HIVENGILY OF HAMA

THE ARCHITECTURAL



AGAIN CEMESTO SPEEDS WAR HOUSING! 600 Units in a Florida Project!



Cemesto Wall Units Combine Strength, Insulation, Permanent Exterior and Interior Finish

HERE is another startling demonstration of the speed with which Cemesto construction may be completed! Within 30 days from the date of starting construction on a 600-unit Florida housing project, 85 families moved into their new homes!

Cemesto is a fire- and moisture-resistant wall unit composed of a cane fibre insulation core with a cementasbestos covering on both sides. It is a combined material making a rugged insulated wall section with complete exterior and interior surfaces, and is equally practical for housing and for industrial construction.

By eliminating much of the lumber and nailing required for conventional construction, Cemesto accomplishes a tremendous saving in critical materials. Get complete information now! Mail the coupon today for booklets bringing you the whole fascinating story!



THE CELOTEX CORPORATION . CHICAGO



A bare minimum of wood framing is needed because Cemesto possesses great structural strength.



Cemesto units expose clean, light, inviting surfaces, require no other interior or exterior finish.



Because Cemesto handles easily, houses go up fast, are ready for occupancy in a hurry.



Completed Cemesto dwellings are neat, trim, pleasant to look at and comfortable to live in.

| Т | Please send at once, free of charge, | AF 0-43 | |
|---|---|---------|--|
| 1 | 28-page booklet, "A Vital Contribution" | | |
| 1 | Portfolio of "Cemesto with Wood Fr | aming" | |

| 1 4 14 /// 2 | |
|--------------|-------|
| Address | |
| City | |
| County | State |

JUNE 1943

| NEWS | 49 |
|--|----|
| POST EXCHANGE, MAC DILL FIELD Alterations to the existing post exchange at a Florida air base, designed by architects and engineers in uniform a fine solution produced with limited means. | 55 |
| WASHINGTON STATLER First metropolitan hotel to be built in more than a decade, the Washington Statler continues a successful tradition and introduces a number of innovations in planning, de- sign and operation. | 61 |
| HOUSE PORTFOLIO A medium-sized house by Walter Gropius two traditional houses , a simple, clean design for an Oregon bungalow plans, pictures and construction outlines. | 77 |
| BRANCH LIBRARY, CHICAGO A good-looking small library building in which modern design has contributed to both the utility and the economy of the solution and has attracted additional readers. | 86 |
| THE PREFABRICATED HOUSE Chapter 6: "Reengineering," the measure of progress. An analysis of some of the most advanced systems of prefabricated construction, of widely varying types. The concluding chapter in the series. | 89 |
| SEVEN COMMERCIAL UNITS A new store block comprising seven separate stores and offices, designed and built as a unit but with a con- siderable degree of individuality. Douglas Honnold and George Vernon Russell, architects. | 97 |
| FORUM OF EVENTS Young designers produce economical new furniture under wartime restrictions Old designers who solved con- temporary problems three quarters of a century ago Announcements Appointments Obituaries. | 2 |
| PRODUCTS AND PRACTICE Cooling with heat—a new gas-fired summer air condi- tioner and winter heater for residential use plastics from redwood technical news new products manufacturers' literature. | 6 |
| BOOKS Eliel Saarinen's book on city planning The Latin American Collection of the Museum of Modern Art The Diary of a Housing Manager. | 12 |
| LETTERS | 34 |

NEXT MONTH: Corning Glass Plant . . . William Wilson Wurster portfolie . . . "Township Planning" . . . Prefabrication.

Managing Editors, George Nelson, Henry Wright; Associates, A. Sworn Goldman, Paul Grotz, Doris Grumbach; Assistants, Peter Blach, Dorothy Oshlag, Richard E. Saunders. Madelaine Thatcher. Publisher, Howard Myers; General Manager, Ruth Goodhue; Advertising Manager, George P. Shutt. THE ARCHITECTURAL FORUM is published by Time Inc., Maurice T. Moore, Chairman; Roy E. Larsen, President; Charles L. Stillman, Treasurer; David W. Brumbaugh, Secretary. Publication and Subscription Office, Orange, Conn. Subscription may also Offices, 19 West 44th Street, New York, 18. Address all editorial correspondence to 19 West 44th Street, New York, 18. Yearly subscription, payable in advance. U.S. and Posses-sions, Ganada, Cuba, Mexico, South America, \$4.00. Elsewhere \$6.00. Single issues, including Reference Numbers, \$1.00. All copies mailed flat. Copyright Convention. Copyright, 1943, by Time Inc. Printed in U. S. A. VOLUME 78-NUMBER SIX

VOLUME 78-NUMBER SIX

In Military Service:

Y

Robert W. Chasteney, Jr. William J. Conway Robert Hanford Joseph C. Hazen, Jr. George B. Hotchkiss, Jr. S. Chapin Lawson Amnon Rubenstein A. Banks Wanamaker

FORUM OF EVENTS



THE BASIC SEAT UNIT VARIES IN UPHOLSTERY ONLY, CRADLES DIFFER IN WIDTH TO PRODUCE 1-, 2- AND 3-SEATERS











This first-rate medium priced modern furniture is a wartime product.

Behind the furniture shown on this page is a long and woeful tale of "no metal." "no plywood," "no springs" and "no ac-cessories." Hans Knoll of New York, who at the age of 29 has already made a name for himself as one of the most advanced producers of modern furniture in this country, and the young Danish designer Jens Risom, were faced with these and other wartime restrictions. They emerged with solutions both ingenious and inexpensive. Their materials: glued-up lumber, olive drab parachute belting as supplied to the Army, saddle leather straps (if available), and cotton upholstery with simple, durable fabrics.

Designer Risom worked on the basis of a previously tried idea. He standardized all seats and frames, then produced numerous combinations (see above). Reclining chairs, armchairs and settees are all made up of the same basic seat unit. Cradles to form the arms and legs are the second basic unit, variable in length to take anything up to three seats. Main contribution to design: refinement and elegance obtained by curving the arms, tapering the table legs, undercutting the table tops. To go with the tables-which, again, are available in several shapes, sizes and heights-Risom created a charming little upright chair, made to take heavy wear and tear, and sell cheaply.

PRICES TO ARCHITECTS AND THE TRADE

- 1. Webbing: \$18 Upholstered in muslin: \$24 Leather lacing: \$42.70
- 2. Upholstered in muslin: \$26 Webbing: \$20
- Double seater (webbing) 44" long: \$36 3. 32" x 32" x 28" high: \$16.70 48" x 32" x 28" high: \$18.70
- 4. 161/2" high: \$16.70
- 5. Webbing: \$10.20
 - Slip seats in muslin: \$11.70

Protect your buildings with the NEW Richmond Fyrgard Door

Carelessness today is sabotage. Take no chances with spreading fires. Protect all interior areaways with the NEW Richmond Fyrgard Doors.

Designed to meet the strictest Underwriter and Building Code Laws, the core of these doors is 3-ply white pine, tongue and grooved, and covered with No. 24 gauge galvanized steel with vertical cap seams of No. 22 gauge steel. The flush galvanized sheets of the NEW Fyrgard Door not only provide a better appearance by eliminating all horizontal seams, but the heavier metal provides a more durable surface, compared to the 30 gauge terme plate on tinclad doors.

The NEW Richmond Fyrgard Doors fit any specifications. Automatic closing single and double swing doors as well as inclined and level track automatic sliding Fyrgard Doors are available. All are built to the same high standard of quality and protection.

Assure all buildings of maximum safety against spreading fires with the NEW Richmond Fyrgard Door. Write today for further details and specifications or see our catalog in Sweet's.



ILENT WATCHMA

...24 hours a day

(Affiliated with the Peelle Company, Brooklyn, N.Y.)

RICHMOND, INDIANA

JUNE 1943

Published monthly by Time, Inc., Orange, Conn. Yearly subscription: U. S. A., Insular Possessions, Canada and Cuba. \$4.00. Foreign Countries in the Postal Union, \$6.00. Single copies of this June issue, \$1.00. Entered as Second Class Matter at the Post Office at Orange, Conn., under the Act of March 3, 1879. Copyright, 1943, Time. Inc.

FORUM OF EVENTS



Is this Aalto's latest? Not at all. This bent plywood chair was designed more than half a century earlier by Mr. Cole of New Jersey, who patented it in 1874. William Kelly designed in 1870 the most compact bedroom unit devised to date, which included a double bed, shoe drawers, shelving to store clothes and a washstand.



Back of hinged shelf unit

Nineteenth century designers solved twentieth century problems

The second half of the past century witnessed a remarkable tide of inventiveness not equalled since. Fortunate for those who wish to delve into this period is a onetime requirement of the U. S. Patent Office that inventors submit models with their applications for patents. Thus we have a record today of designs ranging from corpse preservers to sliding sockets for scythe snaths and including a number of furniture designs shown on this page. Apart from their Cassandra-like perspicacity, these designers of three quarters of a century ago represent the final link in a tradition of craftsmanship and ingenuity that leads directly from the beginnings of design to the very latest, supposedly revolutionary, shapes and structures.



An adjustable reclining chair of metal was patented in 1879 by Mr. Bohsert of New York. An ancestor of Le Corbusier's metal furniture, this form-fitting chair preceded it by half a century.



By this ingeniously contrived couch a Mr. Deetz, in 1880, cut down the time taken to change over from sitting to sleeping to an absolute minimum. (Continued on page 122)



bed folds here a prophere into back of chier

st

CIGARETTE-PROOF

ON STATLER GUEST ROOM FURNITURE

nica

A striking feature of the guest rooms is the Formica Quartered Walnut Cigarette-Proof "Realwood", a plastic sheet in which an actual veneer is incorporated. This was used for tops on dressers and combination writing desks and vanities, as well as tops and shelves on coffee tables. It was used also for base on dressers.

The clarity of the genuine wood grain is remarkable, the most brilliant finish available on wood. Yet the tops have all the useful characteristics of a plastic. They are non-absorbent, cigarette-resisting, chemically inert. They are not stained or injured by conditions that would ruin wood.

Formica was used also for window stools covering the radiator and air conditioning unit. The dial on the Air Conditioning Control is a Formica "Permaprint".

The Washington Statler provides a look into the future of hotel equipment in America and the large part Formica laminated plastics are destined to play in it.



Formica "Realwood" Top in Quartered Walnut on Combination Vanity Dresser

Grey Formica Top and "Permaprint" Dial on Window Stools



Formica "Realwood" Tops and Base on Combination Desk and Dresser and Coffee Table Top and Shelf

IN AMERICA'S FINEST NEW HOTEL

In view of the steadily growing confidence of top flight hotel organizations in Formica as a surfacing material, it is not surprising that the splendid new hotel of the Statler system just completed in Washington, D. C. made a greater use of Formica than any previous hotel. It was the last big job of the kind that Formica handled before it became necessary to devote all Formica resources to the war effort for the duration.

Formica Cigarette-proof Red Gum "Realwood" Table Tops in the Men's Bar

Figured Red Gum Realwood was used for table tops in the men's bar and Grey Formica tops in the Veranda Lounge. It was also extensively used in the Embassy Room, restaurants and guest rooms.

Formica was specified by the Statler design staff and Holabird & Root, architects.



Veranda Lounge with Grey Formica Cigarette-proof Table Tops

THE FORMICA INSULATION COMPANY, 4612 SPRING GROVE AVENUE, CINCINNATI, OHIO



BULL'S EYE! ... thanks to the weather in South Bend, U. S. A.

ANTI-AIRCRAFT bull's eyes are not luck. They are scored by accurate gunners operating accurate guns. And gun accuracy is a built-in feature—made possible by ideal production weather in an American gun factory back home.

Consider the case of the manufacturer of delicate bearings for anti-aircraft guns. Nothing short of perfection is acceptable in these bearings. Variation of a fraction of a hairline may mean the difference of a Zero down, or a Zero dealing out death and destruction.

But even the gauges used for checking bearings vary with varying weather conditions. So in this particular factory the problem of delivering perfect bearings was solved by using Trane air conditioning equipment to keep constant temperature in the gauge room.

In other wars, weather on the production front was a temperamental neutral-helping or hindering the manufacturing efforts of friend and foe alike. In this war, weather — predetermined and rigidly controlled—is our ally. It helps our planes fly faster, farther, and higher... gives us more and better ammunition... helps assure the accuracy of our weapons...

So Trane "weather magic" plays here, as it does in many another war factory, an important role in the production effort. Skilled Trane field engineers, working with Government and industry, have applied this wide line of air handling and heat transfer equipment to maneuver neutral but unpredictable weather into an invaluable production ally.

And from what Trane is doing today will develop improved standards for the America of tomor-

row...greater comfort, better health and living—thanks to Trane air conditioning —in the better days that are to come.





PRODUCTS AND PRACTICE

COOLING WITH HEAT Servel develops a year-round gas-fired air conditioner particularly suitable to residential applications

Postwar houses may be cooled in summer, heated in winter and ventilated in all seasons with a single piece of equipment a newly developed, year-round air conditioner which operates on the same principle as the gas refrigerator. Developed by Servel, Inc., pioneers in gas refrigeration, this unit is the result of more than eight years of laboratory research and field engineering under all sorts of climatic conditions.

Before the war, more than 300 experimental installations had been made in cooperation with 27 utility companies throughout the country, and some of these had been in actual field use from one to four years. When the war interrupted production of air-conditioning equipment, Servel engineers continued their field testing and trial installations on the limited basis permitted by the WPB. Result is, the residential air conditioner, unlike many other predictions for the postwar world, is already a reality which can go into volume production and installation immediately after war restrictions are raised, and materials for civilian production are again available.

The new unit combines heating and cooling in one simple package. Cooling equipment is the absorption type using water as the refrigerant and is made in 3- and 5-ton capacities. Like the gas refrigerator, it is hermetically sealed, with no moving parts to wear. The heating equipment is the indirect type in which atmospheric steam is supplied to the heating coil, and comes in 120,000 and 180,-000 Btu, per hour capacities. A Selectrol thermostat automatically regulates temperature on either cycle, and manually operated toggle switches, built into the thermostat, switch the air conditioner from summer cooling and dehumidification to winter heating and humidification, or to independent air filtering and circulation.





YEAR-ROUND AIR CONDITIONER was installed in nine room house (above). Designed by Paul Drake, architect, house has three baths, spacious halls and is fully insulated with 4 inches of rock wool. Schematic diagram (left below) shows the mechanical operation of year-round air conditioner, while cross section (right) shows path of air flow.



The refrigeration system actually cools through heat. Gas burners that furnish heat in winter supply the energy that operates the cooling system in summer.

In summer, the gas-fired boiler delivers vapor to the refrigeration generator, where it operates the absorption cycle. Condensed steam is returned to the generator by means of a small condensate pump. Differences in temperature and height of columns cause circulation of the refrigerant and solvent in the system. In the heating cycle, atmospheric steam is automatically diverted to a blast-type heating coil. Air, drawn over the coil by a fan through restrictor dampers, condenses the steam as the air is heated. Condensate returns to the steam generator through an opening in the bottom of the heating coil.

Because of the simplicity of its design —use of one fuel for both cycles, absence of pressure within the sealed system, lack of moving parts and automatic control the Servel unit combines quiet, troublefree operation with economical cost.

Year-round unit sells to the utility for about \$1,000 which, at the present time, compares favorably with the cost of other summer cooling systems which must be added to an existing heating system. Total installation costs including the unit, water cooling tower (if necessary) and ductwork amount to \$800-\$1,000 more than the installation of just a winter air-conditioning system alone. Although this first cost is high, it will no doubt be materially reduced after the war when the units are manufactured and installed on a volume basis. Operating costs have been found unusually reasonable in all the Servel experimental installations.

Almost all types of buildings, both residential and commercial, and all types of installation problems were encountered in the more than 300 field installations. Equipment is particularly adaptable to new buildings, since the ductwork can then be arranged with both summer and winter outlets. Being of the central type, the unit is usually placed in the basement. Nevertheless, it has also been installed in the attic of a one-story residence in New Orleans, Louisiana, and a separate ground floor utility room of a Texas ranch house. Two commercial installations illustrate its flexible application: One room of a Southern company's offices was conditioned, while for a California restaurant four units were installed and properly zoned, so that only those units required at any one time were operated, thus achieving maximum economy.

To gather first-hand information on installation and operating costs, customer reaction, and future possibilities of the unit, an elaborate series of tests was made by the Public Service Electric and Gas Company of New Jersey. A report, prepared by Mr. H. P. Morehouse, Public Service's General Heating and Air Conditioning Representative, gives an overall picture of the 1942 summer cooling season, describing what was accomplished in a typical large residential application in the moderate climate of the Eastern seaboard.

The installation cost to the home owner, Mr. D. C. Hungerford of Madison, New Jersey, amounted to \$1,700, a cost which the Public Service Company shared on the understanding that they would have free access to the unit for inspection and for whatever tests that were made. This included the cost of Servel's large model air conditioner, a water cooling tower that was deemed necessary for various cost and service reasons, freight charges, installation of unit and changes in ductwork.

Records show that operating costs for the summer cooling season—June 8 to September 18—were quite reasonable, totaling \$95.14, and averaging 13.3 cents per running hour. Based on an operating period of 95 days, the operation of the cooling equipment averaged approximately \$1 per day. Latest reports on the heating cycle for the winter of 1942-43 indicate that operating costs were running within one per cent of the estimate, corrected for weather.

Experience demonstrated that the gas air conditioner was remarkably free from service troubles. During the summer the unit maintained a very satisfactory temperature and humidity condition throughout the house, including the maid's quarters and kitchen. A room-to-room check showed temperature variations of less than two degrees. Average operation of the cooling equipment during the summer was 7.5 hours a day and total hours amounted to 714.8—400.4 during the day and 314.4 at night. An interesting result of the humidity tests was the amount of



DAY-BY-DAY RECORDS show clearly effective operation of Servel units during a complete summer season in the Northeastern climate. Since thermostat was set at 74°, it is possible to visualize what air conditioner accomplished in temperature reduction and removal of moisture in comparison with the number of hours the unit operated.

water removed from the house, which came to the considerable total of 616.5 gallons for the season. This is probably the first time such information has been collected, and it turned out to be the result that made the greatest impression on the owner.

A gas meter was installed to record the weekly consumption. Electric meters measured separately the conditioner (fan) and the water tower use of electricity. If the water tower had not been used, the electric cost would have been considerably less, but the water cost would have been considerably higher. With the water tower, the water was used over and over again, and only a small amount of makeup water was needed to replace that lost in the condenser.

New molding compound from the aged redwood will replace hard rubber, more critical plastics



A new phenolic-type thermoplastic that is available in quantities has been recently perfected from the phlobaphanic structures of the redwood. These are the products of the reaction when the redwood chips are subjected to high pressure steam, the resultant fiber or powder becoming the thermoplastic substance. It embodies both resin and filler in one composite form and is readily adaptable to either compression molding or to standard hard rubber plant equipment. Redwood plastic, or Shellerite, is now going into full-scale production in the mills of The Pacific Lumber Company at Scotia, California.



PRODUCTS AND PRACTICE



1. PLASTIC DRAIN FITS METAL PIPE



2. HANGING READY-PASTE WALLPAPER



3. NYLON SCREEN FOR POSTWAR USE



4. INSPECTING PLEXON SCREEN CLOTH

TECHNICAL NEWS

Copper-saving circuit: The series circuit, relegated for the past sixty years to street lighting, now returns indoors as an effective copper conservation measure. A recent N.F.P.A. code interpretation permits the use of a 460-volt circuit for industrial plant lighting. Branch circuits at 460 volts require less copper wire than a 115- or 230-volt circuit, thereby releasing large quantities of critical copper. A 30-series circuit has been lately installed in the assembly shop of the Philadelphia Electric & Mfg. Co. New war plants will undoubtedly employ series lighting as they become more familiar with this efficient and critical-material-saving measure.

Extruded synthetic rubber: Ameripol, B. F. Goodrich's oil and heat resistant synthetic rubber, can now be extruded to form a compressible sealing device between metal panels where there must be no air seepage. Besides this aircraft application, Ameripol may expect to find industrial uses where its ready compression gives an air- or liquid-tight seal.

NEW PRODUCTS

SINK DRAIN (1) of white plastic. Name: Lumarith Plastic Sink Drain.

Replacing familiar metal Features: drains, the Lumarith sink drain consists of three parts-surface lip with a long threaded section, rubber washer and Lumarith washer holding it in place. Easy to clean and simple to remove for repair of plumbing, the plastic sink drain will not rust or corrode.

Manufacturer: Molded by Plastics, Inc., Avon, N. J. for A. G. Tompkins Co., 90 West St., New York, N. Y.

WALLPAPER (2) with patented adhesive base simplifies hanging.

Name: Trimz Ready-Pasted Wallpaper.

Features: Eliminating all the unwieldy tools of the professional paperhanger, the amateur may decorate with a minimum of fuss or experience. Like Ready-Pasted Wall Borders, its successor needs only to be immersed in water in a rolled-up strip and unrolled right on the wall. Because adhesive does not dry for twenty minutes, strips can be shifted about on wall for exact pattern matching, which is further simplified by one edge being marked off at one foot intervals and the other edge machine trimmed for a precision job. Paper comes in 24 different patterns with matching border and ceiling papers. Sold in packages containing an 81-ft. roll of 18 in. paper and 161/2-ft. roll of matching 3-in border, three packages will paper the average-size room. Ceiling papers are packaged separately in 81-ft. rolls. Manufacturer: Trimz Co., Inc., 1012

Spaulding Ave., Chicago, Ill.

Waterproof film: A new chemical vapor treatment renders paper, fabric and ceramics water-repellent, thus discouraging condensation. Just developed by Dr. W. I. Patnode, of General Electric's Research Laboratory, Schenectady, N. Y., it has been found nine times more effective than wax or varnish for preventing the formation of water in continuous films. It is especially valuable now as a permanent application on ceramic insulators in radio equipment for the armed forces.

Pressure-sensitive adhesive replacing crude rubber adhesives has recently been announced by E. I. du Pont de Nemours & Co., Wilmington, Del. Needed primarily to adhere sheets of masking paper to plastic noses and transparent aircraft enclosures, new adhesive is compounded from a petroleum base. It meets all requirements for a protective paper to Lucite through handling, shipping, fabricating and assembling. Actually stands up better than crude rubber adhesive in sunlight and does not crack off from the plastic.

NYLON SCREENS (3) for postwar houses. Name: Nylon Window Screen. Features: Made of single heavy strands of nylon, plastic screen cloth is now being tested for military applications and postwar use. Because of its flexibility (can be bent back and forth and even dented without damage), it is particularly suitable as a roll screen; could be rolled up and down on tracks like a window shade, which would eliminate putting screens up and taking them down every summer. Screens can be made in any desired color. but visibility tests indicate that it is easier to see through dark screens. For this reason, a coppery brown was chosen. Where some degree of privacy is desired, a lighter color screen could be used. Having all the good characteristics of metal screening, and many others besides, nylon screening is pigmented before yarn is spun so that color lasts as long as the screen. After the screen is woven, it is heat set between hot rollers so that it retains its shape.

Manufacturer: E. I. du Pont de Nemours & Co., Wilmington, Del.

PLASTIC-COATED YARN (4) for fly screens. Name: Plexon Screen.

Features: This noncritical screen cloth is made of multiple-ply cotton thread twisted tightly and impregnated with cellulose acetate butyrate, over which coatings of the same plastic are then extruded. Yarn can then be woven into screens on ordinary wire looms. Although important in the war effort for numerous Army camps and war plants, plastic-coated yarn is not

(Continued on page 134)



Can 2-story houses have



Here is one man's answer!

As installations multiply, answers to most of the commonest questions on Radiant Heating are being written in terms of actual installations. The query so frequently encountered—"Is Radiant Heating practical for 2-story structures?"—is no exception.

One architect's answer-which gains in interest because his own home is concerned-appears in the John W. Lincoln residence, Stonington, Conn.

The building is 2-story, 9-rooms, and was completed in the Spring of 1942. Coils were fabricated from Byers Genuine Wrought Iron Pipe: 700-feet of 1¼-inch, and 400-feet of ¾-inch. The 1100-foot total includes all supplies and returns. First-floor coils were laid on a gravel bed, and topped with 3-inches of concrete, over which asphalt tile was applied. Second story coils were assembled complete on the floor, then lifted and fastened to second floor ceiling joists, notched to receive them, with insulation above. The heating boiler is stoker-fired hot water, with circulating pump, governed by a Sarco temperature regulating system.

The unusually cold winter just past gave the system an immediate and severe test, with temperatures sagging to 15 and 20 below. Mr. Lincoln reports "entire satisfaction."

Just as the wealth of actual experience has made it unnecessary to theorize about the advantages, the planning or the installation of Radiant Heating, a wealth of actual experience makes it unnecessary to guess or gamble in selecting the most dependable and durable materials for the pipe coils. Byers Wrought Iron has served for many years in applications where identical corrosive conditions existed, and its unusual service qualities are a matter of public record. Then, too, Byers Wrought Iron has a highly desirable combination of thermal properties and is readily and economically formed and welded. These things have made Byers Wrought Iron and Radiant Heating practically synonymous in the minds of thoughtful engineers.

RADIANT HEATING?

If you do not have our technical bulletin, "Byers Wrought Iron for Radiant Heating Installations," we hope you will ask for a copy. It gives in condensed form a lot of worthwhile information on the calculation and installation of these systems, and provides answers to most of the questions that clients are asking.

A. M. Byers Company. Established 1864. Offices in Pittsburgh, Boston, New York, Philadelphia, Washington, Chicago, St. Louis, Houston, Seattle, San Francisco.

BYERS WROUGHT IRON

FOR <u>EXTRA</u> SERVICE IN CORROSIVE APPLICATIONS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

From better bomber fuel to better buildings



Current—Besides going into millions of square feet of roofs for war plants, Koppers coal derivatives today are helping produce more food (through fertilizing materials obtained from coal), better aviation gasoline (through the use of benzene, recovered from coal), syntheticrubber (also through the use of benzene), more aluminum (through electrode pitch used in recovering aluminum).



Contemplated—1941 and 1942 were two of the biggest years in the entire history of coal tar pitch roofing. More of it was used during that period. More valuable lessons were learned about its values. Now, with the great rush of war building construction scheduled to ease up soon, more and more of this long-lasting, maintenance-free roofing material will be available for civilian uses.

Pressure-treated Wood



Current—Many new and diversified uses appeared for pressure-treated wood, as architects and engineers, under the stress of the vast wartime building program, searched for materials more durable or more economical . . . and discovered the great possibilities in pre-fabricated pressure-treated wood.



Contemplated—Architects and engineers have found that the use of pressure-treated wood, as permanent construction material, involves no sacrifice . . . in fact, it actually improves the installation in many instances . . . and they are planning to extend its use in normal peacetime construction.

Koppers Company and Affiliates, Pittsburgh, Pa.



WE THANK the men and women of Statler Hotels Inc. for their long and continued recognition of the superiority of Sloan Flush Valves for again Sloan Flush Valves have been their choice for the new Statler Hotel in Washington.

This repeated preference for Sloan was undoubtedly influenced by the highly satisfactory performance of Sloan Flush Valves which are installed in the majority of the other Statler Hotels.

Statler Hotels. We take pardonable pride in adding the Washington Statler to the Honor Roll of prominent Sloan installations. A new name—another testimony—to the leadership of the world's largest manufacturer of Flush Valves exclusively.

SLOAN VALVE COMPANY

BOOKS



A medieval town plan of Malines in Belgium, a section of healthy cell tissue, and a decentralization pattern of Helsinki show similarities.

THE CITY, Its Growth-Its Decay-Its Future, by Eliel Saarinen. Reinhold Publishing Corp., New York City. 377 pp., illustrated. 6¹/₄ x 9¹/₄. \$3.50.

Eliel Saarinen's long-awaited book on city planning has now been published, and most expectations have been justified. It is a scholarly work of great internal unity: a fine survey of what the city has been and why, and what it must be in the future. It is perhaps the first attempt to correlate the past, present and future of planning, and to demonstrate certain principles common to all three. The author covers every advanced trend in city design, and though some of his specific conclusions are debatable, he has presented a very complete index to all ideas on the subject to date. It seems certain that the book will receive high praise. One may, therefore, be excused for devoting the larger part of this review to a critical analysis of both the criteria and the spirit of Mr. Saarinen's thesis—a discussion which he welcomed in his introduction.

Briefly, the thesis is the assumption that all growth of our material environment-architectural and urban-parallels in every respect the biological processes of organic evolution in nature. This idea, at first glance, seems completely valid, and Mr. Saarinen's demonstrations of similarities in cell structure and organic medieval city plans are convincing. On closer investigation, however, certain radical faults become evident -faults which make this pseudo-scientific, half-mystical analysis appear to be a belated repetition of the 19th century philosophy of mechanistic evolution. The primary fallacy of this kind of analogy is the exclusion of historical accidents, or interference by human, social and economic factors. This is not the place to go into these fallacies too deeply, except to point out that they are accepted by those movements in the present world that represent a general retreat from reason. It is the place, however, to investigate closely this noncontemporary philosophy as it applies to city planning and to indicate its manifestations throughout the author's thesis.

Here we find a number of interesting symptoms: Mr. Saarinen, like those arch-enemies of the machine led by William Morris, has a deep disdain for the material aspects of modern life. At one point he says: "This atmosphere (of folk art) was the reverse of materialism, for folk art did not originate from the work for daily livelihood or for other material reasons; it grew from an inner drift for inner satisfaction." It does not



occur to him that the only true art forms—if there are such things—are those completely interwoven with "the work for daily livelihood." That work, however degrading, is an integral part of the life of any time, and expresses this life more genuinely than abstract, dissociated esthetics ever could. It is precisely the inability of our contemporaries to grasp this, which has, so far, prevented a truly daring machine culture the production of contemporary art forms in "the work for daily livelihood," in factories and machine shops. Unless we face this, we shall merely substitute a spurious "arts and crafts" movement for the equally unrealistic imitations of handicrafts by the machine which exist at present.

A number of other aspects of *The City* are equally disturbing. Hand in hand with the half-mystical approach to an eminently practical problem goes a certain contempt for purely rational, scientific methods. Indicative of this contempt is a (Continued on page 104)

"POWDERED DAYLIGHT" for war plants

• A vital chemical of war is "powdered daylight" – fluorescent powder that makes cool, glare-free, shadowless light to speed production in plants throughout America.

Complex compounds called phosphors are pulverized, refined and milled to the fineness of face powder. Precisely blended and mixed with binders to assure even coating, tiny phosphor particles are *fixed* inside the glass tube by high-temperature baking. There, in very low-pressure argon gas and mercury vapor, the "Black Light" magic of ultra-violet rays transforms phosphor energy into visible light more constant than daylight – and just as kind to the human eye.

More than ten years of independent research have made coatings with smoother textures a unique feature of Sylvania Fluorescent Lamps. They have also brought other points of Sylvania Lamp superiority: uniform colors, higher light output and longer life – at





progressively lower costs.*

Improvements take place every week at Sylvania. Many of them, like the "Mercury Bomb," conserve strategic materials and labor, and at the same time improve quality. All of them serve fluorescent progress, which is aggressively aimed to bring better lighting to industry, commerce and the home when Victory is won.

While today's Sylvania Fluorescent Lamps are serving three-shift days in America's war plants, tomorrow's are being made even better. Specify Sylvania Fluorescent Lamps for replacement and be assured of all the improvements offered by constant research.

SYLVANIA ELECTRIC PRODUCTS INC.

formerly Hygrade Sylvania Corporation Salem, Mass.

Incandescent Lamps, Fluorescent Lamps, Fixtures and Accessories, Radio Tubes, Electronic Devices. World's Greatest Industry

and EARN for You a Place in the

THE PEACE

• No industry, within the knowledge of man, has ever made such rapid growth or reached such gigantic proportions as aviation. It has been predicted that aviation is the power which will do most to help win this war. It is now conceded – it will also win the peace which follows.

Aviation has moulded large numbers of the world's greatest designers, the world's greatest engineers, and the world's greatest producers. Yet-aviation is still in its infancy.

Today, the man with vision, who is alert to its unlimited opportunities, is the one who will most assuredly reap the benefits of postwar aviation. He, will be the designer and builder of the great aerial terminals for commercial and freight traffic of the air. He, will be the designer and builder of the suburban "parking lot" airports. He, will be the one who will help America retain its place of leadership in transoceanic air commerce.

To be "well posted" in all phases of aviation and to keep abreast of its new developments, you must read FLYING, the dominant aeronautical magazine which is read by more influential people than any other aviation journal.

FLYING brings to its readers signed articles by the world's outstanding military and governmental aviation experts, providing authoritative and complete coverage of every aeronautical development. Civilian leaders in the aircraft industry reveal what's to come in commercial air-freight lines, civilian pleasure flying, aircraft engineering and production, and international trade. No wonder FLYING enjoys the largest circulation of any aeronautical magazine in the world.

WII foresight

FEYING A ZIFF-DAVIS PUBLICATION CHICAGO - NEW YORK - LOS ANGELES WASHINGTON, D. C. - TORONTO - LONDON

CHERT

PARKIN

THROUGH WAR YEARS AND PEACE



TODAY and tomorrow meet in America's industrial laboratories. Today's Victory tomorrow's better living-are both taking definite shape.

Rölling equipment that stands up under temperature extremes from Russia's Arctic cold to Africa's inferno is contributing to your automobile of tomorrow.

Preserving foodstuffs in sweltering jungles and on blazing desert is proving new methods whose benefits are headed straight into American homes.

Near-miracles in surgery, sensational new drugs, are writing glorious victories over suffering and disease into a bright new chapter of a book that will never end.

Oil-O-Matic, too, is on the job for Victory today-for better living tomorrow. Even finer, even more efficient, even more versatile Williams Oil-O-Matic products are in the making-backed by more than twenty years of pre-war experience, plus war's know-how.

THE BONDS YOU BUY TODAY BUY WAR SAVINGS STAMPS & BONDS



Oil-O-Malic proudly flies the Army-Navy "E" pennant. Banner of Victory Ioday! Symbol of the experience and know-how that will mark Oil-O-Matic's contribution to better living tomorrow!

ARE YOUR GUARANTEE OF A Botton Townorhour WILLIAMS OIL-O-MATIC HEATING CORPORATION **BLOOMINGTON, ILLINOIS**



The A-B-C's of the Future!

WE WOULDN'T KNOW for sure, but it's our guess that apple pie "like mother used to make" will still be No. 1 on the hit parade with the men of tomorrow.

But one thing we are certain of ... Durez phenolic plastics and resins are going to make some startling innovations and improvements in the American conception of the kitchen! Yet it isn't necessary to take our word for it! Listen, rather, to Mr. Reinecke, who designs before he speaks:

"There is no limit to my personal enthusiasm for Durez phenolic plastics and resins. Their heat resistance and dielectric strength make them the logical material for the kitchen I have visualized here. Their smooth, lustrous and colorful finish naturally appeals to the style-conscious American woman. Their mass-production economies and precision-molding characteristics find ready acceptance with manufacturers. Actually, their properties are so well developed that this future kitchen could be built today!"

We don't have to tell you why Durez plastics and resins

are not being used to build such kitchens today. Like every other American industrial product, they're being fed to the production lines of our arsenals. But when victory is ours... among the multitude of plastic products you'll be buying, here's the a-b-c of your new kitchen!

A. Sliding Durez plastic door of table-height broiler-oven. Door slides upward to prevent heat loss.

B. Walls, cabinet doors, work top and drawers of Durez resin-bonded plywood.

C. Electric appliances move directly into place above work top and electric plates.

D. Open-top refrigerator drawers reduce loss of cold air. Drawers spaced at various points around the kitchen; temperatures controlled for articles used at each station.



Industrial Designer

E. Electric plates and sunken ccok-ing utensils with Durez plastic han-dles to be located at advantageous points, instead of being grouped as on present-day stoves.

F. Plumbing fixtures to be finished in Durez plastics and have plastic controls.

G. Light-weight Durez plastic sink. Finish cannot chip, stain or mar as it goes all the way through the molded piece.

H. Water and drain controls are foot-operated by means of Durez plastic pedals.



DUREZ ... plastics that fit the job

DUREZ PLASTICS & CHEMICALS, INC. DUREZ 446 WALCK ROAD, N. TONAWANDA, N. Y.



precision · · · from furnace to mould ·

★ Men of many years experience and "KNOW HOW" plus laboratory control through every phase of our foundry work—correct metal mixtures and strict regulation of pouring temperatures, are some of the reasons for the consistently high quality and uniformity of STREAMLINE Fittings. PRECISION STARTS WITH THE CORE AND ON FROM FUR-NACE TO MOLD AND MACHINE SHOP.

STREAMLINE Fittings and Copper Pipe are now in the service of our country for many purposes. They are installed in naval vessels of practically all types, including victory ships, subchasers, submarines, mine sweepers, etc. A tremendous amount of Copper Tubing, which in peace years provided peak performance in many of the best plumbing and heating systems in America, is now installed in the great majority of Tanks built in the United States and Canada.

When peace returns to the world, the plumbers and steamfitters of America will again install STREAMLINE Fittings and Copper Pipe to protect the health of the nation as they are now helping to protect the lives of our men in our armed forces.

- 1. Pouring the Metal.
- 2. Pyrometer reading for measuring temperature.
- 3. Pouring the moulds.

STREAMLINE PIPE AND FITTINGS DIVISION MUELLER BRASS CO. PORT HURON, MICHIGAN





Corrugated Eternit is non-critical and <u>Available Now</u> offering low first-cost and minimum maintenance

• Have you had trouble *getting* building material? Have you been forced to forego plans for expansion and rebuilding of plant structural facilities?

Corrugated Eternit is an asbestos-cement product for roofs and sidewalls that gives you material without equal for fast, permanent, low-cost construction! Makes goodlooking buildings that last. It's fireproof, weatherproof and imperishable. Nature made it so!

Hundreds of industrials are using it-have for yearsbecause it needs little or no maintenance, never requires painting, never rots or rusts.

Remember, Corrugated Eternit is available and noncritical. Investigate it for that next job!



• A large paper mill built with Corrugated Eternit Sheets. This material is almost unlimited in its application to industrial construction-for both roofs and sidewalls.



WRITE TODAY for 32page illustrated book containing engineering data and construction details. Address: The RUBEROID Co., 500 Fifth Ave., New York, N.Y. Dept. AF6.



Service to Industry Since 1886... Genuine RU-BER-OID Roofings and Building Products

YOU'RE PLANNING TOMORROW'S HOMES NOW ...

Include the modern convenience and protection of the SQUARE MULTI-BREAKER

ELECTRICAL EQUIPMENT

The Multi-breaker eliminates fuses completely. When a short circuit or dangerous overload occurs, the circuit is cut off automatically. A simple movement of the shockproof lever restores current. There are no delays-nothing to replace.

Because it costs little if any more than fusible equipment-often actually less, the Multi-breaker merits a place in every future home of every price class. The story is the same, whether you're planning individual homes in the upper cost brackets or are concentrating on low cost prefabrication and multiple housing. It applies equally well in the commercial building field.

A Square D Field Engineer will be glad to work with you in arriving at the best electrical specifications for any project you are planning.

Currently, every Multi-breaker we produce is assigned to wartime service. But the same features which make it so valuable to the war effort, earn it a place in the homes which will be built in the future.



LOS ANGELES



KOLLSMAN AIRCRAFT INSTRUMENTS DETROIT

MILWAUKEE

DEWALT CUTTING MACHINES help build and maintain farm buildings



Today—when all farm production is so important to the war effort—it is essential that farm buildings be built and maintained efficiently. DeWalt Cutting Machines have long been *custom-cutting* farm buildings in quantity. To help relieve the critical situation in lumber, DeWalt again comes to the front by re-working any lumber into usable material. Sturdy, flexible, dependable—DeWalt Machines do their cutting with a precision heretofore unknown.

De WALT PRODUCTS CORPORATION Lancaster, Pennsylvania



Speeds Production of Prefabricated Units

Insulating a prefabricated unit with Giant KIMSUL* blanket is almost as fast and easy as rolling out a rug! That's why so many busy, large-scale builders now are using KIMSUL on important wartime jobs. Giant KIMSUL (4' wide and wider in some specifications by 250' long) saves vital time, valuable labor. It can cover an entire framing section in one speedy operation. And, when installed, it provides a strong, effective blanket of uniform insulation which will not sag, sift, shift, or pack down when the unit is handled in shipment and erection.

KIMSUL saves installation time because it is applied by simply expanding the insulation blanket directly over framing members, then nailing the compressibility and strength of KIMSUL which makes this type of streamlined construction practical. (See the cross sectional photograph below.)

KIMSUL is one of the most effective heat-stoppers known, with a thermal conductivity of .27 Btu/hr./sq. ft./deg. F./in. And it is highly resistant to mold and moisture. Add all these facts and you have the reasons why increasing numbers of prefabricators today use and specify this basically better insulation. Find out more about remarkable KIMSUL and how it can produce construction economies in the units you plan and build. Mail the coupon today. There is no obligation.

*KIMSUL (trade-mark) means Kimberly-Clark Insulation.



flooring, sheathing or wall paneling right over it. It is the remarkable

CROSS SECTIONAL VIEW OF KIMSUL INSTALLED IN A FLOOR

This close-up shows how completely KIMSUL blanket compresses under flooring at joists and how quickly it expands to effective thickness on either side of the compression area, providing maximum insulation efficiency.



O C E L S R A H E I A

source of new architectural ideas

Most architects are in hearty accord concerning the place of plastics in the building industry. It's going to be a big place -and an important one.

How all this is to be achieved is not so evident, however, for the question of what material for what application seems extraordinarily complex. The answer appears to be lost in a maze of properties, trade names, chemical terms and figures. Actually, this world of plastics need not be nearly so baffling to the architect. When considered as other products of science

and industry-even as processed steel or shatterproof glass-plastics become standard building materials.

D 0

> N



For the process of manufacture need not concern you. It is the function of plastics that is all important.

Here, the creative architect is back on

firm ground. By understanding what forms a material can take-and what service can be expected from it under varying conditions, he knows how best to employ it.

Among the many plastics, those devel-

oped by Dow are exceptionally important to you. In saran, Styron and Ethocel, you will find materials that can be "made up" in



Seattle

nearly every conceivable form-and in varying formulations that meet exacting specifications. They are three of the most exciting plastics. We urge you to get acquainted with them-learn what they can do-and how you can use them. You'll find them a genuine source of new architectural ideas.

Information on one or all of Dow Plastics is available on request. Write for general booklet containing brief descriptions of each material.

Los Angeles

DOW CHEMICAL COMPANY, MIDLAND, THE MICHIGAN San Francisco





Designed for your new markets

Low-cost housing will be a large part of the residential building industry's postwar volume. In successful low-cost housing the architect's design considers each part that goes into the house from the standpoint of (1) waste, and (2) that part's relationship to every other part of the structure.

In successful homes of all price classes, the architect's design expresses his creative knowledge of the needs and tastes of his community.

For these reasons it is essential that a system of construction allow the architect complete flexibility of design. At the same time, the system must possess a high degree of manufacturing efficiency, produce a structurally sound house.

Engineered housing is the answer. Partly because it is *decentralized* prefabrication, engineered housing encourages freedom of design.

Engineered housing

For seven years and at a research outlay of \$300,000, Homasote Company has been applying sound engineering principles to the problem of building a home. Homasote's purpose: to help the architect who specifies Homasote Building and Insulating Board sell more and Letter houses, *profitably*.

Result of this exhaustive research is Homasote Precision-Built Construction -a system which:

(1) enables the architect to incorporate all the engineering economies of prefabrication into the homes he designs; (2) is based on the use of Homasote Board—oldest and strongest building and insulating board on the market—and other *standard* materials readily available in the local area;

(3) insures the architect's reputation against identification with jerry-building;

(4) saves the architect's detailing time thereby increasing his productivity—by providing complete charts and reference tables;

(5) is adaptable to any architect's design, with no change in a single overall dimension greater than two inches.

\$36,000,000 experience

The soundness of Homasote Precision-Built Construction has been proved in \$6,000,000 worth of pre-war, architectdesigned, private homes erected in every part of the country—and \$30,000,000 worth of government housing.

To the foresighted architect, Homasote Precision-Built Construction is the key to vast, post-emergency markets: lowcost housing projects, large realty developments, machine-perfect homes in all price classes.

For more details, write HOMASOTE COMPANY, Trenton, New Jersey





The Stuff That Dreams Are Made Of

S lets

You Are The WONS' With a Big Job To Do

WONS The

WONS Kitche

supplies the that keeps

MULLINS MAN

UARR

IT'S OUR WAR

HASTEN THE DAY *

This Battle Station is Closer to the Fighting Front than You May Think!

BUY WAR BONK

hile Youngstown Pressed Steel is busy

manufacturing the stuff that helps win the war, its executives are remembering that women still dream "kitchen dreams" and are interested in the stuff that can make those dreams a reality

The story of youngations kitchens is reaching millions of these women every month through National magazines - keeping Youngdown kitchens in their minds until the day when they are again on display on the dealer's floor

Architects and Builders can cash in on this investment in sales protection which Youngstown Pressed Steel is making for their mutual benefit by including youngdown kitchens in their plans for post-war homes.

> These advertisements are appearing in full color in The American Home, Better Homes and Gardens, Good Housekeeping, Ladies' Home Journal and Parents' Magazine.

> > Combined circulation over 13,000,000.

LET'S FIGHT IT NOW



ORY

YOUNGSTOWN PRESSED STEEL DIVISION MULLINS MANUFACTURING CORP. . WARREN, OHIO

JUNE 1943



because of the scientific space-saving features of La-Del Axial Flow Air Fans!

Why burden your overhead and operating costs with inefficient, space-consuming air movement equipment, when La-Del Axial Flow Air Fans can give you so much better service, in so much less space, and at so much lower operating expense?

The above illustration is a typical example of how La-Del installations save space. The old ventilating system was a rambling, cumbersome group of units requiring the area shown within the dotted lines. The La-Del Axial Flow Air Fan which replaced it required only about one-fourth of this area . . . and served the air movement needs of this job with much greater efficiency!

The entire La-Del Axial Flow Air Fan system is as compact as a kernel in a shell. All of the operating equipment is contained within the air duct. Note the diagrammatic drawing at lower right. The adjustable pitch propeller blades are designed for peak efficiency, with balanced characteristics throughout adjustment and fan operating range. This blade design actually broadens the useful operating range of a fan of any given size by fully 75%. Straightening vanes, having specific relations to propeller design, correct to a true axial flow the helical air motion caused by propeller blades. The streamlined tail maintains a uniform axial flow without turbulence. Only the La-Del Axial Flow Air Fan system can give you so much ventilating

efficiency, in such compact space, and at such low cost.

Write for Bulletin No. 116 giving additional facts about the La-Del Troller Axial-Flow principle, for reference in the planning and construction of your peacetime air movement developments.







PIONEERS IN THE DESIGN OF AXIAL-FLOW FANS FOR EFFICIENT AIR CIRCULATION

NEWS ABOUT GLASS from "Pittsburgh"

STERNAL



LIFE-SIZE MURALS of edge-lighted, decorated plate glass are now practical . . . as evidenced by these edge-lighted plate glass mirror panels in the cocktail lounge of the Penn-McKee Hotel, McKeesport, Pa. The sand-blasted figure is full life-size; the mirrored panels 7 feet square. This offers a new design medium for planners of future buildings.

ARCHITECTS WHO DESIGN buildings with large

light-transmitting areas have found Pennvernon Window Glass a good glazing material to specify. It is unusually clear and free from distortion for a sheet glass, and offers good vision, coupled with good looks. This is the Pennvernon-glazed College of Business Administration building of Boston University, designed by Architects Cram & Ferguson.



FOR YOUR STORE FRONT FILE. Whether a store's frontage is small or large, Pittco Store Front Products offer the architect the maximum opportunity to create an individualized, sales-winning store front. These products, including the necessary store front metal, are extremely versatile, and provide endless design possibilities.



PITTSBURGH PLATE GLASS COMPANY · PITTSBURGH, PA. "PITTSBURGH" stands for Quality Glass and Paint



Philip Will, Jr., A. I. A., and a plywood control part for a bomber. Mr. Willis a member of Perkins, Wheeler and Will, known particularly for their interesting, original residences. Most recently, their new Crow Island School at Winnetka, Illinois, has attracted wide attention for its fresh solutions to many school problems,

FROM A BOMBER PART... PRE-FABRICATED Structural Wall Sections for 194X?

To fill wartime needs, plastics have developed surprising new muscles — and a more brilliant peacetime future than plastics producers themselves ever dared predict. This is particularly true of plastics in combination with other materials. For example, the light but amazingly sturdy and durable plasticsbonded plywoods now being molded into large, complicated shapes for aircraft.

Impressed by possibilities of these new plywoods, Chicago Architect Philip Will, Jr., has suggested this stimulating series of pre-fabricated structural wall sections to permit custom-built individuality without sacrifice of mass-production economy.

Panels would be formed into one integral unit from three sections of plywood with the inner section corrugated to impart loadbearing strength and added rigidity. New plastics glues and recently developed new tools, based on induction heating principles, may even make it possible to bond panels like these quickly...and economically... into one, monolithic unit... on the site.

1. Load-bearing wall section with permanent, integral finish of new, clear or colored plastics films, perhaps factoryfilled with insulation. 2. Sliding door panels permanently bonded to wall-papers or fabrics. EXTERIOR WALL PAN SPLINE 3. Thicker sections of heavier plywoods for floor and roof systems. JOINT POST SPLINE 4. Translucent panels of similar con-INTERIOR PANEL struction built from new types of plasticsimpregnated paper. 5. Panels are nominally 4' x 8' but filler * post is thickness of panel, so actual panel width is 4' less panel's thickness to permit assembly on 4' module without cutting.

The Broad and Versatile Family of Monsanto Plastics

(Trade names designate Monsanto's exclusive formulations of these basic plastic materials)

LUSTRON (polystyrene) · SAFLEX (vinyl acetal) · NITRON (cellulose nitrate) · FIBESTOS (cellulose acetate) · OPALON (cast phenolic resin) RESINOX (phenolic compounds)

Sheets • Rods • Tubes • Molding Compounds • Castings • Vuepak Rigid Transparent Packaging Materials



WHAT WILL THE FUTURE BRING?

Frankly, despite wartime advances, problems are posed above that no one in the plastics or building materials industry has yet fully solved. It is logical to assume, however, that the two industries, working together, will produce materials for 194X equally as exciting as these suggestions. And it is equally logical to assume that postwar plastics materials and techniques will contribute equally stimulating new ideas to your particular field... When the time comes to talk "future" on your products, you will find Monsanto, as one of the country's largest plastics producers, an excellent source of information. MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield, Massachusetts.



Single-Family Unit (With or without complete bath)





Two-Family Unit (With or without complete bath)



Expansible Dwellings and Utility Units!

AN OPPORTUNITY for Contractors and Builders!

If new war plants are being built in your locality, or if old plants are undergoing expansion, investigate the possibilities of this new lowcost housing plan.

> Write for **Complete** Information

Factory-built, Factory-assembled and Factory-equipped

When emergency housing is needed at war production plants, Palace Expansible Dwellings and Utility Units quickly solve the building problem. Being com-pletely factory-built, assembled and equipped, they can be delivered by motor truck direct from factory to building site.

With plumbing, wiring and electric fixtures installed at the factory, all that is necessary is to place the dwelling units upon previously prepared foundations and connect them with sewer, water and electric lines. Complete even to furniture, floor coverings and draperies when they leave the factory, they are ready for occupancy within a few hours after reaching their destination.

Two laundry and four toilet units are sufficient for every 100 dwellings. However, the dwelling units may, if desired, be had with private utilities installed, making separate utility units unnecessary.

Palace portable housing and utility units are now available for factory housing projects and subdivision building projects in war-production areas.

PALACE TRAVEL COACH CORPORATION FLINT, MICHIGAN

IE. TRAVEL COACH CORPORATION

America's desire for comfortable, gracious living-so ably satisfied by you in the past-is not a casualty of war. Rather, present day inconveniences resulting from the use of less durable substitute materials are actually stimulating a desire for the economical maintenance and security provided by long-lasting copper and brass.

Fortunate indeed, during this war period, are the owners of homes rustproofed with these durable metals. The convenience and economy they now enjoy are a reflec-

tion of what the future holds for 4399 peacetime builders.

ANACONDA COPPER TUBES assure More Efficient Plumbing and Heating

nd Brass can make

Copper tubes for plumbing and heating lines give vopper under for plumoing and nearing mes give years of rust-free service. Installation cost is low Copper tubes stubbornly resist corrosion because of "solder" fittings. are smooth inside and out ... provide ample strength to withstand normal pressures and temperatures. They save space, are clean and attractive peratures. They save space, are crean and attractive in appearance and in the long run, are outstand-

ce in

ingly economical.

General Offices: Waterbury, Connecticut, Subsidiary of Anaconda Copper Mining Co.

American Brass Compan

ANACONDA SHEET COPPER assures Long-Lasting, Rustless Gutters, Rainpipes, Flashing



Rusted, leaking metal work can necessitate costly repairs—it's one of those things that can make a man regret the responsibilities of home make a man regret the responsibilities or nome ownership. That's why valleys, gutters, rainpipes and flashing on the home of the future should be made of sheet copper. With copper, there's none of the water damage which so often re-sults from the use of less durable flashing ma-terials ... rain disposal systems give better,

suits from the use of less durable flashing ma-terials ... rain disposal systems give better, less expensive service.

Canada: Anaconda American

Anaconda

EVERDUR STORAGE TANKS assure Plenty of Clean, Hot Water



Rusty hot water and an occasional tank replacement due to rust, are common annoyances that need not concern future homeowners. For longlasting hot water storage tanks of Everdur Metal will again be available. These strong, welded, rustproof tanks are establishing trouble-free service records in thousands of homes. *Reg. U. S. Pat. Off.

ANACONDA "ELECTRO - SHEET" assures Concealed flashing that's low in cost, durable

Thin copper for low cost, easy application, yet strong easy application, yet strong and rustproof for lasting protection against infiltra-tion of air and moisture around windows, doors and other points requiring concealed flashing.

er & Brass

Brass, Ltd., New Toronto, Ontario

1 n

makers of

FOLLOW THE SUN. What could be sweeter than a home 'way above the bustling city-a home you could wheel around to get the sun all day? Albert Robida dreamed up this elfin penthouse in 1882. Men have dreamed of wonderful snuggeries since time immemorial; but dreams and reality are acons apart-thank goodness (in this instance)!

After Albert Robida got through dreaming up the whirligig castle-in-the-air over there at the right, Paris went right on building the same old stuffy, ill-ventilated, over-decorated homes and tolerating the worst slums in all Europe.

Will history repeat itself here in the United States after the war? Everywhere you go today you hear people talking about their beautiful ideas for when peace comes. It's all pretty wonderful and fantastic ... and it's always fun to dream-but sound planning is more important.

We cannot all be millionaires and live in penthouses on Park Avenue. America should, however, build many new and better homes-but unless we come out of the dream stage and start doing something about our housing problem, we'll still be dreaming 2, 3, 4 years after Hitler is all washed up.

And so TIME offers this-

PLAN FOR BUILDING POST-WAR BUILDING MARKETS

1. Get ready to make sales the minute peace comes. 2. Prepare to stimulate confidence in new techniques,

materials, designs.

3. Interest both men and women, because they jointly decide when and how to build a house.

4. Stir up prospects for non-residential building.

5. Get the middlemen on your side.

You can do all five of these jobs in one magazine, TIME. For through TIME:

You can tap the dammed-up post-war buying power of over a million TIME-reading families with 21/2 times the income of the average U.S. family ... you can get your new product known to America's most important people*- the men and women whose lead others follow.

You can stir up the house-building urge in both men and women readers (TIME is read by over 1,000,000 men and over 1,000,000 women-they prefer TIME 7 to 1 over all the other magazines they read that carry advertising) ... you can reach not only home prospects, but the bankers and executives who decide yes or no on non-residential building (again and again they vote "TIME is our favorite magazine").

And in TIME you back up your trade-paper advertising with extra impressions on thousands and thousands of the top men in construction and finance.



*These people include executives and editors, congressmen and college presidents, government officials, mayors, radio commentators and 34 other groups of leaders - all of whom have recently voted "TIME is America's most important magazine.


OFF NEW GUINEA

The above picture shows U. S. Naval Units attacking a Japanese flotilla. Fletcher Pratt, noted naval authority, helped us prepare it.

The glorious success of our Navy is due in no small part to precision weapons and equipment. Much of this material is made, and much more is influenced, by Westinghouse. For example, Westinghouse Air Conditioning and Industrial Refrigeration, by controlling conditions of atmosphere and process materials, contribute to precision, uniformity and volume production of countless war essentials.

When the war is won, a "thousand" new-day benefits will result from Westinghouse "Conditioning". Better products at lower cost, greater year 'round comfort and convenience—better living for all.

Back of Westinghouse skill in solving varied "conditioning" problems are years of experience—also a hermetically-sealed compressor which assures economy, dependability—long life. Inquiries are invited from producers of war materials and from postwar planners. Westinghouse Electric & Manufacturing Co., 665 Page Blvd., Springfield, Mass.



SMACK ON A FLAT TOP, Bomb sights are manufactured under controlled air conditions for perfect fitting of delicate mechanical and optical parts and for protection against damage from perspiration and dust.



FULL SPEED AHEAD. Matched sets of huge propulsion gears for warships must fit perfectly. For the precision required, room temperatures are held constant by air conditioning for the entire operation of several days.



GLASS EYES FOR SUBS. In the manufacture of U. S. submarine periscopes, rejects are reduced — production speeded by protecting vital parts against damage from dust and moisture with air conditioning.



BETTER SIGHT—BETTER FIGHT. In grinding lenses and in assembly of binoculars, air conditioning reduces rejects—speeds production by controlling room temperatures, humidity and cleanliness of the air.

Tune in John Charles Thomas, NBC, Sunday at 2:30 P.M., E.W.T.



GEARED TO A THOUSAND WARTIME NEEDS



ALUMINUM PIGMENT IS PICKED FOR Tight Spots

Sea water and salt spray have ways of getting into places where they're not wanted. Metal-to-metal joints at hundreds of points aboard ship must be caulked to make them waterproof.

Some years ago a paint manufacturer developed and patented a caulking compound in which fine aluminum pigment was one of the important ingredients.

The purpose of using this pigment was to help provide resistance to sunlight, air and moisture. Thus, the caulking stays elastic instead of becoming brittle and breaking down. It provides an enduring, watertight seal.

This is an approved war use for Alcoa Albron, the pigment used in the caulking compound applied to many seams and joints on naval and merchant marine

ALCOA

ALBRON

vessels. It plays a small but important role in the nation's shipbuilding program.

Its role in civilian programs, as a pigment for the best aluminum paint, must be filled by substitutes for the duration, but...





1947 GULF BUILDING, PITTSBURGH, PA.

MAKERS OF ALCOA ALBRON PASTE, MADE UNDER PATENTS OF METALS DISINTEGRATING COMPANY, INC.



A three dimensional effect is produced with Bigelow Hartford Saxony.



Wilton carpet that simulates a plain twist carpet in cinnamon and yellow green.



Bigelow Austrian Loom Tufted carpet outside the Colony Room with Hartford Saxony floral in the interior.

Yesterday's carpet planning by Bigelow is today's sensation

One of the features at the new Washington Statler is the brilliant designing and beautiful color of the Bigelow carpet in every part of the hotel. Planned and woven before Bigelow looms were converted to war work the installation demonstrates the effective and economical use of Carpet Counsel suggestions by Architects, Holabird and Root and Decorator K. M. McCann.

When Bigelow looms are again producing contract carpet this same Carpet Counsel service will be yours at no extra cost per square yard.

BIGELOW-SANFORD CARPET CO., INC.

140 MADISON AVENUE, NEW YORK, N. Y.

LETTERS

Two reactions to the May issue . . . a comment from Australia . . . Henry S. Churchill on Stuyvesant

Town . . . Dymaxion vs. Diatom

DREAMS ON STILTS

Forum:

I recently sent 25 subscriptions, as presents, to leading bankers, builders and business men in Syracuse, for the American Builder magazine.

The reason I picked American Builder magazine? The cuts are what people want, generally, not what a few radical architects think that they should have.

There are no chicken coops, nor dreams on stilts, pictured as homes, churches, apartments, etc. This magazine pictures the postwar home as those evolved from the best of prewar period. Evolution not revolution.

Just thought you'd like a reader's reaction, as I subscribe to all.

PAUL HUEBER Architect

THE ARCHITECTURAL FORUM with its sister publication, Fortune, is currently consulting with the citizens and government of Syracuse, N. Y. on a postwar plan for Architect Hueber's home city. His collaboration is cordially invited.—Ed.

Forum:

Syracuse, N. Y.

The May issue of ARCHITECTURAL FORUM is almost breath-taking in its implications. It is worthy of a great deal of concentrated study on the part of the industry.

Your organization has contributed greatly through this extensive study to crystalizing the gigantic problem of rebuilding American metropolitan areas.

IRVING W. CLARK Manager, Home Building Department Westinghouse Electric & Mfg. Co. Mansfield, Ohio

VIEW FROM DOWN UNDER

Forum:

... Out here where the level of architecture generally is still far behind world standards, and where constant struggle against obsolete building codes, narrowminded authorities, powerful speculation builders and above all a stagnant education of architects which sterilizes every fresh approach make the work of a moderately advanced architect rather tiresome, we are dependent on THE FORUM as one means of keeping in touch with the outside architectural world....

... We are very grateful for the number of modern buildings (mainly houses) you are showing. However, although we can see that it is of interest to show good colonial examples as well, we think it a pity to devote so much space to very dubious large-scale commercial and Government buildings. Is the standard in these

buildings in the U. S. so much lower than in houses as your selection seems to imply ?

Another feature which often surprises us is that the interiors generally are far below the standard of houses. Most bedrooms, even when furnished by architects, have an almost crude character what with flowered wallpapers, oversupply of hangings and draperies, not-quite-genuine period sofas, etc. Can't the American sleep in as attractive and efficient conditions as he can bathe? ...

E. M. BUHRICH

Sydney, Australia

MET GITS THE MOSTEST

Forum:

... Twenty-four thousand people, the same number that live in Port Chester, N. Y., are to live in Stuyvesant Town, the "suburb in the city" which the Metropolitan Life Insurance Company is going to erect, postwar, in the blighted area east of Stuyvesant Square. It will get partial tax-exemption from the city, some closed streets, and the help of the city's power of condemnation in acquiring property. The funds will come wholly from the Metropolitan Life Insurance Company's policy holders.

In return the city will get eighteen blocks of blight rebuilt, and taxes on the present assessed value, which is a lot more than it is collecting now. In 25 years it may get full taxes on the improvements, too. Some 8,800 families will get good quarters at an average rent of \$48, and the Metropolitan Life will get 6 per cent combined interest and amortization. The buildings will be twelve stories high over firstfloor garages, and since they cover only about 25 per cent of the acquired land there will be a central park "bigger than Madison Square" as the chairman of the Metropolitan Life proudly states.

However, look! Stuyvesant Town is to be a walled city, a medieval enclave! The 13-story structures will make an almost solid wall around it; where the wall is pierced, other structures are carefully placed to prevent a view of the great interior park. A company town in New York City, set aside from the public, guarded too by the modern version of the moat, the heavily travelled traffic artery here widened for additional protection.

Twenty-four thousand people are promised a happy family suburban life in the middle of town. The apartment room ratio is 3.45, the number of persons per family is 2.75. This latter figure is almost exactly the median for Manhattan according to the 1940 census. This assures the Metro-

politan Life of being right smack at its biggest market *today*. But it also means only .75 children per family, a pattern which will provide no city in the future to worry about.

It means 6,600 children, at that. Deep in the shadow of the courts there will be playgrounds for the littlest ones. The city will be expected to provide schools for the others, of course. There is one on the site now, but it is old and inadequate even for the present population. The new one, built at city expense, will be outside the town, perhaps on a nice new river front park. To have placed the school *in* the town, the Metropolitan says, would mean that the public would be encouraged to come into the walled precincts.

No school in a city of 24,000! Not only that, there will be no civic center, no community facilities through which democracy in urban life can express itself. This is very far from the concept of the integrated and planned neighborhood. There must be regulation without representation for 24,000.

Gramercy Parkchester

This project, built with city taxexemption and city powers of condemnation and the money of tens of thousands of policy holders of all creeds, beliefs and colors, is, we are told, to be lily-white. No Negroes may rent in it, because this is the city of tomorrow, the pattern of our future. This is how safety of investment is preserved in America.

Safety of investment. What of the safety of other investments? The Metropolitan Life is putting about 400 people per acre in this project. This density of population is a menace to other properties, not necessarily per se but as a precedent. It could be drastically reduced if the interest rate were reduced. A 1 per cent reduction, from 6 to 5 per cent, would lop off about 9,000 rooms, and everybody's safety of investment - including the Metropolitan Life's-would be greatly increased. For if the present population of Manhattan were to be all housed at this density, enough of the residential area of the island would be left for three and a half more Central Parks. Maybe that is what we want, maybe that is the ideal-if it is, let us go and proclaim it and know what we are doing, but for the safety of whose investment does it make? Ten more such projects, gentlemen of the Real Estate Board and of the Savings Banks, and you are undone! The boys who get there fustest git the mostest, so you'd better hurry

(Continued on page 128)

Thank you, John A. Stewart!

PROMINENT NEW ENGLAND BUILDER CREDITS DRY-BUILT Full-Wall <u>strong-bilt</u> panels with important savings

BETTER than any words of ours, this letter from a repeat-user of *Strong-Bilt* Panels reports advantages now demonstrated on scores of projects in every section of the country.

Strong-Bilt Panels proved their worth in peace time construction. They have passed with flying colors the rigorous tests of wartime. And now they have earned their rightful leadership in the homes of tomorrow.

Booklets covering use in both conventional and prefabricated construction will be sent on request.

THE UPSON COMPANY



JOHN A. STEWART, General Manager of the Prebilt Company says: "Great stuff! Your full-wall, cut-to-size panels have worked miracles for us. They have helped us maintain our record of completing each project on scheduled time." <section-header><text><text><text><text><text><text><text><text><text><text><text><text>

JAS:ES

· U .. lewas John A. Stewart, General Manager

Upson Quality Products are easily identified by the famous Blue-Center



Crackproof full-wall panels, are presized at the factory to provide a painting surface which even artists acclaim. No joints to fill or tape. No nails to countersink. No nail holes to fill. No drying out period. Invisible Floating Fasteners anchor Upson Strong-Bilt Panels securely from the back.



THE CRACKPRODE BEAUTY SURFACE FOR WALLS AND CEILINGS

WHICH HOUSES ARE PREFABRICATED?





All of them are

Yet all of them were built within the existing construction industry.

Locally registered architects, exercising free and full flexibility, created them. They are not standardized in design.

Local contractors built them. Existing mortgage companies financed them. Local real estate operators sold them.

This community of interests safeguarded the home owner from the start, insured quicker erection and gave more home for the money.

These are homes people like to live in.

They are American Houses.



570 LEXINGTON AVENUE, NEW YORK



THE HOUSE OF HOUSES

AN OPEN LETTER TO ARCHITECTS **ON PREFABRICATION**

AMERICAN HOUSES, INC. 570 LEXINGTON AVENUE NEW YORK ELDORADO 5-6193-8

Dear Mr. Architect:

We have frequently been asked by architects, "What is the architect's place in the prefabrication industry?"

This is what we believe:

The building industry has made much progress in the last few years. You The building industry has made much progress in the last few years. You have introduced many new types of materials. You have written more rigid have introduced many new types of materials. You have written more rigid specifications and designed a wider variety of buildings, requiring a more cointific approach to building scientific approach to building.

You have called for new trades and techniques. You have given over to the contractor jobs which he can no longer do efficiently at the site. All of this has resulted in a growing belief that the home owner has not All of this has resulted in a growing belief that the home own been getting full dollar value from the construction industry.

With the introduction of many new materials -- such as plastics, aluminum, etc. -- in the houses you design, this situation is likely to become even What has been needed in the construction industry for some time - and what

What has been needed in the construction industry for some time - and will be increasingly needed in the future - is a refining process very The loaders of similar to that developed in the ferrous metal industry. similar to that developed in the ferrous metal industry. The leaders of this industry realized that they could not take raw materials and produce this industry realized that they could not take raw materials and produce steel in one operation. They placed between the manufacturers of iron and the users of ferrous metals a refining operation which was the steel mill.

Such a refining process in the construction industry is the function of prefabrication. Making use of it enables you and others in the industry

presabrication. Making use of it enables you and others in the industry to turn over to the contractor a job and supply him with materials in such a form that he can do the job quickly and efficiently. This is American Houses method of prefabrication. Call it refining, or

This is American Houses method of prefabrication. Call it refining, or what you will, it enables you to use our parts in any home you design, regardless of its value. You will find us ready and willing to cooperate our products are available. regardless of its value. fou will find us ready and willing to cooperate with you in any project you are considering. Our products are available You will be interested in our new booklet, "Prefabrication Explained."

Yours very truly

President, American Houses, Inc. FRIC

THE HOUSE OF HOUSES

Holabird & Root Architects and Engineers

THE FREEZING CYCLE

A-Water circulating through tubes of freezer. B-Refrigerant surrounds tubes and causes water to freeze to inner wall of tubes. C-Ice cylinders forming in tubes. The WASHINGTON STATLER introduces Vogt TUBE ICE

TO THE TRAVELING PUBLIC

Score another FIRST for Statler . . . with Tube-Ice!

Statler was first to provide guests with a morning newspaper, to have running ice water and a radio in every room, and a dietician in its hotels. Now, it introduces a new kind of ice at the nation's most modern hostelry ... a clear, hard ice of can-ice quality and appearance ... Tube-Ice.

Here two Automatic Tube-Ice Machines, one of five tons "cylinder" ice capacity and the other of six and one-half tons "crushed" ice capacity each twenty-four hours provide sized ice for a great variety of refrigerating purposes. Chief of these is the preservation of freshness and flavor in foods and for beverage cooling. The machines use Freon as a refrigerant and operate on 15 lbs. suction pressure.

A Vogt Tube-Ice installation will meet your sized ice needs with a minimum of plant investment, power, time, and labor. An attractive booklet which completely describes the machine, the process, and the product with its numerous applications is available upon request.

ASK FOR BULLETIN T1-2

HENRY VOGT MACHINE CO., INC.

LOUISVILLE, KY. Branch offices: New York, Philadelphia, Cleveland, Chicago, Dallas

Five ton unit discharging "crushed" tube-ice. The ton unit discharging "crushed" tube-ice. THE PAT. No. 2,200,424 and 2,239,234 THE FILL PAT. No. 2,200,424 and 2,239,244 THE FILL PAT. NO. 2,200,424 and 2,239,244 THE FILL PAT. NO. 2,200,424 and 2,239,244 THE FILL PAT. NO. 2,200,424 THE FILL PAT. NO. 2, No. 2 in a series of tributes to America's War Industries





TODD BURNERS ARE WORKING FOR VICTORY

Wherever trouble-free, dependable combustion of liquid and gaseous fuels is a necessity . . . in war plants, in countless merchant and fighting ships . . . Todd Burners are delivering unsurpassed performance in the production of heat and power.

They jab and stab, they slug and smash. On and on they roll ... devouring Nazi panzers as they go . . . leaving in their wakes the shattered, burned-out carcasses of these mechanical beasts. Lights, mediums, heavies . . . Lees, Shermans, Grants . . . they outspeed, out-shoot, out-maneuver, out-last anything the frantic "supermen" can create. These are the tanks that American industry builds.

In quality, the world has never seen their equal. In quantity, this vital tool of war is coming off our production lines like pennies out of a mint. For both, the civilized world can thank American industry . . . its genius for producing the most of the best.

And what this genius is doing for tanks, it is also doing for planes, guns, ships, ammunition . . . every phase of our war production. American industrial might . . . all its muscle, all its skill, all its determination . . . is all-out for the blood of the Axis!

TODD SHIPYARDS CORPORATION TODD COMBUSTION DIVISION 601 West 26th Street, New York City NEW YORK MOBILE NEW ORLEANS GALVESTON SEATTIE BUENOS AIRES LONDON

TODD BURNERS * * ON THE FIRING LINE OF AMERICA'S WAR PRODUCTION FRONT





On the postwar building scene, you'll see a lot of Modine.

Before the war, Modine Convectors were extensively used because of their many and distinct advantages. The *new* Modine concealed convector radiation will permit you architects and engineers to heat buildings in a way you couldn't heat them before—but always wanted to do.

This new superior heating will mean added convenience...cleaner, healthier heating combined with new and more luxurious comfort.

And with it a new beauty! Smartly modern, streamlined enclosures...distinctive in design...blending harmoniously with their surroundings. The heating unit will combine increased compactness with ample capacity. Fast to heat...quickly responsive to automatic control...flexible—to meet varying inside demands and sudden changes of outside temperature.

Right now Modine Convectors are at their battle stations—aboard the ships of the U.S. Navy and merchant marine. Modine has built convectors for over a million tons of shipping...is building more. Hence the after-the-war Modine Convector *isn't* wrapped up ready for delivery.

But it is not too early for you to specify Modine Convectors for heating the building you're planning now to be built after the war. Get Catalogs 241 and 241-A.

Modine STEEL Unit Heaters and STEEL Coils are AVAILABLE TO INDUSTRIES DOING WAR WORK

Look in your phone book for Modine representative's name-"Where to Buy It" section under "Heating Apparatus."

MODINE MANUFACTURING COMPANY, 1736 RACINE STREET, RACINE, WISCONSIN

Pre-war Experience (SINCE 1934) Assures Lasting Satisfaction with



1938 Pallomar Roller Rink, Milwaukee, Wis. Note steel tie used as the tension member (wood substituted in wartime installation shown above). Also note the ex. cellent distribution of light due to the absence of the web members required in conventional wood and steel truss construction. **1942** Addition to Ranger Aircraft Plant, Division of Fairchild Engine & Airplane Corporation. Albert Kahn, Associated Architects & Engineers, Inc., Detroit, Mich. Above: Complete view of one 100-ft span. Entire building consists of two of the 100-foot spans located side by side. Each span consists of only one upper chord and one lower chord.

Where the two 100-ft. spans meet, they are supported by 40-ft. carrying trusses whose members are made of kiln-dried lumber glued by the "Unit" process.



PRE-WAR Interior of field house, Gustavus Adolphus College, St. Peter, Minn. "Unit" glued-laminated construction used for 120-ft. span. Sections of this size and larger are made by the "Unit" process in one operation. WAR Bomber Modification Center, St. Paul, Minn. View shows ^{1/2} arch (100 ft. long transported by truck from the factory at Peshtigo. Wisconsin) being hoisted into place. 170-ft. span. Rigidity of glued-laminated construction permits lifting 100-ft. member at the center without distortion.

Both the process and the designs are so well-established and proved by the test of time, that you know in advance what results to expect when you employ "Unit" members Here is something more than an emergency expedient. Such features as simpler detailing, quicker fabrication, and faster erection save time and money anytime - and they are backed up by safety factors, fire resistance, and beauty of functional design which assure lasting prominence of the "Unit" idea in building design . . "Unit" members are fabricated under rigid shop control, with special equipment, trained personnel, and exclusive techniques (U.S. Patents Nos. 2177395, 2172093). Prior to gluing the laminations together, each individual lamination is PRE-GLUED TO FULL LENGTH by means of scarf joints, then SURFACED to insure uniformity and accuracy - meeting the same standard which has long been established in the fabrication of wood members for aircraft. The "Unit" organization, which pioneered many phases of glued-laminated construction, now offers a wealth of engineering background and application data . . . Write, phone, or wire

LAMINATED

Arches & Beams

UNIT STRUCTURES, INC., Peshtigo, Wis. Plants at Peshtigo, and at Sayville, L. I., N. Y.

Copyright 1943 Unit Structures, Inc.



AE-6



WHAT DO YOU THINK

About Doors?



Naturally, we think a lot about them—they're our business. For years we've striven to build them better, but now new opportunities for further improvement present themselves. Already, our war experience has shown us the way to more than one betterment. For instance, new metals and new processes now permit doors to be made lighter and stronger. They may someday be shipped from the factory as a completely fitted door—thus greatly reducing costly handfitting on the job. Whether they swing, slide or fold, the door still presents a worthwhile design opportunity for which we offer forward-looking architects our cooperation. It is one of those projects in which we will gladly make available all possible data and technical information. Done now, we believe that constructive effort of this type will pay dividends when Peace comes, and the world starts to build again. That is the kind of postwar planning we're doing today, as we build all manner of Victory's tools.

(Top Illustration). The Dahlstrom Elevator Entrance installation in the Chesapeake & Potomac Telephone Building, Baltimore, Md. Taylor & Fisher, Architects.



Representatives in Principal Cities

"So Proudly We Hail"...

The Army-Navy "E" has been awarded the employees of Dahlstrom for excellence of production on a wide variety of equipment used by our Armed Services. The presentation was made May 6th, 1943.

A good cleaning....for TOJO

Briggs Beautyware plumbing fixtures were made by men who are now intent on a different kind of sanitation job. They're helping to clean up the things Tojo and Hitler started.

They're proud of their airplane gun turrets which must be manufactured so painstakingly to deal out long-range destruction to the enemy from all sides of our big bombers. They're as proud of such wartime achievements as they were of their bathtubs and lavatories, their kitchen sinks and cabinets.

Some day they'll make things for the American home again — and when they do, Briggs Beautyware will be better than ever!



BRIGGS MANUFACTURING CO., DETROIT



COMPLETE WOOD WINDOW UNITS

"Built-ins" . . . for the 194X home—yes, even a built-in view or two, with dull wallspace converted into year 'round living pictures, through Andersen Complete Wood Window Units! With wider use of fenestration in 194X homes will come wider recognition of the importance of Andersen Complete Wood Window Units. For here are complete wood window units that are designed as a functional part of the entire structure, and adaptable to all types of residential design. And, though designs may change and innovations develop—of this you may be sure: the quality and precisionbuilt excellence of Andersen Complete Wood Window Units will remain *unchanged*. As always, Andersen Complete Wood Window Units will continue to meet the exacting requirements of the building profession.

Sold through regular millwork channels. See Sweet's Architectural file for complete details or write to the . . .

Andersen Corporation

The Paintriotic Architect...

1 "Yes Jim, it's quite a job ... keeping all these wooden buildings from going to pieces. Nobody knows when they can be replaced, so it's up to us architects to help see that they're protected from the weather. And believe me, fellow, that calls for really good paint ..."

2 "Pardon me Mr. Architect but good paint's other name is Dutch Boy White Lead. It never cracks and scales — not only lasts longer *itself* but makes property last longer too . . . conserving both materials and labor. And its adaptability, plus its low price per gallon when mixed, means you can use it on any surface — wood, plaster, brick, stucco, concrete . . ."

3 "Remember too – there's no shortage of white lead – no change in its time-tried quality. The Dutch Boy White Lead you specify today, while improved in whiteness, hiding and body, is the same 100% pure white lead that has protected American property through every war since the birth of the Nation . . ."

NATIONAL LEAD COMPANY — New York, Buffalo, Chicago, Cincinnati, Cleveland, St. Louis, San Francisco, Boston (National Boston-Lead Co.), Pittsburgh (National Lead & Oil Co. of Penna.), Philadelphia (John T. Lewis & Bros. Co.).

4 "Now you can also specify Dutch Boy in a new form – as a ready-to-use *Paint*. It's pure white lead all ready to spread. Comes two ways – as a special Exterior Primer for extra sealing, covering and whiteness and as an Outside White for finishing coat and general painting.

Used as a two-coat combination you can't beat them for sparkling whiteness and durability, even on new wood.

Hey, what's this medal you're pinning on me? 'First Choice for Making Things LAST'-thanks Mr. Architect-that sure says it!'

Specify

FIRST

LAST

PASTE OR PAINT

DUTCH BOY PURE WHITE LEAD

INSULATES NEWEST HOTEL STATLER Holabird & Root, Chicago and New York - Architects John W. Harris Assoc. Inc., New York City · General Contractors Vermiculite Products Corp., Washington, D. C. • Licensee Manufacturer of Zonolite

7 Carloads of Zonolite Concrete Aggregate Used to Insulate Roof of Washington, D. C., Structure

TIT

ZONOLITE CONCRETE

The opening of the handsome new Hotel Statler pictured above adds another outstanding name to the fast growing list of prominent buildings insulated with Zonolite Concrete Aggregate. On this job, the entire roof was surfaced with a reinforced concrete deck, and that, in turn, covered with 2 inches of fireproof. permanent Zonolite insulating concrete roof fill.

Zonolite was selected on the basis of lightweight, fire protection, and superior insulation against heat, cold and sound. It is easily formed into cants, saddles and slopes to give proper roof drainage. Mail coupon now for your free copy of new 86page manual"Zonolite Concrete," giving detailed information on what it is (with complete physical properties) and how it is used (full illustrations and drawings).

In

B: Zonolite Insulating Concrete Roof Fill C: Concrete Roof Deck B A: : A. 2. ·^ Δ A. A C à N

A: Built-up Roofing over entire job

A ZONOLITE PRODUCT FOR EVERY INSULATION REQUIREMENT CONCRETE AGGREGATE: Replaces sand—to make a permanent, fireproof, rotproof, feather-weight insulating concrete. PLASTER AGGREGATE: For lightweight, fire-resistant plaster of high insulating and sound deadening gualities. HOME INSULATION: Granular fill type of high efficiency. No costly equipment needed.

Prompt Deliveries from 22 Plants.

UNIVERSAL ZONOLITE INSULATION COMPANY, Dept. AF6, 135 S. La Salle St., Chicago, III.

| ZONOLITE Mail Contract Mail Contract Co | Coupon for Universal Zonolite Insulation Co. Dept. AF6, 135 S. La Salle St., Chicago, III. Gentlemen: Please send me a copy of your 86-page manual giving complete information on Zonolite in all its forms. 6-PAGE Name |
|--|--|
|--|--|

ADD

Here's what you need for industrial building this year

STRUCTURAL

Gold

Bond

WITH lumber and skilled labor at a premium today, you've got to specify materials which are readily obtained, yet just as easy to use. Gold Bond Structural Gypsum Boards meet these requirements. They handle, saw and nail like lumber. They come in standard lengths, which simplifies specification and reduces labor on the job. All 3 types available through local Gold Bond Dealers.

GOLD BOND GYPSUM ROOF PLANK replaces metal and wood for roof decks. For either flat or pitched roofs it forms a strong base for the roofing material. It is fireproof and weather-resistant and will last for many years. The creamcolored underside serves as the ceiling and needs no painting. Sizes: 2' x 6', 8', 9', 10' ... 2", $1\frac{1}{2}$ ", 1" thick.

GOLD BOND EXTERIOR BOARD is the second in this trio of versatile gypsum boards. These heavy-duty panels complete the outside wall—sheathing and siding—in one operation. There are two types available. One has a durable overcoat of asphalt roofing. The other has a tough green-colored fibre covering. Both types are weather-resistant, insuring long, satisfactory service. Sizes: 2'x 6', 8', 9', $10' \ldots \frac{1}{2''}$ and 1'' thick.

GOLD BOND SOLID PARTITION PANELS meet the need for quickly erected plant and office partitions made from readily available material. New and simplified methods result in faster construction of either permanent or demountable partitions. Incidently, they are a natural cream color, which can be left "as is" or papered or painted. Sizes: 4' x 6', 7', 8', 9', 10'... 1" thick. Also $1\frac{1}{6}$ ", $1\frac{1}{2}$ " thicknesses in same lengths, 24" wide (or 48" wide).

> Write For Complete Technical Information

NATIONAL GYPSUM COMPANY . . EXECUTIVE OFFICES, BUFFALO, N. Y. 21 Plants from Canada to the Gulf . . . Sales offices in principal cities

THE MONTH IN BUILDING NEWS

Metropolitan Life housing project clears major barriers (page 50) ... National Resources Planning Board's Report II is over-optimistic (page 50) ... Morris Livingston's report on postwar markets (page 51) ... Lumber production falls off badly, need increases (page 52) ... FHA plans to help service men buy their homes (page 53) ... First Washington conversion (page 53) ... Britain's White Paper on Building (page 54) ... News notes (page 54) ... Legislation for building costs (page 112).

REVIEW

The war construction summit has been reached and the trip down will be made in a hurry. That was clear to all despite a resounding request for an extra \$400 million from NHAdministrator Blandford to Congress to cover additional war housing.

Earlier last month WPB sounded taps for new industrial plant construction by ordering stoppage of all work which could not be completed by September.

With only a few tough spots still underhoused and with munitions, tanks and planes bulging the sides of War Department warehouses, the Building battalion prepared for an unwanted but inevitable respite from its record-breaking war labors. Already a few Miami hotels were being returned to reluctant owners, here and there new housing projects (mostly single men's dormitories unsuited for family occupancy) were standing bleak and tenantless, and unconfirmed rumor had it that a huge new tank plant nearing completion would not be needed.

Thus, eighteen months after Pearl Harbor, as Building put out to pasture its bulldozers and jigs, it could take prideful stock of its job, ponder the near future with misgivings, and war's end with the almost certain knowledge that its greatest job of all still lay ahead.

The Near Future

For the balance of 1943 at least, Building's prospects are tough. Geared to last year's unprecedented \$13 billion program, Building's men wondered what would happen to them. Already thousands of technicians are idle, real estate men are no longer in real estate, and dealers no longer dealing. And, the WLB to the contrary, many a building laborer, Okie-like, a thousand miles from home, wondered where the next job was coming from. More important, thoughtful people wondered where these men would be when Building was sure to need them once again.

Quiet but Audible

Not all was complete quiet on last month's Building front. There was the second round of the Metropolitan Life housing wrangle still hanging inconclusively over Manhattan (see page 50), there was a namecalling contest between Connecticut war housers and embattled farmers whose fertile farm land they had preempted for building purposes, there was the persistent effort of indefatigable realtors to "rationalize" rent control, there were the booming meetings of city planners and public housers in New York and coming meetings of the architects and producers in Cincinnati (see pages 118-20).

Post Warriors

Almost overnight postwar planning achieved respectability. Planners quick to sense this change in public sentiment, preened themselves in this new, longcoming indulgent atmosphere. The air (most of it hot) was burdened with speeches, newspaper and magazine columns and columnists were spendthrift with praise and projects. Eleanor Roosevelt "My Day-ed" it. Fortune appeared proudly astride its white horse, "Man o' Postwar-Syracuse" and even Look cleared a few more slums, a few less sweaters. THE ARCHITECTURAL FORUM ran a fullpage in the New York Times to talk Planning in words which the readers of even that erudite sheet could understand (see page 157). Occult, aging, visiting Sir William Beveridge looked through rose-tinted honeymoon spectacles at the American "Beveridge" Plan, dubbed it a tardy echo of England's 1933 social security laws.

Most encouraging and most surprising development was the shrinking schism hetween public and private housers. Herbert Nelson's program (NARB) bowed deferentially to public housing; Catherine Bauer's forthcoming NPHC manifesto beckoned coyly to its erstwhile arch foe, and Administrator Blandford firmly called for an end to quibbling, a united housing front. To idealists and realists alike, all this was great and good progress.

All agreed, Planning was here to stay, many believed tall talking soon would turn into precise projects.

(Continued on next page)

NEWS

Manhattan's midwives, the City Planning Commission, meeting last month on the Metropolitan Plan: (I. to r.) Commissioners Moses, Reidel, Rodgers, Chairman Salmon, Orton. Not seen, Commissioner Huie.

Conscientious objectors Harold Buttenheim, Arthur C. Holden and Simon Breines were earnest, indignant, occasionally vague.

NO HOLDS BARRED

Last legal barrier to the construction of Manhattan's vast postwar housing project, Metropolitan Life's "Stuyvesant Town," was neatly hurdled last month when the City Planning Commission met to alter the Master Plan. This step, a small but integral one if the project was to proceed, consisted of modifying the Plan so that the area in which the Met is interested would be declared a Type I area (allowing 416 persons to the net acre).

The meeting open to the public was short, not too sweet. The Commission was present in full force (see above), was tart, almost abrupt with the score of protestants who lined up before the bar at the old City Hall to voice objections.

All the objectors carefully pointed out that they approved in general the idea of extending the Master Plan, disliked only the details. A group of Columbia University seminar members found the proposed density "inhuman, anti-social and uneconomic." The Citizens Housing Council (represented by elderly, earnest Harold Buttenheim) thought the area along the waterfront for two blocks should be preserved for commercial uses and not included in the extension of the Plan. Simon Breines, architect, considered the proposed density shocking, looked blank when asked caustically by saw-tongued Commissioner Moses, to say what the ideal density would be. Arthur C. Holden, architect, requested that the change be tabled until the Commission had worked out the relation between residential and industrial uses of the area.

The Commission sat back, listened unevenly, asked two or three questions, passed the modification within three minutes after the last protest.

At midmonth the Commission reconvened, heard more objections to the plan for the project from most of those who had appeared at the first hearing, listened patiently to the same objections. As if by prearrangement many of the speakers referred to Stuyvesant Town as a "medieval walled town in the middle of the city," protested the company ownership of streets, determination of tenancy, high proposed density of the project.

While the steady stream of speakers appeared before the Commission, the first row of the spectators' section was occupied by the three wise men of the project, Met. Housing Manager Gove, Corporation president Ecker, architect-to-be Shreve. Spread out before them was a model of the project they proposed to build. With unruffled tolerance they regarded it, the protestors, the Commission.

Next day the Commission approved the Plan with only one dissenting vote (Orton), one doubtful voice (Cleveland Rodgers). The Met. seemed "in"—only the details of its contract with the city remained to be settled.

A LOWER SHELF?

Throughout last month, there were heavy repercussions from the publication of NRPB's *Report on a Postwar Building Program*, much talk on both sides, but a general feeling that the shelf of \$7.7 billions of Federal construction projects mentioned in the report was too high for comfort, beyond reach. Superficially it appeared that this would be enough future construction to influence the threatening postwar employment situation. But close scrutiny of the figure showed that a good deal of it was window dressing.

Critics, outside and inside the NRPB, pointed out that \$1.35 billions of the total are for projects not yet completely surveyed, and which must therefore be considered only as possibilities.

Of the remaining amount (\$6.35 billions) \$3.35 billions would require Congressional authorization before detailed planning could be undertaken; after the appropriate subtraction of those figures, it is revealed that only \$1.5 billions of the rest have been planned to the point where they could be put under construction. And this figure includes all the projects which were under construction and were stopped by war restrictions.

Whittled-down Shelf

The conclusion is a much whittled down figure: The U. S. is now prepared to begin construction on short notice on a volume of Federal projects which would call for \$600 millions of construction volume during the first 12 months of the postwar period.

The question which puzzled many is: how large *should* the program be? One expert suggested an answer: he assumed a unit program (one which would put to work one million men on construction within one year—at regular wages for a normal work year of 2,000 hrs.). Under these assumptions, one man-year of employment on construction will be represented by each \$5,000 of construction cost. So the program must be large enough to bring about a level of construction activity at the end of the first year equal to a \$5 billion annual rate.

The minimum feasible program to do this would comprise \$5 billions of projects, with 50,000 projects included in it.

What, therefore, needs to be done? Obviously the first step is to prepare detailed plans and specifications at once. Wide and handsome talk, it is generally felt, will not reach any sort of postwar goal, will not prevent a tragic unemployment period when war construction stops dead.

Secondly, land acquisition must be completed ahead of time. It must be followed with action by participating local Governments including: authorization of the project, appropriation of funds, paper work, authorization of bond issues, etc.

Local leaders point out that their governments will not commit themselves to any

A Hypothetical Projection of Expenditures Based on Past Relationships to the Gross National Product shows only those consumers' goods and services, goods, and producers' goods which concern the Building Industry. Bars represent the percentage of increase for 1946 over 1940. Figures for 1940 (unit: one million dollars) are placed at

the bottom of each bar, those for 1946 at the top. The percentage of increase, the Department of Labor points out, is based on the arbitrary assumptions of the year 1946 as the one when reconversion will be over; almost total employment; price levels similar to those of last year.

large program unless they are assured that Federal aid for construction will be forthcoming. They suggest the passage of a bill such as the Beiter measure, now before the House, to insure Federal aid in all stages of the projected programs.

To all readers of the latest National Resources Planning Board report it was clear that talk was cheap and big, that the projected shelf had been placed too high, and that the real work of accomplishing even a portion of it still lay before Congress, the national and local governments and their fiscal departments, the planners themselves.

POSTWAR MARKETS: FACTS AND FIGURES

In the year's most substantial and factual piece of postwar thinking, the Department of Commerce's Markets After the War-An Approach to their Analysis, the road to an intelligent appraisal of postwar markets is clearly charted. Prepared under the direction of acute, economistminded S. Morris Livingston (who, six months back, declared that the potential housing market for the U. S. postwar was

have left off: the need for planning now in order to take full advantage of the nation's full capacity for production and

a forecast can be made.

consumption postwar. He has devised an ingenious and seemingly accurate method of projecting the potential productionconsumption strength in 1946 (his assumed postwar year) by considering three factors: 1) the affect of the last war on markets, 2) the increase in consumer purchasing power caused by the accumulated demand for goods, and 3) the past expenditures by commodity groups, analyzed by means of a regression formula.

5 million new houses), the study is not

a forecast but an indication of how such

Livingston begins where other studies

The projection which results (see chart) shows that the estimated capacity of the nation's gross national product in 1946 will be \$165 billions. This figure is 58% above 1940, when the g.n.p. was \$97 billions. By projecting past relationships into 1946 (and assuming that the war and the immediate postwar reconversion period will be over before 1946, that 96.5 per cent of those seeking employment will

have productive jobs, that prices will be the same as in 1942), some indication of the impact of this enormous national income on individual lines of business can be obtained. The chart on this page has simply abstracted items concerning the Building Industry, but a similar chart could be made of the other items, with similarly striking results in the percentage of increase over 1940.

6.700 % OF INCREASE

7 000

205

200

190

Housing Market

Concerning housing, Livingston makes explicit his reasons for the great anticipated leverage in consumer purchasing power:

"Housing provides a particularly striking example of the leverage exerted by an increase in consumer purchasing power. It is significant because the relatively low volume of construction was the chief reason for the failure to achieve full recovery in the Thirties.

"In 1940 the average nonfarm household lived in a dwelling with a rental value of only twenty-seven dollars per month as against forty-three dollars ten

(Continued on next page)

NEWS

years earlier. They could not afford anything better because the average income per household had declined in about the same proportion.

"The net increase in nonfarm families was greater in the five years, 1936 to 1940, than in any five years during the height of the construction boom in the Twenties. But most of this increase was concentrated in the low-income groups which could not afford new construction. The number of new dwellings constructed during the decade was considerably less than the increase in households and many of the new dwellings were of the cheapest sort. There was practically no replacement demand.

"Given a continuation of the present average family income, which is commensurate with the effective utilization of available manpower after the war, the conditions of the past decade would be reversed. Several million families would move up into an income class where they could afford new construction. Several million of the most unsatisfactory dwellings would have no market and would have to be replaced. On the other hand the demand for additional housing in those price classes where new construction can compete with existing structures would be considerably larger than the increase in population since 1940.

Projections Into The Future

"Since the cost of a dwelling is roughly ten times the annual rent or the equivalent current cost of ownership, and since typically a large part of this cost is borrowed, the necessary expenditures on new construction to meet this demand would be much larger than the increase in expenditures on housing out of current income. Thus in this important field the increase in the demand for goods would be considerably greater than the increase in consumer purchasing power."

Livingston follows the projection with the observation that "many of the items are probably sufficiently accurate to serve as a preliminary basis for planning as well as a starting point for market analysis." This leads directly into what, for most business men, will be the heart of the matter: how to relate his sales to the gross national product, how, thus to plan his postwar markets. The method the Department of Commerce suggests is a mathematical formula in which the sales of Company X are graphed parallel with the g.n.p. up to 1940 (the last year for which all this information is liable to be complete and accurate). Then, assuming the g.n.p. in 1946 to be \$165 billion (see above) a comparable graph could be projected for Company X. It will be noted that the Department did not rely entirely on formulae, but used alreadytested methods which real companies had adopted to arrive at a measure of their probable share in the postwar output.

conclusions drawn considerably The modify the absolute quality of the analysis, for Livingston points out that "there is nothing automatic or inevitable about these markets. This is still a competitive world . . . courage, hardheadedness, longrange planning may create a volume of business far in excess of that suggested by any reasonable market analysis. Where these qualities are lacking the most accurate appraisal of postwar markets becomes a futile gesture. . . Business has indicated its ability to produce. Thus the postwar problem becomes largely one of distribution."

ONE FOR THE MONEY

Administrator Blandford was the picture of imperturability when he appeared before the Lanham Committee last month to ask for \$400 million additional Government funds for war housing. He was armed with charts, facts, figures, and the Committee's precision-built questions made no apparent impression. Chairman Lanham, recovered from his recent illness, was as cheerful and urbane as ever, and the atmosphere in the tiny hearing room was one of serenity.

It was clear from the start that the Committee was going to be polite but exacting. Lanham wanted to know how close Mr. Blandford had come in estimating shifts of in-migrant workers; Rep. Robert Rodgers (Rep., Pa.) wondered how many cents of each building dollar appropriated for NHA went to administrative expenses; Rep. Jasper Bell said there was a lot about the Kansas City situation that needed explaining. To these questions Blandford gave a rain-check, promised to have answers at the next meeting.

Blandford's data showed that the total program called for housing for 1,100,000 workers who will migrate to war industry areas during the 12 months beginning July 1, 1943. The new increase (\$400 million) would finance 200,000 units (one-fourth of the total): 40,000 family dwelling units produced through conversion; 90,000 temporary family units (new construction), 70,000 single-person units (also new construction).

The remaining 740,000 units would be secured as follows:

40,000 family units, privately-financed conversions; 90,000 through new private construction; 240,000 family units through use of existing dwellings; 370,000 single-person units through use of existing dwellings.

Other interesting data concerned the construction status of war housing produced under a total \$2,078,788,534 appropriation since the summer of 1940:

| | | Under | Pend. |
|----------------|-----------|----------|---------|
| | Completed | Contract | Constr. |
| 1-Person units | 76,588 | 48,300 | 25,504 |
| Family units | 223,064 | 192,354 | 77,965 |
| Trailers | 17,199 | 11,678 | 4,300 |
| Total: | 316,851 | 252,332 | 107,769 |

LUMBER LAG

Rumor had it that the lumber situation was getting critical, soon would be as badly off as steel. Last month facts bore it out:

►WPB issued Limitation Order L-290 restricting the use of seven species of Western lumber almost entirely to essential military needs. To take effect on May 13, the order included all Ponderosa pine, sugar pine, Idaho white pine, white fir, lodgepole pine, Engelmann spruce and Western white spruce. L-290 is the sixth in a series of increasingly stringent limitation orders on lumber, none of which, it appears, has succeeded in supplementing the alarming lumber shortage.

► The United States in its first 3 war years consumed 101.5 billion board ft. of lumber, 38 billion in 1942 alone, according to a statement of the Dept. of Commerce. In the same year 8 billion went to the Army, which now estimates it will need 12-15 billion in 1943. Stocks and production are falling off badly (see chart above), 1943 looks to everyone like a highly trying year.

The Army, it is reported, needs the lumber not for building but for boxing and crating. Large amounts of food and munitions have been spoiled in shipments to overseas theatres because of poor crating. More lumber seems to the Army to be the cure.

Exempted from the order are stocks of unprocessed lumber in the possession of the mills, and shipments "on wheels" as of May 13. Also not limited is lumber for door and window frames, for doors and windows themselves, for interior trim. Southern pine, it will be noted, is not included: cabinets and such can be made from this.

Not exempted are most of the needs of war housing. "Every attempt will be made to take care of essential war housing," one official reported. Doubts were reasonably expressed that this would do, since Army, Navy, etc., requirements leave only very slim civilian pickings.

CONSTRUCTION COUNT

The month's releases contained a lot of news showing just how construction of all sorts was going—some of it bad:

► The Department of Labor announced that the dollar volume of building construction begun in March showed a 72 per cent decrease when compared with the same month in 1942. This is the thirteenth consecutive month that the total value of building construction begun registered a decline.

► The National Association of Home Builders' Washington Letter was more hopeful, declared that "in spite of the unsatisfactory current status of new construction begun by private enterprise . . . the size of the program assigned to private builders for the fiscal year 1944... is substantial in volume. Judging by the current disinclination of many builders to undertake new projects, it may be as large a program as private builders can handle unless general relaxations are made."

►The National Housing Agency announced that approximately 123,500 new war housing units were completed and made available during the first quarter of 1943, and 147,000 were placed under construction. This represents an increase of more than 25 per cent over the last quarter of 1943 in number of completions, more than 60 per cent in number of units started. "Private construction," it reports meagrely, "was at relatively low levels." Further, the OWI revealed that more than 98 per cent of the war housing units assigned to FPHA in this same period represent temporary construction, scheduled for dismantling after war's end. "Temporary construction," it remarks, "affords protection against over-building of communities which are unlikely to absorb permanently the housing built for specific wartime needs."

►FHA announced that it had received applications for insurance of projects to provide 4,631 dwelling units last month, a "marked upturn" in applications.

SOMETHING FOR THE BOYS

FHA, noting the ever-decreasing war housing market, now has fixed its collective eye (together with the National Association of Home Builders) on adding a new Title to the National Housing Act, one which would permit the construction of half a million homes, with mortgages insured by FHA, for eligible ex-service men.

Provisions of the suggested Title: The eligible veteran can purchase a home adequate to his needs upon a down payment of 5%, at an interest rate of $4\frac{1}{2}\%$ with amortization period of 25 years.

► Eligibility for the veteran means honorable discharge from the armed services subsequent to December 7, 1941 (thus providing an immediate market as well), having a family dependent on him for shelter, being employed for at least two days a week, or else with an income from dependents who live with him of four times the monthly carrying charges of the property.

► The bill shall call for an authorization of 2 billion dollars, providing for 500,000-600,000 homes. "No special mort-

(Continued on next page)

disinclination of many take new projects, it may ogram as private builders less general relaxations Housing Agency anproximately 123,500 new

PRECONVERSION

BED RM BED RM

BED RM. BC DOG. STORE WITCHEN BED SIDE HILLIN-RM. BED SIDE HILLIN-RM. BED SIDE HILLIN-RM. BED SIDE HILLIN-RM. LIV-RM. BED SIDE HILLIN-RM. LIV-RM. LIV-RM. BED SIDE HILLIN-RM. LIV-RM. ... POST CONVERSION

ABOVE, BELOW: CONVERTED 3-ROOM APARTMENT

FIRST CAPITOL CONVERSION IS SIMPLE, ECONOMIC, FAST

Leading the country in rapidity of conversion jobs, last month the first residence acquired by the NHA in Alexandria, Va. for conversion purposes was open to war and Government workers. The old house was dingy, run-down, cheerless; a good paint job, new plumbing and kitchen equipment, much interior renovation, has produced comfortable, roomy apartments (three to a floor), completed with the addition of only one new

bathroom unit per floor, (see plan). Conversion costs: \$5,889.50, about \$980 per unit (there were six units). Time required: 6 weeks. Critical materials used: 704 pounds of metal per family unit. This figure stands up when examined in light of figures for materials used by new construction of temporary type (1,950 lbs.), by private war housing: (2,000). But conversion opportunities still seem less than pluggers claim.

NEWS

gage funds shall be set up as in Title VI, but this Title shall utilize the Mutual Mortgage Insurance Fund originally created."

Interest in the proposal has been expressed by the American Legion, the Producers Council, the Chamber of Commerce. Conspicuous lack of interest is expected from the Senate, when and if it is proposed, and only slightly more enthusiasm from the House.

WHITE PAPER ON BUILDING POSTWAR

With no fanfare in the American Press, Britain's most important Government paper on postwar planning for the building industry since the Uthwatt re-Bassano, Ltd.

LORD PORTAL: Minister of Public Works

port was published last month. It was the result of collaboration between the Minister of Labor (Ernest Bevin) and the Minister of Works (Lord Portal), the two most influential figures in England's present Building picture.

The Paper contains a scheme for the postwar training of a labor force likely to be needed for a projected ten-year building program of predetermined volume. Great Britain's *Economist* editorially sums it up as "the first attempt to determine for a long period ahead, the physical volume of activity in one of the major activities, and to prepare measures for bringing the capacity of that industry into line with the planned scale of operations." Its main points:

The Building Program: A postwar program to cover 10-12 years, to employ a labor force of 1,250,000 men. "It will be an essential part of the expansion that recruitment into the industry shall be regulated so as to correspond with the estimated future demands of the construction program. The aim will be to maintain stability in the industry for the whole period of the program."

Regularity of Employment. Satisfactory expansion of the labor force depends upon conditions of work which will eliminate the "casual" form of employment. "The Government would favor the adoption by the Building Industry of measures for a guaranteed period of employment. . ."

Expansion of the skilled labor force. "Even when full account is taken of the trained men who will be returning from the Services, it is clear that there will be a large deficiency of craftsmen. . . The future well-being of the industry depends on a permanent system of recruitment, education and apprenticeship training."

Special Adult Training. To fill the anticipated gap in the supply of skilled workers,

ERNEST BEVIN: Minister of Labor

a Building Industry Advisory Panel is to be established to determine the length of the training period, the number of workers to be admitted into training in a given period, the curriculum, the standards of proficiency, the development of "retraining" schemes to help men already in the industry prepare for new processes and techniques.

Other Details: Local Advisory committees will be set up to assist in selection of applicants; the Ministry of Labor and National Service (together with the Ministry of Works) will be responsible for providing the training in Government training centres or in technical institutions; a similar program will be worked out for training of boys for apprenticeship in the industry.

Commented The Economist, usually dubious about such planning: "The Government has courageously come down from the realm of ideas to that of physical quantities."

COMMITTEE FOR C.P.A. APPOINTMENTS

As announced in May (FORUM, p. 67), the new Committee on Congested Production Areas, created by executive order,

will be one of officialdom's most weighty policy-boards. Designed to tighten up interaction between multitudinous national bureaus on the local front when conditions demand unified and immediate action, the committee has now been named, begun to function.

The members: John Blandford (NHA), Maj. Gen. Fleming (FWA), Paul McNutt (WMC), undersecretaries of the Army and Navy, Budget Director Harold Smith, chairman. Appointed as Director is Corrington Gill (assistant administrator of the old WPA, more recently an assistant to Gen. Somervell in the Office of Supply). Able administrator, it is expected that Gill and his committee will be heard from frequently, and with the force of White House approval behind them.

NEWS NOTES

Rent Spread. Residential rents in 14 more defense-rental areas were brought under control on May 1, with March 1, 1942 set as their maximum rent dates. The total now under control: 371.

More Stops. Total cost of projects having been stopped since the WPB Facility Review Board was formed in October '42, to date: \$1,326,734,752. Of the month's stoppages, three-fourths of the projects were highways, the others building facilities, logging facilities.

Ceramic Stoves Coming. The Clay Products Section of WPB has announced that, "in the not too distant future" ceramic heaters and stoves may be made available to American purchasers, thus releasing thousands of tons of critical materials for more urgent needs. Much research is being carried on; practicable, saleable results are expected soon.

Building Permits, as reported by Dun and Bradstreet, have fallen off drastically. In March, the volume of permits showed a seasonal expansion, although the total for the month was sharply under the corresponding period for 1942 (61% lower). Total valuation for the first quarter of 1943 showed a little more than one-third the amount recorded for the same period last year, the smallest for any period since 1934.

Cheap at Twice the Price? With most figures in, the cost of Washington's grandiose Army office building was found to be double the original estimate. Its cost: \$63,454,583. The estimate: \$31 million. The reasons given: higher cost of critical materials, labor, and the speed pressure that accounted for its completion six months ahead of schedule.

BEW to NY. More and more of the staff of the Board of Economic Warfare has been moved to New York City offices in the last month. In line with a declared Government policy of decentralization of bureaus, it is one of the few Washington

(Continued on page 112)

MAC DILL FIELD, FLORIDA Architects in uniform produce a new post exchange from a miscellaneous group of old buildings. Their materials: ingenuity, imagination, talent, very little else.

The Army supposedly has little use for architects. Its buildings have to be purely utilitarian, and engineers are thought to be best qualified to design such structures. Obviously, these standardized units can not fulfill every need, and tend to be under any conditions, on the dull and drab side. Three random buildings at Mac Dill Field had served as a post exchange, but when they had to be expanded and made into a coherent group, these architects, designers and painters were given a chance to prove what they could do:

MAJOR MEYER KATZMAN of the Army Exchange Headquarters in Washing-

1ST LT. JOSEPH J. ROBERTO, Q.M.R., studied architecture at New York Uni-

PRIVATE ROBERT W. LIMPUS, who, with Private Ritchie, was responsible for the murals on both sides of the Wingspread Bar, studied art with Elmer Toftlinger. Private Limpus' watercolors have been exhibited at Indianapolis, Philadelphia, Washington and Richmond, where he won a prize. He did a mural for the Indianapolis, Y.M.C.A.

ton, was store architect for R. H. Macy from 1930 to 1936. Since then he has been in independent practice in New York. He is best known for his work in planning for leading department and chain stores throughout the country. As head of the Army Exchange Service he was responsible for providing the plans for expansion.

versity. He won first prize in the General Electric Kitchen Competition. Worked with New York architects and industrial designers on jobs ranging from furniture design, N. Y. World's Fair Exhibits, to prefabricated housing and war plants. He developed the plans and supervised the construction of the new Post Exchange.

PRIVATE HARMES W. RITCHIE studied at the National Art School in Wash-

ington, D. C. A national poster contest winner, he has done theatrical design, advertising and display design for a number of North Carolina stores. He has also done an altar piece for a church in North Carolina. He collaborated with Private Limpus on the murals of the Wingspread Bar.

SGT. JOHN L. CABORE, who was responsible for the mural on the rear wall

of the soda fountain room, studied at the Art Students' League in New York. He had a New York studio and did commercial work for leading organizations in the east. He also won the Grand Prize for his mural of the Air Corps at the Florida State Fair.

OLD POST EXCHANGE was a typical Army building, satisfactory according to engineers' standards

THE NEW EXCHANGE IS A FINE SOCIAL CENTER

MURAL ON REAR WALL OF SODA FOUNTAIN ROOM

STAFF SGT. HENRY M. JAMESON took all the photographs

POST EXCHANGE, MAC DILL FIELD, FLA.

THE ORIGINAL BUILDINGS WERE A DISCONNECTED ASSORTMENT OF TYPICAL ARMY STRUCTURES PAINTED IN DRAB COLORS

Three old Army structures, linked by screened arcades and similar design treatment, form a unit both functionally and architecturally coherent. The post exchange at Mac Dill Field—a large bombardment air base in the southeast—is a cooperative enterprise which sells practically everything the soldier needs at minimum cost. It is a combination department store, stationery shop, drugstore and recreational center.

When it was decided that 100% expansion of these facilities had become necessary, the old recreational hall (center building) was set aside for additional usable area. The designers decided to use the area between the three structures as auxiliary soda and restaurant spaces, an ingenious solution which was made possible by the mild climate. A separate warehouse for reserve merchandise, a food storage building between the two kitchens and an addition to the old restaurant building completed the alteration.

NEW CANOPIES were shaped to suggest some of the structural forms to be found in airplane wings

A comparison of the two sets of plans shows that changes to doors, walls and windows were held to a minimum. Though it was an Army project, no priorities were given, and it was necessary to use only materials locally available. Old doors, windows, toilets, interior equipment and furnishings were relocated and reused. Even wood from packing cases was utilized.

Screened louvres were installed for better ventilation. In the new addition to the restaurant, stock windows were set in strips-a procedure not usually followed in Army structures. Finally, the three buildings were joined by a screened arcade, into which three telephone booths were incorporated. The entrance canopies over doors were shaped to suggest structural forms in airplane wings.

POST EXCHANGE, MAC DILL FIELD, FLA.

OLD POST EXCHANGE BUILDING CONTAINED SODA FOUNTAIN AND MERCHANDISE STORE

IT WAS TURNED OVER SOLELY TO THE STORE. EXISTING SHOWCASES WERE REASSEMBLED INTO A COHERENT DESIGN

Details of the new store building, arcades and soda bar show skillful use of dimension lumber. When the soda fountain service in the old building had to be interrupted while the equipment was moved into the new bar, the change-over was accomplished in one day—proof of the excellent organization of the whole job. The original field exchange was set aside for the exclusive use of the merchandise store. Existing showcases which were salvaged varied in length, depth, height and general design. To unify their appearance and to provide increased counter area, storage cabinets were built to link the old showcases. The new counter fronts were faced with 8" natural cypress, which was carried over all the exposed wood of the showcases as well. The resulting appearance is one of a unified design. The new store provides space for a much greater variety of items, and displays them more adequately. Larger amounts of stock can be kept on the floor, and reserves are

THE NEW ARCADES GIVE PRIVACY TO OUTDOOR SODA AND RESTAURANT AREAS, TIE BUILDINGS INTO A UNIFIED GROUP

CENTRAL BUILDING CONTAINS THE OFFICERS' AND MEN'S SODA FOUNTAIN, WHICH ARE DIVIDED BY WINGSPREAD BAR

stored in a separate warehouse. The merchandise store operated throughout the period of remodelling.

Indicative of the resourcefulness of the design is the detail of the arcades shown at the top of the page. An architectural pattern in scale with the entire group has been evolved with elementary means. Apart from its obvious decorative value, the arcades serve as a covered communicating link between the three buildings and assure privacy to the outdoor soda and restaurant gardens.

The long back wall of the soda bar (right) serves as a partition between the officers' room and the enlisted men's room. It is interesting to note the relative informality of this separation. The staircase near the entrance door to this central building illustrates again the effective use made of simple stock materials.

POST EXCHANGE, MAC DILL FIELD, FLA.

MURAL ON ENLISTED MEN'S SIDE BY PVTS. RITCHIE AND LIMPUS SHOWS LIFE IN THE ARMED FORCES

The new soda bar is the social center

of the Post Exchange

The most striking design of the entire job is the enlisted men's soda bar. In it Lt. Roberto tried to express the spirit of the airplane and the Air Force. Long before completion, the field newspaper sponsored a contest to find a suitable name, and WINGSPREAD was the prize winner. Incorporated in the design is a cashier's booth near the kitchen for food control.

The whole room is done in Air Force colors, red, yellow and blue. The excellent handling of the lighting dramatizes the decorative scheme without producing unpleasant glare. The mural on the end wall was done by Sgt. Cabore.

MURAL ON OFFICERS' SIDE DEPICTS THE HISTORY OF FLORIDA FROM ITS CONQUEST BY THE SPANIARDS

OFF-STREET ENTRANCE is a significant improvement in planning. New York's Hotel Pennsylvania (left) illustrates the typical practice

WASHINGTON STATLER

In three important respects this hotel by Architects Holabird & Root sets the pace for postwar designs: in the handling of incoming and outgoing guests without disrupting street traffic; in the most flexible guest rooms yet developed; and in the use of cold cathode tube lighting as a major decorative element

THE DESK FACES THE MOTOR ENTRANCE. NOTE SIMPLE USE OF RICH MATERIALS AND UNOBTRUSIVE ELECTRIC SIGNS

BARBER SHOP (RIGHT) IS PART OF THE COMPACT GROUP OF SERVICE UNITS NEAR THE DESK ON THE GROUND FLOOR

LOBBIES AND SHOPS

Facilities for transient guests are grouped together out of the way of circulation to ballrooms and dining areas. The greatest single departure from general hotel practice made by the Washington Statler is the manner in which guests are taken into the hotel. There is no marquee-covered street entrance where people enter from cars or taxis. This cumbersome feature has been replaced by a partly covered motor drive which runs from K to L Streets, permitting guests to alight with complete protection for themselves and their luggage in any kind of weather. The ground-floor plan reflects the influence of this feature in many ways. The desk and office lobby face the rear of the property. Guests who use the dining rooms, cocktail lounge and the Capitol Terrace, all of which open on 16th Street, are not disturbed by cross-current of incoming and outgoing traffic. The 16th-Street entrance is incidental to the main circulation scheme, and is used almost entirely by pedestrians.

HOLABIRD & ROOT, ARCHITECTS; A. R. CLAS, ASSOCIATE ARCHITECT WASHINGTON STATLER

LOUNGE LINKS DESK AREA AND PEDESTRIAN ENTRANCES

COFFEE SHOP HAS TABLE AND COUNTER SERVICE

JOHN W. HARRIS, ASSOCIATES, INC., BUILDERS

CAPITOL TERRACE, SHEATHED IN MARBLE, MURALS AND SOFT CARPETS, SETS THE TONE FOR THE OTHER PUBLIC SPACES

CAPITOL TERRACE

A modern, two-story version of the old Peacock Alley, without its confusing and superfluous cross-traffic. The long promenade which runs along the 16th-Street side of the hotel (zoning regulations do not allow shops on this street) is one of its most highly publicized features, and rightly so. This two-story corridor, admirably lighted by the high windows which run for its entire length, links the pedestrian entrances with the three large rooms which form the entertainment center. Two stairs, set in alcoves, lead to the banquet rooms on the floor above, while the seating groups in the alcoves, augment the capacity of the lounge. Because there is no cross-traffic worth mentioning due to the placing of the main entrance on the other side of the hotel, Capitol Terrace can function as was intended, with a minimum of confusion.

Since this element is so striking a departure from conventional hotel planning, it is unfortunate that it was not developed more boldly. The columns do tend to give an appearance of unity to the space, but the stair alcoves and recessed entrance merely break it up. Some of the effects of this rather timid approach appear in the illustrations of the exteriors on page 72.

BALCONY OPENS OFF THE BANQUET AND MEETING ROOMS WHICH OCCUPY THE ENTIRE SECOND FLOOR

The small plan diagrams were made from the architects' original sketches and illustrate some of the stages through which the plan evolved. The germ of the Capitol Terrace idea, for instance, appears in the very first sketch, but was apparently discarded for a time. The general placing and relationship of the main kitchen and the various dining rooms were established at the very beginning and only modified in subsequent sketches. Of greater interest is the evidence of changes in thinking on the question of the main entrance. This section of the plan was drastically revised time and again before the final solution, with its direct and simple connection between the motor drive and the desk, was finally developed. As built, the hotel has at least half of the ground floor area devoted to the kitchen, bars and dining rooms.

THE VERANDA IS THE MOST FLEXIBLE OF THE THREE MAJOR DINING AND DRINKING ROOMS, EXCELLENTLY LIT

COCKTAIL LOUNGE-NORTH ELEVATION

DINING AND DRINKING

Lighting becomes an integral part of the design of the Statler's public dining rooms. The three main dining and drinking rooms are grouped in one corner of the first floor, equally accessible from the main kitchen and the Capitol Terrace. The Veranda, done in yellow, pale green and gray, has large windows on two sides and a small outdoor terrace, and is used as a breakfast room and cocktail lounge. It is ideal for the former purpose, as it is flooded with light in the morning and has a very pleasant view of the gardens outside. A part of the room (see first floor plan) opens into the Embassy Room, which is the hotel's night club, and its usefulness, consequently, extends long beyond the cocktail hour. All of the rooms are designed and decorated to conform with their special function, and all are of particular interest for their lighting.

ZEON TUBE LIGHTING

-IG GA SHEET METAL BAFFLE-

-1-0",1-3", 1-6", 1-9" \$ 2-0" RAD-

METAL BAFFLE PLATE

SECTION THROUGH CIRCULAR LIGHT COVES
WASHINGTON STATLER



VERANDA WINDOWS AND LIGHT COVES FORM AN INTEGRATED DESIGN UNIT



SECTION THROUGH SUSPENDED BANDS

LIGHTING

The lighting design of the hotel as a whole employs practically every type of light distribution and source: indirect, direct and semi-indirect lighting, from incandescent and fluorescent lamps to cold cathode tubing. In the service areas alone, for example, several varieties are to be found (page 68); in the kitchen, illumination is furnished by incandescent lamps in glass bowls, while in the laundry, batteries of fluorescent tubes in troughs are used. Lighting in the guest rooms is superior to that of the average hotel room, but not fundamentally different from it. The most interesting examples are to be found in the public spaces, of which the rooms shown here are typical.

The main feature of the lighting in these spaces is the use of cold cathode tubing. To date this tubing has been used primarily in the signs which are to be seen everywhere, and its essential characteristic is that it is operated on high-voltage current supplied through transformers. In this respect it differs from the fluorescent lamps which run at low voltage. Cold cathode tubing is supplied in both plain and fluorescent-coated glass; it is the latter, known as "Zeon," which has been used here.

In the Veranda, for example, there is a series of circular coves illuminated in this fashion. In the photograph directly above, also taken in the Veranda, there are long coves lighted in the same way. Since the whole idea of coffers, coves and similar indirect-lighting devices is to get an absolutely smooth spread of light, the tubing comes close to providing an ideal source for this purpose. Dimmers, an innovation with this type of lighting, are used for a number of rooms on the first and second floors.

Other uses are illustrated on these pages. In the Colony Room the tubing is used behind benches, and shines upwards on the walls and ceilings. Zeon is also installed in the Club Bar, where it illuminates the mural and display of bottles. The detail drawings of a number of typical sections show several methods of application.



THE COLONY ROOM was designed to provide a place for official Washington's lunches and formal dinners. There is no music or dancing. Walls veneered with walnut, an acoustical ceiling and plain curtains provide a quiet background for quiet meals. The large mural at the far end conceals the service doors.



THE CLUB BAR is for men only, and has the conventional nude over the service bar.

THE EMBASSY ROOM (below) is laid out on three levels and offers music and dancing. Color scheme is dark blue with trim and and leather upholstery in white and rose.





PANTRY HAS FURRED CEILINGS, BUILT-IN REFRIGERATORS. BIG IRONERS CAN IRON AND FOLD 13 SHEETS PER MINUTE



MAIN KITCHEN, BANQUET REFRIGERATORS AND LAUNDRY. SERVICE ROOMS ARE SMOOTH AND EASY TO KEEP CLEAN

SERVICE AREAS

Kitchens, laundries, storage and maintenance rooms were concentrated in main floors and basements to conserve the limited guest room space

The hidden workings behind the smooth operation of a great hotel are invariably a source of amazement to the layman. Quantities are prodigious, equipment is exceedingly complex and costly, and the various systems which have been developed to integrate the work of the different departments are highly involved. The Washington Statler shows organization and equipment at their best.

The hotel occupies a site with an area of 65,500 square feet. The Hotel Pennsylvania in New York is built on a plot of substantially the same size. But the Pennsylvania has 2,200 rooms while the Washington Statler has 819. To a large extent this difference in accommodations is due to the building height limitations in Washington, which do not permit commercial structures to be higher than 130 feet. Planning of the services was profoundly influenced by these conditions.

In most hotels a great many of the service departments are tucked away in various parts of the upper floors. It was not possible in the Statler, because the height limitations made it imperative to use every possible foot of space above grade for income-producing purposes. Located below street level are the housekeeper's office, linen room, repair, maintenance and mechanical shops. There is a large laundry, equipped with huge washers, extractors, tumblers and ironers. The glass hoods over the 120-inch ironers (upper right) serve to keep the heat from escaping into the room.

The basement also houses the entire mechanical plant: water heaters, water softening plant, vacuum cleaning plant, ice-making machinery, food preparation rooms and storage rooms. The boiler room is in the sub-basement.

HOLABIRD & ROOT, ARCHITECTS; A. R. CLAS, ASSOCIATE ARCHITECT WASHINGTON STATIFR



DELEVATORS

SCALE IN FEET 0 20 40 60

SERVICES in the Washington Statler were kept as much as possible below the street. A necessary exception was the main kitchen (top plan) which serves the main dining rooms and the coffee shop which is located midway between the first floor and the basement. In the basement, which contains about 65,000 square feet, are placed the shops, food preparation and storage rooms, the laundry and the machinery which takes care of conditioning the air for the public rooms on the first and second floors. Rooms for the employes are also located at this level.

Among the special types of equipment is a new kind of ice-making machine. This device contains a cluster of vertical tubes which are about ten feet high. Freon gas, used in direct expansion, circulates around the tubes, freezing the water inside into long cylinders. When the ice is solid, the cycle is reversed, and warm gas loosens the cylinders which drop to the bottom of the machine where they are cut automatically into cubes. Flaked ice can also be made by shortening the cycle. About 300 pounds of cubes can be produced in 25 minutes.

CONSTRUCTION OUTLINE

FOUNDATIONS: Concrete, Lehigh Cement Co. and N. American Cement Co. Dampproofing-Minwax Co., Inc.

STRUCTURE: Exterior walls—limestone, Indiana Limestone Co.; granite—Johnson Swenson Granite Co. Interior—Stuccostic plaster, California Stucco Products Co.; marble—Vermont Marble Co.; tile—Mosaic Tile Co.; U. S. Quarry Tile Co., Norton Co., West Virginia Tile Co. Structural steel— American Bridge Co.; Bethlehem Steel Co. ROOF: Tile—Ludowici-Celadon Co., Composition—Koppers Co.

SHEET METAL WORK: Flashing-Wasco Flashing Co.

INSULATION: Johns-Manville Co., Celotex Co., Sprayo-Flake Co. and Universal Zonolite Insulation Co.

WINDOWS: Sash—steel, Truscon Steel Co. Glass—Pittsburgh Plate Glass Co. Glass wainscote (ballroom) — Libbey-Owens-Ford Glass Co. Glass blocks—Pittsburgh-Corning Corp.

ELEVATORS: Westinghouse Electric & Mfg. Co. Cabs and accessories—W. S. Tyler Co., Price Bros., Inc. and Peelle Door Co. Dumbwaiters—Otis Elevator Co.

Sanford Carpet Co., Inc., Kompolite Co. Tile—Goodyear Tire & Rubber Co., Tile-Tex Co. and Armstrong Cork Co.

WALL COVERINGS: Paneling, etc.—American Walnut Assn. Flexwood—U. S. Plywood Co. Dinoc-Dinoc Sales Co.

FURNISHINGS: Formica Insulation Co., Metal Office Furniture Co., Dan Cooper, R. W. Irwin, Mallin Furniture Co., Simmons Co. Radio and P. A. system—The Langevin Co. All furniture designed by Trylon Studios. Drapes—Art Upholstery Studios. Barber shop—Appalachian Hardwood Mfg. Co. STORE FRONTS: Kawneer Co.

FABRICS: Stroheim & Romann, Dan Cooper, Goodall Fabrics Co., L. C. Chase & Co., Inc. WOOD AND METAL TRIM: Woodwork— West Woodworking Co., Hardwood Products and American Walnut Assn. Doors—Superior Fireproof Door & Sash Co., The Stanley Works, International Revolving Door Co. and Ellison Bronze Co.

HARDWARE: Lockwood Hardware Mfg., Oscar C. Rixson Co.

PAINTS: Devoe & Raynolds.

ELECTRICAL INSTALLATION: Fixtures— Federal Electric Co., Solar Lighting Co., Charles Parker Co., Pneumatic tubes—Lamson Co. Switchboards—Leonard Electric, Inc. Clocks—General Electric Co. Vacuum cleaner—Spencer Turbine Co.

PLUMBING: Fixtures—American Radiator-Standard Sanitary Corp. Bathroom accessories—Charles Parker Co., F. H. Lawson Co. Showers—Fiat Co. Toilet stalls—Sanymetal Products Co. Pipes and fittings—A. M. Byers Co., Chase Brass & Copper Co., Central Foundry Co., Stockham Pipe & Fitting Co., Ehret Magnesia Mfg. Co., Keasbey & Mattison Co. Pumps—Worthington Pump & Machinery Corp.

KITCHEN EQUIPMENT: P. B. Polhemus Co., Hobart Mfg. Co., Liquid Carbonic Co., K. G. Griswold Mfg. Co., Edison Electric Co., American Stove Co., Michigan Stove Co., Peterson Oven Co., Moree Boulger Destructor Co., Jewett Refrigerator Co., Henry Vogt Co. Laundry equipment—American Laundry Machinery Co.

HEATING AND AIR CONDITIONING: Air conditioning—Carrier Corp. Boilers—Babcock & Wilcox Co. Stokers—Detroit Stoker Co. Oil Burners—Todd Combustion Control Co. Thermostats—Johnson Service Co. Water heater—Patterson-Kelley Co., Inc.



ARCHITECTS PUT MAIN FEATURE OF FEDERAL ROOM ON THE CEILING WHERE IT IS NOT CONCEALED BY FURNITURE

PUBLIC FUNCTIONS

Elaborate facilities for public functions were planned as a principal source of income, to offset relative lack of guestroom space. The Statler executives' decision to turn the hotel's entire second floor over to rooms for banquets, meetings and other public functions is a reflection of the very considerable activity of this kind which is always going on in Washington. The plan of this floor is remarkably flexible and efficient.

Guests headed for this floor can get to it without disturbing in any way the workings of the ground-floor level. If they arrive by car, they merely climb half a flight of steps from the entrance platform; if they come on foot, there are two stairways on the l6th Street side. Only the few who would have to use the elevators would go into the first-floor lobby.

The banquet rooms can serve 1,200 to 1,500 diners in a single group, many more if the capacities of the smaller rooms are added. Largest of the spaces is the Presidential Ballroom, a 75- by 100-foot room with bas-reliefs by Edgar Miller, who also did all the mural painting. By raising a motor-operated wall 30 feet in width, the Ballroom can be merged with the Congressional Room. Third largest of the rooms is the Federal Room, whose bold pattern of red lighting troughs against a copper ceiling is well illustrated in the photograph above.

Throughout the entire floor full advantage is taken of cold cathode tube lighting. In the Presidential Ballroom, for example, not only can any desired color be produced, but the lights can be dimmed as well.

Because the rooms may be used for a wide variety of activities, the services are very elaborate. The main rooms have public-address systems with individual volume control. Any program can be put on a radio broadcasting circuit, or it can be relayed to any room in the hotel. For exhibitions in the Presidential Ballroom there are outlets for power, gas and steam.

HOLABIRD & ROOT, ARCHITECTS; A. R. CLAS, ASSOCIATE ARCHITECT WASHINGTON STATLER









ELEVATOR LOBBY on ballroom floor is typical of those on other levels. Large circular plate behind signal buttons prevents finger marks on wall and is easily found.



EXTERIORS

The exterior is a compromise between official Washington architecture and the design required by a modern hotel plan The most notable characteristic of the exterior-or at least the one first remarked uponis that the guest room windows are horizontal rather than vertical. It is this slight but significant change in proportions which sets the Washington Statler apart from its predecessors in the field. The horizontal windows are the outgrowth of a new approach to the problem of planning the guest bedrooms, discussed in detail further on.

As seen from the streets which bound it, the hotel is pleasantly crisp in appearance. The windows set the pattern, and the smooth walls of limestone look well now and should age gracefully. The three courts required to admit light to the bedrooms have created a strong rhythm of solids and voids on the 16th-Street facade. Inadequacies appear only where there is evidence of concessions having been made to the standard Washington concept of "architecture."

Typical of these minor concessions are the meaningless balconies which appear on each of the four projecting wings, and the equally unnecessary frames which surround vertical groups of windows on the side elevations (bottom photograph, right). These, however, are comparatively insignificant details of a well-studied design. Far more serious is the manner in which the Capitol Terrace has been hidden by a facade made to conform to a conventional monumental pattern. The central entrance (above) flanked by high windows on each side, gives no inkling of the long promenade behind. This treatment is one more example of the damage done to first-rate plan ideas by the still-potent influence of the Washington formula.



MONUMENTAL DOORWAY IS REALLY A MINOR ENTRANCE FOR PEDESTRIANS



THE CITY REGULATIONS PERMITTED SHOPS ONLY ON THE K-STREET SIDE



AIR CONDITIONING

The Statler Company has done a considerable amount of work on air conditioning, and has long been convinced of its importance as a major amenity in the modern hotel. Seven or eight years ago a complete installation was made in the St. Louis Statler, at that time the largest airconditioned hotel in the world. The objective set for the hotel in Washington was full control of temperature and humidity every day in the year.

The steam generating plant, located in the sub-basement, consists of three Babcock and Wilcox Sterling water tube boilers, two of which are rated at 354 h.p., one at 301 h.p. This plant takes care of general heating, hot water and all requirements of the kitchen and laundry. When the oil shortage developed, one of the boilers was converted to coal. Steam is supplied through reducing valves to provide 100-pound pressure to the laundry, between 15 and 30 pounds to the kitchens and 5 pounds to the heating systems.

The heating systems are all automatically controlled, with steam used for heating of all air, direct radiation and for the heat exchangers on the forced hot water system serving the window units installed in all guest rooms.

For servicing the guest rooms, the Carrier Conduit Weathermaster system was used. This is a high velocity system which makes it possible to use small pipes rather than large ducts. Air is conducted through these pipes to the air-conditioning units in the guest rooms (see page 76) where it is fed out through nozzles, expanding rapidly without noise. Traveling upwards at reduced velocity, the air passes over coils which contain either hot or cold water, depending on temperature requirements. Temperature and ventilation are at all times under the control of the guest, who may set his individual room thermostat at any point between 60 and 80 degrees, winter and summer, and turn the air intake on and off. For cooling, two 600-ton Carrier compressors, located on the 15th floor, are used.

The equipment serving the first and second floors is located in the basement. There are eight or ten units of conventional design, each of which serves a specific area on these floors.



GUEST ROOMS

Living rooms by day, bedrooms by night, the guest rooms mark a big forward step in hotel planning. At the present moment Washington is so crowded that available office space is not adequate for the demands put upon it, and in consequence many business transactions are carried on in other places. This need for conference and work space was one of many factors which guided the architects in working out the guest room plans. Even without the stimulus of wartime pressure, however, the typical hotel bedroom was in need of a drastic overhauling, and what was done in the Washington Statler makes sense.

The new type of guest room (there are also conventional rooms) has a large horizontal window with ventilating sash at each end. There is a pocket for venetian blinds. Curtains can be pulled back to expose the entire window. Beds are comfortable couches with full box springs and inner spring mattresses. The old arrangement of bureau, desk and dressing table has been replaced by a single unit filling all three functions. By the window there is a comfortable seating group, a floor lamp and a coffee table. Each night table houses a four-channel radio and a lamp whose base serves as a telephone stand. All horizontal surfaces are of cigarette- and alcohol-proof plastic. There is no ceiling light in the bedroom, and the flush light in the corridor has a concealed mirror which throws light into the coat closet. Bathrooms are pretty much the same as they have always been, with a few improvements such as medicine cabinets with built-in lighting fixtures.

Listed separately, these changes sound insignificant. Taken as a whole they add up to the first real improvement the hotel field has seen in many years. Furnishing and decoration were done by Trylon Studios under Kenneth M. McCann, in collaboration with the architects.

HOTEL GÜEST ROOMS

WASHINGTON STATLER: HOLABIRD & ROOT, ARCHITECTS; A. R. CLAS, ASSOCIATE

DESIGN DATA 1.

THE ARCHITECTURAL FORUM





WINDOW DETAILS PROVIDE A RECESS AT THE HEAD FOR THE VENETIAN BLIND, POCKETS AT THE JAMB FOR CURTAINS

The guest room window assembly in the Washington Statler is a thoroughly integrated design. The window it-

BED CABINETS CONTAIN RADIOS AND BUILT-IN ASH TRAYS. NOTE SPECIAL LAMPS





self consists of a square sheet of fixed glass flanked by narrow double-hung windows. Sash was to have been aluminum, but when the war broke out Statler turned the partly fabricated sash over to the Government (about 65,000 pounds of aluminum) and substituted steel. The top photograph shows how the curtains can be pulled clear of the window. Blinds pull up into a pocket. The window stool and the top of the air-conditioning unit are handled as a single surface, covered with cigarette- and alcohol-proof plastic. Arrangement of equipment inside the air conditioning unit is shown on the section. Note that the air intake is a pipe, not a duct. This is the result of using a high-velocity air supply system.

HOUSE



GARDEN SIDE OF HOUSE AS IT WILL BE AFTER EXTENSION OF THE SECOND FLOOR

VIEW OF SOUTHWEST CORNER SHOWING PROJECTING CONSERVATORY AND TERRACE



HOUSE IN FRAMINGHAM, MASS.

WALTER GROPIUS, ARCHITECT





PROPOSED EXTENSION PROVIDES TWO ADDITIONAL CHILDREN'S ROOMS OVER THE GARAGE WING



78

Walter Gropius designs a modern house which maintains the white crispness of its New England neighbors

The plan of this house is based on a square framing unit, evident in the dining room and kitchen, and used twice to produce the living-room area. This simple method makes it possible to use long strip-fenestration without running into complicated lintel problems. But it has also produced kitchen and hall areas that seem disproportionately large. The design achieves a unity and clarity which belies the problems posed by the site. Among these was the presence of two magnificent elm trees preserved by shifting the position of the house twice to avoid not only the trunks but the roots as well.

Another problem arose from the orientation of the best view, which is in a west-northwest direction toward a large pond. While the living room overlooks this pond, a conservatory projects toward the south to get the sun. Windows along the west wall catch the prevailing breeze to cool the living area in summer.

The building has been designed for future expansion on the second floor, to provide the owners' children with sunny sleeping and play areas. At present they have to use the guest room for the latter purpose. The living space is subdivided by transparent glass screens. Closets throughout are built of standard plywood units.

CONSTRUCTION OUTLINE

FOUNDATION: Fieldstone. Waterproofing—R. I. W., Toch Bros., Inc. STRUCTURE: Exterior walls — framed white pine, pine boarding and sheathing, building paper, 15 lb. asphalt felt, rockwool; inside—plaster on Rocklath, U. S. Gypsum Co.

ROOF: 5-ply tar and gravel. SHEET METAL WORK: Flashing—16 oz. soft copper. Leaders—cast iron. WINDOWS: Sash—Hope's Windows, Inc. Glass—plate and A quality Pennvernon, Pittsburgh Plate Glass Co. Glass blocks— Decora, Pittsburgh-Corning Corp. FLOOR COVERINGS: Halls, kitchen and bathrooms—linoleum, Armstrong Cork Co. WALL COVERINGS: Bedrooms — wall-

WALL COVERINGS: Bedrooms — Wallpaper. Halls—vertical calpboards. Bathroom—tile, Zani Tile & Marble Co. WOODWORK: Cabinets—Custance Brothers, Inc. Doors—Paine Lumber Co. Garage doors—Overhead Door Co. HARDWARE: W. C. Vaughan Co. ELECTRICAL INSTALLATION: Westinghouse Electric & Mfg. Co. Fixtures— Kurt Versen and Georgian Bronze Co. KITCHEN EQUIPMENT: Range and refrigerator—General Electric Co. Ventilating fan—Pryne & Co., Inc.

BATHROOM EQUIPMENT: Kohler Co. HEATING: Forced hot water system. Radiators—American Radiator Co. and Shaw-Perkins Mfg. Co. Thermostat-Minneapolis-Honeywell Regulator Co.



EXPOSED FIELDSTONE CHIMNEY BREAST FORMS END WALL OF LIVING ROOM

THE OPEN TREATMENT OF THE STAIR HELPS TO CREATE A SPACIOUS HALLWAY







PLOT PLAN

Connecticut house follows a local tradition but fails to satisfy all contemporary needs

Located on a ridge running parallel to a

lake and the road, this traditional structure presented some difficult problems. An approach drive had to climb 26 ft.

SERVICE WING IS DIFFERENTIATED BY LOW ROOF AND DORMER WINDOWS



DESIGN OF LIBRARY FIREPLACE OMITS THE CUSTOMARY MANTELPIECE

before reaching the first floor level. The client, having been brought up in the New England tradition, asked for a square house. Site conditions, however, led to a long, rambling structure to fit the top of the ridge. The plan of the building reflects an early attempt to comply with the client's wishes. The main rooms are grouped in a square around the central hall, with a

wishes. The main rooms are grouped in a square around the central hall, with a large porch overlooking the view toward the lake at the back. This produces a fine arrangement of the main areas but forces the service rooms to one side.

On the second floor orientation for the bedrooms had to be sacrificed to the best view. In a more modern plan, some of the rooms might have been extended through from front to back to enjoy both sun and view. In this arrangement only the servants' bedrooms and the guest room get the morning sun.

This house is a competent expression, in general plan and detail, of the New England tradition, but demonstrates that this type of architecture paralyzes planning. It is not a matter of style, but the difficulty of satisfying two opposed conditions: a rigid exterior—interior design pattern evolved from 18th century needs, and the possibilities of present-day living.

DONALD DES GRANGES, ARCHITECT







CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls-studs, cedar shingles; inside-studs, U. S. Gypsum Co. Rocklath and plaster. Floors-oak. ROOF: Slate.

FIREPLACE: Damper—H. W. Covert Co. SHEET METAL WORK: Flashing and leaders-copper.

INSULATION: Outside walls, ground and attic floors-rockwool.

WINDOWS: Sash-wood, double hung. Glass -double strength. STAIRS: Attic stair-Bessler Disappearing

Stairway Co. FLOOR COVERINGS: Kitchen—linoleum.

Bathrooms-tile.

WALL COVERINGS: Wallpaper throughout. HARDWARE: Yale & Towne.

ELECTRICAL INSTALLATION: Wiring system -BX. Switches-toggle.

KITCHEN EQUIPMENT: Range and refrigerator-General Electric Co. BATHROOM FIXTURES: Toilet seat-C. F.

Church Mfg. Co. Cabinets—Hoegger, Inc. PLUMBING: Soil pipes, etc.—cast and wrought iron. Water pipes—brass.

HEATING: Warren Webster & Co. modulation control. Boiler and radiators-American Radiator Co. Valves-Warren Webster & Co.



STREET FACADE WAS DESIGNED TO CONFORM WITH THE NEIGHBORING HOUSES



END OF THE PRINCIPAL LIVING AND BED ROOMS WERE



Baker Art Gallery, Photos

This Ohio house shows the advantages of architect-designed dwellings, proves its point by renting in record time

This unpretentious building vindicates the claim that the architect can produce dwellings of higher standard, at similar cost and equal cubage, than those generally offered by speculative builders. Designed originally for the architect's family, the house was rented within a week when the owner joined the Navy.

The architect comments: "The house was built to accommodate a growing family without being excessively large. It was, in a way, a protest against the local builders who, in Columbus at least, build houses of almost equal cubage but with hardly enough room for two children.

"The large and beautiful oaks on the lot had something to do with the orientation and general shape of the plan. We put the main rooms on the south and east for sunlight and privacy, although the 'front' of the house, according to our neighbors, is the garage door on the principal street to the north. There was a good deal of opposition to this at first, but now that there is some planting it has died down. The windows on the second floor are 3'-6" from the floor, both to give privacy and good ventilation, and to constitute a safety measure where young children are concerned." This feature produced a rather top-heavy effect, especially on the entrance side, which might have been avoided if the siding had not been carried below the first floor ceiling.

Apart from very generous closets throughout, there are storage areas in the basement and on the garden level-facilities that are often lacking. The larger part of the basement has been turned into a fine game room, large enough for tabletennis, and well lit. It is entered by way of a stair facing an outside door, so that it becomes a separate unit and does not interfere with the rest of the house.

CONSTRUCTION OUTLINE

FOUNDATION: Concrete block. Waterproofing-Flintkote Co.

STRUCTURE: Exterior walls-cypress siding and second hand brick; inside-Celotex Corp. sheathing, U. S. Gypsum Co. Rocklath and plaster. Floors-oak.

ROOF: Cedar shingles.

Mill Co.

INSULATION: Celotex Corp. and U. S. Gypsum Co.

FIREPLACE: Damper-H. W. Covert Co. SHEET METAL WORK: Flashing-40 lb. tin. Remainder-Armco, American Rolling

WALTER KNIGHT STURGES, ARCHITECT









THE MAIN BEDROOM OCCUPIES A SUNNY SOUTHEAST CORNER

FURNITURE GROUP AROUND FIREPLACE LEAVES BAY WINDOW FREE FOR PIANO





WINDOWS: Sash and screens in one unit-Pella, Roiscreen Co.

FLOOR COVERINGS: Kitchen and bath-PAINTS: Dean & Barry. HARDWARE: Yale & Towne Mfg. Co. KITCHEN EQUIPMENT: Sink—Kohler Co.

Ventilating fan-Pryne & Co. BATHROOM EQUIPMENT: Kohler Co. Cabinets-Miami Cabinet Div., Philip Carey

Co. PLUMBING: Soil pipes-cast iron. Vent

pipes-galv. wrought iron. Water pipes copper.

HEATING: Forced warm air, humidifying, L. J. Mueller Furnace Co. Thermostat — Minneapolis Honeywell Regulator Co.





An Oregon bungalow demonstrates that the basement garage can be a design asset

This simple house is an unusually well-designed example of its type. The plan, while retaining privacy for different activities, has produced an exceptionally easy flow of circulation. Each separate entity of the the house is accessible directly from the entrances. A living room has been created to take the utmost advantage of the sun, without sacrifice of privacy around the fireplace. The kitchen, within easy reach of both entrances, is centrally located between dining room and breakfast nook, and both bedrooms get morning sun.

A notable feature is the successful incorporation of a garage into the design of such a small dwelling. Easily accessible through an inside stair, it adjoins a generous work area often sorely needed in small houses. To make room for the garage, the living floor was raised above the highest grade, and surrounded on two sides by a balcony. The sole access to this balcony is by way of the main entrance door, which makes it necessary to walk around two sides of the house to reach the rear lawn. This could have been corrected by introducing a doorway in the northwest corner of the living room.

The striking roof overhang was designed for functional reasons. Apart from the obvious one of providing shade in summer on the south exposure, it also protects the balcony against the heavy snowfall that is common in that region. The break in the roof prevents an effect of overpowering heaviness which would have been created by carrying through the steep slope to the eaves.

SHELDON BRUMBAUGH, OFFICE OF HOWARD R. PERRIN, ARCHITECTS



FRONT ELEVATION

Kennell-Ellis

SCALE IN FEET



ACCESS TO MAIN FLOOR IS BY OUTSIDE STAIRS OR THROUGH THE GARAGE





BASEMENT PLAN SHOWS FRAMING OF CANTILEVERED BALCONY ABOVE GARAGE

CONSTRUCTION OUTLINE

FOUNDATION: Concrete. STRUCTURE: Exterior walls-shiplap, paper, siding; inside-wood lath and plaster. Floors-oak. ROOF: Cedar shingles. INSULATION: Rockwool. SHEET METAL WORK: Galvanized iron. WINDOWS: Sash-double hung, Curtis Co.'s. Glass-double strength, Libbey-Owens-Ford Glass Co. PAINTS: W. P. Fuller & Co. and Sherwin-Williams Paint Co. WOODWORK: Curtis Companies. HARDWARE: Schlage Lock Co. ELECTRICAL INSTALLATION: Wiring system-BX. Switches-tumbler. KITCHEN EQUIPMENT: Range and refrigerator-General Electric Co. HEATING: Hot air system, filtering and humidifying, Holland Furnace Co.



THE MAIN READING ROOM HOUSES SEVERAL FUNCTIONS IN ONE OPEN SPACE WITH MAXIMUM OPERATING FLEXIBILITY



The modern design of this branch library by City Architect Paul Gerhardt, Jr. has attracted readers from outside its own district.

One major characteristic of modern architecture is its ability to attract attention, something merchants have known and taken advantage of for a long time. The reason for this attention-getting quality is not merely newness, although the element of novelty is undoubtedly a factor. Fundamentally, it lies in the nature of the contemporary-design approach: the directness and simplicity with which it meets the problem, and the emphasis with which it stresses essentials.

The Lakeview Branch of the Chicago Public Library is an excellent case in point, for its staff reports that many of the library's patrons come from sections already served by other buildings. On the count of popular acceptance, therefore, this building must be rated a success.

The library is an unassuming and inexpensive box of brick. It relies on texture, changes of material, lettering and large windows for its effect. The only piece of applied decoration is the rather mediocre block of sculpture which marks the location of the main entrance. Treatment of the lower part of the street front suggests that of a shop; the long "show window" and the prominent lettering are both standard commercial practice. This effect was produced deliberately by the architect, for it was considered desirable to allow passers-by to see the interior. There is a terrace, planted with shrubs, which serves to keep people-especially children-at a distance from the window without evidence of deliberate control.

Arrangement of the interior spaces is as simple as that of the exterior. Downstairs, for instance, the browsing area, book alcoves and reading room are housed in one large, acoustically treated space. The apparent bleakness of the room as seen in black and white is considerably softened in actuality by warm colors and natural wood. Fluorescent lighting troffers run from one end of the room to the other, giving bright, even illumination. Desk and table tops and other horizontal surfaces are light in color to reduce what the engineers call the "brightness contrast ratio." More interest could have been given the various space subdivisions, perhaps, had a less regular spacing of fixtures been used.

Upstairs, where the children's rooms are located, there is a similar treatment of large spaces. An excellent feature of both floors is the use of high ribbon windows with bookshelves below, a scheme which combines maximum storage capacity with first-rate natural illumination.



The second s





10 15 20 25

BRANCH LIBRARY, CHICAGO, ILL.

PAUL GERHARDT, JR., ARCHITECT



THE CHILDREN'S READING ROOM IS DIVIDED INTO TWO MAJOR USE AREAS BY LOW, PROJECTING BOOKCASE UNITS

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls Ohio pressed brick, common brick' backing, Spray-O-Flake Co. Insulation, furring; inside-metal lath and plaster. Columnsreenforced concrete and Lally columns. Floors-reenforced concrete and concrete slab, Mid-West Concrete Pipe Co.

ROOF: Tar and gravel, Ruberoid Co. INSULATION: Walls-Spray-O-Flake Co. Sound insulation-Acousti-Celotex, Jacobson & Co., Inc.

WINDOWS: Sash-steel, Truscon Steel Co. Glass-Mississippi Glass Co. Screens -Window Accessories Co.

STAIRS AND ELEVATORS: Stairs -steel, asphalt tile treads and risers, Thomas Moulding Co. Elevator book lifts -James L. Baldwin.

FLOOR COVERINGS: Linoleum-Sloan-Blabon Corp. Ceramic tile-Mosaic Tile Co. Vestibule-terra vitra, Franklin Tile Co.

WALL COVERINGS: Vestibule - terra cotta, American Terra Cotta Co. Foyer, etc.-linoleum, Sloan-Blabon Co.

HARDWARE: Schlage Lock Co. and Oscar C. Rixson Co. Door closers-LCN, Norton Lasier Co.

PAINTS: Benjamin Moore Paint Co. LIGHTING FIXTURES: Curtis Lighting Co.

PLUMBING: Toilet fixtures-Kohler Co.

Pumps — Chicago Pump Co. HEATING AND AIR CONDITIONING: Hot water system, recirculating and fil-tering, Precipitron, Westinghouse Elec-tric & Mfg. Co. Boiler—Kewanee Boiler Co. Convectors—American Radiator Co. Thermostats — Johnson Service Corp. Water heater—Bell & Gossett.

THE STORY HOUR ROOM HAS MOVIES, RADIO, RECORD PLAYER AND SMALL STAGE

PREFABRICATION

To inaugurate this new department, THE FORUM has presented this series of six articles on the history of prefabrication in America, soon to be published in booklet form by the John B. Pierce Foundation. The first article in the series, entitled "A Movement Emerges," appeared in the December issue. Tracing the beginning of prefabrication as a widespread movement to the extensive publicity for factory-produced houses in the early Thirties, this article reviewed the contributions of nonprofit foundations and Government agencies such as the Forest Products Laboratory, the Purdue Research Foundation, the Bemis Foundation, John B. Pierce Foundation and other agencies which have exercised a continuous influence on its subsequent development. The second article: "Ideas-The Stimulus to Change," covered various radical proposals for "mast" houses, "eggshell" houses, the "mechanical core," etc., which were the initial impetus behind many prefabrication developments and have in certain instances suggested practical solutions of prefabrication problems. The third article: "Concrete-Forerunner to the Movement," began a house-by-house and system-by-system review of significant prefabrication developments dating back to the beginning of the century. The fourth reviewed prefabrication in steel, with particular emphasis on the experimental period of the early thirties, and the fifth, published in April, wartime prefabrication in wood.

THE PREFABRICATED HOUSE

1. A MOVEMENT EMERGES published December 1942

2. IDEAS

published January 1943

3. CONCRETE

published February 1943

4. STEEL

published March 1943

5. WOOD

published April 1943

the measure of progress

Subsequent articles in this department will examine prefabrication in the future—the distribution, merchandising, finance, land, labor and kindred problems to which proper answers must be found.

6. "REENGINEERING"-the measure of progress

MEASURED BY PURELY QUANTITATIVE STANDARDS, the prefabricated house has arrived. Tens of thousands of prefabricated units have been erected with evident success and are being lived in with apparent satisfaction. Tens of thousands more will undoubtedly be completed before the conditions which produced the current boom in prefabrication are fundamentally changed. Even after the war, there is reason to believe that the Government demand for sectional buildings will continue unabated for some time, with the same cash-on-the-line contracts for hundreds and even thousands of identical structures which have characterized the wartime demand for "demountables," and therefore the same stimulus to house manufacture which has been the result of the war.

What is not so clear is whether prefabrication has progressed very far in the direction of meeting ordinary peacetime demands—whether, on a *qualitative* basis, the prefabrication industry has a satisfactory product ready to offer the individual customer, and whether prefabrication plants can continue to operate efficiently on the basis of individual, direct-to-consumer sales. Divorced as it is from competition with conventional building, from the control of consumers' preferences and the all-important matter of merchandising, the present production of prefabricated houses is no more evidence of the industry's ability to survive in the postwar world than the present production of military aircraft is evidence that the airplane will supplant the auto. In terms of the peacetime housing market, we may be no closer to the manufactured house than we were when the war began.

The postwar success or failure of prefabrication obviously will depend upon its ability to supply the ultimate consumer with a better house for less money, probably influenced by additional factors such as speedier delivery, all-inclusive "package prices" and the confidence engendered by reputable manufacturers operating on a regional or national scale. Are we any closer to a truly prefabricated house than we were 10 years ago? This final article in the first prefabrication series provides part of the answer: real technical progress has been made. Most of the X's and Y's in this equation still represent unknown quantities to which wartime experience has not assigned definite values. Except for very recent developments such as the Homasote Co.'s department store sales program (Arch. FORUM, April, '43, p. 35), virtually nothing has been done to develop the merchandising of prefabricated houses. This question remains a vast, uncharted territory which must be explored before house manufacture can continue under peacetime conditions. Little more can be said of the matter of cost: while there are obvious economies in factory assembly methods, it has not been established that these are sufficient to counterbalance the additional shipping costs and complications of panel construction-especially as compared to the large-scale production of houses at the site. As to whether prefabricated houses are better than their conventional competitors, all that the current crop seems to demonstrate is that they can be made as good-and, since the comparison is with substandard war housing, this is to say not very good at that. From the standpoint of the consumer, there is almost nothing to distinguish most of the houses now being prefabricated from the typical, site-assembled, twobedroom war housing unit built for the same purpose. Once both have been put together, the resulting accommodations are in most respects practically identical in quality, and the interior and exterior appearance virtually the same. In comparing these houses with the peacetime product of the conventional builder, the points of difference which the consumer is likely to notice are mostly on the debit side of the ledger-such things as doorless closets (an economy measure common to all types of war housing and lack of special finishes in the bathrooms (in part a result of panel construction in which a single sheet material is used for all walls, partly a matter of economy).

KNOWNS AND UNKNOWNS

Thus any attempt to evaluate the present status of prefabrication must begin with recognition of the fact that the most important factors in such an evaluation are still not established, and probably cannot be established during the war. Widespread application of prefabrication for peacetime housing will depend primarily upon the development of superior sales methods and a more saleable product, and the war has, if anything, retarded development along these lines. Technological considerations are, in the last analysis, subsidiary to these more important questions. Even a house which represented no important structural advances (such as the conventional "ready-cut"), if available on a standardized basis for quick delivery at a fixed price, would be a bigger step towards house manufacture than a more advanced system of construction minus a practicable merchandising plan.

Nevertheless, important technological advances have been made. and can be examined in the light of their probable effects on house merchandising and building costs, at least on a theoretical basis. In some respects, many of the current prefabricated units are manifestly different from conventional construction, and probably superior to it. Mostly, these differences are matters of what may be called house engineering—and have to do with the more economical and effective use of material, an obvious advantage under any system of distribution. Almost all of 'the panel systems now in use produce a stronger, stiffer structure than conventional construction. The resulting house is less subject to cracking finishes, sticking doors, settlement, etc., than houses built in the ordinary way, and is likely to be better insulated, less drafty and decidedly easier to heat. Moreover, in many cases these improvements have been accomplished with considerably less material, both for framing and finishes, than conventional methods ordinarily require. Indeed, nothing is more to prefabrication's credit than the accumulating evidence of its ability to produce a better structure, with less consumption of materials, through a process of basic "reengineering" of the house structure. At the present time, in the absence of the usual barometer of sales on the ordinary market, such advances are the most reliable—if not the only—index of prefabrication progress.

EARLY "REENGINEERED" HOUSES

Actually, this process of reengineering has not been confined to the war period but rather has been inherent in most attempts at prefabrication since the term was first used. This has usually been true regardless of whether the basic material employed was concrete, steel or wood, and even where no very conscious effort was made to produce a reengineered structure. Fundamentally, it has been due to the fact that the pre-assembly of surface and framing materials, besides reducing the proportion of site labor, also results almost automatically in a more-or-less complete utilization of the "stressed covering" principle used in airplane constructionwhereas conventional construction methods at best achieve only a partial utilization of this principle. Thus almost any type of panel unit in which surfacing materials are applied to the frame in the shop, quite obviously achieves added strength and stiffness from the addition of the surface materials, and it is only natural that advantage be taken of this fact in designing the structure as a whole. With the development of large-size sheet materials, which constitute two-way membranes of enormous tensional strength, and with the improved methods of attaching such materials practicable under shop conditions, it became possible for the first time to consider the entire cross section of the wall or floor, including all of the materials used for whatever purpose, as a single, integrated structural unit-usually that most efficient of structural forms, the hollow box.

One of the first systems of prefabrication to take full advantage of this fact with consequent lightening of the structural frame was that developed by the Forest Products Laboratory in 1935. The first house in which this system was utilized, a one-story structure, had walls only 2 in. thick. Instead of a framework of 2 x 4 in. studding covered by sheathing, siding and an interior finish, the house was built from 4 x 8 ft. stress-skin panel units made up from two sheets of $\frac{1}{4}$ in. plywood glued to $\frac{13}{8} \times \frac{3}{4}$ in. ribs. Floor and roof panels, spanning 12 ft., had 2 x 6 in. ribs on 22 in. centers with a top skin of $\frac{5}{8}$ in. plywood and a bottom skin $\frac{3}{8}$ in thick.









TYPICAL PANEL JOINT

Early "stress-skin" plywood houses developed by the Forest Products Laboratory illustrate most of the advanced techniques in use in this type of construction today. Upper pictures show details of wall panels, windows and panel joint used in the first house. Photo, left, and detail below show thicker panels and mastic-filled joint developed later.



For the structural units used in the first Forest Products Laboratory house, hot pressed, plastic bonded plywood was used, but the plywood skin was applied to the frame with cold glue and nails. In a second house built a year later, phenolic resin glue was also used in assembling the panels, the bond being made under heat and pressure. A moistureproof joint was thus assured, and the entire panel became, in a scientific sense, a woodand-plastic unit. The second house was also a one-story structure, although experiments were made with two-story construction in the course of its development.

In the first house no provision was made for insulation; the second had mineral wool insulation and a vapor barrier between the plywood skins of the panels. The ribs and horizontal top and bottom plates of the wall units were increased in size to 23% x 3/4 in .-mostly to provide additional space for the insulation-and the thickness of the outer plywood skin increased to 3% in. Under test, the wall panels took a pressure of more than 200 lbs. per sq. ft. before failure. This is 17 times the force of a 60-mile wind, which is about 12 lbs. per sq. ft. Tested as a beam over a 131/2 ft. span, the floor panels, which were similar to those used in the first house, took a load of more than 300 lbs. per sq. ft., as compared with the 40 lbs. per ft. required by most building codes.

Thus the experiments conducted by the Forest Products Laboratory demonstrated conclusively that the quantity of material used in the conventional wood-frame house could be reduced by more than one-half, and at the same time the completed structure made considerably stronger than necessary, through a combination of factory assembly of panel units and "reengineering" of the structure.

Since these experiments were made, a number of commercial manufacturers of prefabricated panels have developed systems along the same lines, taking advantage of the remarkable strength developed by the glued-up plywood panel unit. One of the first to do this was Foster Gunnison, who employed a modification of the Forest Products Laboratory construction (using 2 x 2 in. ribs) in his first "Magic Homes," built in 1936. Others included Bates Prefabricated Structures, of Oakland, Calif., which developed a house using 1 x 3 in. ribs in 1939, and Plywood Structures of Los Angeles, which used panels almost identical with those employed in the Laboratory's second house.

All of these systems, like the Forest Products Laboratory houses, used vertical, 4 x 8 ft. wall panels. Where floor panels were also used these, too, were 4 ft. wide, room-length units. Other companies, such as the Willis Way Construction Co. of Chicago and the Speedwall Co. of Seattle, employed similar materials and methods for the room-length panels which became popular in the later development of prefabrication because of their elimination of vertical joints. Thus, through application of the stressed covering principle, the bulk of the material used in the floor panels had been reduced by almost onehalf as compared with conventional construction, and the material used in the walls reduced by more than two-thirds. Despite this considerable saving in materials, tests showed that the resulting structure was three times as strong as was needed to meet average conditions (see note, left).

One company, the Homasote Co. of Trenton, carried the process of reengineering begun by the Laboratory a stage further, through the application of the structural principle of "pre-stressing." This method, used in the Homasote "Junior" system of construction to reduce the size of the studs, was based on a fundamental property of the insulating material used to cover both sides of the panel—the fact that it expanded considerably when moist. By gluing the insulation board faces to both sides of the frame while in a moistened state, so that when dry both sides of the panel would shrink drum-tight, a thin (21/4 in.) panel was produced that was as rigid as the 41/4 in. panels made with dry material and 2×4 in. studs. This method of construction has been used extensively in Homasote's war housing work.

HORIZONTAL WALL UNITS

Most of the systems of prefabrication which use wall height panels, including the various reengineered systems referred to above, employ a form of framework which is basically similar to that used in the conventional wood-frame house-that is, a series of closely spaced vertical uprights forming a more-or-less continuous bearing wall and requiring as a foundation the support of a continuous wall or a girder spanning between piers. Such vertical wall units were based primarily upon the size of materials available rather than upon any structural division in the house itself. Windows were framed into specially built panels, or small panels were built to be fitted in above and below window units separately installed, and in either case special framing was used to carry the weight of the roof or second floor over the heads of the windows. For the sake of appearance, designers of these vertical-panel houses sought to minimize the joints between units with special details. They built units up to room-size widths in order to eliminate interior joints and, in some cases, covered the exterior faces of the panels with siding to relieve the monotonous flatness of the walls.

There was, however, another and distinctly different approach possible, an approach involving a more basic reengineering of the house frame —the use of horizontal panels. First suggested by Le Corbusier in his Pessac project for workers' housing, the horizontal-panel method of construction takes as its basic module the window, creating frankly treated joints above and below the window unit which extend horizontally around the building. Structurally, the panel units carry the weight of floor and roof loads horizontally across long spans to widely spaced columns instead of vertically through the wall surface to the foundation sill—an arrangement which results in unusual freedom in fenestration, and invites the use of wide windows.

The first of the horizontal-panel systems developed after the Forest Products Laboratory's experiments in vertical box-girder wall construction, was a system designed by David Swope, New York builder and son of General Electric's famed Gerard Swope, in 1937. This system utilized glued-up plywood boxes in the form of horizontal box-girders between 4×4 in. wood posts spaced 8 ft. on centers.

In an experimental house, built at Ossining, N. Y. to test the system, panels were formed with horizontal ribs of 2×4 in. and 1×4 in. lumber bonded to an exterior skin of $\frac{3}{8}$ in. plywood and an interior skin of $\frac{1}{4}$ in.

plywood, with horizontal joints at the top and bottom lines of the windows. Since the actual width of the 2 x 4 in. rib at the top of each panel was slightly smaller than that of the 1 x 4 in. rib at the bottom,* the panels tapered about $\frac{3}{8}$ in. on the exterior face. This taper was used to produce a lap joint not unlike conventional siding, with the skin at the base of each unit overlapping the unit below about $\frac{3}{8}$ in.

The same year that Swope erected his house, the Resettlement Administration included in its development at Greenbelt, Md., a house in which horizontal stress-skin panels were used. As in the Swope system, horizontal box girders were used above and below the windows, but instead of separate columns, filler panels between the windows carried the weight from the top girder course down to the panel below the windows, which rested on the concrete foundation.

After these limited approaches to horizontal construction, the John B. Pierce Foundation in 1939 erected the first of a series of experimental houses using horizontal wood units, and developed these houses for subsequent release to the commercial market. Embodied in them was the same principle of horizontal structure that this organization had used in the composition-covered steel truss in its earliest experimental house built on top of the Starrett-Lehigh Building in New York in 1932. In plywood, the organization had been working with the idea of horizontal construction since 1935, and both Swope and the Resettlement Administration had reviewed the Foundation's studies before undertaking their experiments.

The 1939 house was of plywood. Instead of using box-girder wall units, the Foundation formed horizontal units out of single sheets of $5/_8$ in. plywood with wooden flanges bonded to the edges of the sheets to form a sort of I-beam. The floors and roof of the house were carried across 12 ft. spans on these horizontal panel-girders.

Walls were divided horizontally at the top and bottom line of the windows. In erection, units above and below the windows were fastened to 4×4 in. wood posts that rested on concrete foundation piers 12 ft. apart. Between the top and bottom panel-girders were placed windows, and fill-in sheets of the same 5/8 in. plywood used to form the webs of the girders. Top and bottom "flanges" of the girders were shaped to serve as continuous window heads and window sills, and as a water table around the bottom of the wall. On the inner surface of the bottom wall unit a double flange, formed by two 2×4 's bonded to the plywood sheet about 6 in. apart, carried the floor framing. A plywood skirting was added during erection to close the space between the foundation piers.

*In standard cutting practice wood 1 x 4's are made 3% in. wider than 2 x 4's.







Photo and cross section above show construction of David Swope's early horizontal-panel, stressed-plywood house, built in 1937. Picture at left is an interior view of the Pierce Foundation's first horizontal plywood house (1939), which had single-thickness plywood walls with framing members exposed both inside and out. Horizontally sliding sash opened to full width of windows.





Upper picture shows exterior of Pierce Foundation's first plywood house during construction. Cross sections and lower pictures show two later models: the insulated plywood house (left) and Cemesto house (right). As in the first Forest Products Laboratory house, this first experimental structure was not insulated, but a second house built in 1940 on the same principle had insulation on the inside of the panel girders, and a $\frac{1}{4}$ in. plywood interior finish to cover the insulation. By 1941 this house had been released to 12 licensees for commercial sale. Tests showed that the structure was six times stronger than was required for any conditions it might be expected to meet.

Another horizontal panel house developed by the Foundation in 1941 and released to the commercial market through the Celotex Corp., has been extensively used for war housing. Sheets of laminated asbestoscement-surfaced insulating board, known as Cemesto board, formed single-thickness walls in place of the plywood panels. Individual sheets of this material, 13/4 in. thick, extended horizontally across the 12 ft. spans between the 4 x 4 in. posts, and were used as fillers between the window units. Since the panels formed in this material were nonstructural, floors were carried on 2 x 8 in., I-shaped, precast concrete beams that ran from pier to pier to form the foundation. To carry the pitched roof the top horizontal panel of insulating board was backed-up with 5/8 in. plywood to form a girder. Preassembled wood trusses, formed from 2 x 4's, were used to span the entire width of the house and eliminate the need for an interior bearing partition. The roof itself consisted of giant shingles formed from insulation board pre-covered with mineral surfaced roofing, nailed to shingle lath.

HORIZONTAL-VERTICAL MODULAR UNITS

One of the most recently developed systems of prefabricated construction, that of the General Panel Corporation of New York, employs a panel unit that is neither vertical nor horizontal, but may be used in either position as the design of the house may dictate. Developed by Konrad Wachsmann, a European with experience in wood-house manufacture abroad, and Harvard's famed Walter Gropius, this construction has so far been used only experimentally. It employs six standard panels-wall, door, window, floor, ceiling and roof units-all constructed on substantially the same standard frame. Two, three or four of these panels can be connected around a common axis without upsetting the spacing of the system's vertical-horizontal design module. They can be used vertically, horizontally, laterally or even for sloping roofs. All of the panel units are tightly connected to each other by "wedge connectors" without using nails, screws, hooks or glue for assembly. Erection can be done by unskilled laborers who simply hammer in the tightening wedges. The system uses a panel module of 3 ft. 4 in. fitting favorably a door, a window, a







George II, Dubis Staato, Photos.

corridor, a staircase or a bed. Columns, girders, joists and staircases have been developed to meet the normal standard connection of the panels.

The significance of this new system from the reengineering point of view is that here, at last, seems to be the universal system of standard panels that can be used to form a structure of any design which prefabricators have so often talked about but almost never achieved.* This has been accomplished with maximum flexibility since only the panel frames and connectors are constants—finish material for floors, walls, ceilings and roofs may be varied at will. Since identical panels can be used for an almost infinite variety of buildings, panels can be massproduced, warehoused and sold almost like ordinary building materials. They are built entirely flush, each having a thickness of less than 3 in., avoiding any waste of shipping space. Even after erection, designs may be further modified since the units are completely demountable.

REENGINEERING FOR MOBILITY

Still another, and basically different type of prefabrication which has required a considerable reengineering of the house structure is that used in the so-called *mobile* house. Mobile houses have been constructed from various materials and in various sizes, but all have involved substantial structural modifications to meet the special conditions set by this type of design. Such houses must be strong enough to meet the unusual racking strains imposed in transit, and at the same time, must be as light as possible to facilitate movement. In most instances, it has been found possible to satisfy both these conditions through a rigorous redesign of structure, usually with a reduction in the quantity of material ordinarily employed in conventional construction.

An excellent example of this is the two-piece mobile unit recently developed by the Tennessee Valley Authority for war workers' housing, and referred to briefly in an earlier chapter of this series. In shipment, each of the halves of this house is a separate structure, open on one side and carried on a small, four-wheeled "dolly" placed near the center of the 26-ft.-long floor. This floor not only must carry the entire weight of the structure in transit, but is placed on its wood-post-and-girder foundation at the site in such a way that the walls overhang the foundation by several feet. Through application of the box-girder principle of glued construction, however, Shulte Trailers, Inc., manufacturers of the unit, have

*A system somewhat similar to the General Panel Corp.'s method was once used experimentally by the Bemis Foundation, but never commercialized.



Fundamental detail of the General Panel Corp.'s new system of construction is the typical panel intersection illustrated above. Panel frames meet in such a way that 2, 3 or 4 units may be joined with special wedge connectors without altering spacing of panels. Where fewer than four panels come together, open portion of joint is closed with a filler strip.





Pictures above show exterior and interior views of typical construction, picture below floor joists and floor "sub frames" ready to receive finish flooring in panel form.





War housing development of TVA "trailer houses," built by Shulte Trailers, Inc., of Elkhart, Ind. Units are trucked to the site in two completely finished sections, joined at the center on wood-post-and-girder foundations.





Drawings of TVA-Shulte trailer house show compact plan, exterior treatment and details of floor and roof construction, which is gluedup, "stress-skin" plywood.



found it possible to create a sufficiently strong floor platform using only $2 \ge 6$'s for joists, and at the same time, to create a floor which is equally strong in both directions.

In the same way, most of the vertical support for the roof on the open sides of the unit is provided by small plywood cupboards, strategically located and formed from plywood sheets glued at the corners to create, in effect, channel-shaped columns. Virtually all of the finish material, which in ordinary construction would constitute nonstructural deadweight, in this completely reengineered design contributes strength and stiffness to the structure, and the total amount of material used is probably less than one-half that would be needed by conventional assembly methods.

CONCLUSION-WHAT OF THE FUTURE?

It is probable that no worse time than the present could be found to attempt to predict the future of prefabrication. As has already been indicated, success or failure of the movement is dependent more upon the development of merchandising methods-on which little conclusive experience exists and which is now virtually at a standstill-than upon the technological developments which have been reviewed in this series, varied and ingenious as they are. Moreover, it is impossible that two such diverse trends as are represented by the last two developments cited -a system of universally applicable panels and a complete, factory-made house that included even the furniture-could have one and the same future, and yet both come under the broad and inclusive heading of prefabrication. Prefabrication, as we have said, is "all things to all men, and a source of confusion to many." And no one, at this writing, knows just where it is going, or which or how many of several paths it may follow. It is currently in a state of flux. And, the clearest thing of all is that its development is a continuing story, the final chapter of which will not unfold until at least the early postwar years. What has been reviewed herein is simply the prehistory of a movement of tremendous importance to Building, the story of the first faltering steps of an infant industry which may yet grow up to supplant the parent which gave it birth. But before this can happen, it has a long way to go and a great deal to learn, as we have a great deal to learn about it. And probably the biggest lesson, for all of us, will be when we learn that Prefabrication is simply another term for better, more economical building under modern conditions-a goal we are all striving to reach.

(This is the concluding article in the first prefabrication series. Subsequent articles will explore the still-unsolved problems of merchandising, finance, land and labor as they affect the prefabricated house. To any reader who is interested in studying the subject further THE FORUM will supply without charge a bibliography of 130 FORUM articles on prefabrication that have been published since 1932.) SEVEN COMMERCIAL UNITS, including an office, photographer's studio and a variety of retail shops, designed by Architects Douglas Honnold & George Vernon Russell for Hollywood's new "high style" street. An interesting attempt to maintain design unity while allowing tenants individuality of treatment.

PAUL FRANKL, DESIGNER AND DECORATOR, COLLABORATED WITH THE ARCHITECTS ON HIS SHOP FRONT





AN UNUSUAL SOLUTION FOR AN EVERYDAY PROBLEM: SEVEN COMPLETELY DIFFERENT SHOPS ARE CONTAINED WITHIN

Most U. S. city dwellers are familiar with the pattern of neighborhood change from residential to commercial development. Most shifts of this kind, however, extend over a decade or more. The following account, by the architects of this shop group, describes a transformation that occurred almost overnight.

"Rodee Drive in Beverly Hills, California, has been recently transformed from just another street into a distinguished shopping center. Not more than two or three years ago this street had a mixture of residential and commercial buildings, did not compete with shops on nearby Wilshire Boulevard.

"Rodee Drive was zoned for business some years ago, but commercial buildings erected were few and not interesting enough to attract attention. The street was not 'established.'

"Among the first to see its possibilities was Paul Frankl, who had a building designed and put up for him. A perceptible increase in traffic was noticed immediately. This might have been due to the vigorous design of his shop, to the distinction of the furnishings within, or to the huge cage of white pigeons he used for a Christmas display. The point is that people were suddenly very conscious of Rodee Drive.

"Very soon two more shops were opened next to Frankl's. Our office did a cafe across the street for 'Prince' Mike Romanoff. This has become a very fashionable place indeed. At lunch and dinner time, cars deposit movie stars and other celebrities at the rate of four a minute. "This modern rental development is a shining example of the maxim architects like so well: 'Good design pays.' The shops have proven it by the increase of business each tenant has enjoyed in his new location. Together the shops cover 150 x 150 feet—actually three separate 50-feet lots. Each shop was specifically designed for its tenant. The absence of prominent signs is significant: they were not necessary. The character of each shop is imprinted on the public eye by clear and striking design. However, the relation of each shop to the entire composition received considerable study.

"Serious consideration was given to structural flexibility for future changes. Roof spans, bearing walls and rigid frame front were studied so that such changes or additions would be neither difficult nor expensive. Materials of construction are simple and permanent, and it is believed that upkeep and replacement costs will be negligible.

"Adequate parking space for patrons is provided in the rear, and is reached by a paved drive. It so happens that the rear of these buildings is almost as interesting as the front, so there is no feeling of going in the back door."





CLOSE-UP VIEW OF THE WOMEN'S DRESS SHOP, PHOTOGRAPHER'S STUDIO AND THE CUSTOM-MADE JEWELRY SHOP



STAIR RAIL IS SUPPORTED BY METAL RODS EXTENDING FROM FLOOR TO CEILING

George Hurrell's studio is designed (1) to advertise George Hurrell, (2) to glamorize film stars with factory efficiency

Hurrell is a photographer who has been enormously successful in capturing in still pictures the glamor which is Hollywood's chief product. The front of his office is an unusually striking poster in which everything has been subordinated to accent the display photograph set in the middle of an oversize baroque frame. The interior arrangement shows a very effective disposition of the few service rooms required: there are dressing rooms and an office on the first floor and finishing rooms above. A catwalk at second floor level goes around two walls of the studio and is used for lights and for pictures that must be shot from above.



GENEROUS TWO-STORY STUDIO AS SEEN FROM CATWALK





The Frankl Galleries are a display background for modern furniture, accessories, and a collection of exotic plants

Paul Frankl, very well known for his furniture and interior designs, worked out his own shop and its handsome front (page 97) in collaboration with the architects. Main feature of the exterior is the high window, which is framed in natural Douglas Fir and set into a slate-colored wall of corrugated concrete. The shop inside shows a very pleasant combination of high and low ceilings, and is divided into a window display area, general sales space and a "garden room" at the rear.

In the course of developing materials to enrich contemporary interiors, Mr. Frankl has used a wide variety of plants many of them quite extraordinary in shape and texture. This part of the business has apparently developed to the point where an entire section of the shop is devoted to plants.

With so much display material of interest, there was little need to create anything more than an agreeable and unobtrusive background. This is precisely what was done. Some of the walls are of gray painted plaster, others are covered with grass cloth which has been applied in 3-foot squares with alternating grain. Ceilings are also gray, except in the garden room, where a Chinese red was used. Two materials make up the flooring: in the main sales area the floor is of black asphalt tile; in the garden room it is quarry tile, laid bottom side up, and finished with dark oil and wax. A portion of the garden room floor appears in the lower photograph.





FURNITURE IS DISPLAYED IN GROUPS SUGGESTING ARRANGEMENTS FOR THE HOME







HIGH SILL STRESSES PRIVACY



The building for the Shurr-Melnick Agency overcomes the disadvantages of inside offices by use of skylights.

The theatrical agency occupies a space with narrow frontage, and has all its offices strung out in a long line, flanked by a corridor which runs from front to back. As in the shops, there is an entrance from the parking space at the rear. Because of the nature of the enterprise, the front has been treated with restraint, its chief feature being the high, trellis-like window which admits light to the reception room. Interiors are simple but luxurious. In the office at the right, for instance, plywood with a veneer of fine hardwood has been used. All of the office interiors were designed by the architects.



PATTERN OF WINDOW GRILLE IS REPEATED IN THIS TRELLIS OVER FRONT DOOR

A FILM AGENT'S OFFICE MUST LOOK RESTRAINED, EXPENSIVE AND IMPORTANT


at War!

WOOD and GLUE

ein Company of America, 350 Madison Avenue, New York, N.Y.

Regardless of what you plan—this amazing story Wood has changed.

Wood is changing industrial thinking.

1943

Wood is doing "impossible" things. This book tells that story-how plastic resin glues have changed wood nto industry's newest raw material. illustrates case histories of wood ed glue at work, under many conions, doing things more efficiently

How to do the "impossible" will stimulate your thinking

Because of modern glues, wood now offers the best properties of many different materials. Now wood can be impregnated, compregnated, laminated, stabilized, molded or bent. These better glues make water- heatvibration- and mold-proof joints, unaffected by organic solvents-amazingly strong and durable. Yet, the wood retains its natural warmth and richness! Look into this story of modern glue!

LUES FOR INDUSTRY Casein Company of America 350 Madison Avenue, New York, 17 N.Y. Dept. AF 6 Division of The Borden Company

Do it with "imagination" wood and glue!

Write for this free book! Outlines new wood and glue developments. Lists Technical Service Bulletins available to designers and engineers. Stimulating. Worth reading.

GET RID OF THE NOISE DEMONS

... trap them in ceilings of Armstrong's Cushiontone

WITH HELP SO SCARCE and work so put up with efficiency-wrecking noise demons. There's no need to put up with them, either. Get rid of them with low-cost ceilings of Armstrong's Cushiontone.

As much as 75% of the sound that strikes a Cushiontone ceiling stays there . . . absorbed by the 484 deep, noise-quieting holes in each $12'' \ge 12''$ unit. Repainting (with ordinary paint and painting methods) does not affect this permanently high efficiency.

Cushiontone is quickly installed, with little or no interruption to office routine. It's low in cost, too, and simple to maintain. Its factory-applied surface is light ivory in color, reflecting light unusually well—improving general illumination.

New BOOKLET gives all the facts. Let us send you a copy now, and a sample of Armstrong's Cushiontone. Armstrong Cork Company, Building Materials Division, 2306 Stevens Street, Lancaster, Pennsylvania.



BOOKS

(Continued from page 12)

phrase chosen at random: "All this happened until man thought he was intelligent enough to get along with his practical reasoning only . . ." Exactly what admixture to practical reasoning is proposed? Is the answer to a crying need for the most elementary conditions of living a city composed like a symphony? Let planners have the humility to appreciate the importance of giving bathtubs to those who need them. of making it unnecessary for five people to live in a single verminous room.

For these are the problems of today, stated so well at the beginning of Mr. Saarinen's thesis, but later lost in an avalanche of esthetics: "The fact . . . that one-third of the population of the U.S. was compelled to dwell in the substandard conditions of more or less decayed urban communities . . ." This is a very terrible fact, multiplied a hundred times the world over. It is useless to tell those people that ... as the main issues in the solution of these problems (the influx of workers into towns during the industrial revolution) were of economic and material nature, the result was bound to be materialistic in Materialistic in spirit or not, spirit." these people want bathtubs, and that simple demand seems to involve economic problems of such complexity that to gloss over them as the author has done simply places the value of the entire thesis in doubt. To say that: ". . . it sounds almost paradoxical to harbor economic objections to economical rehabilitation of an economically disastrous situation . . ." is a platitude, which leaves the situation unsolved. These objections are being harbored. To propose legislative amendments, which have been, again and again, rejected in actual practice under pressure from certain interests, is not a satisfactory blueprint for action.

The book remains great scholarship, and should be read by all those concerned by the subject. It is perhaps a little *too* scholarly, perhaps a little *too* chaste. Most important, it is still theoretical where it should be practical; still in the clouds where it should be on solid ground. The entire population of this country, from sharecropper to shareholder, is looking to the planners for a solution to their problems. And this is not the answer.

THE DIARY OF A HOUSING MANAGER,

by Abraham Goldfeld. National Association of Housing Officials, Chicago, Ill. 115 pp., illustrated. 5¹/₂x8¹/₄. \$2.

This book was published a few years ago by the manager of the Lavanburg Homes, a project designed to house 110 families living in New York and vicinity. It is reviewed here at this time because, (Continued on page 106)

LOCKWOOD HARDWARE

says Velcome at

at Washington's Hotel Statler

BESPEAKING the rich simplicity and dignity of this modern hotel, the hardware is finished in natural dull bronze, wet scoured and "permanized."

Shown at right are the main entrance and shop door set with Lockwood Cylinder Lock and thumb latch; the plain handle set; and the substantial large knob used on first and second floors. Note the absence of screws in the escutcheons. Holabird & Root, the architects, created the simple dignified hardware designs, which Lockwood Engineers produced with many ingenious hidden holding devices.

Lockwood Builders' Hardware is engineered to fulfill *every* requirement—from design to durable security. Available now only for direct war work, you will still find us ready to plan with you for the day when Victory is assured.



Entrance Thumb Latch Set with Lockwood Cylinder Lock and off-set hand pull, used on main entrance and shop doors.

Rich, over-size round knob and round escutcheon, used on heavy doors on first and second floors. Note the absence of plate holding screws.



Plain door pull with simple escutcheon with rounded ends. Note absence of plate holding screws.







Since 1843, we have held Eagle White Lead to a standard of purity that even in this war year of replacements and substitutes is *unimpaired*.

Because Eagle White Lead is *pure* white lead ground in *pure* linseed oil, it has remarkably long-lived properties. It maintains a tough, elastic film of white "armor" on the painted surface, that does not crack or scale, but which, instead, wears evenly and slowly ... leaving a *perfect* surface for eventual repainting.

We are proud to have made this superb painting material for 100 years. And we are happy that there is a *sufficient supply* of Eagle White Lead for all necessary painting. You can recommend its use with confidence that your client will get the finest paint protection money can buy, at actually *less* money. Note that Eagle White Lead costs only \$2.67 per gallon of finished paint, based on national average cost of Eagle White Lead and linseed oil.

THE EAGLE-PICHER LEAD COMPANY, CINCINNATI, O. Member of the Lead Industries Association



BOOKS

(Continued from page 104)

in the face of large-scale war housing all over the country, Mr. Goldfeld's observations are of the greatest importance.

It might be thought that a book of this type would make interesting reading only to those intimately concerned with the subject. The reverse is true: It is one of the most fascinating books on the workings of a housing project to have been published in a very long time. There is not a single remark, not a single reference to needs and usage, that should not be made compulsory reading for everyone who has anything to do with designing housing projects. It is most refreshing to see the whole subject dealt with on a very down-to-earth basis-far removed from the lofty theories we have been bombarded with for some time. Every problem, from how to store baby carriages to organizing men's clubs is considered in a spirit of extraordinary liberalism and with deep insight into the kind of life that the tenants live, and what their aspirations are. The fine thing about this book is the attitude on the part of the manager, which bars any stigma of charity, or a spurious sense of superiority.

It has been found by experience that, unless architects attain that kind of liberal way of thinking about housing, they prove to be totally unfit for the jobs assigned to them. A number of Mr. Goldfeld's statements will come as a surprise to those who have taken a snobbish view of these problems: "I later decided to try the experiment of accepting about 10% of the tenants from those whose homes I found ill-kept. I wanted to see what effect the new environment would have on them. Some years later, I was interested to observe that of the four families living at Lavanburg who persistently did not maintain decent standards, only two were from this group."

The need for wide circulation of this book can hardly be over-emphasized.

THE LATIN-AMERICAN COLLECTION OF THE MUSEUM OF MODERN ART,

by Lincoln Kirstein. Museum of Modern Art, 11 West 53rd Street, New York City. 110 pp., illustrated. 73/4x101/4. \$2.

The Museum of Modern Art, increasingly conscious of world affairs, has again gone to bat for the good neighbor policy. The result, as usual, is physically perfect. The contents are either enormously stimulating or faintly depressing—depending on whether the reader is an amateur onlooker, or a U. S. artist. For, if this collection proves anything, it is that the artistic center of gravity of the Western Hemisphere lies well south of the border. . . .

These are certain obvious comments one might make on this collection: The strong (Continued on page 108)



It's what you <u>don't</u> see that really tells the story of the new Statler

WHAT YOU SEE in the picture above is a typical room in the new Statler Hotel in Washington.

What you don't see is the planning that made this room possible.

The Statler, as you know, was completed about a year after the war started. Many items were frozen at the time. Many consumer goods were no longer being made. Yet Statler was able to come through on time... because they saw future uncertainties and planned well in advance.

For instance, they were in touch with us about their bedding problems a year and a half before the hotel opened. Consequently, they received the last order of Beautyrest mattresses sent out of the factory before Simmons converted to war.

In detail, they received the last 284 single-bed Beautyrests, the last 185 double-bed-size Beautyrests, as well as Beautyrest constructions for 272 sofa beds and 435 Patent Beds.

The Statler Patent Bed (pictured above) was designed by Trylon Studios, and engineered by Simmons. It works on a new principle of sofa bed construction—takes a regulation-size box spring and mattress and has finger-touch control. doing their post-war planning—particularly to those concerned with hotels, and with the reconditioning and reequipping problems awaiting owners who take over hotels now being leased by the Army and Navy Air Force.

This is the story of part of the plan-

If Simmons can help in any of your post-war planning, please call us. We'll be delighted to help.

ning, back of the new Statler. It may

serve as a reminder to architects now





WOOD Installed Years Ago is Helping the War Effort

A MINE SHAFT carries a lot of traffic. Through it travel the manhoist, skips and counterweights, plus piping and conduit, the manway and ventilating shaft. Construction has to be true, sturdy and dependable, in the face of conditions that are unusually severe—a lot of moisture is present, and exhaust air may carry fungus-forming spores.

WOLMANIZED LUMBER* has been widely used for this important construction as shaft timbers, planking and guides, in trestles and head frames, and as ties. The fact that it performs so well, under these adverse conditions, explains why service records on Wolmanized Lumber make such interesting reading.

PROLONGED LIFE of this treated wood greatly reduces the labor required for maintenance. Thus, the millions of feet of Wolmanized Lumber used throughout industry generally, for years past, are now helping to ease the manpower situation. New materials can go into other vital construction, and the money saved can help the war effort.

WOLMANIZED LUMBER is ordinary wood, "alloyed for endurance". Vacuum-pressure impregnation with Wolman Salts* preservative makes it highly resistant to decay and termite attack. In using it, you retain all of the advantages of working with wood ease of handling and erection, light weight, strength, resilience, high insulating value. American Lumber & Treating Company, 1647 McCormick Building, Chicago, Illinois.

*Registered Trade Mark



BOOKS

(Continued from page 106)

influence exerted by painters like Picasso, Bracque and Juan Gris on some of our Latin American friends; and the patent excellence of the work of painters like Portinari, Orozco, Rivera and Siqueiros all, thanks largely to the Museum's efforts, fairly well known in the U. S. by this time. Harder to define, however, would be the decidedly "homegrown" forms of expression apparent in practically all the examples contained in the collection. They may be divided into two main trends: First, a great consciousness



PORTINARI: St. John's festival

and joy of colors, which is apparent even in the black-and-white reproductions in this book; and second, a strong feeling for movement, masses of people, and individual faces—all at the same time. Taken together, these trends clearly represent an attempt once considered far beyond the function of an artist: the breaking up of the uniform pattern which was imposed upon men by the machine. However, these painters accept a great deal of contemporary life—they protest against its manifestations, not its sources.

As could be expected, this sensitivity for color and movement produces almost unbearably brutal and violent comments on some aspects of our present civilization. The "Echo of a Scream" by Siqueiros, "Beyond Despair" by Lozano are cases in point. Yet despite this awareness of what is going on around them, these painters have never "given up" altogether.

Undoubtedly, there are other premises on which to judge the collection. There is a clear historical approach, which is the one taken in the excellent introduction by Mr. Kirstein—the first attempt to survey three hundred centuries of Latin American Art. It is questionable, however, whether it would be possible to intellectualize this movement in painting at all. For its greatest distinction is its deep passion. These painters have faced the horrors of our life, and have emerged, quand même, with some hope.

(Continued on page 110)



A PEACETIME BUILDING COMPLETED UNDER WARTIME EMERGENCY

John W. Harris Associates, Inc., a modern Construction firm geared to deliver a complete building service, takes pride in identifying themselves with the now famous Statler Hotel, Washington, D. C.

Other outstanding and diversified projects which we have recently completed or are now under construction:

> Seneca Ordnance Depot at Kendaia, N. Y. (In conjunction with the Poirier-Mc-Lane Corp.).

> Housing—Defense Plants Corporation at Burlington, N. J. and Canonsburg, Pa.

- Plant Office Building for the Bethlehem Steel Co. at Bethlehem, Pa.
- U. S. Rubber Company Building at Rockefeller Center, New York, N. Y.

Cities Service Refining Corp. Plant Buildings and Housing, in Louisiana.

Meridian Hill Hotel for Women, Washington, D. C. Constructed for Defense Homes Corporation.

JOHN W. HARRIS ASSOCIATES, INC.

30 ROCKEFELLER PLAZA

NEW YORK CITY, N. Y.



... helping to Save Fuel for War Needs

The MILLION TONS of Mineral Wool now installed in American homes is already saving tremendous quantities of fuel (and therefore, transportation) for war work.

In 1943, the industry will produce enough wool to save 270,000,000 gallons of fuel oil, or the equivalent in other fuel.

Fuel is "ammunition", and must be saved. The U. S. Government has launched a campaign, urging insulation NOW... this spring and summer ... when labor and materials are available.

To encourage insulation NOW... FHA will insure loans with first payment deferred until November first.

For maximum fuel saving (and year round comfort) ceiling and walls should be blanketed with full-thick mineral wool, or equivalent.

Architects can cooperate with the Government and all allied industries, by urging their large as well as small clients to act now.

NATIONAL MINERAL WOOL ASSOCIATION

New York, N. Y.

1270 Sixth Avenue

BOOKS

(Continued from page 108)

MECHANICAL DRAWING, by Ervin Kenison, S. B., James McKinney, and revised by Tom C. Plumridge. American Technical Society, Chicago. 330 pp., illustrated, 53/4x 81%. \$2.

This latest book on mechanical drawing differs from most of its predecessors in that it covers architectural drafting as well. It will be found as useful by architectural students and draftsmen as by engineers. The subject of lettering, which is being neglected somewhat in presentday schools, is covered very adequately. There are charts on architectural, plumbing, heating and electrical symbols, as well as a selection of the most common working drawings and details. When it deals with purely mechanical drawing, the book adopts connotations in lettering and dimensioning similar to those used by architects-a commendable simplification, which will eliminate the frequent errors resulting in actual practice from different drafting methods.

INTRODUCTION TO REINFORCED CON-CRETE DESIGN. by Hale Sutherland and Raymond C. Reese. John Wiley & Sons, Inc., New York City. 558 pp., 61/4 x 91/4. \$4.50. This is the second edition of the standard handbook on reinforced concrete design, which was first published in 1926. Since that time a great many factors, such as the improved quality of concrete, have made certain revisions necessary. Extensive studies have also been made of plastic flow and shrinkage of concrete, and these have led to revolutionary changes in column design. They have been fully discussed in this second edition. Throughout the book, which is well illustrated with simple diagrams, the authors have stressed the practical aspects of concrete construction: the problems that arise on the job.

PLUMBING PRACTICE AND DESIGN, by Svend Plum. John Wiley & Sons, Inc., New York City. 308 pp. illustrated 6 x 9. \$4.50.

This book is a wholehearted attempt tofind a middle road between old, unscientific methods in plumbing, and some of the new, frequently impractical theories on the subject. It is arranged in a sensible manner, dealing first with the kind of wear and tear plumbing materials have to stand, before getting down to specific problems of pipes, fittings, valves, controls, fixtures, pumps, fire protection and air piping equipment. The author is to be commended for substituting realistic drawings for the often confusing plumbing diagrams of a schematic nature. The book does not cover every conceivable problem of plumbing, but it presents a clear and intelligent index to most problems, which architects usually hand over to mechanical engineers.

THE ARCHITECTURAL FORUM

Mines-"There never was a time when it was more necessary to practice economy in household heating." OWI-

Bureau of



last winter."

OPA-

"Keep the heat inside your house."

FHA-"Home owners will be encouraged to

proceed now with

the installation of

heat preservatives."

TAKES EVERY ROOM AT THE NEW WASHINGTON STATLER...

Walnut

American Walnut was selected for use throughout the new Washington Statler because of its structural values, its beauty and its finish, according to Architects Holabird and Root. In the Statler, you will see many of walnut's unlimited possibilities realized. The same qualities that make it **the gunstock wood** prove it the ideal material for postwar homes and institutions. Calls and correspondence are invited. We may be able to help you to obtain your needs, even though deep in war work. Why not get all the details?



Top: 2-bed guest room with walnut bed-ends, sofa-style. Center: Desk-vanity-dresser, and door of walnut. Left: Detail of bed-end-radio-table, for beds arranged in "L". Below: Private dining room, with walnut and murals. Furniture designed by Trylon Corp., N. Y. C. Bedrooms executed by Irwin, Grand Rapids. Occasional pieces by Mallin, N. Y. C. and Dunbar, Berne, Ind. Photos by Hedrich-Blessing.



AMERICAN WALNUT MANUFACTURERS ASSOCIATION 616 SOUTH MICHIGAN AVENUE CHICAGO, ILLINOIS

MONTH IN BUILDING

(Continued from page 54)

bureaus to actually make the move. Its predecessor: WPB's Construction Bureau, now nestling atop New York's Empire State building.

CMP Allotments: Third-quarter allotments under the Controlled Materials Plan have just been completed, announced J. A. Krug, WPB's Chairman of the Requirements Committee. As usual they reveal a continuing demand for materials, with the available supply far, far behind. (For example, the fourteen claimant agencies-NHA is one-requested more than 20 million tons of carbon steel, while the estimated supply for the third quarters is slightly over 15 million). An overall reduction of 35% in Agencies' requests has consequently been made.

Construction by Command. The category of "command" construction has been enlarged to include the remodeling of buildings ordered by either the Chief of Staff, U. S. Army or the Chief of Naval Operations, U. S. N., provided the total estimated costs is less than \$10,000. "Command" construction includes such works as military housing, alien housing, seacoast fortifications, camouflage or other passive defense projects.

Plant Expansion Over. In 1942 the Government spent \$6,492,000,000 for industrial plant expansion. The estimate for 1943 is \$4,500,000,000, a rapid, drastic falling off, with widespread expectations of an almost complete stoppage to become more acute at year's end.

Soldier's Mortgage Payment Reduced. In one of the first decisions of its kind under provisions of the Soldiers and Sailors Relief Act, Justice James M. Proctor of Washington, D. C. ordered monthly mortgage payments on a \$7,000 mortgage reduced from \$70 to \$39 on property owned by a private in the armed forces. The arrangement is to continue for six months after the war.

LEGISLATION FOR BUILDING COSTS

Corwin D. Edwards is economic consultant to the Department of Justice, particu-



HENRY WEIS MFG. CO., INC. 602 OAK ST., ELKHART, INDIANA



CORWIN EDWARDS: Labor's love lost . . .

larly active in its Antitrust Division. He is also a determined, peripatetic gentleman who, in the last two years, has appeared before countless associations with the same proposals: legislation which would reduce building costs by preventing unions or manufacturing organizations from price-fixing conspiracies or methods which force uneconomic measures upon the building industry (thus making new techniques like prefabrication impossible economically).

Last month, couched in the usual legal fol-de-rol, the bill appeared, introduced to the House by Rep. Francis E. Walter (Dem., Pa.), now is nesting in the portfolio of the Committee on the Judiciary. Its provisions:

1) It shall be unlawful for any labor organization to restrain trade by requiring an employer to hire members of one organization in contradistinction to another.

2) To require an employer to hire unnecessary labor, to act so that prices are fixed, customers allocated, production restricted.

3) Any or all of these practices are punishable by law to the degree of a \$1,000 fine, or by imprisonment of one year or both.

Mr. Edwards' proposal, and subse-(Continued on page 114)





This Window did <u>NOT</u> go into the Hotel Statler



 Long before aluminum became a
"critical" metal for war production, the Statler Company and its

architects, Holabird & Root, Chicago, and A. R. Clas, Associate, Washington, chose Adlake aluminum windows for the new Hotel Statler in Washington, D. C. There were no priorities, no metal shortages-then!

However, by the time 76% of the windows were finished, the metal situation had changed. Uncle Sam needed aluminum for building bombers—needed the aluminum that had been fabricated into many hundreds of Adlake windows for the Statler.

In the minds of the Officers of the Statler Company, and The Adams & Westlake Company, there was no question about what to do. The needs of this nation come first!

The Adlake windows did not go into the Hotel Statler. They went back into the melting pot and then into aircraft for U. S. armed forces.

Today, The Adams & Westlake Co. is building aluminum windshields and canopies for bombers and fighter planes.



MANUFACTURERS OF ADLAKE NON-FERROUS METAL WINDOWS

IF YOU'RE SHORT OF WORKERS Because of Housing Problems-

HERE is a solution available now—the fully pre-fabricated, demountable, portable Victory Home—comfortable, convenient and economical to buy and use.

Victory Homes are the civilian version of the Victory Hut now housing tens of thousands of men in our fighting forces comfortably and well. In their basic, single-unit form, Victory Homes provide a house that's really a home, that can be comfortably heated with little fuel. And they can be erected where you want them in as little as six man-hours.*

And—to look ahead—all Victory Homes can be demounted and moved as simply as they are erected. They are designed and built for permanent use, but you need never be faced with a "ghost town" for they are easily removable, and can be salvaged and stored.

Best of all, they're ready for you now, subject to government regulations. Write, wire or phone us for a complete illustrated booklet and for immediate information on prices and delivery dates on Victory Homes.

HED REION

Note the sub-division of space into well-planned living quarters — proven comfortable in actual use.

* Plumbing and electrical installations naturally require additional time.

TEXAS PRE-FABRICATED HOUSE AND TENT CO.

Dallas, Texas

MAKERS OF "VICTORY" HUTS AND "VICTORY" HOMES

MONTH IN BUILDING

(Continued from page 112)

quently Representative Walter's, has met with wholehearted approval from the employer end of the Industry, equally wholehearted vehemence from labor. Feeling in the House is reported to be sympathetic, although no positive action is immediately in view.

URBAN REHABILITATION BILL

Introduced two months ago to the Senate by Sen. Elbert D. Thomas of Utah was a bill designed to provide Federal financing for municipal purchase of blighted areas in cities. It never got very far, for as soon as the introductions were over, Senator



SEN. ELBERT THOMAS: "Out, out, foul blight!"

George's Committee on Postwar Planning had pigeonholed it neatly.

Last month its chances of seeing the light of day were restored. The Senate decided to withdraw it from the George Committee, refer it to the more kindly Committee on Education and Labor.

The bill's spiritual fathers, of course, are master-planners Alvin Hansen & Guy Greer (ex-Federal Reserve Board, now FORTUNE editor) who for years have been working on and formulating a plan whereby Federal loans would be made to cities to purchase land at existing prices for clearance and rehabilitation purposes. The present bill's chance of success in Congress, however, is meagre. Even the current interest in postwar construction (which such a plan would considerably further), would not help. Tightfisted, the present Congress rears up in alarm at the mention of Federal subsidy. The White House had been noticeably cold to the measure; and there is certain to be political pressure against it from blighted-area landlords. Its treatment at the hands of the Senate committee, however, is unpredictable.

(Continued on page 116)



DO NOT OVERLOOK YESTERDAY'S MANSIONS FOR TOMORROW'S IMPROVEMENTS

The present will become the past with the suddenness of a tropical sunset the moment peacetime building is again permitted.

Scientific planning will greatly alter the new building program and include a sweeping slum removal movement.

During this whirlagig of change don't overlook one simple truth—there are more buildings already built than may be built and therefore remodeling will play a large part in tomorrow's building.

"Coyne & Delany" is in a position to supply tomorrow's flush valves for tomorrow's homes, designed to give faultless operation and protection against dangers of back syphonage

—and because "Coyne & Delany" was established during the infancy of domestic sanitation, sixty-four years ago, this organization is qualified to serve the architect and plumber in the maintenance or modernization of today's and yesterday's homes as well as tomorrow's homes.







YOU'LL WANT THIS PAPER FOR 6 REASONS

- 1 Shows interesting unit heater installations
- 2 Tells how to maintain gas unit heater efficiency
- 3 Shows new products
- 4 Gives special news data

5 Jokes

6 Quick notes from trade papers

We would like to put your name on our mailing list so you'll receive The Reznor News every month, gratis. You'll look forward to receiving this newsy folder...you won't miss an issue...it will stimulate you with pictures and news items of industrial achievements. Yes...we have beaten Time and Readers' Digest to success stories. The Reznor News in up-to-the-minute — no re-hash, no old stuff. If you are interested in heating, send the coupon, mail a card, or write a letter today.

REZNOR MANUFACTURING CO. 203 James St., Mercer, Penna.

Gentlemen: Yes, you may send meThe News at no cost and no obligation.

State

REZNOR MFG. CO. MERCER, PENNA.

MONTH IN BUILDING

(Continued from page 114)

NEGRO HOUSING

First hotel of its type to be constructed in this country, last month the George Washington Carver Hall, a hotel for Negro men employed in Government war work, was opened for occupancy. Its architect, FPHA's architect, Hilyard Robinson, himself a Negro.

Primarily interested in housing, Mr. Robinson designed two war housing projects at Willow Run now nearing completion, is one of three FPHA Negro architects.

Careless talk about the insufficiency of housing provisions for Negroes was challenged by Herbert Emmerich, FPHA chief. The Commissioner pointed out that 12 per cent of the total units under the present program are for Negro tenants.

Probable source of the disconcerting rumors was Detroit, where last month a controversy raged about Negro leaders request for a change "in the racial pattern of some areas" in Detroit to provide greater room for Negro tenancy. Mayor Jeffries, the City Council, the leading newspaper, the *Free Press*, publicly urged quiescence, pointed out that these are not normal times and that "anything of this kind happening now would gravely affect the progress of the war."

To the Negro population of Detroit, crammed into two or three insufficient "black spots," the point did not seem to be well taken.

(Continued on page 118)



PREFABRICATED FRAMES AND ERECTION EQUIPMENT ARE FLOWN TO SITE



DRIFT-BOLTED MEMBERS SUPPORT THE FLAME-PROOFED CANVAS LINING



QUICKLY AND EASILY ERECTED, THE BUTLER HANGAR IS DEMOUNTABLE

AIR-BORNE HANGARS

I

1

1

To fill the need for a sizable building light enough to be transported by air and erected in a few hours, the Butler Manufacturing Company, Kansas City, Mo., in collaboration with U. S. Engineers, has developed a novel structure. Structural rigging is packaged, as is the canvas cover, which is raised to the arch by a system of ropes and pulleys. The canvas envelope facilitates camouflage by painting. Two variations of this form have been developed: a high barrage balloon hangar, a dispersal hangar which shelters only part of the plane. Important for immediate use, the Butler hangar has great potential value for the widespread development of airfields in the postwar world.

ī

1

1

1

1

1

1

Name

Address

City.





New homes for American men and women who are building the aircraft, ships and other weapons for Victory are already being provided, at less cost than ever before, with some of the finest equipment and conveniences that American skill has ever devised. Those who work for Victory, as well as those who fight, deserve the highest standard of comfort and efficiency that private industry and government planning can provide. Many of these new homes are Case equipped. That means war workers are getting the best—in housing projects now under construction in such vital war centers as Seattle, Portland, Bremerton, Sacramento, Phoenix, Tucson and many others. These working men and women are entitled to it. W. A. Case & Son Mfg. Co., Buffalo.

VITREOUS CHINA PLUMBING FIXTURES WELDED METAL PRODUCTS

CASE





No. 912 Wall hung Lavatory with Back



No. 2400 Flat Rim Kitchen Sink



No. 2425 Flat Rim Laundry Tray



MONTH IN BUILDING

(Continued from page 116)

ALBERT KAHN, INC. COMMENDED

To the newly shuffled (following the death of Albert Kahn) firm of Albert Kahn Associated Architects and Engineers, Inc., Detroit, was awarded last month a distinctive honor, a certificate of commendation from the Navy's Rear Admiral Ben Moreell, for its work on naval air stations and off-shore bases.

Since 1939, the firm has been engaged in the construction of innumerable warehouses, repair shops, hangars, hospitals. administration buildings, barracks, etc., completing an average of 1.9 buildings



LOUIS I. KAHN (center), associates, their award.

a day for months at a stretch.

Posthumous tribute to the organizing and architectural genius of the late Albert Kahn, the award was welcome official recognition to the organization he left behind him.

FLOATING ISLAND

▶In Jules Verne's The Propellered Island, which appeared in 1895, the great Imaginer conceived a vast steel structure, equipped with motors, carrying an entire city upon its surface as it floated across the Pacific Ocean.

► In 1929 the Fox Movietone Newsreel convulsed its customers with pictures of a man wading in a tank holding a model steel structure in his hand and saying that someday such floats would stretch across the Pacific.

The wader in the newsreel was Edward R. Armstrong, construction engineer, who for years had dreamt of floating-island air bases strung across the oceans (either of





them), creating seadrome routes from the U. S. to Asia, Europe. Last month fullpage advertisements in the country's newspapers (see cut) sponsored by the Sun Shipbuilding & Dry Dock Company and Pennsylvania-Central Airlines proposed the idea again, invited the interest of all companies, all industries. The plan: to locate floating steel islands at 800-mile intervals, standing 70 ft. above the waves, containing a hotel for stopovers, a refueling depot for transoceanic planes.

NAHO-ASPA CONFABS

The air was laden with talk last month, most of it emanating from the annual sessions of the American Society of Planning Officials and the National Association of Housing Officials, which met in New York's swank Hotel Pennsylvania to discuss, singly and collectively, their respective problems. Most intriguing to the general public were the joint meetings of the two societies held for one day where the planners and housing officials plowed up common ground on their common problems.

(Continued on page 120)



The year 1943 promises to be the grimmest, hardest year this country has ever faced. Every effort, and every dollar of national income not absolutely needed for existence, should go into war work and War Bonds.

In the Pay Roll Savings Plan, America finds a potent weapon for the winning of the war—and one of the soundest guarantees of the preservation of the American way of life!

Today about 30,000,000 wage earners, in 175,000 plants, are buying War Bonds at the rate of nearly half a billion dollars a month. *Great as this sum is, it is not enough!* For the more dollars made available now, the fewer the lives laid down on the bloody roads to Berlin and Tokio!

You've undoubtedly got a Pay Roll Savings Plan in your own plant. But how long is it since you last checked up on its progress? If it now shows only about 10% of the gross payroll going into War Bonds, it needs jacking up!

This is a continuing effort-and it needs continual at-

tention and continual stimulation to get fullest results.

You can well afford to give this matter your close personal attention! The actual case histories of thousands of plants prove that the successful working out of a Pay Roll Savings Plan gives labor and management a common interest that almost inevitably results in better mutual understanding and better labor relations.

Minor misunderstandings and wage disputes become fewer. Production usually increases, and company spirit soars. And it goes without saying that workers with substantial savings are usually far more satisfied and more dependable.

And one thing more, these War Bonds are not only going to help win the war, they are also going to do much to close the dangerous inflationary gap, and help prevent post-war depression. The time and effort *you* now put in in selling War Bonds and teaching your workers to save, rather than to spend, will be richly repaid many times over—now and when the war is won.

You've done your bit Now do your best!

THIS SPACE CONTRIBUTED BY THE ARCHITECTURAL FORUM



BUILDING movement—the arch-foe of most calking compounds can't break the weathertight seal of ARCO DUM DUM CALK. Because it stays pliable, and because it firmly adheres to any type surface, DUM DUM CALK defies the destructive effects of building movement, whether caused by temperature changes, vibration, settling, wind, or weather.

DUM DUM CALK is typical of Arco's many quality maintenance products —mill whites, floor treatments, metal protectives, concrete and masonry preservatives — products that have played an important role in three generations of American industry. Write for full details.

THE ARCO COMPANY CLEVELAND, OHIO · LOS ANGELES, CALIF.



MONTH IN BUILDING

(Continued from page 118)

Blandford on Deficiencies

The second-day session entitled "Prospects for a Comprehensive National Housing Policy" heard John Blandford discuss national plans for postwar housing give his estimate on the postwar picture:

"We will enter the postwar period with a tremendous deferred demand for new or rehabilitated housing. This backlog will not merely reflect the necessary cutoff of a large proportion of normal residential building during war years. More fundamentally it will reflect the fact that we have never overcome the housing deficiency carried over from the depression of the early '30s.

"When victory comes there will be a vast reservoir of personal and institutional savings available for investment in or purchase of durable goods not obtainable during the war period. Housing is clearly in the latter category.

"There are going to be millions of young Americans coming home from overseas one of these days, and they're going to count on a lot of things millions of other young people didn't have yesterday —among them good homes to live in ..." Eliot on Postwar

On the same panel, Charles W. Eliot, director of the once ill-fated National Resources Plannning Board (last month the Senate Appropriations Committee gave NRPB \$200,000) advised: "The Government should plan to initiate a large public housing program and assist in stimulating both private and public construction activities . . . Many of the wartime industries are already looking toward housing construction as a major possibility for use of their great new production capacities . . . Postwar housing is not going to be segregated or based on antidemocratic principals." **Emmerich on the Present**

Third speaker on the joint panel was FPHA Commissioner Herbert Emmerich who declared with authority: "In my considered opinion the construction of public war housing is moving along without any important hitches—the primary factors of speed and the savings of materials have been accomplished . . ." **Results: few**

To most of those present, to those come from far corners of the United States for housing and planning news and enlightenment, the conferences were rather disappointing; first, because they sponsored over and over again the old bromides of the planners without the newer concepts of "less experts and more popular and community enterprise"; and second because these meetings had all the usual faults; too much talk, too much personal promotion, not enough concrete programming and results. As is customary with such confabs, everybody seemed very happy, no one noticeably edified.



Swartwout Multiple Heat Valve provides more exhaust with a smaller ventilator

• Architecturally, this is the perfect roof ventilator — for it blends with any building style, is applicable to any type of roof. Cover as much roof area as you please, yet Swartwout Multiple Heat Valve rises only 32" above its curb, and can easily be entirely obscured by parapets if desired. Can be installed in continuous runs or by single units.

Greater exhaust efficiency, large savings in cost of erection and in cost of roof (because less roof furnished) and greatly improved appearance over large size conventional ventilators, are advantages well worth looking into.

Write for Bulletin 219.





a new, <u>improved</u> ASBESTOS-CEMENT WALLBOARD of <u>Flintkote</u> quality

> YOU CAN <u>SAW</u> IT YOU CAN <u>NAIL</u> IT YOU CAN <u>SCRUB</u> IT YOU <u>CAN'T</u> <u>BURN</u> IT WITHSTANDS <u>WEATHER</u>

Flintkote distributors are discovering an amazing variety of uses for this versatile new Asbestos-Cement Wallboard which is now available *in quantity*.

The new wallboard comes in 4' x 8' sheets, either $\frac{3}{16}$ " or $\frac{1}{4}$ " thick. Though made of asbestos-cement that toughens with age and exposure, each flexible sheet can be readily sawed, nailed without drilling, and easily curved.

Forever proof against fire, rodents, termites or rotting, Flintkote Asbestos Wallboard makes ideal partitions, sidings, counters and lining for garages, closets and basements. Its smooth hard surface needs no protective painting.

You'll be pleased to see how stoutly this new Flintkote product resists abuse. Then you'll understand why it's being used in so many different ways for maintenance and repair of industrial and farm structures.

For complete information about the new Asbestos-Cement Wallboard, please phone or write to nearest Flintkote office. The Flintkote Company, 30 Rockefeller Plaza, New York. Branches: Atlanta, Boston, Chicago Heights, Detroit, East Rutherford, Los Angeles, New Orleans, Waco.

NOTICE

To provide an adequate supply of long-fibre asbestos required for war products, the War Production Board has amended Construction Conservation Order L-41 to permit Asbestos-**CementSidings and Shingles** to be sold without restriction for the protection of homes and other buildings, ... where any part of the existing siding or roofing, as the case may be, is in need of repainting or other maintenance and repair."

FLINTKOTE Building Materials

FORUM OF EVENTS

(Continued from page 4)

19TH CENTURY DESIGNERS

This washing machine, although patented in 1875, was based on principles similar to those used in present-day appliances of this type. The cylindrical tank is of tin, and a wire core can be made to revolve inside the drum. Note the scale of the model from the label of the U. S. Patent Office. This machine was designed by a Mr. Starr, of Texarkana, Texas. Others designed similar appliances around that time, using the same principle. Most of these, however, were to be made of wood.





STUCCO SPEEDS WAR CONSTRUCTION ...SAVES CRITICAL MATERIALS

Brings Clean, Fresh Appearance and Weather-Resistance to Exteriors

Stucco made with Atlas White portland cement is an effective answer to the wartime problem of getting along with fewer critical materials. When applied to masonry walls, stucco requires no reinforcing mesh. In addition, no lead, zinc or oil for paint is needed.

Stucco goes up quickly and inexpensively. It can be applied directly over concrete block, concrete cinder block or hollow tile for both exterior and interior facings. Stucco saves vital transportation because materials generally are available locally.

Put your present and future construction plans on a *durable* basis. Use stucco



On this FHA Project in Corpus Christi, Texas, stucco made with Atlas White portland cement was used for both exteriors and interiors. Stucco contractors: Tobin & Rooney, Houston, Texas.

made with Atlas White portland cement -your assurance of a crisp, clean facing that will last for years. (See Sweet's Architectural File, Section 9-14.)

Factory-prepared stucco is preferable



A fireplace by M. A. Cushing, Aurora, Ill., was designed in 1871. It uses the "recirculating air" principle, with the entire fireplace unit serving as a heater. The

intake and output grilles are adjustable, and the air chamber surrounding the flue

In 1864 a Mr. John Park of Joliet, Ill., patented this cooking stove. Apart from the open grate, used directly for cooking, a system of flues penetrates the cupboard unit above, so that any dishes placed on the shelves will be kept warm. An admirable solution to the problem of a minimum kitchen, which we today are still trying to design satisfactorily.

COMPETITION

An architectural competition has been announced by the Ministry of Public Works and Communications of Ecuador for the selection of a design for a new Legislative Palace to be erected in Quito. The total cost of the structure must not exceed \$1 million.

(Continued on page 124)

White Cement Mortar Enhances the Beauty of Tile

Write for more news and helpful information about these and other uses of Atlas White cement: Fine Terrazzo Floors, Light-Reflecting Industrial Floors, Portland-Cement Paint, thin precast Architectural Concrete Slabs. Write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York City. Tile-grout mortar made with Atlas White portland cement brings out the decorative appearance of the tile and lends added character to the tile. Because it is a true portland cement, it produces a hard, glazed joint and provides an excellent bond with long life. When properly mixed and applied, it will not flake or powder. It is easy to clean and keep clean and will not stain or discolor.

Tile-grout mortar made with Atlas White cement may be prepared on the job or purchased as a factory-prepared mortar. Its use assures you of getting the best from your tile.



"Galvanized" Rolls Up at Chow-time

Mobile field ranges are the "dining cars" of Uncle Sam's modern Army. To tired troops, these steaming field ranges moving up to the front bring "chow" on the double quick piping hot and plenty of it.

Galvanized iron is doing its "bit" to keep our men in fighting trim. Used for the exterior of Army field ranges, it provides the same easy-

working, durable qualities that have long influenced architects to specify it for all kinds of sheet metal work. "Galvanized" also speeds Victory by releasing scarcer metals, formerly used in field



ranges, for parts of airplanes, submarines and other vital war equipment.

Close co-operation between Army and Navy technicians, designers and production men is stepping up the manufacture of all kinds of vital war material. ARMCO is aiding this effort in its research laboratories and mills—developing sheet metals with new properties and

> improving older grades. You will have the benefit of all this after the war; with more opportunities for better design and construction. The American Rolling Mill Co., 1181 Curtis St., Middletown, O.



THE AMERICAN ROLLING MILL COMPANY

FORUM OF EVENTS

(Continued from page 122)

The competition will be divided into two stages: On or before October 1, 1943, the competitors will be required to submit their drawings to the Director General of Public Works in Quito. A fiveman jury will then select five designs, the authors of which will be admitted to the second stage. The privilege to participate in this second stage will be the only award.

Within four months from the date fixed by the advisory board, the five designers selected from the original group must



Further and more complete details may be obtained from the Pan American Union, Washington, D. C.

AWARDS

Carl Wilhelm Milles, renowned sculptor, who started out in life as a cabinet maker and coffin designer, has been presented with the Award of Merit medal and a \$1,000 cash prize by the American Academy of Arts and Letters.



CARL MILLES: Outstanding individual

The Award of Merit is given annually by the American Academy to an outstanding individual in American arts. It was presented for the first time last year to Charles Burchfield, the painter.

As professor of sculpture at the Cranbrook Foundation, Mr. Milles has designed scenic sculpture and monuments in conjunction with architect Eliel Saarinen. Although almost seventy, Mr. Milles is still working on a number of sculptural projects, notably a fountain group for Falls Church in Virginia.

The Frank P. Brown Medal, awarded annually to an outstanding figure in the building and allied industries by The Franklin Institute, foremost center for the furtherance of scientific progress, has been awarded posthumously to Albert Kahn. The award cited Mr. Kahn's life history, and declared that his achievements in the development of modern industrial building construction "have been nothing short of sensational." Mr. Kahn, who died on December 8, 1942, left behind him a remarkable record of scientific accuracy and resourcefulness as a pioneer in industrial construction, and a gigantic contribution to the present battle of mass production for war.

APPOINTMENTS

At their annual meeting in Washington last month, the Association of Federal Architects elected Albert G. Bear President for the year 1943-44.

Mr. Bear is well-known among Government architects. He graduated from the University of Pennsylvania, and has been connected with the Construction Service of the Veterans Administration for the past fifteen years. At the present time he is Chief of the Specification Sub-Division of the Technical Division.

(Continued on page 126)

When the Time Comes... EXPECT THIS FROM US

Speed in switching to full-out peace may be even more vital than the time it took to change to war.

It will be important to you. It will be important to workers who need productive jobs. It will be of the utmost importance to every business...to all America...in order to avoid "make work" expediencies ...in order to keep the kind of America we fought for.

When war came, LCN stepped out instantly on what we knew was the shortest road to peace—full scale production for war. Today, even as we apply every productive resource to increase our swelling flood of war material, we at LCN find time . . . make time . . . to forge our plans for peace. We will be ready with our answer to the critical problems that will be upon us.

Expect us, then, when that time comes, to switch over to the business of peace with utmost speed—for you, for us, for America. It is the one adequate answer that American business can and must make.



DOORCLOSERS

NORTON LASIER COMPANY, 466 WEST SUPERIOR STREET . CHICAGO

FORUM OF EVENTS

(Continued from page 124)

Hugh Ferriss has been installed as the new president of the Architectural League in New York City. Well-known as a delineator for some time, he had been awarded a scholarship last month by the American Academy and the National Institute of Arts and Letters.

Among Mr. Ferriss' recent work has been a tour of the United States to make drawings of war plants—a job he undertook under the auspices of the Architectural League on the Arnold W. Brunner Scholarship award.

ANNOUNCEMENTS

Under a program developed jointly by the Board of Economic Warfare and the National Resources Commission of China, thirty-two young Chinese engineers have arrived in the U. S. to study American engineering techniques. In their homeland, several of these young men helped to rebuild industrial plants which had been moved into the interior from the ravaged seacoast area.

In this country they have been assigned to a number of training positions with industrial enterprises, including the Tennessee Valley Authority and companies dealing with electrical equipment, me-





DRESIGHT planning between the owners, The Hotel Statler Company—the architect, Holabird & Root—the interior decorators, Trylon Studios—and the sound engineers, The Langevin Company Inc.—has developed the design illustrated.

As a result of this coordination the new Hotel Statler, Washington, D. C., has, we believe, the finest sound system to be found in any hotel—anywhere—pleasing to both eye and ear.

Today, busy as we are, engaged in vital war work supplying sound to our armed forces everywhere, we cannot help but pause and pay tribute to those who made this greatest of Statlers a reality.

The Langevin Company

NEW YORK-SAN FRANCISCO-LOS ANGELES

SOUND REINFORCEMENT AND REPRODUCTION ENGINEERING

chanical and chemical engineering, metallurgy, petroleum and mining.

The training program is being sponsored by the Division of Cultural Relations of the Department of State. It is to be hoped that this type of exchange of knowledge and ideas will be retained in the postwar period, and that American engineers, architects and planners will, in turn, be given an opportunity to study some of the amazing accomplishments of the young Chinese Republic.

Lowthorpe School, at Groton, Mass., announces a four week summer course in Design and Freehand Drawing to be given by Josef Albers from June 21 to July 16. Mr. Albers taught at the Bauhaus in Germany from 1923 until it closed in 1933. Since then he has been Professor of Art at Black Mountain College and has lectured at the Graduate School of Design at Harvard University.

Mr. Albers' course will cover basic exercise in design and drawing, leading to an appreciation of the functional qualities of form and space relationships.

DIED

CHARLES L. BORIE JR., 72, in Philadelphia. Mr. Borie graduated from the School of Architecture at the University of Pennsylvania in 1892, and practiced in Philadelphia where he was a member of the firm of Zantzinger and Borie. Among the designs he was associated with were the Philadelphia Museum of Art, the new William Penn Charter School and several Pennsylvania hospital buildings. In addition to these, Mr. Borie helped to design the Department of Justice Building in Washington D. C., part of the Sheffield Scientific School of Yale University, dormitories and administration buildings at the University of Chicago, and St. Paul's Church, Chestnut Hill, Pa. Mr. Borie was a very prominent member of the profession in Philadelphia, and a Fellow of the A.I.A.

ROMAN MELZER, 83, in New York City. Mr. Melzer was the royal architect to the late Czar Nicholas II of Russia. His first commission was the redecoration of the Anichkoff Palace for Nicholas in 1890. His official title was that of Architect of the Imperial Court, and in this capacity he designed an imposing ornamental fence around the garden of the winter palace in St. Petersburg, and a palace in Tsarkoye-Selo. Apart from a number of private residences in St. Petersburg, he also designed a palace for the Grand Duke Michael and a bridge across the Neva.

Mr. Melzer came to this country after World War I, during which he had designed aeroplanes for the Russian army. He fied the revolution through Finland and Sweden, and, after arriving in the U. S. designed several Russian Orthodox churches in Brooklyn and Yonkers.

HAVE YOU a problem involving Dust? Here's how PROPELLAIR Fans can help you solve it!

The drawing at the right illustrates one of the many difficult ventilating problems involving dust that have been successfully solved by Propellair Fans because of their unusual efficiency against high static pressures.

Standing with faces close to their work of exact and intricate grinding, die workers in a large Middle Western drop-forge plant were breathing fine emery and steel particles thrown off by portable high-speed grinders. Results: absenteeism due to sickness, and lessened production.

Propellair ventilating specialists installed two 1 h.p. Propellair Fans and duct work for each bench, plus an individual dust collector on the floor above. Each pair of fans, operating together against high static pressure (1.4"), functions as a "dust elevator." They move 4000 cubic feet of air per minute, at velocities over the blocks of 1500 to 1800 feet per minute, exhausting all dust and steel particles produced by the worker.



PROPELLAIR FANS OFFER THESE ADVANTAGES

AXIAL-FLOW, AIRFOIL PROPELLERS.

especially designed by Propellair engineers, deliver maximum air with minimum horsepower. Air flow is even over all parts of the blades-the whole fan works, not just the tips! These unique propellers are also non-overloading-from free air to complete blockoff, horsepower remains virtually constant as long as motor speed is constant. The number of blades, and their angle and shape, depend on the job to be done.

CURVED ENTRANCE RING.

in addition to serving as a sturdy support assembly, reduces tip loss and enables Propellair Fans to deliver maximum air per horsepower. Introduced in 1930, as a result of exhaustive experiments and tests by Propellair engineers, this design makes possible the utilization of the "Airfoil" air-movement principle in the entrance ring as well as in the propeller.





PROPELLAIR FAN FOR EVERY APPLICATION

CE - Extended shaft fans for ducts, di dryers, etc., where motor must be out-side the air stream.

panels



separate motors, engines or line shafts. Also with ex-tended shaft assembly.



CSV-Heavy-duty complete belt-driven unit for high temperatures in ducts, pipes, and as stack boosters.

CU-Low-stand, tiltable, portable cradle fan for hardening-room service, product drying or cooling. CM - Heavy-duty pedestal blast fan for cooling men and products in heavy industries.

pors, dust, or high temperatures.



-Industrial circulator fan for general air-circulating ser-ice of all types.

CB—Slow-speed, ultra-quiet complete belt-driven fan. For office or room ventilation.

If you have a pressing industrial ventilating problem, you should have our Propellair catalog No. 10-I. It contains many pages of technical tables, charts, diagrams and other valuable information for architects, engineers and plant men-and of course describes and illustrates the complete Propellair line. We will mail the catalog on request or, if you prefer, we will ask the nearest Propellair ventilating specialist to deliver your copy personally and at the same time discuss your specific problems. Write!



LETTERS

(Continued from page 34)

up because there is only so much cream to skim . . .

All this sums up to this: If we are to retain democratic principles in our mode of living as expressed through planning in the broadest sense, there must be greater public participation in the making of these plans, there must be greater public control in the execution of them. An enterprise such as Stuyvesant Town is private enterprise only in the most reactionary use of that term. It is shot through with the public interest. The money of policyholders is as much public money as are the state bonds used for financing public housing; because of the vastness of the project and the inevitable repercussions on real estate, on finance, and on the social and business welfare of the city, this public interest should be paramount. The project of the Metropolitan Life is medieval and undemocratic and, in terms of the city's future, financially unsound—needlessly so, for the safety of sacred trustee funds is perfectly compatible with the greater safety which we all seek in the planning of a democratic future New York, N. Y. HENRY S. CHURCHILL Architect

Architect Churchill has ably stated the nowfamiliar objections to the Metropolitan Life's newest project. Some objections appear more valid than others. For example, it is sug-



Tramp-tramp-tramp-go thousands of feet over Tile-Tex floors installed in military establishments. Only a superrugged, tough, durable flooring can take the punishment of army and navy traffic in barracks, storerooms, laboratories, dining halls, kitchens, offices, and other areas in training centers.

Tile-Tex is that kind of flooring—it's made from wearresisting asphalt and asbestos by a company whose manufacturing experience is longer than any other in this industry. If you are writing specifications on army and navy construction of this type, specify Tile-Tex—it meets all requirements of Federal Specification SS-T-306 covering this type of flooring. Write us if we can help you in any way in solving your floor problem.

* The Tile-Tex Company

*

*

IOI Park Avenue, New York City • Chicago Heights, Illinois

*

gested that a public school be placed in the project. Not until the U. S. Government admits Negroes to all of its public housing projects does it seem rational to transfer this problem to the Metropolitan Life Insurance Company. If further study will produce a better scheme that will still yield a not unreasonable 6% for interest and amortization, let such a plan be made public. But the basic problem from which the present plan and the objections to it stem, is urban land cost. That problem is the one that needs solving now if ever.—Ed.

THE GREEKS HAD A WORD FOR IT Forum:

What constitutes, I think, an unfortunate discrepancy in the record of the development of the idea of industrialization of shelter occurred in the second number of THE ARCHITECTURAL FORUM'S series on Prefabrication. This discrepancy was in the matter of the date assigned to Neutra's Diatom House, a co-designed product by himself and Peter Pfisterer. THE FORUM, editorially tracing the early disclosures in the principles of the art, cites Neutra's Diatom House as contemporary to Buckminster Fuller's Dymaxion in its year of original presentation, i. e., 1927. There is possibly a ten-year error in this dating, as I think the first editorial mention of the Diatom House appeared in 1937 and, as I remember it, was first published in Shelter magazine.

Unfortunately the name Diatom is distinctly reminiscent of the name Dymaxion, particularly when employed in connection with design of a model for a prefabricated house. The confusion of the coincidence is increased when we discover that the actual structural forms developed by the diatom-or microscopic organism that is the basis of diatomaceous earth-are, like snow flakes, demonstrative of an infinite variety of hexagonal arrangements. This is because the same mathematical principles that obtained in Fuller's rationalization of the Dymaxion principles of construction, i.e., reduction to the simplest angular relationship of the inherent forces, govern these crystalline articulations in nature. That there is coincidence of names is because of the coincidence of principles and Greek descriptive etymology. At any rate, Neutra's house was not hexagonal, and I think the name was by pure chance similar in structural implication and was not intended to infringe on Fuller's invention, coming as it did ten years later. But when the invention and its multiplesimilar name is advanced to 1927, thus becoming a coincident invention with Dymaxion, there is inferred the question not only of priority of invention but of the name for the invention.

JOHN FISTERE

New York, N. Y.

First mention of Neutra's study of diatomaceous earth was in his How America Builds, published in Germany in 1926, a year before Fuller's Dymaxion was announced. His masthung house, the "Diatom," did not appear until 1934.—Ed.



Planning TODAY the Living of TOMORROW

TODAY Revere production is 100% geared to licking the Axis. But the company isn't forgetting that after Victory comes the Peace. Then man can build his house and home-there to live in security and happiness, forgetting weariness and fear. And if he can't build today, at least he can plan for tomorrow.

That's why Revere attaches importance to its current national advertising wherein it presents the post-war housing ideas of some leading architects and designers. It believes that this effort will *concretely* benefit the entire building industry: the architect, builder, contractor, dealer, realtor, manufacturer and financier. Public acceptance of post-war planning-already preconditioned to its necessity-will be the easier.

To this focus, Revere is already preparing to again supply the building industry with improved roofing and flashing, pipe and tube and a wide variety of architectural shapes. Revere is also pioneering in the development of entirely new alloys and light metals.

Revere is glad at all times to provide expert technical advice.

Naturally, we believe that the intelligent use of copper and brass-and our other metals to come-will enhance the value of any building, hasten the capture of a more ample, gracious living for every one of us.

It's the difference between housing...and living

<text><text><text><text>

lower in cost when mass pro-duced than when individually built. Copper and other good materials will lower upkeep and so still further reduce the cost of living in the house. In this way, nearly every family could have a home with enough out-of-doors room and flexible living space for real happiness.



WILLIAM WILSON WURSTER

After victory, Americans can look forward to a bright era of better living. Architects and engineers are already designing improved homes, are plan-ing new ways of building at lower cost, are pre-paring to bring greater comfort and convenience within reach of all. Revere does not build houses or expect to in the future, but we know that in tomorrow's homes copper will play a newly important part. In thou-sands of homes Revere copper now gives lasting

This advertisement appears in Saturday Evening Post, May 29, 1943

.

protection against the weather, delivers rust-free water, helps reduce heating costs. In days ahead it can bring us new comforts and conveniences, can make our homes better to own, or rent, or sell. All of us are working for Uncle Sam today. No copper is available except for war. But the research going forward in Revere's laboratories today can help make better living available to all tomorrow.

Naturally, in this limited space, Mr. Wurster could describe only the outlines of his con-ception. For more information about this home and its surroundings, write to Revere for free illustrated booklet.



-



Entrance-shadow freelighted by Federal ZEON Cold Cathode Fluorescent Tubing.

In America's newest and finest hotel—the Statler, Washington, D. C.—the public rooms are lighted through the medium of Federal ZEON Cold Cathode Fluorescent Tubing. We are proud to have cooperated with the Architects, Holabird & Root—the builders, John W. Harris Associates, Inc., and the Hotels Statler Company in bringing higher standards of beauty and utility to this magnificent addition to the Statler chain of hotels.

Today, much of Federal's ZEON Tubing is being installed in war plants-cutting eye strain and fatigue, making possible greater accuracy and higher production.

Write today for the ZEON Brochure.



Lighting for industry through the medium of ZEON Cold Cathode Fluorescent Tubing

8769 South State St.

Chicago, Illinois

TEAMWORK - before and after .

THE MODERN, efficient and unusually attractive kitchen and food serving facilities of the new Washington Statler are the product of teamwork between Statler executives and Polhemus engineers. From plans developed well in advance of actual construction, these smart, well-planned units have emerged to provide the Statler staff with an exceptional opportunity for teamwork in meeting the needs of the day.

Architects, Engineers and Owner-Managers desiring to make postwar plans now, are invited to consult with our engineering staff. PCHICHUS

P. B.

ESTABLISHED

ROSELLE, NEW JERSEY

ENGINEERING . MANUFACTURING . INSTALLATION

1865

POLHEMUS CO., INC.

1010 VERMONT AVENUE N.W. WASHINGTON, D.C. 110 WEST 34TH STREET

NEW YORK CITY, N. Y.

While the design and fabrication of strip steel framing systems remains a fundamental part of Stran-Steel's operations, the necessities of war have led this company into a still wider sphere of action. Present assignments for the armed forces involve designing and shipping complete buildings, ready for rapid erection on the site.

This is a military operation today, yet its peacetime significance is obvious. Stran-Steel can promise the post-war construction industry new economies of time, money and materials that follow naturally from wartime engineering developments.

manan

Wartime Engineering Holds a Promise for the Future

STRAN STEEL

1130 PENOBSCOT BUILDING, DETROIT, MICHIGAN

UNIT OF NATIONAL STEEL CORPORATION

PRODUCTS AND PRACTICE

(Continued from page 8)

restricted by priorities. Claimed to be dimensionally stable, waterproof and fire resistant, Plexon screen will, of course, not rust, requires no painting or other finish. Yarn may be produced in any number of colors and in a variety of thicknesses. Present production, for reasons of economy and simplicity, is standardized to battleship gray and to two gages. Various tests indicated that two different weights of yarn, woven at right angles, formed the strongest screen.

Manufacturer: Freydberg Bros.-Strauss, Inc., 212 Fifth Ave., New York, N. Y.

PLATE GLASS shower and bath combination. Name: Utility Carrara Glass Tub.

Features: Composed of five pieces of Carrara structural glass, this new showerbath combination answers the need of new housing construction faced with a lack of tubs. Recently built war homes have, in general, incorporated only a shower stall, leaving an alcove for a tub later. Into this space goes the glass tub, which comes in a variety of colors. With the exception of a few pieces of common lumber, an the necessary parts come to the job ready for assembly. Four pieces of foot-high glass for enclosure and a preassembled glass receptor base are drilled for standard dimension overflow and drain



fittings. Tie rods hold the assembly together, and joint cement insures a watertight enclosure.

Manufacturer: Pittsburgh Plate Glass Co., Grant Building, Pittsburgh, Pa.

TOILET SEAT molded from solid plastic. Name: San-Duro All-Plastic Toilet Seat. Features: Made in two standard colors, brown and ebony black, these plastic toilet seats are attractive, sanitary and durable. Easy to keep clean, they will permanently retain original lustrous finish. Toilet seats are made in standard designs to fit oval, elongated and extended-lip type bowl. Plastic hinge leaves no metal exposed to rust, stain or tarnish.

Manufacturer: Eclipse Plastic Industries, Inc., 5150 North 32nd St., Milwaukee, Wis.

ELECTRONIC DRIVE converts a.c. current to d.c. to secure variable speed regulation. *Name*: Mot-O-Trol Electronic Adjustable-

Speed Drive.

Features: Since most industrial plants are supplied with a.c. current, some expedient is necessary to convert to d.c. current to operate variable-speed motors. Latest device is an electronic drive which converts the current by Thyratron rectifier tubes. These tubes, which allow current to pass in one direction only, supply the direct current to armature and field circuits of the d.c. driving motor. Both armature and field circuits (controlling the entire speed range possible) are controlled by the one dial on the control station. Some stations provide dials for forward and reverse speeds. Housed in a cabinet about the size of a small floor-model radio, this electronic drive provides a speed range of 20 to 1, close speed regulation and smooth automatic starting of direct-current motors. With the drive, motors are fed just the right amount of d.c. power at the proper time so they will turn a lathe, drive a convevor belt, or feed metal into cutting tools at the required speed. Present model is designed to furnish power to motors of one h.p. or less, but larger units can be specially built for machines requiring more power.

Manujacturer: Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

(Continued on page 138)



33,400 ENGINEERS AND ARCHITECTS REQUESTED THIS FREE BOOK

TYPICAL DESIGNS

TIMBER STRUCTURES

ee for Use of Architects and Engineers

In "Typical Designs of Timber Structures" we have assembled the design drawings of 70 representative types of timber structures that have been engineered under the TECO Connector System of construction. It abounds in suggestions for solving design problems. One prominent architect writes: "It is one of the most useful pieces of work that I have received in 20 years." A request on your professional letterhead will bring you a complimentary copy of this most valuable reference book. Write while it is available.

The TECO Ring Connector spreads the load on a timber joint over practically the entire crosssection of the wood ... brings the full structural strength of lumber into play.

TIMBER ENGINEERING COMPANY NATIONAL MANUFACTURERS OF TECO TIMBER CONNECTORS AND TOOLS WASHINGTON, D. C. PORTLAND, OREGON







New Flame Cutters, acquired to facilitate our delivering the goods to Uncle Sam's Navy, cut through metal like hot knives through cheese. Better than anything else, they symbolize Mesker's constant reduction of production costs . . . important to you as a taxpayer today, a window buyer tomorrow.



Mesker Engineers..the country over..

424 SOUTH SEVENTH STREET .

YESTERDAY AND TOMORROW

CASEMENT WINDOWS · MONUMENTAL WINDOWS · INDUS-TRIAL WINDOWS - SCREENS - INDUSTRIAL DOORS - DE-TENTION WINDOWS . REINFORCING MESH GRATING ... plus ... tomorrow ... some other interesting new products!

IS DESIGNED TO HELP YOU TOMORROW



MESKER METAL WINDOWS Weather - Conditioned



Building owners and occupants are becoming increasingly conscious of windows. Ample natural light, draftless ventilation, excellent insulation, stimulate employee effort, increase efficiency...without burdening anyone with artificial lighting and air conditioning maintenance costs. Architect McMahon, in designing for us his Office Building of Tomorrow, indicates window areas from floor to ceiling. Can you imagine a more

desirable treatment? Offices like these never lack good tenants. In our Engineering Department now are designs for windows that will most appropriately cope with such conditions. We call them Mesker Weather-Conditioned Windows. Watch for them.

Do You Have Your "Red Book of Steel Sash?"

If not, write for this comprehensive volume, personalized with your name. Covers metal windows from A to Z... ideal to have at your elbow when working up specifications, details, etc., on post-war projects. No obligation.





ST. LOUIS, MISSOURI, U. S. A.

IMPORTANTI Our warehouse stock of steel windows are now available to anyone without priority, as long as they last. Consult your Mesker Engineer.

TODAY

STEEL AMMUNITION CASES · PRE-FABRICATED STEEL AIRPLANE RUNWAYS · OIL AND WATER STORAGE TANKS FOR THE NAVY'S FIGHTING SHIPS . . . other products which necessarily must remain military secrets.

PRODUCTS AND PRACTICE

(Continued from page 134)

HOLLOW PLYWOOD PANELS are assembled into large sliding doors.

Name: Peelle Hangar Doors.

Features: Both vertical and horizontal sliding doors can be assembled from prefabricated panels. In effect a box-girder construction, panels are made of standard width plywood pressure-glued to framework. Plywood surface is scarfed, providing one continuous piece of plywood the full length of the prefabricated panel. Dressed-wood framework is also scarfed, so that sections can be joined in the field -resin glued under bolted pressure and reenforced with plywood battens glued into place. All exposed ends of sections are finished with continuous dressed-wood framing members the thickness of internal framework plus the thickness of plywood. Horizontal sections are framed vertically and vertical doors framed horizontally. All doors are given a sealer coat at the factory, which prevents checking and provides an undercoat for field paint. Doors may be arranged for either manual or motor operation, and are mounted on standard rails with ball bearing rollers. In addition to unusual strength of box-girder construction, a considerable saving in lumber is achieved. Board lumber require-



PREFABRICATED DEMOUNTABLE HOMES engineered at PEMBERTON

Today, Pemberton's manufacture of Prefabricated-Demountable Homes, Barracks, Hutments, Dormitories, Cantonment Groups, Mess Halls, Canteens and other Waremergency requirements of the Government take precedence over all other business. The Pemberton Mills have turned out thousands of units as a part of the Nation's war effort.

In addition the Pemberton Lumber & Millwork Corporation's plants at Pemberton have developed and produced thousands of Trusses and Sub-assemblies for war projects from Maine to Florida, and as far west as Utah.

Important Government Projects Supplied by Pemberton Mills

SAMPSON NAVAL TRAINING STATION, New York BROOKLYN-BALTIMORE HOUSING PROJECT (1000 units) WAR-WORKERS HOMES, Hartford, Conn. BARRACKS AND CANTONMENT ASSEMBLIES, Fort Dix, N. J. PREFABRICATED HOMES, Middle River, Md. MIGRATORY FARM WORKERS HUTMENTS, King Farm, Morrisville, Pa. FARM SECURITY ADMINISTRATION DORMITORIES (in several areas) WAR-WORKERS HOUSING, Elkton, Md. TILTON HOSPITAL SUB-ASSEMBLIES, Fort Dix, N. J. (and scores of other U. S. Government war projects)

The Pemberton organization quickly became a factor in the rapid erection of thousands of War-emergency structures because its Engineers have been applying advanced construction methods to the present-day building needs of a Nation at War. For Tomorrow, Pemberton's skill in the manufacture of Prefabricated-Demountable buildings of all types—a special objective of Pemberton research in peace as in war will be graphically portrayed in the mass production of finer permanent homes.

Send for Illustrated Brochure No. P-25 at the address below.

PEMBERTON LUMBER & MILLWORK CORP.

Prefabricated-Demountable Industrial Buildings, Homes, Dormitories, Cantonment Barracks, Cafeterias, Field Offices, Administration Buildings, Hutments, Trusses, Sub-assemblies, etc. Prefabrication Plants, Mill & Lumber Yards • PEMBERTON, NEW JERSEY • Tel. PEM. 8011





ments are reduced 25 to 50 per cent over conventional field-fabricating methods. *Manufacturer*: The Peelle Co., 47 Stewart

St., Brooklyn, N. Y. PREFABRICATED SHOWER is shipped to the

job complete even to soap dish and curtain. Name: Marsh Shower Cabinet.

Features: Designed and produced for NHA and FPHA, this new shower cabinet is quickly assembled from noncritical materials. It consists of five major partsback and front assemblies, two side panels of plastic-finished Marlite and a concrete receptor. One of the side panels is fitted for the installation of plumbing fixtures. Superstructure corners and top rails are heavy hardwood, tied together with metal corner braces attached with wood screws. Panels are high-heat bake finish Marlite, and are set on a concrete base and screwed to the receptor rim which has been previously calked for thorough waterproofing. Whole assembly is shipped to the job in two packages. Demountable shower is available for housing projects with adequate priorities.

Manufacturer: Marsh Wall Products, Inc., Dover, Ohio.

PLASTIC WIRING DUCT conserves vital conduit materials.

Name: Pierceway Plastic Duct Wiring Systems.

Features: This new method of secondary wiring not only conserves such critical materials as steel, copper, zinc and rubber, but also provides an electrical distribution system with improved operating characteristics. An efficient and economical method of providing bench wiring to supply power for portable tools, and overhead circuits to supply current for lighting and power for small equipment, it uses no rubber or brass, only a small amount of steel, and less than half the amount of copper in conventional conduit systems With relatively few parts, the Pierceway system can be assembled into a large number of types and sizes of industrial electrical circuits. If changes in production become necessary, wiring can be taken apart and reassembled.

Manufacturer: Pierce Laboratory, Inc., Summit, N. J.

(Continued on page 142)


Steel is not a single metal limited in application by a few definite qualities. Steel is many metals—ranging from the simple carbon steels to the most noble of ferrous metals, the stainless steels. It is produced in practically every form for building purposes. And it is easy to fabricate.

In designing structures for the future, you can obtain all of these desired features in steel: Strength, toughness, stiffness, hardness, safety . . . high strength-toweight ratio . . . proof against fire and vermin . . . freedom from moisture absorption . . . freedom from warpage and shrinkage . . . resistance to heat and cold, to corrosion and oxidation . . . sanitation and cleanliness . . . a stable base for finishes, or in stainless steel a lasting, silvery finish . . . inherent long life . . . low cost per year of service. Wartime demands now restrict the use of steel for building—but Republic is getting ready to supply an unusually complete line of better-than-ever steels and steel products in the peacetime days to come. All its "know-how" of the past is being combined with wide experience in wartime steels and relentless laboratory research to bring you an improved versatile building material—STEEL.

See Sweet's—13/5 for sheet products, Toncan Iron, Electro Paintlok, Taylor Roofing Ternes, Enduro Stainless Steel—27/2 for pipe, Toncan Iron and Republic Steel—23/5 for electrical raceway, Electrunite Steeltubes and Fretz-Moon Rigid Conduit—15/11 for Truscon products—or write us.

REPUBLIC STEEL CORPORATION General Offices: Cleveland, Ohio

Berger Manufacturing Division • Culvert Division Niles Steel Products Division • Steel and Tubes Division Union Drawn Steel Division • Tronscon Steel Company Export Department: Chrysler Building, New York, N.Y.

Republic_

STEELS AND STEEL PRODUCTS



Using plain gauging water

Using Santorized Trimix Liquid in the gauging water

These photomicrographs show the improved dispersion effected by using Santorized Trimix Liquid in Portland Cement mixtures.

These 9 Major Advantages in Concrete Construction Are Yours When You Use SANTORIZED TRIMIX LIQUID

Use Santorized Trimix Liquid and you get greatly improved dispersion of the cement particles in your mix. You get these added advantages:

- 1. Initial setting time cut materially.
- 2. Water ratio is reduced.
- 3. Secures far greater workability.
- 4. Lowers evaporation rate and secures more thorough curing.
- 5. Mix is more homogeneous.
- 6. Both concrete and mortar have greater water impermeability and resistance to erosion.
- 7. Shortens protection period in cold weather.
- 8. Gives greater early compressive strength.
- 9. Permits faster placing, more rapid removal of forms, and greater frequency of form re-use.

Interested construction executives are invited to write Dept. F3 for basic data on the tests which support these claims for Santorized Trimix Liquid.

Where Results Count-Count on Sonneborn



BLUEPRINTS FOR YOUR HOUSE of TOMORROW



YOU MAY BUY A READYMADE HOME!



SECTIONAL SERIES for war plant or apartment house use.

154 OGDEN AVENUE

ERFILM

Your Heating Plant will be KOVEN WATERFILM perfect assurance of heating comfort. The fastest steaming boiler on the market, as well as one of the most attractive and modern in design, KOVEN WATERFILM incorporates the newest scientific improvements. Its patented construction provides these important advantages ... quick heat throughout the house, sustained, even room temperatures, a plentiful supply of domestic hot water, and real economy of operation.

> For industrial installations, the Waterfilm sectional series (pictured) is ideal - it can be taken through a two-foot door, eliminating costly rigging and alterations.

> > JERSEY CITY, N. J.

BOILERS.

PLANTS: JERSEY CITY, N. J. . DOVER, N. J.

IN INDUSTRY

eetronic

In 194?, M-H/Brown Electronics will usher in a new day in the peacetime manufacturing world. In the processing of steel, oil, ceramics, textiles, paper, rubber, foods — to name but a few — M-H Electronics will reduce spoilage to a minimum, smooth out production, improve efficiency. Applied by Minneapolis-Honeywell and M-H/Brown engineers, M-H Electrons have now gone to war in plane, tank and ships, as well as in manufacturing processes in war production plants. But watch and wait for their peacetime march to the aid of Industry. M-H Electrons are coming! . . . Minneapolis-Honeywell Regulator Company, 2740 Fourth Avenue South, Minneapolis, Minnesota. In Canada: Toronto, Ontario. In Europe: London, England, and Stockholm, Sweden.

ussems

* Listen: "JOHN FREEDOM" Blue Network Coast to Coast every Wednesday, 9:00 to 9:30 P. M. Eastern War Time; or see your local newspaper. "The Most Dramatic Show on the Air"

MINNEAPOLIS-HONEYWELL

CONTROL

PRODUCTS AND PRACTICE (Continued from page 138)

BONDED LEAD PENCIL has more usable lead. Name: Consolidated Bonded Lead Pencil. Features: Because lead is cemented to wood in the bonding process, Consolidated pencil will not break as easily as ordinary pencils. This higher tensile strength makes it last longer without impairing writing quality. Bonding also keeps wood from splintering. Tests indicate that lead itself will not break until an average pressure of over 10 lbs. is applied. Comes in five degrees of hardness from No. 1 to 4. Manufacturer: Linton Pencil Co., Lewisburg, Tenn.



WOODEN BAR WINDOWS have same lightness of design as those formerly made of aluminum.



There's nothing "temporary" about the heating plants in these and many other wartime housing developments. They're Mueller all-cast-iron furnaces de-signed for the purpose-following the proved principles of return-flue radiator design—complete stand-ard furnaces in every respect—compact, good-look-ing—high quality... In this, the fourth major war in Mueller's 86-year history, Mueller is helping to hasten the dow of victory with specialized

day of victory with specialized war production work. Meanwhile, research and development pave the way for even greater acceptance of Mueller performance and the Mueller name in your post-war construction.

WG-42 (GRAVITY) coal-fired defense housing furnace. All cast iron. Also available with blower for forced air. 1 WISCONSIN - Milwaukee, 15 single homes on N. Idlewild Ave. For-rest W. Trumpf, builder. Roland C. Kurtz, Architect.

2 TENNESSEE - Murfreesboro, 27 single houses. Murfreesboro Homes, Inc., builder.

3 VIRGINIA – Norfolk, 9 single homes. Johnson 9 single homes. Co., builder.

• NEBRASKA – Fre-mont, 32 single homes. Fre-mont Homes, Inc., builder.



Name: Geyser Bar Window.

Features: Grooved horizontal bars, holding panes of glass, are carried in continuous lines across vertical members of sturdy proportions. Vertical members are notched to receive horizontal members. System allows variety in general arrangement and in type and number of ventilating panels. These panels are shop assembled, while rest of material is delivered in bar form for assembly at the job. Glass panes are from 30 to 44 in. wide and horizontal bars come in lengths up to 16 ft. System permits easy painting at the site and also easy cleaning and maintenance.

Manufacturer: E. K. Geyser & Co., 200 Cedarhurst St., Pittsburgh, Pa.

ROLLING WOOD GRILLE a wartime substitute for steel.

Features: Making a substantial barrier for opening widths up to 19 ft., this rolling wood grille uses a minimum of critical materials. Wood bars are strung on light steel tapes operating up and down in wood guides. Grille locks into side guide with padlock and hasp on bottom bar, and coils overhead on a horizontal counterbalancing shaft, giving the same operation as steel grille. Since coil is entirely overhead, no wall or floor space is taken up. Wood grille may be replaced with steel at a later date if desired.

Manufacturer: Cornell Iron Works, Inc., Thirty-sixth Ave. & 13th St., Long Island City, N. Y.

WOOD grilles and registers for wartime installations conserve steel.

Name: Non-Metallic Grilles and Registers. Features: All models of grilles and registers have a flameproof, fire-resistant prime



coat finish. Due to wide spacing of bars, final coat of paint may be quickly applied. Each bar is capped with steel which assures permanent easy action and neat appearance. Grille bars rotate in a 90 degree arc and are individually adjustable. Registers have two sets of individually adjustable bars in a single frame for vertical and horizontal deflection of airstream, and a damper which controls air volume.

Manufacturer: Tuttle & Bailey, Inc., New Britain, Conn.



HOW TO ENGINEER DAYLIGHT INSIDE

In offices, homes, schools, stores . . . wherever people work . . . an entirely new atmosphere can now be created through use of *daylight engineering* principles.

Our own offices, illustrated above, are an example of daylight engineering. Here, the walls of the outside offices have been built of decorative, translucent glass. Daylight is not trapped in any one office. It is shared by all. Even the inside general stenographic space is flooded with outside light.

Larger window areas properly teamed with trans-

lucent walls or partitions and mirrors brighten up rooms, closets and corridors. Eyestrain conditions can be removed. Even the smallest rooms can be given a feeling of spaciousness never before enjoyed. It's engineered with glass.

Libbey Owens Ford glass for windows, mirrors, wainscoting and work surfaces, and Blue Ridge Glass for partitions, are available in a wide variety of types and colors. Be sure your records of L·O·F Glass are complete. Libbey Owens Ford Glass Company, 2263 Nicholas Building, Toledo, Ohio



NEW PRODUCT LITERATURE

BUILDING MATERIALS. Bulletin of the Producers' Council, No. 44, 66 pp., 8½x11. Presents factual information on new products and recently developed uses for established materials. This issue reveals both the effect of war restrictions, and developments and advances that promise unlimited possibilities for the future. Edited by Dept. of Technical Services, A.I.A. and published by The Producers' Council, Inc., 815 15th St., N. W., Washington, D. C.

FIBERBOARD. Specifications for Installing Armstrong's Temlok Insulation, 8 pp., 8½x11. Description of Temlok and illustrations and directions for its installation in houses as an insulating material and decorative paneling. Armstrong Cork Co., Lancaster, Pa.

BOILER MAINTENANCE. Dividends from Your Power Plant, 36 pp., 5½x7½. Explanation of principles governing economical operation of steam-generating equipment. Preferred Utilities Co., Inc., 33 West 60th St., New York, N. Y. WATER HEATER MAINTENANCE. 10 Ways to Add Life to Your Water Heater, 24 pp., 35%56%. Pamphlet offers suggestions to owners in the interest of conserving metal, labor and fuel. Illustrated with drawings. Bastian-Morley Co. Inc., La Porte, Ind.

KITCHEN. Parsons Pureaire Kitchen, 4 pp., 5½x8½. Pamphlet describes a compact kitchen unit which will be available in the postwar period. Complete kitchen occupies less than 8 sq. ft. of floor space, has 20 sq. ft. of shelf space and a patented selfventilating system which prevents escape of heat and cooking odors into the room. The Parsons Co., Detroit, Mich.

MAHOGANY. The Mahogany Book, 4th ed., 74 pp., 6%x10⁴%. History of mahogany in America and description of types, uses and styles of mahogany for furniture, boats and aircraft. An attractive and readable booklet that is well illustrated. Prepared by George N. Lamb and published by Mahogany Assn., Inc., 75 East Wacker Drive, Chicago, Ill.



FIRE CODES. National Fire Codes for Extinguishing and Alarm Equipment, 672 pp., 6x9. Present volume brings together for convenient reference the many standard codes dealing with various types of fire extinguishing and alarm equipment and related features of supervision, maintenance and organization. Compiled by Robert S. Moulton and published by National Fire Protection Assn., 60 Batterymarch St.. Boston, Mass. Price \$3.

FIRE EQUIPMENT. Maintenance of First Aid Fire-Fighting Equipment, 8 pp., 8½x11. Booklet explains use and care of various types of extinguishers and wheeled engines. Includes charts giving complete data in condensed form on extinguisher and engine characteristics, methods of operation, capacity, range of stream, etc. American-La France-Foamite Corp., Elmira, N. Y.

ICE MACHINE. Vogt Automatic Tube-Ice Machine, 16 pp., 8½x11. Complete description of machine, process and product, together with applications of tube-ice in varied fields of food production and distribution. Henry Vogt Machine Co., Inc., Louisville, Ky.

PLASTICS. Engineering Highlights About Du Pont Plastics, 8 pp., 8%x11%. General properties and uses of Du Pont plastics for evaluation by industrial engineers and management for today's essential needs. E. I. du Pont de Nemours & Co., Wilmington, Del.

SYNTHETIC RUBBER. The Five Types of Synthetic Rubber, 40 pp., 3½x11. Booklet traces the development of synthetic rubber, describes the properties of commercial synthetic rubbers and relates briefly the part played by U. S. Rubber in their development, manufacture and use. Illustrated with photographs and charts. Synthetic Rubber Div., U. S. Rubber Co., 1230 Sixth Ave., New York, N. Y.

INSULATION. The Mineral Wool Industry in New Jersey, 74 pp., 6x9. Bulletin states types of raw materials available in New Jersey and describes manufacturing processes and operating practices. Discusses specifications and economics of New Jersey industry, available resources and transportation facilities. Prepared by John M. Van Voorhis, and published by Dept. of Conservation and Development, State of New Jersey, Trenton, N. J. Price 30 cents.

COATINGS. The Tocol Line, 28 pp., 3%x8%. Catalog lists protective coatings for the control of corrosion from whatever reagent for use on metal, wood, concrete, paper and canvas. Protective Coatings Inc., P. O. Box 56, Strathmoor Sta., Detroit, Mich.

FANS. Autovent Propeller Fans for Ventilating Public, Industrial and Commercial Buildings, 16 pp., 8%x10%. Complete information, dimension and performance tables on new line of fans. Well illustrated. Autovent Fan & Blower Div., The Herman Nelson Corp., 1805-27 North Kostner Ave., Chicago, Ill.

ELECTRICAL. Information on Panelboards and Cabinets, Bulletin No. 69, 24 pp., 7%x10%. Information and specifications on planning and engineering electric light, heat and power distribution installations for present and future electric service. Frank Adam Electric Co., 3650 Windsor Place, St. Louis, Mo.

POWER TRANSMISSION LINES. The Story of Ziebarth Construction, 24 pp., 3%x11%. For planners of postwar or current heavy-construction projects, booklet describes completed construction jobs that required large-scale power transmission. Fritz Ziebarth, P. O. Box 569, Long Beach, Calif.

REQUESTS FOR LITERATURE

Post War Home Building Club, First Federal Savings and Loan Assn., New Castle, Pa., would like to receive information on the latest developments in home design, construction, decorating and landscaping.

ments in nome design, considered A.P.O. 722, Group landscaping. U. S. Engineers Division Office, A.P.O. 722, Group D, Seattle, Wash., c/o George Narovec, requests technical data, publications and catalogs to complete engineering and architectural files. Abe Zitemer, 4075 Tyler, Detroit, Mich., would like to receive catalogs on building materials.



A few short weeks ago the new Hotel Statler in Washington, D. C., opened its doors—the newest and most modern hotel in America. Designed for tomorrow, it represents the ultimate in hotel planning.

The F. H. Lawson Company is proud to have been chosen to manufacture the bathroom cabinets for the Hotels Statler Company, Inc. One of the many unusual features of these specially designed cabinets is a completely new and novel lighting system.

When Victory is won, Lawson will again turn to the manufacturing of bathroom cabinets, and you can be sure that the finest cabinets obtainable will bear the name of Lawson.

THE F. H. LAWSON COMPANY Bathroom Cabinet Division CINCINNATI, OHIO

* BUY WAR BONDS for VICTORY!





"Now here's one thing I really appreciate. It may look like an ordinary sink and tray to you, but I've used it for six months and, Mary, it's the honest-to-goodness answer to a housewife's prayer. It's easy to keep clean, it can't be scratched or marred and it won't stain! Why don't you tell Harry about Perma-Gloss!

"You can bet your next War Bond that I'm going to insist on Perma-Gloss in the kitchen and laundry of our new home!"

Today, Perma-Gloss sinks, through their installation in war housing units, dormitories and camps, are making thousands of new friends. These "for the duration" homes may be temporary, but daily contact with Perma-Gloss Sanitary Ware is making Mr. & Mrs. War Worker – your eventual customer – conscious of its all-around high qualities.

Perma-Gloss is light in weight—easy to install . . . is strong and durable . . . will not dunt or craze . . . is acid proof throughout — not merely acid resistant . . . has no enamel to peel or chip . . . no iron to rust . . . will withstand thermal shock . . . and is inexpensive.



For detailed information, send for our latest Perma-Gloss bulletin.

Ceramics Co. Jeneral GENERAL

CERAMICS COMPANY

SANITARY WARE .

SANITARY WARE DIVISION METUCHEN NEW JERSEY

Contractors who KNOW.. Choose

Rathe-Rite

SHOWER CABINETS for Vital Savings in Time and Labor ...

The quickest way to attractive, sturdy, high quality Shower facilities today is - BATHE-RITE! This has been proved in the experience of Contractors everywhere - men who have installed THOUSANDS of Bathe-Rites in war housing projects, war plants, camps, and personnel buildings.

BATHE-RITES are engineered for QUICK ASSEMBLY. With fewer parts to handle, designed for quick easy fitting, even unskilled labor can erect them in record time, at substantial savings in labor cost. You can easily install FOUR Bathe-Rites in the time usually needed to put up THREE ordinary cabinets ... and have a finished installation that will

meet highest wartime standards of quality, convenience, and appearance.

BATHE - RITES Especially adaptable to war Housing Remodelling . . .

Two standard sizes fit all needs . . . Comply with FPHA Specifications. Re-quire 32" or less floor space, no extra wall or floor alterations.

WRITE OR WIRE FOR DETAILS

Give Name of project and quantity required. Delivery assured on any quantity.



PREVIEW OF TOMORROW



WHAT will Mr. and Mrs. America want in their homes of tomorrow? Architects don't need to guess ... they can know. For recent surveys indicate two major trends in postwar planning-more effective use of windows, and better utilization of space. For example-

NEW WINDOW IDEAS will make tomorrow's homes more beautiful, more useful. In the photograph here, a picture window and casement form an attractive bay. Wood windows help conserve heat because wood is a natural insulator. These windows are of Ponderosa Pine, toxic treated, durable.

DOUBLE-DUTY ROOMS like combination study and bedroom here ---and bedroom here – are easily achieved with pre-assembledPonderosa Pine windows. A sliding door separates the two parts. Pre-assembled stock windows of Ponderosa Pine assure weather Pine assure weathertight precision manufacture-plus low cost installation.

NO WASTED SPACE in the homes of 194X! In this nursery, for example, see how the Dutch doors of Ponderosa Pine permit a maximum of light and air to enter-adding liv-ability and convenience to space that would otherwise be wasted.











War Production

by the quick erection of needed plant offices with J-M Movable Transite Partitions



T'S surprising how quickly plant offices can be constructed when Johns-Manville Transite Walls are used. These modern movable parti-

tions provide sturdiness and complete privacy ... yet permit offices to be erected almost overnight. Economical to buy. Practically no upkeep expense. Look at all these other advantages...

100% SALVAGE if relocation is necessary. The use of interchangeable parts assures maximum re-use of all materials.

VIRTUALLY ABUSE-PROOF. Transite Walls made of asbestos and cement are highly resistant to shock and impact, and provide a complete wall panel of exceptional durability.

PLEASING APPEARANCE. Perfect for plant or general office use because of their modern lines and flush streamlined appearance. Color is light gray—can be painted if desired. Permanent finish.

FORMS ANY TYPE PARTITION. Solid or in

combination with glass-ceiling-high or freestanding.

For details on J-M Transite Walls, see our Catalog in Sweet's, or write for brochure TR-22A, Johns-Manville, 22 East 40th Street, New York, N. Y.

J-M Transite Movable Asbestos Walls—J-M Acoustical Materials—J-M Asphalt Tile Floors are making an important contribution to speeding up war production in offices and plants everywhere.







HOW FENESTRA PLANS TO SERVE YOU BETTER, TOMORROW

In the postwar years to come, America's architects, engineers, contractors and builders will have their greatest opportunities in all history, and their greatest responsibilities.

While, today, ["Victory is Fenestra's Business", various postwar planning committees are preparing improved and new Fenestra building materials, to help you meet tomorrow's heavier responsibilities...Fenestra's promises of future accomplishments may be judged in the light of some of Fenestra's past performances.

SOME FENESTRA FIRSTS

Fenestra was the first to manufacture steel windows in America. Fenestra-Holorib was America's first insulated steel roof deck. The first steel residence casements with integral inside screens were introduced by Fenestra. Fenestra spent hundreds of thousands of dollars to pioneer the famous engineering research work which led to greatly improved industrial daylighting and natural airation. To protect against rust, Fenestra introduced the Bonderized Finish to the steel window industry. The Fenestra Package Window was the first steel-and-wood casement unit delivered to the job complete, ready to nail in the opening. And so on.

DETROIT STEEL PRODUCTS COMPANY Now Engaged Exclusively in War Goods Manufacture Dept. AF-6, 2252 East Grand Boulevard, Detroit, Mich. Pacific Coast Plant at Oakland, California



WILL COMPLETELY ENCLOSE YOUR BUILDINGS WINDOWS · DOORS · ROOF AND FLOOR DECKS · METAL SIDING



ASSAULT ... with **Douglas Fir Plywood**

U.S. Army Engineers make extensive use of this Miracle Wood for Assault Boats and Emergency Bridges!



Exterior-type Douglas Fir Plywood has definite advantages for the Army Engineers: It makes their assault equipment strong, durable and waterproof, yet keeps it lightweight for easy handling and transportation. For these reasons - and many others - Douglas Fir Plywood is serving virtually every branch of our armed forces and hundreds of war industries as well. And as a result of this extraordinary war experience, the Douglas Fir Plywood you buy after Victory will be more useful to you than ever before.

· Left above: Army Engineers build ferry for trucks and guns by using 10-passenger plywood as-sault boats. Left: two plywood assault boats transport jeep and soldiers across river.

lumber

LARGER, LIGHTER

SPLIT - PROOF

STRONGER

DOUGLAS FIR

MADE

TO HELP SPEED VICTORY the Douglas Fir Plywood Industry is devoting its entire capacity to war production. We know this program has your approval.

SEND FOR WAR USE FOLDER Dozens of actual photographs show you how Douglas Fir Plywood is aiding the war effort. Write Douglas Fir Plywood Assn., Tacoma, Washington, for your free copy.



Free White Book. Shows many prize winning houses painted with Cabot's Double-White, Old Virginia White and Gloss Collo-pakes. Contains full information. Write for your copy today. Samuel Cabot, Inc., 1270 Oliver Bldg., Boston, Mass.

DOUBLE-WHITE

and Gloss Collopakes

Do you know why Cabot' Collopakes have greater hiding power?

BUILDINGS TO BUILD THE NAVAL AIR ARM



THE "nests" of our seagoing warbirds are *buildings*.... vast hangars, assembly and repair shops. You'll find them at scores of naval air bases and training centers. Also included are innumerable administration buildings, barracks, houses, and hospitals for the personnel . . . all being built at remarkable speed.

Many of these air bases rival a small city in size. The amount of hardware required . . . for doors, windows, cabinets . . . is tremendous, and a large share is being furnished by Stanley.

Since this and other branches of the armed forces have first call on today's production, the supply available for normal use is limited to those projects which have Governmental approval. The Stanley [STANLEY] Works, New Britain, Connecticut.

STANLEY HARDWARE



CONCRETE HAS WHAT IT TAKES FOR WAR CONSTRUCTION

FOR EXAMPLE . . .

A Modern Arsenal

Concrete construction in which walls are integral with framing, floors, and roofs has the rugged strength and fire resistance essential to war buildings.

- 1. Concrete saves steel.
- 2. Transportation facilities are conserved, since the bulk of concrete materials are usually found locally.
- Construction is expedited by improved methods, easily accessible materials, local labor.
- Architectural distinction is easily obtained by interesting textures and simple decorative effects produced economically in the forms.



All-concrete Administration Building of arsenal in middle west. Designed by U. S. Engineer Office. Priester Const. Co., Davenport, Iowa, contractor.

Basement area of heavy ordnance building. T. S. Willis, Janesville, Wis., and Priester Const. Co., contractors.

To help get the maximum service which Architectural Concrete can render, the Portland Cement Association's staff of skilled concrete technicians is available to assist designers and builders of war structures. Ask for this service.

PORTLAND CEMENT ASSOCIATION, Dept. A6-7, 33 W. Grand Ave., Chicago, III. A national organization to improve and extend the uses of concrete ... through scientific research and engineering field work

BUY MORE WAR BONDS AND SUPPORT THE RED CROSS



"DOWN THE HALL -TO YOUR LEFT"

A better way to banish "ghosts"—the kind that clutter up blueprints—is to use the tracing pencil specially made for producing perfect blueprints direct from drawings. TRACI

VENUS

Venus Tracing Pencil does not smear; it erases cleanly and completely. Result: no ghosts on the blueprint... And Venus Tracing gives intense, opaque black lines on any kind of tracing paper or cloth. Result: sharp, clear white lines on the blueprint.



ENUS

Tracing

ENCILS

American Pencil Company

Dept. 141, 500 Willow Ave., Hoboken, N. J. In Canada: Venus Pencil Company, Ltd., Toronto

Please send FREE samples of Venus Tracing Pencils in all

STATE ____

NAME and title _____



Samson Spot Sash Cord

voluntary pay-roll allotment plan helps workers provide for the future helps build future buying power helps defend America today

> Let's do it the American way! America's talent for working out emergency problems, democratically, is being tested today. As always, we will work it out, without pressure or coercion . . . in that old American way; each businessman strengthening his own house; not waiting for his neighbor to do it. That custom has, throughout history, enabled America to get things done of its own free will.

FREE - NO OBLIGATION

Treasury Department, Section A, 709 Twelfth St. NW., Washington, D. C.

Please send me the free kit of material being used by companies that have installed the Voluntary Defense Savings Pay-Roll Allotment Plan.

| Position | _ |
|----------|---|
| | |

Company .

Name ____

Address .

FIRM NAME ____

four degrees.

ADDRESS

CITY_

THE ARCHITECTURAL FORUM



ENDS MIST HAZARD OR ND

Cutting oil, so vital to the manufacture of precision parts, has created a dangerous hazard in many war plants. Vaporizing at the machines, the coolants fill whole departments with oil mist. This oil adheres to lighting fixtures, bus ducts and wiring, creating a serious fire hazard and nuisance.

In various war plants throughout the country, PRECIPITRON*-the Westinghouse Electric Air Cleaner-is eliminating this oil mist as if by magic. The mist is captured at its source and the cleaned air recirculated through the shop. And the oil removed from the air is salvaged-as much as 100 gallons a day in one midwestern war plant. Trade-mark registered in U. S. A.

Now available in a self-contained unit for use with individual machine tools, Precipitron thus adds one more important job to the many it is doing toward speeding the nation's war effort. Because it cleans the air electrically and is able to capture more than 90% of all air-borne particles down to 1/250,000 of an inch in diameter, it has brought a new meaning to industrial air cleaning. For full information on Precipitron and its many wartime applications, get in touch with your nearest Westinghouse Office. Or write Westinghouse Electric & Manufacturing Company, Edgewater Park, Cleveland, Ohio, for booklet B-3267.

TUNE IN JOHN CHARLES THOMAS, NBC, SUNDAYS, 2:30 P. M. F. W. T.



An electrostatic field at the front of the Precipitron Cell charges all dust, dirt and oil particles as they enter.

Charged particles are drawn to, and precipitated on, these Collector Plates.

Mechanical filter removes large metallic and abrasive particles.

Drain at bottom of unit permits oil to gravitate back to the oil reservoir.

estinghouse Precipitron Vorke PLANTS IN 25 CITIES ...

ower Pack prov voltage to Collect

Air duct from tool (or tools), the







THE LONG-HAUL VIEW

Houston Ready-Cut House Company takes the long-haul view—what is happening now to win VICTORY will make life richer and finer when peace is won. The new precisions—materials—techniques that come out of this war will be used by Houston Ready-Cut. Our plant, which has built 10,000 homes in 25 years, is now in full production, serving industry in its war requirements; after VICTORY we'll be on the alert to serve again civilian needs.

Buy a home in the peace to followwith the Bonds you buy today.

WORKING NOW FOR U.S. BUT LATER FOR YOU

STON Keady Cut HOUSE CO 25 Jeans Profabricating Houses AVENUE HOUSTON, TEXAS



Only Plaster could do it!



Holabird & Root, Architects

CWEEPING smooth surfaces . . . I graceful curving contours . . . refreshing relief of ornamentation-all these are best expressed in plaster. This allows the broadest range in design and craftsmanship, in realizing structures of enduring beauty.

But this takes more than just ordinary plaster. The United States Gypsum Company has made great strides in developing better materials to serve the ends of better building through better plastering. For *duty, there are base coat plasters ... for beauty, moulding, casting and finishing plasters.

New Statler Hotel, Washington, D. C.

Wherever a combination of sound construction, good design, and fireproof protection is desirable . . . gypsum plaster is likely to be first choice. This is a natural selection to fill a national need with a dependable material, available in today's market.

It is safe to predict that future planning will find plaster on the preferred list. For plaster, combined with fire resisting bases, will give varying degrees of fire protection to suit all price and quality requirements. This was true yesterday, is true today and will continue to be true tomorrow.





TWO STONES-a gray stone-a whitestone-bothgypsum. From these have come two products, base coat and finishing plasterswhich have written a record of achievement on walls and ceilings of more buildings than any other material in the world.



GREATER FIRE PROTECTION -Gypsum Plaster will not conduct heat of over 212° F. (the boiling point of water) until it is completely dehydrated. Furthermore, gypsum plaster applied over various bases gives the degree of fire protection required.



SKILLED HANDS - For over five thousand years . . . dating back to the Pyramids . . . gypsum plaster in skilled hands has served to express beauty and add protection for buildings. Today such skilled trades are available to the building industry.





Above: A cylinder of Brixment mortar (left) and a cylinder of mortar made with 50-50 cement and lime mortar (right). Both specimens were made at the same time, and subjected to exactly the same treatment. After curing for 30 days, ¼" of water



was put into the tray and the cylinders were alternately frozen and thawed 15 times. Note in photo 2 that Brixment mortar remains intact, whereas the other mortar has crumbled badly. This simple test can be made in any ice-manufacturing plant.

BRIXMENT Makes More DURABLE Mortar!

FOR permanent strength and beauty, mortar must be *durable*—must be able to withstand the alternate freezing and thawing to which it is subjected many times each winter.

Brixment mortar is more durable. This greater durability is due partly to the strength and soundness of Brixment mortar, and partly to the fact that Brixment is waterproofed during manufacture. This waterproofing helps prevent the mortar from becoming saturated—therefore protects it from the destructive action of freezing and thawing.

Walls built with Brixment mortar therefore retain their original strength and appearance. Even in parapet walls and chimneys, where exposure is particularly severe, Brixment mortar will almost never require re-pointing.





Louisville Cement Company, Incorporated, Louisville, Kentucky. Cement Manufacturers for Over a Century.

THE NEW FRONTIER IS RIGHT WHERE YOU LIVE When people talk about rebuilding America they do not mean some other town. They mean your town, whether you live in Manhattan or Manitowood Nor do they mean some other "third" of the nation than the third you happen to be in. Rebuilding America means rebuilding it for three-thirds of the nation – for each town and for everyone in it

America means rebuilding it for three-thirds of the nation -for each town and for everyone in it.

The important thing about postwar planning is not the jargon the planners talk but what the planners do. Without your help there is precious little they can do but talk.

Planning, like Democracy, needs more than the experts

There are two kinds of postwar planning. One kind could only result if the citizenry shrugs its shoulders and leaves the job to the experts. Not many people, certainly not the planners, want that. The other kind of planning will result if an informed group of active citizens in every community arouses public opinion and guides the planners in gradually making over each community into a better place for your wife, your children, your neighbors and you.

Planners are not crackpots

These technicians are not screwballs or dwellers in ivory towers. They are hard-working. trained, skillful people. They are Planners, They are Architects. They are Engineers. And they are Builders, Real Estate Men and Bankers. A few of them are Government officials, but most of them are private "professionals," expert in giving your community what it needs.

Maybe your town does not need changing-maybe?

Maybe your town has no traffic problem?

Maybe it has no slums and no blighted areas soon to become slums?

Maybe most of the houses are not over 50 years old?

Maybe there are enough safe places for your children to play in? And enough modern schools for them?

Maybe your hospitals are model 20th Century medical plants?

Maybe there is a fine municipal swimming pool for all the kids?

Maybe your water supply tem are up to date?

Maybe these questions are not for you? Maybe you live in the town nobody knows?

Slow planning is better than fast planning

It takes time to replan even a small town.

First you have to assemble all the facts about the kind of town it is. Next the town has to decide what kind of place it wants to be in the future. Then you have to figure out the steps to get there. And only after that can you even begin to plan on paper.

If the war lasts two more years, your planners would have to hurry to have any decent plans ready. And if the war ends sooner, you are likely to be behind the job, even if you start tomorrow.

Replanning and rebuilding your town is a good business proposition

A badly planned town-and almost every town was built before autos and planes were thought of-if allowed to shift for itself will not be able to compete with progressive postwar communities.

Trade will fall off. Sooner or later, people will move to more attractive places. And as your town goes downhill, the cost of community services will go up and taxes will follow. without any compensating features. In other words, you pay no more to rebuild your town than if you do nothing. Of course, planning and rebuilding cost money. But you get something that the town next door cannot take away from you, something your neighbor next door deserves to share with you.

The essentials of a planning program are simple

Planners, like doctors, like to use big words, but they both get results. And since you are the patient in both cases, you might as well be a smart one and learn how to help the planners. To help many people make replanning the U. S., and your particular piece of it, a truly democratic and successful enterprise, the Editors of THE ARCHITECTURAL FORUM are preparing an inexpensive 12-page booklet. This booklet "Planning With You," is almost a primer, but not quite. It counts on your civic spirit and sees you as a responsible adult anxious to play an active part in postwar planning. The booklet is free. Send for it. Read it. It is the first step you personally can take in doing something for the future of your town now.

WHY THE ARCHITECTURAL FORUM is steamed up about replanning and rebuilding your town

THE ARCHITECTURAL This is no philanthropy. This magazine has perfectly sound and selfish reasons for printing this message. For 612 consecutive months THE ARCHITECTURAL FORUM has been talking to its regular audience which now numbers more than 33,000, among them most of the professionals who will lead the way in replanning and rebuilding America. They need a voice to reach the people who will decide how much and what kind of rebuilding should be done. This message is their voice. No one will lose by heeding it.

THE ARCHITECTURAL FORUM is published by TIME INC. 19 WEST 44TH STREET, POSTAL DISTRICT No. 18, NEW YORK



HOTEL STATLER, WASHINGTON, D. C. HOLABIRD & ROOT, ARCHITECTS MARBLE IS MODERN

This most modern Hotel uses marble economically yet generously (14 varieties) to help interpret the Architects' impressive creation. Built in our plants, largely converted from "Marble to Metal" for the armed forces, it is a tribute to our 75 years' experience and large reserve of marble. VERMONT MARBLE COMPANY PROCTOR, VT.



Public Spaces' and Guest Room Draperies, Curtains, Bedspreads, Cushions and Wall Upholstery for the Hotel Statler, Washington, D. C. manufactured and installed by:

ART UPHOLSTERY STUDIOS, INC. 110-112 West 26th Street New York, N. Y.

under direct supervision of Kenneth M. McCann—Trylon Studios, N. Y. C.



For Victory today ... and prosperity tomorrow, keep the War Bond Pay-roll Savings Plan rolling in your firm. Get that flag flying now! Your State War Savings Staff Administrator will gladly explain how you may do so.

If your firm has not already installed the Payroll Savings Plan, now is the time to do so. For full details, plus samples of result-getting literature and promotional helps, write or wire: War Savings Staff, Section F, Treasury Department, 709 Twelfth Street NW., Washington, D. C.





Your Copy of this Informative and Easy to Read Booklet About the Home of Tomorrow

Don Herold, one of America's foremost writers and cartoonists, discusses an important phase of tomorrow's new homes.

This booklet is now being mailed to thousands of prospective builders all over the U. S. who have requested it in response to national advertising.

Mr. Herold's entertaining and enlightening outline of future home ventilation is *must* reading for everyone with an interest in residential construction. Write today for your free copy.



Building for Uncle Sam today so that we can build for you tomorrow.

VICTOR ELECTRIC PRODUCTS, Inc.

| Victor Electric Products, Inc. | |
|--------------------------------------|-----------------------|
| Dept. IB-134 | |
| 2950 Robertson Ave., Cincinnati, Ohi | io |
| Name | and the second second |
| Address | a series and |
| City | State |
| | |

Minwax Wood Finishes have been used on more than 90 war housing projects!

YOU SAY

WAR HOUSING

DID

Did you design any of these projects? Are you working on any of the new projects (more than 200)? Here are a few reasons why Minwax—the complete stainwax finish for wood floors, doors and trim, is so universally selected for war housing jobs:

1. Speed-MINWAX Flat Finish offers the answer to today's demand for speed with proved serviceability, dependability and appearance.

2. Serviceability-It creates a finish that cannot be marred or scratched and can be maintained with the greatest ease.

3. Economy-Because of the simplicity of application, one material creates the complete finish. It offers one of the most economical fine finishes available today.

4. Dependability-Its proved record of performance has led to its selection by architects, painters, and contractors on hundreds of housing, war bases and essential war projects.

Write for complete information to Minwax Company, Inc., 11 West 42nd Street, New York

FACTS ABOUT MINWAX FLAT FINISH

- the original penetrative with ordinary care main-
- finish tains its beauty for the seals, protects and pre-life of the wood
- finish does not mar,
 in clear and 10 nonscratch or powder
 lapping colors

Specified by architects for more than 30 years

COMPLETE CATALOGUE IN SWEET'S





- 1 100% automatic.
- 2 No pumps, valves, or auxiliary units needed to read them.
- **3** Models available so that readings can be taken remotely from or directly at the tank.
- 4 Accuracy unaffected by specific gravity of tank liquid.
- Approved for gauging hazardous liquids by Underwriters' Laboratories and other similar groups.

Write for complete details





ON THE DRAWING BOARD TODAY FOR "buildings of tomorrow"

In your postwar plans, be sure to include the appealing beauty and amazing utility of Modernfold Doors. Accordion-like in opera-tion, Modernfold will assure the finishing touches to room decora-tions. A variety of colorful fabrics make it possible to match any conceller scheme and the second s general color scheme.

Modernfold Doors save space — make unnecessary the area usually allowed for the swing of doors. Room division is economical and effective. Send today for free literature — to help you in your post-war planning.

NEW CASTLE PRODUCTS New Castle, Indiana 1613 | Street Modernfold Doors, 424 Madison Ave., New York City

Hot baths for Uncle Sam's Army and Navy

from AQULUX

Heavy Duty WATER HEATERS

Hot water builds military morale. Uncle Sam is supplying it as gener-ously as possible at American camps camps and posts throughout the world.

It is a matter of pride to us that Johnson-built Aqulux Water Heaters have been chosen for so many of these government installations.

the rapid recovery and the low operating costs we have achieved in these un-Though virtually all of our capacity is being description. Though virtually all of our capacity is being devoted to these government orders, we are endeavoring whenever possible, to take care of the needs of essen-

tial private industries. If you have a water-heating or oil-burner problem, we will gladly help you with all the manufacturing facilities and engineering experience at our disposal.

S. T. Johnson Co., 940 Arlington Ave., Oakland, Calif., and 401 No. Broad St., Philadelphia, Pa.

S. T. JOHNSON CO.

40 years of engineering and building fine Oil Burning Equipment





Always a peacetime favorite, Gas, the fuel, is doing an outstanding job in the war. In addition to serving millions of homes, gas is helping American industry produce huge quantities of war materials.

Gas was ready for war. Gas will be ready for the peace to follow. The Roper (1) Gas Range will help you plan the kitchen of tomorrow.



DAVID E. KENNEDY, INC., 58 SECOND AVE., BROOKLYN, N.Y.



SPECIFICATION AND BUYING INDEX

The advertising pages of THE ARCHITECTURAL FORUM are the recognized market place for architects and all others engaged in building. A house or any other building could be built completely of products advertised in THE FORUM. While it is not possible to certify building products, it is possible to open these pages only to those manufacturers whose reputation merits confidence. This THE FORUM does.

| | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
|---|---------------------------------------|
| Adams and Westlake Company, The | 32 |
| Aluminum Company of America | 29 |
| American Brass Company, The | 37 |
| American Houses, Inc | .08 |
| American Lumber & Heating Co 1 | 52 |
| American Rolling Mill Company, The 1 | 23 |
| American Walnut Manufacturers Association | 11 |
| Andersen Corporation | 40 |
| Arco Company, The | 04 |
| Armstrong Cork Company | 58 |
| Art Upholstery Studios, Inc. | |
| Patha Rite Division | 146 |
| (Milwaukee Stamping Company) | 99 |
| Bigelow-Sanford Carpet Co., Inc. | 33 |
| Borden Company, The | 100 |
| (Casein Division) | 43 |
| Briggs Mfg. Company | 118 |
| Bruce Co., E. L. | 154 |
| B & I Metals Company, The | 9 |
| Byers, A. M. Company | 150 |
| Cabot, Samuel, Inc. | 162 |
| Carrier Corp. | $100 \\ 117$ |
| Case, W. A. & Son Mfg. Co | 103 |
| Casein Company of America | 100 |
| (Division of The Borden Company) | III |
| Celanese Celluloid CorporationCover | II |
| Celotex Corporation, The | 115 |
| Coyne and Delany Co. | 129 |
| Curtis Companies | 19 |
| Dahlstrom Metallic Door Company | 140 |
| Detroit Steel Products Co | 18 |
| DeWalt Products Corporation | 150 |
| Douglas Fir Plywood Association | . 21 |
| Dow Chemical Company, The | 16 |
| Durez Plastics & Chemicais, Inc. | 200 |
| Fagle-Picher Lead Company, The | 106 |
| | 132 |
| Federal Electric Company, Inc. | 121 |
| Flintkote Company, The | 14 |
| (A Ziff Davis Publication) | |
| Formica Insulation Company, TheOpp. | 4, 5 |
| Formica mountain company, | 145 |
| General Ceramics Co. | 135 |
| Great Lakes Steel Corporation | TOF |
| (Stran-Steel Division) | |
| Harris John W Associates, Inc. | 109 |
| Homasote Company | 22 |
| Houston Ready-Cut House Co. | 154 |
| | 145 |
| Johns-Manville | 160 |
| Johnson, S. 1. Co. | |
| Kennedy David E., Inc. | 16 |
| Kimberly-Clark Corporation | 19 |
| Koppers Company | 11 |
| L D I Comment & Mfr. Co | 2 |
| La Del Conveyor & Mig. Co. | 12 |
| Langevin Company, The | 12 |
| Lawson F H Company. The | 14 |
| LCN Door Closers | 12 |
| Libbey-Owens-Ford Glass Co. | 14 |
| Liquidometer Corp., The | 16 |
| Lockwood Hardware Mfg. Co. | 10 |
| Louisville Cement Company, Incorporated | 15 |
| Maskar Bros | |
| MCSKCI DIUS | 13 |
| Milwankee Stamping Company | 13 14 |
| Milwaukee Stamping Company | 13 14 |

| Minway Co. Inc. | 159 |
|--|----------|
| Modine Manufacturing Company | 40 |
| Monsanto Chemical Company, Plastics Division | 20 |
| Mosaic Tile Company, The | 158 |
| Mueller Brass CoOpp. | 149 |
| Mueller, L. J., Furnace Company | 92 |
| Mullins Mfg. Corp. | 40 |
| (Youngstown Pressed Steel Division) | |
| National Cynsum Company | 48 |
| National Lead Company | 46 |
| National Mineral Wool Association | 110 |
| New Castle Products | 160 |
| Cover | IV |
| Overhead Door Corporation | - |
| Palace Travel Coach Corporation | 27 |
| Parsons Company, The | 154 |
| (Affiliated with Traverse Bay Mfg. Co.) | 120 |
| Pemberton Lumber and Millwork Corp. | 100 |
| Pittsburgh Plate Glass Company | 129 |
| Polhemus, P. B. Co., Inc. | 146 |
| Ponderosa Pine Woodwork | 151 |
| Portland Cement Association | 127 |
| Propellair, Inc. | d. and I |
| Republic Steel Corporation | 139 |
| Revere Copper and Brass, Incorporated | 131 |
| Reznor Manufacturing Co. | 116 |
| Richmond Screw Anchor Company, Inc. | 3 |
| Rolscreen Company | 134 |
| Roper, Geo. D. Corporation | 100 |
| Ruberoid Co., TheOpp | . 11 |
| Samaan Cardage Works | 152 |
| Sherwin-Williams Company The | 164 |
| Simmons Company | 107 |
| Sloan Valve Company | 11 |
| Sonneborn Sons Inc., L. | 140 |
| Square D Company | 17 |
| Stanley Works, The | 150 |
| Stran-Steel Division | 133 |
| (Great Lakes Steel Corporation) | 190 |
| Swartwout Co., The | 120 |
| Sylvania Electric Products, Inc. | 10 |
| Texas Pre-Fabricated House and Tent Co. | 114 |
| Tile-Tex Company, The | 128 |
| Timber Engineering Company | 135 |
| Time Inc. | . 30 |
| Todd Combustion Equipment, Inc. | 39 |
| Trane Company, The | 154 |
| Traverse Bay Mfg. Co. | 154 |
| (Affiliated with the Parsons Co.) | |
| Unit Structures Inc | . 41 |
| United States Gypsum Company | . 155 |
| United States Steel Corporation | . 122 |
| Universal Atlas Cement Co. | . 122 |
| (United States Steel Corporation Subsidiary) | 47 |
| Universal Zonolite Insulation Co. | . 4/ |
| Upson Company, The | . 33 |
| Vermont Marble Company | . 158 |
| Victor Electric Products. Inc. | . 159 |
| Vogt. Henry, Machine Co., Inc. | . 38 |
| , og,,,,, | 140 |
| Waterfilm Boilers, Inc. | . 140 |
| Weis, Henry Mfg. Co., Inc. | 159 |
| Westinghouse Electric & Manufacturing Co | , 100 |
| Williams Oil-O-Matic Heating Corporation | . 10 |
| Youngstown Pressed Steel Division | . 23 |
| (Mullins Manufacturing Corp.) | |
| | 1/ |
| (Flying) | . Т. |



Heating and Ventilating Contractor: Mehring and Hanson Co., Chicago, III. Architect and Consulting Engineer: Holobird and Root, Chicago, III. General Contractor: Harris Co., New York.



Every guest room has a Carrier Weathermaster unit with individual control. Positive circulation of outside air is also provided.

New Statler in Washington, First Hotel To Install Carrier Conduit Weathermaster System

• Year round air conditioning of the entire building is an outstanding feature of the new Statler Hotel, most recent addition to Washington's rapidly rising skyline.

Two Carrier Centrifugal Refrigeration Machines provide a daily cooling capacity equal to the melting of 1,100 tons of ice. Individual Carrier Weathermaster units serve conditioned air to each guest room. Lobbies, dining rooms, corridors, and all public spaces are air conditioned from the central plant.

The air conditioning equipment was designed as an integral part of the building thus gaining space equivalent to two extra floors while keeping the height of the structure within building code requirements.

Occupants of guest rooms may dial "Warmer" or "Cooler" as desired. All air delivered to guest rooms is 100% outside air. Heated or chilled water is circulated in Weathermasters. In rooms receiving the full heat of the sun, cooling can be obtained while heating is being used in rooms which have northern exposure.

CARRIER CORPORATION, SYRACUSE, N.Y.





Palace Travel Coach Company turns out 30 Prefabricated Homes daily... All Finished Inside and Out with Sherwin-Williams Paints!

Three hours after the trailer truck pulls up on the lot — compact, modern, prefabricated homes, like the one shown here, are ready for occupancy. Even the plumbing is connected!

These particular units, built under the direction of the Federal Public Housing Authority, are being turned out at the rate of 30 units per day. That's the record of the Palace Travel Coach Company—Flint and Saginaw, Michigan—now operating two plants 24 hours a day, 6 days

Because these homes must be constructed to take the hard knocks of wartime living, to

a week, building homes for victory workers.



stand up through the duration and beyond-they are finished throughout with Sherwin-Williams Paints. Ceilings, walls, woodwork have a longlasting, easy-to-clean finish. Roofs and exteriors will look well and weather well for many years.

Sherwin-Williams technicians are working with many builders...helping them achieve the best finish, the most practical method of application. Let us tell you more about Sherwin-Williams Paints and Finishes for modern housing. Write for detailed information to The Sherwin-Williams Company, Cleveland, Ohio, and all the principal cities.

SHERWIN-WILLIAMS PAINTS FROM INDUSTRIAL PAINT HEADQUARTERS

4287 Miles from an Ice Cream Soda

In global war, military hauls are stretched thousands of miles. Loss by breakage in transit grows more serious as distances increase.

Troop housements, packed in bundles, arrive undamaged because window openings are glazed with Lumarith plastics. Set up in minutes, these portable buildings are ready to shelter our fighting forces and their equipment.

LUMAPANE*, VIMLITE*, and clear LUMARITH* plastic lazing materials, resist the shock of close-by explosion. They stand exposure to salt-spray, smoke, and extremes of weather. When used in munitions plants and other war industrics, they safeguard against flying splinters and save working time often lost through such minor plant accidents.

In addition, Lumarith plastics transmit a wider sunlight band to include infra-red and ultra-violet rays. In peacetime applications, this property of Lumarith is of particular importance to horticulturists, stock breeders, and poultry raisers.

The effective use of Lumarith plastics for window glazing is but one of the ways in which Lumarith will serve in post-war housing. From the mailbox in the doorway to the louver under the eaves, the pre-fabricated home of tomorrow will use Lumarith plastics wherever lightness, toughness, and beauty are of first importance.

Plastic Glazing descriptive booklet will be mailed on request.

Celanese Celluloid Corporation, 180 Madison Ave., New York City. Representatives: Dayton, Cleveland, Philadelphia, Chicago, St. Louis, Detroit, Los Angeles, Washington, D. C., Leominster, Montreal, Toronto, Ottawa.

IEE

CELANESE

CELLULOID

Reg. U. S. Pat. Off.

CORPORATION A DIVISION OF CELANESE CORPORATION OF AMERICA

The First Name in Plastics

GOOD DOORS AID FAST PRODUCTION

COPYRIGHT 1943, OVERHEAD DOOR CORPORATION

Reliable electric operation is provided for any "OVERHEAD DOOR", the motor size always in proper relation to the door size.



• Use The "OVERHEAD DOOR" with the Miracle Wedge in every army, navy or marine building where man-hours mean Victory, and in every factory where fast production counts. This quality door is built as a complete unit—is dependable, quick, easy to open or close in any climate—and as a consequence is found in all types of structures.

TED KAUTZIS

OVERHEAD DOOR CORPORATION Hartford City, Indiana, U.S.A.