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Even under the cost limitations of the defense housing program, the sound policy of building for permanence need not be compromised—as this Glen-Hazel Heights Project shows. Built under FWA and the Pittsburgh Housing Authority, the estimated cost for 1001 units is $3,700,000. Hot and cold water lines, and vent lines 2" and smaller, are Byers Wrought Iron. The unusual resistance of wrought iron to the corrosive conditions involved is indicated by the many wrought iron water lines and vent lines installed during the 90's which are still on the job.

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BUILDING NEWS

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REMODELING IS HERE AGAIN

Remodeling, as a pot-boiler is not entirely strange to architects and builders. But this time remodeling and modernization are not just pot-boilers for the architectural office; at least in defense-booming centers they have their own function in the all-out war effort. For the provision of industrial buildings and industrial housing can be in part accomplished through re habilitation and conversion of existing structures. The merits of this scheme, which has received priorities blessing and other official support, are obvious, but important: 1. speed in meeting the need, 2. saving of critical materials, 3. avoidance at least in part of the inevitable over-building. And for non-defense centers, remodeling may turn out to be the only available means of satisfying building demand that cannot claim priorities. Remodeling has advanced, too, since depression days, as this issue of the RECORD should demonstrate, and it may rate new space in the office files.

NOW THEY HAVE STREETS

When Dorothy Rosenman made her timely plea for better coordination in the planning of defense housing projects (AR 11/41) there was general agreement that she had put her finger on a weak spot in the relations between Federal bureaus and local authorities. Even in taking exception to one of her for-instances, Seward H. Mott, Director of FHA's Land Planning Division, agreed with the general tone of her message.

His letter reads in part:

From its inception this Administration has cooperated closely with local planning commissions and municipal and county officials, and we are in hearty accord with Mrs. Rosenman's statement that housing problems must be worked out on the ground and with a consideration of local needs rather than from a desk in Washington.

Mrs. Rosenman refers to FHA activities in Newport News, Va., and we are gratified with the comments regarding the appearance of the FHA-financed homes, but I wish to point out that the statement in regard to these houses being located on dirt streets and that the FHA has imposed no obligation on the developer to pave the streets, is in error. It is a minimum FHA requirement that every house, either on an individual lot or in a development of homes, must be served with an adequate paved street as well as other utilities. We take particular pride in the character of the street improvements we are securing in the Newport News area as every one of our developments is served with bituminous bound macadam streets of a minimum width of 26 ft. This applies even to developments of homes in the $3,000 price range. In higher priced developments such as Stuart Gardens concrete curbs and gutters and sidewalks are installed. No doubt the error was due to seeing these projects before the street construction was completed. The developers seldom install the paving until sewer and water ditches have settled and heavy building is over.

And for her part Mrs. Rosenman finds gratification in a note of all's-well-that-ends-well. She replies:

It is gratifying to know that the FHA projects at Newport News have been served with adequately paved streets.

When many of the FHA developments were completed, the people and officials of Newport News, the state planning officials and representatives of the National Resources Planning Board, working in the area, did not know that FHA required the developers to pave the streets. They were concerned because there were no plans for street paving in evidence, because the locality had no ordinances which required street paving, and because the small taxes paid by these little houses could not possibly begin to defray the cost of paving the streets.

Had there been a mechanism established in the locality through which the various local agencies could have been kept in contact with the plans and action of Federal agencies operating there, the energy lost in speculation, meetings, discussions, time-consuming conferences, might have been used for more constructive purposes.

There is an understandable reason for this particular omission. The local FHA man was probably rushed from critical area to critical area. He did his work, and made his report to his office. There was no mechanism at that time for contact with the locality. They were left guessing, tried to get the facts, and, evidently, did not get them. However, all is well that ends well. It is good to know that the streets are paved, that the FHA office is on the alert and that there is an operating coordination of local and Federal housing functions in this area now.

"Why not remodel it? All you'll need is venetian blinds."

—Drawn for the RECORD by Alan Dunn
WALTER HESSE, of the firm of Bloch and Hesse, well-known New York architects, is the designer of this new Schrafft's, as well as many other Schrafft restaurants and stores in Manhattan and other eastern cities. The firm has long been known for their outstanding work in the institutional and public building fields. Mr. Hesse is shown here examining the samples of Alexander Smith Carpet used in Schrafft's.

The burgundy Alexander Smith Carpet in this Cocktail Lounge sets off the walnut wainscoting and bar and the collection of unusually fine English coaching prints.

A rose-colored Alexander Smith Carpet was used in the Audubon Room (Ladies' Dining Room), accentuating the green leather chairs and the colorful twenty-foot Punch and Judy mural.
Mr. Hesse has this to say of his use of carpets:

"The fine food served by Schrafft's is worthy of a harmonious setting, and I consider carpet an important component of such a setting. Alexander Smith Carpets qualified for use here; aesthetically because of their beautiful colors and patterns, and practically because they resist the terrific wear to which they are subjected in this restaurant which seats 500 people.

"Our plans called for the use of carpets throughout the Ladies' and Men's Dining Rooms on the second floor and in the Cocktail Lounge on the first floor and even in the entrance to the Lounge from Forty-third Street where traffic is heaviest.

"Delivery dates were essential to open the restaurant on time. Alexander Smith were ahead of schedule. After my client and I had personally visited the Alexander Smith showroom, their Contract Department furnished various samples for color and design. These greatly facilitated selection by the owners and myself, and resulted in a carpet which combines beauty of pattern and texture.

"Their agents were on the job from the minute the carpet was delivered until it was laid and even until the decorations and dining equipment were put into place. During the progress of the job the services and advice of their Contract Department were constantly helpful; and very important, too, was that they assisted us in keeping carpet costs within the budget.

"Guests have made many flattering comments on the new interiors of this Schrafft's. I am well satisfied, and do not hesitate in saying that the assistance of Alexander Smith was of inestimable help."

A NEW Metropolitan Chapter of AIA will be organized if the Brooklyn and Westchester County Chapters accept an invitation proffered by New York Chapter to unite as nucleus of such a group. The Metropolitan Chapter will then invite as members individual members of New York, Brooklyn, Bronx, Queens, Staten Island, Long Island and Westchester architectural societies and all unaffiliated registered architects.

The movement follows a survey, by a committee headed by Lewis Greenleaf Adams, of architects in New York State (AR 11/41, p. 12), the majority of whom favored a central organization. Based on ratio of replies received, membership of the proposed chapter would reach, 1,136.

DEAN WALTER R. MacCORNACK of Massachusetts Institute of Technology has been appointed chairman of the Committee on Urban and Rural Land Use of AIA, succeeding Frederick Bigger of Pittsburgh.

Samuel E. Lunden succeeds Sylvanus B. Marston as president of Southern California Chapter of AIA.

Gold Medal

Princeton University has been awarded the 1941 gold medal of the American Group of the Société des Architectes Diplomes par le Gouvernement, it is announced by Julian C. Levi, president of the Group. The medal goes annually to the "architectural department of that college or university having the best record of accomplishment in the teaching of architecture on the general principles of the Ecole des Beaux Arts in Paris."

A gold medal and a prize of $50, bestowed every year upon the student obtaining the greatest number of values in the national competitions of the Beaux Arts Institute of Design, was won by Glen Paules of the University of Illinois. J. C. Tighe of the University of Pennsylvania received the silver medal.

Dr. FREDERICK ERNST GIESECKE, Professor Emeritus, Heating, Ventilating and Air Conditioning, at A. & M. College of Texas, has received the F. Paul Anderson Gold Medal awarded by the American Society of Heating and Ventilating Engineers for distinguished scientific achievement. Dr. Giesecke was honored for his contributions to the advancement of heating based on his research work in the fields of heat transfer and hot water heating.

Design Competition

Cash awards totaling $500 are offered professional interior decorators in a national competition for the best plans for arrangement and furnishings of interiors in 200,000 U. S. Government defense houses as well as an estimated 200,000 privately built defense homes. Sponsors are PBA and Interior Design and Decoration, which announced the competition in its January issue, in cooperation with the American Institute of Decorators. A typical defense house floor plan was selected, and awards will be made for the best arrangements of interiors that can be obtained at the lowest cost by defense workers.


Defense Reference Center

Technical material on public, domestic and industrial air raid precautions, as well as general instruc-

(continued on page 12)
HERE is Kitchen Maid's answer to the challenge of wartime housing—an additional line of standard cabinet units, broad enough to meet any architectural requirement, yet simplified and standardized to permit substantial reductions in manufacturing costs. Such well known Kitchen Maid features as smooth surface, warp-proof doors, non-sticking drawers, dowel joints, hardwood frames, and factory-sealed finishes are found in this new line—yet a minimum of critical material is used. And Kitchen Maid's large productive capacity promises rapid delivery in quantities. Investigate before planning your next house or project. Mail coupon now.

The Kitchen Maid Corporation, 821 Snowden St., Andrews, Indiana. Please send catalog on your new "War-Time Cabinetry."

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An attractive combination of upper cabinets, sink fronts, and base cabinets—available in sizes to fit practically any space.

Another practical combination of standard units with the additional convenience of broom closet or dish cupboard.
WITH RECORD READERS
(continued from page 10)

How to Save Vital War Materials When You Specify WIRE
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FOR WET LOCATION WIRING...specify Hazard Watertite, Type RW. Its submarine rubber insulation requires no lead sheath protection and saves this vital material. Meets all code requirements. Ask for Bulletin 168A.

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PAUL CRET designed the interiors for the cars of New York Central's new Empire State Express, built by the Edward G. Budd Manufacturing Company of Philadelphia. The view of the central section of the dining car shows "banquet type" seats, pigskin covering on walls and ceiling. The valance boxes from which the curtains are hung serve as baffles for air conditioning current.

Library Volume Available

ARCHITECTS concerned with post-war civic planning programs may be grateful for word that the 500-page volume "The American Public Library Building," by Joseph L. Wheeler and Alfred Morten Githens, is being sold from the Enoch Pratt Free Library of Baltimore, Md.

Personal

KNOWN as Associated Landscape Architects, with offices at 664 N. Michigan Ave., Chicago, six landscape ar-

(continued on page 14)
There's more to war than the equipping of bombers and battleships. The plants and shipyards that make them, the factories and mills turning out thousands of large and small parts, must be powered through wires and cables that can stand the pace of 3-shift operation.

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February 1942
Lumber treated with CZC, as in this housing project, means longer life by protecting against decay and termite damage.

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Write for locations of plants supplying this service. E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Dept., Wilmington, Delaware.

WITH RECORD READERS

(continued from page 12)

architectural firms have merged personnel, office facilities and equipment and will specialize in site and town planning, camouflage, defense housing, airports, recreation areas and defense industrial plants. In the group are C. B. Andrews, Fitzgerald & Atkinson, Robert Bruce Harris, Ralph Rodney Root, Simonds, West & Blair and F. A. Cushing Smith & Associates.

E. E. ROBERTS AND ELMER C. ROBERTS INC. announce removal of their offices to 22 E. Huron St., Chicago, Ill.

The architectural firm of Austin & Shambleau, South Bend, Ind., has been dissolved. Mr. Shambleau has retained his office in the J. M. S. Building. Ennis R. Austin is at 1414 E. Michigan Ave., South Bend.

NEW ADDRESS of Harold H. Ehlers, formerly of Detroit, is 7380 Franklin Rd., Franklin, Mich.

ARCH ALBERT of St. Louis, Mo., is now at 1914 South 39th St.

Died

FREDERIC CHARLES HIRONS, 59, in New York City, Mr. Hirons, a founder and former president of the Beaux Arts Institute of Design, had been named a Chevalier of the French Legion of Honor in recognition of his services for architectural education. Among his best known works are the George Rogers Clark Memorial at Vincennes, Ind., the Worcester (Mass.) War Memorial Auditorium, the Rockland County Court House in New City, N. Y., the Beaux Arts Institute of Design Building, New York City, and the Davidson County Court House at Nashville, Tenn.

WILLIAM LOCKE, 69, at Charleston, S. C. Mr. Locke, an architect and engineer with offices for many years in St. Petersburg, Fla., at his death was Senior Engineer in the Planning Division at the U. S. Navy Yard in Charleston. He designed industrial plants, churches, schools and hotels throughout the South.
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STEAM HOT WATER

FEBRUARY 1942
FREEZING ORDER IS IMMINENT FROM WAR PRODUCTION BOARD

By KENDALL K. HOYT and RAYMOND R. Dickey

War Production Board . . . New Freezing Order Imminent . . . Modernization Opportunities . . . Shelter for War Workers . . . Lanham Act Passed . . . Priorities and Housing

Creation of the new War Production Board means far more than a mere shifting of agencies. Its significance is the tremendous power that it delegates to the Chairman of the Board.

Among the very first to feel the heavy hand of this Board will be the construction industry. A drastic freezing order which would stop all but certain classes of construction is now imminent. Already this order has been considered twice by the Clearance Committee which checks all potential priorities orders for unanimity of policy prior to final OK by the Director of Priorities. In each case, the order has been sent back for change. But as this is being written the present draft of the order provides for immediate cessation of all construction not falling within one of the following classes:

1. Any construction bearing a priority rating may be completed or begun.
2. Any building essential to the public health and welfare (such as hospitals) may be completed, whether or not it has a rating. In the case of new buildings of this type, clearance must be effected before commencing construction.
3. Where building foundations have been finished, the general rule will be to allow completion.
4. Certain types of farm buildings will be permitted.
5. Repair and modernization, where not using critical materials beyond certain amounts, will be permitted—even encouraged.

In all other cases, building will be permitted only through special dispensation.

The original draft of the order also provided that new construction which did not use more than 2,500 pounds of critical materials would be allowed. As a clear indication of the new "tough minded" administration of war production and civilian curtailment to facilitate war production, the Clearance Committee returned the draft containing this provision with instructions to eliminate it entirely.

In the low-cost housing field there is still a tremendous opportunity for privately financed construction in defense areas. Banks and other lending institutions are being pressured by the FHA to put some of their huge amounts of funds into low-cost housing of a defense type. The FHA is urging the use of Title VI of the National Housing Act and is pointing out the marketability of mortgages insured under that title. The whole low-cost housing job cannot be done by public funds alone.

FHA changes regulations

In an effort to step up private building to house war workers—especially rental properties—FHA has changed some of its regulations and procedures. Adjustments are being made immediately in FHA construction cost estimates in local areas, in relation to actual building costs, where increases in costs are stabilized and adjustments justified.

Monthly payments on loans insured under Title VI (defense housing insurance) are being reduced by about 11 per cent through elimination of the so-called accelerated amortization provision. Effective Feb. 13, the sum of principal and interest payments on new loans will be substantially the same each month. Up to this time, payments in the first five years have been greater than in the following 15 years. Adoption of a level repayment provision will enable more defense workers to purchase or rent homes constructed with mortgages insured under Title VI. Builders may either sell or rent such properties, and since the FHA is urging the construction of more homes under Title VI for rent, this change in the regulations will reduce the carrying cost for builders and the rent.

The new Lanham Act, which increases the defense housing appropriation to $600,000,000 and the Community Housing Program appropriation to $300,000,000, has been sent to the President for signature as this is being written and will undoubtedly be signed. In addition to the increase in appropriation, the Act, as it finally got through Congress, extended the defense housing program to include living quarters for single persons engaged in national defense activities; increased the average unit cost of family dwelling units from $8,000 to $8,750 for construction types located within the continental United States, and to $4,250 for other locations except Alaska where a $7,500 limit was fixed. It also gives the Administrator discretionary authority to build temporary units where he believes there is not a reasonable prospect of disposing of houses built for defense purposes after the emergency. Houses built with funds appropriated under the Act may not be conveyed to any public or private housing agency engaged in slum clearance or subsidized housing for low income groups without express authorization of Congress. Rentals will be fixed in relation to the value of the property. In case of Army and Navy personnel, the Secretary of War and Secretary of Navy will name rentals.

Special authority is given to the Administrator to adjust rentals to incomes during the emergency. Contracts for the housing will be awarded by competitive bidding.

Priorities

Supplies of plumbing, heating, and electrical equipment for maintenance and repair will continue to be available through the usual wholesale and retail channels, according to OPM's Priorities Division. Under a new suppliers' order, M-67, suppliers may accept deliveries of plumbing, heating and electrical supplies—and other suppliers, producers, or other persons may make deliveries of such supplies—if the supplier to whom delivery is being made has less than his maximum permissible inventory, and the delivery is of the minimum quan-

(continued on page 20)
"In my opinion," writes Frank Sutton, "steam is the most flexible medium for heating large groups of buildings because with it you can obtain everything required for many varied types of service. Complete control over each building can be obtained with modern central steam heating control, with or without extensive zoning. Comfortable heating is provided at an enormous saving by comparison with earlier uncontrolled and now obsolete installations. By the use of appropriately located pressure reducing valves, steam is made readily available for laboratories, clinics and similar facilities and for heating domestic hot water."

Frank Sutton designed and specified a "Controlled-by-the-Weather" Webster Moderator System of Steam Heating to improve the heating of fifteen buildings on the campus of Alfred University, Alfred, N. Y. It is an outstanding example of the heating improvements and economies that can be effected by modernization of the older-type low pressure steam heating systems.
tity commercially procurable.

For a supplier located in the Eastern or Central Standard time belts the term “maximum permissible inventory” means that he cannot have on order or in stock more supplies, in total dollar value, than one-sixth of his total 1941 sales in dollar value. A supplier located elsewhere in the United States cannot have on order or in stock more than one-fourth his total 1941 sales in dollar value.

It is important to note that the M-67 does not guarantee delivery of any material. Delivery to a supplier depends upon the manufacturer being able to get the necessary materials to fabricate or manufacture plumbing, heating, or electrical supplies. Manufacturers of such supplies may get priority assistance by making application on Form PD-25a addressed to the Production Requirements Branch of OPM.

There has been a change in procedure for manufacturers who are supplying building materials for defense housing projects. Preference rating order P-55 was amended on Jan. 13 and provides that such manufacturers should, after that date, apply for priority assistance under the Production Requirements Plan. Under the former procedure, building materials manufacturers could extend project ratings to speed up their own purchase orders for necessary materials. Under the new procedure, however, these manufacturers may not extend ratings assigned to projects, but must apply on Form PD-25a for priority assistance.

When a project rating has been given to a particular housing project, the builder may extend that rating to a supplier if the supplier has “not in whole or in part manufactured, produced, assembled, or otherwise physically changed” the materials to fill a rated order. If the supplier has not changed the materials, he may apply the rating carried by the project to his own purchase orders for finished items, but when the supplier extends the rating to a manufacturer for the finished item, the manufacturer cannot extend the project rating further to get raw materials but must apply for a rating to get his raw materials under the Production Requirements Plan.

The amended order P-55 also requires suppliers to sign an acceptance of P-55 amended before applying its rating to their orders, as well as to get each extension of the order authenticated by an agent of FHA.

One change of considerable value to a supplier is that the amendment allows him to defer application of the ratings assigned to orders filled by him until he can place a purchase order with a manufacturer for the minimum quantity procurable on customary sales terms.

---

**Once an UGLY DUCKLING**

**NOW**

A BEAUTY IN BOTH DESIGN AND ACTION

At long last, awkward, unsightly overhead door checks need no longer be accepted as a necessary evil. They can be displaced by the specification of Rixson UNI-CHECK—at about the same cost level. UNI-CHECK is installed in the floor, practically out of sight. It enhances the appearance of a fine door with its small top and bottom pivots instead of bulky hinges.

UNI-CHECK requires only 2½ inches of floor depth: Can be readily installed in any type of floor with or without a threshold. It closes the door gently and positively. There are only six sturdy moving parts and no complicated adjustments to make.

---

**Rixson Uni-Check**

**FOR SINGLE ACTING INTERIOR DOORS**

UNI-CHECK is suitable for any single swing interior door, wood or metal, and no unsightly arms project whether the door is open or closed. Made in four capacities. Write for data sheet.

Your nearest Rixson representative will gladly demonstrate UNI-CHECK to you.

THE OSCAR C. RIXSON CO.
4448 Carroll Avenue
Chicago, Illinois

Rixson Representatives at:
NEW YORK: 507 Webster Avenue, Wyncote, Pa.
PHILADELPHIA: 211 Greenwood Avenue, Wyncote, Pa.
ATLANTA: 152 Nassau Street
NEW ORLEANS: 2800 Jefferson Avenue
SAN FRANCISCO: 116 New Montgomery Street
SEATTLE: 402 East 38th Street
LOS ANGELES: 909 Santa Fe Avenue
LONDON, ONT., CANADA: Richards-Wilcox Co., Ltd.
MAKE THIS TEST -
Prove BRIXMENT is BEST!

1. Slap a small amount of Brixment mortar, and an equal amount of 50-50 lime and cement mortar, on a brick. Wait a minute, then feel each mortar.

2. Test each mortar. You will find that the Brixment mortar stays plastic far longer than the other mortar. This proves greater water-retaining capacity.

BRIXMENT Mortar Has Far Greater Water-Retention!

WATER-RETAINING CAPACITY is the ability of a mortar to retain its moisture, and hence its plasticity, when spread out on porous brick.

High water-retaining capacity is of extreme importance in mortar. If the mortar does not have high water-retaining capacity, it is too quickly sucked dry by the brick; the mortar stiffens too soon, the brick cannot be properly bedded, and a good bond cannot be obtained.

Brixment mortar has extremely high water-retaining capacity. It strongly resists the sucking action of the brick. Brixment mortar therefore stays smooth and plastic when spread out on the wall.

This permits a more thorough bedding of the brick, and a more complete contact between the brick and the mortar. The result is a better bond, and hence a stronger and more water-tight wall.

BRIXMENT for Mortar and Stucco


FEBRUARY 1942
THE wide variety of units composing the Pittco Store Front Metal line affords the architect an opportunity to achieve unusually pleasing combinations of members. Each unit in the line bears a definite design relationship to all other units which may be combined with it in actual store front work. The effective contrast between smooth, sweeping surfaces and adjacent surfaces which are interrupted by beading or sharp contours, is a design element provided generously by Pittco Metal. This quality is exemplified in the sash shown above. Whatever problems of metal construction may confront you in designing quality store fronts, you will find a distinguished answer to them in the varied bars, mouldings and sash of the Pittco Metal line. Pittsburgh Plate Glass Company, Grant Building, Pittsburgh, Pennsylvania.

DETAIL:
In the above combination, the clean arc of the sash face-plate enhances and intensifies the fluted jamb moulding. Sash: 12-A. Jamb: PX-195

PITTCO STORE FRONT METAL
PITTSBURGH PLATE GLASS COMPANY

"PITTSBURGH" stands for Quality Glass and Paint
"SOUND"

DEFENSE FOR FACTORIES...
RCA Victor Industrial Sound Systems!

For Air Raid Alarms ... Inter-Plant Communication ... Emergency Instructions ... Executive Announcements ... Radio News Programs ... Fire Drills or Alarms ... Music!

IN TIMES like these communication is especially vital. That's why the RCA Victor Industrial Sound System should be considered now by every plant designer and superintendent! RCA Victor Sound Systems put executives in instant communication with any or every department, or any individual, thus speeding production and increasing plant efficiency.

In addition, facilities for air raid alarms, emergency instructions, announcements to employees, and music during fatigue periods are of tremendous importance to every factory producing war material. All these can be handled quickly and effectively with an RCA Victor Industrial Sound System.

Write or send coupon for full details about this important time-saving defense aid. Scores of defense plants are already using RCA Victor Sound Systems. We will be glad to furnish names upon request.


Of Vital Importance to Every Factory

DEFENSE — Instant communication along production lines, between control positions, between floor and moving cranes, between office and warehouses. Provides instant warning or emergency instructions. Facilitates movement of material. Intelligible above extreme noise level in mills, shops and foundries.

ADMINISTRATIVE CONTROL — Paging system to locate executives, key men, visitors ... Time, fire and safety signals ... Instant contact for air alarms and emergencies.

PERSONNEL RELATIONS — All employees or groups of employees can be reached at once. Permits safety talks and instructive talks to improve efficiency. Music during lunch or fatigue periods increases defense production. Useful for recreational and social functions.

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MUSIC • PAGING • COMMUNICATING
RCA Manufacturing Co., Inc., Camden, N. J. • A Service of the Radio Corporation of America • In Canada: RCA Victor Co., Ltd., Montreal

FEBRUARY 1942
DEMOUNTABLE HOUSING INDUSTRY TO BUILD 42,000 DEFENSE HOMES FOR FWA

Demountable housing, given a big boost last month with huge Government orders, moves suddenly into a significant position on the housing front. With FWA programming 42,000 demountable houses, to be paid for with a $153,000,000 allocation from the President's emergency funds, the prefabricating industry gets its first taste of mass production volume. While it can hardly be said that 42,000 units spread over 50 plants represents the long-heralded arrival of mass-produced housing, it can well prove sufficient volume to short-circuit much of the painful process of developing markets, and to establish at least a few companies in a strong position.

Thus, if for no other reason, the Government's acceptance of the demountable houses holds interesting potentials for architects and engineers. For the enthusiastic predictions of a few years back are again being freely offered with a new postwar twist like this: 1. Many prefabricators will have a running start into peace-time production; 2. What happens then will be largely dependent on the designers.

The first announcement came early in January and the tempo increased through the month, until the wording was "the entire production capacity of the country's prefabricated house building industry will be used and manufacturers will be required substantially to increase their output." Concurrently the FWA whipped up some suggested floor plans and planning standards to guide prefabricators and site planners, and announced that orders for 35,000 units would be placed during January.

Then, while FWA field men were busy selecting sites in most of the 50 areas, came an announcement of a new scheme contemplating the construction of all types of defense homes in small groupings within a defense area, instead of concentrating them in large numbers.

FWA reports 200 mills and woodworking plants have also indicated a willingness to take part in the program. Site fabrication will also be employed. The announcements promise a two-shift, seven-day-week production, and the 35,000 units in the first orders are to be ready by July 1.

FLAMEPROOFING STRUCTURAL MATERIALS WITH BOROPHOSPHATE RESIN

By C. A. Crowley, Ph.D.,* and J. B. Mullen, M.S.,**

Should an enemy decide to bolster his own morale and impress us with a bombing attack, our chief danger would be from fire. Incendiary bombs by the hundreds can be carried in a plane which can transport only a few explosive bombs. So we should do what we can to increase the fire-resistance of wood structures, particularly those of military significance such as wood hangars, barracks, etc.

Some work has been done with ammonium salts of phosphoric acid and salts of boric acid, but these materials have shortcomings. A recently developed material with few if any defects is a sodium borophosphate polymer, commercially called Abopon.

This material is being satisfactorily used in fireproofing textiles, theater drops, etc. Its properties for application to structural materials has been the subject of study. Various commonly used panels were impregnated with 25, 50 and 75 per cent solutions of Abopon. They were then tested with a blowtorch adjusted so that the flame was 1 in. from the panel, with the blast continued for exactly 30 seconds after the material began to flame, and then shut off. Times required after that for flames to cease, and for afterglow to cease, were recorded (see p. 26). Superiority of the treated panels is apparent from these figures. Light, porous

---

* Consulting Engineer, Chicago, Ill.
** Chief Chemist, Technical Service Bureau, Inc., Chicago, Ill.

(continued on page 26)
Lives Saved! Battles Won!
by a BRAIN and a PENCIL . . . .

A man hunched over a drawing board broods darkly as he sketches odd shapes on layout
tissue . . . .

Suddenly an excited gleam comes into his eyes. His pencil moves feverishly, bringing forth a graphic design,
 translating his brain child into a new device to serve his Nation in the arsenal of production. A device that will
speed Victory, save lives and achieve a quicker peace.

Men engaged in vital defense projects gladly pay a
few extra pennies for A. W. Faber's WINNER Techno-
TONE, America's standard of excellence in drawing pen-
cils. You, too, will find that ideas come more readily,
more smoothly with a WINNER Techno-TONE.

WINNER Techno-TONE
DRAWING PENCILS

13c each 2 for 25c $1.25 dozen
At all Drawing and Artists Material dealers and leading Stationers.
Write Dept. AR-2, A. W. Faber, Inc., Newark, N. J.

A. W. FABER, Inc.  NEWARK, N. J.

Companion Pencil — WINNER Thin Colored Checking — Superb colors and
strength. Chosest for all prints: 2381
Red; 2382 Blue; 2383 Green; 2385D
Yellow; 2437D Orange, 10c each. $1.00
dozen. Would you like a sample?

Try WINNER Techno-TONE at
our expense. Write for free
sample of your favorite degree
on your business letterhead.

WINNER Techno-TONE guarantees
all 4 Freedoms — Freedom from
Scratching, Smudging, Flaking and
Gritty Hard Spots. 17 scientifically
graded tones — 68 to 9H. Polished
rich green. Packed in metal box.
Made in U. S. A.
insulating boards show striking results.

<table>
<thead>
<tr>
<th>Material</th>
<th>Treatment</th>
<th>Time in Seconds to Flame</th>
<th>Time to End of After Glow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masonite</td>
<td>None</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>25%</td>
<td>33</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>50%</td>
<td>60</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>75%</td>
<td>75</td>
<td>1</td>
</tr>
<tr>
<td>5 Ply Fir Board (1/8&quot;&quot;)</td>
<td>None</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>25%</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>50%</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>75%</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>Celotex</td>
<td>None</td>
<td>3</td>
<td>167 over 300</td>
</tr>
<tr>
<td></td>
<td>25%</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>50%</td>
<td>130</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>75%</td>
<td>200</td>
<td>2</td>
</tr>
<tr>
<td>Nu-Wood</td>
<td>None</td>
<td>2</td>
<td>35 over 300</td>
</tr>
<tr>
<td></td>
<td>25%</td>
<td>37</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>50%</td>
<td>75</td>
<td>0</td>
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<td></td>
<td>75%</td>
<td>300</td>
<td>2</td>
</tr>
<tr>
<td>Upson Board</td>
<td>None</td>
<td>2</td>
<td>2 over 300</td>
</tr>
<tr>
<td></td>
<td>25%</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>50%</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>75%</td>
<td>31</td>
<td>2</td>
</tr>
<tr>
<td>White Pine</td>
<td>None</td>
<td>7</td>
<td>20 over 24</td>
</tr>
<tr>
<td></td>
<td>25%</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>50%</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>75%</td>
<td>14</td>
<td>0</td>
</tr>
</tbody>
</table>

Untreated panels were badly burned over the entire upper two-thirds of the piece. (Each panel was clamped at bottom, and torch flame was directed at a point 2 in. from top and 4 in. from bottom of panel.) In sharp contrast, a round charred area not more than about 2 in. in diameter, and generally smaller, is the extent of damage to panels impregnated with Abopon. Also, exposure to the torch flame was greater for treated than for untreated specimens, since it took longer for treated pieces to flame.

Resistance of treated materials to fires caused by incendiary bombs, glowing sparks or the like was tested by means of hot blocks. A steel block $\frac{3}{4} \times \frac{3}{4} \times 4\frac{1}{2}$ in., weighing approximately 10$\frac{3}{4}$ oz., heated to 1500-1600°F., was laid on a test panel for exactly one minute. Treated panels, without exception, ceased to flame or glow within 20 seconds after removal of the block; untreated panels, in every case, continued to glow for over a minute and had to be quenched. Treated panels were charred only in an area roughly outlining the place where the block lay; the others were charred over virtually their entire area. Furthermore, actual penetration was markedly less in all treated panels. These tests prove that while treated material may char, and may even flame while in actual contact with the hot object, flames will stop and charming will cease almost at once when the hot object cools or is removed.

Treated materials were also tested for possible loss of the fireproofing agent due to rain. The test was more severe than ordinary exposure. At its conclusion, the average loss of Abopon by weight was approximately 30 per cent. The materials tested were not painted. Yet, Abopon is not soluble in alcohol or oils and therefore can be easily covered by paint or lacquer to protect surface, so that loss due to rain could be made negligible. In fact, cost of painting might be reduced because borophosphate resins seal the porous surfaces of the materials, and prevent raw wood from "sucking in" paint.

---

**EXPERIENCE COUNTS—ALWAYS!**

Our 50 years experience produces cold storage doors which efficiently protect the contents of refrigerated rooms.

JAMISON-BUILT DOORS—always essential to the best protection of perishable products—are today a vital link in national defense. For NO FOOD MUST BE WASTED.

Why call for anything less than the best—at no extra cost? Specify JAMISON-BUILT DOORS.

Consult nearest branch or address

Jamison Cold Storage Door Co.
Jamarson, Stevenson and Victor Doors
HAGERSTOWN — MARYLAND

---

**COMPETITION FOR AIRPORT BUILDING**

at Fitchburg, Massachusetts

The Fitchburg Municipal Airport Commission, George R. Wallace, Chairman, announces an architectural competition for the design of an administration building at the Municipal Airport.

Copies of the program may be obtained from Joseph Hudnut, Professional Adviser, Robinson Hall, Harvard University, Cambridge, Massachusetts.
"He couldn't get into that crowded washroom"

Maybe it is stretching a point to think the boss would use his own office for a washroom.

But there are plenty of washrooms where the traffic jams are enough to make him want to.

... ...

Today, such conditions can easily be avoided with the planning help of the Scott Washroom Advisory Service.

This free service offers new technical data on traffic flow, fixture arrangements and sanitary needs... the assistance of trained staff members to provide material you need to plan washrooms for efficiency, comfort and economy in use.

For details, and for a set of Don Graf Data Sheets on washroom planning, write Scott Paper Company, Chester, Pa.

See our listing in Sweet's Catalog

SCOTT WASHROOM ADVISORY SERVICE
offered by the makers of the famous
new "Soft-Tuff" ScotTissue Towel and ScotTissue Service Roll
EVERY INDUSTRY, every responsible man in industry, has the present duty of answering two questions.

FIRST ONE IS: Are we, am I personally, doing everything within my power for the war? Our answer here at Alcoa is a plain, unqualified, yes.

NEXT QUESTION IS: What are we doing about the day when we will all need business, which is the polite way of saying, when millions of jobs will be needed for the boys who come back, and for the boys who stayed back to make the weapons.

IMAGINEERING, you know, is the word we have coined to define what we business people have all got to do about the future; about the products we are going to make and the services we are going to be able to offer when this war is over. Imagineering is imagination plus engineering.

HOW DO YOU DO IT? One way would be to figure out, now, how to take advantage of all the aluminum that is going to be available.

QUICKEST WAY TO GET AT IT is to take one of your products or a piece of equipment that “just couldn’t” be made of aluminum, and ask yourself, Why not?

MEANING, OF COURSE, why not light; why not stronger for the same weight; why not resistant to corrosion, and so on, ad infinitum. The first man in any line of business who calls tradition a liar, and things-as-they-are a millstone, is the man who is going places; the man who is going to make peacetime pay rolls.

THAT'S IMAGINEERING AT WORK. We've got some ideas here at Alcoa. We're trying to pass them out. We are looking for men who have made themselves receptive by doing some solid Imagineering on their own hook, in their own fields.

Aluminum Company of America, 2167 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALUMINUM
Look in "Sweets" for full specifications on these FITZGIBBONS units for heating defense homes

80 FWA WARM AIR CONDITIONER
Automatically controlled blower provides forced circulation of warmed air. Designed in accordance with the specifications set up by the Procurement Division of the U. S. Treasury Department, meeting the requirements of FHA, USHA, PBA and FSA for Defense Housing. Fitzgibbons "Weldseal" construction positively insures against leakage of five gases. For hand firing with coal. Also available for use with oil or gas burner.

FITZGIBBONS 400 Series STEEL BOILER
The choice of architects and builders wherever low cost heating in small homes is needed. Beautifully adapted to defense housing using radiator heat with oil, gas or stoker firing, or with coal hand firing. Built-in copper coil provides domestic hot water. All the advantages of Fitzgibbons steel boiler construction in an attractively jacketed unit priced for the field it serves.

FITZGIBBONS 65 DA—80 DA—100 DA
A distinctly small home air conditioner which has every Fitzgibbons advantage of welded steel construction, and extremely low fuel consumption. Warms, humidifies, filters and circulates the air. Quiet in operation, beautiful in appearance.

Fitzgibbons Service to Architects stands ready at all times to cooperate with you in the solution of your heating problems. Just say the word.

Fitzgibbons Boiler Company, Inc.
101 PARK AVENUE, NEW YORK, N. Y.
Branches and Representatives in Principal Cities
REVIEWS OF CURRENT LITERATURE

By ELISABETH COIT, AIA

THE EARLY ARCHITECTURE OF NORTH CAROLINA: A Pictorial Survey by Frances Benjamin Johnston, with an Architectural History by Thomas Tileston Waterman. Foreword by Leicester B. Holland, FAIA, Chapel Hill, Univ. of North Carolina Press, 1941. 290 plus xxxv pp., 93/4 by 123/4 in., illus. $10.00

HOUSES OF OLD RICHMOND. By Mary Wingfield Scott. Richmond, Va., The Valentine Museum, 1941. 332 plus xii pp., 73/4 by 103/4 in., illus. $5.00

"Colonial colonial" is Professor Holland's name for North Carolina's land-born style of the period covered in this book—"early 18th Century" to about 1850—as distinguished from the Spanish, French, English, or other sea-born colonials which adorn the other North Atlantic tidewater states.

From one skillful hand come all the photographs, totalling about 330, and within a natively harmonious frame showing great variety—with a stairway upside down to add piquancy. The chapters on the churches and on the domestic architecture of the tidewater and the foothills will be to all but the most initiated an astonishment delight.

Acknowledgments are made to the Carnegie Corporation, the H.A.B.S., and Colonial Dames.

Dr. Scott's interest and emphasis are on the side of local history in her story of Richmond's rise from village to commercial and social capital during 1737-1860, as expressed in over a hundred of the homes erected during that period. Short readable accounts of the families concerned and of the later happenings to their homes are supplemented by references to source material; and the pictorial record is the more valuable because it includes about fifteen houses no longer standing.

BUILDING CONSTRUCTION: Materials and Types of Construction. By Whitney Clark Huntington. New York, Wiley, 1941. 674 pp., 6 by 9 in., illus. $6.00

This is a thorough revision of a standard work by the head of the University of Illinois Civil Engineering Department, made to include the past decade's developments in materials, construction types, insulation and acoustics.

The work, designed for students of engineering and architecture and for graduates of limited or specialized practical experience, is in textbook form and cyclopedic in scope, including industrial, scientific and technological aspects of the subject. The well written text, clothed in one of Wiley's best bold-face, roman and italic ensembles, defies fatigue and misunderstanding in the reading and forgetting in the sequel. Of the figures, numbered 237, a high proportion consists of full page groups of diagrams containing from half a dozen to three times that number of well drawn, well captioned drawings from which a child or the merest of laymen could get a good idea of cavity brick, hollow tile, steel column, stone masonry, glued-laminated truss, and other construction types. References at the chapter ends run from two or three to three score and ten. The index takes all the space it needs both for quick reference and for a legible summary of the contents.

THE PUEBLOS: A Camera Chronicle. By Laura Gilpin. New York, Hastings House, 1942. 124 pp., 7 by 93/4 in., illus. $3.00

This chronicle, twenty years in the making, is primarily authored by a photographer, who acknowledges in generous detail contributions by archaeologists and others to the quite superlatively well organized, attention-compelling text, consisting partly of a short introduction, partly of longish captions immediately adjoining the 75 fine photographs they complement.

While the latest period naturally shows more strictly architectural photographs, pictures of earlier periods powerfully present the extent and settings of dwelling groups, dance piazas, "castles" protecting water sources, and other communal structures, holding their own in their unimaginably gigantic natural surroundings. Among the later dwellings one recognizes with a start that neither the one-family, compact, dazzling, white-walled, flat-roofed Acoma dwelling with its 12-paned double hung sash, nor the terraced group of apartments of similar construction with outside stairs is not just plumb "modern."

EARLY CHURCHES IN PALESTINE. By J. W. Crowfoot. New York, Oxford Univ. Press, 1941. 166 pp. plus 31 plates, 6 by 93/4 in., $3.50

Of mainly archaeological interest, this book by an author long resident in the near East— at the Sudanese and Egyptian Ministries of Education and as director of the British School of Archaeology at Jerusalem—continues the record of churches cleared since 1920. Those of the fourth to the seventh century—the period which opened Europe's dark ages but which was bright with the architectural record of Christian achievement from Constantinople to Africa—forming the subject of the 1937 Schweich Lectures of the British Academy are here shown, the fragmentary finds being described and illustrated by some fifty detail photographs and a score of plans.

THE ST. MARK'S NEIGHBORHOOD: A Study of Housing and General Property Conditions in a Congested Urban Area. New York, Community Service Society, 1941. 43 mmp., pp. 81/2 by 11 in., diagrams. $0.50

This survey of 95 acres containing 22 blocks in Manhattan's Lower East Side tells in competent prose and 11 maps of the "improvement" of Peter Stuyvesant's orchard with reference to historic development, population changes, vital statistics, land values, building values, age and type of structure, parks, playgrounds and other communal facilities, alterations to buildings during the last decade, tax arrears and zoning regulations. Recommendations are made for the various parts of the area with respect to the recent New York State Urban Redevelopment Act. The Society's Housing Committee, which made the study in cooperation with New York University's School of Commerce and the Real Estate, Accounts and Finance Departments, plans to take the necessary steps for putting its recommendations into action.

(continued on page 32)
Day and night Carey plants hum with activity, speeding production of materials needed in America's all-out war effort.

Carey Heat Insulation for power plants and aviation gasoline refineries... Carey Shingles and Roll Roofing for housing from barracks to defense workers' homes... Carey Built-Up Roofs for machine tool and aeroplane engine plants... Careystone Corrugated Siding and Roofing for munition plants, boiler houses, etc. Elastite Expansion Joint for roads and runways... Carey-Miami Bathroom Cabinets and Accessories for public and private housing projects... these but highlight the unending stream of Carey Products going into America's vital construction program.

While Carey has thus been doing its utmost to help meet America's war needs, civilian requirements have not been forgotten. There are legitimate demands for repairs, remodeling and new construction in every community—needs that can and will be met by the building industry.

Meanwhile Carey research continues unceasingly to seek improvement—to check and recheck raw materials and formulas—to subject every product to gruelling tests... all to the end that the architect may specify CAREY Products with the sure confidence that they will render outstanding service. For catalog and details, address Dept. 21.
HOW TO DESIGN AND INSTALL PLUMBING. By A. J. Matthius, Jr. Chicago, American Technical Society [c. 1941]. 442 pp., 5½ by 8½ in., illus. $3.00

A slightly enlarged edition of a practical handbook first published less than two years ago, written by a technician and teacher for student, tradesman and home owner. The material ranges from rural waste disposal to institutional plumbing; both the text and illustrations—these chiefly diagrammatic—are clear and informing; there are questions for test and revision purposes and a serviceable index. Readers will wonder now and again: at inclusion, for example, of several non-essential full-page indistinct half-tones; at the post-dating in the imprint; at finding the portable bathtub among historic "installations"; at the statement that the bidet, "at one time used in residences," is "a form of bath used in hospitals to wash the lower extremities of the body."

PERIODICAL LITERATURE


A sympathetic expose of the parts played by business, by tradition, by snobbery, and by free imagination in the making of buildings which are good or bad because "within the terms of each problem involved they are a good or a bad answer to it." Home building continues to show little progress, although California homes and even a few of the latest experimental defense houses show originality and spontaneity. On the other hand, where tradition has little say American architecture combines service and beauty, solidity and economy of line and material; witness the San Francisco and Bronx-Whitestone bridges, schools of different types, outdoor recreation areas such as Jones Beach, complicated express highways and the TVA dams.


Astonishingly little known damage to works of art in Greece is reported as a result of the war. Delphi and Olympia were not under fire; destruction surrounds the Heraklion Museum in Crete but the Museum escaped; a bomb exploding in the Museum garden at Thebes did no harm to the exhibits; explosions at Eleusis broke the Museum windows and shook some of the mended pottery to pieces; some of the Acropolis...
MAHON Rolling Steel DOORS

MULTIPLE DOORS...

The Practical Installation Where the Door Opening is Extra Wide

Where an unusually wide door opening is to be fitted, as pictured above, and the entire opening is used only occasionally, the practical and economical installation is two Mahon Rolling Steel Doors with an intermediate hinged or removable center post, which forms the center guide channels in which the door curtains operate.

This post can be released at the floor and either swung up out of the way or removed altogether, thus clearing the entire doorway for unobstructed passage when desired. The doors can be fitted with either chain-gear or power operating mechanisms and can be raised or lowered individually or in unison.

Complete particulars of this and other installations will be found in Sweet's or in the NEW Mahon Rolling Steel Door catalog, just issued. If you have not yet received your copy, send for it at once.

THE R. C. MAHON COMPANY • DETROIT • CHICAGO

Manufacturers of Rolling Steel Doors, Shutters and Grilles, Steel Roof Deck, Kalamein Doors, Tin Clad Doors, Cast Iron Roof Sumps and Roof Sump Recesses.
and Kerameikos Museum’s treasure had been removed to safety, and in the National Museum smaller objects stored in the basement of the new wing were protected by five stories of reinforced concrete construction above; Corinth’s earthquake-proof Museum with doors and windows sandbagged is better able to withstand explosion than any other in Greece: here smaller pieces were stored, and sand was laid deep in the sculpture gallery to provide a soft bed for statues left standing.

**MONOGRAPHS.** Oculus. New York (New York Chapter of AIA), December, 1941, p. 1

In reply to a member’s question as to the appropriateness of the Monograph series “Architecture and Design” as a vehicle for the work of AIA members, the Chapter Committee on Professional Practice records its opinions: “The... system of publishing the work of individual firms is a valuable contribution to the public relations of the profession. To make such publication commercially possible, it must be supported as are other architectural magazines by advertising matter. Provided pressure methods in soliciting advertising are not used, and provided the space to the advertiser is reasonably equivalent to the price... no objection to this method of publication.”

**OXALIC ACID... [and Other Products from Wood Waste],** Michigan Architect and Engineer, Detroit, Nov., 1941, pp. 97-9

New plastics, comparable in price with today’s cheapest, are promised for the near future by a new process producing lignocellulose from wood waste. This material, combined with a fraction of the phenol-formaldehydene-resin now used in making plastics, will make a plastic suitable for articles required by defense programs. Oxalic, acetic and formic acids as well as wood alcohol are also reclaimable by improved processes from sawdust.


The Kansas City Building Commission proposes for the City Building Code measures estimated to reduce by a fourth or more tornado damage, such as that sustained last fall. Rafters should be anchored to the studs by strap iron instead of nailed; substantial rod braces should be provided for all chimney breasts; diagonal sheathing from sills to plates should be well nailed to all parts of the frame; bottom sills to be bolted to the foundation.
Florida's alive with lovely colors, but the Hotel Whitman, in Miami Beach, has scenery all its own—a floor of FINE TERRAZZO made with Atlas White Cement.

The architect chose wisely when he chose FINE TERRAZZO made with Atlas White portland cement. He knew it would reproduce any pattern, and reproduce it well. He knew its fresh and vivid colors would last a lifetime. And in addition, he knew upkeep would be practically nil, except for regular cleaning.

Next time you plan a floor, plan on FINE TERRAZZO. And just to be sure its colors glow brightly—plan on using Atlas White portland cement. It comes both plain and waterproofed. See Sweet's Building File, Section 11.24 for further details, and 24 full-color illustrations of FINE TERRAZZO. Or write us for free book, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York City.

OFFICES: New York, Chicago, Philadelphia, Boston, Albany, Pittsburgh, Cleveland, Minneapolis, Duluth, St. Louis, Kansas City, Des Moines, Birmingham, Waco.

This FINE TERRAZZO floor made with Atlas White cement was designed for the Hotel Whitman by Architect Roy F. France, Inc., Miami Beach. Installation by Venetian Art Marble & Terrazzo Co., Miami. Colors: Red Champlain Marble; Belgian Black Marble; Yellow Verona Marble; Royal Green Marble.
IN 1919

UNIQUE RECONSTRUCTION

BOSTON CUSTOM HOUSE
was described as "notable usage of historic edifice as base for new tower." Peabody & Stearns, Architects.

IN THAT YEAR, TOO, PAYNEHEAT MADE BUILDING NEWS

With constantly improved design, based on sound research, PAYNE has led the Industry in pioneering gas heating progress. Now, as America's largest manufacturer of gas heating equipment, PAYNE never relaxes this constant insistence on better engineering, better materials, better performance. With 69 double-tested styles and sizes, there's a PAYNE unit for every heating need. investigate PAYNEHEAT thoroughly—and you'll specify it firmly! See Sweet's, Western States AEC, our convenient AIA file... or ask your PAYNEHEAT Contractor or Gas Company.

PAYNEHEAT

MORE THAN A QUARTER-CENTURY OF GAS
SPECIALIZATION

Payne Furnace & Supply Co., Inc., Beverly Hills, California

Above: PAYNE Gravity Unit. Also: Modern Console, Zoneair, Floor Furnace, Duplex Furnace, Space-saver Unit, Sentry Forced Air Unit, Industrial Units.

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SEE OUR CATALOG IN SWEETS
REMODELING—A WARTIME MANDATE

With the pinch of priorities getting painful, as forecast by Architectural Record (AR 11/41, 1/42), and in view of the President's recent galvanic call for war production, the rehabilitation of existing structures is increasingly indicated.

Reasons for modernization are impelling: 1. Speed and more speed is the cry that accompanies every order for industrial buildings or defense housing; 2. Utilization of existing buildings saves critical materials for still more urgent use. The call comes clearly from Washington, implemented with the assurance of priorities assistance for every directly essential modernization project.

The professional aspects of modernization should need no belaboring. While many firms of architects and engineers are swamped with war work, their offices crowded with new personnel and lighted into the wee hours, others find themselves becalmed in non-defense areas. To these, modernization may prove the only means of providing for civilian building needs. And the most-nearly-priorities-proof means of keeping the office intact until the mushrooming defense program calls for its talents, or even until the post-war period opens the door to manifold new opportunities.

As to industrial buildings, a recent survey of the National Association of Real Estate Boards indicates that when the United States entered the war there was usable space in 76 per cent of the cities of the country, but that in half of them there was already a practical need for modernizing industrial space. Every movement since then to intensify the war effort adds to this need, as it broadens the list of items required for military operations.

In housing, the push for conversion and alteration has been on for some months. Even before the famous "SPAB-9" order, FHA had begun its "Repair for Defense" program, giving every encouragement in financing to such rehabilitation as would create new housing units in defense areas. Priorities aid carries higher ratings than new construction for defense workers. And such modernization is specifically exempt from Federal Reserve Board restrictions on credits. FHA Title I has been amended to give additional inducements. Finally, automobile and tire restrictions will inevitably put a premium on close-in locations, giving a further competitive advantage to large old houses that are simply crying for improvement.

HOLC, too, has joined in the campaigning, and has undertaken to supply free advice to property owners. HOLC has a $100,000 appropriation from the President's emergency funds to hire fee architects and technicians to supplement its own staff. This agency has gone so far as to suggest mass modernization much along the lines of slum clearance.

"Intelligent leadership combined with exceptional vision and technical skill will be necessary," says Howard Leland Smith, chief of the architectural section of FHA, "if real and lasting benefits are to be obtained. It seems logical, therefore, that the architect, by reason of his experience and training, should assume a large share of this leadership."
RENOVATED EXTERIOR. White composition shingles resurface the first floor; terrace of brick and slate

HOUSE REMODELING

By MORRIS LAPIIDUS, Architect

WARTIME PRIORITY LIMITATIONS and mounting costs are a serious deterrent to the construction of new private homes today. But in most communities, there are many outmoded houses, purchasable at reasonable cost, which can be advantageously remodeled according to modern standards with materials that are readily available. Frequently these houses contain heating and plumbing systems that need little or no change. In the following notes, based on my experience with my own house, shown on these two pages, I have attempted to point out a few considerations and rules of thumb which are pertinent to any such work undertaken today.

EXTERIOR. The most everyday house can be considerably improved in appearance by slight additions to and deductions from the original structure. The "style" of the house, set by the original structure, need not obviate achieving a modern character—which derives largely from simplification and designing interior areas to serve their functions more logically. Super-imposition of "modern" features results only in banality and superficiality. To keep costs low, minimize exterior alteration work, and avoid actual structural change wherever possible. Instead of tearing out side walls and roof, resurface with available, durable materials. Retain present fenestration as far as is compatible with the new interior living spaces. Judicious landscaping will increase the apparent size of the plot and help overcome the stilted appearance of many of these older houses.

PLAN. In securing an open, modern plan within the old framework at moderate cost, leave exterior walls as they are and use such existing interior partitioning as possible. Throw unused hall space, small parlors and music rooms into one sizable general living area, adapted to many uses and furniture arrangements. If the house has an unnecessarily large kitchen, rearrange for a compact modern kitchen, plus a breakfast room or dining alcove. Make use of left-over areas for new closets, a laveratory or powder room.

INTERIOR MATERIALS. Select available materials for long life and low maintenance cost. Several modern panel or roll surfacing materials are available that can cover over old walls and ceilings and unify the different areas. Replace heavy molded trim with simple, flat trim. Use light fixtures solely as light sources and not as points of decoration.
LIVING AREA. A fabric-surfaced wall covering is used on walls; the ceiling is of compressed wood panels.

BAR DETAIL (shown closed below)

STAIR CORNER. Built-in furniture flanked by cabinets of rift-sawn oak.

TOWARD DINING ROOM. A card table and cabinets line the wall.

DINING ROOM. One wall is mirrored; the floor is linoleum.

KITCHEN-BREAKFAST ROOM.
REMODELED FARM HOUSE

WILTON, CONN., FARM HOUSE. POLHEMUS & COFFIN, ARCHITECTS. A good example of the type of residential remodeling which has been widely practiced in the older sections of the country. The process includes both retention and renovation of admired period characteristics and addition of modern living comforts. In this case, two wings were added—one at the side, one at the rear—and the old central structure was reconditioned and replanned to fit in with a contemporary scheme of living. In the old portion, original woodwork which existed under numerous layers of paint was brought back to the natural wood and waxed. In addition to modern heating and plumbing, new facilities include insulation in all attic and new wing walls. The contractor for the job was H. C. Atwater, Inc.
TWO BUILT-IN UNITS

THIS PIECE OF FURNITURE, worked out in birch, combines cupboards, drawers, a glass-front china case and a writing table. The cupboards are accessible from both the kitchen and the dining room. The writing table is well adapted for use as a sideboard or as a serving bar for informal entertaining.

IN THIS CORNER UNIT, a desk and bookcase are joined to form a study area in what was formerly unused space. The desk surface is flush with and an extension of the top of the bookcase base. Both natural and artificial light come from the same direction. The entire unit is of bleached oak.
CITY HOUSE—
APARTMENTS

NOS. 9 AND 11 PARK AVE., NEW YORK CITY. JAMES E. CASALE, ARCHITECT. One owner acquired the two adjoining brownstone houses shown in the photographs. The one on the left was remodeled as the owner's home; the other (see plans) was converted into six housekeeping apartments—five of which were rented from the plans; the sixth by the time the remodeling was completed. Almost all of the original structure and materials were either salvaged and reused or renovated in their existing locations. Entrances were lowered to the basement level and new windows replaced the former doors. The facade was surfaced with imitation limestone. The architect reports: "The apartment rentals will, from present indications, exceed the cost of the entire job in less than three years."
THE GEORGE WASHINGTON HOTEL, ST. LOUIS, MO. FRANK CANN, ARCHITECT.

This is the fourteenth building that the owners have taken over as a liability, remodeled and changed into an asset. And one of the chief factors in its success, they emphasize, is that the existing structure was used as far as possible. Practically all partitions, window and door openings, heating and plumbing lines and wiring were reused. Before renovation, the 1908 wall-bearing structure contained 165 hotel rooms and large (unprofitable) lobbies and dining rooms. Today there are 72 apartments, 66 hotel rooms and five stores—almost always 100 per cent rented.
STORE REMODELING

By DALE STETSON, Designer of the remodeled Davison Paxon Store, Atlanta, Ga., shown on the opposite page and on page 46

Due to present conditions, many materials customarily used in store remodeling have become scarce, prohibitive, or off the market. Under the worst conditions, however, we will probably still have left the two most important materials—wood and paint. A lot can be done with these alone.

Confronted with this situation, store designers can do one of two things—change details where possible, or make no change and use temporary substitutions where necessary. For example, certain items of hardware such as drawer pulls can be eliminated without sacrifice of design standards, as indicated in sketches A, B and C. Small sliding doors will function acceptably on a rounded wood track as shown in sketch D. Old hang rods can often be reused. If they cannot be plated now, paint them a bright color as often as necessary.

If fluorescent wall case lighting is not available, most old stores have plenty of used incandescent equipment that can be reused.

Many pieces of old fixture cabinet work which were formerly discarded because of labor expense involved in modernizing them, can now be reused at a saving due to advances in the price of materials over labor.

It is possible that present conditions should change the designer's and store owner's approach to current modernization. Instead of thinking in terms of fine cabinet work and permanent installation, it might be wise—and profitable—to think in terms of temporary large-scale display, using display techniques—wall board and batten construction, with water color paint to dress up existing interiors. In other words, this would amount to a sort of masquerade, in which the boldest of colors and conceptions can be executed because they are not permanent, and because they are not expensive.
TYPICAL REMODELED CASE (above). Almost as much material was removed as was added. Replacing wood and glass doors with their mechanisms and tracks were removed. A new cornice was added with a groove provided for cut-out letters. A dash board just above the base gives an even hem for dresses on display, conceals lighting and facilitates dusting.

Store owners frequently write off the expense of modernization in 10 years, charging the department involved so much per year—let's say $1,000 a year for 10 years. Using this technique, an owner could change his department twice a year for about $200, always have a store with a fresh appearance and still save $800 a year toward the kind of modernization that is eventually desired.

The alternate theory is to do the best possible under existing difficulties, building well and planning well. One thing is certain. There will be no priority on the time and talents of those whose business it is to give intelligent study to store conditions and plans for the future.

DEPARTMENT STORE

DAVISON PAXON DEPARTMENT STORE, ATLANTA, GA. DALE STETSON, DESIGNER AND SUPERVISOR. In remodeling this department store, the problem was to reassemble and modernize each department following a preconceived plan for the whole store. A typical "before" and "after" plan is shown at right. As cost was a controlling factor, all existing equipment was re-used; the work on both renovating of old equipment and construction of new backgrounds—cabinets, cases, etc.—was handled in the store's own carpenter and paint shop under the direct supervision of the designer, whopreview was employed by the store in an executive capacity. By this means, new fixtures were manufactured at cost, and knotty problems of how to use all salvageable materials were handled with least possible delay. In round numbers, the cost averaged about $1 per square foot of floor space. The details at the top of the page illustrate a few of the more adroit improvements which were made at low cost.

FEBRUARY 1942
NEW BOOK DEPARTMENT

ABOVE, the birdseye view of the ground floor book department illustrates the planned organization that governs the whole store. The process involved remodeling of existing units (see above), construction of new cases and units, and rearrangement of elements to form an effective and inviting department.

AT RIGHT are three details. The top one shows a variation on the remodeled cases detailed on the preceding page. Here, with the cases used for children’s clothes, two drawers are incorporated at the base.

THE MIDDLE PHOTO shows extremely inexpensive new display cases in the basement store. Built entirely of ¾-in. pine, they are finished with half-round trim. Paint and good lighting do the rest.

AT BOTTOM is the second-floor shoe shop, separated from the main floor physically but not visually by a low partition just out of the photograph at left.

BOOK TABLE—BEFORE AND AFTER
Doors removed; shelves added; more merchandise displayed.
SPECIALTY SHOP

FUR SHOP, NEW YORK CITY. PAUL BRY, DESIGNER. The problem was to separate the apartment house and shop entrances, provide direct access to the shop from the sidewalk, dramatize a specialized display case, and to improve the design generally. The interior finishes of mirror, fabrics and glass have special news significance in the face of current priority limitations.

EXTERIOR. Business expansion to include the second floor space is architecturally expressed in the unified "after" scheme. The central, triangular display case is reflected in wall mirrors at either side of the entrance recess which are fully visible to those approaching the store from either direction.
STORE

PARMELEE-DOHRMANN STORE, LOS ANGELES, CALIF. HARBIN F. HUNTER, ARCHITECT. Although the new store occupies the upper floors and basement of this 4-story building, skillful planning called for only two bays plus a rear entrance corridor on the first floor. By this device, a minimum of expensive ground space was required; yet the building elevators are part of the store, and there is valuable direct access from the large parking lot at the rear. The new store front is faced in ceramic veneer and glass block. Trim and letters are of nickel silver. The general contractor was C. W. Driver, Inc.

LOW COST PRIVATE OFFICE

SUPERVISOR’S OFFICE, IOWA WPA ART PROGRAM, DES MOINES. WILLIAM FRIEDMAN, DESIGNER. The problem was to design inexpensive interior and furnishings, to be executed by unskilled or semi-skilled labor, for a typical office space with a wall-to-wall window facing west. The ceiling was furred down and covered with painted corrugated board. The east wall was furred and finished in 3-ply fir squares with pickled finish.

1. WEST [WINDOW] WALL. The plant shelf is supported by braces and ceiling wires, providing clearance for full-length draperies.
ABOVE is a detail of wall case unit shown in the photo (at right) of the first floor rear. Typical of most of the fixture work, the case is of lath, plaster and wood. BELOW are three schemes developed to give structural columns a useful and effective merchandising task.

2. FURNITURE and cabinets of plywood with pressed wood work surfaces
3. EAST WALL covered in plywood. Vents conceal exhaust fan
OFFICE BUILDING

FIRST NATIONAL BANK BUILDING, SAN DIEGO, CALIF. FRANK L. HOPE JR., ARCHITECT. From this 30-year-old building, the projecting cornice and belt courses, engaged columns and arches were removed. The bottom two floors were resurfaced with bronze-colored terra cotta units above a black granite base. The upper wall surfaces of buff glazed brick were retained and cleaned, and where elements had been removed the new surfaces are of glazed tile, specially fabricated in color and size to match the existing face brick. Cost: $60,000. The general contractor was Walter Trepte.

FACTORY OFFICES

GORTON MACHINE COMPANY OFFICE BUILDING, RACINE, WIS. FRANK J. HOFFMAN, ARCHITECT. The enlarged office building is an extension of the first floor level beyond the confines of the old building (at right). The drafting room and chief engineer's office are at the rear, nearest the factory; purchasing department and general offices are logically nearest the main lobby. On the second floor are air supply and exhaust fans and compressor equipment. Control of air for both ventilation and cooling is individual with each office. There is a complete intercommunicating system between offices and factory building. The general contractor was Johnson and Henrickson.
BANK

UNION FEDERAL SAVINGS AND LOAN BUILDING, EVANSVILLE, IND. RALPH LEGEMAN, ARCHITECT. The problem was to convert a 25-year-old building into offices for the association and a related insurance agency. Columns were removed from the public space and replaced by reinforced concrete columns (and attendant new second-floor framing) at the four corners of this area. Plate glass is used on the front of the building; glass block elsewhere. Ventilation is accomplished by fan circulation; the building is year-round air conditioned. Interior walls are surfaced in plaster, oak plywood or flexible wood veneer. Contractor for the job was J. Bippus & Son.

ORIGINAL 1862 church

ST. JOSEPH'S CHURCH, TIFFIN, OHIO. ALOYS FRANK HERMAN, HOWARD THOS. SIMONS, ARCHITECTS. General contractor, Hossler Brothers.

RECONSTRUCTED after a damaging fire, the new church was awarded an Ohio Architects Society medal for excellence of design. The new spire is of fireproof construction.
As materials for normal types of new construction become more and more scarce, the technical as well as the economic justification for remodeling becomes increasingly apparent. “Doing the most with the least” is more than ever a mandate that controls wartime building. Thus, ingenious construction economies in remodeling operations become of first importance in overcoming the limitations of a wartime emergency.

Phrased differently, this means that critical materials must be conserved in remodeling as in new construction. This is fundamental to any building operation today—whether or not the structure rates priority assistance. And the extent to which technical ingenuity can achieve sweeping conservation of scarce building materials may determine—now and in the foreseeable future—whether or not a project will go forward beyond the stage of plans and specifications.

Following paragraphs—and the Time-Saver Standards details that accompany them—are notes that will be found useful in designing for the “war economy construction” of remodeling projects. They have been adapted from a wide number of reliable technical sources and are applicable to a wide variety of building types and structural conditions.

Foundations: It is fair to assume that foundation remodeling problems will be comparatively simple, primarily because elaborate alterations or complicated underpinning operations will probably prove too expensive in both effort and material in the majority of cases. But however simple they may be, foundations justify the greatest care in design, specifications and field supervision. Particularly important points to check are:

1. Type of structure. If reinforced concrete is indicated steel should be figured at the minimum (see pp. 59 and 60 of this issue) and the concrete mix carefully adjusted to it so that stability, continuity of bearing and anchorage and waterproofness are assured. The use of mass concrete with a less-than-usual proportion of reinforcing is a possibility that deserves investigation in each case.

Timber supports—particularly where re-spanning is indicated—may be applicable depending upon local conditions. But not all grades or species of timber are equally good for such application. Recommendations of such agencies as the U. S. Forest Products Laboratory and the National Association of Lumber Manufacturers should be followed. And in virtually all cases foundation timbers of any sort should be treated with a wood preservative approved by the same technical authorities.

2. Waterproofing. This is partly a matter of providing adequate surface drainage and partly a question of flashing. It involves also the construction of the foundation walls and sub-surface floors. In concrete construction both integral and membrane waterproofing may be necessary. Dense concrete made with a water-cement ratio not exceeding 1 to 6, properly placed and cured, is inherently water-tight. But unit masonry walls will usually require two exterior skin coats of 3/4 in. thick, using a proportion of 1 part cement to 2 parts sand and embodying a stearate or some other type of integral waterproofing compound. Usual types of metal flashing use critical materials and will be increasingly scarce. But new types made of corrosion-proofed sheet steel and asphalt coated flexible membranes are appearing in place of copper, zinc and lead sheets.

Floors. Most remodeling complications relative to floors involve either waterproofing or heat losses in sub-surface floors on fill or methods to prevent sound transmission between floors. The waterproofing problem can be variously solved by measures similar to those used in sub-grade walls to accomplish the same purpose. To reduce heat losses and prevent condensation some sort of insulation must usually be employed—either as surfacing or as a part of the floor construction itself.

For example, with a 4-in. concrete slab poured on earth, about 74 per cent of heat loss can be stopped by installing a yellow pine sub-floor on sleepers and surfacing with maple or oak flooring. Where a concrete floor already exists, an even more efficient method is to install a 1-in. layer of rigid insulation board protected on both sides with membrane waterproofing and then pour an additional concrete slab on top. Even without additional surfacing this construction effect about a 67 per cent reduction in heat loss compared with a double-slab floor minus the insulation. And if the wood flooring just described is added, the heat loss is reduced an additional 12 per cent.

The problem of controlling sound transmission through floors also may involve use of a double-membrane floor with a “sandwich filling” of insulation blanket. Suggested details of such constructions are shown in the Time-Saver Standards on page 55. Although these do not, by any means, exhaust the structural possibilities, they emphasize two cardinal principles of sound transmission control: one, development of a relatively great mass in material; and second, damping of sound vibration through use of dissimilar materials in close association.

Walls. Graphic suggestions in Time-Saver Standard details do not include several excellent construction methods that involve extensive use of metal—particularly the use of metal studs for hollow partitions and solid partitions formed by plastering on both sides of metal lath. They do, however, reflect the wide adaptability of masonry and wood frame construction to remodeling problems.

Material in the following six pages of Time-Saver Standards was compiled and drawn by Carl T. Sigman. Sources included a large number of building material manufacturers, practicing architects and engineers and the technical staffs of a number of trade associations. Among those particular credit is due the following: Portland Cement Association, Structural Clay Products Institute, National Association of Lumber Manufacturers, the National Lime Association and the United States Gypsum Co.
REMODELING CONSTRUCTION: 1—Foundation Details

PLASTER OVER BASEMENT WALLS

NOTE—SHIELDS IN THESE THREDE DETAILS TO BE OF COPPER.

BARRIER SHIELD APPLIED TO FRAME CONSTRUCTION

NOTE—DEFLECTOR SHIELD APPLIED ONCE OR TWICE A YEAR.

DEFLCTOR SHIELD APPLIED TO BRICK VENEER CONSTRUCTION

COMBINATION SHIELD APPLIED TO SOLID MASONRY CONSTRUCTION

TERMITE SHIELDS

Scale 1" = 1'-0"
**Remodeling Construction: 2—Concrete Floors**

**Wood Floor Over Concrete with Underlayer of Nailing Concrete**
- Finished floor
- Flooring secured with 8d cut nails
- Asbestos-cement nailing concrete

**Wood Floor Over Concrete**
- Dampproof course consisting of 25 to 30 gallons of tar to each cubic yard of sand

**Finished Floor, Directly on Sleepers Set in Mastic Cement & Nailed to Concrete**
- Mastic cement
- Concrete nails
- To penetrate concrete 1/8" deep

**Wood Floor, Over Concrete with Sub-Base of Sleepers & Sleeper Fill**
- Rough flooring
- Concrete base

**Wood Block Floor Over Concrete**
- Surface to be filled or sealed
- Pitch or bituminous mastic binder
- Not more than 1/8" thick

**Wood Floor, Over Concrete in Mastic**
- Surface to be level and clean
- Pitch or bituminous mastic binder
- Not more than 1/8" thick

**Cork Tile Floor Over Concrete**
- Cemented and blind-nailed
- Troweled top coat of cement to cover conduits
- Mixtures of one part cement to four parts sand—surface must be level

**Wood Floors Applied Over Earth**
- Dampproof course consisting of 25 to 30 gallons of tar to each cubic yard of sand
- Foundation course of crushed stone mixed with sub-floor tar leveled and rolled in place
WOOD FLOOR OVER PRE-CAST GYPSUM BASE AND CEILING — WOOD JOISTS

CEMENT FLOOR OVER PRE-CAST GYPSUM BASE AND CEILING — WOOD JOISTS

TILE FLOOR ON FLAT-TOP AND BEVELED WOOD JOISTS

SOUND-CONTROL WITH STAGGERED JOISTS AND SUB-FLOORING

SOUND-CONTROL WITH INSULATION BLANKET BETWEEN ROUGH AND FINISHED FLOORING

SOUND-CONTROL WITH STAGGERED JOISTS AND INSULATION BLANKET

PARTITION OVER PARTITION PARALLEL WITH JOISTS

PARTITION NOT OVER PARTITION ON DOUBLE JOISTS

PARTITION OVER PARTITION AT RIGHT ANGLES TO JOISTS
NEW WAYS TO SAVE STEEL IN CONCRETE

With a huge building program still ahead, and with metals becoming almost daily more critical, architects and engineers are looking more and more to such non-critical materials as concrete. Concrete specialists have been no less active in attempting to simplify design technique to conserve reinforcing steel.

Recent statements from two authorities point the way ahead. Carried to a logical conclusion the comments of Dr. Hugh L. Dryden, Bureau of Standards, and studies by engineers of the Portland Cement Association would imply a revision in both the theory and practice of concrete design. At least they offer specific suggestions for conserving steel.

Steel in concrete floors

The comparison of steel requirements in various floor construction systems is by no means a simple subject, and authorities do not always agree. Dr. Dryden wrote recently: “The amount of steel needed in two-way reinforced slabs usually is considerably less than that needed in one-way reinforced slabs. The amount of reduction depending on the ratio of width to length of slab, the span, and the loading. In general, the steel reinforcement needed in reinforced concrete slabs may be reduced by the use of light-weight fillers of structural clay tile or hollow concrete blocks.”

Offering disagreement on some points are the results of some recent studies of specific designs, by the Portland Cement Association (see chart, page 60). P. C. A. engineers report: “In 1940, before the steel shortage became acute, seven types of concrete floor systems were designed including the supporting beams." The studies included three live loads—50, 100, 150 p.s.f.—and three span lengths—15, 20, 25 ft. At that time, comparative cost was the object, but today, while cost is still a vital problem, it is the steel quantities that are of special interest. The following steel quantities in lb. per sq. ft. of floor area for seven types of floors are taken from these design studies for 20-ft. span and 100-lb. loading.

<table>
<thead>
<tr>
<th>Type</th>
<th>Steel Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 20-in. metal pans</td>
<td>2.77</td>
</tr>
<tr>
<td>2. 30-in. metal pans</td>
<td>2.58</td>
</tr>
<tr>
<td>3. 12-in. masonry filler</td>
<td>3.34</td>
</tr>
<tr>
<td>4. 16-in. masonry filler</td>
<td>3.43</td>
</tr>
<tr>
<td>5. One-way slab</td>
<td>3.61</td>
</tr>
<tr>
<td>6. Two-way slab</td>
<td>3.70</td>
</tr>
<tr>
<td>7. Flat slab</td>
<td>2.13</td>
</tr>
</tbody>
</table>

*By the Structural Bureau of the Portland Cement Association. Design based on A.C.I. Code 1936 with f' = 20,000 p.s.f., f'' = 2,500 p.s.f.

“One point that stands out is the superiority of the flat slab*" design, which requires only 2.13 lb. of steel per sq. ft. The designs that have most steel are types 3, 4 and 6—floors with masonry fillers and the two-way solid slab. The floors with metal pans and the one-way slab are between the extremes...

“Neither flat slab nor solid slab ceilings need metal lath or plaster. Ceilings that require suspended ceilings with metal lath should have approximately one-half pound added to their steel factors. Types 1 and 2, with suspended ceiling included, will then require approximately 3.2 p.s.f., and compared with this figure both flat slab and solid slab show a definite margin of saving.

“Flat slab construction has been regarded as suitable especially for heavy warehouse loads. Actually, flat slab will often show a saving both in cost and steel for light load construction such as apartments, and it deserves consideration in many other occupancies.

“Increasing the load increases all steel factors, but the smallest increase in steel is in the flat slab, the superi-
ority of which becomes more marked
the greater the load.”

Lowering live load estimates

Steel conservation possibilities in
reinforced concrete columns, as given
by the P.C.A., are put in tabular form
on this page. The data compare tied
and spiral columns for different col-
mum sizes, different concrete strengths,
according to four different design
codes. The column load assumed is
500 kips, and the steel weights are
given per column with 12-ft. story
height.

Several conclusions are cited: 1. For
ordinary-strength concrete it is
advantageous to use tied columns,
that is, in normal column sizes. 2. In
small-sized columns, and ordinary-
strength concrete, spiral columns take
a little less steel than tied columns.
3. The opposite is true where the
design is based on 5,000-lb. concrete.
4. When loads are large and column
sizes small, a great deal of steel may
be saved by using high-strength con-
crete.

The P.C.A. goes on to point out:
“The laps used for splices of vertical bars
consume a considerable amount of steel. . . .
Except for unusual cases in which comparatively large bending
moments create tension in the columns, the vertical bars could still
be butt-spliced and the steel now used in laps conserved. Attention should
be given to welding ends of bars to
be spliced in columns, especially when
the bars are large. . . .”

Reinforcement in columns

Codes of many city building de-
partments force a waste of structural
materials by requiring inordinately
high live loads for many types of occu-
pancy. “It is clear,” reports the
P.C.A., “that many buildings de-
dsigned under present building codes
may be drastically over-designed and
that such practice involves an amount
of waste of materials which must
cause concern. The live loads recom-
ended by the U. S. Department of
Commerce Building Code Committee
should be adopted universally be-
cause their use will conserve building
materials.

“Ancorother source of waste originat-
ing in many city building codes is
their tendency to require columns to be
designed for excessive loads. It is
generally recognized that for many
types of occupancies the columns
need not be designed for the full live
load when there are several stories
above the column considered. The
committee’s recommendation is that
‘except in buildings for storage pur-
poses, the following reductions in as-
sumed floor live loads are permis-
sible in designing all columns, piers
or walls, foundations, trusses, and
girders.’

“Reductions of total live load carried:

Carrying one floor 0
  two floors 10
  three floors 20
  four floors 30
  five floors 40
  six floors 45
  seven or
  more floors 50

“For illustration, a column suppor-
ting eight levels (one of which pre-
sumably may be a roof) need not be
designed for more than one-half of
the live load on all eight levels. Not
taking full advantage of the reduc-
tions means that columns are over-
designed and material wasted.

Allowable working stresses

“The allowable stress in column
bars in both J.C. 1940 and A.C.I.
1941 is 40 per cent of the yield point
stress with an upper stress limit of
30,000 p.s.i. That means 16,000 on
intermediate and 20,000 on hard
grade. It is not customary to go any
higher, and the fact seems to be
ignored that the top limit in the codes
is 30,000 p.s.i. which, of course,
would be permitted only on steel with
a minimum yield point of 75,000
p.s.i. Here is an untapped source of
saving steel which deserves attention
especially under the present condi-
tions.

“Allowable concrete stresses are in
general given in percentage of con-
crete strength, and increasing the
latter may therefore be an important
source of saving material. With pres-
ent-day cements, a strength of 3,000
p.s.i. is a conservative value and de-
giners could well adopt much higher
strengths, all the way up to 5,000
p.s.i. In columns, loads should be
carried by concrete rather than by
steel, a subject that has already been
discussed. Using a higher concrete
strength for design purposes will go
a long way toward reducing rein-
forcement in beams for compressive
stresses, diagonal tension and bond.
It will also be helpful in regard to
reducing dead load, which is another
source of saving, especially in long-
span construction.”

Steel conservation possibilities in reinforced concrete columns, as tabulated by the Portland
Cement Association, giving weights of reinforcement for tied and spiral columns of various
sizes and various strengths of concrete. Conclusions of P.C.A. engineers are: 1. For ordi-
mary-strength concrete it is advantageous to use tied columns; 2. In small sizes spirals
take less steel; 3. The opposite is true with 5,000-lb. concrete; 4. When loads are large
and column sizes small, much steel may be saved with high-strength concrete.
DIVISION 4. STRUCTURAL STEEL

FED. SPEC.
Steel for Bridges and Buildings
(Replaces A 9.)
Includes references to:
Structural Rivet Steel.
Carbon-Steel Coatings
For miscellaneous Industrial Uses.
Tentative Carbon-Steel Forgings for General Industrial Use
A.S.T.M. A 7-39
A.S.T.M. A 141-39
A.S.T.M. A 351-39
A.S.T.M. A 27-39
A.S.T.M. A 235-40 T

A.S.T.M. SPEC.
Bearing plates, gussets, lintels. Limitations of job cutting and drilling. Plumbing and leveling tests and shop drawings.
Simplification of structural steel shapes.
Copies may be secured from the Steel Institute, 350 Fifth Ave., New York, N. Y.
The types of structural steel shapes have been reduced by this "simplification" and only those listed will be rolled.

OTHER REFERENCES
Published by American Institute of Steel Construction.
This may form the basis of Structural Steel Specification with the addition of several items required for the specific project such as:
Type of Paint. Type of field connections.
Planing and milling of columns and stiffeners.
Special holes in steel for attachment of other materials or passage of pipes, etc. Architectural clearances.
Separators for double beams.

DIVISION 5. ROOFING & SHEET METAL

FED. SPEC.
Lead; Sheet
Specify Grade A (purest) or Grade B; and weight per square foot. Weights in lbs. and approximate thicknesses are: 1 (1/16"), 1.1/2, 1 (1/32"), 2.1/2, 3 (3/64"), 3.1/2, 4 (1/16"), 5, 6 (3/32"), 8 (1/8"), 10 (5/32"), 12 (9/32"), 14, 16, 20, 24, 30 (1/8"), 40, 60 (1/4").

Copper; bars, plates, rods, shapes, sheets and strips
Specify: Forms and temper:
Bars—soft and hard.
Shapes—soft and hard.
Sheets—soft, hard and light cold-rolled (latter for gutters, leaders, cornices, etc.)
Strips—soft, hard and light cold-rolled (latter for gutters, leaders, cornices, etc.)

Solder; Tin-lead
Specify Grade; A, B or C for galvanized iron or zinc. Fed. Spec. E-Q-Q-Q-S-7571, Aug. 16 '41 suggests use of Lead-silver solder in place of above.

Solder; Silver
Iron and Steel; sheet, black and zinc-coated (Galvanized)
Specify: Iron or steel; type, gauge, class and weight of coating; state if to be oiled.
Types I Flat black sheet.
II Flat zinc coat sheets.
III Corrugated zinc coated sheets.

Classes: A—Extra heavily coated.
B—Heavily coated.
C—Moderate heavily coated.
D—Ordinary coated.
E—Lightly coated for severe forming.
Fed. Spec. E-Q-Q-S-696, Sept. 12, '41. Alternates for light metal coating and other protective coatings such as paint, enamels, lacquers, asphalts, porcelain-enamelled specified.

A.S.T.M. SPEC.
Lead-Coated Copper Sheets
Specify type of application: Type I molten lead; Type II electro-deposited lead.
Specify Grade: Weight of lead, both sides, 100 sq. ft.

Class A standard 12 15
Class B 30
Class C 40 50

Specify: If one side only is to be coated, if special textures are required.

Soft Solder Metal
Specify Grade: Tin-lead solder A & B grade.
Tin-lead-anthimony solder; A & B grades.

Silver Solder
Specify grade (1 to 8)

Zinc-coated (galvanized) Iron or Steel Sheets
Specify class of coating and gauge of sheet:
Class A—Extra heavily coated (no forming except corrugating).
Class B—Heavily coated (not intended for forming except corrugating and curving to large radii.
Class C—Moderately heavily coated (moderate bending).
Class D—Ordinary, for general utility (not for long life).
Class E—Light, tightly adherent coating for severe forming.
DIVISION 5. ROOFING & SHEET METAL  

continued

Lead Coating  
Specify Type: Type I calking lead, Type II lead wool.

Terne-plate (roofing tin)  
Specify: Material, Iron or steel; trade symbol IC or IX; and weight of coating, 8, 15, 20, 25, 30, or 40 lbs.  
Fed. Spec. E-QQ-T-301, Sept. 12, '41 suggests use of steel, cement or asbestos shingles, asphalt roofing, slate roofing, containing spec. for iron and steel sheets with surfaces prepared for painting, and porcelain enamelled.

Slate; roofing  
Specify if other than 3/16" slate is required. Specify Grades: A, highest, B & C. If special slate such as unfading or weather is required, so state. In accord with Simplified Practice Recommendation R 14-28.

Fiber-board; Insulating  
Specify Class C—roofing boards.

Terne-plate (Long termes)  
Specify: whether steel or iron; type and class, grade, weight and finish. Type I for general use such as cornices, kalamein, doors, etc. Type II and III for uses where drawing or forming operations are severe for standard type. Class A only temporary protection, Class B, C, D for permanent protection.

Classes are weights of coating per double box as follows: Class A standard, Class B—12 lbs., Class C—15 lbs., Class D—40 lbs. Grades: 1—Primes only, 2—Primes with up to 20% of seconds.

Fed. Spec. E-QQ-T-191, Sept. 12, '41, suggests use of light coating of tin and specifies other protective steel coatings such as paint, enamels, lacquers, asphalts, etc.

Roofing and shingles; asphalt-prepared, mineral surface  
Specify Type: Type I. Ready or Roll roofing (80 lbs.)  
Type II. Shingles (83 lbs.)  
Specify color and any special desired texture or edging.

Shingles, roofing, cement-asbestos  
Fed. Spec. SS-S-291

Pitch; coal-tar (for) mineral-surfaced built-up roofing, waterproofing and dampproofing  
Fed. Spec. F-R-261

Specify Type: (Both types to be used with coal-tar saturated felt.)  
Type I for use with felt for roofing and waterproofing with slope not over 1" per foot.  
Type II for use with felt for roofing and waterproofing as a ply cement in membrane waterproofing or alone as dampproofing. Use in locations where temperature will not exceed 100° F.

Cement, bituminous, plastic  
Fed. Spec. SS-C-153

For use with plastic flashing used with bituminous roofing. Specify: Type I for use with flashing felt. Type II or III (coal tar base) may be used on coal tar pitch for repair of metal roofing or as expansion joint material for concrete or masonry.

Felt; coal-tar saturated (for) roofing and waterproofing  
Fed. Spec. HH-F-201

Asphalt-Primer; (for) roofing and waterproofing  
Fed. Spec. SS-A-201

Asphalt; (for) built-up roofing, waterproofing and damp-proofing  
Fed. Spec. SS-A-668

Specify Type and Class and Grade:  
Type I for surfaced, built-up roofing.  
Class A free from organic matter.  
Class B contains finely divided mineral matter.  
Type II for surfaced, built-up roofing.  
Grade I for inclines not over 6" to 13" over boards, and not over 3" to 13" over concrete.

Roof-coating; asphalt, brushing consistency  
Fed. Spec. SS-R-453

For repair and coating of asphalt and metal roofing and for application to concrete, masonry and steel as dampproofing (use over primer).

Felt; asphalt-saturated (for) flashing, roofing and waterproofing  
Fed. Spec. HH-F-191

Specify Type I for use with asphalt on built-up roofs, and Type II for flashing with such roofing.

Roofing; asphalt, prepared, smooth-surfaced  
Fed. Spec. SS-R-501

Specify Grade A—Heavy (weight 50 lbs.) or  
Grade B—Medium (weight 40 lbs.) (Intended primarily for temporary buildings.)  

A.S.T.M. Spec.  
Zinc-coated (galvanized) Iron or Steel Sheets  
A.S.T.M. A 93-38 T  
Zinc coated sheets for general use.  
Specify gauge of sheets and weight.

Zinc-coated (galvanized) sheets, wrought iron  
A.S.T.M. A 163-39  
See Miscellaneous Metals

Asphalt Shingles surfaced with Coarse Mineral Granules  
A.S.T.M. D 235-41 T  
Specify form, size, color and any special edging.

Cool-Tar Pitch for Roofing, Dampproofing and Waterproofing  
A.S.T.M. D 498-41  
For use as a mopping coat in built-up roofs with slag or gravel, as a mopping coat in dampproofing or as a plying or mopping cement in membrane waterproofing.  
Specify Type: A mopping coat for built-up roofs; mopping coat in dampproofing or as a plying cement in membrane waterproofing above ground when not exposed to temperatures over 125° F; Type B mopping coat in dampproofing, or as a plying cement in membrane waterproofing below grade (moderate temperature).

Cool-Tar Saturated Roofing Felt for use in waterproofing and in constructing Built-up Roofs  
A.S.T.M. D 227-41

Asphalt for use in Constructing Built-up Roof Coverings  
A.S.T.M. D 312-41  
Specify Type:  
(a) For use in slag or gravel surfaced roofing on inclines up to 3" per ft.  
(b) For use in unsurfaced on inclines up to 3" per ft.  
(c) For inclines between 3" and 6" per ft.  
Specify whether roofing is over boards or concrete.

Asphalt-Saturated Roofing Felt for use in waterproofing and in constructing Built-up Roofs  
A.S.T.M. D 226-41 T  
Specify: 32" or 36" widths; 15 lb. or 30 lb. type.

Asphalt Roofing Surfaced with Powdered Talc or Mica  
A.S.T.M. D 226-41 T  
Specify 32" or 36" width; 65 lb. grade or 55 lb. grade.  
Specifications for nails and lap cement included.

Asphalt Roofing Surfaced with Fine Mineral Granules  
A.S.T.M. D 234-41 T  
Specify width of 32" or 36" and grade; 65 lb. or 55 lb. grade.
DIVISION 5. ROOFING & SHEET METAL

FED. SPEC.

Roofing: asphalt and asbestos-prepared, mineral surfaced

Specify color.

OTHER REFERENCES


Simplified Practice Recommendations

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt</td>
<td>R 4</td>
</tr>
<tr>
<td>Structural slate</td>
<td>R 13</td>
</tr>
<tr>
<td>Roofing turrets</td>
<td>R 30</td>
</tr>
<tr>
<td>Iron and steel roofing</td>
<td>R 78</td>
</tr>
</tbody>
</table>

A.S.T.M. SPEC.

Asphalt Roofing Surfaced with Coarse Mineral Granules

Specify: 32" or 36" width. Specify color. Specifications for nails and lap cement included.

Wide Salisbury Asphalt Roofing Surfaced with Coarse Mineral Granules

Specify: 32" or 36" width. Specify 45 lb. or 55 lb. grade and color. This material is used as cap sheet.

Asphalt-Saturated Asbestos Felt for use in Constructing Built-up Roofs

Widths 32" or 36". (This material may also be used for membrane waterproofing.)

DIVISION 6. MISCELLANEOUS METALS

On account of scarcity of certain metals, reference to such metals and alloys of same have been omitted (such as aluminum, chromium, nickel, manganese.)

Note where "E" is used in front of Fed. Spec. symbol it denotes Emergency specification, such as E-QQ-B-601.

FED. SPEC.

Copper: bars, plates, rods, shapes, sheets and strips

Specify Type A or B unless otherwise noted.

Lead: sheet

For lead-coated copper see "Roofing and Sheet Metal."

Brass: commercial; bars, plates, rods, shapes, sheets and strips


Brass: commercial, and naval castings

Specify composition A to D.

Brass: castings (to be brazed)

Bronze Castings; Specify Grade A or B

Specify Type I and composition 1 to 10.

Iron, Gray, castings

Steel; Castings

Iron; malleable; castings

Iron, wrought (refined); bars

Steel; carbon and alloys, bars

Steel, carbon (Low carbon), Sheets and Strips

Treads; safety, metallic

Specify Type and Class

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, Filled</td>
<td>Class 1: Brass with lead ribs.</td>
</tr>
<tr>
<td>A, Filled</td>
<td>Class 2: Brass with abrasive ribs.</td>
</tr>
<tr>
<td>A, Filled</td>
<td>Class 3: Aluminum alloy, with lead ribs.</td>
</tr>
<tr>
<td>A, Filled</td>
<td>Class 4: Aluminum alloy, with abrasive ribs.</td>
</tr>
<tr>
<td>A, Filled</td>
<td>Class 5: Aluminum alloy</td>
</tr>
<tr>
<td>A, Filled</td>
<td>Class 6: Cast iron</td>
</tr>
<tr>
<td>A, Filled</td>
<td>Class 7: Alloy, as specified</td>
</tr>
</tbody>
</table>

A.S.T.M. SPEC.

Copper Rods, Bars and Shapes

Specify Type A or Type B unless otherwise noted. Type A will be supplied.

Brass sheet and strip

Specify: Alloy, temper, grain size of annealed tempers.

Copper-Base alloys in ingot forms for Sand Castings

Specify alloy (25 listed)

Lightweight and Thin-sectioned gray iron castings

Prime consideration of such castings is appearance and machinability.

Gray Iron Castings

Specify class: (Classes are in accord with tensile strength).

These castings are for use where strength is a consideration.

Malleable Iron Castings

Alloy-Steel Casting for Structural Purposes

Specify Class.

Common Iron Bars

Reinforced Iron Bars

Single and Double Reinforced Wrought-Iron Bars

Specify Grade A—Double refined or Grade B—Single refined.

Rolled Wrought Iron Shapes and Bars

Wrought-Iron Plates

Uncoated Wrought-Iron Sheets

Strip Steel, Cold-Rolled

Specify tempers, grades.

Mild Steel Plates

Carbon-steel and alloy-steel blooms, billets and slabs for forgings
DIVISION 6. MISCELLANEOUS METALS

FED. SPEC.

Calking Lead
Specify Type I for calking lead and
Type II for lead wool.

For Structural Steel
See Structural Steel Division.

OTHER REFERENCES

Sheet Steel—
Simplified Practice Recommendation (Second Edition)
R 28-29

Metal Partitions for Toilets and Showers—
Simplified Practice Recommendation.
R 101-40

Hardware and Fittings; (for) lavatory-partitions and
inclosures
FED. SPEC. FF-H-136

A.S.T.M. SPEC.

Zinc-coated (Galvanized) Wrought-Iron Sheets
A.S.T.M. A 163-39
ASA G9.8-1937

Sheets used for roofing, siding, culverts.
Specify Class:
Class A and B Extra-heavy and heavy coated
(not for forming except may be corrugated).
Class C Moderately heavy coated (moderate bending).
Class D For general use.
Specify weight of coating.

Zinc-coated Iron or Steel Sheets
A.S.T.M. A 95-30 T
A.S.T.M. A 95-27
ASA G9M-1931

DIVISION 7. METAL WINDOWS & DOORS

MISCELLANEOUS REFERENCES

Steel Windows and Industrial Doors (Solid Section Steel
Windows)
Simplified Practice Recommendation.
R 72

Hollow Metal Doors
Simplified Practice Recommendation.
R 82

Kalamein Doors
Simplified Practice Recommendation.
R 83

Fire Protection of Openings in Walls and Partitions against
Fire
National Board of Fire Underwriters.

DIVISION 8. CARPENTRY

FED. SPEC.

Wall-board; gypsum
Specify:
Type A with square edges, with or without recess, or
Type B with rounded edges for filled joints; Standard
thickness 1/8", special 1/4" and 3/8".

Fiber-board; hard-pressed, structural
Specify:
Class A—untreated
Class B—treated
Specify thickness: 1/4", 3/16", or 1/4".
(4 wide x 5', 6', 8', 9', 10' or 12'.)

Fiber-board; insulating
Specify:
Class A—Building Board or Class C—Roof Board
and finish desired.

Millboard, asbestos
Specify:
Grade A medium, or Grade B hard
and thickness, 1/4", 3/16" or 1/8".

Paper; sheathing; waterproof
Specify:
Grade A for permanent structures and
Grade B for temporary structures.

Cord, sash, cotton, braided
Specify:
Type A unfinished
Type B polished
Specify that size shall be as required by
pulleys and load.

Bolts, lag, steel (lag screws)
FED. SPEC. FF-B-561

Screws, Wood
FED. SPEC. FF-S-111

Nails, spikes, staples and tacks
FED. SPEC. FF-N-101

NOTE: Specification Standards will be continued
in the March issue of ARCHITECTURAL RECORD.
RESTAURANTS

A survey of the problems of restaurant design based upon recent examples, and including both economical roadside establishments and more formal types

A BUILDING TYPES STUDY

ABOVE. Dutchland Farms, Great Neck, N. Y. Joseph Watters, architect. RIGHT. the new Schrafft's, New York City. Bloch and Hesse, architects
HOWARD JOHNSON RESTAURANT, CAMBRIDGE, MASS. JOSEPH MORGAN, ARCHITECT. Even this well-established chain needs its face lifted periodically, as witness this example which has recently been entirely resurfaced, on the exterior, with weather-resistant fiberboard.

DUTCHLAND FARMS RESTAURANT, GREAT NECK, N. Y. JOSEPH WATTERSON, ARCHITECT. One of a row of quaint shops lining a lane, this unit was built and is owned by the Sedinay Realty Co.; is leased by Dutchland Farms. As originally built, the right-hand dining room was a dining terrace, but demand soon caused it to be enclosed. Total seating: 75 people.

ICE CREAM BAR makes most profits, is centrally located.
RESTAURANTS

Sooner or later the hot dog stand was bound to become big business. That was in the cards, as the saying goes. The public took to traveling independently of railroads, in many cases independently of hotels. The public wanted a bite to eat, informally because travel by car often left it feeling somewhat disheveled, quickly because it often wanted to get on in a hurry. And the family out for a breath of air on a hot day wanted some ice cream; or, hungry of an evening, a hamburger. So of course our highways became lined, first with dining cars, then with hot dog stands.

But the businesses were, as a whole, inefficient. Further, even a disheveled motorist wants a pleasant, clean place to stop—and most of them weren’t clean.

Thus the “food-for-travelers” industry was ripe for organization, and we now have numerous chains, of which two are illustrated on these pages, making handsome profits. Individual operators lease rights to a name and an organization’s advice—upon certain stipulations—from one chain. Another chain reverses the process, leasing and operating restaurants from individuals who put up the buildings. Whichever the method, operation of the chains, and of successful privately-owned-and-operated establishments as well, reflects a uniform basic conception.

The fundamental sources of profit are ice cream and soda-fountain business, frankfurters, hamburgers, sometimes sandwiches. Thus the soda fountain and the hamburger counter are the focal points in plan; the restaurants literally revolve around them. Ice cream in 28, 30, 40 flavors is advertised to the zenith.

Yet even Mrs. Smith, though slightly disarranged, wants the satisfaction which comes from soft roseate lights, suave service, acoustic plaster, spotless tile, and a passable meal now and then. So the satellite restaurants, which have to be carefully laid out on the basis of expected trade, to seat enough to make money but not enough to lose it, must be swank in a subdued way. And here commerce says: “They must be economically built!”

The gasoline scare a few months back cut down business in these establishments tremendously. What the war-necessary rubber and new car curtailments will do, no one can guess. Such problems, of course, do not affect the cocktail-lounge, night club type of restaurant, shown also in this issue, as directly. In times like these, people seem to feel the need of relaxing somewhat violently.
FAMILIAR FORM IS A TRADEMARK

DUTCHLAND FARMS RESTAURANT, ROCKVILLE CENTER, N. Y. JOSEPH WATTERSON, ARCHITECT; S. TYSON HALDEMAN, ASSOCIATE ARCHITECT. Here the problem was to design a building which would retain the characteristic Dutchland Farms form with its windmill so familiar to travelers, yet which would be smart and reasonably modern. Being a roadside restaurant, ample parking space was important. Sales of ice cream are the principal source of revenue, so the soda fountain had to dominate the interior, yet be somewhat dissociated from the dining room.

Sandwiches are featured as well; hence the sandwich maker is displayed in an alcove to the rear of the dining room. At the same time, seats for over 100 had to be provided in the dining space, so located that waitresses might have free access to soda fountain, sandwich counter and kitchen.

Above all, the building had to be exceedingly economical in construction; yet substantial enough to create a satisfactory impression. There is a partial cellar; walls are 8-in. brick; roof is tile. Floor and roof framing, doors and windows, are all wood. Floors are covered with linoleum except in kitchen, which is maple. Building is winter air conditioned; lighting is fluorescent. Ceilings are of acoustic plaster, walls painted plaster with Primavera plywood wainscot. Building was built and is owned by Gepo Realty Co.
NIGHT CLUB IS ADDED TO A SOUTHERN RESTAURANT

REMLER'S NIGHT CLUB, SAVANNAH, GA. LEVY and CLARKE, ARCHITECTS. The existing portion of this restaurant consisted of the banquet hall, sandwich bar and kitchen; additions include the cocktail lounge and night club. Thus the restaurant's range embraces all types of food service, from a sandwich to a banquet, with or without entertainment.

The night club floor is tiered, with a maple dance floor in the center, and successive terraces occupied by freestanding tables, semi-circular booths, and wall booths. Construction is of steel frame with brick veneer curtain walls. Ceiling is of insulation board with a plastered center feature lighted by multicolored intermittent lights. Walls are of insulating tile and plaster.

Cocktail lounge has a U-shaped bar, is wainscoted in Harewood, and has a plastered ceiling. The building is air conditioned. L. D'Englere was the decorator. Contractor was Walter Strong.
ENTRANCE

COCKTAIL LOUNGE is in the center of the building
ST. LOUIS HOTEL REMODELS ROOF BAR

CHASE HOTEL COCKTAIL LOUNGE and STARLIGHT ROOF, ST. LOUIS, MO. HAROLD KOPLAR, ARCHITECT. To increase the hotel's convention and transient business, the management decided to add facilities. Only the roof—partially enclosed and hence subject to vagaries of weather—was available. The existing outdoor dining space and wasteful kitchen on the roof have been completely revamped.

Structurally, this involved several problems. Existing concrete columns and footings were examined to determine their suitability for carrying the added loads to be imposed. A high coping, which incidentally interfered with patrons' views of the city, was cut down to seat height, and new 6-in. H-columns were anchored to tops of old columns. Steel trusses spanning from wall to wall carry a new
AND DINING SPACE

roof of lightweight precast concrete slabs. New columns are fire-protected by concrete poured into stainless steel forms which remained in place as the permanent finish.

In both Zodiac and Starlight rooms are orchestra bays supported by cantilevers extending out from the roof framing. The bar itself is on casters, in two sections, which can be moved out to the remaining outdoor dining terrace or into the Starlight room to permit use of the Zodiac room for banquets or similar functions.

Both rooms are air conditioned and seat a total of 550 patrons. Lighting is both indirect (from cove lights) and direct (from directional flush lights). Construction was done by the hotel management. Structural engineers were Brussel and Viterbo.
SECTION at right shows sliding roof directly over the circular Zodiac bar, and illustrates design of the trusses used to span from wall to wall. In addition, it demonstrates the way in which changes in ceiling level, etc., delimit various areas without using actual partitions.

WINDOW DETAIL: remaining portion of parapet wall is capped with a 10-in. channel to which are attached the window tracks, made of aluminum channels and angles. Two out of each three windows slide horizontally. All are weatherstripped with refrigerator gaskets, and have concentric sash locks to strengthen their frames against wind pressure when closed.

ORCHESTRA BAY in Zodiac room is suspended from an 18-ft. diameter steel ring cantilevered from the roof trusses, and projected 7 ft. beyond the building line. From the ring hang 3-in. steel tees which support the floor of the bay. Bay in Starlight room is similar, though rectangular and consequently simpler to fabricate.
SKY ROOM, EL CORTEZ HOTEL, SAN FRANCISCO, CALIF. HERTZKA and KNOWLES, ARCHITECTS. In this remodeling job, certain structural elements could not be changed. The problem thus became one of designing as spacious a cocktail lounge as possible and minimizing columns, elevator shafts, etc. Windows are large in order to capitalize on the spectacular view. Construction is of reinforced concrete, with furred metal lath and plaster walls and ceilings, and carpeted floors. The lounge is air conditioned, with ceiling supplies, and an exhaust, decorated with a Lucite floral sculpture, over the bar. Fans, condensers, etc., are on the floor above. Ducts are lined with soundproofing material.

A difficult problem in this case arose from the fact that the room is used at night, and the windows ordinarily would mirror reflections of people and of the ceiling, obscuring the view of the city’s lights which is one of the Sky Room’s main attractions. After some experimentation, the architects found that putting the light source behind the person looking out the window eliminated reflections. Indirect coves, lighted by neon tubes, were designed to keep light off the ceiling, so that it would not be mirrored either.
BAR: air is exhausted through grille in the Lucite sculpture and gunmetal mirror overhead. Table tops are plastic.

ABOVE, stairs to lounge. Rail is bronze with sandblasted Lucite panels which house fluorescent lights. RIGHT, lounge interior. General contractor was M. H. Golden. Windows in Sky Room have heat-absorbing glass to reduce sun heat load.
For control of the air... in Blackout Plants

In today's new windowless factories, complete air conditioning equipment stands high on the list of "musts." All the familiar air conditioning problems are there—but with more stringent requirements, demanding new applications and closer control.

Such problems faced General Electric engineers recently in planning the air conditioning system for a plant making vital aviation devices.

Sufficient fresh air to provide four complete air changes per hour was needed.

Heating and cooling were major problems, for the internal heat released under normal operating conditions was sufficient to heat the building with outside temperature at 15°F above zero.

Precision machining processes demanded unusually close control of temperature and humidity. Six independently controlled conditioning zones were necessary to provide the required flexibility.

These problems were solved by the installation of a complete system using G-E refrigeration and air conditioning equipment. The wide range of G-E products—plus G-E experience and engineering ability—can help to solve your problems.

General Electric Co., Div. 2442, Bloomfield, N. J.

General Electric

For the complete refrigerant cycle

... Turn To...
Blackout Light

Now available for shipment is a blackout lighting unit that follows requirements of the British Air Raid Precaution Specification. This is a suspension fixture with over-all depth of 7 in. Intensity of illumination secured on the ground is .0002 to .0004 foot candles, equivalent to starlight. Usual spacing between units 100 ft. The manufacturer says there can be no detection or identification of the units or surrounding area from hostile planes. Holophane Co., Inc., 342 Madison Ave., N. Y. C. (Fig. 1.)

Blackout and Camouflage Paint

The complete line of blackout and camouflage paints is announced, for domestic and commercial use in areas subject to possible air raids. In black, smoke grey, earth drab and neutral brick, they obscure interior illumination when applied to windows, skylights and other glazed openings, and also effect a partial camouflage in daytime. Pittsburgh Plate Glass Company, Pittsburgh, Pa.

New Construction Material

Somewhat in the nature of a plastic is a new construction material made of wood wool "excelsior," water, silicate of soda, soy bean protein and quicklime. Relatively strong, with low conductivity of heat, low manufacturing cost, good resistance to fire and good appearance, it is said to be applicable for molded products, insulating building boards, doors, sash, moldings, gutters, veneer cores, air ducts, stove pipe board liners, roofing, etc. The manufacturer claims it can be transported without breakage, sawn or nailed, and will not swell, bulge, warp or check. Designers for Industry Inc. of Ohio, 426 Terminal Tower, Cleveland, Ohio.

Furnace-Water Heater

Combination furnace and water heater, for low-cost housing projects and trailers, is announced. The lower half of this model comprises oil heating unit, combustion chamber and blower; the upper half consists of hot water tank and stack. A spring-mounted fan is installed at the bottom rear to force the heat out through louvres at floor level. There are controls for automatic water heating and semi-automatic house heating. Evans Products Company, Detroit, Mich.

Heavy Duty Unit Heater

For heating large buildings such as airplane hangars, skating rinks, locomotive shops, etc., there is a new heavy duty unit heater which delivers air at velocities of 1,500 to 2,500 ft. per minute and raises air temperature sufficiently to give a 100 to 125 degree temperature rise. The unit is built up of complete sections, each having an input rating of 250,000 Btu per hour. Surface Combustion Corporation, Toledo, Ohio. (Fig. 2.)

Automatic Heat for Defense Homes

A bin-feed stoker-fired furnace is being offered at a low price which makes it suitable for defense homes. Over-sized fan and motor are employed and a minimum of ductwork is necessary. Filters are spun glass, stoker and fan are automatically controlled. The baked enamel jacket has a steel inner lining. Bonnet capacity 30,000 Btu; fan capacity 1,000 Cfm; heating surface 3,360 sq. in. Anthracite stoker has capacity of 108,000 Btu. Cooper & Cooper, Inc., Pittsfield, Mass.

Five New Paints

A line of five new paints, designed to provide civilian markets with products to replace now unavailable aluminum paints, has been announced. A tank white can replace aluminum (continued on page 84)
"Why settle for 75¢ when you can have $1.00?"

It gives you something to think about when you compare the advantages of Nairn Linoleum with other floor materials. For Nairn Linoleum alone meets all four of the basic specifications for the modern floor.

1. **EYE APPEAL**—Unequaled beauty and wide variety of color offer unlimited freedom of design. Patterns that are Color Correlated — with each other and other decorating materials.

2. **LONGER WEAR**—Nairn commercial linoleums not only meet, they exceed U. S. Government specifications on every point. Built-in ruggedness that spells long-range economy.

3. **RESILIENCE**—Quiet, "foot-easy" Nairn Floors are sound absorbing, sound deadening . . . "comeback" with a minimum of marring after indentation.

4. **CLEANLINESS AND EASY MAINTENANCE**—One-piece construction leaves no dirt-catching cracks and joints . . . reduces maintenance time and cost to a minimum. Positive germicidal properties. No splinters! No "dusting"!

Why be satisfied with a floor that gives you only two or three of these advantages — a 50% or 75% value for your money? In times like these especially — it's important to get "all 4" — 100% for every dollar you spend — with Nairn Linoleum!

**EXTRA VALUE IN NAIRN WALL LINOLEUM, TOO.** It lasts as long as the building. It won't fade, crack, discolor, stain or dent. And — with its amazing variety of patterns and colors — it offers more decorating possibilities than any other permanent wall material. Both Nairn Floor and Wall Linoleum are fully guaranteed when installed in accordance with specifications.

**FREE—200 PAGE BOOK** of installation aids and specifications — for architects, contractors, builders. Write on your letterhead to Congoleum-Nairn Inc., Kearny, N. J.
The fact that a number of building products and materials will not be generally available for the duration of the war has created an advertising situation that many manufacturers of items in this classification have not solved. They would like to prepare for the day when peace comes, when architects have returned to normal practice and construction for living and luxury is again in full swing.

These manufacturers are vitally interested in keeping the architect aware of the desirability of their products, because they know that the acceptance they have gained for them now might not hold at the war's end unless they do. With the advertising pages of the architect's journal of professional practice generally accepted as the ideal medium for carrying out this task, the problem is not so much one of "how" as it is "what" to tell the architect.

What the architect would like to know from the advertising of such products depends, of course, on the relation of his work to the national defense program, but by and large the big question that comes to his mind must be, "Is the item available?"

If the product is available, its advertisement should be "keyed" to current problems. The architect would like to know, for instance, the restrictions (if any) regarding the use of the product. He would like to have suggestions that would make for faster delivery, or save material, and otherwise assure the best job in terms of the national interest.

If the product cannot be obtained the architect would like to hear about improvements and new developments. He is also interested in knowing where and how it is now being used—which not only makes attractive reading but impresses the features of the product on the architect's mind.

In the final analysis, both the architect who is engaged in defense work and the architect who is striving to maintain his private practice realize that beyond the clouds of war is a bright future for building. The manufacturer whose advertising is usefully attuned to the emergency now will be foremost in the architect's mind when the time for rebuilding America comes.

—RONALD ALLWORK

COMPANIES WITH NOTHING

PRACTICING ARCHITECTS recognize that a change in present-day advertising is necessary—in fact, they have some pretty definite ideas on the subject as the following quotations will testify.

JOSEPH HOLTON JONES says, "We feel manufacturers' advertisements should now fulfill two functions: Continue to keep the manufacturer's name and product before the profession, and keep the profession apprised of all new materials and methods which manufacturers may develop to meet war needs and which, after the war, may be used to advantage by architects in the building program which is bound to come."

FRANCIS BENEDICT JACOBBERGER suggests, "Information as to why these materials have no adequate substitute, or why they are not making a substitute material."

In this connection JAMES C. MACKENZIE asks for "a brief circular mailed out supplementing suitable advertisements in the magazines."
TO SELL NOW SHOULD LOOK AHEAD

While WILLIAM I. HOHAUSER believes that information on unavailable products "that are improved upon during this period" is desirable.

To this GORDON B. KAUFMANN adds "Our own personal feeling in the matter is to suggest either 'name advertising' on a somewhat reduced scale or practically none at all. For your own purposes, articles on the critical list have no interest for us. We are so busy trying to find substitutes.""

J. LINERD CONARROE asks advertisers, "Why not be frank about the materials and state if they can or cannot be had or if they can be had with priorities and on what types of buildings?"

And PHILIP IVES thinks that "new developments, which I could look forward to taking advantage of when private practice is resumed, are what I'd like to read about in advertisements."

ITS LOOKING PRETTY FAR AHEAD to talk about Christmas gifts in 1944—the year the war ends. But that's just what this steel company is doing in the above ad directed to the layman. "We continue to advertise steel products for civilian use..." writes an official of the company, because "we are looking ahead. The acceptance of steel products is not something you can turn off and on at will. It must be created and maintained by continuous efforts."

THE ADVERTISEMENTS BELOW are examples of what well-known manufacturers in the building field are doing to meet the present situation. These ads are of the present, and because they are informative, useful and interesting, their sponsors will be remembered.

FEBRUARY 1942
For Every Garage Door...

STANLEY
GARAGE DOOR
HARDWARE

Do you know what Stanley has to offer for long-wearing, smooth-operating garage door equipment?

You'll find exactly what you want in Stanley's No. 61 Catalog. It is a handy reference book. A copy will be sent on request. The Stanley Works, New Britain, Connecticut.

Books on
WAR TIME BUILDING
AND AIR DEFENSE

The books listed below are especially recommended for architects and engineers who wish to specialize in solving the many technical problems pertaining to wartime construction and the protection of the civilian population.


3. BOMBS AND BOMBING, by Willy Ley. 124 pages—A brisk, popular survey explaining how the several kinds of bombs are made and their probable effect on buildings of different types and on air raid shelters—Price $1.25.

4. WARTIME BUILDING CONSTRUCTION — 1st American Edition 1942—This book reviews the general principles of wartime building. There is a special section devoted to the construction of single-story buildings to provide living quarters for armed forces, also for temporary office accommodation and hospitals; a section devoted to the methods used for the application of reinforced concrete construction—Price $4.00.

5. CIVIL DEFENSE, by C. W. Glover. Over 900 pages—fully illustrated, revised and enlarged. The most complete and authoritative book on the subject. This volume discusses in detail the precautions necessary for the protection of the civilian population—Price $16.50.

6. AIR RAID PRECAUTIONS—1941. An authoritative book compiled by various British experts based on actual experiences during air raids. It contains the best available scientific data pertaining to shelters, emergency watch towers, respiratory equipment, etc.—Price $3.00.

7. AIR RAID DEFENSE, by Dr. Curt Wachtel, 1941. The purpose of this book is to convey the many and varied aspects of Air Raid Defense. All measures and methods discussed or recommended in this book are practiced somewhere in Europe—Price $3.50.

ARCHITECTURAL RECORD
119 West 40th Street, New York, N. Y.

Please send 1. 2. 3. 4. 5. 6. 7.

Check or money order for is enclosed.

Name
Address
City and State

Check the numbers of the books you want, and mail to Architectural Record with your remittance—no extra charge for postage
More than 100 tons of **NATIONAL PIPE** installed in the 610 dwelling units of this new low-rent housing project.

It's no accident that **National Steel Pipe** has been chosen for a large majority of America's big scale housing projects. Architects and plumbing and heating contractors have long recognized the fact—that for general all-round building purposes, **National Steel Pipe** gives the greatest service for the least investment. Owners can depend on the efficient, trouble-free operation of their piping systems when **National** is on the job. Workmen tell us they like to work with **National Pipe** because it's easy to install, profitable to use. It's clean, inside and out, strong and ductile, and uniform in every property. Bends, cuts and threads with ease.

National quality never varies—**National Steel Pipe** is always the same—no other pipe has been able to offer greater value in strength, durability and ease of installation at low cost. Write for data.

**Ramona Village Housing Project**

**Contains 610 Dwelling Units...**

One of the country's finest!

Ramona Village is owned and operated by the Housing Authority of the city of Los Angeles, California. The 110 separate buildings are all two stories in height, and are of five different types, containing four, six and eight families each. The total number of rooms is 2679.

An administration building houses the administrative offices, maintenance shop, club and social room, and day nursery. The dwelling units contain from one to three bedrooms in addition to a living room and kitchen.

The architects for the work are known as the Housing Architects Associated, consisting of: George J. Adams, chief architect; Walter S. Davis, Ralph C. Flewellin, Eugene Weston, Jr., Lewis Eugene Wilson and Lloyd Wright. General contractor, Baruch Corporation. Mechanical engineer, Ralph E. Phillips.

**National Tube Company**

Pittsburgh, PA.

Columbia Steel Company, San Francisco, Pacific Coast Distributors

United States Steel Export Company, New York

**United States Steel**

**February 1942**
where it is desirable to cut evaporation losses and reduce inside temperatures. A metal lead paint is said to provide a protective lead-colored metal coating for all metal surfaces including new or old galvanized metal. Two grays are offered affording protection and durability on exposed metal surfaces; and an enamelized yellow metal primer is for all types of metal surfaces, especially where subjected to damp, wet or foggy conditions. American-Marietta Company, 43 E. Ohio St., Chicago, Ill.

**Asphalt Mastic Board**

High melting point asphalt in combination with fine mineral aggregate, sealed between dry non-bleeding liners, provides a new asphalt mastic board said to be waterproof, rigid, non-warping. The product is designed for application where a shortage of some fiber boards and sheet metal threatens. Acid- and alkali-resistant, it may be formed into various shapes or corrugated. Suitable for roofing, siding, duct work in heating, air conditioning and industrial air blower systems. Keystone Asphalt Products Co., 43 E. Ohio St., Chicago, Ill.

**Plastic Strips for Terrazzo**

Plastic teinite is being used to block off sections of terrazzo in the flooring of large buildings. Strips of teinite attached to ribbons of galvanized iron outline the design to be followed in laying the floor, and the plastic edge remains visible after the terrazzo has been polished. The teinite comes in a variety of colors. Extruded Plastics, Inc., Norwalk, Conn. (Fig. 3.)

**Cleaning Air Conditioning Equipment**

A chemical process of cleaning, dustproofing and fireproofing air conditioning or kitchen equipment, including ducts, fans, heating coils, filters and controls, grease ducts, chutes, etc., is guaranteed to keep the equipment cleaned for a year. The treatment is adapted to hotels, restau-

(continued on page 86)
HERE'S ONE FLUORESCENT UNIT FOR EVERY OFFICE LIGHTING NEED

The Westinghouse CL-110 fluorescent luminaire may be suspended from or mounted flush on the ceiling, as an individual unit or end-to-end in continuous strips.

When the luminaire is suspended from the ceiling, both direct and indirect lighting is provided. Light from one 30-watt lamp is directed upward and two or three 40-watt lamps, depending on the unit selected, are arranged to direct their light downward. When the luminaire is mounted directly on the ceiling, the 30-watt lamp is not used.

Regardless of mounting or number of lamps, high power factor and minimized flicker are assured. Maintenance is simplified on glass enclosed units by a hinged door assembly that facilitates cleaning and relamping. Units are also available without the diffusing glass.

Effective lighting is obtained today with CL-110 fixtures in industrial offices, drafting rooms, factory engineering and purchasing departments. This is Westinghouse engineered seeing—a lighting technique that may help you with your own illumination problems. Ask your nearest Westinghouse Lighting Distributor today for Folder 8655. Or, write Westinghouse Electric & Mfg. Co., Edgewater Park, Cleveland, Ohio.

For Continuous Strip or Individual Mounting

CL-110 units utilize either two or three 40-watt lamps when mounted flush on the ceiling.

Light from one 30-watt Mazda F lamp is directed to the ceiling, and two or three 40-watt lamps are arranged to direct their light downward.

Engineered seeing is available through 117 Westinghouse Electric Supply Company offices and Independent Lighting Distributors.
Emergency Lighting Units

Four new emergency lighting units are offered as protection against interruption of the normal source of power in manufacturing plants. According to the manufacturer they give "split-second emergency lighting protection" with absolute reliability. Each unit consists of a battery of either the chloride or the flat plate type, automatic switches which transfer the battery to the emergency lighting circuits upon failure of the a.c. supply, and an automatic charging device. When the a.c. service is restored the emergency lighting circuits are transferred back to the a.c. supply. No separate battery is required. Operating and maintenance costs are said to be extremely low and battery life is said to range from 8 to 14 yrs. Electric Storage Battery Co., Philadelphia, Pa.

American Fabric Wall Covering

American successor is announced to a well-known fabric wall covering. The fabric consists of a canvas foundation with a pyroxylin coating on which lacquer paints have been fused to make the surface light-resistant and capable of withstanding hard usage. According to the manufacturer, the tensile strength prevents plaster cracks, binds weakened plaster and gives permanent structural protection. The fabric is presented as non-porous, waterproof, vermin-, odor-, dust- and soot-proof. Plain, texture and pattern effects. Recommended for institutions and homes, remodeling and new construction. Frederic Blank & Co., Inc., 230 Park Ave., New York City.

New Wood Weatherstrip

A well-known window is now employing a wood weatherstrip. Laboratory tests have indicated the new weatherstripping is tighter in high winds than the one formerly used, that high humidities do not affect its operation. The manufacturer also offers as advantages the fact that the wood weatherstrip will not corrode; long life; quicker installation; better balance. All items in this window line can be used with the new weatherstrip. Curtis Companies Incorporated, Clinton, Iowa.
WALLS, PARTITIONS and 
stiles of White Carrara 
Structural Glass, with Black 
Carrara trim, bring beauty 
and permanence to this 
Toilet room in the Univer-
sity of Pittsburgh's Cathe-
dral of Learning. Architect: 
Charles Z. Klauder.

Precision-made 
Carrara Glass 
keeps toilet rooms 
young!

WHEN Carrara Structural Glass 
is made, every piece of it is 
mechanically ground and polished to 
a true, flat surface. This precision 
method of manufacture imparts to 
Carrara the high degree of excellence 
and quality found only in a finely-
machined product.

Thus, Carrara has a smoothness 
and reflectivity of surface, a depth 
and uniformity of color found only 
in a glass so made. Carrara joints 
are true and even, without lippage. 
Carrara never warps with age. It 
won't check, craze, stain, absorb 
odor or fade.

This glass can be decorated in vari-
ous ways to achieve unusual architec-
tural effects. It is available in a special 
Stucco-finish for use where a soft, vel-

cety-surfaced glass is desired. And 
there are no construction delays with 
Carrara — its application involves 
little, if any, use of critical materials.

Send the coupon... today... for 
our free booklet on Carrara. It is pro-
fusely illustrated, and contains full 
information on Carrara's physical 
characteristics, the colors available, 
construction details, and other data.

Pittsburgh Plate Glass Company 
2014 E Grant Building, Pittsburgh, Pa. 
Please send me, without obligation, descrip-
tive literature on Carrara Structural Glass.

Name: _____________________________
Address: ___________________________
City: ___________________ State: ______

CARRARA 
The modern Structural Glass 
PITTSBURGH PLATE GLASS COMPANY
Show your clients how easy it is to GIVE EMPLOYEES THIS PROTECTION

When chilly blasts blow into your clients' business places— what happens? Employees shiver and shudder. They suffer from frequent colds. Even if they don't stay home from work, sneezing, sniffling employees can't render the efficient service the public expects.

Show your clients how they can safeguard employees' health and efficiency from the "blitz" of open doors. Tell them how easily they can install draft-proof Revolving Doors—and thus shut out winter's icy blasts, enjoy even heat distribution, and cut fuel bills as much as 25%.

For complete technical data, phone your local Revolving Door representative. Or write to the factory for a free A. I. A. Data Folder, containing photographs and descriptions of new installations in banks, office buildings, restaurants, hotels and stores.

5 Ways a Revolving Door Pays for Itself—
1—Cuts heating and cooling costs.
2—Increases usable floor space.
3—Reduces damage from dust and dirt.
4—Assures customers' comfort.
5—Safeguards employees' health.

W & T Electrolytic Chlorinator for Sterilization of Swimming Pool Water

This equipment is designed to produce the actual sterilizing agent at the point of use. The Electrolytic Cell manufactures sodium hypochlorite solution from such readily available materials as common salt, water and electric current, and the new W & T Electrolytic Chlorinator can readily be operated at any point where these are available.

The new W & T Electrolytic Chlorinator can be used for most types and sizes of swimming pools. It justifies your specification by giving years of accurate, dependable service at minimum maintenance expense.

Copies of the folder on the W & T Electrolytic Chlorinator will be sent on request. Ask for Technical Publication 201. The unmatched experience of W & T representatives is at your service. They will explain how to

"SWIM IN DRINKING WATER"
WALLACE & TIERNAN CO., Inc.
Manufacturers of Chlorine and Ammonia Control Apparatus
NEWARK, NEW JERSEY REPRESENTED IN PRINCIPAL CITIES

Welcome to PITTSBURGH'S NEWEST HOTEL

400 rooms, all with radio at no extra cost, outside view and bath.

* RATES
Singles . . . . . . $3.30 to $4.40
Doubles . . . . $5.00 to $6.50

* Most Conveniently Located Hotel in Downtown Pittsburgh

Hotel Pittsburgh
A KNOTT HOTEL
Joseph F. Duddy, Manager
A LESSON ABOUT FIRE... FROM LONDON

If ever there was a bit of hell with wings, it's an incendiary bomb! Yet from London... where bombs have rained alike on buildings with and without sprinkler protection... comes this word; In no single known instance has a sprinkler-protected premise been destroyed by fire caused by incendiary bombs!

Here's positive fire protection that every building owner would be especially glad to have called to his attention in these days of wartime hazards and replacement difficulties. Grinnell Automatic Sprinkler Systems are a vital safeguard to the building, its stocks of precious defense materials and irreplaceable equipment. You can trust them to control fire of any origin, automatically, at the source!

Make this efficient fire protection a blended part of your original designs. Over 50 years of intensive fire protection engineering enables Grinnell engineers to assist you with complete understanding of your problems and your clients' needs. Phone the Grinnell office near you for advisory interview. Grinnell Company, Inc., Executive Offices, Providence, R. I. Branch offices in 34 principal cities.

GRINNELL
Automatic Sprinkler Fire Protection

A BLENDED PART OF YOUR BUILDING'S DESIGN
"Enlisted . . . for the Duration"

Today, when everybody should be at his post of greatest usefulness, we’re at ours—turning out door closers and other goods marked “rush,” with all the skill and speed we can muster!

War Building Projects Need Reliable Door Control

All buildings have to have doors, and each important door needs a closer that can be relied on to work, to take punishment, day in, day out, for years without attention. Every workman, from the General or the Chairman down, has to use those doors. Better be sure they have the best of control.

At Uncle Sam’s Service . . . and Yours

The LCN organization, inside and out, has been carefully built over the years to do a superlative job in this field. We’ve taken on other work demanding precision, too, and our wheels turn day and night so that these two essential needs will be taken care of well. LCN, 466 West Superior St., Chicago.

To be Sure—Specify DOOR CLOSERS BY LCN

“Automatic” CONCRETE CURING

“On jobs like this—or a small basement floor!”

On ANY job, thorough curing under waterproof SISALKRAFT assures maximum hardness, density and strength. This method is simple, positive and economical. Once the paper is laid over a freshly finished slab, no further attention is required. No sand, burlap or sprinkling. No human element. SISALKRAFT for concrete curing is becoming the standard specification.

Write for complete data file.

The SISALKRAFT Co.
205 W. WACKER DRIVE · CHICAGO, ILLINOIS
NEW YORK · SAN FRANCISCO

VENETIAN VACATION WITH VACATIONERS


WRITE for details of remarkably low rates—especially attractive for extended stays.

ON BISCAYNE BAY AT 15TH STREET SEASON: NOVEMBER TO MAY
BOX MOUNTING DEVICES

Ideal for modern, efficient Surface Wiring
IN INDUSTRY OR IN THE HOME

Durability and long life in everyday service are built into all types of Bryant Box Mounting Devices. Their high-quality and master workmanship assure complete satisfaction, whether installed in factories or in the home.

You choose the application. Bryant has the Box Mounting Device which we feel sure you will agree meets the need "right on the nose."

Metal Covers: Switches, Outlets and Lampholders for 3½" and 4" boxes. Covers are cadmium plated to resist corrosion.

All Porcelain: Lampholders only. Keyless and pull types with or without side outlet. Made with large diameter bases. 4½" diameter for 3½" boxes, 5½" diameter for 4" boxes.

Catalog will be sent to you on request. Write for your copy today. The Bryant Electric Company, Bridgeport, Conn.

Sold Through Electrical Wholesalers Nationally

EVERY OUTLET DESERVES A BRYANT DEVICE

FEBRUARY 1942 91
WAR OR NO WAR, Johnny's sister wants a room of her own. Month by month, the need for this extra room will worry Johnny's parents. Temporary arrangements may have to be made, but they will build that home of their own just as soon as they possibly can.

Meanwhile, they will be thinking and planning. They will appreciate ideas and information that will help them crystallize their home building requirements. They will need a book like *Home Owners' Catalogs* and its "Guide To Home Planning."

*Home Owners' Catalogs* does three specific things for prospective home owners. It helps them make detailed inventories of family needs. It provides room by room check lists and furniture cut-outs with which to determine adequacy of space and convenience of arrangement. And, through a product and brand selector, it enables them to list first and second choices of materials, equipment and furnishings suitable for their new homes.

But, perhaps most important to architects—and manufacturers of home building products as well—*Home Owners' Catalogs* "keeps 'em-sighing" for the time when they can proceed with their home building plans.

**It's FREE . . . don't let them miss it!**

Those who are planning to build homes for their own occupancy, costing $4000 or more for construction, exclusive of land—and those who expect to modernize at a cost of $2000 or more—in any of the 37 states east of the Rocky Mountains, within 12 months, are entitled to receive a free copy of *Home Owners' Catalogs*, without obligation of any kind. We send this attractive cloth bound volume—with its hundreds of beautiful illustrations and comprehensive descriptions of reliable home building products—by mail prepaid, to all who meet these restrictions.

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*Home Owners' Catalogs*

*Published by F. W. Dodge Corporation, 119 West 40th Street, New York, N. Y.*
AIR BASES
CHEMICAL PLANTS
ARSENALS
PLANTS
HOSPITALS
NAVAL BASES
ORDNANCE PLANTS
INDUSTRIAL PLANTS

Defense against power failure...
EXIDE EMERGENCY BATTERIES

WITH defense industries working overtime, thousands of plants must have light all night long. And in many of these plants, essential processes must be operated continuously... even a temporary power failure would be disastrous.

And yet, because of storms, floods, fires and even street accidents... events which no utility company can possibly control... power failures do occur.

To forestall such risks, many architects and engineers have installed Exide Emergency Power Units in industrial and chemical plants, Naval Bases, hospitals, ordnance plants, arsenals, and air bases. These Exide Units have “earned their pay” in many an emergency, because they operate instantaneously and automatically upon any interruption of the normal electric supply. Also, they are easily maintained and economical to install and operate.

In providing for this vital protection in your plans for buildings, we can be helpful. Write us.

THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia
The World’s Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto
Time Is Short... America's Great
WAR CONSTRUCTION PROGRAM
Must Be Kept In High Gear!

WAR doesn't wait for those who aren't ready. Potential planes can't carry bombs and potential factories can't produce munitions and armaments. Our government, its War and Navy Departments, the Defense Plant Corporation and the Housing agencies have a stupendous responsibility and task to perform in properly equipping and implementing our field forces. The first step must be that of marshalling private enterprise to construct additional military installations and manufacturing buildings to produce munitions. And this first step, unless accomplished in the shortest possible space of time, may mean the difference between victory or defeat on many battle fronts.

Success in marshalling the building industry to perform its duty to the nation is dependent on a reliable and timely flow of information on projected war construction to those directly interested and in a position to contribute to our all-out construction effort. And speed in the flow of news, as well as in actual construction, remains the essence.

Complete cooperation and coordination of effort among owners, architects, engineers, contractors, subcontractors, sub-subcontractors and manufacturers is also essential to the successful execution of this all-out program. Timely and reliable information is needed so that the right men, the right materials, and the right equipment may be available at the right place at the right time.

Now, as for more than 50 years, the information provided through Dodge Reports is functioning on a confidential basis to coordinate the activities of those who can supply products and services to new construction projects... to tell them what is to be built — where — and when — and the responsible officials who must be served.

Dodge, working closely with officials of the War and Navy Departments, and conforming with the rules of censorship, will help keep America's great war production program in high gear. Each hour — each day — Dodge Reports help the industry to construct war projects on time, whether they be new industrial plants; new housing projects for industrial workers; new warehouse buildings; new commercial and community undertakings necessary to the health and safety of the public; or bridges, roads or other types of construction required for all-out prosecution of the war.

The continued cooperation of architects, engineers and contractors with Dodge Reporters in the field will contribute materially to the final victory.

DODGE REPORTS

Issued by F. W. DODGE CORPORATION, 119 West 40th Street, New York, N. Y.
Who Has a Better Right to this Security?

Today The American Workman Has The Greatest Need For Home Equipment That Will Serve Him Well And Long AT LOW OPERATING COST!

When a wage earner buys a house, financial consideration goes beyond a choice of land and structure. For it's the monthly cost to live which determines whether he can continue to afford the security of a home of his own.

Give him home operating equipment that will keep on giving good service at low cost. Give him an efficient and adequate heating plant and wiring system, and money-saving kitchen appliances. These can contribute more in operating economies than any slight increase they may cause in monthly payments under a long term mortgage.

And at the same time you can profit by specifying General Electric home equipment, because the homes you design and build today are the homes that will build your reputation for tomorrow.

Write us for the complete story...how G-E Equipment can lower living costs for your customers!

WIRING • REFRIGERATOR • RANGE • FURNACE • WASHER • IRONER • CABINETS • DISPOSALL and DISHWASHER • WATER HEATER

GENERAL ELECTRIC

HOME BUREAU, BRIDGEPORT, CONN.
YOUR NEW SWEET'S IS ON THE WAY!

Distribution of the 1942 Sweet's Catalog File is now under way. Your new file will be delivered to your office with the least possible delay. This is the thirty-sixth in an unbroken annual series of Sweet’s files. It contains more than a thousand new and up-to-date manufacturers’ catalogs —useful information on all kinds of building materials and equipment for all types of buildings.

Sweet’s Catalog File enables you to compare and select products or services to meet your requirements. If it is difficult to get what you want from accustomed sources, use Sweet’s as a means of finding reliable alternative sources. Sweet’s gives you quickly and in convenient form, the product information you must have.

FEWER ARCHITECTS MOVED OFFICES LAST YEAR

Comparison of Sweet’s distribution lists for 1941 and 1942 shows less tendency on the part of practicing architects to move their offices.

“It is true that a good many architects closed up in 1941 because they were called into service,” observes Mr. Rodney Derby, manager of the Distribution Department, Sweet’s Catalog Service, New York. “But among other thousands of architectural offices a smaller proportion than heretofore reported a change of address. There may be several reasons for this: Many designers are temporarily working full time on rush jobs in big consolidated offices, but won’t risk closing their own offices; others not so employed are sitting tight waiting to see what’s going to happen; a large majority of course are too busy to take time to move.”

“The urgency of defense and war time construction is such that many enormous consolidated offices have been set up both by

MOST OF ‘EM HAVE AN “S”

In the record’s Index to Advertisements on page 102 of this issue, an “S” preceding a company name indicates that the concern has one or more catalogs filed in the 1941 Sweet’s Catalog File. You will note that most of the record advertisers have adopted this modern, efficient and economical method of filing detailed information for your convenience. Thus, when a record advertisement awakens your interest you can instantly turn to Sweet’s “for further information.” No writing. No waiting. No expense to you.

USED SWEET’S 29 YEARS

McKim, Mead & White, Holabird & Root, Maybeck & White and Myron Hunt remind us they have been continuous users of Sweet’s for twenty-nine years or more. Does any practicing architect recollect being a user longer than that? The first Sweet’s file was issued in 1906, under the title, Sweet’s Indexed Catalogue of Building Construction.

CONSULTING STAFF

To interpret the professional viewpoint to manufacturer-clients, and to assist them in the selection and formulation of information for their catalogs, Sweet’s has a full-time staff of consulting architects.

46 FIRMS IN SWEET’S FOR FIRST TIME

Never before has FIRE-PROTECTION been so important!

Johns-Manville Asbestos Shingles for roofs and sidewalls are FIREPROOF... cost less in the long run... Why gamble?

Every architect can help eliminate fire hazard by specifying J-M Asbestos Shingles. Made of asbestos and cement, they simply cannot burn!

For roofs, the new J-M American Colonials provide American Method beauty, the texture of weathered wood, handsome color blends, freedom from rot and decay. Any carpenter can apply them. And the finished roof costs but little more than roofs of far less lasting materials. In fact, based on their life expectancy* the cost per year of a J-M Asbestos Shingle roof is, we believe, less than for any other roof.

For sidewalls, J-M Asbestos Siding Shingles offer equal protection against fire, weather, wear. Never require preservative treatment.

For details, just mail the coupon.

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**BUILT TO LAST 30 YEARS PLUS**, the new J-M American Colonial Roof Shingles combine beauty, firesafety, low upkeep. *30 years is underestimating their life. Thousands of the very first J-M Asbestos Shingles are still going strong after more than 30 years.*

**BEAUTIFUL J-M Cedargrain** Textured Siding Shingles faithfully reproduce the pleasing grain of sawed wood. Fireproof and rot-proof, they assure permanently low maintenance. Never need preservative treatment. Unusually economical and easy to apply.

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JOHNS-MANVILLE, Dept. A.R.2, 22 East 40th Street, New York, N.Y.

Please send me your latest brochures on J-M Asbestos Roofing and Siding Shingles.

Name ____________________________

Address __________________________
York Features
Give the Biggest Future

When you buy refrigerator doors, you expect them to last a long time. York doors stand up, retain original insulating, sealing and operating efficiency longer because of correct design, generous use of top-grade materials, rugged hinges, skilled craftsmanship... and these exclusive York features:

**PATENTED ROLLER-SEAL.** The York double seal provides two tough, pliable gaskets with sponge rubber cores and moisture-proof, grease-proof, wear-resisting coverings. The outer gasket overlaps and compresses tightly against the face of the door-frame. The Roller-Seal or inner gasket is brought to bear against a wood sealing strip with a rolling and wedging action that insures a leak-proof seal through the years.

**ROLLER-SEAL LATCH.** A new latch combines finger-tip control with extreme ruggedness and modern styling... easy to operate and good looking... all exposed parts subject to wear made of stainless steel.

York Roller-Seal Doors are available for every type of refrigeration service, cooler, freezer and sharp freezer doors, vestibule doors, track doors.

York Ice Machinery Corporation,
York, Pennsylvania.

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For 20 Years LEADING ARCHITECTS AND BUILDERS HAVE REPEATEDLY SPECIFIED EVANS VANISHING DOOR WARDROBES FOR SCHOOL PROJECTS AND EVANS HAS NEVER DISAPPOINTED THEM.

WRITE FOR NEW CATALOG AND DETAILS

Evans VANISHING DOOR WARDROBES
W. L. EVANS COMPANY "WASHINGTON, INDIANA

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YORK
REFRIGERATION AND AIR CONDITIONING

"Headquarters for Mechanical Cooling Since 1885"

KEEP 'EM FLYING!

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A Short Cut to Your
CONSTRUCTION COST PROBLEMS
FOR PRELIMINARY ESTIMATES

Boekh's Manual contains cubic and square foot costs on approximately 500 types of buildings with a total of over 7,000 specific base cost figures and, in addition, thousands of specific cost variations.

All costs are keyed to local construction cost conditions through exclusive index conversion formulas—Boekh's Manual never gets out of date if used with the conversion Index.

Boekh's Manual of Appraisal is now used by over 8,500 firms, among which are hundreds of architects and builders. This Manual is nationally recognized by Fire Insurance Companies and Mortgage Loan Agencies as a standard of Building Construction Costs.


Local Current Index Conversion Factors (each location). Price shipping prepaid $1

Order now, examine it for 10 days, then if you are not completely satisfied return the Manual and your money will be refunded.

EH BOECKH, ASSOCIATES
Consulting Valuation Engineers
903 TIMES-STAR BUILDING, CINCINNATI, OHIO

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ARCHITECTURAL RECORD
Here's the latest news about the advantages of Toncan Iron Sheets over other ferrous sheet materials—contained in a new 16-page edition published especially for architects and engineers.

"A Few Facts about Toncan Iron" presents valuable information to help you serve clients better, save them money, and increase your prestige. It will help you get the facts straight about Toncan Iron and how it differs from other ferrous metals—facts written by a producer of both iron and steel sheets.

Toncan Iron is not a copper-bearing steel. We make copper-bearing steel sheets—but we also make Toncan Iron Sheets. Toncan Iron is made from open-hearth iron—a highly-refined, exceptionally pure iron which is more resistant to the attack of rust and corrosion, more ductile than open-hearth steel.

With this finer base metal is alloyed the exact proportion of copper and molybdenum to produce a metal with greater rust-resistance than any ferrous material in its price class—a metal having twice as much copper as the best copper-bearing iron or steel.

Toncan Iron Sheets are easier to work, speed construction, reduce waste, stand up longer without repairs—all important in Construction for Victory.

Get a copy of "A Few Facts about Toncan Iron" and see why it pays to specify Toncan Iron for sheet metal work. There's much of interest, too, in Sweet's—27/3 and 13/6 on pipe and sheets—25/3 on Steel and Tubes—9/1 and 21/2 on Berger—15/18 on Truscon.

**REPUBLIC STEEL CORPORATION**

General Offices: Cleveland, Ohio

Berger Manufacturing Division • Culvert Division
Niles Steel Products Division • Steel and Tubes Division
Union Drawn Steel Division • Truscon Steel Company

**REPUBLIC**

**Toncan Iron SHEETS**

An alloy of refined open-hearth iron, copper and molybdenum—that grows old slowly
We Americans have confidence in our ability to maintain democracy and our present mode of living.

In our efforts to provide defense materials to protect these ideals, a pencil is inevitably used to transcribe our ideas into working designs on the drafting boards of America.

That KOH-I-NOOR Drawing pencils are so often the choice of draftsmen who know pencils best, cannot be chance alone, but must be based on practical experience gained by these men over a period of years.

Try KOH-I-NOOR today and see for yourself just what difference does exist. For sale at the better Stationery, Drawing Material and Art Material Stores.

* MEPHISTO BLUE PRINT CHECKING PENCILS in six colors, are made expressly for use on blue prints. Their strong, smooth, full colored leads are also suitable for coloring maps, charts and for general checking purposes.

* SEND FOR FREE BOOKLET No. 3

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THE RESTORATION OF COLONIAL WILLIAMSBURG


The Colonial Williamsburg Number of Architectural Record—issue of December 1935—was sold out soon after publication but the entire editorial contents have been reprinted and bound in permanent book form with blue cloth covers.

Many thousands of these Williamsburg reprints have been sold but the demand continues unabated.
An Architect Reports

on oil burning systems in

SMALL COMMERCIAL BUILDINGS

Joseph Watterson, of Mineola, Long Island, has designed many fine residences and small commercial buildings on Long Island. Among the large number of jobs for which he has specified the Petro Oil Burning System are the attractive Dutchland Farms Restaurants in Great Neck and Rockville Centre which are published in this issue of the RECORD. S. Tyson Haddenman was associate architect on this latter job. Mr. Watterson has this to say about Petro:

"From my experience I know that an architect can safely specify Petro for the smaller commercial structure—which will be important in our defense building—as well as for the bigger jobs. In the Store or Restaurant where the basement is planned for use by customers, this area is rendered free from noise and dirt where oil systems are used. Overhead is cut down because a janitor is not needed to check an oil burner, and I believe that oil heating systems provide the clean, quiet, pleasant surroundings which add comfort for the customer and guest.

"The Petro System has proved highly dependable and economical in the Dutchland Farms Restaurants. The owners and guests are well-pleased, and I can endorse them one hundred per cent."

Mr. Watterson's opening sentence above contains a very well taken point. His experience with Petro equipment in small and average sized buildings agrees with the experience of many other architects and engineers who have used the smaller Petro systems.

Professional preference for Petro is based chiefly on Petro's performance record of high efficiency and low operating costs. But a second factor is the wide range of applications included in this record—everything from a small residence or store using "light" fuel oils to multi-unit, high pressure boiler rooms using pre-heated "Bunker" fuel oils.

To have such a range of equipment available at one source is, in itself, an advantage to the architect. If he desires to check his own opinion, or the recommendation of his engineer, he can ask for a Petro recommendation. Since Petro has equipment in all sizes and for every commonly used fuel oil, the Petro engineer has no reason for bias in submitting his opinion.

The men quoted monthly in these pages in recent years have been noted for big structures. Their offices, however, have also directed a huge total of smaller projects, and their approval of Petro Systems reflects their total experience with Petro Systems of all sizes and the uniformly excellent performance Petro delivers regardless of size.

CAPACITIES (single burners): to 145 gal. per hour—487 boiler h.p.—68,000 sq. ft. steam E. D. R.

For further information see our CATALOG IN SWEETS.

Immeasurable Petro Systems in daily Commercial use are fired with light "Domestic" oils, at firing rates from 2 to 18 gallons per hour.

Petro Industrial Burners for Automatic operation with preheated No. 6 oil, or with No. 5 or lighter oils, are available in eight sizes. Models W-25 to W-9 inclusive. Each burner is a self contained assembly of motor, fan, pump, rotary cup atomizer and interlocked air and oil adjustments.

In the use of preheated No. 6 oil, the Petro Thermal Viscoity System is an integral part of a Petro installation, insuring reliability of operation and fuel economy.

Semi-Automatic and Manually controlled Model W Burners and "Mechanical" type units are also available to meet circumstances which do not require automatic operation.

Petro's Engineering Division will gladly answer questions. The Petro Industrial Equipment Catalog will be sent promptly on request.

Petro Cuts Steam Costs

PETROLEUM HEAT AND POWER COMPANY

STAMFORD CONNECTICUT

—Makers of good Oil Burning Equipment since 1903—
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- New buildings...industrial or governmental...must be designed to make man-power, as well as machinery, most productive. That means you must get adequate, effective heating in that new building of yours. With a war to win you can't afford to specify heating equipment that hasn't already proved its performance. Modine Unit Heaters have!

And now every single day counts! You want to get those unit heaters in—all set for quick, automatic heating. Modine Unit Heaters are faster and easier to install. With Modine-patented direct-from-branch-supply-pipe suspension, units attach directly to steam or hot water line. No brackets, pipe rods or straps. Supply connection is only support needed. Less material, less labor —$3 to $8 less cost per unit to install.

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

MODINE MANUFACTURING COMPANY
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THE Unit Heater WITH DIRECT-FROM-PIPE SUSPENSION
9 WAYS to brighten A $4,200 HOME!

How Architect Sargent Did It

1. Used large window areas for abundant natural light.
2. Placed a plate glass mirror over mantle.
3. Framed the fireplace with mirror panels.
4. Used Flutex decorative glass folding doors between dining wing and kitchen.
5. Placed plate glass shelves in windows.
6. Used Vitrolite on walls over bathtub.
7. Used fixed lights of Flutex above bathtub.
8. Placed generous size mirror over wash bowl.
9. Put full-length mirror on bedroom closet door.

When designing small homes or defense housing projects, remember that flat glass products can brighten them in many ways ... add to comfort and convenience ... actually help build morale.

The fact that glass is thoroughly in keeping with modern architecture is another point to keep in mind.

An important consideration these days is the ready availability of practically all types of Libbey-Owens-Ford flat glass. No priority headaches.

See Sweet's for full information or write for architect's catalog. Libbey-Owens-Ford Glass Company, 1221 Nicholas Building, Toledo, Ohio.

Libbey-Owens-Ford Glass Company
Glass Designed for Happiness

You can GET Glass! Design for it!