

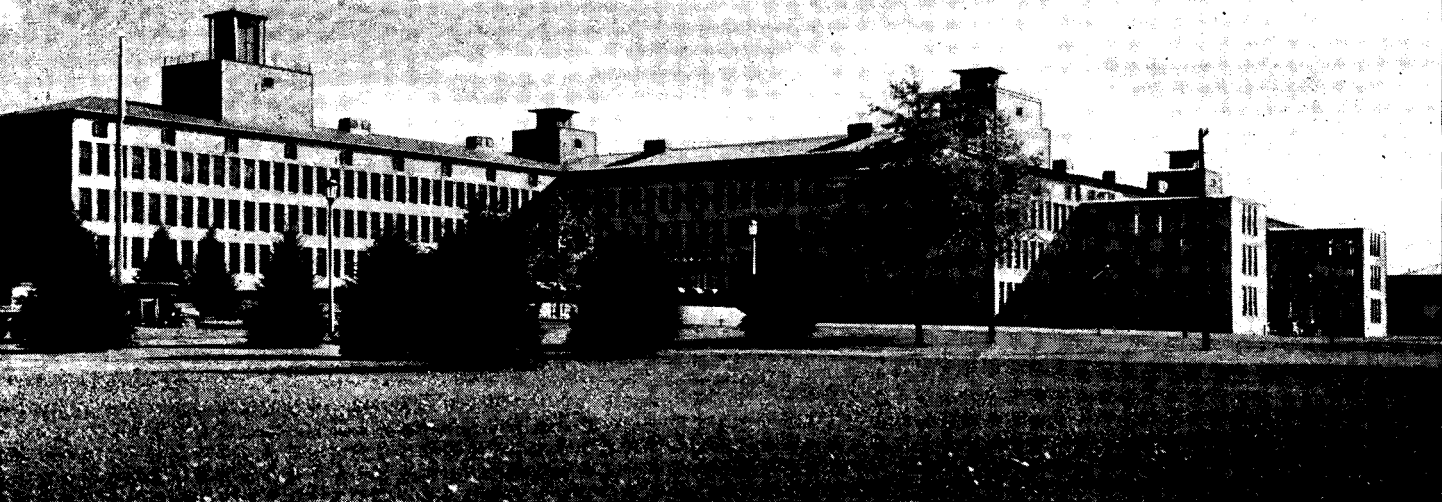
OF
LOU - ROUEN

Samuel Chamberlain
WITH DIXON'S TYPHONITE ELDORADO PENCILS

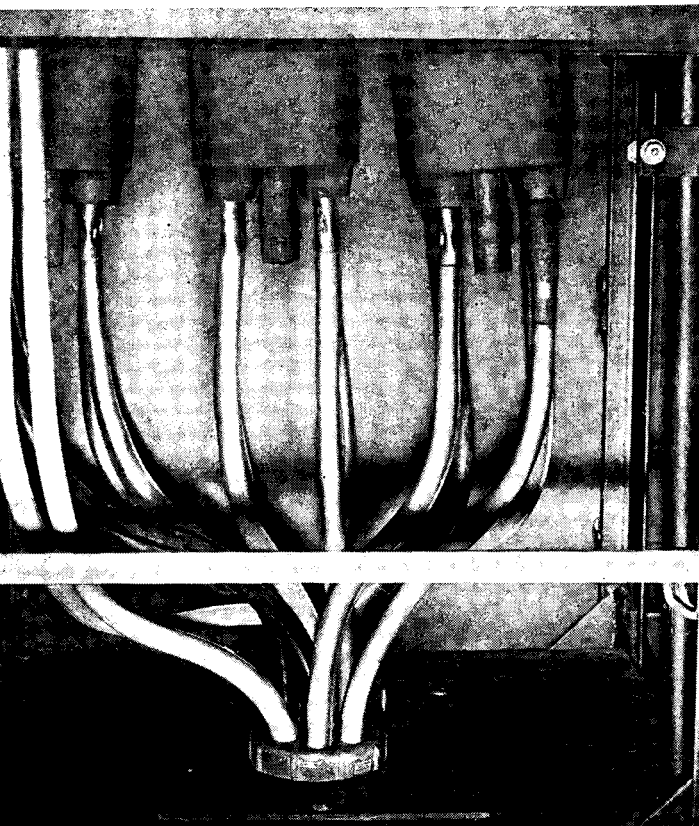
Buttresses in detail (above) drawn with Eldorado pencil 3B, tones blocked in with flat surface of B & F. Distant Cathedral Spire blocked in with flat surface 3H. A flat 5H wedge added mist in sky. Foreground building on left drawn with 6B, 4B, B wedge point.

TYPHONITE ELDORADO

Church of St. Maclou, Rouen, France. Built by Gun A. D., 1437, smashed A. D., 1940 by the Luftwaffe. Pencil Sales Dept. 225-J. Joseph Dixon Crucible Co., Jersey City, N. J.



ENGINEERED TO LAST FOR 99 YEARS



Low side of 4150 volt distribution transformer showing connections of one of the three 208-volt ring mains, in the Bell Telephone Laboratory cellar. This is a 3-phase 208 volt 4-wire system with a pair of circuits passing through each "crab" joint (one phase per terminal). The 4/0 Awg Okolite-Okoprene cables are colored blue, red, and black for phase identification. The two white cables on the left are the neutral conductors. The cables are connected to the crab joint with mechanical squeeze connectors. One of the conductors is in the process of being terminated.

When Bell Telephone Laboratories decided to decentralize part of their engineering facilities by moving into the country, they determined that their new buildings would be built to last "for at least 99 years."

Taking advantage of their own extensive laboratory experience and test results, they wrote specifications that they knew would provide the most durable materials and equipment available.

Their wiring specifications, for instance, called for an oil-base compound protected with a neoprene sheath, where exposures required it. In this new laboratory it was essential to have insulated wire that would resist flame, moisture, heat and chemicals.

The accompanying illustrations show how Okolite-Okoprene cables fitted into the picture and how simple it was to install and splice this carefully-chosen wiring. Okolite-Okoprene cables are used in many other places — in central stations, on railroads, in industrial plants, mines, or wherever long-life and full protection is required and they cost no more than high quality-braided wire. Bulletin OK-2009 describes them in detail. . . . The Okonite Company, Passaic, N. J.

Cooperating on this project were:

Architects and Engineers:

Voorhees, Walker, Foley & Smith, New York

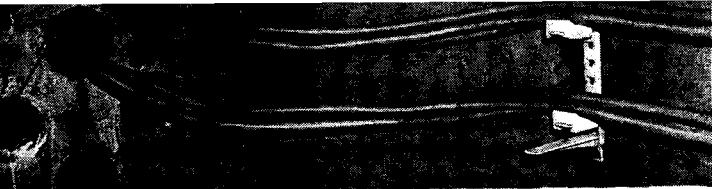
Electrical Contractor:

Hatzel & Buehler, Inc., New York City

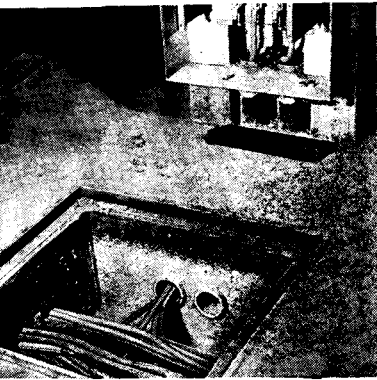
Distribution and Power Cables:

The Okonite Company, Passaic, New Jersey

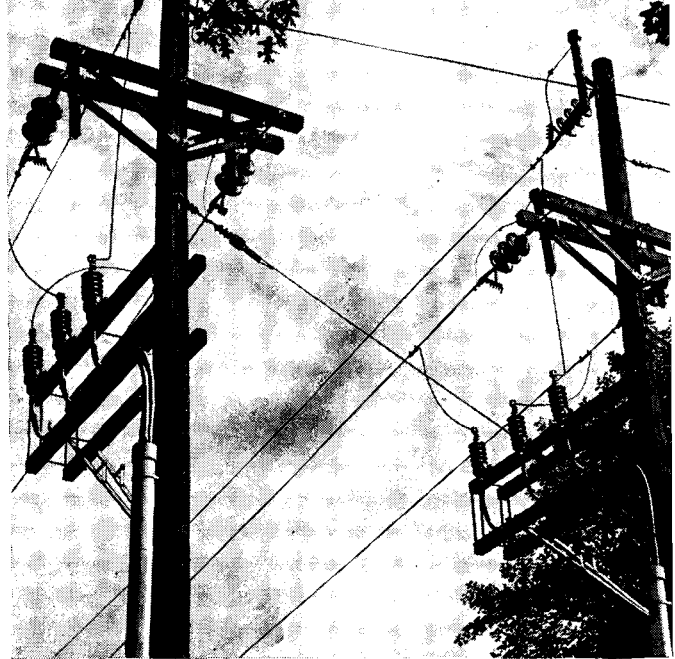




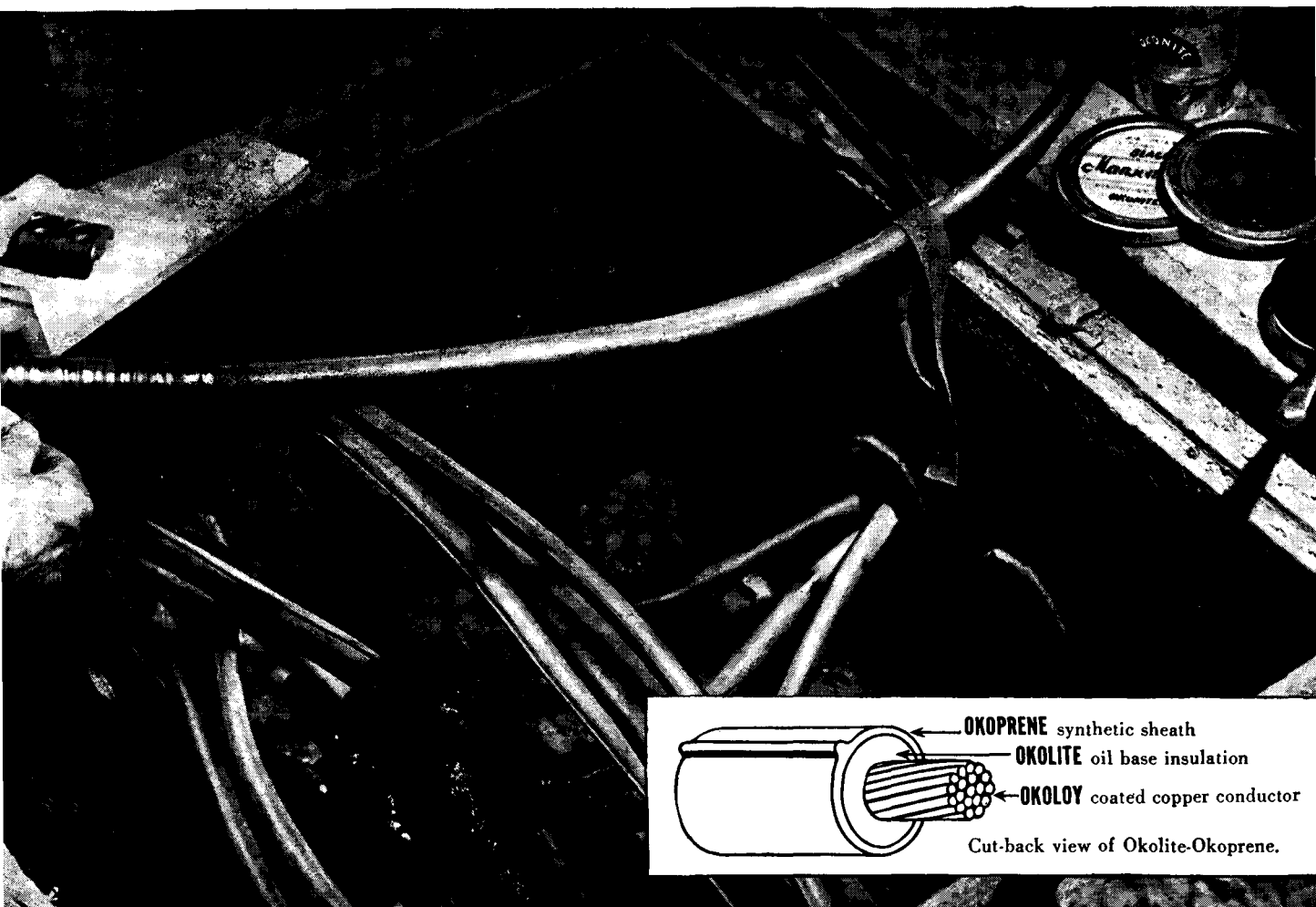
3' x 3'—Distribution manhole in 4150 volt power distribution line running from substation to Bell Telephone Laboratories. 6 cables on right are 2 circuits of Okolite 3/0 g 11/64" Okolite 4150 volt lead-covered cables supplying power to distribution transformers in laboratory. 2 cables on left are each 7-conductor Okolite-Okoprene signal cables for operating signal light on control board in main building to permit checking position of substation breakers.



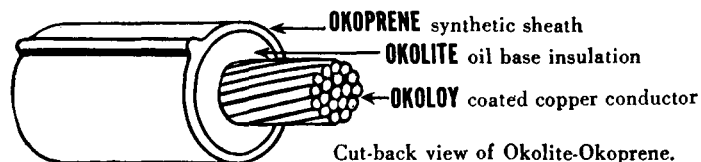
3' x 3'—Distribution manhole and distribution panel in cellar of Bell Telephone Laboratory. 11 - 4/0 Okolite-Okoprene cables pass through each manhole - each phase and the neutral are tapped by means of a special split tee-connector. Tap circuit can be seen leaving manhole and entering 208-volt distribution panel. Manhole is carefully waterproofed and cover sealed with a gasket.



Terminal poles on Jersey Central Power & Light Company's main feeder line (13,200-volts) serving Bell Telephone Laboratories substation. 6-single conductor Okonite Varnished lead-covered pole riser cables run from pothead terminals through 4" conduit to substation main line breakers.



3' x 3'—Distribution manhole in Bell Telephone Laboratory cellar showing taps being made on 208-volt ring main distribution cables. These are 4/0 Okolite-Okoprene cables colored for phase-identification. Splicer is making final tap with special split tee-connector. Exposed section of conductor and connector are insulated with Okonite rubber tape and pro-



ected with layers of Manson Tape and finally painted with weatherproof compounds. Okolite-Okoprene cables were specified for use in the following tough, damp locations: (1) under cellar floors, (2) between buildings (3) to street lighting standards, (4) at substation, (5) all wiring in kitchen refrigerators, (6) all wiring to outdoor bracket fixtures.

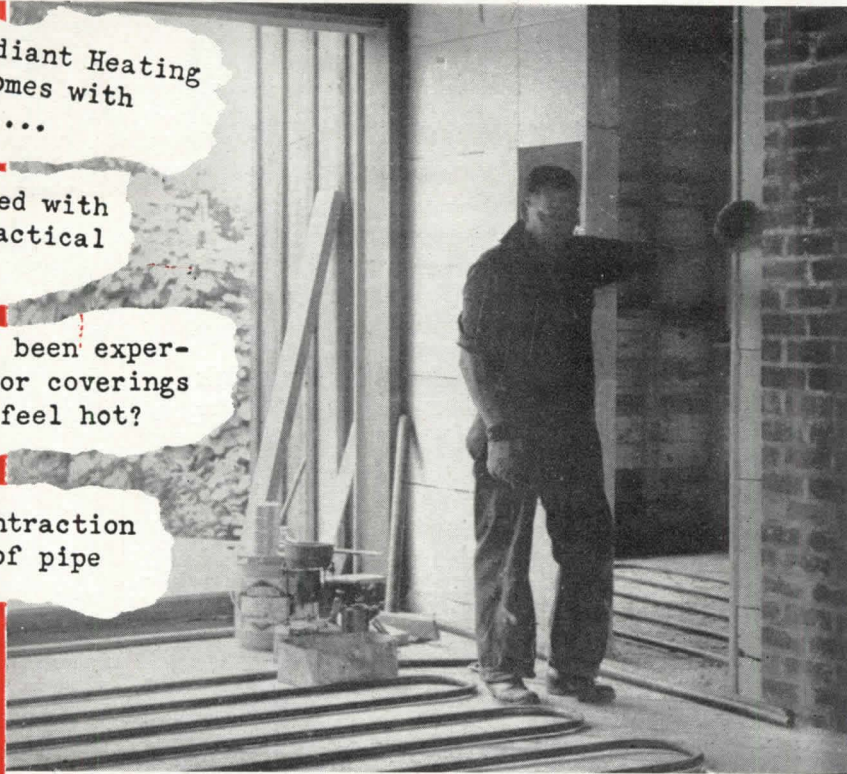
wondering about Radiant Heating in 'modern' type homes with large glass areas.....

can Radiant Heating be used with wood floors, and is it practical for two-story structures?

have any difficulties been experienced because of floor coverings ...and doesn't floor feel hot?

how about expansion and contraction and also, is there danger of pipe failures?

Questions like these on
RADIANT HEATING
are answered by
USER EXPERIENCE



This installation alone answers several often-asked questions. Radiant Heating coils were installed under wood floors in modernizing this old house, while in two new wings, they were laid under concrete. The large glass area in one wing is indicated by the picture.

BYERS WROUGHT IRON

Of hundreds of questions on Radiant Heating, those above probably come up most often. They can be answered in the most authoritative terms of all: *actual user experience*.

Since a number of Radiant Heating installations have been made in ultra-modern homes, the query as to glass area offers no difficulties. One owner's comment is typical: "In spite of the tremendous glass area, this room is always comfortable."

So far as the effect of Radiant Heating on wood floors is concerned, it should be remembered that the temperatures involved are little higher than summer heat encountered on torrid days. Installations made both with commercially seasoned flooring and factory finished flooring have served for several seasons, with complete satisfaction.

Any worry about the effect of floor coverings is needless, also. One user wrote, "The living room is almost completely carpeted, but we have not noticed that this has reduced our radiation at all." Whether the floors have been painted, concrete, linoleum cov-

ered, or dotted with scatter rugs, the universal reaction has been that there is no sensation of *heat*—but a very *definite* feeling of *comfort*.

The matter of preventing pipe failures boils down to one thing: selecting the proper kind of pipe. Where the pipe is surrounded by concrete or plaster, it must expand and contract at the same rate . . . or stressing and cracking will result. The heat transfer should be good; and of course resistance to both internal and external corrosion is a prime essential.

Wrought iron combines all these qualities to an unusually high degree. Its advantageous thermal properties can be verified by consulting the tables in an engineering handbook. And its corrosion resistance had been demonstrated not

only in the hundreds of Radiant Heating jobs where it is now serving, but also in applications like skating rinks, where the installation methods are similar, and the corrosive conditions even more severe.

If you would like a brisk and business-like story of what Radiant Heating is, how it is calculated and installed, what the answers are to many common questions about it, and why Byers Wrought Iron is so important in assuring dependability and permanent satisfaction, send for our technical bulletin, "Byers Wrought Iron for Radiant Heating Installations." You'll find it interesting and helpful.

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

CORROSION COSTS YOU MORE THAN WROUGHT IRON

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ELECTRIC FURNACE ALLOY STEELS · OPEN HEARTH ALLOY STEELS
CARBON STEEL TUBULAR PRODUCTS

ARCHITECTURAL RECORD

COMBINED WITH AMERICAN ARCHITECT AND ARCHITECTURE

VOL. 94

NO. 3

SEPTEMBER • 1943

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H. JUDD PAYNE, Vice-President in charge of Magazine Division



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TODAY'S CLUES FOR POSTWAR FLUSH VALVES

★ While no one can lay down any very definite blueprints for the plumbing that will be found in postwar buildings, some valuable clues as to trends can be discovered in buildings completed within the last year or two.

Take hospitals, for example. Several outstanding institutions have been put into service during this period. The Jefferson Hospital at Birmingham — already recognized as one of the South's finest — is one of these.

Every piece of equipment that went into the Jefferson Hospital was selected with careful forethought to the comfort and well-being of the patients to be served. Noise reduction, for example, has been aided by the selection of Watrous *Silent-Action* Flush Valves.

In this detail there is a definite clue on postwar trends . . . the flush valves to be installed in most buildings of tomorrow will be smoothly functioning water control instruments which operate *silently* — without any of the tell-tale noise that once was associated with flush valves.

In fact, if we are to judge by the Jefferson Hospital's selection of Watrous *Silent-Action* Flush Valves, more and more careful attention will be given to—

- (a) the degree of noise elimination provided by a flush valve — and the PERMANENCY of the noise elimination;
- (b) the ability of the valve to be adjusted for maximum water savings.
- (c) the valve's simplicity and economy of maintenance.

Plans for Watrous Flush Valves for the buildings of tomorrow are already under way. You may be sure these valves will match fully the many other developments in building construction which are to come.

THE IMPERIAL BRASS MFG. CO.
1240 West Harrison Street, Chicago 7, Illinois

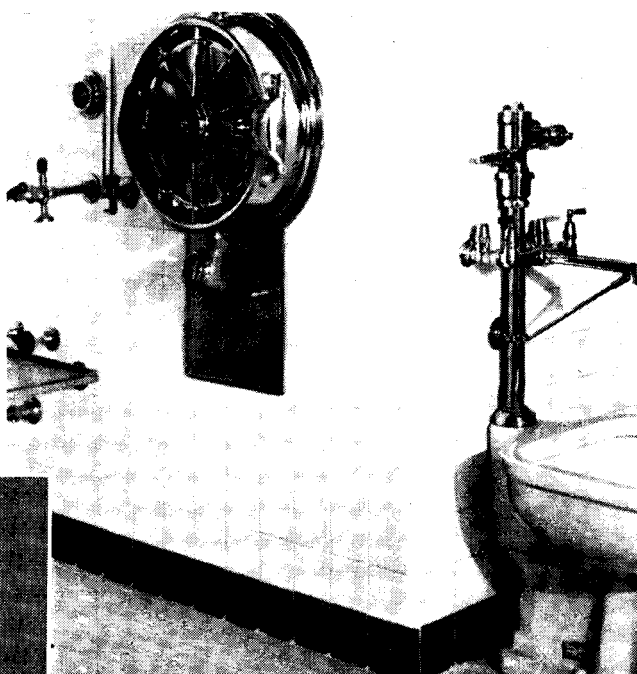
Data for wartime projects and postwar applications.

Sweet's Catalog File—Section 27, Catalog No. 39—covers both "V" model Watrous Flush Valves for essential wartime applications and the complete line of models and combinations for postwar planning . . . Or write for Bulletin 858-W and Catalog 448.

Watrous Flush Valves



*The Jefferson Hospital, Birmingham, Alabama
Charles M. McCauley, Architect
The Pate Co., Plumbing Contractors*



● There are two of these utility rooms on each floor with service sinks equipped with Watrous *Silent-Action* Flush Valves. Watrous *Silent-Action* Flush Valves are also installed on fixtures in all bathrooms and washrooms.

WASHINGTON NEWS

Critical materials allotted under CMP. The lumber crisis. New housing construction. WPB — after peace? Private home building. The new strong man of OPA.

The most encouraging news coming out of Washington which affects housing construction is the announcement of the allotments of critical materials for the fourth quarter under the Controlled Materials Plan. While the amounts are far below construction needs in normal periods, yet one significant feature stands out to quiet some of the earlier fears. Made available for the last quarter are 65,000 tons of steel and 1,300,000 pounds of copper. These are the allotments requested by NHA, the claimant agency, and they were fulfilled.

In addition to the specific allotments there has been created a "margin-for-error" reservoir of an additional 45,000 tons of steel for various construction programs. Housing will share in this emergency pool if the need arises. Included in the allotments will be some Class "B" products which are essential to housing construction, such as kitchen stoves and space heaters. In this connection, the Office of Civilian Requirements was unexpectedly allotted a large quantity of carbon steel for the fourth quarter, assuring additional housing equipment, the production of which has been drastically curtailed for a long period of time.

The lumber crisis

The growing shortage of lumber is fast becoming one of the most serious problems affecting the whole war production program. With the present scarcity of critical metals, the use of lumber has become increasingly important in the construction industry. The situation is already so acute that WPB has issued a directive increasing permissible stresses. An estimated additional 200,000,000 board feet of structural lumber and considerable metal will be made available annually by this action.

The new directive, No. 29, entitled "National Emergency Specifications for the Design, Fabrication and Erection of Stress Grade Lumber and Its Fastenings for Buildings," theoretically

increases by 20 per cent working stresses for all lumber which has been graded for strength by a recognized lumber grading agency. In this directive it is ordered that the emergency specifications apply to and govern the use of stress grade lumber and its fastenings for all buildings which are constructed, financed or approved by governmental agencies on contracts placed after November 1, 1943. These agencies, however, are empowered to put the directive into immediate effect wherever possible. Where contracts already have been placed or will be placed before the November 1 deadline, it is directed that they should be reviewed by the sponsoring agencies promptly and changes made in accordance with the emergency specifications unless such changes will result in a substantial delay in the war effort.

The lumber industry itself has estimated that it has a shortage of more than 60,000 workers necessary to keep up proposed production. At present rates of production there will be a decrease of more than 2 billion board feet over the total amount produced

last year. The greatest lag exists in the northern mid-west section where the Great Lakes Region is about 30 per cent behind last year. The situation has become so threatening that WPB Chief Don Nelson has given the problem his personal attention. As a result of Nelson's survey there was appointed a lumber policy committee which is seeking means of restoring production of this vital commodity. Some of the smaller eastern mills are receiving aid from WPB and the Forest Service.

New housing construction

The latest "work-or-fight" order may have a material effect on future construction. The War Manpower Commission has ruled that deferments from Army service will be granted only for occupational reasons. In addition, there is a new list of non-deferable jobs which will cause many men to move into essential war jobs. This in turn will mean that men from one part of the country will migrate into sections which are tight labor market areas. Housing shortages already exist in nearly every tight labor market area, and with the influx of additional workers the pinch will be even greater.

NHA will attempt to relieve some of the housing shortages in every way possible. New war housing quotas for

(Continued on page 10)



- Drawn for the record by Alan Dunn

THE STANDARD OF TEXTURED TILE



ARKETEX CERAMIC CORPORATION

B R A Z I L — I N D I A N A

An open letter to
Architects and Engineers:

More than twenty years ago the founders of Arketex Ceramic Corporation created AR-KE-TEX Ceramic Glazed Structural Tile. In originating and developing this product they offered a new wall material to the architectural profession.

The fact that millions of units of this material have been used in many important building projects since then is tangible evidence that Arketex engineers have made a definite contribution to progress in building design and construction.

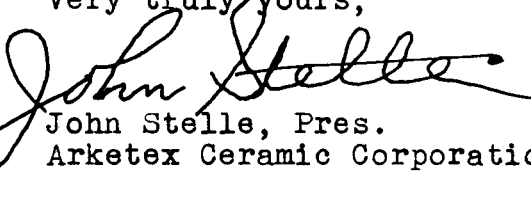
Since AR-KE-TEX Tile was first offered to designers, many improvements have been made in form, color and texture. Our Research Department is constantly seeking ways to still further improve our product in order that you may have available an even better solution to the new demands which are made by an ever changing building world.

On the opposite page is the first of a series of monthly messages which will appear in this magazine. We hope they will be welcome in your offices. We pledge that they will always contain information which will be useful to architects and engineers, their draftsmen and their specification writers.

They will be designed to keep you posted on new developments in the manufacture of Ceramic Glazed Structural Tile and its many applications in the buildings you plan.

We hope you will read these messages and that they will bring something of value to you.

Very truly yours,

A handwritten signature in cursive script that reads 'John Stelle'. The signature is written in dark ink and is positioned above the typed name and title.

John Stelle, Pres.
Arketex Ceramic Corporation.

BETTER WALLS

WITH AR-KE-TEX TILE

PUBLISHED MONTHLY FOR THE INFORMATION OF ARCHITECTS AND ENGINEERS

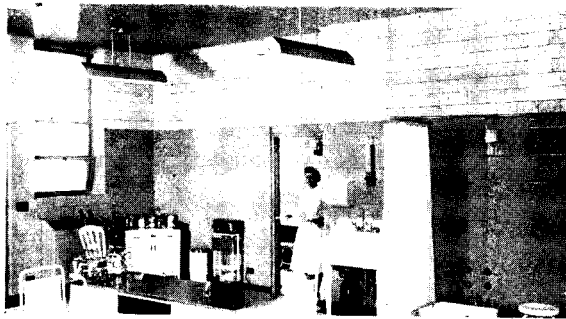


AR-KE-TEX CERAMIC GLAZED TILE IN HOSPITALS

Sanitary wall surfaces have long been recognized as the prime requisite for hospital interiors. The maintenance of scrupulous cleanliness of walls is a costly matter where ordinary construction materials are used. Painting and refinishing of walls runs into a substantial figure in the annual maintenance budget for most hospitals.

Where walls are built of AR-KE-TEX Ceramic Glazed Tile there is no cost for painting or refinishing because these walls combine the three-fold necessity of permanent sanitation with beauty and economy. Not only is the face of AR-KE-TEX Ceramic Glazed

Tile impervious but the body of the tile is less absorbent than any similar material; a vital necessity for a structural unit which must remain constantly sanitary.



Walls of AR-KE-TEX Ceramic Glazed Tile remain clean and sanitary because of their high-fired glazes which are never affected by moisture, acids, alkalis, grease, oil, or any ordinary chemicals. They main-

tain a smooth surface to which dirt cannot cling or ever penetrate and retain their beauty of color and texture permanently through their ability to withstand defacing or soiling by any ordinary means.

For further information send for descriptive literature or see our Catalog in Sweets.

ARKETEX CERAMIC CORPORATION
BRAZIL, INDIANA

(Continued from page 7)

private financing, just released, show that the west coast will come in for a big share of new construction. Many temporary family dwelling units will be built through public or governmental financing.

NHA has adopted a new policy for privately financed construction. This type of construction is scheduled only if the need is for family units and if there may be a postwar demand for such accommodations.

Both publicly financed and privately financed war housing is being built under local quotas established on the basis of information pertaining to labor migration which is supplied by the War Manpower Commission. To save critical materials, new housing is authorized only in areas or localities where WMC determines that in-migration of workers is essential. Even after such data is given by WMC, the quotas of new construction will not be established until after a survey is made of existing housing. In this connection the more important feature is the conversion of facilities already present in a locality.

Private home building

Several stories have been "making the rounds" in Washington to the effect that there will be a relaxation of tight construction controls for private home construction. There has been a great deal of pressure put on WPB for a modified program of construction of homes under \$6,000 in value.

The cold hard facts disclose that there is still no substantial easing of critical materials necessary for such building. Recent "victories" of the Office of Civilian Requirements over the armed services has given unwarranted ammunition to wishful thinkers. As a result of unexpected allotments to the Civilian Requirements Division, many "irritation items" such as bobby pins, alarm clocks, razors, etc., will be turned out. While wartime civilian supply is a psychologically tough problem, the war needs of the armed forces are paramount. The increased availability of certain "irritation items" has a remarkably quieting effect on civilian morale. However, such a concession should not be construed to mean that there is a definite

easing-up of critical materials for larger consumer durable goods — particularly private home construction.

When supplies of iron, steel, copper and other critical materials are available, the construction of private residences and much-needed stores will receive early attention. In addition to the class of home valued at \$6,000 and less, there probably will be another classification based on homes between \$6,000 and \$12,000.

WPB—after peace?

One of the most frequently discussed questions here in Washington centers on the possibility of a postwar materials control agency. Officials of WPB are fully cognizant of the problems of re-conversion and other postwar headaches, but many are hesitant to make any public utterances. This hesitancy is motivated by the fear of universal criticism from both labor and industry.

Ernest Kanzler, former Director of Operations in WPB, has just submitted a report to Chairman Don Nelson. Contents of the report have remained a close-mouthed "civilian secret" but it is known that the document deals entirely with matters concerning postwar planning. Few observers in the capital doubt that government controls will be continued after the war and some go as far as to predict that a highly integrated system of international production control will come out of the peace conferences.

The new strong man of OPA

Out of the shambles of a well chastised OPA has grown a new figure, Chester Bowles, who was appointed General Manager by Administrator Prentiss Brown. "A kick-a-day for OPA" was becoming a byword on Capitol Hill. Administrator Brown had brought Lou Maxon from Detroit to try to save the tottering price agency, but all the advertising executive did was to give it another kick. In desperation Bowles was made General Manager, and he assumed the new post knowing full well that the whole price control structure was on the brink of complete collapse.

One of the first of a series of actions

taken by the new General Manager was to remove "professors" from key price policy positions. He has replaced them with men of long-standing business experience. Even more important, Bowles is taking all branches of industry into his confidence and is conferring with various industry representatives far more actively than has ever been done.

Bowles is now reorganizing the price divisions into four or five branches on the basis of production and distribution levels. He is frank to admit that before such reorganization can be effectively accomplished, OPA must recruit additional qualified business men for the job. Under Bowles' management OPA is attempting to simplify existing price machinery and is placing far greater authority in local OPA offices.

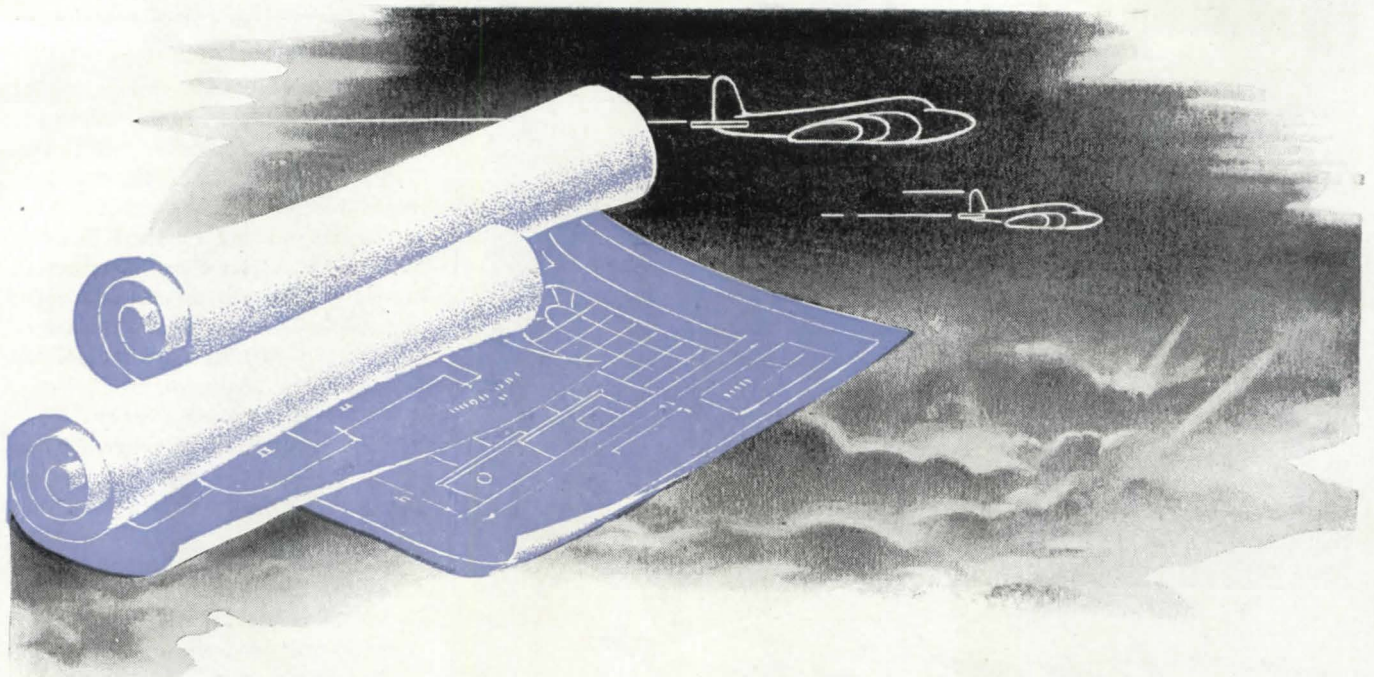
A stickler for efficiency, Bowles steadfastly refuses to replace competent local OPA officials because of political pressures. This one feature may lead to renewed congressional attacks because of previous commitments made to prominent members of Congress by Administrator Brown, former Michigan Senator.

Under Brown's direction business need not look for miraculous price reductions in the form of roll-backs. However, for the first time since the two-fisted Leon Henderson left, OPA will tighten up on existing prices and compliance will be the keynote. There are many observers who believe Bowles' management may save OPA from too severe pastings when Congress returns.

Small cost construction repairs

There has been a great deal of confusion in the field of construction as to the planning and procurement of necessary materials for maintenance and repair of construction facilities under the Controlled Materials Plan. There is a definite relationship between L-41 and CMP Regulation 5 which governs maintenance, repair and operating supplies. WPB has tried to clarify existing procedure by issuing Interpretation 9 of CMP Regulation 5. This regulation may not be used to get materials or products for any con-

(Continued on page 17)



Blueprints in the Stratosphere

AGAINST a stratosphere ceiling are projected many of the plans for tomorrow's Air-Conditioning progress . . . blueprints in a sky without limiting horizons for human comfort.

Worthington's work on Air Conditioning has not halted through wartime concentration on its production for essential industries. Rather it has gained new heights of discovery — added wider vision to years of research and accumulated knowledge.

Out of equipping giant bomber plants and engine-test chambers, for example, has

come a fund of information that is to be put to work in the general interest of commercial projects now on your boards.

War secrecy today limits the availability of these most modern developments. They will however be at your disposal at the conclusion of the present crisis.

Even now, much aid can be given to architects and engineers who are working on specific projects for post-war modernization and new building construction. Why not call the nearest Worthington office into consultation?

CA3-43

WORTHINGTON PUMP AND MACHINERY CORPORATION, HARRISON, N. J.
District Offices and Representatives in Principal Cities



(Continued from page 10)

struction work of the type requiring authorization under L-41, unless the authorization specifically states that CMP 5 may be used. However, in those cases where specific WPB authorization is not required to begin construction, and where the materials needed for the job do not cost more than \$500, CMP Regulation 5 may be used to buy materials needed for the construction.

—J. Maxwell Dickey
Washington Correspondent

★ ★ ★

NHA NOTES

Savings in critical metals

Savings ranging up to 80 per cent in use of critical metals as compared with pre-war levels have been accomplished in the war housing construction program through joint cooperation of the government and the building industry, according to John B. Blandford, Jr., Administrator of the National Housing Agency.

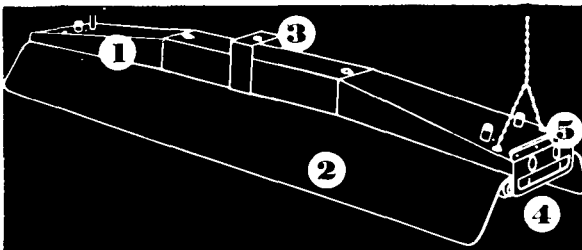
Studies recently completed by NHA show that the average privately financed family dwelling unit now being built under the war housing program consumes only 2,749 lb. of critical metals as compared with 8,930 lb. of such materials used in the average pre-war dwelling unit, a reduction of 69 per cent, Mr. Blandford reported. These statistics include not only the metals used directly in house building, but also the metals consumed in products and equipment installed in the housing and in related utility facilities such as electric, gas, water and sewage connections.

In the publicly financed phase of the war housing program, family dwelling units of permanent type built during the fiscal year ended June 30, 1943, consumed an average of 2,717 lb. of critical metals. This was a reduction of 72 per cent from the 9,712 lb. used in the average pre-war publicly financed family dwelling and of 49 per cent from the 5,370 lb. consumed in the average family dwelling built with public funds in the preceding fiscal year. Still greater savings have been accomplished in family units of temporary construction, which is now used for substantially all the war housing being built with government funds. The average temporary family unit

(Continued on page 98)



The Latest and Best
IN FLUORESCENT LIGHTING!



- 1** Ingeniously engineered Accessory Housing—long—lean—good looking—and tough! Meets W. P. B. metal limitations. Die-formed from a single piece of steel.
- 2** Masonite "REFLECTOR-BOARD" Reflectors; formed in our plant, rigidly checked, quality controlled. Finished "300° White" (88% R. F.). Reflector easily removed and reinstalled, with Flexible "Triggers."
- 3** Hang it anywhere—anyway! K. O.'s for conduit and chain. Sliding hanger for outlet spacing variations.
- 4** Supports for Eggcrate Louvres, when desired. Louvres can be attached to standard units, initially or at later date.
- 5** "Bump-Proof" end-plates give added lampholder protection. Starters easily accessible even when SUPER-ILLUMINATORS are mounted directly to ceiling.

For full details on the GUTH Super-Illuminators, Write for Catalog Sheet No. 744.

EFFICIENT!

SIMPLE!

PRACTICAL!

ATTRACTIVE!

Easy-to-Clean!

Leaders in Lighting Since 1902



THE EDWIN F. GUTH CO. • 2615 Washington Ave. • St. Louis, Mo.



George Nelson, one of the managing editors of *Architectural Forum*, is also one of the most creative of today's architects. His most recent achievement: The interesting, original Sherman Fairchild New York town house, designed in partnership with William Hamby.

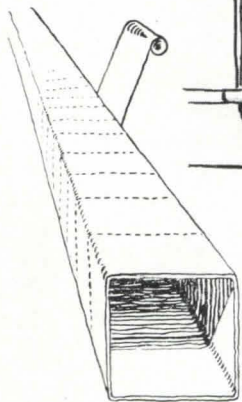
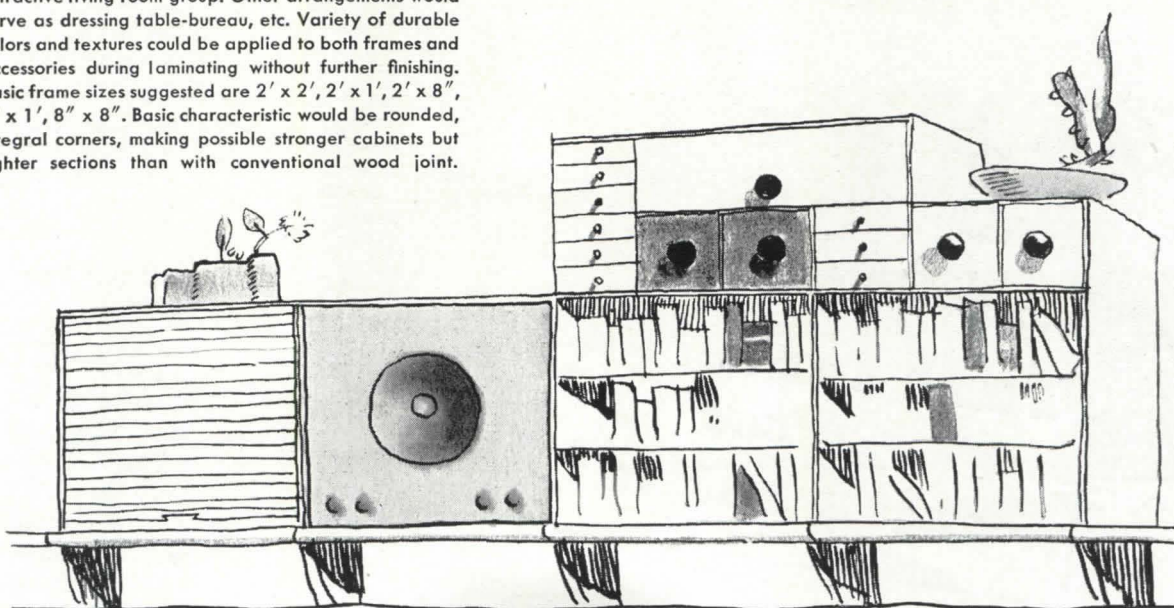
FROM AIRCRAFT AMMUNITION BOXES... EXPENDABLE UTILITY CASES FOR 194X?

ARCHITECT George Nelson has long felt a need for standard furniture units lower in cost . . . lighter in weight . . . and of wider utility than cases, cabinets and chests now on the market. But not until he heard the story of the plastics boxes used to store and feed ammunition to the wing guns of modern fighter planes, did a solution suggest itself.

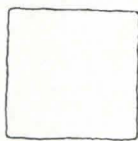
These boxes once were steel. Now they are fabricated with substantial savings in cost and weight from a thin but surprisingly tough, strong and rigid plastics-and-fabric laminate.

Basing his plans on use of a similar material, laminated on a mandrel into continuous, hollow lengths, Mr. Nelson has developed the interesting suggestions below for producing a wide variety of space-saving units . . . suitable for a wide variety of storage functions . . . from just five basic frames. Such units, he points out, would provide maximum storage in minimum space. Equally important, they should be so inexpensive that they could be discarded without a twinge of the owner's conscience, when they have served their purpose.

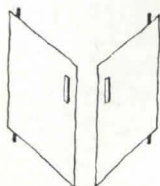
Stacked on a standard low bench, units make useful, attractive living room group. Other arrangements would serve as dressing table-bureau, etc. Variety of durable colors and textures could be applied to both frames and accessories during laminating without further finishing. Basic frame sizes suggested are 2' x 2', 2' x 1', 2' x 8", 1' x 1', 8" x 8". Basic characteristic would be rounded, integral corners, making possible stronger cabinets but lighter sections than with conventional wood joint.



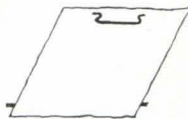
CUT ON DOTTED LINES



ADD BACK



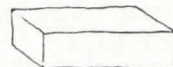
HINGED DOORS



DROP DOORS



SHELVES



OR DRAWERS, ETC.

The Broad and Versatile Family of Monsanto Plastics

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

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

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



PLASTICS AND YOUR FUTURE

Whatever your particular postwar products, chances are excellent that wartime advances in plastics materials and fabricating techniques will open up many exciting new possibilities for smarter styling . . . improved performance . . . lower costs. Chances are also excellent that you will find the answer to your particular needs in a Monsanto plastic. Monsanto is one of the nation's largest producers of plastics. The family of Monsanto plastics is probably the broadest and most versatile offered by any one manufacturer. For facts — and many a pertinent idea — see the 24-page guide to Monsanto Plastics prepared for product designers. Simply write: MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield, Massachusetts.

LETTERS FROM RECORD READERS

PREFABRICATION

Record:

The article on prefabrication in your June issue was the best overall treatment of the subject that has appeared in any publication.

The section by Douglas Haskell accurately outlines the three major schools of thought on the merchandis-

ing problem. As was clearly pointed out the method of production must be in harmony with the method of merchandising. Time will tell which one of the three methods you outlined will win out in the long run.

The section by Howard P. Vermilya is a down to earth preview of the technological advances that may be expected to find their place into prefab-

ricated homes. What Vermilya points out is in refreshing contrast to the "lunatic fringe" of thought that has recently appeared in so many magazines.

Your section containing a list of the prefabricators is the most comprehensive and accurate that has appeared thus far.

For years there has been much valuable time and effort wasted on the "nuts and bolts" phase of prefabrication without any clear thinking on the merchandising aspect. It was a question of putting the cart before the horse. I, therefore, hope that your article will reverse the trend of thinking and will stimulate concentration on merchandising. When that problem is solved the production and product design problems will fall in logical, orderly fashion.

—FOSTER GUNNISON, *President Gunnison Housing Corporation*

"HOUSE OF THE FUTURE"

(*Editorial, July 1943, page 41*)

Record:

It is true that we have been reading and hearing a tremendous amount of speculative opinion about the house of the future, with much emphasis on prefabrication. We continue to believe, as Mr. Stowell points out, that house design will reflect individual tastes and needs, while accepting the advantages of new ideas that contribute to comfort and convenience.

—LEON F. HUSSEY, *Vice-President Fuller & Smith & Ross, Inc.*

Record:

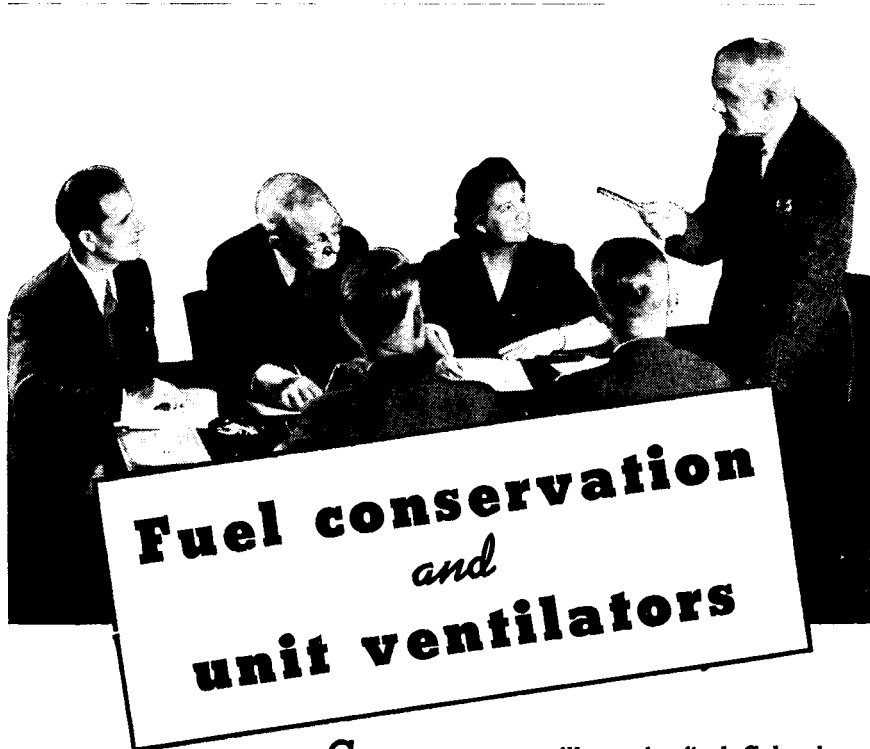
I have read Kenneth Stowell's editorial. I find it quite refreshing in that he has simplified this whole subject. I do hope you have mailed a reprint of this to everybody associated with building. It will help to crystallize thinking back to grass roots. I like it and I hope you will express my compliments to Mr. Stowell.

—MELVIN H. BAKER, *President National Gypsum Company*

Record:

The article of Mr. Kenneth K. Stowell on "The House of the Future," appearing in ARCHITECTURAL RECORD

(*Continued on page 16*)

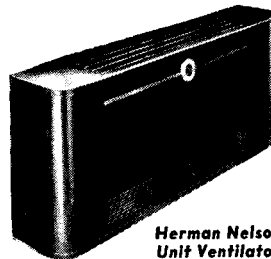


Fuel conservation and unit ventilators

COLD WEATHER will again find School Authorities struggling with the problem of fuel conservation.

Fortunate are those whose schools are equipped with Herman Nelson unit ventilators which operate in accordance with the Her-Nel-Co Method. These units when properly controlled introduce air from out of doors only when necessary for maintaining proper temperatures in the classrooms. They save all of the fuel formerly used to heat large quantities of cold air continuously introduced from out of doors even when not required.

Herman Nelson facilities are now engaged in producing equipment to hasten victory. With peace, we will resume the designing, developing and pioneering of equipment to provide better schoolroom ventilation at less cost.



Herman Nelson
Unit Ventilator

Sales and Service Offices in Principal Cities

The Herman Nelson Corporation MOLINE ILLINOIS

Autovent Fan & Blower Division, Chicago, Illinois

Manufacturers of QUALITY HEATING, VENTILATING AND AIR CONDITIONING PRODUCTS



THE EYELINE OF FIFTH AVENUE

IS 80% BRONZE

MOSSE
Linen



Illustration shows the shop of Mosse Inc., 659 Fifth Avenue, New York City. Paul T. Frankl, Designer. Morris Ketchum, Jr., Associate. Anaconda Bronze Work by General Bronze Corporation, Long Island City, N.Y.

The world's most fashionable shopping district not only reflects the inherent dignity and good taste of architectural bronze—but it emphasizes the fact that this ageless metal adds distinction to displays of merchandise, that it lends a feeling of warm substance and integrity to the establishment whose front it graces.

A SETTING THAT NEVER GROWS OLD

Anaconda Architectural Bronze is a sturdy, durable metal . . . rustproof, of course. Every bit as economical as it is attractive, architectural bronze is easily cleaned;

its natural lustre may be preserved with but occasional attention.

In peace time, The American Brass Company has always been the leading supplier of Architectural Bronze, Copper and Nickel Silver in the form of extruded shapes, drawn shapes, sheets, etc., for the creation of ornamental work of every description. 4818

THE AMERICAN BRASS COMPANY

General Offices: Waterbury 88, Connecticut

Subsidiary of Anaconda Copper Mining Company

In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ontario



Anaconda Copper & Brass

Looking Ahead in Air Conditioning with Sullivan A. S. Patorno



SULLIVAN A. S. PATORNO, and his associated Consulting Engineers, have among their many projects designed the unusual air conditioning system for "Lusk Apartments" in New York City. In this article Mr. Patorno makes a dramatic statement on the postwar possibilities of air conditioning medium-priced apartment houses.

"In the early part of 1938, when the 'Lusk Apartments,' New York's first complete air conditioned apartment building, was finished, it demonstrated that year-round comfort could be made a reality. The tenants of the 'Lusk Apartments,' who had previously known only eight months of comfort, now no longer suffered throughout the four hot months.

"While the apartment house dweller of today has the use of his apartment for a period of twelve months out of the year, his apartment is uncomfortable during the summer season. But by adding cooling to the apartment, the owner can increase the comfort period by 50%, from eight months to twelve months, and give his tenants all-year comfort.

"We have been making a study for some time of the practical application of cooling to apartment houses at a minimum initial and operating cost. Our studies indicate that it is possible to incorporate cooling in apartment buildings having medium-priced rentals at an additional initial cost of approximately 10%, and an increase in the rental charges of approximately 10%. For this slight increase in cost, the owner can furnish and the tenant may enjoy an additional comfort period of 50%, or a full twelve rather than eight months.

"The constructive elements, such as life insurance companies, savings banks, real estate organizations, far-sighted investors, etc., are planning the construction of many medium-priced apartment dwellings. Our message to these people is that it will now be possible to add cooling to *second* buildings for a nominal increase in initial and operating cost.

"Any medium-priced apartment building constructed in the postwar period that does not offer its tenants year-round comfort will not only have difficulty in competing with buildings providing year-round comfort, but will probably find its rate of obsolescence greater. We have singled out the medium-priced apartment dwelling because we believe that it will be the logical outlet for investment and will benefit the greatest number of people in the postwar period."



REMEMBER—"Freon" refrigerants are non-toxic, non-explosive, non-flammable, non-irritating. They cannot harm food or clothing. By every measure they are the world's safest refrigerants. Kinetic Chemicals, Inc., Tenth and Market Sts., Wilmington, Del.

FREON
REG. U. S. PAT. OFF.
safe refrigerants

"Freon" is Kinetic's registered trade mark for its fluorine refrigerants.

BACK THE ATTACK—BUY AN EXTRA WAR BOND THIS SEPTEMBER

LETTERS

(Continued from page 14)

in July, 1943, is not only extremely well written but timely, and those of us interested in housing generally would be benefited greatly if it could have a wider circulation than a technical magazine, however good, can give it. The idea of "prefabrication" as related to housing has been presented to the public most unrealistically and Mr. Stowell's article goes a long way toward substituting fact for fiction on a subject close to the heart of the American public.

—R. R. ROGERS, Vice-President
The Prudential Insurance Co. of Am.

Record:

We have all deplored the fantastic treatment which has appeared in print. It seems much better to understate the case. We are also aware of the price problem. Many products are already available which would increase the comfort and convenience of a home. But at least in some cases they are beyond the pocketbook of the owner. It is a mistake to encourage prospective buyers of any product to expect too much for a limited investment.

—J. M. MC DONALD, Treasurer
The Buchen Company

Record:

Kenneth K. Stowell's article in the ARCHITECTURAL RECORD expresses very aptly that which most of us I believe really think about the house in the future.

There has been so much blah about some new creation that might be developed that wouldn't look like a house at all that getting down to earth is a good thing. The standard of living never stands still, but pork chops in 1975 are going to look very much like the pork chops of today, and there are many of the fundamentals of the house that will follow this example.

—CLARK T. MORSE, President
American Blower Corp.

Record:

I think Mr. Stowell's article is extremely timely, and should be most effective. It treats the subject in a most interesting manner.

I quite agree with you that much harm can be done by the loose talk that is being indulged in about future housing. There is no doubt that there will be substantial improvement in housing, and that this should be so

(Continued on page 100)

Before

After

THREE 3-POLE
CIRCUITS AND
OBSOLETE OPEN
TYPE MAIN
SWITCH

TWELVE 3-POLE
CIRCUITS AND
PROVISION FOR
TEN ADDITIONAL
... SAME BOX,
SAME CONDUIT

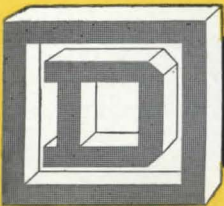
Here is the easy, economical way to provide for increased power demands

● Increased production has brought the demand for more power distribution in scores of plants. There are countless fusible panels similar to the one shown at the left above—inadequate and subject to excessive heating.

Notice how easy it is to convert to a compact, dead front circuit breaker panel.

Notice, too, that by utilizing thin wall wire, additional circuits have been provided, using existing box and conduit.

If any of your industrial clients need this kind of conversion, let your nearest Square D Field Engineer work with you in determining the exact requirements.



ELECTRICAL EQUIPMENT

KOLLSMAN AIRCRAFT INSTRUMENTS

SQUARE D COMPANY

DETROIT

MILWAUKEE

LOS ANGELES

WE'RE READY TO WORK WITH YOU — NOW!

17,450* V-Day Jobs started...
9,555* in the Designing Stage

The architects of the country are starting a great early-post-war job . . . the building of a new America. This vital project is not just "up for discussion" — *it's on the boards.*

The total value of the known actual building jobs now scheduled for V-Day initiation is well over 1½ billion dollars. A large percentage of this work has reached the design-specification stage.

On many of these projects, Lockwood Builders' Hardware has been specified. Lockwood machines — now at work for Victory — are ready, together with the "know how" to resume with high quality builders' hardware as soon as the go-ahead is received.

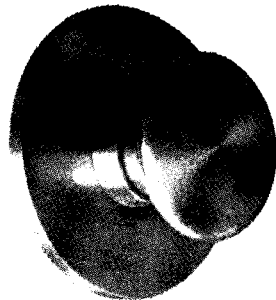
Architects everywhere are finding Lockwood ready and equipped to assist now in putting this V-Day work on a ready-to-go basis . . .

*On the basis of a partial round-up of V-Day projects by F. W. Dodge Corporation.

M

LOOK TO LOCKWOOD

for that extra something in the way of intelligent cooperation. For instance, take the distinctive hardware at Washington's Hotel Statler: Holabird & Root conceived a simple concentric design calling for escutcheons without screws. Lockwood engineers worked out a practical solution.

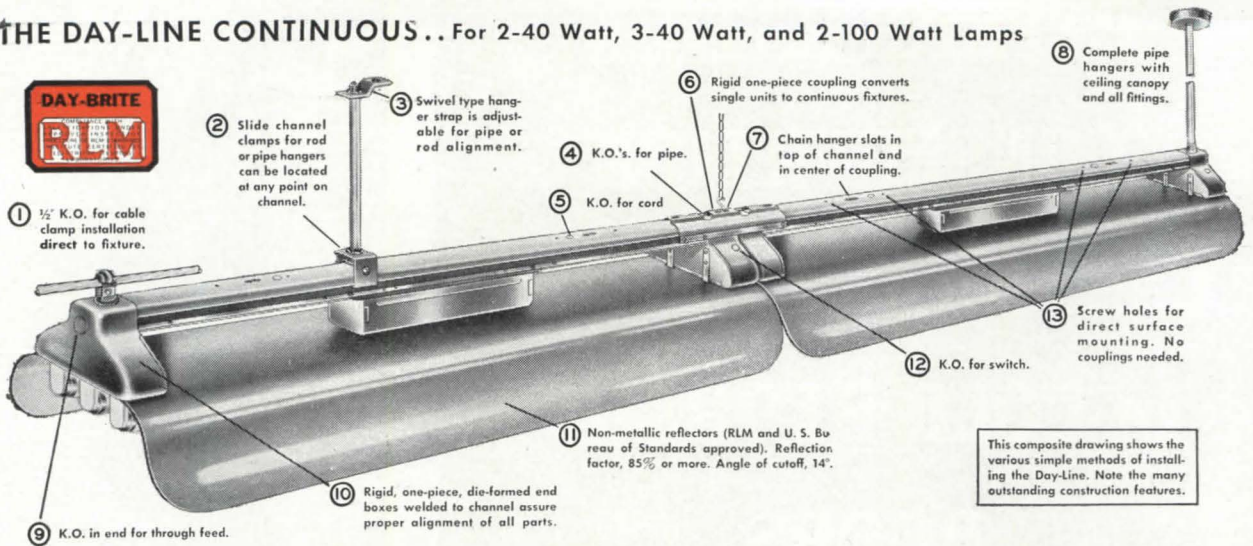


Lockwood Hardware Mfg. Co.
Division of Independent Lock Co.
Fitchburg, Massachusetts

ARCHIT



THE DAY-LINE CONTINUOUS . . . For 2-40 Watt, 3-40 Watt, and 2-100 Watt Lamps

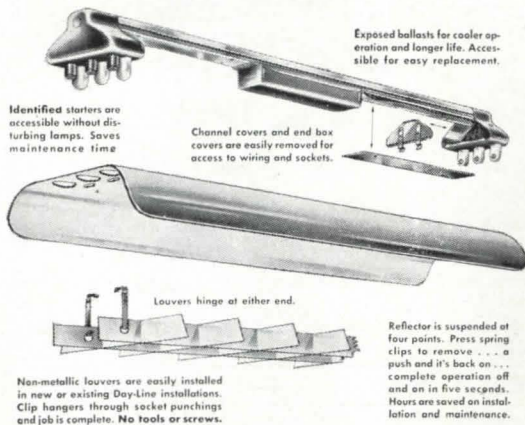


This composite drawing shows the various simple methods of installing the Day-Line. Note the many outstanding construction features.

New Fixture Has 13 Advantages

THE DAY-LINE UNIT . . .

For 2-40 Watt, 3-40 Watt, and 2-100 Watt Lamps



The numerous features combined in the new Day-Line Fluorescent Fixtures, for unit mounting or continuous runs, make them especially adaptable to many types of present and future construction. Because all the advantages cannot be detailed here, Architects are requested to send for helpful dimensional, specificational and illumination data contained in Bulletin F-69 . . . Inquire, too, about Day-Brite's special Architectural Design Service—a valuable "right hand" to help you with any lighting design problem.

70-A

DAY-BRITE LIGHTING, INCORPORATED

5491 Bulwer Ave. • Saint Louis, Missouri

DAY-BRITE
db
 The Sign of Quality
 Look for this Label

Day Brite
 Reg. U. S. Pat. Off.
LIGHTING FIXTURES

COMMERCIAL • INDUSTRIAL and SPECIAL DESIGNS *Nationally distributed through all leading electrical supply houses*

REFRIGERATION CONSERVATION Calls for EFFICIENCY in COLD STORAGE DOORS

Streamlined in appearance and functional efficiency, specialized for every refrigeration service, York Cold Storage Doors meet all requirements *plus*.

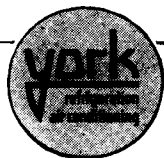
York Cold Storage Doors are equipped with two water and grease-proof, wear resistant gaskets and the exclusive York Roller-Seal shown in the diagram. Hinges and latches are self-adjusting to maintain constant and even gasket pressure. These features insure a perfect and enduring seal.

Rugged construction includes cross bracing which prevents sagging or settling. Vertical panels not only harmonize with modern design but eliminate the accumulation of moisture and dirt common to horizontal panel construction and add further to structural strength.

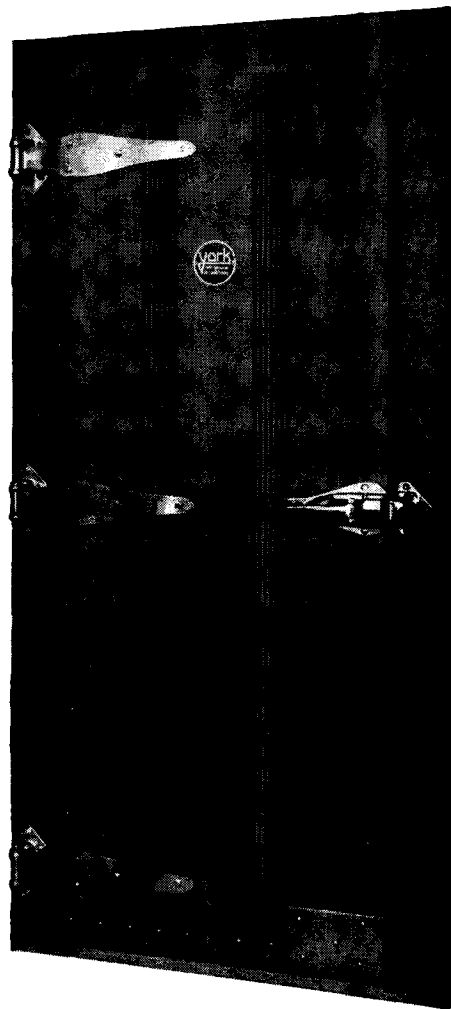
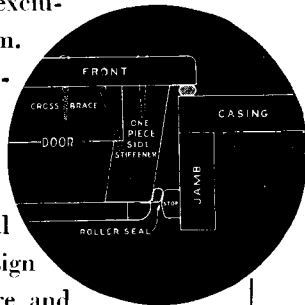
Hardware, too, is streamlined and built for heavy duty service. Castings are malleable iron—other parts are steel. York's exclusive baked enamel finish uses no critical materials. It is attractive and durable. Other finishes are available on order for high priority jobs.

Special cold storage doors for unusual applications are available to your clients through a York factory branch or distributor nearby. YORK CORPORATION, York, Pennsylvania.

YORK REFRIGERATION AND AIR CONDITIONING FOR WAR



HEADQUARTERS FOR MECHANICAL COOLING
SINCE 1885



STANDARD COOLER AND FREEZER DOORS

In addition to the standard cooler and freezer doors, York provides sharp freezer doors, metal clad doors, double doors, vestibule doors, track doors, super freezer doors, can, crate and ice passing doors, and refrigerator fronts of various types.

SIZE IN CLEAR		WALL OPENING	
Width	Height	Width	Height
1'-6"	1'-6"	1'-10-3/4"	1'-9-1/8"
2'-0"	3'-0"	2'- 4-3/4"	2'- 3-1/8"
2'-0"	6'-0"	2'- 4-3/4"	6'-3-1/8"
2'-6"	2'-0"	2'-10-3/4"	2'-3-1/8"
2'-6"	3'-0"	2'-10-3/4"	3'-3-1/8"
2'-6"	3'-6"	2'-10-3/4"	3'-9-1/8"
2'-6"	6'-0"	2'-10-3/4"	6'-3-1/8"
2'-6"	6'-6"	2'-10-3/4"	6'-9-1/8"
3'-0"	6'-0"	3'- 4-3/4"	6'-3-1/8"
3'-0"	6'-6"	3'- 4-3/4"	6'-9-1/8"
3'-6"	6'-6"	3'-10-3/4"	6'-9-1/8"
4'-0"	6'-6"	4'- 4-3/4"	6'-9-1/8"
4'-6"	6'-6"	4'-10-3/4"	6'-9-1/8"
5'-0"	6'-6"	5'- 4-3/4"	6'-9-1/8"

There's a NEW "JEEP" in the military field!

THIS ALL-PURPOSE BUILDING OF STRIP STEEL



NAVY DEPARTMENT
 JULY 4, 1943
 IMMEDIATE RELEASE
 PRESS AND RADIO
 LIGHT GAUGE STEEL BUILDINGS FOR ADVANCED BASES
 SERVE SCORES OF USES

Many hundreds of galvanized steel, semi-circular utility buildings, each 40 feet wide by 100 feet long and looking like a big brother to the Quonset hut, the Navy's standard housing unit for advanced bases, are going up at scores of points in foreign theaters of war.

There, these buildings serve a multiplicity of uses. They are used for storing everything from machinery to food. Used as recreation buildings, they seat 600 men each. Almost every type of machine shop or repair operation for advanced bases can be accommodated within these units. They are so varied in their usefulness that they are similar in the building field to what the "jeep" is to the land forces.

Yet these structures can be put up in about 300 man hours each, exclusive of the time taken laying a concrete floor. The arched ribs are made of strip steel. * * * The ribs are manufactured in sections, can be laid on the ground, and bolted together. Except for raising the first couple of ribs, it is unnecessary to have a scaffolding, and heavy lifting equipment is completely avoided. The construction crew can raise these ribs, once they are bolted together, by merely pulling them into place with a rope. The corrugated steel cover is painted an appropriate camouflage color before shipment.

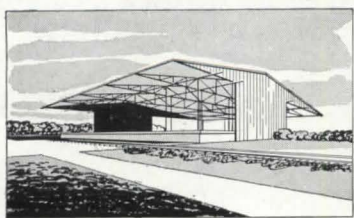
These units, which weigh some 25,000 pounds apiece, can be packed conveniently in crates occupying only 369 cubic feet. The crating takes only a minimum of space and is designed for quick handling on and off ships. The utility buildings fulfill needs met by nothing else because of their portability, cheapness, and wide utility.

* * * *

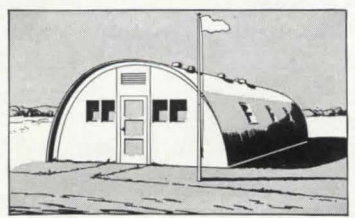
Even before America entered the war, Stran-Steel was applying the full measure of its research facilities, design experience and fabricating knowledge to the development of better military buildings. Today the inherent strength and light weight of strip steel framing have been utilized to best advantage, effecting economies both in the frame itself and in the collateral materials required. Many thousand cubic feet of shipping space—many thousand tons of shipping weight—have been released for other war equipment through these savings.

As the largest supplier of huts and military buildings for naval bases, Stran-Steel has acquired irreplaceable experience in design, coordination and supply. This experience is at the service of the armed forces.

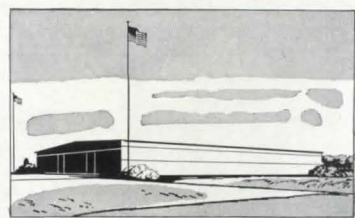
Wherever Shipping Space, Speed of Erection, and Durability Are Factors in Building—
STRIP STEEL by STRAN-STEEL IS THE ANSWER



HANGAR BUILDINGS



THE FAMOUS NAVY "QUONSET" HUT



SPECIAL-PURPOSE BUILDINGS

STRAN-STEEL

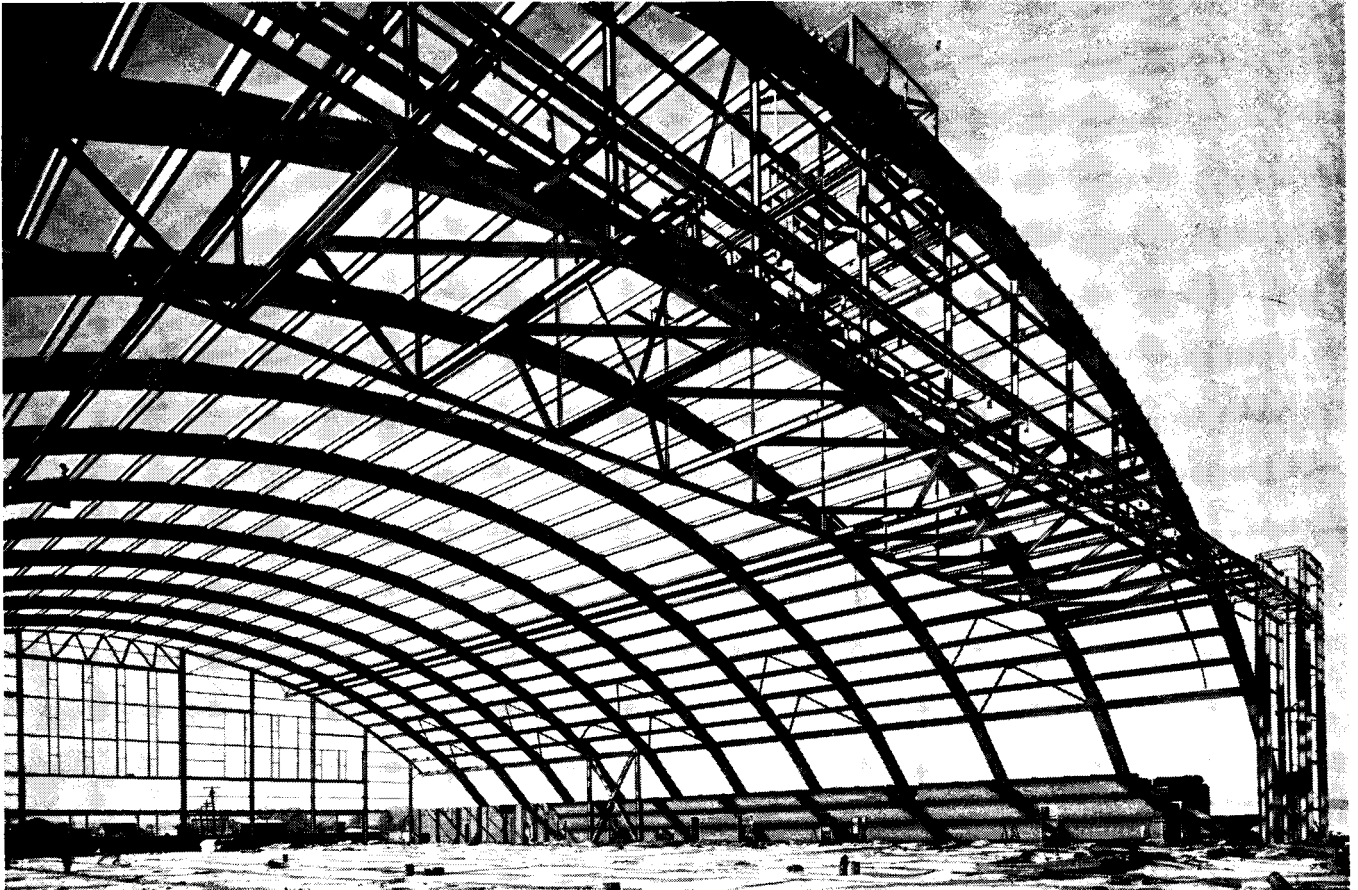
1130 PENOBSCOT BUILDING, DETROIT 26, MICHIGAN
 DIVISION OF GREAT LAKES STEEL CORPORATION • UNIT OF NATIONAL STEEL CORPORATION

DESIGNER AND FABRICATOR OF STRIP STEEL MILITARY BUILDINGS

For long, clear spans:

STEEL

These slender, graceful two-hinged, tied roof arches provide a clear span of 255 ft. and a center rise of 64 ft. for this Air Corps hangar. Although 338 ft. long, the hangar required only 800 tons of steel.



*Engineers: Arch-Roof Construction Co.
Contractors: Tuller Construction Co.*

In designing hangars for the air age to come, consider the problem of providing clear spans long enough to accommodate the ever-spreading wings of our aircraft. Already hangars require spans approaching 300 ft. Giant transports of the future may well call for hangars with clear spans up to even 500 ft. But however great the required spans, here's one point to remember: Steel will enable you to achieve them with greater beauty, simplicity, strength, and economy.

Reason for this is that steel is the strongest, most compact of building materials.

—Steel is safest for such structures because it is predictable. Its strength is uniform and definitely known and is therefore dependable.

—Steel is fire-proof, vermin-proof, warp-proof. When properly maintained, steel is the most durable of building materials.

—Steel is rolled into the shapes and fabricated into structural members which can accommodate any design coming from the drafting board.

For these and many other reasons you will find it advantageous to design your post-war hangars of steel. Moreover, as a result of continued development and research enriched by the war-time experience, the post-war years will find steel abreast of any new structural development brought out by the architect or designing engineer.





Drawn from real life in 1939, on a Cleveland school building job, this picture demonstrated the ease with which aluminum spandrels were set in place. Architects had discovered the many advantages of using spandrels cast of Alcoa Aluminum Alloys, from a design and structural standpoint, and the future looked bright for this product. Then came the war—

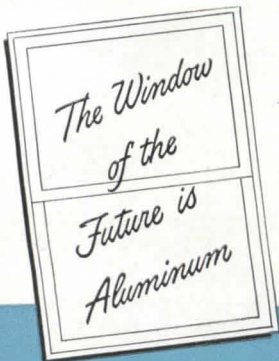
From making aluminum spandrels, every foundry swung over to fighting equipment.

No more aluminum for architectural uses! But out of this war effort is developing something

of great importance to architects and builders.

Those fabricators of aluminum have forgotten the fear of complicated jobs that once made them hesitate; experimentation is behind them, and they'll be ready and willing to execute your designs. Aluminum will be more plentiful when this war is over, than anyone ever dared imagine. Prices are lower than ever before.

The many forms in which Alcoa Aluminum Alloys will be available, its attractive surface finishes, offer tremendous possibilities to the architect who is also an Imagineer. ALUMINUM COMPANY OF AMERICA, 2167 Gulf Building, Pittsburgh, Pennsylvania.



ALCOA ALUMINUM



Reg. U. S. Pat. Off.

\$10,000.00

FOR APARTMENT

MINNEAPOLIS - HONEYWELL *Offers*

- 2 CASH PRIZES OF \$2,000.00**
- 2 CASH PRIZES OF \$1,000.00**
- 2 CASH PRIZES OF .. \$500.00**
- 20 CASH PRIZES OF .. \$150.00**

for Winning Designs of a Hot Water or Steam System and its Controls
for a Six Story Apartment Building, Giving Tenants Individual or

Personalized Heating Control

MINNEAPOLIS-HONEYWELL announces a \$10,000
Competition for the design of a system of steam heating
and its control, and a system of forced hot water heating and
its control in a hypothetical six story apartment building.

MINNEAPOLIS

HONEYWELL

COMPETITION!

HEATING DESIGNS

CONTESTANTS will be furnished complete architectural drawings and layout sheets upon which to submit their designs. The purpose of the competition is to provide a design of a heating system which will incorporate greatest tenant health, comfort and convenience, reasonable first cost, low operating and maintenance cost and some form of Individual or Personalized Heating Control whereby tenants may have the exact temperature they desire in their own particular apartment. It is therefore necessary that contestants arrange their design of the heating system so that at least one thermostat be installed in each individual apartment.

Eligibility

Any persons in the United States, its dependencies, or Canada, who are not employees or representatives of the Minneapolis-Honeywell Regulator Company, their subsidiaries, their advertising agency or who are not judges of this competition, or who are not employees or representatives of any company deriving a substantial proportion of income from the sale of automatic controls, or who are not relatives of the aforementioned, are invited to compete.

GENERAL RULES

- 1 All entries must be postmarked not later than midnight November 15, 1943.
- 2 Only one layout of each type of heating system may be submitted by a contestant. He may choose either a hot water or steam system of heating, or both, but only one prize will be awarded to a contestant.
- 3 Detailed instructions with complete architectural layouts will be provided each entrant, together with informative booklet describing Personalized Apartment Heating Control.
- 4 Piping, radiation or boiler need not be sized, but material used and piping layout are to be considered of major importance, particularly in regard to economy.
- 5 Entries will be judged on the basis of design merit only and not upon the manner of presentation. Elaborate details or ornamentation are discouraged.
- 6 It is not necessary to indicate equipment on the layout by manufacturers' trade name or type number. The general name applying to the piece of equipment shown need only be used.
- 7 All entries will be judged anonymously by a jury consisting of a nationally recognized consulting engineer, a nationally recognized architect and a representative of Minneapolis-Honeywell.
- 8 Minneapolis-Honeywell Regulator Company reserves the right to reproduce in brochure or other form, any or all of the layout entries submitted in this competition. All entries shall become the property of Minneapolis-Honeywell Regulator Company.

MINNEAPOLIS-HONEYWELL REGULATOR COMPANY
2804 Fourth Avenue South • Minneapolis, Minnesota

Please send me entry form and complete architectural layout sheets for your \$10,000.00 Personalized Apartment Heating Design competition.

Name.....

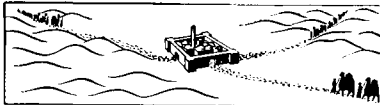
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Address.....

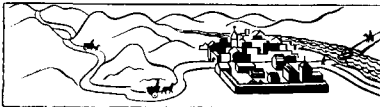
City..... State.....

TEMPERATURE CONTROLS

TOWNS ON CARAVAN ROUTES



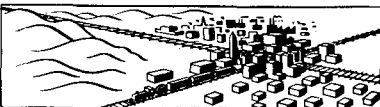
TOWNS ON ROADS



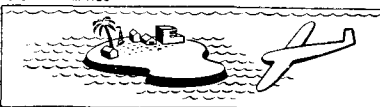
HARBOR TOWNS



RAILROAD TOWNS



TOWNS OF THE AIR AGE



PICTOGRAPH CORPORATION FOR PUBLIC AFFAIRS COMMITTEE INC.

Settlements follow transportation developments. From "The Airplane and Tomorrow's World."

THE AIRPLANE AND TOMORROW'S WORLD.

By Waldemar Kaempffert. New York (30 Rockefeller Plaza), Public Affairs Committee, 1943. 31 pp. 5½ by 8½ in. 10 c.

This short, comprehensive study is global in extent, includes considerations political, geographic, economic and mechanical, and admirably ties to tomorrow: ocean shrinkage from 65 days in 1620 and 15 in 1838 to a few hours today; wide, rapid development of backward countries and inland cities; redeveloping of forgotten centers; and necessarily saner and more liberal ideas about who owns and who may use earth, sea and sky.

HANDBOOK OF PLASTICS.

By Herbert R. Simons and Carleton Ellis. New York (250 Fourth Ave.), Van Nostrand, 1943. 1082 pp. 6½ by 9½ in. illus. \$10.00.

From what was originally a series of records of technical experiments, the editor of "The Plastics World" and the late president of the Ellis Laboratories, with the cooperation of an advisory committee composed of leading representative technical men, have produced a cyclopaedic work on plastics and the

plastics industry.

Prefaced by an outline story of the industry are sections on physical properties, materials, manufacture, processing and fabrication, chemistry, applications in industry, and commercial considerations: plant practice, estimating, workers' welfare, etc.

Unusual and very convenient is the duplication of parts of the text in different sections; and a chapter in the physical properties section gives in condensed form the commercial catalogs of the leading manufacturers of plastics products. In addition to the 129 tables in the text there are 22 in the appendix, which also includes extensive general and chemical glossaries and a list of plastics trade names, with the type, physical application and manufacturer of each.

COUNTY OF LONDON PLAN.

Prepared for the London County Council by J. H. Forshaw and Patrick Abercrombie. London (St. Martin's St., W. C. 2), MacMillan, 1943. XII + 188 pp. 9½ by 12 in. illus. 12s. 6d.

Planning for greater London is being studied by many allied groups. The interim report of the Royal Academy's Planning Committee has been published, as has that of the R.I.B.A. The interim report of the greater London Regional Reconstruction Committee has recently appeared.

The present work, by the London County Council Architect and the Professor of Town Planning at University College, deals with the 116 square miles inhabited by some four million people, and administered by the London County Council. Figures given are, for reasons of national security, pre-war; but the survey has taken cognizance of regions either heavily bombed or for some other reason ripe for clearing, and the study of the interwoven problems of transportation, housing, parks, public services and industry is made in close harmony with those of allied groups.

The plans are necessarily tentative. It is impossible to foresee the increase in car ownership after the war. Neither can increase in air-mindedness, with the resulting change in traffic patterns, be predicted. Nor yet indeed postwar trends in design. But principles for

short-term and for long-range reconstruction are well stated and well illustrated; and the study of home and work with the 28 L.C.C. boroughs, the discussion of alternatives, the plea for presentation of existing regions of mellow beauty, the presentation of the established neighborhoods to which Londoners are attached, and which number about 200, make a new kind of living guide to the region.

A beautifully written study gallantly presented, with about 70 plates including a dozen in color.

THE AMERICAN SCHOOL AND UNIVERSITY.

A Yearbook, 15th ed. New York 16 (470 Fourth Ave.), Amer. School Pub. Corp., 1943. 367 pp. 8½ by 11¼ in. illus. \$2.50.

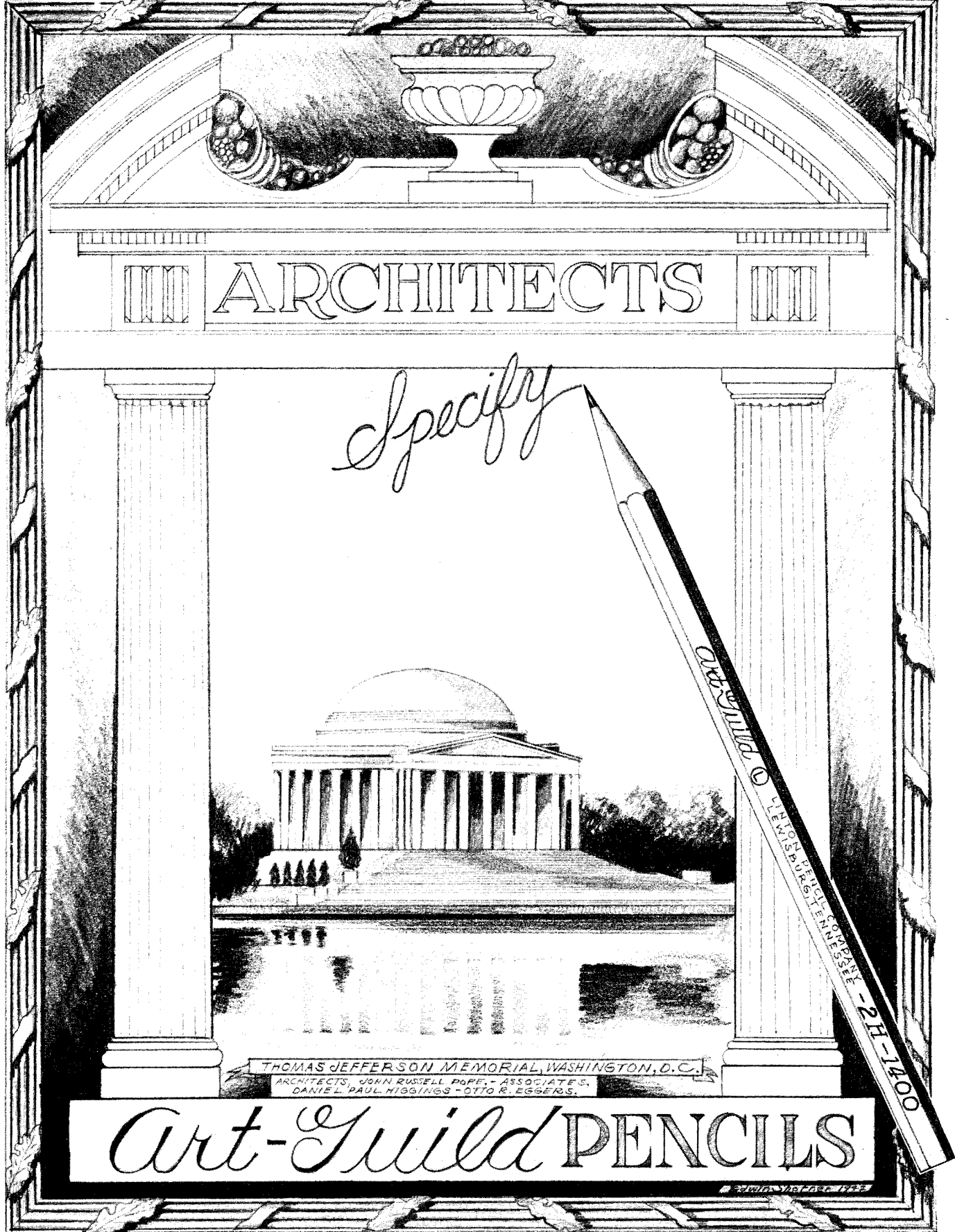
The increasing trend toward general communal use of school buildings and play spaces is recorded; there are chapters on new and unusual schools; on space and equipment to meet the newer physical fitness programs and the newer emphasis on serviceable knowledge and skills as distinguished from scholarship; and a gracious but powerful paper on the psychological effect of the building on a child who may be depressed by a building meeting all space, light, sanitation and ventilation requirements, but drab, dreary, institutional. Naturally the shop and the industrial arts laboratory section is prominent, and throughout there is emphasis on conservation of equipment. The usual directory features are continued.

POST-WAR STANDARDS FOR PUBLIC LIBRARIES.

Chicago, Ill. (520 N. Michigan Ave.), Amer. Library Assoc., 1943. 93 pp. 6 by 9 in. \$1.50.

Prepared at the request of the National Resources Planning Board, these Standards cover briefly all phases of the organization and administration of public libraries, with references to sources of more detailed information. For architects the two sections on size and area and on buildings will be of interest; and the latter section is based largely on "The American Public Li-

(Continued on page 28)



This drawing is one of a series made with Art-Guild BONDED LEAD drawing pencils

Art Guild pencils are available in 17 precision-milled degrees—6B to 9H. Beautifully finished in green lacquer, they come neatly packed in a metal box.

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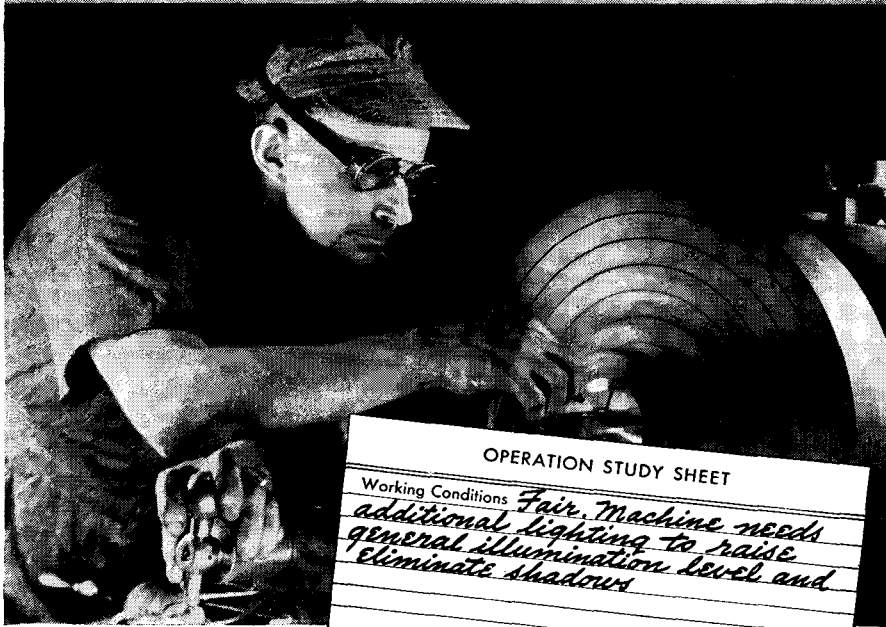
112 West Ninth Street
Los Angeles, California

38 South Dearborn Street
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Dallas, Texas

RE-LIGHTING

the new **manpower** *requirement*
production



OPERATION STUDY SHEET

Working Conditions *Fair. Machine needs additional lighting to raise general illumination level and eliminate shadows*

This man needs more light

The plant where this worker is employed—like most plants built before Pearl Harbor—was probably designed for peacetime production, with lighting equipment intended merely to supplement daylight. Hence, *its lighting system is inadequate for wartime night work—and production falls off seriously on the "swing shifts."*

Re-lighting for better illumination will correct this condition, make it easier for workers to see—thus increasing efficiency and production. Re-lighting costs little and is easy to arrange. A Silv-A-King lighting engineer, for instance, can tell you quickly how to re-locate lamps to eliminate glare and shadow...show you where it is necessary to increase lamp wattages or install additional equipment to insure uniform high lighting levels.

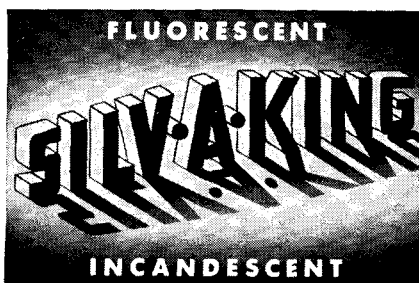
Silv-A-King fluorescent equipment, with reflectors of non-critical Silv-A-Tex, is available for prompt delivery to war plants. Silv-A-King equipment (fluorescent or incandescent), plus a Silv-A-King "engineered layout" make an unbeatable combination.

BRIGHT LIGHT REFLECTOR COMPANY, INC.

308 Morgan Avenue, Brooklyn 2, N. Y.



Send for new Folder 43-V describing Silv-A-King "Victory" Fluorescent Units.



SILV-A-KING MAKES *Light* WORK FOR YOU

REQUIRED READING

(Continued from page 26)

brary Building" by Wheeler and Githens (ARCHITECTURAL RECORD, July, 1941, p. 30) which, according to the A.L.A. "represents the best judgment of the architectural and library professions as to sound practice in the planning and construction of buildings."

PERIODICAL LITERATURE

STUYVESANT TOWN.

NAHO News, Chicago (1313 East 60th St.), July 16, 1943. pp. 61-63.

A short clear account of the questions involved in the six months' conflict between public officials and civic, welfare and business leaders on the 8,842-unit medium-rental housing proposed by the Metropolitan Life Insurance Co. for New York's "gas house" district—"a battle up to now lacking only in beer bottles and murder." These questions are: "frankly tailored" legislation relaxing city supervisory powers and limitation on dividends, and canceling the requirement regarding rehousing of the present 11,000 residents; a density variously estimated as 392 and 445 persons per net acre, contrary to the city's Master Plan; absence of school, library, health center and other community facilities; alleged racial discriminations in a project to be built with public subsidy.

HISTORY OF CITY PLANNING.

Journal of the Amer. Soc. of Arch. Historians, Troy, N. Y., Rensselaer Polytechnic Institute, Jan.-April, 1943 (pub. summer '43), v. 3, nos. 1-2.

A special double number containing articles on "History and the Modern Planner" by Carl Feiss of the Denver Planning Commission, "Form and Function in Urban Communities" by Hans Blumenfeld of the Philadelphia Housing Association; "The Impact of Ancient City Planning on European Architecture" by Karl Lehmann-Hartleben of New York University, "Mediaeval Towns" by Columbia's Leopold Arnaud, and the article on "Early Town Planning in New York State" by the Journal's editor, Turpin C. Bannister, reprinted from the April "New York History," already digested here.



UNDER THE NATION'S ROOF

September, 1943

Roofing Felts with valves - that's Ruberoid P-E-R-F-O-R-A-T-E-D Felt. In mopping the felt, the vapors are trapped - which is the primary cause of blisters. The outlet valves release these vapors. Inlet valves insure a complete asphalt seal between sheets of the completed roof.



How about a rich deep red or cool green surface on that steep monitor roof rather than the customary unsightly black? Ruberoid has the specifications. Bonded, too.



The tornado that hit Cleveland and vicinity on April 27th, 1943 was an ill wind that blew a good moral for architects and home-owners everywhere. Damage was tremendous and many roofs suffered. Notable exceptions were the roofs protected by Ruberoid Tite-On Shingles. Aside from four ridge shingles on one job, not a Tite-On was blown off. Tite-On is a self-locking shingle - no metal clips - no gadgets.



Ever see Ruberoid Colonial Asbestos Siding used on monitor or gable ends? Good-looking, fireproof and permanent.



Stonewall Board, Ruberoid's new (and phenomenally successful) general utility asbestos-cement building material is finding wide use in industrial construction. Strong, imperishable, low in cost, and available (it's non-critical). 3/16", 1/4", 3/8" - standard 4' x 8' sheets. Use it for exterior and interior walls, ceilings, partitions, vents, ducts, fire and heat barriers - wherever a fireproof, rotproof, rustproof material is needed.



This remarkable Stonewall Board - together with Ruberoid Corrugated Eternit Sheets - offers architects and builders suitable asbestos-cement building materials for all types of industrial construction and building maintenance. These are non-critical . . . available now.



Your nearest Ruberoid office has a complete library of construction specifications as issued by government agencies as well as analyses of materials and application methods required by A.S.T.M. and A.R.E.A. In case your colleague failed to return your copy, write or phone us for the information you need.

The RUBEROID Co.

For up-to-the-minute information on your roofing and building problems consult our nearest sales office:

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The Construction Industry Is Noted For

PROGRESSIVE ACHIEVEMENTS

MODERN construction came in with steel, concrete, and the safety elevator more than fifty years ago. The progress of the industry since then has been recorded in many ways. Such early skyscrapers as the old Monadnock Block in Chicago and the twenty-two story Masonic Temple in the same city—regarded as an eighth wonder of the world by visitors to the Columbian Exposition in 1893—were but fore-runners of Rockefeller Center, the Chicago Merchandise Mart, the Parkchester Housing Project in New York, and all the vast war plants built in the last couple of years.

In 1942, the industry, in full mastery of modern design, planning, management and building techniques, carried through successfully the largest construction program in the history of this or any other country. It completed many projects ahead of schedule and won many Army and Navy "E" awards—overcoming many unusual obstacles in so doing.

To the architects, engineers, contractors, sub-contractors of America—and the great firms who have supplied them with progressively improved materials and equipment—must go full credit for the excellent planning and efficient coordination of productive effort which has brought the industry to its present enviously high position in the economic structure of the nation.

And, these same devoted factors are preparing now for new and greater developments in construction after the war.

Dodge services will continue—as for more than fifty years—to aid in the dissemination of timely information about construction activity and the available (old and new) materials and equipment which may be utilized in the attainment of future construction goals.

Dodge services include Dodge Reports—daily, selective news covering activity on construction projects of all kinds; Sweet's Files—bound volumes of catalogs on construction materials, equipment and services; Home Owners' Catalogs—a bound volume of catalog information about home building projects and services; and Dodge Statistical Research Service—providing a scientific basis for serving the various divisions of the Dodge organization, the construction industry, the press and the Government with reliable statistics developed from Dodge Construction Reports. These—plus Architectural Record, the leading professional magazine serving architects and engineers—provide members of the industry with exceptional facilities for organizing their activities and promoting the logical sale of their products in an efficient and economical manner.

*For Daily, Selective Information on War-Time
Construction—and Jobs for the Post-War Period—Use*

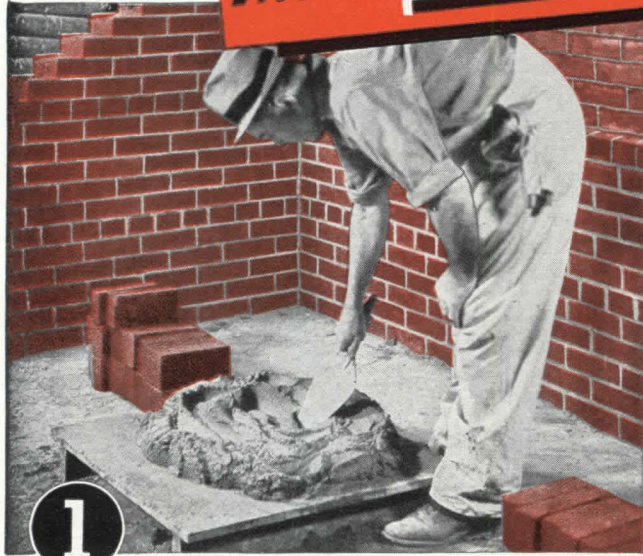
DODGE REPORTS

Issued by F. W. DODGE CORPORATION

119 West 40th Street, New York — and Principal Cities East of the Rockies



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



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

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

BRIXMENT Assures **More Economical Brickwork**

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

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

To secure economical brickwork, the mortar must

have excellent workability.

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

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

BRIXMENT

For Mortar and Stucco

Louisville Cement Company, Incorporated, Louisville, Kentucky. Cement Manufacturers for Over a Century.



DAYLIGHT ENGINEERING *in the Kitchen of Tomorrow*

Many remarkable new conveniences will take their place in the kitchens of tomorrow's homes. While homeowners may have to wait for several years after the war to obtain most of these conveniences, there is one that they can enjoy just as soon as postwar building begins. That is the convenience of Daylight Engineering.

Through use of large window areas and translucent decorative glass walls, even the most compact kitchen can be given an atmosphere of spaciousness . . . a light, cheerful place in which to work.

The transparent and translucent qualities of glass will also play an important part in the design of

other kitchen appointments; its range, refrigerator, cabinets, etc. The sanitary, acid-resisting surfaces of glass will make possible entirely new and different work surfaces. Vitrolite walls or wainscoting will find increased acceptance and use because of its easy-to-clean, easy-to-look-at finish.

Libbey·Owens·Ford Glass for windows, mirrors, wainscoting and work surfaces, and Blue Ridge Glass for partitions, are available in a wide variety of types and colors. Be sure your records of L·O·F Glass are complete.

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"Engineering in Wood"

TIMBER STRUCTURES INC. BUILDS FOR TODAY'S "MUSTS" ... PLANS FOR TOMORROW'S "CERTAINTIES"

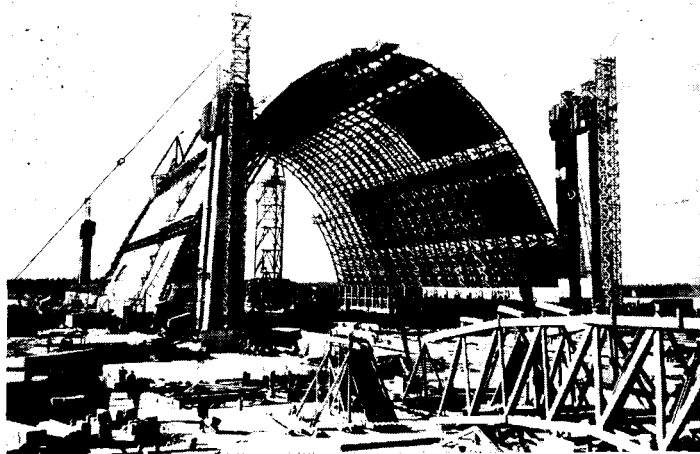
Today's *musts* in timber construction include blimp and airplane hangars, army depots, shipyards, cantonments, war plants of all kinds.

To this entire field Timber Structures, Inc. has helped bring *Engineering in Wood*, just as it did to plant construction before Pearl Harbor, just as it will do again for the postwar building certainties of industry.

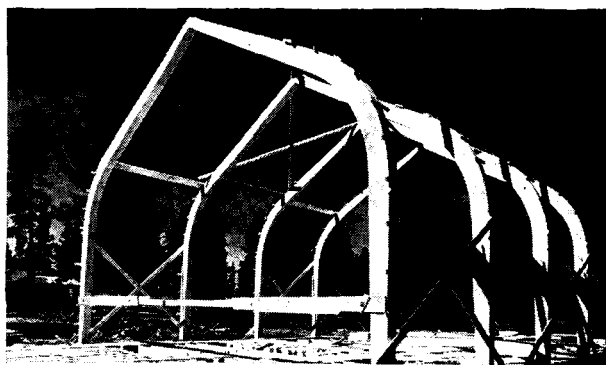
Engineering in Wood is many things. Research, design, engineering, prefabrication, transportation, erection. All are part of Timber Structures service

to architects, plant management, engineers and contractors. All are responsible for the construction speed, economy, strength and permanence of roof trusses and other timber structures and items supplied by this organization.

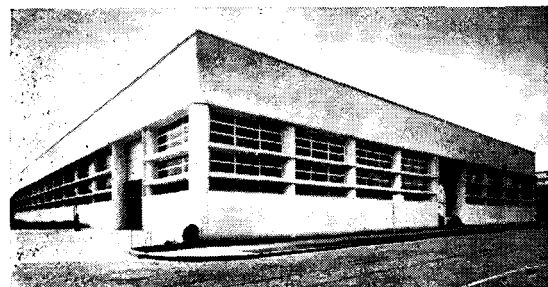
For today's *musts* and tomorrow's *certainties*, we are prepared to serve you in timber and other structural materials. Write or wire for any specific data on work under consideration. For informative literature on the jobs Timber Structures, Inc. has done, is doing, mail the coupon.



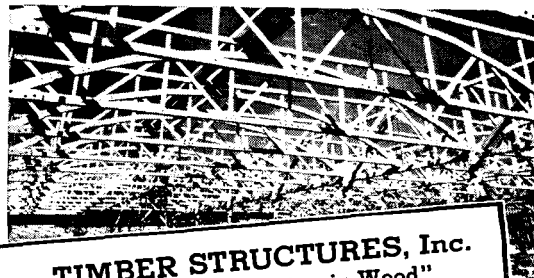
WORLD'S LARGEST TIMBER STRUCTURE. One of many similar blimp hangars for the Navy which Timber Structures, Inc. has fabricated and fire-proofed. 1000' long; 235' wide; 185' high. 2050 tons of steel were saved by Navy's use of modern timber design fabrication and treatment. TECO connectors and their use procedure as developed and made available by the Forest Products Laboratory and Timber Engineering Co., (subsidiary of National Lumber Manufacturers Association), helped greatly to make these structures economically possible in wood.



CHAPEL. Prophetic of tomorrow's church construction is this Regimental Army Chapel (one of many) using glued laminated arches fabricated and erected by Timber Structures, Inc. Simple, dignified beauty in architectural design is combined by Timber Structures, Inc. with modern building practice to provide chapels such as this for men in the service.



WAREHOUSE, 200'x300' for Woodbury and Co., Portland, Ore. Roof trusses for this modern building designed, fabricated and erected by Timber Structures, Inc. Architect: Richard Sundeleaf, Portland. Contractor: Wegman & Son, Portland. Miles K. Cooper, Portland, Structural Engineer.



PLYWOOD PLANT, Peninsula Plywood Corp., Port Angeles, Wash. 90-64' trusses were provided. Engineer: J. H. Stevenson. Contractor: A. S. Hainsworth Construction Co., Seattle.

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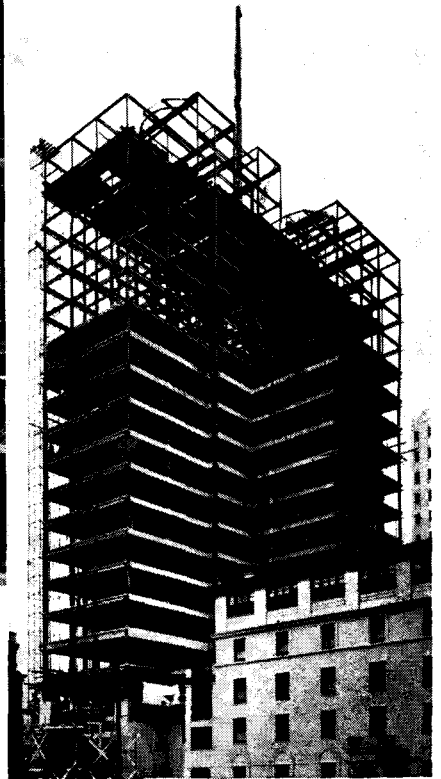
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Type of building or business . . .

If west of the Mississippi, send to Portland 8, Oregon. If east of the Mississippi, send to 335 Fifth Avenue, New York 17, N. Y.

*There are
no "IFs"*

ABOUT WELDED CONSTRUCTION in post-war building



Structural welding is making possible savings of 10—20% in steel. Today these savings are vital to our war effort . . . tomorrow they will make possible lower construction costs.

For this reason, many architects and designers are now basing their post-war plans on welded construction to reap the benefits of its economy, simplicity, flexibility, and reliability proven in war construction.

The widespread use of welding in war production and building projects has not only advanced its development, but has in addition vastly increased the number of technically skilled welders whose services will be available in peacetime. Moreover, structural steel fabricators have gained valuable experience in the

Right: Nurses' Home, Jersey City Medical Center. All welded construction—23 stories high—2200 tons of structural steel.

application of welding, and their broadened knowledge assures greater efficiency in future welded building construction.

In view of these many wartime developments, architects and designers will be able to apply wholly new designs that take full advantage of the broad possibilities which welding provides. If you have a design problem concerning the use of welding, Air Reduction engineers will be glad to assist you. Write for further details to your nearest Airco office.

Air Reduction

General Offices: 60 EAST 42nd ST., NEW YORK, 17, N. Y.

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United States
War Bonds.



IDLE CYLINDERS ARE PRODUCTION SLACKERS: Keep 'em rolling for victory!

Speakman

LOOKS POST-WAR WITH YOU

YOU'RE looking ahead. So are we. The Post-War era will bring many changes in building methods and the uses of many materials. In some instances, the about-face will be abrupt. In others, the change, if any, will be gradual.

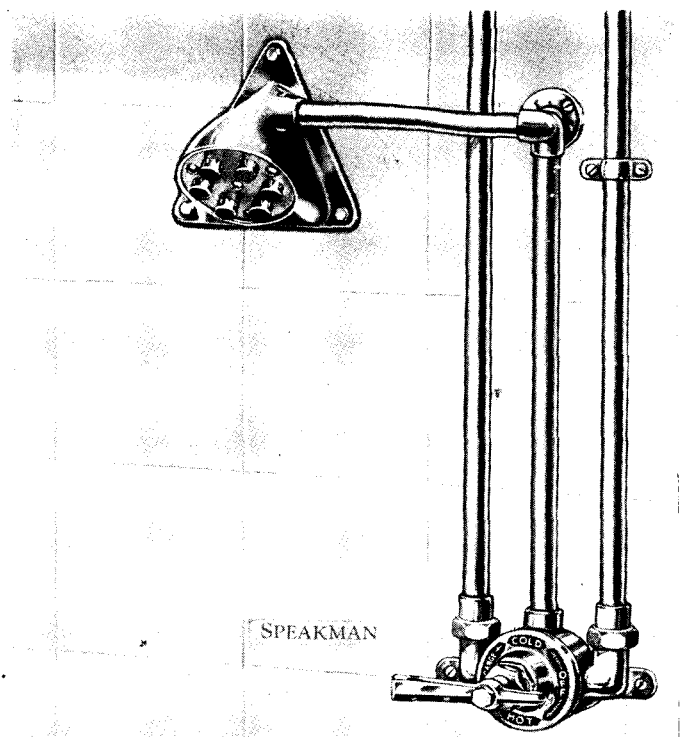
In the latter group come Speakman Showers and Fixtures. At the present time, we see only progressive changes in their fundamental designs or construction features for the Post-War era.

The Speakman Showers illustrated, fill basic needs. They're fundamentally right in design, in construction, in performance. They've proved that.

Your specifications can be prepared now for Post-War projects with the assurance that Speakman dependable Showers and Fixtures will be available.

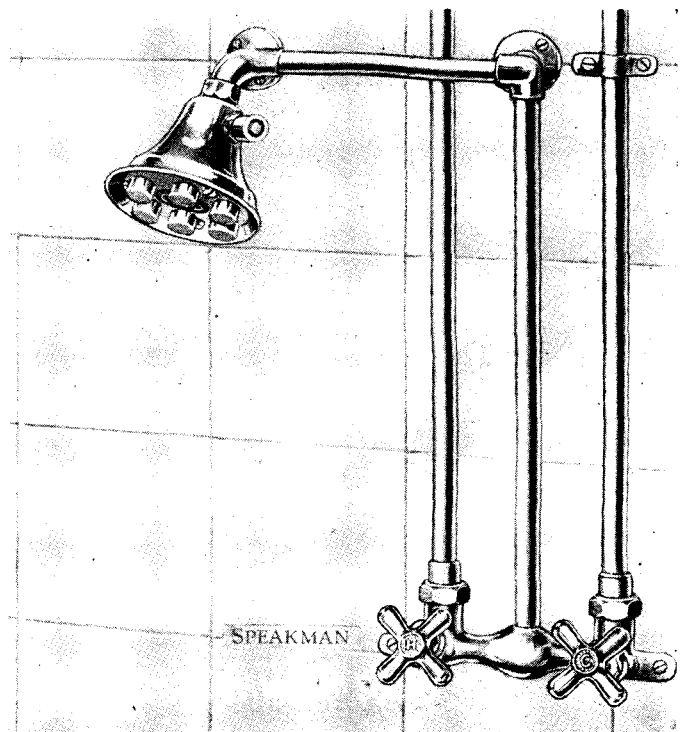
SPEAKMAN COMPANY

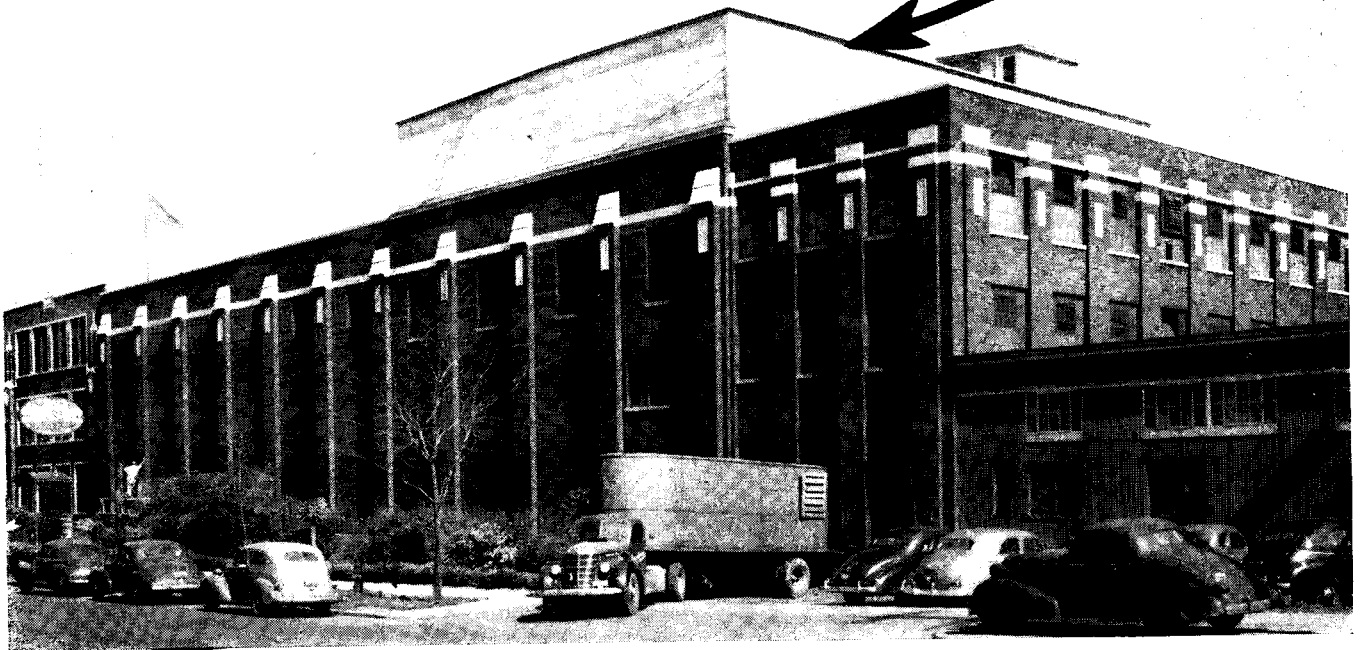
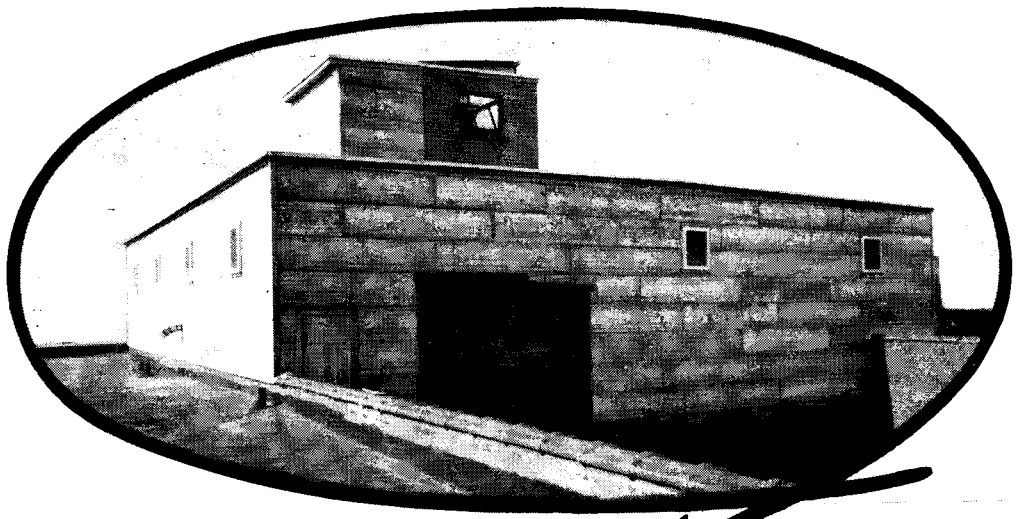
WILMINGTON, DELAWARE



- **5-1150 SPEAKMAN Century Exposed Mixometer Shower.** Size, $\frac{1}{2}$ inch. Mixometer with monel metal renewable seats, cast lugs to bolt close against wall, and metal lever handle. Supplies to overhead 36 inches long. Horizontal discharge arm setting head 15 inches off center. Wall-type Anystream Self-Cleaning Shower Head with side inlet. Arm extends either right or left.

- **5-1160 SPEAKMAN Century Exposed Two-Valve Shower.** Size, $\frac{1}{2}$ inch. Valve center with cast lugs to bolt close against wall. Monel metal renewable seats, swivel discs, encased washers, monel metal washer screws and four-arm metal handles. Supplies to overhead 36 inches long. Horizontal discharge arm setting head 15 inches off center. Close fitting, flanged elbow at each end of arm. Anystream Self-Cleaning Shower Head with lockshield control set at 30° angle. Shower head equipped with lockscrew to prevent malicious removal. Arm extends either right or left.





THE SKY'S THE LIMIT!

THESE photographs prove again that there's practically no limit to the versatility of Gold Bond Gypsum Building Boards! In this case, a large packing company needed additional warehouse space—so they built it on the roof with Gold Bond Gypsum Building Boards. To quote the contractor they are products "that eliminate the use of critical material and speed up the erection of necessary buildings."

There are three of these products for emergency duration building. One is Roof Plank, for either flat or pitched roofs, which makes an ideal base for the roofing material. Another is Exterior Board. It has a weather-resistant exterior finish, completing both sheathing and siding in one operation. The third is Solid Partition Panels for sturdy interior walls quickly installed. All three handle and saw like lumber. All three are fire-resistant. And of utmost importance right now, all three are immediately available.

WRITE TODAY FOR DETAILS



BUILD BETTER WITH
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Everything - for walls & ceilings

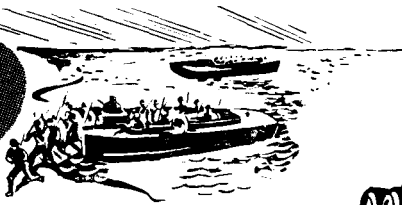
More than 150 different products for
MODERN CONSTRUCTION
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WALLBOARD...LATH...PLASTER...LIME
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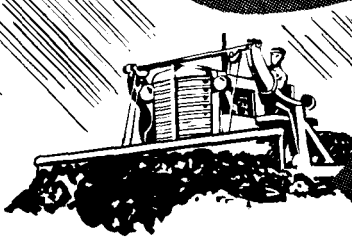
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21 Plants from Canada to the Gulf . . . Sales offices in principal cities

BARGES



BINOCULARS



BULLDOZERS

begin with

**WINNER Techno-TONE
DRAWING
PENCILS**

Through many world-shaking events—for 182 years—A. W. Faber has supplied fine quality drawing pencils to Craftsmen everywhere. First, the famous 'Castell'—now the equally famous All-American WINNER Techno-TONE.

WINNER Techno-TONE reflects the reputation of the House of A. W. Faber. Made in 17 degrees of rich black, it withstands pressure without flaking or breaking. Free of gritty hard spots, it does not scratch or smudge. It is smooth . . . amazingly smooth. Would you like to try it? What degree shall we send you?

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STRENGTH—Just as a bridge is engineered for stress and strain, the lead and cedar wood in WINNER Techno-TONE are welded to withstand 4 or 5 times normal writing pressure. Blunt, tapered or chisel-point, WINNER Techno-TONE can take it—saving much time and annoyance of resharpening.

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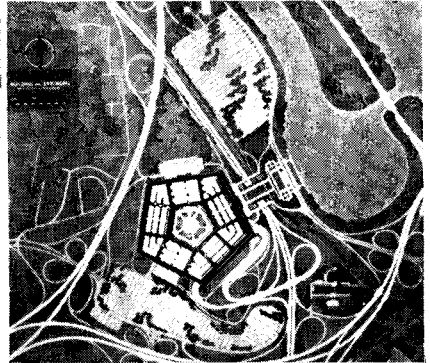


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Companion Pencil — WINNER Thin Colored Checking — Superb colors and strength. Choice for all prints: 2381 Red; 2382 Blue; 2383 Green; 2385D Yellow; 2437D Orange. 10¢ each. \$1.00 dozen. Would you like a sample?
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WINNER Techno-TONE is available in 17 scientifically graded tones—6B to 9H. Polished rich green. Made in U.S.A.

PIPE PUTS "Life" INTO THE PENTAGON WORLD'S LARGEST OFFICE BUILDING

HUNDREDS OF TONS
OF NATIONAL PIPE USED
FOR ALL SERVICES



EVEN a super-colossal building like the War Department's Pentagon is so much stone and steel until its services bring it to life. When a building for 40,000 people is put up, it takes a fantastic network of water pipe, steam lines, air conditioning lines and other piping to make life comfortable under blazing summer sun and winter cold.

Many innovations were introduced into the construction of this building but when it came to piping, no chances were taken with substitutes of any kind. Time-proved, long-lasting steel pipe that architects and engineers have found so dependable in thousands of important buildings throughout the nation was used here

in large quantities. War made it imperative to finish the Pentagon in a hurry. The time allotted was one year—or as close to that as possible. Such construction speed made the easy workability and fast welding properties of NATIONAL Pipe a real asset. Actually the building was 90% completed in 15 months. In addition to building programs, large quantities of NATIONAL Pipe and Tubes are being used in other types of war services. Hundreds of ships are being built which need thousands of miles of pipe. Great numbers of airplanes, tanks, trucks, gun mounts and much other military equipment all need pipe and tubing. And now the biggest oil line in the

PENTAGON BUILDING—New home of the War Department—is the largest office building in the world. Has more than 4,000,000 sq. ft. of floor space.

world is taking 1117 miles of huge 24-inch NATIONAL Seamless Pipe to deliver Texas oil to the east coast. Big things are done in war times but when peace comes again, NATIONAL Pipe and Tubes will play an equally important part in building a better world of the future.

NATIONAL TUBE COMPANY

PITTSBURGH, PA.

Columbia Steel Company, San Francisco, Pacific Coast Distributors • United States Steel Export Company, New York



Is His "Case of Sniffles" A Clue to Better Post-War Windows?

Anyone who has ever caught cold from sitting too near a drafty, heat-leaking window, will answer "yes!" The No. 1 requirement in post-war window design is *weather-tightness*—ability to reduce wind infiltration and heat loss.

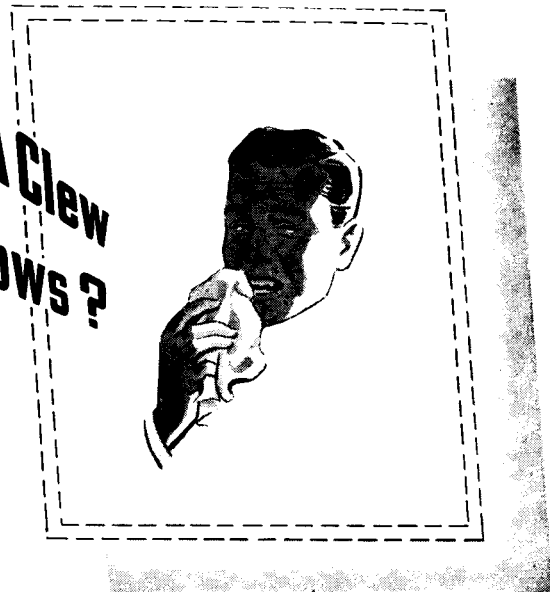
Designing that kind of window isn't simple. It takes elaborate testing equipment, extensive laboratory facilities. It takes years of research and field experience.

Curtis has made this investment in time and research.

Consider, for example, the Curtis Silentite window. It represents the first basic window improvement in 300 years. It is a complete pre-assembled unit—factory-fit for extreme accuracy. It is made of wood—a non-conductor of heat and cold. It operates without weights or pulleys—and hence with no cuts in the jamb to allow heat leakage. Its efficient weatherstripping is built-in, an integral part of the unit.

But what about the window of tomorrow? We can say only this: Curtis research is still going on . . . still centered on making even further improvements in window weather-tightness.

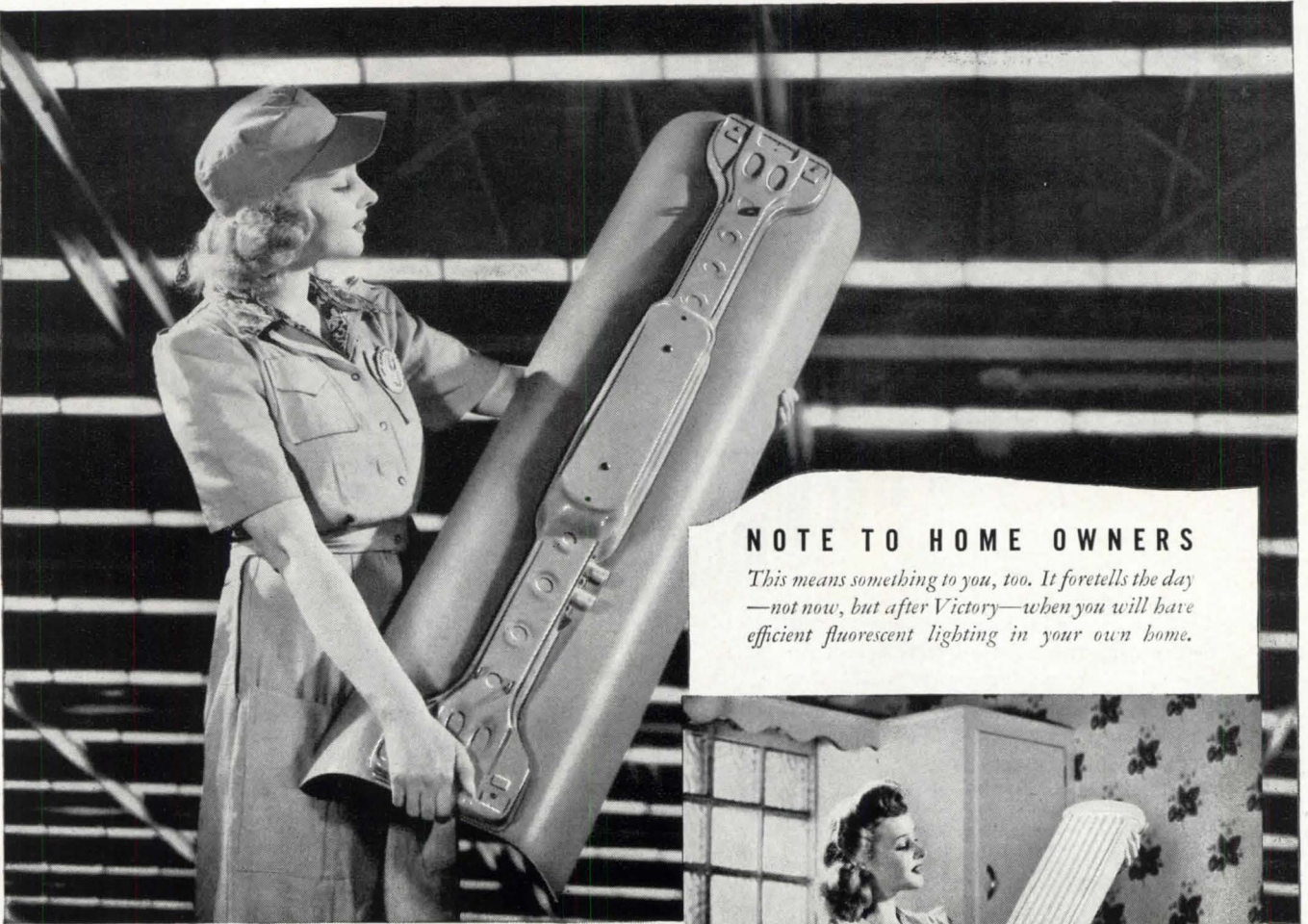
Whatever tomorrow may bring, Curtis will continue a leader in better window design . . . with *weather-tightness* a primary Curtis advantage. Curtis Companies Service Bureau, Dept. AR-9S, Clinton, Iowa.



Here is one of the famous Curtis Silentite window designs. It's an insulated, pre-fit, pre-weatherstripped window . . . free of weights and pulleys, free of sticking or rattling. It's a typical Curtis achievement in designing windows that keep heat inside—and bar out cold.



TOMORROW'S WINDOWS WILL HAVE GREATER WEATHER-TIGHTNESS



NOTE TO HOME OWNERS

This means something to you, too. It foretells the day —not now, but after Victory—when you will have efficient fluorescent lighting in your own home.



The fluorescent fixture of the future

The new Sylvania industrial fluorescent fixture is much more than a design to save critical metal for armament.

Right now it is standardizing fluorescent lighting for precision production and is giving better cool, shadowless and glarefree light to war plants.

In its simplicity and flexibility of design, it is truly the fluorescent fixture of the future.

It takes its place on the list of Sylvania fluorescent "firsts" with the first complete industrial fixture, which did

much to speed war production with the most efficient lighting known.

Sylvania engineers, who have contributed so much to the development of fluorescent lighting, streamlined this fixture and eliminated metal entirely from its reflector. Yet its durable composition reflector has an efficiency of 86 per cent, reflecting

more light than prewar porcelain enameled metal in conventional contours.

This all-purpose Sylvania fluorescent fixture is designed to meet any industrial requirement in one of two standard sizes. It carries Underwriters' Laboratories approval and our own guarantee.

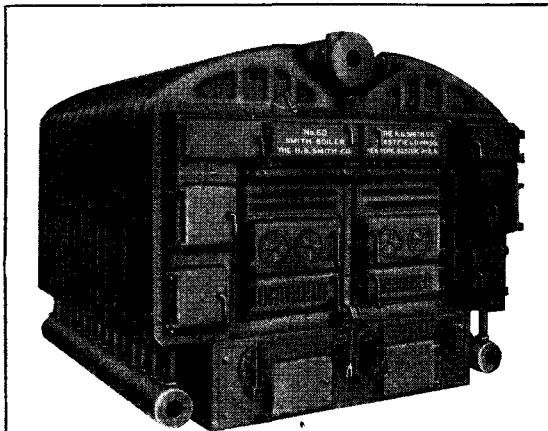
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*Heating the Huge Drill Halls of the World's
2nd Largest Naval Training Station*



H. B. SMITH

**CAST IRON BOILERS
HEAT LARGEST BUILDINGS AT
THE U. S. NAVY'S \$50,000,000
SAMPSON (N. Y.) TRAINING STATION**

Seventy-odd carloads of H. B. SMITH boilers were shipped to this great Naval Training Station which houses 30,000 trainees and numerous civilian workers.

Not only were big 60 Smith boilers installed in the Drill Halls, Mess Halls and other buildings, but over 150 No. 34 SMITH Hy-Test boilers are supplying domestic hot water.

Architect-Engineer: Shreve, Lamb and Harmon
General Contractor: John A. Johnson Contracting Corp.

Heating Contractor: J. L. Murphy, Inc.

Largest of all of the many large buildings at the Sampson, N. Y. Naval Training Station are the six tremendous Drill Halls, 626 ft. long. Each of these immense structures has nearly 60,000 sq. ft. of drill hall floor area alone. In addition, there is a 60' x 75' swimming pool where trainees learn to swim; a gymnasium and moving picture facilities.

Heating this type of huge wide-open building causes rapid condensation at the heat distribution points which in turn places a heavy demand on the boilers to maintain adequate steam pressures at all parts of the system.

To handle these large and exacting requirements, three hand-fired 20 section No. 60 Smith cast-iron boilers having a combined output capacity of 61,200 sq. ft. were installed in each building.

. Another successful heavy duty war time application of H. B. SMITH cast-iron boilers Another proof that H. B. SMITH will be your choice for post war building that demands something extra from the boiler plant.

THE H. B. SMITH COMPANY, INCORPORATED • **WESTFIELD, MASSACHUSETTS**
BOSTON **NEW YORK** **PHILADELPHIA**

**Get There "Fustest"
with the Mostest" . . .**

When
**FIRE THREATENS
WAR PRODUCTION**

Winning the "Battle of Production" involves a lot more than a supremacy of materials, machinery and manpower. One major fire . . . or a small fire that results in crippling damage by the extinguishing medium . . . can halt or slow down war production in a dozen vital plants.

Cardox Fire Extinguishing Systems are guarding against these crippling fires in plants producing a wide variety of critical war products. For example, individually engineered applications are on duty in important plants producing such military necessities as:

Airplanes, Aviation Engines, Aviation Carburetors, Airplane Parts, Engine Parts, Plastics, Rubber Products, Processed Fabric, Tanks, Tank Engines, Cold Strip Steel, Armor Plate, Forgings, Solvents, Motor Fuel, Electric Power.

By instant smothering of fire and cooling of combustibles through the mass discharge . . . at high rate of flow . . . of low pressure, low temperature CO₂, Cardox Systems provide the all-important advantage of fast, complete extinguishment of large or small fires—without damage by the extinguishing medium.

Today, Cardox is concentrating its engineering and manufacturing facilities on two basic activities: (1) Designing and manufacturing of Cardox Fire Extinguishing Systems needed to make it possible for the Armed Forces of America to have more planes, guns, tanks and ammunition; (2) working with industry on plans to increase the efficiency of fire protection both today and after the war.

If you would like more information, write on company letterhead for Bulletin 1593.

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★ **BUY WAR BONDS** ★

**How Cardox Systems
Protect War Industries**

- Timed discharges, as needed, through built-in piping systems . . . supplied instantly from a single storage unit holding tons (if required) of liquid Cardox CO₂.
- Mass discharge of Cardox CO₂ "knocks out" fire, by . . .
- Reducing oxygen content of the atmosphere below the concentration necessary for combustion, and . . .
- Cooling combustibles and fire zone below ignition temperature . . .
- Extinguishing fire quickly and completely *without* damage from extinguishing medium.

**CARDOX—CO₂ Systems with
Enhanced Fire Extinguishing
Performance**

- A. Uniformity of CO₂ characteristics.
- B. Extinguishing medium with uniformly greater cooling effect.
- C. Accurate projection of CO₂ through greater distances.
- D. Timed discharges, as needed, through built-in piping systems . . . supplied quickly from a single tank holding tons of liquid Cardox CO₂.

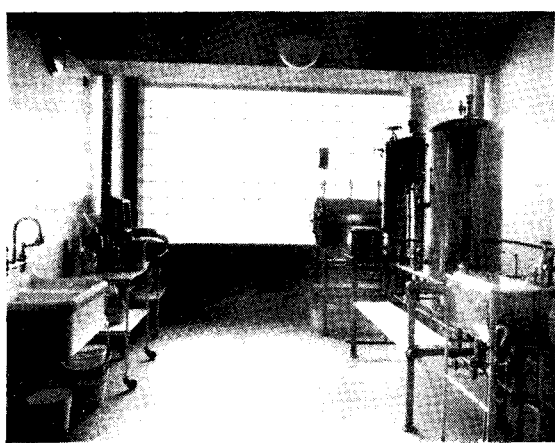
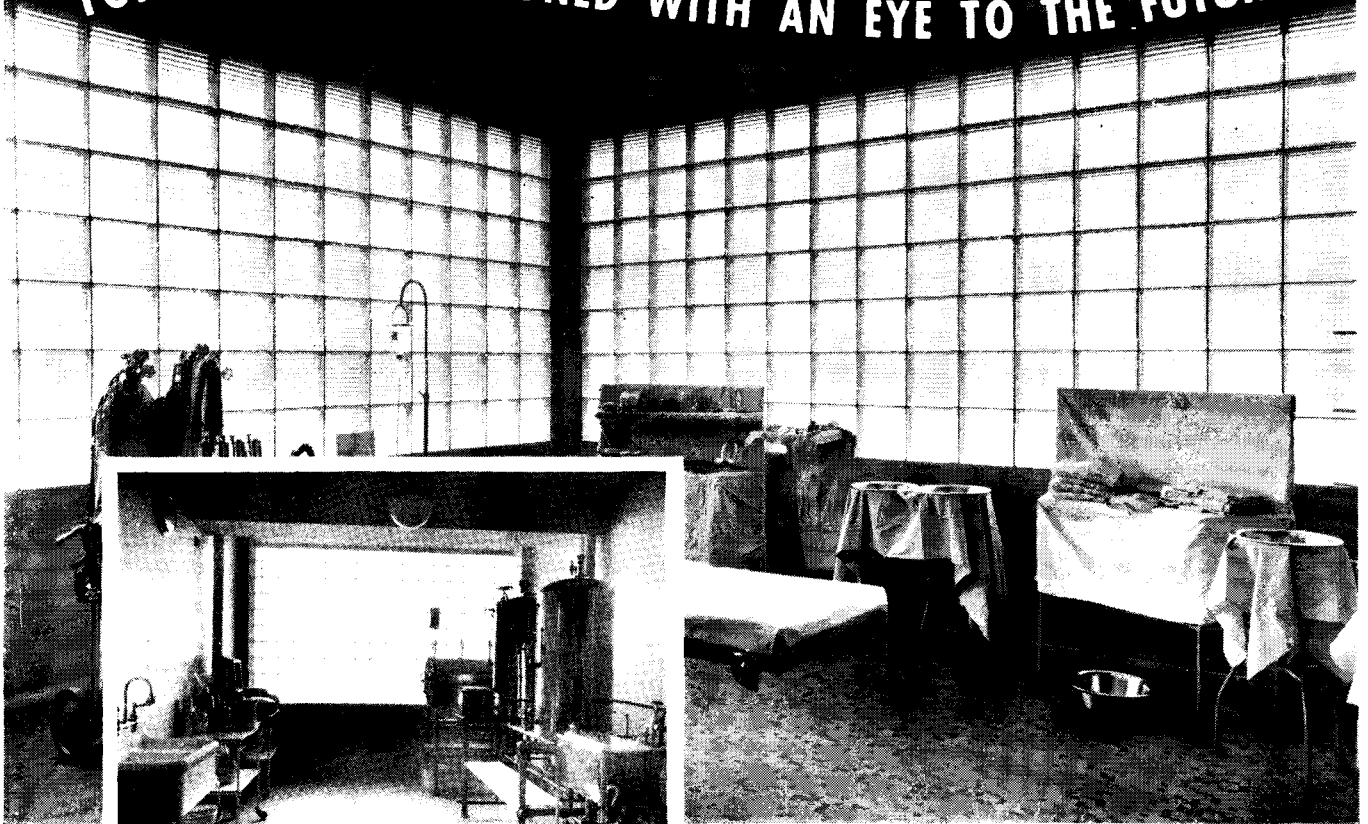
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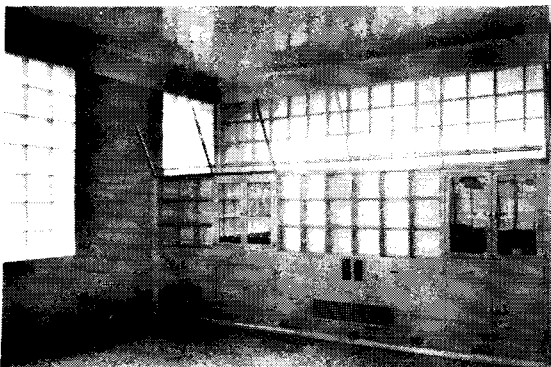
PC Glass Blocks

FOR HOSPITALS DESIGNED WITH AN EYE TO THE FUTURE



SANITATION is important in hospitals . . . and PC Glass Block panels qualify outstandingly in this respect. A hose, a long-handled brush or a damp cloth permits quick and thorough cleaning of the panel. Further, the non-transparency of these blocks provides perfect privacy in hospital installations, without prejudice to good daylighting.

OPERATING ROOMS present an excellent opportunity for PC Glass Block panels to prove their practical advantages. A large supply of diffused daylight is essential here . . . and PC Glass Blocks supply it. At the same time, they assure quieter rooms, insulating effectively against outside noises. They also permit better control of temperature and humidity.



THE ATTRACTIVE APPEARANCE of PC Glass Block panels, whether in outer walls or interior partitions, must not be overlooked in appraising them for hospital use. And their high insulation value . . . twice that of an ordinary glazed window . . . results in substantial savings in heating costs.

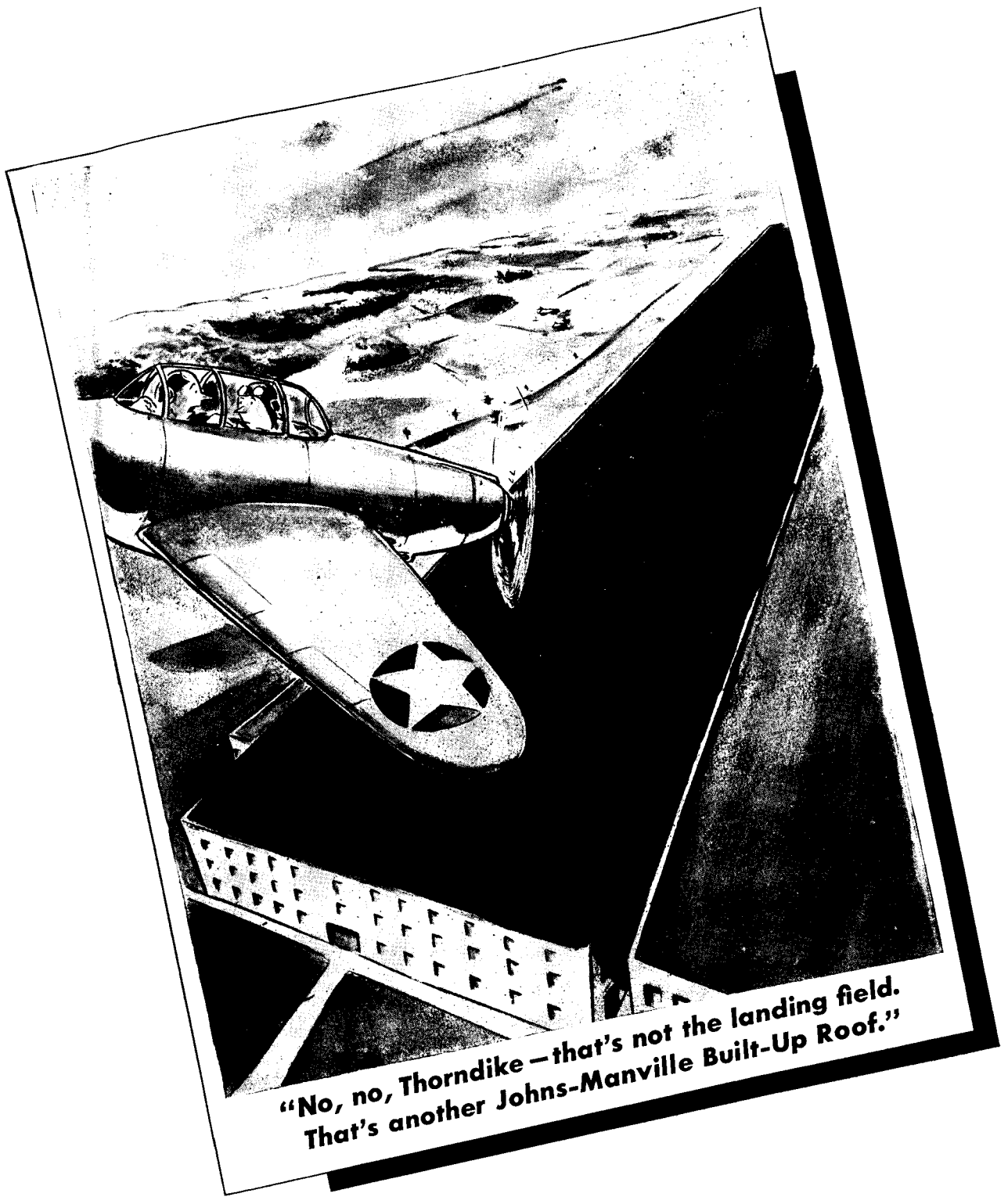


GLASS BLOCKS

Distributed by
PITTSBURGH PLATE GLASS COMPANY
and by W. P. Fuller & Co. on the Pacific Coast

"PITTSBURGH" stands for Quality Glass

PITTSBURGH CORNING CORPORATION
632 DUQUESNE WAY - PITTSBURGH, PA.



**"No, no, Thorndike — that's not the landing field.
That's another Johns-Manville Built-Up Roof."**

ACTUALLY, some of the recently installed J-M Roofs are so big that they might be mistaken for landing fields. But size isn't everything.

The important fact is that these J-M Roofs of fireproof, rotproof asbestos are safeguarding vitally important war materials and equipment. And, because they are built to

endure, they will also be protecting the peacetime products in these same plants for many, many years to come . . . a lasting reminder of the sound judgment and foresight exercised by architects who are today specifying asbestos built-up roofs.

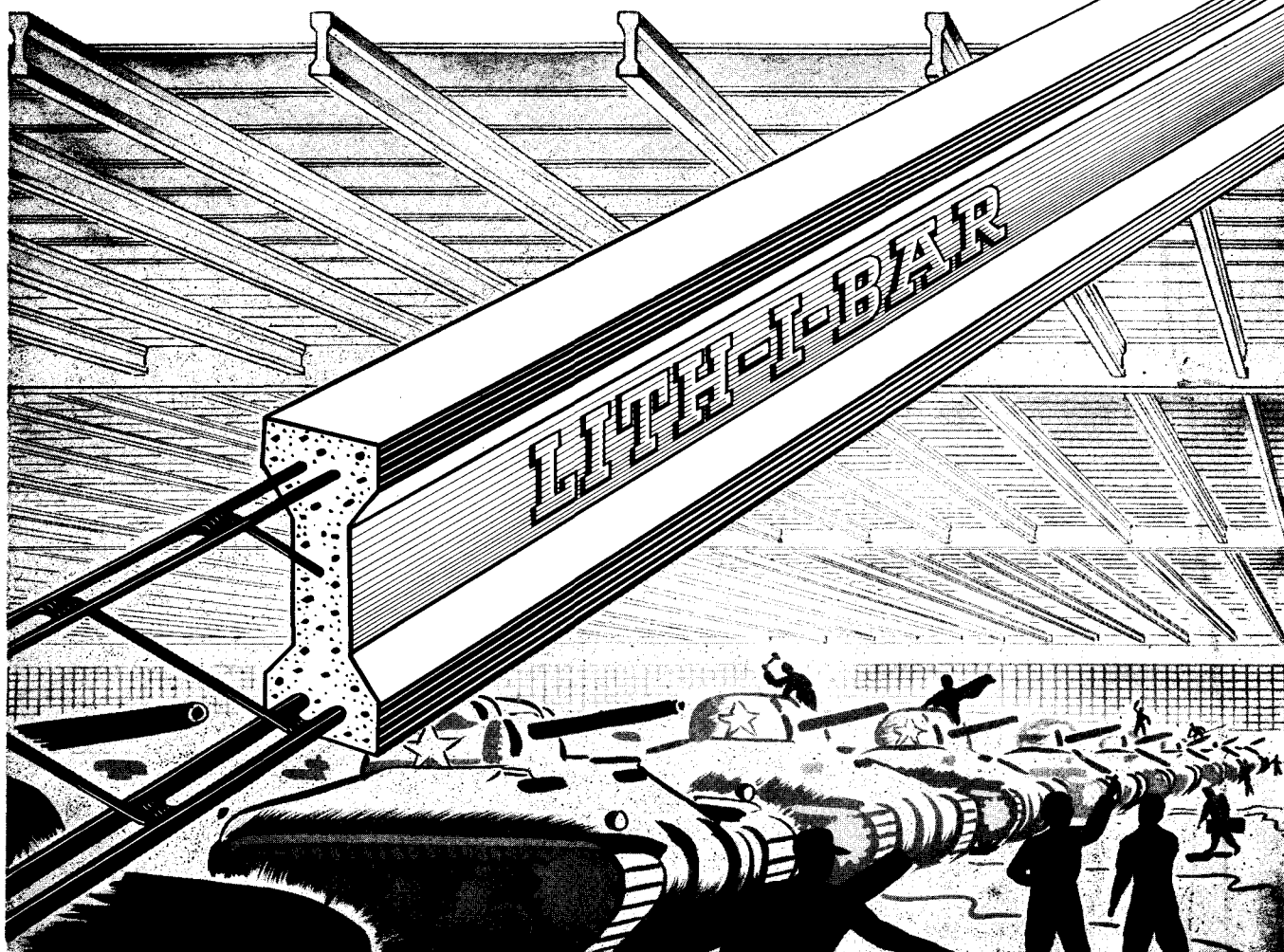
Johns-Manville, 22 East 40th Street, New York 16, New York.



JOHNS-MANVILLE *Asbestos* **BUILT-UP ROOFS**

STRENGTH ABOVE ALL!

WITH **62%** SAVING
IN STEEL



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LIGHT WEIGHT — BALANCED
REINFORCING UNIT — MACHINE
MADE — CONSTANTLY UNIFORM

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LENGTHS UP TO 36 FT.
HEIGHTS 6" — 8" — 10" — 12" — 14"
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RESULTS IN A FIREPROOF
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TIME - PROVEN in floors and roofs on hundreds of outstanding jobs: homes, stores, factories, schools, hospitals, churches, theaters — large and small.

When you want fireproof construction that is simple, that requires the minimum in field supervision, that is fast, that will give you the greatest per dollar value, you will find the answer in the LITH-I-BAR.

Five strategically located manufacturing plants equipped with the most modern production facilities, staffed by experienced men, who can demonstrate to you the merits of LITH-I-BAR.

Whether it be a present day project requiring the utmost in speed of construction and conservation of critical materials, or post-war planning, the nearest LITH-I-BAR manufacturer can be of material assistance.

Your inquiry will bring you by return mail definite proof of how LITH-I-BAR builds better fireproof construction for less; also the location of the nearest manufacturer ready to serve you.

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W. E. DUNN MFG. CO. ★ HOLLAND, MICHIGAN

IMPORTANT FOR PEAK PRODUCTION...

The "HEALTH ZONE" of the plant



TO keep workers off the sick list and on the job, industrial plants are more carefully planned today than they ever have been before. Every effort is made to provide sanitary working conditions. Health records show that absenteeism drops—employees are more efficient—when adequate washroom facilities are provided, with plenty of soap, hot water and individual tissue towels.

Such washrooms are literally "health-zones." They help prevent the spread of minor contagious diseases that account for the largest amount of lost time in any plant.

The Scott Paper Company can help you plan washrooms that are sanitary and efficient in every respect. The second edition of the Scott Washroom Advisory Service Manual gives basic washroom layouts and suggestions that insure effective use of all equipment and keep traffic flowing smoothly.

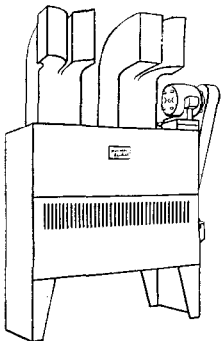
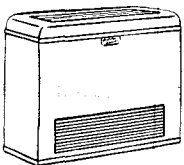
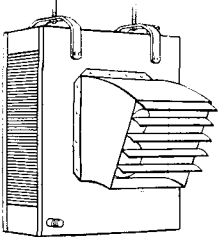
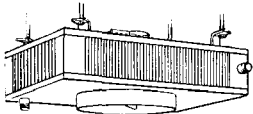
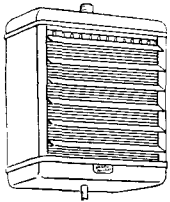
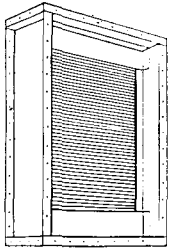
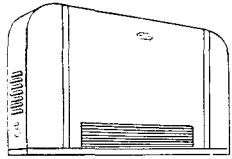
For your copy, and a set of Don Graf Data Sheets on washroom planning, write Scott Paper Co., Chester, Pa.



SCOTT WASHROOM
ADVISORY
SERVICE

TOMORROW is well on its way!

When days of peace and reconstruction come, remember to specify equipment of NESBITT make to answer your heating, ventilating and air-conditioning problems.

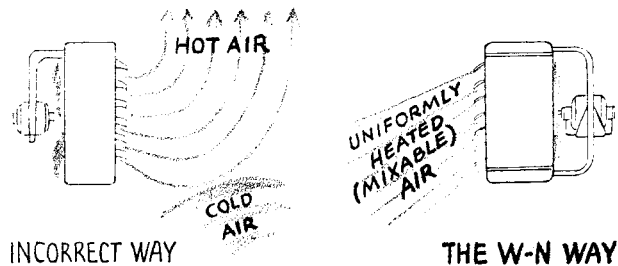


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W-N UNIT HEATERS

THE **W-N** PRINCIPLE:

CIRCULATE LARGE VOLUMES OF AIR AT COMPARATIVELY LOW TEMPERATURES, AND AT A VELOCITY TO CAUSE THE HEATED AIR TO MIX THOROUGHLY WITH THE ROOM AIR.



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PROPELLER-FAN UNIT HEATERS

- PREVENT TEMPERATURE STRATIFICATION AND OVERHEATING OF UPPER AREAS.
- ASSURE QUICKER HEATING, LOWER FUEL COST, AND GREATER COMFORT.
- FOR SMALL AND MEDIUM-SIZE ENCLOSURES NOT HAVING HIGH CEILINGS.

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Manufacturers of the Nesbitt Syncretizer Heating and Ventilating Unit, Nesbitt Heating and Cooling Surfaces, and Webster-Nesbitt Unit Heaters

The Nesbitt Syncretizer is sold by John J. Nesbitt, Inc., and American Blower Corporation - Nesbitt Surfaces are sold by leading manufacturers of fan-system apparatus - Webster-Nesbitt Unit Heaters are sold by Warren Webster & Company

PHYSICALLY FIT

There is no place for weaklings in this war. It's a war for survival, survival of the fittest.

That goes for materials, too. Even carpet, because the longer-wearing the carpet, the greater the number of looms freed for essential war materials.



So congratulate yourself if you specified Crestwood Carpet for your pre-war clients. Crestwood will see them through. It will justify your specification, for it has what it takes to stand the gaff!

Meanwhile the skills that made Crestwood possible have enlisted for the duration . . . for the production of duck, blankets, ordnance and other materials to help win the war.

Out of this war experience should come an even better Crestwood than you knew before. And out of our post-war planning will come a wealth of new ideas which will be available to you soon after victory is won and you have concluded your own war efforts.

ALEXANDER SMITH CRESTWOOD CARPET

AMERICA'S No. 1 CONTRACT CARPET

ALEXANDER SMITH & SONS CARPET COMPANY • 295 FIFTH AVENUE • NEW YORK, N. Y.

EVOLUTION IN BUILDING

In wartime and in peace, come hell or high water, we have the firm conviction that the evolutionary processes will still go on. Evolutionary processes in shelter, building, architecture as well as in all other spheres of human activity! This is not to say that the curve of progress is steady and continuous. It isn't. It changes pace, intensity, and even direction—but it still goes on, even if sometimes it seems to regress.

◆ Evolution is the “trial-and-error” method of progress. It starts with present conditions, a knowledge of what they are, how they arose and their relative desirability. Then an idea for improvement, the development and crystallization of the idea, its analysis and experiment, the trial, and discoveries of error. And the process is repeated. A success becomes common knowledge, it gains acceptance, even devotees, and on it goes. The pace is accelerated in periods of most intensive activity, as man is goaded on by necessity (the mother of invention). Research in many fields is transferred or translated into practical application in other fields. Chemical and agricultural, metallurgical and psychological research all contribute to the evolution of building materials, forms, and methods.

◆ It is natural that new discoveries, inventions and applications are hailed as revolutionary. They absorb our immediate attention and enthusiasms. But actually most such new developments are evolutionary, are based on the scientific “trial-and-error” method, laboriously thought out in a step by step process. And then comes the “trial-in-use” period, when the new must compete with the old, the test of time, of actual application in practice—the pragmatic test.

◆ In postwar building many new ideas, new materials, new products, new methods, new techniques and, yes, new organizations and new men, will face this competitive period and, for the most part, the fittest will survive. The competition will be keen and the criteria exacting. Survival will depend on comparative fitness in (1) *function*—how well does each serve its purpose; (2) *cost*—both first cost and cost of operation and maintenance, in which durability is a factor; (3) *appeal*—in attractiveness, not in measurable scientific units of efficiency or dollars and cents, but in emotional desirability as compared with rational or intellectual analysis. For the human is a perverse animal and often acts on intuitive likes and dislikes in spite of rational proofs that contrary action is wiser. Sentiment, association, prejudice, and just cussedness play important parts in evolution. Forms with more rhyme than reason do persist, in spite of the exasperated condemnation of those impatient for their elimination. Eventually, however, the better—from the interplay of all three points of view or bases of judgment—supersedes the less desirable. And the evolutionary processes still go on.

◆ In this belief in the evolution in building, this conviction that the best of yesterday and today will survive until the better of tomorrow has proved conclusive superiority, lies the solace of the die-hards of the old school—and also the faith and indomitable enthusiasm of those who are so keenly aware of the inadequacy of our present shelters and are working to improve them. Progress is inevitable, though it may be painfully slow, in the evolutionary process in which we firmly believe.

HOW MANY POSTWAR HOUSES?

By THOMAS S. HOLDEN, PRESIDENT F. W. DODGE CORPORATION

Some say a million a year, some say two, some less. Here is a realistic estimate based on thoughtful scrutiny of the six most potent factors involved in postwar markets

ON VARIOUS OCCASIONS the writer of this article has stated that, based upon certain assumptions regarding our postwar economy, residential building in the postwar decade might be reasonably estimated at an annual average volume approximately three times that of the depression decade 1930-1939.

The U. S. Bureau of Labor Statistics has published estimates of new non-farm family dwelling units built each year. These estimates average 273,400 units annually for the period 1930-1939.

Applying the multiplier three to this figure gives 820,000 units as an estimated average for the postwar decade. (Naturally this should be interpreted as meaning 800,000 or more," since such estimates can only be approximations.)

It may be useful to appraise this estimate in comparison with other estimates that have been published in various places.

The following estimates will be discussed:

(A) 560,000 to 640,000 units, estimated annual average for five years following the war, the "ready-made," "new-family" market calculated by Robinson Newcomb, in an article entitled, "A Million Houses—More or Less," published in the July, 1943 issue of ARCHITECTURAL RECORD.

(B) 820,000 units annually for ten postwar years (this writer's estimate).

(C) 1,000,000 units annually (most frequently quoted figure).

(D) 2,000,000 units annually (highest estimate that has been quoted).

It is necessary to compare these estimates with the actual volume of the 1920-1929 decade, estimated by the U. S. Bureau of Labor Statistics at 7,034,000 new non-farm dwelling units (an annual average of 703,400 units). That decade was a period of postwar recovery, prosperity and boom; it was the most prosperous peacetime decade thus far in the country's history; it was also the decade which had the largest numerical increases in total population and in urban population in the country's history. To justify any of the above estimates except (A) it is necessary to show demand factors of greatly increased potency over those that were operating in the period between 1920 and 1929.

A. 560,000 to 640,000 non-farm dwelling units annually. (Dr. Newcomb's estimates of the "ready-made" market).

This estimate is based principally on an anticipated increase of 4,600,000 new households to be formed between

1940 and 1950, allowance being made for vacancies, for house production from 1940 through 1944 and for demolitions. The lower figure anticipates demolitions at the rates customary in the past, including demolitions by fire and catastrophe. The larger figure anticipates possible revival of a public housing program with planned demolitions and replacements in slum areas. It seems fair to appraise this as a minimum estimate, for it is based only on the natural "ready-made" market due to the new family formations. Under certain conditions, Dr. Newcomb estimates an additional 50 per cent of new dwelling units for "re-housing" as distinguished from "new-family" housing. This, he states, depends on prices, prosperity, building industry progressiveness, rent curves, depreciation and demolition policies, etc.

Certain other factors likely to prove important in increasing residential building volume are worthy of more detailed analysis.

1. Migration—By using overall national figures, the factor of internal migration is ignored. War housing demands arose largely from migration of workers to war-production centers. While most of these centers are likely to continue as the chief centers of peacetime industrial activity and employment, they are not likely to require second-shift and third-shift workers. Many of the new residents of these communities will remain, but many others will return to farms or to other urban centers where peacetime employment is offered. Unless demolition of war housing of temporary character removes all housing surpluses, it is quite possible that the country will have shortages in many spots and surpluses in others. In that case, shortages will create housing demands in particular locations regardless of surpluses elsewhere.

2. Decentralization—This trend, which started on a large scale in the 1920's and continued through the 1930's, is very likely to continue. Greater prosperity encourages aspirations for home-ownership, the desire for a place with a plot of ground, abandonment by tenants of low-grade rental accommodations in congested areas for better-grade housing in better city neighborhoods, suburbs or the country.

3. Replacements—Assuming a period of prosperity, the decentralization trend is likely to be curbed only by improvement, or demolition and replacement, of low-grade urban housing.

Relatively few houses are likely to be abandoned, or demolished with replacement on the same sites with new houses, by owner-occupants; exceptions to this general rule would be very large houses owned by persons who

are squeezed by depreciated sales values, higher property taxes and high income surtaxes.

Another factor tending to accelerate replacements is a growing tendency toward realistic appraisal of old properties. Owners of industrial or rental-income property have been accustomed to write off depreciation, because they were permitted depreciation allowances on income-tax returns. The fact that home-owners could not make deductions for depreciation is one of a number of reasons why such owners in the past have expected high resale values for their property. The great deflation of the 1930's, the switch to periodic amortization of mortgages, and the pressure to reduce valuations for tax-assessment purposes, have all been tending toward more realistic concepts of actual values of residential property and somewhat more ready acceptance of purchase offers at prices representing depreciated values.

Another factor likely to become very important is that of postwar price inflation. Rising commodity prices, rents, and real estate values, tending to resale prices in postwar dollars approximating original costs in pre-war dollars may affect decisions of property-owners to sell out and build new houses elsewhere, leading to ultimate abandonment of the least desirable old buildings.

Certain other factors likely to become operative on a large scale would tend to increase demolitions and replacements (either on the sites or elsewhere). They are large-scale urban redevelopment projects, new terminal developments in cities, changes in street layouts for improved traffic conditions, new through-highways and the like.

Finally, the continued aging of the country's housing inventory is a factor which should have some effect.

It seems, therefore, reasonable to expect some speeding up in demolitions and replacement, if the prosperity anticipated for the postwar era is realized. It will probably not be a speeding up by artificial means, such as current proposals for deliberately building short-lived houses, but a gradually accelerated abandonment of the lowest grade of existing buildings, principally rental property.

4. Prosperity—There is a question whether the Newcomb estimates give *enough* weight to the prosperity factor. Note the following comparative figures:

	New Non-Farm Households	New Non-Farm Dwelling Units
1920-1930.....	5,500,000.....	7,034,000
1930-1940.....	4,450,000.....	2,734,000
1940-1950.....	4,600,000.....	5,200,000*
1940-1950.....	4,600,000.....	5,600,000*

*Newcomb's minimum "new-family" units
 *Newcomb's maximum "new-family" units

Figures on new non-farm households are Department of Commerce estimates quoted in Dr. Newcomb's article. The figures on new units for the two past decades are estimates by the U. S. Bureau of Labor Statistics; the figure on new units for the current decade are Dr. Newcomb's minimum and maximum estimates (2,400,000 for 1940-1944; 2,800,000 to 3,200,000 for 1945-1949).

It is to be noted that in the prosperity decade 1920-1929, actual units estimated to have been built exceeded new household formation by 28 per cent. In the depression decade, actual units were 39 per cent less than new households, suggesting a large amount of doubling up, accommodation in converted old buildings, and possible carry-over of a shortage. The great decline in the depression decade further suggests that prosperity and depression are very strong demand factors. Dr. Newcomb's minimum estimate for 1940-1950 (5,200,000 units) is only 13 per cent over new household formation for the decade; his maximum estimate for the decade (5,600,000 units) is not quite 22 per cent over estimated new household formation.

Another consideration pointing to prosperity as a factor tending to increase housing demand is found in records of consumer expenditures. Consumers in the United States spend in the aggregate about 13 per cent of their total expenditures for house rent or for the rental-equivalent in carrying charges on owned homes. This percentage is fairly uniform. Many economists believe that national income in the postwar decade will exceed \$100,000,000,000 annually, in terms of the 1940 price level. If that figure is assumed as the average for the postwar decade, then the following figures on national consumers' total rent-fund have significance.

CONSUMERS' ANNUAL RENT FUND	
(13% of Total Consumer Expenditures, in Current Dollars)	
1920-1930	\$ 8,900,000,000
1930-1940	7,800,000,000
Postwar decade	13,000,000,000

There is no obvious way of translating these figures into demand for new housing. They do indicate, however, that a vastly increased fund is likely to be available for improvement of housing facilities, a significant portion of which should consist in acquisition of new facilities; this is, of course, subject to the validity of the national income estimate for the postwar decade.

It can be concluded that Dr. Newcomb's estimates based only on "new-family" need are very much on the conservative side, and that an estimate substantially larger than these may be justified. The validity of advance estimates cannot be proved or disproved by argument, only by the facts as they later develop.

B. 820,000 non-farm dwelling units annually.

(The writer's estimates).

The four factors enumerated under (A) seem to justify a higher estimate than Dr. Newcomb's.

The writer's figure (820,000 units) is more than 16 per cent above the average annual production of new dwelling units in the prosperous 1920-1929 decade. Certain facts raise questions as to whether such a high figure will be actually realized.

Population increases in the current decade (1940-1950)

(Continued on page 102)

By GEORGE HERBERT GRAY, F.A.I.A., CONSULTANT IN ARCHITECTURE AND CITY PLANNING

A Reply to "Housing and the Democratic Process"

by Joseph Hudnut in June ARCHITECTURAL RECORD

THE significant title of Dean Hudnut's cleverly written article, his sketchy picture, or caricature, of existing public housing as "chicken farms," and his suggestion for reverting to smaller units long since tried and abandoned—these together raise important issues which demand scrutiny and a review of some elementary facts. While we disagree with him, we are glad he has reopened the discussion of fundamental policies.*

Our housing policies are still young, growing and open to improvement. To achieve improvement there must be free and open discussion of all opinions. Obviously, constructive discussion must be based on sound premises, on facts, and should be realistic rather than abstract. No discussion, philosophical or otherwise, can attain a high level if based on unsound premises. On these fundamental points we feel that the Dean's article left much to be desired.

Contrary to the Dean's fear of social and political implications in large-scale housing, it is my considered judgment, based on three decades of close contact with the problem of slums and low-cost housing in this country, in England, and in the countries of northern Europe, that the most fundamental justification for public housing is that it affords a method of increasing a sense of civic responsibility and of civic pride in a large and important segment of our population—that segment in which privations and limitations in the outlook on life are most prevalent. Such conditions when allowed to simmer, may brew organized discontent, even revolution. It is this

*The present writer raised some of the same issues, and others in "Highlights of a Housing Tour in Northern Europe," The Octagon, December 1937, February 1938, reprinted separately 1938.

writer's judgment that the childhood environment of the home and *the neighborhood* have a lasting influence on the character and the outlook on life, an influence no less if not greater, than that of the school environment and training. For a century now in this country we have been developing the idea of public education; but for that portion of the population living in overcrowded, run-down, unsanitary rooms, playing in congested streets, about the docks and railroad yards, on dumps and in deserted houses, in close contact with all types of vice, for these the schools are playing against loaded dice, and a good family influence, or church influence fares no better. If our nation is not to degenerate from a democracy into an agglomeration of self-centered individuals, each preying upon the other, then it is *the neighborhood*, the *community of families*, that must be organized into groups with *civic consciousness and civic pride*. In a slum neighborhood a good family influence suffers the same handicap as do the schools, and the churches fare no better.

It takes a fair-sized housing project to make a neighborhood. It takes intelligent disinterested management to develop pride of project, community responsibility and civic consciousness. The dangers of perverted management are precisely those which exist in our public schools. Such risks are inherent in a democracy of the people and by the people. Not only do fair-sized projects afford a decent environment in which to rear the rising generations of families who would otherwise be in the slums, but they afford a homelike and neighborly environment for mothers and fathers, and for the old folks. If we are to have fully efficient and loyal citizens we must make available to them environments similar to those which may be found in large-scale public housing projects. Our

Left: Housing project (Elm Haven, New Haven) integrated with its neighbors. Center, and right: the old-style street, and the new.



Fairchild



responsibility then should be for the increase of such environment and for the support and maintenance of the highest standards which have been achieved, and for their continuous improvement. The quality of a nation is the quality of its people. Any means for improving that quality is a vital concern of the federal government.

The Dean observes that public housing has not had "its origin in the economic class which it is meant to serve." Did our public school system have its origin in the group which was lacking education? Has not the required number of years of schooling been advanced against the wishes of parents who would have their children make an early start at earning? It must be borne in mind that the people in the slums are largely occupied with mere existence, have little time or educational equipment for studying ways and means of improving their lot as a group, that they lack community organizations through which they might voice any such ideas. There are, however, some who have risen from the slums into higher walks of life, and who do voice the needs as they know them from experience. They work through various civic organizations, general and specialized, local and national. It is in such organizations that our housing policies have germinated; the legislation has been enacted by the peoples' representatives in Congress, and it should be noted that without the backing of organized labor there would have been little housing legislation. In Congress Senator Wagner has been spokesman for both labor and housing.

On the social side the Dean feels that "there should be no trace of the institution," no attempt "to channelize the lives of tenants into accepted moulds." Certainly not, if done autocratically, by driving rather than by leading through educational methods. The Declaration of Independence, the Constitution, all subsequent laws federal and local and the institutions deriving from them, most emphatically our public educational *institutions*, are means and methods of "channelizing" the aims and actions of our people toward certain common and accepted principles and goals making for a better way of living. The test of the validity of any such "channelization" is whether it leads to a better way of living, to greater solidarity of accepted civic aims throughout the population, to carrying the higher civilization of the privileged groups into the area of the lower civilization of the less privileged masses. One measure of the civilization of any nation is the extent to which it has eliminated the disparity of advan-

tages between the upper and the lower income groups. The question then is: Can large-scale housing contribute to that end?

We are all familiar with the desirability and the feasibility of adult education, and with the many conspicuous achievements within that field, limited though the work has been. We are also familiar with the outstanding achievements of the settlement houses. From the methods of the settlement workers, adapted to the housing estates of London full two generations ago, from these methods stem the system of management in our housing projects. The attitude of the ruthless, mercenary rent collector gave way to a more humanized and understanding approach—eviction was not resorted to until the cause of arrears and possible measures for removing the cause were investigated, a direct and very practical form of adult education. Another step, as projects grew in size, was the organization of mothers' clubs, of girls' clubs, of boys' clubs, the establishing of work rooms where fathers could follow their hobbies or repair and paint the family furniture, the allowance of space for indoor and outdoor recreation. These activities are normally brought into being in open meetings of tenant community organizations, developed by their committees and advised by welfare organizations from the city at large; they are voluntary, democratic and free from managerial controls. In such an atmosphere of neighborliness there is engendered pride of project, pride of neighborhood, a sense of cooperation and of responsibility. In short, through that most democratic of methods, voluntary action, there is established a seed-bed of citizenship.

Obviously such accomplishments are not possible in an "apartment house" nor in a group as small as fifty families. For such results the project must be of a size to warrant the setting aside of space for various recreational and community activities, large enough to warrant a well-organized staff—including volunteers. Incidentally, as we have previously pointed out, such a project is also of a size which can take advantage of the very considerable economies of large-scale production in first cost, and of large-scale maintenance and management.

On the question of size, A. E. Morgan, in his interesting book "The Small Community—The Seed-bed of Civilization," makes some pertinent observations. His thesis is that out of the small community has developed our higher civilization, and that to retain its high qualities we must retain or recapture some of its characteristics

Social activities in "Elm Haven." Negroes and whites attend the same schools, the author points out, so mingle voluntarily





Housing of an earlier day. "Riverside Apartments," Brooklyn, N. Y. The project was built in about 1884 by A. T. White, a pioneer in large-scale rental housing

which have been lost in the big cities. Such communities, of course, are units in a larger whole. But, while small enough to retain neighborly contacts, the unit or community should be large enough to plan and act effectively as a group. Such are the units which Mr. Morgan finds we must develop if we are to preserve our democracy. Such are the units which we find in our public housing projects—if some fall below this high standard which is the aim of the national policy, that does not invalidate the policy—any more than weaknesses in our public school systems invalidate public education.

The Dean suggests that the people living in sub-standard housing "should be invited to improve, not to change their way of life, which would remain as before an integral part of the community." One of the most depressing features of large areas of sub-standard housing is the general lack of any community life, of community pride, of civic pride—features which we do find in large-scale public projects. At several points the Dean objects to such projects as being isolated from the city and its life. This point of view seems to ignore the widely accepted objective of gradually eliminating *all* sub-standard areas, residential and others, and of redeveloping them on twentieth-century lines. How these areas will be broken up, how interrelated, will be determined by local conditions and the local viewpoint. The pattern which Eliel Saarinen so strongly advocates in his stimulating book, "The City," is one of units probably averaging much larger than most housing projects, each to be surrounded by generous open spaces. Even if we follow the general present pattern of our cities, then when the elimination of all types of blighted areas approaches achievement, the isolation of individual projects will end and integration will be achieved, if the planning has been sound. In housing, as in all things, the validity of policies and ways of achieving them must be judged by ultimate results.

In the suggestion that local housing authorities should have control of all housing, for whatever income group, we heartily concur in principle. That is approximately the practice in Holland, where bad housing has been more nearly completely eliminated than in any other country. For the housing of the small segment of the population whose incomes are comparatively opulent, the controls of the city plan are usually adequate.

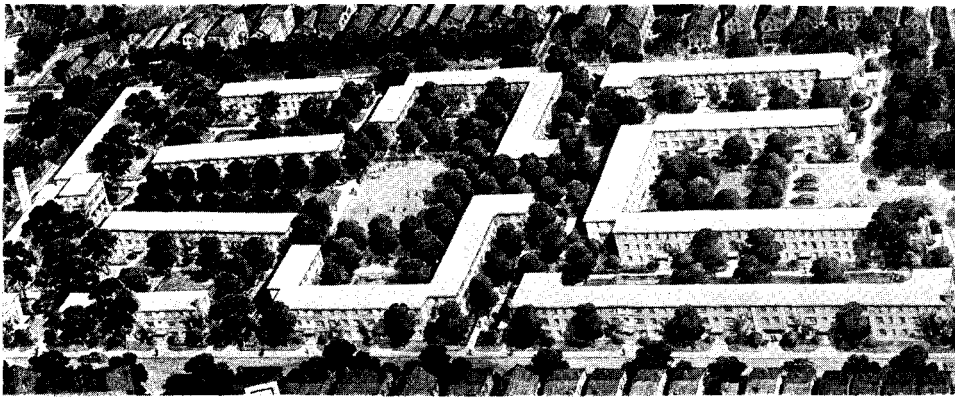
In one part of Dean Hudnut's article it is suggested

that we abandon the idea of large projects and instead build many small units, widely separated, normally not more than one to the block, housing "say not over fifty families." It is a truism among those dealing with real estate, the realtors, the city planners and economists, that even a good house is doomed if in a poor neighborhood; that the only way to improve a neighborhood is on a large scale—but more of that presently. Another argument the Dean offers for small units is that large units are in danger of becoming institutional, and have already segregated narrow, economic strata of the population.

Let us consider the narrow stratification which existed in most projects aided by USHA. We say "existed" because one of the last acts of important policy making of USHA was to recommend to the local authorities a liberalization of regulations so that within each project a wider range of income might be possible. Actually, for years in the projects of the National Capital Housing Authority (formerly the Alley Dwelling Authority) incomes have ranged from those of the almost destitute to those who could pay the full economic rent (i.e. cost without profit), indicating that such policies were largely of local determination.

As to the desirable size of projects, we find the answer in the cumulative experience of several generations, both in this country and abroad. The idea of national responsibility for seeing that families of low income shall be decently housed originated in that famous speech in Parliament by Lord Shaftsbury just one hundred years ago, and was followed by legislation which then seemed revolutionary, but which has been augmented by succeeding generations until finally it is sufficiently effective to have abolished all but a few of the smaller slum areas of London—as I know from personal observations, war reporters to the contrary notwithstanding. During that long period, "improved housing," beginning with just such small projects as Dean Hudnut suggests, gradually with the accumulation of experience, grew to projects of the present size.

In the United States there was a parallel development. The first housing in this country which might have claimed to be "improved," built in New York about 1850, was a commercial venture of the small size Dean Hudnut suggests, for about 100 families. It was followed a few years later by a definitely "improved housing" venture,



"Farnham Court," New Haven, (Douglas Orr and R. W. White, architects) showing how mass housing can be broken down into intimate groups by small courts

with low rents a prerequisite, even if entailing a loss. The six-story buildings,* housing about 180 families, were "nearly fireproof," with sound deadening in floors and partitions, iron stairways, gas, and running water in each apartment, common laundries (of a simple sort), two large recreation rooms which could be thrown together for assemblies, social or religious. Both these buildings were soon swamped and absorbed by the surrounding slums.

The first sizeable housing came in 1876, when A. T. White in Brooklyn built in succession two groups of "Improved Dwellings for the Laboring Class." The first two buildings were on a corner lot, accommodated a hundred families and had a large free space in the rear. The second group, on the opposite side of the street facing the first, consisted of three buildings, housing about one hundred and fifty families, occupying the entire end of a block, and having a large free space between the buildings. These two groups together proved large enough to hold their own against the surrounding neighborhood, and have remained a good investment to this day—with the aid of good maintenance and recent remodeling. However, for his next project Mr. White acquired an entire block. As the decade passed, Mr. White's experience was duplicated in Manhattan. Larger and larger units were found necessary to set and maintain neighborhood standards.

Another essential advantage of the larger projects was the greater economies in first cost and in management—contrary to the Dean's idea that scattered units might facilitate management.

The housing experience of World War I further demonstrated the advantages of large-scale projects. Since that time it has been generally recognized that under usual conditions, even an entire block is too small a unit to afford adequate assurance of being able to maintain its own standards against the threat of the surrounding blight, and that the superblock is needed. It has the further advantage that it permits of a rearrangement of the street pattern, of the elimination of outside traffic and of a more flexible and economical use of the land for buildings, for recreational areas and for other free spaces which permit sunlight and summer breezes to enter all houses—all of which amenities the Dean seems to hold

in slight value compared to "the rush of the madding crowd" and the glint of neon lights.

This trend toward large projects has been paralleled in about all the countries in western and northern Europe—in all those countries where civilization has been moving forward. Thus by a process of trial and error, by a natural evolution if you like, the verdict of almost universal experience has led to large projects.

As to the "chicken farm" type of project which Dean Hudnut pictures: I have seen illustrations of war housing in which, because of the temporary light construction, one can trace a family resemblance of the kind suggested. In a period of rapid changes, when ideas are taking off at every conceivable tangent, it would seem we should be a bit tolerant even of public housing, which after all is designed by fallible architects, chosen by the fallible local authorities. However, such exceptions in permanent housing are not so usual as to serve as the text for general denunciation.

Before criticizing our housing policies, we must consider what these policies are and how we came by them. The broad aims and methods advanced by the proponents of public housing were stated in, "A Housing Program for the United States,"* a summary of the deliberations of a large and carefully selected group of experienced American housers, advised by Sir Raymond Unwin and Miss Samuel and Ernst Kohn, housing director at Frankfurt-am-Main in pre-Nazi days. These three, accompanied by Henry Wright and E. J. Bohn, made an extensive study of conditions in the field in this country. The actual policies in effect up to this time, have been developed under several agencies.

The USHA, which has produced most of our permanent public housing, operated from 1937 to 1942, but under normal conditions only between 1937 and 1939. However, the Act of 1937 did not mark the beginning of our public housing policy. The start was with the Housing Division of PWA (created under the National Recovery Act of 1933), which after the first year was given the right of eminent domain, through the Emergency Housing Corporation acquired land and built some fifty projects which were initiated and sponsored by the local com-

(Continued on page 106)

*Erected by the Association for the Improvement of the Condition of the Poor.

* Published by the National Association of Housing Officials, March, 1934.

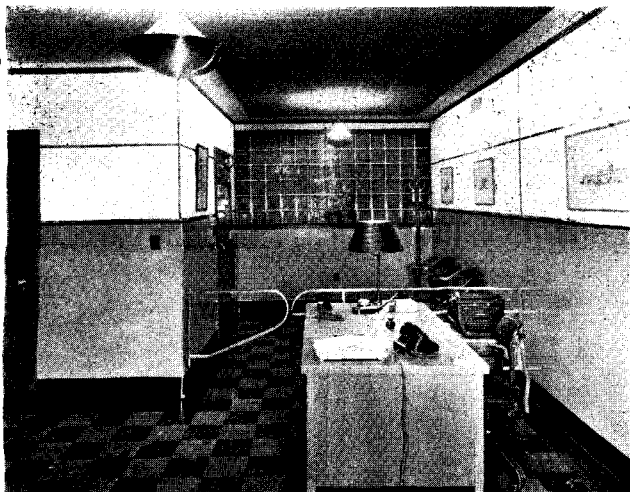


ARCHITECT'S OFFICE BUILDING

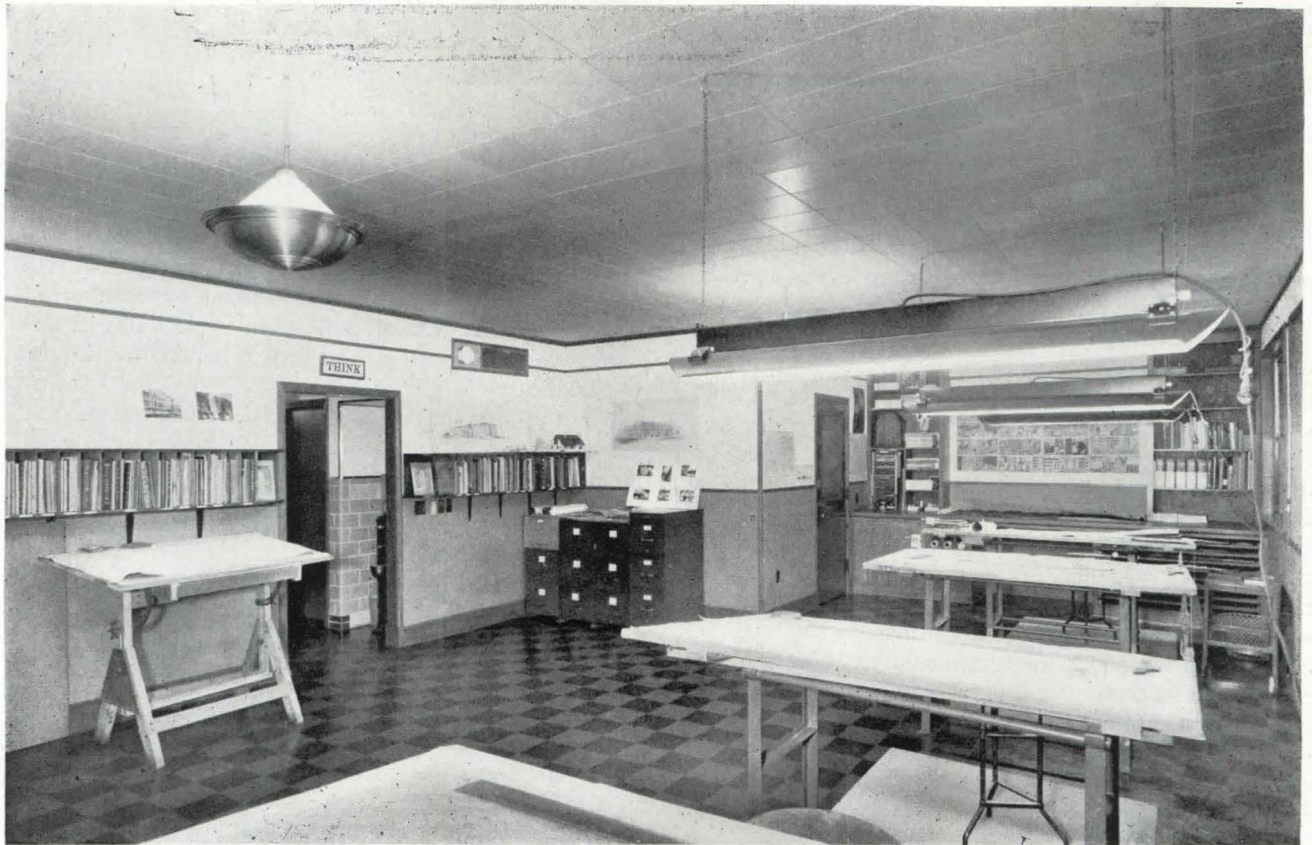
OFFICE BUILDING FOR

LORENTZ SCHMIDT, ARCHITECT, WICHITA, KAN.

FOR ARCHITECTS already considering the planning of their postwar quarters there may be a thought in this architect's solution of his office problem. He designed and built his own office building outside the congested district, "about halfway between the better residential district and the business section." And, having occupied the structure for a couple of years, he adds, "I am more enthusiastic about this arrangement than I have ever been. My clients, the contractors and material men like it. It is so much quieter and pleasanter for the people employed. I have also found it very much more economical.



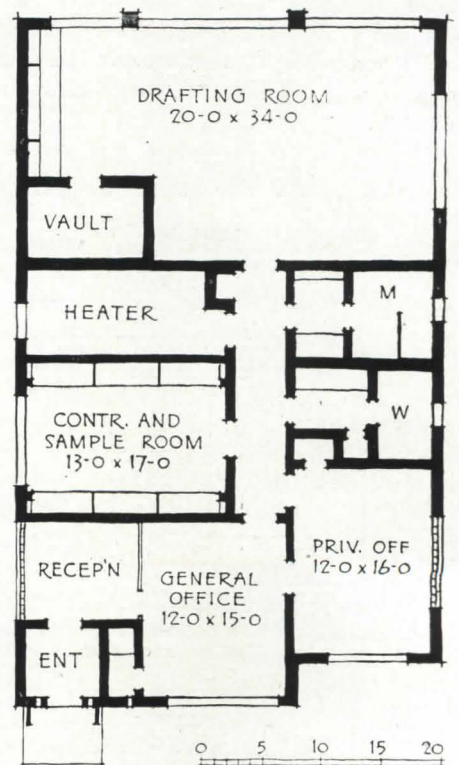
Edgar B. Smith photos



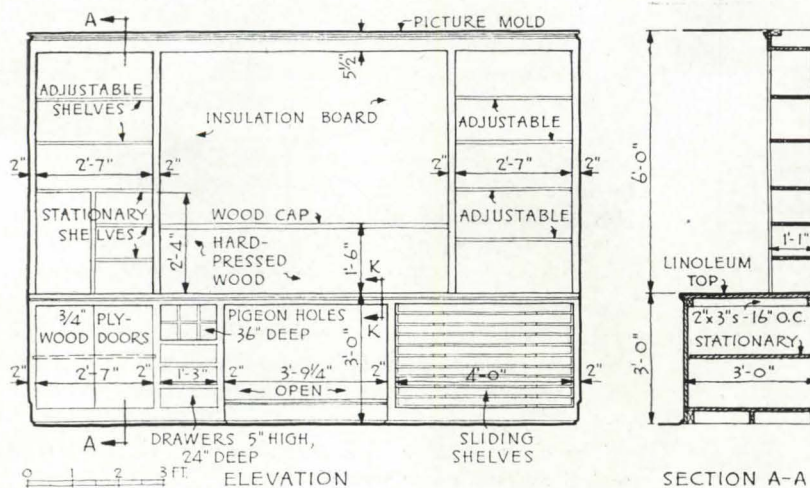
The drafting room, looking toward head draftsman's cabinet, detailed below

The basementless building has a floor slab poured directly on a tamped earth fill. A waterproofing and hardener was applied after the floors were finished. Floor surfacing is asphalt tile or mastic flooring. The entire building is done in "dry-wall" construction. Exterior walls are of 8-in. brick, furred, and covered with insulation board. Wainscot high the insulation board is covered with one-eighth-in. pressed wood with an enamel finish.

"One of the best features," writes Mr. Schmidt, "is the room used as a sample room, conference room, contractor's room, and specification assembly room. I find that it is very helpful to have samples available both for the use of the designers and in discussing the plans and specifications with the owners. It saves a great deal of time." The building cost 10,000.



Opposite page, left: reception lobby, seen from general office; right, Mr. Schmidt's private office. Left: details of head draftsman's wall cabinet



NOTES ON NEWSPAPER PLANTS

By WALTER O. KRUSE, KRUSE & PARISH, ARCHITECTS

A NEWSPAPER BUILDING is a straight line production plan problem and its product, the newspaper, must be turned out without waste motion and at the least cost. The complicated structural and engineering problems, as well as exterior and interior architectural effects, must be subservient to the arrangement of plan. The building should not be burdened with expensive features of space or decoration that are not essential to its operating requirements, unless the publisher expressly demands it and is advised of its cost.

On the other hand, the architect appreciates that the newspaper is a public institution—the center of many civic enterprises, the voice and spokesman of the community. Its exterior and that portion of the interior accessible to the public must command the deference and respect due its dignity and purpose and be a reflection of the good taste and business enterprise in the community of which it is a part. To integrate these two apparently divergent requirements is the assignment given to the architect.

The administrative, business, advertising and news departments should be provided with space, comforts, and conveniences in keeping with their importance. Besides light and well-ventilated working quarters, provisions must be made for adequate locker and rest room facilities for all departments. There is no valid reason why all departments of a newspaper plant cannot be clean, orderly and inviting to the public and the members of its staff.

The period of exploration of possibilities of various sites may well be deliberate because at this stage mistaken judgment can be costly. It is becoming common to acquire a site not necessarily in the business district but rather on the edge of it and if possible on the side toward which the city is developing.

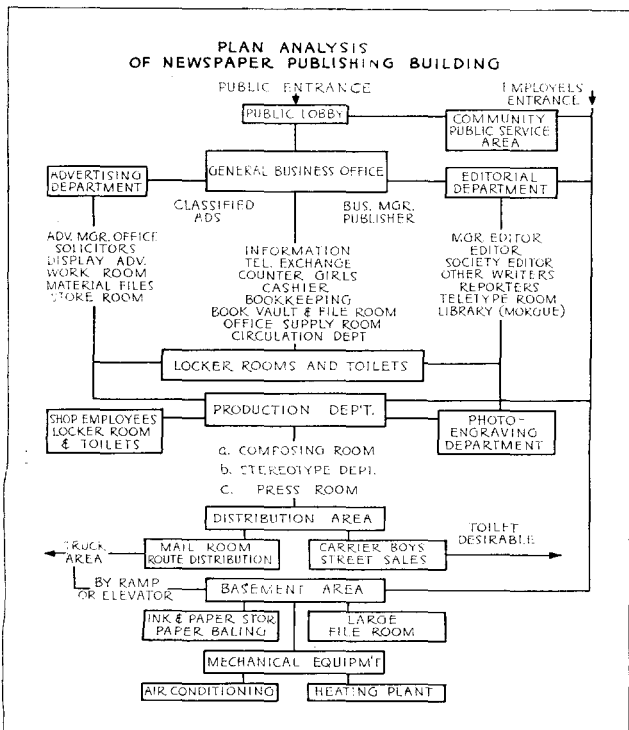
For the exterior facing material, brick, stone, and terra cotta are still generally favored. Some of the more modern designs are executed in architectural concrete, brick, stone, tile or terra cotta in colors and in combination with glass block and bright non-corroding metals. On the interior the walls of production departments should be faced with a smooth light-colored impervious brick, to provide for easy maintenance and to reduce the amount of plastering required. Plastering is now confined principally to walls in the office sections, and should be finished smooth and painted with a good quality of washable paint. The necessity of giving consideration to acoustic materials on all ceilings for noise elimination is also generally recognized.

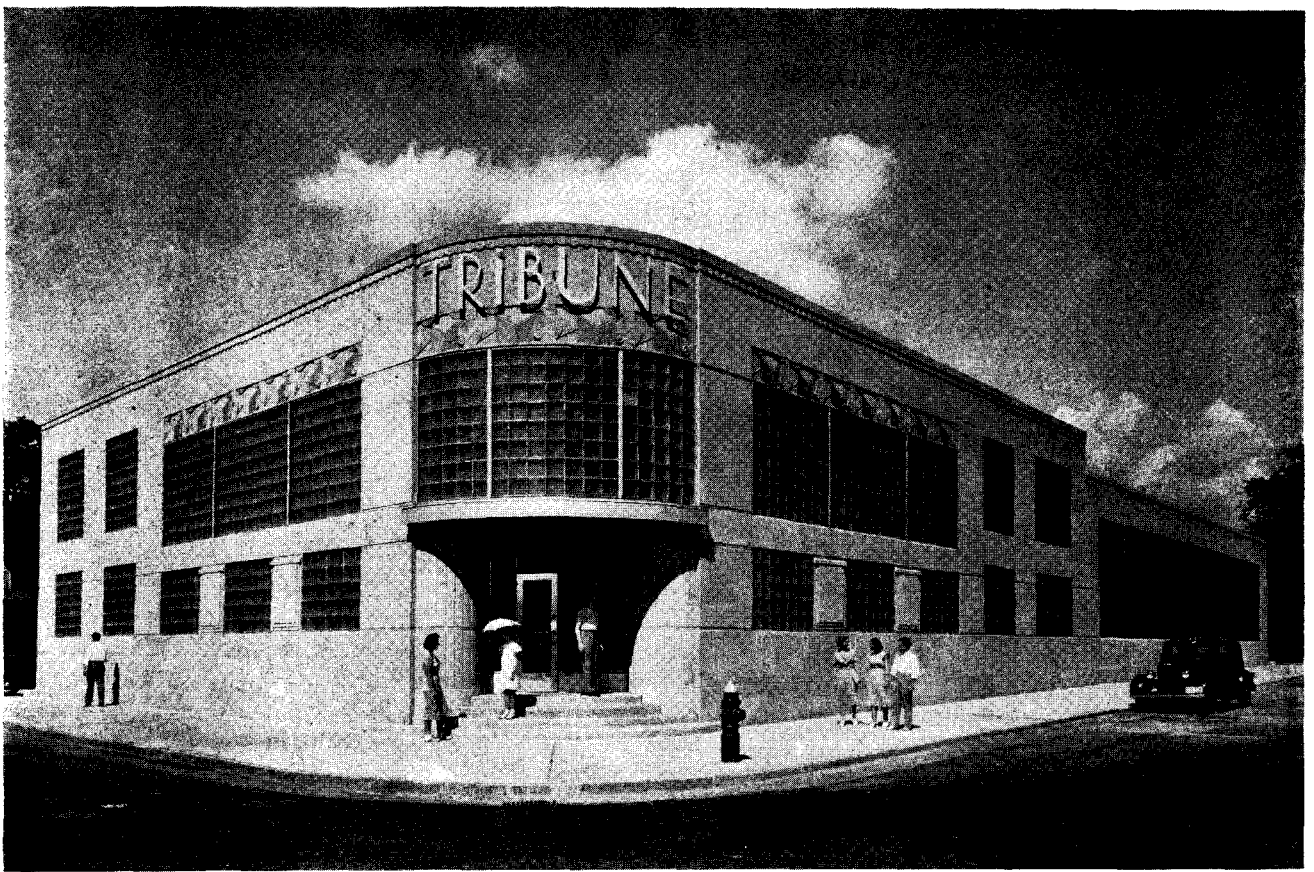
Scientific lighting for the entire building is unusually important. A system of overhead indirect lighting of ample and uniformly distributed foot-candle capacity, eliminating glare and the use of individual desk lamps, is desirable. For the production department the principle of down lighting is used, except in some cases, as over news and ad banks, make-up tables and finishing machines, a reflecting dome type of fixture of considerable foot-candle capacity has proved very satisfactory.

For the floors of office portions a resilient type of material should be used. Wood blocks have proved very satisfactory in the production departments. The basement and trucking areas should have wear-proof concrete floors, and if there is danger of dampness in the subsoil, drain tile must be laid under the floor. Paper rolls are usually handled on dollies or paper trucks running on tracks, laid in trenches with floor of paper storage area at truck height.

Within recent years air-conditioning has developed tremendously and its use in connection with newspaper buildings has helped to solve many disturbing problems. In a newspaper plant the air-conditioning system should be split into several independent units to obtain the best results. If a photo-engraving plant is installed the exhausts from this department should be carried directly to the outside by ducts of acid resisting materials. This also applies to the exhaust of fumes from equipment using molten metal. In the pressroom it is best to arrange the exhaust flow of air down through the press opening into the basement through the paper storage area. By this method the usual ink lint driven off while the press is running at high speed does not fill the pressroom with a blue haze. The humidity prevents static and paper tear and insures an even inking of paper.

The chart shows a plan analysis of the elements of a typical average newspaper plant.





NEW FREEDOMS FOR THE PRESS

NEWSPAPER PLANT FOR LA CROSSE, WIS., TRIBUNE

KRUSE & PARISH, ARCHITECTS

BOYUM, SCHUBERT & SORENSEN, ASSOCIATES

WITH ITS NEW BUILDING, functionally planned for efficient operation, this newspaper has achieved a still uncommon kind of freedom of the press. Since the manufacture of newspapers is a straight-line production job (page 58) and a 24-hour operation, this space freedom is worth achieving.

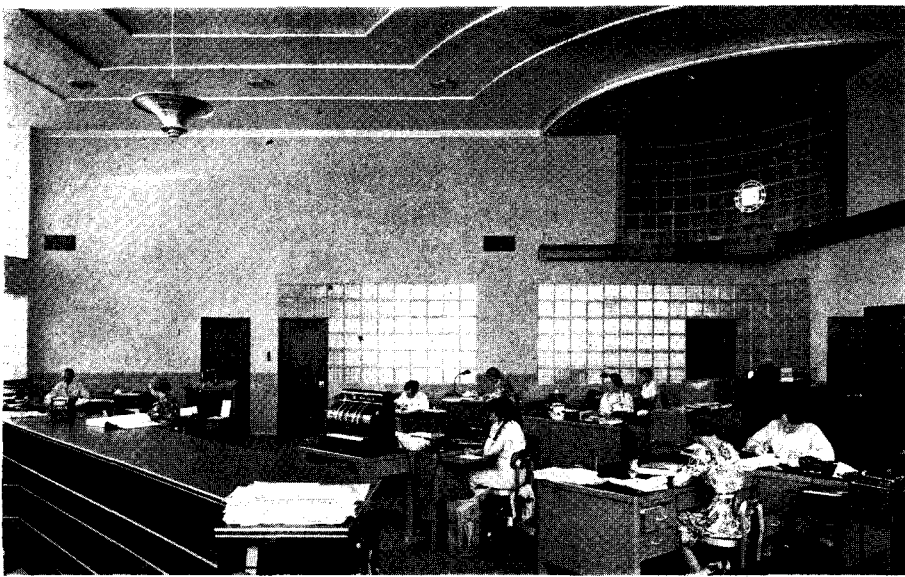
The freedom in planning is plainly seen on the exterior. Glass block areas are virtual maximums permitted by varying room heights and interior walls, no effort being made to align them on the facade. For the rest of the exterior, it comes naturally from the reinforced concrete structure, with some masonry ornamentation in pre-cast concrete. Exposed metal parts and trim are of aluminum.

Freedom for handling heavy paper rolls and finished newspapers is gained by a double level trucking area. A public alley gives access to the upper platform for the newspaper trucks; a private driveway and ramp permits delivery of paper stock directly to the basement. Carrier

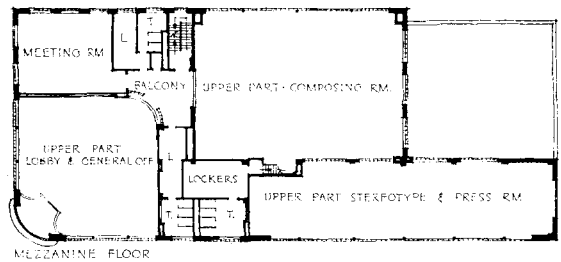
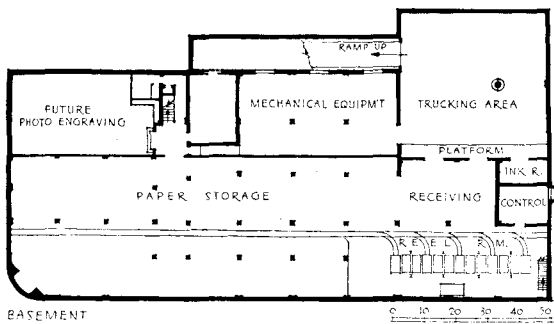
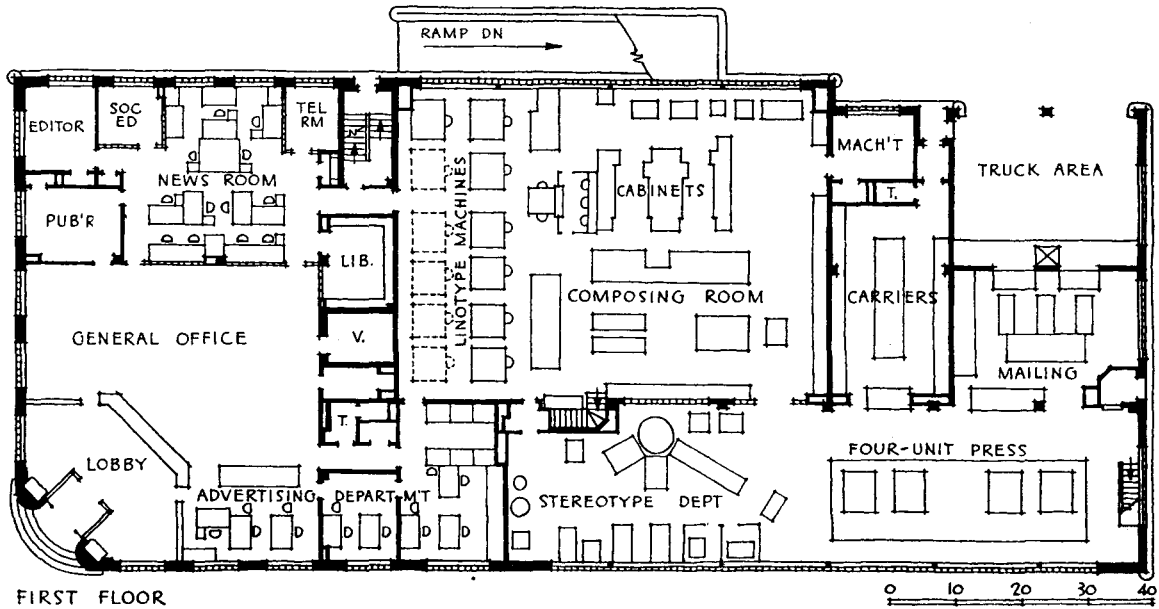
boys have their own entrance to their separate room, and their own toilet room; thus is the rest of the plant protected from their excess energy.

Offices and newsroom are shielded from the noise and clatter of the operating departments by a row of "dead" spaces—stair wells, library, vault, etc. Glass block partitions and acoustic ceilings also help to isolate noise. Traffic between operating and office departments is minimized by supplying separate locker and washrooms.

Freedom for good newspaper work is further provided by a complete air conditioning system. While this is appreciated by the always-hurried white-collar departments, it is equally productive in the shop. Sufficient humidity is necessary to good, fast press work, and filtration keeps ink troubles under control. Earl H. Beling was consulting engineer for the air conditioning.



Lobby and office area is done with restraint, with high coffered ceiling of acoustic cork with aluminum bands and aluminum lighting fixtures. Woodwork is dull walnut veneer.



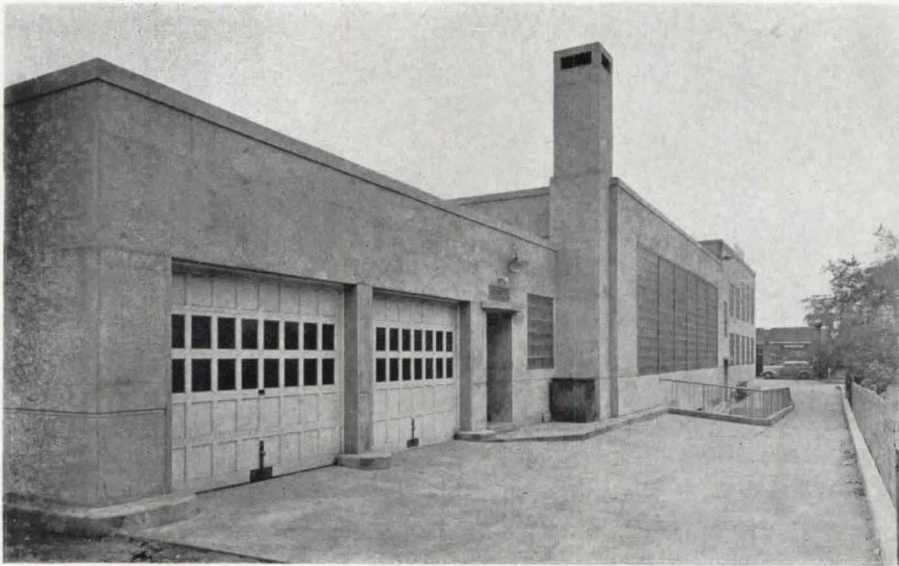
Corridor on the mezzanine floor. Many interior partitions were built of glass block to take advantage of all possible "borrowed" light. Flush steel door frames eliminate all wood trim



General newsroom has glazed gray brick wainscot, painted plaster walls and cork acoustic ceiling. Totally indirect lighting renders obsolete the traditional desk lamps and eyeshades

In the publisher's private office the background for the inevitable personality pictures is matched walnut veneer paneling in natural color. Acoustic cork ceiling is finished bone white





Ground floor trucking area, for newspaper trucks, opens to a public alley in rear. Heavy paper rolls are delivered directly to basement, via the private driveway and trucking ramp

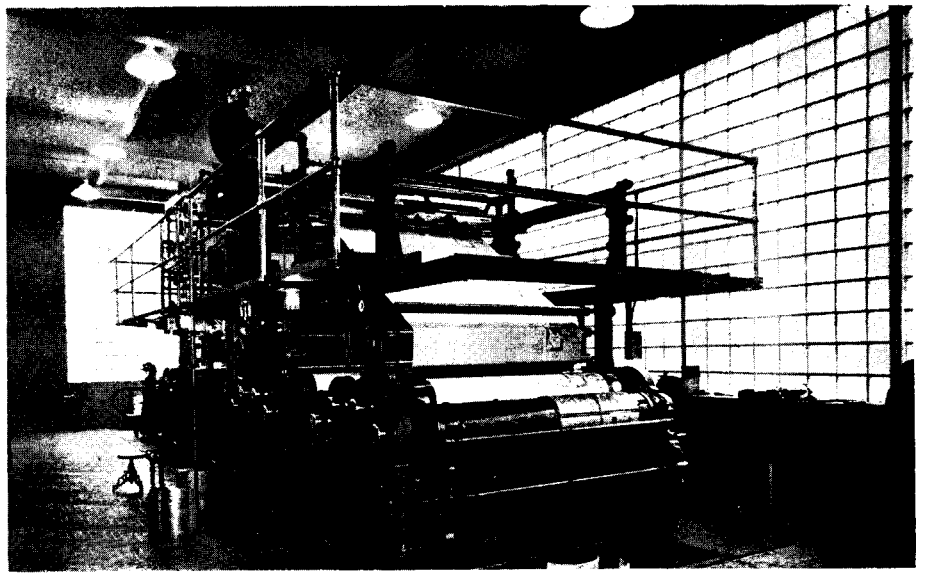


A partial mezzanine floor provides a large room which is now used for meetings. Perhaps a more important purpose is to allow for possible expansion of newsroom and offices below

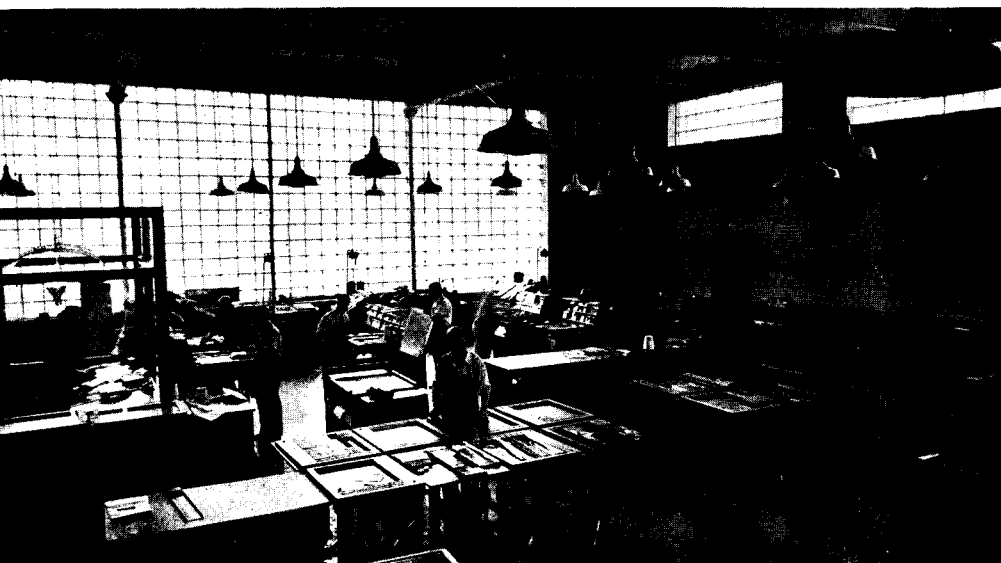
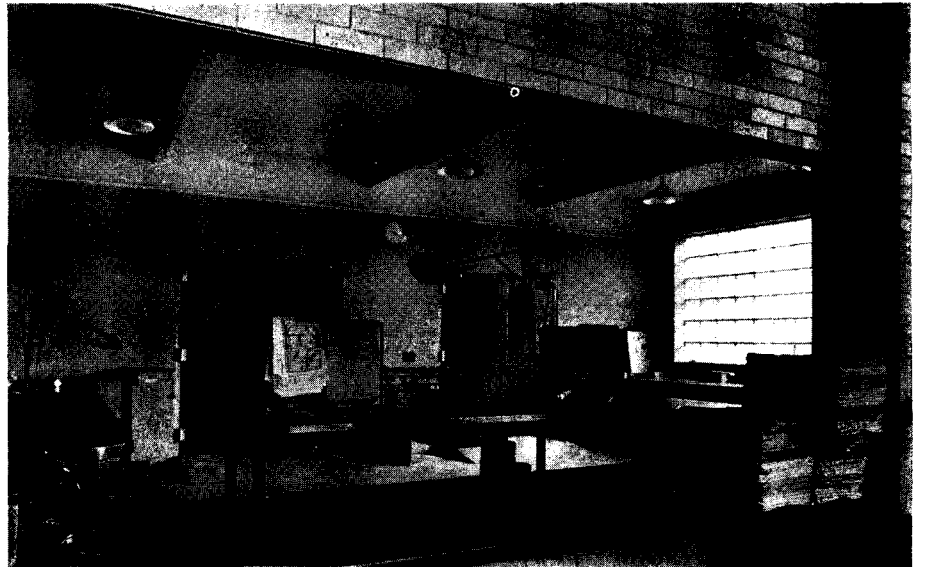
Linotype machines occupy one side of the composing room, with a space allowance for future additions. High-placed dome fixtures provide good lighting without any shadows



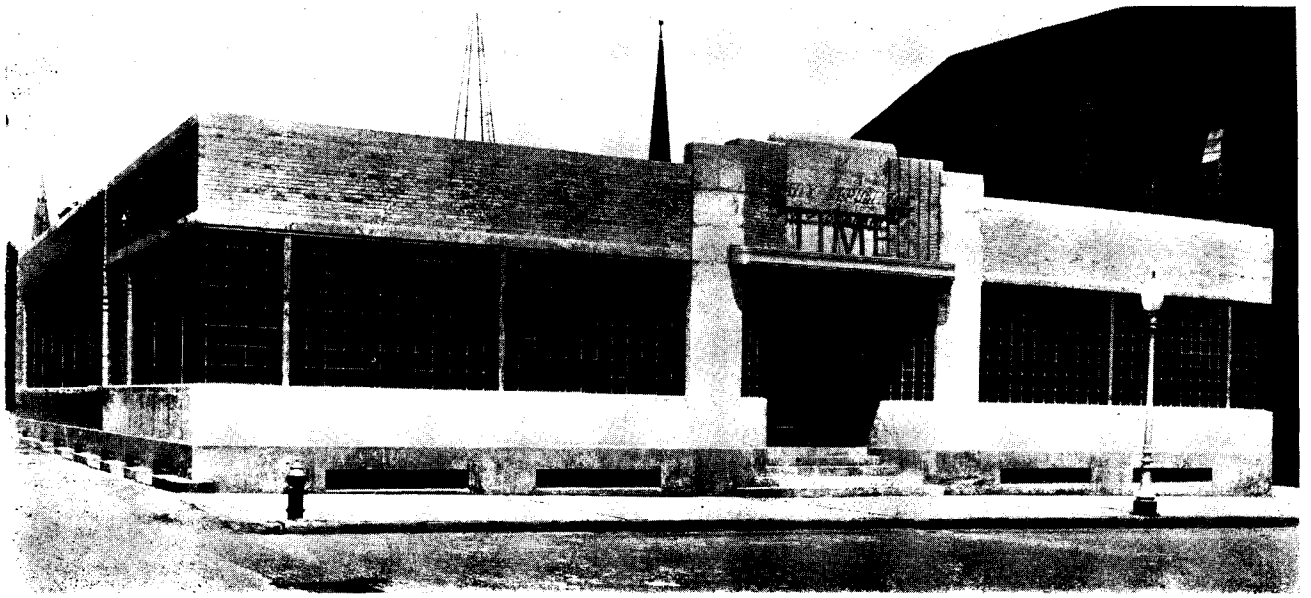
The huge newspaper press gets an outside location in the rear, with maximum glass block areas to provide diffused daylight. Air conditioning maintains proper humidity for paper handling



The mailing department has its separate room, directly in the line from press to loading platform. Heavy steel tables and counters, and special lighting arrangements, make handling easy



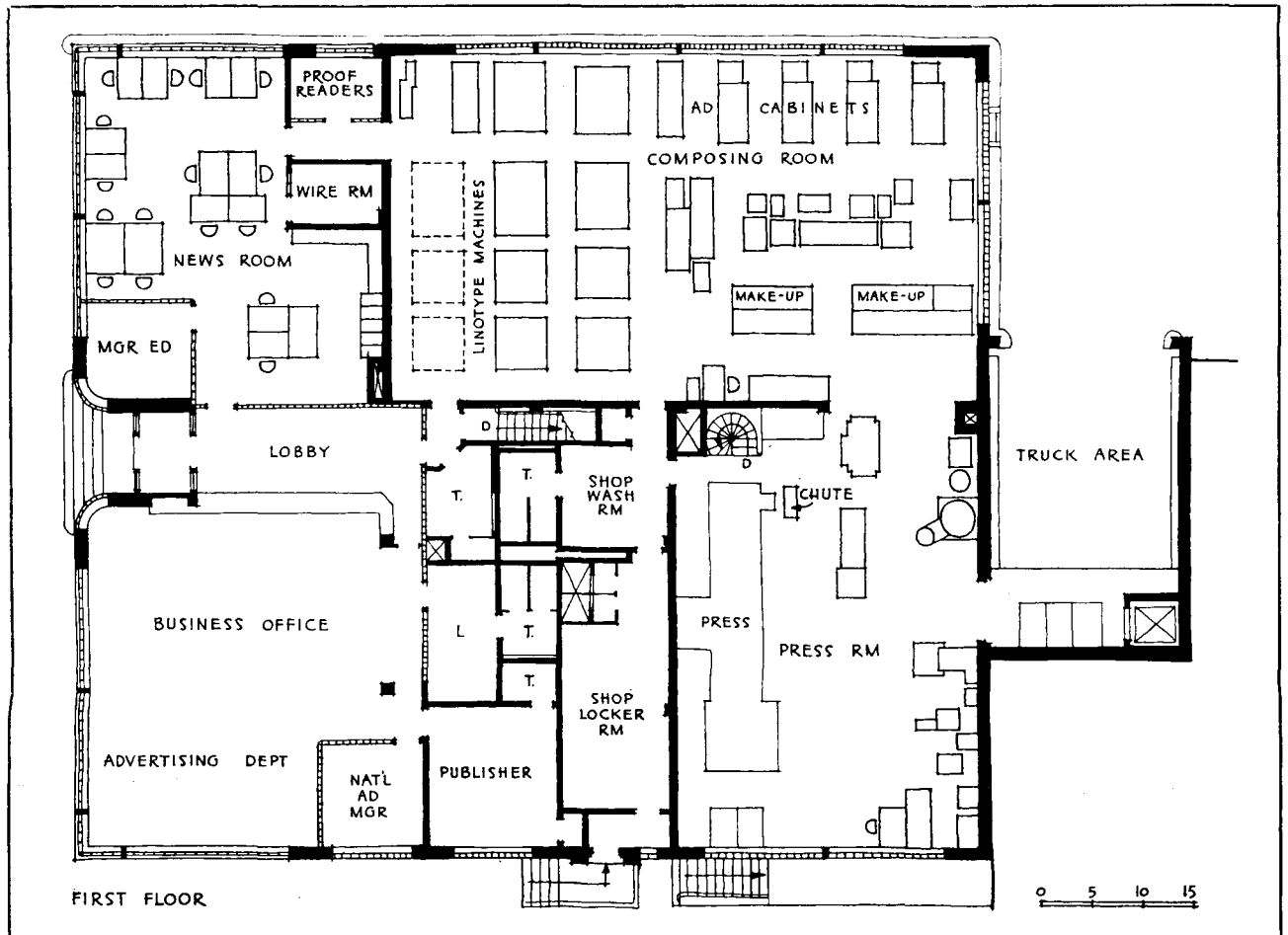
Composing room, like other work areas, has hard maple woodblock floor, vitreous face brick for walls. Steel roof beams are left exposed. Roof slabs have acoustic insulation



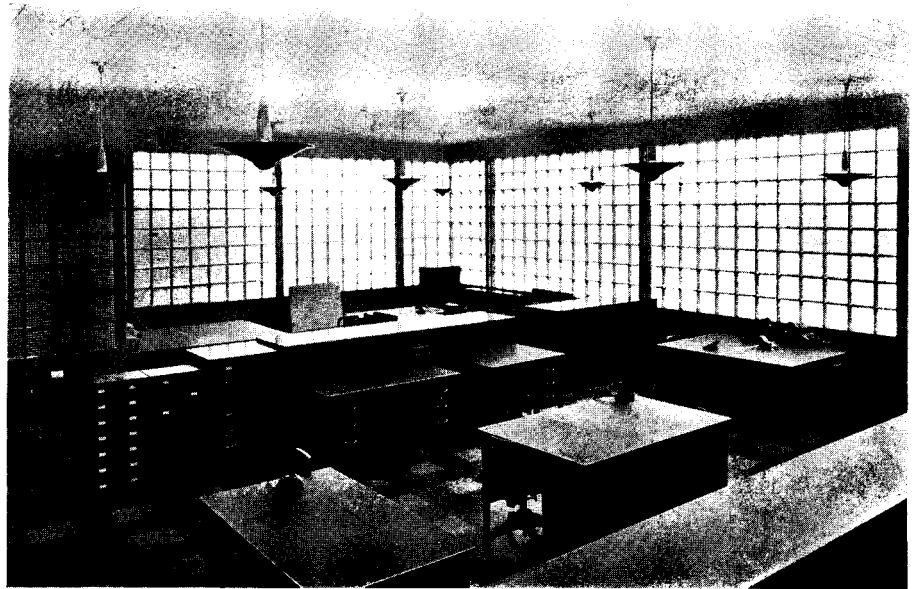
PRODUCTION LINE PLANT FOR NEWS

BUILDING FOR DAILY REPUBLICAN-TIMES, OTTAWA, ILLINOIS

KRUSE & PARISH, ARCHITECTS; LOUIS H. GERDING, ASSOCIATE



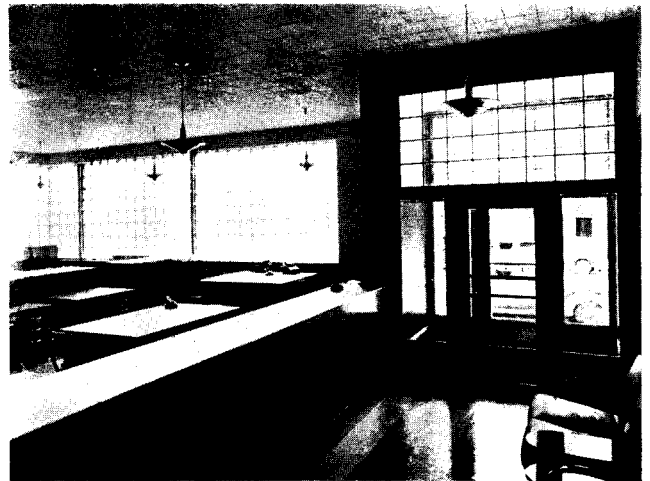
Business and advertising office is brisk and efficient, rather than ornate. Acoustic ceiling, asphalt tile floor, large glass areas, glazed brick wainscot, totally indirect lighting



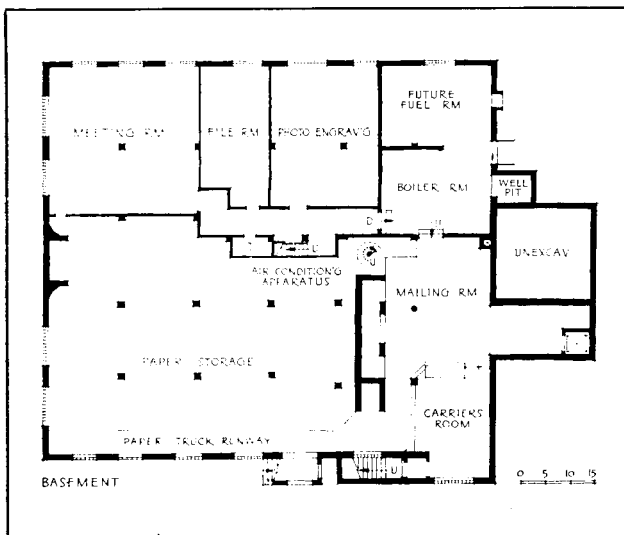
Sheffel Studio photos

PRODUCTION of daily newspapers proceeds at a fast pace, and pretty much in a "straight-line" process. The modern plant is designed to delineate the flow line, to eliminate waste motion and back-tracking. In this plant for a small-city newspaper, the flow is readily seen to be natural—copy from advertising and newsrooms to composing room to press to newspaper distribution, raw materials to storage to pressroom. Offices and production departments are well separated, the double locker and washrooms placed between them serving also to separate shop and office workers.

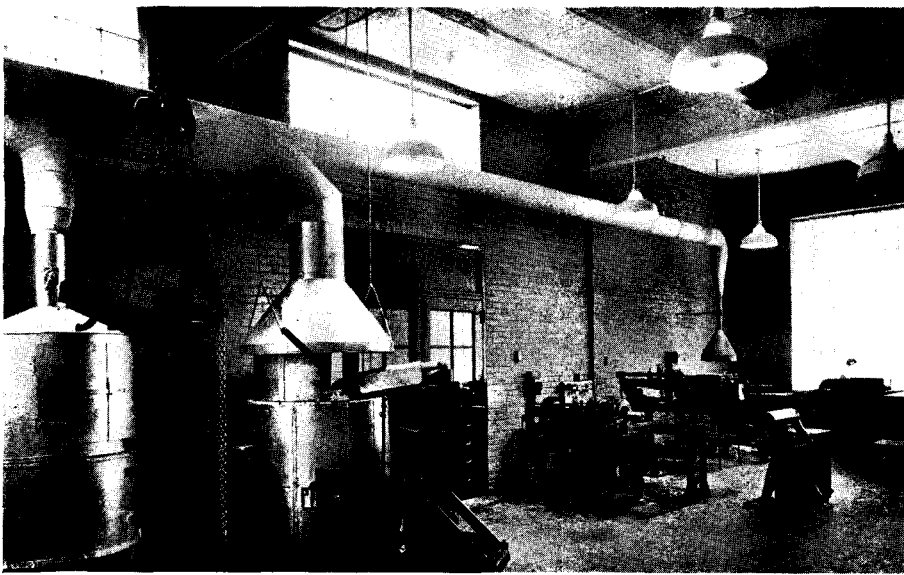
The steel and concrete structure is faced with smooth gray face brick and limestone. There are no windows; large glass block areas open walls for light, not for ventilation. Interiors are designed for cleanliness and easy maintenance, with a minimum of wood and other trim, and with vitreous brick walls (wainscots in offices). The building is completely air conditioned.



A long service counter separates office from public lobby



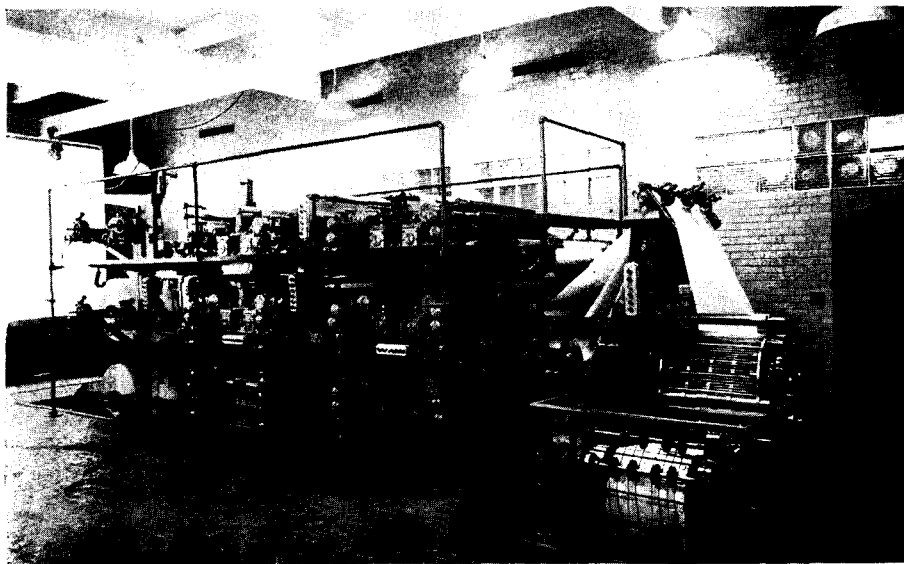
Pine paneling sets the note in the publisher's office.



Positive exhaust of fumes from metal furnaces in the stereotype department (in the pressroom) is but one function of the system that provides complete air conditioning for the plant



In the composing room, vitreous brick walls, glass block window lights, strong overhead light, give every inducement to keep things clean. All shop floors are of wood block, laid on end



The heavy newspaper press stands on a separate foundation, to help isolate its noise. Finished newspapers go directly from the press by automatic conveyor to mailing and carrier rooms below



Hedrich-Blessing

HOTELS

THE HOTEL AS AN ORGANISM

By ROBISON HEAP

SETTING NEW PLANNING STANDARDS

HOTEL STATLER, WASHINGTON, D. C.

DORMITORY STANDARDS

HOSTELS FOR BRITAIN'S WAR WORKERS

By F. R. S. YORKE, A.R.I.B.A.

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NO. 81

LEGEND

Staff

- 1. Administration
 - a. Time clock
 - b. Paymaster
- 2. Services
 - a. Rest rooms and lockers
 - b. Toilets

Central Services

- 1. Housekeeping department
 - a. Public areas unit
 - b. Guest rooms unit
- 2. Laundry
- 3. Repair shop
 - a. Carpentry
 - b. Painting
 - c. Upholstery
 - d. Mechanical

Lodging Operation

- 1, 2, 3 and 4. Housekeeping sections for each guest room floor

Public Services

- 1. Porter
- 2. Check room
- 3. Valet services
- 4. Other services (See legend for Organization of Public Elements for tabulation)

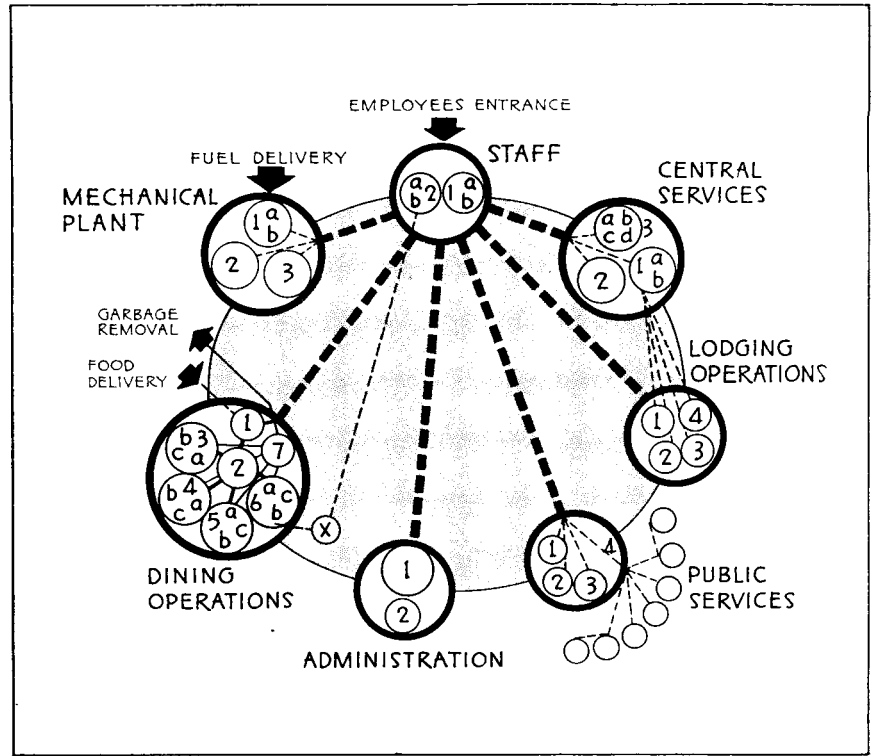
Administration

- 1. Administration offices
- 2. Registration desk, cashier, etc.

Dining and Banqueting Operation

- 1. Food receiving room
- 2. Food storage and basic preparation (bakery and ice cream freezing)
- 3, 4, 5 and 6. Kitchens
 - a. Preparation (other than basic)
 - b. Serving
 - c. Dish washing
- x. Employees' dining room
- 7. Garbage freezing

1. Organization of SERVICE Elements



Mechanical Plant

- 1. Heating plant
 - a. Boiler room
 - b. Fuel storage

- 2. Air conditioning plant
- 3. Machinery rooms
 - Refrigeration compressors.
 - Elevator machinery, etc.

LEGEND

Business Lobby

Services

- 1. Telephone and telegraph
- 2. Tobacco and newspapers
- 3. Barber shop
- 4. Men's room
- 5. House physician
- 6. Transportation tickets
- 7. Beauty shop
- 8. Women's room

Shopping

- 1, 2 and 3. Drugs, haberdashery, airline offices, etc.

Lounge

- 1. Peacock Alley
- 2. Lounge proper

Lodging

- 1, 2, 3 and 4. Floors of guest rooms

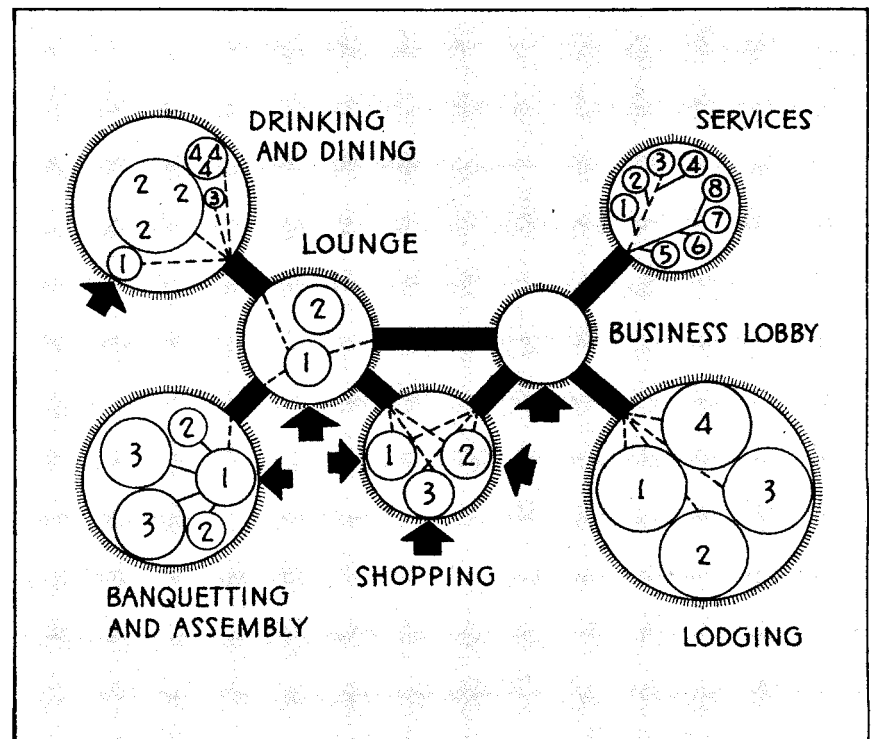
Drinking and Dining

- 1. Coffee shop or cafeteria
- 2. Public dining rooms; including dining and dancing
- 3. Cocktails
- 4. Private dining rooms

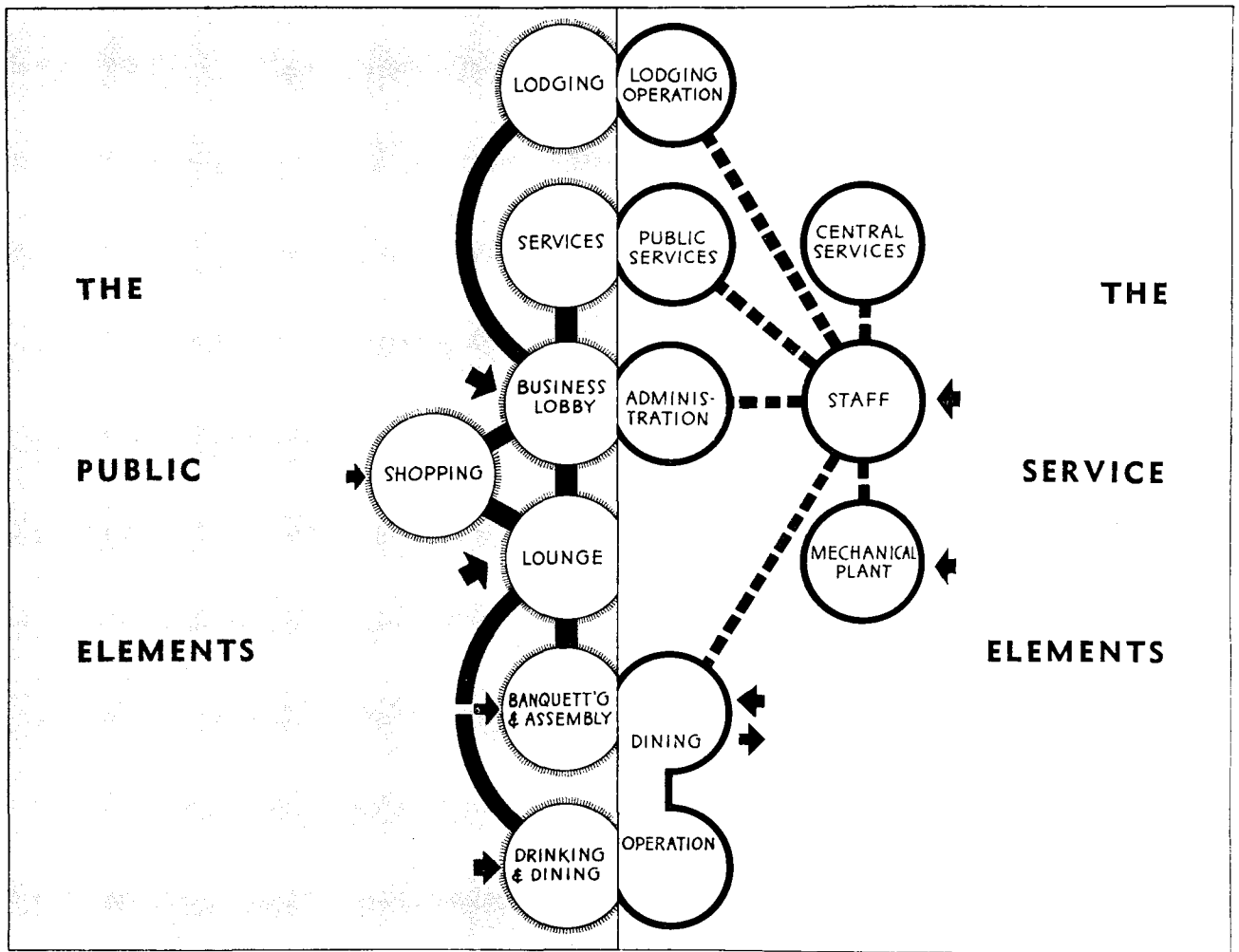
Banqueting and Assembly

- 1. Foyers
- 2. Check rooms and toilets
- 3. Banquet and assembly rooms

2. Organization of PUBLIC Elements



3. Organization of PUBLIC and SERVICE Elements



THE HOTEL AS AN ORGANISM

By ROBISON HEAP

THE HOTEL is primarily the direct response to the traveler's need for lodging and entertainment. Secondly, it is a center for conventions, balls and banquets, formal and informal dining, dancing and drinking. An understanding of the organization required by these varied activities is a prerequisite to good hotel planning.

The approach to such an understanding here suggested is based on a primary distinction between the action patterns of patrons and staff. The three diagrams together with the accompanying legends are largely self-explanatory. Diagram 1, relating to staff only, identifies six sub-patterns: central services, lodging operation, public services, administration, dining operation and mechanical plant; and shows how each flows from the staff center. On this flow system are superimposed other relationships, such as (1) that between the central housekeeping unit and the chambermaid groups on the various guest room floors, and (2) that between the staff center and the staff dining room. Other superimposed relationships will readily occur to the

designer and will vary with the individual problem.

Diagram 2 is limited to the action patterns of patrons. Arrows indicate points of origin for various sub-patterns, such as those originating at the business lobby, lounge, banquetting and assembly foyers, coffee shop and shopping center. Because of the number and variety of sub-patterns of patron activity it is essential that all of the action centers (with the exception of the services and lodgings, which are controlled by the business lobby) be directly accessible from the exterior. It should also be possible for each activity to flow through all of its stages without crossing or conflicting with any other activity, or on the contrary to join at any stage with another activity. This analysis clearly indicates the need for open and flexible planning with multiple intercommunication.

Diagram 3 shows the combination of public and service elements indicated in the preceding diagrams into a single overall grouping of the various action patterns composing the hotel-as-a-whole.



Hoydeck

SETTING NEW PLANNING STANDARDS

HOTEL STATLER, WASHINGTON, D. C.

HOLABIRD & ROOT, ARCHITECTS; A. R. CLAS, ASSOCIATE

THE DETERMINATION of the character of any hotel project is largely the conception defined by the owner, the site and the needs of the city in which it is located. For instance, a site of great value requires the maximum amount of sub-rentals; again for a location in a retail center a large number of sample rooms are essential, but such factors may be devalued by predilections of the owner who wishes to emphasize one element at the expense of others.

In the case of the Statler Hotel in Washington, D. C. the owners desired to provide previously non-existent convention facilities in that city. Once this had been determined Washington Zoning Ordinances and the nature of the site established the number of rooms to be provided. The owners believe that the postwar period will justify the number of rooms which, to some, may presently seem too few—as well as the convention facilities, which now appear too large.

In order to have a minimum of service areas above the second floor the basement provides for all housekeeping needs such as: the laundry, work shops, machinery, stor-

age and employee requirements including their dining room with its separate kitchen.

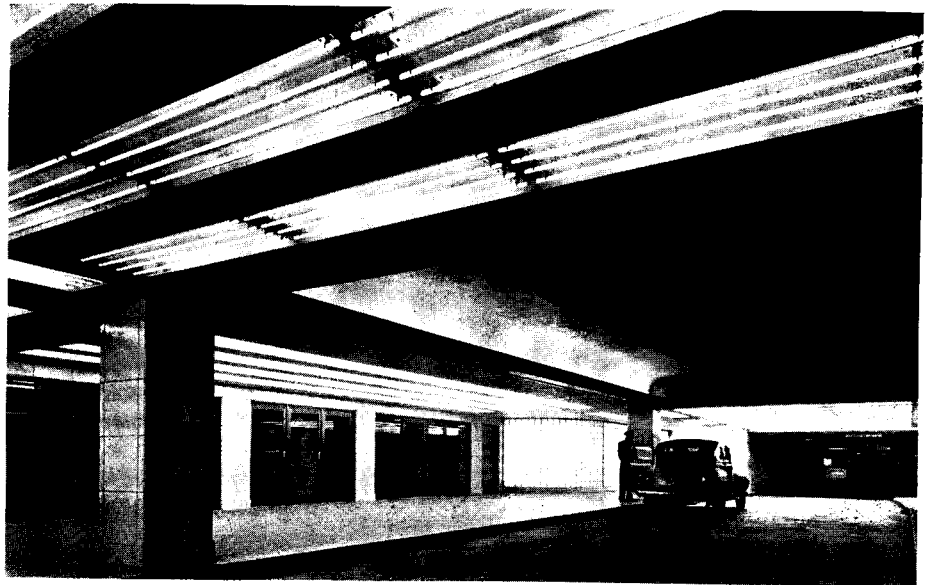
Significant among the new planning standards presented in the Statler is the motor-way running through the structure from which arriving guests find immediate and sheltered access to either the main desk or the function areas on the second floor.

The various public dining rooms and cocktail lounges and the main kitchen occupy the major portion of the first floor. Since the banquet and private dining rooms of the second floor can accommodate a total of about 3,500 people a separate food preparation center is required for handling this load.

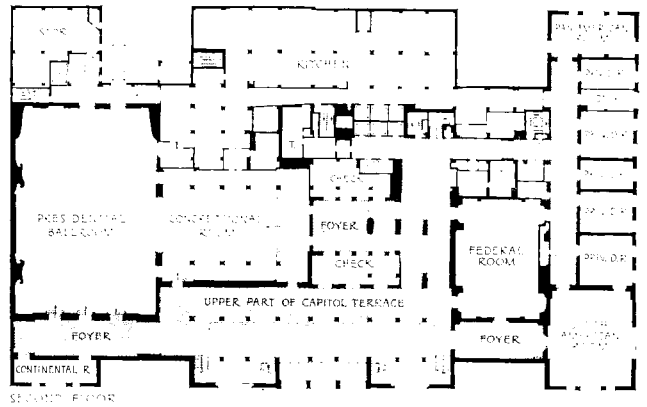
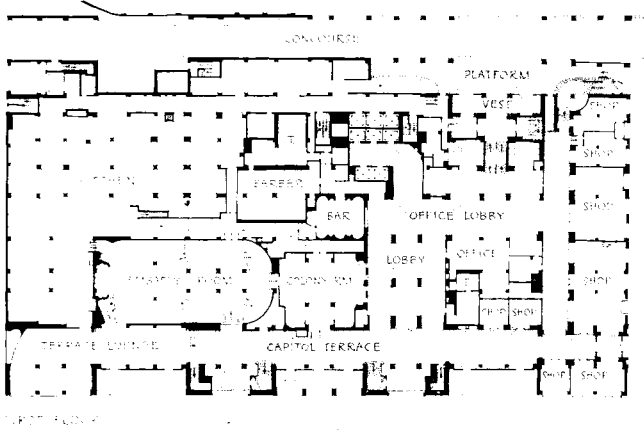
Lighting on both the first and second floors is generally supplemented by cold cathode tubing which is installed in ceiling coves as well as in pylons. The use of dimmers with this lighting results in a flexible decorative medium.

The entire hotel is equipped with year-round air conditioning which in the guest rooms may be adjusted to suit individual requirements.

A distinguishing feature of the Statler's hospitality is a covered motor-way, bright with glass block and cold cathode lights

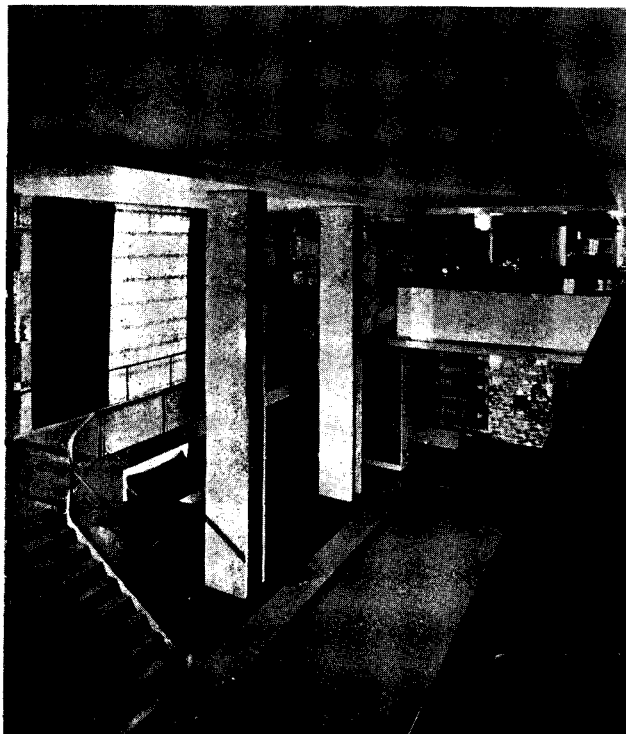


F. S. Lincoln



The Capitol Terrace, with wide stairs to banquet areas

F. S. Lincoln



Main lounge: lighting is the principal decorative medium

Hedrich-Blessing

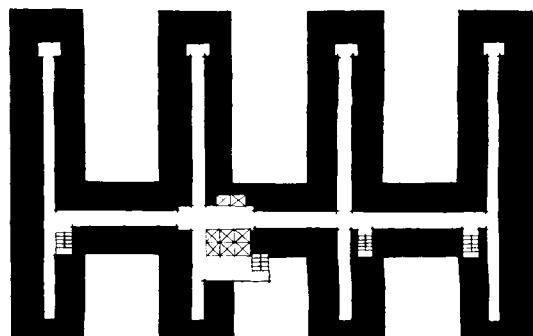
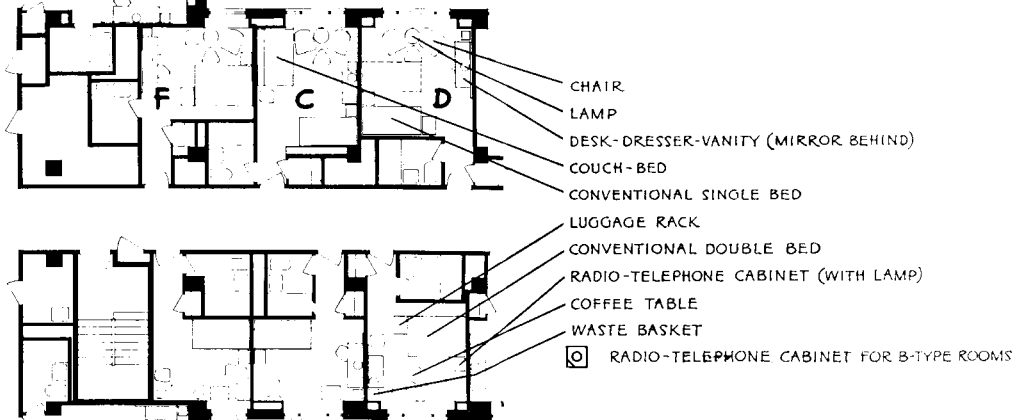
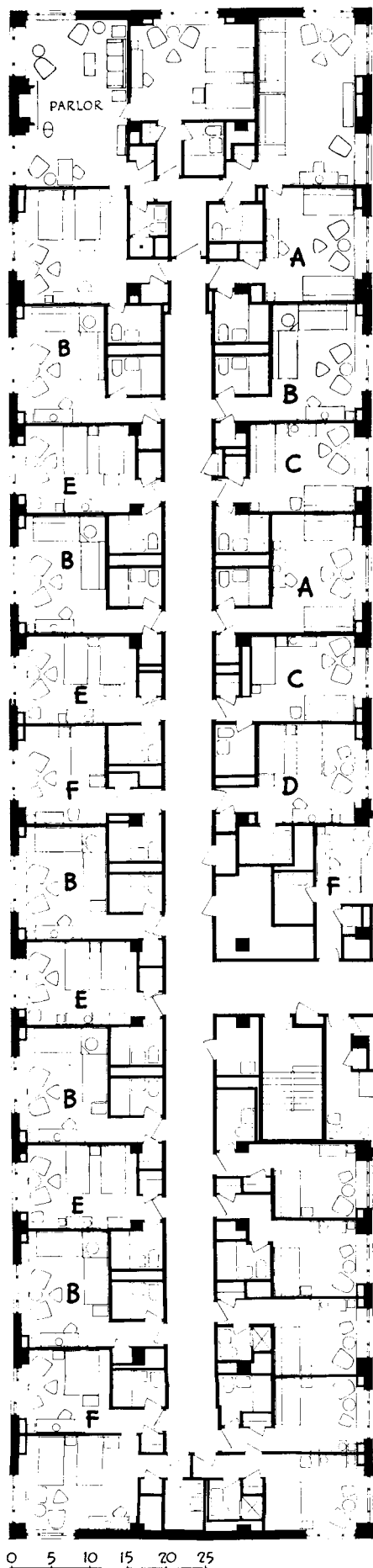


A-type room arrangement, an idea brought back from Italy and England by Architect John Root, was the starting point in the Statler's studies of bedrooms that could double as living rooms. Beds are a Statler special, which make up as davenports for day use. Room is wider and shallower than the conventional proportions, and was first considered rather radical

Other furnishing schemes developed as studies progressed. B- and F-types are wider than they are deep. The B-type, with its L scheme of bed placement and its corner radio-telephone-lamp combination, is the one most frequently used. C, D and E have more the proportions of the usual hotel bedroom, but are planned and furnished for increased daytime utility

Uncertain about public acceptance of the living-bedroom idea, the Statler wanted some of the new style, some of the more conventional. The proportion worked out to about half and half, largely through the alternating of wide and narrow rooms. This arrangement brought bathrooms back to back, for good economy both in space development and in plumbing installation. In general, rooms are smaller than normal, but distinctly more useful

Furniture design contributed much to the new livability of rooms. Basic in all room layouts are two elements: 1, the grouping of two stuffed chairs, floor lamp and double-decked triangular coffee table; 2, combination desk-dresser-vanity, with large wall mirror behind and full-length mirror beside it. Careful surveys showed the drawer space of this combination adequate for the typical hotel room, though it is considerably below old standards. Furniture, scaled down for these room sizes, was designed by Statler's Trylon Studios



NEW STANDARDS

IN GUEST ROOMS

FOREMOST in new standards evolved for The Statler is the use of dual purpose guest rooms affording the lodger an office or living-reception-room during the day and a bedroom at night. In approaching this objective the owners did not establish the number of such rooms desired nor the number of conventional guest rooms. The architects started with the space needs of essential furniture, scaled down somewhat from usual standards, and a ceiling height of 8 ft. 5 in.; 11 ft. 6 in. x 16 ft. 0 in. seemed adequate for two-bed rooms and 10 ft. 0 in. x 12 ft. 0 in. for single-bed rooms. Placing beds along walls resulted in maximum floor space at the windows. It was found that the two-bed room with beds against the walls and the long dimension parallel to the outside wall achieved a living room character which was readily heightened by designing beds as couches, and by installing other appropriate furnishings. Ultimately, a division of half conventional and half living-bed-rooms was fixed.

As a design tool in planning the Statler Hotel, the architects analyzed four large intensively developed hotels disclosing the following data:

Ratio of the typical floor area (inside the exterior walls) to the 1st floor varies from $66\frac{2}{3}$ per cent to $73\frac{1}{4}$ per



Hedrich-Blessing

Two-bed room, with couch-beds in parallel arrangement

cent. Of this typical floor area the guest space, including baths, closets and vestibules, amounts to 64 to 70 per cent.

Net room area, i.e., space which can be used for furniture, varies from 44.3 to 47 per cent of the typical floor.

Corridors and services vary from 22 per cent to 30.6 per cent; from 6 to 8 ft. wide.

Two-bed room, with beds in L arrangement, for a slightly narrower room

F. S. Lincoln

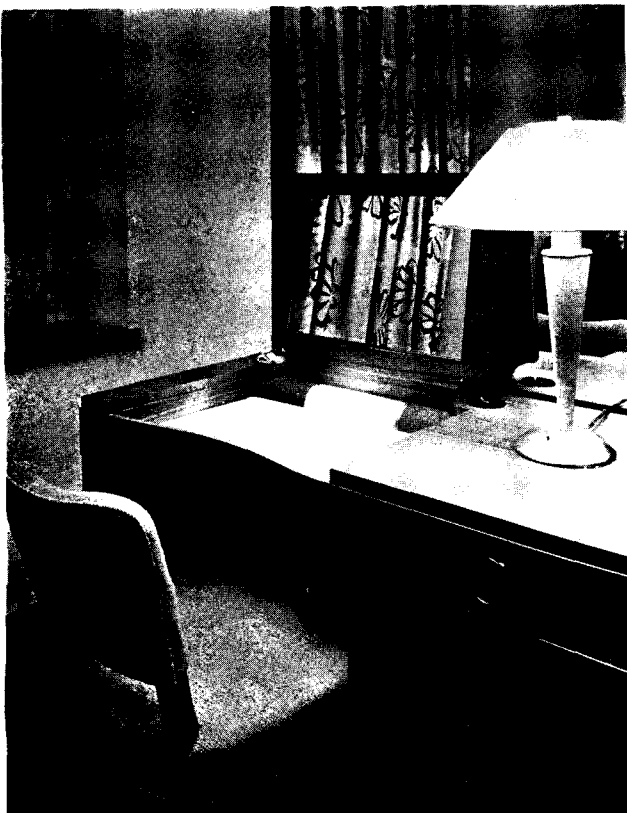




Hedrich-Blessing

Above: combination dresser-desk-vanity, with standard mirror

Left: desk top opens up to make a lighted vanity mirror



Number of rooms per typical floor varies from 54 to 137, with an average of 115. Rooms for single occupancy vary from 6½ per cent to 30 per cent; those which are large enough for a double bed from 20½ per cent to 48½ per cent; those with twin beds from 34 per cent to 58 per cent and parlors from 3 per cent to 11 per cent.

From the above, the number of rooms with one bed varied from 30 per cent to 62 per cent and the number of rooms with two beds from 38 per cent to 70 per cent.

Maximum guest count in the rooms varied from 170 per cent to 193 per cent of the number of bedrooms.

Average net room size varied from 154 sq. ft. (11 ft. 0 in. x 14 ft. 0 in.) to 184 sq. ft. (11 ft. 6 in. x 16 ft. 0 in.)

For a more detailed analysis of hotel areas see ARCHITECTURAL RECORD, July, 1940.

Representative of living-bed-room furnishings are the desk-vanity-dresser, a combination unit supplying the features customarily expected in three separate pieces. The vanity mirror is fixed to the underside of the writing table. Also contributing to the desired effect is a four-station radio centrally controlled and installed either in a furniture unit or in the window assembly containing the air conditioning control.

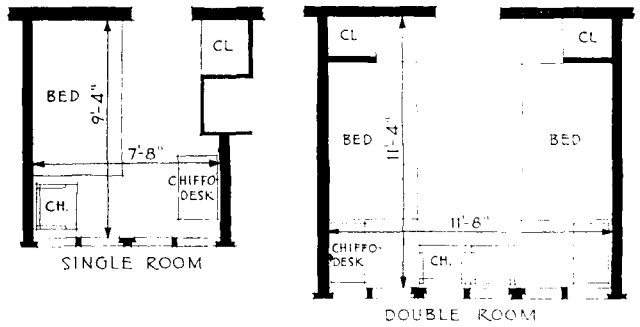
DORMITORY STANDARDS

DORMITORIES are a hotel building type affording lodging and entertainment on a plane of maximum economy implying minimum capital investment and management expense. The sojourner, be he commercial traveler, journeyman worker, or vacationer, expects and is prepared to pay for most of the facilities and services commonly found in commercial and resort hotels, although of necessity these facilities and services must be largely modified in form and scope. Characteristic of dormitory planning are simplicity of construction, minimal guest rooms, ganging of plumbing fixtures, rugged furnishings and the elimination of unessential accessories.

Today the war activities have accented dormitories for workers; tomorrow it may well be that the development

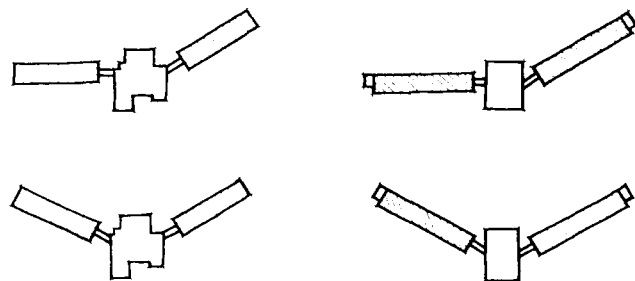
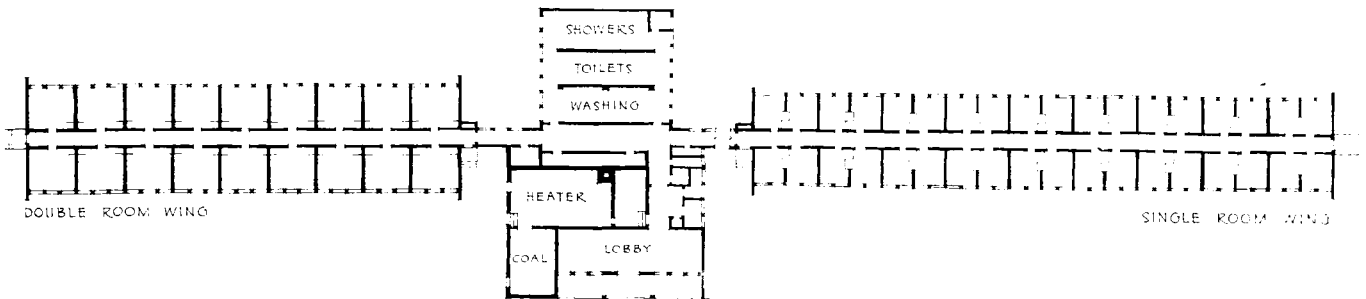
of the hostel, so prevalent in England and Europe, will become a more familiar establishment in this country. Despite present restrictions on construction, consideration might well be given to the need for dormitory hotels which will provide a place of rendezvous for families whose war engaged and separated members can thereby be reunited for brief periods. Such needs obviously require adjusting design standards which have been based on a more protracted occupancy by workers. Planning for gaiety and leisure time diversion requirements, however, may well have as a base the following reference standards which represent recommendations of the various government agencies engaged in the development and management of war dormitories.

ELEMENTS • Rooms



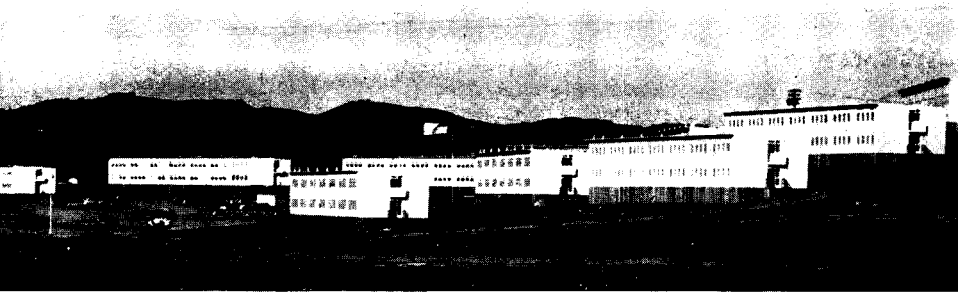
Ratio of single to double rooms varies widely (10-50 per cent) dependent upon kind and length of occupancy expected. Young persons generally prefer double rooms; older persons prefer single. Single and double rooms are usually placed on either side of the common hall. For limited use periods, as in hostels, capacity can be increased up to 100 per cent by the use of double-decked bunks.

Buildings

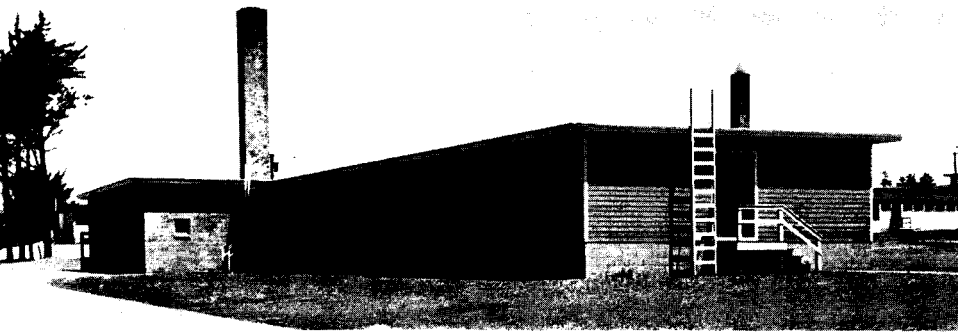


Dormitory planning should effect adjustment to site conditions thereby achieving economy, diversity, and fullest utilization of natural resources. By breaking up large building assemblies fire hazards are reduced.

For large developments, common facilities (toilets, showers) are best located in separate buildings connected by covered passageways to the sleeping rooms.



Dormitories for a large project at Vallejo, Calif. Buildings are placed for maximum privacy and to take advantage of prevailing winds



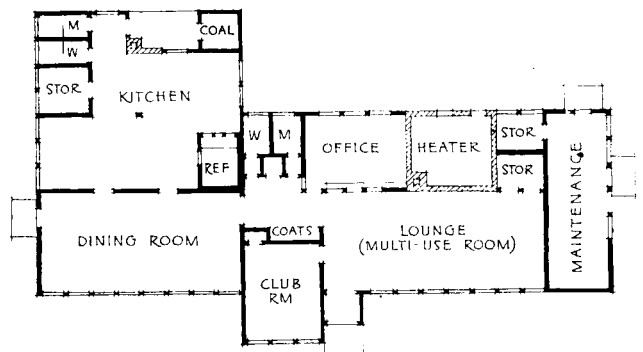
Good housing is as vital in the small war production center as in the large. One of the small FPHA dormitories at Sturgeon Bay, Wis.

Community and Management Facilities

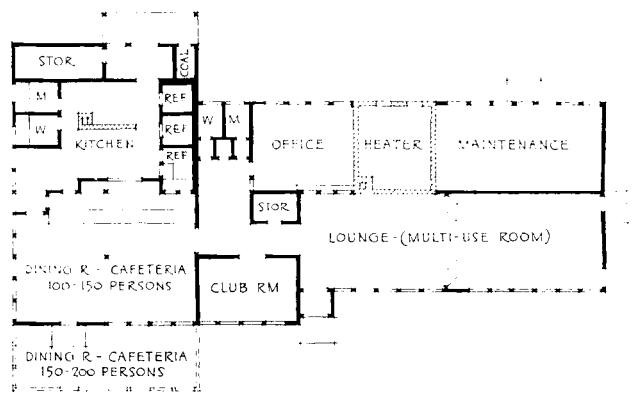
CENTER of activity in the dormitory group is the community and management building. It combines at least two very essential functions — recreation for the worker-residents and management and maintenance for the buildings in the project. Eating facilities are usually included; these are necessary in themselves in many locations, and are important to the recreational activities in any case. Frequently, medical care is also provided for in the community center, particularly in the larger community. And, naturally, as the project takes on size, additional facilities are included, sometimes with various service shops in the same building; and usually in anything larger than the ones here shown there is some assembly hall-theater.

Simplest types of community center buildings are the two little ones shown diagrammatically at the right, which are recommendations for "project facility buildings" by the FPHA. A maximum gross area for the upper one, for populations of from 50 to 100 persons, is given as 3,300 sq. ft., divided as 1,825 for tenant activities and management, 1,475 for cafeteria. In the larger one, tenant activities and management get 2,700 sq. ft., cafeterias 1,650 or 2,050, depending on the size of the dining area.

It is not so easy, of course, to give desired gross areas for more complicated plans with additional facilities. But for a table of individual room areas, see recommendations in table form, ARCHITECTURAL RECORD, July, 1942, page 46.



Plan for a dormitory hotel of 50 to 100 persons



For a dormitory hotel accommodating 100 to 200

The lounge in the recreation center at Vallejo is spacious and airy, and easily adapted to various activities. Albert F. Roller was the architect

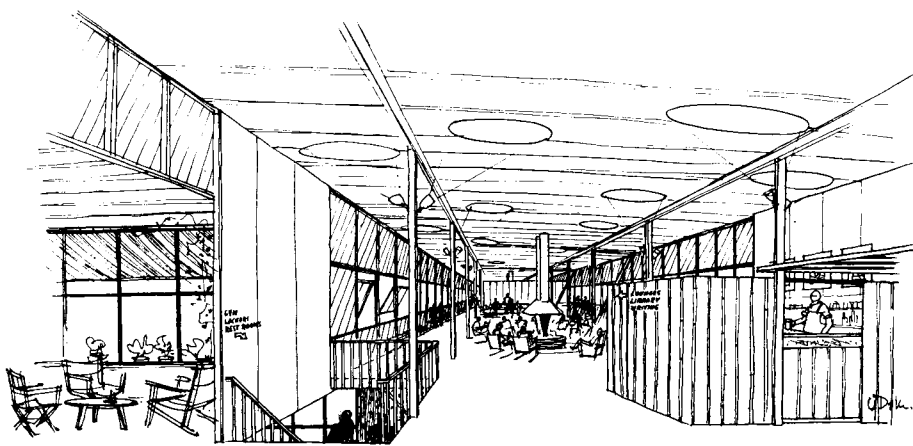
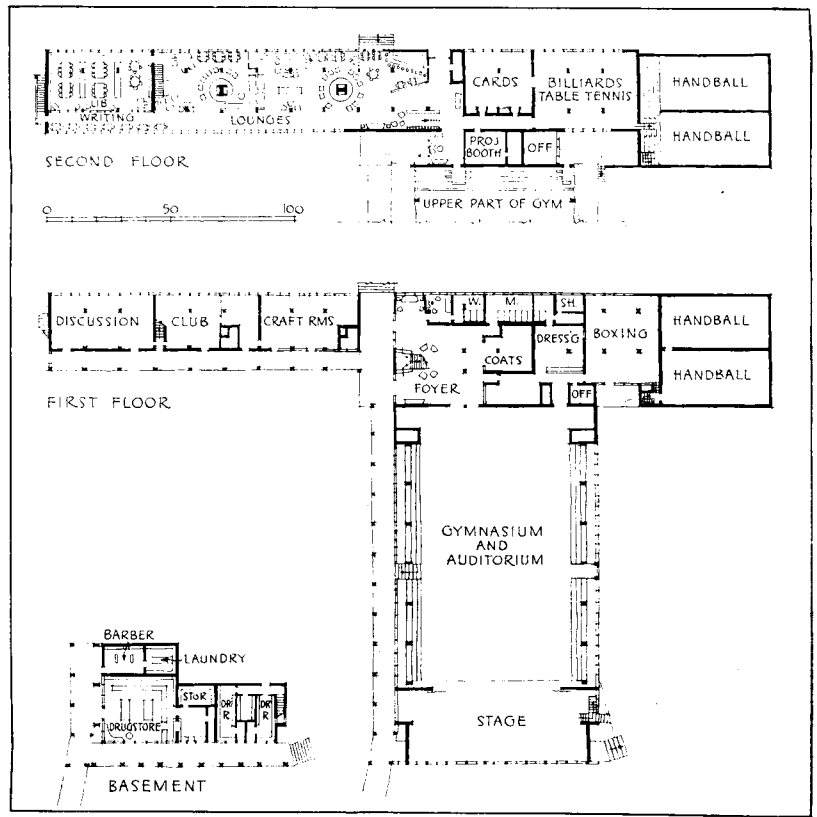


Hillside Dormitories, Vallejo, Calif. Right, entrance to coffee shop; below, dining room. Vernon DeMars, F.S.1 Architect; Norman Fletcher, Associate

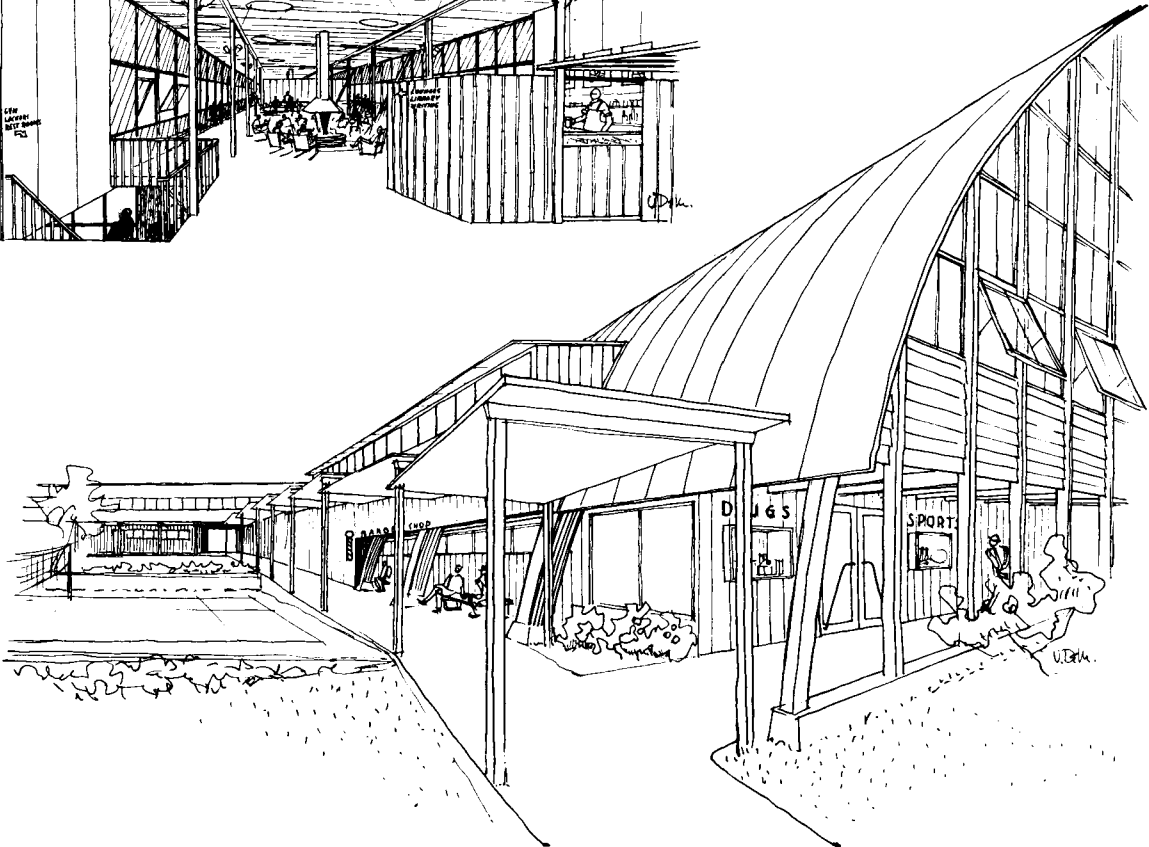


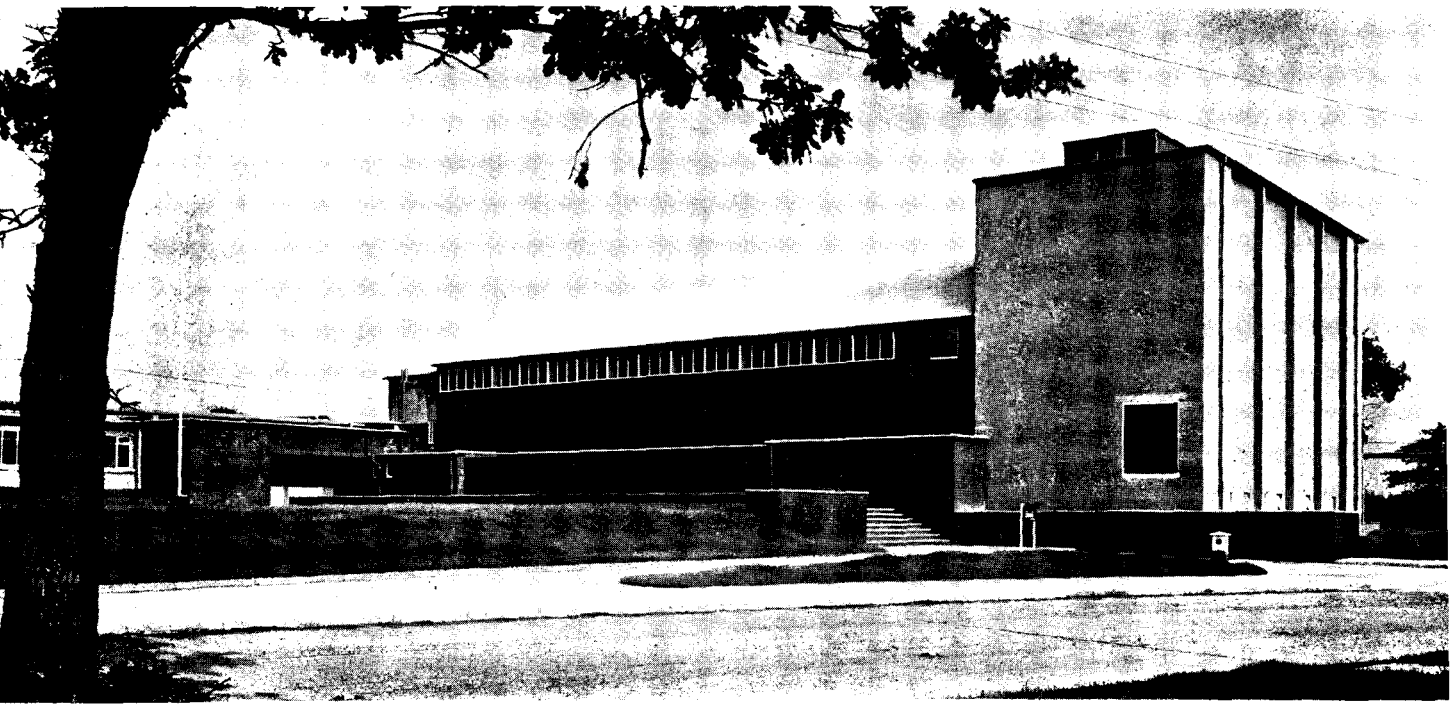
Recreation Center

This building proposed for a large project would be ideal for a large summer camp resort or national park where a strong accent on physical education prevails. Active sports and spectator activities are carefully separated on different floors. The grade on this specific site allowed the drugstore and shopping center to be tucked under the gymnasium and at the corner store location of traffic flow from other parts of the project.



VERNON DE MARS,
ARCHITECT FOR FSA;
JOHN GRACE, ASSOCIATE





HOSTELS FOR BRITAIN'S WAR WORKERS

By F. R. S. YORKE, A.R.I.B.A.

EARLY IN 1941 it had become apparent that living accommodation must be provided for those unmarried workers in Britain's war factories who could neither find billets near their work, nor be easily transported from neighboring towns. Housing requirements were formulated into a building program. Some of the schemes were handled directly by the staff of the Ministry concerned, others were allocated to private firms of architects or engineers. For the sake of clarity, this article will deal with a single scheme, though no one is really typical.

Hostels were required to house some 20,000 girls, in two new factory centers. Distance from towns made it necessary to regard the hostels as residential clubs with facilities for recreation and welfare. Each hostel houses 1,000 girls, in two main groups, 50 miles apart. The sites vary in size from 15 to 30 acres. A group of eight or ten hostels was divided into three or four sub-groups, the whole being on a 15 or 20 mile circuit.

The chief-architect's organization comprised a central office, with a survey and site planning department, drawing office, materials and progress sections, and structural engineer's department. These were closely linked with the offices of the quantity surveyors and the consultants for roads, drainage, water supply and heating. There were site-architects for the sub-groups, responsible to the chief architect. The close collaboration between architects, engineers, quantity surveyors and specialist consultants worked well. Quick decisions could speed the work.

UTILITIES AND BUILDING LAYOUT. Sewers were laid between the sites, and to a common disposal plant. Pumping stations were installed on low-lying sites. Boreholes were sunk to provide water through a ring main connecting the sites. Five hundred thousand gallon storage tanks are kept topped-up by means of booster pumps. Electric supply is taken from the national grid, and transformed to 400/230 volts for power and light.

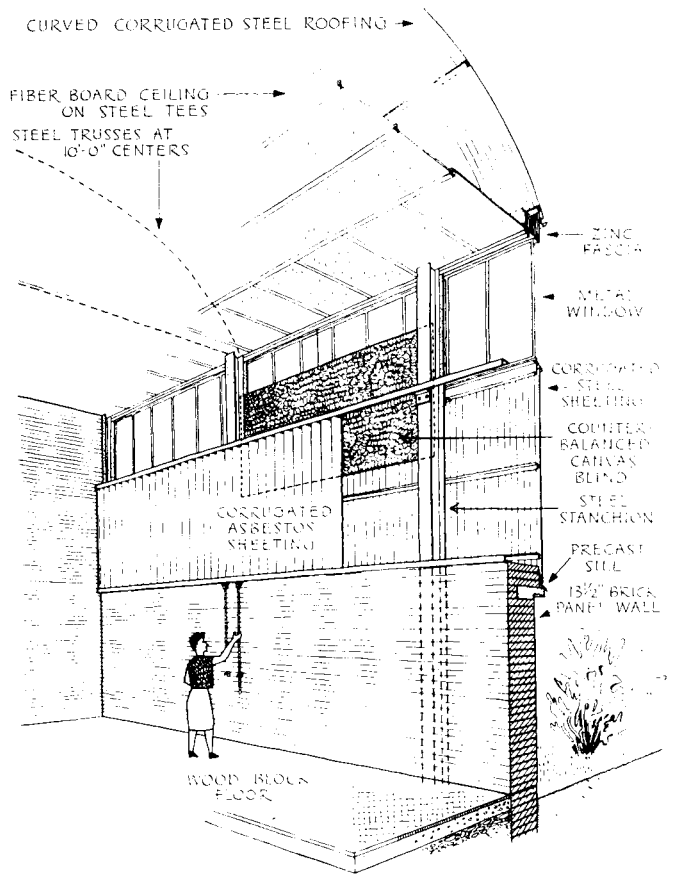
For purposes of site layout buildings were considered broadly in three categories: 1. *Dormitories.* 2. *Social Center.* Administration block; kitchen; canteens; assembly hall; lounges; writing room; reading room; games room; bar; lavatories; A. R. P. shelters. 3. *Ancillaries.* Manager's bungalow; supervisory staff quarters; sick bay; chapel; personal laundry and hairdressing; bedding store; workshops; trailer pump, ambulance and general garages; porter's lodge; boiler houses; incinerator.

Layout varies in accordance with the shape and size of site, etc., but dormitories are as a rule arranged in a loose ring round the site. The social center, as the administrative and recreational hub of the hostel, is near the entrance to the site from the public road. There is a parking space for buses in which girls travel to the factory and a service yard for the kitchen, stores and boiler houses, but the larger part of the site is free from traffic. Informality gives the general appearance of a village with its green and community center, and avoids an institutional appearance.



British official photos

Walls in largest type of hall are of white corrugated asbestos with chocolate colored brickwork below. Floor is of wood block



DORMITORY HUTS, prefabricated, are of two types: H. units for 92 girls and 2 stewards, in 4 wings, and L. units for 46 girls and 1 steward, in 2 wings. Both types have a central spine containing bathrooms, toilets, common room (lounge), drying room, linen room and A. R. P. shelters. The L. unit is much more flexible and is easier to relate to aspect and contour.

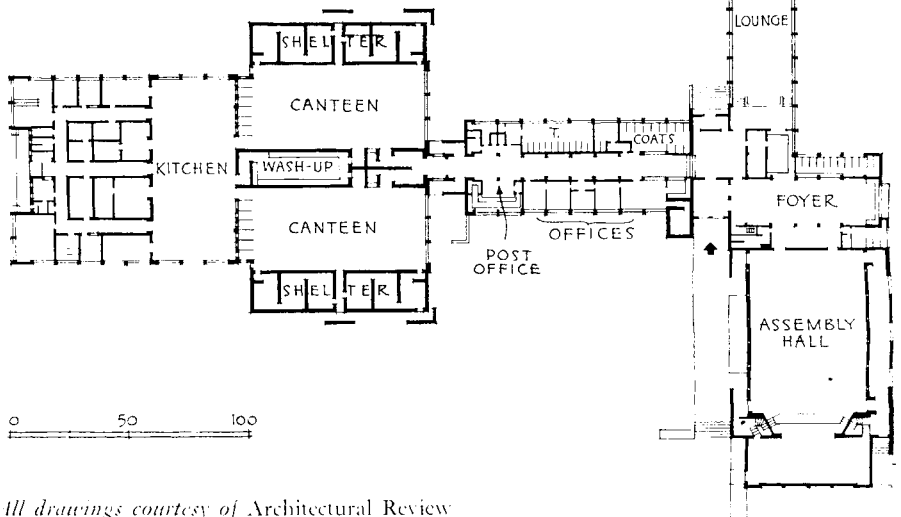
The central spines are built in brickwork and have solid 6-in. reinforced concrete roofs. The wings are generally prefabricated timber and felted gypsum plasterboard huts, divided into cubicles with local materials, generally 3-in. hollow burnt clay pot. (See page 82).

ADMINISTRATION AND SOCIAL CENTER. The administration block houses the offices of the hostel manager and his staff, the shop and post office and the cloakrooms and lavatories, as is shown on the plan. Kitchen and canteens are a standard group for all hostels. Each has two parallel canteens, with hatches at the kitchen end

through which meals are served from hot plates.

Meals are taken at hours dictated by the factory shift system. Each of the two canteens seats 250 persons, but the

One central unit houses offices, canteens and social center



All drawings courtesy of Architectural Review

kitchen has to be capable of providing for as many as 1500 persons at each meal at weekends. Full meals can be cooked either by electricity or steam.

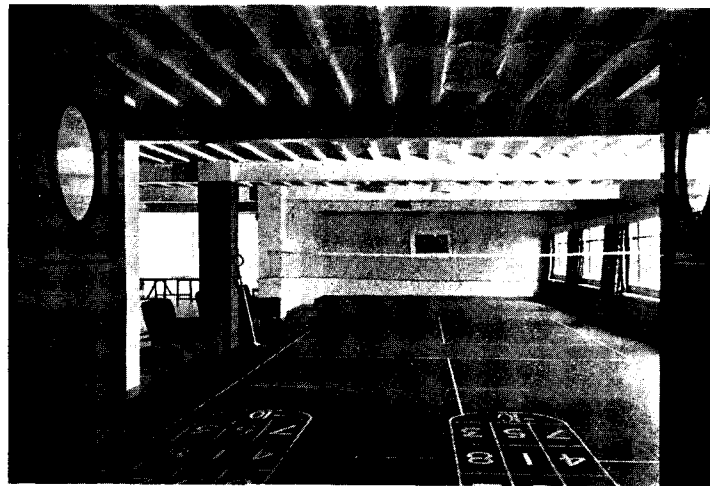
Assembly halls vary in size according to individual hostel requirements. There are four types: those with a platform and provision for 16mm. movie projector, holding 250 or 350 persons, and those with full stages and normal commercial 35mm. projector, holding 350 or 600 persons. All have dressing rooms. The hall illustrated is a 600-seater.

HALL FOYERS SERVE AS LOUNGES when there is no function in progress. The recreation rooms comprise lounge (sharing a bar with the foyer) and reading, writing room and games room, closely linked with the assembly hall.

The system of construction, common to most social center and ancillary buildings, is based on a 10-ft. bay unit, which makes the best use of stock units such as precast concrete roofing members, and requires no members too large to be manhandled. Standards were fixed for piers, stanchions, wall panels, windows, lintels, eaves beams, room beams, precast roofing members and roof trusses.

HEATING. Heating and hot water are supplied by two boiler houses on each site. Steam and hot water are distributed through overhead mains supported on steel posts or on the roofs of buildings. Road crossings are generally underground. Each dormitory cubicle has a hot water radiator, under individual control. Canteens and kitchens have hot water unit heaters and extract fans. The halls have a plenum system, supplying 800 cu. ft. of warm air per person per hour.

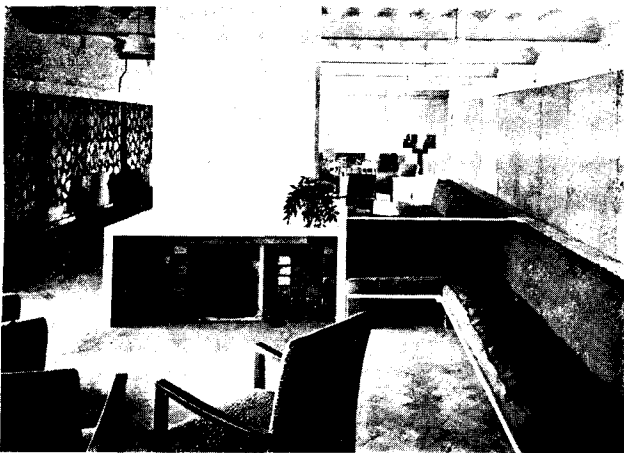
COLOR AND DECORATION. Speed of construction, low cost, shortage of skilled labor and limited materials made it almost impossible to achieve good appearance through quality of finish. At the same time it was essential that hostels should look attractive. This was accomplished through the contrasting textures of materials, and by the use of color. The architect's staff prepared a color scheme, standard with minor variations, for 20 hostels. Externally roofs are sprayed with a matt green paint, and opposing wall planes are painted green, dark brown and light brown, with occasional white or blue soffits to



Scarlet, pale blue and white are the colors used in games room



Kitchen is ventilated by exhaust ducts and fans in gable ends

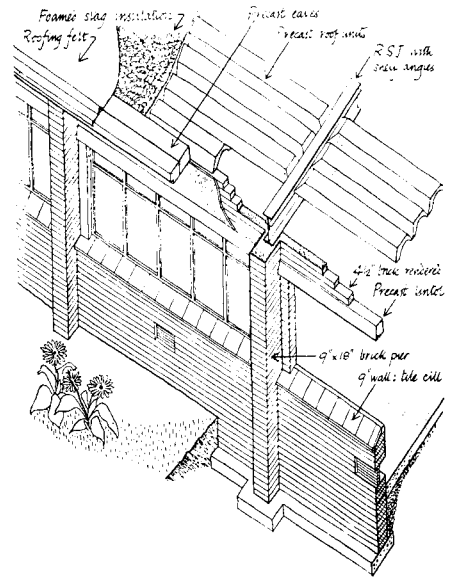


Interior of a canteen, looking toward kitchen service hatches

Lounge and reading room are separated by fireplaces and seats



A reading room. Hostel furniture was specially designed and mass-produced



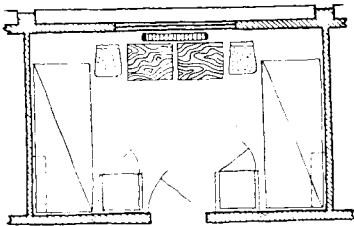
Lounge and game room construction details

loggias and entrance porches. Window frames are white throughout. Bright reds, blues, and yellows are used on doors.

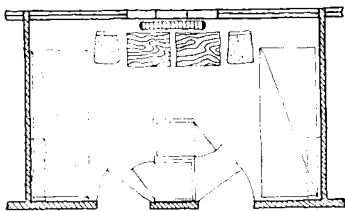
There is no plaster on internal walls, but texture was applied cheaply to the rough brick surfaces by stippling a brushed-on plastic "paint" resembling a cement slurry.

This material made a good base for distemper.

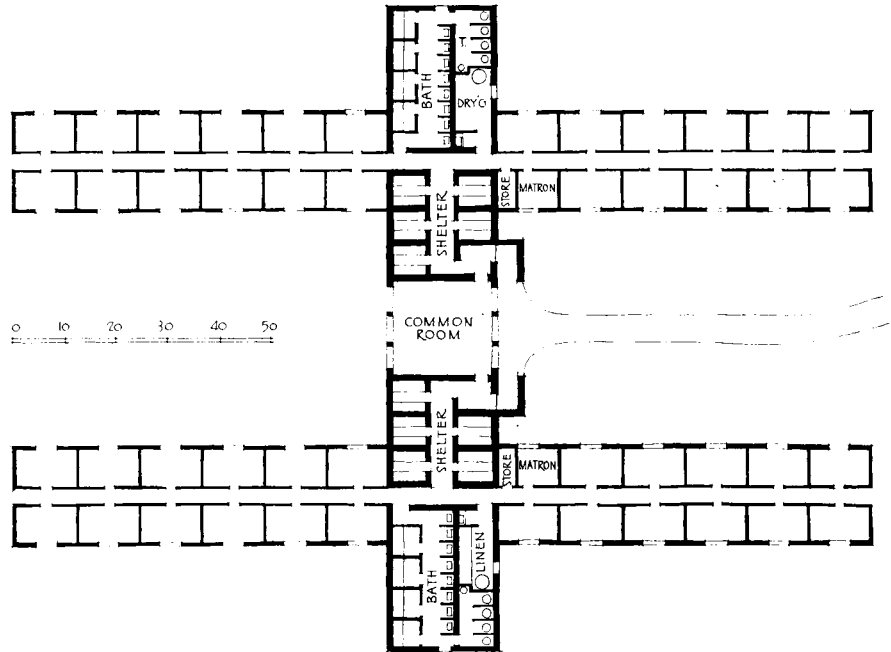
Furniture and fabrics for hostels and similar schemes were specially designed and mass-produced for Britain's Ministry of Works and Buildings, which was responsible for its allocation. Framed lithographs help considerably in giving a cheerful appearance to the rooms.



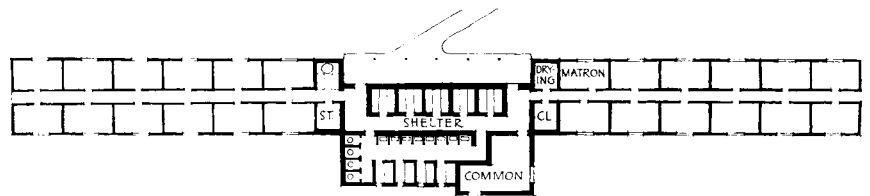
Bedrooms are double, 12 ft. by 7 ft. 6 in., compactly furnished



Rooms with two doors have more apparent privacy, less space



Right. The two types of dormitory unit, H at top, L below. Wings in L type can be rotated in wide arc to suit site conditions



DRY-WALL CONSTRUCTION

PART 1: FIBER BOARDS

By Harold R. Sleeper, A.I.A.

Dry-wall construction has gradually developed through a generation; prefabrication brought it further to the fore, as it was essential to this system of building. Now war work, with speed so essential, has given it a potent shot in the arm.

Rapid developments, both in new materials and improved methods of erection, have proved in recent experiences that dry-wall construction has a very definite place in construction. It will become increasingly important if prefabrication is to make further strides. The architect who hopes to keep abreast of postwar building must know the benefits, pitfalls, and technical data relating to dry-wall construction.

The purpose of this article is to provide sufficient data to guide the architect in the selection and use of materials. Furthermore, it is hoped that the architect's interest will be aroused to the extent of participating in a search for better materials and new techniques for their application.

Dry-wall construction, as here-in used and as generally understood, refers to all interior finish surfaces for walls and ceilings with the exception of plaster.

Sound absorption: Materials designed specifically for sound absorption (acoustic materials) are definitely part of the dry-wall family. Because of space limitations, however, they will have to be left for later treatment.

Advantages: The advantages of dry-wall construction are: elimination

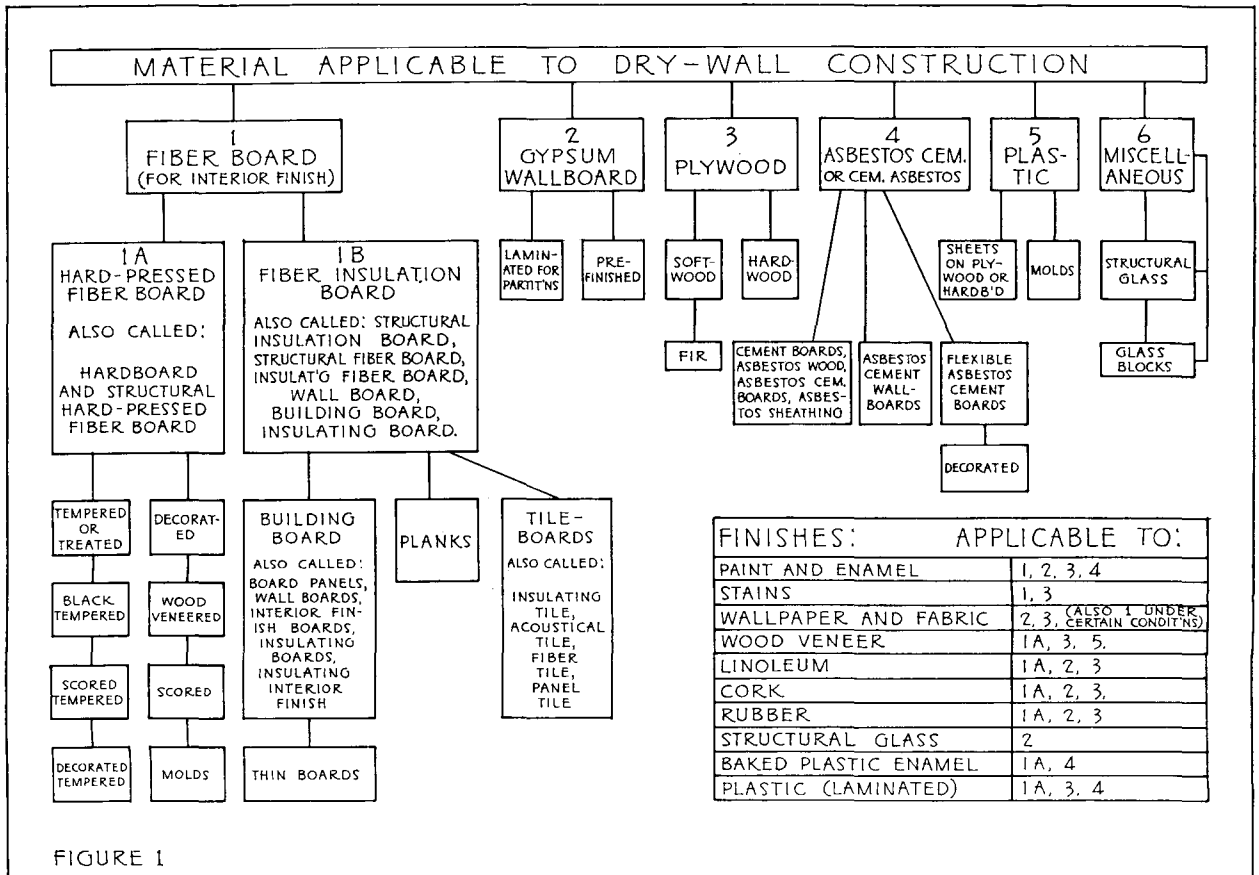
of drying time and elimination of dampness from building; speed in construction; the possibility of more shop fabrication; simplification of procedure due to fewer trades involved. Besides the general advantages, more or less common to all materials for dry-walls; specific materials have other advantages such as: thermal insulation, sound absorption, waterproofness, economy, etc.

Handicaps: Handicaps cannot be generalized, except the necessity for covering, hiding, or exposing all joints. All materials require such treatment at all room corners. Many require, in addition, other such joint treatment within the room surfaces. Only a very few of the score of manufacturers make wall finishes of widths over 4 ft. (8 ft. widths are now the maximum.)

Methods of attachment, though well on their way to better solutions, are still handicaps. Nail heads have to be concealed.

The resistance of the labor

The information upon which these Time-Saver Standards are based has been compiled by the author from sources believed by him to be completely reliable. These sources are: 1. government reports, 2. manufacturers' literature.



DRY-WALL CONSTRUCTION

PART 1: FIBER BOARDS

unions to the elimination of plastering has been a real deterrent to use of dry-walls in metropolitan areas.

Several psychological jumps need to be taken to disabuse our minds of preconceived prejudices against walls which sound hollow. They give the impression of weakness which has little bearing on the facts.

Costs: The question of cost of dry-wall construction is so subject to local conditions, union organization, and markets, at any given time and place that little definite information is obtainable which might fit any given condition. One defense housing job (250 units) asked for alternate costs for plaster ceilings, in lieu of insulating fiber plank construction. The low bidder allowed a substantial credit for plaster, while the second bidder asked for a similarly large extra for plaster. One contractor was engaged in building two housing projects at the same time, located only a few miles apart. He had the option of floating dry-wall construction or plaster. He chose to use one of each type. Such experiences make one hesitate

even to comment on comparative costs.

Use by federal agencies: Defense and war housing agencies have given us experience in dry-wall construction comparable to years of peacetime building. It has not only been used in prefabricated houses but also has been allowed as an option or alternate in standard construction, instead of plaster. See Defense Housing Specifications FPHA DW-D-13a for specific materials involved.

Terminology: The building field is loaded with conflicting terminology and nomenclature. Manufacturers further confuse the picture by christening their every product as closely as possible to their competitors'. Even the different departments of the federal government use different terms for the same thing. There was a day when "wallboard" was "wallboard." Today it may mean any of fifty products.

Our own heading "dry-wall" is in itself a misnomer. Why not "dry-walls and ceilings?" The chart in Figure 1 may clarify some of the various terms.

FIBER-BOARD (For Interior Finish):

Fiber-board, although made in many forms and by many manufacturers, has been fairly well standardized as to uses, types, sizes and thickness. It is, perhaps, the original dry-wall material; only lately have developments occurred which are likely to revolutionize its use. Its main classifications today are "fiber insulation board" and "hard pressed fiber-board" (hardboard). (Chart, Figure 2)

Being made of vegetable fibers, this material is subject to expansion and contraction. Early methods of erection either did not provide for this element or else joint molds limited its decorative effect. For years manufacturers, with a few exceptions, have limited the width of fiber insulation board to 4 ft., probably because of its tendency to swell and shrink. The first company to make 8 ft. widths made it possible to cover entire sides of rooms in one piece, with cut-outs for doors and windows. They counteracted the expansion and contraction by dampening and pre-expanding the boards on the job prior to erection. Planks and tileboards followed as a later de-

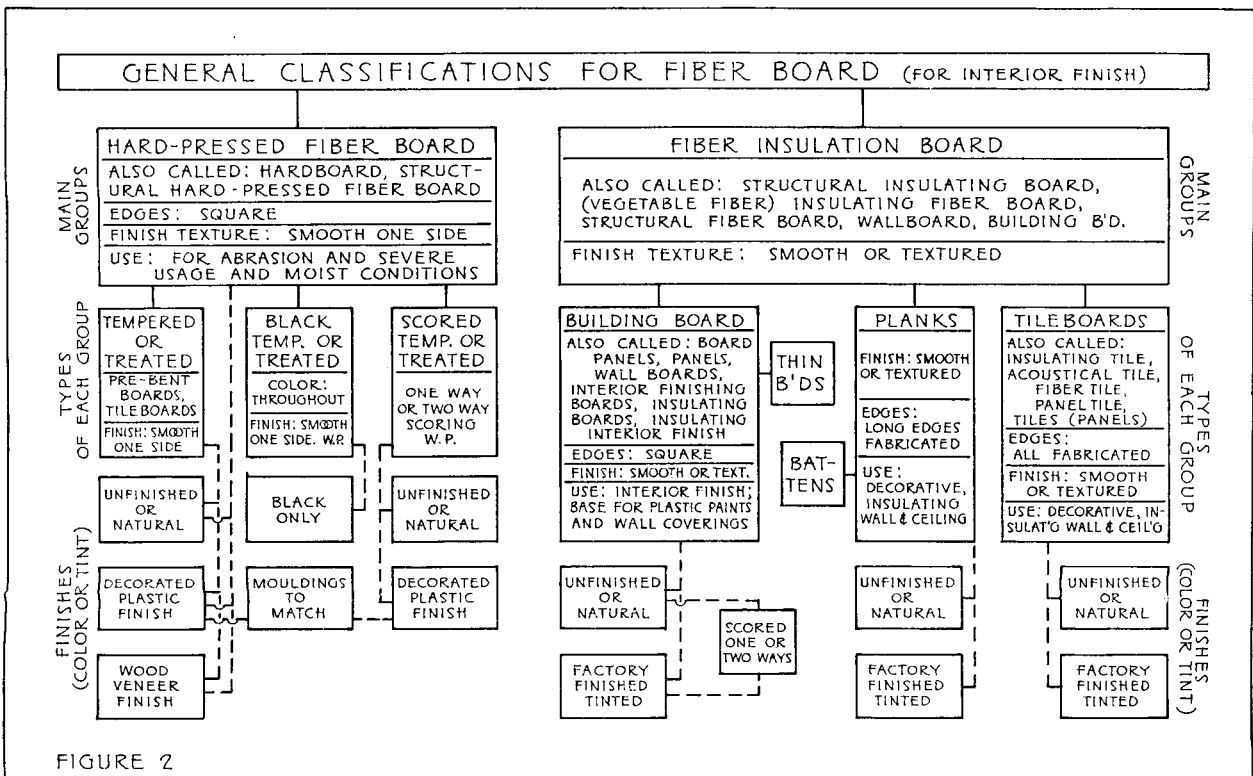


FIGURE 2

DRY-WALL CONSTRUCTION

PART 1: FIBER BOARDS

ARCHITECTURE
**TIME-SAVER
 STANDARDS**
 SEPTEMBER, 1943

velopment to allow for the movement in the material. Hard pressed fiberboard, a still later development, brought this material into many new uses.

FIBER INSULATION BOARD:

Classifications and sizes: This material is subdivided into building boards, planks and tileboards. The material for all is practically identical except for sizes and edges. The methods of erection are usually different.

The characteristics of this material, such as insulation value, sound absorption properties, low cost, and availability, offset the fact that it is not fireproof and that its tendency to move requires that it be carefully erected. Federal specifications call for it to be water resistant and for the destruction of rot-producing fungus. Its ease of cutting and nailing is also an important factor in the cost of erection.

Framing or furring, in general: Framing or furring for nailing shall correspond to the size or type of board, tile or plank, but maximum spacing shall be 16 in. o.c., with headers for all trim and edges.

Finishing fiber insulation board

Calamines, casein and water paint: Apply directly without size unless otherwise specified by manufacturer.

Stain: Modifies natural colors, without affecting sound absorbing properties and without destroying texture. **Gluestain:** This gives best results. Dry color may be added as desired; apply warm. Alcohol stains are not recommended as they may leave brush marks.

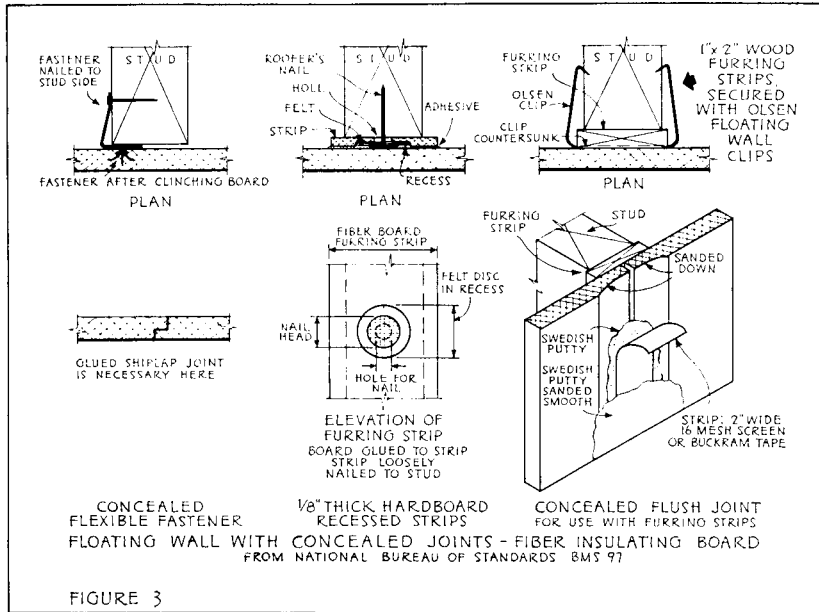
Oil or varnish paints: Board must be sized. Sand slightly after sizing.

Plastic paint and wall covering: Secure information from manufacturers as methods vary with type of material.

Stencils: Japan colors thinned are recommended.

Recent developments: Fiber insulation board, when used in large sheets, is designated as building board, board panels, or wallboard. Modern developments of this material have been based on finding a solution to the problem of movement of the boards.

The recent experiments,* summarized below, made by Charles G. Weber and Robert C. Reichel



at the National Bureau of Standards will be of interest to all who seek further data regarding correct methods of using fiber insulating board.

This investigation was made to find ways of overcoming the difficulties with joints between the individual boards due to expansion and contraction. Performance of experimental walls was observed during cycles of controlled variation of relative humidity. The experiments indicate that by substituting flexible fasteners which allow movement of the entire surface, rather than the rigid nailing commonly employed, fiber insulating boards will serve as a suitable base for all decorative treatments which are used on plaster. If rigid nailing is used, joints should be covered.

Nailing and cementing: Experiments included several methods of nailing and cementing boards directly to studs. None of these proved satisfactory. Defects in both papering and painting of these surfaces showed at joints and nail heads. The report states that this construction requires the covering of joints and restricts the surface treatment to some type of paneling in which the nails are confined

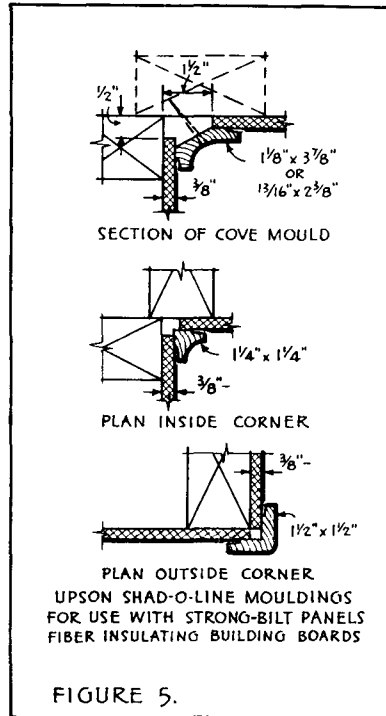
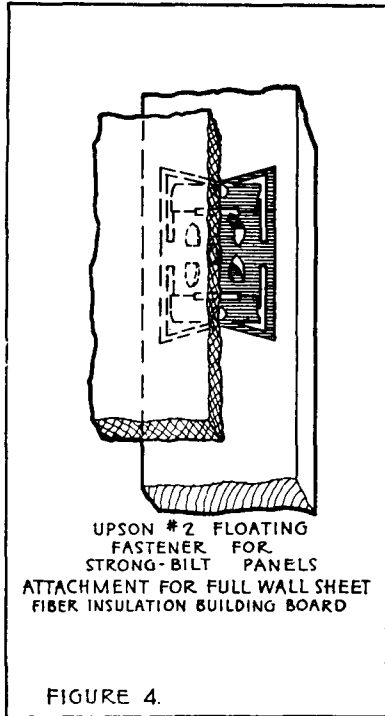
* Building Materials and Structures Report BMS 97, 1943. Experimental Dry-Wall Construction with Fiber Insulating Board. National Bureau of Standards, U. S. Department of Commerce.

mostly to the edges and the joints covered by the molding strips which form panels.

Flexible fasteners: Two methods of allowing free movement of the fiber-board were employed, and both proved successful. The *first method* consists of securing the board directly to the stud with a concealed, flexible fastener. This fastener was developed at the Bureau. Fasteners were nailed to studs. Boards were driven on fasteners (using blocks to prevent marring surface). This causes spreader to spread fastener and thus secure the board. (Figure 3). In this method the joints must be treated to give them sufficient strength to hold together while entire face moves. Glued shiplap, or taped joints proved satisfactory. Another method provided that furring strips be secured to studs with flexible fasteners and then the board is either cemented or nailed to these strips. Several fastening devices were used for the latter. (Figure 3). The *second method* used hard pressed fiber-board strips. One-eighth inch pressed fiber-board furring strips were nailed on parallel with studs. A nail hole larger than the nail and a felt cushion allowed the strip free play. The insulation board was cemented to the strip. (Figure 3). Wood strips were also used. One inch by two inch wood

DRY-WALL CONSTRUCTION

PART I: FIBER BOARDS



furring strips were secured to the studs with Olsen floating wall clips. (The Patent and Licensing Corp., New York.) Then the insulation board was nailed to the furring strips. (Figure 3).

The boards used for these tests were 1/2-in. thick fiber insulating boards, except that the last method noted above was duplicated with 3/4-in. board.

Joints on all but the first method,

where strength over joints is required, were prepared by filling with Swedish putty and sanding smooth. Neither ordinary putty nor plastic wood were satisfactory for filling.

Finish of boards: It was found necessary to size boards except where factory finish was provided or where casein type paint was used. Boards whose surface fibers form

a fuzz should be sanded lightly after priming.

Wall paper was applied over sized boards with paperhanger's paste.

The difference in textures between boards and finished joints was found troublesome to finish uniformly with paint, especially when boards were relatively rough-surfaced. Smooth surfaced boards gave no trouble.

Other floating method: Floating methods of erecting boards in addition to those described in the report of the National Bureau of Standards, include full wall construction with Upson floating fastener No. 2 (Figure 4) and Strong-Bilt panels (5/16 in. thick). These fasteners are first nailed to the studs with 2d coated nails, 12 in. apart on ceilings and 14 in. apart on walls at intermediate studs, and at edges of panels 16 in. o.c. (not less than). Panels are clinched to fasteners by striking a block held on the board. This company has developed moldings for edges of panels designed to allow for shrinkage without cracking paint at the intersection of board and moldings. (Figure 5).

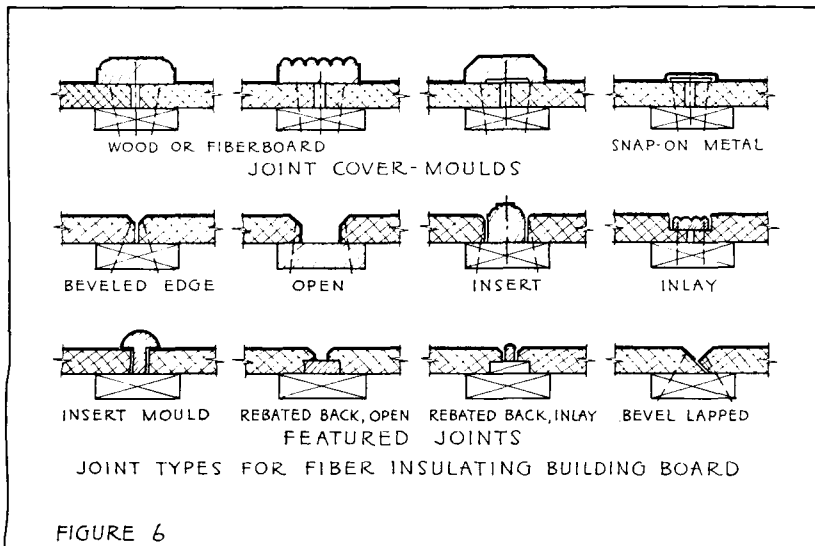
Framing and furring: In general framing and furring for nailing building boards is from 12 to 16 in. o.c. and with headers placed to receive all board ends and edges, and for nailing of all wood trim.

Joints: A great variety of concealed or exposed joints is possible. (Figure 6). Plastic strips will soon be made for this purpose. Where it is desired to fabricate edges of exposed joints, tools for field cutting are available.

PLANKS AND TILEBOARDS: Planks and tileboards may be considered in the same category, as planks are in reality long tiles; the only difference being that tiles are fabricated on all edges, while planks have square ends.

Manufacturers would greatly increase the use of tile panels if they could develop a flush joint, such as is available for certain acoustical tiles. In many cases architects desire plain, flat surfaces for ceilings, not Vee joints.

Many planks and tiles are fabricated with a joint which allows at least partially concealed nailing, with either a T & G, shiplap, Vee joint, or a combination of several.



Clips (Armstrong's Tem-clip) are available for securing the panels or planks together so as to have no exposed nail heads. Splines are made for this same purpose (Celotex key joint). Others lock the second panel to the nailed one adjacent by means of a beveled T & G (Johns-Manville Lightning joint). Nu-Wood (Wood Conversion Company) also provides a clip for concealed nailing. Insulite accomplished the same result with Lockpins. When fully concealed nailing is not provided, nails should be located in the joint shadow. (Figure 7).

Nailing: Nailing has not been standardized for these special joints, so it is recommended that manufacturers' directions be followed.

Framing and furring for tileboards (panels): This shall correspond to size of tileboard units. Using 16 by 16 in. or 16 by 32 in. allows for 16 in. spacing, but for superior application nailing strips 8 in. o.c. are recommended.

This material may also be cemented to a solid, continuous backing.

Framing and furring for planks: Members shall run at right angles to plank 9 in. o.c. up to a height of 5 ft. 0 in. and 12 to 16 in. above this height, except that 12 or 16 in. width planks may have long edges bearing on framing members on 12 or 16 in. centers.

TILEBOARD (PANELS) APPLIED WITH ADHESIVE: Tileboard may be cemented with special adhesive to any smooth, sound, solid backing. Adhesive spots of 2 in. dia. are applied to the corners of square boards and two additional spots on rectangular sizes. Slide units into place with sidewise pressure.

Supplementary nailing spaced 6 in. apart on all edges, at a slight angle and set flush, is recommended where tileboard is applied over a nailing surface.

HARD PRESSED FIBER BOARD (HARDBOARD):

Characteristics: Of similar composition to other members of the fiberboard family, this material undergoes a different processing which renders it more dense, more water resistant and gives it a harder surface than other types.

Vegetable fiber of any type is subject to swelling and shrinkage,

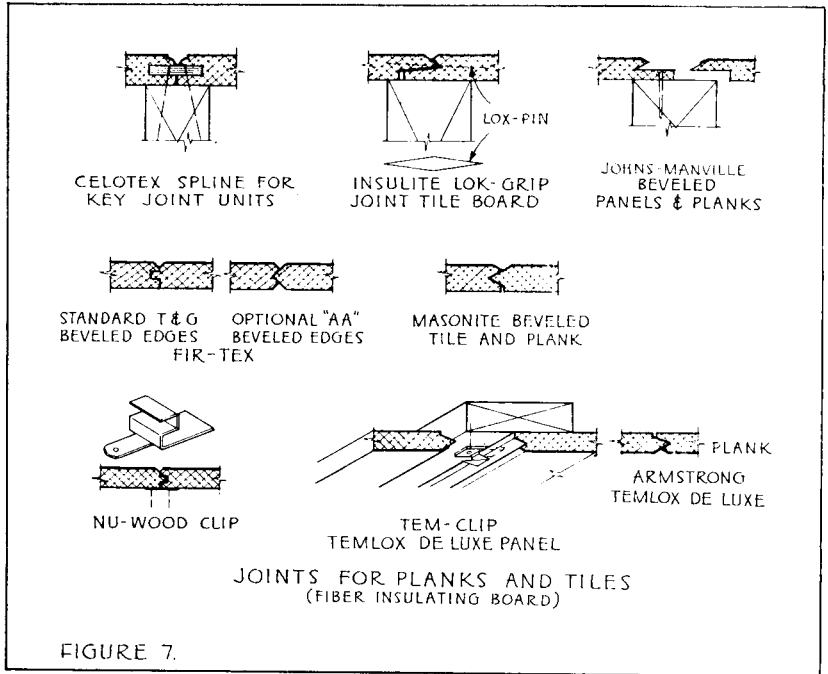


FIGURE 7.

but the treated or tempered type of hardboard is limited by the Federal Specifications to 12 per cent absorption, and one of the hard-

boards $\frac{1}{4}$ in. thick is advertised to have 6.8 per cent water absorption. This low factor, of course, limits its movement to a minimum.

STANDARD SIZES OF FIBER INSULATION BOARD Simplified Practice Recommendations R-179-42 for Structural Insulation Board (Vegetable Fiber)

Product	Size			Edges	Author's Notes
	Width	Length	Thickness		
*Building Board	4'	6' 7' 8' 9' 10' 12'	$\frac{1}{2}$ " , $\frac{3}{4}$ " , 1"	Square	The following are also available: 8' Width
Thin Board	4'	7' 8' 9' 10' 12'	5/16"	Square	8' Width 0.34" Thickness
Tileboards (Panels)	8" x 8" 12" x 12" 12" x 24" 16" x 16" 16" x 32"		$\frac{1}{2}$ " , $\frac{3}{4}$ " , 1"	**Fabricated edges.	
Plank	8" 10" 12" 16"	6" 8" 10" 12'	$\frac{1}{2}$ "	**Fabricated long edges.	

*Standard colors and finishes are:

1—Natural Board.

2—One light colored board; e. g. white, ivory, buff.

**Fabricated edges refers to any type of edge treatment other than square edges, without reinforcement.

DRY-WALL CONSTRUCTION

PART I: FIBER BOARDS

NAILING OF FIBER INSULATION BOARD

Type and Use	Thickness	Nails—Type and Size
Building Board, Nails Exposed Tileboard (Panels) Nails Exposed Plank, Nails Exposed	½"	Brad, 1¼", 3d, 14 ga., 11 ga. head Finishing 1¼", 3d, 15½ ga., 12½ ga. head Cadmium plated "insulation board" nail, diamond point, 1¼", 17 ga., 5/32" head
Building Board, Nails Exposed Tileboard (Panels) Nails Exposed	¾" or 1"	Brad, 1¾", 5d, 12½ ga., 9½ ga. head Finishing 1¾", 5d, 15 ga., 12 ga. head Cadmium plated "insulation board" nail, diamond point, 1¾", 17 ga., 5/32" head
Building Board, Nails Covered	½"	Box, 1½", 4d, 14 ga., 7/32" head Common 1½", 4d, 12½ ga., ¼" head Galv. roofing, 1½", 11 ga., 7/16" head Galv. shingle 1½", 4d, 12 ga., 9/32" head
Building Board, Nails Covered	¾" or 1"	Box, 2", 6d, 12½ ga., 17/64" head Common, 2", 6d, 11½ ga., 17/64" head Galv. roofing, 2", 11 ga., 7/16" head Galv. shingle, 2", 6d, 12 ga., 9/32" head

SPACING OF NAILS—6" o.c. for intermediate nailing, 3" o.c. and ¾" away at edges.

NOTES ON NAILING:

Exposed nails shall be driven at an angle setting below surface, with fiber tapped over surface.

Nails may be driven in beaded groove or Vee of planks.

For painted surface, use finishing nails or brads.

Nail first to intermediate members and then along edge.

Uses: The uses of hardboard are multiplying due to the recently developed plastic, heat treated finishes, and the veneering of wood over these boards.

This material is suitable for bathrooms, kitchens, and other locations subject to dampness or severe service. In recent War Housing, shower enclosures of

hardwood with decorative finish have been used.

Application: Hardboard may be secured in place with nails or adhesive, with studs not over 16 in. o.c., with headers at all edges. Boards shall be brought to moderate contact and nailed to intermediate supports 6 in. o.c. and 4

in. o.c. at all ends and edges, with nails at least 1 in. longer than board thickness. Slightly counter-sink nail heads and putty holes where material is to be painted.

When cementing material over a solid backing such as insulation board, spread cement evenly over entire surface of hardboard and tap surface in place and brace until adhesive sets. If joints are exposed, they should be slightly beveled. Hardboard may be curved in one direction.

There seems to be no definite agreement as to the minimum thickness of hardboard which should be erected without a solid backing. Those who manufacture only 5/32 in. (which is the usual decorative thickness) and thinner, call for backing. Even though boards may be sufficiently strong for spanning without backing, they will seem light unless ¼ in. or thicker is used. The 3/16 in. thickness is allowed without backing by the Federal Public Housing Authority for war housing.

When used in spaces of high humidity, one manufacturer recommends that the material be scrubbed on back with a wet brush and allowed to dry twelve hours before erection.

References For Fiber Insulation Board

National Bureau of Standards.
Building Materials and Structures:

BMS 42 Structural Properties of Wood—Frame Wall and Partition Construction with "Celotex".

BMS 50 Stability of Fiber Building Boards as Determined by Accelerated Aging.

BMS 72 and BMS 89 Structural Properties of "Precision-Built, Jr." Prefabricated Wood Frame Wall Construction Sponsored by the Homasote Company.

BMS 97 Experimental Dry-Wall Construction with Fiber Insulating Board.

Simplified Practice Recommendation R 179-42 Structural Insulating Board (Vegetable Fiber).

Federal Specifications:

LLL-F-321a Fiber-board; insulating, Class A Building Board.

Application Instructions for Structural Insulating Board.

Insulation Board Institute, Chicago, Illinois.

TYPES AND SIZES OF HARD PRESSED, STRUCTURAL FIBER-BOARD

Federal Specifications LLL-F-311

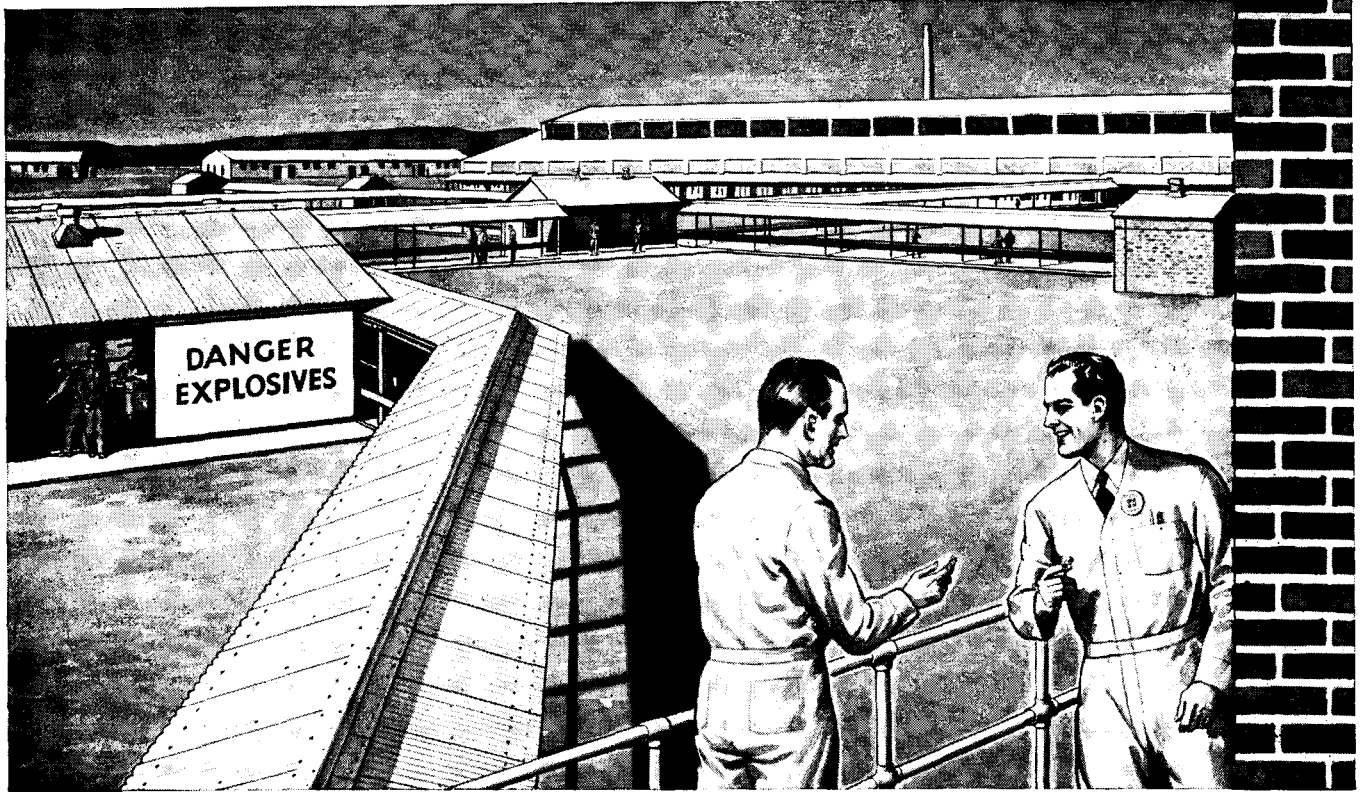
Class A—Untreated (Max. water absorption 20%)

Class B—Treated (Max. water absorption 12%)

Size			Author's Notes
Width	Length	Thickness	
4'	5' 6' 7' 8' 9', 10', 12'	½", 3/16", ¼"	Also the following thicknesses are available: 1/10", 1/16", 5/16", *5/32" *Usually decorative

Tests: For data concerning Hardboard, Decorated—see National Bureau of Standards, Building Materials and Structures—BMS 77 Properties of Fiber Tileboards.

Looking ahead with Asbestos



85 ACRES OF K&M "Century" ASBESTOS CORRUGATED for a famous arsenal

It was an immense, urgently needed wartime project. Speed was paramount. The roofing and siding had to go on with no loss in erection time, and it had to provide permanent protection and uninterrupted service for this vital war production plant.

K&M "Century" Asbestos Corrugated met every qualification and approximately 4,000,000 square feet went into place on time . . . enough material to cover an area of 85 acres. This tremendous quantity is only a fraction of the many millions of square feet of "Century" flat and corrugated asbestos sheets that have been used for wartime construction to date.

K&M "Century" Asbestos Corrugated is produced by applying tremendous hydraulic pressure to a combination of asbestos fibre and

Portland cement. The result is a truly maintenance-free sheet . . . a material highly resistant to fire and weather.

Previously, all our output of K&M Asbestos Corrugated was reserved for essential war needs. But having met many of these urgent obligations, we can now supply this remarkably adaptable, time-and-money-saving material for general use.

Wartime research at K&M continues to uncover new processes and products, and we are looking forward confidently to the rewards of these achievements in the "V" years to come.

* * *

Nature made asbestos;

*Keasbey & Mattison, America's asbestos pioneer,
has made it serve mankind . . . since 1873*

KEASBEY & MATTISON
COMPANY, AMBLER, PENNSYLVANIA

Makers of

asbestos-cement shingles and wallboards; asbestos and magnesia insulations for pipes, boilers, furnaces; asbestos textiles; asbestos electrical materials; asbestos paper and millboard; asbestos marine insulations; asbestos acoustical material; asbestos packings; asbestos corrugated sheathing and flat lumbars; asbestos-cement pipe for water mains



PLASTIC ROOFING

One of the newest uses of plastic materials is a new permanent roof coating called Plastikroof. According to the manufacturers, this product improves with exposure, will not crack in sub-zero weather, flow in summer heat, or sag or creep on vertical surfaces. It will bond to any surface, and will retain its original elasticity

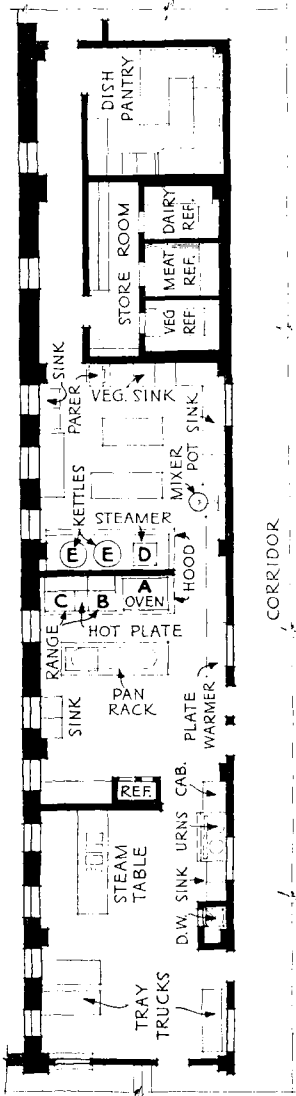
indefinitely, it is claimed. Available in red, green and black. Evercrete Corp., 19 West 44th St., New York.

FLOATING GLASS

A buoyant, cellulated glass known as Foamglas is said to provide highly effective insulation and to be completely impervious to water, in itself non-combustible and a fire retardant.

A true glass, cellulated by the evolution of internal gas at high temperatures, Foamglas is said to be able to support its own weight in any type of wall construction without danger of crushing or packing. Pittsburgh Corning Corp., Grant Bldg., Pittsburgh.

KITCHEN PLAN NO. 3. Third of a series of successful mass-feeding kitchen plans.



**KEEP FOR
HANDY
REFERENCE!**

This kitchen plan of a general medical 150-bed unit illustrates how unusual space restrictions may be overcome with the use of a combination baking and roasting oven. Adequate capacity for both operations is provided in this installation.

**COOKING
EQUIPMENT
USED:**

- (a) No. 909 BLODGETT GAS-FIRED ROASTER-BAKER
- (b) Solid-top range and heated extension
- (c) Solid-top skeleton
- (d) Vegetable steamer
- (e) Stock kettles

Designed by A. Amendola, Nathan Straus-Duparquet, Inc. for A. J. DePace, Architect.



For details and specifications of Blodgett Ovens, consult your equipment house or write

The G. S. BLODGETT CO., Inc.
53 Maple Street, Burlington, Vermont



Figure 1

POSTWAR HOUSE

An experimental prefabricated house (Figure 1) built by The Mengel Company, Louisville, Ky., features a dry-wall construction throughout, and especially developed scarfed joints for walls and ceilings. The flush wall construction eliminates batten strips, furring strips and nails.

FLUORESCENT NOTES

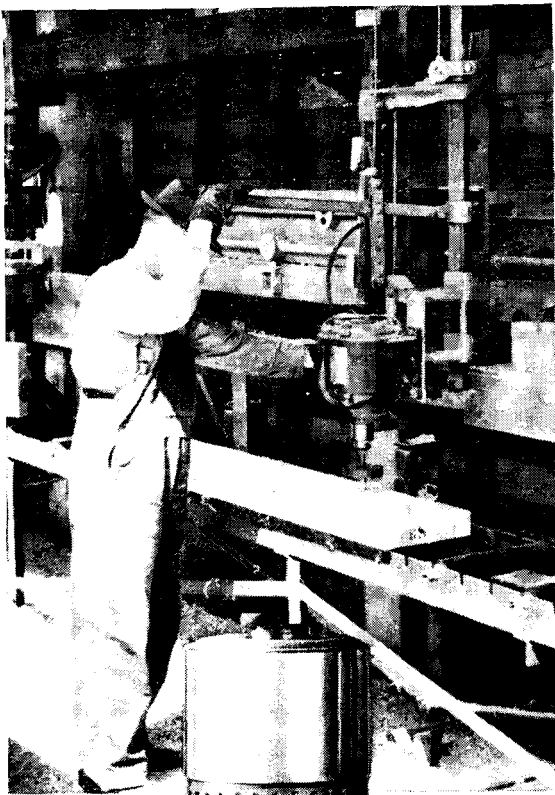
Lamp ballast

An air-cooled type of fluorescent lamp ballast, designed for exposed mounting on fluorescent lamp fixtures, saves the metal ordinarily used in housing the ballast and other accessories, and will operate at lower ambient temperatures than enclosed type ballasts, according to the manufacturers. No special installation devices are required. Built in approved ratings for single, two, three and four lamp fixtures—ratings of 40 to 100 watts. The Acme Electric & Mfg. Co., Cuba, N. Y.

Fixture for marine use

A fluorescent lighting fixture especially designed for marine use is resistant to shock, vibration and oscillation, and may be used in industrial plants where these factors must be taken into consideration, the manufacturers report. The new unit employs two 15-watt fluorescent lamps. Ballast, lampholders, starter sockets and special terminal block can be removed from

(Continued on page 92)



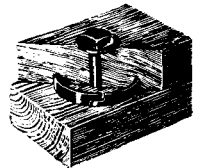
SOUND ENGINEERING ADVICE

- ✓ *Design* in **TIMBER**
- ✓ *Specify* **TECO CONNECTORS**
- ✓ *Employ* a **Teco Timber Fabricator**

'Round the World—100,000 timber war and peace-time structures have been quickly and economically built with the TECO Timber Connector System of Construction—sponsored by the lumber industry since 1933.

The TECO Split-Ring Connector spreads the load on a timber joint over practically the entire cross-section of the wood . . . brings the full structural strength of lumber into play.

Write for *FREE* copy of "Heavy Timber Construction Details"—just off the press. Always specify **TECO** Connectors.



TIMBER ENGINEERING COMPANY
NATIONAL MANUFACTURERS OF **TECO** TIMBER CONNECTORS AND TOOLS
WASHINGTON, D. C. PORTLAND, OREGON



(Continued from page 90)

the housing as a complete unit, without dismantling the fixture from the ceiling or from the mounting brackets. The Louverplas shield used in the unit is said to give well diffused illumination with effective lamp concealment, and to eliminate objectionable brightness from normal viewing angles. Curtis Lighting, Inc., 6135 West 65th St., Chicago 38.

Light-weight unit

To compensate for WPB steel limitations, a new light-weight fluorescent unit, the Super-Illuminator, has a die-formed one-piece full channel, with metal "bends" (patents applied for) that provides greater channel-strength on the horizontal and on the torque. Available in sizes for 2-40, 3-40 and 2-100 watt fluorescent lamps. The

Edwin F. Guth Co., 2615 Washington Ave., St. Louis, Mo.

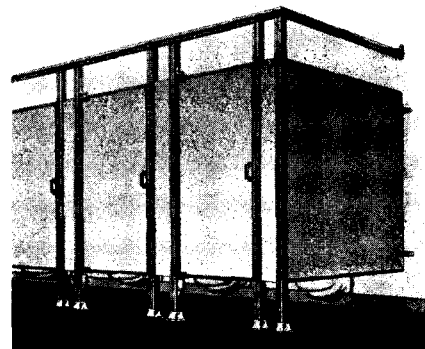


Figure 2

TOILET COMPARTMENTS

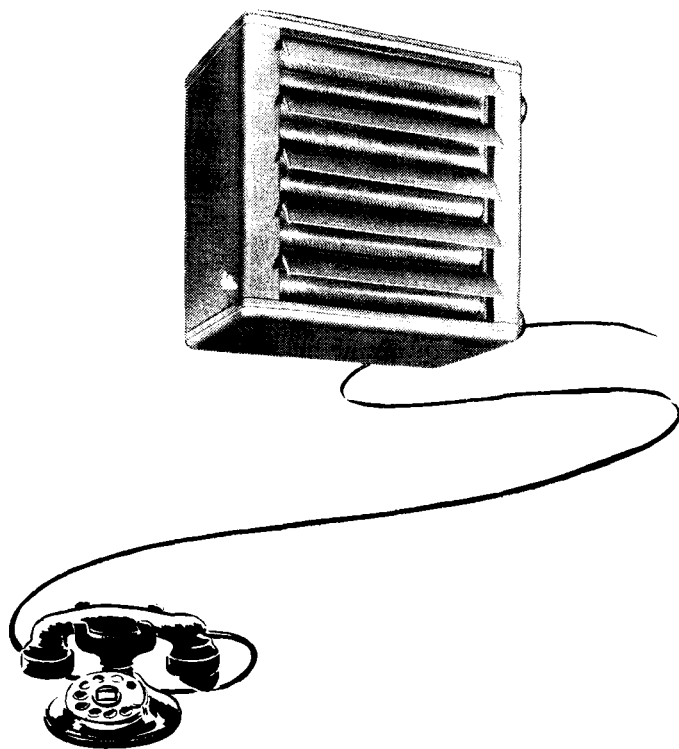
Two new types of asbestos board toilet compartments are offered to meet needs of expanding war plants, institutions, temporary schools and recreational centers. Both types feature doors and partitions of two sheets of cement asbestos board laminated to a structural core which provides a strong, rigid partition panel that is moisture-, fire- and wear resistant. The "Duration" type can be secured without any delay, the manufacturers report, as one priority order covers delivery of the entire unit, including hardware and partition fittings. The "Sanybestos" type, in which steel posts and hand-rail bracing are used, is available only from material on hand, and in connection with orders having a priority rating of AA-5 or better. (Figure 2) The Sanymetal Products Co., Inc., 1677 Urbana Rd., Cleveland.

SHOWER STALLS

A wartime shower cabinet known as the Fiat Volunteer features erection on the job in less than 20 minutes, with the use of no tools other than a screw-driver.

In this wholly prefabricated shower, the extension lock joints used at back corners are fastened to the back panel at the factory. The side panels are simply snapped into these joints when the shower is erected. Front pilaster columns are also mounted on the side panels at the factory. Even the holes for the screws required to complete the fastenings are factory punched. The manufacturer states that the whole job

(Continued on page 94)



Let's talk Sense... Men who do business with

Fedders have found that a promise is a promise. Through maintaining a sensible balance between backlog of orders and ability to produce, we have made friends by making deliveries that heating men can depend on. You will enjoy doing business with Fedders . . . even under these emergency conditions.

FEDDERS MANUFACTURING CO., INC., BUFFALO, N. Y.

Manufacturers of Unit Heaters, Blast Heating Coils, Unit Coolers, Electric Refrigeration Equipment, Automotive and Aircraft Radiators, Electric Water Coolers



When you can again get carpet... get the most for your money through the advice and services of Bigelow Carpet Counsel



This beautiful showroom for women's clothes at Marshall Field & Co., Chicago, has Bigelow Crescendo Lokweave on the floor.

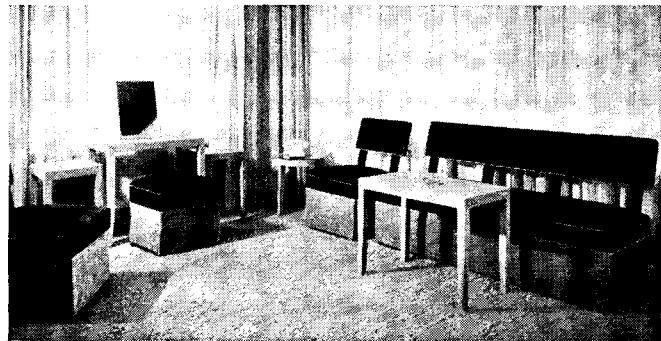
Before the war, hotels, theatres and stores saved money, time and trouble when they bought carpet by using Bigelow Carpet Counsel.

Carpet Counsel offered pattern recommendations from a wide range of designs. It gave estimates of wear in traffic areas. By using Carpet Counsel, you knew you would get the most from every floor covering dollar.

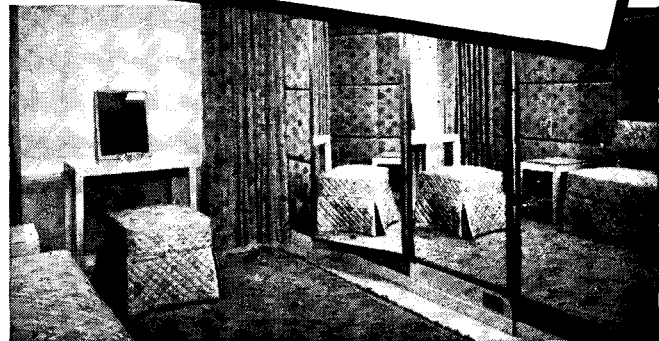
When Bigelow looms again weave contract carpet, let Carpet Counsel eliminate time-and-money-wasting guesswork in the planning stage.

CHECK THESE CARPET COUNSEL FEATURES

1. THE RIGHT CARPET FOR THE RIGHT TRAFFIC AREA
2. COLORS AND PATTERNS FOR EVERY TYPE OF ROOM
3. NO EXTRA COST PER SQUARE YARD



One of the striking fitting rooms at Marshall Field's. The floor is covered with Chamfur Lokweave.



Another of the well lighted Marshall Field's fitting rooms showing an interesting decorative treatment.

~~~~~  
**BUY  
 WAR  
 BONDS**  
 ~~~~~

"When it comes to carpet come to Bigelow"
BIGELOW-SANFORD CARPET CO., Inc.
 140 MADISON AVENUE, NEW YORK 16, N. Y.



(Continued from page 92)

can be completed in 18 minutes.

The Volunteer meets all government regulations concerning the use of steel. Tension locking joints, front stiles, top trim and threshold are of rustproofed steel. Wall panels are made of tempered, hard-pressed, treated fiberboard, finished with waterproof baked-on enamel. Receptor is of reinforced concrete. Fiat Mfg. Co., 1205 Roscoe

St., Chicago; 21-45 Borden Ave., Long Island City 1, N. Y.; and 32 South San Gabriel Blvd., Pasadena, Calif.

Another wartime shower cabinet of non-critical plastic materials is also designed to permit fast assembly. This is the Tilestone Shower Stall, with walls of plastic coated Masonite Tempered Presdwood. Corner post of 20

gauge galvanized steel forms a water-tight joint with the wall panels. The Sanymetal Products Co., Inc., 1677 Urbana Rd., Cleveland.

HEAT TRANSMISSION REPORT

The insulating value per inch of mineral wool is the same for both ceilings and walls, and, regardless of the depth of application, its conductivity per inch of thickness remains the same, according to a paper by Professors Frank B. Rowley and C. E. Lund of the University of Minnesota, presented before the semi-annual meeting of the American Society of Heating and Ventilating Engineers in Pittsburgh recently. These conclusions resulted from a comprehensive series of tests which substantially confirmed the coefficient of heat transmission values used in the *ASHVE Guide*, while pointing out that allowance should be made for the space occupied by studs or joists when accurately figuring overall "U" values.

In making the tests a standard hot-box apparatus was used, so constructed that it could be rotated to place the wall either in a horizontal position with heat flow upward, or in a vertical position with heat flowing horizontally.

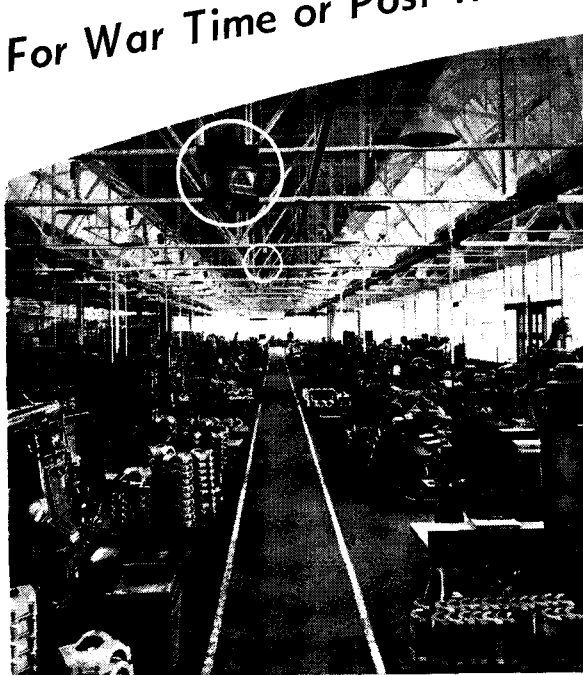
Mineral wool was tested in granular, bat, and blanket form, and in thicknesses varying from 1 to 6 in. The tests dispel any suggestion of convection current perceptibly affecting the value of attic insulation, and substantiate the economies of the trend to thicker insulation.

SWINGING DOOR OPERATOR

Two electric operator units for swinging doors, Model V and VR, for one-, two-, three-, and four-leaf inward swinging doors and for one-leaf outward swinging doors, features a complete motor unit consisting of the motor, the speed reducer, the adjustable friction clutch and driving arms, and the limit switch. Motors are of the three-wire "instantaneously" reversing type. A relay on the Model VR Operator maintains the circuit to the motor after the operator has been started by momentary contact. Barber-Colman Co., Rockford, Ill.

(Continued on page 96)

For War Time or Post War Heating Problems



27 Wing Revolving Unit Heaters are installed in this typically congested manufacturing plant.

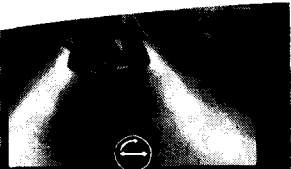
REVOLVING Unit Heaters are the scientific answer to the problem of heating industrial plants—whether that problem concerns itself with bringing up-to-date unsatisfactory heating conditions in today's war plants or planning for the industrial plant of a post-war world.

Wing Revolving Unit Heaters are being specified by more and more architects, engineers and contractors because these heaters solve the most difficult of factory heating situations.

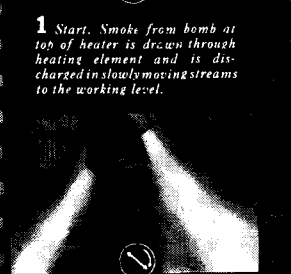
L. J. Wing Mfg. Co.

151 W. 14th St. New York City
Factories: Newark, N. J.

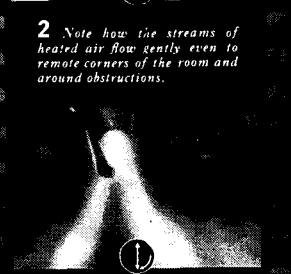
WING TIPS:
Save critical materials and installation time with Revolving Unit Heaters.



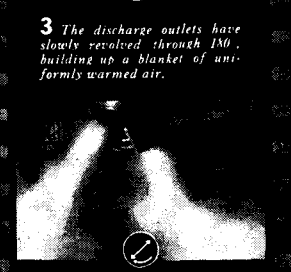
1 Start. Smoke from bomb at top of heater is drawn through heating element and is discharged in slowly moving streams to the working level.



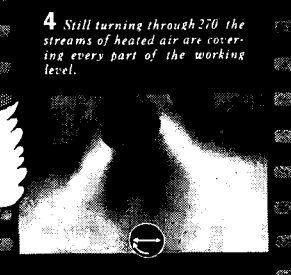
2 Note how the streams of heated air flow gently even to remote corners of the room and around obstructions.



3 The discharge outlets have slowly revolved through 180°, building up a blanket of uniformly warmed air.

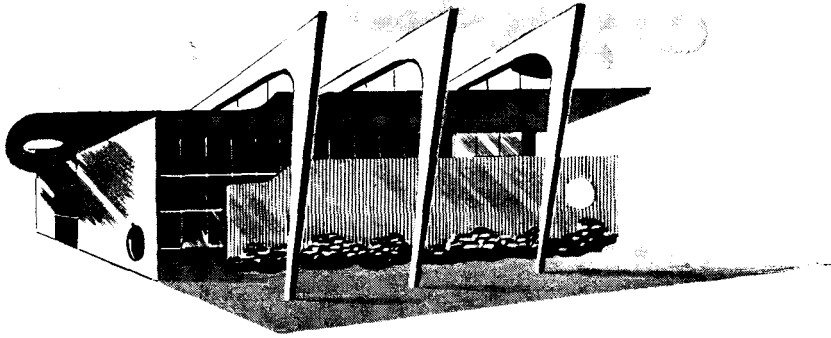


4 Still turning through 370° the streams of heated air are covering every part of the working level.



5 The discharge outlets have completed one revolution, demonstrating conclusively the thorough coverage of the WING Revolving Heater.

WING *Revolving* **UNIT HEATERS**



REVOLUTION ?



EVOLUTION ?

What are **YOUR** plans for postwar Homes?

How they'll look—how they'll be designed and built—is strictly *your* affair. But your plans in this direction are of vast interest to General Electric engineers whose job it is to design the heating and air conditioning equipment for your postwar homes.

Will the trend be towards one-story, basementless construction? Will there be greater use of concrete and masonry? Will there be more window area, more roof area, more ceiling and wall insulation? These are just a few of the things that *we need to know* in order to tell you what *you want to know*.

Our designers are reaching the point where

they require *your* ideas to match against their own . . . and we intend to ask you for them in the very near future. We are not promising any immediate postwar miracles . . . but your help and advice will hasten the day when we can announce an advanced line of G-E heating and air conditioning units . . . compact . . . efficient . . . and with greater output for less cost.

☆ BUY WAR BONDS ☆

General Electric Company, Heating and Air Conditioning Equipment Divisions, Section 3449, Bloomfield, New Jersey.

GENERAL  **ELECTRIC**

LISTEN TO THE GENERAL ELECTRIC RADIO PROGRAMS: "THE HOUR OF CHARM," SUNDAYS, 10 P.M., E.W.T., ON N.B.C. . . . "THE WORLD TODAY" NEWS, WEEKDAYS, 6:45 P.M., E.W.T., ON C.B.S.

(Continued from page 94)

PORTABLE HOME

Offered as a practical, low-cost answer to the housing problem in war-production areas, is the Kalamazoo Portable Home, which in a space 20 by 8 ft. incorporates a three-room, all furnished apartment.

The exterior is Johns-Manville slate-gray Flexboard supported on a rigid, heavily constructed frame. Only the

trim is painted. Ceilings are 7 ft.; floors are linoleum covered, screens furnished on all windows and on both doors. Interior walls, except in the kitchen, are finished in ivory with woodwork to match. Kitchen walls are of Masonite tile.

These portable homes are delivered on trailer running gears, from which they are lifted and mounted on six con-

crete blocks; no foundation is required. Each home is completely set up and furnished when delivered, and ready for immediate occupancy. Kozy Coach Co., Kalamazoo, Mich.

BONDING PROCESS

A method of joining thin sheets of stainless steel or aluminum to plywood with a bond stronger than the materials themselves has been announced by the U. S. Stoneware Co., Akron, Ohio. Known as the Reanite Bonding Process, the new method is already in use for vital war applications. It may be used to bond metal to metal, rubber, synthetic rubber, plastics, leather or wood to metal, or to each other. Almost any metals may be joined. On tests of bonds formed between non-metallic materials or between metals and non-metals, the materials themselves gave way before the bond, it is reported. Shipped in gallon, 5-gal. or 55-gal. containers. U. S. Stoneware Co., Akron, Ohio.

ADHESIVE

A new type of adhesive developed by the Du Pont Company is being used to bond the thin sheets of wood that are molded to form the bodies of military helicopters, it has been announced. Adhesive No. 4624, as the new product is called, is both thermoplastic and thermosetting, Du Pont chemists point out, is unaffected by high temperatures, and retains its flexibility at low temperatures. Available today only for military use. E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Del.

UNIT HEATERS

A new series of vertical delivery unit heaters has steel condensers which are protected against corrosion by a special coating of lead alloy. Tube and fin assemblies are completely submerged in molten lead alloy to provide a coating over their entire surfaces. Fins are permanently bonded to tubes with metal. Tubes and headers are brazed with silver solder to form an integral unit of steam carrying passages guaranteed for working steam pressures up to 150 lb. per sq. in.

The larger models in this series may be mounted as high as 50 to 60 ft. above the floor where necessary. Modine Mfg. Co., Racine, Wis.



THE THICKER ...THE BETTER

INSULATION TESTS conducted at the University of Minnesota, and reported at the semi-annual meeting of the ASH&VE, June 8th, 1943, proved that, within reasonable limits, the thicker the insulation, the better. Of course 3 5/8" is the practical thickness for walls; and 4" is normally recommended for ceilings.

Another point developed was that there is no difference in the insulating value per inch of thickness of Mineral Wool, whether installed in ceilings or walls.

Furthermore, the cost per inch of Mineral Wool decreases with the thickness... demonstrating, once again, that the thicker, the better.

A copy of the report mentioned above may be obtained by enclosing 6 cents in stamps to cover postage and mailing with a request, to the address given below.

**NATIONAL
MINERAL WOOL
ASSOCIATION**

1270 Sixth Avenue

New York, N. Y.



WE ACCEPT THIS CHALLENGE, TOO!

When the smoke cleared away from the charred ruins at Pearl Harbor, there was no decision for us to make. We converted our peace time machines to the job of war with a speed born of vengeance. The skilled men behind those machines began pouring out a steady and ever increasing stream of vital war parts to help bring America a quicker, less costly victory.

Yet with all this, we have deliberately *made* time in each busy day to plan for as quick and as satisfactory a change back to peace time production. *For in those critical days when men lay down their weapons lies the real challenge to America.*

We must be ready, all business must, with new products and new jobs for the men in khaki and blue. We must do this so that every American may look forward to a steady job, a home of his own, better education for his children.

We are fighting now for our lives—we accept this challenge to fight as staunchly for our dreams.

NORTON LASIER COMPANY

466 West Superior Street

Chicago



DOOR CLOSERS

(Continued from page 12)

used only 1,989 lb. of critical metals, a saving of 80 per cent as compared with pre-war public housing of permanent type.

War worker accommodations

Living accommodations for 35,124 war worker families in key production centers will be provided when work is

completed on properties now being converted into additional family dwelling units under the NHA's Homes Use program, Assistant Administrator Philip M. Klutznick of NHA has reported.

This total includes 21,881 family units to be provided through publicly-financed conversion of homes and

other structures under government leases closed as of July 31, and 13,243 units to be provided under applications by property owners for priorities for conversion through private financing.

BUILDING CONTRACTS

Contracts were let in July for 21,924 new family dwelling units in the 37 eastern states, according to F. W. Dodge Corporation. This figure compares with 15,750 in the preceding month and 18,420 in July, 1942. Total residential building, including military barracks and accommodations for single men in temporary type dormitories in war production centers, amounted to \$71,836,000 in July, \$61,508,000 in June, and \$127,382,000 in July, 1942.

Non-residential building, with a total value of \$61,840,000, ran 35 per cent below June and 87 per cent below July a year ago when manufacturing plant contract-letting was at its height. Of the \$489,066,000 recorded in July, 1942, 82 per cent was for manufacturing plants and closely related types of projects.

Heavy engineering work in July, amounting to \$49,985,000, also declined from the \$73,257,000 registered in the preceding month and from the high figure of \$327,348,000 attained in July last year.

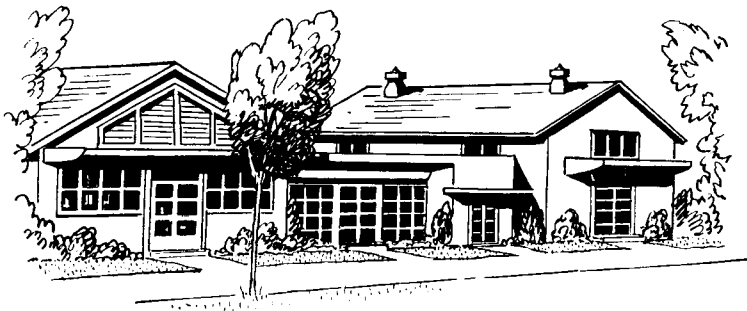
During the first seven months this year, total construction contracts amounted to \$2,034,933,000. This is a decline of 56 per cent from the corresponding period in 1942.

SCHOLARSHIP IN INDUSTRIAL ARCHITECTURE

The Albert Kahn Scholarship in Industrial Architecture at the School of Fine Arts, University of Pennsylvania, will be awarded this year covering full tuition (\$400.) to a student who has completed four years of a four year or of a five year course in architecture and who has shown outstanding ability in both design and construction in any accredited school of architecture.

Any architect or student interested may obtain application blanks by writing to George Simpson Koyle, Dean, School of Fine Arts, University of Pennsylvania, Philadelphia.

***Tile-Text* is "physically fit"
for Recreational Centers**



TILE-TEXT floors are getting a rousing welcome . . . and a rigorous workout in the recreational centers from coast to coast. Trained to "take it" by years of development, Tile-Text takes the hardest assignments in stride . . . and stands inspection like a cadet on parade. A ruggedly durable composition of asbestos and asphalt, Tile-Text is ideally suited to the grueling service conditions of wash-rooms, storerooms, passageways and other areas where resistance to moisture, fire, acids and wear are prime requirements. In lobbies, office spaces, dining rooms and other like areas, Tile-Text combines these essential features with good variety in color and design. Planned to give service . . . Tile-Text requires but little. Maintenance calls only for occasional mopping . . . and installations may be made without interfering with the use of adjoining spaces. Write now for the name of an approved Tile-Text Contractor . . . qualified to render complete, speedy Tile-Text service.

★ The Tile-Text Company

101 Park Avenue, New York City • Chicago Heights, Illinois



Laying Pre-finished
Maple Floor Sections

PREFABRICATED-DEMOUNTABLE STRUCTURES

by the thousand, constructed and delivered by the Johnson mill organization

40 War-Emergency Contracts have included War and Navy Department Cantonments, Hospitals, Naval Training Stations, Farm Security Dormitories and War Workers' Housing under the Federal Housing Administration, State and Municipal Authorities.

Today we build for WAR . . . under direction of the U. S. Government . . . Tomorrow we build for Peace . . . under direction of the Country's greatest Industrial Leaders.

Over 5,000 "Prefabs." included

In addition to thousands of War-workers' homes, the Johnson mills have produced Demountable Administration Buildings, Field Offices, Barracks, Hutments, Farm-Workers' Houses, and Cafeteria and Canteens to serve over 17,800 Workers on a single job.

Today the Johnson mills are engaged in all-out production for Victory . . .

Tomorrow Johnson research will produce America's finest low-cost homes.

EXTRACT FROM RECENT NAVY DEPT. LETTER

"This work was started under difficulties that involved delays in acquisition of land, but was so well organized and expedited by the contractors that the 450 housing units were completed in 120 working days and the facilities, including pavements, sewage disposal, incinerators, fire protection and drainage system, were completed shortly thereafter.

["The job was organized on an assembly line basis that proved so efficient that the final costs, including the fixed fee for the contractors, was 11% under the original allotment."]

Send for Brochure 36

"A Firm Foundation Since 1896"

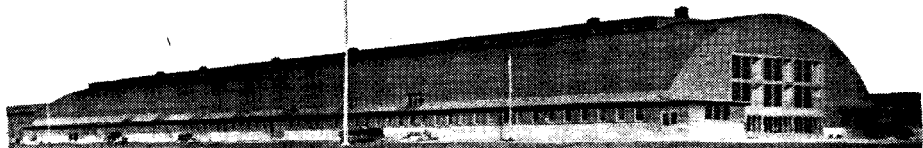
JOHN A. JOHNSON CONTRACTING CORP.

Brooklyn, N. Y. — Atlanta, Ga.

Philadelphia, Pa. — Washington, D. C.

GENERAL

CONTRACTORS



One of six 600-foot-long Drill Halls at largest Naval Training Station in the East. A recently completed \$50,000,000.00 Project

LETTERS FROM RECORD READERS

(House of the Future. Continued from page 16)

you and I both agree. However, I have never been one of those who believes that in order to improve the livability of a house it is necessary to make it look like the old fashioned prints of beehives. And I do not believe the public either wants or will accept freak houses.

In addition to this chatter about

housing design, I think the publicity we see about the reduction in the cost of houses is equally harmful. I know you are as much interested as I am in reducing the cost of houses, particularly small houses, and I have no doubt that this will gradually come about, but it seems to me it is utterly vicious to create the impression in the minds

of the public that the cost of housing is going to be reduced substantially the minute after the Armistice is signed. We know this is not going to happen, and that such reduction as does come about will come gradually.

—ABNER H. FERGUSON, *Commissioner
Federal Housing Administration*

Record:

I think it is correct that the house-of-the-future will still be a house livable, with the requirements about the same as they are at the present time as far as space and accommodations are concerned, and as for these fantastic things—some of them may develop in the future, but it's going to be a tried and tested thing before accepted by the public, and I think that most manufacturers appreciate that and are charting their course in that direction.

—H. F. WARDWELL, *President
Detroit Steel Products Co.*

Record:

We are in complete agreement with what you say. Our postwar planning assumes that we will start with the best pre-war house and consistently improve it as we have tried to improve our houses for the past quarter century.

—FRANK M. ROBERTS, *Gen. Sales Mgr.
Houston Ready-Cut House Co.*

Record:

The good house is a wise combination of many materials; and in recent months the industry has had broad experience with combinations of materials never before dreamed possible, with the result that there will be some fundamental changes in combinations of materials and methods of assembly which will provide better housing for less money and yet be well within the specifications of the Stowell editorial.

—CARL F. BOESTER, *Housing Research
Executive, Purdue Research Foundation*

Record:

I think Kenneth Stowell's editorial hits an important nail on the head.

This nail is that an important advance in the arts, and not a miracle, is what we will witness, are witnessing, in home building. It is a stimulating project.

—F. STUART FITZPATRICK, *Manager
Construction and Civic Development
Dept., Chamber of Commerce of U.S.A.*

WANTED: ARCHITECTS ENGINEERS

for interesting, important war work

If you're a graduate engineer or architect... if you're not now devoting all of your capabilities to vital war work... probably you can qualify for interesting, important work at Bell Aircraft. Machine design or mechanical drawing experience is highly desirable.

This is a sound, progressive,

fast-growing company. It has a splendid record of achievement in design and construction of military aircraft. Working conditions are excellent. We're located near a metropolitan area, yet out far enough to permit living in the country if desired.



Just send a brief outline of your education and experience to

ENGINEERING PERSONNEL DEPARTMENT

BELL AIRCRAFT CORPORATION
NIAGARA FALLS, NEW YORK

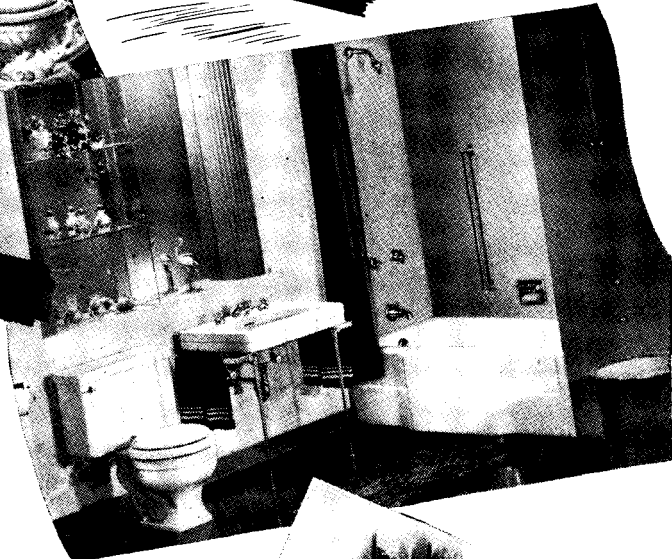
a glimpse into the

FUTURE

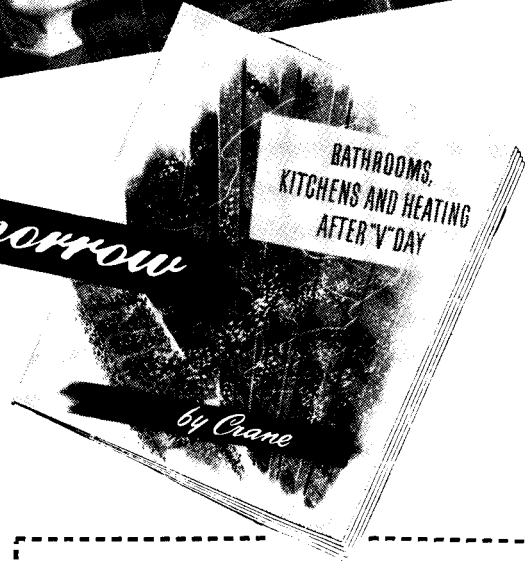
yesterday



today



tomorrow



IT IS a far cry from the bathroom of the '90s to the convenient charm and practical efficiency of the bathroom of pre-Pearl Harbor days. But the question today is "What about the future?" What will Mr. and Mrs. America want in plumbing and heating when the war is won? Already on the drawing boards of many of America's architects, homes of the future are taking shape. To aid architects in their planning, Crane is conducting a broad program to determine the desires and preferences of those who intend to build homes when the war is won.

So extensive is this investigation—so broad in scope that it covers every state in the Union—cities, towns and villages—and reaches families in every income group.

It is too early to draw any conclusion on this investigation, but of this architects may be certain: the Crane line of the future will continue to reflect the same high quality in materials and workmanship, the same advance in design and construction as in the past. And above all, it will be designed to meet the established preference expressed by thousands of home owners.

If you would like a copy of the colorful booklet and questionnaire being widely distributed to future home owners, mail the coupon below.

CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVENUE, CHICAGO

VALVES • FITTINGS • PIPE • PLUMBING • HEATING • PUMPS

NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS

CRANE CO.
836 S. Michigan Ave., Chicago, Ill.

Please send me copy of booklet "V" Day and questionnaire.

Name.....

Address.....

City.....State.....

(Continued from page 51)

one-sixth less than the actual number of new household formations between 1920 and 1930 (5,500,000).

Consequently, anticipation of a larger residential building volume for the postwar decade than in the 1920's banks rather heavily on six factors considered likely to have greater significance:

- (1) Migration
- (2) Decentralization

- (3) Accelerated replacements
 - (4) Prosperity
 - (5) Progressive reduction in housing costs
 - (6) An accumulated deferred demand
- The first four are discussed under A.

5. Cost reduction—The residential building recovery that was in progress up to our entry in the war was marked by steady improvement in the quality of houses offered in the lower price ranges. The war housing pro-

gram gave an added impetus to time-saving methods of construction, likely to be translated into money-savings in the postwar period. New materials to become available, prefabrication of sub-assemblies, and new construction methods are all likely to contribute to progressive lowering of costs. Gradual, progressive developments along these lines, possibly coupled with reduced financing charges and modernized building code standards, are to be expected rather than any spectacular new invention that would alone accomplish the purpose of significant cost reduction.

6. Deferred demand—There is every evidence that housing demand was growing continually from 1934 until interrupted by the war. It is also obvious that a deferred demand has been accumulating ever since October 1941, when restrictions were first placed on non-essential civilian construction. This deferred demand is principally for houses banned by war restrictions: that is, houses over \$6,000 (with land), everywhere; and houses at all price levels outside of war centers.

Continuation of housing production at the estimated rate beyond the period necessary to catch up with deferred demand will be contingent on continuation of all of the first five factors in the above list plus such development of investment confidence and investment opportunities in the recovery period as would lead the country into an era of general economic expansion.

In view of past experience, current facts, and reasonably anticipated postwar prospects, the writer concludes that this is a fairly optimistic estimate, banking rather strongly on postwar prosperity and upon the potency of such prosperity in stimulating residential building demand.

C. 1,000,000 units a year.

This frequently-quoted figure seems to be a round number useful as such in more general discussions. The writer has seen no careful study based upon factual information and analysis that seems to warrant its acceptance by anyone wishing a reasonably conservative appraisal of future potentialities. Field surveys usually yield figures on needs or wants, which have to be discounted for use as measures of market demand.

(Continued on page 104)

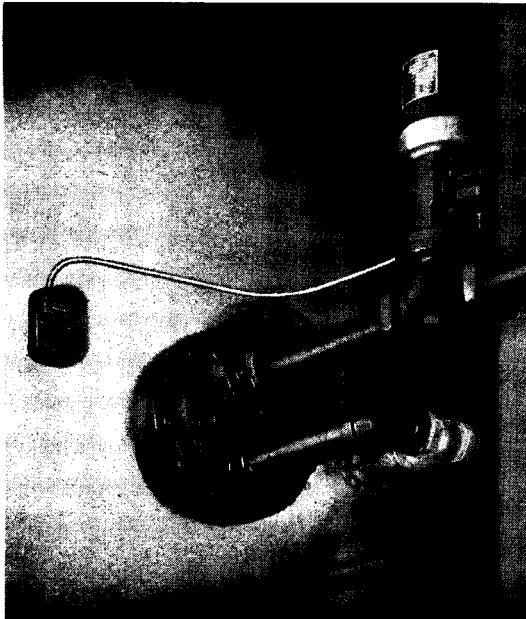
BARBER-COLMAN

GRILLES & REGISTERS
AIR DIFFUSERS



AUTOMATIC
CONTROLS

AUTOMATIC CONTROLS FOR HOT WATER STORAGE



★ The storage of an adequate supply of hot water for washing and other purposes presents a problem of temperature control as well as of proper size and distribution of tanks. Actually, a control installation on each of a number of tanks will usually reduce the operating cost over the installation of a control on the central supply alone. Barber-Colman control equipment has demonstrated its ability to provide accurate maintenance of water temperature in storage tanks.

WATER KEPT HOT AT MINIMUM EXPENSE

★ With a simple BARBER-COLMAN CONTROL, consisting of a Thermostat in the tank and a Motor-Operated Valve on a steam supply line, the water in each tank is automatically maintained at the desired temperature. Heat losses from water supply lines are reduced to a minimum and the amount of steam used is also kept at a minimum by the automatically-operated valve. Once the thermostat is set, practically no attention is required for either adjustment or maintenance. BARBER-COLMAN equipment is quality-built throughout to assure a long life of dependable operation.

BARBER-COLMAN COMPANY

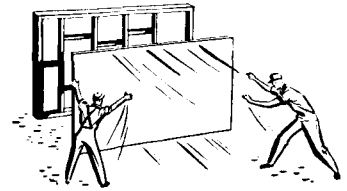
1232 ROCK STREET
ROCKFORD, ILLINOIS



What the building industry told us about dry-built full-wall construction

Recently, a large independent fact-finding organization asked builders, contractors and lumber dealers all over the country what they thought of dry-built full-wall construction. When the results were tallied up, here is what we found.

An overwhelming majority believe that the dry-built, one-panel wall will be the wall of the future! These are the reasons they gave:—



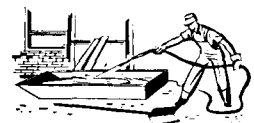
1 SINGLE PANEL WALLS GO UP FASTER. When Upson Strong-Bilt Panels are used in full-wall size, valuable building time is saved over tedious, old-fashioned methods of interior wall construction.



2 LABOR COST IS LOWER. One Strong-Bilt Panel covers the entire wall of an average room. Upson Floating Fasteners anchor panel securely from the back. No nail holes to fill because no face nailing is necessary. No joints to tape or hide.



3 CRACK-FREE FOREVER! Strong-Bilt Panels simply cannot crack, so there is no maintenance problem for these beautiful, easy-to-paint, single-panel walls.



4 DANGEROUS MOISTURE IS OUT! Trim and flooring are not exposed to undue moisture when Strong-Bilt Panels are used. Just think! Authorities say 1,000 pounds of water may be used in plastering the average small home.

• • •

Already, dry-built full-wall construction is beginning to take its place in plans for post-war homes, now on the drawing boards. For booklets picturing the advantages of dry-built, full-wall construction, both in conventional and prefabricated homes, write The Upson Company, Lockport, New York.

Upson Quality Products Are Easily Identified by the famous Blue-Center



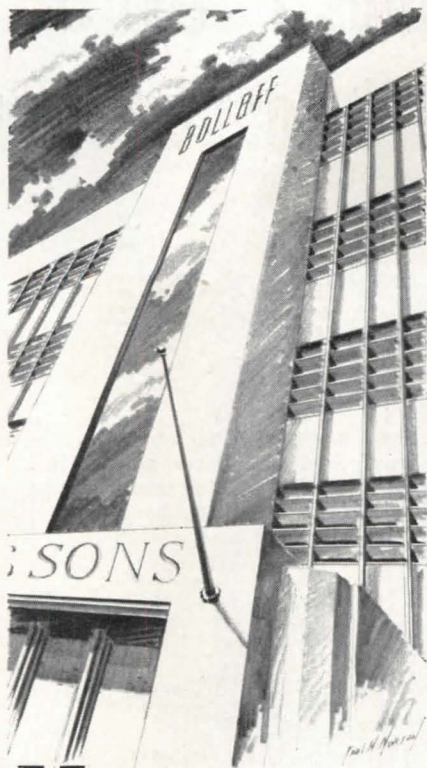
From studs to finished wall in a matter of hours! Efficient insulating value adds still more dollar value. Finished job fully measures up to quality standards of the \$18,000 home shown below—yet is sufficiently economical for low cost mass-produced housing.



THE CRACKPROOF BEAUTY SURFACE
WITH EFFICIENT INSULATING VALUE



UPSON
STRONG-BILT
PANELS

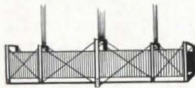


MONTGOMERY ELEVATORS in future buildings

NEW BUILDINGS now being planned for future construction will make use of new materials and techniques developed during the war. "Electronics," glass pipe, new metals and special plywoods enter the picture. And in your plans where freight or passenger elevators are required, new problems arise. To assist you in solving these problems, Montgomery maintains a special "Elevator Planning Service." This "Service" developed



the famous "Cross-Over" Bridge to meet a special transportation problem in plants divided by railroad sidings. Giant freight elevators with platforms 40' long were developed for one of the nation's leading packers. In your specifications for new construction, be sure the name MONTGOMERY appears where elevators are specified!



BUY WAR BONDS & STAMPS



MOLINE, ILLINOIS

Branch Offices and Agents in Principal Cities

HOW MANY HOUSES?

(Continued from page 102)

This has been true of statistics on contemplated building recorded for many years by F. W. Dodge Corporation, and of field surveys on housing demand made in the past by various other organizations. A total of a million units might be reached or slightly exceeded in one or several postwar years, but this writer is aware of no present indication that it is likely to be sustained over an extended period.

D. 2,000,000 units a year.

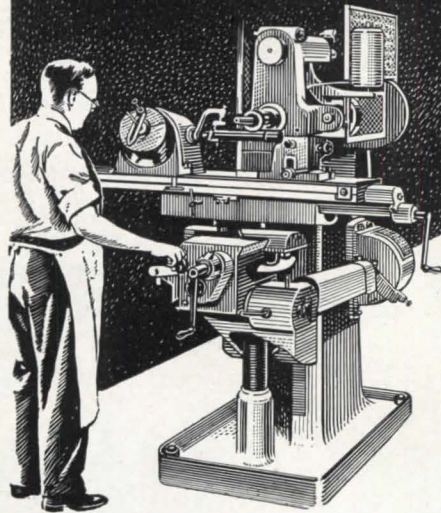
If 1,000,000 dwelling units a year seems over-optimistic as an estimate of average annual volume, anything above that figure is more so. Housing production at the rate of 2,000,000 units a year would rehouse America in approximately 20 years. This presupposes a rate of demolitions that is likely to wreck most, if not all, residential real estate values, local tax structures, mortgages, and thrift institutions. The cost to the economic system of scrapping facilities at a rate permitting this volume of new-facility production would far outweigh the advantages of any conceivable savings that might be achieved through quantity production of houses.

In conclusion, this writer considers it sounder and more realistic, for purposes of postwar market planning, to think in terms of figures approximating the minimum estimates of Dr. Newcomb, or his own moderately optimistic estimates, than in terms of the larger figures being so widely quoted. All such estimates will naturally be subject to revision as facts of the post-war situation develop. They are necessarily given in terms of averages over a five-year or ten-year period to follow the war, rather than in terms of a single year, because no one knows either the date of the war's termination, the conditions that will prevail in the early period of transition to peacetime activity, or the time it will take for peacetime building activity to get into full stride.

Finally, since F. W. Dodge Corporation has just as much to gain, relatively, through maximum-construction volume as anyone else in the industry, the writer's sole purpose in appraising conditions and prospects conservatively is that of viewing the situation as realistically as he knows how.

LIGHT FROM FLOORS

helps war workers
see better



TO INCREASE the effectiveness of the lighting facilities, plants built for Boeing, Consolidated, Douglas and North American have light-colored concrete floors made with *white* portland cement instead of with *gray* portland cement or other darker materials.

Tests in Consolidated's plant at Fort Worth show that the white-cement floor compared with a gray-cement floor in the same plant reflects 61% more light to underside of wings and provides 20% more light on vertical faces of work.

Because it salvages waste light, a light-reflecting concrete floor made with Atlas White cement—

- ▶ decreases shadows and dark areas;
- ▶ makes seeing easier and quicker;
- ▶ reduces eyestrain, headaches and absenteeism;
- ▶ reduces accidents, errors, spoilage and shut-downs;
- ▶ increases quantity and quality of production.

Maintenance is simple—frequent sweeping, occasional damp mopping, periodic scrubbing.

Write for new book, "Light From Floors." It gives detailed information on the value, installation and maintenance of light-reflecting concrete floors made with Atlas White portland cement. Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York City.

AR-F-22

**ATLAS
WHITE CEMENT**
For Light-Reflecting Floors

**For Buildings
YOU ARE
PLANNING
NOW...**



**...to be built
AFTER THE WAR**

IT'S NOT TOO EARLY TO
Specify
modine
CONVECTORS

★ Many architects have certain projects for which plans are being prepared *now* so that construction will not be delayed when building materials become available. It is not too early to specify Modine Convectors to heat those buildings.

Postwar Modine Convectors *will* embody *new developments*—resulting in *improved performance* and *appearance*. But such improvements will be decidedly *practical*. Modine Convector design will involve no principles not thoroughly tested and proved by Modine in actual heating service.

The war has not interrupted the manufacture of

Modine Steel Unit Heaters and Steel Coils Now Available to Industries Doing War Work

MODINE MANUFACTURING COMPANY, 1773 RACINE STREET, RACINE, WISCONSIN


Modine Convectors. Today the entire output is used to heat our fighting ships and merchant ships. Cooperation and collaboration with the Navy and Maritime Commission have brought about many practical improvements.

Here's a Preview of Postwar Advantages

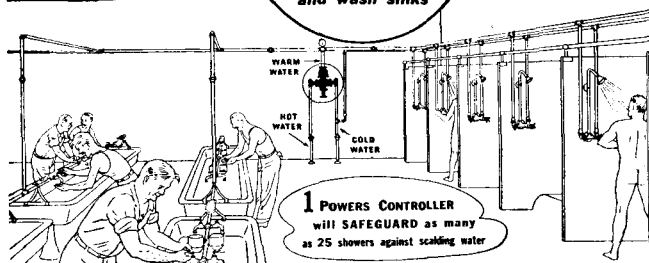
1 A more compact heating unit. **2** Increased heating capacity. **3** Fast, even heating. **4** Quickly responsive to automatic control. **5** Greater flexibility to meet changes in heat demand. **6** Healthier, and cleaner. **7** New, luxurious comfort. **8** Smartly modern in appearance, with new beauty of line and proportion. **9** Increased facility and economy of installation.

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For all practical planning—you can specify Modine Convectors now. Catalogs 241 and 241-A will help you.

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

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Use Powers thermostatic water mixing valves for Group Showers, Wash Sinks, Hot Water Line Control and Industrial Processes. Capacities up to 2,650 g.p.m. Write for Circular 3017. THE POWERS REGULATOR COMPANY, 2752 Greenview Avenue, CHICAGO—Offices in 47 Cities. 52

POWERS WATER TEMPERATURE CONTROL

WAR HOUSING EXPERIENCE YOU CAN USE—

TYPICAL HOUSING PROJECTS WITH KITCHENS BY KITCHEN MAID

Project	Location	Kitchens	
Red Hook Housing Project	New York, N. Y.	2581	212
Woodhill Homes Project	Cleveland, Ohio	568	423
Vineyard Hill Project	Wheeling, W. Va.	302	1252
Prospect Hill Housing Project	Pawtucket, R. I.	310	267
Ordinance Plant Houses	Chvrleston, Ind.	36	440
Newfoundland Base	Newfoundland	80	600
Home Building Corp	Kansas City, Mo.	800	110
Colonial Hills & Dales Housing	Columbus, Ohio	200	20.
Army Staff Residences	Crab Orchard, Ill.	15	138
Lone Star Ordnance Plant Houses	Leary, Texas	60	449
Parklabrea Housing	Los Angeles, Cal.	2649	240
St. Charles Apartments	Silver Springs, Md.	77	135
Cartridge Loading Plant Houses	Alton, Ill.	50	250
Wills Homes, Inc	Dayton, Ohio	10	346
Seminary Heights Project	Arlington, Va.	3550	397
First National Development Co	Chicago, Ill.	30	180
Parkmerced Housing	San Francisco, Cal.	2394	1703
Gulf Port Mortgage Co	Galena Park, Texas	39	200
			727
			50
			1287
			108
			293

In a few short years, more than 33,000 Kitchen Maid kitchens have been sold for housing projects of practically all types—everywhere. This exceptional experience in advanced cabinetry design and low cost composite construction should be of great value to you on any war housing job. It's yours for the asking. Just write The Kitchen Maid Corp., 639 Snowden Street, Andrews, Indiana.



PUBLIC HOUSING

(Continued from page 55)

munities. These projects set the picture of public housing in many minds; latterly the war housing has set another picture. It is important, however, to differentiate between the policies of these two quite definitely emergency agencies and the policies of the USHA in the more nearly normal period of 1937-39.

Contrary to what is implied in Dean Hudnut's article, from the start the Housing Division and its successor, the USHA, recognized the need for a close coordination with the city plan (where such has existed), the need of available cultural centers (including schools and places of worship), of places of amusement, and of local stores. In many PWA projects these features, when lacking in the existing neighborhood, were made part of the project, except that the government built no churches (as the Dean would seem to desire) and, for reasons which should be obvious (how many churches for how many denominations, or for what favored "segregated" groups?). To the policy of erecting shops and places of amusement there was opposition from commercial sources, so much so that in the Act of 1937 there was no provision for the building of them, and it seems safe to say none have been built into projects built under the Act—a necessary compromise with strongly entrenched public opinion, for better or worse.

It was, however, the policy of USHA and is the policy of FPHA (its successor since early in 1942) to insist on sites where all previously mentioned community facilities are or can be made available on off-site locations. If existing schools have not been readily accessible from the site then a site on the project has been required for use by the School Board. Thus the project is integrated with the surrounding neighborhood. Facilities for community recreation, indoors as well as outdoors, assembly rooms, and in some cases space for local clinics, have been provided. Convenient access to work and the centers of urban activities have also been required. No doubt local pressure has at times been great enough to cause some compromises, but they have little or no bearing on the discussion of national policies.

Since the ownership and maintenance of the entire housing property is a responsibility of the local community, the question raised by the Dean of whether playgrounds are owned and maintained by the park authority or by the housing authority is one for local determination, just as is the use of public school playgrounds by the general public. The prevailing policy has been to pass the maintenance of playgrounds over to the park authority—if they would accept it. The playgrounds are normally within the project for the good and sufficient reason that there the children will not have to cross traffic thoroughfares to get to them. If other playgrounds are needed in the same general neighborhood, they should of course be similarly located for children in the surrounding houses—for "segregated" groups so long, but only so long, as our population is composed of such groups.

What more rational and democratic arrangement would the Dean suggest? Viewed in the light of the facts, public housing seems to hold great promise for raising a large mass of our population to higher levels of efficiency, of contentment and loyal citizenship. With vigilance, this promise can be realized.

SOUND-CONDITIONED" CEILINGS WILL BE A **MUST** IN TOMORROW'S SCHEME OF THINGS



SABINITE "M"

A New Acoustical Plaster Finish

In planning for the wide awake world ahead—sound-correction, beauty and fire protection are made a part of the original conception . . . not patched on afterward—otherwise the structure is "dated" as old-fashioned.

Hard-surfaced ceilings with uncontrolled sound bouncing around are fast becoming a thing of the past . . .

Sabinite* "M" has upset old ideas and set up new standards. Why? Because it goes on like any other plaster finish . . . lends itself to any architectural design . . . blends

with any decorative scheme . . . requires no special planning, construction or application. Any skilled plasterer can put it on.

Sabinite "M" offers a practical, low cost solution for modern sound-quieting. Its smooth-textured surface absorbs a uniformly high percentage of sound. It is high in light reflectivity. May be had in prepared colors or decorated to suit.

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**FOR TOMORROW'S
"SOUND-CONDITIONED"
CEILINGS**

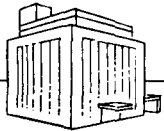
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a war plant for **PRODUCTION**



a hospital for **EFFICIENCY**



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FIVE STANDARD WIREMOLD SURFACE RACEWAY SYSTEMS provide the most practical method of rewiring older buildings for modern lighting and convenience...the *best* way to wire many NEW buildings where later changes may be expected. Wiremold is an accepted specification for nurses' call and signal systems in modern hospitals, for public address wiring in schools, for fire and police call systems.

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PLUGMOLD, the Wiremold Plug-in-anywhere Wiring System places outlets exactly where needed, in any desired number, with ability to add or relocate after installation. Sizes for both industrial and commercial or home use.

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WIREMOLD FLUORESCENT LIGHTING EQUIPMENT, in conjunction with Wiremold Raceways, solves wiring problems in functional lighting design.

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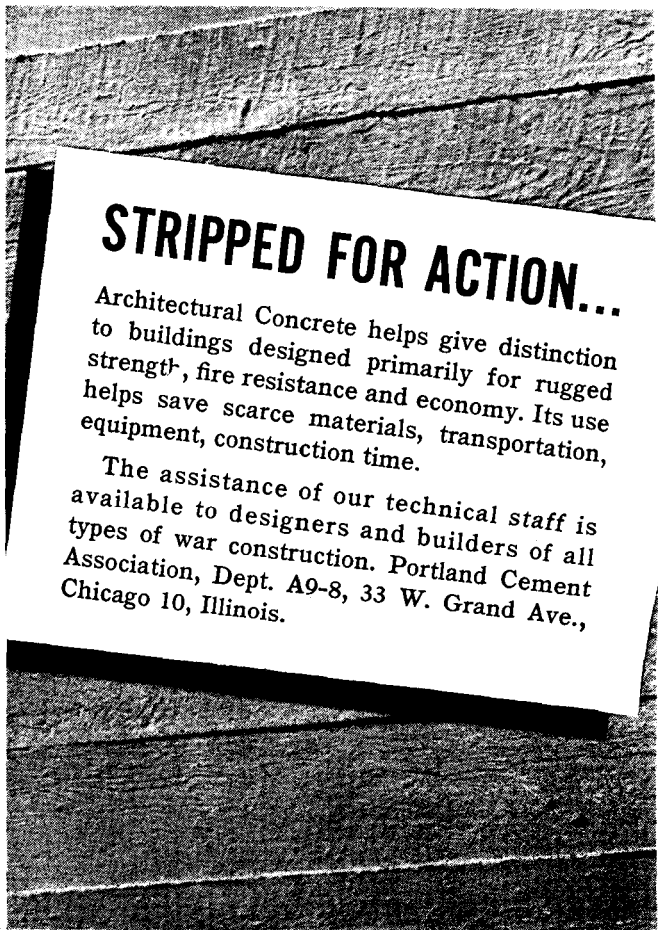
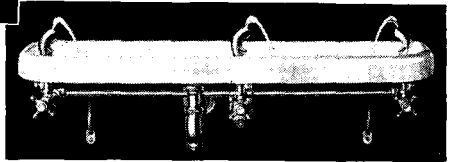
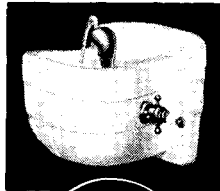
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**Halsey
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Back to school has gone young America, safe in the teachings of the American way —and safe in health because of Halsey Taylors. In most of the prominent schools in the country these modern drinking fountains are the preferred installations. Their trouble-free, health-promoting features make them the logical choice of school boards and architects the country over.

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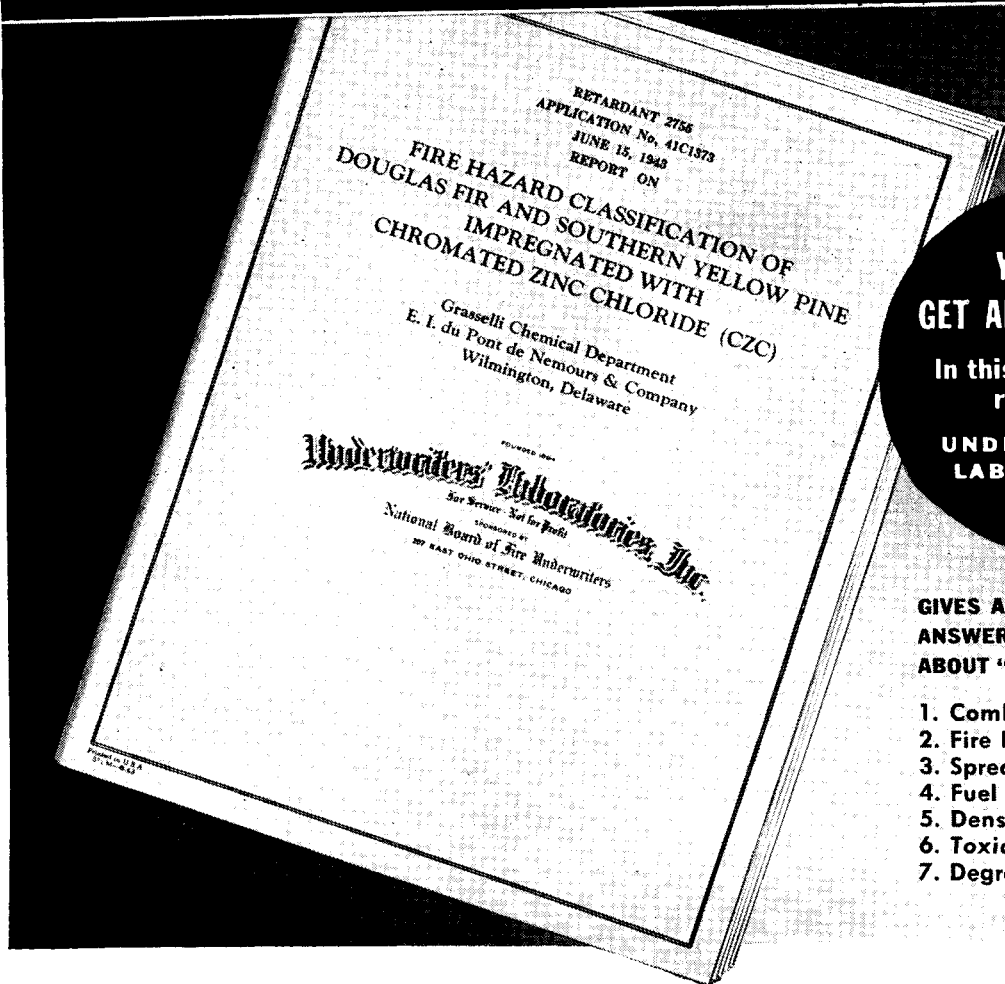


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Architectural Concrete helps give distinction to buildings designed primarily for rugged strength, fire resistance and economy. Its use helps save scarce materials, transportation, equipment, construction time.

The assistance of our technical staff is available to designers and builders of all types of war construction. Portland Cement Association, Dept. A9-8, 33 W. Grand Ave., Chicago 10, Illinois.

Report to Architects on the FIRE RESISTANCE OF "CZC"-TREATED WOOD



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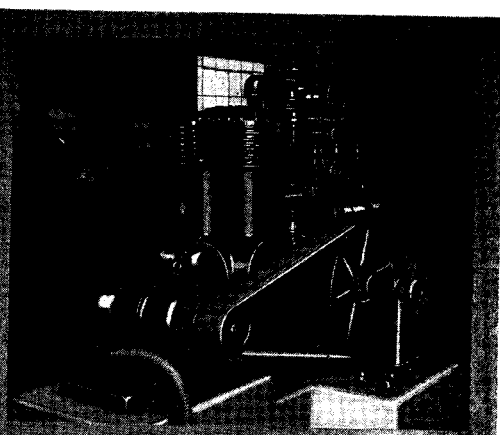
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Please send me the Underwriters' Laboratories, Inc., report on "CZC"-treated wood.

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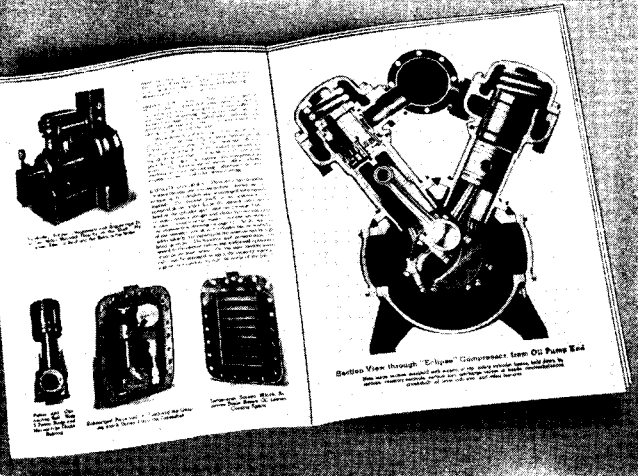


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Ask for those covering the cooling work in which you are interested—whether quick-freezing, industrial processes, marine service, low-temperature testing, air conditioning, ice making, cold storage, or other special services.

Also keep in touch with your nearest Frick Branch or Distributor for expert engineering assistance. Ninety years' experience is back of our recommendations: let us hear from you.



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The administration of our huge Military Forces is big business. Large staffs of officers and men are needed to do the mountainous "paper work", and their headquarters are BUILDINGS, at every base throughout the nation. Much of the hardware required for doors, windows, and cabinets is supplied by Stanley.

Stanley's already large production facilities have been stepped up, but the demand for this, and other war requirements is unceasing. The Stanley Works, New Britain, Connecticut.

STANLEY 
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ASK YOUR DISTRIBUTOR OR WRITE
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Important news ABOUT THE

FUTURE FOR EVERY ARCHITECT IN AMERICA!

The outstanding response to the Celotex "Miracle Home" campaign shows that people are planning now for post-war homes!

THE STORY goes back to 1941 when the "Miracle Home" Idea was born. The more we studied it the more we were convinced that we had a real message that was in key with sound architectural thinking, in tune with public trends.

We consulted with many of the well-known architects and decided to present this message in our national advertising.

Were we prepared for the deluge of inquiries? Frankly, no! We were never so (pleasantly) surprised in our lives!

Apparently, the decision to tell the

people about the "Miracle Home" was a good one. We certainly touched a tender spot in America's heart . . . its faith in a future of new, more livable homes that you and thousands of other architects will design. To that end, we are writing everybody who requests more detailed information, to consult his local architect.

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Another thing! Every "Miracle Home" advertisement urges readers to buy War Bonds today and earmark them as a down payment on a new-built home, tomorrow.

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Yes sir! It certainly looks like there's a great day coming!



WRITE US
for a copy of the
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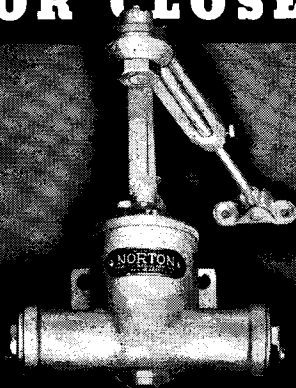
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Careful maintenance and periodic check-ups will add even more years of service to your long-life Norton Door Closers. Write for copy of the new Norton War-time Catalog No. 22W which includes repair parts listings and essential maintenance information.

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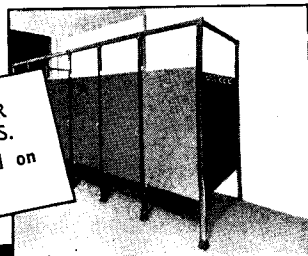
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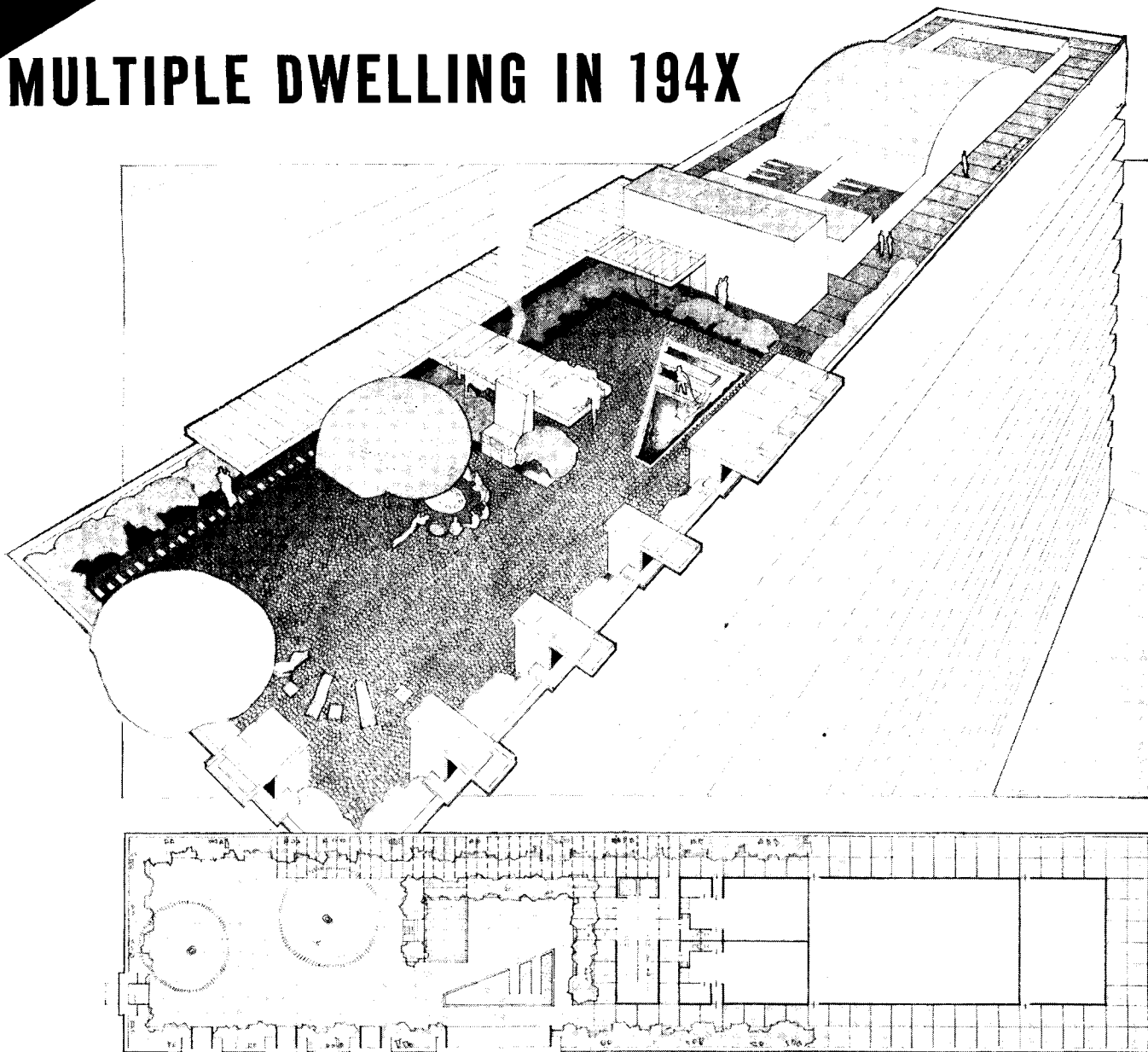


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● How to get the most use from a limited apartment house area is suggested in this original design by architect Harwell Hamilton Harris, winner of the Pittsburgh Plate Glass competition for two successive years, and past winner of the American Institute of Architects award.

Instead of being lost, the surface of the plot on which the building stands is transferred to the top of the structure — to take advantage of the view, the air currents and the privacy which the height provides. Trees, grass, shaded walks and pergolas are attractive features. Included are places for picnicking and for sun-bathing, with dressing rooms and showers, game courts, a play-yard for children

and a wading pool. Individual areas, however, are skilfully separated, so that one person's fun is not his neighbor's annoyance.

This latest in a series of current architectural conceptions provides still another variant on the practical utilization of valuable roof space. It is a project for which Barrett Specification* Roofs are particularly well suited. At Rockefeller Center's famous roof gardens and elsewhere, Barrett Roofs have already proved their adaptability for this advanced type of construction. Standard for flat roof construction since 1854, Barrett coal-tar pitch and felt roofs are destined to play an even more important part in post-war planning.

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Tens of thousands of these plywood Victory huts are being used by the Army.

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*provide warmer, wind-tight
homes for our soldiers!*

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● The interior of one of the Victory huts built by Texas Pre-fabricated House & Tent Co., Dallas. Walls, roof, awning flaps—all are Exterior-type Douglas Fir Plywood.

● (Right) Another style of hut, especially adapted for use in all climates. Each contains some 1400 sq. ft. of Douglas Fir Plywood. Plan now to make extensive use of Douglas Fir Plywood in YOUR post-war building.



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VICTORY**
the Douglas Fir Plywood Industry is devoting its entire capacity to war production. We know this program has your approval.

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Real Lumber
**MADE LARGER, LIGHTER
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STRONGER**

**SEND FOR FREE WAR
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Scores of actual photographs show how Douglas Fir Plywood is serving on every battle front and on the home front. Write for your copy today. Douglas Fir Plywood Association, Tacoma, Washington.



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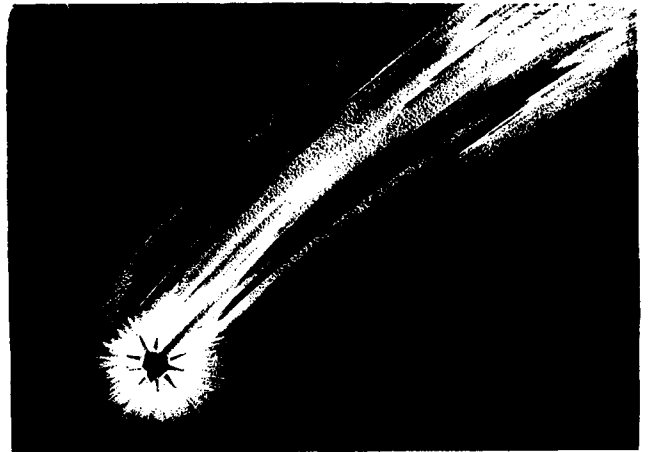
WHEN VICTORY COMES, we'll solve YOURS.

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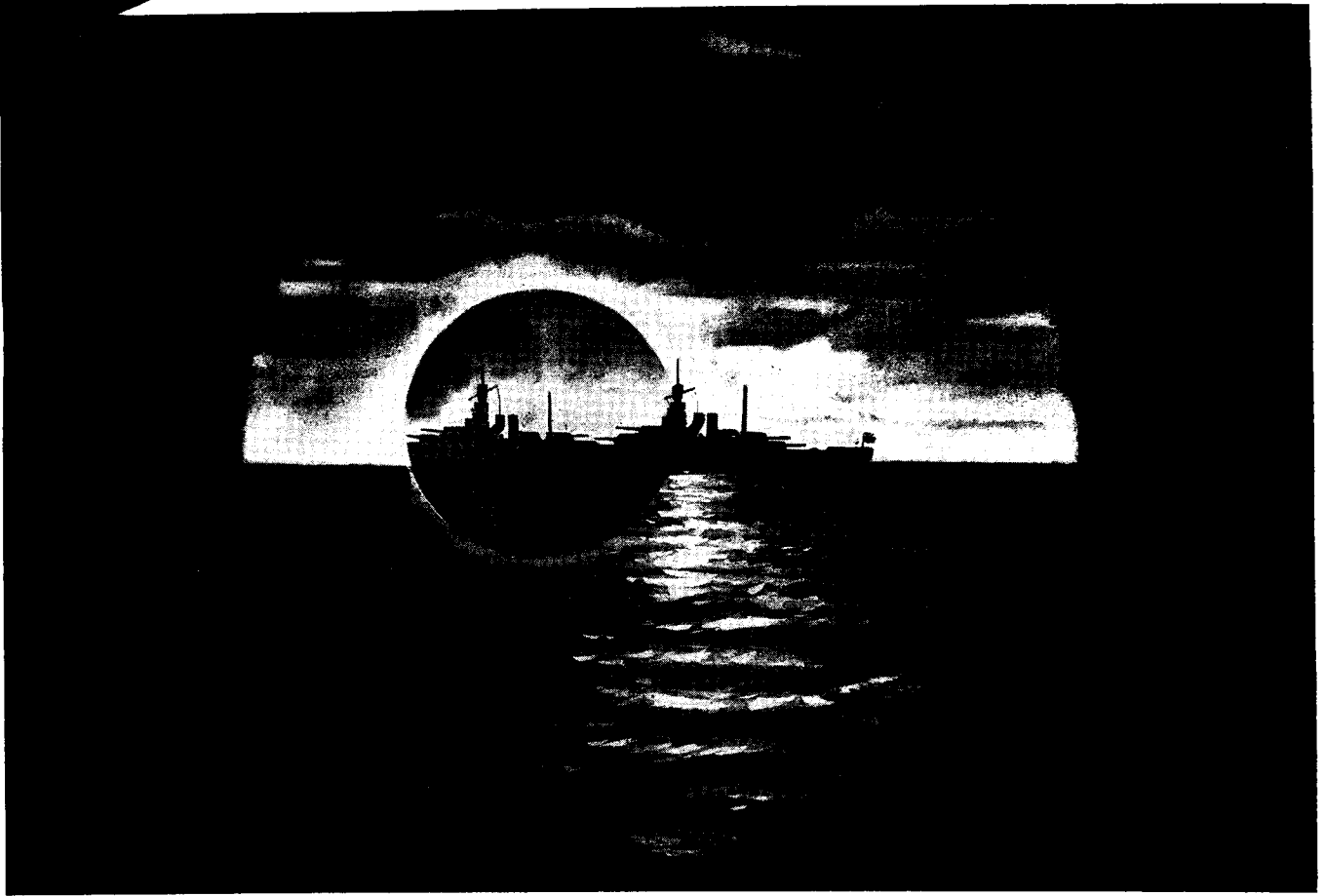
All-important is to be prepared to put out fires that can and do start . . . immediately, automatically, *at the source!* Expert fire-fighters will tell you that no system will accomplish this more surely—more

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Owners of fifty billion dollars worth of property say it's the best guardian of production and storage. Call in a nearby Grinnell engineer for advice. Grinnell Company, Inc., Executive Offices, Providence, R. I. Branch offices in principal cities of the United States and Canada.

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Automatic Sprinkler Fire Protection



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Inspection weeds out most of the faulty pieces, but

dry air is the best inspector. It prevents rejects and steps up all-important production.

Naval requirements set 30% relative humidity as a moisture ceiling. Skilled Trane Air Engineers have translated these requirements into weather battle plans, from which have been produced Trane Air Conditioning Equipment to exactly meet the requirements of the job.

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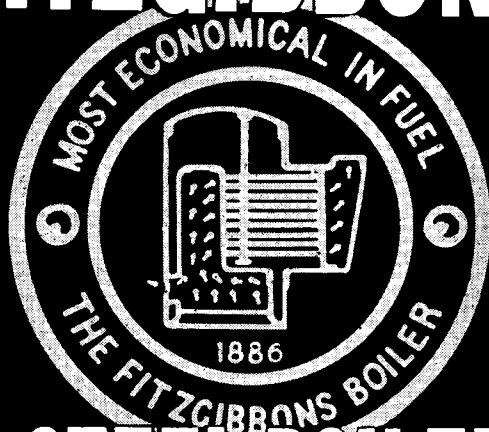


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Fairchild needs aeronautical, structural, mechanical and electrical engineers.

It needs architects, draftsmen, machine designers and others similarly qualified.

These positions are highly interesting, confidential, have to do with the unique development of military cargo-carrying

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Candidates should have at least a high school education and 5 years of actual engineering or drafting experience. Age range 28 to 50. They must be American citizens. Those now employed at their highest skills in war work will not be considered.

In replying please send photo (any kind) and give details of experience, education and general background. Replies will be treated confidentially.

Address: Engineering Department 2, Fairchild Aircraft, Hagerstown, Md.

An Engineer's Comment

On Post-War Factors Affecting OIL BURNING SYSTEMS



Charles S. Leopold, well known Consulting Engineer of Philadelphia, whose firm has handled the heating, ventilating and air conditioning on many outstanding buildings, including the Pentagon Building, Arlington, Va., the Bankers Life Building, Des Moines, Iowa, the Hotel Warwick and Stern & Co. Store in Philadelphia, and approximately fifty theaters for Warner Brothers. His long list of diverse projects naturally included all common fuels and methods of firing. In some of the ones which used oil, Petro Systems were installed. More important, however, is the fact that his wide experience and current study leads Mr. Leopold to make this comment:

"Following World War 1, there was considerable speculation as to long-range availability of fuel oil. Opinions varied from five to several hundred years . . . we now know that it was at least twenty-five years. Following the successful conclusion of World War 2, doubtless this point will again be discussed. In view of the many advantages of liquid fuel, it is even possible that other liquid fuel may be developed to supplement any deficiencies that may develop in the supply of natural petroleum. Because of the world-wide ramifications of the problem, prophecy at this time is relatively futile.

"Since World War 1 it has been good practice to install boilers of proper setting heights and furnace volumes for the combustion of bituminous coal by stokers and then to take advantage of the cleanliness, convenience, and labor saving features of oil where economically justified. This practice will probably continue and, in view of the war experience, be even more widely adopted."

Current restrictions on all petroleum consumption are a war necessity, but economy of operation will always be a business necessity.

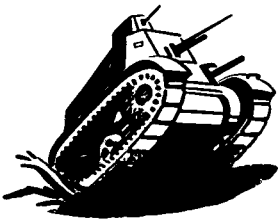
Petro Oil Burning Systems are designed for (and deliver) dependably consistent high firing efficiencies in ratio to the oil input. That's fuel economy. They are built to provide long term service with minimum upkeep expense.

These are basic operating economies to which are added the labor saving and other attractions mentioned by Mr. Leopold.

The rapid increase of preference for Petro Systems in recent pre-war years is impressive evidence, if not proof, that users and specifiers have growing recognition of the practical and permanent values in Petro Systems. It is likewise an assurance that Petro will be the proper solution for post-war oil firing problems.

OIL IS AMMUNITION USE IT WISELY

Full data on Petro Industrial Burners are in Sweet's—*or Domestic Engineering*—catalog files, or we will gladly send copies on request.



PETRO
Cuts Steam Costs

PETROLEUM HEAT AND POWER COMPANY

STAMFORD

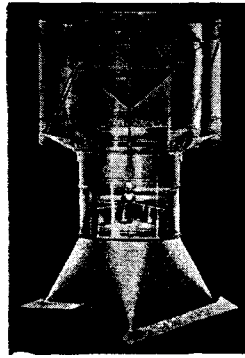
—Makers of good Oil Burning Equipment since 1903—

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Wherever heat may be localized to an unusual degree, BURT Free-Flow Fans are indicated. They move many times the air that gravity ventilators will handle. Operation is always positive and efficient in all weather—always controllable. Let BURT's forty years of engineering experience help solve your ventilating problems. There's a BURT ventilator for every type of industrial, commercial and residential installation.

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Burt Engineers
are glad to
help on plans

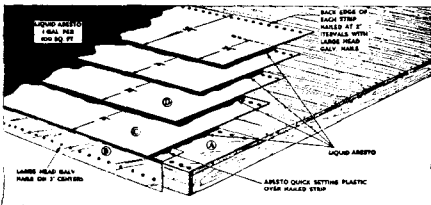
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Abesto for new built-up roofs saves time because it eliminates the use of hot kettles and requires no hot mopping. It saves money because plain roll roofing can be used and less labor is required for application.

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Abesto roofs are better roofs, proven by numerous installations which have given satisfactory service for many years.

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- Two rolls of smooth surface roll roofing. (35, 45, or 55 lb. weights.)
- Two gallons of liquid ABESTO.
- Two pounds of galvanized large headed roofing nails (length of nails to be sufficient to anchor securely into sheathing.)

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for Permanent Weather Proofing



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ARROW-HART & HEGEMAN ELECTRIC COMPANY, HARTFORD, CONN.



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Electric Door*

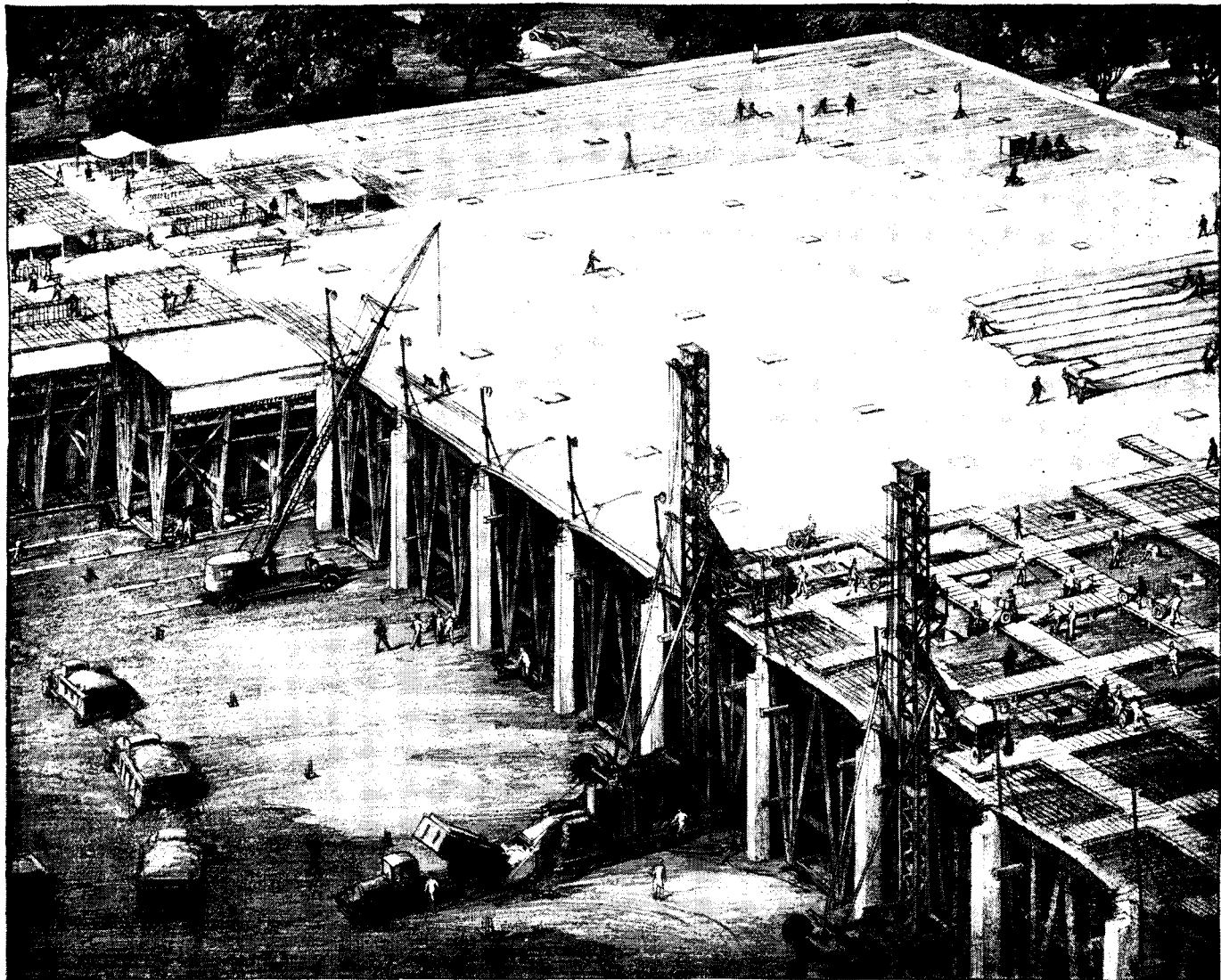
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Tomorrow's design . . . available
now for lasting service



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World's Largest Manufacturer of Automatic Folding Doors



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EARLIER OCCUPANCY IN
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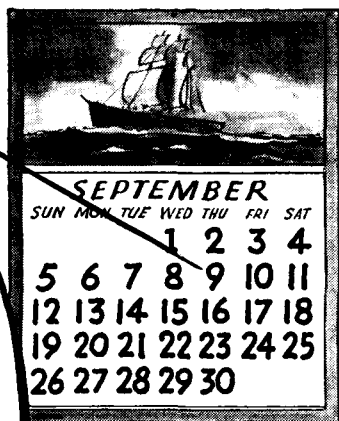
Similar speed and economy are also obtained in multi-story structures . . . in fact, wherever repetitive use of forms is possible, and it usually is, with a little ingenuity. The net result is *profitable* speed . . . faster completion at lower, instead of higher cost. Sound planning utilizes 'Incor' 24-Hour Cement in the superstructure . . . in other parts of the building, Lone Star Cement may be more economical. Selective use of these two high quality Portland cements enables the architect to save his client money as well as time. In planning your next project, specify 'Incor'* 24-Hour Cement and Lone Star Cement for better quality concrete . . . maximum speed at minimum cost.

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9TH**



Your Bond Selling Responsibilities Double!

Starting September 9th, your Government will conduct the greatest drive for dollars from individuals in the history of the world—the 3rd War Loan.

This money, to finance the invasion phase of the war, must come in large part from individuals on payrolls.

Right here's where YOUR bond selling responsibilities DOUBLE!

For this extra money must be raised *in addition* to keeping the already established Pay Roll Allotment Plan steadily climbing. At the same time, every individual on Pay Roll Allotment must be urged to dig deep into his pocket to buy *extra* bonds, in order to play his full part in the 3rd War Loan.

Your now *doubled duties* call for these two steps:

1. If you are in charge of your Pay Roll Plan, check up on it at once—or see that whoever is in charge, does so. See that it is hitting on all cylinders—and *keep it climbing!* Sharply

increased Pay Roll percentages are the best warranty of sufficient post war purchasing power to keep the nation's plants (*and yours*) busy.

2. In the 3rd War Loan, every individual on the Pay Roll Plan will be asked to put an *extra two weeks salary* into War Bonds—over and above his regular allotment. Appoint yourself as one of the salesmen—and see that this sales force has every opportunity to do a real selling job. The sale of these *extra* bonds cuts the inflationary gap and builds added post-war purchasing power.

Financing this war is a tremendous task—but 130,000,000 Americans are going to see it through 100%! This is their own best *individual* opportunity to share in winning the war. The more frequently and more intelligently this sales story is told, the better the average citizen can be made to understand the wisdom of turning every available loose dollar into the finest and safest investment in the world—United States War Bonds.

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This space is a contribution to victory today and sound business tomorrow by

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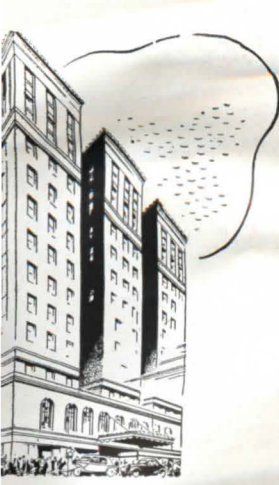
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