points and offer no transportation difficulties.

lack of ships, and domestic materials such as aluminum where productive capacity has not kept pace with expanding demand. Primary shortages are fairly easy to predict and may be anticipated if needs are reasonably well established. Secondary shortages include those arising out of transportation bottlenecks which may cut off the supply of raw materials or fuel necessary to process these materials, or which may affect the distribution of finished products (as is beginning to be the case with structural steel on the West Coast). Also under this heading should be included local shortages resulting from unusually heavy local demands, and shortages of fabricated products due to the conversion of existing productive facilities to direct defense production, such as are likely in certain classes of building equipment. Secondary shortages are obviously harder to predict than primary shortages, may (as in World War I) play an important part in the Building picture. Several shortages of the first type are already apparent. Raw materials used in building which have been placed under "industry-wide mandatory control" include aluminum, nickel (monel metal), nickel-bearing steel (stainless), copper, zinc, and cork. This, the most drastic form of government control, indicates an "acute" shortage, and probably means that no further supplies of these materials will be available for any but the most essential building purposes, if at all. It does not mean, however, that the supply of fabricated products employing these materials will be cut off immediately, since it will be some time before reserve stocks are exhausted. At such time as this takes place, it seems probable that items like monel metal sinks and hot-water tanks, stainless steel trim, and aluminum windows will be virtually unobtainable. Whether the shortage of copper and zinc (for galvanized iron) means that neither will be available for essentials like flashing, gutters, piping, etc., remains to be seen, but it seems clear that their use as roofing materials will be frowned upon if not prohibited entirely.

Other primary materials which, while not yet on the mandatory control list,

show equally acute shortages are chromium and rubber (rubber is subject to a special import control of its own). The shortage of chromium will affect future production of hardware, plumbing fixtures, lighting equipment, and metal trim, which will probably not be obtainable in this finish once present stocks have been used up. Steel, as a primary material, is in a special category by itself. Obviously essential to the Defense effort at every stage, it is nevertheless available in huge quantities certainly in excess of direct Defense demands. The question is whether there will be enough to fill all civilian needs, and if not—as is seemingly the case—which needs will be placed first. Since iron and steel products are being substituted for non-ferrous metals in many instances, it is almost impossible to forecast future demand. Structural steel has undeniably been hard to get during the past few months, yet the American Institute of Steel Construction insists that fabricating capacity is not being used to capacity. Ingot producers, on the other hand, assert that the bottleneck is fabrication. For the present, at least, steel probably belongs among those materials which have been all but used up by the first phase of the Defense program, and especially by Defense construction, but which may prove easier to get later on. Other materials in this group are electrical equipment, fabricated sheet materials, and other items used in the cantonment and industrial building programs now drawing to a close. Such shortages are hard to analyze and even harder to predict, since they depend on a complex of factors including raw materials, fabricating facilities, and transportation, and vary from month to month and locality to locality. About all that can be said with assurance is that they have applied to particular items rather than whole lines, that they depend almost entirely on the Defense building program, and that they are likely to be less and less important as this program nears completion. Future Defense building, it is promised, will be planned more with an eye towards availability of materials now that the initial objectives have been achieved. As to long-term shortages, that which

threatens in non-ferrous metals is clearly one of the most serious facing building as a whole, especially since the shortage of copper and nickel is accompanied by a shortage of zinc which may prevent the use of galvanized iron as a substitute. Just when such shortages will take effect depends, as has been said, on the existing supply of already fabricated materials. Naturally, they will be felt first in areas where Defense and non-Defense construction have been particularly active, and retail stocks are low. Even in such areas they are not likely to have an immediate effect upon individual, small scale operations for some time, but may be felt immediately in the case of large scale projects requiring wholesale quantities of material.

For both types, data on the national status of particular materials can presently be considered only as an overall guide to the type of situation which may develop. It cannot be considered as governing in any particular locality, but rather should be regarded as indicative of the need for the utmost flexibility in specifications and for a design approach which obviates the need for materials that are likely to be hard to obtain. The best way to learn whether a given material is or will be available is to consult the local materials dealer. Architects and builders must be ready to adopt the procedure of checking on the availability of materials and equipment before deciding upon rigid and inflexible specifications.

LABOR SHORTAGES

Shortages of skilled building labor, frequently reported, seem to have been greatly exaggerated. The Bureau of Employment Statistics, which keeps accurate records of the numbers of workers of various types registered with various government employment agencies, states in a recent report: "Eighteen of the nineteen building trades occupations are again reported with considerable surpluses of available registrants necessary to fill both present demand and that anticipated within the next 60 days. . . . For the first time a construction occupation, steel framework connector, appears on the shortage list with an insufficient number of job seekers to fill immediate openings. This occupation is closely related to a number of shipbuilding occupations and it is probable that steel framework connectors are being placed in shipyards where shortages are pronounced."

Local figures give much the same picture. New York, with 22,200 registrants, and California with 11,200 (April figures) have the largest number of building trades workers available. In a few areas (Connecticut, Buffalo, N. Y., southern West Virginia, and Washington, D.C.) real shortages have developed due to the intensity of Defense building activity, but most have been short-lived. So far as the national picture is concerned, there is no reason

(Continued on page 78)



ALUMINUM, and aluminum scrap has become a precious metal, every bit of which is needed for direct Defense uses. Non-ferrous metals of all kinds are short, and both copper and zinc (used for galvanizing) are under industry-wide control. Whether or not

small quantities of these materials continue to be available to the building industry, it must learn to avoid their use for non-essentials, or where other materials will do as well. Chromium for trim, may eventually disappear entirely.

WHAT GOVERNMENT CONTROL MEANS AND HOW IT WORKS

Government control over raw materials, production, and distribution under the priorities system is designed primarily to implement the production and acquisition of defense material for the Army and Navy. Its secondary purpose is to assure supplies for essential civilian needs. Responsibility for the administration of this huge and important task is vested in two bodies: the Army and Navy Munitions Board and the Office of Production Management. The Munitions Board has control over all military items such as guns and tanks, and essential equipment for the Army and Navy. It operates through the so-called Critical List, which is a compilation of over 300 items of essential military and naval equipment which are likely to be needed in a hurry and may be hard to obtain. Its authority extends down to the first subcontractor on Government contracts, but not beyond. The Priorities Division of OPM has authority over ratings for all raw materials, for the extension of ratings below the first subcontractor, over items not on the Critical List and over the general field of civilian and commercial needs.

Control by the Munitions Board over items on the Critical List is exercised by the local Procurement Officer, who places the order and from whom the manufacturer and first subcontractor obtain the order's rating, in accordance with a predetermined schedule. Classifications (A1a, A1b, A2a, etc.) are based upon the needs of the expanding Army and Navy and indicate the sequence in which these orders must be filled in order to meet military needs. Manufacturers are required to give these items preference in this order if necessary in order to meet the specified delivery date. Since by this system a single item, such as a machine gun, might have an A1a rating if intended for the first 400,000 trainees and an A2a rating (much lower) if intended for the second 400,000, presence of an item on the Army's Critical List does not necessarily indicate a shortage, but is merely a measure of its importance in the military scheme of things.

Control by the Priorities Division of OPM is much broader in scope. A number of types of OPM control are already in operation, ranging from Mandatory Industry-Wide Control (the most severe) to Inventory Control (the mildest). Under Mandatory Industry-Wide Control OPM takes complete charge of an industry's output. Military and Naval orders for items on the Critical List, of course, receive automatic preference ratings through the Munitions Board's machinery. All other orders placed with the industry are submitted once a month to OPM's Priorities Division, which then designates ratings under which civilian consumers may receive part of their requirements. OPM also issues Blanket Ratings to manufacturers of such products as military airplanes, tanks, etc., covering all materials, parts and supplies necessary for completing such items, and Individual Preference Certificates to manufacturers for specific orders. These ratings are graded in the same fashion as the items on the Critical List (A1a, A1b, A2a, etc.). Manufacturers are required to fill them in the order of their importance.

Still another form of OPM priorities control is the Defense Supplies Ratings System, under which manufacturers receive preference ratings for a percentage of their production. This is an innovation being tried experimentally on the theory that it permits manufacturers to continue to do off-the-shelf civilian business. Plan is to extend it further if it works successfully.

The mildest forms of OPM control are what are known as Pools and Inventory Controls. The Pool system requires manufacturers of raw materials to place arbitrarily a certain percentage of their total production in a pool, from which OPM may make mandatory allocations to meet defense needs. Inventory Controls (already applied to 16 metals) are designed to prevent overbuying and prohibit shipments to overstocked customers. OPM also has authority to issue ratings covering orders and work which, though not primarily designed for war, are essential to the defense effort.

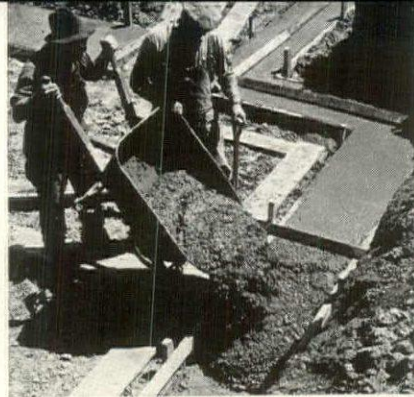
RESIDENTIAL BUILDING

House construction, for a number of reasons, is likely to be less drastically affected by Defense shortages than other building types. Houses can be, and are built from a wide variety of materials, few of which are likely to prove scarce. Most of these materials can be used interchangeably: wood can be replaced by brick, brick by wood, or both by concrete or other materials if the need becomes apparent. Variety of design, construction, and finishing methods is already great; adaptation to such shortages as do occur need not involve experiment or substitution, but will simply be a matter of following the line of least resistance.

Nor need the effect of such shortages as do occur be a purely negative one. New materials, new methods, and new approaches to design which have been held back by the weight of precedent may make unexpected progress; fear of Defense shortages may stimulate house construction more than their reality ever restricts it; Defense, as such, creates an enormous demand for new housing which must be met and will be met even if priorities for housing—both public and private—are necessary. Far from a cessation of home building, what is likely is a considerable increase.

A review of the detailed data on this and the facing page reveals the fact that none of the structural materials used in home building is in question. There is plenty of lumber, cement, brick, tile, plaster, glass, roofing, flooring, etc., to build as many homes as may be needed. Critical shortages are possible only in what may be called "accessory" materials: metals in general and particularly non-ferrous metals: equipment in general and particularly electrical equipment. Every house contains—must contain, if modern standards are to be met—such accessory items. But the amount of metal, for example, which a given house contains can vary from a little to a lot. And, with the number of houses which will be built during the Defense emergency counted in hundreds of thousands, "little" savings—minor reductions in the amount of strategic materials used in every house—can add up to impressive totals if instituted on a nation-wide scale. If consistently applied, there is no reason why they cannot eliminate the threat of shortages entirely. The home building industry is in a particularly favorable position to adopt such an approach to the problem. The whole program of the past ten years has been one of elimination of waste. If the emphasis must now shift to conservation of vital materials rather than dollar savings it is a change in emphasis only—the basic objective remains the same. And, just as Defense is already benefitting from Building's long-term program of cost reduction, Building, in the end, will benefit from the discipline of Defense.

Priority controls should not cut deeply into the home-building situation, since few essential materials are likely to become involved. Indications are that whatever restrictions are imposed will be based on a policy of conservation that should effectively prevent absolute shortages from developing, and that voluntary co-operation will be tried out before mandatory controls are imposed. Such a policy is obviously in the best interests of Building. Building consumes huge quantities of basic materials; voluntary curtailment of non-essential consumption—without cessation of private construction—can be a vital factor in preventing critical shortages later on.



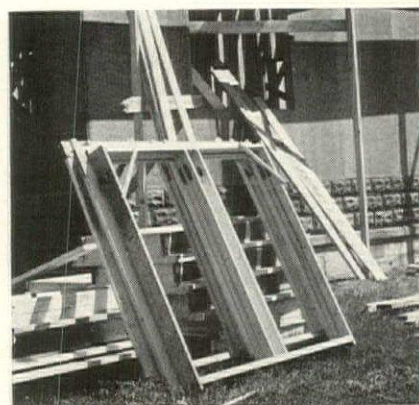
Roman Siemianowski Photos

Structural Steel, for residential purposes, should be replaced by timber wherever possible. Although there is as yet no shortage of junior sizes, further fabrication will probably be discouraged to conserve metal.

Lumber of all types is available in abundance — although subject, of course, to shipping difficulties. Any shortages which do occur should be temporary and localized unless shipments from the West Coast are cut off.

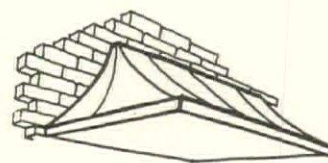
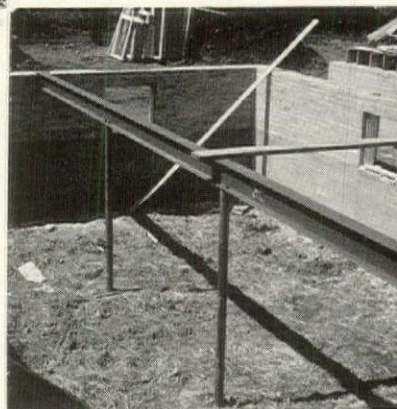


Sheet Materials have been subjected to heavy demands by the cantonment program, which for a time absorbed almost the entire production of some types. Army buying has now slackened off and future purchases will be better distributed. For the present, availability depends mostly on stocks in the hands of local distributors and dealers, and varies sharply even between different items in related lines. In general, the situation will probably improve with time.

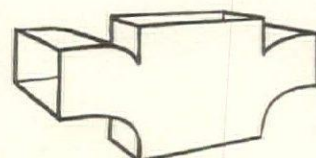


Millwork and Finish Lumber are available in adequate quantities despite heavy demand due to cantonment construction. More-than-ample local productive facilities and stocks of suitable materials assure domestic supplies for an indefinite period, except in areas where unusual building activity causes temporary shortages. There is no shortage of glass, and none should develop unless fuel (natural gas) is cut off.

Concrete. Local production of cement, sand, and gravel assures ample supplies of materials for concrete, although reinforcement may become harder to obtain. During World War I fuel shortages shut down some cement plants and transportation difficulties created gravel famines in areas where military construction was particularly heavy, but such interruptions were brief. Lumber forms may be used if metal forms or sheet materials become unobtainable.



Sheet Metal Work, such as metal roofs and other non-essential applications, will be discouraged in order to conserve non-ferrous metals.



Ductwork, and other essential uses of metal, will doubtless receive preferential treatment, although some substitute for galvanizing may be necessary.

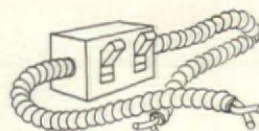




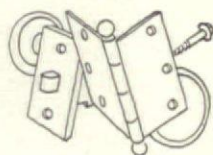
Flue Tile, Brick, and other clay products are locally produced and available in abundance. Defense demands on this group of materials have not been heavy, and they constitute a reliable "standby" if shortages in other lines develop. During World War I, fuel and transportation bottlenecks caused some difficulty, but this should not be repeated unless the general situation becomes acute, or a real oil famine develops.



Waiter Sanders—Black Star



Wiring, and electrical equipment in general, is one of the tight spots in the residential building picture. Program calls for restrictions all along the line, but no absolute curtailment.



Hardware, like wiring, seems slated for restrictions. Iron may replace non-ferrous metals, and certain finishes, such as chromium, will probably be unobtainable.



National Mineral Wool Assn.

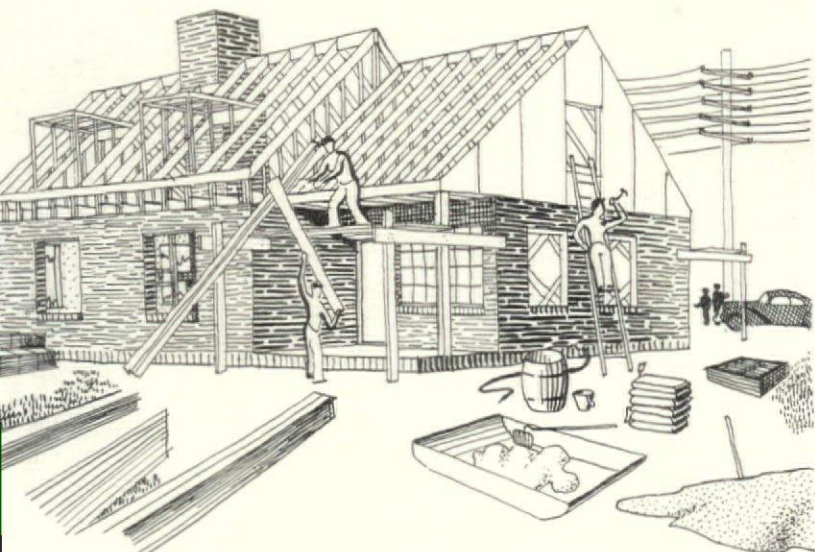
Insulation, in general, should be available in abundance, although aluminum foil may disappear entirely for a time. Use of insulation of other types will be officially encouraged, both in new and old construction, to save fuel.

Plaster, with an abundant supply assured, should regain much of the ground it has lost to other materials if shortages in other lines develop. The supply of plasterers, like plaster, is more than ample.



Plumbing, a heavy consumer of both ferrous and non-ferrous metals, is in for changes and restrictions of various kinds. Official plans call for discouraging second bathrooms, simplified practices to save pipe. Hot-water tanks are already hard to obtain.

Fixtures should not be tight unless existing productive facilities are converted to other uses. Materials for enameling are abundant, chrome trim, as in other lines, may disappear.



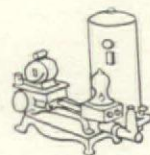
Heating, like plumbing, uses strategic materials. However, its greater flexibility (the chance to use substitute materials, methods, etc.) should relieve any strains which may develop.



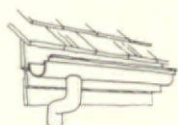
Roofing materials, such as wood and asphalt shingles, slate and tile, are plentiful. Building paper supplies are adequate at present, with some question as to the future because of the anticipated shortage of paper of all types. Galvanized and copper nails may become hard to obtain.

Paint supplies will continue to be ample. Tung oil, an import, can be replaced by a synthetic substitute.

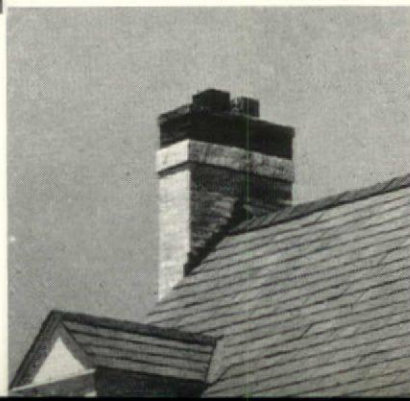
Charles E. Knell



Equipment of various types is said to be "tight" and likely to grow tighter. Builders may have to accept out-size motors, pumps, fans, etc., as long as army buying continues heavy and until production can be reorganized.



Gutters and Downspouts may be hard to obtain with rationing of non-ferrous metals and zinc for galvanizing. If the situation becomes acute, generous overhangs and splash slabs offer one solution, porcelain enamel on steel still another.



Flashing should be used sparingly, and painted iron or impregnated fabrics may have to be substituted for other materials. Avoid complicated roofs which require more flashing than the simple gable type.

Kitchen Cabinets in metal, which require mechanical fabrication, should be replaced by wood if shortages develop. Monel metal, chromium, and stainless steel are out of the kitchen picture once present stock is used up.



why they should not adjust themselves automatically in time, especially now that many of the largest Defense projects are nearing completion.

SUBSTITUTES

First reaction to the possibility of a shortage in a particular material is naturally to look around for a suitable substitute. Under wartime conditions, this approach is not likely to prove as fruitful as might be expected. For many essential raw materials, no suitable substitutes have been developed. Where true substitutes exist, they are likely to be just as scarce as the material they replace, or, in any event, not available in sufficient quantities to supply wholly new demands. Broadly speaking, no one material can substitute for another in all its uses. Substitutions, at best, can only be made for specific uses.

A case in point is that of the plastics. Plastics can and have been substituted for a great many materials. They have in many ways already taken the place of metals which are now hard to obtain. But they are not a cure-all. In the first place, the supply of plastics is not infinite but is limited, like every other material, by productive capacity, which cannot be doubled overnight. (Production of some plastics will be limited by the supply of formaldehyde, which is used in making smokeless powder.) Plastics manufacturers will be reluctant to expand into new fields unless there is a reasonable certainty that demand will continue, and not slack off when other materials are again available.

Nevertheless, substitutions of various kinds will undoubtedly be made. In addition to plastics (trim, hardware), porcelain enamel seems a good bet in place of galvanizing and non-ferrous metals. It is already being used extensively by stove and refrigerator manufacturers to replace

aluminum and stainless steel, and (in contrasting colors) chromium trim.

Not strictly substitutes, but potent safety valves for Building, are the various alternative structural and finish materials already in use. Thus concrete, for example, in many uses replaces wood (and vice versa). If, as seems probable, cork and rubber flooring are curtailed, asphalt tile, quarry tile, terrazzo, wood, and many other available materials can take their place.

DESIGN CHANGES

Even more potent should be the architect's ability to adopt entirely new solutions, if necessary, to meet a dearth of materials of a particular type. If flashing and gutters are hard to obtain, roofs can be designed which require neither; if window sash are no longer available, fixed glass and louvered ventilators may be used instead. Even in larger structures the same principle applies: where structural steel is hard to get, reinforced concrete (or reinforced brickwork) can be used in its place: for wide spans, suspension cables — as used at the Chicago fair — or laminated wood arches may be the solution. It would not be too difficult, by this method, to replace 90 per cent of the materials in any particular building. Should anything so drastic be required, an entirely new concept of shelter can be devised to meet the needs and potentialities of a war-torn world.

DOMESTIC FUELS

With talk of an oil shortage due to lack of tankers on the East Coast, and other dislocations of the transportation system possible, architects and builders are bound to be asked questions regarding the best type of fuel burning equipment to install in new homes. Since the answer—insofar as it depends upon the question of priorities—depends upon government policies yet to be announced, it is not easy to make. One thing is sure: with the number of domestic burners already in use well above the 2-million mark, any attempt to cut off entirely, or sharply curtail the supply of domestic liquid fuel would create more drastic problems than it could possibly solve, and is exceedingly unlikely for this reason if for no other. Much more likely is a program of domestic fuel conservation, which will probably apply to fuels of all types, since all depend on transportation in one form or another and all forms of transportation will be overtaxed. Already, the Oil Burner Institute has launched such a program, calling for a check-up on existing burners, enforcement of Commercial Standards in new installations of all types, and more adequate insulation, and aimed at fuel savings upwards of 25 per cent. As in other fields, this is the intelligent approach: voluntary conservation can prevent shortages from developing; if this fails, en-

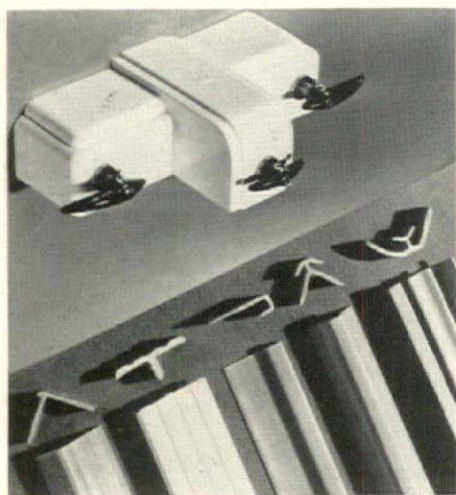
forced restriction of civilian consumption, rather than absolute curtailment, will be applied. By wholehearted cooperation in such a program of national conservation of strategic resources Building can solve its own problems, continue to perform its vital functions with respect to the general welfare, and make an important, if not decisive contribution to National Defense.

GOVERNMENT CONTROLS

A considerable number of items are already under one or another form of Government control. Defense orders of all kinds have only recently reached a total of \$1 billion a month; plans call for a gradually increasing tempo, reaching \$2 billion a month by July 1942, with extension of priorities control, if necessary, to cover practically all items of material and products of manufacture. According to Arthur Krock, Washington correspondent of the *New York Times*, this means, "complete control of production in the national economy, with the accessory power of putting a ceiling on prices, including wages and rents . . . From the housewife who wants a new copper pipe for her bathroom and the debutante who wants the jeweler to fashion her a special bauble, to the manufacturer who hopes to keep his private customers, the whole nation must be subject to the system."

OPM, through Defense Housing Coordinator Charles F. Palmer, has recently announced the extension of priorities control to essential defense housing, both public and private, in order to facilitate acquisition of materials for defense housing projects now getting under way. Operations of this system will be limited to dwellings costing less than \$6,000 and to areas where the defense housing shortage is acute, may be extended to essential commercial structures needed to complete functioning communities. To the extent that its use is found necessary, it will obviously mean that materials and equipment for over-\$6,000 homes and projects not connected with National Defense will be harder to obtain. Still another Government control is the power of the Federal Housing Administration to expand or contract credit in its twelve regional sections. And, U. S. Housing Authority can control the use of strategic materials in its projects.

In sum, the object of the whole intricate priorities system is, first, to assure supplies for the armed forces; second, to see to it that whatever surplus is then available is applied to the most essential civilian needs. Priorities control will be extended as far as proves necessary in order to accomplish these ends. Those activities which contribute to the support of National Defense effort will thereby benefit. Activities which conflict with this purpose will obviously suffer. Building, except in so far as it is "luxury" building, should fall into the first category.



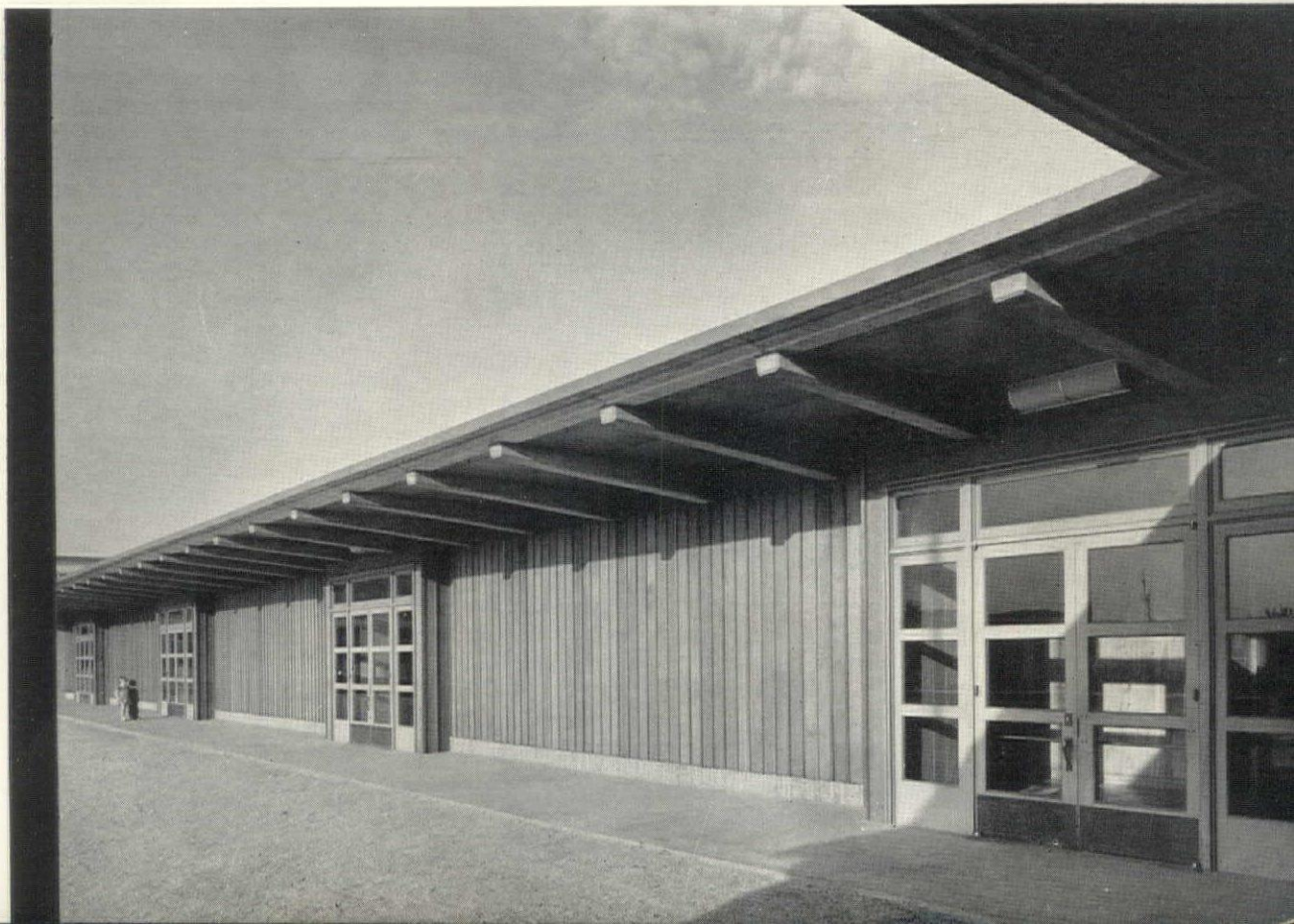
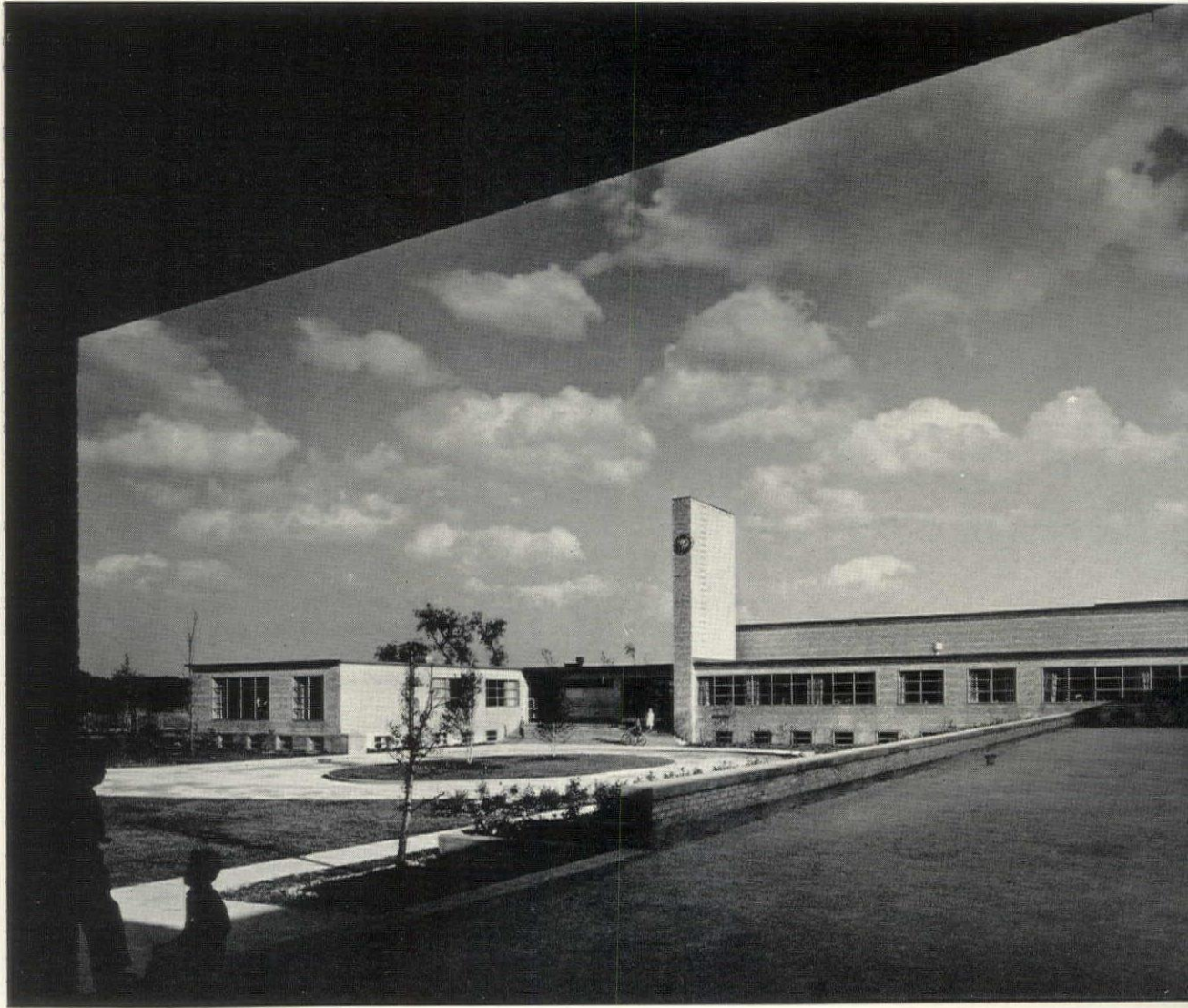
Tennessee-Eastman Corp.

PLASTIC substitutes for various metals likely to be scarce are already available. Upper picture shows plastic plumbing, a substitute for chrome-trimmed brass, lower picture plastic moldings designed specifically to replace aluminum. Another material that seems likely to be generally adopted as a substitute for non-ferrous metals and galvanizing is porcelain enamel on steel.

CROW ISLAND SCHOOL, WINNETKA, ILL.

ELIEL & EERO SAARINEN,
PERKINS, WHEELER & WILL, ARCHITECTS

Hedrich-Blessing Photos



Notes on Planning

The most important feature of the Crow Island School is that it is the architectural expression of an educational philosophy, which in Winnetka is essentially the philosophy of progressive education. The result of 22 years of practical research and continuous exchange of experience with educators elsewhere, it recognizes the child's need for physical health, emotional and social adjustment, self-expression and the development of special aptitudes, and the mastery of the useful parts of reading, writing, arithmetic, history, geography and science.

The selection of architects to build a school around this philosophy was a joint responsibility of the Board of Education and the Superintendent of Schools. A wide search was made, in the course of which it was found that most architects followed a pattern based on the accepted standards of the traditional academic school. Finally we hit on a rare combination—a young firm of architects, Perkins, Wheeler and Will, eager to give detailed study to our needs, and a firm consisting of one of the world's greatest architects and his son—Eliel and Eero Saarinen.

A Letter to the Architects:

Your question "What spirit shall it have?—That is what is important," will not let me rest. On and on my mind runs trying to answer you. And now that I have seen the interior of buildings you have made and seen that you can build **specific spirit** with landscape, brick, wood, metal, glass and textile; with shapes and masses and strips of color, may I share with you my thoughts and feelings of what our school building should really be?

All the architecture shall be a setting for childlife. Everywhere children and what they can do shall be the adornment of the structure. The building itself shall be the **place of joy in living**. But I must warn you. It must be a place which **permits** the joy in small things of life, and in democratic living. These two things we must safeguard in children's lives. The building must not be too beautiful, lest it be a place for children to keep and not one for them to use. Its materials must be those not easily marred, and permitting of some abuse. The finish and settings must form harmonious background with honest child effort and creation—not one which will make children's work seem crude.

Above all the school must be childlike—not what adults think of children. At the same time it should be dignified, and playful, but not a playing down to children. It must be a place for living, a place for use, good hard use, for it is to be successively the home, the abiding place for a procession of thousands of children through the years. It must be warm, personal and intimate, that it shall be to each of these thousands "My school."

The school must be honest, and obvious, to childish eyes as to its structure, its purpose, its use, its possibilities. Strength shall be evident. Genuineness shall be visible. Materials shall say—"things are as they seem." And struggle—because life is struggle—must be manifest in some way.

It must be inspiring—with a beauty that suggests action, not passiveness on children's part. Yet it must give children the feeling of basic rightness, and fitness, that gives them belief that they too can be, act, and create, and that they, their action and creation are needed.

It must be democratic. That above all is necessary. School must not create an illusion, otherwise children will fail in more mature life. I know now why you said "There is no peace." There is always a water-tower in the landscape of life, a struggle of forces. We may hide it with beauty, or shut it out with a forest. But it is there. That is why I asked "Will the forest always be there?" That is why I came away from Cranbrook asking myself

By CARLETON WASHBURN, Superintendent of Schools

Lawrence Perkins spent many weeks in our schools, watching teachers and children at work, and generally soaking up our educational thought and practice. Then he made a model of a classroom unit he thought would meet our needs. This was studied and criticized by the faculty, School Board, janitor and superintendent. When approved it formed the basic unit for the new school, which was then jointly designed by the two firms.

Cooperation did not stop with planning. At every step of construction, members of the staff and Board worked with the architects. For the landscaping and playground, a park superintendent, Robert Everly, and a playground director, John McFadzean, of the neighboring community of Glencoe, were called in. They had specialized in what they called "park-schools" and, in consultation with the Winnetka group and the architects, laid out an ideal plan of planting, lawns and playgrounds.

The outcome is a school which in practice works out as it was intended to do—a beautiful, homey, practical architectural embodiment of an educational philosophy.

"What will the children of Edgewood and Kingswood do about grimy, commercial Detroit? Will they accept their own smug withdrawal; will they push out those limits of beauty to recreate and enrich other adjoining areas, will they create new Cranbrooks somewhere else in the world?"

Our school will look out upon a democracy of homes: Some beautiful ones of the privileged; some modest ones of moderate means; some unpretentious ones of a struggling foreign group. The children of these homes and school must feel unity between their school and home lives.

The school should look to the future. It should not seem complete and finished beyond any addition or adjustment to later demands. It should give children and adults the feeling of flexibility, possibility of change. This is the germ of growth. And rigidity of architecture can cage the energy, and irritate the spirit of those who live within.

Now may I speak of specific parts of the building:

The classrooms shall express inner tranquillity which can be sustained. The atmosphere of these rooms which particularly are the school homes, should give feeling of security. These are especially the places of living together and should give feeling of inviting home-likeness, settings in which constant, confident realization of self and others together can take place. A place not too good to be true—one which small persons can feel will endure.

We talked of the spirit of the assembly, but may I try to express more fully what it should be? The assembly has a unique place in the school. It is the one part of the building in which all come together simultaneously, obviously and consciously to form the school body as a whole. This place by its very nature houses the peaks in school living. Frequently the experiences taking place there are exhilarating, lifting and stimulating emotionally. The room must therefore have dignity for large group consciousness' sake. It must be buoyant for emotion's sake. But it must not be adult, sophisticated or overstimulating. It may awe slightly—for children must be lifted to levels they did not know were inside. These levels they cannot and should not sustain for long periods. Therefore as a setting it may take the breath a bit as one enters—not just on the one first view, but with each entrance.

That was what I tried to say to you with my illustration of a bed of blue Scilla—that first spring flower. Its vibrating blue color and the assurance that spring has come again lifts one inwardly. Or like the dash of sunshine on



Hedrich-Blessing

the metallic blue of an Indigo Bunting's wing gives a flash of surprise—something of the unbelievable. This element I'm sure the assembly should have.

We mentioned I think that even six or seven year olds as well as up to eleven year olds would speak alone to several hundred other children. It will be a place of singing of small and large groups. It is a place where children will play dramatically together and for the entire school. A place where children will show and explain objects, drawings, etc. For these reasons seeing and hearing from all parts of the room are of vital importance. The room must be friendly, intimate, childlike though it has dignity and seats five hundred. It must climax all group gathering places in the building.

We suggested that there be no illustrative frieze decoration as the means of **presenting** the place to children, lest such illustration be not the fanciful picture of the children who behold it, and lest it designate too definite form of creation thereby inhibiting instead of encouraging child expression.

The building of the room must make it the children's, not some adornment of it after the structure is done. Its fancifulness must be such that each individual sees in it his own picture of the complete school and what it stands for to him.

I believe the plan of irregular stage, the unbalanced sides of the room, the curved ceiling plaster, the indirect lighting all as suggested by Mr. Eero Saarinen fill the requirements for the structure. The best of ventilation must be assured. Color treatment it seems to me can be the means of bringing in some of the elements of intimacy and surprise. This form of decoration can, I find in your girls' building, be such that one makes the discovery as a personal experience. That I believe has value for our purpose. It will help children feel an artistic ownership in their building.

The art room and library have some factors in common with the assembly. They too, are general school rooms—though not for all the school simultaneously. The art room should lead children to confidence in an exploration of themselves. In beauty it should urge and stimulate to creation. Again the beauty should be a background setting kind, and one not too finished, lest children feel it beyond them to make contribution.

The library I would designate as a place for "lingering with energy." A place for storing enrichment which at

later time and place will find outlet and expression. Here again we need a setting. This time a setting for children and their books.

The pioneer fireplace end with its cruder obvious means of daily family living will give opportunity for experimentation and experiencing. Pioneer equipment and its authentic arrangement is a consideration in preparing the room—as is modern equipment and its placing in the modern end of the room. This room shall be one of our efforts to assist children to interpret their subtle environment, of sophisticated present day life.

The shop and science room shall be a further step in this evolution of experience. It shall say to children, "This is your place of finding out, of trying out, of doing and making. Here are the tools and materials to do with, as you need; to understand what you wish to investigate, to find out what you yourself can make and do. It is your working place."

In this work room I will help plan arrangements of tool room, cupboards, lumberjacks, etc. But the atmosphere of the place shall be your responsibility. The windows will lighten it. Do plan to treat it acoustically that it may be a pleasant working place. Plan it to be attractive in color effect—not just one more basement-shop, but rather a children's work room—substantial, dependable, orderly but also pleasing and inviting.

The visual education and museum room should be a very plain setting, yet appropriate and pleasing. The front of the room will have a mounted screen, and cupboards on either side, cupboards below, counter height, for housing circulating visual classroom materials. The sides should have glass cupboard cases—some closed below—for museum materials.

Adult rooms like principal's offices, teacher's rest rooms, conference rooms should, I would think, be kept in harmony with the rest of the building, but could definitely express adult rather than childlike atmosphere. These are less important than the other parts more fully discussed. They should express the rightness and place of adults within the child's world rather than the usual reverse situation, an acceptance of children in the adult world.

Sincerely yours,

Frances Presler
Director of Activities



LOBBY AND WAITING SPACE

INTERMEDIATE SCHOOL CORRIDOR



CROW ISLAND SCHOOL, WINNETKA, ILL.

ELIEL AND EERO SAARINEN,
PERKINS, WHEELER AND WILL, ARCHITECTS

Comment by JOSEPH HUDNUT

The social art of architecture affords no theme of deeper import than that of the schoolhouse, nor any, unless it be the church, which has suffered a more grievous oppression from laws which had their origin, not in society, but in the private heavens of architects.

We know what the first public schoolhouses were like: those dour tightly balanced boxes of brick, proportioned according to the rules, and proclaiming their cultural affiliations with pale symbols of Latium. Perhaps that language was apposite to an educational system which was itself chiefly concerned with symbols, often alien and remote: a system whose reverence was for letters, whose method was penalty and reward, whose merchandise was the opportunity to get on in the world. We know how that system changed and expanded with the multiplication of the subjects taught, how inquiry and freedom came gradually to supplant precept and enforced receptivity, and how an education of scientific method overcame the earlier "mixture of guess and tradition"; and we know also the meagre changes which these wrought in the outward forms of school buildings. The little box became a bigger box. It melted slightly, to be sure, under the warm romance of Richardson, assumed a turret and a Tudor tower when the pictorialism of Cram and Goodhue became the fashion, masked itself after the Columbian Fair under the pale cast of Parisian logic and in our time set on its somewhat wintry poll a chaplet of buds culled from our Colonial springtime; and yet it remained, as it was in the beginning, molded, not by use, but by that remote and sophisticated thought which until recently was the necessary basis for the practice of architecture.

The Crow Island School is not the first in which the expanding energies of the new education, bursting that stubborn box, have found their way without the lead of tradition into outward expression. It is rather only one of the many affirmations of that liberating spirit which is making the art of teaching (the greatest of all arts) articulate in the art of architecture; but it is an affirmation clear resolute and persuasive. An inward activity has shaped

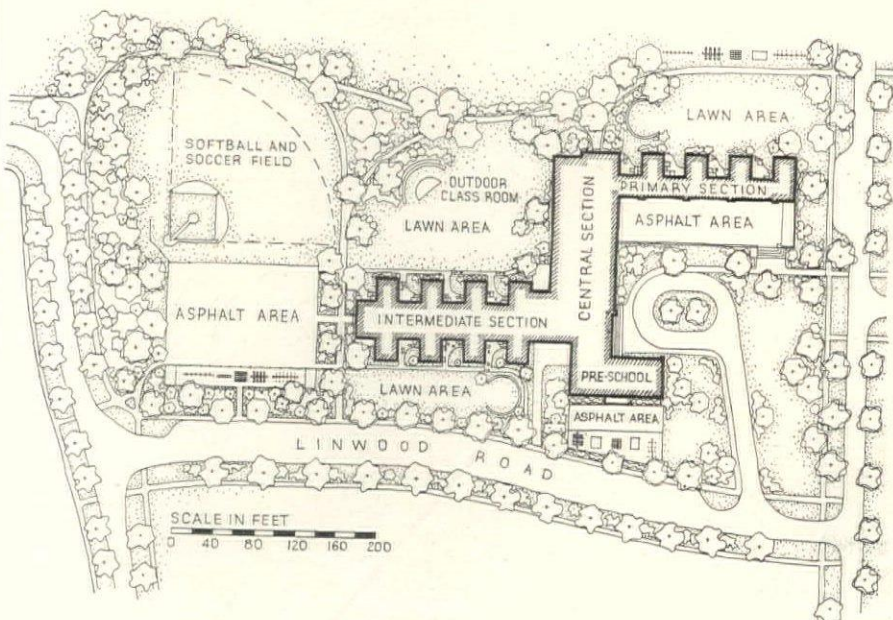
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All photos, Hedrich-Blessing

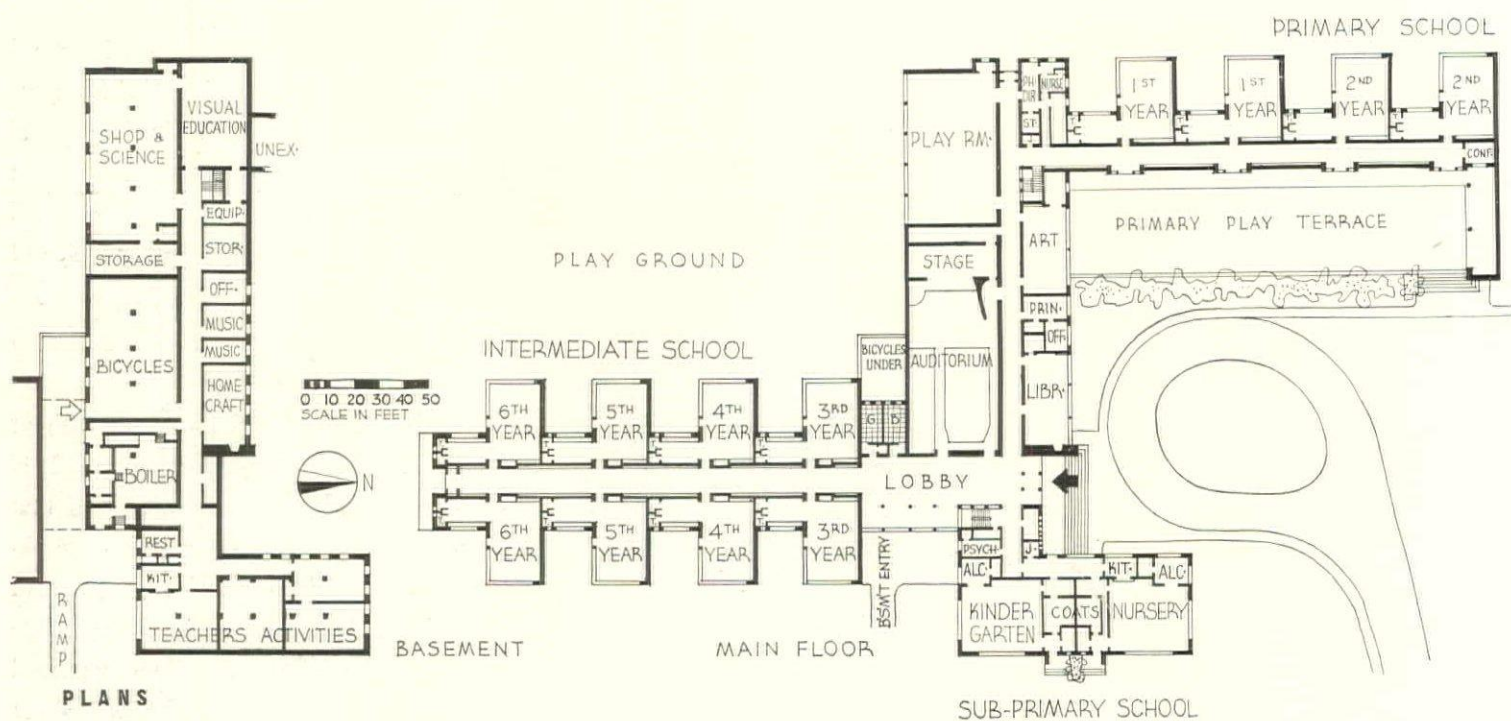
Illustrations at the top of these pages show the main entrance hall. A well-lighted waiting space, outside the main channel of circulation, is provided. Its separate use is indicated only by the change in ceiling treatment and by the light metal columns. The photograph of the corridor detail shows the combined use of brick and wood and the unobtrusive built-in lockers.

The plot plan below indicates a minutely studied landscape treatment (differentiation of lawns, trees, shrubs, and specific play areas), and the essential character of the building itself. Classrooms are free of the building on three sides, and are separated by small garden-like spaces.





MAIN ENTRANCE





PLAYROOM AND AUDITORIUM WING

The three main age groups occupy the wings of the building: sub-primary, primary and intermediate. Convenient to all are the auditorium (note the unsymmetrical arrangement), main lobby and principal's office. One solid wall in each of the projecting classrooms eliminates the possibility of distractions for the pupils. A partial basement contains rooms for services and minor activities.

this arresting building. The architects, I think, proceeded not *towards*, but *from*, the busy pattern of the society it was to shelter. The design was shaped in their minds by the pressures and recessions of this society—of which it was to be both a consequence and a cause. They saw, before they took up T-square and triangle, the making and doing and expressing in ceaseless variety which was to be sheltered here, the seeing, hearing and speaking, the experiencing and growing, and around these they fitted their fabric so closely that it seems to share them all in a way not unlike that in which the human body shares the energies of the soul; and by the same process they have written into their constructed forms, both within and without, that unity with the scheme of a wider life briefly channeled here—that awareness of a social usefulness and destiny—which are the heart of progressive teaching.

I think that this end is reached in the Crow Island School with unusual felicity. The many and varied organs of the separate departments—primary, sub-primary, and intermediate—are unmistakable in the forms into which they are translated. Each is firmly set in its individual throne; and the central section of playroom, theater and lobby holds each of them by the hand. Yet they submit also to control and order: an organic order not unlike that of the Nature

(Continued on page 89)

PRIMARY SCHOOL HALL





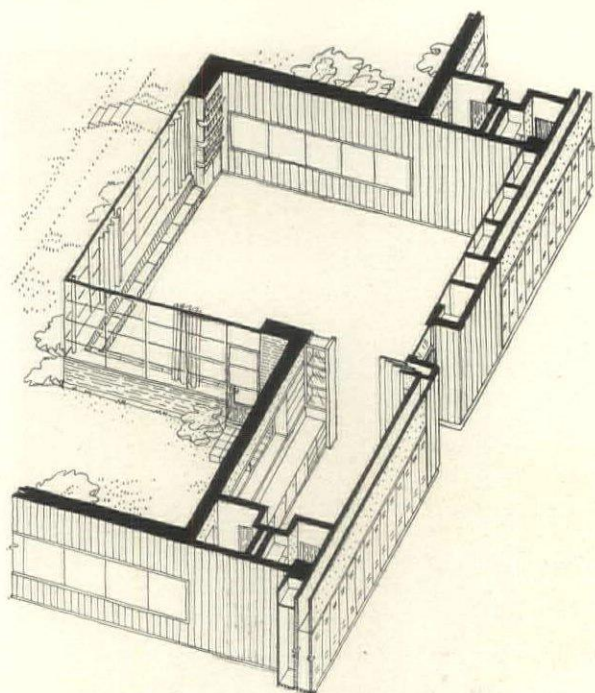
INTERMEDIATE CLASSROOM

PRIMARY SCHOOL CLASSROOMS

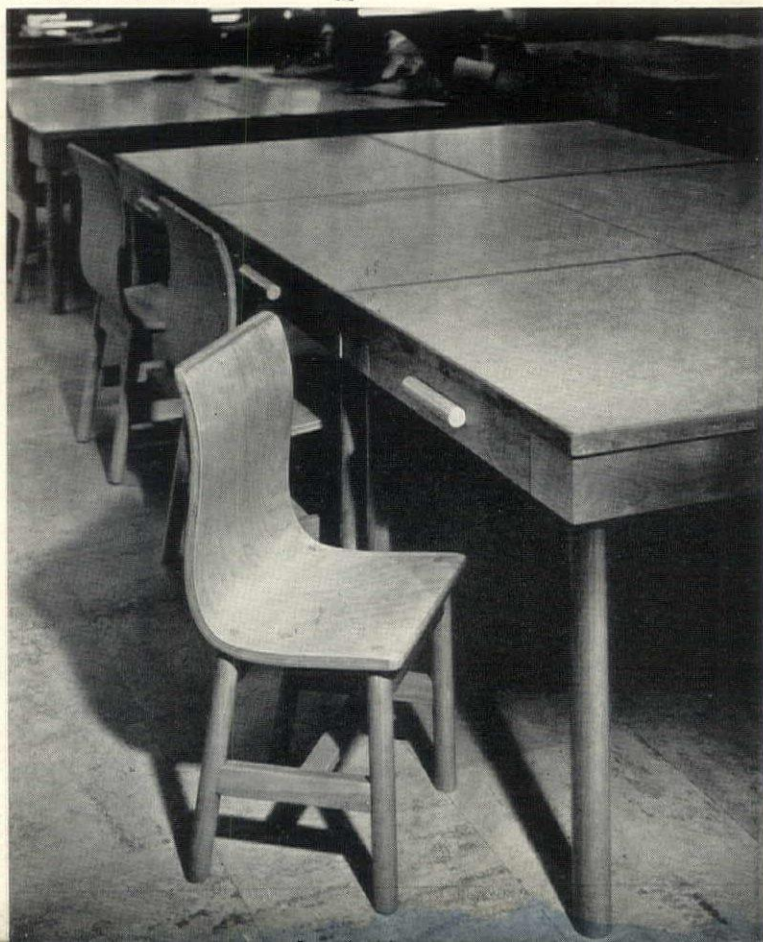




PRIMARY CLASSROOM



FORMICA TOPPED TABLES



The classroom unit was designed and approved before any thought was given to the layout of the building. If unusual, the procedure is extremely sound, for it arrives at the solution of the key element without compromise for "architectural" considerations. The photographs show an extremely pleasant background, well subordinated to the children and their activities. Desks and all other furniture were specially designed.



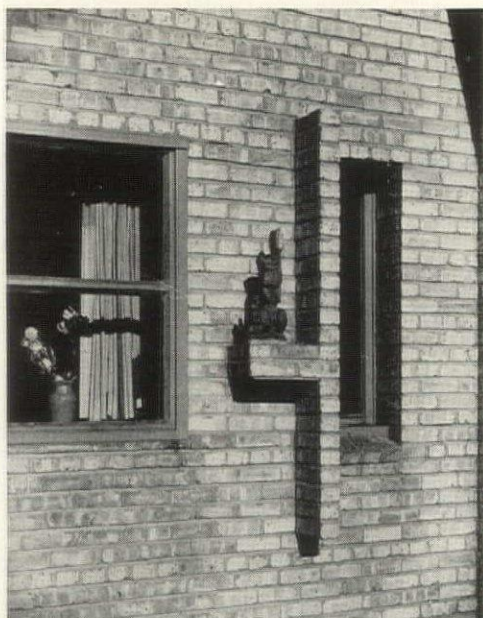
KINDERGARTEN

KINDERGARTEN & NURSERY ENTRANCE



CROW ISLAND SCHOOL, WINNETKA, ILL.

ELIEL & EERO SAARINEN,
PERKINS, WHEELER AND WILL, ARCHITECTS



The consistent use of wood and brick as the basic materials gives unity to exteriors and the rooms inside that no amount of "design" could provide. Enrichment is limited to nominal decorative use of the brick, occasionally in combination with terra cotta. The interior use of wood is confined largely to vertical boards which provide a pleasing texture, and stand up well under heavy use.

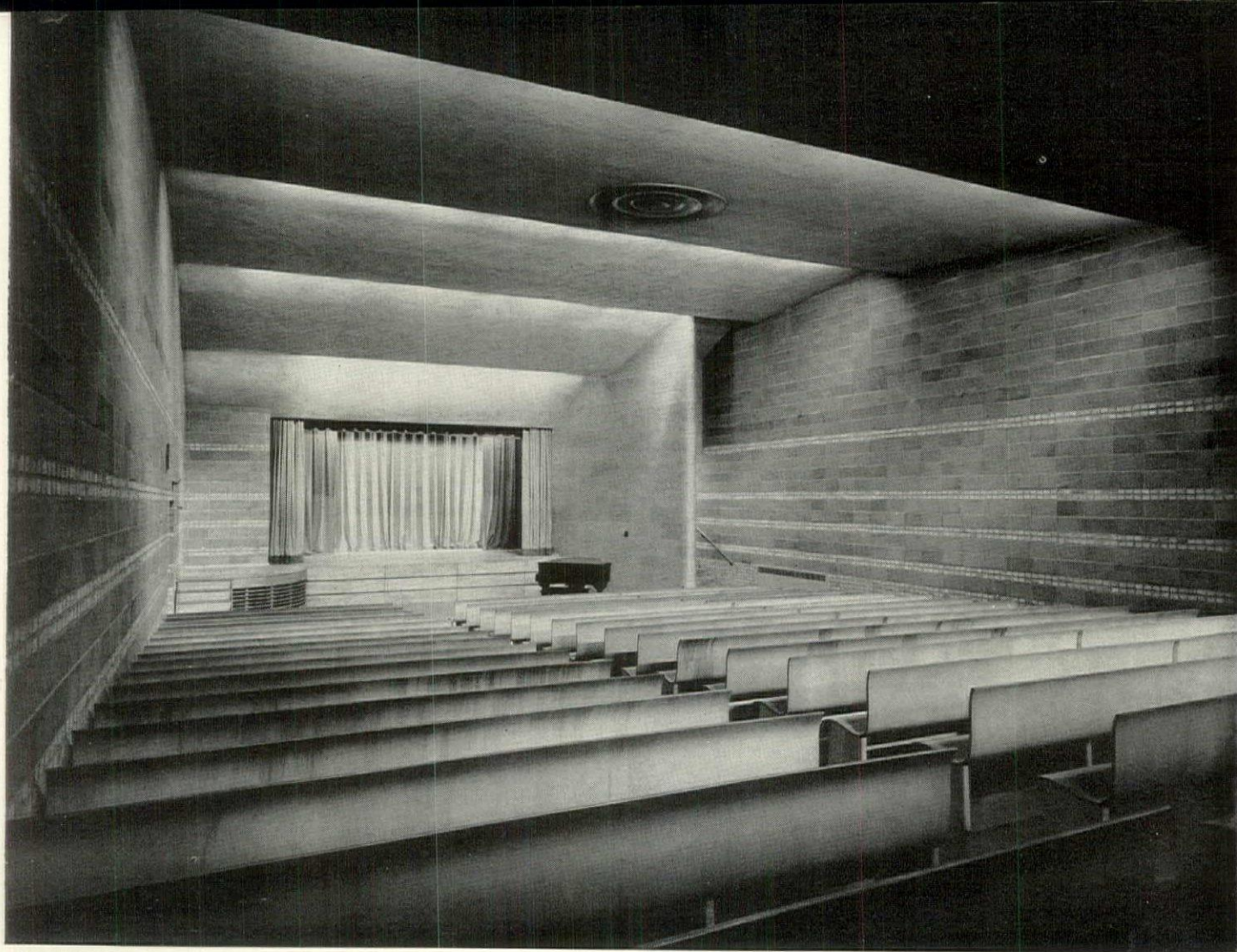


upon which they are cushioned, the Nature which their many fingers seem to grasp, whose transcendental spirit their walls of glass continuously invite. Especially I like the hospitable lobby and that central assembly room which so stealthily gathers the children into its arms; and as for the classrooms, they are, I think, as perfect as they could be made. A sure and deep understanding of youth and of the teacher's way of working formed these theaters for becoming and unfolding which, unmarred by grown-up affectations or by recollections of outmoded disciplines, have captured so much of that friendly dignity, that serious joy in living and creating, which are among the beautiful attributes of childhood; and the building, informed by that devotion, flings its bright radiance like a gem into the lives that are shaping here.

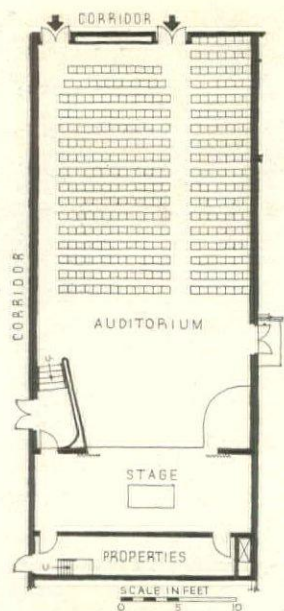
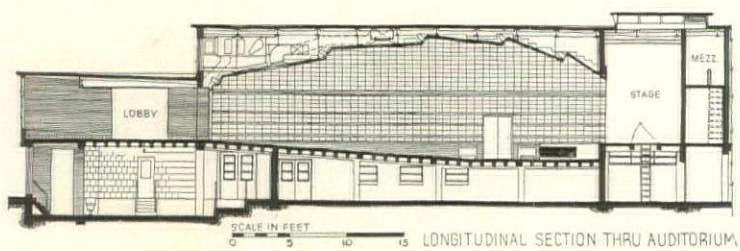
I do not imply that the Crow Island School is without deficiencies. I could, for example, wish that the wide chimney which has so conspicuous a place in the ensemble had confessed itself more frankly to be a chimney: its ambition to be a spire seems somewhat misguided. I suppose that some inherited pattern—perhaps that of the monastery—intruded at this point into the rationalism of the architects, or perhaps they remembered inopportunistically that rule of the esthetes which approves *contrast* as an end in itself. The contrast is, in my opinion, inconsistent with the idea to be expressed. I should like, in the second place, to eliminate the basement. No child should enter a basement when this might just as well be replaced by rooms accessible to the sun: all the more so if the basement makes necessary a wide range of exterior steps. I must protest also against that curious anachronism the *Pioneer Room*, with its Indian tent, its hand-hewn beams, its genuine antique waffle-iron (there could be no worse method of teaching history); and especially I protest against the provision of a separate room for "art"—an arrangement certain to promote that schism between art and the other human activities so fateful to the American culture. The arts, it should not be necessary to say, should be taught in the same environment as science, letters, and the civic responsibilities: the color-box in each student's desk should be as familiar to him as are pen and printed word.

I wish that I knew how to bring the Crow Island School to the attention of those high-placed persons who determine the design of the public schools of

(Continued on page 91)



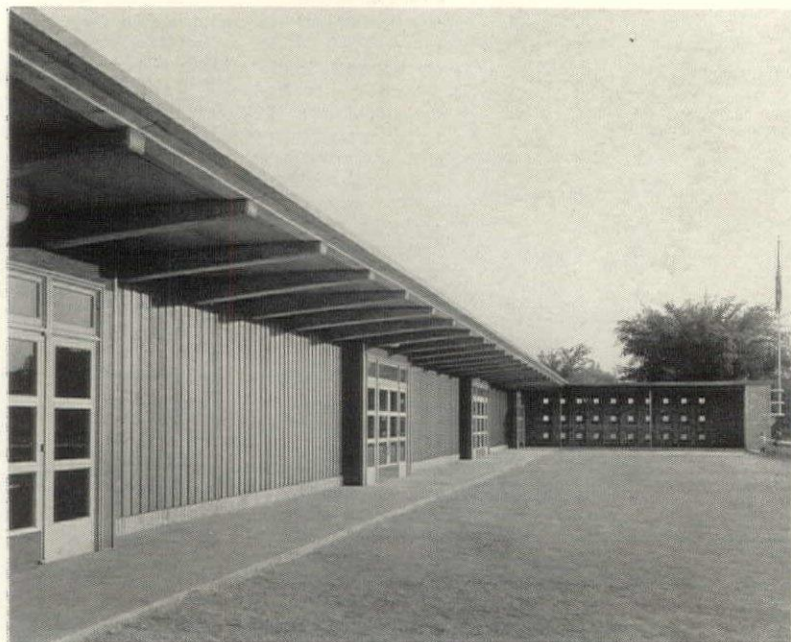
AUDITORIUM



PLAN

AUDITORIUM





PRIMARY SCHOOL PLAY TERRACE

Curiously enough, the frankly unsymmetrical treatment of the auditorium is less startling in actuality than in plan. Seen in black and white, the room is austere; the real impression of warmth comes from the color of the tile walls and light wood benches. Views above and below show the play terrace of the primary school and the library.



LIBRARY





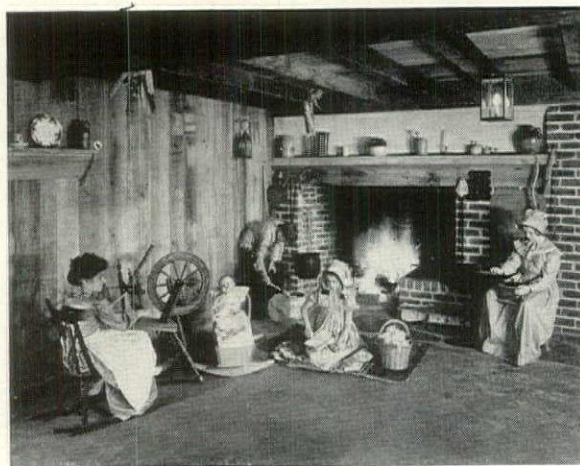
PIONEER ROOM

ART ROOM



Examples of provision for the children's less formal activities.

PIONEER ROOM



CONSTRUCTION OUTLINE

FOUNDATION: Poured concrete, plywood forms.

STRUCTURE: Exterior walls — brick, Brisch Brick Co. and Calif. redwood. Main entrance—Indiana limestone. Interior partitions—solid brick and clay tile. Classrooms and halls—Idaho white pine. Auditorium and playroom—Waylite insulating concrete block, Chicago Insulcrete Co. with horizontal common brick or Northwestern Terra Cotta Corp. glazed tile trim; some gypsum plaster. Floor construction—reinforced concrete, plywood forms. Structural steel—Mississippi Valley Structural Steel Co.

ROOF: Structural steel frame, Mississippi Valley Structural Steel Co., supported by T-irons. Barrett Roofing Co. 20-yr. bonded built-up and gravel roofing.

WINDOWS: Sash—steel projected, Hope's Windows, Inc. Glass—American Window Glass Co. and Libbey-Owens-Ford Glass Co. Glass block — Owens-Illinois Glass Co.

FLOOR COVERINGS: Asphalt tile — Thomas Moulding Floor Co. Playroom and assembly room stage—ironbound maple, Robbins Flooring Co. Library — elm, Haskelite Mfg. Co.

WALL COVERINGS: Offices — Japanese grass cloth. Auditorium — white oak veneer, Mengel Co. Remainder — white Idaho pine planks.

INSULATION: Offices, music rooms, shop and visual education room—1 in. Quiet-Tone acoustical tile, U. S. Gypsum Co. Rockwool by Air Tite Insulation Co. Sound insulation — Thermax, Celotex Corp.; acoustical plaster and Kalite, Certaineed Products Corp.

FURNISHINGS: By Illinois Craft Project, WPA, Milwaukee Art Project, WPA and Welfare Engineering Co., designed by architects and Carleton Washburne. Desk and table tops—Formica Insulation Co.

ELECTRICAL INSTALLATION: Wiring system—rigid conduit. Switches—Square D. Co. Devices and fixtures—Hub Electric Co. Special fixtures designed by Prof. Stanley McCandless, built by Hub Electric Co. Lamps—Wabash Appliance Co. Photo-electric control—General Electric Co. Clocks—Warren Telechron Corp. and Stromberg Time Corp. Fire alarm system—Signal Electric Mfg. Co.

HARDWARE: By Sargent & Co., Richards-Wilcox and Oscar C. Rixson Co. **DOORS:** Garage doors—McKee Door Co. New Londoner flush doors, American Plywood Co.

PLUMBING: Fixtures—American Radiator-Standard Sanitary Corp. and James B. Clow & Sons. Soil pipes—Dee Bros. Building Supplies. Valves and piping—Crane Co.

HEATING AND AIR CONDITIONING: Convectors—American Radiator-Standard Sanitary Corp. Boilers—Kewanee Boiler Corp. Oil burners—Lammert-Mann. Water circulating pumps and ejectors—Yeoman Pump Co. Traps—Sarco Co., Inc. Temperature controls—Johnson Service Co. Ventilators—Anemostat Corp. of America, R. B. Hayward Co., Herman Nelson Corp. and H. H. Robertson Co.

BUILDING FOR DEFENSE

HEADWAY AND HEADACHES

BRIEFS

Significant and interesting but briefly told are these building-for-defense developments of the past month:

► To Congress went a Presidential request for \$300 million more defense housing funds to be spent under the Lanham Act by the Federal Works Agency and its subsidiaries. Roosevelt indicated that at least 125,000 additional Federally financed defense houses should be built prior to July 1, 1942, said that the requested \$300 million was "to fill the most urgent present needs." If and when it is appropriated, this fund will raise to about \$700 million the total Government ante toward solving the defense housing problem—the same amount which has been spent by the U. S. Housing Authority in its slum clearance and subsidized low rent housing program.

► To the President with Congressional approval went the \$287 million appropriation bill which would finance a network of strategic roads for defense purposes. Some of these roads would be equipped with "flight strips" to serve as emergency landing and take-off fields for war planes.

► The War Department reported that only 2½ per cent of the average daily force of 394,000 men working on all types of Army construction have been injured since the first of the year. And, many of the 94 million work hours of these men were spent in such dangerous tasks as dynamiting, pile driving, dam building, caisson sinking and excavating.

► Enough 10 ft. non-climbable fence to stretch from Philadelphia to Pittsburgh and a sufficient number of flood lights to erect 59 in every mile of that fence will be used by the War Department in the fencing and lighting of critical areas in its 95 post and camps in all parts of the country. Actual statistics: 1.5 million ft. of 7 ft. steel chain link type fence topped with three feet of barbed wire; 5,167 floodlights at about \$100 apiece.

► While the Federal defense housing program is far from a social relief measure, its administrator, John M. Carmody, cannot forget that his Federal Works Agency was once the nation's No. 1 pump-primer and dole distributor. Thus, last month he announced that the public defense housing program has already given 23 million man-hours of work to some 63,000 men and was paying them at the rate of \$2 million a week.

► To assist the Army in the acquisition of land for defense construction projects

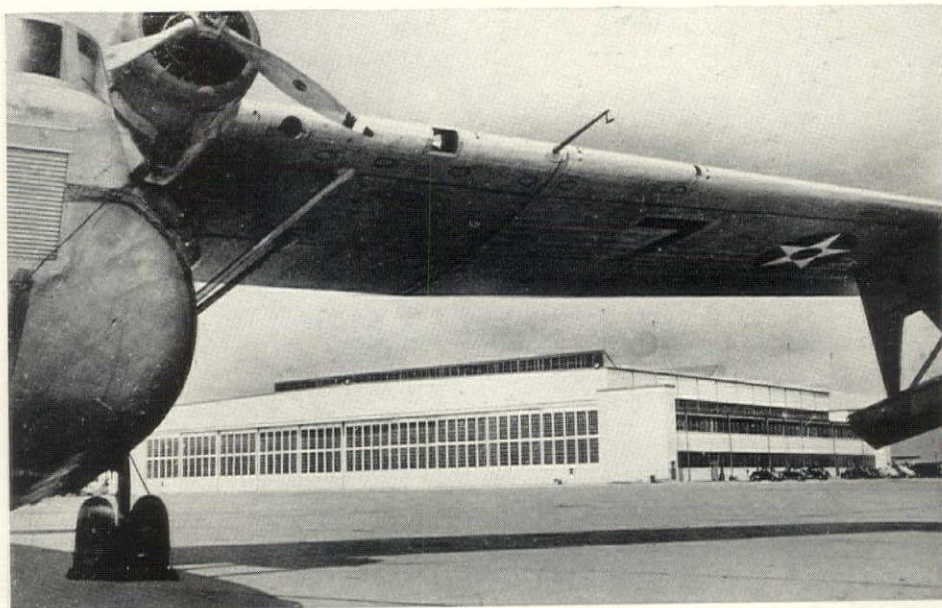
of all types, the War Department has invited fifteen nationally known realtors from all parts of the country to serve on the new National Advisory Council on Real Estate. Including President Philip W. Kniskern of the National Assn. of Real Estate Boards, the group of experts will cooperate with the real estate section of the Quartermaster General's construction division. To the same end the War Department also appointed real estate directors for each of its nine military zones. Comprised of private realtors, Government employes and Army officers, this group will have active charge of the Army's land acquisition and disposal or leasing. They will work under the direction of the nine zone constructing quartermasters.

► While indication is that rents will not be covered in the proposed Federal price-fixing bill, President Roosevelt at mid-month let it be known that he is for some sort of rent control in defense housing hot spots. Personally, he favors having Congress legislate the maximum percentage which local rents would be permitted to advance over their average level during a specified period. And, he suggests 1938-39 or 1940 as the period.

HOUSING PRIORITIES

While Government priorities have already affected the delivery of many critical materials to house builders (see p. 42, col. 2 and p. 73) not until last month was the industry covered with a blanket priority ruling. Spread jointly by OPM's Priorities Director Edward R. Stettinius and Defense Housing Coordinator Charles F. Palmer, the blanket covers all types of housing, puts public and private defense construction ahead of private and public non-essential work and will assure a steady flow of materials to projects of the former type.

With the concurrence of the Army and Navy Munitions Board OPM's Priorities Division will give each Government defense housing project and private housing in officially designated defense areas (they will probably coincide with FHA's Title VI defense areas) preference ratings "considered appropriate in the light of the national defense activity to be served." These ratings will then be used by contractors to obtain on required delivery dates any materials appearing on the Defense Housing Critical List. While still in preparation and undisclosed last month this list will include materials and items of equipment which, while available in



Wide World

Commissioned last month after an expenditure of a cool \$30 million, Quonset Point (R. I.) Naval Air Station is only one of 15 such stations being developed or expanded in the U. S. today. Viewed under the wing of a giant seaplane, the hangar houses part of the station's four squadrons of a dozen patrol bombers each, was roughed out by the Navy Department, designed by Architect Albert Kahn, built by Contractors Merritt-Chapman & Scott Corp. and Geo. A. Fuller Co. of New York. Their other works include a mile-long airfield, a maze of brick barracks, officers' quarters, roads, and a large bulkhead retaining 400 acres of reclaimed land. Another part of the 1,200 acres was created by moving a whole colony of 260 summer cottages to a mile-distant site where they serve as homes for some of the station's 5,000 officers and enlisted men.

limited quantity, must be conserved. And, since they are vital for purposes more important than housing, such materials as these will certainly not appear on the list: aluminum, copper, nickel, bronze, zinc.

In recommending whether or not a private housing project is eligible for a priority rating, local field representatives of the Defense Housing Coordinator in FHA field offices will be guided by these rules issued from Washington: 1) reasonable preference in occupancy of the housing must be given to workers in designated defense industries; 2) house prices must be \$6,000 or less; 3) rentals—for shelter only—must be \$50 or less per month; 4) the housing must be necessary from a national defense point of view. Of course, rehabilitation of existing housing is in the same boat with new construction.

Doing his part for National Defense, Administrator Nathan Straus of the U. S. Housing Authority issued instructions to local housing authorities to use substitutes for such critical materials as cork and rubber. Said Straus: "Aluminum is barred entirely and substitutes for steel, copper, and bronze will save from half a ton to a ton of metal for each USHA home built." Wood was indicated as the major substitute for metal, and concrete will replace steel in some cases. Wood substitutes for galvanized metals will save zinc as well as iron and steel, and, according to Straus, cut stone will replace bronze wherever possible.

FACTORY COSTS

Back to their highest level since 1920 went industrial building costs during 1941's second quarter. During this period the cost index compiled regularly by Austin Co., top notch industrial builders and engineers, shot up 10 points to 109 per cent

of the 1926 average. The index reflects the national trend of labor and material costs for a typical one-story steel frame monitor-type plant. All-time peak: 155 in the spring of 1920. Post-depression low: 80 in the fall of 1939.

Announcing the index's discouraging rise, Austin's President George A. Bryant last month commented: "The whole material situation has changed completely and is still changing with each succeeding month. Fabricated steel for one project in the Southwest, for instance, costs almost 50 per cent more now than when we started our first work in the same locality a year ago. In the same period the cost of lumber in that area has doubled. Such advances reflect premiums paid for early delivery, in which wages for overtime in the steel plant, fabricating shop or lumber mills are but one of the factors which tend to increase costs. The unparalleled need for speed in the completion of defense plants has likewise led to more overtime for engineers and field labor, all of which has increased costs proportionately. With construction workers getting time-and-a-half and double time for overtime, and working six or seven days a week, the average hourly cost of labor in the building trades advances from one-sixth to one-third more than the established hourly rates. . . ."

SECOND HAND FACTORIES

A young child of the National Assn. of Real Estate Boards begat by the national emergency, the Society of Industrial Realtors is comprised of "qualified industrial real estate specialists" from every principal defense production area. This spring it launched a survey of vacant factories and storage buildings as a contribution to defense. Last month the Society assembled in New York City's Biltmore Hotel to

study the findings. Reports covered 50 key cities, gave Government and private manufacturers these facts to ponder:

►Total usable production and storage floor areas come close to 90 million and 12 million sq. ft., respectively.

►Vacant industrial giants containing more than 200,000 sq. ft. under one roof are scarce, account for only about 6 per cent of the total. Most prevalent are 25,000 to 100,000 sq. ft. plants which account for about 44 per cent of the total. Smaller in number are plants with floor areas of less than 25,000 sq. ft.—32 per cent. Those between 100,000 and 200,000 sq. ft. are fewer still—18 per cent.

►Heavy manufacturing could be made at home in 22 per cent of all the vacant industrial and storage buildings. And, these heavy manufacturing buildings account for more than half of the total floor area surveyed. Forty-nine per cent of the structures are adaptable to light manufacturing; 29 per cent, to warehousing and distribution.

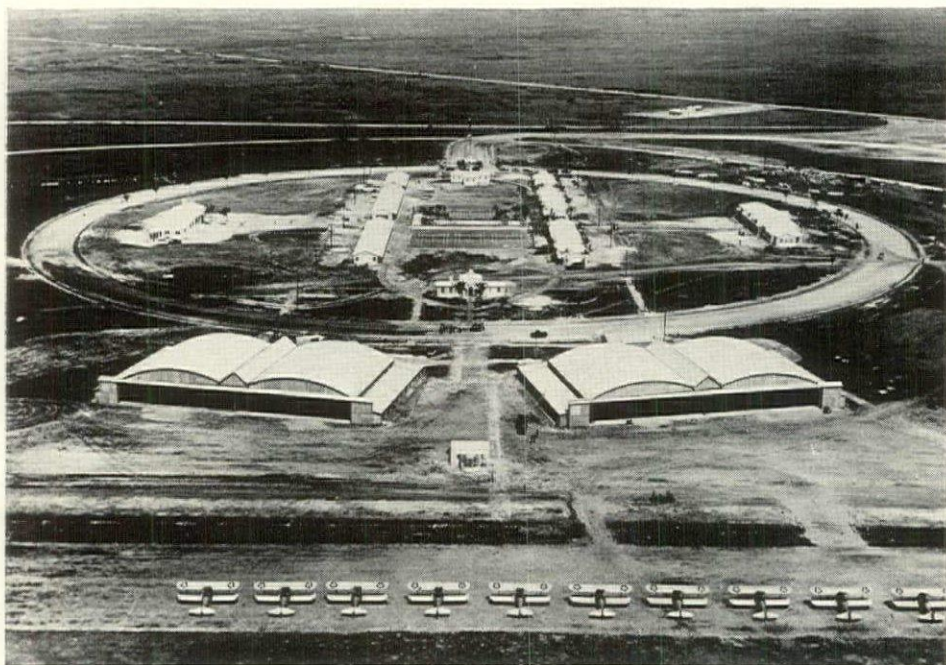
►Greatest concentration of available space occurs in cities having a population between 250,000 and 500,000; seven cities in this group have reported a combined surplus of 10 million sq. ft. New York, Philadelphia, and Detroit, cities in the 1 million-and-up population bracket, have 7 million sq. ft. of space for sale or rent. Three States alone, New York, New Jersey and Pennsylvania, have reported a total of 21 million sq. ft.

When the Society's inventory is complete, the tabulated data will show the number of square feet of industrial floor area ready for occupancy in all parts of the country, the proportions suitable for light and heavy manufacturing, the proportion contained in one-story buildings, the amount available in structures of slow-burning or concrete construction and the proportion which already boasts railroad sidings. A similar breakdown will be available for warehouse space.

In their preliminary form, the survey results have prompted conservative Walter S. Schmidt, president of the Society, to describe the backlog of idle U. S. industrial buildings as "abundant . . . a good supply." More positive are the comments of Industrial Realtor George B. Robeson of Camden, N. J.: "This nation has always been prodigal in its waste of natural resources . . .; now it is wasting its vacant industrial plants. Many existing modern plants can be bought at around \$1 per sq. ft. including land as against the cost of new construction of around four dollars."

240 HOUSES A DAY

After months of necessary ground work and unnecessary hemming and hawing, the Federal defense housing program kicked up its heels in June, got going. In that one month, 7,191 dwelling units were completed by the Federal Works Agency and its seven house building affiliates—more than the cumulative total completed in all preceding months. Thus at the half-



Wide World

Interestingly planned is this new defense project of the Riddle Aeronautical Institute at old World War I Carlstrom Field, Arcadia, Fla. Beyond the pair of large hangars and inside the circular road are the school's living and recreational facilities: instructors' quarters to the left and right; students' barracks in the center on either side of the tennis courts. An athletic field and swimming pool are also included in this private project.

year mark, the FWA's \$340 million 95,000 house program was 15 per cent complete. Herewith the score by months:

MONTH	MONTHLY TOTAL	CUMULATIVE TOTAL
Previous mos.	927	927
February	829	1,756
March	996	2,752
April	1,662	4,414
May	2,656	7,070
June	7,191	14,261

The June total represents a production of about 240 dwelling units per day, compared with 88 per day in May.

TITLE VI

Private defense housing activity under FHA's Title VI program is slowing down, but the reason is far from discouraging. Thus, fortnight ago FHA's power to insure mortgages on \$100 million of defense housing was almost spent, and builders were hesitant to prepare project plans and mortgage insurance applications which soon cannot be accepted. At that time, the 22,200 applications totaled \$81 million, and \$58 million of them had been accepted. Moreover, 5,400 Title VI houses had already been started.

To prepare the way for a continuation of this booming program, FHA has drafted a bill for Congressional approval which would add \$200 million more to its Title VI insurance powers, has obtained Defense Housing Coordinator Palmer's approval as well as that of the Reconstruction Finance Corp. which offers to discount the FHA insured mortgages. However, as this went to press, the proposed bill had yet to appear on the floor of Congress, was apparently tied up in the Budget Bureau, the Office for Emergency Management or the White House. The delay was interpreted by some Washington observers to mean that high administration officials are inclined to demur at any measure which would increase the volume of home building. If this dubious interpretation proves correct, the side-tracking of FHA's Title VI expansion proposal is the first sign of Government discouragement of home building which, during World War I, was shut off entirely.

EMERGENCY PWA

At long last, Government's Defense Public Works program (ARCH. FORUM, April, 1941, p. 12) has been approved by Congress, greased with \$150 million and launched on a national front. Purpose: to assist defense-boomed communities expand their own overtaxed public works. Means: 1) Federal grants covering part or all of the projects' costs—under the bygone Public Works Administration program Federal grants were limited to 45 per cent of cost. 2) Federal loans at 3 per cent—they were 4 per cent under old PWA. 3) Direct Federal construction and lease of the projects to the communities. Agency: the Federal Works Agency's Division of Defense Public Works and twelve regional offices, created from the remnants of PWA and staffed with PWasters recalled from furlough—PWA Commissioner, Col.



Stop-gap housing. While Bomber Builder Glenn L. Martin and FW Administrator John M. Carmody argue about who is to build the housing necessary for workers in Martin's expanding Baltimore, Md. plant (see text below), the Farm Security Administration has temporarily supplied 800 four-man trailers. Each will be placed on a 25 x 50 ft. lot, will rent for \$25 a month including gas, electricity and water. They cost the Government about \$800 each.

M. E. Gilmore, will head the Division. Projects: schools, water works, sewage and refuse disposal facilities, hospitals, recreational facilities and streets.

Unlike former public works programs, this emergency PWA will produce no pump-priming boondoggles, and speed will be the keynote. Thus, new DPW schools are expected to be open when the fall semester begins. Some building will be temporary, all of it quick, none of it monumental. About half the \$150 million appropriation will go for the construction of buildings, the balance for heavy construction and for operation, equipment and supplies—even school teachers.

Since more than \$500 million worth of Defense Public Works projects have already been proposed for the requisite Presidential approval, Washington observers are confident that the program will be enlarged several times. Meanwhile, FW Administrator Carmody will "give the squarest shooter the best break. Quick decisions to participate on the most generous scale possible on the part of communities will expedite construction. We will argue first with those who have money to carry a share of the cost and then take on the rest. . . ."

BALTIMORE HOUSING

Bomber Builder Glenn L. Martin holds millions of Government airplane orders, has multiplied many times his 1939 production facilities outside Baltimore. Early in the expansion program the need for additional housing became bluntly apparent, and, showing an initiative which is sadly lacking in most industrialists, Martin decided to build 400 houses for his workers. This was his counter-proposal to the Government's: if Martin would build 1,000 houses the Government would build the other 2,000 which a survey indicated were necessary.

Last month after 60 of Martin's houses were ready for occupancy and the other 340 were well on their way to mid-August

completion, trouble developed in the Baltimore defense housing camp. To expedite its part of the program the Federal Works Agency had purchased from the U. S. Housing Authority a brand new 700-unit slum clearance project, had reserved 600 of its units for Martin employees. Ruffled because there were still 300 vacancies in this Armistead Gardens project 45 days after its opening, FW Administrator John M. Carmody last month telegraphed Martin: "We have made every effort to inform Martin workers that housing is available, but, for reasons we are unable to understand in face of your earlier representations of need through Coordinator of Defense Housing, we have not received from your company the cooperation expected. . . . Because of this serious situation I have directed the (local) Housing Authority to open the project to qualified defense workers employed by other companies in the Baltimore area. Meanwhile, I am anxious to know whether the apparent lack of enthusiasm on the part of your organization in getting Armistead Gardens fully tenanted with your workers is due to the fact that Government did not elect to build defense housing on your site. You are aware that work is being pushed on 300 additional homes and that an allocation has been made for 750 others to be constructed in the immediate vicinity of Armistead Gardens. . . . In the face of your failure to fill Armistead Gardens are we to understand that your housing needs are taken care of?"

"Mr. Carmody's statement is most interesting," retorted Manufacturer Martin. "However, the facts are these. . . . Soon after we started, the Federal authorities asked me for a release on 1,000 of their houses since they proposed to purchase Armistead Gardens and to enlarge it by 300 additional units. I told them that Armistead Gardens did not meet defense needs for our plant because it was six miles away. . . . When these places became available, many employees looked at them but

(Continued on page 46)

BUILDING FOR DEFENSE . . . A CITY HOUSING SURVEY

tells Louisville where it stands. Realty Analyst Roy Wenzlick counts 29,100 new noses in local defense establishments, concludes that private enterprise will accommodate them.

Like many another U. S. community, Louisville, Ky. last spring realized that the national defense program was doing strange things to the local housing situation. But, the extent and character of the problem were so befogged by generalities and loose talk that a solution was not even in sight.

To clear the air, President-Publisher Harry Bingham of *Louisville Times and Courier-Journal* asked President Roy Wenzlick of Real Estate Analysts, Inc., famed building investment economist and counselor, to investigate and document the defense housing problem of the metropolitan area and recommend whatever action was deemed necessary. While the Wenzlick findings, per se, hold little significance for planners in other communities, they spotlight the effect of the defense program in general and challenge similarly affected communities to examine closer their own defense housing problems.

Defense activities. On a personal inspection trip to Louisville from their St. Louis headquarters, Realty Analyst Wenzlick and his Vice President-Treasurer A. B. Kissack logically looked first at the seat of Louisville's trouble—defense activities in the metropolitan area. They found a total allocation of \$125 million in Government construction and production contracts, accounted for primarily by these whopping projects in and about the city:

► The \$69 million powder-making Indiana Ordnance Works being built and operated by duPont in the small town (April, 1940, pop. 939) of Charlestown, Ind. Begun last September, the plant's construction required a peak labor force of 24,000 in June, is scheduled for completion at year-end when another labor force of 9,000 will handle its operation.

► The \$29 million bag-loading Hoosier Ordnance Works which Goodyear will operate on a 48-acre site adjacent to the powder plant. It was begun last April, will involve a peak construction force of 9,000 this month, will be ready for the 4,500-man operation crew by New Year's Day.

► The \$9 million expansion of Fort Knox which had a post population of only 6,200 in April 1940 but now accommodates more than 35,000 military and civilian personnel. While the construction force peaked at 7,000 in March, an average of 2,750 building mechanics will be busy there during the balance of the year. (Construction began in June 1940.)

► The \$5 million Naval Ordnance Works, a Westinghouse operated gun assembly and mounting plant. Its construction began in January, required a peak force of 1,000 in June and will be finished this month for an operating force twice as big.

► The \$2 million expansion of the Quartermaster Depot for the Army. Its construction started a year ago, peaked in June when 900 men were on the site, will be finished by year-end. The operating force will comprise 1,870 men, as compared with 630 in March 1940.

While these five major projects would have required 41,900 building mechanics had their employment peaks coincided, the largest construction force required at one time for all defense projects in the Louisville area, including many comparatively small military and private industrial projects, was the June total of 30,725. During the same month defense production (non-construction) jobs totalled 6,925, bringing the June defense employment total to 37,650. By February, practically all construction will have been finished, and many unemployed building mechanics will seek and land some of the 19,100 defense production jobs which will have been created by then. This defense employment level will be maintained for at least the balance of 1942. On top of it, secondary employment in defense-boomed but non-defense activities (construction, industry, retailing, commerce, etc.) will by year-end require some 10,000 additional workers. Total defense employment for 1942: 29,100.

Housing demand. The pinch in living accommodations occasioned by this huge employment increase is not as pressing as the cold statistics indicate. Thus, Investigator Wenzlick learned from Army officers in charge of the Indiana Ordnance Works construction that the peak labor force of 24,000 was comprised of 400 Government employees, 7,200 subcontractors' workmen and 16,400 duPont employed building mechanics. Picked from about 150,000 applicants, the last two groups were made up largely of out-of-towners—40 per cent lived more than 50 miles from the site, 40 per cent came from rural or farm districts and 20 per cent migrated from other construction jobs. Only 19 of the 65 subcontractors participating in the construction were from Louisville. Nine out of ten workmen were more than 25 years of age and, while three out of four were married, only a comparatively few brought their families to the Louisville metropolitan area. (Extraneous but interesting is the fact that some 14,000 men commuted to the job in 3,500 automobiles, 6,000 by railroad.)

Despite the large proportion of non-resident workers building Louisville's defense plant, the city's housing is seriously overcrowded. Fortunately, however, this stress will be considerably relaxed with the completion of the construction program prior to the February peak of production and secondary defense employment. More-

over, since the housing demand created by the presence of construction workers is temporary, Wenzlick concluded that it was not Louisville's worry, but rather the proper field for Government housers and their trailer squadrons.

In calculating the "permanent" housing need, it was assumed that 12,600 of the 29,100 increment in production and secondary jobs could be filled from the ranks of the city's 21,040 unemployed (April 1940). Thus, only 16,500 workers would be drawn from outside the community and would require housing. According to an accepted rule of thumb (1½ workers per family), this will mean an 11,000 family increment in addition to the 500 families of Army and Navy officers and the normal city growth of 1,505 families (860 per year) between April 1940 and January 1942. Total family increment: 13,005.

Housing Supply. Biggest part of their housing need will be met by the 5,000 vacancies which Wenzlick estimated were habitable out of an April 1940 total of 5,991. Next biggest part, by the 3,475 new dwelling units built between April 1940 and April 1941 plus the 2,000 units to be added by January 1942. Conversions are expected to contribute another 500, and a \$856,600 Federal defense housing project will accommodate 250 civilian employees of the Army. After subtracting the 200 units that will have been demolished during the 21-month period, the net housing increment by January 1942 will total 11,025—1,980 less than the need. In other words, the Louisville metropolitan area will suffer from a housing shortage of 1,980 units in early 1942.

If Wenzlick's educated hunches are realized, however, this shortage will have been wiped out by the middle of next year. On the basis of statements by the community's biggest builders (25 or more houses per year) that they will double their last year's operations if demand continues, it is estimated that 5,000 new privately financed dwelling units will be provided during 1942. In addition, "plans are taking form to remodel and rehabilitate 1,000 single residences into 2,000 dwelling units". Finally, USHA plans to provide a net increase of 535 units after demolitions. Total 1942 housing increment: 6,535 dwelling units.

Subtracting from this total the estimated January shortage of 1,980 (see above) and the 1,000 new families anticipated during the year, Wenzlick concludes that there will be a housing surplus of 3,555 units, or 2.4 per cent, at the end of 1942, comments that "this vacancy should be further increased during 1943, probably reaching 4

(Continued on page 52)

BUILDING FOR DEFENSE . . . SEVEN INDUSTRIAL PLANTS

keynote a program involving some 1,800 projects, some \$2.5 billion. A portfolio of typical examples from Florida to California, from 40,000 to 1.3 million sq. ft.

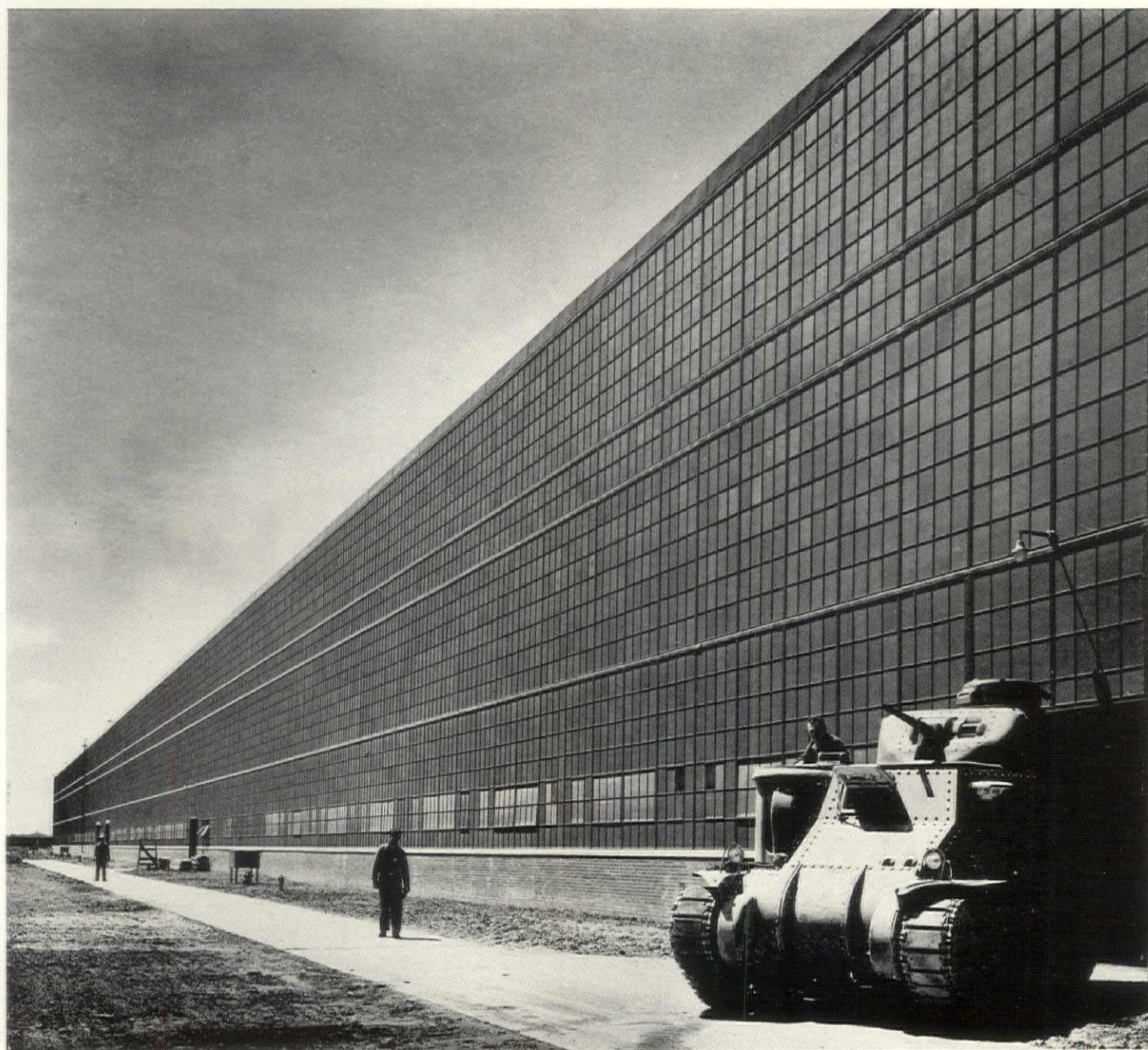
If fourteen football fields and their end-zones were grouped together, their area would equal, not the total production floor space of all U. S. defense plants nor the area of all new plants in the aircraft category, but merely the working area of one of these plants—the new Vega Airplane Co. project at Burbank, Calif. (see p. 100). And, the sprawling Vega plant is but one of about 115 aircraft and aircraft parts plants being built or enlarged in the defense program. All told, they will cost some \$614 million including equipment, seven times as much as the aircraft industry spent on plant expansion during 1940.

The industrial construction program, of course, includes more than aircraft plants. Of the \$2.5 billion which had been spent and was being spent on new and expanded defense industrial facilities at June's end, about \$600 million was allocated to the construction of ammunition producing facilities, \$230 million to gun arsenals and \$50 million to buildings for the mass production of vehicles and tanks. An undisclosed but sizable chunk of this last fund went into the huge Government tank arsenal built and operated by the Chrysler Corp. (below and p. 98). Smaller privately financed industrial projects have been

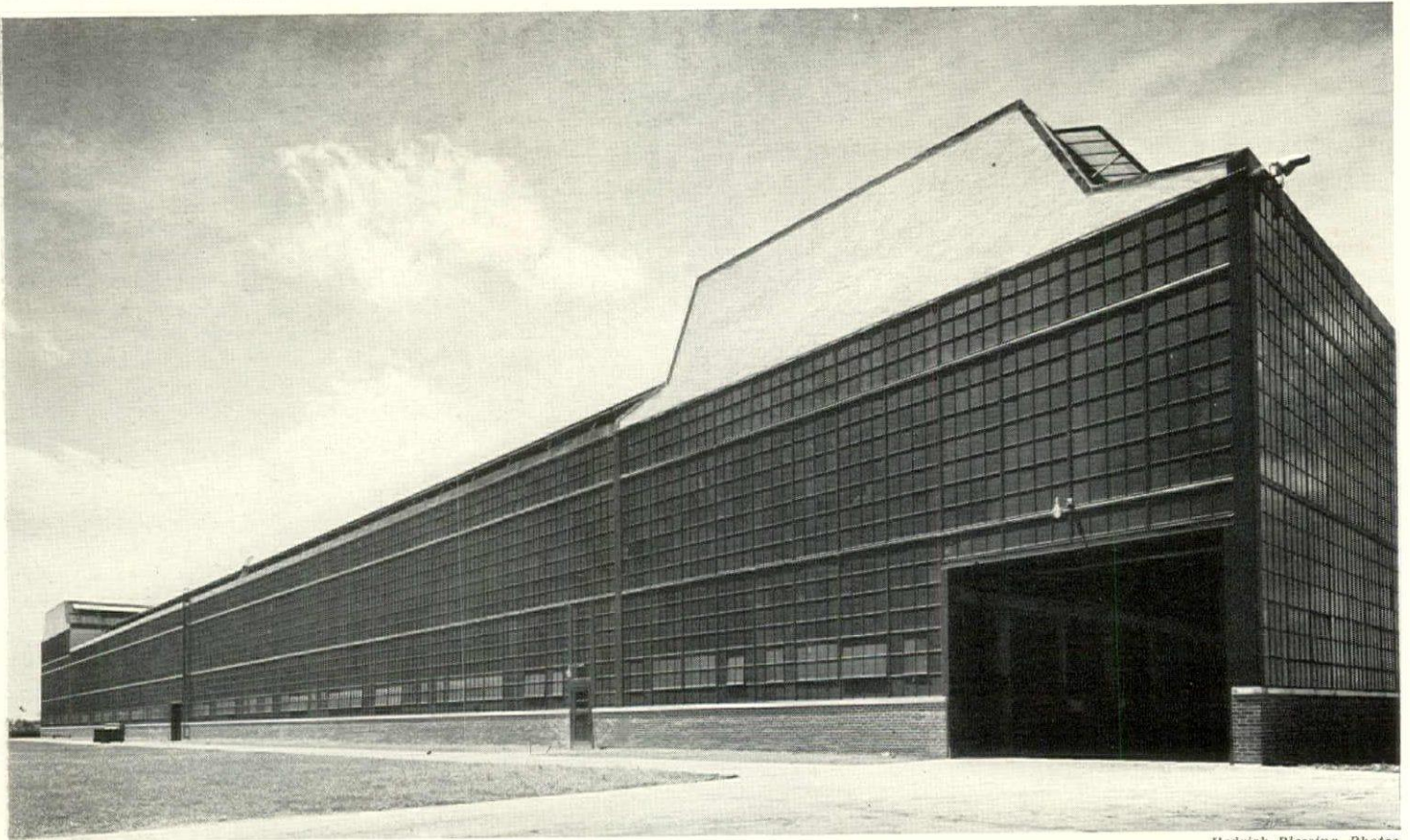
fostered by the Government financed big ones. For instance, Adel Precision Products Corp.'s new factory (p. 103) turns out small but vital airplane parts; U. S. Electrical Motors' new plant (p. 102) manufactures aircraft testing auxiliary engines; and Intercontinent Aircraft (p. 106) is subcontracting for a larger manufacturer.

With some 1,800 defense industrial projects to choose from, THE FORUM's seven selections presented on the following pages afford a mere peep at Building's part in the defense program. But they merit analysis as examples of significant, current industrial design and construction.

TANKS CHRYSLER CORPORATION DETROIT, MICH.



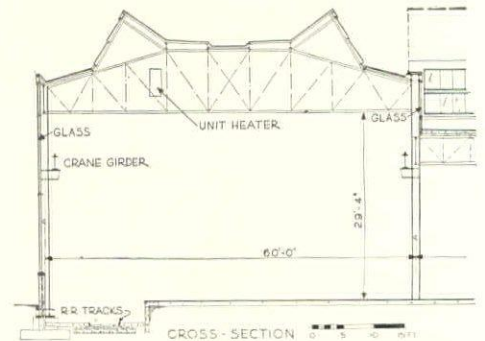
Hedrich-Blessing



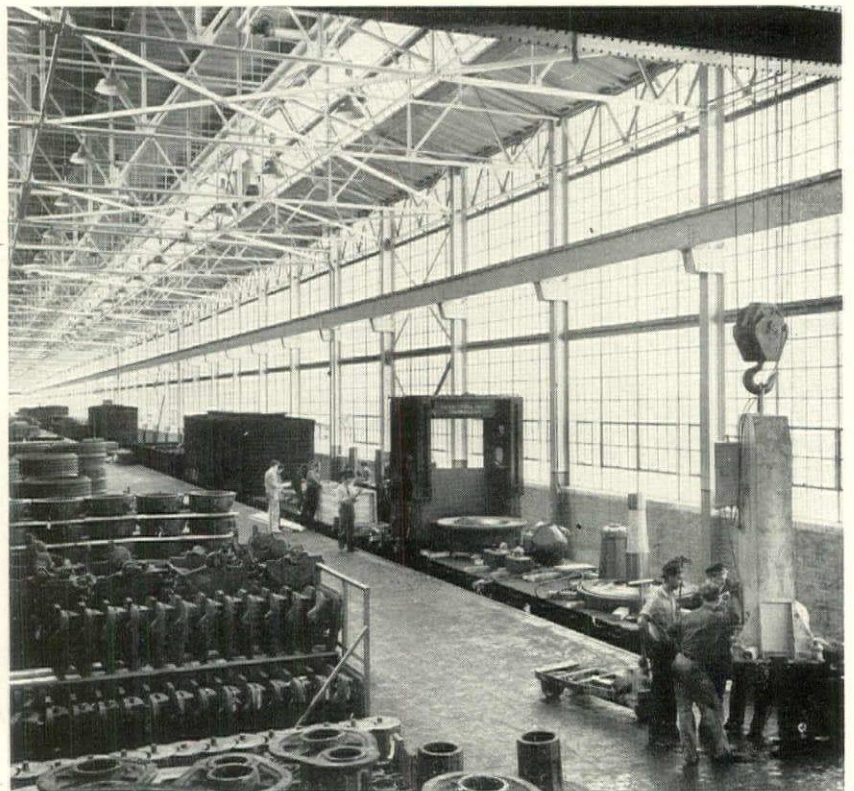
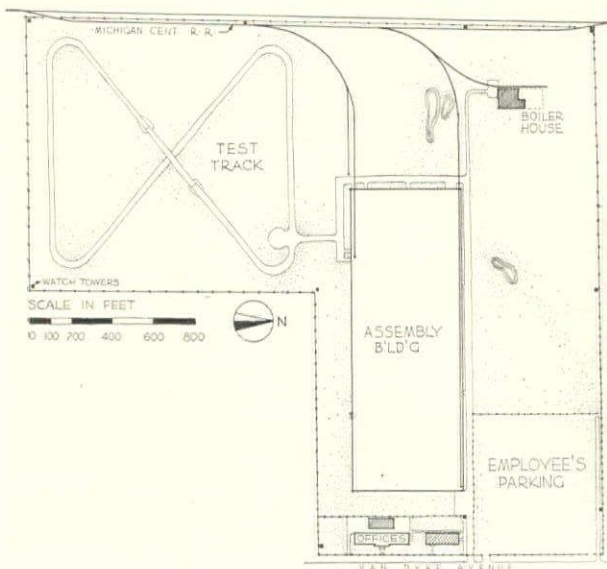
Hedrich-Blessing Photos

After plant and tool engineers had calculated the machinery and floor space required for the production of each tank part, Chrysler executives put the various requirements together, roughly planned a building to house an efficient arrangement of these departments. Finally, after dimensions, clearances, bay positions and expansion provisions had been specified, the requirements were handed to Architect-Engineer Albert Kahn. Typical of most Kahn-designed buildings, the 1,382 x 520 ft. assembly unit is enclosed with reinforced concrete flooring (finished with 3 in. thick wood blocks), brick curtain walls, continuous steel sash and a monitor type roof atop steel trusses. Assembly building layout: 1) A 60 ft. wide receiving bay on the north side with interior railroad

facilities running its entire length (see photograph, below) and truck space at either end. 2) At right angles to this bay, 23 sub-assembly bays 60 ft. wide. 3) An 80 ft. wide final assembly bay running along the south side of the unit—flat cars pick up completed tanks at one end of this bay. The building contains 26,540,000 cu. ft. Other units in the project: personnel building, garage, boiler house and office building. Contractor: O. W. Burke Co.

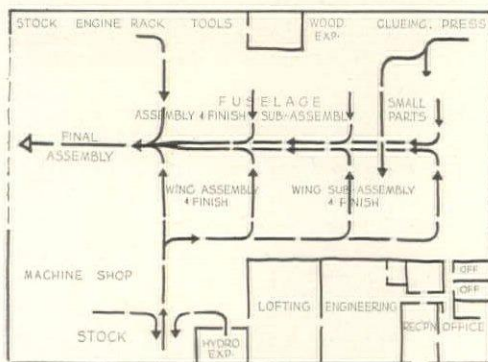


CROSS-SECTION 0 5 10 15 FT.

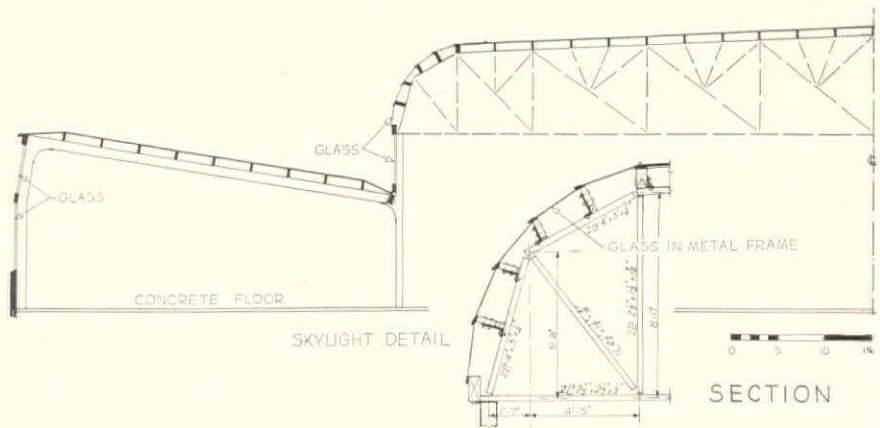




HUGO ECKART, ARCHITECT-ENGINEER

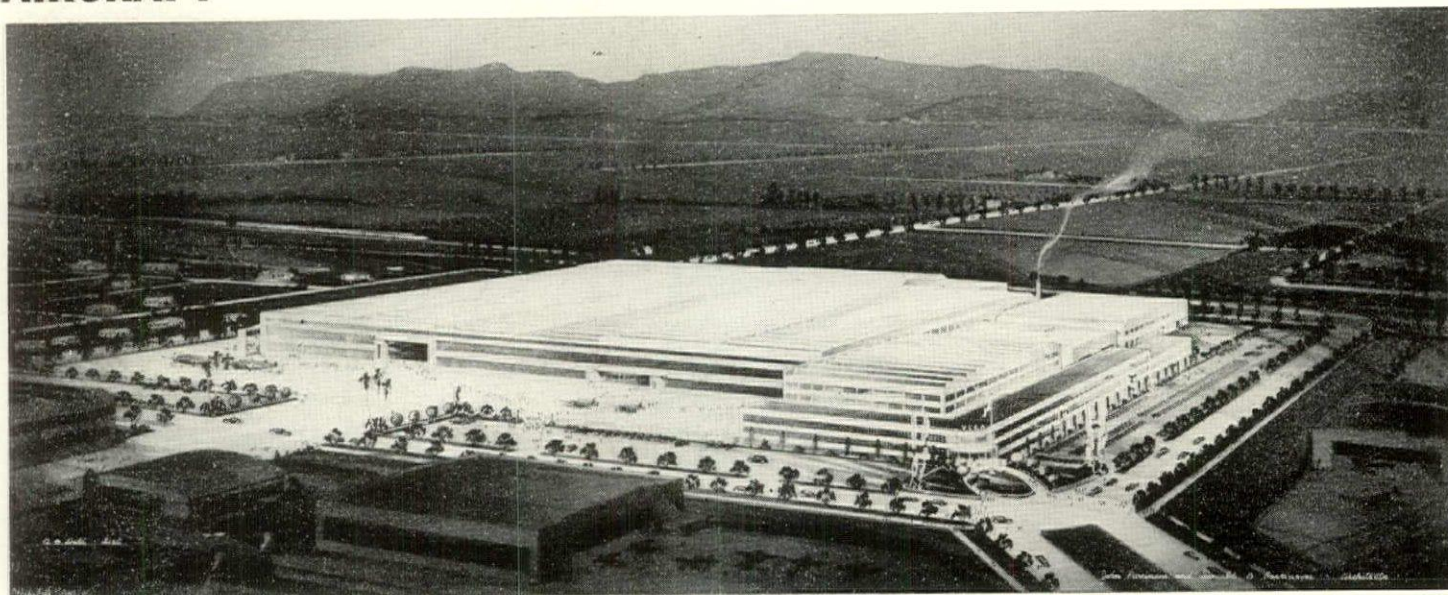


FLOW PLAN



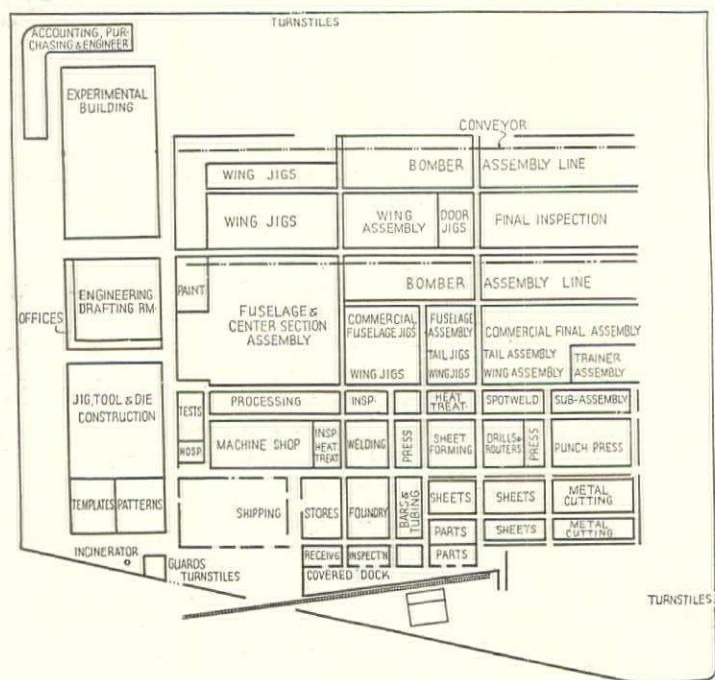
Eaton

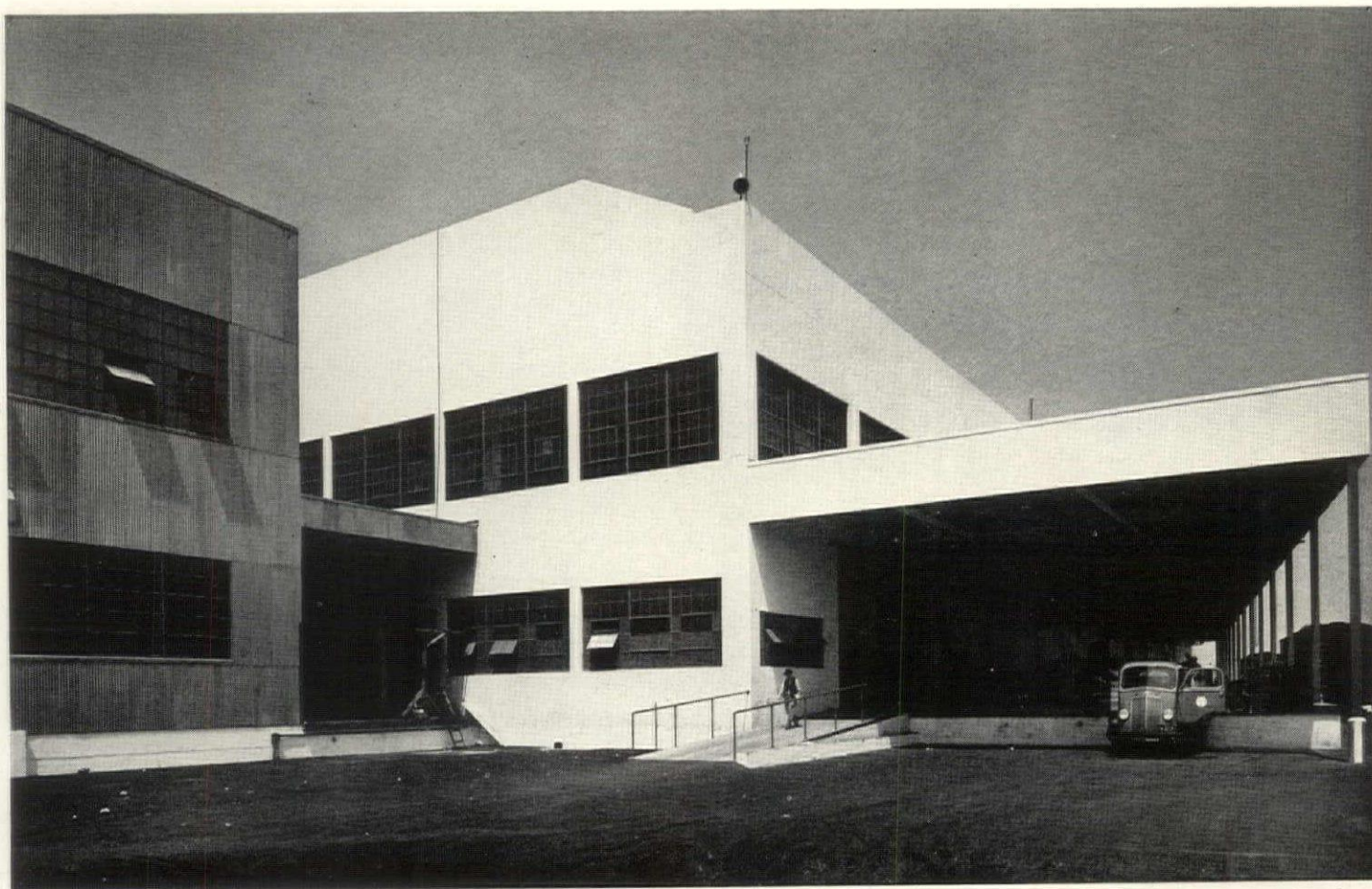
Most interesting detail of this small (28,000 sq. ft.) aircraft plant is the use of continuous curved sash along the eave structure line for the entire length of the central span (see detail drawing). It affords additional horizontal and vertical light (see interior view) and will help solve the lighting problem which sideways expansion of the plant would naturally entail. Located on a 20-acre site adjacent to the San Bernardino County Airport, the plant may also be expanded to the front and rear, and indication is that additional units, similar in design and construction to the existing plant, will soon be added. Construction: reinforced concrete footings, foundations and walls to sill height; welded steel truss framing; tongue and groove sheathing covered with composition roofing. Architect-Engineer: Hugo Eckart. Contractor: Buttress & McClelland, Inc.



Eaton

Since the big 1,334,000 sq. ft. Vega plant was built in one \$7 million swoop, its layout is better suited to mass production than that of most airplane factories which have reached comparable size by piecemeal expansion. Instead of the old-style fabrication-to-storage-to-assembly operation which was repeated many times in the production of an airplane, the Vega plant's design permits the fabrication of sub-assemblies adjacent to their next point of use, and the operation proceeds in a continuous flow from rough stock to brake-testing. In general, the flow follows this channel via monorail conveyors, lifts, and traveling bridge cranes which blanket the main building and connect it with the storage facilities: 1) unloading from trucks and railroad on a 325 ft. covered dock, 2) storage in 625 x 125-160 ft. warehouse, 3) fabrication, processing and painting of parts under main building mezzanine, 4) sub-assembly on a J shaped 197,000 sq. ft. mezzanine, 5) final assembly in two 16-plane lines running the full 850 ft. length of the 600 ft. wide main building. Other units of the well-integrated 14-building project include a three-story L-shaped air conditioned administration building facing the Lockheed Air Terminal, an air conditioned and artificially lighted engineering building whose one strip of windows serves the individual studios of head engineers; a manufacturing engineering building whose first floor is devoted to the building of tools, jigs and patterns, the second, to factory executive offices; a two-story shipping building, the first floor of which is used for the crating of parts and assemblies, the second—adjoining the main building mezzanine—for additional sub-assembly work; an underground storage building for combustibles, inflammables and acids. Construction is reinforced concrete walls, concrete floors, saw tooth roof. Lighting is 100 per cent fluorescent—36,524 tubes in 10,392 fixtures, claimed to be the world's largest installation. Architects: John and Donald B. Parkinson. Engineer: Elliott Lee Ellenwood. Contractor: William Simpson Construction Co.





2

- 1 Administration building
- 2 Warehouse and covered dock
- 3 Shipping building
- 4 Main assembly
- 5 Engineering department

4

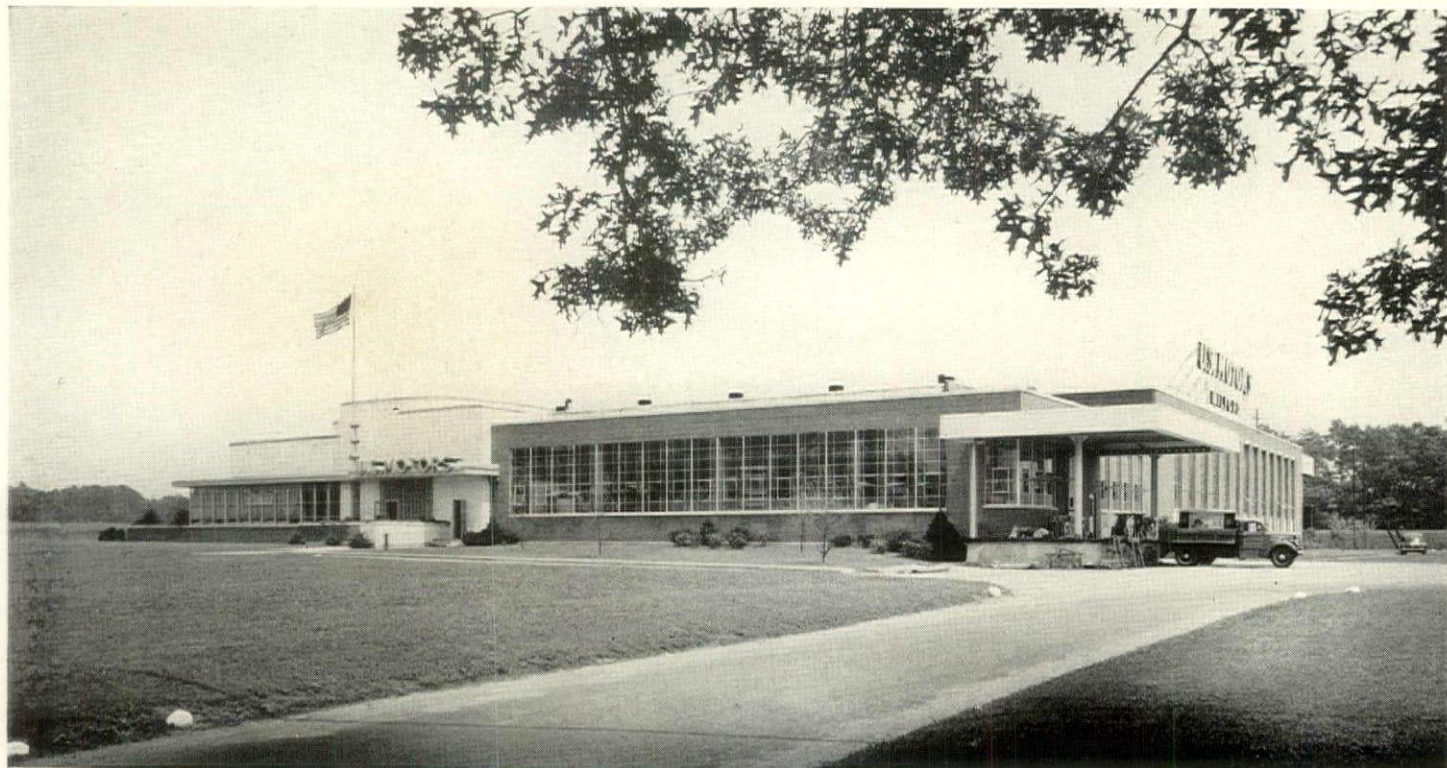


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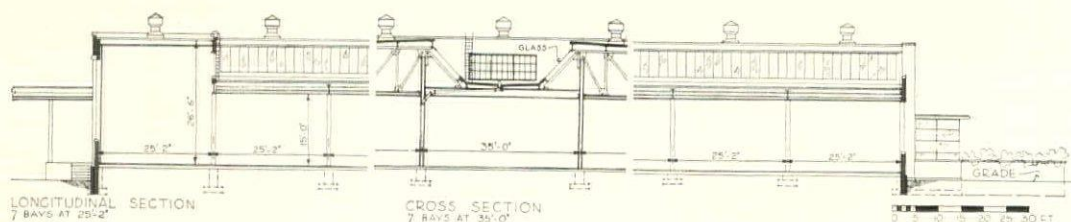
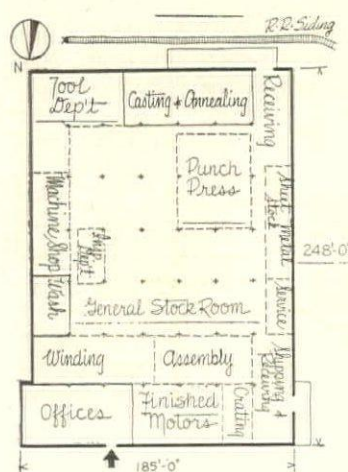


3





Rudolph Edward Leppert, Jr.

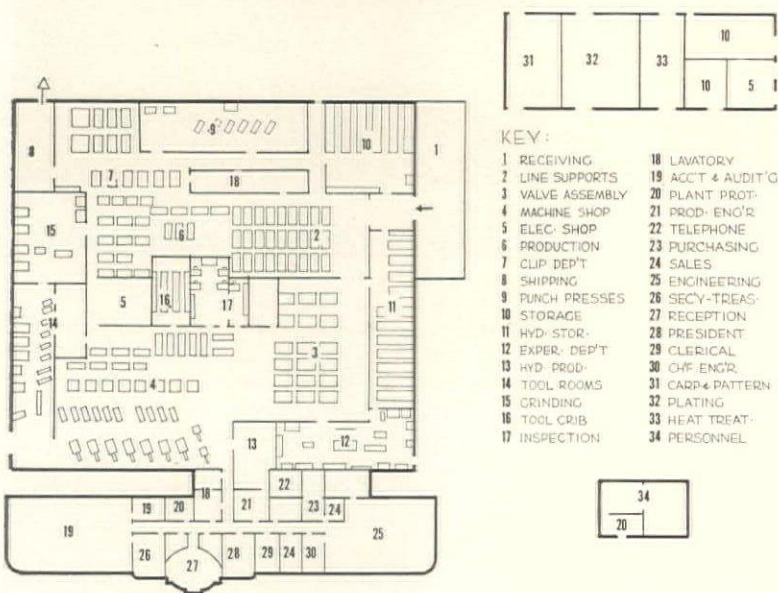
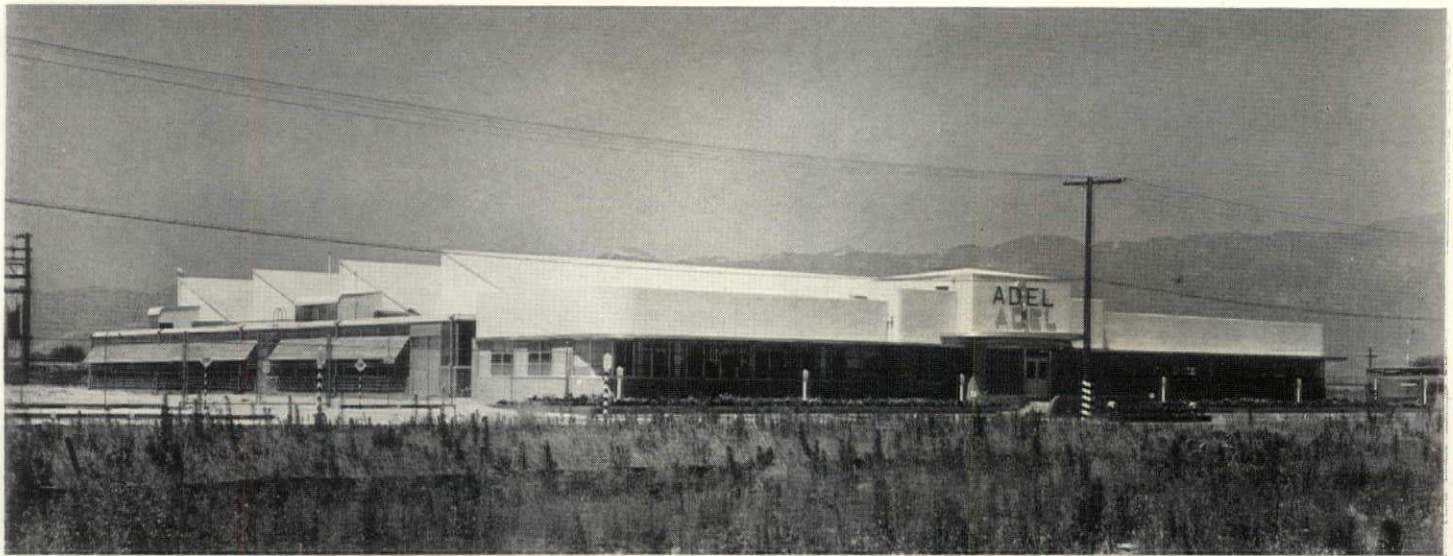


LEO F. CAPRONI, ARCHITECT-ENGINEER

With steel columns spaced 25 x 35 ft. and with a clear height under roof trusses of 15 ft., this small plant boasts considerable flexibility in the layout of its mass production machinery. A controlling factor in its design by Architect-Engineer Leo F. Caproni was the requirement that the arrangement of the various departments be such that the expansion of any one of them could be accomplished with a minimum of machine relocation. This is facilitated by the possible expansion of the building to the north and to the east and by the fact that a separate administration building may be located between the plant and the road to the north. Built on a 50-acre site on the periphery of a small town, the plant contains 1 million cu. ft., 50,000 sq. ft. within its brick veneered cinder block walls, 2 in. wood block floor finish and insulated steel deck built-up roof. Total cost came to \$175,000, or 17½ cents per cube, \$3.50 per square. Contractor: Frank P. Sullivan.



Lucas



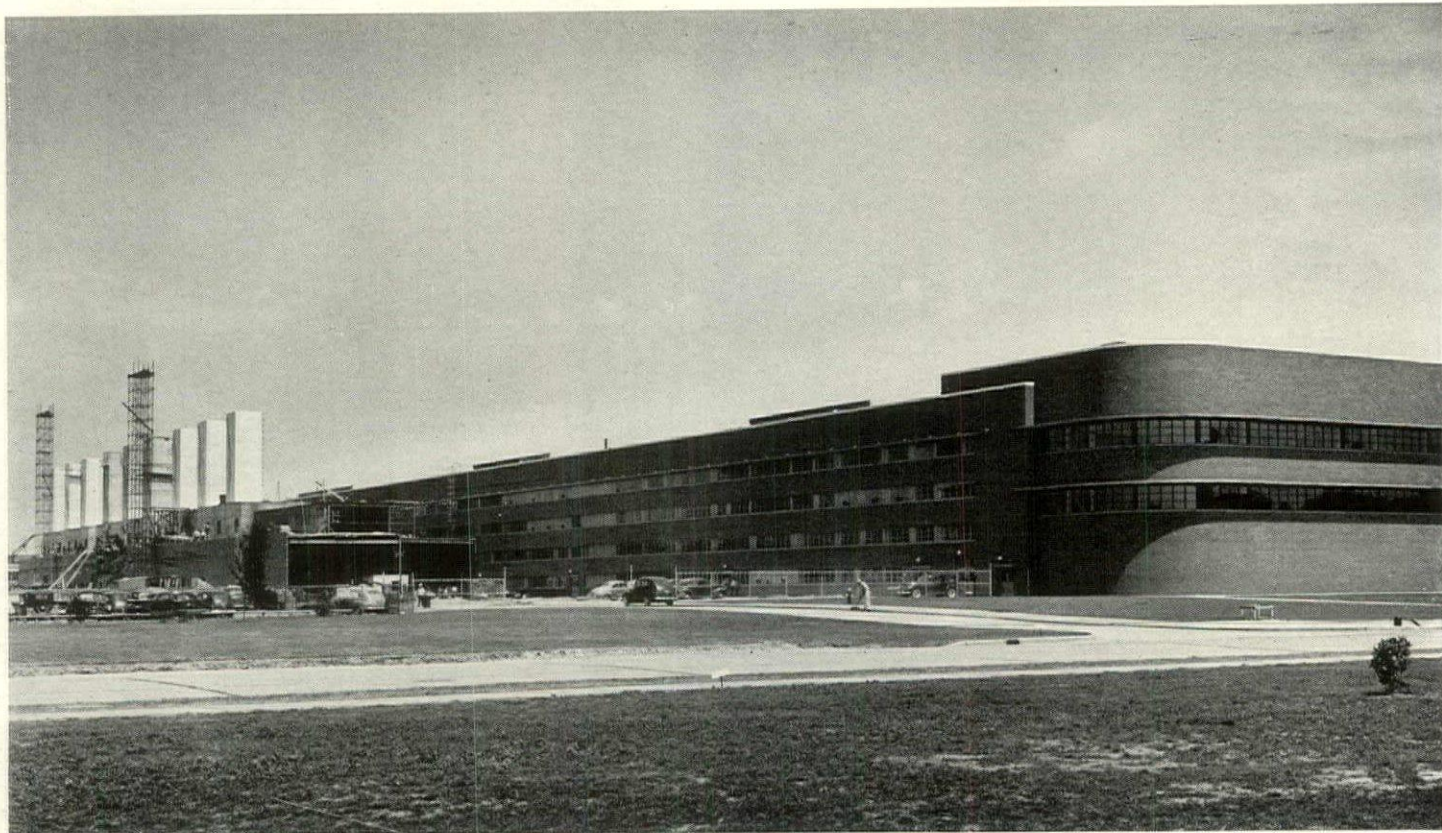
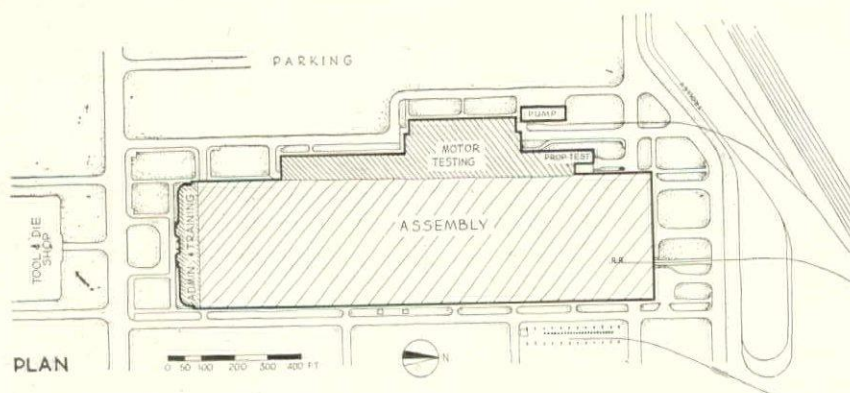
Principal requirement for the design and layout of this 40,000 sq. ft. plant was that it be a "completely versatile" project adaptable to any type of precision production (Adel mechanics work to tolerances of 0.0002 in. in producing some of their aircraft parts). To this end, the shop was blanketed with an overhead "gutter" type wiring and lighting system which permits the location of machinery anywhere. Lighting was also planned to provide for uniform distribution regardless of the ultimate position of machinery. Daylight is admitted through large windows and (from the north) through the large glass areas in the saw tooth roof. (Welded steel roof trusses permit this north light to pass unobstructed to the working plane.) All told, the glass areas equal about 35 per cent of the gross floor area.

Since Adel's products are extremely small, no effort was made to assure a minimum of movement between the various production line operations. Departments are segregated by standard sections of wire netting on pipe supports which permit low expense expansion or revision of working areas. To combat troublesome gases and reduce fire hazards, the heat treating and plating shops as well as the storage, carpenter and pattern shops are separate from the main plant. Architect-Engineer and contractor: The Harnish Co.

THE HARNISH CO., ARCHITECT-ENGINEER



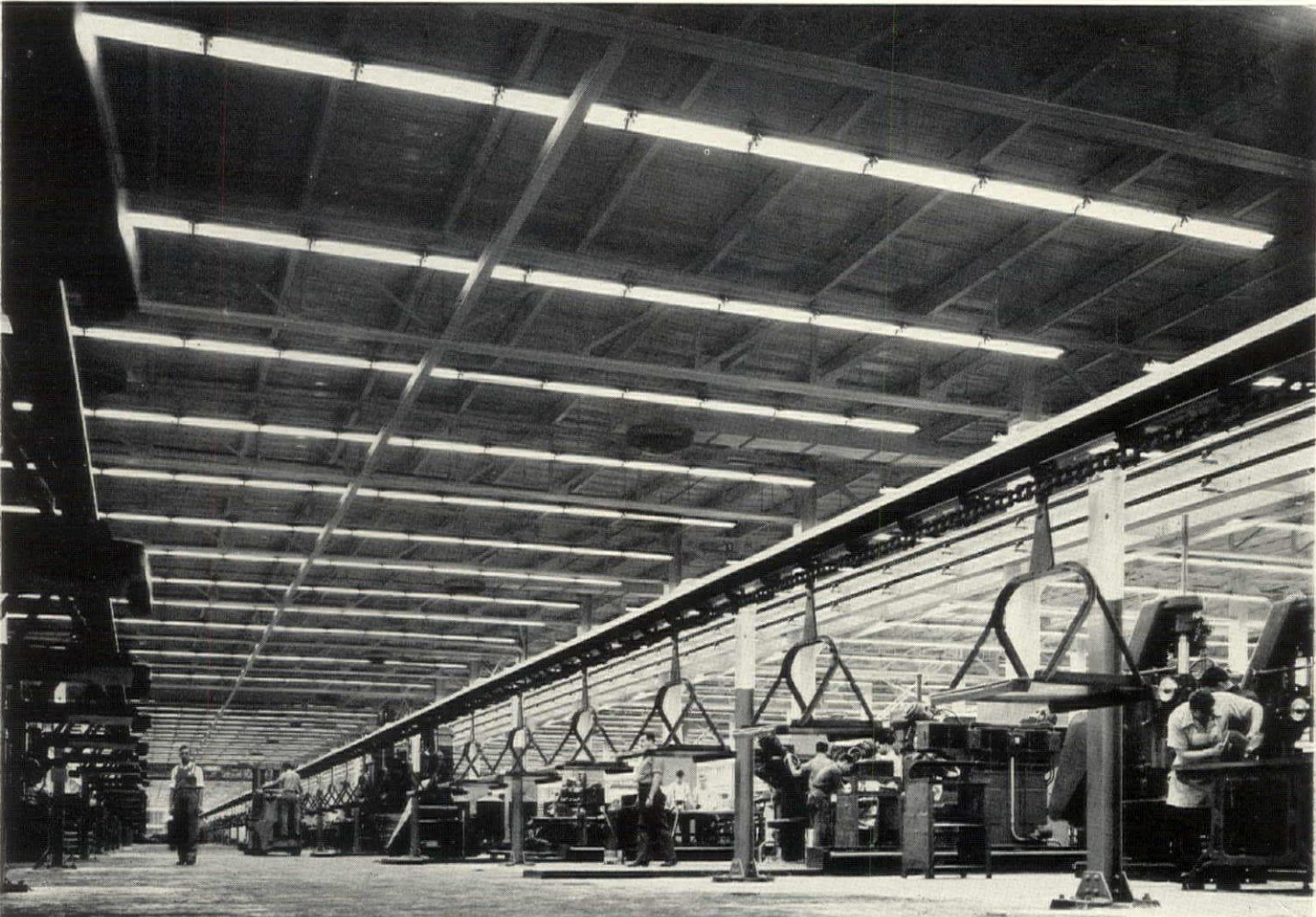
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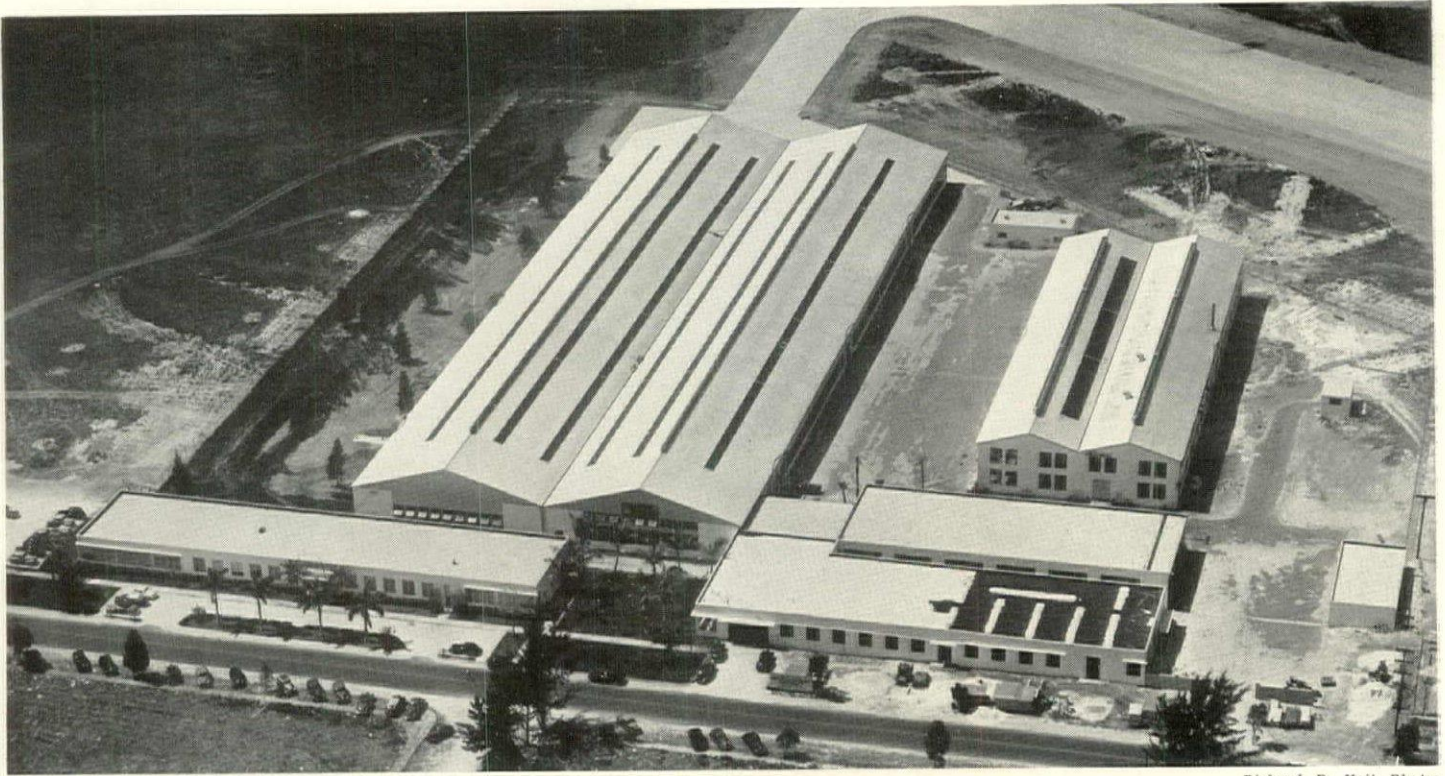
*Hedrich-Elessing Photos*

PLAN

This 360 ft. wide building consists of three main divisions: 1) Aircraft training—a 57 ft. deep three-story division is lighted with double-glazed hermetically sealed strip windows, shielded from direct sunlight by continuous metal “Venetian blind” which runs horizontally outside the windows. 2) Manufacturing and assembly—a two-story division covering the balance of the plant’s 1,000 ft. depth. 3) Engine testing—a two-story windowless division at one side of the main unit. Associated engineers and architects: Giffels & Vallet Inc. and L. Rossetti. Contractors: American Bridge Co., Bryant & Detwiler, Julius Porath & Son, and Esslinger-Misch Co.

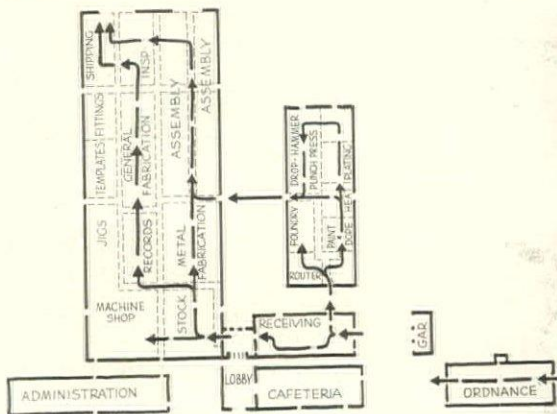
ADMINISTRATION WING





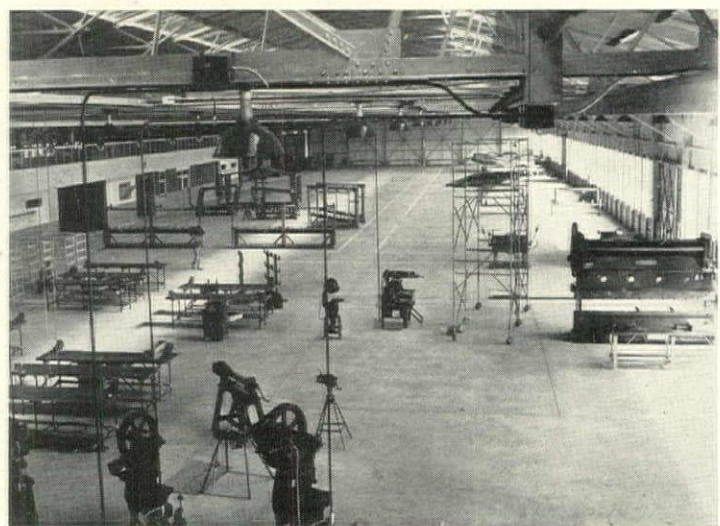
Richard B. Hoyt Photos

ROBERT LAW WEED, ARCHITECT



Another of the comparatively small defense plants completed in recent months, this nine-building, 182,300 sq. ft. aircraft production project is situated on a 103-acre site adjacent to Eastern Airlines' Miami terminal, has a comfortable 700,000 sq. ft. of expansion room. With two plants operating in China, Intercontinent last October had ordered steel shipped to India for another. However, the company halted the shipment in Miami, ordered that the steel be fabricated for the construction of this project's 200 x 500 ft. main factory building. Meanwhile, Architect Robert Law Weed was commissioned to adapt the factory to Florida's heat and frequent wind storms, to design the concrete and steel accessory buildings. Contractor: M. R. Harrison Construction Corp.

While Intercontinent is pioneering a new Florida industry (only other sizable industry: sugar), it has had no difficulty obtaining the 1,500 workers required—they had been attracted from all parts of the country. Result: Douglas Aircraft Corp. may soon follow Intercontinent's lead, also be in a strategic position to supply post-war South American markets.



BUILDING FOR DEFENSE . . . 13,394 PREFABRICATED HOUSES

speed FWA program, signalize development of a fledgling industry. A six month's review.

THE FORUM in December 1940 (p. 531) reasoned that "national defense may do for Prefabrication what World War I did for the aircraft industry—raise it from infancy to adolescence in no time." Since then Prefabrication has grown in stature, has expanded from a group of experimenters into a fledgling industry-within-an-industry which has been assigned some 17,500 houses for the Government defense program.

Many new companies have entered the field; many new prefabrication techniques have been developed. Not all of them will survive, of course, but the better developments will most certainly affect not only the Prefabrication but, eventually, the entire home building industry.

In the light of Prefabrication's recent spontaneous development and its potential contributions to home building techniques, THE FORUM hereafter will devote a department of each issue to the progress of this growing industry, herewith presents an introductory summary of developments during the past six months.

Now almost complete, the Navy's \$50 million 14,630-unit defense housing program was speeded by the early use of prefabrication. Some 4,000 units, or about

27 per cent of the total, came from the assembly lines of such leading prefabricators as American Houses, Inc., Stran-Steel Corp., Tennessee Coal, Iron and Railroad Co., Harnischfeger Corp. and the Homasote Co.'s local representatives (ARCH. FORUM, Feb. 1941, p. 34 and May 1940, p. 352, col. 1).

Slower to start but moving now, the defense housing program of the Federal Works Agency and its affiliated Government bureaus at first turned a deaf ear to prefabricators' claims of speed and low cost, tried to keep eleven of them quiet by assigning them parts in one 650-unit project at Indian Head, Md. to demonstrate Prefabrication's merits and demountability (ARCH. FORUM, Mar. 1941, p. 174; see also below). But, Prefabrication's merits have risen from this intended side-tracking, have prompted FW Administrator John M. Carmody to reorganize the prosecution of his defense housing program, to create a new subsidiary, FWA's Division of Defense Housing, with the specific purpose of bringing prefabrication into the program (ARCH. FORUM, July 1940, p. 8).

In all of 1940, FWA let only two small prefabricated construction contracts for a total of 90 dwelling units. Since then, with the exception of January, the total

has leaped each month—particularly in recent months. Thus:

	Projects	Units
1940	2	90
1941 - Feb.	1	500
March	4	1,642
Apr.	1	230
May	3	1,600
June	7	3,967
SUB-TOTAL	18	8,029
Approved but not yet contracted for	20	5,365
TOTAL	38	13,394

The March total includes all houses in the 650-unit demonstration project, a few of which were contracted for in February and April. Most of the units to be contracted for were approved in May—the birth month of FWA's new prefabrication division.

From this tabulation of progress through July 5, it is apparent that Prefabrication has belatedly been given a real part in Government's defense housing program—the 13,394 units approved for this type of construction represent no less than 15 per cent of the total 86,006 units approved at that time.

While the accompanying tabulation indicates the size of the 38 prefabricated projects as well as where and by whom

(Continued on page 44)

PREFABRICATED DEFENSE HOUSING

STATE & CITY	UNITS	COST (000)	CONTRACTOR	PREFABRICATOR	STATE & CITY	UNITS	COST (000)	CONTRACTOR	PREFABRICATOR
ALA. Coosa River	50D				MO. Ft. Leonard	500D		Barrett & Hilt	Homasote Co.
Muscle Shoals	150D		Tenn. Valley Authority	Tenn. Valley Authority	N. J. Camden	500	\$1,456	Wheeler Eng. Co.	Day Housing Corp.
ARIZ. Litchfield Pk.	100D				Camden	500			
CALIF. Benicia	100D		Herbert Mayson	R. M. Bates House	Clark Twp.	700	\$2,168	Clifford F. McEvoy	
San Diego	100D	\$2,785	Fred J. Early, Jr.	Plywood Structures	N. Y. Fishers Is.	20D	\$ 104	Tremaglio Bros.	Tremaglio Bros.
			Myers Bros.	Plywood Structures	N. C. Wilmington	475D	\$1,350	Green Lumber Co.	Green Lumber Co.
			Wesco Const. Co.	Plywood Structures	OHIO Dayton	500			
San Diego	500				Port Clinton	100D			
Taft	75				Newton Falls	150D			
Torrey Pines	75D		Herbert Mayson	R. M. Bates House	Ravenna	100+100D			
Vallejo	542D	\$3,090*	Engineers Ltd.		PA. Phila.	1000			
Vallejo	1692D	\$4,816	Barrett & Hilt	Homasote Co.	TENN. Jackson	200D	\$ 534	Algernon Blair	Algernon Blair
			Robert McCarthy	Plywood Structures	Milan-Humbolt	100D	\$ 253	Algernon Blair	Algernon Blair
CONN. Groton	200D				Alcoa	250D			
GA. Hinesville	100D				TEX. Dallas	300	\$ 884	Central Contract. Co.	Central Contract. Co.
Macon	115D				Grand Prairie	300	\$ 750	Central Contract. Co.	Central Contract. Co.
IND. Kingsbury-LaPorte	400D				Mineral Wells	100D			
LaPorte	200D	\$ 575	Green Lumber Co.	Green Lumber Co.	WASH. Bremerton	230	\$ 692	Macrie Bros. & S. S. Mulen, Inc.	
South Bend	250				Bremerton	70	\$ 206	Lease & Leigland	
KANS. Wichita	600D				WIS. Manitowoc	400D	\$1,198	Kroening Eng. Corp.	Harnischfeger Corp.
MD. Indian Head	650D	\$2,327	Geo. Hyman Const. Co.	**					

D—Demountable.

*—Includes also the cost of 316 units of conventional construction.

**—Eleven prefabricators, each accounting for 20-77 houses: Allied Housing Assoc. Inc. (Homasote), General Fabricators, Inc., Harwood-

Nebel Co., E. F. Hauserman Co., Home Building Corp., Lockwall House, Inc., National Homes Corp., T. Calvin Owens, P.H.C. Housing Corp. and Berkeley and Gary Furniture Co., Standard Houses Corp., Tennessee Coal, Iron & Railroad Co.

BUILDING FOR DEFENSE . . . BILLETS FROM BRITAIN

Imported comments on war damage, peace plans and other building subjects

Non-essential building in Britain is nil, and military construction is secret. Consequently, Britain's building and architectural journals must go abroad for pictorial material, and many a new U. S. building is being publicized in England today. To compensate for the slimly rationed photographic diet, the British journals are giving their readers a big dose of textual material. War's effects on building and building's ultimate effect on peacetime reconstruction are inexhaustible subjects widely covered in the journals. Many comments on these subjects are not only of interest to U. S. Building but are also of the utmost significance. Herewith THE FORUM presents excerpts from several recent issues of leading British journals:

HONORARY ARCHITECT

The Prime Minister has been invited to accept Honorary Fellowship of the R.I. B.A. (Royal Institute of British Architects) and he has agreed to do so.—*Building*.

WAR DAMAGE

We do not have access to official figures of war damage . . . But let us make an estimate. You know that there are about twelve million families in Great Britain, living in houses and flats of various sizes. Some live in single rooms and some in large mansions, but perhaps the largest proportion live in houses costing about £500 or so. Say, then, that the average house is something under £1,000, which would give about 10,000 million pounds for the whole of our housing. Maybe the other buildings—works, offices, schools, cinemas, town halls, etc. — would about double this amount, giving the value of our buildings as very roughly £20,000,000,000.

Of the above multitude of buildings, what proportion have been destroyed or are being destroyed? Some days none are destroyed but some days the damage must extend to several millions of pounds. We know that for a million pounds you can get over a thousand houses or almost any one building in Great Britain. What would you say, then, is the average air raid damage per day at present or during the past six months—when things have been at their worst? We do not know, but we think a quarter of a million pounds might be pessimistic. If this figure is roughly accurate, then it would take at least 80,000 days, or over 200 years, to destroy Britain's buildings. If you think the £250,000 too low, this might be balanced by the fact that as more are destroyed the remaining ones are more difficult to hit. In fact, Hitler from the air

raid point of view, seems to have taken on a long job!—*Building*.

Last month we discussed the desirability of a correct perspective regarding war damage, and about the same time the well-known economist, Mr. J. M. Keynes, spoke on the same subject at the Housing Center, and corroborated our conclusions. He said that though the damage to buildings was striking in particular places, it was almost negligible when taken in bulk. Mr. Keynes estimated the damage to date as under 1 per cent of the value of our buildings, and that the damage could be made good by one year's activity of the building industry. From this estimate we can in fact draw the astonishing conclusion that our buildings are worth more today than they were when the war started, and if we take their increased value due to rise in building costs they are worth much more.—*Building*.

WRIGHT REACTION

We have tried to get our teeth in Mr. Frank Lloyd Wright's article on rebuilding London, which appeared last month in the *News Chronicle**, and we have no doubt that, if we can digest it, it will do us good. But it is full of indigestible morsels. We are told, for instance, that the new London should be twenty-five times the area of old London, because the new space scale of our mechanical age is just about that—twenty-five feet now to one foot then. We presume this to mean that the average speed is now about twenty-five times what it used to be, and therefore we can now cover twenty-five times the same distance with the same amount of trouble. Which seems to us quite logical, even if not mathematically correct, for an area which is increased twenty-five times linear is 625 times larger. Still, we get the idea, even if this might result in London being larger than England! But though we also get Mr. Wright's idea of making roads concave instead of convex, we can't quite see how the advantage comes in. But good it must be if it works, because we are told it would reduce motor accidents by 999 in a thousand. We are all for that.—*Building*.

BOMB SHELTER POLICY

Birmingham's A.R.P. Committee, in accordance with their policy of providing many shelters holding from 6 to 48 people in preference to a few large shelters holding hundreds, are to build these as rapidly as possible. Every large shelter already started is to be finished, however, and the City Engineer is investigating deep, bomb-proof shelters with a view to placing a comprehensive report on them before the

*See page 68.

City Council at their next meeting.—*The Architect and Building News*.

POST-WAR PATTERN

Lord Reith, making his first public appearance as Minister of Works and Buildings . . . had a sharp word to say to those who thought that preparations for replanning during time of war were unnecessary.

"Planning," said the Minister, "must precede construction and reconstruction, and let no one speak in a foolish way to the contrary. It is stupid to say planning is not necessary in a city which has spread tentacles of desecration over so vast an area of green fields." He did not propose to speak in detail of his plans, but he invited attention to a serious problem—Were they to plan from the last war or plan for the next war? Someone, he declared, had to solve that problem, or they would find themselves with a multitude of two-faced signs, with "Garage" on one side and "Bombproof Shelter" on the other. He would ask all who were interested in the replanning of London to think of the responsibility that rested on them as guardians of the traditions of the past and the needs of the future.—*The Builder*.

Preparations for planning the use of land and the development of cities are gathering momentum. Early in the war, it was widely urged that the Royal Commission on the Geographical Distribution of the Industrial Population, which had just reported, should remain in being to watch the distortion by war conditions of the problems they had surveyed exhaustively. Now, in a Consultative Panel on Physical Planning appointed by the Minister of Works and Buildings, members of the Commission together with several experts who put the shrewdest evidence before it, form the core. It is a splendid sign that this planning has every chance of starting with physical facts and not fancy theories. Test surveys are being made of Coventry, Birmingham and Bristol, all blitzed areas. The London County Council has been asked for a plan for London. The committee which was set up to consider ways of preventing speculation in bombed lands—a problem of development and redevelopment which, in fact, goes far beyond bombed land—is to report almost at once. And the knowledge that (the) panel is, on the whole, made up either of the most hard-headed of architects and town planners or of the men who have delved most deeply into the social and economic problems of land use and urban growth is most encouraging.—*The Economist*.

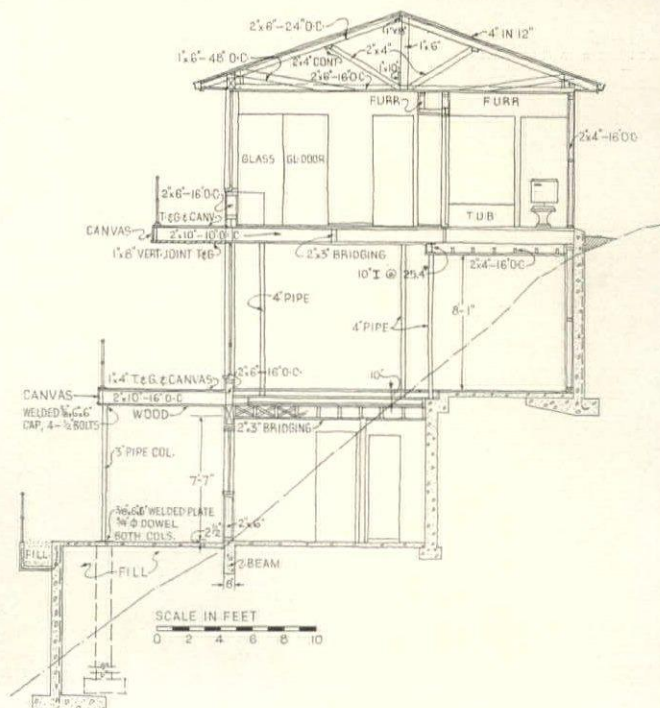
HOUSES

HOUSE IN BEVERLY HILLS, CALIF.

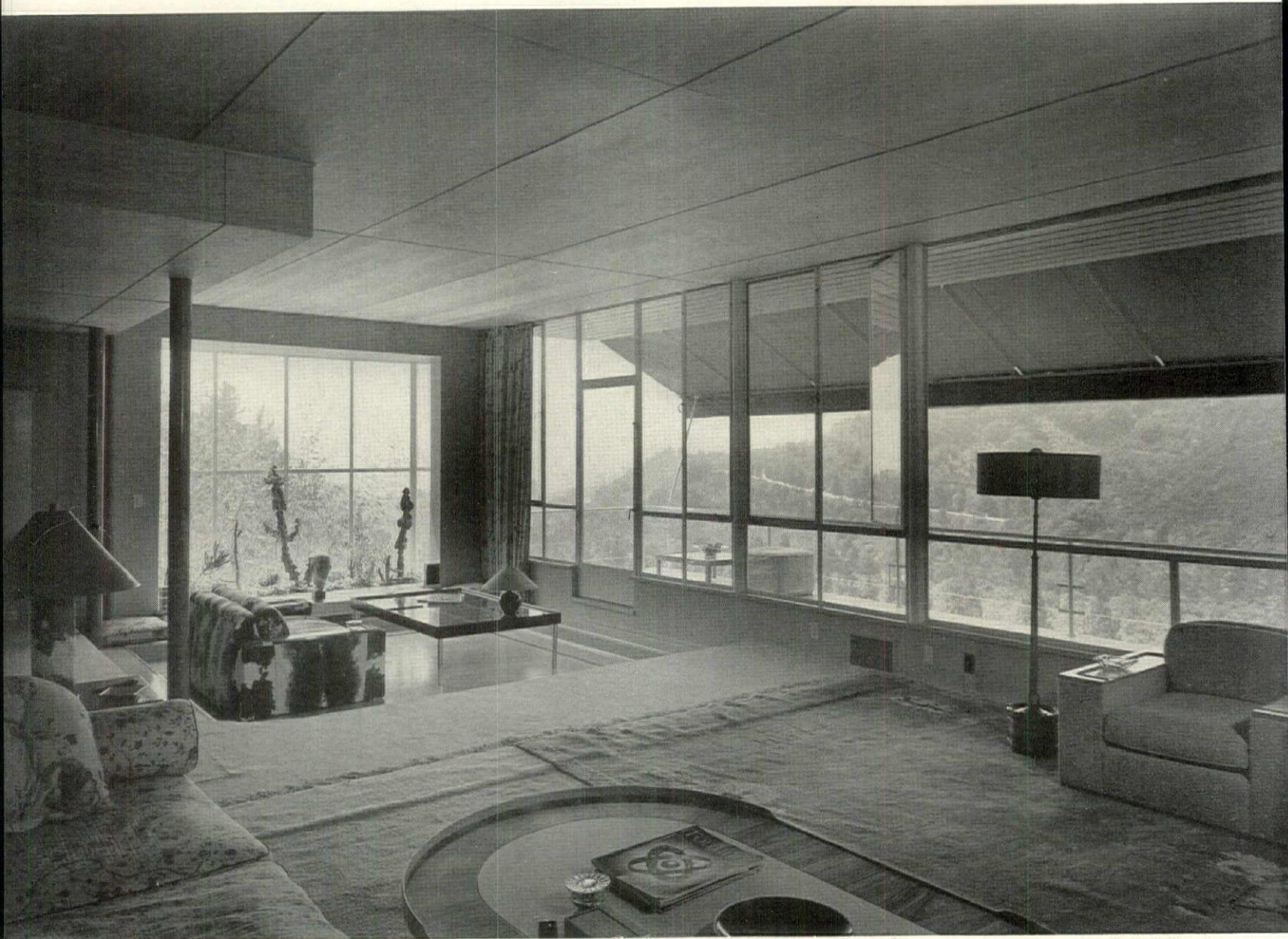
PAUL LASZLO, DESIGNER



Julius Shulman Photos



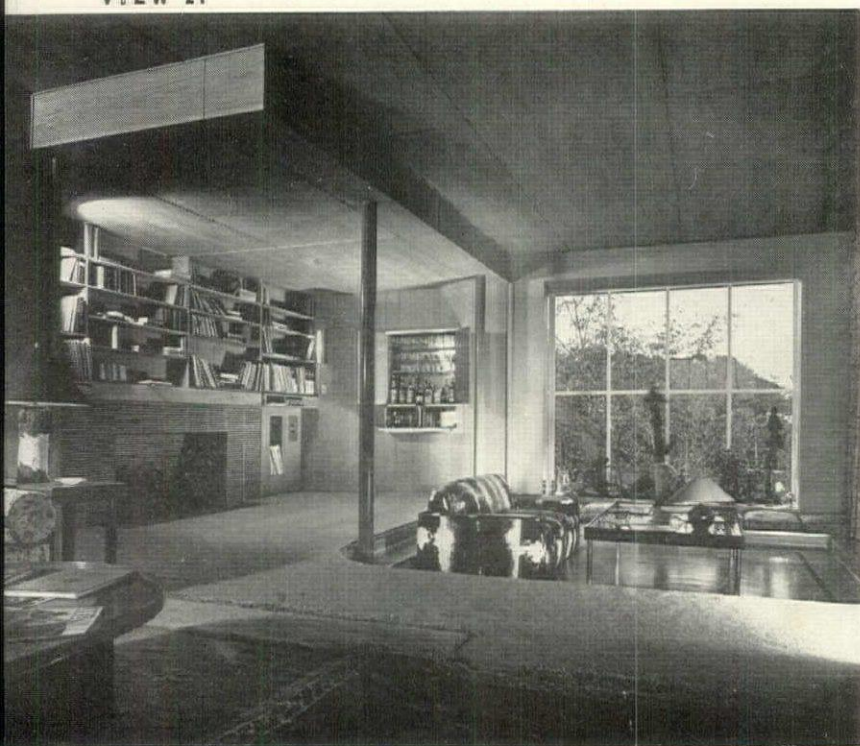
LIVING-DINING ROOM, BEDROOM-STUDY, PLAYROOM, THREE BATHS



VIEW 1.

Fred R. Dapprich

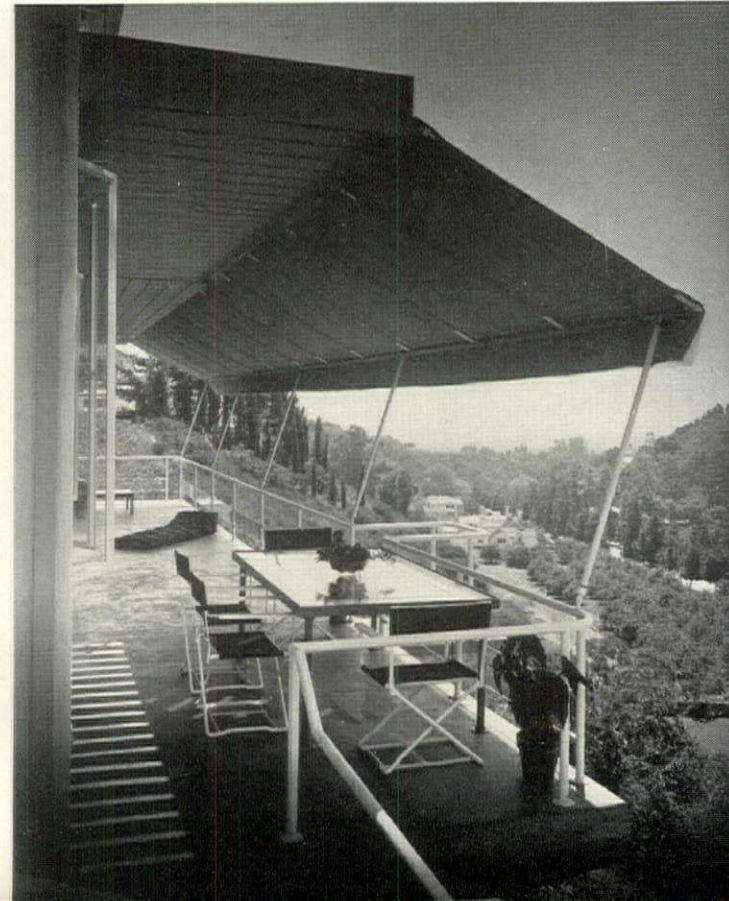
VIEW 2.

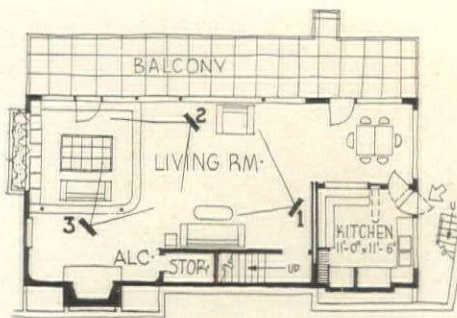


Julius Shulman

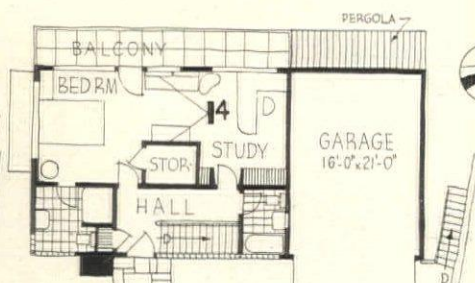
BALCONY

Fred R. Dapprich

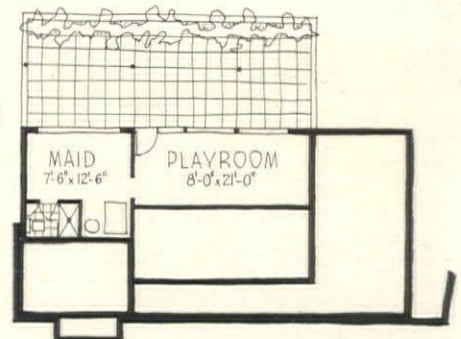




GROUND FLOOR

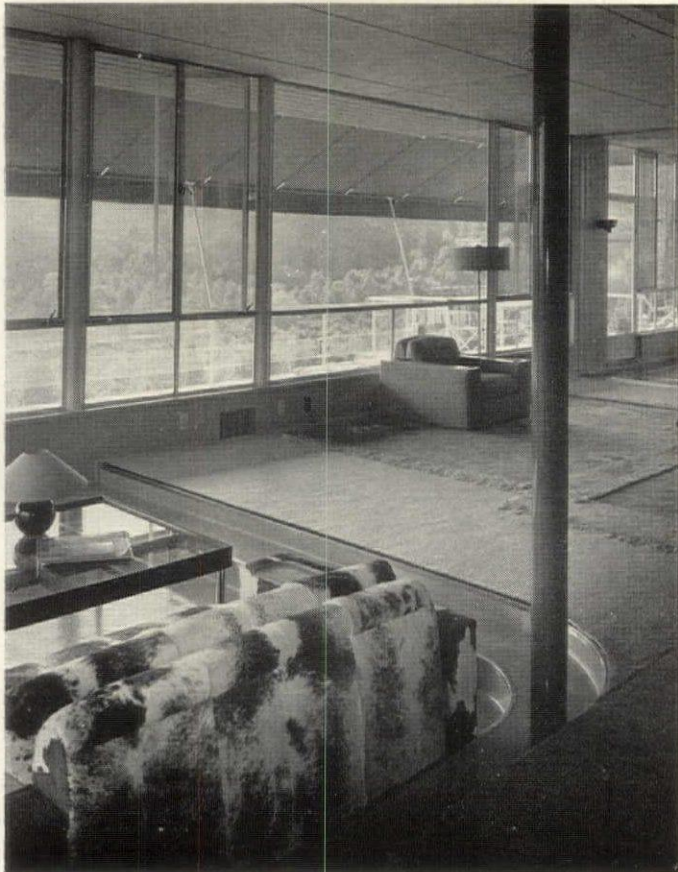


STREET FLOOR



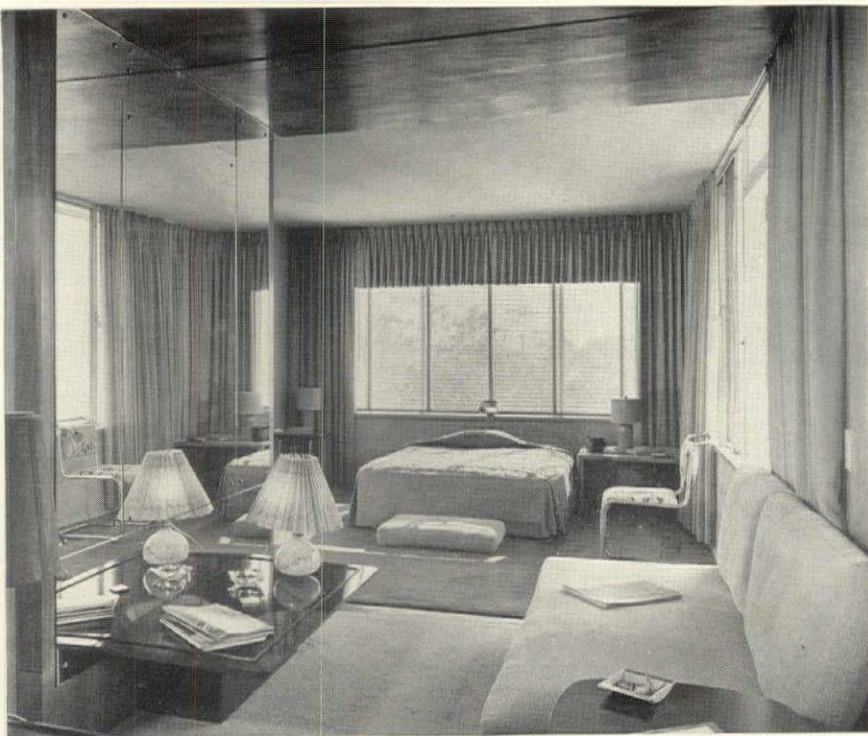
LOWER FLOOR

0 5 10 15 FT



Fred R. Dapprich

VIEW 3.



Julius Shulman

VIEW 4.

For his own house the architect has used a design incorporating several spectacular features, notably in the living room, where a pronounced change in levels and floor texture has been developed. The result seems most successful, with emphasis on material, color and view. In the living room walls are gray, the ceiling is natural oak, and the lally columns have a baked red enamel finish. There is a terrace or balcony at each level, closely related to the adjoining rooms. The terrace off the living room, shown on the opposite page, has a sharply projecting awning which effectively creates an impression of usable space greater than actually exists. All furniture was designed by the architect. Cost: \$12,700. Cubage: 26,600.

CONSTRUCTION OUTLINE

FOUNDATION: Reinforced concrete. Waterproofing—Anti-Hydro Waterproofing Co.

STRUCTURE: Exterior walls—stucco, 15 lb. asphalt felt, studs; inside—lath and plaster. Floor construction—sub-floor, white oak T. & G. finish. Ceilings—partly plaster; part paneled oak.

ROOF: Red cedar shingles. Deck—canvas.

FIREPLACE: Damper—The Majestic Co.

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

INSULATION: Attic floor—rockwool bats. Sound insulation—Coast Insulation Co.

WINDOWS: Sash—steel casement, Michel & Pfeffer Ironworks. Glass—double strength, quality A, and crystal plate Libbey-Owens-Ford Glass Co. Glass blocks—Insulux, Owens-Illinois Glass Co.

FLOOR COVERINGS: Living room and bedrooms—oak. Dining room and bathrooms—Wingfoot rubber, Goodyear Tire & Rubber Co. Kitchen—linoleum, Armstrong Cork Co.

WALL COVERINGS: Living room and bedrooms—partly paneled, California Panel & Veneer Co. Kitchen—Sanitas, Standard Coated Products Corp. Bathrooms—Sanitas and tile, Pomona Tile Co.

WOODWORK: Trim—Douglas fir. Doors—California Panel & Veneer Co. Garage doors—Holmes Mfg. Co.

HARDWARE: By Schlage Lock Co. and Beverly Hardware Co.

PAINTS: By Sherwin-Williams Paint Co.

ELECTRICAL INSTALLATION: Wiring system—flexible metal conduits. Switches—Bryant Electric Co. Fixtures—L. & Y. Electric Co., Leo Corner Co. and Pryne Co.

KITCHEN EQUIPMENT: Range—Gaffers & Sattler. Refrigerator—Frigidaire Div., General Motor Sales Corp. Cabinets—California Cabinet Co.

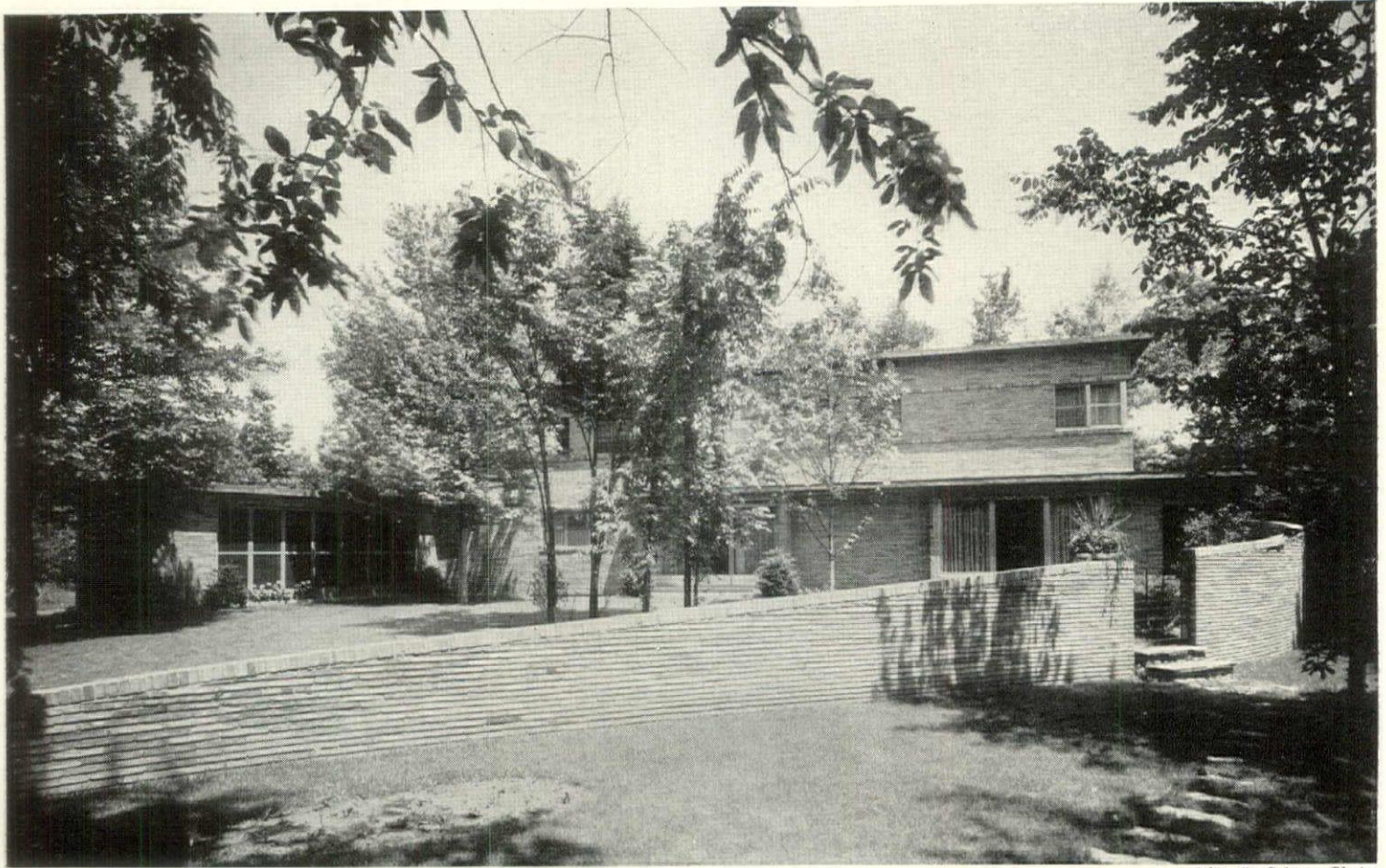
LAUNDRY EQUIPMENT: Sink—Crane Co. Drier—Butts Mfg. Co.

BATHROOM EQUIPMENT: By Crane Co.

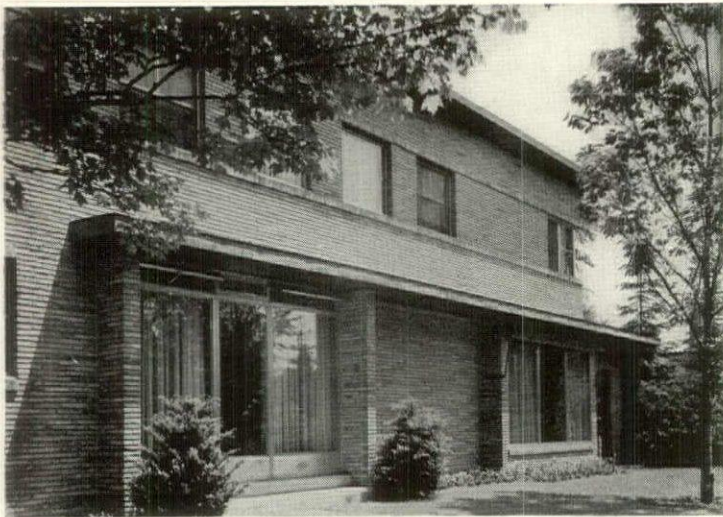
PLUMBING: Hot and cold water pipes—galvanized iron. Soil—cast iron. All by Crane Co.

HEATING: Gravity unit by Atlas Heating Co. Electric heaters—Thermador Electric Mfg. Co. Water heater—Crane Co.

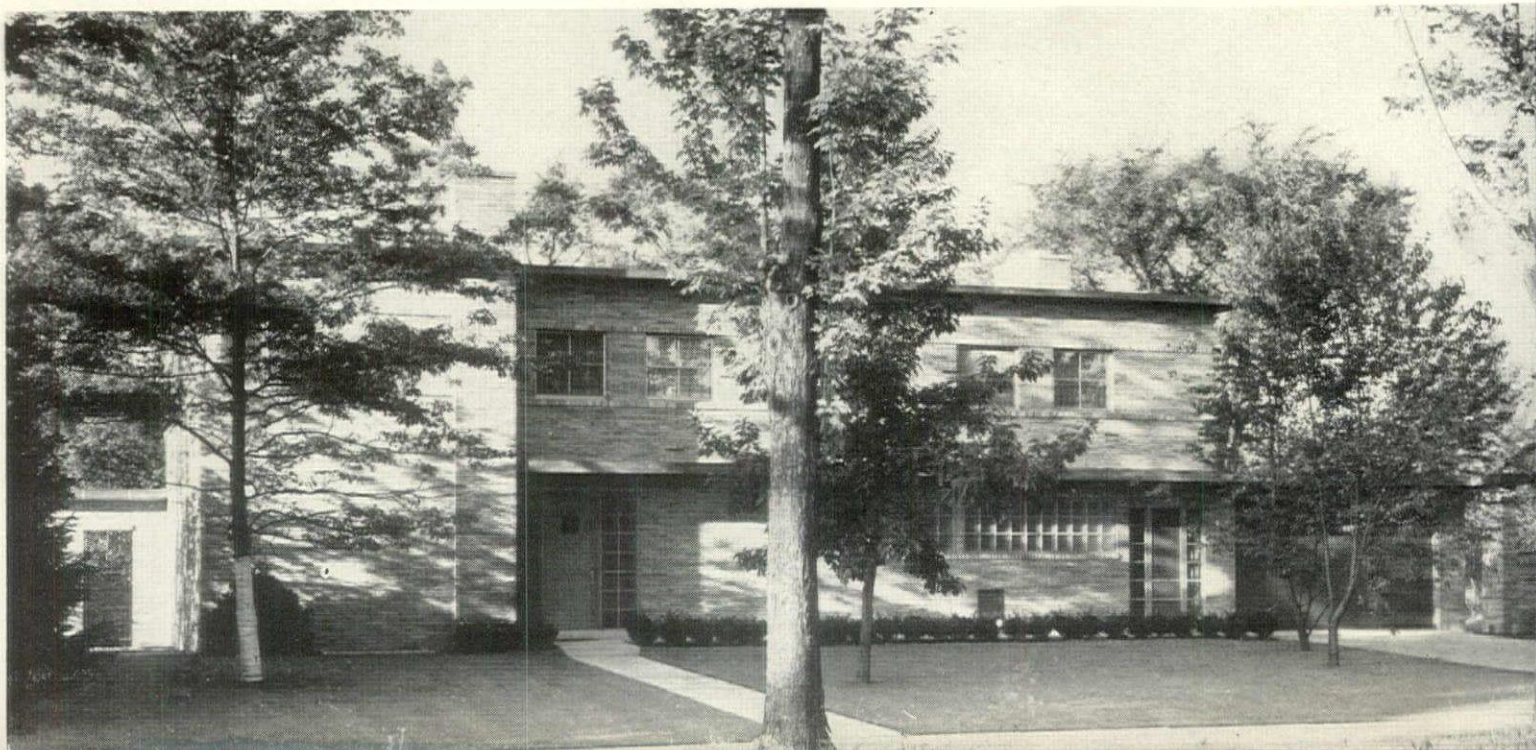
FOUR BEDROOMS, MAID'S ROOM, FOUR BATHS, LAVATORY, BREAKFAST ROOM



John S. Coburn Photos



A design for a large city lot, carried out with a very substantial facing of special brick. The projecting porch and the curved garden wall were placed to give the rear garden as much privacy as possible. Arrangement of the main living areas permits considerable flexibility, as the study, living room and dining rooms can be used as one large space, or two or three separate spaces. Interiors were developed by the architect's office, under the direction of Mrs. Swanson, and extensive use was made of commercial furniture designed by the architect in collaboration with Eliel Saarinen. Cost: \$34,000. Cubage: 72,000.





PORCH



STUDY



LIVING ROOM

CONSTRUCTION OUTLINE

FOUNDATION: Cement block. Waterproofing—integral, The Truscon Laboratories.
STRUCTURE: Exterior walls—special Wyandot brick, Harnischfeger Corp. panel construction, Reynolds Metals Co. insulation, U. S. Gypsum Co. rocklath and plaster. Floor construction (1st.)—wood mosaic parquet in mastic on cement slab; (2nd.)—strip wood.

ROOF AND DECK: 20-yr. built-up roof, The Philip Carey Co.

SHEET METAL WORK: Flashing—16 oz. copper. Downspouts—galvanized pipe. Ducts—galvanized sheet metal.

INSULATION: Outside walls—metallation, Reynolds Metals Co. Ceiling (2nd.)—Reynolds metallation with 2 in. rockwool.

WINDOWS: Sash and screens—aluminum, double hung, Kawneer Co. Glass—polished plate. Glass blocks—Owens-Illinois Glass Co.

FLOOR COVERINGS: Living room—wood parquet with rugs. Bedrooms—wood, carpeted. Kitchen—linoleum, Congoleum-Nairn, Inc. Playroom—asphalt tile, Johns-Manville.

WOODWORK: Trim—birch. Doors—slab, birch and oak. Cabinets—General Electric Co. Garage doors—metal, Kinnear Mfg. Co.

HARDWARE: By Russell & Erwin Mfg. Co.

PAINTS: Pittsburgh Plate Glass Co.

ELECTRICAL INSTALLATION: Romex cable. Circuit breakers—Square D Co.

KITCHEN EQUIPMENT: Complete unit, General Electric Co.

BATHROOM EQUIPMENT: By American Radiator-Standard Sanitary Corp. Cabinets—Miami Cabinet Div., The Philip Carey Co.

PLUMBING: Soil and vent lines—cast iron.

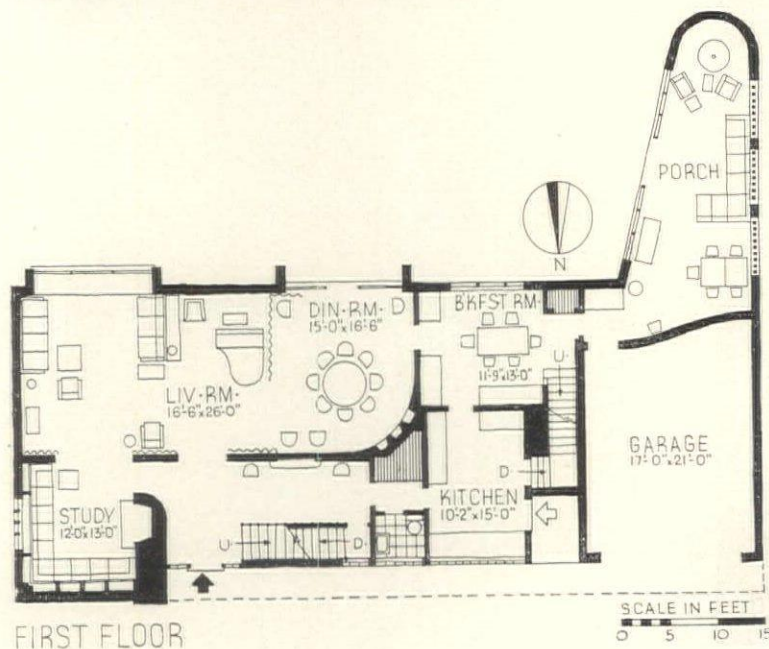
Hot and cold water pipes—copper tubing.

HEATING AND AIR CONDITIONING: Hot water system. Cooling system—Westinghouse Electric & Mfg. Co. Boiler—Pacific Boiler Co.

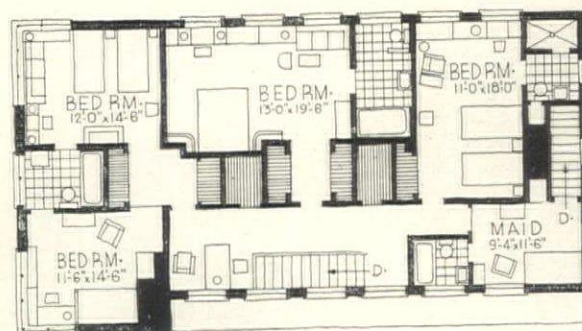
Radiators—Modine Mfg. Co. Regulator—

Minneapolis-Honeywell Regulator Co. Water

heater—Bell & Gossett Co.

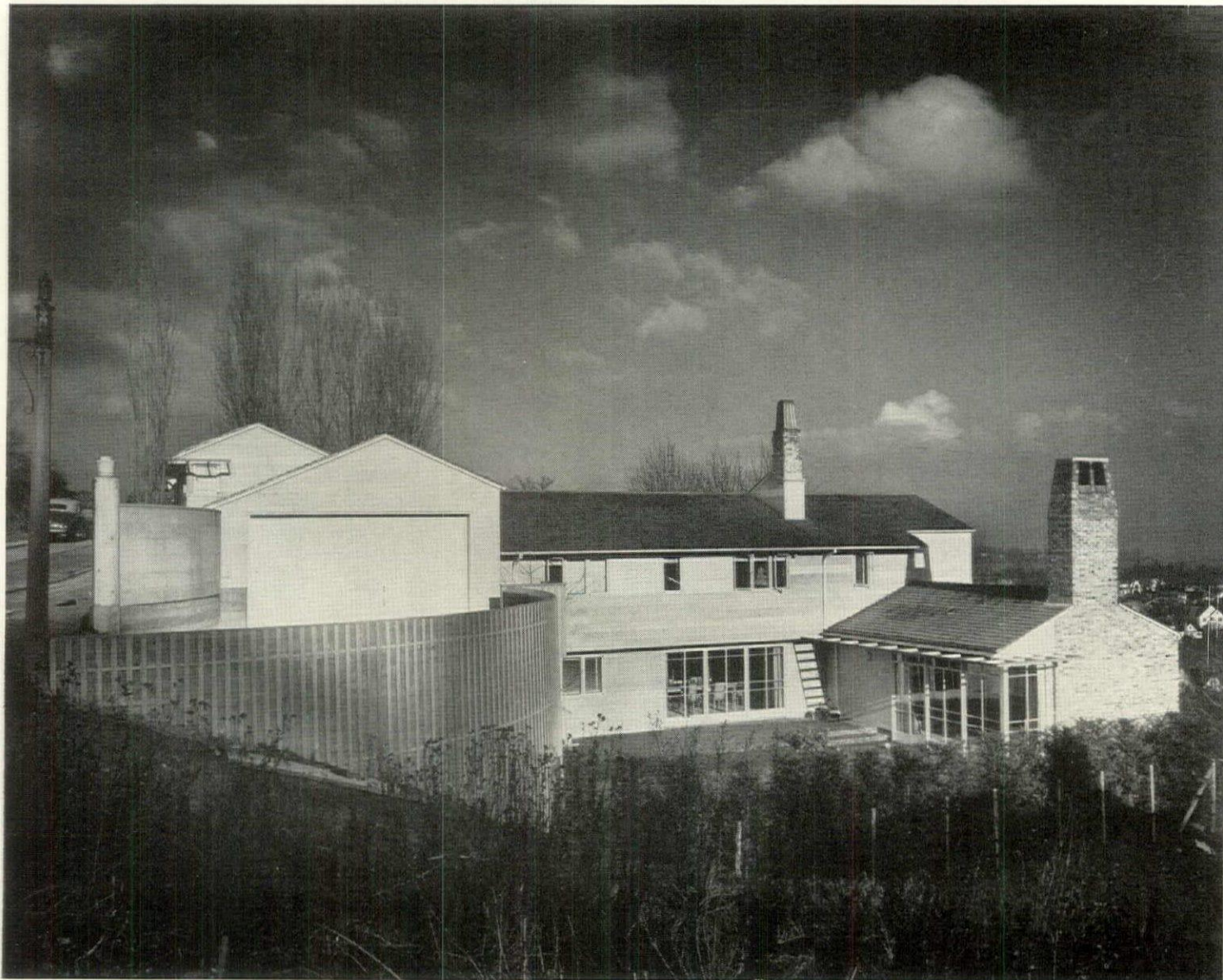


FIRST FLOOR

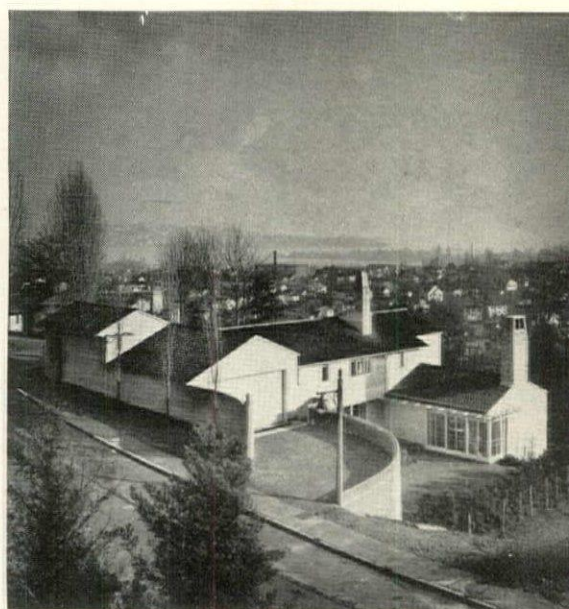


SECOND FLOOR

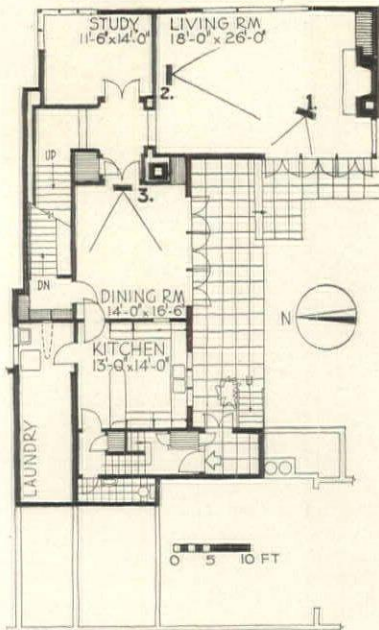
THREE BEDROOMS, TWO BATHS, STUDY, SHOP, RECREATION ROOM



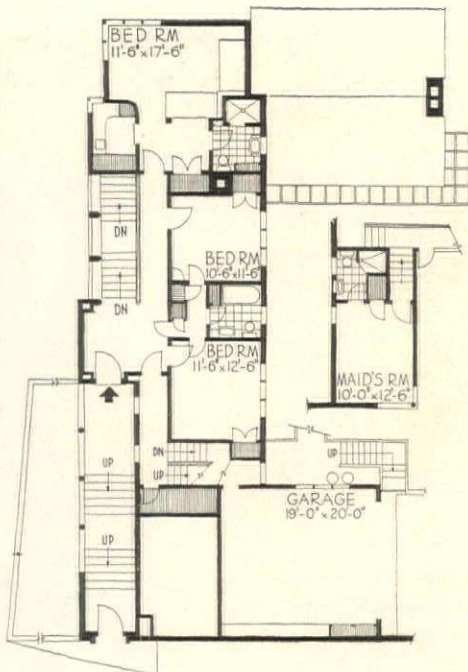
Richard Garrison Photos



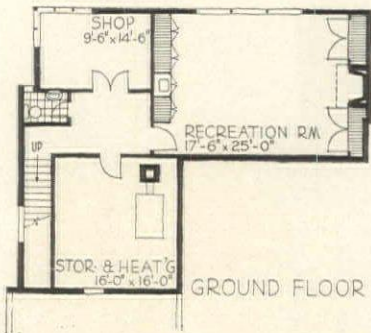
VIEW 1.



FIRST FLOOR



SECOND FLOOR

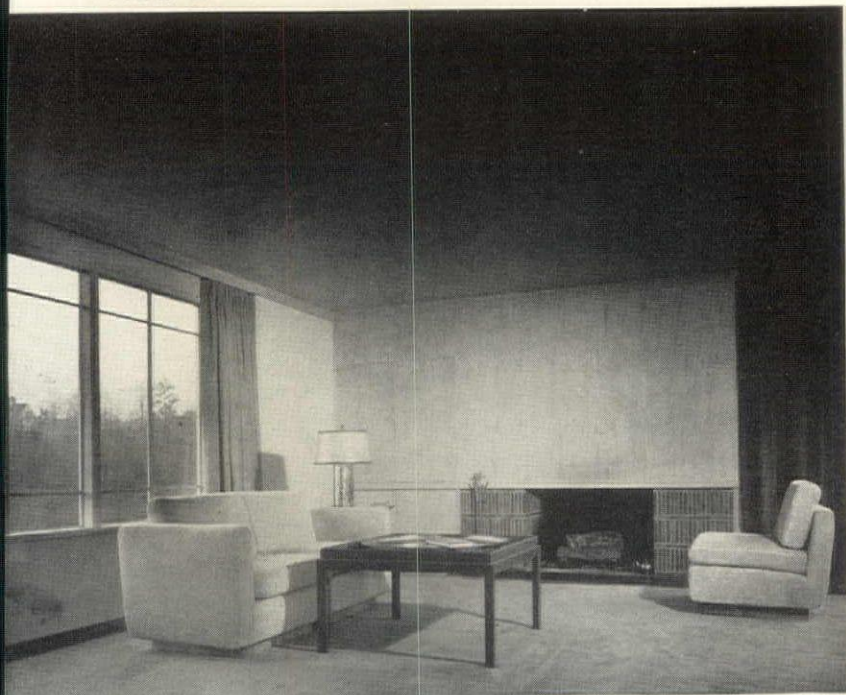


GROUND FLOOR



VIEW 3.

VIEW 2.



The adaptation of the house to a steep site, familiar enough by now in West Coast work, has been given a new twist in this example, where the slope has tended to develop the house in one direction and orientation for sun in another. Essentially the scheme is an attenuated rectangle set perpendicular to the street; it permits adjustment to the change in level while preserving a southern exposure for the main rooms. The architect has been very successful in maintaining the character of the design both inside and outside the house. Texture in the retaining wall of the driveway echoes the basically wood character of the design. Cost: about 46 cents per cu. ft.

CONSTRUCTION OUTLINE

FOUNDATION: Reenforced concrete. Waterproofing—Pabco, emulsified asphalt, The Paraffine Co., Inc.

STRUCTURE: Exterior walls—vertical grain T. & G. cedar or brick, Sisalcraft Co. paper, shiplap; inside—studs, lath and plaster. Floor construction—beech finish, E. L. Bruce Co.

ROOF: Covered with shingles.

FIREPLACE: Damper—The Majestic Co.

SHEET METAL WORK: Armco throughout, The American Rolling Mill Co.

INSULATION: Ground floor and attic—rockwool, Eagle-Picher Sales Co.

WINDOWS: Glass—double strength, quality B, Libbey-Owens-Ford Glass Co. Screens—Chamberlin Metal Weather Strip Co.

FLOOR COVERINGS: Main rooms—rugs, Bigelow-Sanford Carpet Co.; some linoleum in bedrooms and halls, Armstrong Cork Co. Kitchen and bathrooms—Armstrong Cork Co., Inc.

WALL COVERINGS: Living room and bedrooms—bleached plywood. Entry hall—bleached cedar.

WOODWORK: Trim and cabinets—vertical grain fir. Doors—white gum. Garage doors—fir plywood.

HARDWARE: By Yale & Towne Mfg. Co.

PAINTS: By Pratt & Lambert and Schorn Paint Mfg. Co.

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

KITCHEN EQUIPMENT: Range and refrigerator—Stewart-Warner Corp. Dishwasher and washing machine—Bendix Home Appliance, Inc.

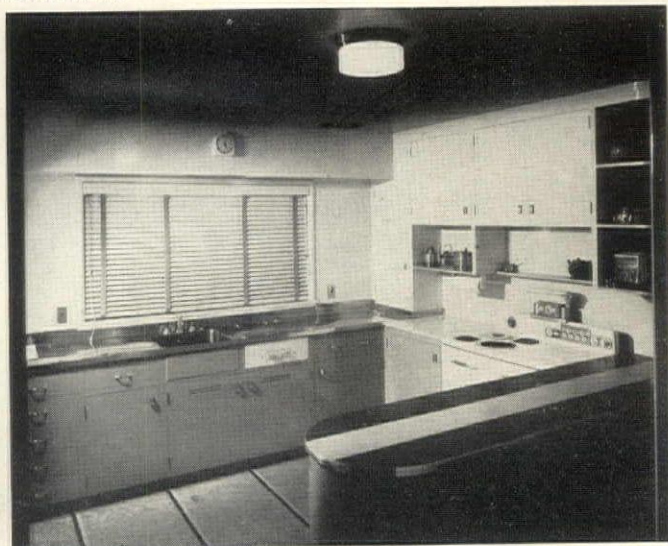
LAUNDRY EQUIPMENT: Washing machine—Bendix Home Appliance, Inc. Ironer—General Electric Co.

BATHROOM EQUIPMENT: By Crane Co. Seat—C. F. Church Mfg. Co. Shower—Milwaukee Flush Valve Co.

PLUMBING: Soil and vent pipes—cast and galvanized iron, lead connections. Hot and cold water pipes—mild steel.

HEATING: Forced air plant with filtering and humidifying. Grilles—Waterloo Register Co. Fan—Western Blower Co. Water heater—General Electric Co.

KITCHEN



FOUR BEDROOMS, TWO BATHS, LAVATORY, UTILITY ROOM, NO BASEMENT

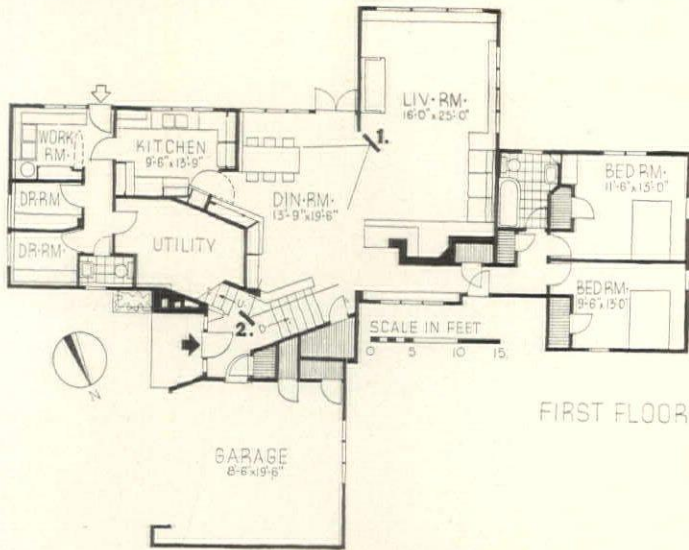


J. Redmond

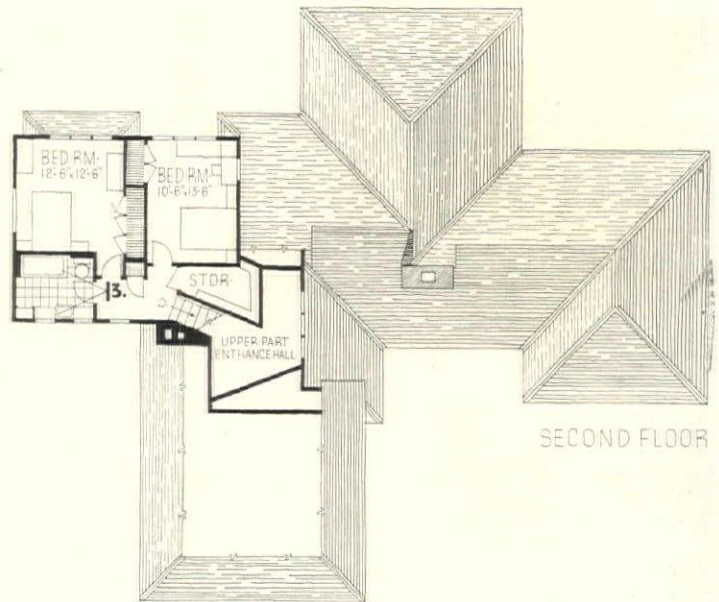
A basementless house, with the main entrance on an intermediate level between the first and second floors. The plan follows none of the conventional types, and the unusual arrangement of rooms is expressed with skill and conviction in the exterior treatment. The combination of living and dining rooms has produced a very large unobstructed interior which shows up to good advantage from the entrance hall. Behind the fireplace is a corridor leading to two of the bedrooms; these form a unit completely separate from the sleeping rooms on the second floor. A great deal of the furniture has been built in. Cost: about 37 cents per cu. ft.

William H. Allen





FIRST FLOOR



SECOND FLOOR

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—cypress siding, T. & G. wood sheathing; inside—studs, gum Weldbord, U. S. Plywood Corp., on plywood glue strips. Floor construction—concrete slab on cinder fill, wood sleepers, pine sub-floor.

ROOF: Covered with 16 in. cedar shingles.

SHEET METAL WORK: Flashing—40 lb. I.C. tin.

INSULATION: Outside walls and roof—4 in. batts, Baldwin-Hill Co.

WINDOWS: Sash—wood; inside mounted storm sash, Pella Rol-screen Co. Glass—double strength, quality A.

FLOOR COVERINGS: Living room—carpet. Bedrooms and halls—oak. Kitchen and bathrooms—linoleum over fir plywood, Armstrong Cork Co.

WALL COVERINGS: Gum Weldbord, U. S. Plywood Corp.

WOODWORK: Doors—flush cypress, U. S. Plywood Corp. Garage doors—Overhead Door Corp.

HARDWARE: By National Brass Co., Knappe & Vogt and American Cabinet Hardware Co.

PAINTS: By Sherwin-Williams Co.

ELECTRICAL INSTALLATION: Wiring system—non-metallic sheathed cable, Westinghouse Electric & Mfg. Co. No-Fuze panel. Switches—tumbler, Despard, Pass & Seymour.

KITCHEN EQUIPMENT: Range—Magic Chef, American Stove Co. Refrigerator—Frigidaire Sales Corp. Counter tops—Formica Insulation Co.

BATHROOM EQUIPMENT: By Crane Co.

PLUMBING: Soil pipes—cast iron. Hot and cold water pipes—copper tubing. Pump—Deming Co.

HEATING: Sunbeam oil fired, forced air, filtered and humidified, The Fox Furnace Co. Oil burner—Toridheet, Cleveland Steel Products Co. Water heater—Crane Co.



VIEW 3.

VIEW 1.



William H. Allen Photos

VIEW 2.



TWO BEDROOMS, TWO BATHS, SEPARATE DINING ROOM, BALCONY, DECK

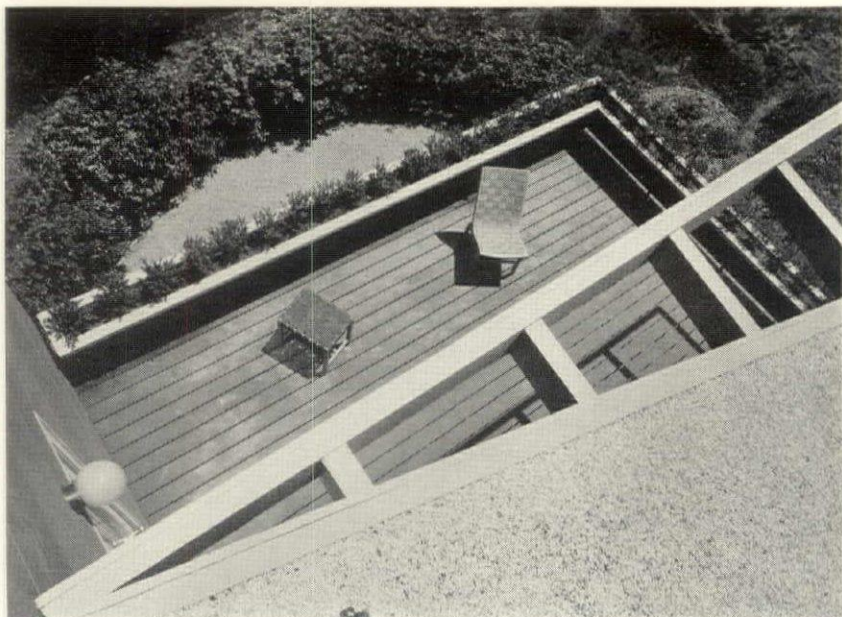


VIEW

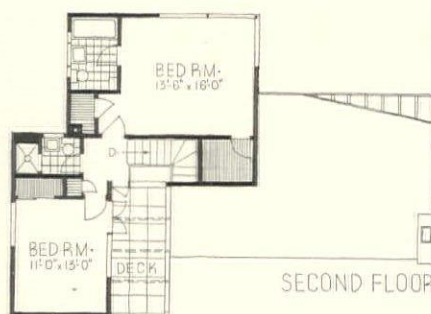
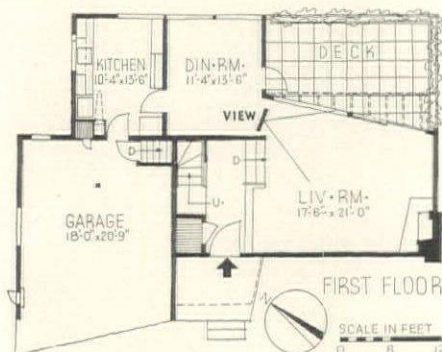
The effect of spaciousness in this house is all out of proportion to its size. Internally it is the result of using all-glass walls and an exposed shed roof; outside it was produced by the contrast of several sharply defined masses and by the emphasis on the outdoor areas as architectural elements. The slanted living room wall is useful in catching more sun, and it creates an easy circulation between living and dining rooms. Natural redwood and white trim are an integral part of a handsome exterior; this treatment, which has become almost standard in a large body of California work, is the best solution to date of the problem of combining simplicity with richness of appearance. Cost: \$9,400. Cubage: 23,000.

Philip Fein Photos





DECK

**CONSTRUCTION OUTLINE**

STRUCTURE: Exterior walls—redwood siding, O. P. sheathing, Brownskin building paper, Angier Corp., wood lath; inside—plaster or plywood, U. S. Plywood Corp. floor construction—oak finish.

ROOF: Covered with 5-ply built-up and gravel, Certainteed Products Corp. Deck—covered with Malthoid, Certainteed Products Corp.

FIREPLACE: Damper—Superior Fireplace Co.

SHEET METAL WORK: Flashing, leaders and ducts—galvanized iron, U. S. Steel Corp. Gutters—redwood.

SOUND INSULATION: Living room ceiling—Celotex, Celotex Corp.

WINDOWS: Sash—sugar pine, casements. Glass—double strength and sheet, Pennvernon, Pittsburgh Plate Glass Co. Weatherstripping—Chamberlin Metal Weather Strip Co.

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

WALL COVERINGS: Living room—plaster and plywood, U. S. Plywood Corp. Kitchen and bathrooms—some tile, Gladding, McBean & Co.

WOODWORK: Oregon pine throughout.

HARDWARE: By P. & F. Corbin and Oscar C. Rixson Co.

PAINTS: By W. P. Fuller Co.

ELECTRICAL INSTALLATION: Wiring system and switches—General Electric Co. Fixtures—Boyd Fixture Co.

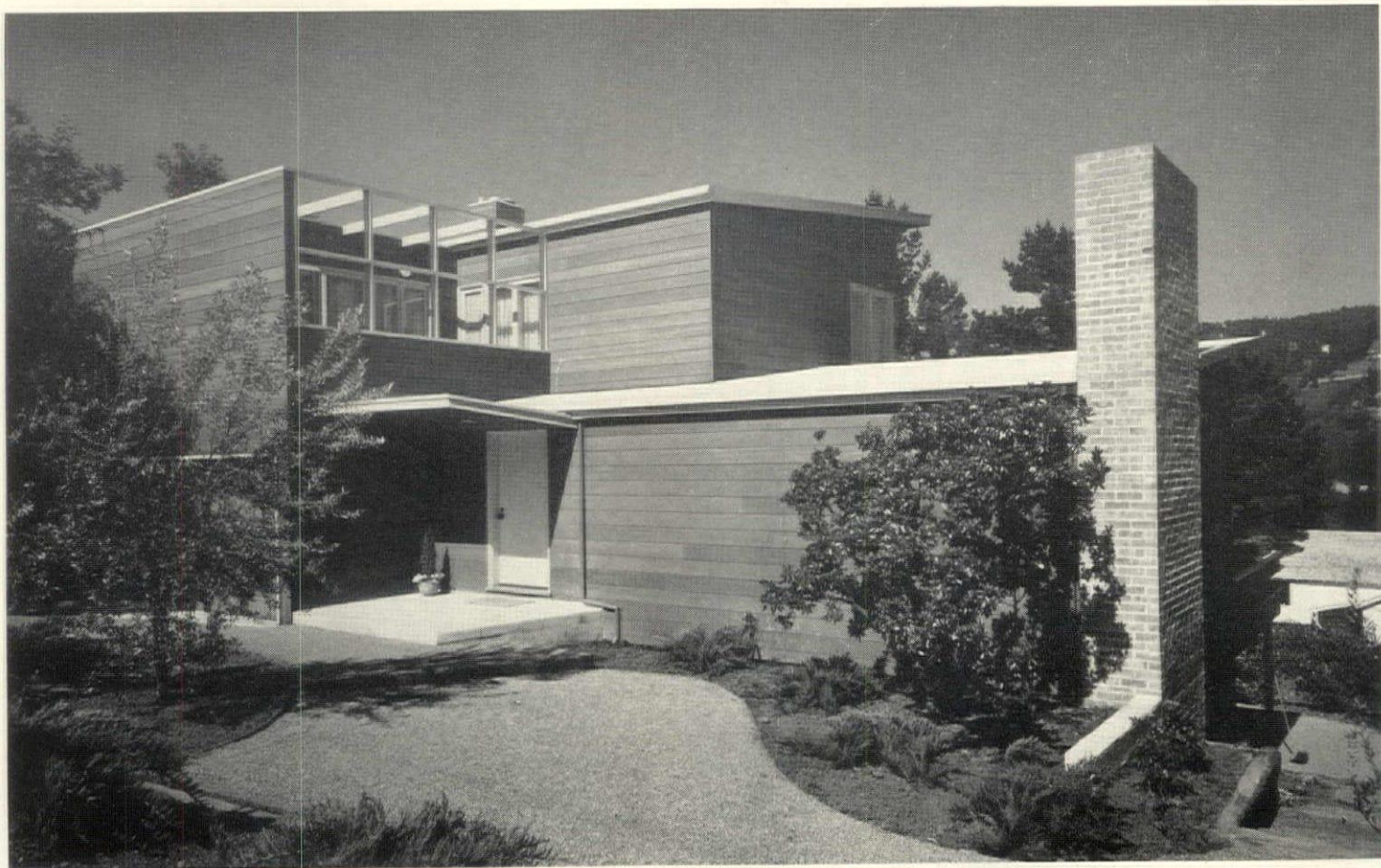
KITCHEN EQUIPMENT: Range—Magic Chef, American Stove Co. Refrigerator—Sears Roebuck Co.

BATHROOM EQUIPMENT: By Kohler Co. except toilet by American Radiator-Standard Sanitary Corp. Cabinets—Hallenscheid & McDonald.

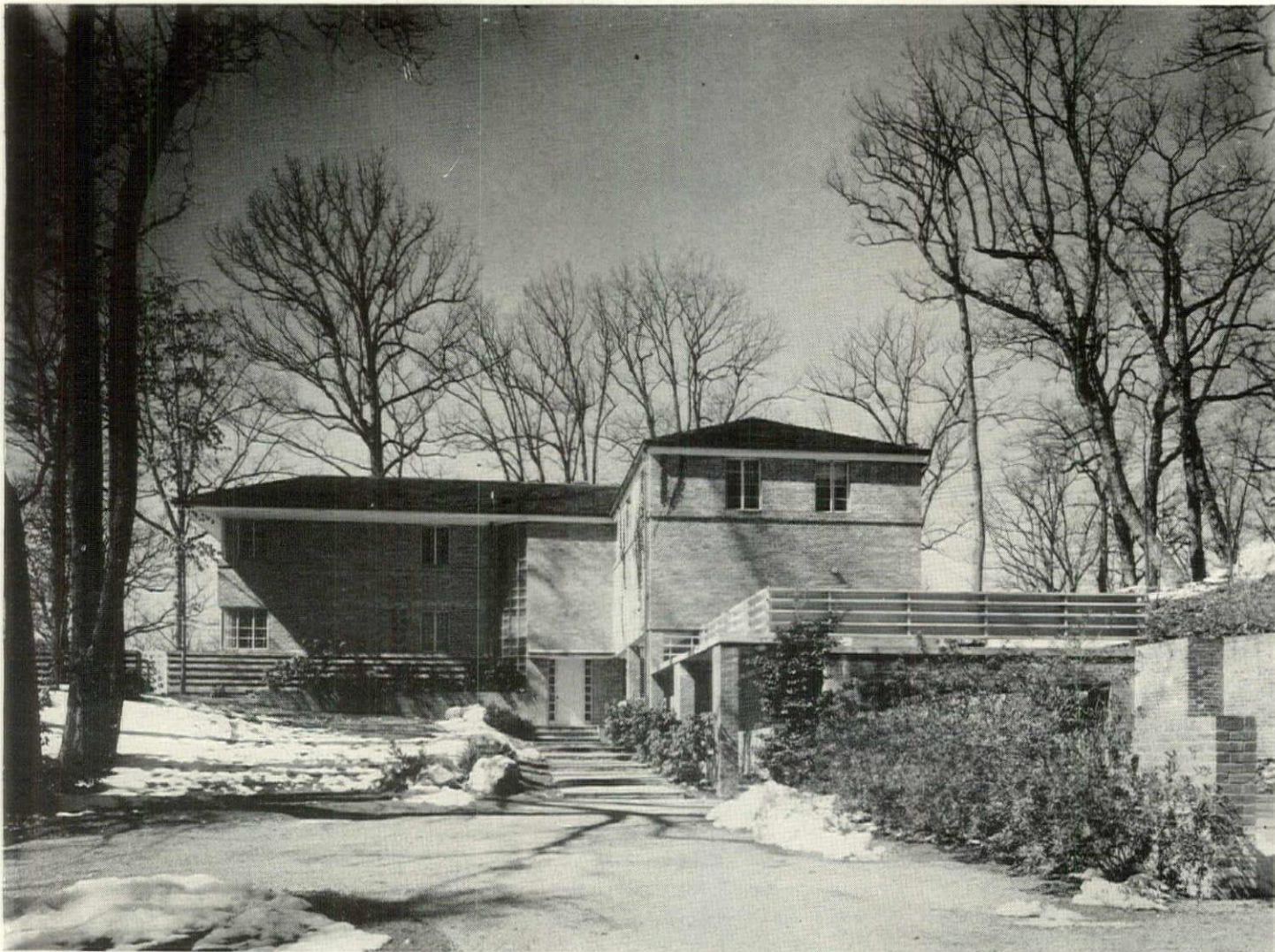
PLUMBING: Soil pipes—cast iron. Hot water pipes—copper, Mueller Co. Cold water pipes—galvanized iron, Columbia Steel Co.

HEATING: Warm air system, Fraser Johnson Co. Radiators and grilles—Hart & Cooley. Water heater—Crane Co.

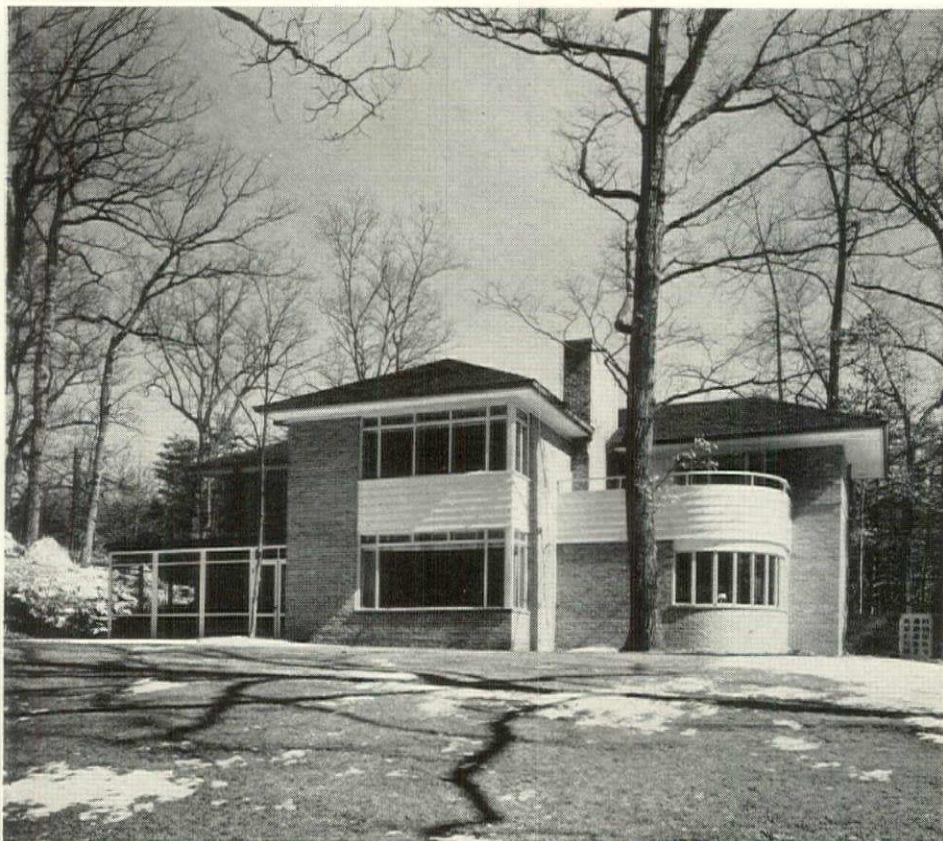
MARIE M. HARBECK, LANDSCAPE ARCHITECT



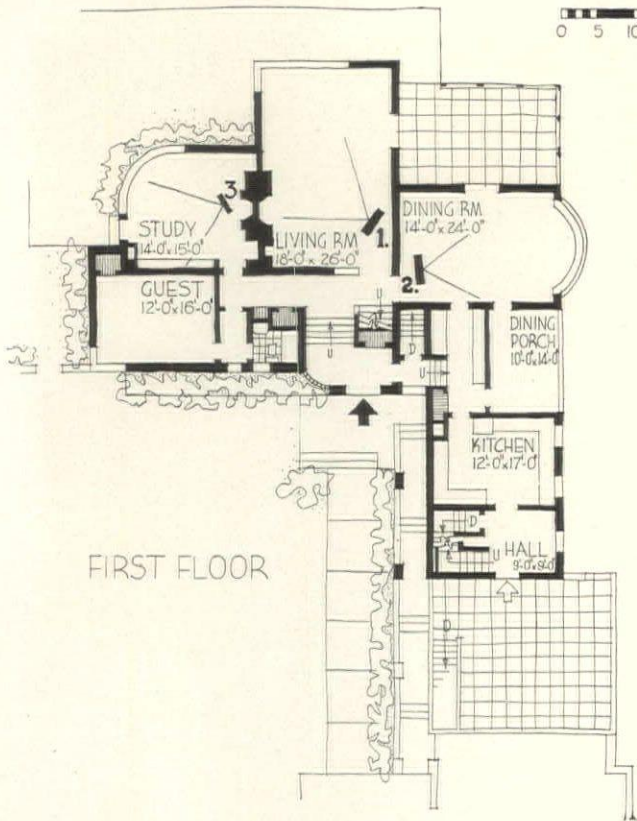
FIVE BEDROOMS, TWO SERVANTS' ROOMS, FOUR BATHS, DINING PORCH



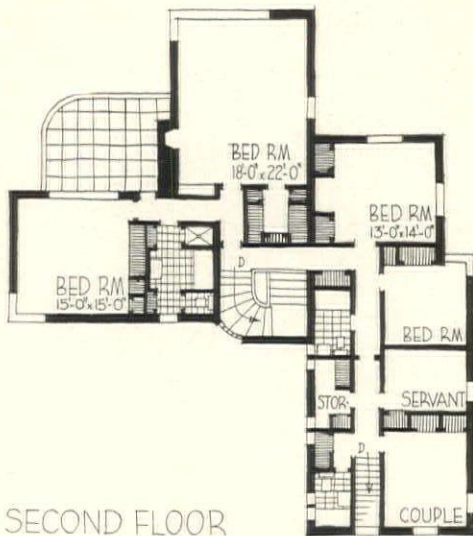
Orville K. Blake Photos



An imposing modern design based on the use of masonry. In connection with the structural material selected, it is interesting to note the manner in which it has affected the fenestration. Extended glass areas are concentrated, as in the rear of the house, and a change of material clearly marks the shift from wall-bearing to frame construction. Elsewhere the windows have short lintels and wherever possible are pushed up to the line of the eaves. Also of interest is the way in which the garage and service rooms provide a long buffer between the entrance and the main section of the house. The deck off the service hall is an excellent, usable outdoor area, well screened from the ground level by a solid parapet of wood. The designers have been very generous with outdoor living spaces: there are porches off both living and dining rooms and a deck between the two main bedrooms. The guest room on the first floor is well placed. Cost: \$35,000. Cubage: 80,000. (Both figures are approximate.)

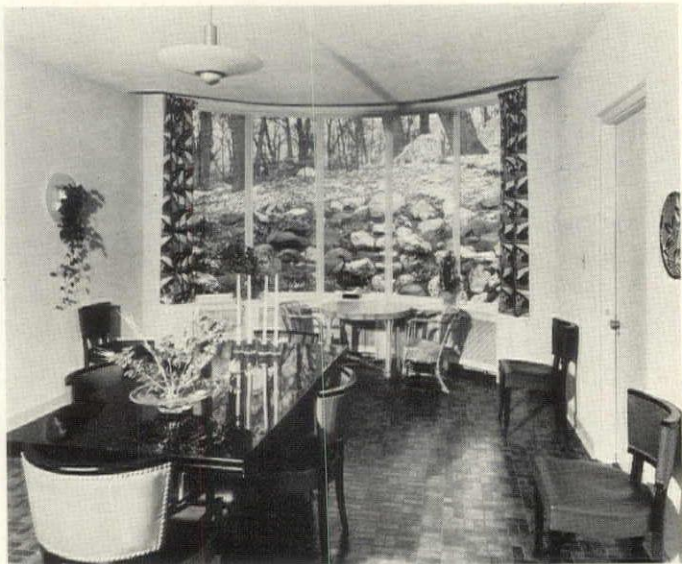


FIRST FLOOR



SECOND FLOOR

VIEW 3.



VIEW 2.



CONSTRUCTION OUTLINE

FOUNDATION: Cinder block.
STRUCTURE: Exterior walls—brick, 1 in. parge, 4 in. cinder block backup, 1 in. furring; inside—studs, Cabot's Quilt, Samuel Cabot, Inc., U. S. Gypsum Co. rocklath and plaster. Floor—sub-floor, red oak strip finish.
ROOF: Tile shingles, Ludovici-Celadon Co. Deck—canvas.
FIREPLACE: Damper—The Majestic Co.
SHEET METAL WORK: Flashing—copper. Gutters and leaders—lead clad steel. Ducts—Armco iron, American Rolling Mill Co.
INSULATION: Outside walls—Cabot's Quilt, Samuel Cabot, Inc. Ceiling (2nd floor)—rockwool.
WINDOWS: Sash—steel casements, Hope's Windows, Inc. Glass—double strength, quality B and polished plate, Penn-vernion, Pittsburgh Plate Glass Co. glass blocks—Owens-Illinois Glass Co.
FLOOR COVERINGS: Main rooms—oak strip. Dining room and kitchen—linoleum. Bathrooms—tile.
WALL COVERINGS: Plaster throughout.
WOODWORK: Trim and cabinets—white pine. Library—oak. Garage doors—Overhead Door Co.
HARDWARE: By Sargent & Co. and Schlage Lock Co.
PAINTING: By Pratt & Lambert.
ELECTRICAL INSTALLATION: Wiring system—flexible conduit. Fixtures—Lightolier Co.
KITCHEN EQUIPMENT: Range and refrigerator—West-inghouse Electric & Mfg. Co. Sink and cabinets—Oxford Cabinet Co.
BATHROOM EQUIPMENT: By American Radiator-Standard Sanitary Corp. Cabinets—Hallenscheid & McDonald.
PLUMBING: Soil pipes—cast iron. Hot cold water pipes—brass, Mueller Co.
HEATING AND AIR CONDITIONING: Split system, heating, well water cooling, humidifying, cleaning, circulation, also some radiation. Boiler—International Boiler Works Co. Oil burner—Williams Oil-O-Matic Heating Corp. Con-ductors and balancing els—American Radiator-Standard Sanitary Corp. Grilles—Waterloo Register Co.



VIEW 1.

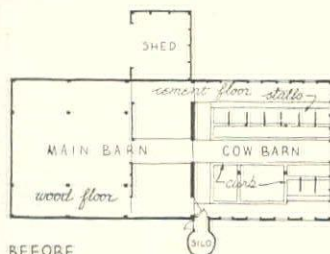
REMODELED BARN: TWO BEDROOMS, THREE BATHS, OFFICE



Rodney McCay Morgan Photos



BEFORE



BEFORE

Since the beginning of the big trek from metropolitan centers to pleasanter surroundings, the remodeling of barns has become a standard part of the rural building picture. The operation is by no means a universally satisfactory one from the cost viewpoint, but in some instances, as the example here, it may work out very well indeed. The chief advantage enjoyed by the architect was that he was able to select the barn, and he picked one of a size easily adapted to domestic scale. The main barn became a two-story living room, while the cow barn was taken over for an office, garage and kitchen. There are two upstairs bedrooms and a bath. Most ingenious was the use of the silo, which was cut down about five feet and converted into a circular stair tower. Remodeling cost, excluding well and architect's fee: \$8,149. Cubage: 42,400.



BEFORE





CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—Neponset building paper, Bird & Son, Inc., Celotex board, Celotex Corp. and red cedar shingles on shingle lath; original outside sheathing remains as interior finish. Interior partitions—pine plan on studs or old framing. Floor construction—concrete and wood. Ceilings—Celotex board, Celotex Corp.

ROOF: Covered with shingles.

FIREPLACE: Damper—H. W. Covert Co.

SHEET METAL WORK: Flashing—copper.

INSULATION: Outside walls—Celotex board, Celotex Corp. Roof—rockwool.

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

STAIR: Iron spiral.

FLOOR COVERINGS: Living room—wood boards. Bedrooms—N. C. pine. Halls—cement.

Kitchen and bathrooms—linoleum.

WOODWORK: Pine throughout.

HARDWARE: Yale & Towne Mfg. Co.; some handmade.

PAINTS: By Samuel Cabot, Inc.

ELECTRICAL INSTALLATION: Switches—Harvey Hubbell, Inc.

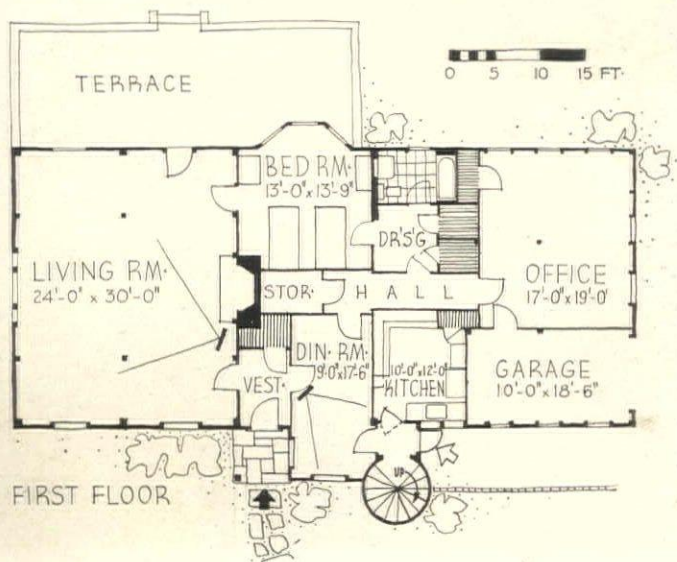
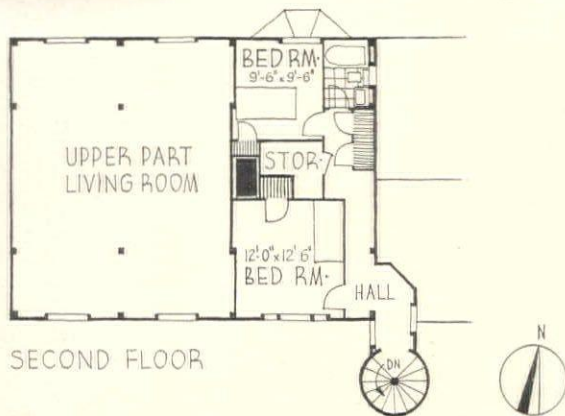
KITCHEN EQUIPMENT: Range—Universal, Landers, Frary & Clark. Refrigerator—Frigidaire Corp. Sink—Crane Co.

BATHROOM EQUIPMENT: By Crane Co. Seat—C. F. Church Mfg. Co. Cabinets—metal, The Philip Carey Co.

PLUMBING: Soil pipes—cast iron. Hot and cold water pipes—brass, Bridgeport Brass Co. Sump pump—General Electric Co.

HEATING: Steam system. Boiler and radiators—American Radiator-Standard Sanitary Corp. Oil burner—Petroleum Heat & Power Co. Thermostat—Minneapolis-Honeywell Regulator Co.

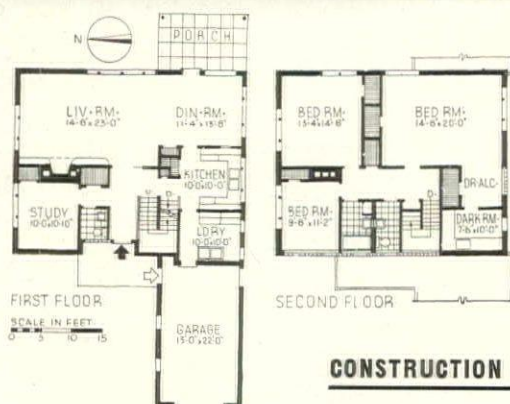
VIEW



THREE BEDROOMS, STUDY, TWO BATHS, LAVATORY, DARK ROOM



Hedrich-Blessing Photos



WEST ALLIS, WIS.
 LAURENCE SCHWALL
 DESIGNER

CONSTRUCTION OUTLINE

FOUNDATION: Walls—concrete block. Waterproofing—Aquadant paint, Johns-Manville.

STRUCTURE: Exterior walls—Shaletex Softone brick veneer, Streater Brick Co., Insulux glass block, Owens-Illinois Glass Co.; inside—U. S. Gypsum Co. rocklath and plaster.

ROOF: Copper, Copper Roofs, Inc. Deck—built-up roofing, mopped with asphalt.

FIREPLACE: Damper—Colonial Fireplace Co.

INSULATION: U. S. Gypsum Co.

WINDOWS: Sash—wood, Glass—double strength, Libbey-Owens-Ford Glass Co. Glass blocks—Insulux, Owens-Illinois Glass Co.

FLOOR COVERINGS: Linoleum, Armstrong Cork Co.

WALL COVERINGS: Main rooms—wallpaper, Imperial Paper & Color Corp. Kitchen and bathrooms—Linowall, Armstrong Cork Co.

WOODWORK: Trim—gum. Garage doors—National Mfg. Co.

HARDWARE: By National Hardware Co.

PAINTS: By Sherwin-Williams Co. and Pratt & Lambert, Inc.

ELECTRICAL INSTALLATION: Switches—Pass & Seymour. Fixtures—Moe Bros. and Adjustable Fixture Co.

KITCHEN EQUIPMENT: Range and refrigerator—General Electric Co. Cabinets—metal, Modern Steel Equipment Co. Fan—Midwest Mfg. Co.

BATHROOM EQUIPMENT: By Kohler Co. Cabinets—Miami Cabinet Div., The Philip Carey Co. Heater—Midwest Mfg. Co.

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

HEATING AND AIR CONDITIONING: Allis-Chalmers Mfg. Co. indirect home conditioner. Chronotherm—Minneapolis-Honeywell Regulator Co.

A model home, sponsored by a local newspaper and built from plans of one of the winning designs in the Owens-Illinois Glass Block competition. Two efficient rectangles enclose the floor plans, with a garage and porch as the only projecting elements. The arrangement of the service entrance and laundry, and the provision of a study convertible into an extra bedroom are among the more interesting features. Walls of glass block are given prominence. Cost: \$10,500.



NEW YORK MEDICAL COLLEGE

FIFTH AVENUE FLOWER HOSPITAL, NEW YORK CITY

REINHARD & HOFMEISTER & WALLACE K. HARRISON
ASSOCIATED ARCHITECTS



Samuel H. Gottscho Photos

LOBBY



IRONS & REYNOLDS, INC., BUILDERS

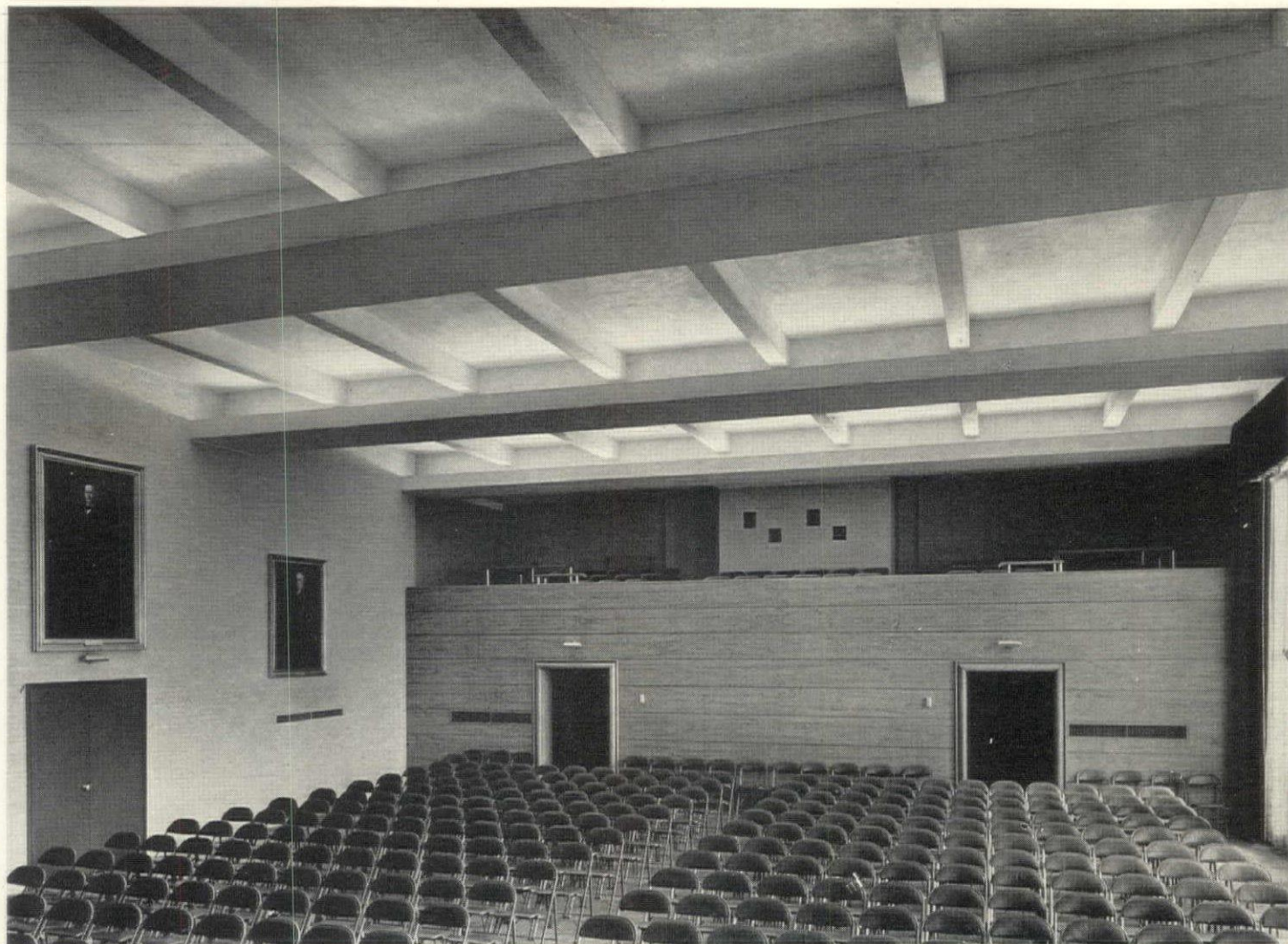
NEW YORK MEDICAL COLLEGE, FIFTH AVENUE FLOWER HOSPITAL, N. Y. C.



The architects of this medical school were faced with a series of complicated problems: a restricted city site, irregular in contour; the existence of an older hospital building to which the new structure had to be attached; and the presence of a list of requirements which could be met under the budget only with the greatest difficulty. The question of harmonizing the style treatments of the old and new buildings, the subject of considerable discussion, was solved by relating the masses. No attempt was made to limit the efficiency of the school by maintaining an outmoded type of fenestration or by the repetition of meaningless detail. Photographs of the exterior and interiors show a consistently straightforward approach and a certain monumental quality which was achieved with great economy. The plans, four of which are reproduced on page 128, indicate the enormous number of different elements which had to be arranged within the restricted envelope. Cost, including equipment: \$1,288,000. Cubage: 1,871,000.

LOBBY

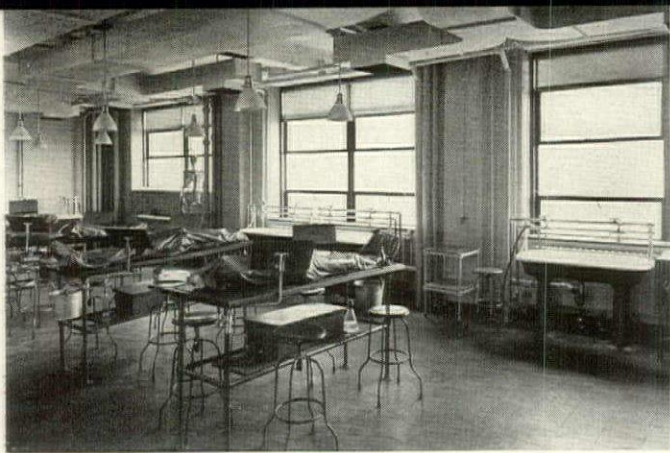




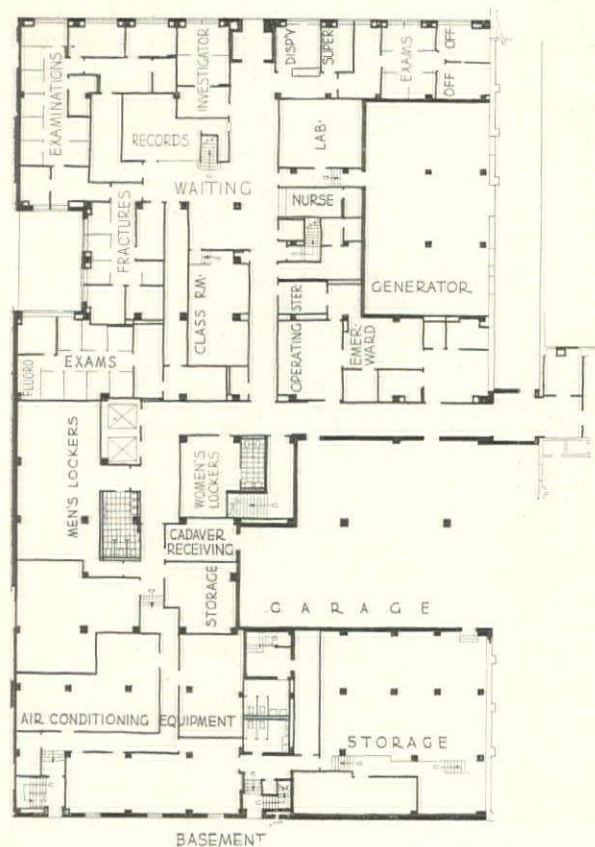
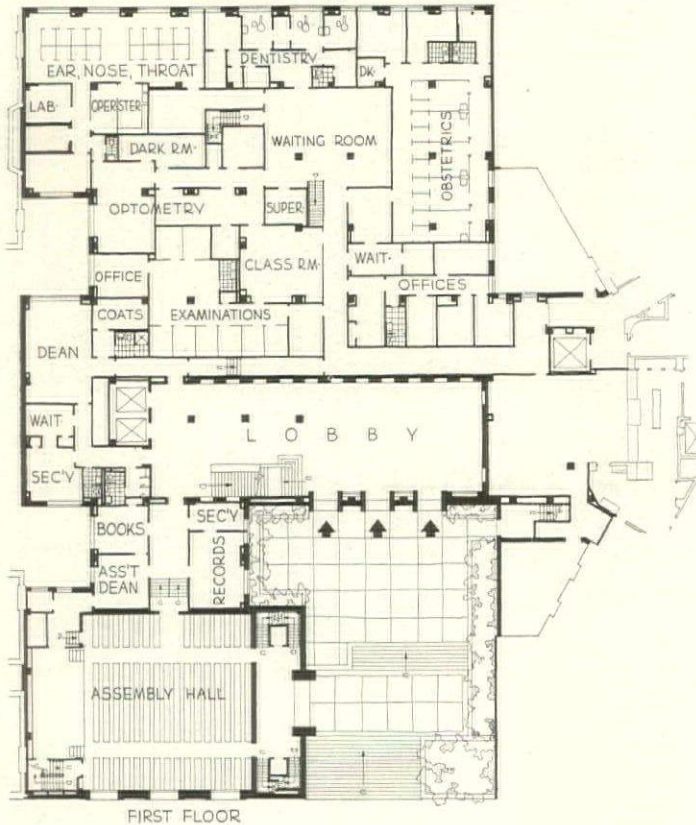
ASSEMBLY HALL

LIBRARY

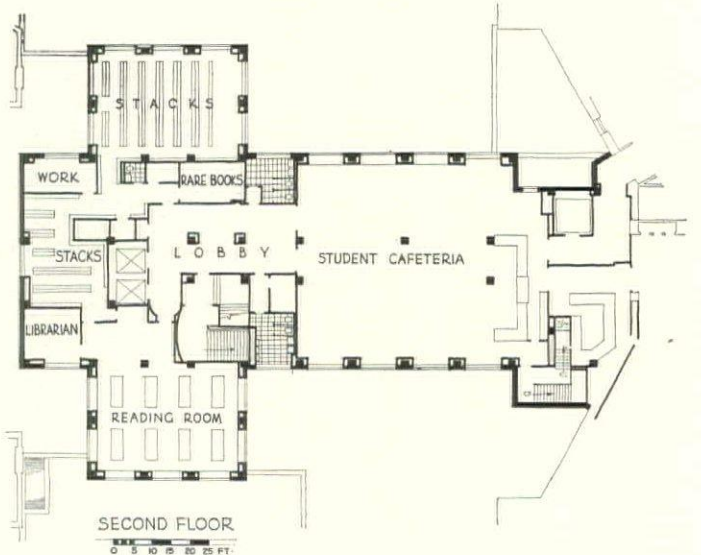
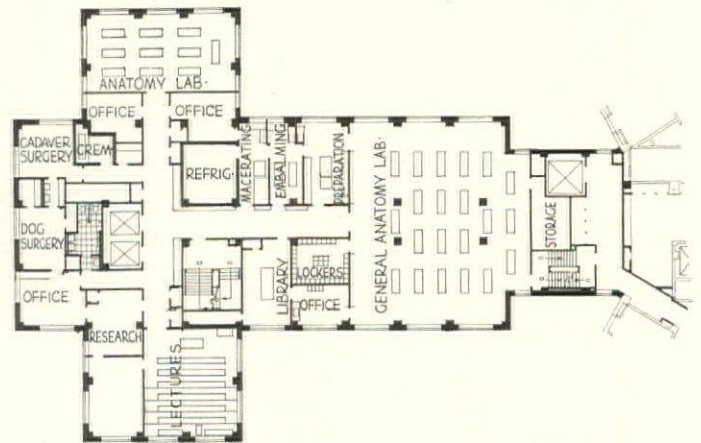




GENERAL ANATOMY LABORATORY



NEW YORK MEDICAL COLLEGE



CONSTRUCTION OUTLINE

FOUNDATION: Reinforced concrete. Waterproofing—hydrolithic.
STRUCTURE: Exterior walls—brick, Fredenberg & Lounsbury Co.; and cinder block, National Brick Co.; inside—cinder block, metal and glass, E. F. Hauserman Co. Floor construction—cinder slab, cinder fill, cement topping.
ROOF: Covered with Traffic Top tile and slag finish, Celotex Corp.
SHEET METAL WORK: Copper throughout, American Brass & Copper Co. and New Haven Copper Co.
INCINERATOR: Nelson Contracting Corp.
SOUND INSULATION: Sanacoustic tile, Johns-Manville.
WINDOWS: Sash—Fenestra steel, Detroit Steel Products Co. Glass—double strength, quality A, polished plate and obscure.
STAIR: Terrazzo, steel risers and stringers.
FLOOR COVERINGS: Lobby—terrazzo. Remainder—Johns-Manville resilient type "A" flooring.
WOODWORK: Auditorium—teak wood.
ELECTRICAL INSTALLATION: Two and 3-wire system.
LABORATORY EQUIPMENT: Laboratory Furniture Co.
KITCHEN EQUIPMENT: By Nathan Straus-Duparquet, Inc. Refrigerator rooms, equipment and refrigerators—Westinghouse Electric & Mfg. Co. Compressors and coils—Frigidaire Div., General Motors Corp.
BATHROOM EQUIPMENT: By American Radiator-Standard Sanitary Corp. Seat—C. F. Church Mfg. Co.
PLUMBING: Soil pipes—cast iron. Hot and cold water pipes—brass. Gas air and vacuum lines—galvanized copper bearing steel.
HEATING: Two pipe vacuum return system; supply and exhaust ventilation. Boiler—Union Iron Works. Grilles—Tuttle & Bailey, Inc. Valves—Chapman Valve Co. Regulators—Powers Regulator Co. Water heater—Patterson-Kelley Co., Inc.

BUILDING MONEY

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Some 1,000 cars clog court in Government building quadrangle; others rim Washington park circle in rear.



Life, Thomas D. McAvoy

DEFENSE PROBLEMS COME HOME TO ROOST

in nation's Capital, force defense workers into stables, citizens into cellars. A look at the pressures of unplanned expansion and some safety valves to ease them.

"Chief industry of Washington is Government which has taken no responsibility for housing its workers. If a private industry . . . were to operate on a similar irresponsible policy, Government would be the first to criticize." Thus, with unveiled sarcasm, the Chairman of the District of Columbia Housing Commission has boomeranged the frightening problem of Washington's overcrowding back at the Government's neck.

Ever since Washington became both the Capital of the U. S. and lately of the anti-Axis world, lack of working and living space has become increasingly acute. Today, with the nation at undeclared war and defense activities still expanding, the situation has become not only ridiculous but tragic. Ridiculous is the fact that part of Defense Housing Coordinator's offices must be located in an antiquated stable; that opera houses, warehouses, hotels, theaters are all functioning as Government offices. Tragically, living space for Government's employees is equally inadequate and is causing grave social defects. With one bath frequently shared by 15 to 20 people, with 6 to 8 unrelated persons sharing one room, it is small wonder that the Capital's municipal facilities are helpless to provide sanitation, route traffic, maintain health and prevent crime. In daylight hours, traffic is continuously snarled; at night it is unsafe on the streets—three rape cases have been reported in as many months.

Directly proportionate to the groans caused by Washington's growing pains has

been the clamor for a Government solution to the overcrowding. Private builders have tried to keep abreast the need with the construction of approximately 4,800 dwelling units in 1941's first five months (2,085 more than a year ago). Defense housing agencies are adding 1,000 new units at nearby Greenbelt, Md., 350 units at Alexandria, Va. across the Potomac River. Government has leased or bought every square inch of floor space in the city, is planning temporary office construction.

Yet, all this is not enough. First official recognition of the defection came when President Roosevelt in press conference two months ago mentioned the advisability of moving some of the "self-contained" Government departments out of Washington, referred the suggestion to the Federal Works Agency for study. First encouraging action was the Budget Bureau's distribution of questionnaires to department heads concerning their "self containment" and mobility. Then, fortnight ago it was announced that the Federal Home Loan Bank Board and its subsidiary agencies (total personnel—1,150) soon would be moved to New York City. Since most employees prefer to play their personal politics at short range and are firmly established in the Capital's life, the moving order came as a disturbing surprise and prompted wide complaint.

SITUATION

When Major L'Enfant laid out Washington's city plan in the early 19th Century,

he provided for every contingency except gargantuan growth of Government. Room was made for normal expansion, but the great and permanent increases in the city's population during and after each U. S. war (see chart, p. 131) strained the city's buildings, caused congestion. From a small town of some 14,000 citizens in 1810, Washington grew to 131,000 by 1870, 486,000 by 1930. With the advent of the New Deal in 1932 and War in Europe in 1938, the Capital census of 1940 showed a total population of 663,000, an increase of 36.2 per cent. (National population growth: 7 per cent.) And, since that count, 65,000 new employes have migrated to the city, and others are arriving every day. Today, there are 167,000 Government employes in Washington, about 16 per cent of the total Federal payroll.

Office Space. The effect of this spontaneous expansion on Government's available office space has been tumultuous. With the completion of each new building, both public and private, there has been a mad scramble for office space. When the Reconstruction Finance Corp. recently moved into its new offices, it was just one jump ahead of the expanding War Department. In an effort to convert any and all space into office space, Chief C. J. Guthridge of the Public Buildings Administration's Planning and Space Control Section has rented every structure which could possibly be utilized, some which are much needed for residential purposes. Thus, Leon Henderson's Price



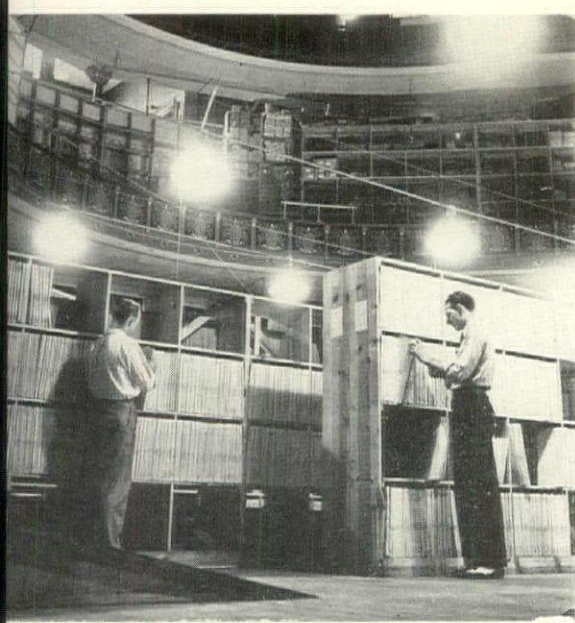
Life, Thomas D. McAvoy

Symbolic of the Capital's overcrowding is this dramatic night view of a tent camp at the foot of the Washington Monument.



Life, Eliot Elisofon

Make-shift WPA offices occupy the orchestra of the old Auditorium, while file cabinets sit in the balcony, secretaries on the stage.



Acme

Sarah Bernhardt once played to the nation's elite at the Belasco Theater. Now, Treasury Department clerks labor at grimmer tasks.

Administration department (OPACS), newest of the defense housing offices, has moved into a sorely needed defense housing project, now boasts a kitchen and bath for each office suite. The Treasury Department has a number of floors in the Raleigh Hotel. The city is still shuddering from the rumpus caused by evicted tenants of the Dupont Circle Apartments which have been leased to the Government for offices.

Vigorously competing with U. S. Government's space grabbers are the British which have brought 2,000 new workers to Washington to speed the lend-lease program. They now fill several private mansions (including the late Andrew Mellon's), two apartment buildings and a hotel floor.

Living space is rapidly becoming as crowded as the Black Hole of Calcutta. Renting an individual vacant bed is a common practice. Old houses are now the homes of several families who have a room each and stagger the use of kitchens and bathrooms according to precise timetables. Basements are being converted by landlords into apartments which command \$30 to \$40 per month. Visitors still find it necessary to engage hotel rooms in cities as far as 50 miles away from the Capital.

A synoptic view of the whole picture makes it clear that Government in its quest for office space is robbing Peter to pay Paul. Despite the fact that half-year-old plans for 1,000 dwelling units at Greenbelt, Md. and temporary Washington dormitories for girl employes have yet to reach the contract stage, Government is continuing to requisition already inadequate living space for office purposes, is compressing its employes into less and less living area, is taxing both human and public efficiency.

Public facilities. Most drastically afflicted by Washington's rapid growth are the municipal facilities. Police are unable to handle the parking problem. In an effort to relieve the situation, Government offices have staggered their opening hours, at intervals between 7:30 and 9 A.M. Still traffic's pace during these hours is slow.

Disease is beginning to peril the picture. Inadequacy of medical facilities was emphasized by evidence presented to a House investigating committee by District Health

Officer Dr. George C. Ruhland. He testified that applications for admittance to public hospitals have been increased by 21,390 during 1940. With the city suffering a recurring cycle of measles (800 cases, so far), the daily average of in-patients at Gallinger Hospital increased from 956 during the whole of 1940 to 1,184 for the first three months of this year.

SOLUTIONS

New construction notwithstanding, a mountain of evidence seems to prove that unplanned expansion cannot keep pace, either actually or sociologically, with Washington's increase in population. Several plans for solving the trouble have been proposed: 1) A large scale program of temporary building. 2) Decentralization or removal of self-contained Government offices to other cities. 3) Limitation on the influx of additional Federal employes into the Capital by placing the remaining burden of defense on the shoulders of industry and local government. Each one separately has valid pros and cons, but together they may form a workable pattern.

Temporary building would eventually ease the problem of both office and residential space and keep Federal functions centralized. Officials are now planning the erection of six to ten temporary office buildings providing about 800,000 sq. ft. which is still 1.2 million sq. ft. short of the need. Most objectionable features of large scale temporary construction are that such a program will only aggravate the strained condition of Washington's public facilities and that temporary "eyesore" structures tend to become high cost permanent monstrosities. All Federal officials recall that temporary buildings erected during the World War I are still in use by the Army and Navy, which have just finished expanding them with further "temporary" work.

Clearly then, to preserve real estate values and to preserve Washington's beauty, such buildings should be really temporary—in fact as well as in name.

Decentralization is a more complete solution. Besides alleviating all sides of the Washington problem by actual removal of a portion of the populace, it might help



Acme

In this stable Defense Houser Palmer's men work like horses to solve overcrowding problems in other defense towns.



Acme

"Temporary" World War I building spews crowds into already congested street. War Department occupies 21 different buildings.

doctor the office vacancy conditions in some other cities. That many cities have ample room for Federal Government tenants is indicated by the accompanying list of vacancy ratios (see col. 3). Government is a sure-paying tenant, and a migration of Government employees to any city would not only help local business but might lessen to a small extent the migrators' cost of living.

Big bugaboo to decentralization, however, is an internal dilemma which stumps everyone—Where to move what department? What departments are self-contained and can be easily moved is the one horn of the dilemma on which everyone agrees—except the departments involved. With the Budget Bureau's moving order to FHLBB came many a fearful rumor, equally fearful denials. A concurrent visit from Al Smith to President Roosevelt led to reports that the Securities Exchange Commission might be moved to Smith's Empire State Building in New York City. Some observers thought that SEC, if moved to New York, should be housed in the Wall Street office buildings which SEC has legislatively emptied.

Most frequently nominated agencies for eviction from Washington are the Interstate Commerce Commission, Railroad Retirement Board, SEC, Social Security Board, the Federal Housing agencies, and the Maritime Commission. Though these departments are small (a combined Washington payroll of 12,600 as compared with the Treasury Department's 17,000 and the Commerce Department's 13,000), their relocation would certainly help. With the single exception of the Interstate Commerce Commission which serves as a research and advisory agency to Congress, all of them are self-contained, could be moved without threat of inefficient operation. The Federal Housing agencies deal mostly with each other. Grouped together, and maintaining a Washington liaison office, they could be located in any city in the country.

Government decentralization does not lack encouragement. The mouths of most municipalities water for the fruits of Government tenancy. Chicago, a railroad center, thinks it is the rightful home of the Interstate Commerce Commission as

evidenced by a Congressional Bill introduced by Chicago's Rep. Sabbath. New York City, through its garrulous Mayor La Guardia has expressed the hope of becoming the host to any or all Government departments. Baltimore, already the partial home of the Social Security Board, is gurgling for more.

From a real estate point of view, however, the succulent fruit of Government tenancy may have gritty pits. Some:

► Government cannot lease space for more than one year at a clip due to Federal budget requirements.

► Where Government acquires land and erects its own building, it takes property off local tax rolls. It has already lopped \$650 million off Washington ratables.

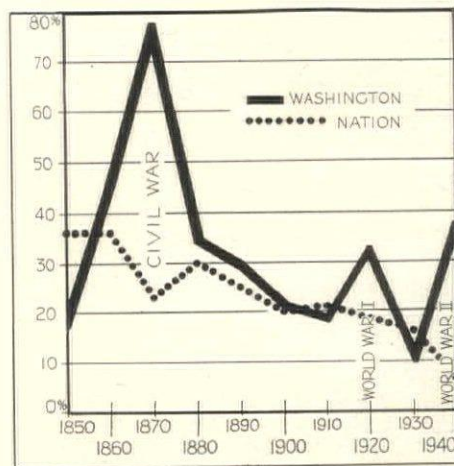
► Government does not conform to local building codes and fire laws, yet expects the local fire departments to protect its buildings.

► Government office rent cannot exceed 15 per cent of the market value of a property. Where taxes are levied on the same basis as market value, owners are restrained from rehabilitation, because if Government moves out afterwards they have not only lost their tenant but are paying higher taxes.

Limitation of Washington defense personnel to present levels would help curb the city's population growth. But, to convince an Administration inclined toward central control that private industry could and should handle the remaining developments of the defense effort would be difficult. Factually, the work of sub-contracting and the training of apprentice technicians could be handled most efficiently by private industry. And since civilian defense action is completely dependent on local catastrophe, it is logical that such organization be locally controlled through the Mayors or citizens defense heads, under the direction of a small national staff. Just as OPM's Defense Contracts Division is decentralized through its field offices in the various Federal Reserve Banks throughout the country, so could the future growth of military and civilian activities be handled.

Combining all three plans into an integrated whole may be the most constructive solution. Some really temporary office and

POPULATION CHANGES expressed in percent of previous totals. Note that Washington's population has jumped with each war, despite the downward national trend.



residential construction, removal of certain self-sufficient departments to other cities, and the delegation of specified defense tasks to private industry and local government would relieve Washington's all-round congestion, increase the efficiency and economy of Government and speed the national defense program. Finally, this three-pronged move would lay the foundation for later changes in Government organization which must come with post-war redevelopment, for chances are strong that peace following World War II, as after all other U. S. wars, will find Government a bigger business than ever—one which will continue to grow and grow.

OFFICE VACANCIES BY CITIES —a list of large U. S. cities with the percentage of their office space vacant in May 1941. Source: a survey conducted by the National Assn. of Building Owners and Managers which covered 2,398 buildings in 103 cities, which showed an average vacancy of 16 per cent.

Baltimore, Md.	9%
Boston, Mass.	24
Buffalo, N. Y.	20
Chicago, Ill.	18
Cincinnati, O.	17
Cleveland, O.	16
Dallas, Tex.	11
Denver, Colo.	11
Detroit, Mich.	23
Houston, Tex.	11
Kansas City, Mo.	22



Acme



Life, Elliot Elisofon



Acme

Terminal which formerly housed buses, now houses a branch of the Department of Justice, is difficult to heat, poorly lighted.

Drafted by Government before completion, the Longfellow Building built by private capital, now serves Farm Security Administration.

4,800 houses like these have been built in Washington during 1941's first five months, but they have barely touched the need.

NEED FOR DIRECT HOUSING

As a funnel for insurance company investment funds is made apparent in Government probe — but not to Government probers.

The FORUM goes to bat after SEC strikes out.

Besides their big business of betting against death, the 26 leading U. S. life insurance companies own and operate 8 per cent of the State of Iowa, hold more than one-fifth of all New York City real estate mortgages, control 23.7 million of the 217 million acres in the vast "North-west Central" section of the U. S., invest \$2 million in real estate mortgages every day. These are a few of the facts highlighting the Securities and Exchange Commission's report to the Temporary National Economic Committee (Monopoly Committee) on legal reserve life insurance companies. To monopoly-conscious Government investigators such statistics betoken the kiss of death, but to U. S. housers they signify the growing real estate position of U. S. insurance concerns and their tremendous possibilities as a direct investor in U. S. housing—possibilities which THE FORUM last month investigated.

Originally (three years ago), the purpose of SEC's study was to investigate the investment policies of legal reserve life insurance companies. Actually, the report released to TNEC in March at a total cost of \$250,000, uncovers every nook and cranny of life insurance business, emphasizes pseudo-skullduggery, tries but fails to make two plus two equal five.

Only conclusion concerning U. S. economy which TNEC derives from the 366-page tome is that it suffers from lack of venture capital on the part of insurance companies. As to what sector of business this timid insurance capital should venture, the report is unspecific. Only SEC Commissioner Sumner T. Pike spoke up, advised that insurance companies should "find room in their portfolios . . . for the common stocks of substantial corporations." Most insurance men shudder at the very idea of such an innovation. They well remember Canada's Sun Life which once put 50 per cent of its assets in common stocks, lost \$44 million in the '29 crash and caused the Canadian Government to step in with restrictions.

As long as life insurance is to remain safe, it can hardly be expected to take longer chances than at present. Thus, TNEC's attempt to hit a home run for U. S. economy seems to have resulted in a high-arched foul ball.

The Case. However unfortunate the fate of the investigation, it is more unfortunate that the investigators did not discover among all their facts, two well-evidenced premises which might have resulted in the valuable conclusive recommendation that insurance companies could safely benefit themselves and U. S. economy through di-

rect investment of venture capital in housing and rehabilitation.

Already known to most Americans, the first salient premise is that U. S. insurance companies are the second largest holders of private money in the country. Their combined assets exceed \$31 billion; their yearly receipts, \$5 billion. Since 1906, a 900 per cent increase in assets has been realized, predating a possibility in 1950 of annual receipts amounting to an astronomical \$40 billion which must be profitably and safely invested.

Second premise, stemming from SEC evidence, concerns the present nature of insurance company investment in real estate. In the last two decades these companies have grown markedly as mortgagors and, inadvertently, as real estate operators. Since 1929 they have increased by about 640 per cent their owned real estate. This account, consisting of cast-off foreclosed properties, has yielded a mediocre profit, but has proved a challenging training ground in real estate operation. Mountinous are the facts which show the extent of their real estate operations:

► Over \$7 billion of the 26 insurance companies' \$26 billion total investments is in some kind of real estate. Almost \$2 billion of it is sunk in foreclosed real estate.

► Of the total \$7 billion farm debt in the country, insurance companies hold 12 per cent.

► In 1937 Metropolitan Life Insurance Co. owned and operated as the result of foreclosed loans, over 7,000 farms in 25 States representing an investment of over

\$80 million. This company alone harvested 50,000 bales of cotton, 10 million bushels of corn, 5 million bushels of wheat.

► Insurance companies hold about \$4 billion worth of urban mortgages, 60 per cent of which are located in ten metropolitan areas.

► Urban real estate owned through foreclosure has increased from \$11 million in 1929 to \$984 million in 1938.

With these and other statistics to prove that insurance companies are stuffed with investment funds having no place to go and that they have had extensive real estate experience, it seemed logical for SEC investigators to recommend direct investment in housing. Instead, they barely hinted at its fruitful possibilities: "Two of the 26 companies, Metropolitan and Prudential, have made an investment in the field of housing development . . ." Why SEC did not explore direct housing's investment and profit aspects, its beneficial influence on U. S. economy and, perhaps, its inevitability, will baffle posterity.

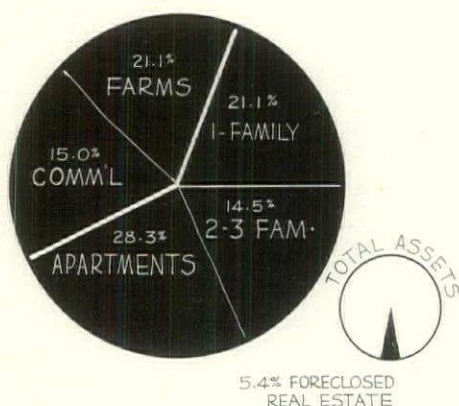
Stocks. To discover the attitude of insurance companies toward such a recommendation had it been made, THE FORUM last month sounded out several of the industry's leaders on the pros, cons and possibilities of investment in both common stocks and company-owned housing projects. It was found that the companies unanimously turn up their corporate noses at common stocks, and for very simple reasons: (1) Fluctuations in stock prices and, in turn, the value of the investment cannot be easily controlled. (2) Best control would be participation by the insurance companies in the management of the companies in which stock was purchased, but Government would immediately cry "monopoly." (3) The stock market for several years has been uncomfortably unstable and sadly low.

An interesting case history is to be found in Connecticut where insurance companies incorporated in the State are permitted by law to make common stock investments;

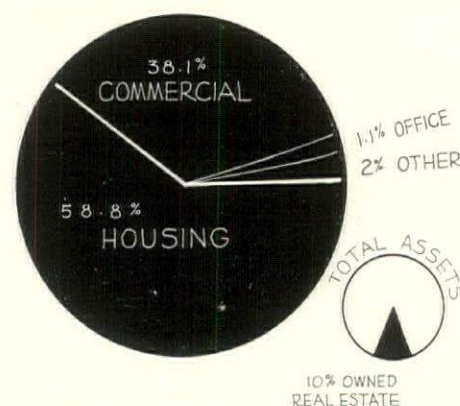
(Continued on page 56)

DISTRIBUTION OF OWNED REAL ESTATE BY TYPES

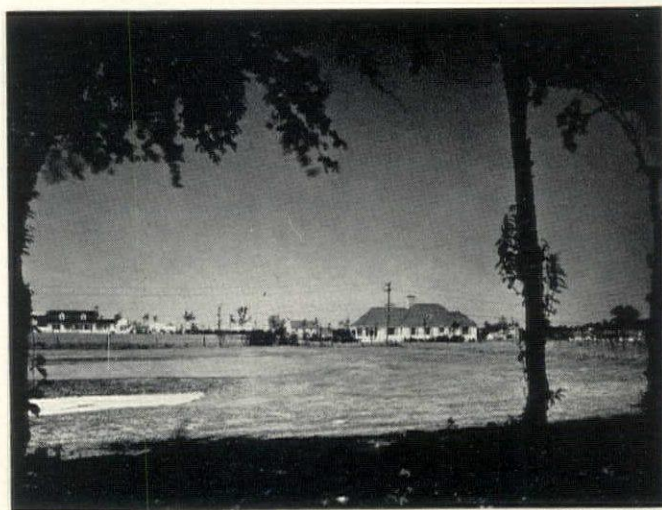
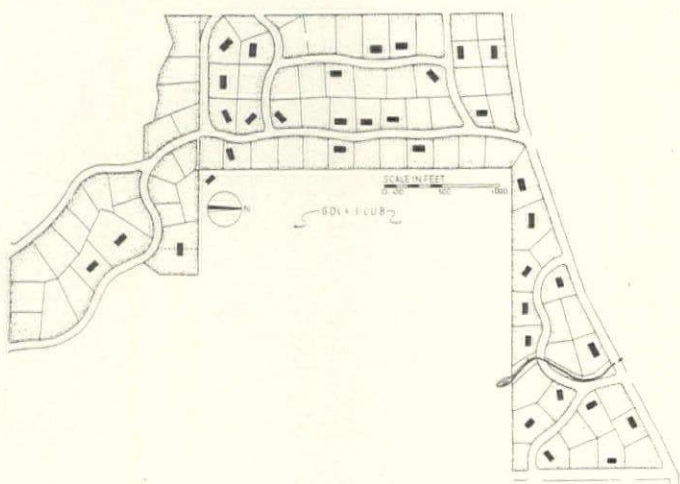
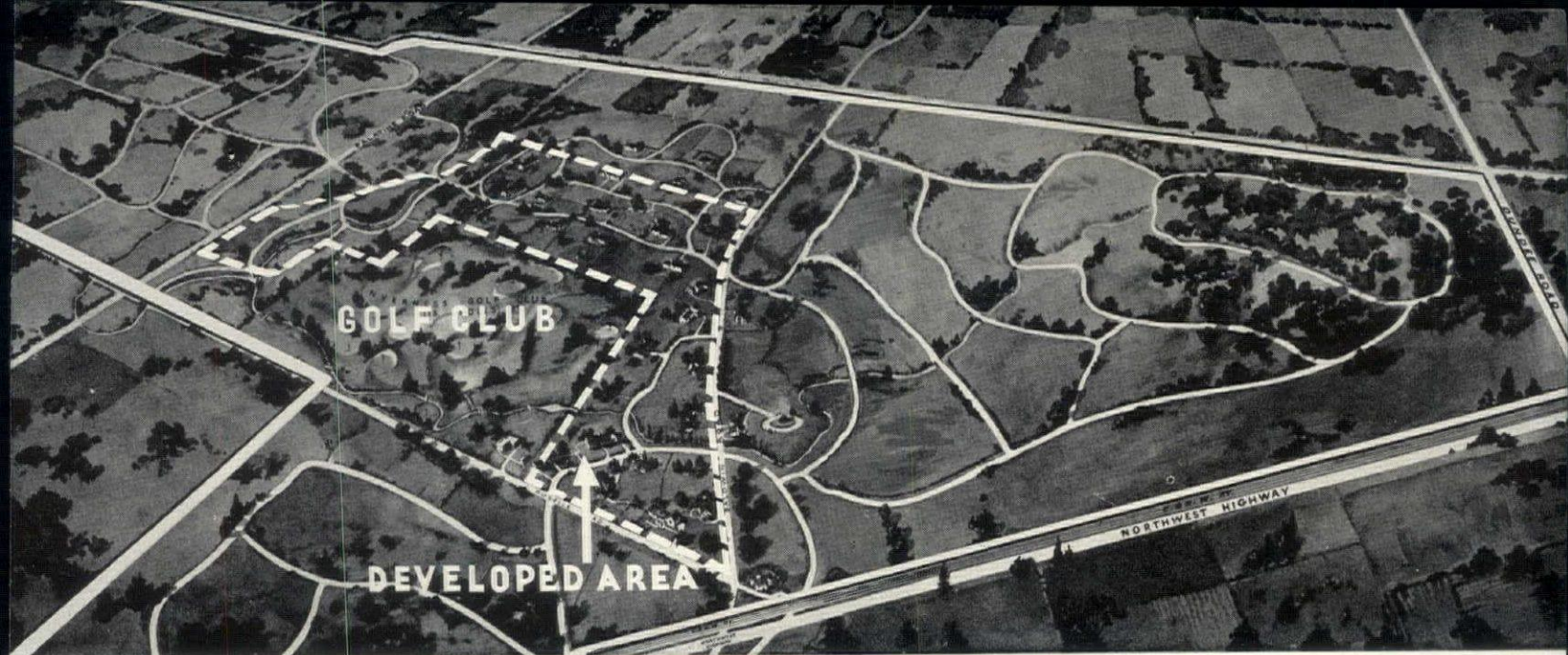
A TYPICAL AMERICAN COMPANY



A TYPICAL FRENCH COMPANY



More diversified than the typical French company's intentionally owned real estate, are the typical American company's foreclosed property holdings. Most of the French company's housing investments are in large apartments, while the American company's are spread over all types of dwelling units. This basic difference is probably attributable to the fact that French companies prefer to invest directly in the most profitable type of housing, while American companies choose to spread their mortgage (and the resultant foreclosures) over a wide range of building types. Source of French data: Corliss L. Parry.



Hedrich-Blessing

BIG HOUSES IN A BIG SUBDIVISION entice 33 Chicagoans to the country, bring big business to Architect Weber. Subdivider McIntosh tackles 1,484 acres, launches a planned community with large scale landscaping and a built-in golf course.

Everything about Inverness, a two-year-old subdivision in rural Chicago, is big. Its 1,484 acres have been divided into 820 generously proportioned lots and are being developed with big \$15,500 houses by one of the most prominent subdividers in Illinois. And, for speculative projects in this price class, the 33 sales to date—a dozen in the last half year—are big enough. While its physical dimensions alone command attention, Inverness is newsworthy on another count: Its houses all come from the drafting board of one architect who has varied their designs from Monterey to Modern, yet has combined them in a harmonious community far above the general plane of speculative subdivisions.

The Man behind Inverness is 64-year-old Arthur T. McIntosh. Since 1907 when he organized the Chicago land development and building company which bears his name, he has marketed no less than 320 subdivisions including two entire suburban villages. With the aid of three compar-

ative youngsters*, Oldster McIntosh built 370 houses in the last two years, is now developing three small-house subdivisions in the \$3,200-\$6,000 price bracket as well as his one big high price project.

The 1,484 acres. Inverness' history actually dates back to 1926 when Subdivider McIntosh began acquiring with cold cash the eleven parcels of grain and dairy farm land and the 100-acre golf course which now comprise the community.

An ideal location for a neighborhood of well-to-doers (McIntosh has shot at and hit the \$3,500-and-up income group), Inverness is situated 28 miles—about 45 automobile minutes—northwest of Chicago's business "Loop." It is within five minutes of Barrington and three minutes of Palatine, both of which towns boast excellent shopping centers, schools, libraries and theaters. Barrington is connected

*Vice President Way Thompson, 32; Secretary Arthur T. McIntosh, Jr., 28; General Manager Earl T. Chalberg, 40.

with Chicago by the Chicago & Northwestern Railroad's 40-minute commuter service.

While some home seekers might frown on these times and distances, they would probably be cheered by the tax reduction they involve. The Inverness property levy of only \$3.53 per hundred looks good beside the \$8 to \$10 rates charged in Chicago and in Evanston, Oak Park and many another nearby suburb.

In February 1939, when Subdivider McIntosh's land acquisition program was complete, the company's engineer Roy L. LaLonde tentatively platted the site. With due consideration to the rolling topography and the existence of several country roads, streams and woods, he surrounded the golf course with 820 building lots ranging in area from one to three acres, set aside 45 acres for future parks, playgrounds, a shopping center and a school*.

*Inverness already has a nursery school (up to fourth grade) in a specially designed wing of one of its residents' homes.

Although bounded by several highways, traffic through the subdivision was discouraged by the fact that the new network of interior streets intersects these main arteries at but a few points and that its contour-following curves offer few shortcuts to motorists.

Due to the vast size of the tract, McIntosh logically decided to develop it in sections. In June 1939 the first section, flanking two sides of the golf course and called "The Meadows", was definitely platted and improved with streets. A second and adjoining section, "Seldon Woods", was platted this June, bringing the improved area up to 180 acres (see site plan p. 133). The resultant 93 lots were tagged with prices ranging from \$1,000 to \$3,500 in accordance with their size and location.

The one architect. Early in the development of Inverness, McIntosh set out in search of a specialist in the design of country houses, wound up with AIArchitect Bertram A. Weber. His references included a group of attractive residences along Chicago's swank North Shore and another in the more countrified northwestern suburbs.

Since Weber was to design all speculatively built houses in Inverness, their architectural qualities and relation to one another were assured.

To guarantee that the tailor-made houses would follow suit, the subdividers wrote into their detailed deed restrictions (see p. 42) an iron-clad provision that all such houses and accessory buildings as well as all alterations costing more than \$1,000 be 1) designed by a licensed architect, 2) checked by the subdividers, and 3) approved by a committee of three architects—the owner's architect, McIntosh's architect (Weber), and a third architect appointed by the other two. To date this restriction has been needless, for Architect Weber has designed all six of the subdivision's built-to-order (by McIntosh) houses as well as the 30 custom units.

The 36 houses. While this one-man control of house design has helped give the project a unified over-all appearance, it has not limited the individuality of the houses. Thanks to Weber's imagination, many are similar enough in plan to permit the economies of construction standardization; yet no two are alike in exterior appearance. Indeed, their architectural styles include Cape Cod, Colonial, Georgian, Monterey, French and California Modern. The accompanying photographs prove this point, indicate that Architect Weber knows his business.

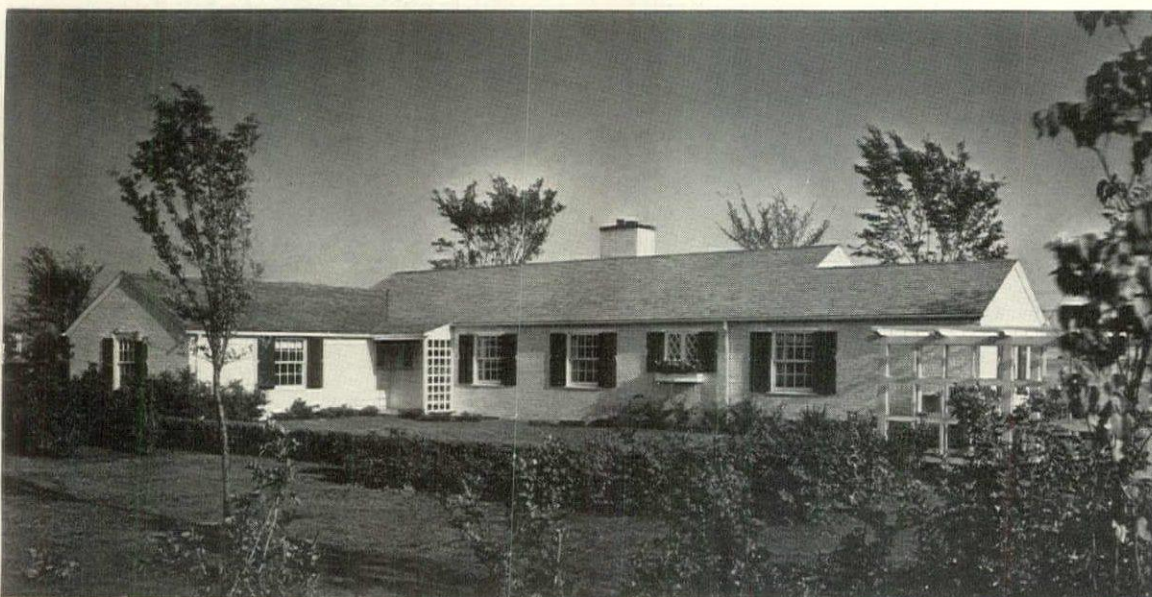
To get his big ball rolling, Subdivider McIntosh built and sold the first few

houses without profit. The others, both tailor- and custom-made, have been sold at prices from \$10,000 to \$17,500, including profit and the \$1,000 to \$3,500 land prices. Average price: \$15,500.

The 33 sales. The company's construction program calls for an inventory of five or six houses on hand at all times, but it was knocked out of kilter last month when two sales in one day cut the inventory to three, boosted total sales to 33. (The supply will soon be replenished by some of the ten new models now in Weber's drafting room.)

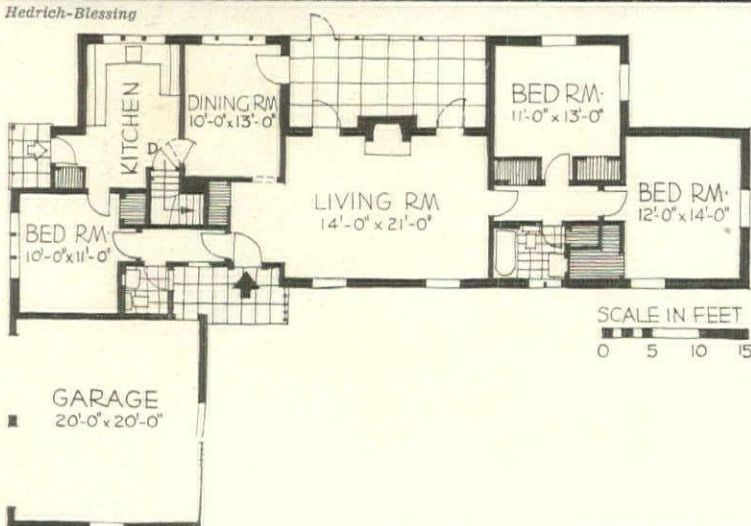
Major portion of these sales is attributable to the company's regular display advertising in two of Chicago's leading newspapers; some of it, to the half-dozen large highway billboards near the property. Direct mail promotion has not been used, and, while unsold houses are open for public inspection, they have not been furnished. Outside realty brokers are encouraged to assist McIntosh's own sales staff, but have yet to move a single house. Company salesmen have accounted for all 33 sales: six in 1939, 15 in 1940, and twelve in 1941's first six months.

All Inverness houses have been built and paid for by the subdividers with hard cash, and several purchase options are therefore available. About 60 per cent of the purchases to date have been financed



Hedrich-Blessing

HOUSE: \$13,000. LOT: \$2,500.



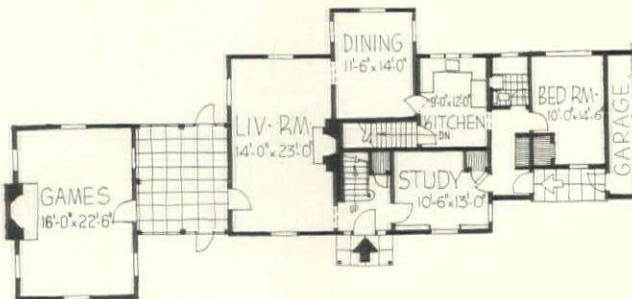
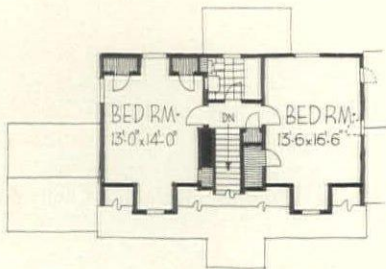
Running the gamut from Modern to Monterey, Inverness houses prove that an attractive community need not be limited to one architectural style, speak well for the versatile talents of Architect Bertram A. Weber. He has designed all of the 36 houses built in the subdivision to date. The house above harks of California, boasts a conveniently located first floor bedroom which may serve either the owner's family, his guests or his maid. Uppermost house on the opposite page is basically French with the traditional frills commendably replaced with modern horizontal accents via the projecting courses of brick. The center house is a rambling Colonial with an almost symmetrical facade. Note that it contains a large first floor game room and five other rooms on this level, but only two second floor bedrooms. The house at the bottom of the page has a flavor of Monterey and, while compactly planned, is the only one of the four which suffers from a dearth of bedroom closet space. All house costs shown on these pages include the cost of driveways, walks, a well and pump, a septic tank and extensive landscaping. Average Inverness house has sold for \$15,500, including the cost of an average one-acre lot.



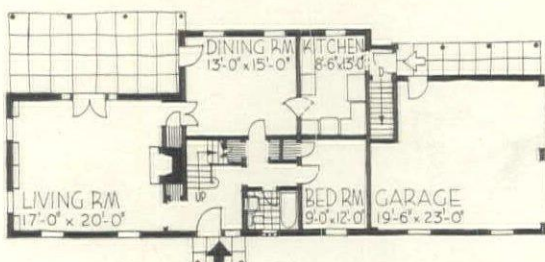
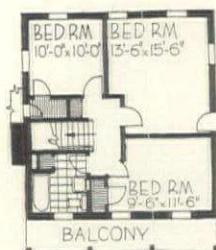
HOUSE, \$11,500. LOT, \$2,000.



Hedrich-Blessing Photos



HOUSE: \$14,500. LOT: \$2,000.



HOUSE: \$15,000. LOT: \$2,250.





HOUSE: \$15,000. LOT: \$2,000.

Hedrich-Blessing Photos

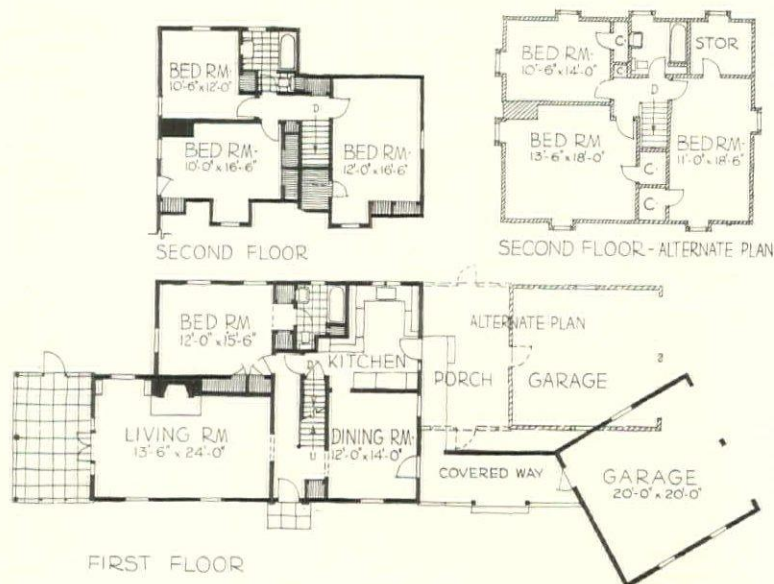
with FHA-insured mortgages involving cash down payments as low as 20 per cent. The other purchasers have either paid the full price in cash or have arranged their financing with insurance companies or individual lenders.

Most of these purchasers have come from Chicago or its North Shore suburbs. On the average, they are 36-year-old junior executives, have a wife and one child, earn \$6,000 a year, work five days a week in Chicago, spend the other two days puttering around their junior estates, playing golf or relaxing on their screened porches—of which each Inverness house has at least one.

The big attractions. In addition to such already-mentioned features as strategic location, low taxes, large lots, expert land planning and house design, Inverness has several other pieces of attractive window dressing. A potent drawing card, the adjacent 100-acre Inverness Golf Club (par 72) is owned by the McIntosh Company which passes on the membership. Needless to say, a family admitted to the subdivision would also pass the club's eligibility requirements, although its membership privileges would be no greater than those of outsiders, its membership fee no smaller.

Another attractive feature of the subdivision is its landscaping—present and prospective. While much of the property is heavily wooded, McIntosh in the spring of 1939 planted 2,600 elms and 1,800

(Continued on page 42)



HOUSE: \$15,500. LOT: \$2,000.





Design standardization at Inverness is apparent in the floor plans of the two houses on the opposite page—but not in their exterior treatment. The main first floor wing of both houses is identical in plan except for fenestration; only major variation is in the position of the garage which is cocked at an angle in the upper house, parallel to the main wing in the lower. Second floor plans are, of course, quite different; the mansard roof of the lower house increases the usable floor area considerably. Both houses are well equipped with closets, and their standardized first floor bedroom is so positioned that it may serve several purposes: guest room, maid's room, study, library, auxiliary living room. Note that the cost differential between the two houses is only \$500.

Photographs on this page were taken inside the house shown at the top of the opposite page. Note the abundance of such built-in features as cabinets, drawers and dining facilities in the kitchen and bookshelves in the living room alcove. Dutch door seen from central hall (right above) provides access between dining room and covered way. Cost breakdown and construction outline (right) pertain to this house.



COST BREAKDOWN by sub-contracts

Excavation & grading	\$361
Masonry	1,310
Well & pump	708
Carpentry	7,922
Plumbing	886
Wiring	350
Tiling	175
Plastering	879
Heating	576
Painting	790
Total	\$13,957

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—8 in. bevel cedar siding, Celotex Corp. waterseal sheathing, 1 in. builders blanket insulation, Wood Conversion Co.; inside—studs, U. S. Gypsum Co. rocklath and plaster.

ROOF: Covered with red cedar shingles.

INSULATION: Outside walls—1 in. builders blanket, Wood Conversion Co. Attic floor—rockwool. Sound insulation (floors)—75 lb. deadening felt.

SHEET METAL WORK: All Armco galvanized iron, American Rolling Mill Co.

WINDOWS: Sash—double hung, Silentite, Curtis Companies, Inc. Weatherstripping—zinc and spring bronze. Glass—double strength, quality A, Libbey-Owens-Ford.

FLOOR COVERINGS: Main rooms—oak. Kitchen and (2nd. floor) bedroom—linoleum, Armstrong Cork Co. Bathrooms—tile and linoleum.

PAINTS: By Pratt & Lambert.

WOODWORK: Cabinets and doors—Curtis Companies. Garage doors—overhead, Barber Colman Co.

HARDWARE: By P. & F. Corbin.

ELECTRICAL INSTALLATION: Wiring system—conduit. Switches—Harvey Hubbell, Inc. Fixtures—Wilmer Snow.

KITCHEN EQUIPMENT: Range—Magic Chef, American Stove Co. Refrigerator—Bohn Refrigerator Co. Cabinets—Curtis Companies.

BATHROOM EQUIPMENT: By American Radiator-Standard Sanitary Corp. Seat—C. F. Church Mfg. Co. Cabinets—Charles Parker Co.

HEATING: Forced warm air system, filtering, humidifying. Furnace—American Radiator Co. Registers—U. S. Register Co. Regulator—Minneapolis-Honeywell Co. Water heater—Everhot Heater Co.



RURAL HOUSE DESIGN BOOSTED

by National Homes Foundation with eight recommended plans.

When a farmer wants a new house, he usually goes to the nearest builder or lumber dealer, asks him to duplicate his neighbor's house. The neighbor's house was probably produced the same way—and so on down the road of amateurly designed houses.

Today this chain may be broken, for the National Homes Foundation has prepared a series of eight well-designed floor plans for farm and village houses. Organized early in 1940 at the request of the

Central Housing Committee (representatives of Government's six housing agencies), NHF is a non-profit cooperative group representing 29 building material manufacturers and 49 building trades associations, including the Producers' Council, manufacturers' affiliate of the AIA.

From several hundred plans submitted by the U. S. Department of Agriculture, state agricultural college housing experts and representatives of the building industry, a joint committee selected the

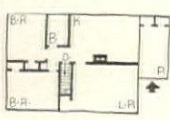
four best farm house plans (left below), the four best village house plans (right below). Forthwith, five manufacturers' associations furnished renderings illustrating the use of their materials in the construction of the eight prize winners.

While working drawings and specifications are available through local material dealers at nominal cost, they are aimed at rural areas where architects are usually few and far between. But, since the designs are uncommonly good and adaptable to low cost construction anywhere, chances are that the NHF stock plans will go wide of their mark, ricochet off urban architects and break the ground in many suburban subdivisions.



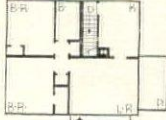
FARM HOUSES

ASBESTOS SIDING

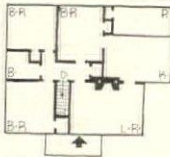


VILLAGE HOUSES

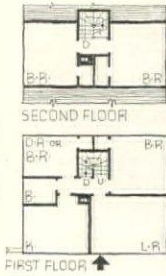
ASBESTOS SHINGLE



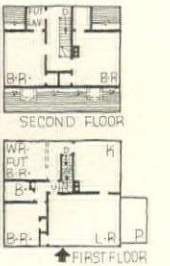
PLYWOOD



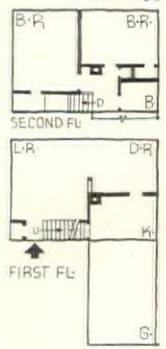
BRICK



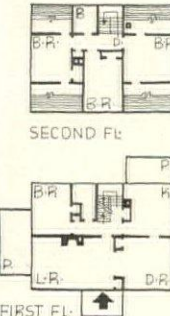
WOOD SHINGLE



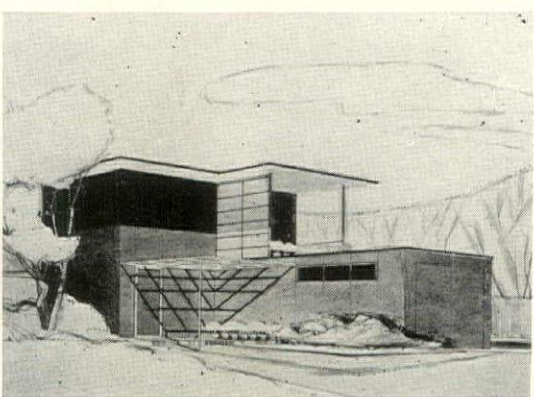
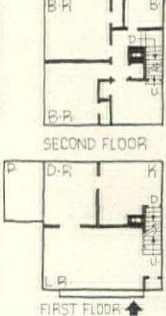
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STRUCTURAL TILE



WOOD SHINGLE



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There is no one method, no one principle of operation that G-E engineers and scientists ever take for granted. When they design a new product they start from scratch.

When G-E decided to enter the home heating field in 1927, it took five years before its first unit was marketed. But when the G-E Oil Furnace made its debut in 1932, it was a sensation. It introduced the new principle of burning oil upside-down...the now accepted Inverted Flame and atomization that breaks each drop of oil into 100 million particles before burning.

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further refinements, maintains its position as the most advanced heating unit. Home owners' records show that it is saving between 25% to 50% of former fuel costs.

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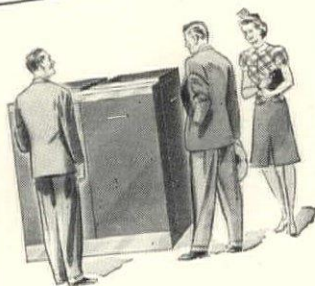
TURN TO



...for the complete line of
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(Here are typical examples)



G-E Oil Furnaces—
(steam, hot water, vapor) seven different sizes for various heating capacities. Year 'round domestic hot water coil optional.

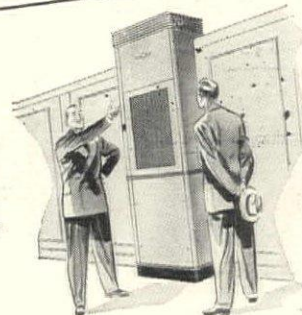


G-E Winter Air Conditioners—(oil or gas fired) circulates warm, clean, moistened air. A single switch provides summer circulation. Cooling equipment can be added.

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for residential, commercial and industrial applications. Capacities range from 76,000 Btu output per hour to 1,372,000 Btu per hour.

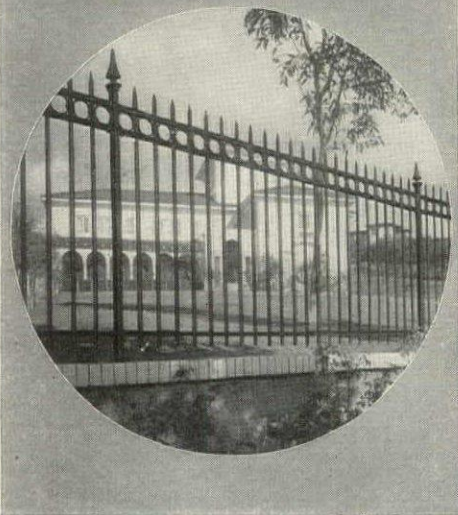


G-E Unit Air Conditioners—for low-cost air conditioning in shops, restaurants, offices, etc. Complete range of sizes. Low in cost. Little or no duct work needed.



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FOR BEAUTY, specify construction which eliminates center supports or ugly cross-bracing. Anchor-Weld Iron Fence Panels require no center support or cross-bracing to mar the beauty of design, yet each panel will support one ton of distributed load. Learn how Anchor-Weld Iron Picket Fence lives up to these ideal Fence Specifications. Mail the coupon below for catalog and a Sample Weld (makes an attractive paper weight). No obligation, of course.

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Please send me Anchor-Weld Iron Fence Catalog
and name of nearest Anchor Fence Engineer.

Name _____
Firm _____
Address _____
City _____ State _____

INVERNESS

(Continued from page 136)

maples in the more barren sections of the tract, has since added 1,700 evergreens, 2,400 lilac bushes, 1,600 buckthorns and 2,000 poplars. When they come of age, 40,000 additional trees and shrubs planted in the Inverness nursery this spring will be transplanted about the 1,484 acres.

Finally, most of the ten restrictions placed on every Inverness deed (see summary, below) serve as an attraction for new home seekers as well as a protection for existing residents.

The remaining 784 lots in Inverness still leave the McIntosh Company with plenty of unfinished business, but, in the light of the size and price range of the project, progress to date is encouraging. Particularly so, is the fact that 1941 sales in six months have almost reached the volume for the whole of 1940, despite the adverse effects of international developments. Says McIntosh's General Manager Earl T. Chalberg: "The national defense program has slowed up deliveries in the pipe and metal trades and, of course, has naturally affected the cost of materials. Headlines have naturally had some effect in retarding sales at Inverness, but even so the Company is carrying out its 1941 construction program as scheduled."

DEED RESTRICTIONS—a summary of the ten covenants to which the purchase of every Inverness lot is subject:

- 1 No building may be erected for manufacturing, industrial or business purposes.
- 2 All buildings must be one-family houses (except such accessory buildings as servants' quarters, garages and other out-buildings) and no more than one house may be built on one lot.
- 3 All one-story houses must have a ground floor area of at least 1,000 sq. ft.; all one-and-one-half and two-story houses, at least 800 sq. ft.
- 4 Before occupancy of any building, a septic tank or other sewage disposal facilities satisfactory to the State health authorities must be provided.
- 5 No advertising sign or billboard may be erected on any lot.
- 6 No stables or other quarters may be erected for the accommodation of "horses, cattle, swine, goats, sheep, bees or fowl."
- 7 No fence or wall may be erected along the thread line or in any part of a brook or stream.
- 8 All houses must be designed by a licensed architect. (For other details of this restriction, see text, p. 134, col. 1).
- 9 Each lot shall have an easement "in, over and upon" it for the use of light and telephone companies.
- 10 No lot may be sold to or occupied by anyone who is not a Caucasian—domestic servants excepted.

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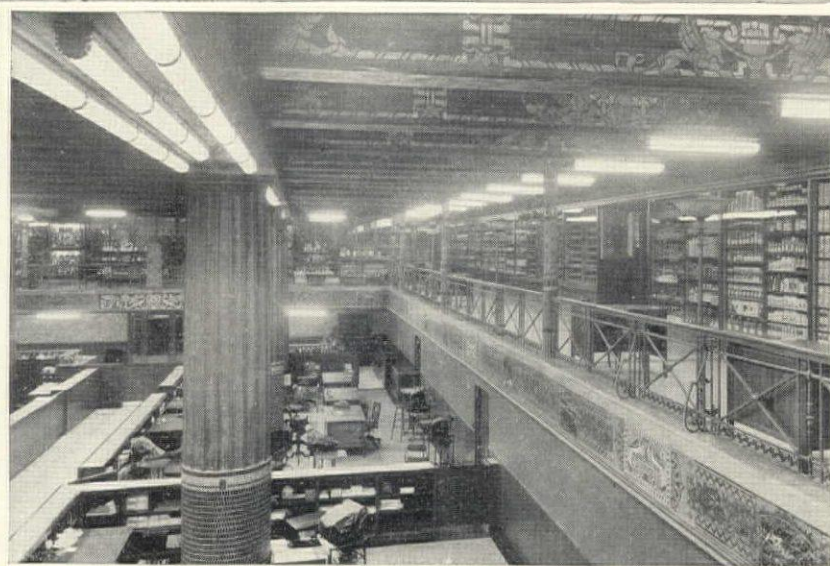
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Westinghouse CL-40 fixtures provide abundant light for seeing and selling in the showrooms of this large West Coast food and liqueur importer.

FLUORESCENT LIGHT for seeing and selling

Ceiling-mounted fluorescent luminaires provide inviting light for seeing and selling in the showrooms of this large West Coast food and liqueur importer.

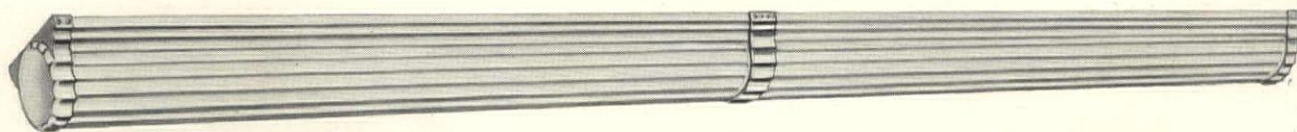
Vertical display cases as well as office desks needed high-intensity, diffused illumination. Dark mahogany ceilings and walls, however, added to an already difficult lighting problem presented by varying office and mezzanine mounting heights.

To "supply the answer," the mezzanine display cases were lighted with Westinghouse Type CL-40 luminaires spaced nine feet apart along the ceiling. Evenly distributed light on the office desks was also provided by six runs of these continuous strip units. The whole lighting system functions as a single light source; minimizing shadows and annoying glare.

Westinghouse engineering experience, as used in this West Coast installation, is available to help you solve your own lighting problems, too. Ask your nearest Westinghouse Lighting Distributor today for descriptive fluorescent folder F-8504; or, write Westinghouse Elec. & Mfg. Co., Edgewater Park, Cleveland, O.

★
Type CL-40 continuous strip luminaires are designed specifically for ceiling mounting. The units, used either individually or in continuous runs, provide high efficiency, cool, glareless illumination for all types of commercial establishments.

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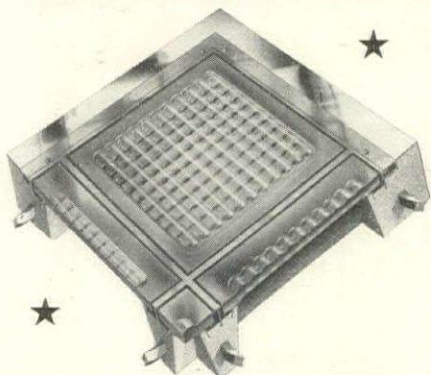
117 Westinghouse Electric Supply Company offices and independent Lighting Distributors provide local stocks and services.

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LIGHTING
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Crow Island School Chooses CLAD CRETE

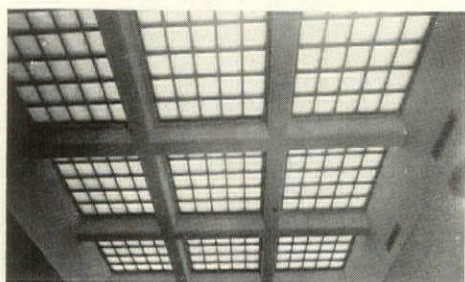


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WEATHER-PROOF • TROUBLE-PROOF
AMERICAN SKYLIGHTING**

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PREFABRICATION

(Continued from page 107)

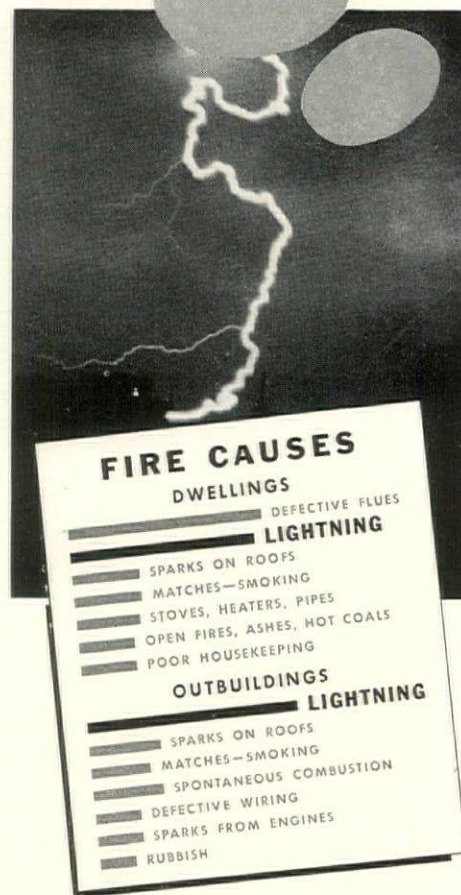
they are being built, two merit individual comment:

Indian Head, Md., as predicted (ARCH. FORUM, Mar. 1941, p. 174), is a farce as a prefabrication demonstration project; it proves nothing that could not have been discovered more economically and more quickly for both Government and the prefabricators in some other way. In other words, the companies which had a good record of prior experience, however short, and a good fabricating plant, have produced good houses at Indian Head. Most other participants have done more harm than good to the industry as a whole by throwing together poorly designed, poorly fabricated, poorly assembled units. Two months after foundations were complete, one prefabricator had only partially completed three of his 60-odd houses, and two weeks later (July 5) another much-ballyhooed beginner had yet to begin his site operations. Fortunately for the industry, it is well known that the Indian Head project is not typical of Prefabrication's potentialities, that Government red tape and bull-headedness prompted several leading prefabricators to withdraw from contract negotiations this spring.

Vallejo, Calif. is the site of the second largest single project in the entire defense housing program (largest: 3,000 units at San Diego), and its 1,692 dwelling units are being prefabricated. The location of the project at the Mare Island Navy Yard was approved by FWA on April 21, and on June 10 Barrett & Hilt won the contract for 992 units to be prefabricated by a local Homasote Co. dealer, while Robert McCarthy landed a contract for the 700-unit balance to be prefabricated by Plywood Structures. Bids of these San Francisco contractors were \$2,790,496 and \$2,025,100, or about \$2,700 and \$2,750 per unit, respectively.

Demountability. While Government has of late showed good sense in calling upon the prefabrication industry to speed its defense housing program, it has not taken a wholly realistic view of Prefabrication's potentialities. Thus, it seems unable to divorce prefabrication from demountability—as is reflected in the fact that of the 13,394 units approved for prefabrication, FWA has required that about 9,400 units or 70 per cent be demountable. While prefabricators alone are capable of producing demountable houses, demountability is a child of the defense program, a factor never considered by prefabricators prior to the emergency. Their experience had been wholly in the "permanent" house field, but their defense assignments to date do not jibe with this fact. Government has yet to recognize Prefabrication's principal function, has yet to benefit thereby.

**CAN ANYONE
AFFORD
TO PLAY WITH
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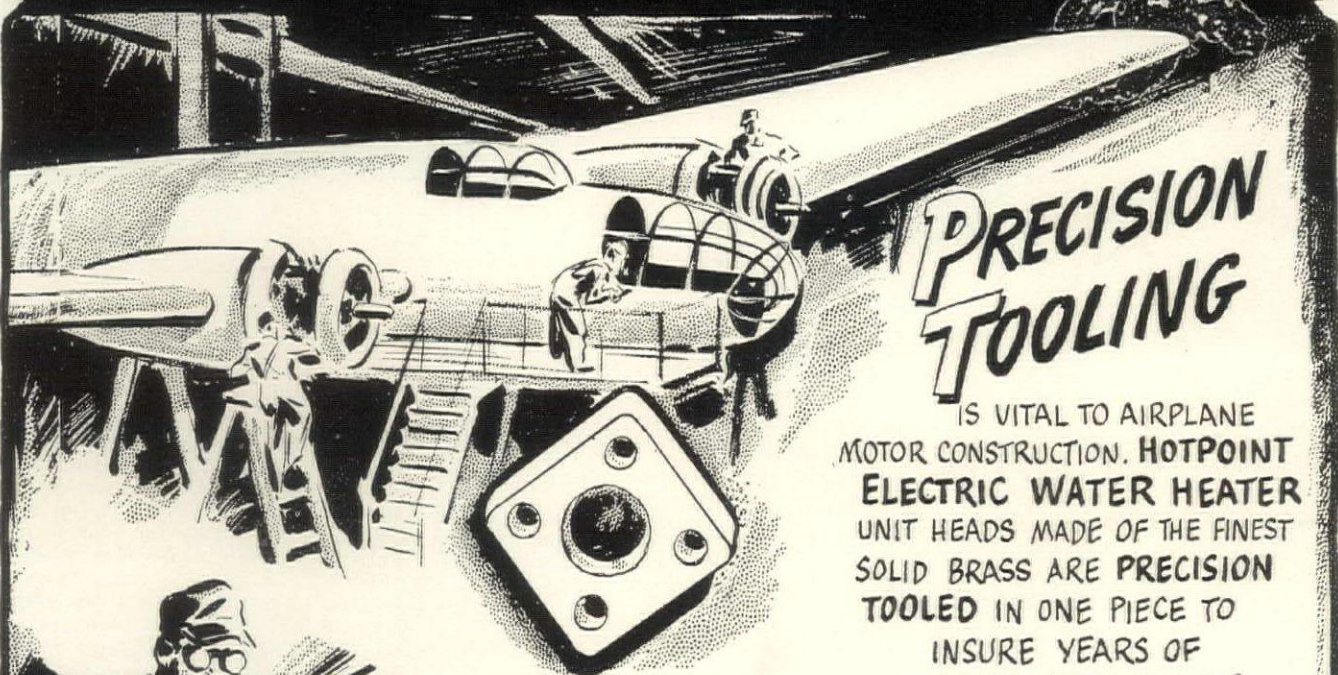
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FREE estimating and engineering service to architects on installations when inquiry is accompanied by blue-prints of all elevations and roof detail showing location of soil pipes, metal ventilators, etc. Write for literature.

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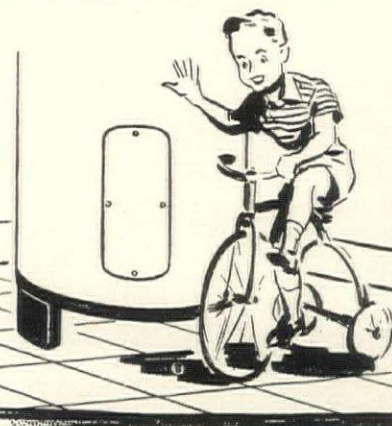
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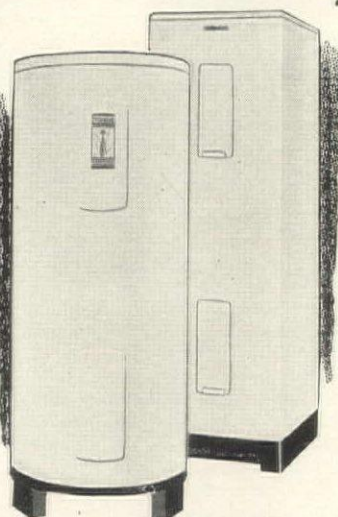
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Hotpoint

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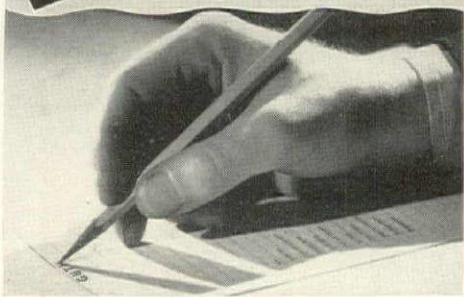
Name

Address

City State

I am an ☐ architect ☐ builder

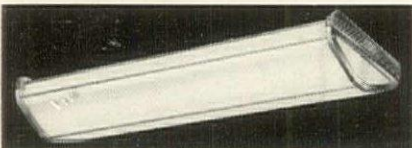
When You Specify **Guth** FLUORESCENT LIGHTING



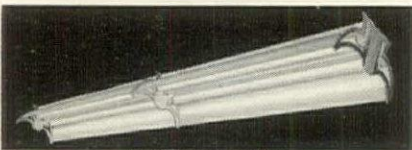
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Today, GUTH Fluorescent Luminaires are built with the designing knowledge and manufacturing facilities developed through 39 years of successful experience. Each GUTH Product is engineered to produce more light and better light at lower Cost—and to distribute that light with scientific control. Write us today for important, helpful facts about modern Fluorescent Lighting.

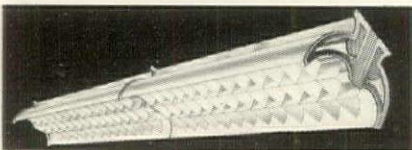
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GUTH Excelux



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"LEADERS IN LIGHTING SINCE 1902"

Guth

HEADWAY AND HEADACHES

(Continued from page 95)

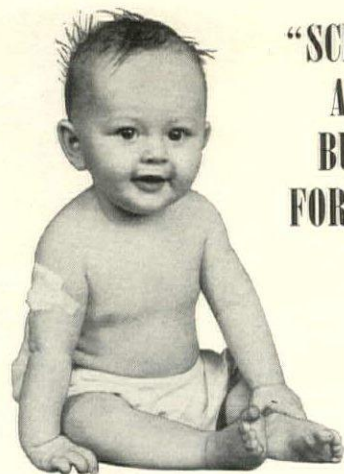
were not willing to live there at the rental figures charged. Where our employees live is a matter for their personal decision. The Company could not control them even if it wishes, which it doesn't. We believe, however, that many employees will choose to live in attractive houses located near their work where the daily traffic hazards caused by inadequate roads can be avoided. We now have 20,000 employees and will soon increase this figure to 42,000. The Federal housing authorities are still committed to build 1,000 houses in the vicinity of the plant. . . . We are doing our job, but the Government housing authorities appear to be falling down on theirs."

One week after this exchange of accusations, Government allocated another 1,000 defense housing units to Baltimore, upped the city's total to 3,085, including the completed Gardens' 700 units. Meanwhile a squadron of Government trailers filled Baltimore's housing gap (see cut, p. 95). When "permanent" housing is completed, the trailer city will be vacated and moved to another trouble center.

LUMBER CEILING

Because the price trend of the upper grades and specialties of West Coast lumber has misbehaved, shot up from \$8 to \$15 per 1,000 board feet, Federal Price Boss Leon Henderson spanked the perpetrators, announced that a price ceiling would be built over their heads. Said he: "While it is recognized that heavy buying of specialties (ship decking, flooring, box car material, etc.) may have been stimulated by unusual conditions, such conditions do not warrant the price advances that have occurred."

Coincident with this pronouncement came an official warning for the Southern and Appalachian hardwood lumber industries. Thus, Price Executive Peter A. Stone of the Lumber, Building Materials and Furniture Section of Boss Henderson's Office of Price Administration and Civilian Supply told an assemblage of furniture makers in Chicago that "within the past two months some of the principal items of lumber that you use have increased \$10 per 1,000 ft. I can assure you. . . that we will not sit idly by and let this situation continue." Stone gave two reasons for the price rise, intimated that neither held water: 1) The lumber industry expects a 5 cent raise in minimum wages to 35 cents an hour and, 2), while this would boost furniture costs less than 25 cents on a \$25 article, the lumber industry expects the furniture industry to hike its prices as much as 15 per cent. His reasoning was that, if furniture prices go up, lumber manufacturers and labor all down the line will say, "While the furniture men are getting theirs, why shouldn't we get ours' . . . and thus you have started the country on the road to inflation."



"SCHOOLS
ARE
BUILT
FOR ME!"

I'm eight months old. My doctor says I have a perfect body . . . A physical education supervisor with twenty years experience, the last eight years of which she devoted to checking the effects of school furniture on the child body, told my father and mother:

"Ninety per cent of the children enter the kindergarten and the first grade with good body alignment. By the time these children finish the third grade seventy-five per cent have poor body alignment. By the time these children finish the fifth and sixth grades the percentage is considerably higher. School furniture should help to improve muscular tone and bone structural development so the perfect body alignment your baby has today at eight months of age will be his throughout life".

Schools are built for me! . . . Naturally, I hope when I enter school—only a few years from now—the furniture I must use will be the kind that helps to keep my body in perfect alignment as it is today.



Utilitone Model 48

Carleton Washburne, Superintendent of Schools, Winnetka, Illinois selected this UTILITONE model 48 for the new Crow Island school . . . The UTILITONE movable pedestal school desk with the body-toning back and seat is available in eleven models.

Write for full details about the Utilitone models . . . No obligations.

Welfare Engineering Co.

ENGINEERS OF SCHOOL SEATING
Waukegan Illinois

MODERN *can* BE BEAUTIFUL

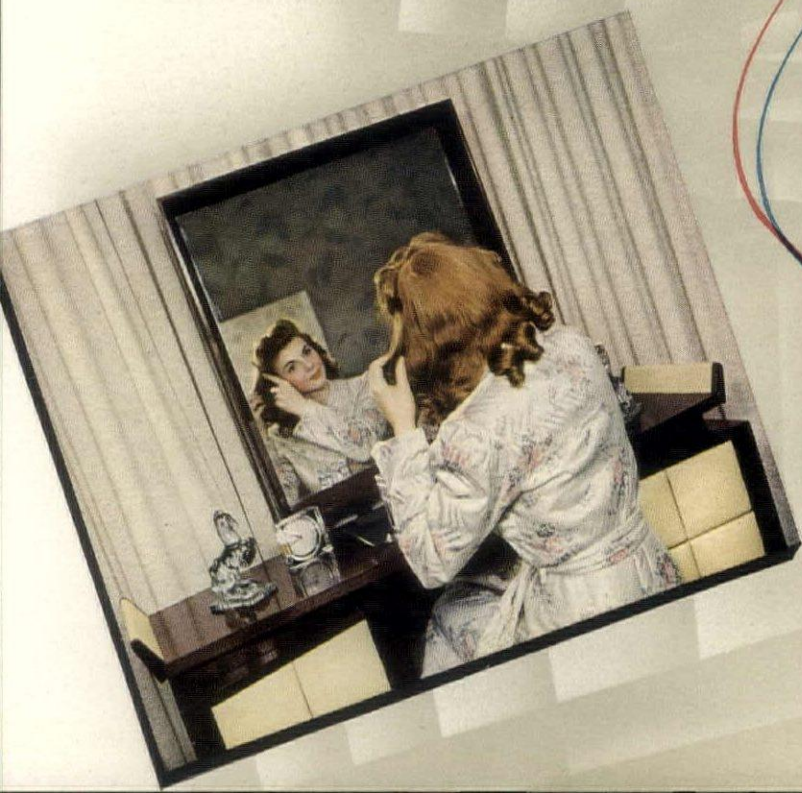
These are no "steals" from the craftsmanship of the past, nor ghosts of the ugly modernism of the twenties. Here is furniture of a new period—Modern American—unconventional, artistic, functional.

In the bedroom, antique-ivory Leatherwove coated fabric covers the headboard of the bed and each individual panel of both dressing table and bureau in a cool, smooth design. Ingenious panel-mounting together with unobtrusive grooves eliminates unsightly drawer pulls.

Sophisticated is the use of Leatherwove on base and legs of the dining room table and again on the panelled walls. Easy to tailor, washable and available in a variety of colors, Leatherwove offers unlimited possibilities in the decorative field.

Chairs are distinguished by little emphasis on woodwork and much on thick, soft upholstery for both seat and back . . . a completely satisfactory way of getting comfort where comfort is most appreciated. Chair upholstery is Velmo, a beautiful, deep-pile fabric, famed for its comfort, quality and inspiring colors and designs.

Because of their reputation for durability, Chase fabrics are honored and respected in every field where upholstery fabrics are used. Design your next interior around Fabrics by Chase. May we send swatches of both Velmo and Leatherwove?

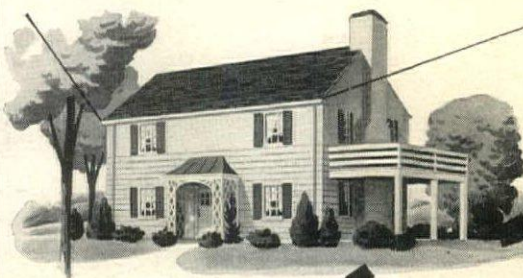
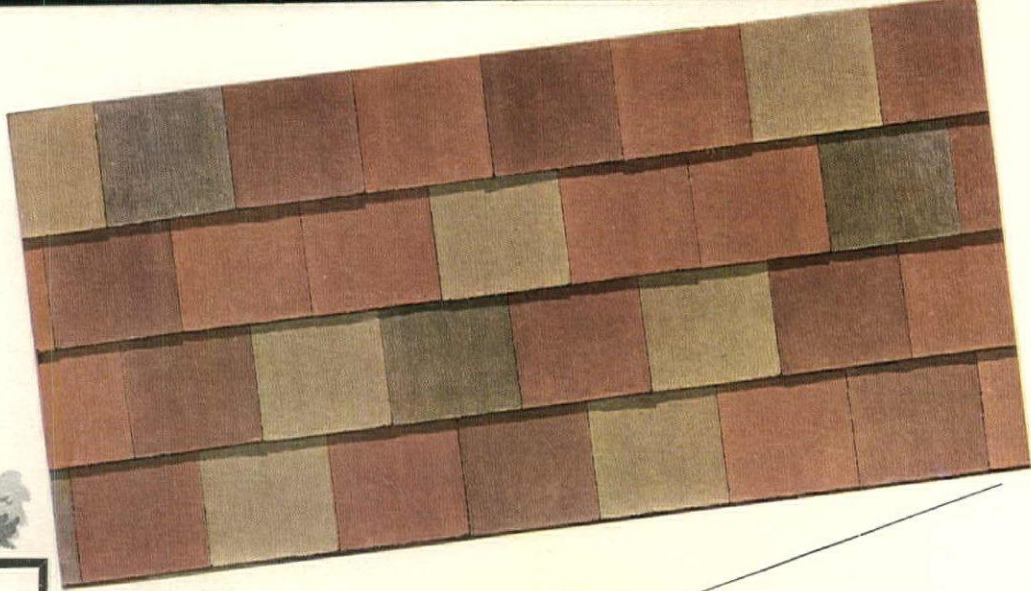


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BRANCHES: BOSTON
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Color-Toning

LETS YOUR FEELING FOR COLOR FIND EXPRESSION IN THE ROOF

Nothing like K&M "Century" Color-Toning has ever been known before. Until now, roof tones have been largely standardized. No sure way has existed for the architect to harmonize a new roof with its surroundings, to "individualize" a roof without at the same time risking a discordant or harsh effect on the finished home, or to insure a faithful interpretation of the roof he has visualized.

Through the development of Color-Toning, Keasbey & Mattison "Century" Asbestos-Cement roofing shingles free you from all these difficulties. "Century" No. 92 shingles, in the special range of tones illustrated here, may be combined and blended in any proportions you desire.

The K&M Architects' Color-Tone Work Kit supplies you with small gummed paper replicas of the shingles. It enables you to design the roof in miniature, fix the proportions and placement of all shingles, and place in the roofer's hands a guide which can't go wrong.

You can show your client exactly how his roof will look. In addition to the wholly new individuality and beauty this method offers, it brings to a home the enduring, economical security of a fire-resisting, weather-resisting asbestos-cement roof. For builders, it suggests an inexpensive way to obtain pleasing architectural variety in residential operations.

Exclusive with K&M "Century" No. 92 roofing shingles, Color-Toning alone provides all these advantages. Other K&M "Century" asbestos-cement shingles, both roofing and siding, are available at even lower cost to insure lasting beauty and protection against fire and the elements.



FREE — Architects' Work
Kit for the visualization of
Color-Toned roofs. Write
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KEASBEY & MATTISON
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LINDENWOLD



OLIVE GREEN



DELL GREEN



OXFORD BLACK



RUST



ROYAL RED



SUNSET RED



HEATHER



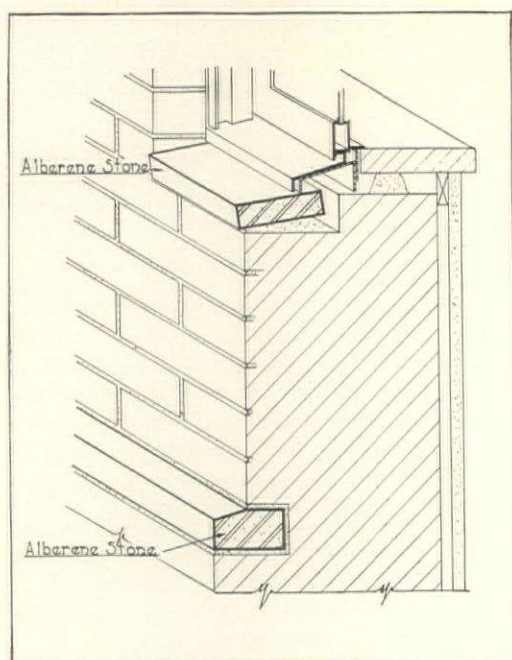
LEAF TAN

The Lindenwold Shingle (above) was reproduced directly from a full-size shingle reduced 6 times in size. The swatches show the eight other colors in the same reduction. Notice the beautiful graining.



Riverside Hospital, Tuberculosis Pavilion, North Brother Island, New York, N. Y., Electus D. Litchfield, Architect.

Sills, coping and trim of Alberene Stone are durable, colorful and economical



Detail showing 1 3/4" thick Slip Sill, and 2 1/4" thick Belt Course of Alberene Stone as used in Riverside Hospital. At circular sections, Sills carry through to form a band course. Alberene Stone used for roof and balcony copings, also.

Alberene Stone is ideal for exterior use because it is impervious to moisture; it does not chip, scale or split. Its natural light blue-grey tone harmonizes with practically any other colors. The fact that it can be cut into thin sections makes for definite economies. Used for sills, coping, spandrels, exterior or interior trim. Alberene Stone is free for all time of maintenance costs. As years pass it weathers to pleasing bluish and greenish tones with glints of yellow. Our Mills in Virginia are the largest in the country devoted to producing special purpose quarried stone. We are prepared to make deliveries promptly of stone in a color range of gray, dark gray, blue, blue-black, dark green and black, in various textures and finishes; and prompt delivery is an important consideration in the present emergency. Inquiries will receive immediate attention.

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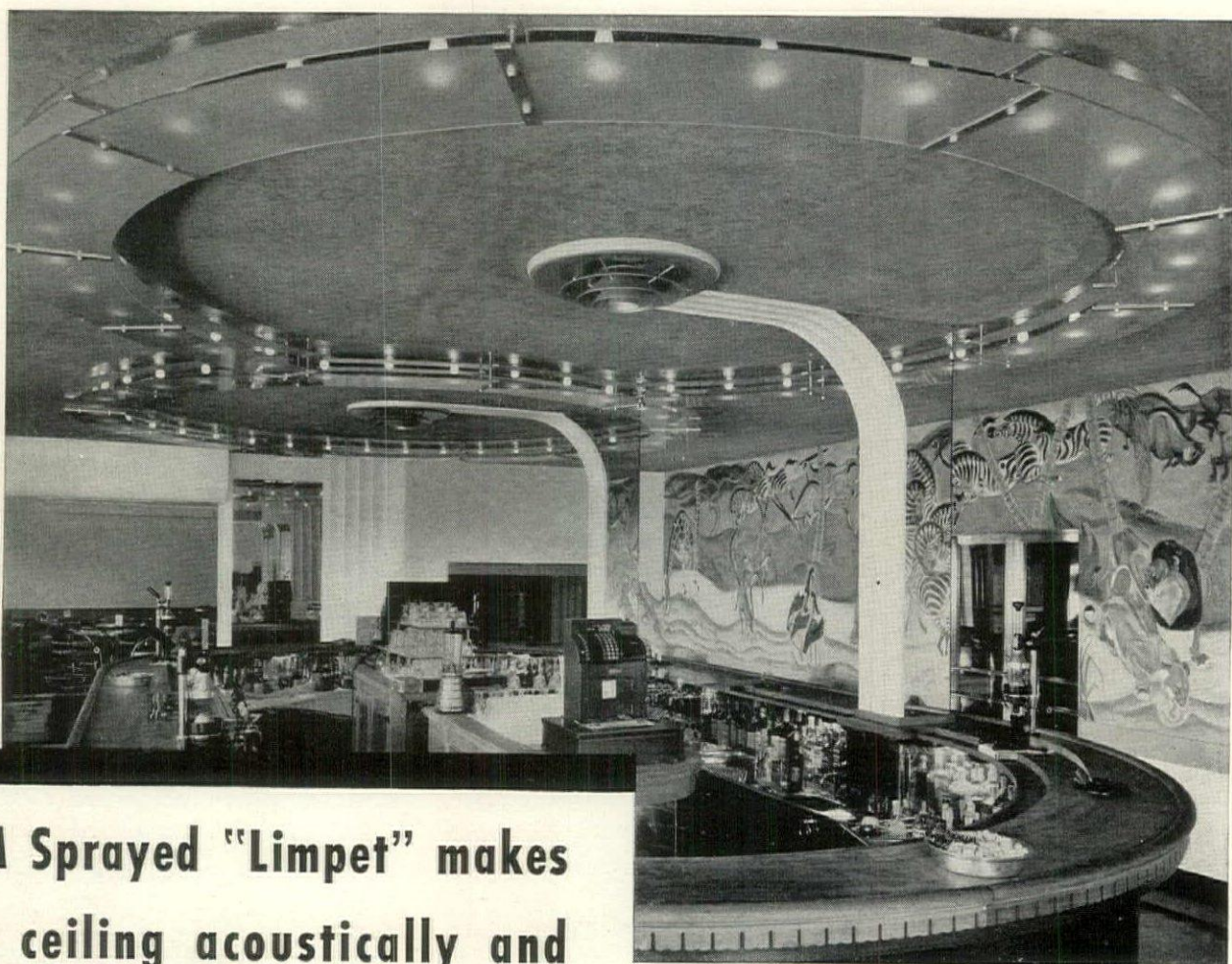
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☞ THE NATURAL STONE OF DIVERSIFIED UTILITY ☞



K&M Sprayed "Limpet" makes this ceiling acoustically and visually QUIET

• Circle bar and cocktail lounge in Hotel Governor Clinton, located in the heart of New York. K&M Sprayed "Limpet" on the ceiling combines full acoustical correction with the plain, unobtrusive appearance so essential in this room.

The modern bar in New York's famous Hotel Governor Clinton was completed in 1938. The "island" design of the serving bar, the colorful murals, and the interesting lighting fixtures combined to make this room an unusually smart gathering place. But there was one drawback. Noises lingered and reverberated. An acoustical ceiling was clearly needed, yet it had to be severely plain, with no geometrical pattern.

Keasbey & Mattison Sprayed "Limpet" Asbestos was the perfect solution for this problem. With its high noise reduction coefficient, it effectively quieted the room. It produced a plain, unobtrusive ceiling. Its natural color blended so well with the decoration of the bar that no paint whatever was needed. Had paint been needed, it could have been applied safely ... as many as ten coats may be used without seriously

affecting the sound absorption qualities of "Limpet."

So successful was this application that "Limpet" was used to correct another troublesome acoustical condition in the Coral Room of the same hotel.

"Limpet" brings you acoustics without geometrics. It follows the contours of curved, recessed or irregular surfaces as readily as flat. Applied by spraying from a "gun," it sticks tight to any clean surface, regardless of shape or composition, without the need of mechanical systems or gadgets. It may be built up to any practical thickness to afford the specified degree of sound absorption per square foot.

"Limpet" is extremely light in weight and fire-resisting. Its thermal conductivity of only .31 at 75°F. makes it a highly efficient heat insulator. Only "Limpet" combines all these advantages.

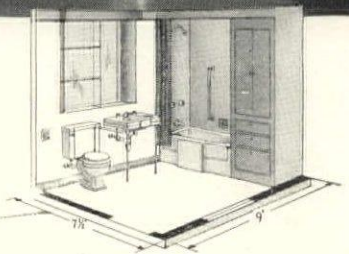
FREE: Write Dept. 23 for new A.I.A. Catalogue giving complete details on "Limpet."

KEASBEY & MATTISON
COMPANY, AMBLER, PENNSYLVANIA





Modern fixture styling helps your planning



ARCHITECTS are finding modern home builders demand glamor in bathrooms—at not too much cost.

How this can be achieved is suggested in this charming new bathroom which is economical in layout, yet extremely practical in serviceability. The illustration shows the *Berkley*, one of the new Crane fixture groups, styled to today's taste, designed to help you plan better—more attractive—more livable bathrooms.

You can see the *Berkley* group, as well as

other Crane fixtures, at your nearest Crane display room. Here you will also receive all the assistance you need in selecting plumbing and heating fixtures to fit any house you may be designing—in any price class.

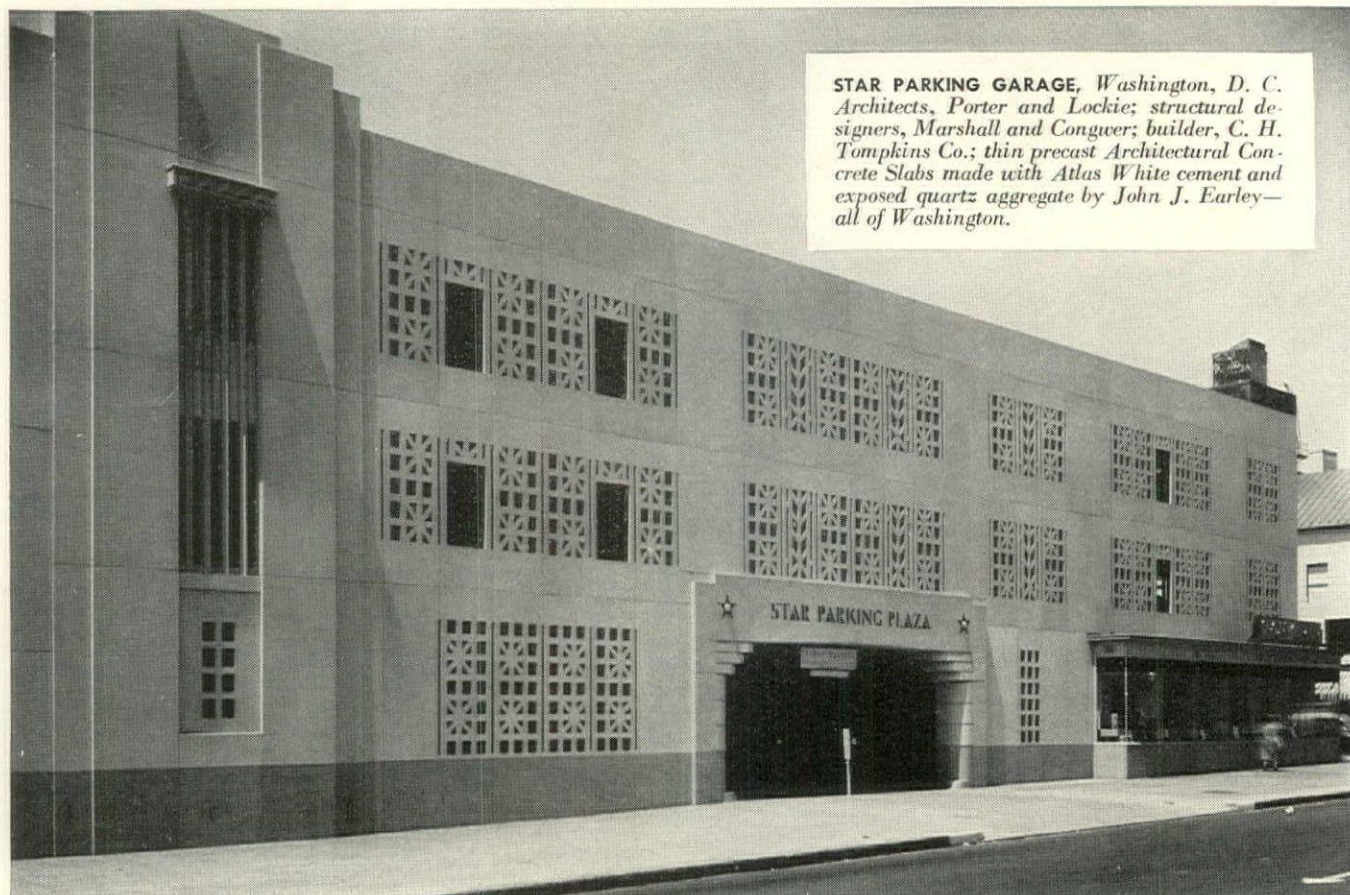


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LACE CURTAINS



STAR PARKING GARAGE, Washington, D. C. Architects, Porter and Lockie; structural designers, Marshall and Conger; builder, C. H. Tompkins Co.; thin precast Architectural Concrete Slabs made with Atlas White cement and exposed quartz aggregate by John J. Earley—all of Washington.

Building costs cut five ways with unique application of Architectural Concrete Slabs precast in large, thin, varied shapes

THIN, precast Architectural Concrete Slabs, hung like lace curtains from floor to floor, form the decorative walls of the Star Parking Garage, Washington, D.C. These slabs are only $2\frac{1}{4}$ in. thin, yet heavily reinforced with steel they give strengths of more than 7,000 psi. This combination of flexibility, strength and beauty enabled the architects to save money in these five ways:

- 1—Eliminated the need of heavy masonry walls;
- 2—Reduced the support such walls normally require;
- 3—Served as forms for the fender curb on each parking floor;

4—Eliminated need and expense of all fenestration because perforations in the slabs took the place of windows, admitting light and providing ventilation;

5—Eliminated the cost of a sprinkler system because grillwork walls and large floor openings qualified the building as an open-air garage.

Thin, precast Architectural Concrete Slabs offer new freedom in design, since they can be cast in almost unlimited range of shapes and sizes. For this job, the slabs measured $3\frac{1}{2}$ ft. x $9\frac{1}{2}$ ft. x $2\frac{1}{4}$ in. thin. Materials were Atlas White cement and exposed yellow quartz aggregates, reinforced with heavy

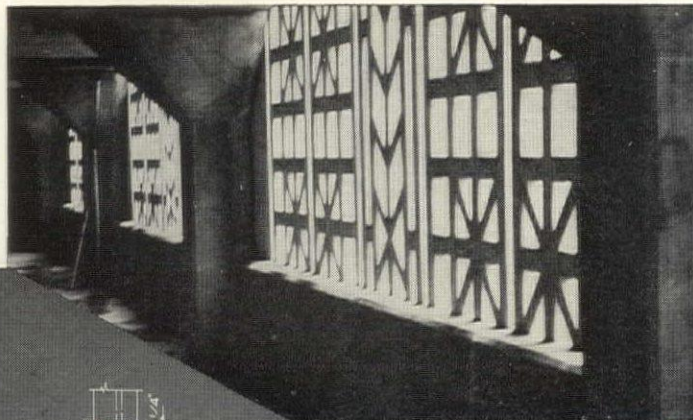
rod galvanized welded mesh. Their large size cut erection time and reduced the number of joints ordinarily required.

Write for further information, or see SWEET'S CATALOG—Section 4. Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), Chrysler Building, New York City. OFFICES: New York, Chicago, Philadelphia, Boston, Albany, Pittsburgh, Cleveland, Minneapolis, Duluth, St. Louis, Kansas City, Des Moines, Birmingham, Waco.

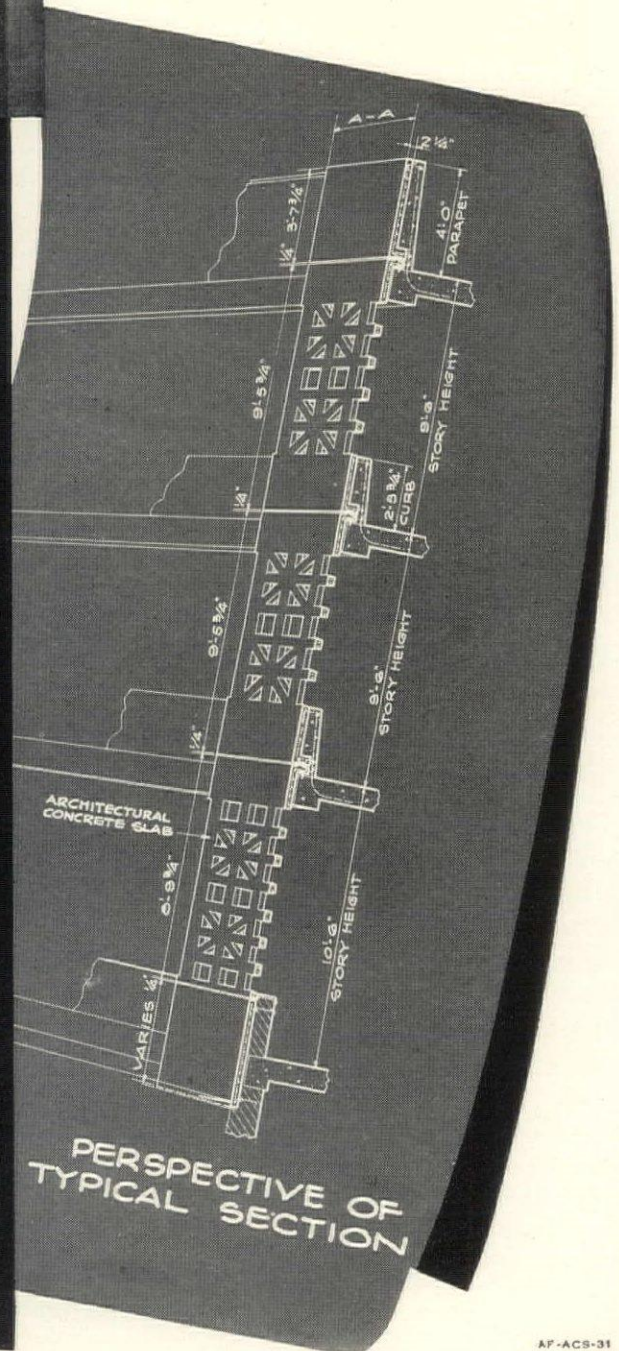
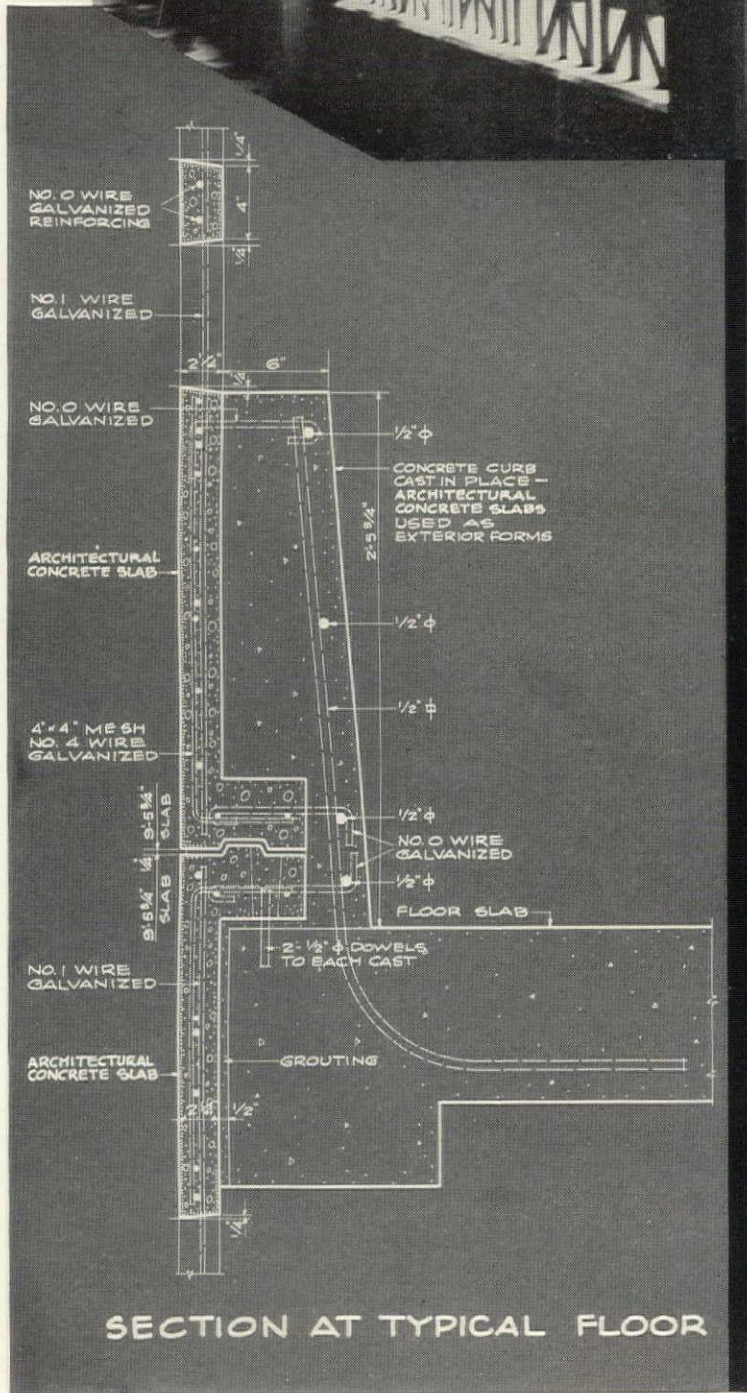


ARCHITECTURAL CONCRETE SLABS

OF CONCRETE



LACY GRILLWORK of 2¼-inch thin precast Architectural Concrete Slabs shown both in the photos and in the detailed plans below. Erection is simple and anchorage is firm. Each slab is a full story high and is anchored top and bottom with lugs, dowels, and reinforcing ties extending into the fender curb. The lugs, fitted with tongue and groove, are cast monolithically with the slabs, and the slabs were used as outer forms for the fender curb.



AF-ACS-31

MADE WITH ATLAS WHITE CEMENT



LOUISVILLE SURVEY

(Continued from page 96)

or 5 per cent, which we would consider as normal."

Rents in the Louisville area have jogged upward, and indication is that they will continue up until housing demand and supply are balanced in mid-1942. "While in many isolated cases the rent increases have been excessive and have worked hardships on the tenants, a general increase is justified and can be expected. . . . It is a healthy condition and naturally follows the law of supply and demand." On a national basis, rents have crept up from a low of 63 per cent (of the 1923-25 average) in 1933 to only 70 per cent in 1941, while all other components of the

cost of living have rebounded to levels ranging from 78 to 100 per cent. Moreover, Louisville rents have been continuously under the national average during the past 16 years, are now some 25 per cent below.

On the basis of these facts, the Wenzlick report advises against rent control, warns that "if rents are frozen, private building . . . would shrink to insignificant proportions. This has been the universal experience in communities which have tried it." To a major argument of rent control advocates that "if rents are frozen at the present level, increased consumer income would result in an effort on the part of the great majority of families to move to better and more commodious houses," Wenzlick counters, "this alone would create a housing shortage in any

community even though no additional population were added. . . . This moving up would be highly desirable if it could be accomplished, but it cannot be done during the emergency as the very freezing of rents, which would seem to make it possible, would prevent the amount of building necessary to its accomplishment."

Costs. In line with the national trend, Louisville building costs have risen faster than rents; they shot 16.3 per cent skyward during the twelve months ended February 1941. This means that a house built for \$5,000 at the beginning of the period would have cost \$5,815 at the end. Comments Wenzlick: "The sharp rises of the past in costs will slow down as construction employment drops off in Louisville defense areas."

Interesting commentary on both rent and cost boosts is a statement in the Louisville report which follows a general discussion of defense production, curtailed consumer production, inflation and Government's efforts to control the upward price spiral: "It is self evident that during the period of the defense emergency the average standards of living in the U. S. must decline, as there will be a smaller amount of non-defense production to distribute. That this is contrary to the expectations of the mechanic who looks forward to the more abundant living which he thinks his high wages on defense projects will enable him to secure for his family does not alter the underlying fact that you cannot distribute more than you can produce."

Government housing, according to the survey, would not help mitigate Louisville's problem. "We believe that it would discourage more private building than it would be able to produce itself."

Recommendation review. From the foregoing synopsis, it is apparent that Wenzlick's recommendation to Louisville was a private enterpriser's dream: 1) increased private building, 2) saturation of the existing housing supply, 3) no rent control, 4) no "permanent" Government housing for civilian defense workers. In brief and in general, the survey's conclusion was one of *laissez faire*. And, while this attitude today is usually open to question, experience has thus far proved it to be the proper prescription for Louisville. To wit: Government officials whose eagle eyes are trained on all defense housing hot spots have not considered the Louisville problem severe enough to merit Federally financed defense housing projects for civilian workers. Obvious conclusion is that private enterprise is handling its assignment well. If it falls down on the job, a red danger light will blink in the continuing survey of Louisville housing conditions which a committee of *Times* and *Courier-Journal* readers is conducting. This survey will keep the Wenzlick report up to date, will recommend action where necessary.



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More Efficient Workers

For better working conditions, calk all door and window frames, as well as other exposed building joints, with Pecora Calking Compound. No drafts, dust or moisture seepage is possible when this permanent material is properly applied. For Pecora will not dry out, crack or chip. It helps maintain more uniform temperatures in air conditioning and will show a desirable saving in fuel costs. Pecora is so dependable in performance that it has warranted the continued specification of leading architects since 1908.



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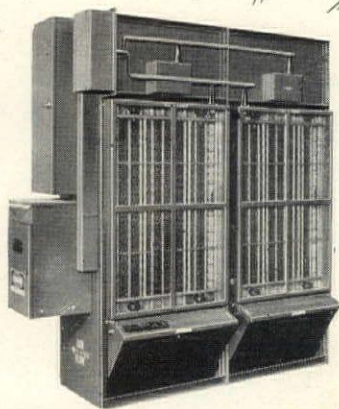
PECORA CALKING COMPOUND

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Dust, Soot, Smoke EVEN *Oil Vapors and Welding Fumes*

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WHEN THE AMERICAN
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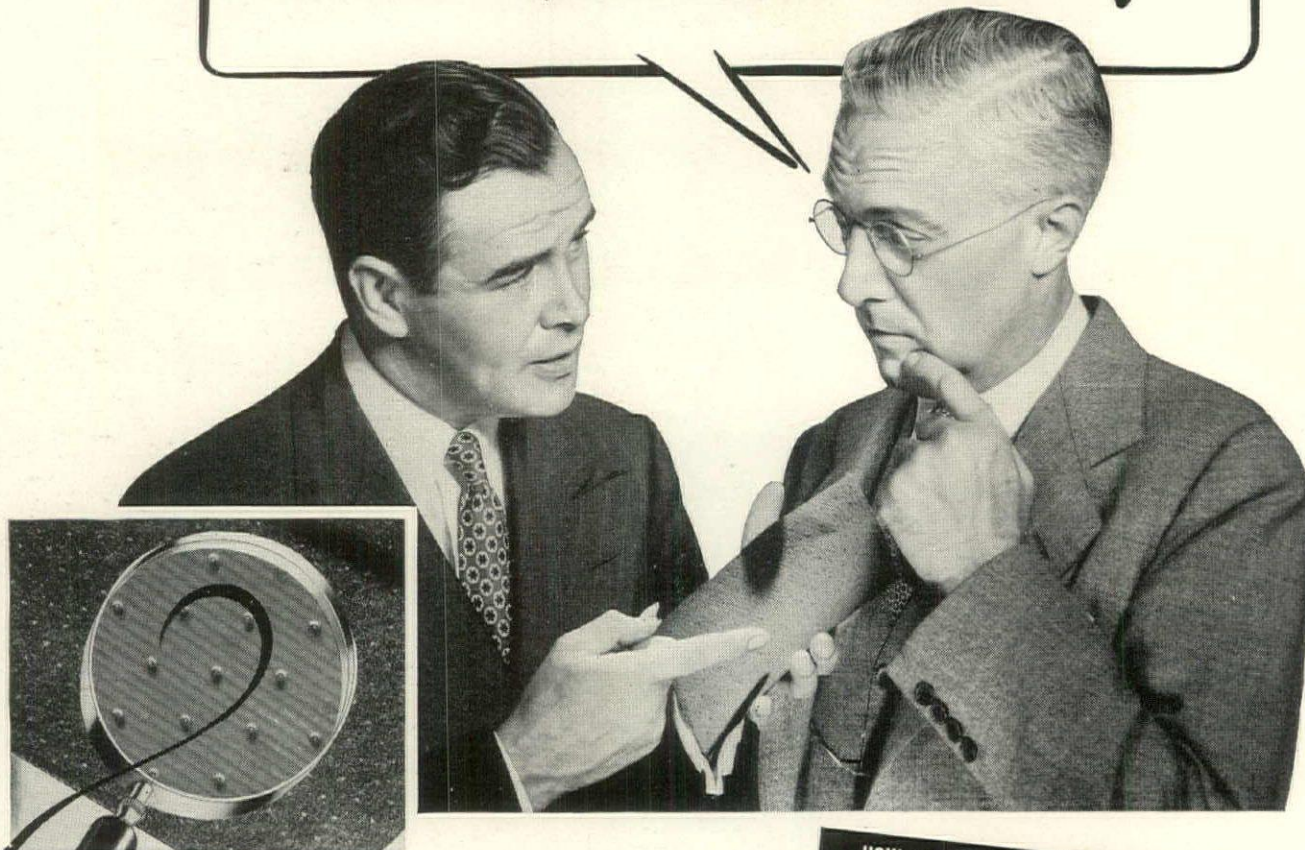
Since air filtration is universally recognized as a basic part of any air conditioning system—the only problem confronting the designer is the choice of the *right* filters. Where the highest degree of air cleanliness is required the AAF Electro-Matic filter stands out as the most efficient self-cleaning air filter on the market today. It removes not only the atmospheric dust and soot that is collected by other types of filters but also smoke and fine dust particles of microscopic size not previously collected.

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For industrial air cleaning the Electro-Matic also arrests oil vapors and welding fumes thus safeguarding health and increasing the personal efficiency of employees. This factor has become increasingly important in the defense industries. The interesting story behind the development and application of the Electro-Matic precipitator is told in AAF Bulletin No. 250C. Write for your copy. There is no obligation, of course. Please address 194 Central Avenue, Louisville, Kentucky.

AMERICAN AIR FILTER CO. INC.
INCORPORATED
LOUISVILLE, KENTUCKY

WHAT!...PUNCH HOLES IN A ROOFING FELT?

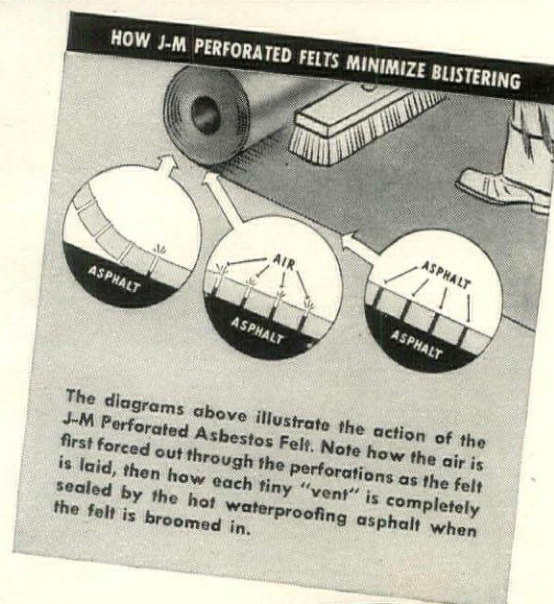


Millions of tiny holes in J-M Perforated Asbestos Felts make a better built-up roof . . . minimize blistering . . . save application costs

J-M's revolutionary "perforation principle" works like this: When the roof is laid, millions of tiny holes in J-M Perforated Asbestos Felts act as "safety valves"! . . . permit trapped air to escape. That means a roof virtually free from troublesome blisters. And once the felts are in place, the waterproofing asphalt completely seals the minute perforations.

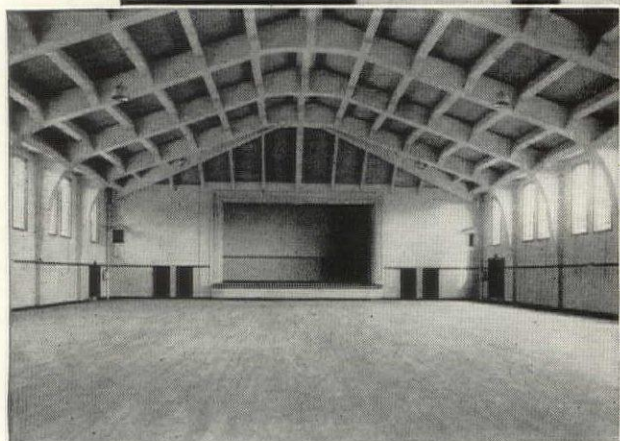
J-M Perforated Felts have other advantages, too. Flexible and easy to handle, they are quickly broomed into place. And they fit snugly to the roof deck . . . adhere tightly to each other. Result: lower application costs, a better built-up roof!

Made of asbestos, J-M Perforated Felts are rotproof, fire-resistant . . . need no protective coating to withstand the drying-out action of the sun. Get *all* the facts—send for free 48-page book, "Things You Should Know About Your Roof." Johns-Manville, 22 East 40th Street, New York, N. Y.

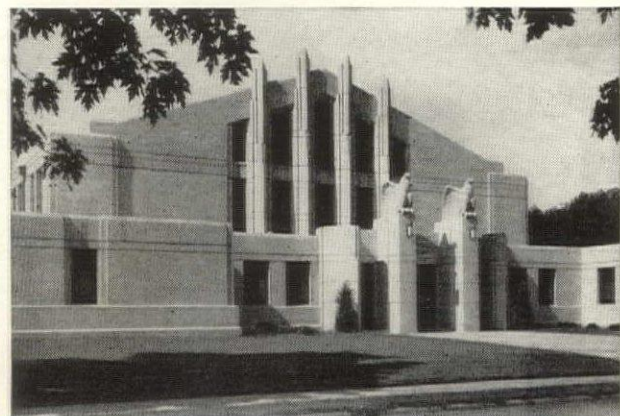


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**THE ROOF
WITH THE SAFETY
FACTOR**



Firesafe concrete rigid-frame roof bents span the big drill halls.



General view of the armory at Pontiac, Ill., showing the pleasing appearance of these structures.

● (Top view) Even the eagles are concrete. Eleven of the 13 new Illinois armories are architectural concrete; the remaining 2 use concrete as the chief structural material. S. Milton Eichberg, supervising architect.

Illinois Builds Eleven Armories of **ARCHITECTURAL CONCRETE**

The new Illinois National Guard Armories in eleven Illinois cities, recently completed in concrete, are a source of pride to the people of the state. Concrete helped achieve distinctive, monumental design, interesting wall surfaces and pleasing ornamentation. First cost was low; concrete's enduring strength, low maintenance and firesafety are a guarantee of the future.

Your architect can tell you how these advantages of concrete can be applied to your new public, commercial or industrial building. See Sweet's 1941 catalog 4/49, or write us for literature, mailed free in the U. S. or Canada.

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Dept. A8-7, 33 W. Grand Ave., Chicago, Ill.

A national organization to improve and extend the uses of concrete . . . through scientific research and engineering field work

INSURANCE HOUSING

(Continued from page 132)

only 1/2 per cent of these companies' assets are so invested. Thus, even if similar legislation were enacted throughout the nation, chances are slim that more than a small part of the insurance companies' excess investment funds would trickle into common stocks.

Housing. On the other hand, there is considerable hope for direct insurance company investment in large scale housing projects and other real estate developments. In the first place, there have already been several successful experiments in this direction. Metropolitan Life's \$9.5 million low rent housing project in New York City's borough of Queens has consistently

netted 6 per cent — except during the depths of depression. And, its almost-complete Parkchester, a \$55 million 12,000 family project in the borough of the Bronx (ARCH. FORUM, December 1939, p. 412), is expected to do at least as well. (Less shiny are Prudential's two Newark, N. J. examples which have suffered from poor planning.) Moreover, this type of investment has proved safe and profitable for foreign insurance companies—particularly in France—whose intentionally owned real estate accounts for a bigger part of their total assets than does unintentionally owned (foreclosed) real estate in U. S. companies—18 per cent and 6 per cent respectively.

In response to FORUM queries, insurance company investors have put forth a trio of

sound reasons for favoring direct real estate investment over common stocks: (1) A large, well-planned, well-managed project is more stable and at least as profitable as an equal investment in a "blue chip" common stock issue. (2) Good management is insured through direct ownership by the insurance company and does not involve the onus of monopoly. (3) There is already enabling legislation in three of the most populous, poorly housed States: New York, New Jersey and California. (4) Low cost, low rent housing fills a recognized sociological need, and in view of the public relations problems of insurance companies housing would win wide public acceptance.

Barriers. There are, however, several potent counter-balancing factors which have retarded the movement toward direct housing investment and will probably continue to do so: (1) Land costs in large urban areas are prohibitively high. (2) It is difficult to assemble large enough tracts to permit the economies and control inherent in large scale operations. (3) Government's entry into any field prompts insurance companies to pull in their horns; through the U. S. Housing Authority, Government has already gone \$800 million deep into the low rent housing field. (4) Enabling legislation, such as New York State's Limited Dividend Housing Law, concentrates too much control in the hands of Government. (5) These laws are frequently restrictive beyond reason — New Jersey insurance companies may build only in the largest ("Class A") cities. (6) In many cases the construction of a new low rent project by an insurance company might undermine the occupancy of its older foreclosed properties. (7) Few insurance companies are large enough to build necessarily large projects without concentrating too many of their investment dollars in one basket. Prime doctrine of insurance company investors is diversity. (Parkchester alone accounts for 1 per cent of the assets of the nation's largest insurance company.)

Although the cons outnumber the pros for direct housing investment, the favorable factors are weightier and may eventually lead to more insurance company activity in the field. In fact, Metropolitan is now building two large projects on the West Coast (ARCH. FORUM, Feb. 1941, p. 2; Apr. 1941, p. 4) and at least one other company is seriously considering the advisability of erecting several comparatively small projects in upstate New York communities. Still another company has under advisement the possibility of direct investment in commercial real estate projects. Passage of satisfactory enabling legislation in other States might hasten this trend. And, the smaller insurance companies might become interested in the field if they were permitted to band together for the construction and operation of large projects, thus spreading their risk and obtaining the all-important diversification of investment.



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Richmond provides you with patented pre-fabricated form-tying devices specifically engineered for tying and anchoring concrete forms of every kind—from light wall construction to heavy engineering structures. Each Richmond product has inherent and exclusive advantages. You save money with them. You save time with them. You do a better job with them. Prove it? Gladly! Just ask.

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Take point #2. Time after time contractors find they need only half the number of Richmond Tys as when using "make-shift" devices. That's why you, too, will find Richmond costs you less!



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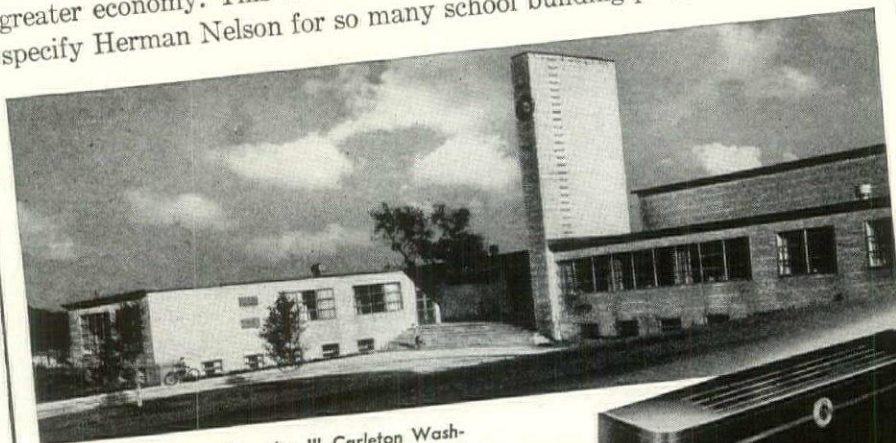
HERMAN NELSON UNITS INSTALLED IN NEW CROW ISLAND SCHOOL

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Crow Island School, Winnetka, Ill. Carleton Washburne, Superintendent. Perkins, Wheeler & Will and Eliel and Eero Saarinen, Associated Architects. Maurer Engineering Co., Heating Contractors.



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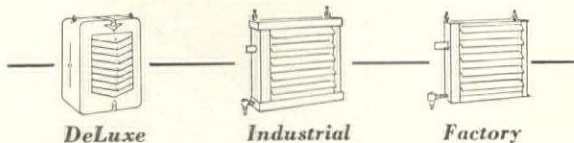
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THE UNIT HEATER WITH 14 POINTS OF SUPERIORITY

LETTERS

(Continued from page 26)

Forum:

... The channels of capital which flow into housing production must be broadened, deepened, and above all cleared of obstruction and stagnation. 'Investment housing,' private even more than public, must take the place of speculative housing. Housing is today the durable goods industry subject to the largest potential expansion; that expansion will not take place at all, and certainly not in a healthy manner, until we develop large opportunities for secure, long-term investment at a reasonable rate of return in housing, just as such opportunities have been developed in other durable goods industries. . . .

Building must recognize that the occupant pays for the cost of living in a house; and that construction economy is but one ingredient in a compound of costs which includes maintenance, insurance, durability, recurrent utility charges, etc. All these items must receive attention at the stage of initial planning, lest a dime saved at the start cost a dollar in the long run.

... This problem of financing and investment is the greatest challenge to housing, and in a sense the greatest challenge that will face our post-defense economy. . . .

LEON H. KEYSERLING

Deputy Administrator and
General Counsel
Federal Works Agency
U. S. Housing Authority
Washington, D. C.

Forum:

... The proposed article contemplates that the great bulk of post-war construc-

tion will be done by private enterprise. . . .

I think this is an entirely mistaken point of view. After the war we shall need an expansion rather than a contraction of public enterprise. The most pressing job will be the rebuilding of homes of sub-standard nature especially for the lowest income group. This can only be done by public enterprise. For doing this job we must find entirely new economic solutions not yet envisioned. Democracy must find means for insuring the full use of men and machines. If it does not, it will fail. The nation can afford to build itself a decent place in which to live for it has a productive capacity to do so. . . .

WARREN JAY VINTON

Chief Economist and Planning Officer
U. S. Housing Authority
Washington, D. C.

Forum:

... "Shorter-lived" buildings struck me between the eyes. My first reaction is highly unfavorable. I am thinking of the long term installment mortgage, and the pride of unencumbered ownership to which the buyer is entitled when his years of struggle have cleared the debt. I am thinking of homes which have housed three and four generations, to which children's children still point with pride as an ancestral home. I am thinking of the mortgage lender and his insistence upon high standards of construction in the security which he accepts. But then I am compelled to remember that in our shifting populations the homestead for generations is becoming a rarity almost unique, and that the efficiency and initiative of American industry is measured by the size of the scrap heap. Perhaps you have something there. I do not know. It will take a lot of thinking. . . .

FREAS B. SNYDER

Upper Darby, Pa.

Forum:

... Housing, it would seem to me, should be treated very differently than consumption goods, or items of short life like the automobile where a changing style and advancing methods produced every year or so, an article so basically improved that the owner seeks the newer model. I am rather in favor of keeping buildings up-to-date by careful and continuous modernization. I can see some advantages to the construction industry in the building of short-lived buildings and the coming of fads in that particular; however, I believe such a policy would involve a stupendous waste of wealth which this nation can not afford; there has been much of that waste in the past. . . .

WALTER S. SCHMIDT

Cincinnati, Ohio

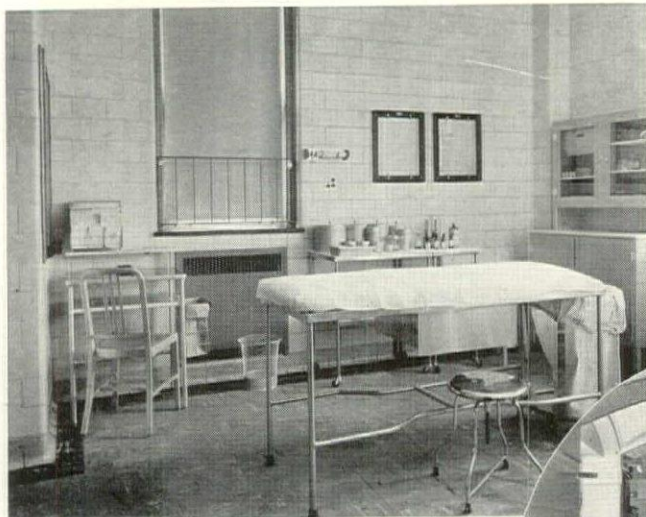
Forum:

... Architects everywhere will be grateful to THE FORUM for the series of articles you propose. They will be permanently grateful if THE FORUM will develop a plan of action that will bring sense to the present system of wasteful building. . . .

E. D. PIERRE, President

Indiana Chapter, A. I. A.
Indianapolis, Ind.

(Continued on page 64)



Operating Room,
Children's Memorial Hospital,
Chicago



Main Lobby,
Children's Memorial Hospital,
Chicago
Puckey & Jenkins, Architects



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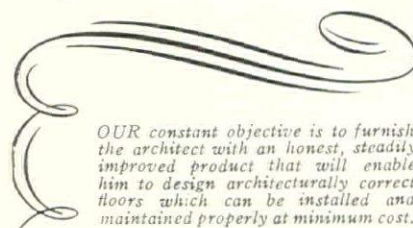
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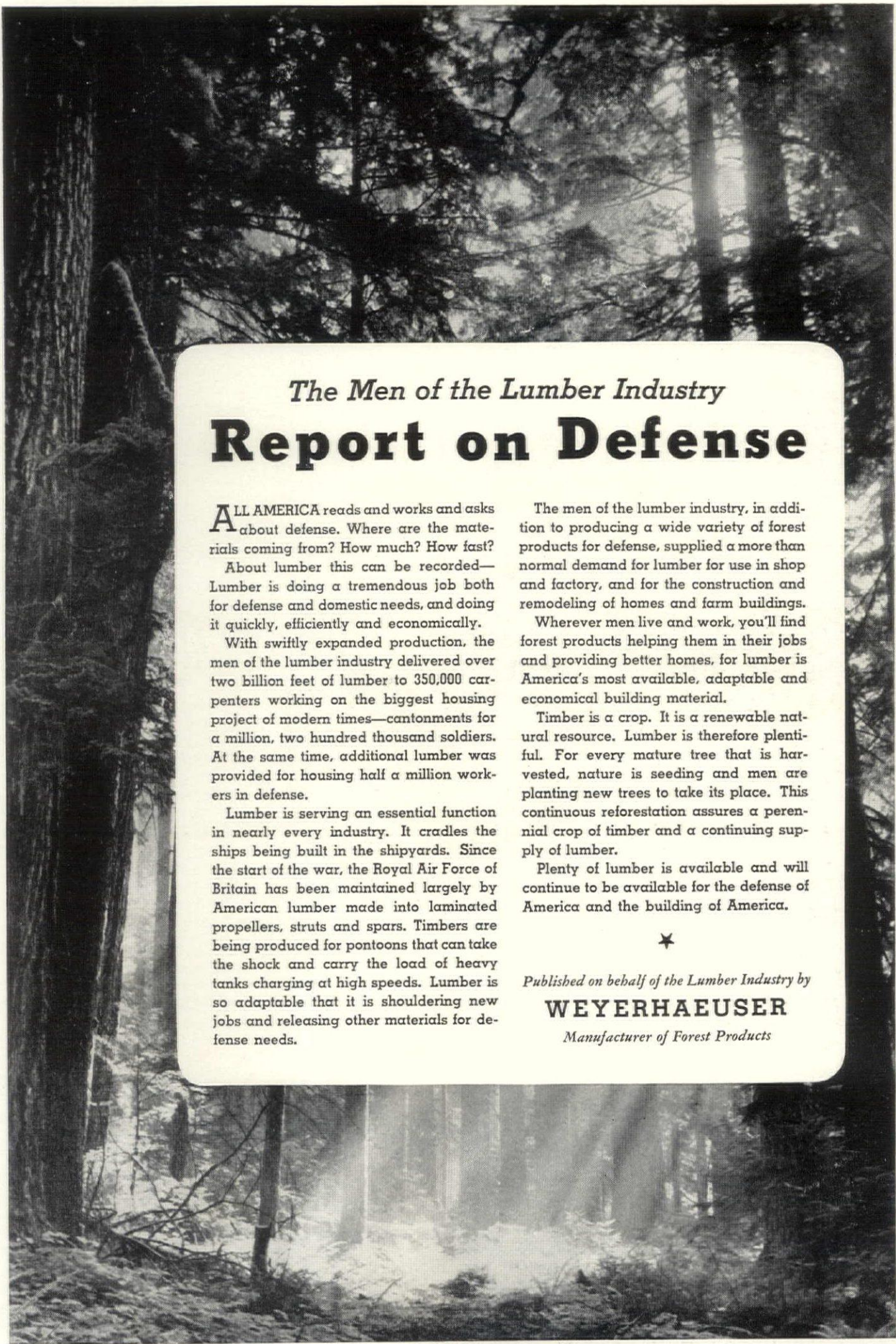
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Lumber is serving an essential function in nearly every industry. It cradles the ships being built in the shipyards. Since the start of the war, the Royal Air Force of Britain has been maintained largely by American lumber made into laminated propellers, struts and spars. Timbers are being produced for pontoons that can take the shock and carry the load of heavy tanks charging at high speeds. Lumber is so adaptable that it is shouldering new jobs and releasing other materials for defense needs.

The men of the lumber industry, in addition to producing a wide variety of forest products for defense, supplied a more than normal demand for lumber for use in shop and factory, and for the construction and remodeling of homes and farm buildings.

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Plenty of lumber is available and will continue to be available for the defense of America and the building of America.



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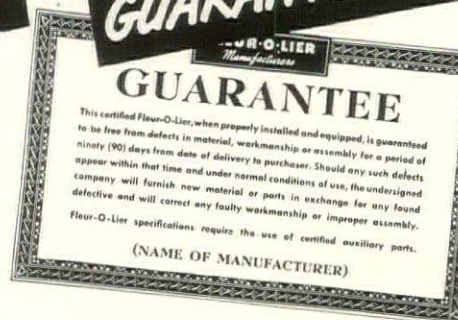


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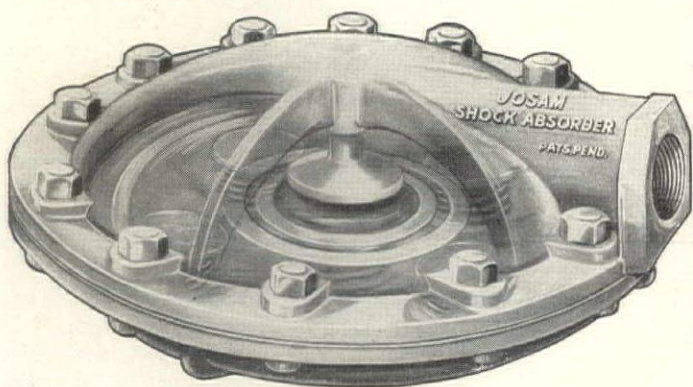
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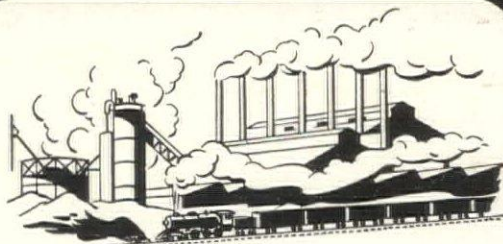
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LETTERS

(Continued from page 60)

Forum:

... First thing on the whole subject I've seen, congratulations.

J. P. GEDDES

Providence, R. I.

Forum:

... Thank you for the prospectus in the May FORUM. I think it is excellent in every way and most timely. ...

ALBERT KAHN

Detroit, Mich.

Forum:

... THE FORUM is to be commended for its leadership in bringing this all-important matter so prominently to the front. ...

... Every plan-minded group should welcome its appearance. ...

JAMES H. MITCHELL

San Francisco, Calif.

Forum:

... It seems to me that if some control feature for financing and building could be set up, similar to the Federal Reserve's control of the call money market, it would act as a check valve to any unneeded speculative building and high pressure financing. The control of this discount rate by the Federal Reserve Bank is the feature that

takes care of the banking end of investments. Possibly this could be covered by interest rate control on mortgages. At least it would be a big factor in building, if tightening and expanding of mortgage money and rates were properly handled ...

Paragraph No. 9 could well have the thought in it that we must have an educational program not to over-sell properties on the rising market. I think this is one of the factors that FHA has not yet taken into consideration enough. Institutions are looking back over their experience to see that a fellow does not contract for a period of 30 years to carry a monthly carrying charge equivalent to the maximum that he could reach today in a period of high earnings ...

C. ARMEL NUTTER

Newark, N. J.

Forum:

... As to the hourly wage of labor, Labor will probably continue to refuse to lower the hourly wage rate unless somebody will guarantee continuity of employment. They want the guarantee although they have had no guarantee of much of anything for the last ten years. They apparently do not believe that lower costs would increase the volume so that they could get a higher annual wage. They also fear that contractors, material men and loaning agencies would reap the benefit of increased volume without reducing their own costs. No one element in the building industry is large enough to increase volume very much by reducing costs. All of the elements would have to work together. The TNEC hearings on the Construction Industry as reported in Part II, brought out the fact that the Government and the loaning institutions have reduced the cost of financing, perhaps as much as is reasonable. The hearings also brought out the fact that some materials were in the control of a few large corporations giving a chance for charging high prices.

CHARLES W. KILLAM

Cambridge, Mass.

Forum:

... I cannot see much of life that is given over to building things ever more cheaply with a view of shortening their period of utility so as to make way for innovations of science and technology. The utilization of all our knowledge and technology all of the time should give us greater durability in structures and longer periods within which obsolescence takes effect: we would build no obsolete things, as we have always done in the past. ...

FREDERICK L. ACKERMAN

New York, N. Y.

Forum:

... THE FORUM has suggested a planning program drawn to large scale. It is going to be enormously difficult to sell the needs of the future to a people not yet quite awakened to the implications of the present, or adequately informed of the blunders of the past. That will take a lot of doing. ...

CLEMENT R. NEWKIRK

Utica, N. Y.



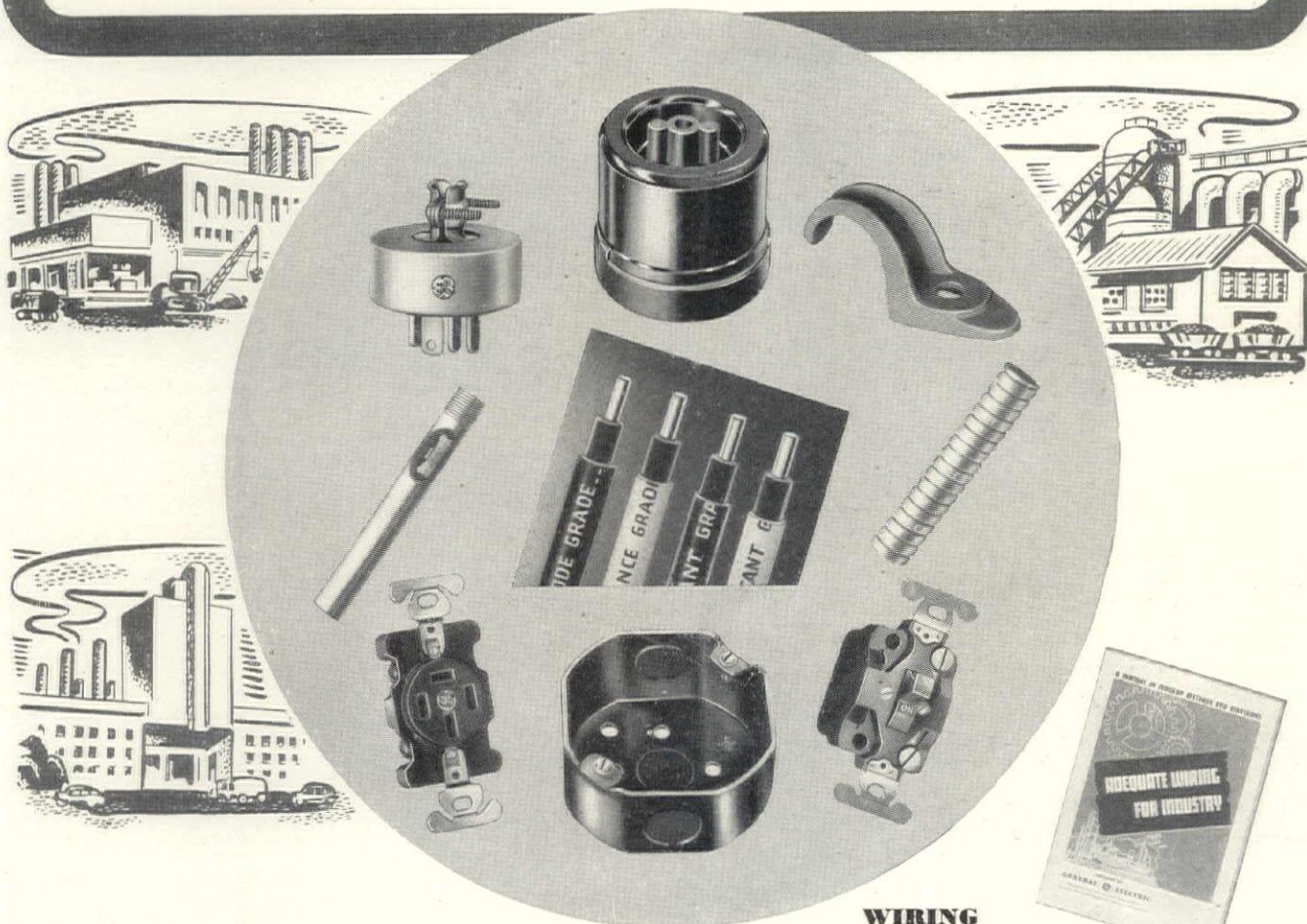
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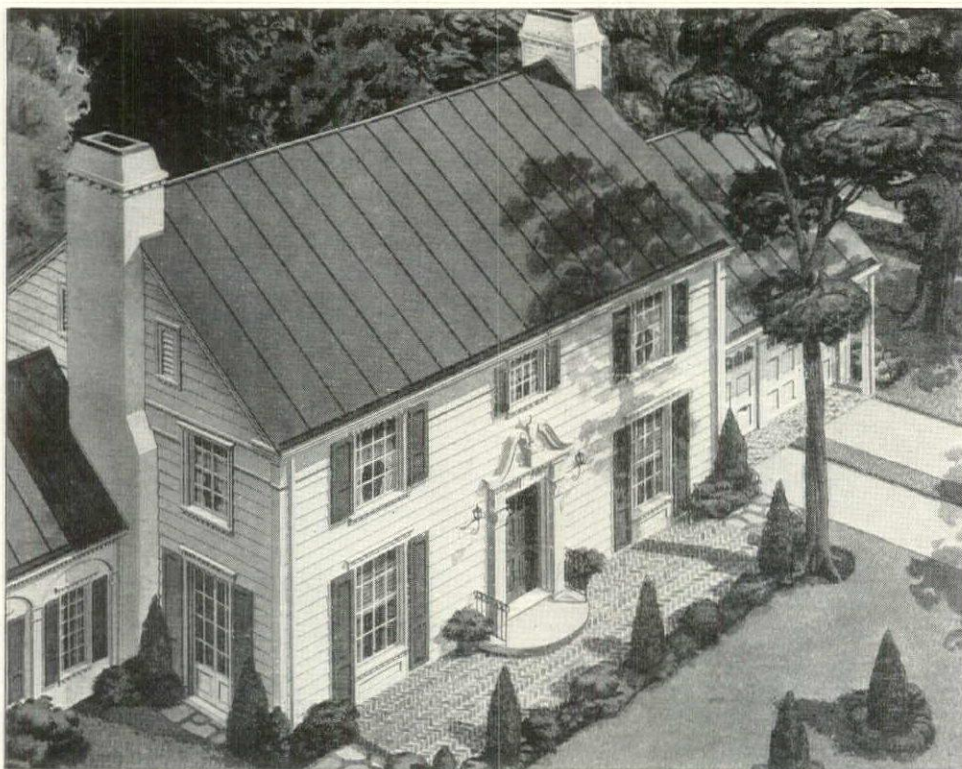
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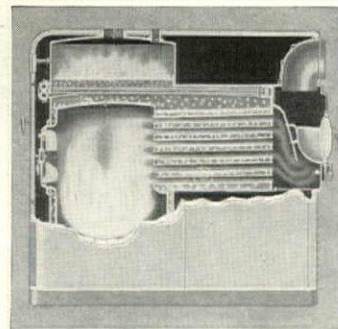
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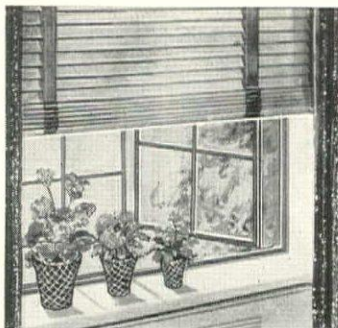
United States Steel Export Company, New York



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UNITED STATES STEEL



IN the National Gallery of Art now open at the nation's capital, **RIXSON Door Operating Mechanisms** won their place by an unmatched record for performance under extreme conditions.

RIXSON Floor Checks have the job of gentle but positive door closing—**RIXSON Concealed Overhead Checks** the same function on interior doors, plus the job of *staying out of sight*. The classic lines of the interior doors and trim are not marred by the unsightly projections of ordinary door checks.

RIXSON Overhead Checks Nos. 100, 220 and 225 are completely

concealed from both sides of the door. This is particularly desirable in a great gallery of art, but architecturally just as important on many less pretentious designs. Specify **RIXSON** by name and number.

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RIXSON REPRESENTATIVES AT:

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RIXSON

**Concealed Overhead
Door Checks:**

For entrance, vestibule, and interior doors hung on butts. Send for catalogue giving complete information on sizes, application, etc.

RIXSON

Floor Checks:

Made in styles and sizes meeting all door operating requirements, single or double acting. Complete catalogue sent on request.

RIXSON

FORUM OF EVENTS

(Continued from page 14)

WRIGHT OVER LONDON

Two years ago Frank Lloyd Wright lectured in London, to the delight and consternation of a larger audience than most architects ordinarily attract. About eight months ago he was awarded the King George medal, the handsomest British gesture to any architect. Today the London in which Wright spoke is a vastly changed place, and its people are finally and desperately concerned with a problem consistently evaded throughout their long history: reconstruction. To the recipient of their biggest medal the British turned again, this

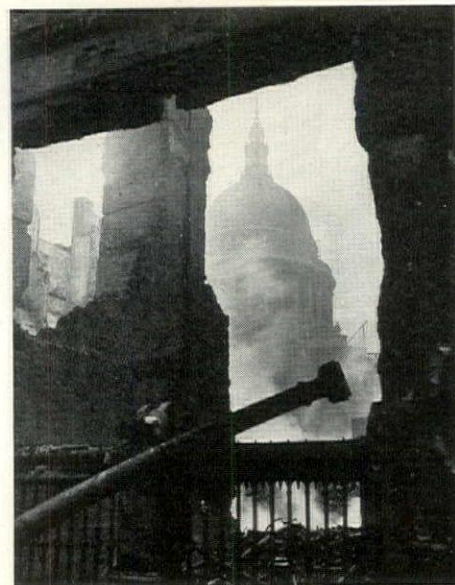
time with a cabled request from the enterprising *News Chronicle* for an article entitled "How I would rebuild London." The basis of the problem, replied the



London Daily Mirror

architect, is not architecture. The true basis for what we could honestly call democracy means no speculation in money, land or

ideas—no gold, no realtors, no patents. In such a state unemployment would be unthinkable and war impossible. "Skeptic? Well, laugh and be bombed!"



Graphic Photo Union

On the plan: "London reintegrated should be 25 times the area of the old London. It should be a motorcar, airplane London, spacing all laid out upon the new scale of human movement set by car and plane . . . The historic part could be featured in a great central park system. Do not be afraid now to build new factories and farms designed to be fit associates for country homes and schools, churches, theaters and parks. It is easy to do this with fluid power and integral architecture



Radiators in this remodeled house are all recessed and copper tubing used between walls and ceilings.

For Remodeling Old Houses Radiator Heat Costs Less

WITH use of copper tubing, all piping can be snaked in-and-out and round-about between walls and ceilings. No cutting of walls or taking up floors, as with duct systems, with the chance of weakening the structure in cutting into beams.

At least half, and generally even less, basement space is needed for a boiler, than for a warm air equipment. Any piping that is in sight, is only incidental.

A distinct saving can be made in the hot water supply. No separate heater, or even a storage tank is needed. The one boiler, with its one fire does both heating jobs and definitely saves fuel.

The One-pipe hot water system has the lead these days. The Burnham with its "coasting-no-costing" feature, merits your consideration. Send for printed matter.

See Sweet's. See for yourself.

Burnham Boiler Corporation

Irvington, N. Y.
Dept. J.

Zanesville, Ohio
Dept. J.

Representatives in all principal cities of the
United States and Canada.



Life-Dennis Scanlon

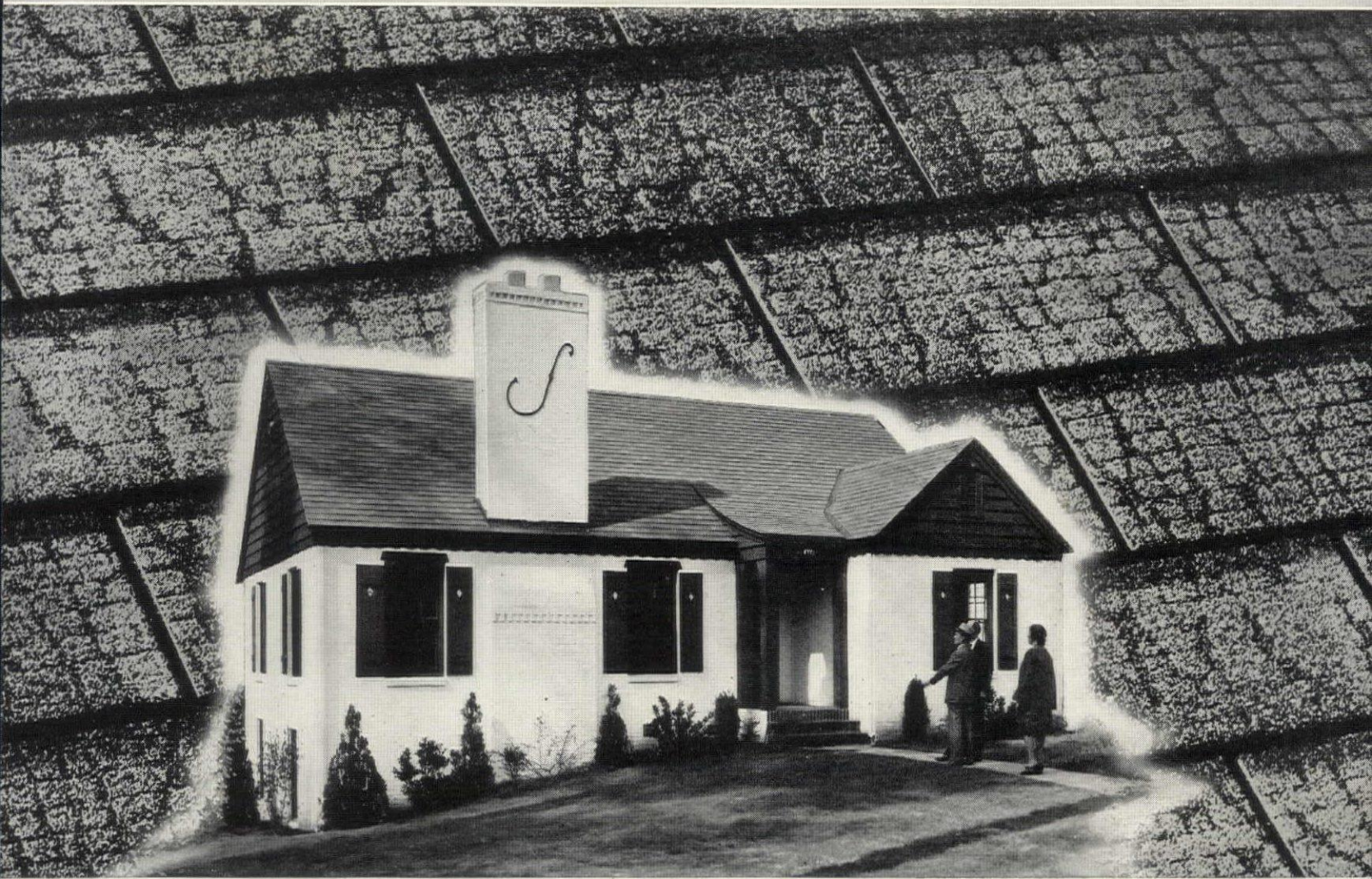
. . . Such grandomania as survives the bomb should expend itself by unlimited extensions parallel with the ground."

And as a final comforting note: "Don't grieve too much—Britain—English culture is safe. Empire is not essential!"

The *News Chronicle* cabled back its delight with the article, noting that it had inspired a "certain amount of waspish criticism"—presumably from the beneficiaries of Empire, gold, realty and patents.

(Continued on page 72)

TIMBERGRAIN IS NEW, REVOLUTIONARY!



You've never before seen such *beauty* in an asphalt shingle!

"It's the most beautiful asphalt shingle I've ever seen!"

Everywhere, they're saying that—Architects, Builders and Contractors! What they're all talking about is Ruberoid's extraordinary new asphalt shingle—TIMBERGRAIN.

Seldom has a new shingle received such widespread and enthusiastic endorsement. This mass approval from members of the building profession is justified because of Timbergrain's new and revolutionary features.

First of all, Timbergrain has a *textured* surface that is rough, rugged, *built-up*. Combined with two-toned coloring, it provides unusual transverse shadow effects, and eliminates the *flat* look frequently found in asphalt shingles.

Secondly, Timbergrain has extra thick butts, accentuated by deep,

black, *built-in* shadow lines—providing a roof of character, massiveness and beauty. Timbergrain has an average approximate weight of 250 lbs. per square.

Thirdly, Timbergrain's extra thickness gives greater strength, more weather protection and more safety.

For new homes — or homes being remodeled — Timbergrain is the year's sensation! Let your clients have the advantage of outward beauty, and inward long life and durability. Timbergrain is time-honored Ruberoid quality through and through.

Be sure to see this style leader, Timbergrain. Available in Greentone, Redwood, Bluetone and Slatetone blends. Write for colorful folder and complete information. Address Dept. AF-8. The Ruberoid Co., 500 Fifth Avenue, New York, N. Y.



RU-BER-OLD

ROOFING AND BUILDING PRODUCTS



WHEN WE THINK
OF WOOD FLOORS

BEING A BUILDER I HAVE
USED **LIGNOPHOL**
ON JOB AFTER JOB, WITH
EXCELLENT RESULTS



In the building field, only successful results can explain the steady use of a product.

You can be sure that any floor finished with LIGNOPHOL will stand up to hard usage—will last longer—will look more attractive.

LIGNOPHOL penetrates the wood, depositing toughening resins, life-imparting oils, which resist moisture, molds, fungi, and wood-destroying organisms.

LIGNOPHOL helps to protect floors against cracking, dry rot, pitting, scuffing and burn marks from rubber shoes. It costs little to apply and is extremely effective in bringing out the natural beauty of the wood. Available in natural, light, medium and dark brown. LIGNOPHOL offers you a splendid, economical opportunity to make the floors (and trim) you finish more serviceable—more beautiful.

See reproduction of various woods in natural colors in Sweet's Catalog, page 17/40.

LIGNOPHOL
The **ONE** Application
Wood Finish

LIGNOPHOL
Preserves and Brings
Out the Natural Beauty
of the Wood

LIGNOPHOL
Leaves Nothing
to Wear Off

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L. SONNEBORN SONS, Inc.

88 LEXINGTON AVE.

NEW YORK CITY

*Whatever Your Specification
... Stanley Makes It*



Stanley Hinges for Combination Doors

As combination screen and storm doors become increasingly popular, architects are specifying Stanley No. 152 $\frac{1}{4}$ Adjustable Tension Spring Hinges for hanging them.

Ordinary Spring Hinges Not Suitable

The combination door uses a screen panel in the summer and a glass panel in the winter. Due to the difference in weight between the two, ordinary fixed-tension spring hinges are not satisfactory.

Stanley 152 $\frac{1}{4}$ Hinges of wrought brass are designed for this service. Made of heavy gauge metal and equipped with heavy springs of best quality steel wire, their tension can be easily regulated for correct closing of either weight door.

AN AID TO YOUR SPECIFICATIONS

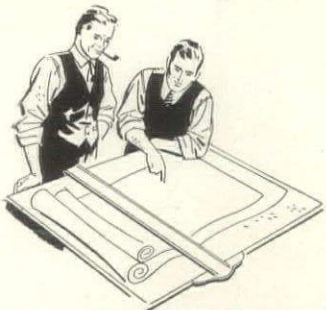


Stanley Catalog No. 61 is a handy guide to the best in building hardware. It gives complete details and specifications on the complete Stanley line, and will prove invaluable as a reference when you are making up specifications. Write for your copy. The Stanley Works, New Britain, Connecticut.

STANLEY

HARDWARE FOR CAREFREE DOORS

How to be sure



a good design produces as good a store front



Architects: Thalheimer & Weitz

WHEN you design a store front, you design it to do a specific job . . . to draw business and boost profits for your client. Yet the best design in the world can result in only a mediocre finished front, unless the design is executed with quality materials.

That's why so many architects standardize on Pittco Store Front Products when it comes to building

the fronts they design. These products are meant to be used together. They have proved their consistently high quality and versatility on thousands of American Main Streets. They can be counted on to produce as unified, harmonious and sales-building a front as you originally projected on paper.

The Pittco line of store front products includes glass of every kind for

store front work. And a quality store front metal that adds the finishing touch to quality glass store fronts.

For store fronts that really *work* for your clients, carry out your designs with Pittco Products. Send the coupon for our free book of information about them. It contains many graphic illustrations of actual Pittco Store Fronts which have built better business for their owners.

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

Pittsburgh Plate Glass Company
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Please send me, without obligation, your new, illustrated booklet, "Pittco Store Fronts — and Their Influence on Retail Sales."

Name.....

Street.....

City..... State.....

FORUM OF EVENTS

(Continued from page 68)

USED CAR CENTER

Most U. S. used cars are sold out of parking lots in the ring of blight surrounding the business center, or on the fringe beyond the zone of urban development. Fan-

Photo Art



cier set-ups include such standard concrete structures as Joe Fisher's. To Mr. Fisher, however, goes the credit for being the first to use part of his second floor as a glorified display window. The building is in Portland, Oregon.

FIRST ENAMEL-ON-STEEL GOVERNMENT MURAL

Edward Winter is a talented, energetic 32-year-old artist who operates out of Cleveland. His hobby, and business, during the past ten years, has been porcelain enamel, and he has been fortunate in having the huge furnaces of the Ferro Enamel Corporation to play with. To date he has produced 35 murals in this material, ten of which are on copper. The panels illustrated, on their way into the furnace, are for the post office in Cassville, Missouri,

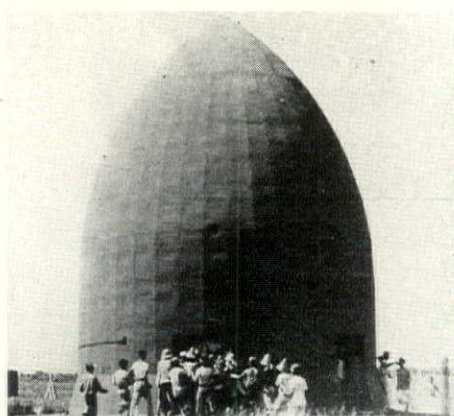
and will cover an area five by twelve feet. Panels of 18-gauge steel received six different firings, and depict the State's flower, fruit, vegetable and animal life. Colors are applied with spray gun.



Albert Duval

EAST INDIES SHELTER

With ample reason to expect visits from unfriendly bombers in the not-too-distant future, this Netherlands colony has been constructing shelters, and recently released this picture to the press. There is no explanation for the curious shape.



Wide World

TRAFFIC TOWER

In the course of rapidly developing relations with Latin America, it may be for-



Harris & Ewing

gotten that the southern half of the hemisphere also has much to offer. From Buenos Aires comes this smartly designed traffic control tower. U. S. city officials could afford to look twice.

(Continued on page 76)

REDWOOD... the natural wood for "natural finish"

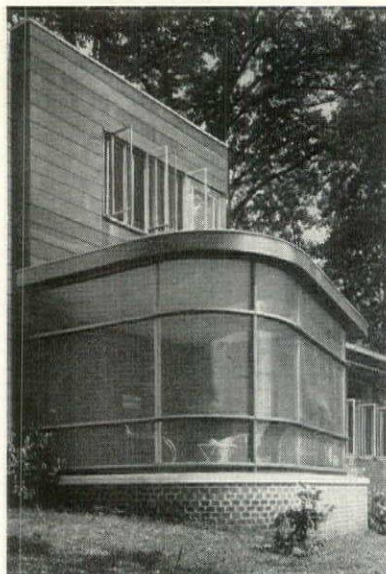
Redwood lends itself outstandingly to the present trend toward natural finish interiors and exteriors:

... because of its unusual ability to take and hold the various natural finish treatments.

... because of its natural preservatives, high resistance to weather and decay, even when unfinished.

... because of its beauty of grain, color and satin-like surface.

Data on Redwood in natural finish gladly sent on request. California Redwood Association, 405 Montgomery Street, San Francisco; also offices in Los Angeles and New York.



Home in Knoxville, Tennessee
ALFRED CLAUSS, Designer



Home in Madison, Wisconsin
BEATTY & STRANG, Architects

REDWOOD IS IDEAL FOR:

Siding	Picket Pack
Interior Trim	Fencing
Window and	Log Cabin Siding
Door Frames	Gutters
Foundation Stock	Mouldings
Underpinning	Paneling
Structural Timbers	Shingles
Garden Uses	Shakes

Standard patterns of above Redwood products are available at most distribution points. If you can't obtain Redwood easily please write. We will tell you how to get it.



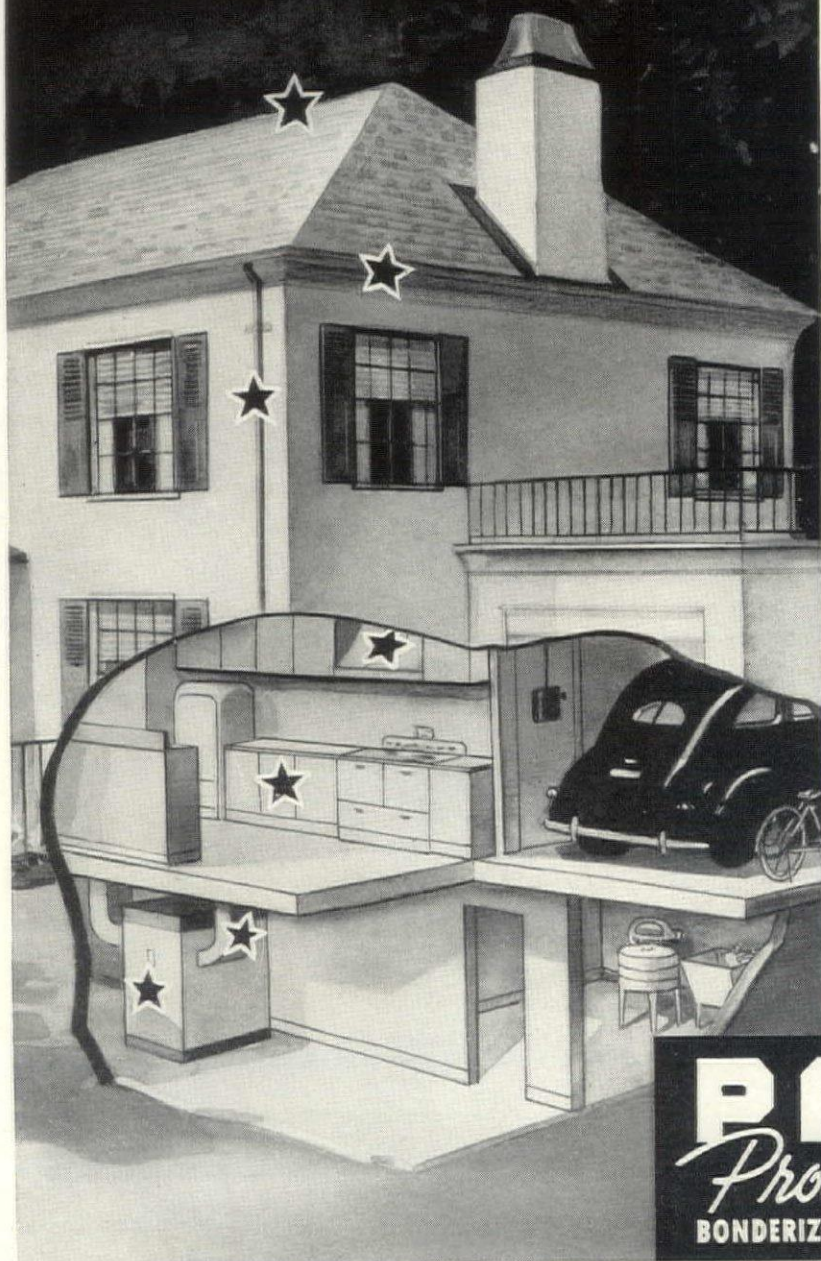
Home in Madison, Wisconsin. WILLIAM KAESER, Arch.

Whatever the job ... consider REDWOOD!

BONDERIZED- GALVANIZED

WITH RUST PROOFING AND
PAINT HOLDING QUALITIES

A DUAL PURPOSE
ARCHITECTURAL
SHEET METAL



From the metal ridge rail to the heating and air conditioning ducts in the basement, including eaves troughs, down spouts, ventilators, kitchen cabinets, heating and air conditioning cabinets, mill-treated Bonderized-Galvanized steel sheets help to speed up installation and assure long time service for these and other important units.

Wherever rust is a menace to sheet metal work and immediate paintability is essential, Bonderizing gives the galvanized sheet a plus value. Bonderizing not only adds rust resistance but it conditions the metal surface to receive and hold paint, enamel or lacquer. No waiting, weathering or etching treatment is necessary. The chemically produced, Bonderite surface absorbs the finish, provides positive adhesion and neutralizes chemical action between the zinc and paint, preventing scaling or peeling.

Specify Bonderized-Galvanized sheets for all sheet metal work where paint is to be applied.

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



Send for This Book:

Explains what an architect wants to know about metal protection on various types of architectural material.

PARKER
Processes **CONQUER RUST**
BONDERIZING • PARKERIZING • PARCO LUBRIZING



Many architects, builders and maintenance men have found they can cut painting costs by standardizing on *one paint* for all properties.

The paint is Eagle White Lead mixed with linseed oil.

This pure white lead paint has been preserving the beauty of American homes since 1843—and doing it at minimum cost. That's because its performance is always uniform—always dependable. Time between paintings is lengthened. Eagle White Lead doesn't crack or scale—leaves a perfect surface for repainting.



**EAGLE
WHITE
LEAD**



THE EAGLE-PICHER LEAD COMPANY, CINCINNATI, OHIO

IN BUILDING FOR DEFENSE

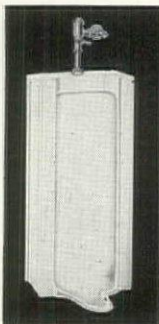
**AMERICA
CALLS ON**

CASE

IN HOMES—the first line of the nation's welfare—people have confidence in the health-protection of Case plumbing fixtures. The glistening surfaces of their *twice-fired* vitreous china, and their efficient mechanism afford the maximum of cleanliness and lasting sanitation.

IN PLANTS, too, you can contribute most effectively to the country's health-defense by specifying Case fixtures. Clients recognize their unequalled cleanliness and resistance to acids and discoloration.

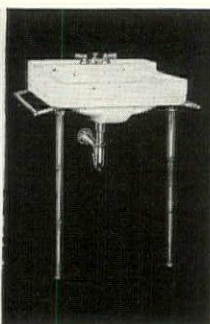
IN PUBLIC BUILDINGS of every type, Case quality fixtures are positive safeguards of the public health. On display in distributor's showrooms everywhere. Write to Dept. E-81, W. A. Case & Son Mfg. Co., Buffalo, N. Y.



The No. 2300 18" vitreous china stall Urinal.



The famous non-overflow *one-piece* T/N Water Closet. Atmospherically vented non-siphoning ballcock.

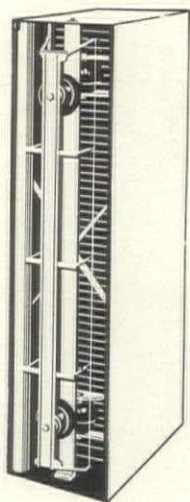


The WINSTON Lavatory has a shelf back and concealed front overflow.

CASE

DISTINCTIVE PLUMBING FIXTURES

CLEAN AIR IMPROVES WORKING CONDITIONS



Precipitron dirt collector cell removes from the air stream particles as small as $1/250,000$ of an inch.



Precipitron now cleans 30,750 cfm of circulating air in the Lubrite Division offices of the Socony Vacuum Oil Company in St. Louis.

PRECIPITRON* Solves Dirt Problem

Electric air cleaning has banished an annoying dirt problem in the Lubrite Division offices of the Socony Vacuum Oil Company in St. Louis.

Westinghouse Precipitron, operating on the electrostatic principle, was installed in a new wing of the building. And the dirt collector cells removed 85 per cent of all air-borne dirt particles down to $1/250,000$ of an inch. The results were so satisfactory that Electric Air Cleaning was used in the older section of the building as the answer to a critical dirt, smoke and dust problem. In cleaning 30,750 cfm, Precipitron brought immediate benefits.

Walls, woodwork, and ceilings now remain clean longer—saving redecorating and cleaning costs. The tobacco smoke nuisance has been eliminated. Business machines, papers, and desks are dust-free, and general working conditions improved. Yet, the maintenance cost of the Precipitron is comparatively negligible.

You will want the complete story on how Electric Air Cleaning can answer your air-borne dirt problem. Phone your nearest Westinghouse Sales Office; or, write Westinghouse Electric & Manufacturing Company, Edgewater Park, Cleveland, Ohio, for Booklet B-2187.

*Trade Mark Registered in U. S. A.

Westinghouse Precipitron



FORUM OF EVENTS

(Continued from page 72)

AWARDS

Hobart B. Upjohn, nationally known for his work in ecclesiastical architecture, has been awarded the 1941 ARNOLD W. BRUNNER SCHOLARSHIP of the New York Chapter of the American Institute of Architects, carrying a stipend of \$1,200 to be used in "the pursuit of advanced study in some special field of architectural investigation." Mr. Upjohn, whose grandfather, Richard Upjohn, was president of the Institute from its founding in 1857 until his death in 1876, plans to write a history

of the Institute up to 1900. He is a fellow of the American Institute of Architects and was president of the Institute's New York Chapter from 1935 to 1937. Honorable mention in the Brunner Scholarship Competition went to Mrs. Lois Wilson Worley of St. Louis, Mo.

Two University of Illinois students, G. Paulson and L. Woodard, received first medals in the Special 1941 PARIS PRIZE COMPETITION, conducted by the Society of Beaux-Arts Architects. F. C. Salmon, University of Pennsylvania, also received a first medal. Second medals went to J. C. Tighe, J. C. Wheeler, A. B. White, S. Carter, and J. S. Nants, Jr. The program called for the design of a plant for the assembly of motor cars.

The San Francisco Art Association announces the award of the 1941 ABRAHAM

ROSENBERG SCHOLARSHIP to Lloyd Wulf and Hassel W. Smith, Jr. The scholarship, which carries a stipend of \$1,500, is awarded annually to artists between 25 and 35 years of age who have attended the California School of Fine Arts for at least two semesters and who have developed their work to a professional status. Mr. Wulf plans to travel in South America, particularly Ecuador, where he is interested in painting the Incas, their festivals and open air markets, and the landscape surrounding Quito. Mr. Smith wishes to continue his painting of the Mother Lode Country in California.

Winners in the MUSEUM OF MODERN ART's Posters for National Defense Competition are John C. Atherton, Ridgefield, Conn. who won the first prize of \$500 in Group A (designs for the Treasury Department) and second prize of \$250 in Group B (designs for the Army Air Corps), and Joseph Binder, New York City, who won first prize



Out of sight

at a twist of the wrist

—a MUST for your list

The most beautifully designed bathroom gets a "black eye" the minute untidiness causes you to notice the family's collection of toothbrushes, water-streaked tumbler and half-used bar of soap. Keep these necessary but sometimes ugly items forever out of sight with the Hall-Mack Concealed Lavatory Unit.

Matches the Aristocrome line of fixtures perfectly. Soap, tumbler and toothbrush holders are on a solid brass chromium-plated panel which revolves so as to conceal these necessities when not in use. Also furnished in bakelite, the face side of which is covered with chrome-plated brass sheet.



CONCEALED LAVATORY UNIT

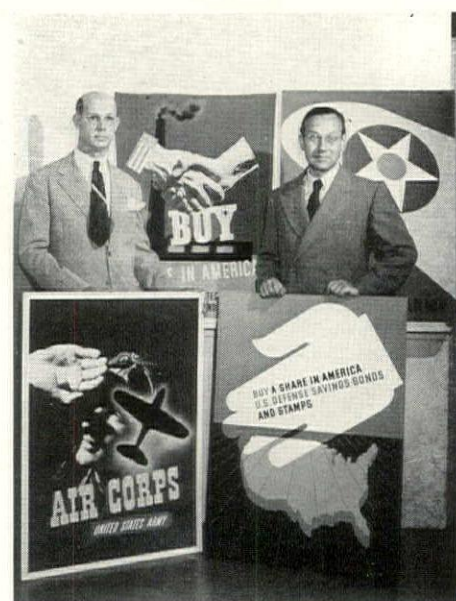
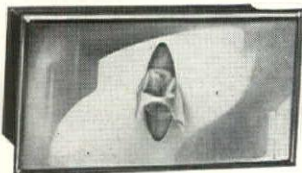


HALL-MACK

CONCEALED KLEENEX HOLDER

Holds large size Kleenex package — nothing shows but the gleaming chromium panel. Easy to reload.

ARISTOCROME — Accessories of solid brass, heavily chrome-plated and highly polished. Several lower priced lines, too. Specify Hall-Mack and choose from America's most complete selection.



Albert Fenn

in Group B and second prize in Group A. Ten honor prizes of \$50 each went to Hugh Donnell, West Redding, Conn.; Pat Rooney, New York, N. Y.; Arnold Roston, New York, N. Y.; Alex Steinweiss, Westport, Conn.; Clara Fargo Thomas, New York, N. Y.; W. L. Frazer, Brooklyn, N. Y.; John A. Gibbs, New York, N. Y.; Alfred S. Piane, New York, N. Y.; Xanti Schawinsky, Edgewater, N. J.; Si Vanderlaan, Los Angeles, Calif.

CRANBROOK ACADEMY OF ART announces that as the result of a nationwide scholarship competition for the year 1941-42, full resident scholarships have been awarded to the following students: Robert W. Moser, Eugene, Oregon; Stephen W. Page, Detroit; Charles W. Lane, Almont, Michigan; Ruth Keller, Webster Groves, Missouri; Clarence E. Van Duzer, Jr., Cleveland; Helge Westermann, Copenhagen, Denmark; Jack K. Steele, Detroit. Tuition scholarships were received by Mary E. Pike, Winslow Eaves, Betty H. McBride, Robert Eaton, Efrem M. Waskowsky, Paul G. Valkenier, Alexander Goldfarb, Virginia Dudley and Jay Robinson.

(Continued on page 80)



HALLENSCHEID & McDONALD

1344 W. Washington Blvd. • Los Angeles

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FOR ANY STYLE, SIZE OR PRICE HOUSE . . .

DOORS, FRAMES AND WINDOWS OF *Ponderosa Pine*

ARE STOCK ITEMS . . .

One way to make low-cost homes a real reality is to utilize stock sizes of all building materials.

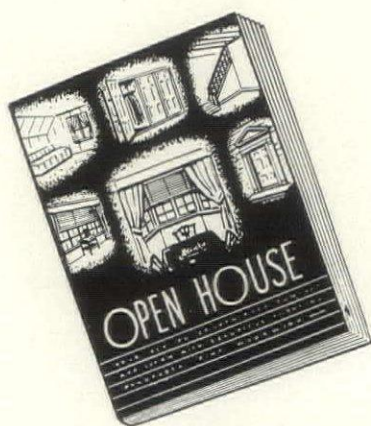
Doors, frames and windows of Ponderosa Pine can be a major contribution to low-cost home planning and building. That's because virtually any problem in design can be solved readily with stock sizes of these items—items available through any lumber dealer, anywhere.

People want more windows. They want more light, more air, plus the decorative advantages of good-looking windows. Architecture is becoming more functional which means broader uses for doors to make homes and rooms more efficient.

40 years of preference prove the usefulness of "Ponderosa" for interior and exterior woodwork; for all kinds of doors and windows. In appearance, in paintability, in workability and in its ability to stay lastingly beautiful, Ponderosa Pine has long since demonstrated itself worthy of your recommendation. Just say "doors, frames, windows and woodwork of Ponderosa Pine" and be sure of enduring beauty and satisfaction at low cost.

A national consumer advertising program is now telling the public about Ponderosa Pine. It shows better and more efficient ways to use doors and windows to assure the results we know you want people to have.

Write for your copy of "Open House"—32 pages of practical, efficient ideas for planning more convenient, more attractive rooms through the more intelligent use of doors and windows. Write today—and remember, for lasting satisfaction in any size, style or price home—specify doors and windows of Ponderosa Pine!



Get your free copy of "Open House"—32 pages of interesting ideas on the use of doors and windows in all types of homes.

PONDEROSA PINE WOODWORK

111 WEST WASHINGTON STREET • CHICAGO, ILLINOIS

**FUNNY I NEVER THOUGHT OF PLUGMOLD
...WHY IT'S JUST THE THING FOR STORES
OFFICES, AND MANY INDUSTRIAL NEEDS!**



● Yes indeed, Plugmold is ideal for a host of commercial and industrial building applications.

It completely solves the problem of providing many outlets in small space for plugging in electrical apparatus, merchandise for display, test equipment, hand tools and appliances that are designed to operate from regular lighting circuits.

It gives your clients an entirely new kind of convenience. Outlets can be placed exactly where needed . . . can be relocated, added or removed as required.

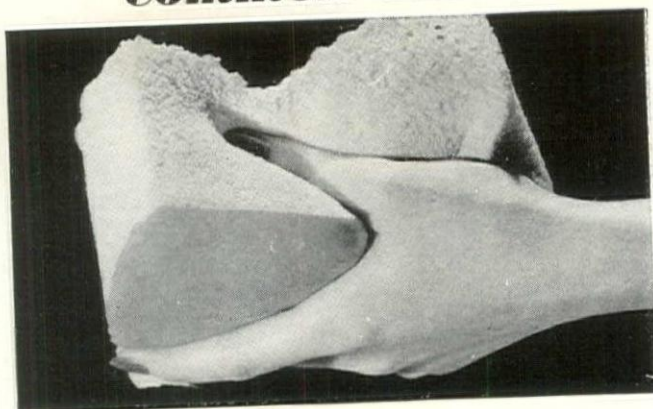
This is the modern way to install all "convenience" wiring . . . a logical part of design for functional needs. Write us for literature and short sample length for your office use.

THE WIREMOLD COMPANY, HARTFORD, CONN.

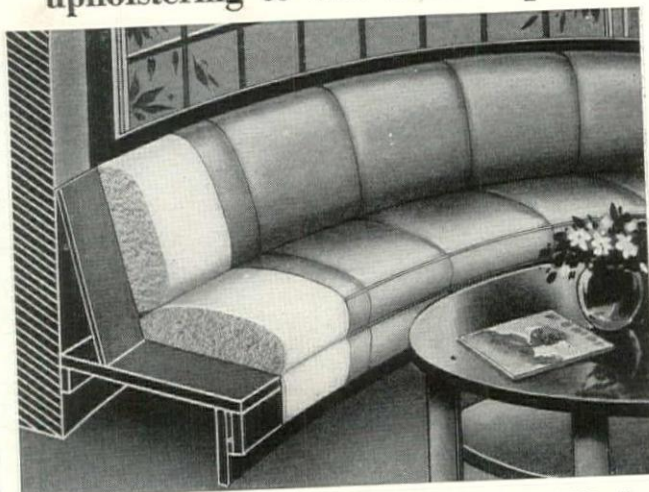
PLUGMOLD
WIREMOLD

Plug-in-Anywhere Wiring Systems

**This is a handful of
common sense**

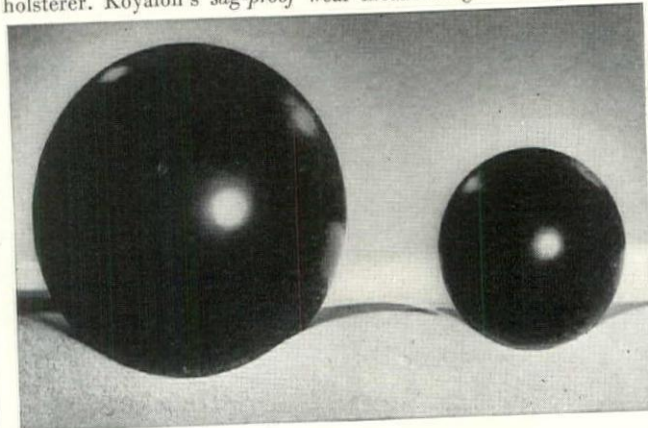


Koyalon changes complicated upholstery to one molded piece



Comfortable built-in seating simplified

Koyalon provides both *softness* and *springiness* in a single material—pre-shaped, ready to apply to any base. Does a more beautiful job because Koyalon is already *molded* to perfect form for the upholsterer. Koyalon's *sag-proof* wear means longer lasting beauty.



WHY *Koyalon* MEANS MORE COMFORT

These bowling balls show how perfectly Koyalon adjusts itself to various weights. Weights that could be your shoulders, your hips. Equalized support for every part of the body makes Koyalon more restful to sit on.

• • • • • MAIL FOR EASY WORKING DETAILS • • • • •

UNITED STATES
RUBBER COMPANY

1230 Sixth Avenue • New York



Koyalon
FOAM CUSHIONING

USE THE MARGIN BELOW FOR YOUR NAME AND ADDRESS

**Successful
Hartford, Connecticut
Builder Proves
JANITROL
Is Your Wisest Choice
Because, to Quote Mr. Douville
Vice President, Arnold Construction Co.**

- "Janitrol outdates all other forms of heating where it can be used. Simple installation cuts down cost and time.
- "It is especially suited for this type of home because of little space necessary.
- "Janitrol Heating is one of the major selling points for the homes and so is featured in Arnold advertising."

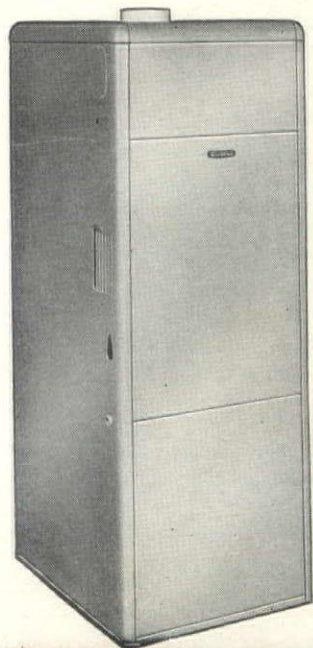
FIRST to install Janitrol Heating in groups of homes in the Hartford section, Mr. Arnold's good judgment is verified by Janitrol's immediate adoption by other contractors who inspected Arnold Construction Co. Janitrol installations.

In hundreds of areas, extensive housing projects present the same problems faced by the Arnold Construction Co., which Janitrol readily solves, namely, quick, simple installation, low cost and automatic service and complete customer satisfaction.

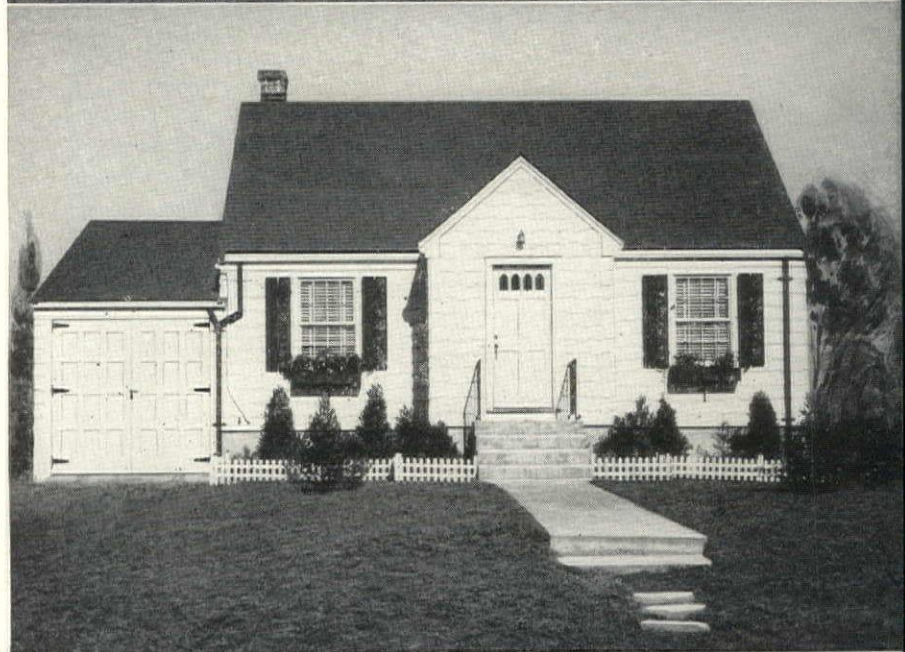
Adoption of Janitrol Automatic Gas Heat and Air Conditioning for all the homes you build will be a step to greater success—a solution of all home heating problems. Janitrol manufactures suitable equipment and provides competent engineering service on automatic heat systems right through the whole range of building from the four room, no-basement home to the large mansion or great factory.

Janitrol manufactures unit heaters, hanging furnaces, forced air conditioners and gravity units—all gas fired—in a wide range of capacities. Tell us your heating problem. Let us send a Janitrol engineer to explain the Janitrol Units best suited to your jobs.

SURFACE COMBUSTION CORP., TOLEDO, OHIO
Offices and Engineers in Principal Cities



Illustrated at the left is one of the beautifully designed Janitrol gas-fired Winter Air Conditioning Units. Ideal for any type home or individual apartment heating, this compact unit, completely assembled in the most popular sizes, will give lasting satisfaction.



JANITROL

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WINTER AIR CONDITIONERS • CONVERSION BURNERS • UNIT HEATERS • GRAVITY FURNACES

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● NOW . . . to save your time on flooring problems, Bruce has assembled a complete new file on Streamline, Block, Plank, and Strip floorings, and Floor Finishing. This new data file gives you stimulating ideas plus helpful information on all types of hardwood floors. Includes comprehensive book on floors published by the Department of Commerce. Hundreds of colorful illustrations show a wide variety of flooring effects . . . in homes, offices, stores, schools, etc. It explains how various types of floors are laid . . . gives complete information on various finishing methods. Get your copy of this helpful new file while our supply lasts. It's FREE! Just mail the coupon!

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BRUCE 1425 Thomas Street
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HARDWOOD FLOORINGS—
FLOOR FINISHES—TERMINIX



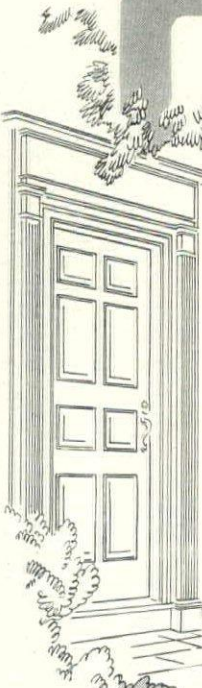
E. L. BRUCE CO., 1425 Thomas Street, Memphis, Tenn.

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City..... State.....



Bilt-Well ENTRANCES

Sound a Note of Welcome

A first impression to please the eye without displeasing the purse. There is an attractive Bilt-Well Entrance for every type or size of home. All adopted from finest architectural originals, with adjustable openings for different door sizes and suited for Wood Siding, Brick Veneer or Solid Masonry Walls.

Bilt-Well front Entrances are designed for today's market. Bilt-Well for your clientele.

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MAKERS OF GOOD BUILDING WOODWORK SINCE 1866

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WOOD WORK



Interior Designing by: The H. CHAMBERS COMPANY, 1026 N. Charles Street, Baltimore, Maryland

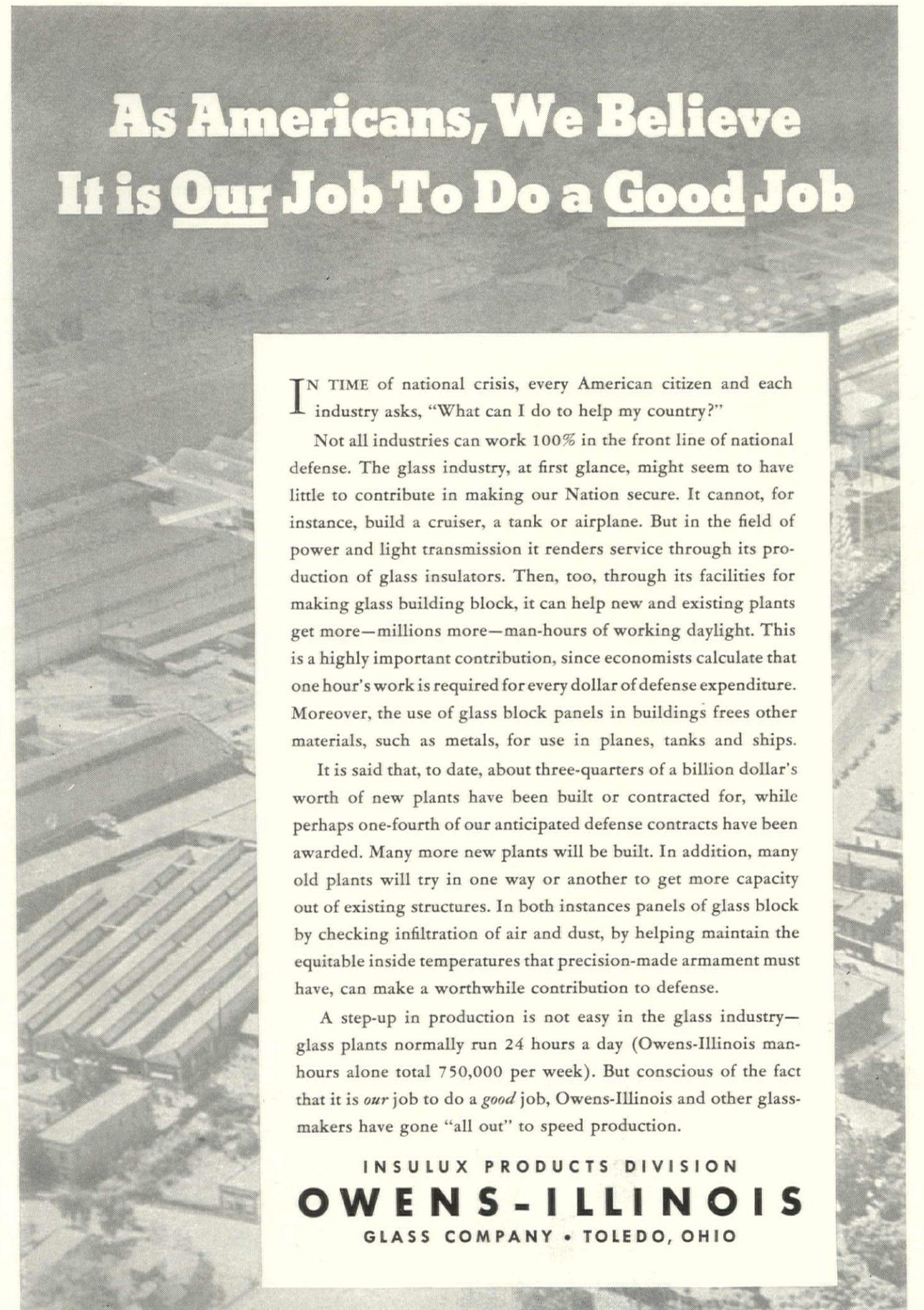


BEAUTY Plus UTILITY FOR ANY INTERIOR

Tufraw Genuine Rawhide adds a luxury note . . . a touch of beauty to any interior. The bar shown above is fashioned in the natural Tufraw Rawhide with square effect panels divided by flat brass mountings. This widely accepted decorative material is easy to keep clean and is strikingly effective. Specify it for your next interior and note the dramatic difference. FREE sample swatches of Tufraw Rawhide in natural and colors sent on request.

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Makers of Quality Leathers for Over Half a Century
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As Americans, We Believe It is Our Job To Do a Good Job

IN TIME of national crisis, every American citizen and each industry asks, "What can I do to help my country?"

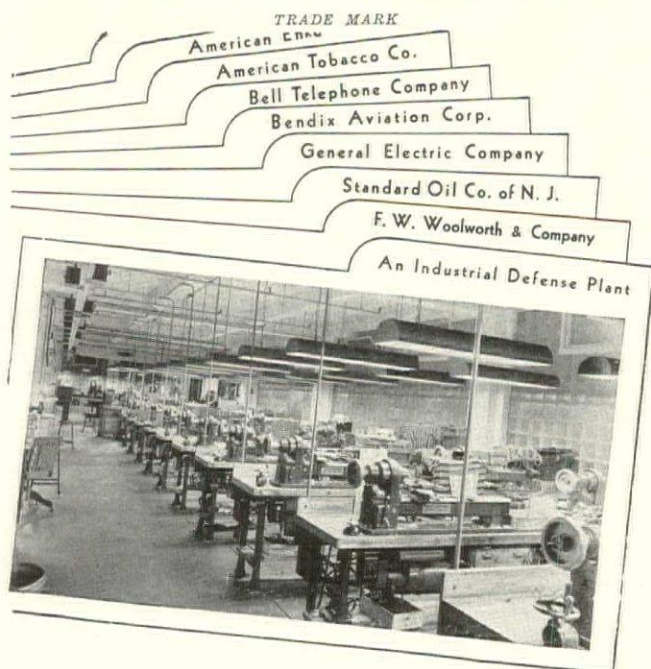
Not all industries can work 100% in the front line of national defense. The glass industry, at first glance, might seem to have little to contribute in making our Nation secure. It cannot, for instance, build a cruiser, a tank or airplane. But in the field of power and light transmission it renders service through its production of glass insulators. Then, too, through its facilities for making glass building block, it can help new and existing plants get more—millions more—man-hours of working daylight. This is a highly important contribution, since economists calculate that one hour's work is required for every dollar of defense expenditure. Moreover, the use of glass block panels in buildings frees other materials, such as metals, for use in planes, tanks and ships.

It is said that, to date, about three-quarters of a billion dollar's worth of new plants have been built or contracted for, while perhaps one-fourth of our anticipated defense contracts have been awarded. Many more new plants will be built. In addition, many old plants will try in one way or another to get more capacity out of existing structures. In both instances panels of glass block by checking infiltration of air and dust, by helping maintain the equitable inside temperatures that precision-made armament must have, can make a worthwhile contribution to defense.

A step-up in production is not easy in the glass industry—glass plants normally run 24 hours a day (Owens-Illinois man-hours alone total 750,000 per week). But conscious of the fact that it is *our* job to do a *good* job, Owens-Illinois and other glass-makers have gone "all out" to speed production.

INSULUX PRODUCTS DIVISION
OWENS-ILLINOIS
GLASS COMPANY • TOLEDO, OHIO

They Did it Right with L-I-N-O-L-I-T-E



LINOLITE Fluorescent Equipment

is ENGINEERED for PERFORMANCE

BY BARKON-FRINK

These and many other preeminent American concerns have selected LINOLITE as a sound Fluorescent investment, designed to give long-term satisfaction without becoming "dated".

Whether your problem is industrial or commercial lighting, a critical comparison of Barkon-Frink's *engineered* equipment with ordinary "assembled" units will quickly reveal the reasons for LINOLITE'S prestige and popularity.

The coupon below will bring you the facts.

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Sterling Bronze Company Inc.

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23-10 Bridge Plaza South, Long Island City, N.Y.

CERTIFIED FLEUR-O-LIER MANUFACTURER

Lighting Since 1857

The Frink Corp., Bridge Plaza South, L. I. City, N. Y.
Please send complete information on Barkon-Frink LINOLITE
Fluorescent Lighting.

Name

Address

City A.F.

B O O K S

(Continued from page 16)

general advice which may or may not be capable of prompt application, the book contains a surprising amount of immediately usable information. There is a brief but meaty chapter on preliminary cost estimates, another on office records and documents, and a very valuable discussion of overhead. Also presented in some detail is a simplified method of cost accounting.

Mr. Wills' entertaining and informative little book will not, in all probability, solve the major difficulties which beset the architectural profession, nor is there any reason why it should. But it goes a long way in indicating the remedy for the avoidable ones, and it could eliminate many headaches for many architects. For those who may not be as familiar with the author's talents as a cartoonist as with his houses, three of the book's illustrations are reproduced.

CONCRETE DESIGN AND CONSTRUCTION, by W. Herbert Gibson and Walter L. Webb. American Technical Society. 500 pp., illustrated. 6 x 9. \$4.75.

This book covers not only the theory of concrete engineering, but deals with practical construction problems as well. Illustrations show standard equipment used, such as mixers, hoists, forms, etc., and the descriptive text is adequate. A good book for home study.

THE OLD HOUSE PICTURE BOOK, by Marion Nicoll Rawson. 96 pp., illustrated with sketches. 9 x 11. \$2.50.

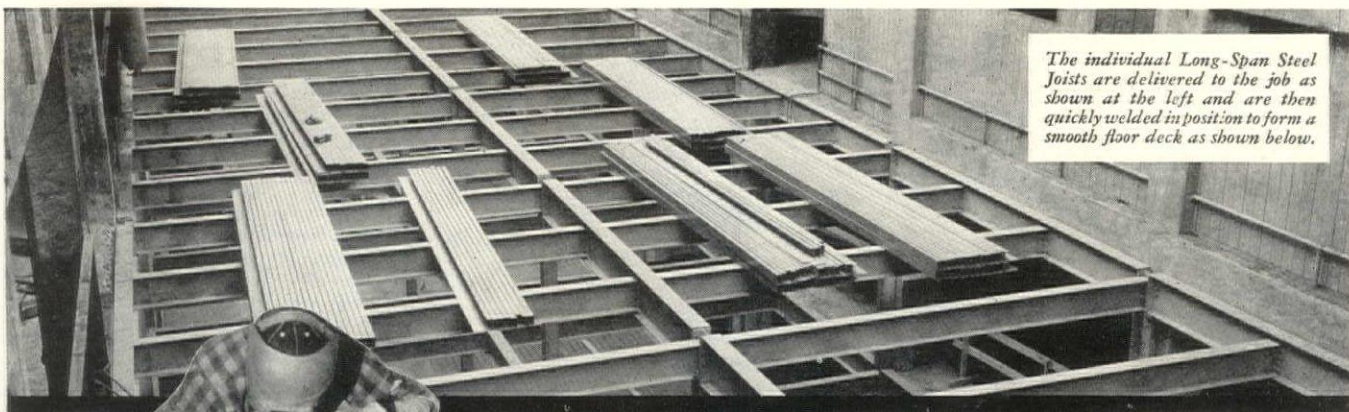
A collection of pen and ink sketches of a great variety of early American houses, their adjuncts and accessories. While the drawings, as regards quality and interest, leave something to be desired, they do present the subject matter with reasonable clarity and fidelity. Material shown includes ironwork, stencil patterns, stairs, moldings, signs, fireplaces, etc.

YOUR HOUSE AND MINE, by Geoffrey Bounphrey. Allen & Unwin, Ltd. 253 pp., illustrated. 6 x 8 3/4. \$4.50.

Geoffrey Bounphrey is an English writer who has produced a number of books on architecture, transportation, cookery, etc., for popular consumption. The present book is the outgrowth of a series of lectures which were broadcast for child listeners and turned out to be even more popular with their elders. Its purpose is to explain how houses have developed, and why, and to examine the newest developments in houses and their possible influence on the future. In its attitude is reflected the stand of the more intelligent English critics, whose sympathy with the efforts of the modern architects has not blunted their appreciation of earlier buildings. In essence, therefore, we have here a critical history of the English house, finished off with a very stimulating presentation of domestic architecture and town planning as it is (and might be) today. The job throughout is very well done. Problems of presenting technical matters simply are competently solved, and a tremendous amount of historical data on structure, materials and planning is presented quite painlessly. Numerous illustrations, adequately captioned, complete one of the best popular histories of the house that has yet appeared.

CONSTRUCTION ESTIMATES AND COSTS, by Harry E. Pulver. McGraw-Hill Book Co. 653 pp. 6 1/2 x 9 1/2. \$4.50.

A manual for builders and estimators, arranged according to trades and materials. The book is suitable for most practical purposes as its range embraces both small and large building operations. A valuable feature is the consideration given to variations in the labor time required to perform a given piece of work.



The individual Long-Span Steel Joists are delivered to the job as shown at the left and are then quickly welded in position to form a smooth floor deck as shown below.



***SPEED
FOR
DEFENSE***

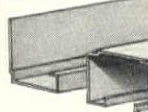
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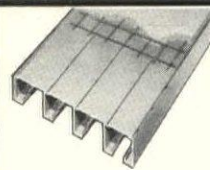
LONG-SPAN STEEL FLOOR AND ROOF SYSTEM

TO HASTEN the construction of new plants and additions for America's defense industries, architects are making extensive use of Wheeling Long-Span Steel Floor and Roof System. This improved system of building floors, ramps, and roof decks, eliminates lengthy delays. The prefabricated COP-R-LOY joists can be erected in minutes instead of days. A crew of six welders can finish approximately 1,000 square feet an hour. While they are completing their work, electricians, plumbers, bricklayers, and other tradesmen can start roughing in on the portion of the deck already completed. This kind of speed is accomplished without waste. There is no chance of wrong assembly. There is no cutting on the job. The joists are delivered the correct size and are designed so that correct assembly does not depend on the skill of the workmen. Write for details.

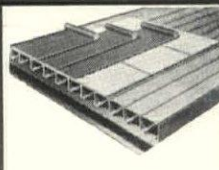
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STEEL
JOISTS**



WELDED INTO A RIGID DECK



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**OR BUILT-UP
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*Proven by sworn facts taken largely from 1940 edition of
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There's a free "Visual Test" Kit waiting for you... mail the coupon below *today*.

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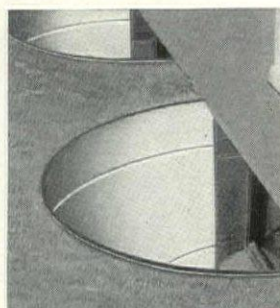
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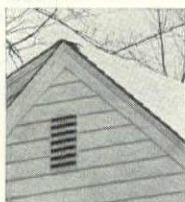
Faster Construction at LOWER COST with DONLEY AREA WALLS



Quickly installed by inexpensive labor, these substantial, low cost metal Area Walls are saving money and time for builders all over the country. Users report savings of up to 50%.

Designed to offer least surface to frost action—do not crack and disintegrate like masonry. Arch-formed and ribbed for strength. 16 ga. copper bearing steel, protected by two weather and corrosion-resisting coatings, carefully crated.

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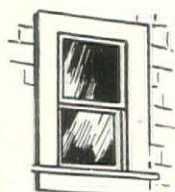


Substantial, well-made, these steel attic louver ventilators are low in first cost and easy to install. In frame construction, all that is necessary is to cut an opening in the sheathing, nail flashing flange to sheathing, butt shingles or siding against ventilator body and that's all—no wood trim needed (installation in brick is just as easy).

Complete with bronze fly screen fastened to inside, made of 20 ga. steel electrically welded, finished with two coats of special paint for double protection. Rectangular shape in 10 sizes up to 18" x 36", also made in half-circle and quarter-circle shapes.

The DONLEY BROS. Co.

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THE "eyes" of the house are the windows—the "eyes" of the majority of architects and builders vote for double sash hung with weight, pulley and Samson Spot Sash Cord. Dependable — permanent — no adjustments — little, if any, replacement cost. Samson Spot Sash Cord, identified by the Colored Spots (Reg. U. S. Pat. Off.), is the specification standard.

SAMSON CORDAGE WORKS

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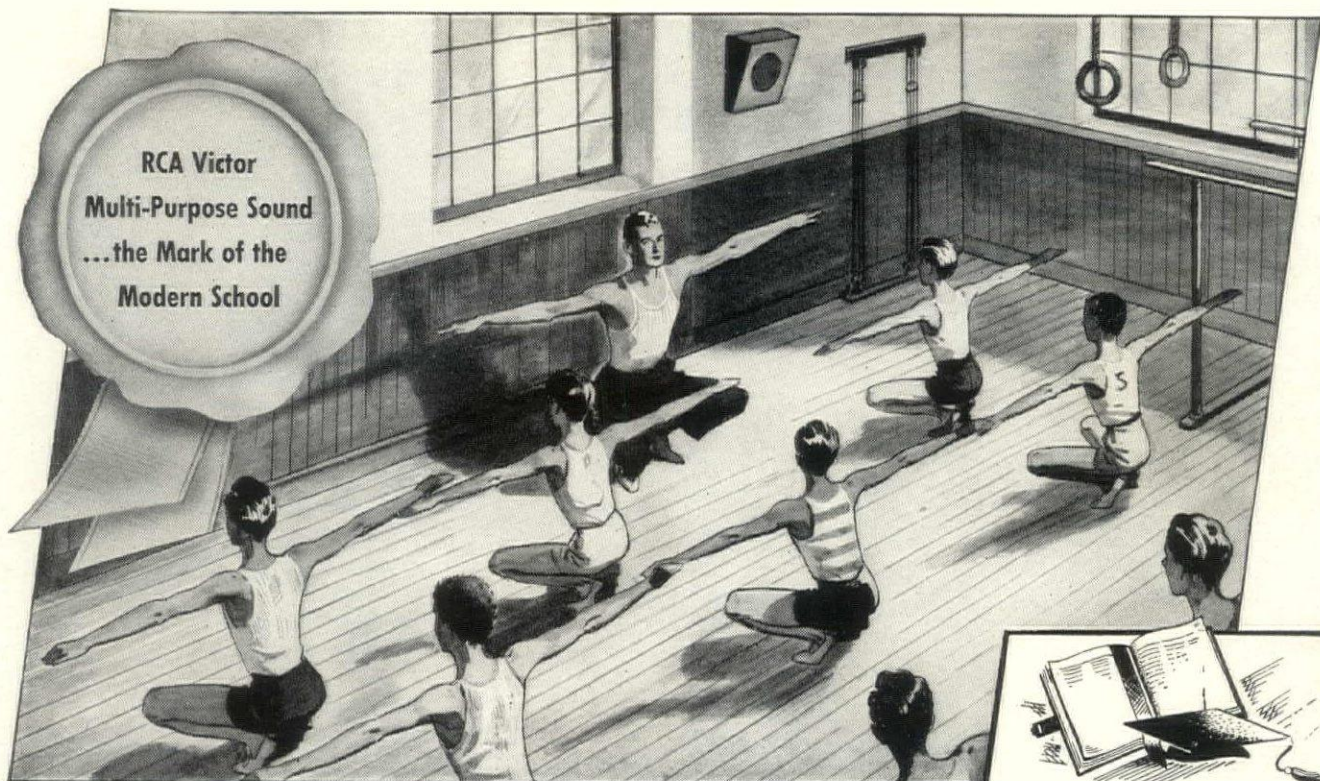


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**SAMSON
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SASH CORD

**RCA Victor
Multi-Purpose Sound
...the Mark of the
Modern School**



RCA Victor Multi-Purpose Sound enables instructors to use Victor Records as a teaching aid. In this way the system not

only helps with physical education but with music appreciation, languages, English literature and many other subjects.

In planning a school—it will pay you to DESIGN FOR EFFICIENCY with RCA Victor Multi-Purpose Sound!

**In schools, as in offices, factories, hotels, hospitals
and many other buildings, this Sound Service
SAVES STEPS, SAVES TIME, SAVES MONEY**

In schools these days, students, teachers and principals alike are keenly aware of the value of sound. They know that *sound* service is as important as the services of light, heat and water. For it means more efficiency — and that's important.

When you specify RCA Victor Multi-Purpose Sound for a school you automatically provide for simplified administrative control and a more interesting curriculum. This Sound System saves steps and time by making possible complete two-way communication between the school principal and teachers in any or all rooms. The principal may make announcements, call pupils or teachers, direct fire drills and quickly handle many other routine matters.

By giving new life to lessons, making them easy to learn, RCA Victor Multi-Purpose Sound is a

valuable aid to students. With it, educational radio programs may be received and educational records, covering a multitude of subjects, played.

School administrators have frequently commented on the convenience and money-saving features of this system, which makes the preparation and circulation of written notices and announcements unnecessary.

For these reasons, it will pay

Mt. Lebanon High School in Pittsburgh, Pa., is one of many with RCA Victor Multi-Purpose Sound. The RCA Victor Sound Service for Schools includes:

- Classroom communication
- Lecture and radio programs
- Music appreciation—Record programs
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you to *design for efficiency* with this amazingly low-priced, high quality sound. If you wish, a specially trained RCA Victor sound engineer will discuss any sound coverage problem with you. Just drop us a line for full details.



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Consult your nearest RCA Commercial Sound Distributor

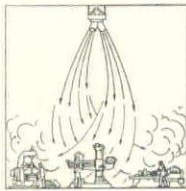
**IT PAYS TO SPECIFY
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RCA MANUFACTURING CO., INC., Camden, New Jersey
A Service of the Radio Corporation of America • In Canada: RCA Victor Co., Ltd., Montreal

WING REVOLVING UNIT HEATERS INCREASE PRODUCTIVE EFFICIENCY



WING Revolving Unit Heaters in Large Airplane Accessory Plant



By maintaining an active, constant circulation of air throughout an industrial plant at all times, WING Revolving Unit Heaters produce a sensation of refreshing, invigorating comfort to workers which is productive of more and better work with less energy.

WHEN plants are pushing for peak production... when every minute of time and every ounce of effort of employees count as never before for greater productive precision and less "rejects" from fewer human failures... your recommendations on industrial plant heating are of vital importance.

A prominent architect advises his clients: "WING Revolving Unit Heaters would be worth installing if they cost twice as much." (But they don't! In most cases they cost less.) One reason for recommending WING Revolving Heaters is the recognition that employee comfort and satisfaction make it imperative that plants have the fresh, live, invigorating atmosphere in winter and summer which only WING Revolving Unit Heaters provide.

You will find the technical reasons in Bulletin HR-1. Write for your copy.

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WING *Revolving* UNIT HEATERS

UNIT HEATERS • VENTILATING FANS • EXHAUSTERS • BLOWERS • TURBINES

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STANDARD TECO TERMITE SHIELDS

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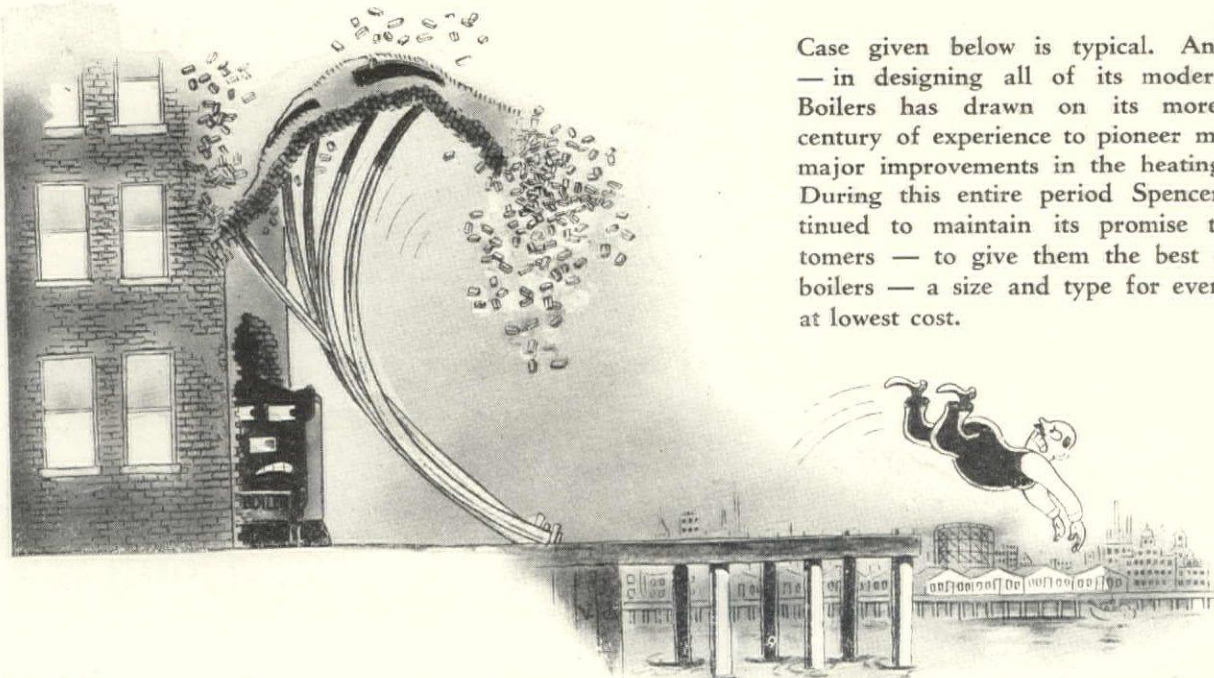
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THE SPENCER HEATING CLINIC

Uncovers Many Heating Needs



Case given below is typical. And Spencer — in designing all of its modern Spencer Boilers has drawn on its more-than-half-century of experience to pioneer many of the major improvements in the heating industry. During this entire period Spencer has continued to maintain its promise to its customers — to give them the best of modern boilers — a size and type for every need — at lowest cost.

CASE:

OWNER FIRST WRECKS BUILDING THEN DROWNS SELF

DIAGNOSIS:

Wall openings so small side wall was breached to bring in new boiler. Insufficient shoring responsible for collapse of whole building. Owner ends all in river when architect, whom he neglected to consult, points out that no tearing down was necessary.

PRESCRIPTION

The larger sizes of the Spencer Steel Tubular "A" Boilers which range up to 42,500 feet, are especially designed to be cut right in half — at the factory — and shipped in two pieces — then re-welded right on the job. No boiler tubes are cut, dislodged or moved in any way. This feature has already saved many owners large sums. Spencer Boiler designs include the Beauty Jacketed "K" and "C" Series with a range of sizes from 400 to 1950 feet (steam) for modern homes. One of their special Spencer features is the built in year-round domestic water heating coil.

And for homes where fuel economy is a requirement — for schools, churches and apartments, etc., there is that outstanding money and labor saver — the famous Magazine Feed Heater. It automatically stokes the smaller sizes of coal or coke — without motors or moving parts. *Send for the Complete New Catalogue*

SPENCER HEATERS

WILLIAMSPORT, PA.

DIVISION-AVIATION MANUFACTURING CORPORATION



Illustrated: Type "A" Steel Tubular Spencer ranging up to 42,500 ft. (Steam) for oil, gas, stoker and hand firing.

SPENCER BOILERS

FOR EVERY TYPE OF BUILDING AND EVERY TYPE OF FUEL

-protection in the public interest



to give even greater
life to

wood doors

—to assure purchasers that they will have a lasting usefulness, research scientists have developed minimum standards of *toxic preservation*—a treatment to enhance and improve the lasting qualities of wood products to keep pace with modern service requirements.

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Seal of Approval—The Identification of a Product Meeting N. D. M. A.
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FOR FURTHER INFORMATION SEE OUR CATALOG IN SWEETS



THE POPULAR FIR

One of the most frequently specified grilles among the more than one hundred designs illustrated in the Hendrick Grille Book is The Fir. With an open area of 50%, The Fir is as practical as it is pleasing.

If you buy or specify grilles, write on your letterhead for the 196 page Hendrick handbook, "Grilles."

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Offices and Representatives in principal cities. See 'phone book.
Mfrs. of Mitco Open Steel Floorings, Mitco Shur-Site Treads
and Mitco Armorgrids, Hendrick Perforated Metals and Screens.



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**For Concrete,
Stucco and
Masonry**

DUM DUM MASONOC is a tough but decorative plastic coating, many times heavier than paint, which bridges and fills the tiny cracks that give deterioration its start.

STAYS PLIABLE

While DUM DUM'S outer surface hardens to resist wind and weather—the under-surface remains pliable and alive, expanding and contracting with temperature changes and movements of the building surface, thus maintaining a weather-proof seal. DUM DUM will beautify concrete or stucco buildings, meanwhile protecting and preserving them against the forces of deterioration.

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THE ARCO COMPANY
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DUM DUM MASONOC

A pliable, heavy coating for Masonry Surfaces

“Waylite”

**THE LIGHTWEIGHT INSULATING
AND ACOUSTICAL AGGREGATE
IN PRE-CAST CONCRETE**

The Crow Island School in Winnetka, Illinois, as described on Page 79 of this issue of The Forum, features “Waylite” in construction.

Waylite was selected for this project because of these features . . . Its high value in insulating against cold and heat. Heating costs reduced. . . Its high acoustical value. The unpainted Waylite walls in the auditorium offer maximum acoustical efficiency. . . Waylite is 40% lighter than common concrete blocks. . . It is fire-safe, having a four-hour fire test rating by Underwriters Laboratories . . . Waylite is near white in color and is available.

The Waylite blocks used in the Crow Island School were supplied by THE CHICAGO INSULCRETE COMPANY.

THE WAYLITE COMPANY

105 West Madison Street

Chicago, Illinois

Plants in Chicago, Bethlehem and Philadelphia

TO SELL 7,700,000 FAMILIES ON

GLASS

Designed for Happiness

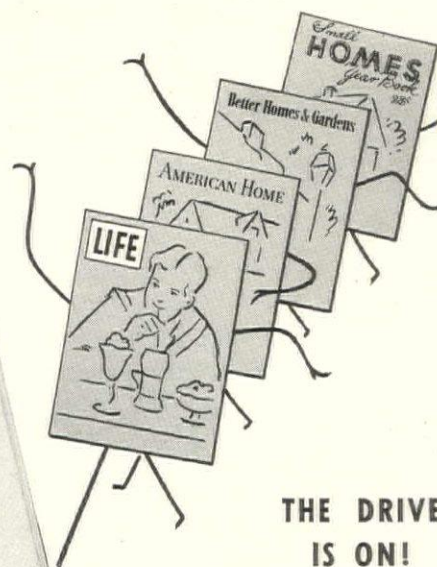
Double windows! Double comfort! Double thrift!

It's the new money to be saved... double windows... double comfort... double thrift! Libbey-Owens-Ford Glass... designed for happiness.

LIBBEY OWENS FORD GLASS
Designed for Happiness

See you and

LENS
YEARLY SUBSCRIPTION \$4.50



First Advertisement Promotes Window Conditioning

First shot in the new Libbey-Owens-Ford campaign to sell more glass in *all* classes of homes is this full color page in national magazines. The first advertisement sells the benefits of Window Conditioning. It points out how storm windows and doors save up to 30 per cent of fuel bills... how they help guard health by eliminating drafts and cold spots... how they prevent steamed windows and condensation damage to furnishings.

Succeeding advertisements sell glass features that will stimulate both new home construction and remodeling. Planned to stimulate the sale of other materials handled by lumber and glass dealers, this program means more business and more profits for you.

One out of every four families will be reached by this campaign... the 25 per cent most interested in their homes... the 25 per cent that represent your best prospects! Tie in with this Libbey-Owens-Ford promotion.

Wider Application of Glass Stimulates Interest in Architectural Service

Through the new Glass Designed for Happiness promotion, Libbey-Owens-Ford accents the fact that homes *both large and small, in every price bracket*, can be lighter, brighter and cheerier with glass. One of the principal aims of this promotion is to make your clients more glass conscious... to pave the way for you to use glass in the many forms and applications you have visualized.



Libbey-Owens-Ford Glass Company
Dept. AF-841, Nicholas Building
Toledo, Ohio

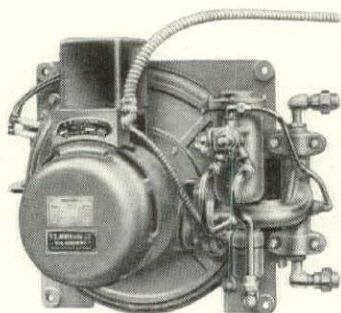
GLASS

Designed for Happiness

WHEN YOU SPECIFY

The Johnson
TYPE 30 AV

Rotary
Oil Burner
You're RIGHT!



Whenever heating, air conditioning or power needs call for a dependable oil burner, you're RIGHT when you specify the Johnson TYPE 30 AV Rotary Oil Burner. With new installations or modernization plans this scientifically "right" burner — simple in design, sturdy in construction, dependable in operation — has made, and is continuing to make, a host of friends among those who know what to expect from a GOOD oil burner, and GET it.

Easily adjusted to burn heavy-bodied, low cost fuel oils in any temperature. Adaptable to almost any type boiler.

For further details send for DATA SHEET 30 AV-2

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COPPER...

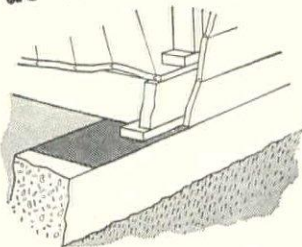
Any workman can put COPPER-ARMORED SISALKRAFT in place—and it costs about ONE-FOURTH as much as 16-oz. rolled copper.

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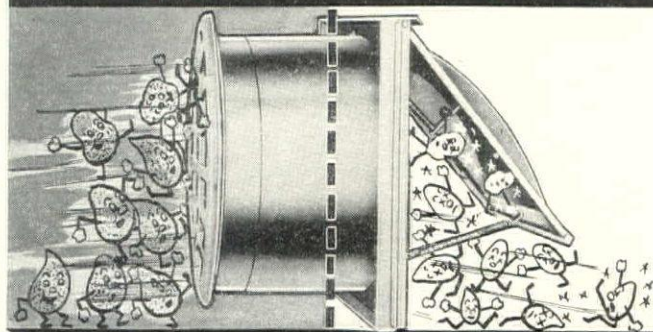


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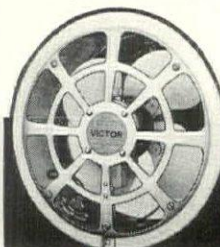


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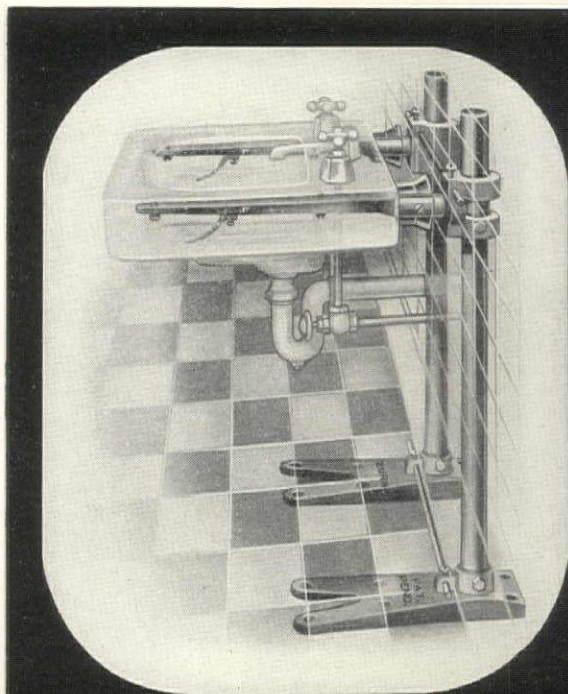
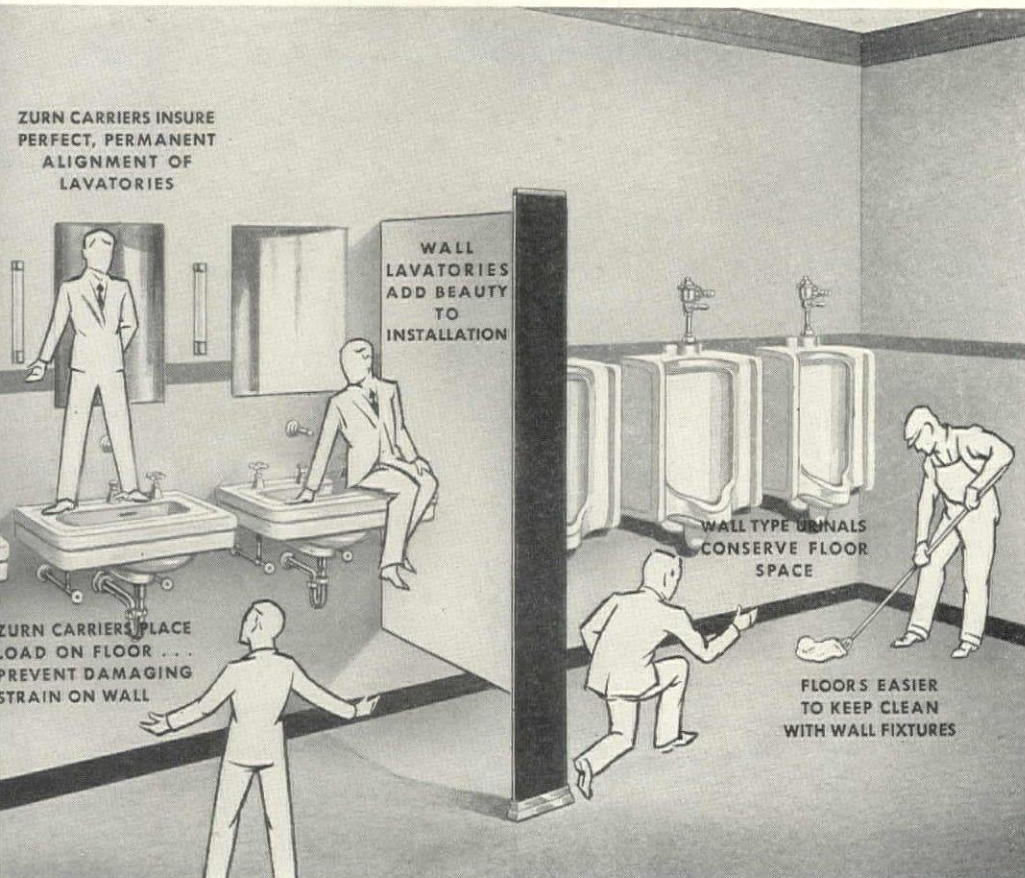
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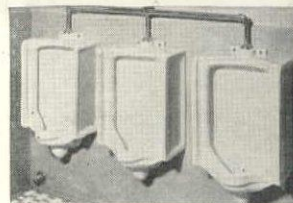
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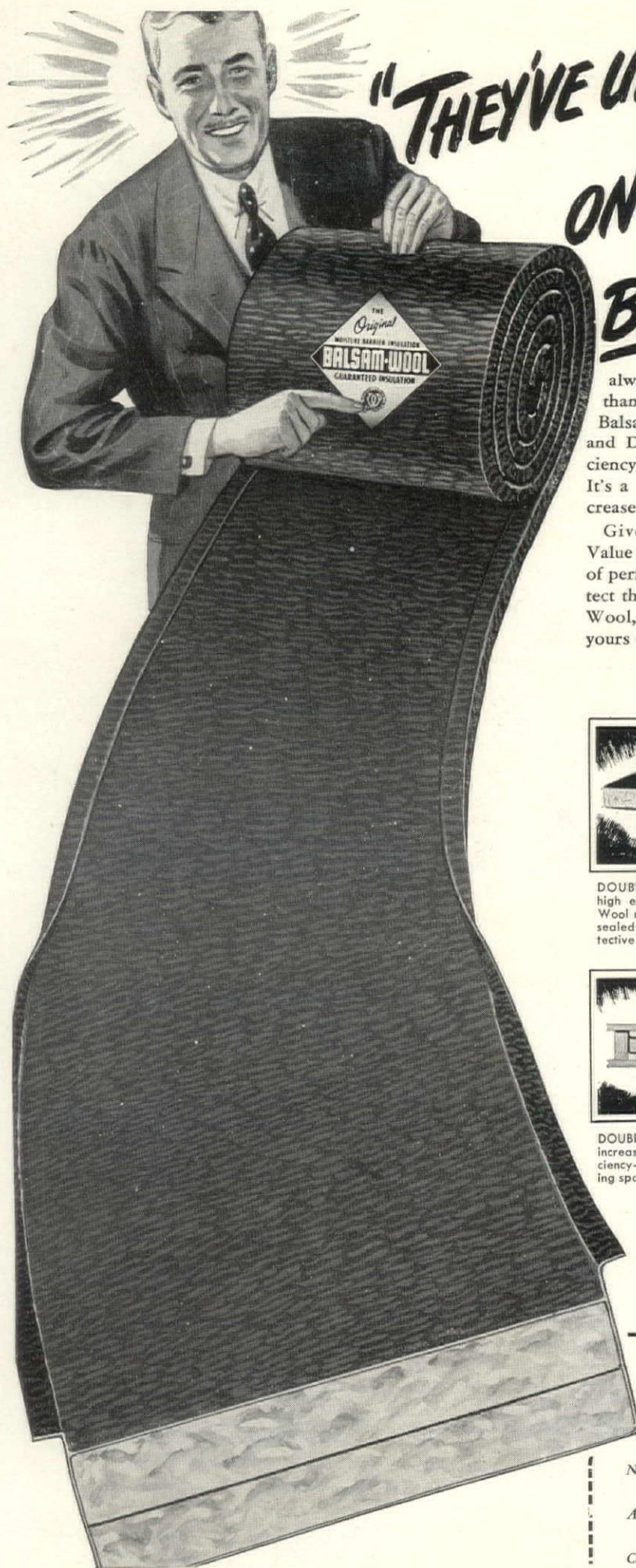
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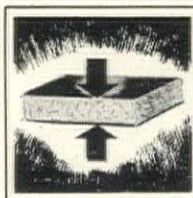


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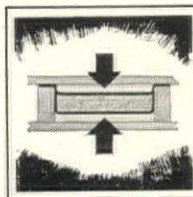
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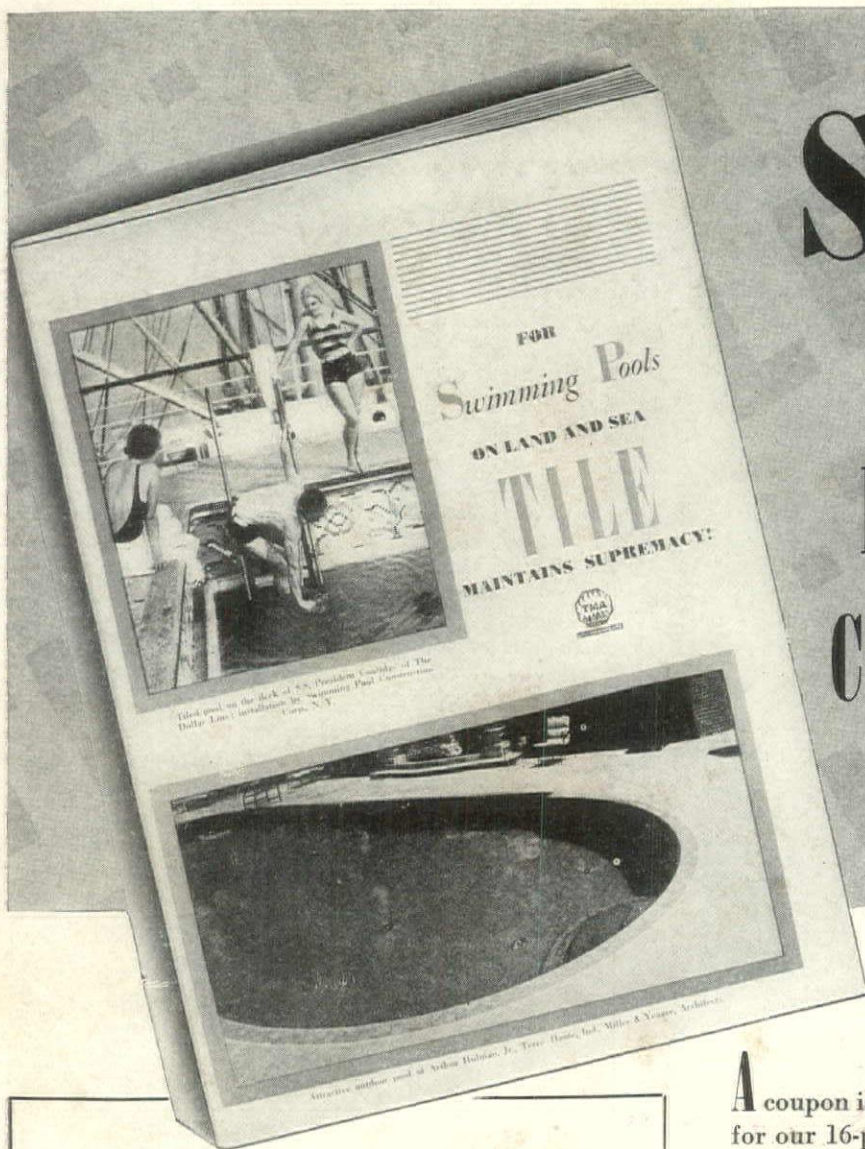
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