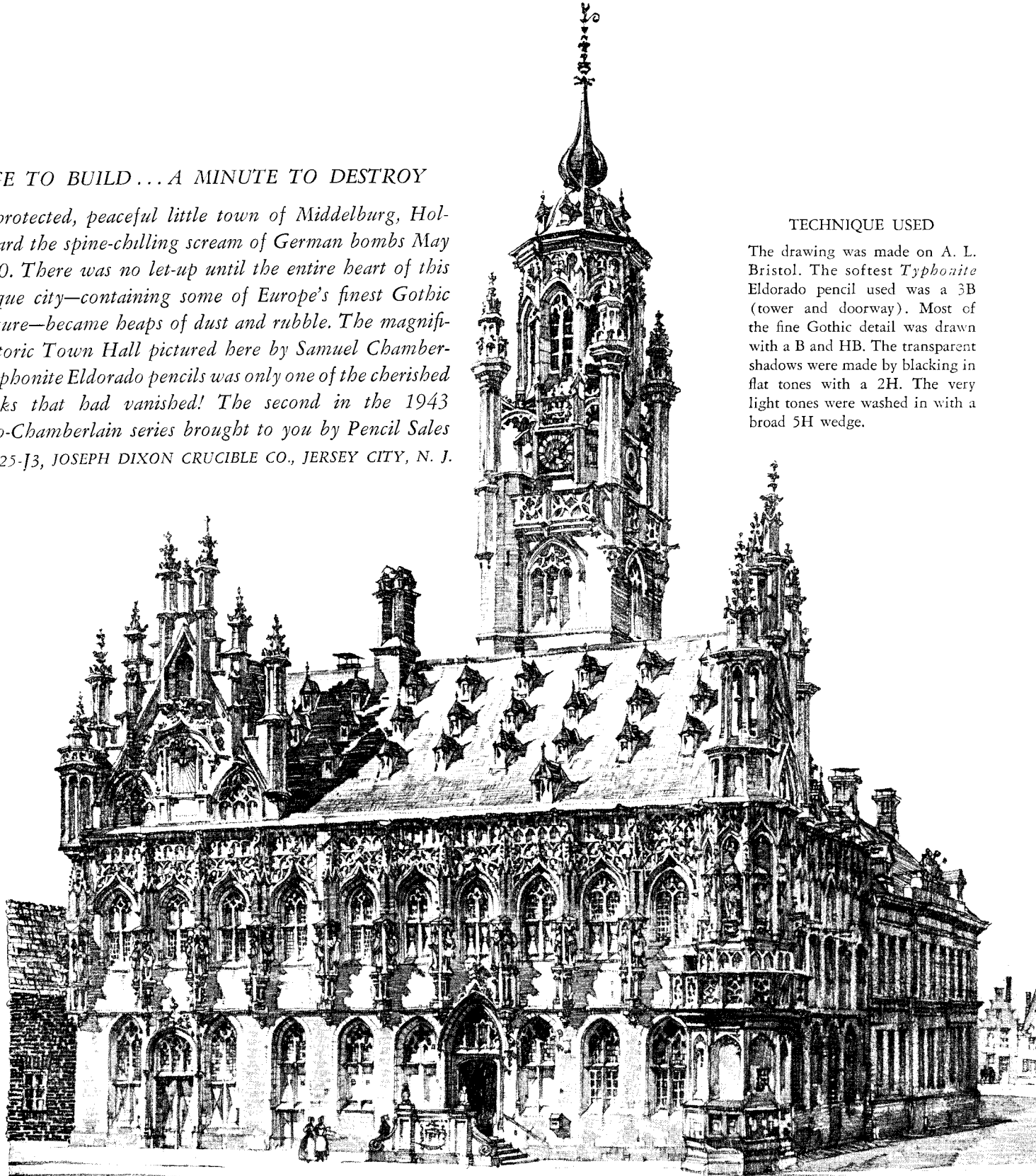


AN AGE TO BUILD... A MINUTE TO DESTROY

The unprotected, peaceful little town of Middelburg, Holland, heard the spine-chilling scream of German bombs May 7, 1940. There was no let-up until the entire heart of this picturesque city—containing some of Europe's finest Gothic architecture—became heaps of dust and rubble. The magnificent historic Town Hall pictured here by Samuel Chamberlain's Typhonite Eldorado pencils was only one of the cherished landmarks that had vanished! The second in the 1943 Eldorado-Chamberlain series brought to you by Pencil Sales Dept. 225-J3, JOSEPH DIXON CRUCIBLE CO., JERSEY CITY, N. J.

TECHNIQUE USED

The drawing was made on A. L. Bristol. The softest Typhonite Eldorado pencil used was a 3B (tower and doorway). Most of the fine Gothic detail was drawn with a B and HB. The transparent shadows were made by blacking in flat tones with a 2H. The very light tones were washed in with a broad 5H wedge.

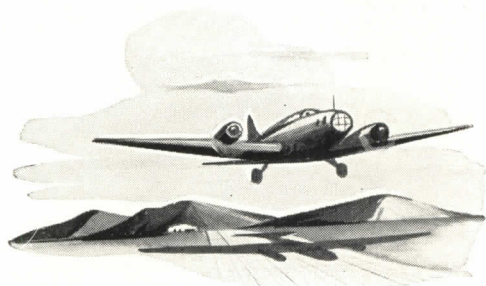
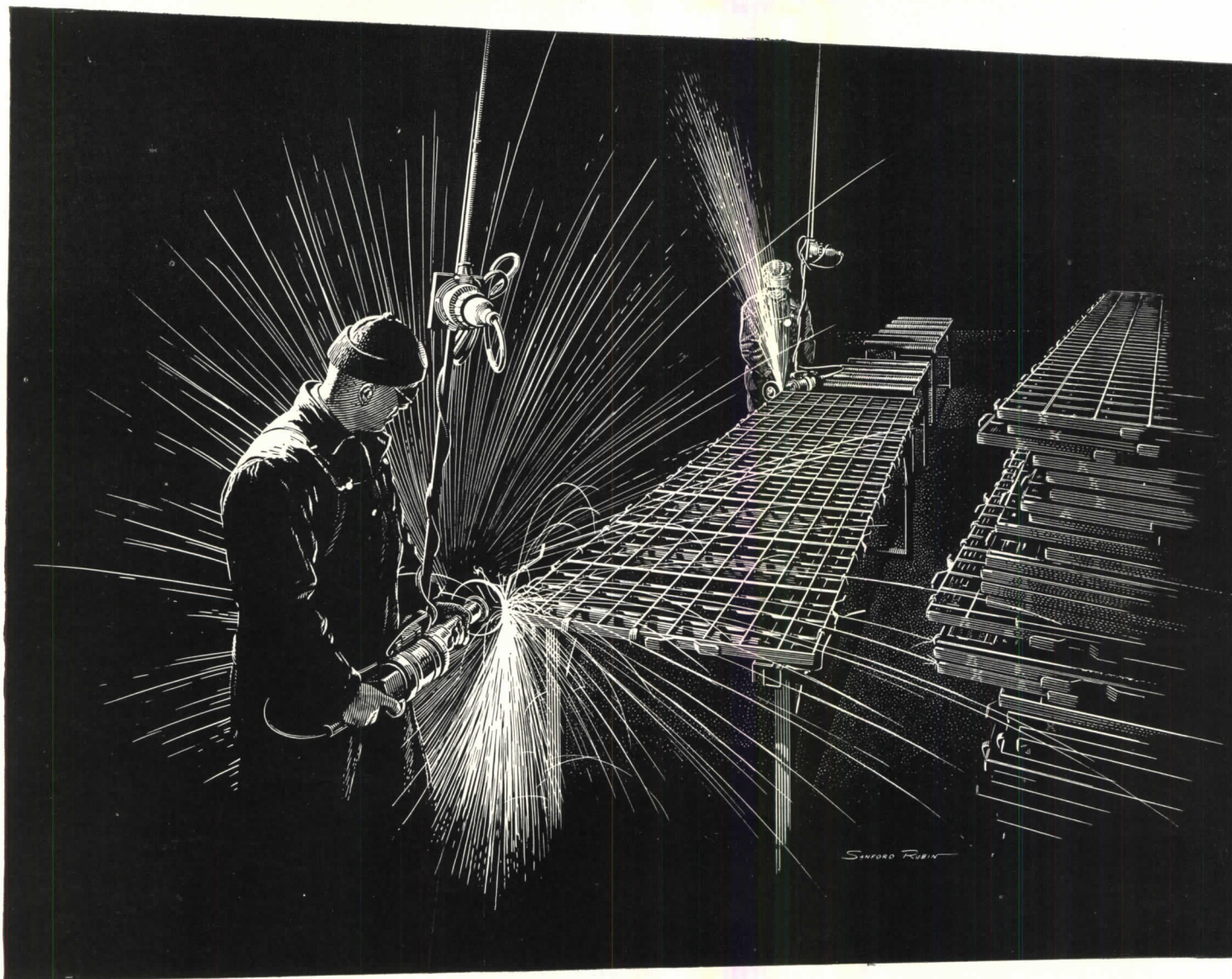


Samuel Chamberlain
WITH DIXON'S TYPHONITE ELDORADO

THE TOWN HALL MIDDELBURG, HOLLAND

TYPHONITE
ELDORADO

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Portable Grinders are used to "smooth up" unfinished sash. To meet the war's demand for more speed, Mesker converted from 60 to 180-cycle current. Result: grinders have been speeded up to a two-mile-a-minute pace...for smoother finishes, in less time. Important in making airplane runways today... windows tomorrow!

Mesker Engineers...the country over..

YESTERDAY AND TOMORROW

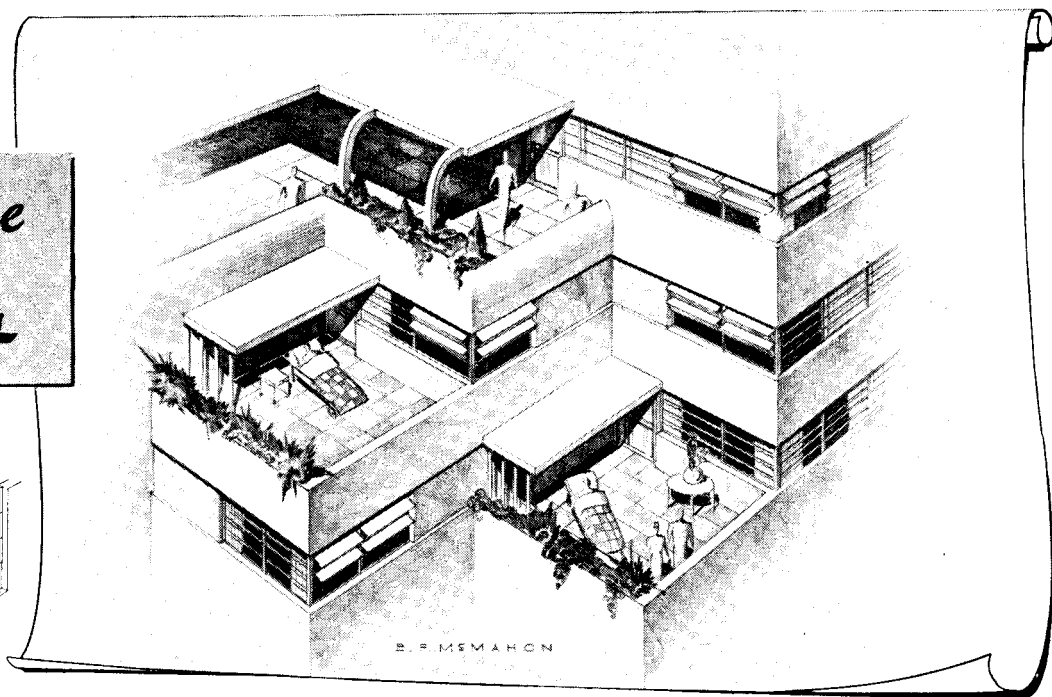
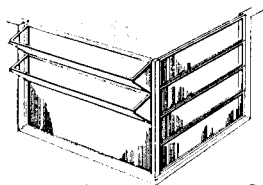
CASEMENT WINDOWS • MONUMENTAL WINDOWS • INDUSTRIAL WINDOWS • SCREENS • INDUSTRIAL DOORS • DETENTION WINDOWS • REINFORCING MESH GRATING... plus ... tomorrow ... some other interesting new products!

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S D E S I G N E D T O H E L P Y O U T O M O R R O W

*A Feature
IN FUTURE
Hospitals*



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Windows ARE cheaper than walls. Architect McMahon recognized this when he designed for us his Hospital of the Future, illustrated above. Properly weather-conditioned, good windows insulate just as efficiently as walls. In addition, properly distributed . . . in the designing stage . . . they provide abundant natural light and *low-cost* ventilation. Hospital administrators tell us they want a *maximum* of these advantages in future windows. It's no secret that for some months we have been working toward these very things. Today, all-out on war production, we are very mindful of the future . . . ours and *yours*. What's more, we are trying to DO something about it. New facilities, new IDEAS are being born at Mesker Brothers much, much faster than we can tell you about them. This much we do want to suggest: for the *Windows Of The Future*, watch "the windows WITH a future" . . . *Mesker Metal Windows*.

Do You Have Your "Red Book of Steel Sash?"

If not, write for this comprehensive volume, personalized with your name. Covers metal windows from A to Z . . . ideal to have at your elbow when working up specifications, details, etc., on post-war projects. No obligation.

Consult Your Mesker Engineer Now!

His job is to help you with your war-time construction problems . . . involving windows or whistles or whirligigs . . . to assist on post-war projects requiring the kind of windows only Mesker can produce. Consult him NOW.

In War and Peace . . . at your service!

Brothers

ST. LOUIS, MISSOURI, U. S. A.

TODAY

STEEL AMMUNITION CASES · PRE-FABRICATED STEEL AIRPLANE RUNWAYS · OIL AND WATER STORAGE TANKS FOR THE NAVY'S FIGHTING SHIPS . . . *other products* which necessarily must remain military secrets.

The **Biggest** Construction Volume Today

is in *People's heads*

Although there are no men, materials or time to spare for any but essential structures today, there's probably more *mental* building going on than ever before.

Homes, plants, schools, hospitals, and churches, deferred till peacetime, are now taking shape in people's heads—for they are an essential part of the pattern of living America is fighting to preserve.

In connection with this planning, Radiant Heating is receiving a lot of attention, and is the source of many questions. These can best be answered in terms of actual experience, and Byers has a large reservoir of such reports from users. For instance:

... The man who reported that Radiant Heating saved his furniture; his dogs found the Radiant-Heated floor more comfortable to sleep on.

... The man who "never tired" of searching for the cold-spots present in all other houses . . . but absent in his.

... The young couple who luxuriated in the opportunity, provided by Radiant Heating, of doffing shoes as well as wraps at their front door.

... The gloating householder whose friends had fuel bills of \$20 and \$22, while his (in a comparable house, Radiant Heated) was only \$13.13.

... The man whose wife "found to her amazement she had to turn the thermostat down day after day . . . we now find a 60 degree setting most favorable."

... The employer who reported (1) fewer creaking joints among old employees, and (2) lowered clothes-pressing bills, as two of

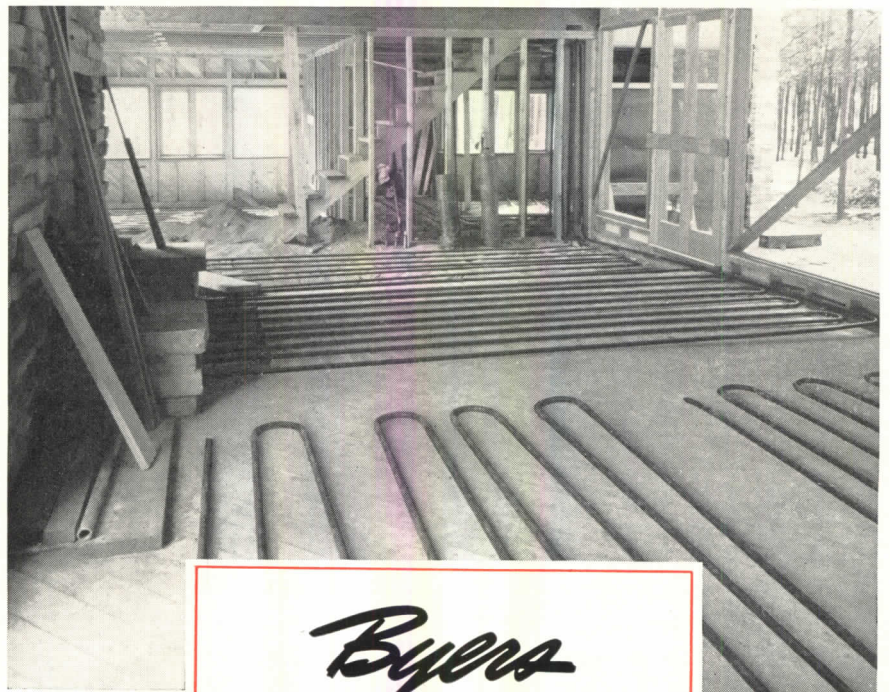
many dividends from Radiant Heating.

These are not cited as typical, but merely to suggest the range and variety of the case histories in file. As a help to building counsellors who are being asked about Radiant Heating, a "Question and Answer" section is included in our technical bulletin, "Byers Wrought Iron for Radiant Heating." Also included is information on figuring and installing jobs, and data on

the thermal qualities, corrosion resistance, and workability of wrought iron. Wrought Iron has become synonymous with Radiant Heating because of its unusual combination of these essential qualities. May we send you a bulletin?

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CORROSION COSTS YOU MORE THAN WROUGHT IRON

ARCHITECTURAL

RECORD

COMBINED WITH AMERICAN ARCHITECT AND ARCHITECTURE

VOL. 93

MARCH 1943

No. 3

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NEXT MONTH

POSTWAR planning in England has naturally developed with greater speed than in America. In the determination of policies and programs, British architects have taken an active part. British experience and thinking is valuable in the formulation of plans for America, because both of points of similarity and points of difference. In the April issue, Douglas Haskell continues his summary and interpretation of British planning. . . . Plastics is looked upon as one of our fastest-growing industries, and its products will play an increasingly important part in the development of building materials. An understanding of what plastics are, and their definite applications in the building field is the subject of a clear-cut, informative, down-to-cases article written for the architect-engineer who is searching for facts rather than romantic generalities. . . . Factory buildings are scheduled to account for about half of the 1943 building volume in America. Important considerations of factory design, and case studies of outstanding industrial buildings will be the subject of a special study presented in our April issue. . . . Our Building Types Study will be devoted to considerations of office and loft buildings. Ely Jacques Kahn, AIA, speaks from experience of the probabilities and possibilities in this field. His article is analytical, critical and stimulatingly constructive. . . . New developments in prefabrication are shown in the system designed and demonstrated by Gropius and Wachsmann. The structural system is both ingenious and flexible, and has applications in many fields.



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This bulletin provides:

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- ✓ A simplified reference chart which shows the proper flush valve combinations to use to comply with War Department specifications.

THE IMPERIAL BRASS MFG. CO.
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*Write for your copy, or see the 1943 Sweet's
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WASHINGTON NEWS

By J. MAXWELL DICKEY

Building Construction and CMP • Further Tightening of L-41 Provisions • New War Housing Construction Standards • New Construction Application Form • WPB and NHA Housing Regulations • Extension of Title VI • OPA Loosens up on Rental Housing Sales • Mechanical Refrigerators in War Housing • Postwar Construction Planning • WPB Construction Report

CONTROLLED Materials Plan Regulation No. 6 brings the construction business tightly within the restrictions under CMP. The new regulation constitutes a partial revision of WPB's procedure for authorizing delivery of construction materials. Builders will have to apply to a claimant agency under CMP for an allotment of controlled materials and for authority to purchase other materials and fabricated products. The various claimant agencies openly admit that they will carefully analyze all projects before sponsoring them, as each such agency is to be limited in its total allotments.

Construction directly connected with military operations will be sponsored by that branch of the service for which the project is to be performed. War housing will be handled through NHA as its sponsoring claimant agency. WPB's Facilities Bureau has charge of assigning each construction project to a claimant agency.

Application for allotments of controlled materials are to be made on several CMP forms. Along with the application under CMP there must be an accompanying authorization for the commencement of the work. Inasmuch as the list of controlled materials includes many necessary items used in construction, such as structural steel, wire, nails, little construction of new projects can be undertaken outside of CMP. Under CMP the allotment received by a builder will carry a priority rating which is to be used for purchasing all materials that are not under the Plan and all fabricated items which may be used in the construction project.

A fundamental shift of emphasis in WPB from controlling materials to a coordinated scheduling of production including all types will affect architects and engineers alike. Because of various shortages which have created war production bottlenecks, WPB has issued a list of critical components. The list of these critical components now numbers over 200 products. Many

items are included which have been "musts" for architectural designing work. Some of these listed components cannot now be ordered without specific permission from WPB. Officials in WPB believe that the list of these critical component parts will grow as the war progresses and war needs increase.

Further Tightening of L-41 Provisions

In answer to the inquiries which have been flooding WPB, a new amendment to L-41 was issued which clarifies the difference between maintenance and repair and new construction as far as the application of this limitation order is concerned. The new amendment specifically designates that where a single job is partly maintenance and repair and partly new construction, the whole project will be

considered as new construction and will become subject to the provisions of L-41. The amendment also reduces to \$200 as the cost maximum for new construction which may be undertaken without specific authority. All provisions of the new amendment apply to private housing as well as commercial construction.

The new action defines maintenance and repair work that is necessary to keep a structure in "sound condition." It does not include any building operation which would involve either a change in design or a structural alteration. The cost of construction as now defined in L-41 has been narrowed to exclude all financing and insurance charges as elements of cost. Construction may be begun without specific authority from WPB if the following cost limits are kept: \$200 for residential; \$1,000 for multiple residential; \$1,000 for agricultural; \$5,000 for industrial; and \$1,000 for "other restricted" construction not otherwise classified.

(continued on page 10)



"Now in case of an air-raid, you will all take shelter in the nearest steel-frame apartment house."

—Drawn for the RECORD by Alan Dunn

What every Architect

— AND THE SHAPE

(Reading time 6 minutes)

THIS IS AN ODD sort of advertisement.

Its first purpose is to unsell you on some ideas that have been oversold. In brief, it seeks to point out that plastics are *not* materials from some mysteriously scientific Never-Never land that are going to revolutionize the building industry . . . singlehanded . . . or overnight.

Next it aims to give you a brief, accurate, over-all picture of what these products of modern chemistry really are . . . and of how they *can* be expected to help you work out exciting new solutions to many an age-old architectural problem.



To begin with, plastics is one of those big, vague words that cover a much greater multitude of materials than the average person realizes. Even when you eliminate glass, rubber and potter's clay—which are plastics in that they can be pushed into almost any desired shape and made to hold that shape—you still have a bewildering array of widely varied synthetic materials commonly accepted as plastics.

To help get an ordered picture of those materials, they can be grouped into four main classes according to their sources: (1) natural resins such as shellac, rosin, bitumen; (2) protein substances such as soy bean and casein; (3) cellulose derivatives such as cellulose nitrate and cellulose acetate; (4) synthetic resins such as the phenolics, polystyrene, the melamines and the vinyl acetals which are produced from such basic substances as coal, petroleum, air and water.

Practically all modern plastics fall within the last two groups, the most numerous, most versatile and most promising of the four.



Here is another distinction which helps bring order out of the surrealist chaos of chemical names and terms that first confronts the seeker after plastics knowledge and understanding: All plastics are divided into two classes according to their reaction to heat.

One group, the thermoplastics, are heat-softening. That is, they will soften again after they are formed into final shape if they are again exposed to sufficient heat—from 140° to over 300° F., depending on the material.

The other class, the thermosetting materials, are heat-hardening. Under heat and pressure they polymerize or harden into a dense, infusible form after which they cannot be melted or softened with further heat or pressure.

To the architect, this is obviously an important distinction. It also has much to do with the ways in which specific materials are fabricated into usable forms.



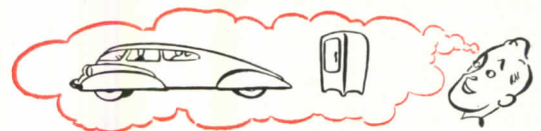
A third way of classifying plastics is by the forms in which they are used: (1) as sheets, rods, tubes and similar standard shapes; (2) as molding compounds; (3) as liquid or powdered resins for impregnating, bonding or coating other materials. For your purposes, as a potential user, this is probably the most informative method of discussing them.

To date all materials supplied in the first class have been thermoplastics of limited structural strength and heat resistance. Thanks to their virtually limitless color range and other engaging qualities, however, they are being used by architects for counter and table edging, moldings and other types of decorative trim.



The molded plastics are supplied by the producer in powder or flake form to be shaped by custom or proprietary molders in polished steel dies under high heat and pressure. To meet a wide variety of specific needs, wide variety is possible, even between compounds of the same basic type—especially so with thermosetting materials which are commonly mixed to enhance strength or other properties, with such fillers as wood flour, mica, asbestos and even canvas chopped into half-inch shreds.

You see molded plastics every day in table model radio cabinets, adding machine housings, electrical parts—and also in hundreds of brightly colored products frankly in the gadget class. Under stress of wartime needs physical qualities of molded plastics have been greatly improved and their postwar utility in building hardware, lighting fixtures and scores of other applications of interest to the architect will be greatly enhanced.



It is in the third group of plastics, the resins for use with other materials, that the most spectacular wartime advances have been made. It is this group which shows the most promise of actually realizing the plastics automobiles, refrigerators and houses that Sunday feature writers have been dreaming up ever since the beginning of the past great decade of plastics progress.

Laminated, plastics-bonded papers, fabrics and even plywoods, of course, are not entirely new in themselves. Behind the veil of wartime censorship, however, and under the drive of wartime needs, amazing progress has been made in developing new plastics resins, new methods of combining resins and base materials and new methods of forming them into final shape.

should know about Plastics

OF THINGS TO COME



Here are a few facts for your postwar building plans:

A new, paper-plastics material has been developed for structural aircraft parts equaling aluminum in mechanical strength on a weight basis . . . is moisture resistant . . . extremely stable at high or low temperatures . . . has a smooth, integral surface more resistant to scratching and denting than aluminum.

New methods have been perfected of molding large sections of plastics-bonded plywood into intricate shapes . . . under low pressures . . . on relatively simple, inexpensive molds. By these methods, strong, lightweight wing and fuselage sections for aircraft, complete with supporting ribs, have been molded in one operation. Plywood hulls for Army assault boats and the Navy's famous PT boats have been shaped into one tough, strong, homogenous unit that defies sea water, wear and weather.



Techniques have been worked out for molding plastics-impregnated pulp into large forms . . . with the intricacy of conventionally molded products . . . and the added strength of laminated sheets. By varying amounts of resin in the pulp, surfaces can be dense, hard and finely finished, while the center remains relatively loose and porous in structure.

Keeping pace with progress of the fabricators, plastics producers have developed new resins—such as Monsanto's new formulations of melamine and formaldehyde. Like tough, heat and age-resistant phenolics most commonly used to bond or impregnate other materials, these are thermosetting. With such durability, however, they combine a practically rainbow-wide range of colors not available with darker phenolic resins.



To the creative architect even those few brief facts should conjure up visions of many a new solution to postwar problems . . . new possibilities for the "packaged" bathroom and kitchen . . . perhaps new, lightweight, load-bearing wall sections with integral insulation and a weather-resistant finish that can be scrubbed clean with laundry soap.

Here is one further fact, however, which helps to make this an odd sort of advertisement.

You will never buy these products of postwar plastics from Monsanto. You may not even recognize many of them as plastics. They will probably come to you from the same progressive building material manufacturers who supply your present types of wall board, the same hardware, plumbing and kitchen equipment manufacturers whose products you specified for prewar buildings. MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield, Massachusetts.

The Broad and Versatile Family of Monsanto Plastics

NITRON—Monsanto's tough, strong, water resistant and dimensionally stable cellulose nitrate. Supplied in a limitless range of colors in sheets, rods, tubes and special shapes largely for mechanical fabrication into finished form. Thermoplastic.

FIBESTOS—Monsanto's cellulose acetate, also tough, strong and colorful, is compounded with various plasticizers into molding compounds to be shaped by heat and pressure into final form . . . and is also supplied as sheets, rods, tubes, continuous rolls and special shapes. Thermoplastic.

LUSTRON—Monsanto's polystyrene molding compounds are produced from one of the newest and most promising of the synthetic resins . . . and are notable as the lightest of all commercial plastics with excellent dimensional stability, unsurpassed electrical qualities and outstanding appearance values. Thermoplastic.

RESINOX—Monsanto's phenol-formaldehyde resins are compounded with various fillers ranging from wood flour to cut fabric into strong, heat resistant molding compounds with good electrical qualities . . . and are also supplied in liquid or powder form for bonding other materials into sheets or simple shapes of exceptional strength and large surface area. Thermosetting.

MELAMINE—Monsanto's melamine-formaldehyde resins, are supplied, like Resinox, in powder or liquid form for bonding other materials . . . and are also compounded with fillers into molding compounds with equal heat resistance, even better resistance to water and chemicals, an unlimited color range and excellent electrical qualities. Thermosetting.

SAFLEX—Monsanto's rubber-like vinyl acetal resins are processed into molding compounds . . . supplied in transparent, translucent or opaque sheets or rolls . . . compounded into special "dopes" or sheets for "rubberizing" fabric . . . or formulated into special bonding resins. Thermoplastic and thermosetting forms both available.



(continued from page 7)

Architects and engineers who participate in any unauthorized construction project in violation of L-41 as amended, may be subject to severe restrictions by WPB.

The amendment further provides for an additional exemption for construction which is necessary to restore or replace residential or multiple residential structures which may have become damaged or destroyed by disaster. This exemption will apply only when the estimated cost of the necessary work is less than \$5,000. Form PD-200 must be filed within two weeks after the damage occurs.

New War Housing Construction Standards

WPB and NHA have jointly issued a revision of war housing construction standards which are more liberal than those originally established last October. Of particular interest to private builders, the more important changes are: a 10 to 15 per cent increase in permitted floor area; removal of the restriction on the use of softwood lumber for finished and sub-flooring; and expansion of the areas in which wood frame construction may be employed; elimination of some heating provisions because many of the requirements included in the original standards are now on the War Housing Critical list.

Public and private war housing projects are affected alike by the revised standards regardless of the size of the construction job. Builders whose plans and specifications do not conform to the new standards will be denied all priority assistance.

New Construction Application Form

New application forms for the construction of war housing have been released by WPB. The new form covers every phase of residential war housing regardless of whether it is publicly or privately financed. The new form PD-105, Revised, provides for a change in the manner of reporting material lists so as to more closely conform to the schedules under the Controlled Materials Plan. It is a simplified version of the old forms and when completed must be filed with the local FHA office.

WPB and NHA Housing Regulations

Crystallizing the joint declaration of policy issued by the War Production Board and the National Housing Agency last December, NHA has issued the new regulations for programmed war housing projects. The new regulations will apply only to private war housing built under preference rating applications filed on or after February 10. Both occupancy and marketing of projects built under preference ratings prior to that date are regulated by the requirements previously in effect.

Four principal conditions are laid down for all war housing coming within the scope of the new regulations:

1. Until the end of the war, emergency housing must be reserved for rental occupancy by indispensable war workers as defined by NHA on November 27, 1942. This applies to any transferee owner as well as to re-occupancy of the house.

2. Provision is made whereby the eligible war worker occupant may exercise an option to purchase the property after four months' occupancy. The total monthly payment cannot be in excess of a fair rental for comparable accommodations and the purchase price must not exceed \$6,000. The purchaser is restricted to the same conditions of occupancy and marketing as was the original owner.

3. If a new owner certifies that he will be subject to all occupancy and marketing requirements as the original owner he then may be relieved of sale limitations.

4. The requirements set up for occupancy and marketing do not continue after an involuntary transfer, such as a foreclosure proceeding.

The new regulations specifically provide for change or modification of the occupancy or marketing requirements. Request for such changes as well as for changes in sales price or rent level are filed with local field offices of FHA.

Extension of Title VI

Little opposition now seems likely to favorable congressional action on the extension of Title VI. The new bill, which was introduced in the

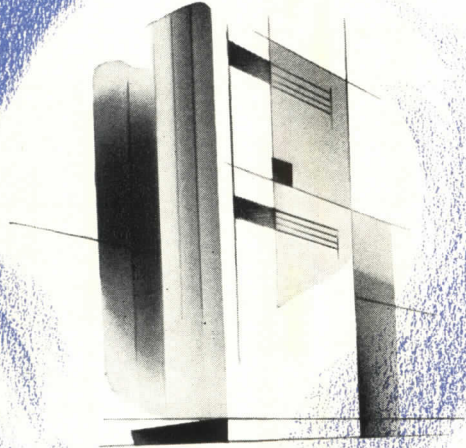
House by Chairman Steagall of the Banking and Currency Committee, makes two major changes in the present law. The aggregate amount of mortgages insurable under Title VI would be increased from \$800 million to \$1,200 million and it would extend the present expiration date from June 30, 1943 for an additional year.

Hearings have been held before the House Banking and Currency Committee. Some criticism from committee members has been leveled at the increasing emphasis being placed on rental housing rather than home ownership. Housing officials have pointed out to the Committee that this restriction is not a part of the program under Title VI, but that WPB made it an issue in conjunction with obtaining priority assistance. During the hearings, Representative Wolcott of Michigan again raised the objection to OPA's requirement of at least a one-third down-payment towards the purchase price on war housing projects. FHA Commissioner Ferguson admitted that the one-third down-payment provision has an indirect effect on the Title VI program because it creates an additional barrier to selling existing houses. This causes, it was pointed out, further competition for the relatively small amount of housing purchases that is possible under Title VI.

OPA Loosens Up on Rental Housing Sales

Almost in direct answer to the objections being directed towards OPA, that agency issued an amendment to its maximum rent regulations for rental housing. The amendment liberalizes the former restrictions which regulated the sale of rental housing where equivalent housing accommodations may be acquired into which a tenant can move without too much hardship or loss. In such cases an owner may apply to the Area Rent Director for a certificate of eviction which waives both requirements as to down-payment and 90-day period. After the certificate is issued the seller may remove the tenant in accordance with local tenancy laws.

(continued on page 12)



Busy Making Snowballs for You to Throw

IN your planning ahead, Air Conditioned living, working, resting space must dominate every horizon. From the factory to the salesroom, from the food market to the schoolroom—all will have conditioned air on a necessity basis.

While you are mixing concentration on present priority jobs with your visions of peacetime planning, Worthington, too, is following suit. Engineers are plotting improved machinery performance. Designers, too, are contributing, putting external beauty on a par with internal efficiency. In the midst of our manufacturing concentration on essential war orders, the Worthington line of the morrow is taking shape.

As your own planning progresses, you will be counting on incorporating the most modern air conditioning equipment. What Worthington is creating can be of material aid in your shaping up of post-war commissions. We're busy making snowballs for you to throw.

Our sales offices will be glad to equip you with all the new data, as fast as it reaches publication stage. Worthington Pump and Machinery Corporation, Harrison, New Jersey. District Offices and Representatives in Principal Cities.

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Air
WORTHINGTON
Conditioning

A N D W O R T H I N G T O N R E F R I G E R A T I O N

(continued from page 10)

The amendment also provides that a certificate of eviction may be applied for by either the seller or the purchaser and subsequent action to evict the tenant may then be instituted. As a result, it will be possible for the two parties to enter into an agreement or contract of sale conditioned upon the delivery of the vacant possession.

Mechanical Refrigerators In War Housing

Because of the growing number of complaints the Compliance Section of WPB is beginning a check on sales and installations of mechanical refrigerators in war housing projects. The survey will cover builders who have requested 10 or more refrigerators for installation in a particular

project. Operations of dealers and building firms that are authorized to supply and install mechanical refrigerators will be carefully checked. All dealers will have to make reports on a special questionnaire form, while field assistants of the Social Security Board will act as special WPB agents to examine all installations.

Postwar Construction Planning

The Independent Offices appropriation bill (H.R. 1762) as passed by the House eliminates entirely a recommended \$1,400,000 for the National Resources Planning Board headed by the President's uncle, Frederic A. Delano. In spite of the desperate efforts now being made to put the appropriation back into the Senate bill, the outlook is not too bright for the Board's continued existence after the present appropriation runs out on June 30. This is the second serious setback to Federal planning efforts for postwar construction. The first came some months ago when both Houses of Congress voted down the Public Work Reserve bill intended to further the program sponsored by the NRPB for public works planning and operations to cushion a postwar economic shock. The Federal Works Agency and the Planning Board previously had been using WPA funds to help municipalities with preliminary planning of projects to be undertaken after the war.

The NRPB has transmitted to President Roosevelt a report on state planning which describes the current and proposed programs of work of each of the 42 State Planning Boards in the country. The document also contains a record of State legislation on conservation, planning, zoning and platting.

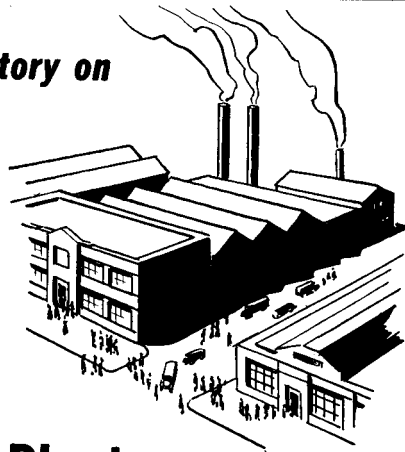
WPB Construction Report

War construction last year totaled \$12,145,059,000, more than double the 1941 volume, WPB reports. Direct military construction in 1942 was three times the volume of 1941, while factory construction was two and one-half times greater. Non-essential construction value at \$1,301,230,566 has been stopped in the last four months in order to free materials, equipment and other resources for more essential war uses, WPB disclosed. Of the total number of projects stopped in the last

(continued on page 14)

They are working for Victory on

Tile-Tex floors-



in America's War Plants

Tile-Tex floors, the country over, are serving in the war effort. A composition of asphalt and asbestos, it stands the bombardment of service . . . and requires only a minimum of man-power to install and maintain. It is easily installed without interruption to adjoining areas.

Tile-Tex is used widely in Plant offices, rest rooms, chemical laboratories, dispensaries, and similar auxiliary spaces. *Tuff-Tex Greaseproof Industrial Flooring*, companion product to Tile-Tex, answers the severe problems of most actual manufacturing areas.

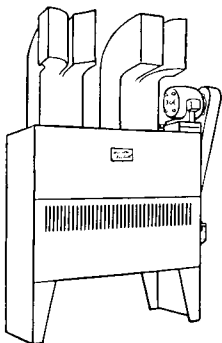
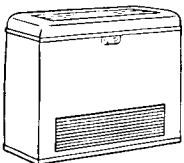
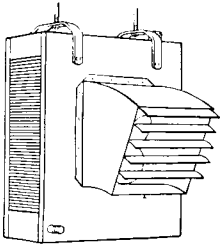
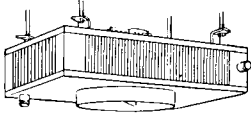
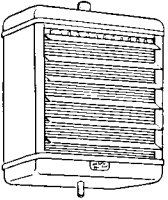
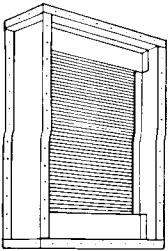
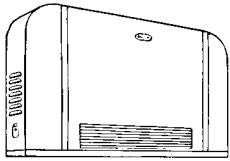
Either Tile-Tex or Tuff-Tex is available promptly in a wide range of colors and sizes. Write today for specification data and complete information about these two outstanding products, designed for the industrial floor user.

★ **The Tile-Tex Company**

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

TOMORROW is well on its way!

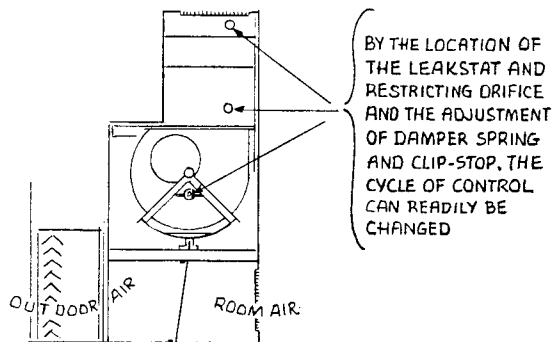
When days of peace and reconstruction come, remember to specify equipment of NESBITT make to answer your heating, ventilating and air-conditioning problems.



NESBITT-MADE
EQUIPMENT

SYNCRETIZER

HOW TO SAVE FUEL!



THOUSANDS OF NESBITT SYNCRETIZER SCHOOLROOM UNIT VENTILATORS

ARE NOW IN USE IN STATES WHICH USED TO REQUIRE ALL AIR TO BE TAKEN FROM OUT OF DOORS AND WHICH NOW PERMIT THE PARTIAL RECIRCULATION OF ROOM AIR.

A SIMPLE INEXPENSIVE ADJUSTMENT (REQUIRING NO CRITICAL MATERIAL) COULD BE MADE WITHIN THE UNIT BY THE CONTROL MANUFACTURER TO CONVERT THE CYCLE OF CONTROL FROM "F" (ALL OUTDOOR AIR) TO "A" OR "O" (IN WHICH ROOM AIR IS MIXED WITH OUTDOOR AIR) THUS TO EFFECT SAVINGS OF UP TO 70% OF THE FUEL USED FOR VENTILATING.

THAT'S ONE REASON WHY THE NESBITT SYNCRETIZER WAS CALLED "TOMORROW'S HEATING AND VENTILATING UNIT TODAY"

— WRITE NESBITT FOR DETAILS —

NESBITT

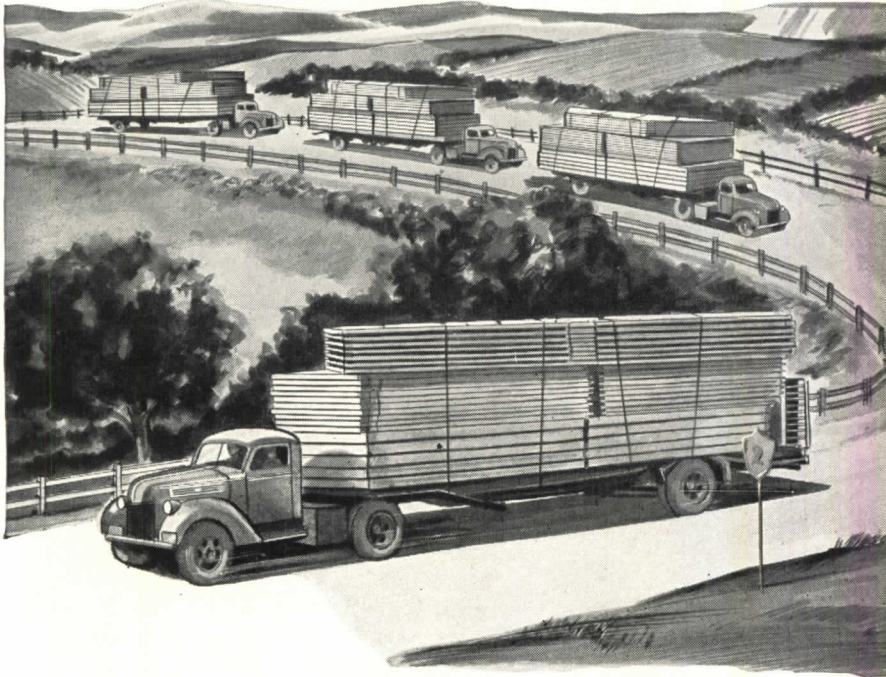
JOHN J. NESBITT, INC., HOLMESBURG, PHILADELPHIA, PA.

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

HOUSES BY THE HUNDRED

ROLL to the Armed Forces

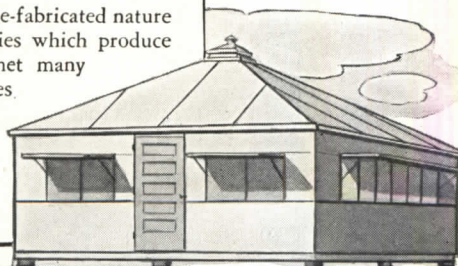


Fully pre-fabricated, demountable, portable houses . . . ready for troop quarters in as little as six man-hours after arrival . . . roll across the country from coast to coast and *beyond*.

Mobility—five complete huts to a truck and ten to a freight car—is just one of the reasons why these Texas Pre-Fab products are being used by the armed forces. Mighty important, too, is the Air-Space insulation that keeps the men of our armed forces warm in cold climates, cooler in tropical temperatures . . . the solid, weather resistant plywood construction . . . designed to minimize the insect nuisance . . . and an economy which is reflected in a saving by government of \$30 to \$50 per man housed.

To the men who live in them and to a government that must meet the expense, Victory Huts are an answer to one of the most important aspects of war—housing our fighting forces *well, efficiently and economically.*

Now Available: Due to the completely pre-fabricated nature of Victory Huts and systematized facilities which produce and deliver them, this company has met many emergency "rush orders" for the armed forces, and can meet others. If your duties involve personnel housing, write or wire for "Victory Huts and Homes"—a complete description of this improved, efficient type of troop housing.



TEXAS PRE-FABRICATED HOUSE AND TENT CO.

Dallas, Texas

MAKERS OF "VICTORY" HUTS AND "VICTORY" HOMES

TRADE MARK

TRADE MARK

THE RECORD REPORTS

(continued from page 12)

four months, many were halted voluntarily by the programming agency, while others were ordered stopped after studies by the WPB facility review committee. This committee was established last October to consider the necessity of projects from the point of view of the war effort, location, method of construction, use of critical materials and consumption in operation of materials, man power, or services.

★ ★ ★

TALK ON URBAN PLANNING

Jose Luis Sert, well-known Spanish architect and writer, will speak on "Urbanism versus Suburbanism" on Monday, March 22, at 8 p.m., at the School of Design in Chicago. His lecture, with lantern slides, will deal with the problem of rebuilding cities on a new basis of postwar activity, handling the four urban functions: dwelling, recreation, work and transportation.

Mr. Sert is the author of "Can Our Cities Survive" (ARCHITECTURAL RECORD, Jan. 1943), a clear and concise approach to the problems of the modern city.

ARCHITECTS' EXAMINATION

Commencing this spring, requirements for admission to the Illinois State Architects' Examination will be changed as follows: instead of the present three day, 24-hour junior examination there will be a four day, 36-hour examination (written) which will meet the higher requirements adopted by the majority of states and will permit Illinois licensees to be registered by reciprocity in other states.

IDEAS WANTED BY ARMY

For the past year the Engineer School at Fort Belvoir, Va., has operated a suggestion system. To date 11 per cent of the suggestions received have been approved and put to use. More suggestions are wanted, from civilians as well as from the armed forces. No useful idea is too small to report; every one submitted is copied *without any indication* of its source, and judged by competent critics on its merit alone. The long list of subjects important to the Corps of Engineers includes: camouflage, construction, design, materials, safety, sanitation, specifications and standards. Suggestions should be sent to The Engineer School, Fort Belvoir, Va.

(continued on page 94)

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



Take some Brixment mortar and some 50-50 lime and cement mortar. Try shoving a full head-joint with each mortar. You'll find that with the Brixment mortar



(1), it is much easier to shove the brick accurately into place, with a full head-joint, than it is to do the same thing with the other mortar (2).

BRIXMENT *Makes a More* **PLASTIC Mortar!**

One of the most important characteristics any mortar can possess is *plasticity*. Within certain limits, plasticity is the greatest single factor not only in the *economy* of the brickwork, but also in its strength, its neatness and its resistance to the passage of water.

One of the most outstanding characteristics of Brixment mortar is its unusual plasticity. For nearly twenty-five years, bricklayers all over the United States have agreed that the working qualities of Brixment are comparable to those of straight lime putty. This exceptional plasticity makes it easy for the bricklayer to secure neat, economical brickwork, with the brick properly bedded, and

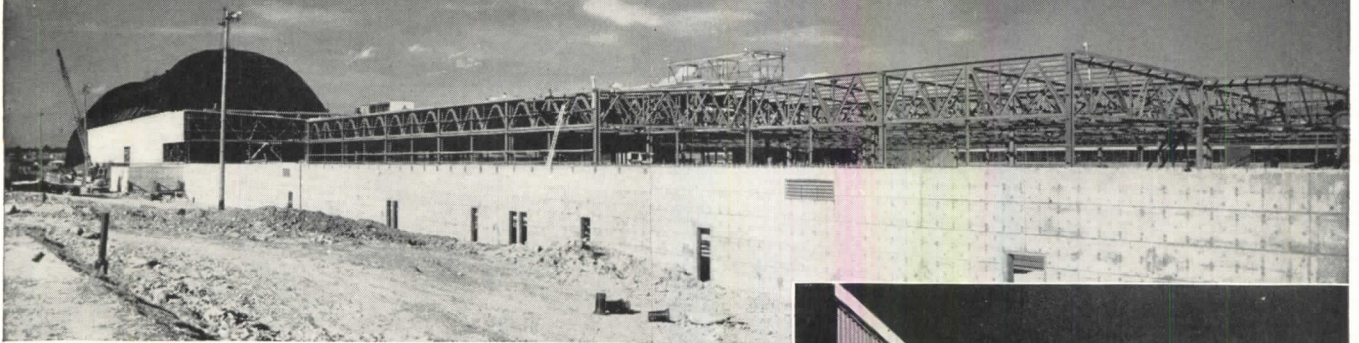
the joints well filled. And because of this unusual plasticity, a bag of Brixment will carry three full cubic feet of sand and still make an ideally workable mortar.



BRIXMENT

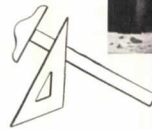
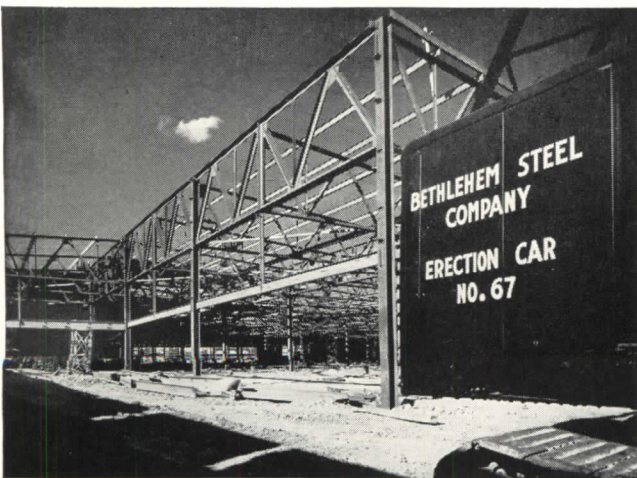
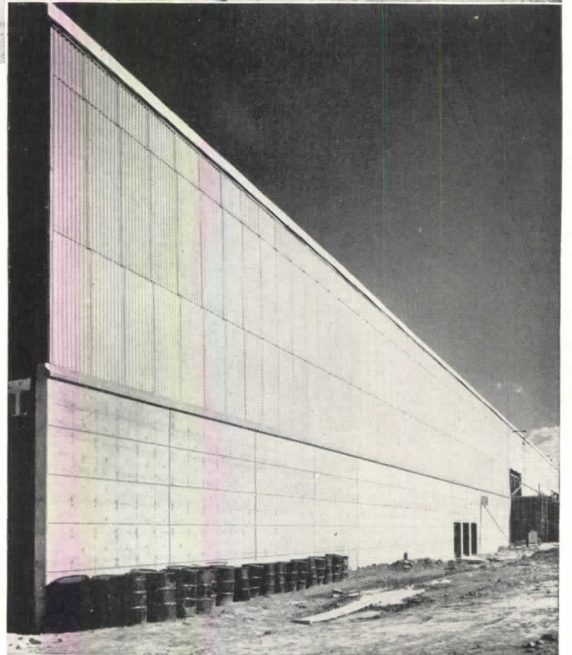
For Mortar and Stucco

15-Acre Plant for Fighter Planes



Somewhere in America the Sikorsky Plant, shown here during the period of construction, is now turning out large numbers of the latest type fighter planes for the Navy. This plant covers an area of 652,500 sq. ft., is completely windowless and is 100 per cent, fireproof.

An unusual feature of the Sikorsky Plant is the walls. On the west side of the building, shown above and right, is a bomb-fragment-proof wall, of 10-in. reinforced concrete, 15 ft., 4 in. high. This is designed to provide air-raid protection for employees, as well as protection for emergency hospital, vault, general offices, and other key elements. The other walls of the structure are of corrugated asbestos composition, $\frac{5}{8}$ in. thick, backed up by $1\frac{1}{2}$ in. of insulation. These walls rest on steel girders so that, should a bomb hit, only bays actually demolished need be replaced. Fire curtains are included to prevent the spread of fire to any other section of the plant.



Architects and Engineers: J. Gordon Turnbull, Inc.
Contractors: Clemmer Construction Co.

Construction has provided a 40-ft. ceiling throughout. There are four aisles, 1050 ft. long, with 100-ft. spans, and one 450-ft. aisle with a 200-ft. span and two aisles with 100-ft. spans. A cafeteria on the main floor accommodates 600. General offices and storage space are located on a mezzanine which runs along one side of the rectangular structure for a distance of 1000 ft. Fabrication and erection of the 8000 tons of structural steel were carried out by the Bethlehem Steel Company.

BETHLEHEM STEEL COMPANY



*Would it take you 300 years
to design a post war window?*



It took 300 years to achieve the first basic improvement ever made in windows*. But no one can have that much time to design windows for tomorrow's homes. It's easy to see what post-war windows will be like—if you consider them in terms of *basic human needs*. So stop just a moment and speculate with us as to what those needs may be . . .

EASY OPERATION? Tomorrow's windows must be easy to operate—they must not stick, rattle or bind—they must be absolutely *trouble-free*. That calls for an enlightened conception of window design and construction.

WEATHER-TIGHTNESS? A "must" for every post-war window is complete weather-tightness—truly modern weather-stripping that bars out chills and drafts. For double-hung windows, choose a type of construction that gives better protection from air infiltration.

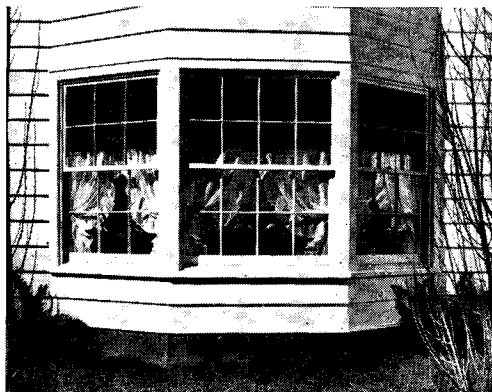
LOW MAINTENANCE? Certainly! That's why you'll find it important to use a window material that is lasting—a *thoroughly tested* material able to stand the most severe demands of time and weather. Wood—as used in Curtis Silentite Windows—is such a material.

QUALITY? Remember, quality can only be determined through years of use, in every type of structure, under a wide variety of conditions. Remember, too, that the *reputation of the maker* will be one of your best guarantees of quality in post-war windows.

* Introduced by Curtis in 1732



THERE IS ONLY ONE SILENTITE AND ONLY CURTIS MAKES IT
Its patented features aren't available in any other window



HERE'S OUR SUGGESTION:

We think the present family of Curtis SILENTITE Pre-Fit Windows goes further than any other type of window in meeting the needs outlined here. In addition, our research is constantly directed towards developing further window improvements. We suggest, therefore, that you keep in touch with Curtis on windows and other high quality woodwork for today—and tomorrow. Curtis Companies Service Bureau, Clinton, Iowa.

LESS LOST TIME in plants with well-planned

"HEALTH ZONES"

RECORDS of the U.S. Public Health Service show that more than half the absences in industrial plants are due to the common cold and its complications.

This is the type of illness that can be substantially reduced by company health programs, and progressive employers know it. Washrooms, in particular, are receiving more attention than ever before.

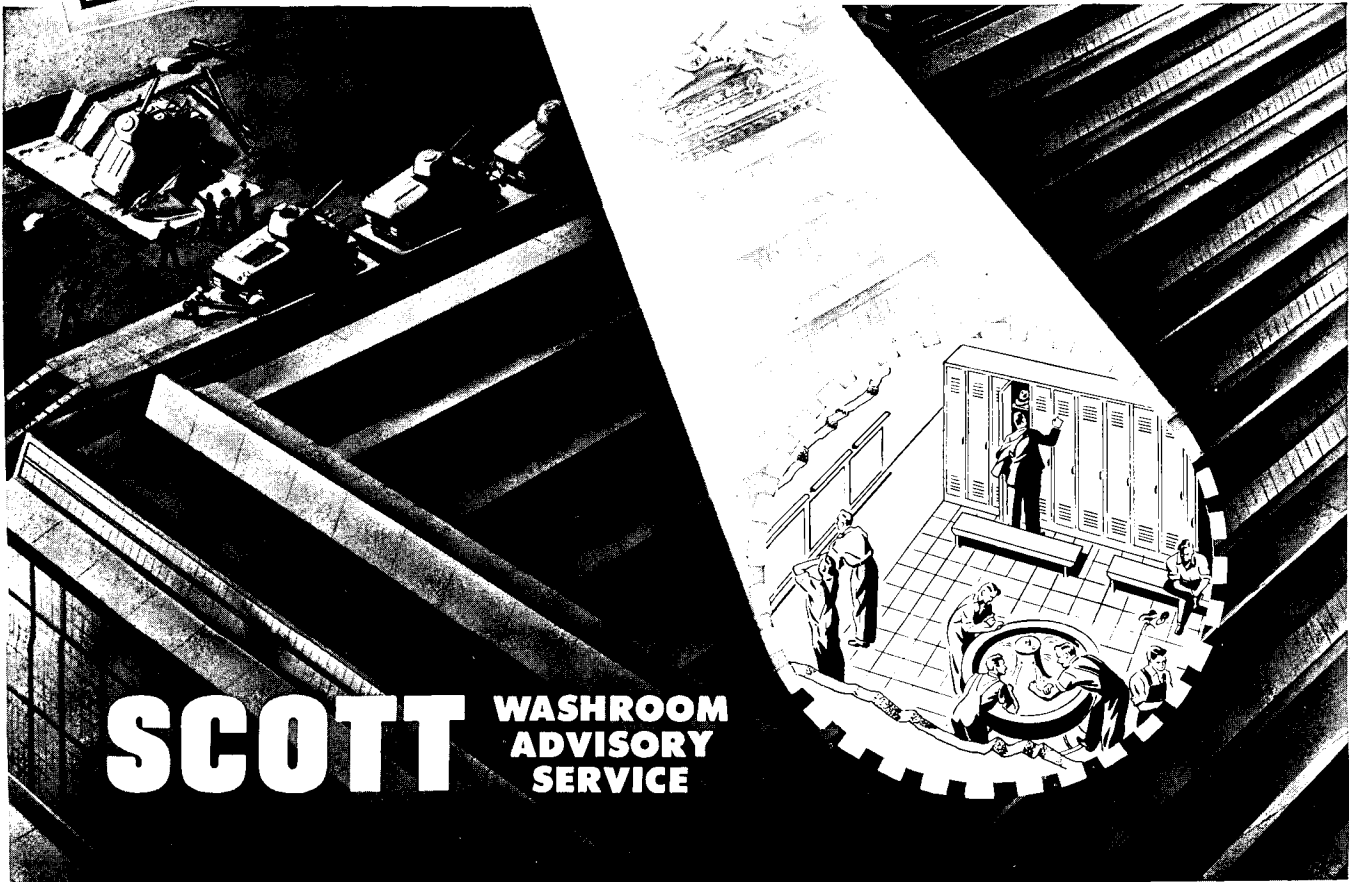
It is a fact that modern sanitary washrooms, equipped with plenty of soap, hot water, and individual tissue towels, play an important part in preventing the spread of contagious diseases.

Such washrooms are literally "health zones." They should be planned as an essential part of every industrial building you design. Ample facilities should be provided, in convenient locations, and all fixtures should be placed to insure most efficient use and a smooth flow of traffic.

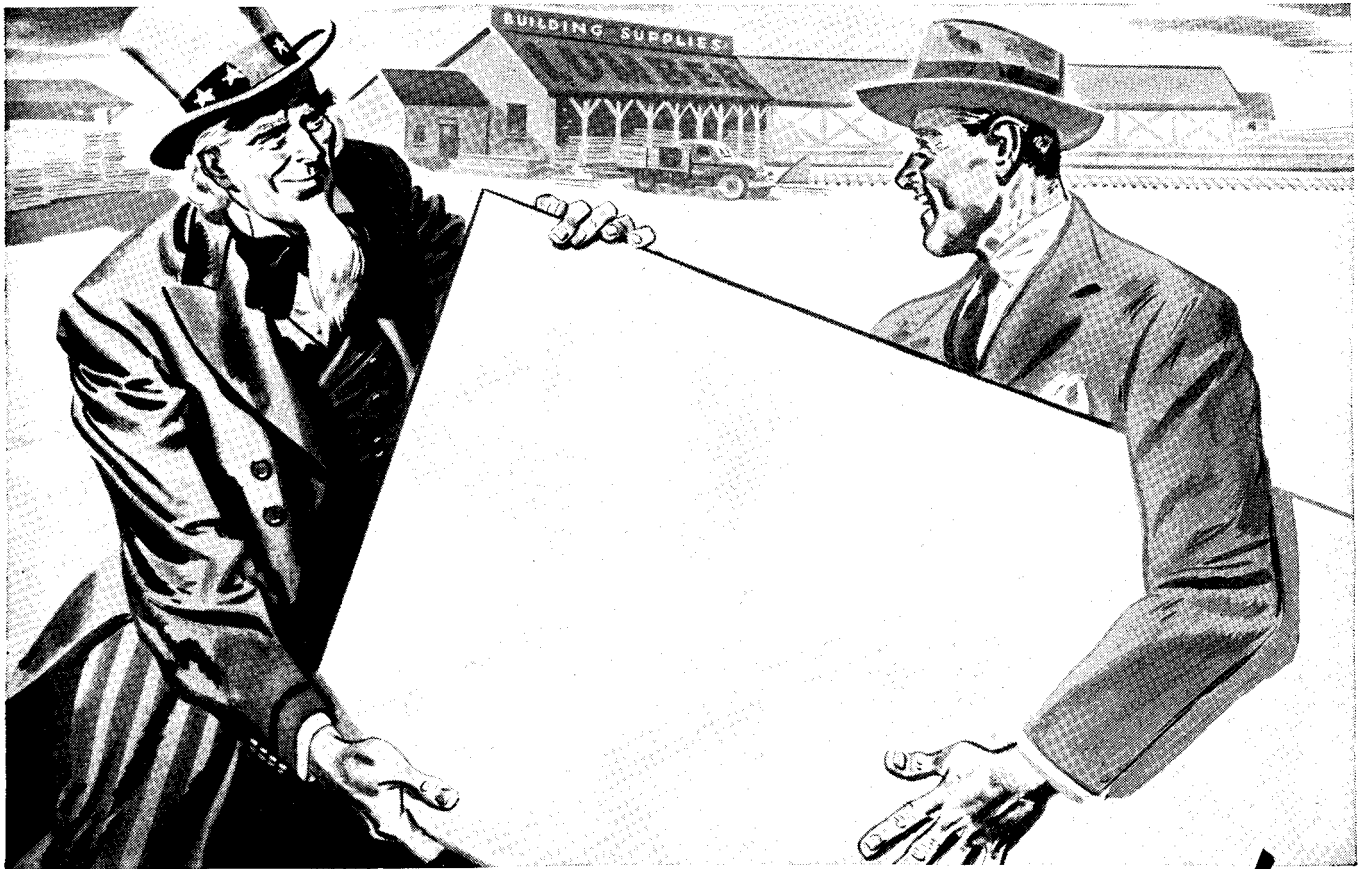
The Scott Paper Company can aid you in designing washrooms that help keep workers on the job. The Scott Washroom Advisory Service Manual gives basic washroom layouts and suggestions that have proved practical in all types of industrial buildings. For your copy, and a set of Don Graf Data Sheets on washroom planning, write Scott Paper Company, Chester, Pa.



Send for your free copy of the Scott Washroom Advisory Service Manual.



SCOTT WASHROOM ADVISORY SERVICE



UNCLE SAM ASKED FOR A MIRACLE!

Amazing new "Stonewall" board replaces gone-to-war building materials

● Uncle Sam was in a spot. Plywood, fiber-board, sheet metal had gone to war. A new building material was needed. Not only for government but for other essential building.

So Ruberoid engineers went to work and came up with an amazing new material that could immediately swing into mass production—and at low cost . . . **STONEWALL Asbestos-Cement Board.**

Stonewall is today's **BIG NEWS** in building materials:

1. **It's Available**—You can really get it.
2. **Ruberoid Quality**—In many respects surpasses materials it replaces.
3. **All-purpose Material**—Uses almost unlimited. Can be sawed or scored, nailed and drilled.
4. **Low Price**—Does not upset estimates.

Stonewall, on pure performance, has already earned widespread acceptance as *the* preferred board for a vast number of uses . . . on farms, in factories, for war housing . . . inside and outside walls, ceilings, partitions . . . from chicken coops to government office buildings.

Investigate Stonewall. It's tomorrow's building material, *available to you today!*

The RUBEROID Co.
Executive Offices
500 Fifth Avenue, New York, N. Y.
Address: Department AR 3

CHECK THESE FEATURES

- ✓ Strong, Durable
Low Cost
- ✓ Fireproof
Rotproof
Vermin-proof
Termite-proof
Ratproof
Rustproof
- ✓ Dapple Grey
Needs No
Painting
- ✓ Can Be Nailed
Sawed, Drilled
- ✓ Easy To Clean
Can Be Hosed
- ✓ Smooth, Flexible
- ✓ And It's
Available



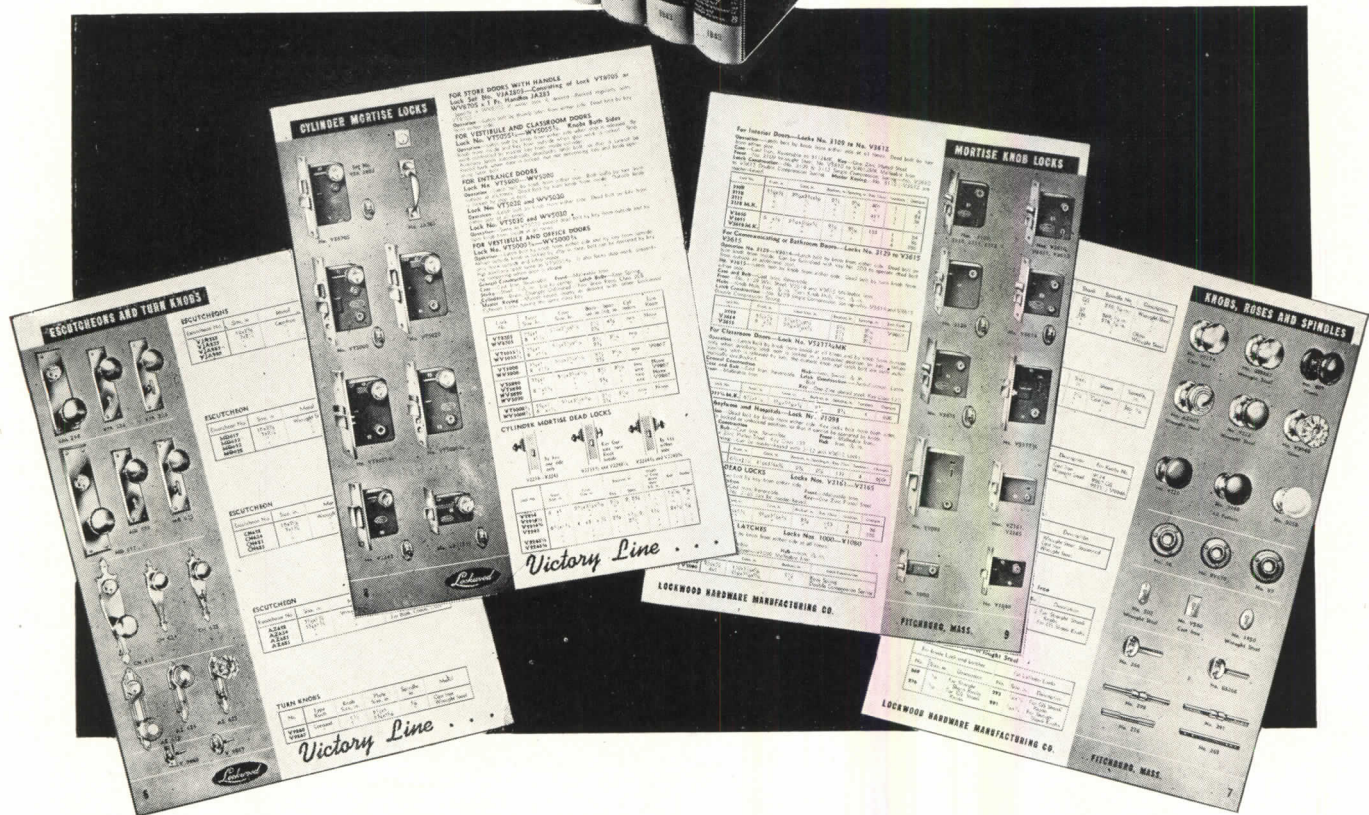
STONEWALL

A Product of The RUBEROID Co.

SWEET'S
1943 CATALOG



LOCKWOOD'S LATEST
FEATURES



LOCKWOOD'S "VICTORY" HARDWARE

in line with WPB Simplification Program

SWEET'S CATALOG 1943 will contain 12 pages of Lockwood Builders' Hardware.

The manufacture of builders' hardware involves the use of critical materials, needed for war equipment and ammunition for our armed forces. For this reason, certain items in this catalog may be withdrawn as the war progresses. But

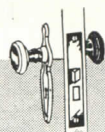
the Section does give you the Lockwood line as up-to-date as is possible at this time.

The Lockwood Builders' Hardware Dealer is well equipped to assist you in specifying permissible Lockwood Hardware, and you can count upon Lockwood to handle your requirements as promptly as your priority rating permits.



LOCKWOOD HARDWARE MFG. CO., Fitchburg, Mass.
Division of Independent Lock Company

PATRICIAN



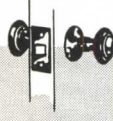
POLYFLEX



MORTISE LOCK



BOR-LOC



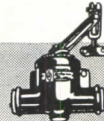
UNIFAST



CAPE COD



SUPER CLOSER

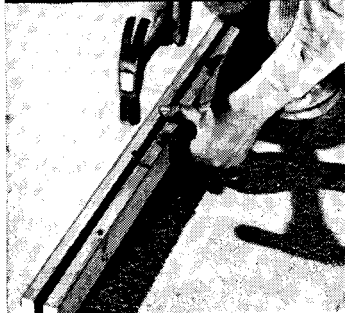


90% LESS LUMBER* USED WITH NEW

2 INCH SOLID ROCKLATH PARTITION

SAVES TIME—AVAILABLE NOW

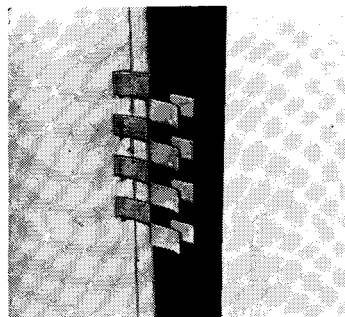
HOW TO ERECT IT



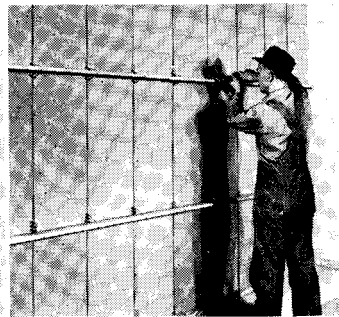
1 Nail 1½" x 2" wide grooved runner to floor. Use hardened concrete nail if on a concrete floor. Runners are all the lumber required, except at openings.



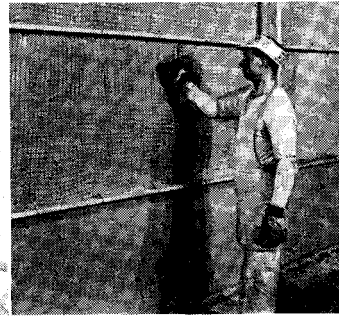
2 Nail runner to ceiling. Groove for ceiling runner should be ½" wide and 1" deep. For floor runner, groove to be ¾" deep, splayed to ⅜" bottom width.



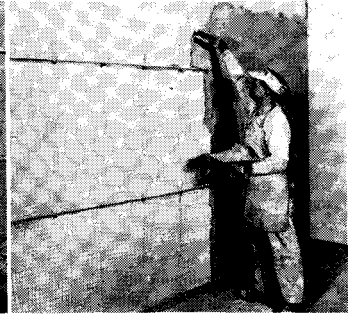
4 Use two W-22 Bridjoint clips at three points between each piece of Rocklath. Force boards together snugly. At exterior corners use W-33 clips.



5 Two horizontal braces of 1 x 4's, tied to the Bridjoint clips, provide a rigid wall for plastering. On long partition runs, intermediate vertical braces are required.



6 With wall braced, partition is ready for plaster. Scratch both sides. After scratch coats set, brown unbraced side. Allow the plaster to set.

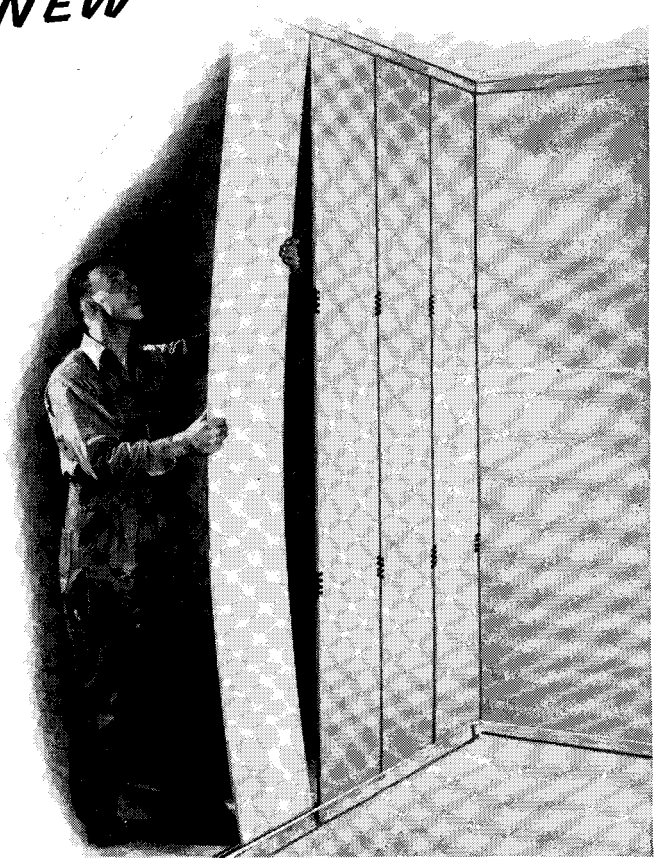


7 Remove braces and brown second side. The partition is now ready for the finish coat of plaster to give an incombustible wall.



8 Note that floor and ceiling runners provide grounds for plaster. If surfaced on sides, runners may be left exposed as molding at floor and ceiling.

*Over standard wood frame construction, spaced 16" on centers.



3 Snap Rocklath sections in place between floor and ceiling runners. Rocklath may be ordered to exact length required. ¾" x ¾" strips, with space between for Rocklath, may be substituted for grooved ceiling runner. Cornerite may also be used in place of ceiling runner. This partition can be used wherever non-load bearing partitions are needed.

—ALWAYS THE LEADER IN PLASTER PROGRESS



UNITED STATES GYPSUM

300 West Adams Street • Chicago, Illinois

This famous trademark identifies products of the United States Gypsum Company—where for 40 years research has developed better, safer building materials.

PLASTER • LIME • KEENE'S CEMENT • STUCCO • LATH • INSULATION

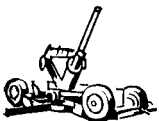
THERE ARE NO RUGS IN TANKS



DUCK. We've set our sights to double last year's production.



BLANKETS. Bigelow is one of the largest producers of Army blankets.



ORDNANCE. Bigelow machine shops are humming. Machine tools and ordnance are being turned out.



GUN COVERS. Fabrication of such things as tank crash pads, gun covers, etc. are a large part of our activity.



1025 MEN. There are Bigelow men from the Mills and the Offices in all branches of the armed service.

IF you asked one of the boys in a tank crew how he liked living without rugs on the floor or maybe an easy chair to relax in, he would probably tell you:

"Sure those things are swell. We want to get this war over with, so we can go back to them. But they won't beat off a counter attack or help us take an enemy position."

We want to get the war over with as quickly as possible too. So we have put a big percentage of the Bigelow looms to work making the things that are needed now. Blankets and duck for example; blankets to keep our fighting men warm and duck to keep their powder dry.

This means that we cannot supply you with carpet replacements that you need and the new rug designs that you want. Our looms that made fine contract carpet are producing entirely for war. And if because of this Bigelow rugs are not available today, remember your waiting has permitted us to turn out blankets that have kept the night cold from some boy, or an order of duck has sheltered someone from the tropic sun.

BIGELOW-SANFORD CARPET CO., INC.

140 MADISON AVENUE, NEW YORK, N. Y.

NEW AND POSITIVE ANSWERS

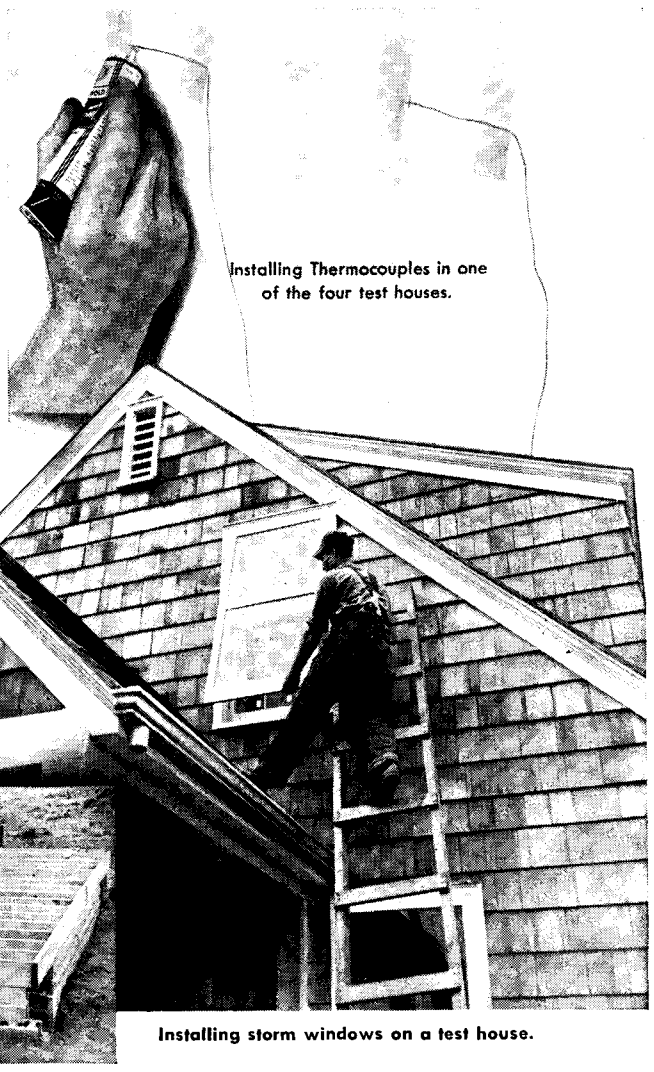
to these questions—

How much fuel savings can you expect from insulation?

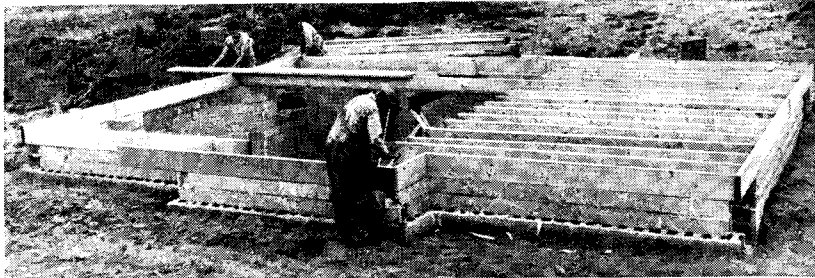
What is the comparative efficiency of various insulation thicknesses?

How do actual results check against calculated ones?

What is the difference in fuel savings when actual temperatures are used in place of theoretical?



Installing Thermocouples in one of the four test houses.



All four houses were identical in construction.

WHAT *Can These Tests Tell You About Insulation Values?*

Up until now, "calculated" or "estimated" results have furnished the yardstick for measuring insulation value. Today, you need no longer rely on such approximations. Today, authoritative, scientific data—based on actual insulation performance—are yours for the asking.

To obtain these data, Wood Conversion Company, manufacturer of Balsam-Wool, built four identical test houses. Throughout an entire heating season, the houses were heated under rigidly controlled conditions. Thermocouples in 43 positions gave accurate temperature readings.

Such Wood Conversion insulation tests are a part of this company's continuous research program. They are embodied in a report that is yours for the asking. For new light on insulation values—for a new and more positive yardstick of insulation performance—send for your copy today.

Balsam-Wool
SEALED INSULATION

WOOD CONVERSION COMPANY
Dept. 115-3, First National Bank Bldg.
St. Paul, Minnesota

Please send me complete scientific data on the Wood Conversion Company insulation tests.

Name.....

Address.....

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

No telephone booths in this emperor's castle



From Architectural Collection—The Bettman Archive

TODAY

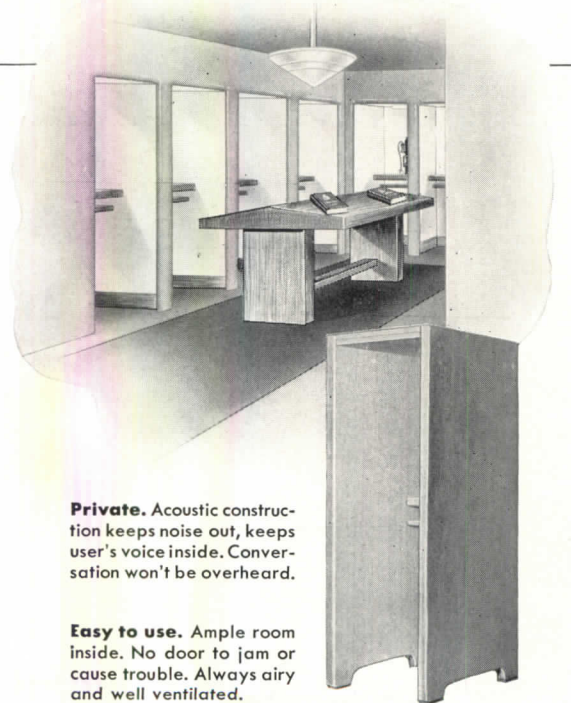
**modern built-in booths
are an important part of
your building plans—**

When you're drawing up plans for building or remodeling public places, be sure you include modern built-in telephone booths. Convenient telephone facilities are important in today's plans; if you specify Burgess Acousti-Booths, they'll add a note of distinction to your design.

Acousti-Booths provide greater privacy and comfort for users because they're of patented Burgess acoustic construction. They're doorless, yet quiet inside. You won't have a design problem because they're ready to install. And their all-wood construction makes it easy to match any interior decoration scheme. Burgess Battery Company, Acoustic Division, 2821-A W. Roscoe Street, Chicago, Ill.

Operating under Burgess Patents

BURGESS TELEPHONE *Acousti-Booths*



Private. Acoustic construction keeps noise out, keeps user's voice inside. Conversation won't be overheard.

Easy to use. Ample room inside. No door to jam or cause trouble. Always airy and well ventilated.



15 Years' Outstanding Performance Proves
'INCOR'S VALUE TO ARCHITECTS



SPECIFY
'INCOR' 24-HOUR CEMENT
 FOR
 EARLIER OCCUPANCY IN
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 WATERTIGHT CONCRETE—
 BASEMENTS, TANKS, STUCCO, ETC.
 CONCRETE FLOORS—HEAVY-DUTY,
 NON-DUSTING—READY FOR
 SERVICE IN 24 HOURS

TIME and again we hear it said, "Architects take cement pretty much for granted." We beg to differ—and with good reason. Because, since 1927, leading architects the country over have specified millions of barrels of 'Incor' 24-Hour Cement for all types of construction.

These years of practical job experience highlight the basic advantages of 'Incor':

Earlier Occupancy at lower cost, through savings in forms and time. 'Incor's dependable high early strength means concrete ready to use in 24 hours or less.

Watertight Basements, Tanks and Stucco: Greater curing efficiency and plasticity assure impervious concrete in one-fifth the usual time. Honeycomb-free surfaces are clean, hard and dense.

Non-dusting Concrete Floors: Uniform, workable 'Incor' mixes produce longer-wearing, non-dusting concrete floors. Thorough curing in 24 hours means durable, scratch-free surfaces in one day instead of five to seven.

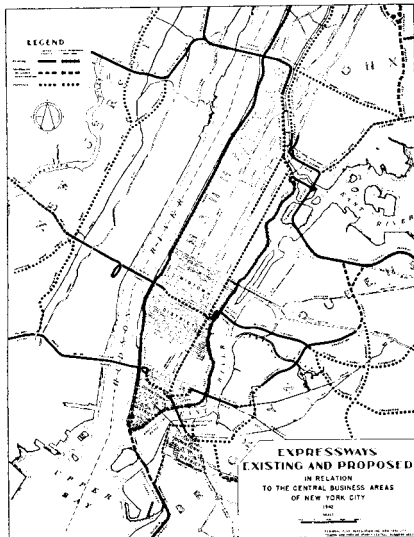
Take advantage of 'Incor' quality on your next concrete job. Specify 'Incor'* 24-Hour Cement where it does you the most good.

*Reg. U. S. Pat. Off.



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From "Traffic and Parking Study."

NEW YORK PLANS FOR THE FUTURE. By Cleveland Rodgers. New York (49 East 33rd St.), Harper, 1942. 293 pp. 5¾ by 8¾ in. illus. \$3.00.

TRAFFIC AND PARKING STUDY: A plan for . . . the Central Business Area of New York City. New York (400 Madison Ave.), Regional Plan Assoc., 1943. 144+22 pp. 8½ by 11 in. illus. \$4.50.

STUDIES by members of the two chief authorities concerned with re-planning in the Metropolitan area.

Many years' experience as editor of the *Brooklyn Daily Eagle* and five as a member of the City Planning Commission have gone into making the first a book of wide appeal, analytic, precise and suavely human, telling how order and beauty may be, and are already being, achieved out of an unlovely chaos. Essentials of the objectives; agencies at work or to be enlisted for work, and mandatory and permissive legislation already available for the remaking of the city are presented in an attention-compelling manner; the illustrations though small are good; and if now and then to the general reader such penetrating reporting may prove stiff reading it is always entertaining. For yesterday's sorrows—graft, profiteering, public and private ignorance and shortsightedness, and the lag attendant on all reform—are told, as are tomorrow's aims, in terms of today's citizens: a people which inevitably spends much money on expensive government; which spends, perhaps necessarily, on check room gratuities "probably many times

more than the sums spent on men's hats;" and indulges—hundreds of thousands of smallish income families—in comfortable old flower decked houses, beautiful with shining glass and polished brass, lined along well kept streets; a people, the largest percentage of which "merely handles pieces of paper" for a living, but which also follows a greater variety of occupations than any equal population on earth.

One of the most acute of the city's ills, "one which causes it to get in its own way to the extent of several millions of dollars yearly" is comprehensively treated in the "Traffic and Parking Study" made by the Regional Plan Association, with the active assistance of all the city agencies concerned with traffic, of 26 local civic and business organizations, of the Port of New York Authority and of the U. S. Public Roads Administrations: a fundamental study with recommendations and proposals of gigantic proportions, work on most of which in the interest of economy ought to be initiated now, although construction must await the war's end.

DECORATING THE HOME. By Ethel Lewis, New York (60 Fifth Avenue), Macmillan, 1942. 574 pp. 6 by 9½ in. illus. \$5.50.

IN A BOOK of a size convenient to handle here is a fine treatise on a wide subject; factual and practical from its thumbnail historical explanations to its statements of essential dimensions, shrewd but sympathetic in its understanding of a wide public's needs. In logical sequence come discussion of elements of design, of styles in architecture and furniture, treatment of surfaces, selection and care of materials, lighting, color, pictures, even table and flower arrangement, with now a short course on textiles, now one on construction of furniture, upholstery, or roofs: a mass of information communicated by a mind at once judicial and enthusiastic and skilled in organizing and expressing its thought. Be it said the author draws on experience as associate editor of a leading home and a leading decoration monthly and an instructor in a first-rank art and technical school.

An inexpensive one-volume work of such wide range lacks, naturally, the

luxurious large scale plates to which much literature on interiors has accustomed us; but its 334 figures include photographs adequate to excellent and many line drawings. The bibliography is usefully arranged by way of authority for, or amplification of, the various chapters; the 28-page index includes references to the illustrations; there is a set of 300 problems for the serious student; and pleasure and ease in using the book are much heightened by the ease with which it opens, the clear large type, and the rich red dull linen cover.

THE PICTURE GARDEN BOOK. By Richard Pratt. New York (17 East 45th St.), Howell, Soskin, 1942. 143 pp. 8 by 10½ in. illus. \$5.00.

VEGETABLE GARDENING IN COLOR. By Daniel Foley. New York (60 Fifth Ave.), Macmillan, 1942. 255 pp. 6 by 9½ in. illus. \$2.50.

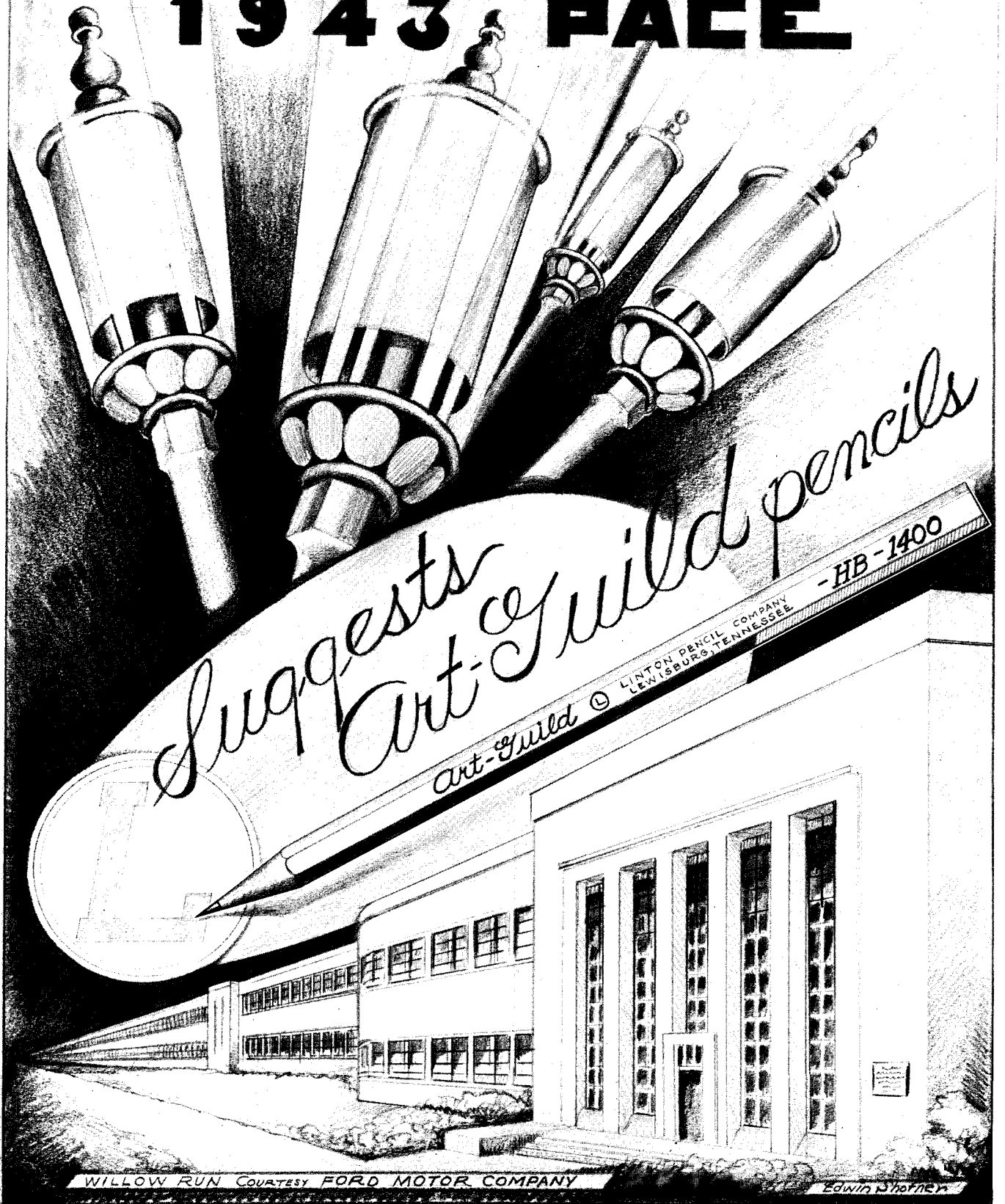
Two BOOKS to delight war-time gardeners.

In 250 pictures in color and in black and white Mr. Foley makes vegetable, fruit and herb gardening look as simple and as satisfying as do the seedsmen—from whom indeed come many of the color plates; at the same time he is as sound as he is readable on soil preparation, cultivation, crop succession, harvesting, storage, food values with even vitamin content.

Mr. Pratt, with the help of extraordinarily beautiful color photographs by Edward Steichen, deals with flowers and other plants of decorative value, giving accurate descriptions and a thousand stimulating suggestions: for a jungle garden, a Victorian corner, a wire garden, one with elaborate furniture, one in which a little furniture or a bit of fence goes a long way, gardening in a barrel, in water, window gardens for the four seasons, even gardens without flowers and many other variations of the standard functions of the "garden-go-round." A steady accompaniment of definite instruction on cultivation and propagation, administered in a language as versatile and exciting—and as orderly—as the gardens described, make this a book for the practical gardener; but it is also a book to be enjoyed by the reader who has no intention—as yet—of owning even a flower pot.

(continued on page 28)

MANUFACTURING 1943 PAGE



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.

Try them at our expense. We will gladly send you a few Art Guild pencils for personal test. Just drop us a note on your letterhead, specifying the degrees you prefer.

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RE-LIGHTING

the new **manpower** *requirement*
production

Vital to plants built and lighted
for daylight operation

Most plants operating today were designed and built for peacetime, *daylight* working schedules. Wartime production demands night work. *Lighting based on daylight conditions is inadequate to serve the needs of night workers.*

Night production is generally acknowledged to be anywhere from 20% to 40% less efficient than daytime production. And poor lighting, with its consequent eyestrain, fatigue, and lower working efficiency, is a major cause of this slump.

Re-lighting for 24-hour-a-day war production is the easiest, most economical remedy for this condition. Re-lighting does not mean discarding your present lighting system. It merely means bringing the equipment you have up to date by re-locating lamps to eliminate glare and shadow; increasing lamp wattages, re-spacing lamps, installing additional equipment to insure uniform lighting levels throughout your plant. A Silv-A-King lighting engineer can tell you exactly.

Silv-A-King's part in the war effort includes the production of parts for torpedoes, bombs, gliders and other aircraft; as well as naval and surgical equipment.

BRIGHT LIGHT REFLECTOR COMPANY, INC.
308 Morgan Avenue, Brooklyn, N. Y.



Send for your copy of our
16-page book: "Light Is An Essential
Production Tool"



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

REQUIRED READING

(continued from page 26)

THE OLD CHURCHES OF LONDON. By Gerald Cobb. New York (597 Fifth Ave.), Scribner's, 1943. 116 pp. 6 by 9 in. illus. \$6.00.

FORMAT AND PRICE requirements have forced Mr. Cobb to limit his antiquarian-architectural record mainly to churches in the "City of London," a selection possessing unity, however, for two reasons: these include all but two of Wren's churches, and all of them are of the town-and-neighborhood type. Apart from the illustrations—35 figures and 85 plates together numbering 200-300 informing items—the value of the book for architects will lie chiefly in the introductory chapter by Prof. Geoffrey Webb of Cambridge, which gives a kind of conspectus of English architectural styles as exemplified in London's churches; but there is much social history in this account of establishments, many of mediaeval origin, possessing relatively little value as churches even when Dickens wrote about them four score and something years ago, and many now either damaged or destroyed.

YOUR HOUSE. Its Upkeep and Rejuvenation. By J. Harold Hawkins. New York (443 Madison Ave.), M. Barrows, 1943. 224 pp. illus. \$2.50.

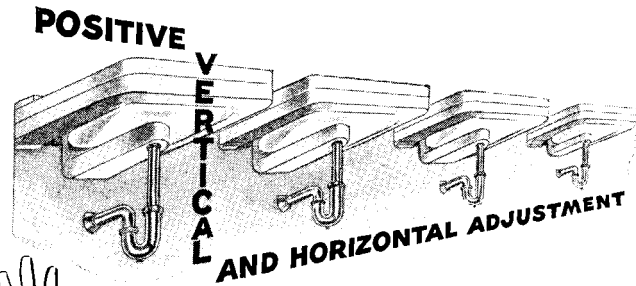
EVEN AFTER the present emergency this book will continue to be valued by innumerable families who must always be their own repair advisers. For here, with an average of one good drawing to each well printed page, a manufacturer, who became home building editor of two leading national home monthlies, tells the home owner the what and how and why of construction and equipment from cellar to roof, and in such a way that even the least skilled in the use of tools is enabled to make small repairs and restorations, and to deal intelligently with the several artisans or contractors needed to cope with the more serious.

LEE MANSION. By Randle Bond Truett. New York (67 West 44th St.), Hastings House, 1943. 57 pp. 5½ by 8 in. illus. \$1.25. (Amer. Guide ser.)

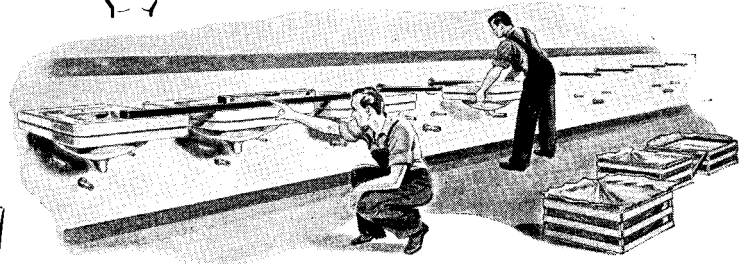
ALMOST 80 photographs of the house and dependencies at Arlington, Va., which formed the home of the Lee and Custis families, skillfully conveying the idea of the Lee Mansion National Memorial that the restored mansion should depict life as it

(continued on page 30)

On all wall fixture jobs in post-war buildings specify this vital **4** point protection



Grief-free installation protects against waste of time and materials



Perfect, permanent fixture alignment

Specify **ZURN** engineered carriers to support wall fixtures

Specify wall type fixtures for appearance, convenience, and utmost sanitation. Wall type fixtures in toilet and washrooms encourage cleanliness. Floors are easier to clean and keep clean. Wall lavatories and sinks release additional unobstructed floor space for placing waste baskets, toilet receptacles, hampers, etc.

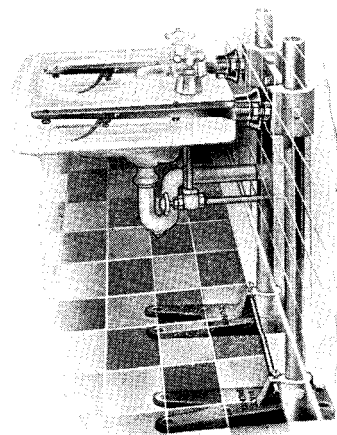
Then, specify Zurn Engineered Carriers to support them. Permanent, proper support is just as important as the fixtures themselves. Recognized as the only outstanding technical advancement in wall fixture support in over a decade, only Zurn Engineered Carriers now measure up to contemplated post-war standards of performance—speed and soundness of installation. Zurn Carriers are neatly and substantially packaged. Roughing parts and finishing parts can be separated on the job without danger of loss or misplacement. This simplifies the plumbing contractor's work and avoids delays. Failure to specify Zurn Engineered Carriers may permit the use of obsolete methods of support that may "queer" the job. No other type of wall fixture support provides this 4-point protection:

1. No damaging strain on the wall.
2. Positive vertical, and horizontal adjustment.
3. Grief-free installation.
4. Permanent, perfect fixture alignment.

Such protection makes Zurn Engineered Carriers fully as worthy of specification as the fixtures they support. All 25 basic types covered in Zurn Carrier Catalog No. 39. Ask for new Zurn Brochure on Wall Fixture Support.

J.A. ZURN MFG. CO. • Sales Office and Factory, Erie, Pa., U. S. A.

WHEN YOU SPECIFY WALL FIXTURES—SPECIFY **ZURN** ENGINEERED CARRIERS TO SUPPORT THEM



This phantom view shows how Zurn Engineered Carriers Provide Positive 4-Point Protection on wall fixture jobs



**BUILDING • PLUMBING
DRAINAGE PRODUCTS**

Roof to Basement

J. A. ZURN MFG. CO., Erie, Pa. • U.S.A.

Please send me _____ Zurn Carrier Catalog
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Name _____ Position _____

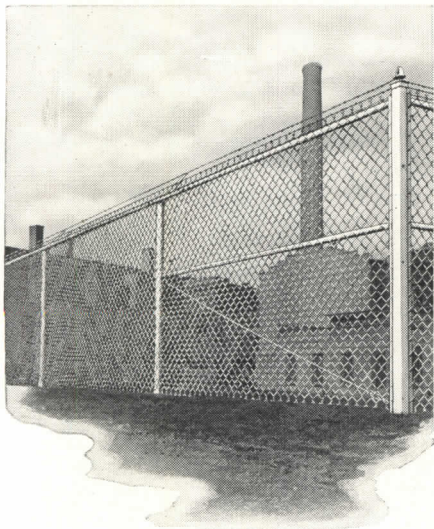
Company _____

Address _____

City and State _____

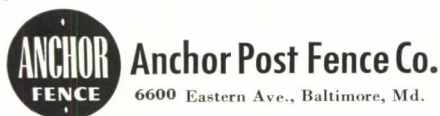
P.S. Please attach to your business letterhead

Bring your Wartime Fencing Problems to **ANCHOR**



HERE'S an *easy* way to specify the right fence for every wartime requirement—to get the best fencing available for your purpose, in spite of wartime restrictions. Consult an Anchor Fence Engineer—no obligation. Get the benefit of Anchor's 51 years of broad experience on every type of industrial fence, barrier, and enclosure—chain link, welded iron, barbed wire, woven wood, board, and other special constructions.

Anchor's 16 branch offices provide speedy nation-wide service. Anchor's skill assures the *best* fencing available under wartime conditions. So write at once for name of nearest Anchor Fence Engineer. You may be surprised to discover how Anchor's great fencing experience can help you save your clients time, headaches, money.



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6600 Eastern Ave., Baltimore, Md.
Please send me the name of my nearest Anchor Fence Engineer, and free Industrial Fencing Manual.

Name.....
Address.....
City..... State.....

REQUIRED READING

(continued from page 28)

was lived during the sixty years of the building and occupation of the house: a stately home designed for formal entertaining, intimate family life, and administration headquarters of a busy plantation. Some figures for the "small suite," the "very small" master bedroom, etc., would have helped the reader to form a clearer picture: a plan would have served.

CAMOUFLAGE SIMPLIFIED. By Eric Sloane. New York (23 East 26th St.), Devin-Adair, 1942. 64 pp. 8 $\frac{3}{8}$ by 10 $\frac{7}{8}$ in. illus. \$2.50.

A FIRST IMPRESSION, that this book of pictures about light and form should be available to every child who can read at all, remains good even after discovery that this superlative of simplification was prepared by an expert for a group of engineers, and that it is an informing condensation in graphic form of the best protective concealment thought published to date.

PERIODICAL LITERATURE

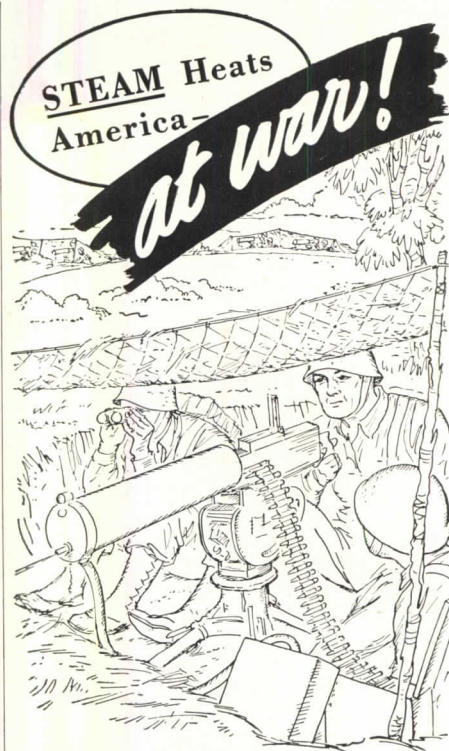
TIMBER TOWER FOR 50,000 GALLON TANK. Engineering News-Record, New York (330 West 42nd St.), Jan. 28, 1943. pp. 65, illus.

DESCRIPTION, mainly by means of diagrams, of a type of construction well understood by "rough carpenters" in lumber regions, using little critical material, in wooded country inexpensive and convenient for water supply of camps, reception and embarkation centers, etc. In the example cited, a Pacific Northwest military encampment required on short notice, the 12 by 12 in. timbers were anchored in concrete foundations, and the bents, framed on the ground, were pulled into position by a tractor. The tank came to the job in precut staves which were hoisted and assembled in final position.

HOUSING SURVEY. Municipal Journal, London, W. C. 2 (3-4 Clements Inn, Strand), Dec. 25, 1942. pp. 1565-6.

TENANTS' preferences as shown in some 800 units surveyed by the Liverpool Council of Social Sciences. Grading of tenants by health, age, and social habits is needed: neighbors steal garden produce and clothes from drying yards, "wild" children destroy stair rails, etc. The one-family house with garden is preferred by 80 per cent of those reporting, and largely

(continued on page 32)



AMIGHTY flood of "Chicago pianos"...

Fire-power to engulf the Axis . . .

Machine guns by the million . . .

That is America's promise to the Victory Program—and America is going to beat that promise.

The time-table of war construction has been reviewed in order to get essential new plants into production without delay.

Heating problems presented by plant conversion and by the new building program call for a proven method of heat distribution.

When steam is selected as the heating medium, all of the experimenting has been done. Steam harnessed and brought under control with Webster Systems of Steam Heating has proved its ability to heat every section of a building to the desired temperature at minimum cost.

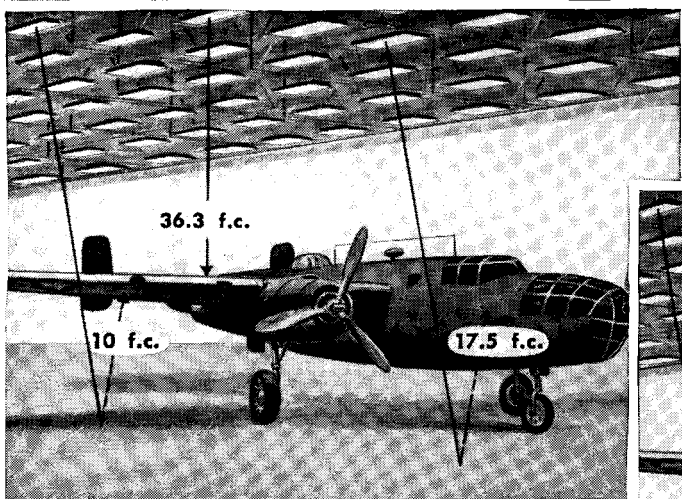
Today, we are engaged in direct war work, but manufacturing facilities are still available to supply Webster Steam Heating Equipment for buildings serving the war effort.

Essential repairs for Webster Systems are available on A-10 priority, under W.P.B. Emergency Repair Order P-84. Orders should be limited to actual needs.

Warren Webster & Company, Camden, N. J. Representatives in 60 principal Cities

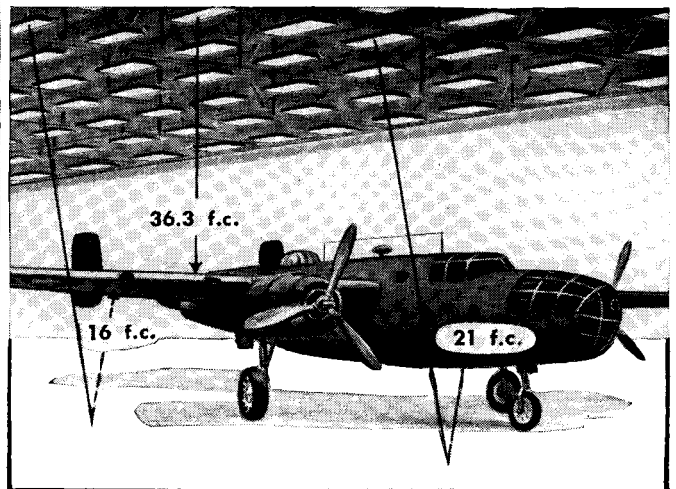
Webster
Steam Heating

How Light-Reflecting Floors Increase Lighting Efficiency



↑ **GRAY-CEMENT FLOOR**
Reflection factor 27.4 per cent.

WHITE-CEMENT FLOOR
Reflection factor 44.0 per cent. ➔



White-cement floors save light by reflecting it—increase the amount of light on vertical work surfaces and in those hard-to-get-at dark areas.

LIGHTING INSTALLATIONS in many plants financed by the Defense Plant Corporation are designed to provide about 36 footcandles of light... on *horizontal* working surfaces. So far, so good.

But what about other surfaces? What about illumination on vertical faces where so much work must be done? One way to increase the benefit of the investment made in the lighting system is by reflection of light from the floor. And the amount of light a floor will reflect is dependent upon its color. Tests on a 36.3-footcandle installation showed that if the floor is of gray cement, about 17.5 footcandles of light will fall on vertical surfaces. But if the floor is of light-colored concrete made with Atlas White portland cement, about 21.0 footcandles of light will fall upon these surfaces... a 20% increase! Compared with a still darker floor, the increase would be even more.

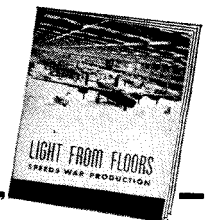
These light-reflecting floors also increase the amount of light on undersurfaces to an even greater extent. Tests on this same installation showed that compared to gray-cement floors, white-cement floors reflect 61% more light

onto undersurfaces. Compared with still darker floors, the increase would be much more.

These figures show why you should design floors to be a part of the lighting system. And when you convert floors into giant reflectors of light, men on the job see better... work longer without tiring. Result: errors, accidents, spoilage and shutdowns are reduced, and quality and quantity of production go up.

Mail this coupon today for your copy of "Light from Floors," a new 24-page book containing installation photos, charts, case studies, cost and maintenance data. Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York.

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



ATLAS WHITE CEMENT FOR LIGHT-REFLECTING FLOORS

Universal Atlas Cement Company, Chrysler Building, New York, N. Y.

Please send me copy of new book, "Light from Floors."

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Name _____
Position _____
Company _____
Address _____

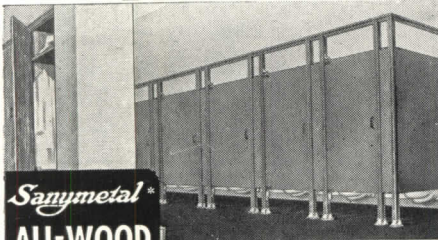
a "LOAFER" ...



that's what they'd make out of yuh—and at a time when a guy wants to make every minute COUNT!

... I tell yuh, they ain't got enough toilets, and that means somebody ain't carin' much or just don't realize that more men means more toilets.

Some toilet facilities just won't stand comparison under today's conditions. They're inadequate! They're neglected! They imperil the health and the morale of both men and women war workers who have the will to get things done. This is no time to skimp on toilet and washroom facilities with man and woman hours carrying such high ratings. Modern and adequate toilet facilities are an imperative requirement for utmost production. Sanymetal All-Wood Toilet Compartments offer a quick and economical way to provide adequate toilet facilities, with essential privacy, convenience, and protective sanitation. By utilizing Sanymetal All-Wood Toilet Compartments, the result of Sanymetal's 27 years of specialized experience in providing toilet facilities for men and women workers, you will realize these advantages:



Sanymetal
ALL-WOOD Toilet Compartments
With Complete Door Hardware and Partition Fittings

SAVE TIME AND MONEY: No need to design or attempt to build makeshift toilet compartments. Sanymetal Specialists have worked out a standard flush type compartment of economical design that can be made from the materials available today and furnished complete with door hardware and partition fittings.

CONVENIENCE AND SANITATION are embodied in Sanymetal All-Wood Toilet Compartments in a degree unappreciated, unapproached, and usually overlooked by those lacking Sanymetal's 27 years of specialized experience in this line.

ENGINEERED IN WOOD FEATURES provide a strong, rigid installation, free from dirt-collecting pockets and ledges, and comparatively easy to keep clean.

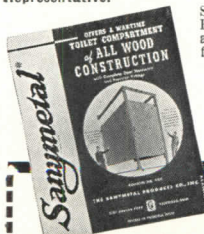
ONE ORDER, ONE PRIORITY COVERS THE DELIVERY OF EVERYTHING YOU NEED, even complete door hardware and partition fittings, so that you can proceed to complete the installation without the slightest delay.

COMES READY TO INSTALL without trial erection or aggravating attempts to assemble material.

Write for Bulletin No. 900 for complete data on Sanymetal All-Wood Toilet Compartments. For quick action, see "Partitions" in your phone book for Sanymetal Representative.

Sanymetal Lockers of Pressed Hard Fibreboard are now available without delay. Write for Bulletin No. 920.

THE SANYMETAL PRODUCTS CO., INC.
1689 Urbana Road
Cleveland, Ohio



Please rush by return mail your new Bulletin on:

- Sanymetal All-Wood Toilet Compartments—Bulletin No. 900.
- Sanymetal Pressed Hard Fibreboard Lockers for Bulletin No. 920.

Name
Position
Firm
Address
City State

REQUIRED READING

(continued from page 30)

for these reasons. Gas is preferred for cooking, greatly preferred for laundry work; few people want all-electric homes; almost all want one open fireplace. Built-in furniture is adopted with caution; communal restaurants and kitchens are "not very popular." Thicker walls are desired, also storage tanks for rain water.

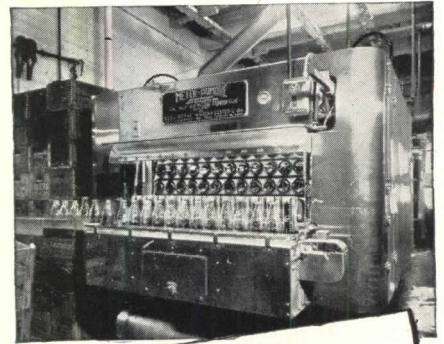
INDUSTRIAL HOSTELS. By W. G. Holford, Architectural Review. Cheam, Surrey, Eng. (45 The Avenue), Dec. 1942. pp. 131-146. illus.

DESCRIPTIONS with three score illustrations of several hostels or war dormitories for women war workers—originally volunteers—near industrial plants. Though created under pressure; at low cost, and with minimum critical material, these function pleasantly as well as efficiently, through good arrangement of administration, social and sleeping quarters, and use of good color, serviceable equipment, inexpensive art and craft work such as posters or textiles. Each hostel houses about 1000 women; in some places groups of hostels extend the social circle; canteens serve about 250 meals at a time, and at week-ends may provide for 1500 people. An air-raid shelter is as much a part of each as are comfortable lounge, quiet space for reading or writing and a theatre or hall. Though built for urgent temporary use, many may see postwar service as camps, schools, or clubs, especially those beautifully situated in pleasant country.

A CAVE HOUSE. By Ralph Rapson and David Rannels. California Arts and Architecture, Los Angeles (3305 Wilshire Blvd.), Jan. 1943. pp. 24-5. illus.

SUGGESTION for a house of chemically treated rammed earth, mostly below ground level, inexpensive to construct, easy to camouflage. Any earth will serve, and the percentage of asphalt emulsion is varied from 10 to 85 to suit the earth available. The emulsion costs only 10 to 20c a gallon, and unskilled labor can be used, so that the cost is low for a house sound-and-weather-proof, fire-water-and-bug-repellent. Little artificial heat is needed, and for that little piped panels are suggested. The exposed wall may be of glass or plastic, transparent or opaque as required.

Profits in Process



THE ALLEN MANUFACTURING COMPANY
HARTFORD, CONNECTICUT U.S.A.
Arthur S. Searns - President - David Cap. Searns

February 18, 1942

Mr. T. F. Loring
171 Ohio Ave.
West Springfield, Mass.

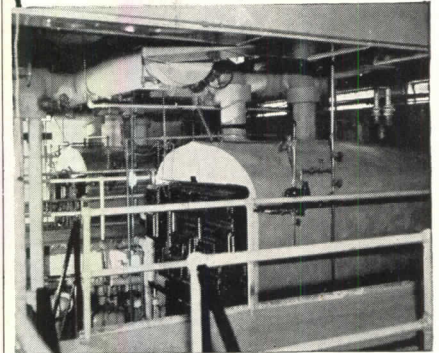
Dear Sir:

Since 1929, we have used 2-10 section automatically oil fired #42 Smith boilers to heat our main plant. Because of our extensive factory experience with these units, we decided in 1941 to specify an H. B. Smith boiler for certain processing work. For this purpose an automatically oil fired 10 section #42 Mills boiler was installed and is used in connection with a Babcock & Wilcox degreasing machine. This machine uses trichloroethylene as a solvent which is heated to about 1800 Fah. with steam maintained at 10 lbs. pressure 24 hours a day and which is supplied from the Mills boiler.

The excellent performance of this boiler to date has completely justified our insistence on the installation of an H. B. Smith boiler.

Yours very truly,
THE ALLEN MANUFACTURING CO.
Engineering Dept.

C. S. Bates
C. S. Bates



Live steam for processing . . . dependable and constant . . . pressures up to 15 lb. . . for processing alone or for processing and heating combined . . . industry demands it and Smith Cast-iron, Sectional Boilers supply it.

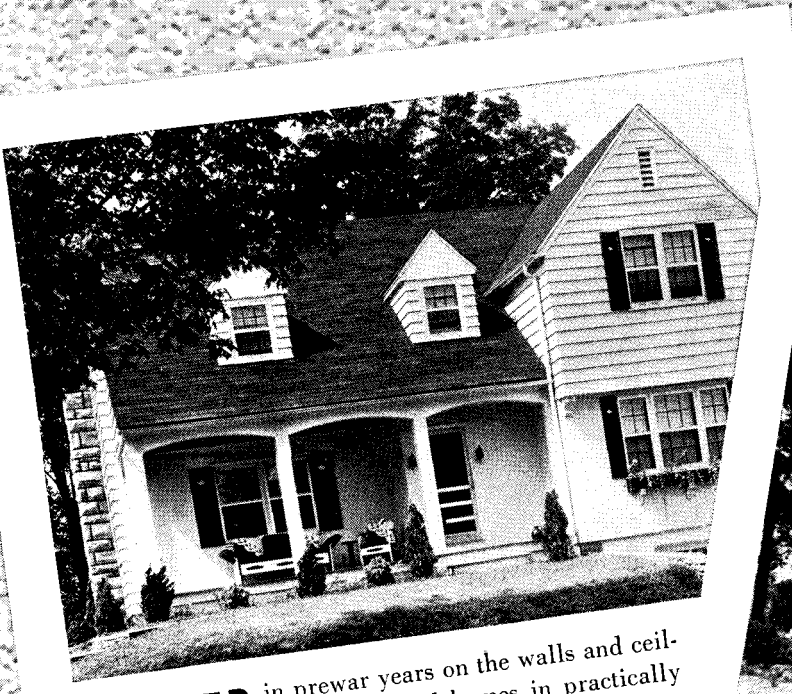
Above illustrations and letter are striking examples of successful use of Smith Cast-iron Boilers for process work. The top illustration, a bottle washer in the Milk Bottlers' Federation, Brooklyn, N. Y.—steam by a Smith 440 Mills Oil-Fired Boiler. At the bottom, two No. 60-S-20 Smith Boilers at Gevaert Company of America, Williamstown, Mass.

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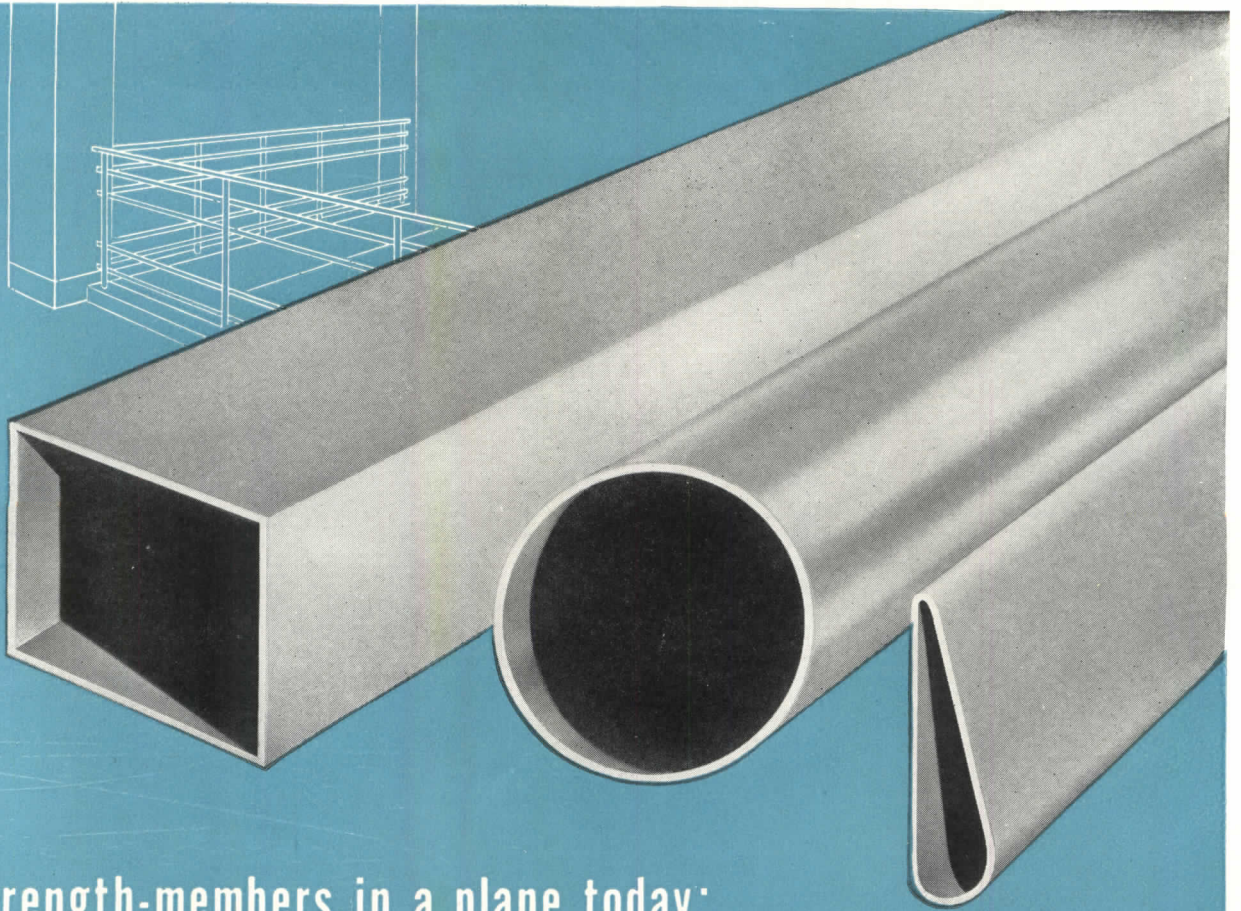
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Strength-members in a plane today;

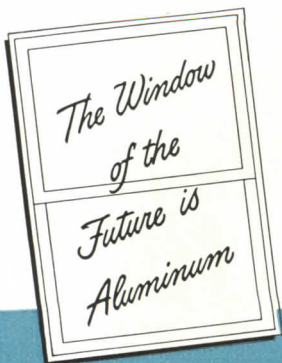
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You probably knew Alcoa Aluminum tubing, before the war, simply as handrails and similarly decorative-utility items of construction. Metal furniture made of aluminum tubing was fast demanding the architects' consideration. You may have employed Alcoa Aluminum conduit where corrosion was a problem.

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Properties that make Alcoa Aluminum tubing invaluable for war work are also advantages which will appeal to architects and builders for future, peacetime uses. The enormous quantities being produced by Alcoa today, and the developments in fabricating methods, promise greater economies through the use of aluminum tubing. ALUMINUM COMPANY OF AMERICA, 2167 Gulf Building, Pittsburgh, Pennsylvania.

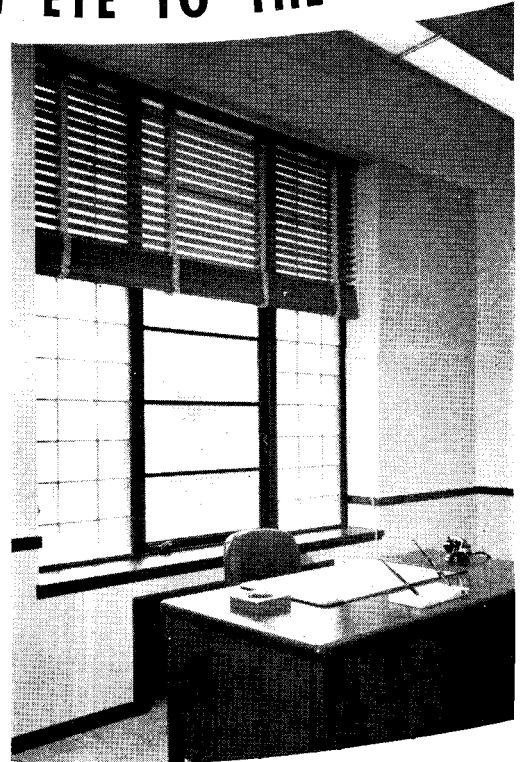
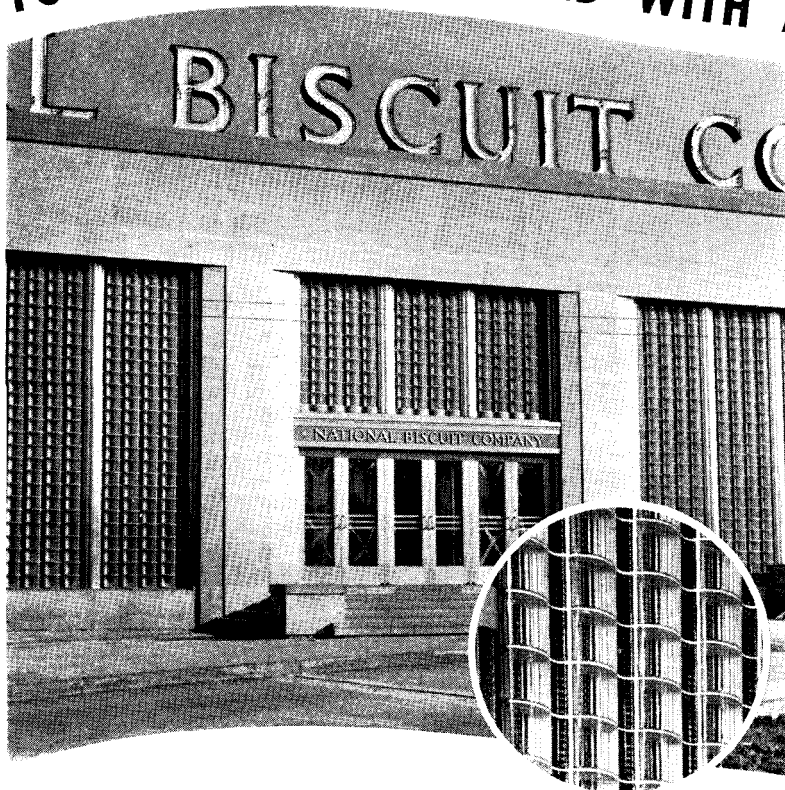


ALCOA ALUMINUM



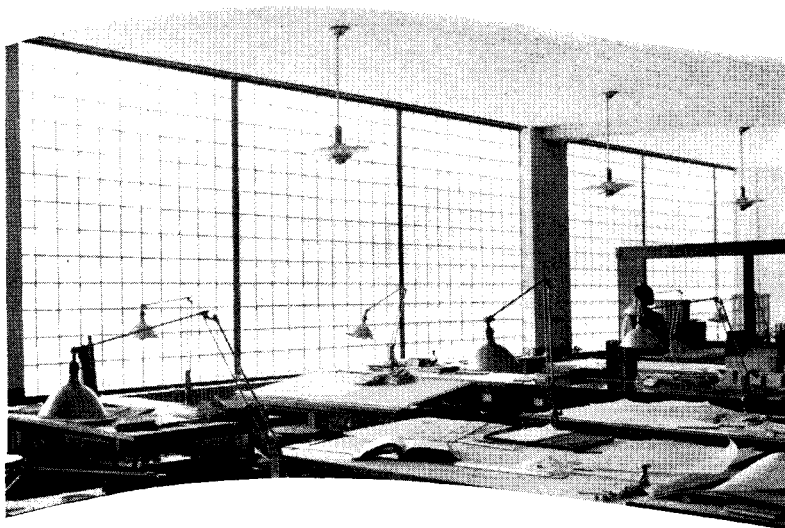
PC Glass Blocks

FOR BUILDINGS DESIGNED WITH AN EYE TO THE FUTURE



This clever use of PC Glass Blocks makes a particularly attractive front for an office building or factory. Here Architect Louis Wirsching, Jr. creates a striking decorative effect by using corner blocks for entire panels. The "fluted columns" formed by the blocks decorate both the inside and outside—and they provide softly diffused daylight for the lobby of this modern building.

A practical combination of PC Glass Blocks and regular steel sash is used in this modern, well-lighted office. This treatment was widely used in the new National Gypsum Building designed by Architects Backus, Crane & Love. The regular window allows ample ventilation and permits visibility of outdoors. The glass blocks provide additional daylight transmission, yet because of their insulating qualities, this is achieved without additional heat loss.



Provide plenty of daylight for large rooms with a combination of Druid Blocks and Prism Light-Directing Blocks. The Druid Blocks are used in the lower courses of the panel, the Prism Light-Directing Blocks above eye-level. Prisms, on the inside surfaces of the Light-Directing Blocks, direct sunlight upward to the ceiling, from which it is reflected to areas far from the outside wall. This is an idea well worth incorporating into your designs of the future.



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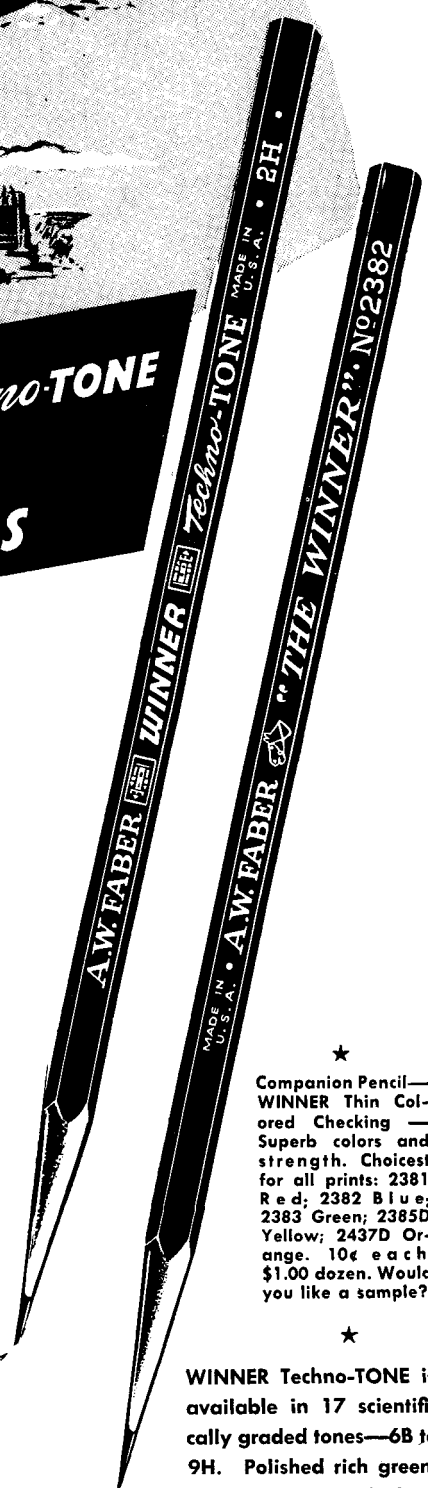
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AT ALL DRAWING AND ARTISTS MATERIAL DEALERS AND LEADING STATIONERS



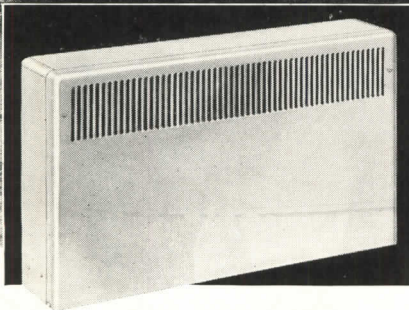
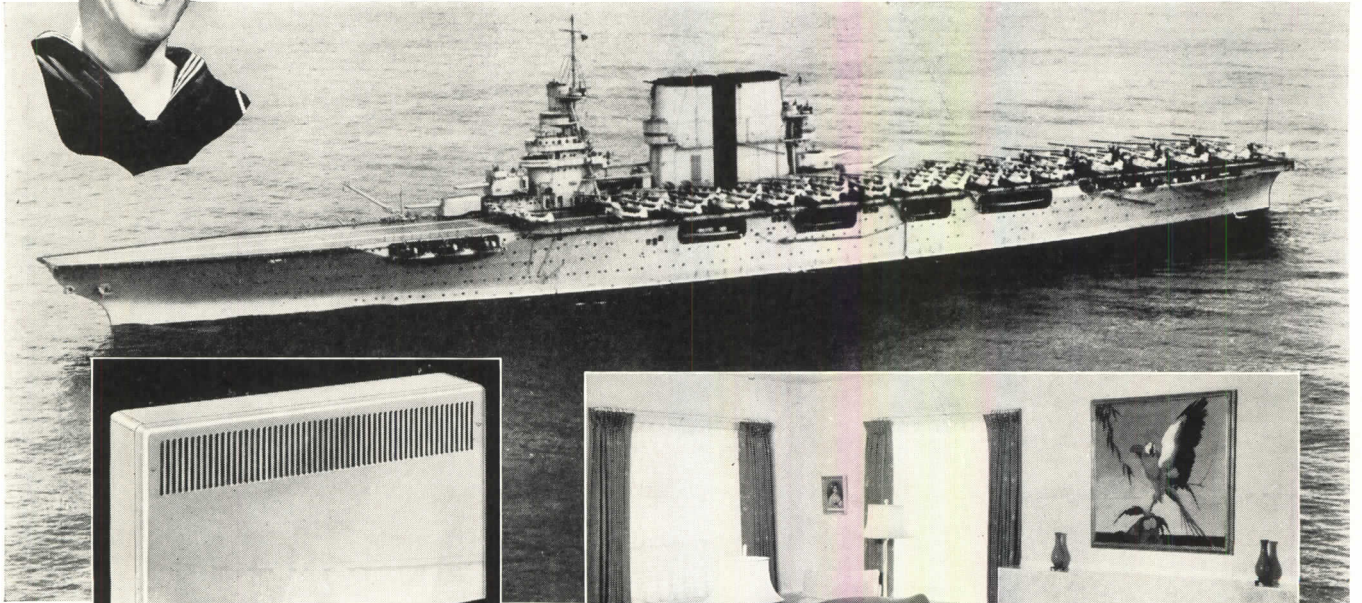
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Companion Pencil—
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Superb colors and strength. Choicest for all prints: 2381 Red; 2382 Blue; 2383 Green; 2385D Yellow; 2437D Orange. 10¢ e a ch. \$1.00 dozen. Would you like a sample?

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WINNER Techno-TONE is available in 17 scientifically graded tones—6B to 9H. Polished rich green. Packed in metal box. Made in U.S.A.



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Official U. S. Navy Photograph



(above) Today's Modine Convector—built for ships, with steel enclosure, and light-weight copper heating unit weighing only one-third to one-fourth as much as cast iron radiation. (right) Pre-War Modine Convertors—combine modern smartness, distinctive beauty, space-saving convenience, extra cleanliness with luxurious comfort-heating.



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IN HOMES, OFFICES AND APARTMENTS

★ Gone to sea with the U. S. Navy! That's why you're not getting Modine Copper Convertors—for homes and apartments, offices, public buildings and institutions *now*.

Instead Modine Convertors are bringing real heating comfort to Uncle Sam's sailors and men of the merchant marine. Not only on the big flat-tops, battle-wagons and cruisers; but on destroyers, sub-chasers, mine sweepers and cargo ships.

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MODINE MANUFACTURING COMPANY, 1773 RACINE STREET, RACINE, WISCONSIN

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STRAN STEEL

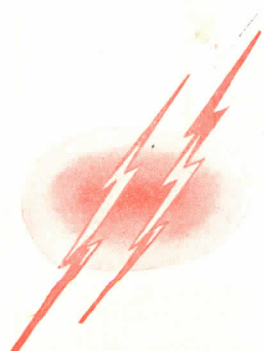
DIVISION OF GREAT LAKES STEEL CORPORATION
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experience to the techniques of war will bear fruit, when Peace comes, in startling new developments in the electronic control of automatic heating and manufacturing processes. Minneapolis-Honeywell Regulator Co., 2804 Fourth Ave. S., Minneapolis, Minn. In Canada: Toronto, Ontario. In Europe: London, England, and Stockholm, Sweden.

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Instruments by **BROWN** *and Controls by*
MINNEAPOLIS-HONEYWELL

危機 築

WORDS have graphic meaning in China. The brush-stroke characters are simplified, conventionalized, indicative sketches of things and ideas—and there is insight and philosophy in their makeup. For example, our title characters at the right (reading upward) are freely translated *Construction Crisis*. And the characters are made up of symbolic parts: the lower third of the lower word indicates “labor,” the next, above, “wood,” and the top third, “bamboo”—the whole therefore presenting the idea, “to construct.”

◆ But more significant to us at the moment is the concept of the word “Crisis” expressed by the Chinese in two characters, the upper indicating “danger,” the lower, “opportunity.” We Occidentals are apt to emphasize the “danger” factor in any crisis, to look on the black side with fear of trouble, of change, of what may happen. We forget that the crisis has also the factor of “opportunity,” the chance for action, for improvement, for change for the better. It is the “opportunity” factor of the present crisis that should occupy our attention, our thought and action.

◆ The opportunity that the architect and the engineer seek—“to be of ever increasing service to society”—may well emerge with greater scope and force through this crisis. The danger is that we will forget this and bog down in vain regrets and repining that things will not be as they were! The old ways of the professions, the old organizations, the old methods and techniques were not necessarily the best. They should be examined with a view to improving them, of making them more efficient, more closely knit into the fabric of the industry, more closely coordinated—and thus “of greater service.”

◆ It is widely recognized throughout the building industry that “the architect who plans the use and final appearance of the structure has become the coordinator and must provide a clearing house or forum where planning can be systematized and where allocations of required space for structural parts and utilities can be agreed upon. The engineering profession must bring specialists to this planning board. . . . It is natural and proper that the architect of record should represent the group he coordinates. . . .”^{*} In turn such groups can be more closely associated with those who execute the actual construction, those efficient building organizations which have proved their ability to turn blueprints into buildings with breath-taking dispatch.

◆ The present crisis brings the opportunity for closer ties among all the various factors that must function to produce better physical environments—regions, cities, communities, buildings. The functions of planning and calculating, of manufacturing and producing, of assembling and erecting, of financing and managing, must and will remain component parts of the building industry whatever changes in its organization are brought about by this crisis. As the concepts of producing better physical environments now broaden from the production of single buildings to the creation of planned, coordinated communities, cities and regions, the importance and the responsibilities of the trained professional planners, architects and engineers will increase. Theirs is the opportunity now of so contributing to the planning of the postwar program (and of organizing for their own more effective functioning) that they will be in the position of leadership in a better coordinated industry when construction again is possible.

◆ The danger is in missing this opportunity through rugged individualism, inertia, indifference, dispersion, discouragement, or the desire to return to the status quo ante. The Chinese can’t write Crisis without writing Opportunity. Can we?

^{*} John W. Pickworth, Consulting Engineer, *Civil Engineering* for October 1942.



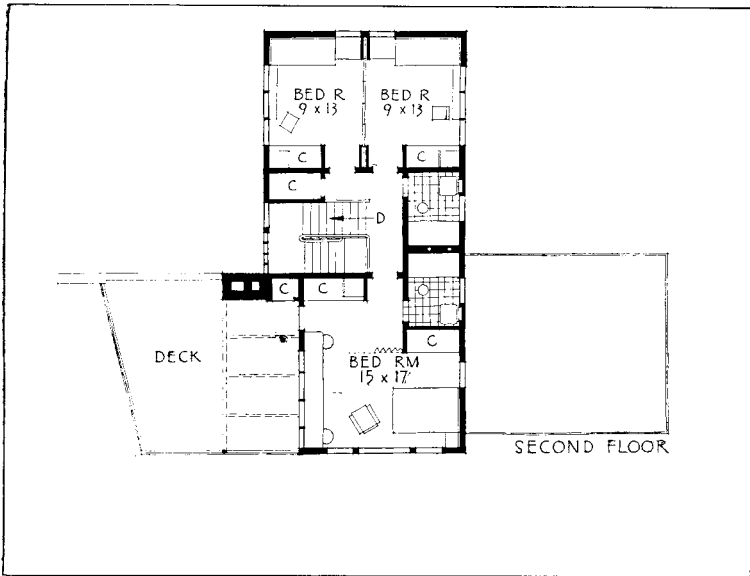


PLANNED FOR SITE AND SUNLIGHT

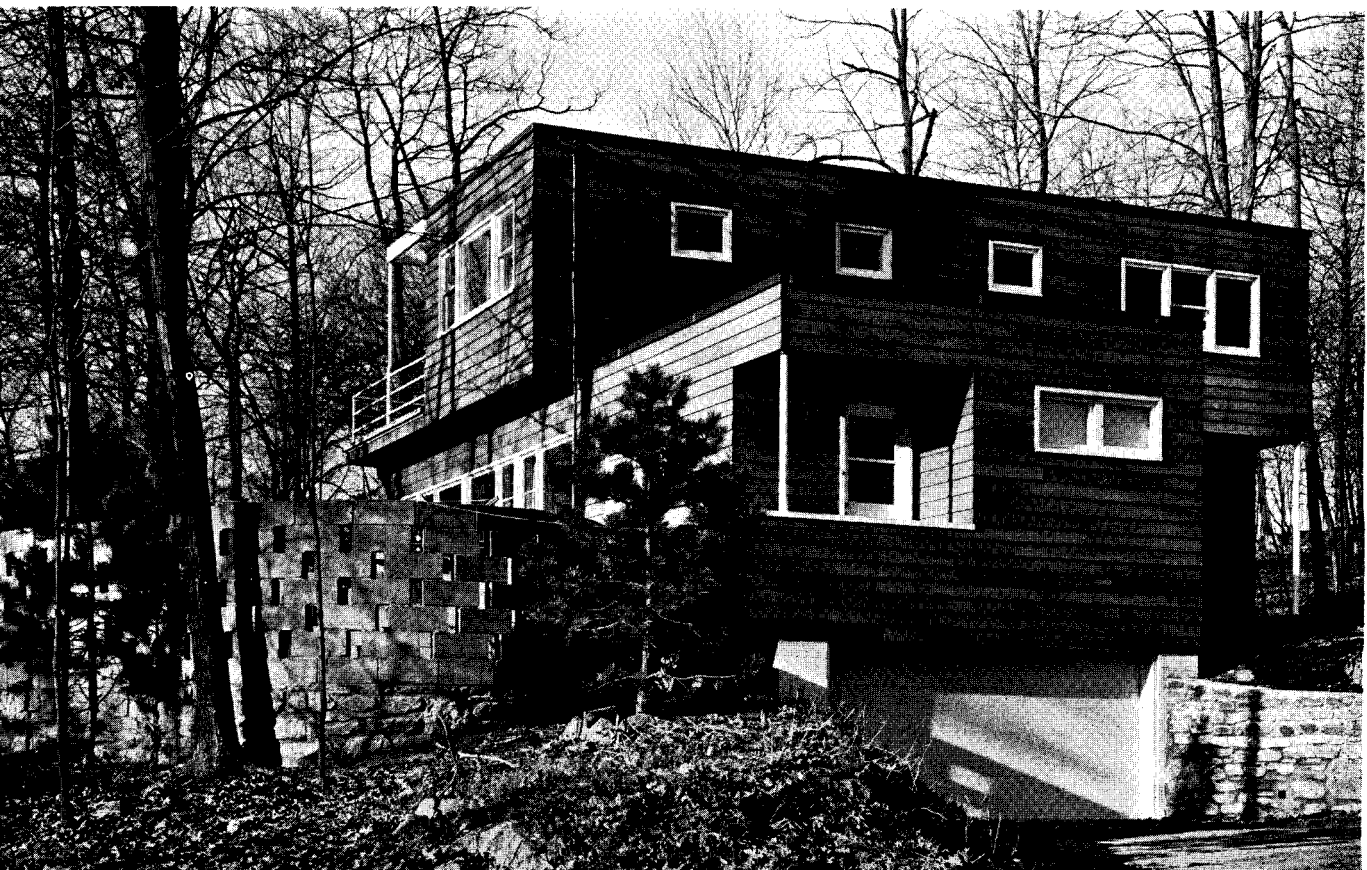
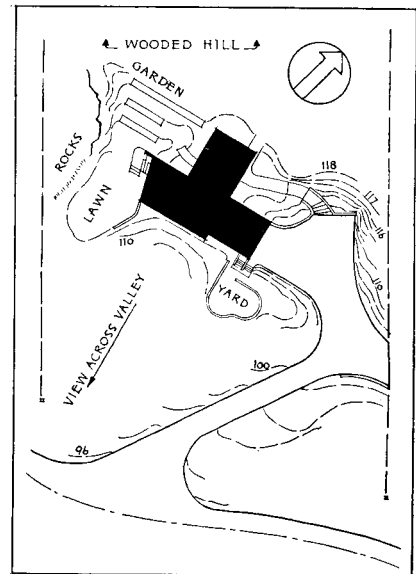
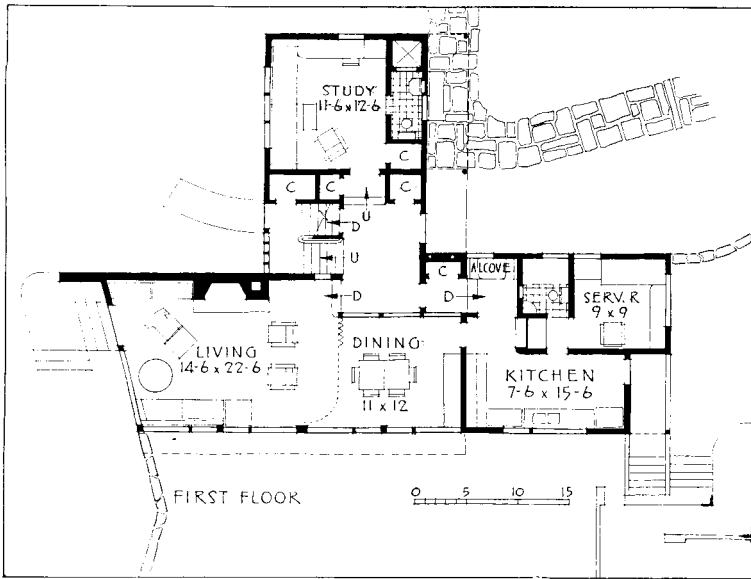
WILLIAM MUSCHENHEIM, ARCHITECT



THIS FRANK EXTERIOR for a thoroughly functional interior plan was not finally approved by all interested parties without some discussion of the pros and cons of "modern houses." In any case the clients and their architect won over the bankers and the house was built; it is the home of Mr. and Mrs. William Hard, Jr., in Chappaqua, N. Y. The house occupies a wooded hillside, and is oriented for a fine view toward the south. The plan was drawn to meet precisely and adequately the basic requirements as to accommodations—two adults, two children, maid and two guests. The study or guest room has especial privacy, and the development of the second floor over the study affords unusually good placing for the bedrooms. Partitions between the children's bedrooms are of the folding-roll-away type so that the rooms can be thrown together as a large play area. Construction is wood frame, with redwood siding.



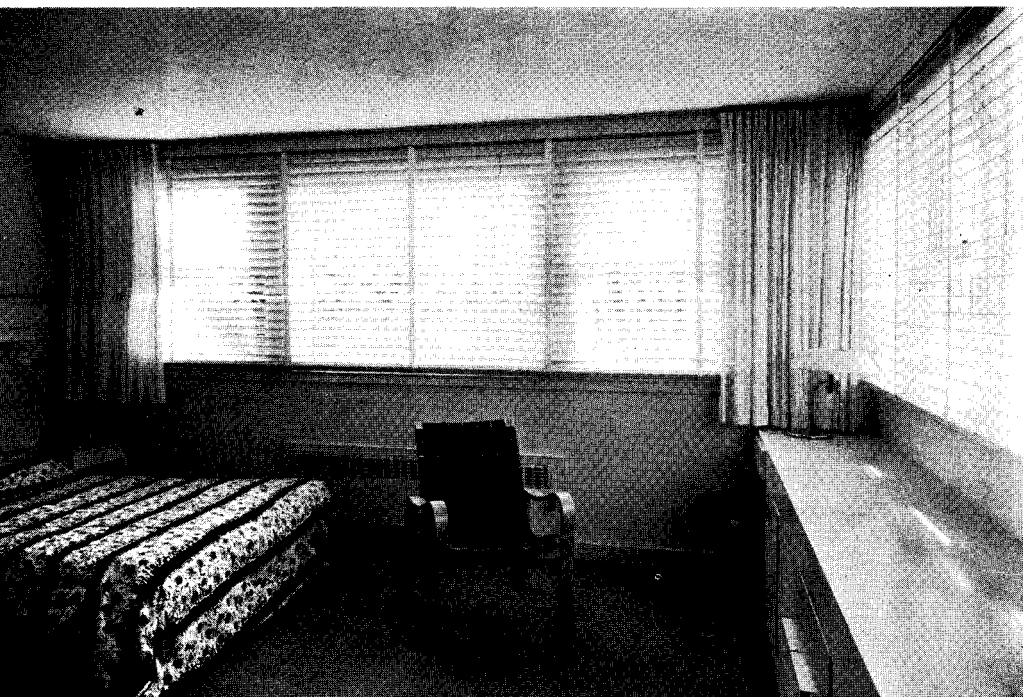
Planning for maximum space in minimum dimensions is accomplished by careful planning of built-in furniture, as shown in interior views on pages 44 and 45



Meteor Picture Service



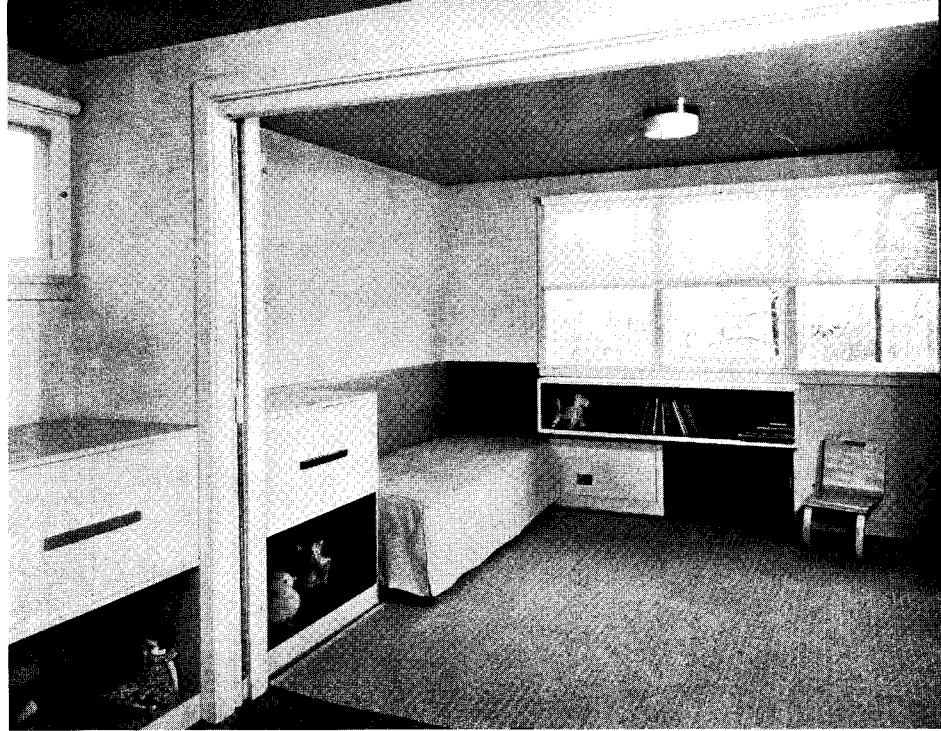
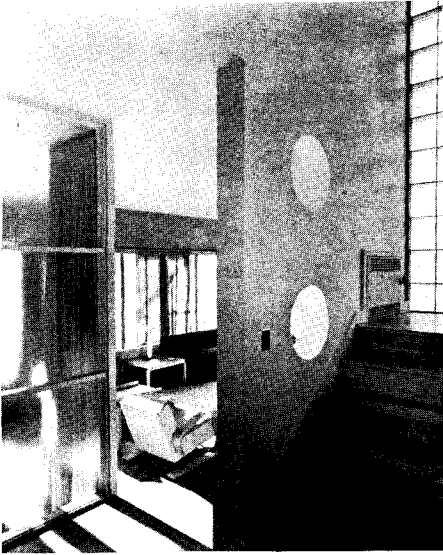
Thoughtful use of colors and color contrasts enlivens interiors throughout the house. Living room background is the grays (two shades) of ceiling and the red of bricks in fireplace. Sash and trim are gray or white. Color accents: red easy chair, brown sofa, arm chairs in natural with red



**House of Mr. and Mrs. William Hard, Jr., Chappaqua, New York
William Muschenheim, Architect
(Continued)**

Built-in furniture along one entire wall gives spaciousness to master bedroom. Walls and ceilings are yellow, sash white, chairs dark blue, curtains yellow

Foyer and stair hall uses four shades of gray for various wall spaces and ceiling, with dark blue door and hand rails. Some trim is white; glass partition trim, yellow



The two children's bedrooms may be opened into one large play space, and built-in storage cabinets make it easy for the toys to be kept under cover. Both rooms are done with fawn shades on walls, ceilings, and cabinets. In one room cabinet recesses are blue and orange, in the other blue and red

The rear wall of the dining space and the glass partition take a brighter note than the living room, being done in yellow. The partition is of translucent glass. Dining room chairs are a light marine green. The furniture is in natural tones; the curtains in dining and living room are gray and yellow





Since the steel pipe columns carry the entire load, the sleeping area in this small house is partitioned off only by a curtain

HOUSE WITH NO BEARING WALLS

"THE PERCH"—AN EXPERIMENTAL STEEL FRAME HOUSE. CHARLES T. GRANGER, ARCHITECT

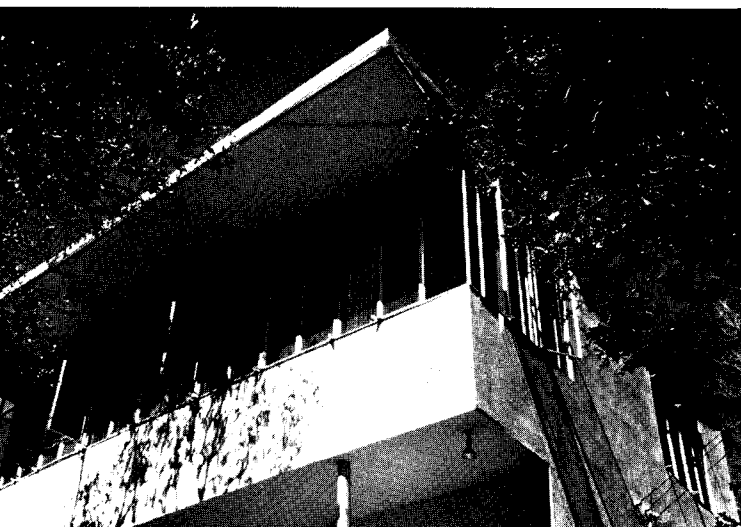
To do a little house without any bearing walls was the object of the experiment that took form in this dwelling perched above its garage, in Austin, Texas. The idea of treating both interior and exterior walls as curtains enclosing space but having no structural significance would allow the planner complete freedom in arrangement and

An overhang is no problem, as none of the walls carries any load

division of space. For maximum flexibility it was desirable to carry roof and floor on as few supports as possible. Thus the structural system consists of six pipe columns with steel beams at floor and roof lines, forming three bents. The floor and roof become rigid planes providing lateral stiffness, and making it possible to deck roof and floor before erecting any walls.

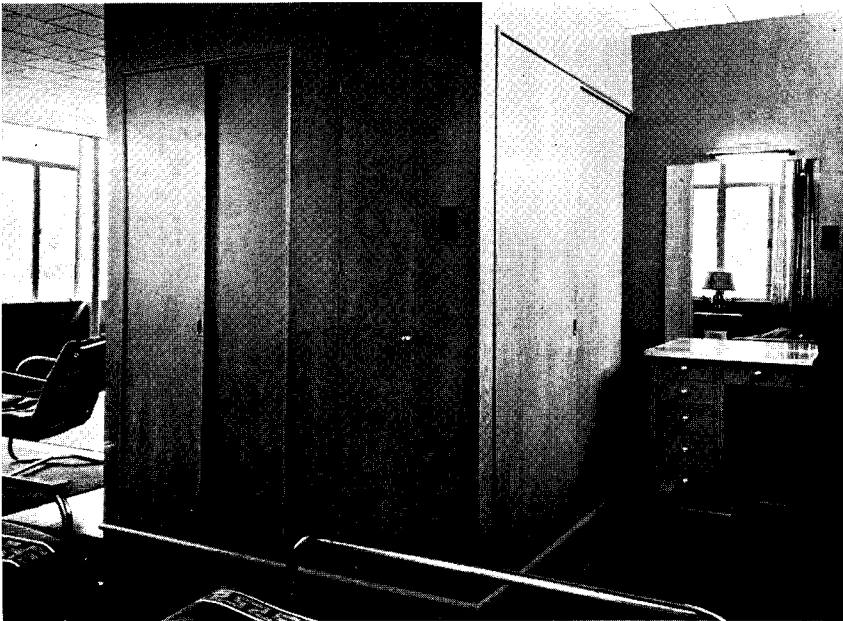
Exterior walls are true curtains hung from the roof. They are formed of plywood interior and cement plaster exterior suspended by 2-in. channels, 2 ft. on center, spot welded at the roof and floor planes. The steel sash also hang from the roof; they were welded in place before the wall was started. The portion of the wall below the windows is virtually an apron, hanging from the bottom of the sash.

Among the advantages of the system cited by the designer are: an all welded, steel frame of low initial cost and low maintenance expense; ease and speed of erection; high proportion of shop work rather than site work; low foundation cost; complete freedom of interior partitioning. He also cites its interesting possibilities for development as a prefabricated unit.

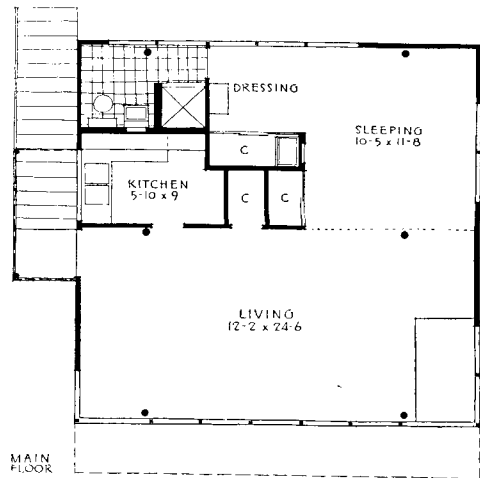
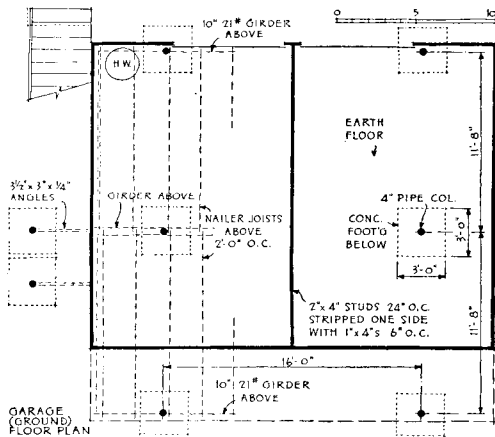
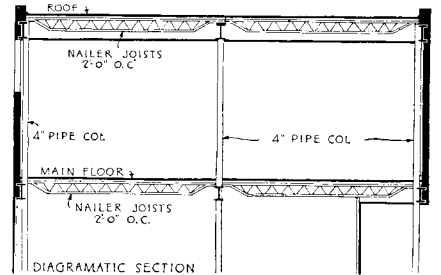
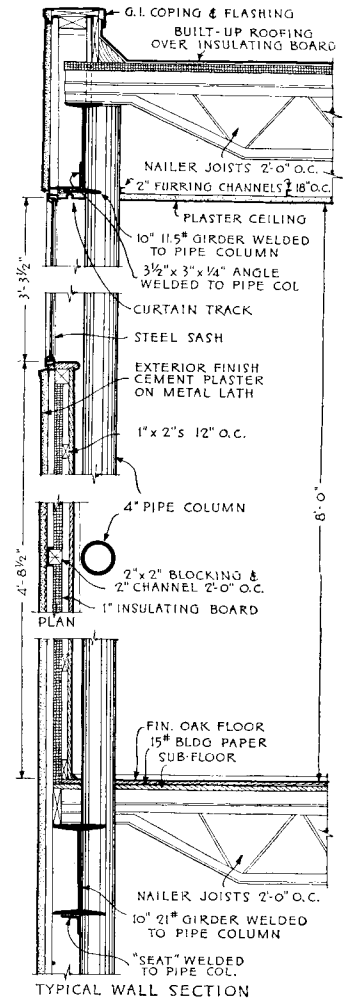


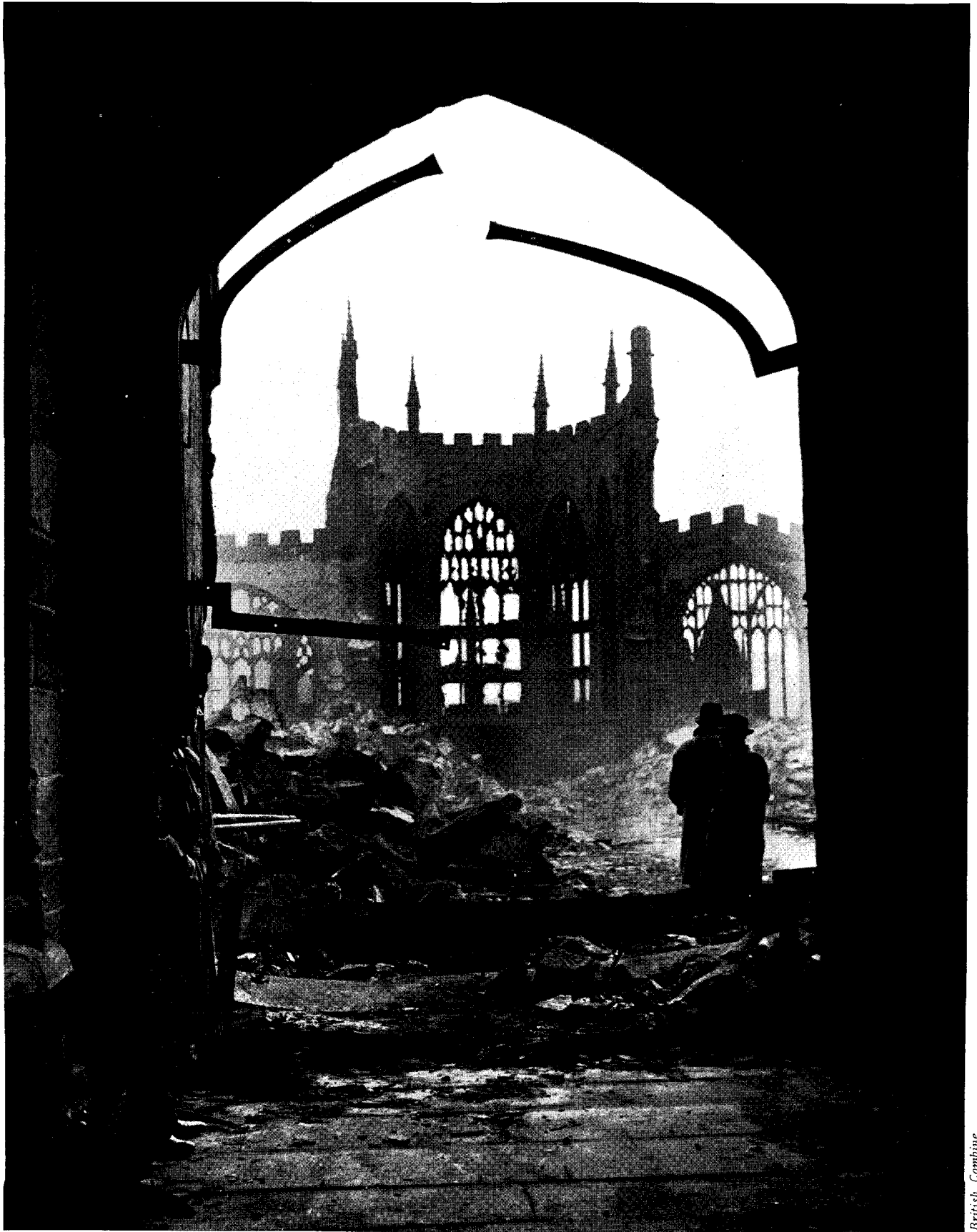


Interior divisions are in general little more than cabinet partitions; the larger social areas are separated by cabinets and closets rather than by formal walls



Jean St. Thomas





British Combine

“out of the catastrophe have come some large conclusions . . .” Coventry will rise anew about its cathedral ruins



BRITAIN'S PLANS ARE BOLD

Horizons above the hedge-rows loom large in Britain's postwar plans and policies as they crystalize in reports and action. Her progress, her philosophy and her programs, with the implications for U. S. planners, are here summarized and interpreted by

DOUGLAS HASKELL

The air age starts out with a major upset, as shown in the bombing of three million British homes.

The upset is spreading here; is already reshaping America haphazardly.

The British architectural profession is saving itself by aiding those forces which can create a large orderly framework for building.

SINCE the earth's surface is covered by only land, water, and air, the effective conquest of the air is certain to introduce a major new cycle of human adaptation. Upon Britain this new cycle broke with sudden cruelty and violence. The inhabitants of the two to three million homes that were damaged or destroyed by bombs can draw scant comfort from being a "necessary" sacrifice, in the sense that catastrophe is needed before the human mind can draw new large conclusions. And yet, out of the catastrophe have come some large conclusions in Britain, leaving open the question of whether there will be resolute adherence.

These large conclusions directly affect architects in the United States. Even the remote repercussion of those bombs is strongly felt. It blew apart a whole peaceful group of charming somnolent Classical Revival towns on the seacoast of Virginia, replacing them with muck, smell, and claptrap. It made urban centers out of Wichita, Kansas, and Corpus Christi, Texas, and a metropolitan conurbation along the Columbia Basin, while an older sea-center such as New York was left stagnant. It pushed the Alcan Highway into the Alaska wilderness, carried engineers and architects into the Carribean, and blew Kentucky mountain boys clear over into India.

The upset is more than a passing challenge. Major disorder always

takes the ground out from under the architect's feet. When people live by short aims, cheap hopes, extemporized devices, scattered ideas, an architect must always seem a luxury or foolishness. The most ardent campaigns in behalf of giving trained architects the jobs can bear small fruit.

In Britain the profession has displayed a keener insight. It has put heavy labor into helping create that large framework within which architects can work. When ministries, municipalities, boards, industries, start forth, eventually, on the large programs that have been organized, it will be unnatural for them to turn, for the execution, to anyone except the architects who, individually and through the RIBA, have shown how to put quality, amenity, and workable standards into the programs.

Britain after the last war did large-scale housing which completely overshadowed ours; this time, according to Sir Ernest Simon, she is making up her mind to do large-scale planning, with unprecedented subordination to the common plan.

A speech by Sir Ernest Simon illustrates very perfectly how the shortest way home to architecture lies the longest way 'round through large-scale planning and organization.

Sir Ernest is a past mayor of Manchester and a prominent member of the British Ministry of Works and Planning (MOWP). He told an American audience how Britain made up its mind, during the last war, to have housing. And in the interim between wars, Britain produced no fewer than 4,000,000 homes, of which 1,500,000 were built by public authorities. This time, said Sir Ernest, the problem will be planning.

"The reason why we consider it necessary to plan after this war is that we remember how badly we planned and how disastrous was our lack of planning after the last war. I remember Lloyd George speaking in his vigorous manner for 'Homes for Heroes.' That was all very nice and valiant, but unfortunately it had not been planned, and the materials were not available to the contractors. Land and material prices were about three times what they had been and the houses did not get built. And the delay caused a tremendous boom and a tremendous slump all in three years, and it was ten or twelve years before we got building going after the last war. . . . We shall have ten million to demobilize. . . . We have had one hundred years of building slums, and then two wars. . . . We have had between two and three million homes damaged or destroyed by bombing, and we feel that the demand for rebuilding will be so great that it has to be planned on an enormous scale. *In about three years expert industry should accomplish what we did in fifteen years after the last war.* There should be a manpower plan . . . a series of plans for obtaining the various materials. . . . That is what we are hoping for: *a thirty-year building plan for Britain.*"

No great stretch of imagination is required to draw American parallels. We have not yet lost homes by bombing but neither had we built them. Not devastated by bombs, our cities are just as badly wrecked by the results of past real estate inflation. Our industry has been redistributed, not under fire but nonetheless radically. Major effort is required to produce any sort of orderly framework for peace. Architects accustomed to worrying about nothing more than the best design for a kitchen may find themselves deprived of even this opportunity unless someone has



worried about rational provision of land to put kitchens on. In Britain, at any rate, all the preliminary work centered on the land.

II. The Big Three Reports: Barlow, Scott, Uthwatt

British planning policy is crystallizing about three enormously important State papers issued under the names of Barlow, Scott, Uthwatt. They put the largest aspects of policy into specific proposals. They gave focus to public discussion. This discussion created the largest asset of all: a climate of opinion favorable to bold planning.

Architects as individuals made contributions to all three. The RIBA submitted evidence to the Scott Committee as a body.

A. The service of the Barlow Report, the root document of all three, was to establish firmly in the public mind the undisputed need for a central planning authority, exercising positive control over the land.

This conclusion was not fully reached by the majority; it arose, rather, out of the combined statements of majority and minority and the subsequent discussion.

The report was made, just at the opening of the war, by the Royal Commission on the Distribution of the Industrial Population. This was appointed back in 1937 by Chamberlain, who had just parked his umbrella in Whitehall. Talk in the streets was still about the recent coronation; Fascists were just beginning to use tanks in Spain; Japs were laying secret plans for the attack on Peiping. "The leisurely trend of opinion in favor of a more secure basis for planning" had not yet "become an urge for action." Although strategic considerations were beginning to shape the scene, the Commission really grew out of the Depression: the Commissioner of Special Areas (read "depressed" areas) had pointed in 1936 to the alarming lop-sided growth of industry in the region of London.

The Commission set out to study industrial maldistribution in general; heard industrialists declare themselves ready to have dispersion encouraged, concentration "discouraged"; heard that London was considered too large by its own governing body, the London County Council; listened to the Manchester municipal representative say that not only was national planning the answer but that national control was also the *only* answer.

Finding that national action was now indispensable, the Commission declared flatly that, "for this purpose, a Central Authority, national in scope and character, is required." Its objectives must be:

- (a) *redevelopment* of congested areas where these were necessary;
- (b) *decentralization and dispersal* of industries and population from these areas;
- (c) encouragement of a reasonable *balance* of industrial development throughout the country, with appropriate regional *diversification*.

Although the proposed Central Authority was given many broad directives, there was still lacking any proposal to give it either final veto power or really constructive power of initiation. The model was in fact,

The general policy of Britain is crystallizing around three great State documents signed by Barlow, Scott, Uthwatt.

The Barlow Report, a State document of basic policy, began with consideration of industrial dispersion, and ended with the idea that there must be a Central Planning Authority over all Britain. Discussion of the Report fastened down the idea that the Authority must have positive powers.



British Official Photos

our own National Resources Planning Board: with facilities for research, for reviewing Planning Schemes in the national interest before their execution, for serving with advice any voluntary applicants for it whether public or private; but not for enforcing this advice with more than moral pressure.

The Barlow commission made its recommendations *unanimously* but the minority asked for more. And, as in many a Supreme Court decision in the United States, the dissentient voices had the firmer grasp of the future.

Control, said the minority headed by Professor Patrick Abercrombie, must be more positive. The Central Planning Authority must have power of initiation and definite sanctions. Great Britain had too much big planning talk and not enough plans: only 3 per cent of its area was covered by actual plans in operation; only half by planning measures definitely formulated. Despite legislation against ribbon development, ribbon development was going cheerfully forward. Despite talk of town and country planning, groups of uncorrelated buildings were being dumped all over the countryside. Despite resounding resolutions about dispersion, those already in possession of industrial establishments in the congested areas possessed enormous legal leverage for staying just where they were.

Moreover, said the minority, research was already abounding but time was short. While the situation was being studied, a whole herd of horses was escaping from the barn. The emergency of defense had already set under way "a new onslaught of unrestricted spoliation and haphazard development of an injurious, inconvenient, and unsightly character."

The defect, they declared, lay in the mental atmosphere of the early Industrial Revolution, which endowed the individual industrialist with sovereign wisdom while relieving him, in a manner unprecedented in history, of responsibility for his social acts; the sovereign wisdom could no longer be credited, since so much industry was living on subsidy from the State; the individualism must be modified since, "*for certain purposes, the country now has to be treated as an economic unit.*"

It was in analyzing another defect of disunited control that Professor Abercrombie hit upon the greatest difficulty of all. He was speaking of "compartmental" regional planning, whereby one group laid out the railroads, another the electric grid, the third the trunk highways, and a fourth the towns, whilst they kept plans hidden from one another. Why secrecy? Why should the London County Council set forth a housing development without even indicating the streets? The answer was simple: claims for compensation. Whoever divulged details, whoever gave real currency to his plans by making them specific, was instantly beset by the flood of claims.

The central difficulty, then, was the difficulty of land. And here the majority and minority stood on common ground; both agreed on the need for a further inquiry. And this was to take place, leading to the monumental report of the "Uthwatt Committee," the Expert Committee on Compensation and Betterment. Between Barlow and Uthwatt, however, there first came Scott.



Industrial dispersion brings industry and agriculture into conflict over land. The Scott Committee sought to bring industry and agriculture into productive and functional correlation. Bringing town and country together might vastly decrease farmers' opposition to planning in America.

B. *The great service of the "Scott Committee" was to conjoin the concepts of city and country planning, not in terms of mere contrasting pattern but in terms of complementary productive functions.*

By October of 1941, the bombs had fallen on London. Moscow was under threat. Evacuees were returning, invasion was not a sustained nightmare, but the dispersion proposed by Barlow was grimly real.

Dispersion carried industry and airports into the country. But in the meantime submarines were at work sinking food, and agriculture was competing for every scrap of land.

The full title of the new committee was the Committee on Land Utilization in Rural Areas. Presided over by Lord Justice Scott, it was appointed jointly by the ministries of works and agriculture.

By this time, the future creation of a central planning authority could be assumed; assuming it, the committee sought to reconcile in policy the claims of building and of agriculture, the use of land as a site with its use as a resource. The recommendations in detail would have to be examined by an American with critical care. Too many ideas have been carried unchanged from the tiny fields within flower-starred hedgerows to the haunts of the prairie goose. Loving the countryside in its traditional garment, the committee proposed above all else to keep country and town distinct.

Profitable industry, it was asserted, must have an average of fifty employees; with dependents counted in, balanced industry would change any village into a town. Taking no account of possible automobiles, the committee declared that industrial location was just as bad outside the village in the open countryside. "On balance," whatever industry could not be directed to existent vacant or derelict sites should be located "in existing or new small towns and not in villages or the open country."

Close-knit compactness in rural development was held to be the desirable rule, maintained by *statutory panels of architects and planners* made available for all rural planning and construction; even *garden cities were begrudged* because they took three-fourths of the land on their sites out of agriculture forever.

Planning was *not to wait*: nothing could be more fallacious than postponement: "not only is the vision of the future the stimulus of the present, but plans must be ready when the time comes for action." Planning would involve the *Central Planning Authority*; it would call for agricultural, soil, and land *classification surveys* around each expanding urban area; *local planning should be compulsory*, not permissive; local schemes should go through the ministries of agriculture and of planning for approval; new satellite towns, housing estates, garden cities and suburbs should be sited if possible *away from the better farm lands*; they should be *by-passed* by through roads new or rebuilt; their *planning should be compact* and their structure should lag no whit behind the city in the use of *new materials and new structural technique*. *Electricity should be as cheap* on the land as it was in town; rural life demanded *social centers* on the model of the "village college."

The Scott Committee minority was one man, Professor Dennison. He disturbed the flow of warm sentiment with a sharp shower of cold eco-



British Official Photos

nomonic fact. Even yeomen pursuing "traditional architecture," he reminded his colleagues, have to eat. If traditional methods of agriculture were out of date, then the fine stage-setting of bright patched fields and thatched cottages (such as the tied cottages on the planning minister's own estate) would have to be paid for, either by the managers of the show or, more probably, by the impoverished actors. And, indeed, Professor Dennison's industrial view of agriculture would be the more familiar and more appropriate one in the United States, with the consequence that less is to be learned for future rural patterns here from England than from the large achievements of our own FSA and TVA.

What the Scott Committee might chiefly contribute to American planning thought is perhaps its method rather than its content. It brought city and country together. If farmers here oppose planning, that is because it means city planning to them, and at their own expense. We could afford to listen to many an archaic point of view if we could thereby draw the farmers in. And the response of farmers to TVA and FSA planning indicates that their opposition is anything but insuperable, their capacity for thinking anything but impaired.

The idea of a Central Planning Authority was now accepted; national planning was accepted; correlated development of city and country was accepted; the Uthwatt Committee sought for implementation through the requisite national control over all the land.

C. The Uthwatt Report has been described as a great milestone in the history of planning. In boldness of overall control, its proposals matched the dictators; and yet without the destruction of either private initiative or private ownership. The scheme involved nationalization not of land ownership but of development rights. It gave the State power of acquisition over any land already developed, for public purposes. The costs of the enormous program were to be covered by a heavy tax on unearned increment.

The Uthwatt recommendations of September 1942 cannot be accurately reproduced in short compass. A sketch may serve to suggest the uncanny British gift for securing a revolutionary effect without revolutionary destruction.

The Uthwatt scheme may best be compared with the bold American schemes that burgeoned shortly after the bombing of Pearl Harbor. The difference is like that between a loose-knit Uncle Sam ranging over wide spaces and compact John Bull on his tight little island; like the differences between 43 people to the square mile and 700, with concomitant differences in industrial complexity. As the Committee said, "the denser the population . . . the more complex the industrial organization . . . the more highly developed must be the control of land organization by the community."

American schemes of the Hanson-Greer type dealt with cities devastated not by bombs but by real-estate inflation. They proposed that the Government bail the present owners out, saving them from insolvency, writing off the whole present cost to the public treasury but depending for recoupment on the results of vast future expansion in business activity and consequent value. The distressed areas that were bought would be put into pools cleared of debt, and leased out for development at current rates, counting on adherence by the developers to city plans, and on the business future of the city, to fill out the values now so delinquent. The Government would recover not only through its leases

American postwar plans look to "rehabilitation" of individual cities, by Government acquisition of the worst devastated areas — by saving the nucleus of a nucleus. Tight Britain, thought the Committee, must reject such partial pools, must control all land.

but through the consequent increases in taxable values arising from prosperity and full employment.

The Uthwatt Committee commanded no such optimism. It examined all such pooling arrangements of limited character and discarded them. Before it lay the Barlow Report and the Scott Report, both setting forth the indissoluble link between the future of the cities and that of the country under industrial dispersion. If anything was firmly agreed upon, it was that city planning alone would not do in England; there had to be one national plan, covering city and country, under unified control.

Accordingly the committee assumed the creation of the central authority and assumed the acceptance of new subordinations of private interests to the public good. For purposes of planning, the whole country would then be divided into built-up areas and undeveloped land outside the built-up areas.

It was in dealing with the land outside that the Committee introduced the strongest innovations. It proposed that the planning authority acquire not all the land but all the rights of development. The steps would be:

1. A general prohibition against individual development (outside built-up areas) and immediate compensation to owners for loss of development value.

2. "Unfettered determination through the planning authority" of areas to be developed, whether by public action for the national need or whether by private action according to demand.

3. "Purchase by the State of the land itself if and when required for approved development, whether for public purposes or for private purposes."

4. "In the case of approved development for private purposes, the leasing of such land by the State to the person or body undertaking the development"—preference would be given to the original owner.

The owner of a farm or country house, could, accordingly, stay right on, even after the State had paid for his development rights, and could, under local regulations, even add to his establishment; only when a large scheme was approved for the area would the State step in to buy, paying him for the value of the place less development rights already acquired, and compensating him also for any severance or "injurious affection."

The cost of so universal an undertaking would indeed seem to be prohibitive, and appraisal almost impossible, unless one understood a fundamental distinction drawn by the Committee between the problem of acquiring *some* land and the problem of acquiring *all* land. Paradoxically, the latter might be the simpler. This is because it excludes what the Committee called the "floating value."

To use a homely illustration of our own, "floating value" is what a storekeeper encounters, who is looking for a site in a block where there is confident expectation of a large office-building venture. Every owner in the block has a "floating" hope of attracting the big deal; every lot consequently costs too much for the less intensive use. Yet once the big deal has been closed, the "floating" value has all settled in one place; the *quantum* of actual office-building demand has been exhausted;

The Uthwatt scheme hinged on State acquisition, outside built-up areas, of all "development rights" plus greater powers of condemnation in built-up areas and recoupment by taxing unearned increment. Neither the scope nor the feasibility of the scheme can be judged without examining the basic difference between managing "some" land and managing "all" land, as instanced in the elimination of "floating" value.



British Official Photos



British architects plan confidently now, expecting that land will be released for building in large quantities and on orderly terms.

from all surrounding lots this "floating" value now evaporates as if it never had been there; the smaller deal can be made; the two transactions may be said to represent the actual *quantum* of development in the block for that year. So, too, if the land had been held by a single owner, he could have built the office building and opened the store without ever charging himself more than the actual development value of the two transactions.

In condemnation proceedings, in the opinion of the Committee, public bodies seeking *some* land could never avoid paying an aggregate sum in excess of actual development value because of the "floating" element; but, taking the whole country as a baseline, they need only study the actual *quantum of development* of recent years to arrive at a "global" valuation for the country as a whole. For its distribution among individual parcels they felt sure there could be devised an adjudicable procedure, again upon the basis of development in the past. As a "shot" they put the estimated area of development of raw land, for all Britain, at 45,000 acres per year with total development rights of roughly—£9,000,000 or \$45,000,000.

In the built-up areas the committee found that local authorities were hampered by limited power and limited means. Adequate powers could be provided only through streamlined condemnation procedures and the backing, financially, of the central authority. And, inasmuch as "sound planning does not destroy total land values but merely redistributes them, the ultimate cost may be reduced by recoupment elsewhere." So the authority was to be given power to acquire land even where no immediate development was in prospect. And, to assure real recoupment by the State, there was proposed a "periodic levy on increases in annual site value (of all land), with the object of securing such betterment for the community." The suggested rate was 75 per cent.

Such, in the roughest outline, were the far-reaching proposals of the Uthwatt Committee, with no indication of many a carefully worked out detail. The Britons asked no totalitarian surrender of all private rights in the community interest. They proposed widely to extend the area of private subordination; and it was significant, as Sir Ernest said, that this move was pushed in "the landowners' own House of Lords." They wiped out the major allurements of speculation and its major disasters, implying that speculation as such had lost its social function. Risk-taking and profit-taking were confined more closely within the field of actual productive development.

Whatever might be the worth of the Uthwatt plan, its intention was evidently not to cramp or disappropriate owners but to assure a greater future to each through orderly development for all.

The part played by architects in formulating these policies and later in acting on them remains as a later subject. The Royal Institute of British Architects made major contributions of its own through its Reconstruction Committees. Architects drew city plans, assured that devastated areas would be controlled and could be turned to new account. They set standards and evolved new methods of work. They worked up new concepts to link town and country in new ways. All this will be covered in the continuation of this article next month.

DEDICATED TO WAR AND PEACE

THE RCA LABORATORIES BUILDING, PRINCETON, NEW JERSEY

The H. K. Ferguson Company, Engineers, Harry L. Porter, Chief Architect



At the dedication ceremonies: left to right; Dr. Harold Willis Dodds, President, Princeton University; Col. David Sarnoff, U. S. Army Signal Corps; Maj. Gen. Dawson Olmstead, Chief Signal Officer of the Army; Lt. Gen. James G. Harbord, U. S. Army (retired) and Chairman of the Board, Radio Corporation of America

THE ONLY HAPPINESS which art, science and industry can provide is the happiness of free men and women." With these words of David Sarnoff, RCA president, the new RCA Laboratories, Princeton, N. J., were quietly dedicated to a war task which had hurried the first building unit to completion. Plans for the complete laboratory, made long before Pearl Harbor, call for a large addition to the present unit, which must now wait until radio and electronics research turns again to peacetime pursuits.

The laboratories occupy a site of approximately 260 acres not far from the Princeton University campus. Since it was undeveloped farm land, it was necessary to design all utilities, which include two wells, a sewage disposal plant and a boiler plant for heat and power. High voltage electrical power was available at the property.

The main building is a three-story and basement unit containing the laboratories and offices. At the rear there is also a one-story unit housing the library, drafting room, cafeteria, model shop and various stockrooms. The addition to be built (perspectives next page) will contain additional laboratories, the final dining and assembly rooms, together with administrative and patent department offices.

Construction is reinforced concrete foundations, basement walls, floor and roof slabs and brick exterior walls.

The exterior face brick is tan, with limestone trim. The structural frame is steel. The roof slab is insulated with vermiculate concrete insulation averaging about 3 in. in thickness. Pitched roofs are gypsum plank with 1 in. insulation covered with smooth surface composition roofing.

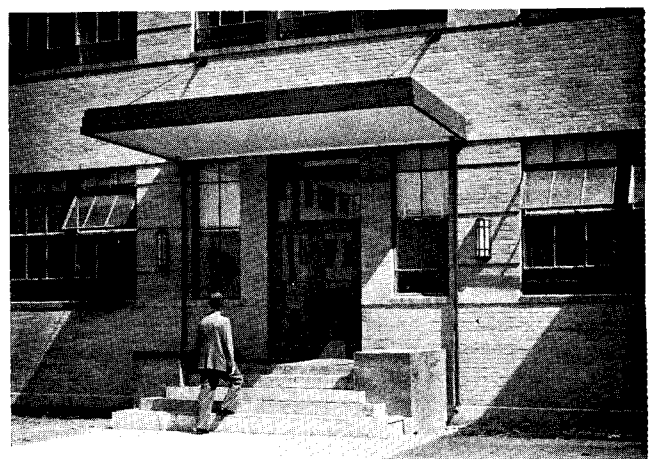
In general, concrete floor slabs in the three-story portion have 3-in. porous concrete fill with 1 in. cement topping to provide space for underfloor services. Floor finish in the major portion of the building is asphalt tile with rubber cove base. In general, interior partitions are 3 in. gypsum tile plastered on both sides. Toilet partitions are glazed tile. Stair partitions and partitions in the one-story section are clay tile painted.

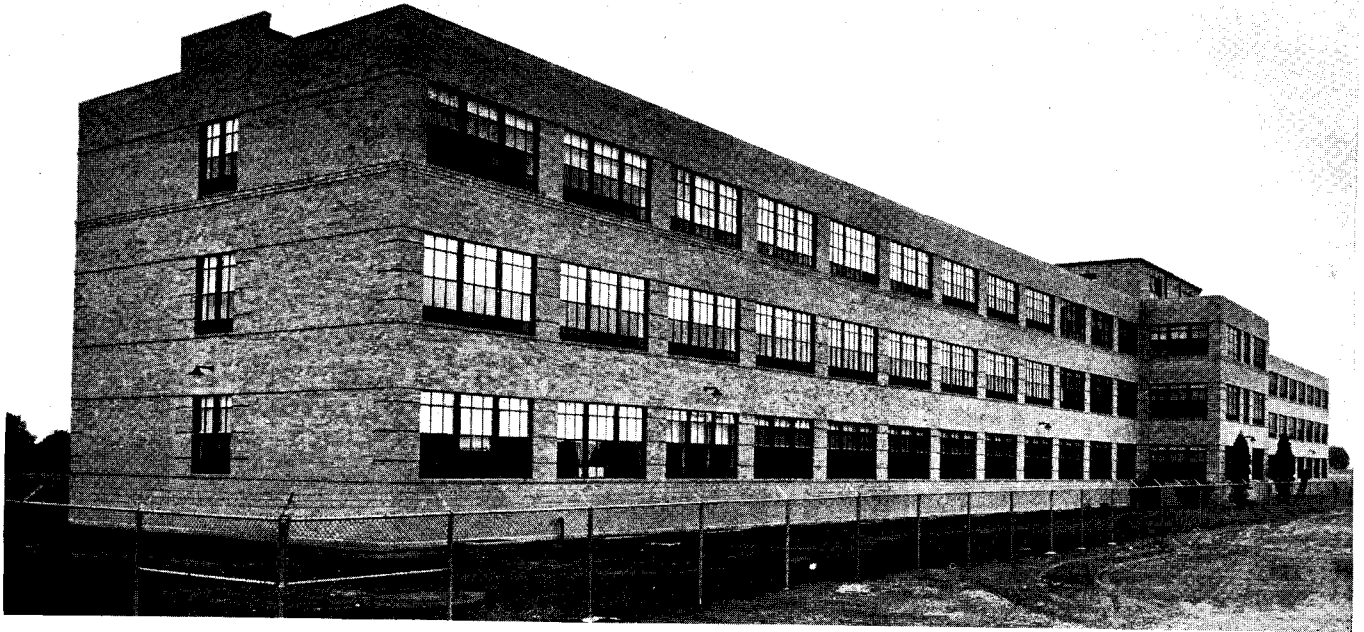
At the crossing of the wings there is a penthouse one story high constructed of steel and brick with concrete roof slab. This penthouse contains the elevator machines, the pressure water tanks, an air conditioning unit and a small laboratory unit. The roof slab has a wood deck on sleepers, covered with heavy copper sheathing so that it serves as a ground shield for antenna experiments conducted on the roof.

Typical space is completely equipped for use as electrical laboratories (see page 63). Conveniently located along corridors on each floor are workshops with bench facilities and various power tools. A mechanic is on duty on each floor to assist the research scientist who may want to make a specific part in a hurry. More complicated parts are made in the main model shop.

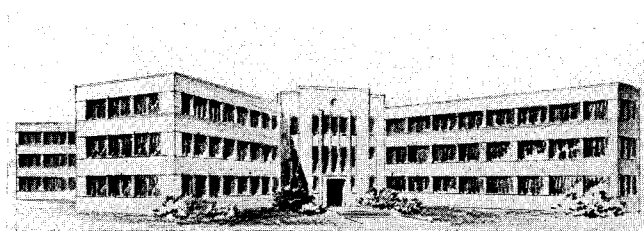
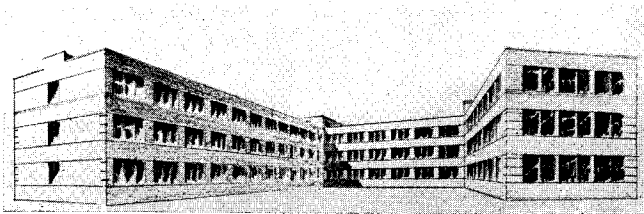
In addition to typical laboratories, there are special rooms for television and optical study, a chemical laboratory, an acoustical laboratory, an electronic tube manu-

Main entrance of the new RCA Laboratories (first unit)





Above: View of main laboratory building. Left: side and front perspectives of the laboratories as they are planned for postwar

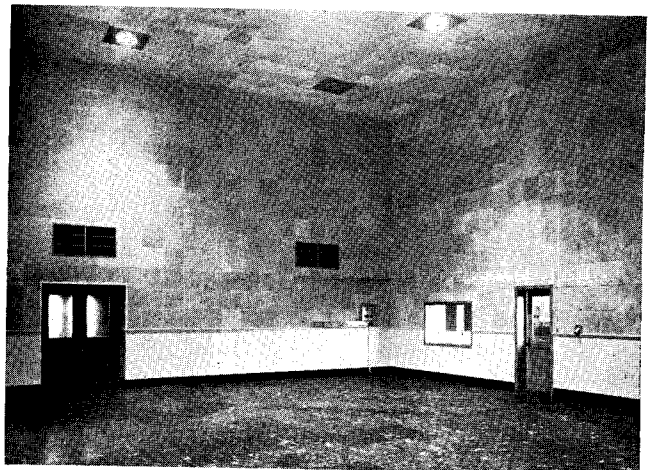
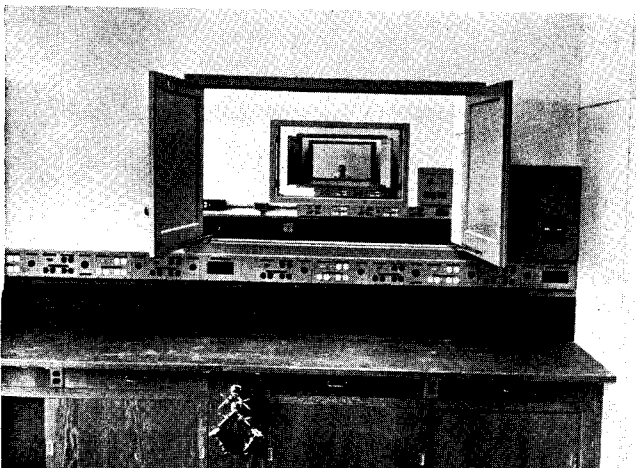


facturing shop, cathode ray laboratory, model shop, metal testing laboratory, etc.

These various rooms introduced many special requirements. Only three of them—the chemical, electron microscope and glass optics rooms—are air conditioned, but there were special problems such as that of electrical shielding. The laboratory for research on receiving tubes has double walls of copper for insulation against electrical disturbances. The acoustical laboratory involved much more complicated problems structurally (see page 64). Pretty generally throughout the building, a wide variety of utilities and services were required.

Bays of the optic laboratory are ingeniously connected by windows, making possible long focus experiments through the rooms

Television laboratory, showing control room and two-story studio, 36 by 48 ft., designed for normal sound characteristics





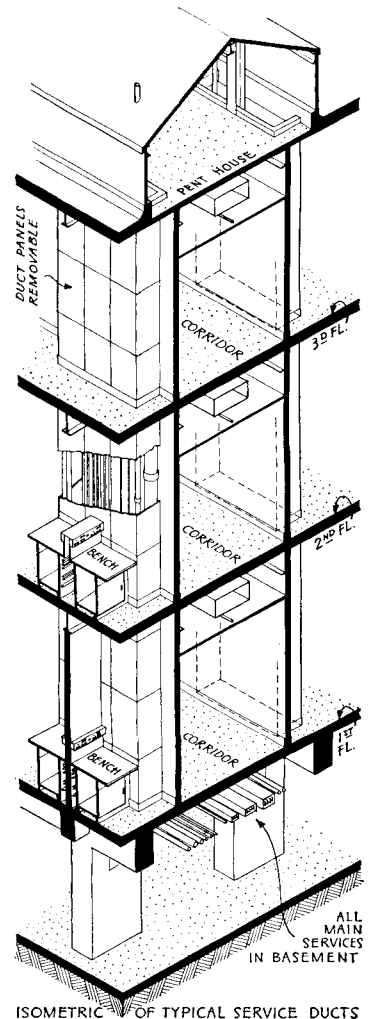
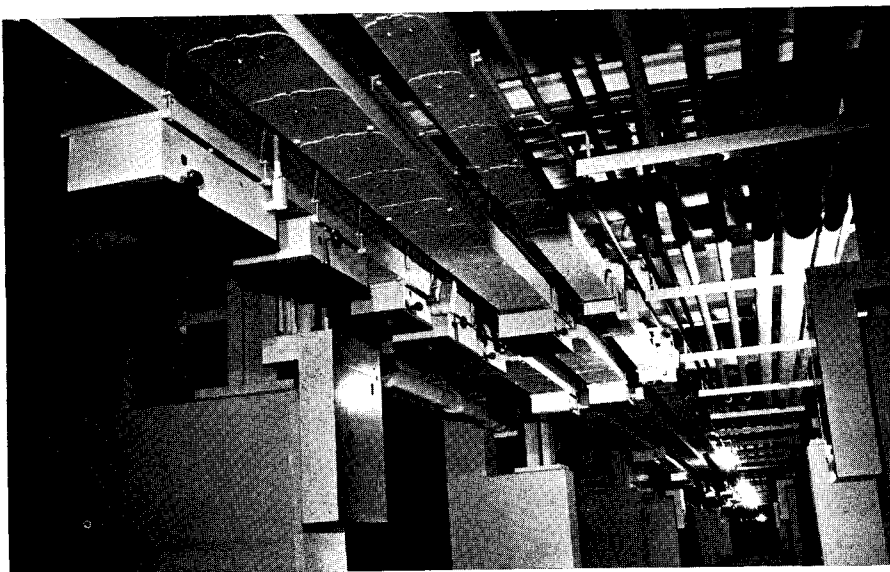
MYRIAD SERVICE DUCTS

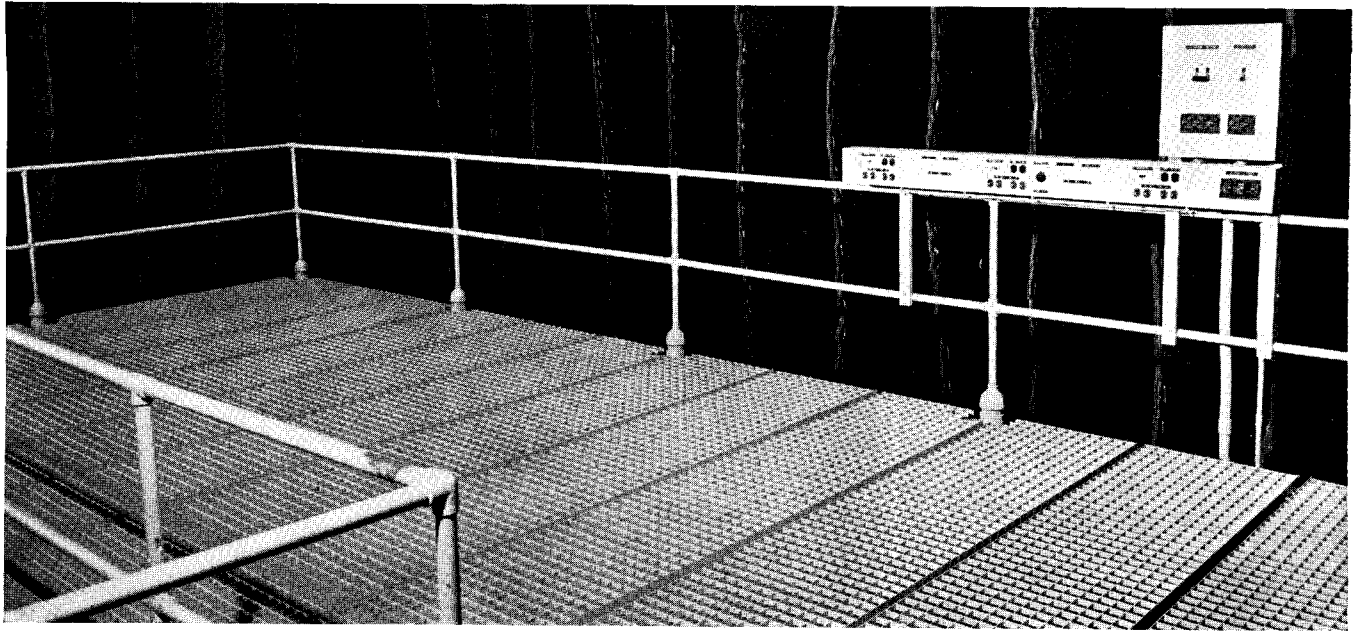
The laboratory areas require a great variety of services: hot and cold water, compressed air, gas, oxygen, hydrogen, acid drains, ventilating ducts for fume hoods, and (for several types of electrical outlets) both alternating and direct current supply in the many different voltages necessary for radio experimentation.

These services all enter through

service shafts placed at each interior column along the corridors and running from basement to roof. They measure approximately 3 by 6 ft., and are constructed with steel studding and asbestos cement sheets. The sheets are removable panels, to give ready access to the lines inside the shaft. The services are fed out to standard laboratory work benches 6, 12 or 18 ft. long placed against the sidewalls and terminating at the service lines.

Basement corridor is a main artery for electricity and many other service lines





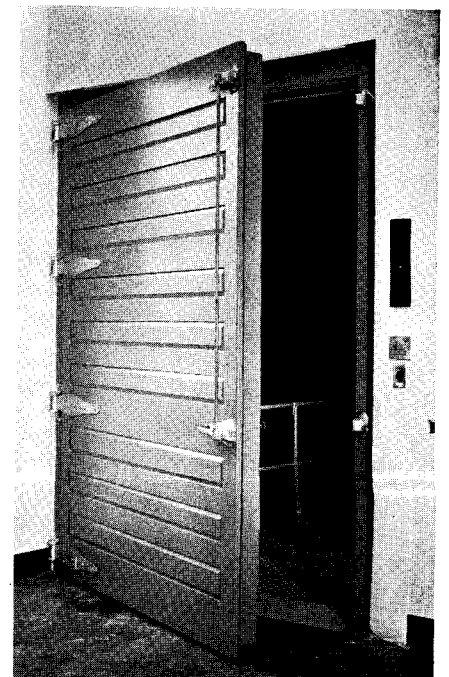
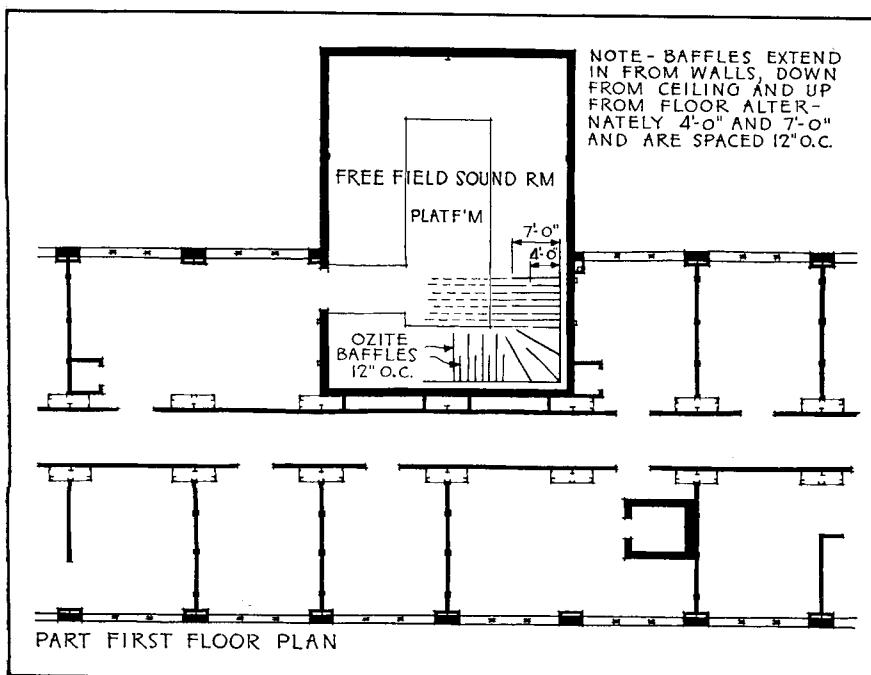
"FREE FIELD" SOUND ROOM

The designers were confronted with a unique problem in the so-called free field sound room—a large room that was to be completely sound-isolated and sound-deadened, so that no echoes, reflections or extraneous sounds of any kind could be heard within. The room is three stories high, 36 by 48 ft., with a floor structure completely separate from the rest of the building. The floor itself is a steel grid platform; the supporting posts are set in rubber. Around and under this platform the space is filled with curtain baffles, hanging from ceiling to floor in an edgewise position. They are of 1-in. ozite and measure from 4 to 7

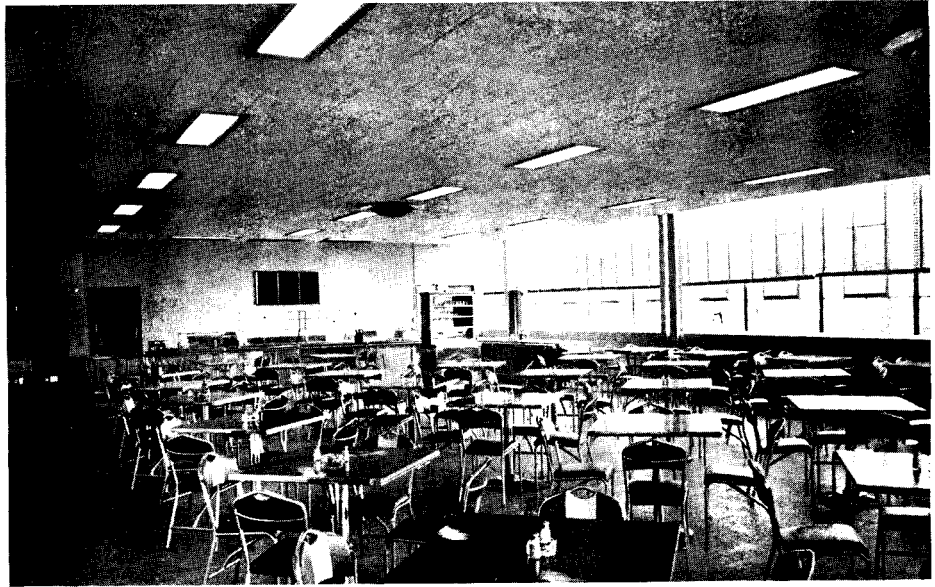
feet in width, arranged as shown in the plan below.

The room is heated by circulating hot air, and it has its own ventilating system. Entrance is through a heavy wooden door, padded on the inside.

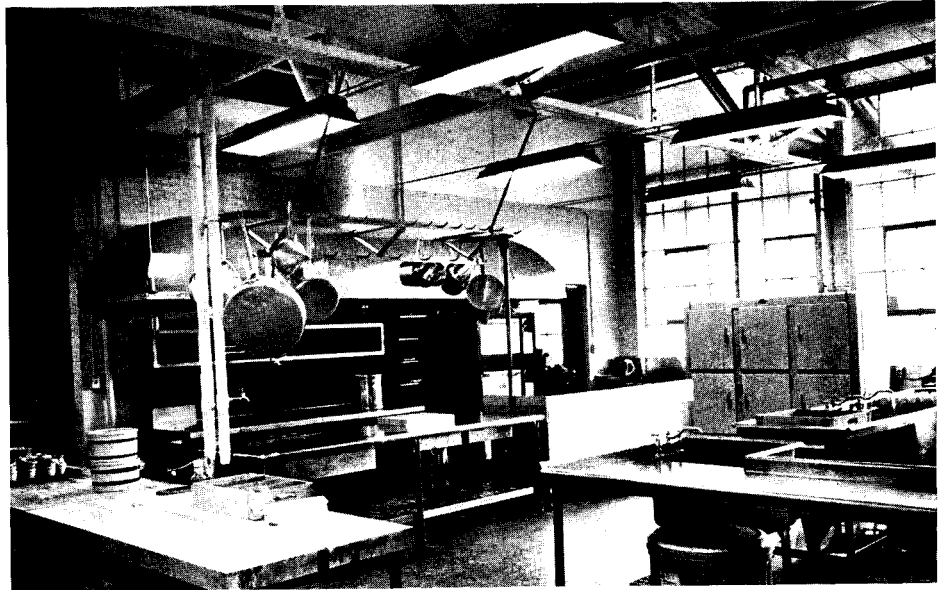
The purpose of this laboratory is to duplicate the acoustical characteristics of the outdoors under ideal, normal conditions, so that all that can be heard is sound produced inside, with no reflection to distort it. Spoken sounds seem very soft; as somebody said, they sound "as if you were going under ether." At any rate, the room provides one place where sound measurements can be accurately made, and where measurements made at different times can be compared.



The cafeteria, in the one-story wing at the rear of the main building, has serving capacity for 200 persons at one time. Additional dining facilities will be installed when the second section is built



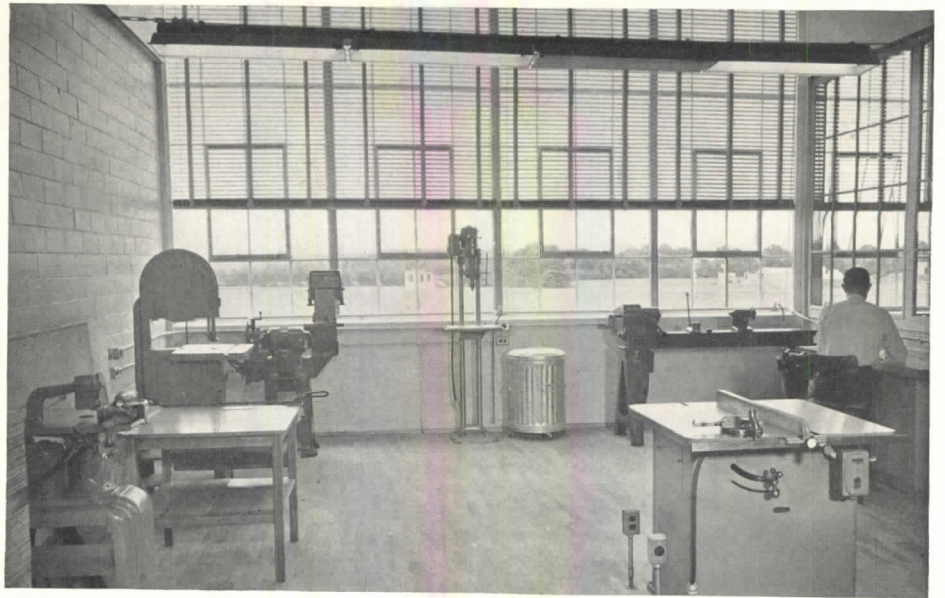
The cafeteria kitchen has complete facilities, for the RCA Laboratories are far from any built-up community. Other facilities in the one-story wing include model shop, library, drafting room



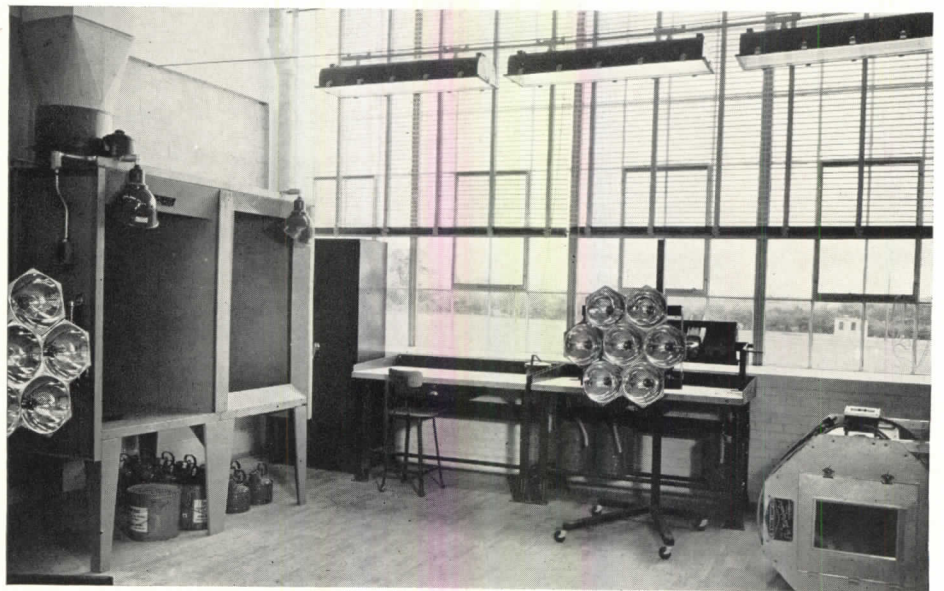
The drafting room, with boards for 15 draftsmen, has maximum daylight from the north, and fluorescent lighting for the wee small hours. Adjoining is the blueprint room, with photostat equipment



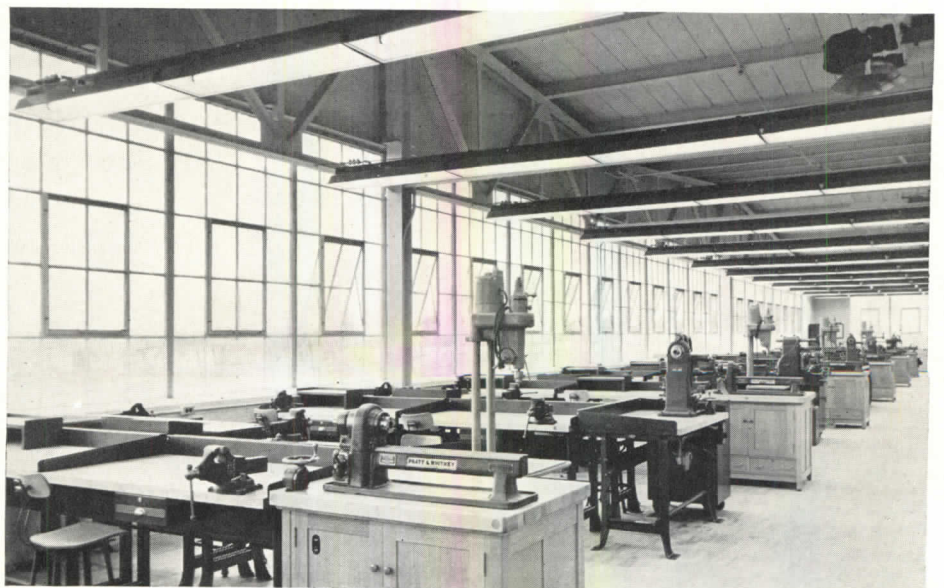
Shops to make almost any kind of gadget a research worker can think up are very necessary features of the RCA Laboratories. Here is the cabinet shop, where "mock-ups," or models, are fashioned of wood



When the ideas of the dreamers progress still farther, the scale samples are supplanted by finished models. In this lacquer room there are two spray booths and batteries of infra-red drying lights

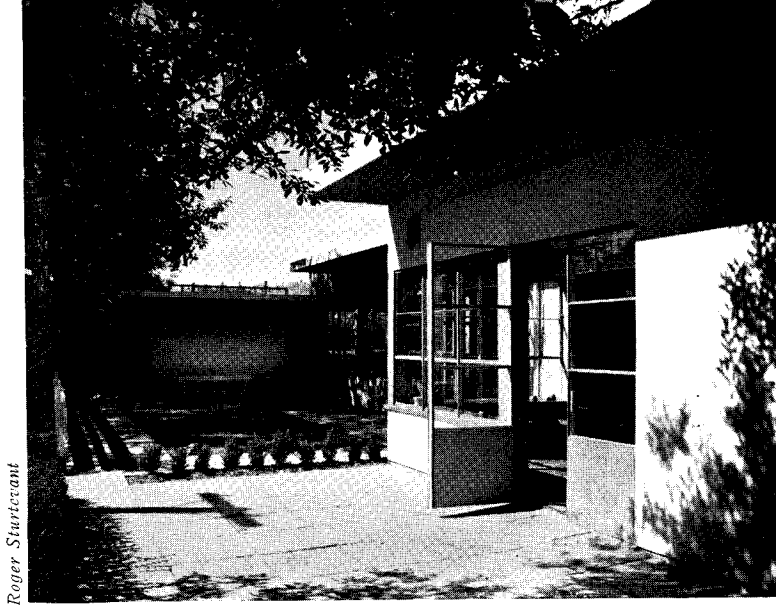


The model shop is one of the most modern and completely equipped in existence. Milling machines, drills and lathes are located near the benches. There are also larger items—up to giant punch presses





A progressive, growing institution, the Helen Bush School, Seattle, builds no monumental structures; buildings must not be finished products, but living and changeable. Mostly they



Roger Sturtevant

are one-story frame, functional, alterable, expansible, economical. Living quarters need not be so impermanent; they are of two-story fireproof construction. John T. Jacobsen, architect

ON PLANNING THE POSTWAR SCHOOL

PART ONE: By JOHN E. NICHOLS, A.I.A.

Supervisor, School Buildings and Plans, Connecticut Department of Education

TO ATTEMPT to be specific about trends in school design that may become pronounced after the war would be presumptuous. Periods of warfare are periods of great social, economic and technological change. The shape of those changes is not yet discernible, yet education to have meaning will have to reflect them faithfully. The time has not arrived for crystallizing ideas which must be valid in the light of conditions that do not yet exist and whose nature cannot yet be seen.

It seems more sensible to point out issues and problems that will affect functional planning of school buildings, and attempt to forecast, very broadly, the trends of design to meet those problems.

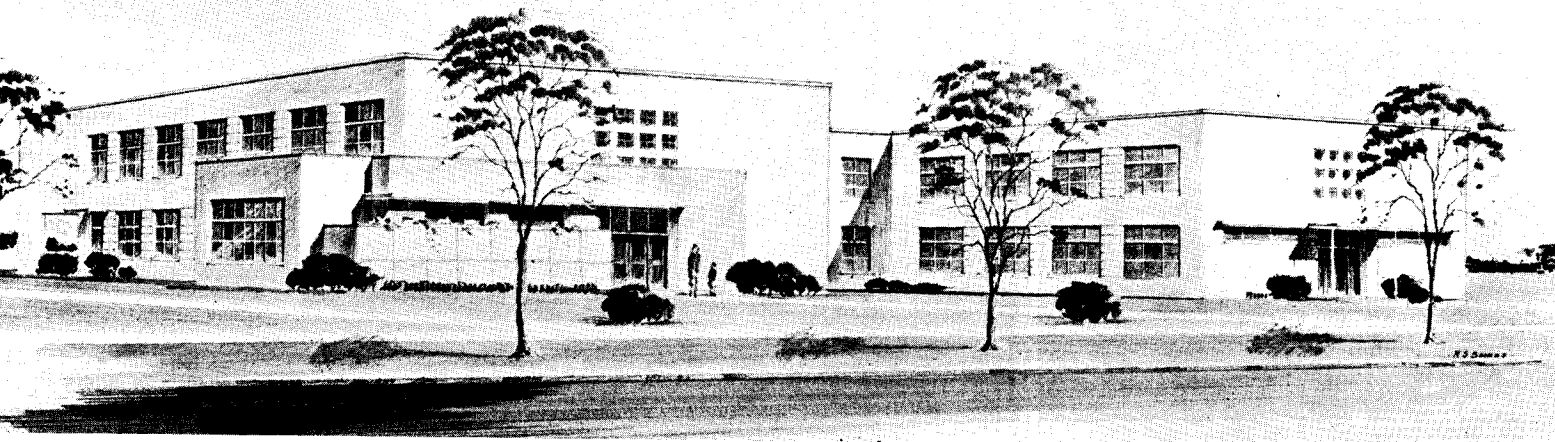
1. Realistic education is directed toward understanding the present day world and learning to cope with its problems. It will be less and less concerned with learning bodies of unrelated fact and more with learning to live. Emphasis will continue to shift from textbooks and parrot-like recitation to learning through doing, through individual and independent exploration, investigation and experimentation. Schools increasingly will become laboratories in self-reliant living.

The physical effect upon school buildings will be a greater emphasis upon the "laboratory" approach to the design of individual rooms and upon the provision of those facilities necessary for experience in practical tasks. The old undifferentiated "classroom" will give way increasingly to specialized rooms with specialized equipment—work-

rooms with appropriate counters, tables, benches, sinks, service outlets, shelves and cupboards, filing cases, map and chart cases, project lockers, subject files, notebook cases, and so on. Increasingly, too, will means be provided for instruction and experience in such practical areas as home-making, child care, home repairs, gardening, self-government. Rooms will be larger to accommodate activity and equipment. Noise reduction treatment will be taken for granted. Wall materials will be adapted to tacking and nailing. Emphasis will be upon utility.

2. Public agencies are learning more and more to work together, pooling their energies and resources, cooperating rather than competing. School buildings increasingly are becoming the headquarters for community programs in such areas as health and welfare and recreation as well as for education in the more traditional sense. There is seldom any distinct line dividing the work that those agencies should be doing.

Buildings designed for this broader function must encourage by their layouts, and provide the space and equipment for, a variety of community enterprises. For health service there must be clinics and facilities for consultation and community health instruction. There must be space for social work—testing, interviews and conferences in the field of public welfare. There should be office space for the recreation director. In smaller communities particularly the school will accommodate the public library service and will serve as a governmental center, containing the necessary town offices and space for voting and other gov-



Planned for postwar, for the Detroit Board of Education, this school gives a glimpse of advances to come. Hyde & Williams, architects

ernmental functions. The war has made people realize what the school has to offer to government by the way it has stepped into the breach with its services in rationing and registration.

3. Schools will continue their already pronounced trend toward an extension of their programs downward to include pre-kindergarten children and upward to include junior college youth. The war has served to force recognition of a need for nursery schools that education has long ignored. The need for such a program will not die with the coming of peace—nor will the program itself. High school graduates, on the other hand, have found gainful employment increasingly hard to find. The postwar era will see that situation intensified. The demand for schools to provide worthwhile pursuits for youth until they can be employed will continue. The addition of two years or so above the 12th grade will become increasingly common.

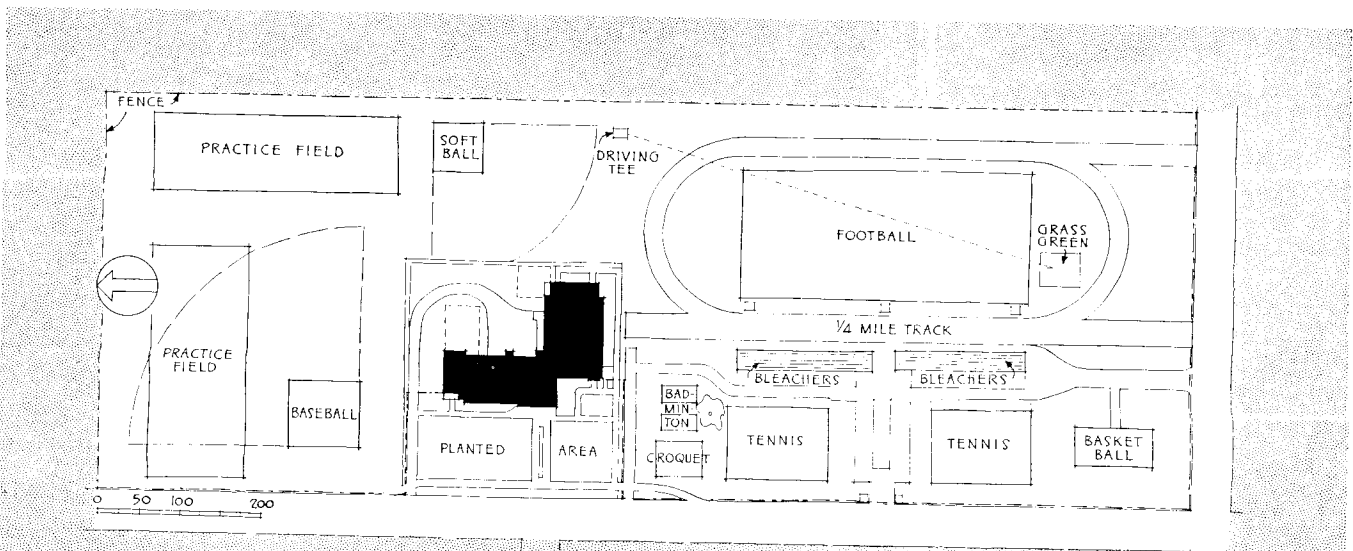
The implications here are obvious. Day care units will be added to elementary schools and high school facilities will have to be expanded. The new post-high-school facili-

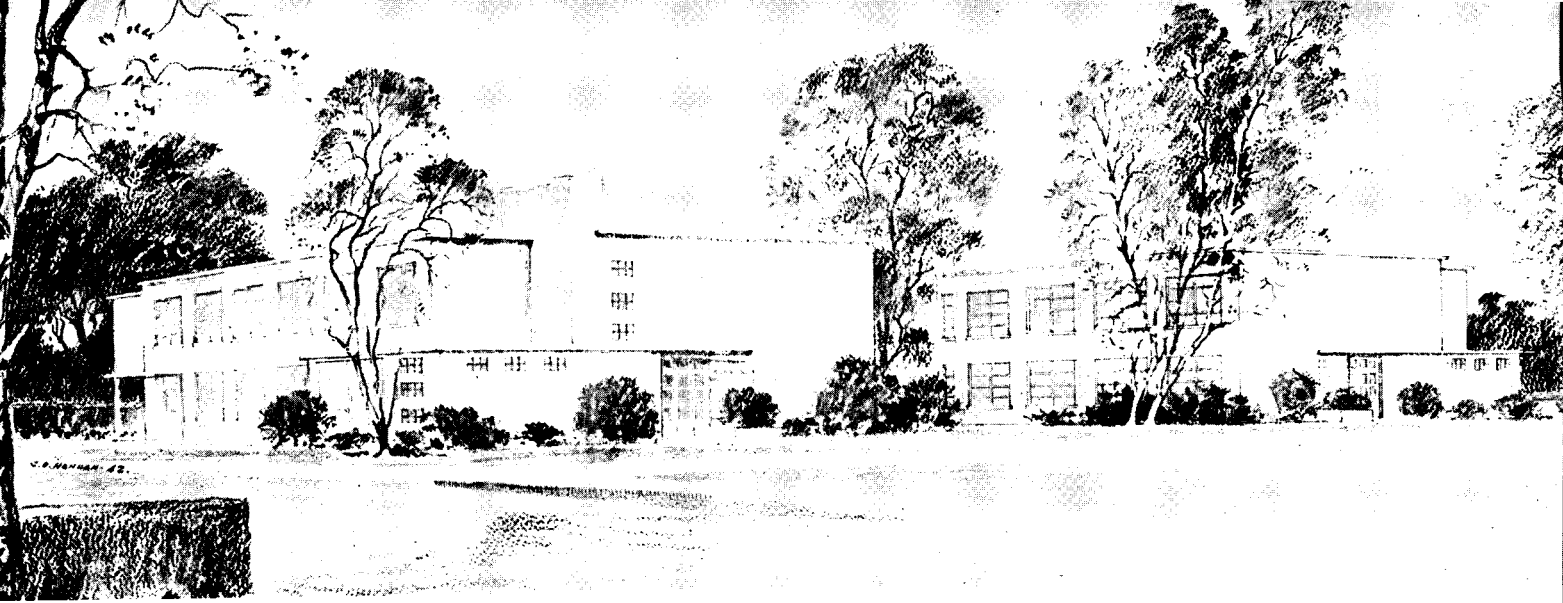
ties will probably be for work of a vocational character. There will be more emphasis upon shops of various kinds in order to provide vocational work experience of a practical nature adapted to the needs and interests of the mature pupil looking forward to employment.

4. Hand in hand with the extension of the school program to include younger and older pupils will come the move toward an extension of the program in point of time. The school day will grow longer and there will be more school days in the year. This will be brought about by the need for a longer day for the nursery units and for a year 'round program. For high school and post-high-school youth, on the other hand, the cooperative school-work program will find wider acceptance. Here the pupil is in school during certain intervals and in industry or business during others. This program, too, will tend to become year 'round.

The result will be an increase in the facilities for living within the school—resting, eating, washing, dressing, amusement and recreation as well as formal learning. There will also be an effort to meet summer weather condi-

Postwar dictum: children shall become strong. Site plan of Roxana, Ill., Community High School. Wm. B. Ittner, Inc., architects





A Detroit postwar school which could not wait; part of this one became a war project. Giffels & Vallet, Inc., L. Rossetti, architects

tions in such matters as ventilation, orientation, fenestration, shading, and the like.

5. Another development which will bring about greater emphasis upon school shops will be the continued trend toward education in making a living.

Such shops will not be only for mechanical pursuits but for commercial and distributive and technical occupations. They will be designed, too, not only for pre-vocational and exploratory work and for terminal vocational courses but also for short intensive courses for small selected groups needing special training or retraining. (We have a rehabilitation program to look forward to after this war).

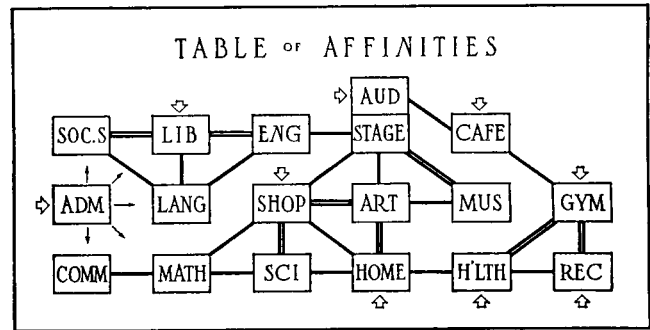
6. The move toward adapting our school buildings for community use will continue. We may expect them to be used more and more for recreational, cultural, avocational and governmental purposes. Nor will this community use continue to be confined to "out-of-school" hours, especially in view of the probable lengthening of the school day.

School buildings increasingly will be designed for sectional occupancy so that various parts (auditoriums, gymnasiums, shops, laboratories, libraries) may be used independently without disturbance to the occupants of other parts. This will require special attention to circulation, access, heating and ventilating, soundproofing, parking, etc. On the other hand, dual use of the same facilities by pupils and adults will require careful consideration of storage problems, for more materials will be in use. They will be in greater variety and unfinished work will have to be put away to clear for each succeeding group. Also, additional facilities will be provided for community organizations.

7. There will come an increasing tendency to break down the barriers between areas of subject matter. Courses will be organized less for the convenience of the teacher and school administrator and more for the benefit of the pupil who has had to correlate for himself areas of subject matter that were not designed to bear much relation to one another. Increasingly will education begin with the pupil and his needs

rather than with the subject to be dispensed. Mathematics will carry over into the science laboratory and English will find application in the shop. The pupil will have greater freedom of access to those laboratories and shops which, at the moment, offer those facilities most needed to further his work in a given field.

As a consequence, more attention must be given by the designer to those physical inter-relationships which will permit and encourage proper working inter-relationships. Certain shops and laboratories have special affinities for others—that is, between them there is and must be less



From a report of the Connecticut Dept. of Education

distinction and more integration. Science laboratories will bear definite space relationships to homemaking laboratories, for example, and the school stage to shops and music units.

8. Obsolescence of school buildings is well recognized as one of the greatest deterrents to progress in education. Our nation is littered with buildings that are structurally sound, that provide comfortable and healthful shelters for pupils, but which do not lend themselves to the conduct of a modern forward-looking educational program.

The recent past has seen a pronounced move toward the development of flexibility through skeleton construction. To effect a minor interior change, however, such as moving a partition, is still a construction job. Partitions generally

are removable but not movable. To meet this weakness and encourage changes that will keep buildings functionally young, "soundproof" fire-resistive partitions that are durable and attractive will be brought to a higher state of development and will all but replace entirely our present interior partitions of block masonry.

The movable partition, however, will bring about the readaptation of heating, ventilating, plumbing, and lighting elements and the nature of fixed equipment. As these are usually designed today they would not permit the movement of interior partitions at will.

The causes that make for movable partitions and skeleton construction will also make for reduced emphasis upon permanence, and more upon function. The tendency is and will continue more and more toward placing money into those elements that are useful—and perhaps pleasing because they are useful—rather than into those whose purpose is primarily longevity or elegance.

Probably the ideal school would be so nicely designed and constructed that it would serve faithfully and without failure for ten or fifteen years and then, like the wonderful one-hoss shay, except for age, go "to pieces all at once—all at once and nothing first, just as bubbles do when they burst."

The architect who can approach the deacon's achievement will indeed be welcomed by the educationist, and I think also by the public which has so long poured money into futile permanence.

The architecture of schools will become less formal, less self-consciously impressive, less forbidding perhaps to children. Schools, as I have repeatedly intimated, will take

their places as integral and intimate parts of the life of the community. They will increasingly be thought of as living tools of the community and not as places to be displayed as symbols of affluence or false culture. As a consequence they will be designed in as inviting and homelike a character as possible.

9. Natural lighting of schools has never been entirely satisfactory. With all its faults, however, it is preferable to any practicable artificial lighting so far devised.

Hand in hand with technical advances in the field of lighting will come a trend toward less reliance upon natural lighting in schools, with consequent far-reaching modification of present standard practices in design intended to provide adequate illumination—narrow school rooms, high ceilings, fixed radiation locations—and far greater freedom in planning both building layouts and those of the individual rooms. At the same time developments in heating and ventilating towards forced air, or more probably in the direction of the radiant or warmed wall and floor type, will be encouraged by reduced window areas. Improved ventilation methods on the other hand will encourage the reduction of windows.

It is a mistake to attempt now the detailed planning of individual school buildings to be constructed after the war. It appears far more sensible to use that same effort and money instead for research into the multitude of architectural-engineering-educational problems that confront us; in developing tentative plans which readily may be kept revised and up to date during this unstable period until the very moment that they finally must be frozen.

PART TWO: By I. O. FRISWOLD

Director, Buildings and Business Administration, Minnesota Department of Education

IT IS MY BELIEF that our public school buildings of tomorrow will be similar in essential respects to those erected in recent years. The exterior design, interior arrangement, and general space provisions in school buildings erected during the next decade are to be found in structures erected in recent years. Rather than revolutionary changes in school building design we can expect an extension of the better practices now in evidence of the school architect, the engineer, and the educational consultant in the functional planning of school buildings.

With respect to major trends in teaching methods that may be expected to affect the design of public school buildings, at least two are worthy of mention:

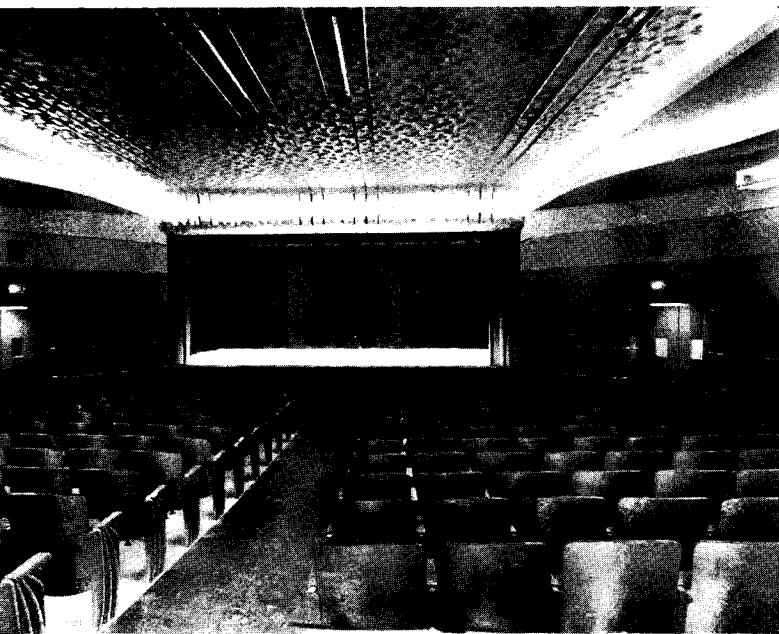
First, increased emphasis on the use of audio-visual aids and methods in instruction will require that instructional rooms be provided with more storage and display space, planned and equipped with audio-visual needs in mind. In addition to planning regular classrooms for audio-visual instruction, special facilities will be provided in the form of laboratories, museums, projection rooms and equipment, storage and servicing rooms.

Second, the planning of school buildings will be affected by the continued development and extension of the activity program. This movement is well developed in many communities, and we have reason to believe it will continue

to spread. To the extent learning is accomplished by doing rather than by listening, more instructional space must be provided per pupil. Liberal provisions must be made for handcraft, dramatization, construction, art and music activities, increased storage facilities and flexibility within school buildings.

Even greater changes can be expected from extensions or increased emphasis in subject matter fields. For example, health and physical education throughout all grades of the public school system undoubtedly will receive greater emphasis after World War II. This means more schools will have gymnasium, locker and shower, and other auxiliary facilities for physical and health education. Likewise, a tremendous impetus will be given to pre-vocational and vocational education. Doubtless many schools will erect vocational shop facilities physically independent of existing structures. The continued growth in music activities will result in the incorporation of music suites in secondary school buildings. These probable developments are indicative of several that will require careful consideration in preparing future school building plans.

Unquestionably, adult education will receive greater emphasis. Population trends suggest that with the passing of time we will have fewer school children and more old folks, and our public schools must be planned to accommo-

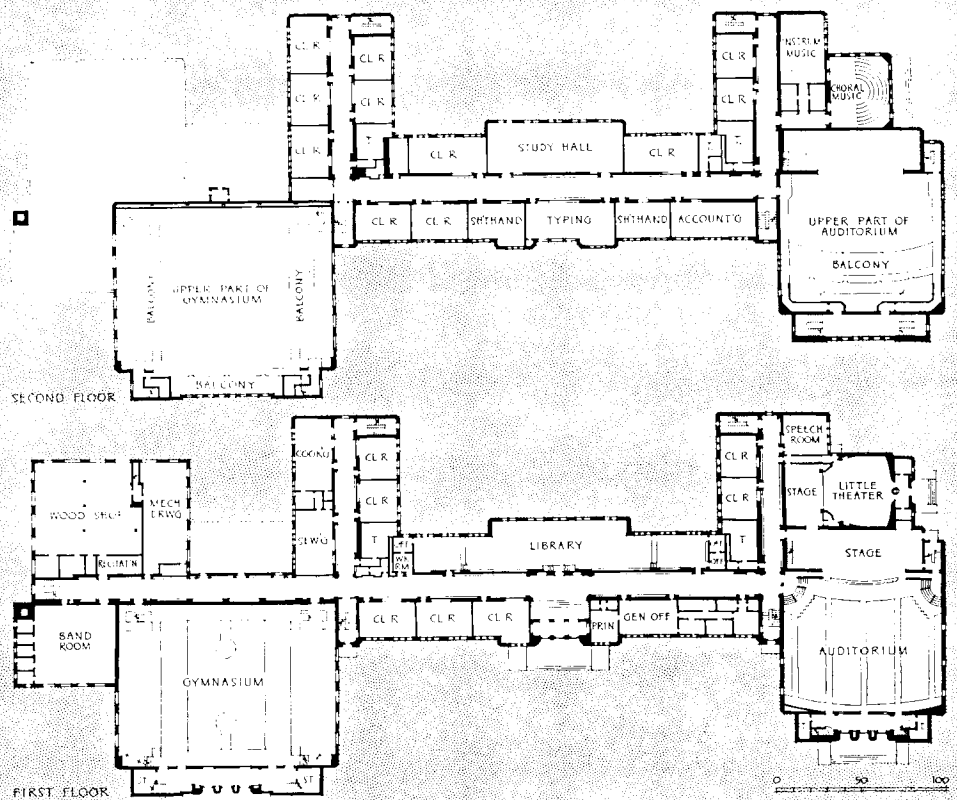


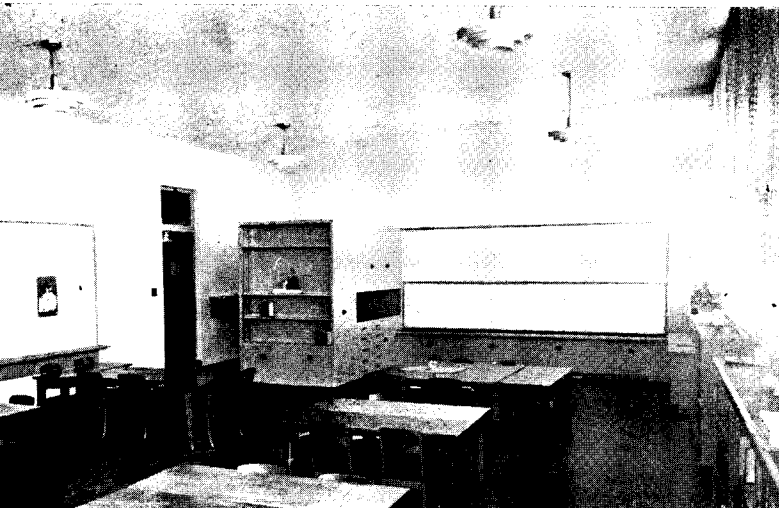
SENIOR HIGH SCHOOL
ROCK ISLAND, ILLINOIS

BENJAMIN A. HORN, ARCHITECT

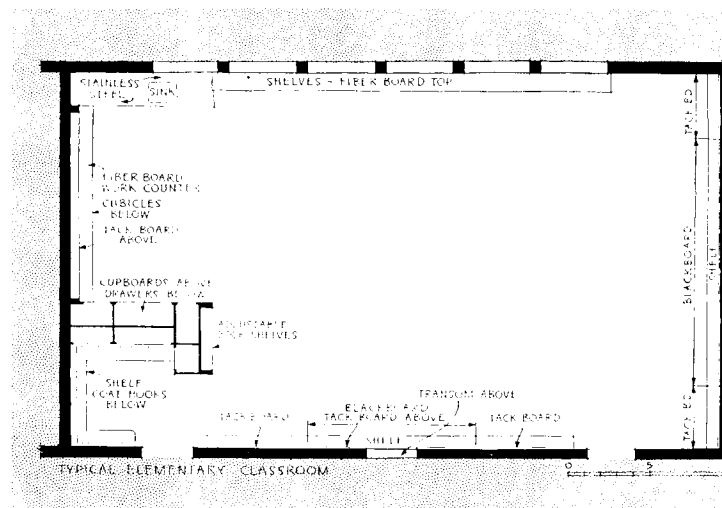
WM. B. ITTNER, INC., CONSULTING ARCHITECTS

A large high school definitely planned for wide usefulness for community activities. The separate entrances to gymnasium, auditorium and little theatre, would seem obvious features anyway, but are nevertheless sufficiently unusual in schools of an earlier era to deserve comment. At any rate they invite use of these important areas by the whole community, not just students. The placing of the library also offers convenient access to the public. And, possibly more important, the school offers a wide variety of shops and activity rooms that will prove valuable for training adults as well as pupils.





Considerable study of the "typical" elementary classroom in San Diego has led to widespread use of the ideas here shown: cloak-alcove, storage space for playground equipment, work



alcove with sink, closed and open cupboards. Each student has his own storage cubicle. Room dimensions are 23 by 40 ft., kindergartens larger. Clyde Hufbauer, supervising architect

date adult education activities as well as the instruction of children of school age. Furthermore, a decline in our school population can be expected to result in a smaller pupil-teacher ratio than heretofore. It is not probable, however, that a decline in the number of pupils per teacher will result in smaller classrooms, because of the need for more space per pupil. The more complex our civilization becomes, the greater will be the need for the schools to increase their instructional services.

Social, educational, economic, and technical trends now in evidence suggest that our public schools must assume a larger responsibility for the promotion of human welfare. In many communities, the nursery school must be added to care for the children of working mothers. Youth must be given medical and dental care, and our schools must participate in promoting such services if our conservation of human resources is to be made effective. Juvenile delinquency during wartime and the maladjustment that develops during postwar periods will become a major social problem in the solution of which the public school must participate. Our public schools must become youth centers contributing to the constructive out-of-school activities of young people. Provision must be made for the welfare of out-of-school youth as well as those of school age, outside of school hours. If the federal government institutes a program of military training for all able-bodied youth before they reach the age of 21 years, the schools will be required to extend their program to bridge the gap between the time high school pupils graduate and the time they receive their military training, and to prepare them for gainful employment after their military service. Factors such as these will require that public school buildings be planned to facilitate the extension of social and educational services.

In the light of current trends and anticipated demands, school buildings must be planned to provide the utmost in

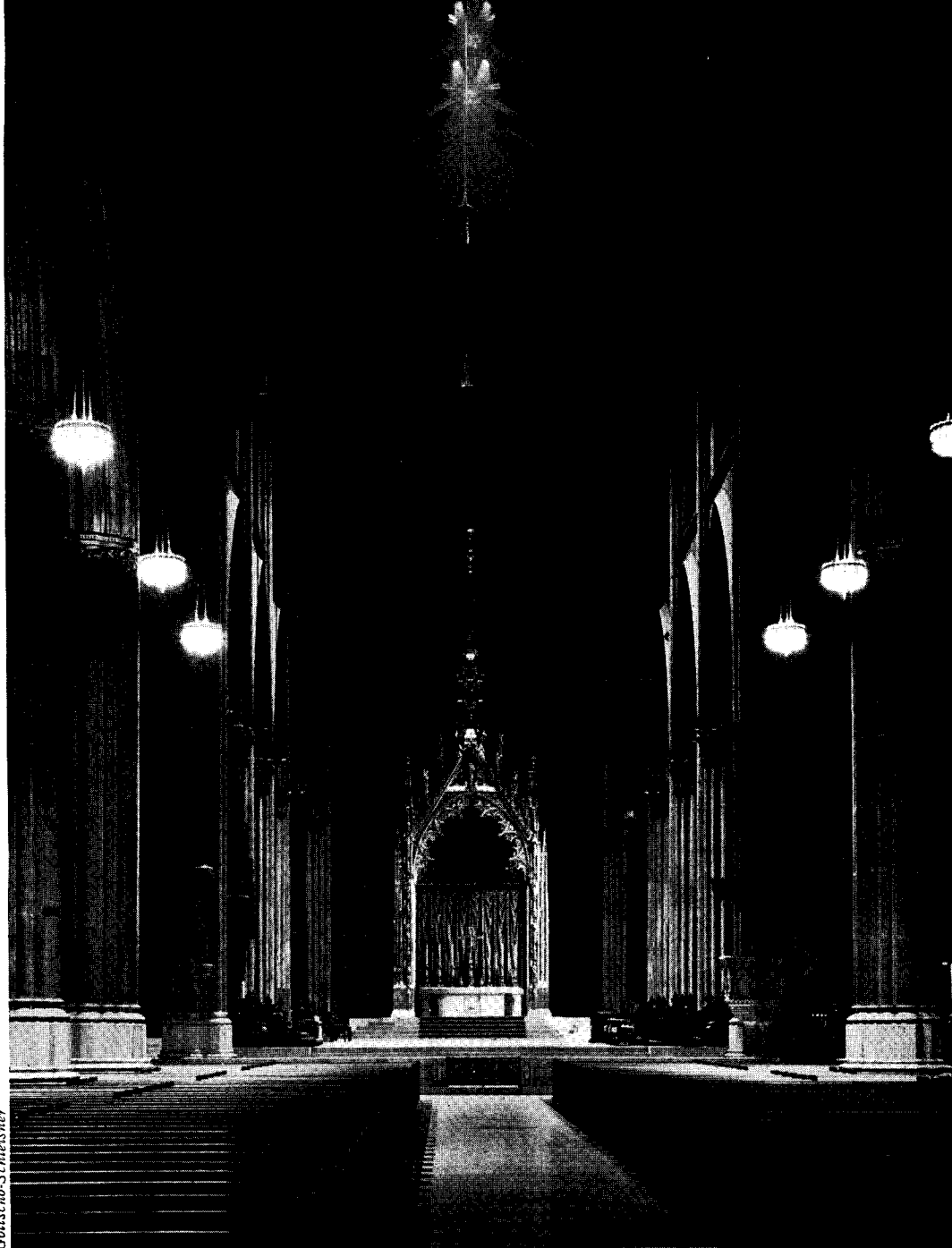
flexibility. Provisions should be made for the ready extension of the physical plant, for multiple use rooms and equipment, and for changing interior partitions. The small school, in particular, must be planned so that the same space can be used for a variety of activities. This means more multiple-purpose science laboratories, general shop facilities, combination gymnasium-auditoriums, combination lunch room and study halls, and the like. The larger schools will need a larger number and a greater variety of specialized rooms.

We have a right to expect that architects will adapt their thinking and practice to new conditions. The fact of the matter is, however, that many architects practising today find it difficult to change their philosophy and practices of long standing. Whereas nearly every architect would agree that form should follow function, there is a wide difference of opinion as to whether a given form is functional or not. Because the laymen comprising our boards of education look to the architect to determine the design of public school buildings, it is obviously important that many architects change their viewpoint and philosophy, if new developments in design are to be achieved.

We have reason to believe that school buildings of the future (and this includes many of those that will be constructed during the postwar period) will have extensive acoustical treatment, be better insulated against heat and cold, exemplify best practices in interior decoration, and be equipped with better mechanical equipment for their artificial illumination, heating and ventilation, and that the personal factor in the control of such equipment will be largely eliminated by the use of automatic devices. School buildings of the future are not only going to be more healthful and attractive and sanitary, but they will be constructed of materials that will reduce appreciably the cost of operating and maintaining them.

The new altar and baldachino in St. Patrick's Cathedral, New York City, designed by Maginnis and Walsh, Architects

Gottschko-Schleisner



RELIGIOUS BUILDINGS

A STUDY OF CHURCH DESIGN, PRE-WAR AND POSTWAR
PREPARED IN COLLABORATION WITH OTTO F. LANGMANN, A.I.A.,
ASSOCIATE IN THE OFFICE OF HOBART UPJOHN, ARCHITECT

ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NO. 75



Hedrich-Blessing Studio

Tabernacle Church of Christ, Columbus, Ind. Eliel and Eero Saarinen, Architects



St. Dympha Chapel, Longview State Ho

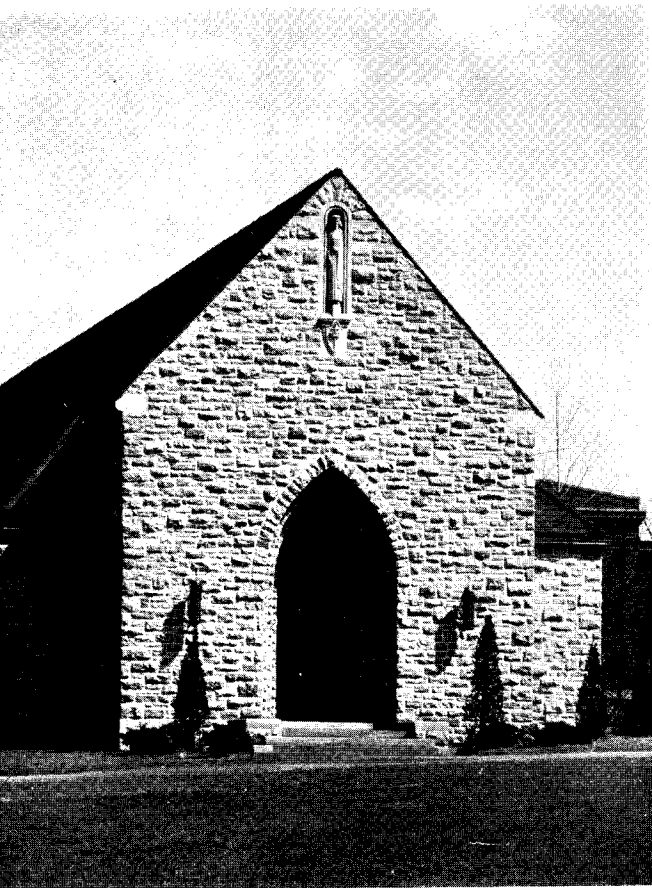
IN time of war the troubled people always turn or return to religion for moral and spiritual help and guidance. The increase in church attendance and church membership today indicates the renaissance of religious feeling. More churches would be built now if government restrictions did not prevent. These must be deferred, however, until after the war when both money and materials will be available. Forward-looking churches are preparing now for future building and remodeling, and are profiting by the greater interest in, and greater service of, the church in war time. After the war many church improvements will be provided either as memorials or through the gifts of grateful parishioners.

Forms of religious worship are intensely traditional and are subject to less change than almost any other institution. The requirements of the church building proper are therefore, as a rule, just as traditional. However, many churches are becoming increasingly "institutional" and are providing recreational, social, and cultural facilities as well as

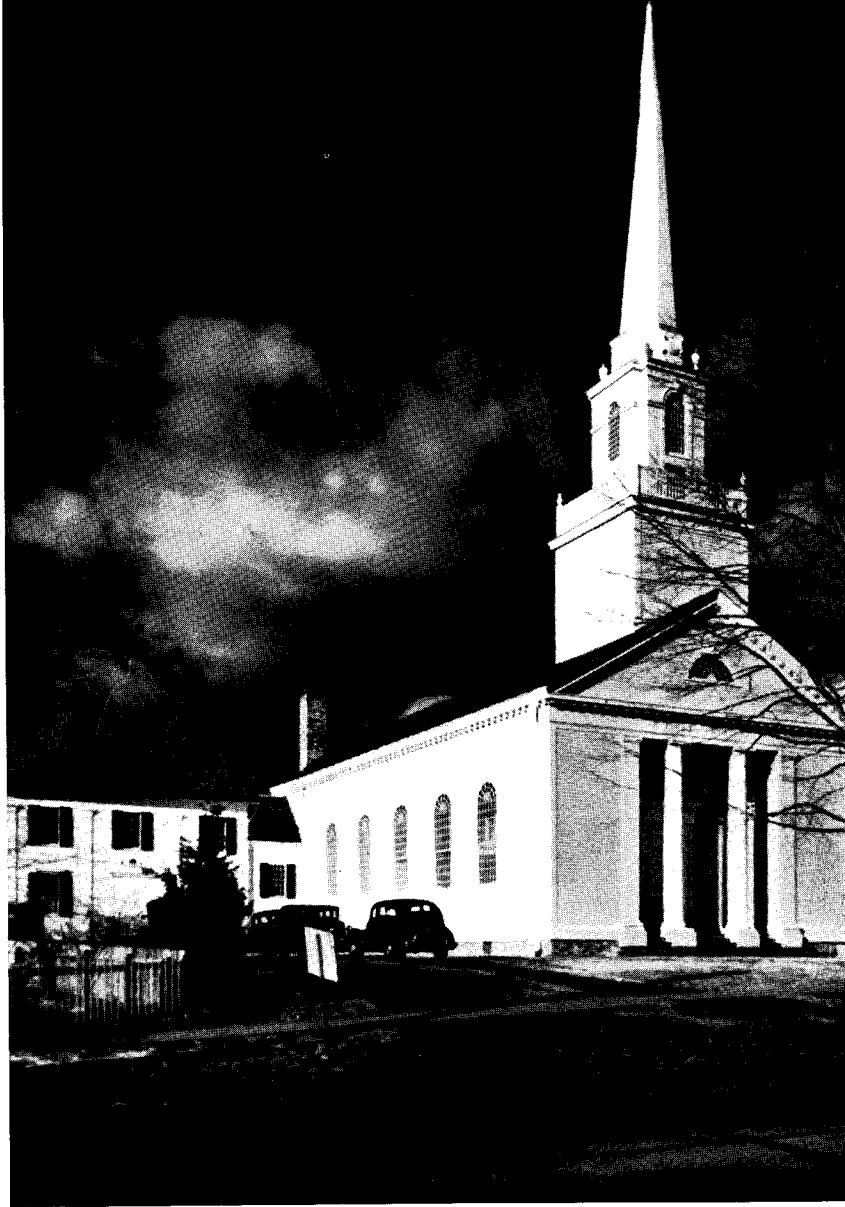
the facilities for formal religious worship and this does change the pattern and size of the church as a whole. Along with the intensely traditional aspect of religious architecture, there has recently been a growth of feeling that the architecture should reflect, in a modern spirit, the religious feeling which is more in keeping with the times. It is probable therefore that we will have both the nostalgic architecture of the past, and also fresh concepts of form expressing the modern versions of basic convictions. It is hardly expected, however, that the fundamentals of church planning will be greatly changed in the postwar era at any greatly accelerated pace over the development progress of the immediate past. It is probable that there will be greater simplification and economy in line with public taste. New planned communities will require new churches and it is expected that there will be more community churches built.

The following notes from the experience of an active church practice indicate some of the more important aspects of church architecture.

CHURCHES



Cincinnati, Ohio, Edward J. Schulte, Architect

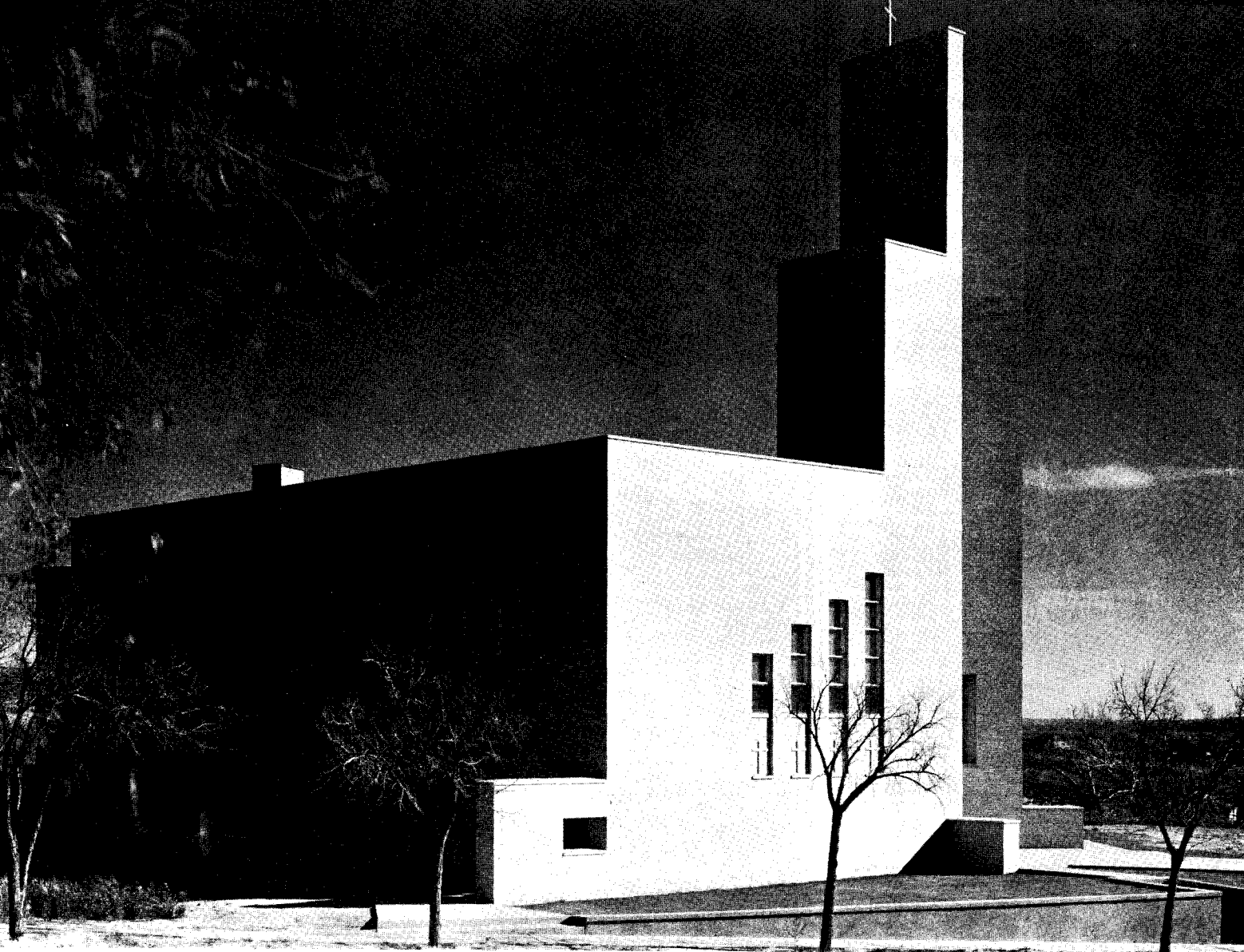


Congregational Church, Glastonbury, Conn., Hobart Upjohn, Architect

The vestibule of the church should be large enough to permit the usual after-service conversational groups. It should be carefully planned to prevent drafts of air from entering the nave, and be arranged so as to keep the noise of conversation and footsteps from the church or a balcony. The division between the church and the vestibule may take the form of a glazed or partially open screen. Attempts have been made to have this division removable so that, on Christmas and Easter, people could sit in the vestibule, but such arrangements have never proved to be very satisfactory. There is no need for a cloakroom, as people prefer to take their coats into the church. A small closet off the vestibule, however, will prove convenient for the storage of pamphlets and literature to be distributed to the congregations. A gallery is used only when it is necessary to bring the maximum number of people within range of the speaker's voice, and the rear of the church is therefore the best place for it. Such a gallery may be used for the organ and choir.

The nave usually gains in religious feeling when its height is accented. This may be done by the use of intermediate columns, which will have the additional advantage of reducing the length of the roof span. The objections to the use of columns are not as valid as might be imagined, and any small reduction in the number of seats and the interference in visibility is offset by the architectural gain.

The width of a nave is generally established by the aggregate width of the seats, each seat being from 18 to 20 in. wide, and the width of the aisles. The length of a nave has, in the past, been determined by the carrying power of a speaker's voice, but amplifying systems today allow greater latitude. The height of the nave in the larger Gothic churches of the past has often been two or three times the width. In Colonial examples, the interior height is frequently about $1\frac{1}{4}$ times width. In small parish churches the walls may be low and height provided by open ceiling trusses. The proportion of any auditorium of course depends upon architectural style and size of the church.



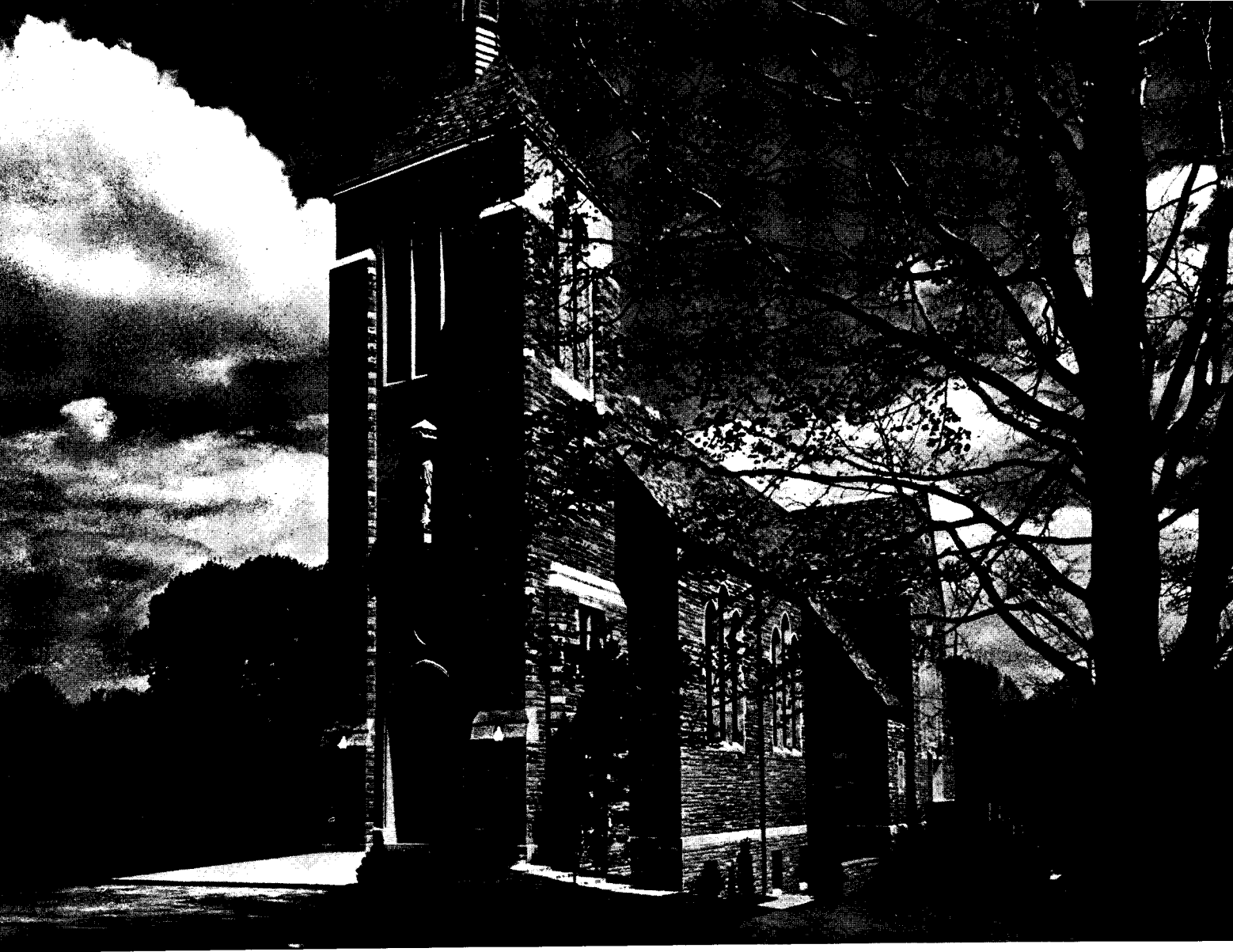
SS. Peter & Paul, Pierre, S. D., Barry Byrne, Architect

St. Mary Star of the Sea, La Jolle, Cal., Carleton Winslow, Arch't.



It is usually desirable to have a center aisle even where the pulpit is on center. Otherwise, in addition to the non-ecclesiastical effect, the church will be awkward for weddings and funerals or ritualistic processions. Churches may have either one, three or five aisles which should be of uniform width throughout their length. The minimum width necessary for funeral services is 5 ft. Some center aisles are, of course, much wider. Side aisles vary from 2 ft. 6 in. in the small church, to 6 ft. in the large one. The space between the front row of pews and the chancel, in which communion, wedding and funeral services take place, may vary from 5 ft. to 9 ft. Small churches sometimes omit rear aisles altogether, but larger ones usually allow from 3 ft. to 9 ft. as a crossover for ushers and latecomers.

Windows should be designed so that the attention of the congregation will not be distracted by what goes on outside. This is usually achieved by placing the windows high, and by using either stained or translucent glass. Too great a glass area may impair the acoustics of the auditorium as well as increase the heating load.



Rosemont Collegé Chapel, Rosemont, Pa., Henry D. Dagit & Sons, Architects

The Parish House should be so located that it will not overshadow the church proper. As there are actually few occasions when many people must pass from one to the other, and they are generally used at different hours, it is probably best to have the parish house accessible from, or near, the chancel of the church. An alternate scheme is to connect the vestibule of the church with the parish house and Sunday school by means of a cloister or arcade. All too frequently a church site is purchased before full consideration is given to its planning possibilities.

The Sacristy and clergy rooms are naturally placed adjacent to the chancel. Requirements for such rooms vary widely, and depend on the size of the choir, the number of the clergy and on the personal need of those who will use the rooms. Provision should be made for storing vestments and altar linen, for arrangement of flowers, and for caring for communion service, candlesticks and other paraphernalia. The dressing rooms for the choir should have sufficient wardrobe space and provisions for the storage of the choral music.

St. John's Church at Sandy Hook, Conn., Beckwith & Wilkins, Architects

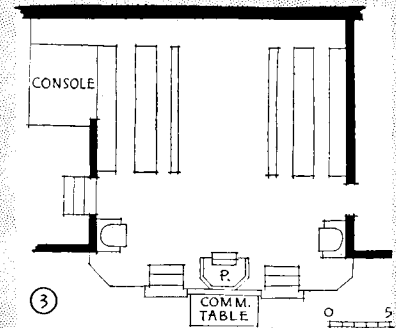
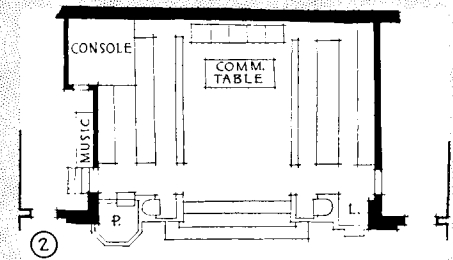
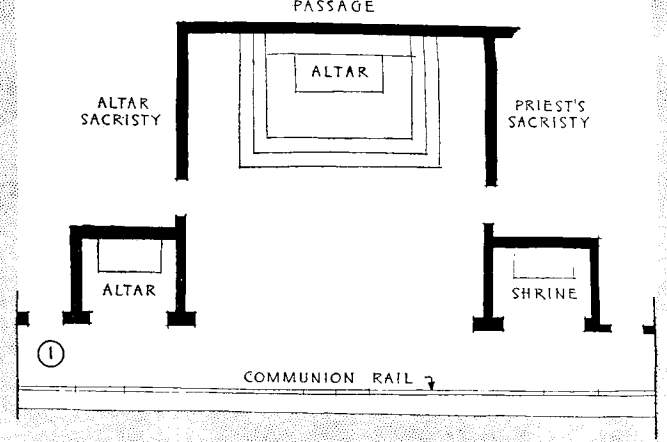


Austin Dinkler

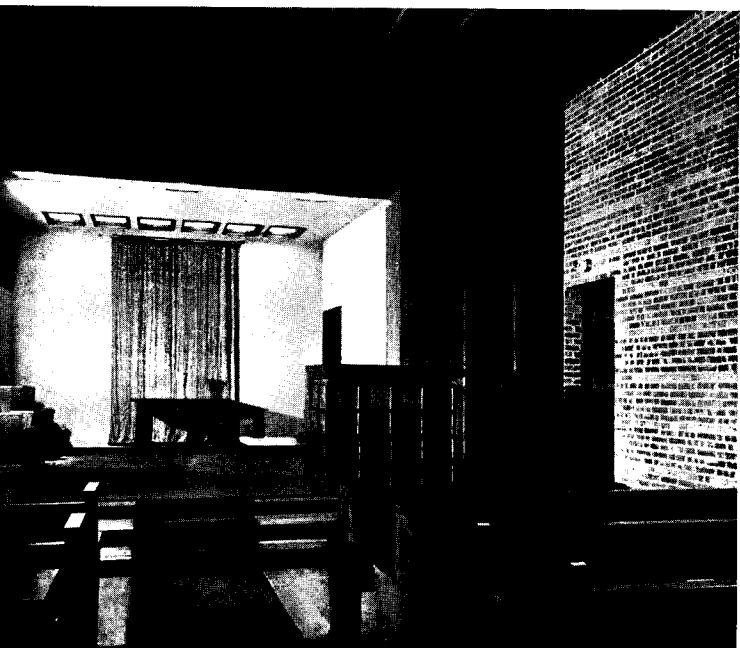


Hedrich-Blessing Studio

Tabernacle Church of Christ, Columbus, Ind. Eliel & Eero Saarinen, Arch'ts



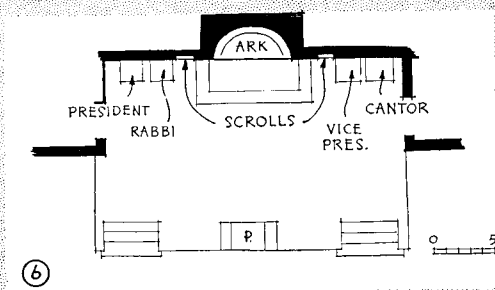
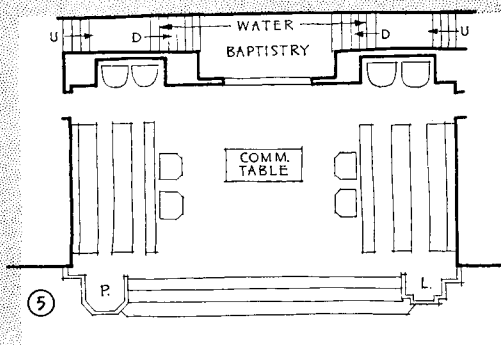
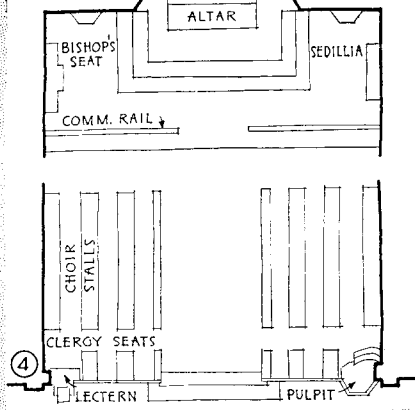
Elements of Typical Chancel Plans



The design of chancels is not rigid nor absolute. The figures above merely give an indication of usual types. Each of the schemes is subject to considerable variation.

1. A Catholic chancel. The altar is raised. Two sacristies are connected by a passage at the rear. In small churches the pulpit is inside the communion rail, in large churches it is outside near the front row of pews.
2. A chancel suitable for a Presbyterian, Congregational, Methodist or Lutheran Church, containing pulpit, lectern, Ministers' seats, elders' seats, choir, console, and communion table. The steps are on center, the communion table is in the chancel, the pulpit is to one side.
3. Another scheme containing the same elements. Here the pulpit is on center, the communion table is in the nave. The elders occupy the first row of pews. The Methodists could use this scheme with addition of a communion rail.

Third Unitarian Church of Chicago, Paul Schweiker, Arch't



Church of SS Peter & Paul, Norwood, O., Edward J. Schulte, Arch't

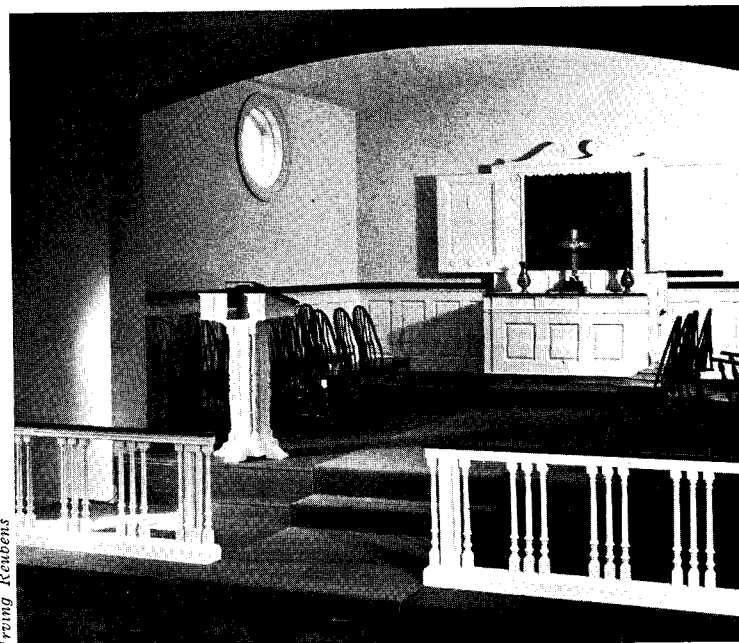
for Various Faiths and Denominations

4. The altar of the Episcopal chancel is raised. In front of the communion rail there are entrances from the side. Two clergy seats are always provided. The extra clergy seats and the Bishop's seat are optional. There is both a pulpit and a lectern. Choir stalls are set 3 ft. back to back and 1 ft. 6 in. is allowed for communion rail and kneeler. The altar and its platform occupy a depth of 5 ft. or more.

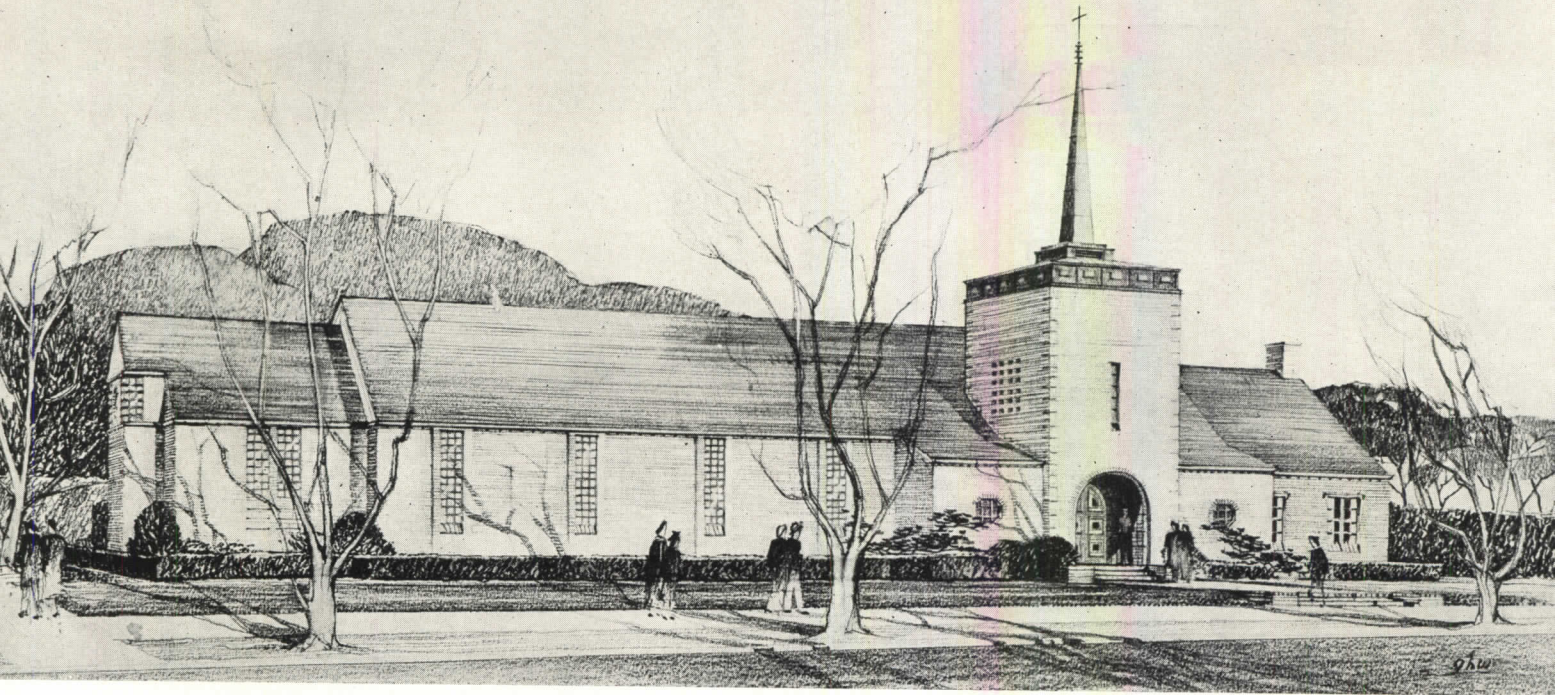
5. The baptismery, in the Baptist Church, is part of the chancel design. Steps on one side lead to the women's dressing rooms, on the other side to the men's dressing rooms. The communion table is in the center of the chancel.

6. The chancel of a Jewish synagogue. The Ark, raised above the platform, has sliding or swinging doors. There are niches or shelves on either side for scrolls.

Methodist chancel in Red Bank, N. J. Wenner & Fink, Arch't

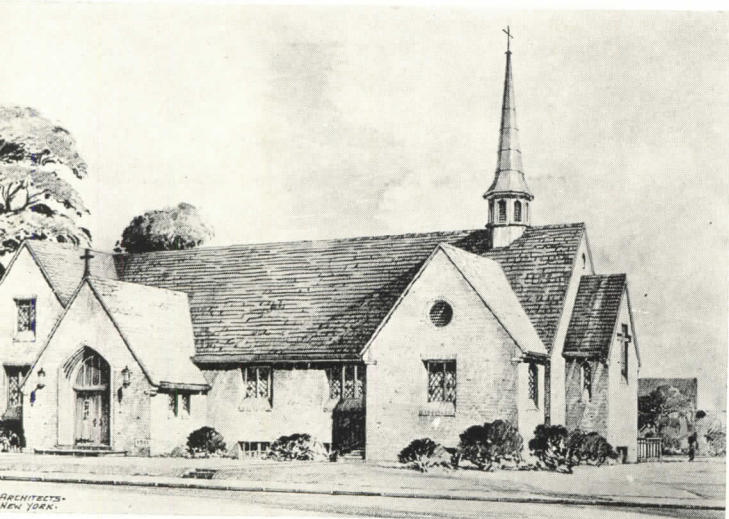


Irving Rubbens



Church for McMinnville, Ore., by Sutton, Whitney, and Aandahl

FIVE POSTWAR CHURCHES



Above: Design for a postwar Lutheran church by Cherry & Matz

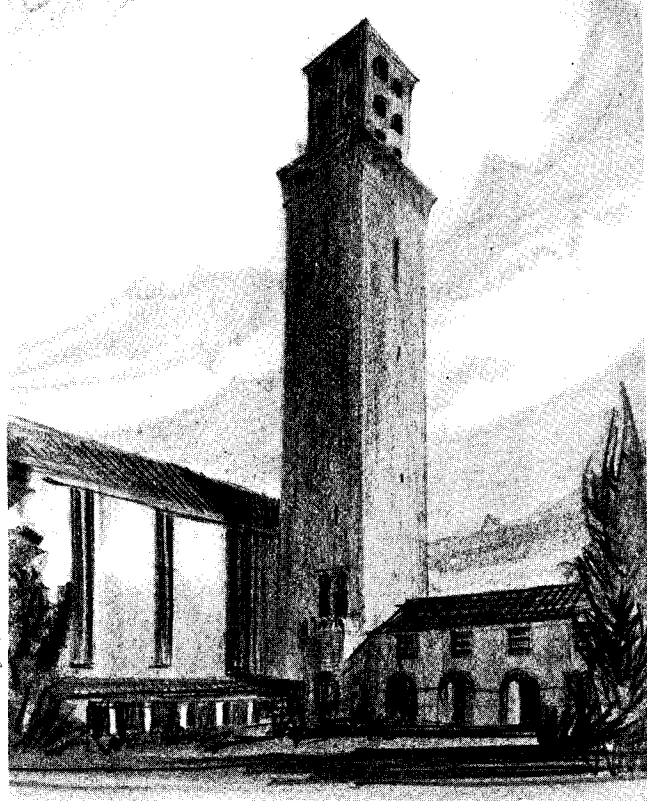
Below: A Presbyterian church for Florida by Wenner & Fink



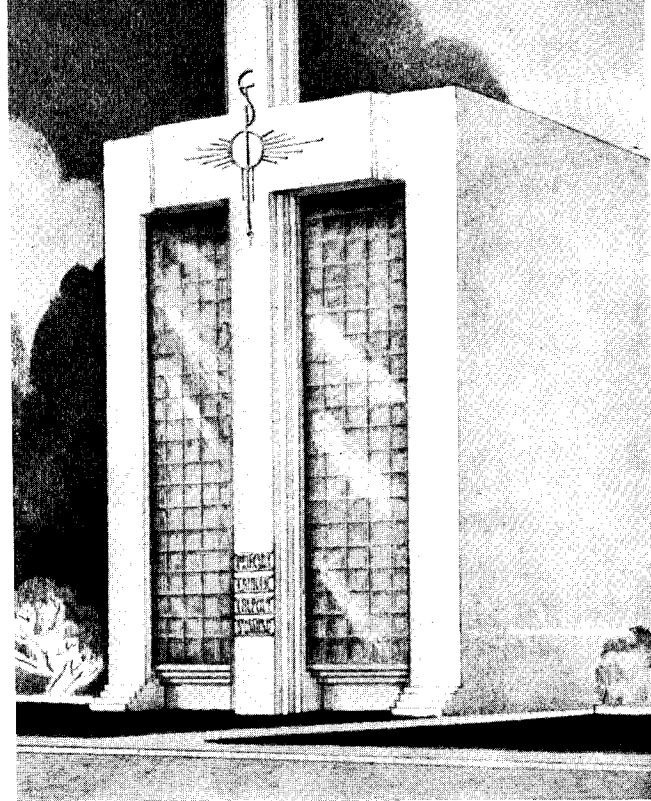
The organ is sometimes not chosen until the construction of a church is well under way, yet the space for it must be provided in advance. An electric organ offers no problem, but for a pipe organ it is well to allow an organ loft at least 10 ft. deep, 16 ft. wide, 16 ft. high. This space should be heated, have a finished floor, hard plaster walls, lighting outlets, conduits leading to the console, air ducts leading to the console and to the blower room. A minimum-sized console will be 5 ft. wide, 4 ft. 8 in. deep, and 4 ft. 2 in. high. The blower should be located either in basement or elsewhere where its vibration and noise will not interfere with the church service. Access to the blower, for servicing and maintenance, should be provided on three sides. A blower for a medium-sized organ is 7 ft. long, 5 ft. wide, and 4 ft. 3 in. high. Specific organ requirements should be discussed with the manufacturers.

The lighting of a church auditorium often is supplementary to daylight as most services are conducted in the morning. If the walls are not unusually dark, 2 watts per sq. ft. usually suffice. In no case should a church be lighted as brightly as a theater or a music hall. Many churchmen prefer to have the ceiling of a nave dimly lighted. The only part of the nave where general lighting is a positive necessity is the general eye-level area. Glare, of course, should be avoided by directing and shielding the light sources. Illumination may be direct, indirect, or a combination of the two.

Fixtures for direct lighting may be placed on the walls or hung from the ceiling. Overhead lights are placed as near as possible to the center line of each row of pews and their spacing in the other direction is usually related to the windows or the columns at the sides. The designer should resist the tendency to place them too high. Visibility



Preliminary sketch for a tower. Office of Hobart Upjohn, Arch'ts



Designed by Barry Byrne for an interior lot on a city street

from a balcony set in the rear of the church should not be the controlling factor in the determination of the proper height. The distance from the light to the floor should be about 5 ft. greater than the distance from the light to the nearest wall. All fixtures must be reached for maintenance and relamping. Windlass arrangements for lowering overhead fixtures are expensive, and often necessitate a long loose cord which some electric codes prohibit. In most churches, janitors climb a 10 ft. ladder to change the bulbs. Large fixtures should be placed on two circuits and switched so that they may give full or partial illumination. Theater dimmers are also used.

Indirect light from a concealed source may be used for overall illumination of some important reflecting surface. The altar may be bright-lighted by spotlight. Trough lighting behind the chancel arch may be directed toward the altar and reredos. Choir stalls are usually lit by overhead lights similar to those in the nave while pulpits and lecterns need desk lights. Pin lighting from small holes in the ceiling, which sends small overlapping cones of light downward, has given dramatic results. The future may well bring forth more changes in lighting than in any other utility connected with church work.

The heating of churches presents an unusual problem to the heating engineer, because the church itself may require heat only one day a week, whereas the offices and other rooms may need to be warm all week. The requirements of parish houses and social rooms will also be variable. The water pipes, as in all buildings, must be kept from freezing. The need for domestic hot water will not be constant. On certain days the Sunday school rooms, the kitchen, or the shower rooms may call for a large supply. At other times consumption will be negligible. Heating systems there-

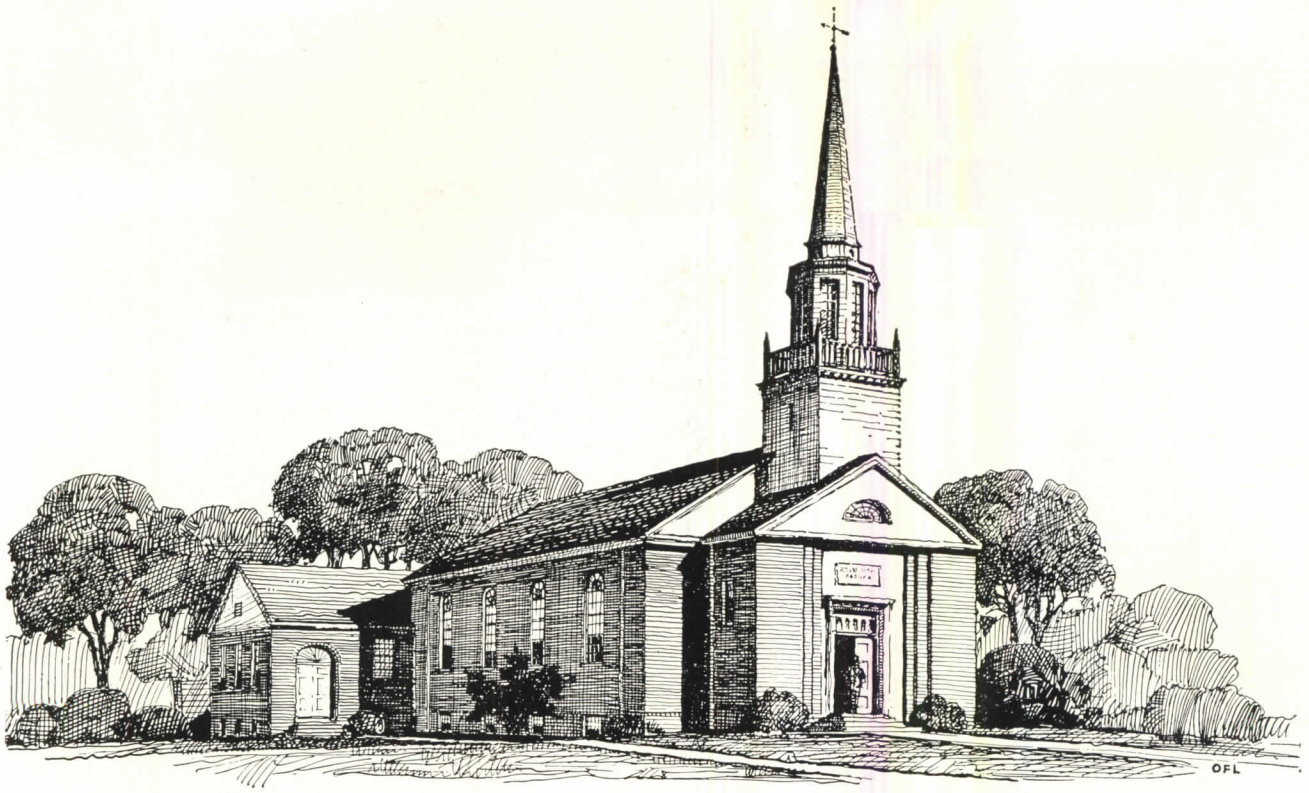
fore should have a maximum flexibility and control. The large rooms of the church and the plant will need boosters to supplement the regular sources during times of peak load.

These considerations indicate that the choice of the type of heating plant will vary so with local conditions, as well as being dependent on the size and plan of the church, that no definite rules can be given. Heating can be by warm air, direct radiation, panel radiation, or air conditioning, and different parts of the church may well have different systems.

Good acoustics are essential in a church. Unless the designer is reasonably certain that factors which make for good sound reception are present, he should have an acoustical analysis made. There must be proper synchronization of direct and reflected sound, and no reverberation. When direct and reflected sounds meet the ear at different times, 1/20th of a second or more apart, they create what is known as a dead spot. Due to the reflection of sound from the rear wall of a nave, dead spots sometimes occur two-thirds of the way to the back rows of pews.

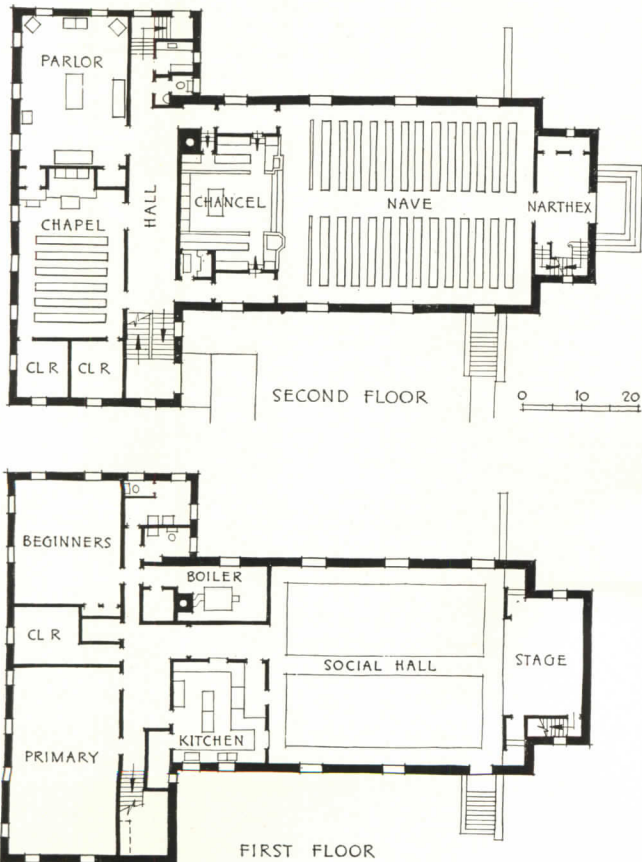
Rectangular rooms which are not exceptionally long and narrow, and octagonal rooms, all other things being equal, have good acoustic properties. Broken surfaces such as pilasters, coffers, exposed roof trusses, and sound-absorbent surfaces make for good reception of sound. Glazed surfaces, hard plaster, large window openings, and curved surfaces—especially arched ceilings in which the center of the arc is near the earline—are not conducive to good results.

It is customary today to put acoustic materials on almost all church ceilings. The decision as to whether or not to use them on the walls, or on part of the walls, depends on the nature of the walls themselves and on the numbers of cushions, draperies, or rugs that are likely to be used.



The North-Haven Congregational Church North-Haven Conn.

A church seating a total of 261 persons, chapel seating 50, parts of the parish house on two floors. Office of Hobart Upjohn, Arch'ts



Sunday schools. The enrollment in the present day Sunday school or "Bible School" is often as large as or larger than the membership of the church. Religious educators agree that, whenever possible, each grade should have a room to itself. Such an idealistic scheme is impossible in the majority of cases, and for reasons of economy, classes may have to be held in alcoves.

When the number of pupils is large, a Protestant Sunday school may be divided into as many as seven separate grades. Provision is made for pupils up to 24 years of age. The younger children are taught in large classrooms, intermediate groups have several small classrooms and rooms for assembly, the older students and adults often meet in chapels, parlors, or social halls which may be part of the church plant. As in schools, the classrooms have blackboards, corkboards, supply closets, and either locker space or cloakrooms. Separate toilet rooms are generally provided for younger children.

The most ideal arrangement is to have the Sunday school in a separate building, with all its rooms above grade level. In practice, few churches can afford to have the space under the nave go to waste. The small modest church will locate its Sunday school there as well as using this as the social hall on week days. A church in the next size bracket will place its social hall under the nave, and place the Sunday school in an ell.

Social halls. Church activities of a social nature, club meetings, lectures, church suppers, welfare work, dramatics, games and so on, take place in rooms which are collectively known, for want of a better name, as the social halls. Foremost among the requirements is the stage. It should be 15 or 20 ft. deep. The space under it should cer-

A compact plan is economical for the medium-sized church plant

tainly be used for storage of chairs, which can be stacked on trucks made for the purpose, and rolled in. Only a luxurious church provides dressing rooms, make-up rooms, spaces for stage properties. A room which will serve successfully as both social hall and gymnasium obviously has to be an architectural compromise. If a basketball court is a necessity, and if the size of the lot permits, it is preferable to put it in a separate building or wing. The cost of such a procedure is not so great as it might seem. The social hall could be smaller, lower, and of less expensive finish. The gymnasium could be built of lighter construction than the rest of the plant, and it would not be necessary to heat it to a high temperature.

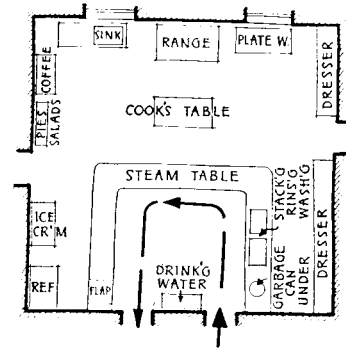
For church socials, dinners and teas, there should be provision for the preparation of food. A planner should keep in mind the nature of the service to be rendered. Facilities should be planned for intermittent use. There is no need for storage of supplies as in a home. The food is prepared in advance of the time it is served. A large number of people must be served in a short space of time by volunteer workers. The simplest arrangement is to have food from the kitchen passed over a counter into the social hall. When there are large numbers of people and when several courses are served, such a plan will cause delays and interruptions. Continuity of service is assured by adoption of such a plan as the one shown in the accompanying sketch. Those who work in the kitchen stay in fixed positions. Volunteer waitresses pass along the circular counter, first depositing empty trays, then picking up foods of the next course.

Large church plants have additional kitchenettes, men's clubrooms, offices of the church and Sunday school, rooms for boy and girl scouts, and a ladies' parlor. Storage space is desirable. Red Cross classes have huge quantities of supplies, including sewing machines.

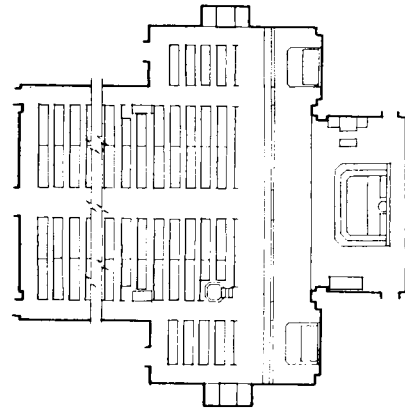
Furniture. The success or failure of a church building program may depend on the furniture. Good results require close attention to detail. Good materials and workmanship are exceedingly important. Intangible, spiritual meaning is often symbolized in the form and design.

The backs of pews are always inclined, but they may be either straight or curved, made solid or with open slats. Seats are tilted down at the back, made straight if cushions are used, curved if they are not. The individual folding seat is sometimes used. The closed pew end is the most formal, the open end makes it easier to get in and out. Arm rests should be high enough to prevent lounging.

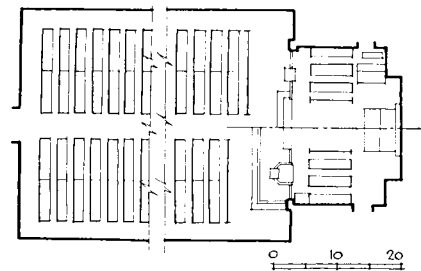
Choir stalls, front and rear screens, clergy seats, reredos, sedilia, pulpits (with their canopies), fonts (with their covers), kneelers, bookracks, and hymnboards are but some of the articles on which the ingenuity of the designer may be exercised.



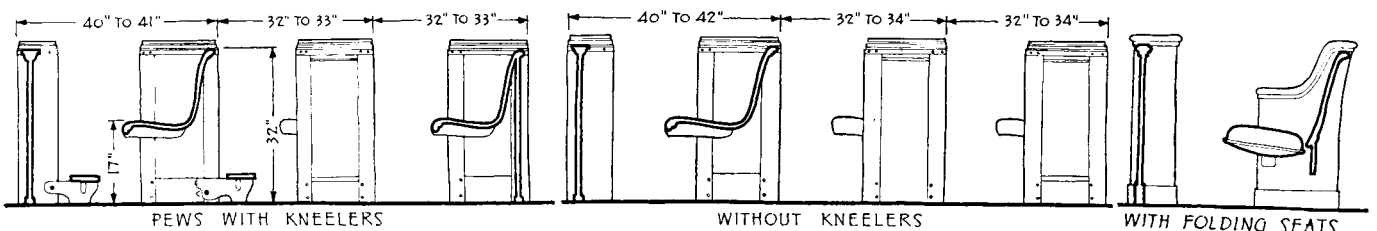
A kitchen designed for one-way circulation eliminates interference between those who prepare the food and those who serve it



Standard planning of seats in a Catholic church. Note the use of the transepts. Pews are spaced 2 ft. 8 in. from back to back



The pulpit of the Protestant church is in the chancel. Planning of seats and aisles is substantially similar to the Catholic model





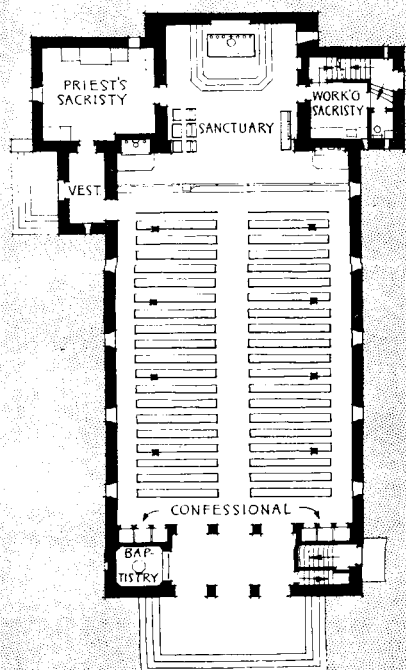
Richard Garrison

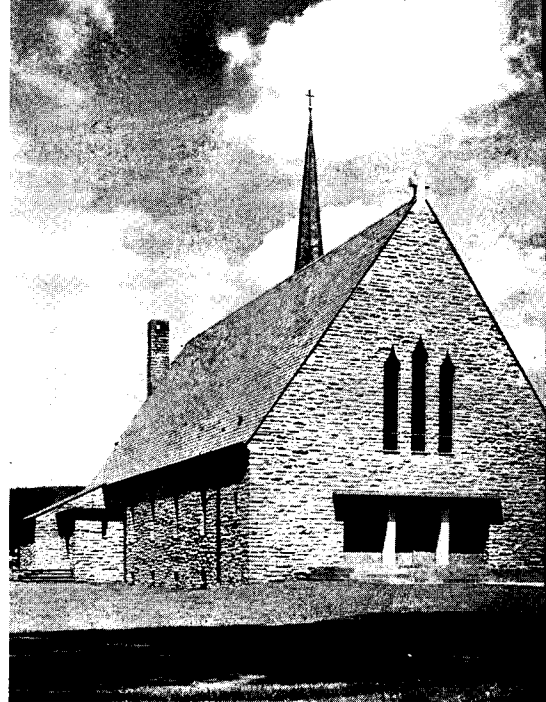
ST. JOSEPH'S CHURCH

CANAAN, CONN.

OLIVER REAGAN, Architect

Statues and rood carved by Gleb Demjinsky, polychromed by Louis Ross. Stations of the Cross painted by Hildreth Meiere. Much of the metal work was executed by the late Samuel Yellin.





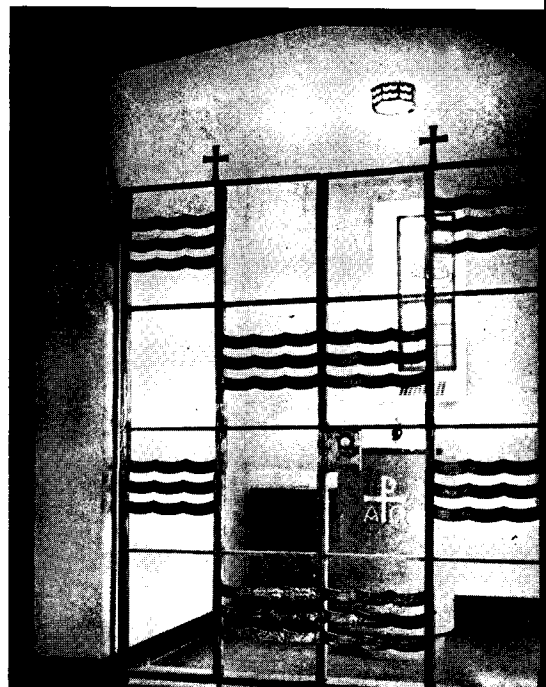
EXTREME simplicity of design, studied form and proportion, and the inherent beauty of the materials used, give this church its distinction and its appropriate character.

The church is set 100 ft. back from the street on a 4-acre plot on the main road to the Berkshires. A side road leads into a parking space on the property which will accommodate 80 cars. Originally a brook ran through the center of the site and the land sloped toward it. Careful manipulation of levels, and judicious use of fill from the excavation, enabled the architect to keep the first floor low and, at the same time, to place the basement windows above the ground.

The church seats 340 people in the nave, 30 more in the choir loft over the narthex. A full basement contains a social hall and a complete kitchen. The small vestibule at the side wall will serve as an entrance to the church from a rectory which has been planned for construction after the war.

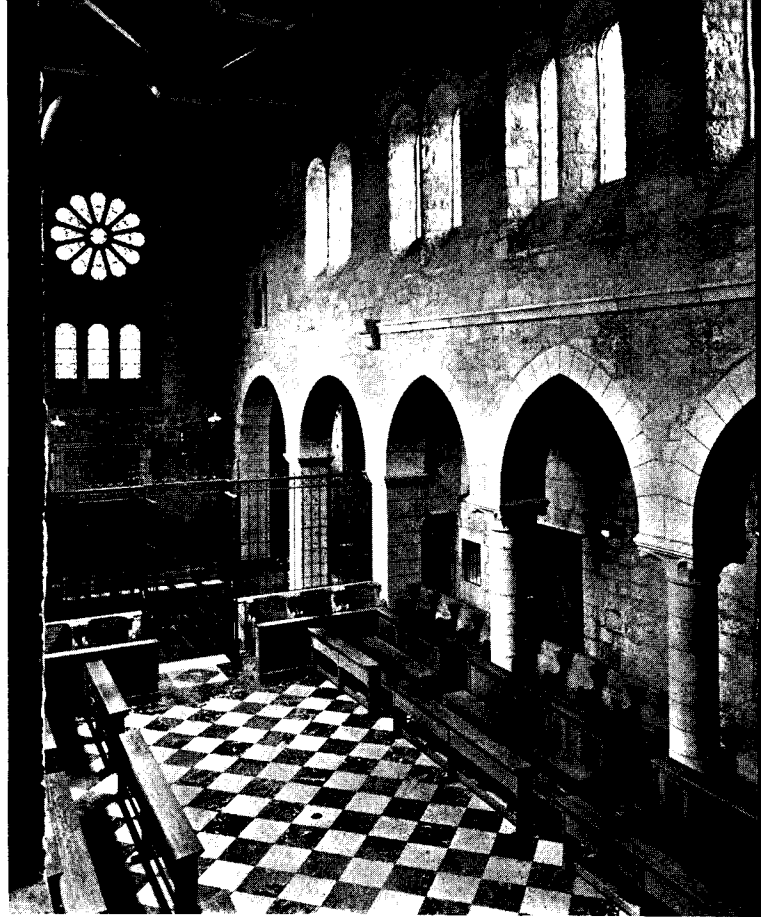
The walls are of granite, laid random coursed rubble with a wide weathered tooled joint. The roof is Vermont slate and the tower spire is sheathed with lead-coated copper.

The dignity and simplicity of the interior are appropriate to the country setting. Restfulness has been achieved by the elimination of elaborate ornament and detail. In the nave, a composition of plaster and marble dust, light cream in color, is used for the walls. The columns are 8 by 10 pine encased in white pine. The ceiling is pine, stained light brown with ferric oxide and ammonia. A terrazzo floor is used, except under the pews, where there is fir. The leaded glass windows are rectangles of antique marine glass. Symbols have been inserted directly into the rectangular field without the customary enclosing frame. Where detail is used, it is used with care. The three altars are of colorful imported marbles. The dorsal curtain is made of silk, in four shades of red and gold, woven specially for its setting. The baptismal font is one solid block of stone.



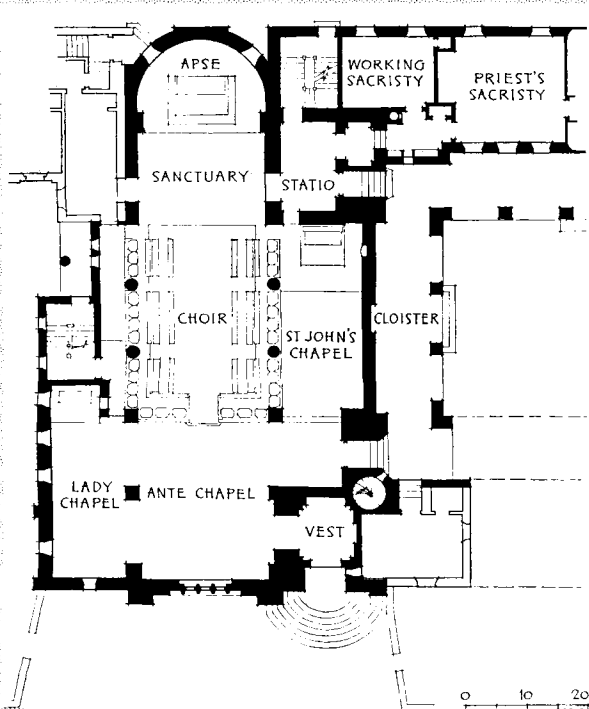


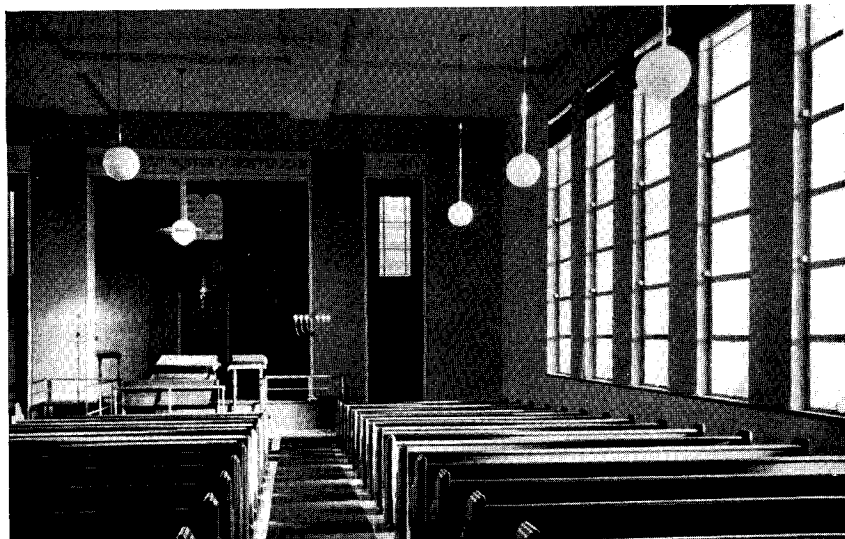
Hastell



**MONASTERY CHURCH OF ST. JOHN
AND ST. MARY, CAMBRIDGE, MASS.
CRAM & FERGUSON, Architects**

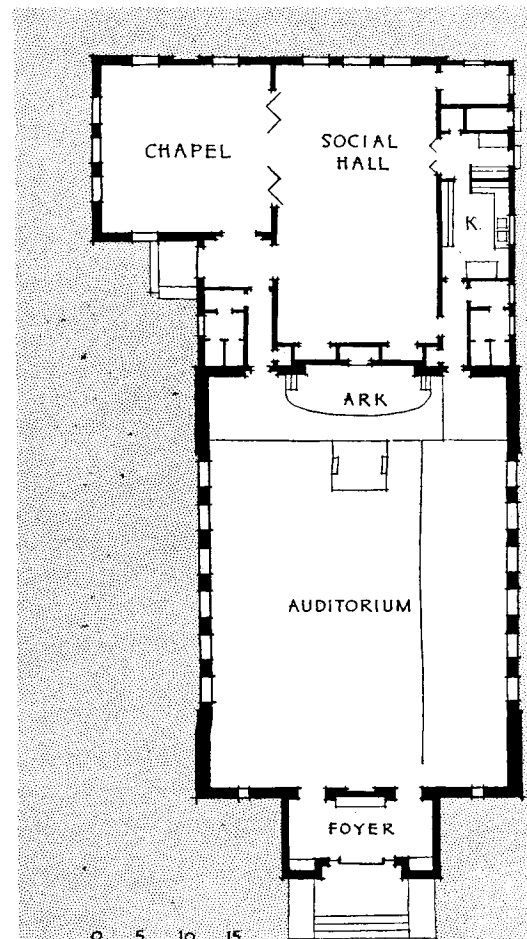
Located near the banks of the Charles River in Cambridge, Mass., this church is part of the monastery group of the Society of St. John the Evangelist, (The Cowley Fathers). In addition to the church, the monastery has guest quarters, offices, a garden and a cloister. Since the church is planned primarily for members of the order, the length of the choir is greater than the length of the nave. Superiors sit at the rear of the nave facing the altar.





**TIFERET ISRAEL SYNAGOGUE
DALLAS, TEX.**

HOWARD R. MEYER, Architect

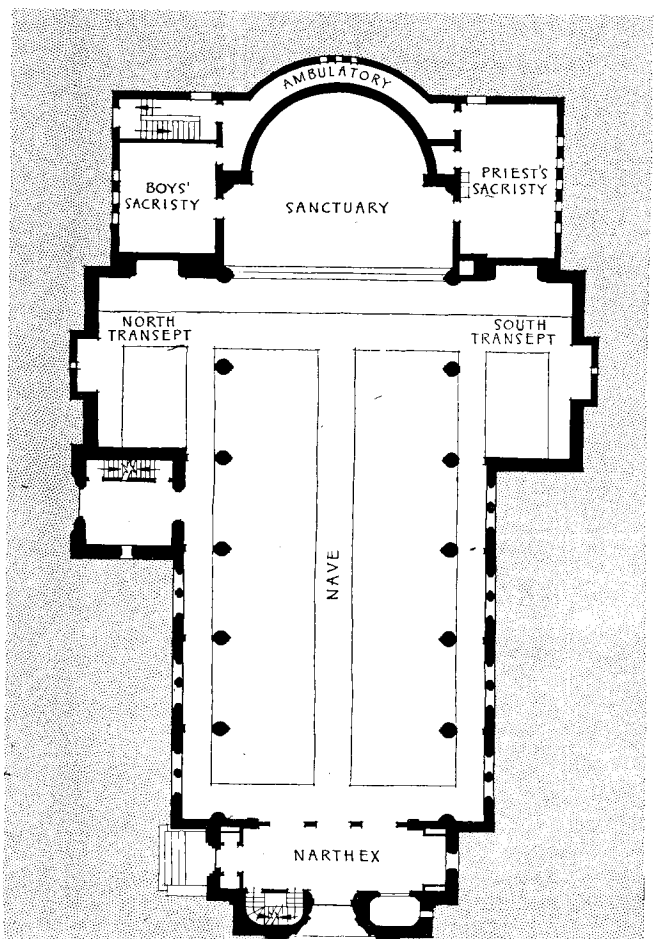




ST. THOMAS CHURCH

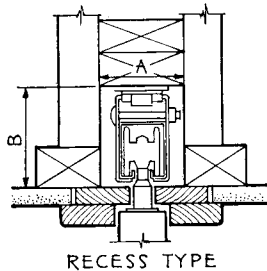
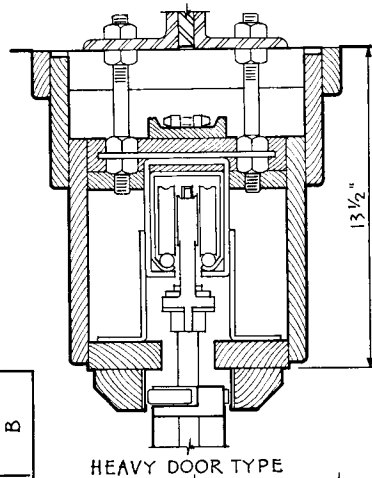
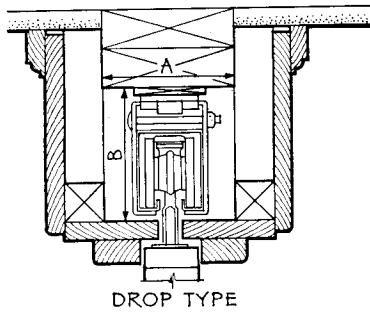
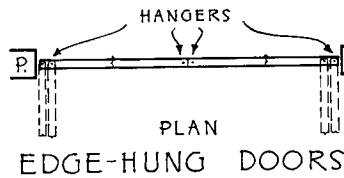
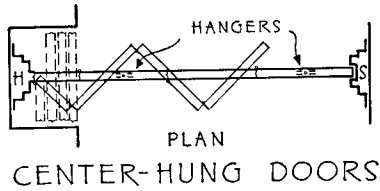
FT. THOMAS, KENTUCKY

EDWARD J. SCHULTE, Architect



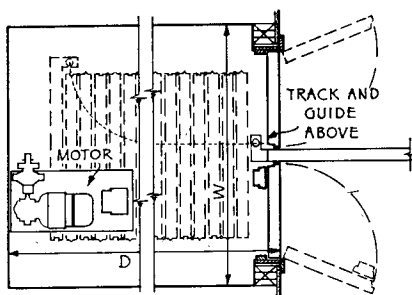
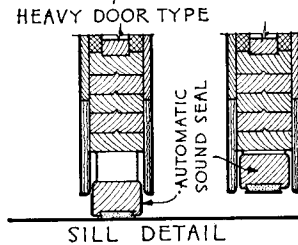
FOLDING PARTITIONS

Center-hung and edge-hung doors



MAXIMUM WEIGHT EACH DOOR	A	B
80 LBS.	3 3/8"	3 1/2"
110 LBS.	3 5/8"	4 1/4"
225 LBS.	5 3/8"	5 3/4"
OVER 225 LBS.	5 7/8"	8"

TYPICAL HEAD SECTIONS
 SCALE 1/2" = 1'-0"



POCKET WIDTH (W) = WIDTH OF ONE PARTITION DOOR PLUS 24"

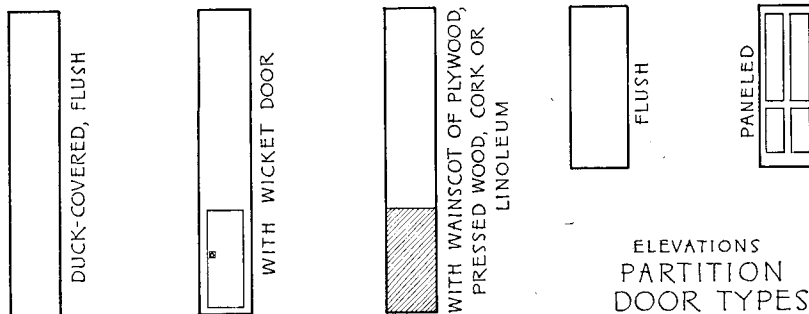
TO DETERMINE POCKET DEPTH (D), MULTIPLY 3 3/8" BY NUMBER OF DOORS AND ADD 18"

PLAN
 SCALE 1/4" = 1'-0"
 TYPICAL POCKET
 WITH MANUALLY OPERATED
 POCKET DOORS

Center-hung doors are usually supported from above on pivoted hangers in the center of the top edge of each alternate door. All doors which fold toward any one jamb are hinged together and operate as a unit. When the partition is in its folded position, the doors straddle the track, half of each door being on the right, the other half on the left. Floor guides are not always required. A lift-lower appliance set in the bottom rail of the doors will serve to prevent side-way and effect soundproofing. When the partitions are operated by an electric motor, a continuous roller chain, concealed in the head casing, is attached to the hanger on the door farthest away from the jamb.

Pair-operated doors are edge-hung. The pivots securing them to the tracks are located in the corners of the top or bottom rails of the doors. When the partition is folded all the doors are on one side of the track. Top-hung doors have floor guides, bottom-supported doors have head guides. Pairs of doors are hinged together, and each pair operates independently of the others. To close a partition that is in place across an opening, the pair of doors nearest the opening is first *broken* and folded back, and the second pair is pushed into the position formerly occupied by the first. The operation continues until all the doors are out of the opening.

Pockets, to keep folded doors out of the room, take various forms. A simple recess may serve the purpose. The recess will be closed by the last door to fold into it, but when the partition is unfolded, the recess is exposed to view. More elaborate installations have a small pocket room with doors of its own, which may be either manually or mechanically operated. Sometimes the whole partition slides through a slot in the wall and folds up in a room outside.

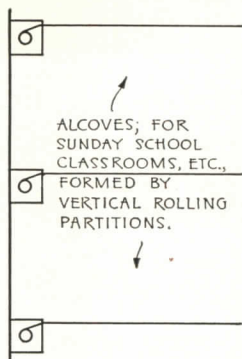


Passage through closed partitions. It is often desirable to get from one side of a closed partition to the other, without folding the whole partition back, or having parts of it broken. Small wicket doors, set within the larger doors of the partition, provide the means. If this is not practical, certain types of installations permit one door near a jamb to operate independently of the others.

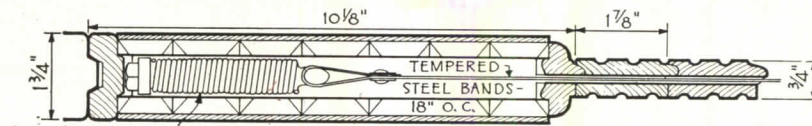
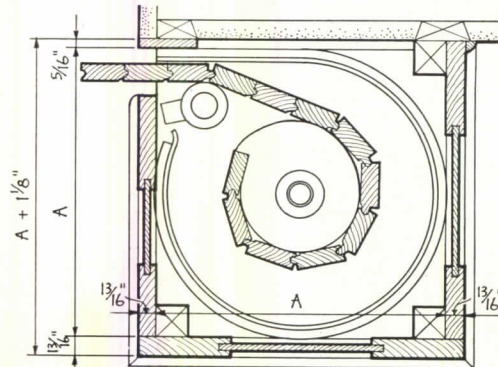
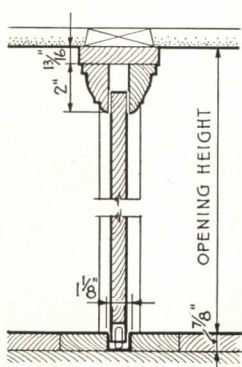
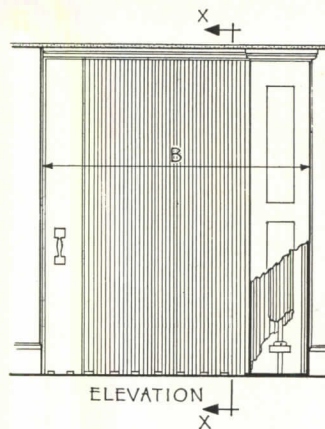
FOLDING PARTITIONS

2—Horizontal Rolling-Folding Fabric

Door construction and soundproofing. The thickness of doors should vary with the height. High partitions usually have doors 4 ft. wide. Panel, glazed or flush doors are available. The latter may be duck-covered, and wainscoted in cork, linoleum, or composition, and blackboards may be made a component part of the door. Insulating material in loose or board form is used in built-up doors to minimize sound transmission.



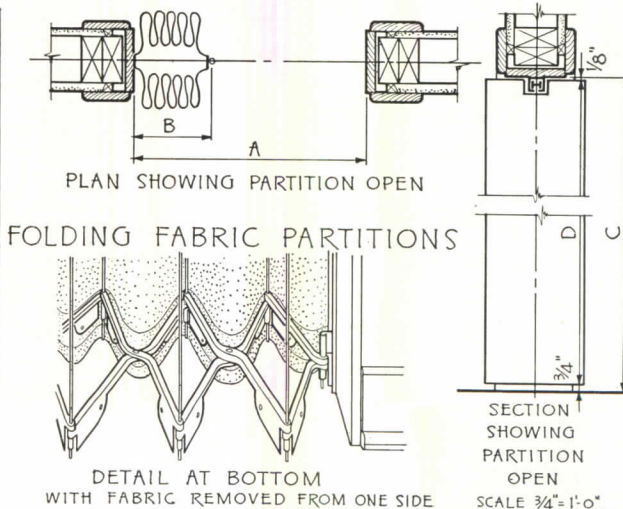
A	B
12½"	5'-2"
13½"	7'-2"
14½"	8'-8"
15½"	11'-0"
16½"	13'-7"
17½"	16'-5"
18½"	18'-5"
19½"	20'-6"
20½"	22'-9"



VERTICAL ROLLING PARTITIONS

Rolling partitions are made up of small slats which roll up on shafts, which may be set either horizontal or vertical. If the space to be closed by a horizontal rolling partition is greater than the length of the unit, removable intermediate posts may be used.

A	B	C	D
2'-10"	8½"		
3'-5"	9½"		
4'-0"	10½"		
4'-6"	11½"	6'-8½"	6'-7½"
5'-0"	12½"		
6'-0"	14½"		
7'-0"	16½"		
8'-3"	18½"		
4'-0"	10½"		
4'-6"	11½"		
5'-0"	12½"	8'-0"	7'-11½"
6'-0"	14½"		
7'-0"	16½"		
8'-3"	18½"		



Folding fabric partitions consist of a leatherette covering on a light metal collapsible gate frame. The covering is washable, and comes in 10 standard colors. One side of the partition may be of different color than the other. The accordion-type frame travels on an overhead track. Hardware consists merely of one transparent plastic pull. Partitions which fold only one way may be locked to the jamb. Sound deadening material may be incorporated in the construction of the partition.

Looking ahead with Asbestos



**WAR OR PEACE
INDUSTRIAL CONSTRUCTION
CALLS FOR SPEED**

ONE of the most put-to-work materials in this period of unparalleled war construction has been—and is—K&M “Century” Asbestos-Corrugated and Flat Lumber.

Here’s reason number one why Army and Navy air bases and vital war plants have made vast use of this Keasbey & Mattison building material for roofs and sidewalls: Its erection speed is up to the terrific tempo of a desperate war. An advantage which will surely find wide favor in post-war construction.

Besides this all-important speed factor, “Century” Asbestos-Corrugated and Flat Lumber resists fire and water, is rot-and-rust proof,

seldom needs repairs or protective treatment, grows tougher with age.

These are outstanding qualities for a building material to possess, whether the construction is for war or peace. When the war is over, and K&M “Century” Asbestos-Corrugated and Flat Lumber can flow again into peace-time channels, Industry will be eager to give it much to do. Just as Industry will also find use for those new products which K&M’s intensive research into asbestos will develop.

* * *

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 lumbers; asbestos-cement pipe for water mains



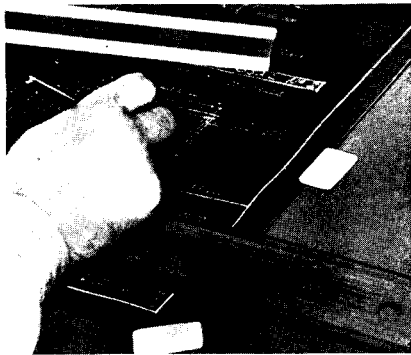


Figure 1

STICKERS IN PLACE OF THUMB TACKS

A NEW METHOD of attaching drawings and blueprints to drawing boards which eliminates the necessity of moving the T-square over thumb tack heads is the use of Kum-Kleen Stickers. Paper thin, Kum-Kleen Stickers are applied without moistening. They are said to lie flat, and to be peeled off easily without a trace, all the adhesive remaining on the label. They come in a variety of sizes and shapes. (See Figure 1) Avery Adhesives, 451 East Third St., Los Angeles, Calif.

FLOODLIGHTING PROJECTORS

TO MEET wartime needs for protective floodlighting and lighting of yards, areaways and other outdoor work places, a new type of RDS Floodlighting Projectors has been developed. Replacing the Type RD Projectors made by the same company, these new seamless steel housing units embody all the features of the previous models, but all parts formerly made of aluminum, brass or other non-ferrous metals are now furnished in steel or cast-iron especially treated by porcelain enameling and other rust-proofing to give them resistance to corrosion.

Units are furnished with vertical and horizontal stops which automatically reposition projector and eliminate need for resetting after projector has been tilted or turned around for cleaning or inspection. Two models are offered: the RDS 14 for 300 watt and 500 watt general service lamps or 500 watt floodlighting lamps; and the RDS 18 for 750 watt and 1000 watt general service lamps or 1000 watt flood-

lighting lamps. Each model is supplied with plain, stippled or ribbed heat resisting glass covers. Benjamin Electric Mfg. Co., Des Plaines, Ill.

GREEN PIGMENTED INCANDESCENT LAMP

A NEW incandescent lamp called Verd-A-Ray has been developed expressly to reduce eye and body fatigue by eliminating over-exposure of the eyes to the harmful red rays of light. Verd-A-Ray has a dispersive inner surface and an enamel fused on the outer surface of the bulb, the enamel having an index of refraction materially different from that of the glass. A reflective green pigment in the enamel has a filtering effect which increases the proportion of middle spectrum light, more easily handled by the eye than are the extremes of the visible wavelengths. Clinical research conducted over a period of months by fully qualified physicians, the manufacturers report, proved more rapid rod response and definite evidence of conservation of Vitamin A in the eye. Save Electric Corporation, Toledo, Ohio.

NEW FINISH COAT

NEEDING no priming or undercoat, "Colorthru," a finish coat in color, can be applied to old or new masonry even when wet. One coat brushed or sprayed on floors and walls, according to the manufacturers, penetrates, waterproofs, preserves and beautifies any masonry surface. It comes ready mixed for immediate use. Colorthru Chemicals, 20 W. 45 St., New York City.

FLEXIBLE WOOD MAT

A NEW WARTIME substitute development is a flexible matting of wood links. Light in weight, according to the manufacturers, it can be rolled or folded up for easy cleaning, and lies flat, following the contours of the floor. The ends are beveled to reduce the danger of tripping. Flexible Wood Link Matting, as this new product is called, is said to be comfortable to stand on and to afford good drainage. One inch thick, it comes in natural wood color. It is available in three stock sizes (18 by 32, 24 by 38, and 30 by 44 in.), and can be made in

special sizes of any length and up to 36 in. in width. American Mat Corp., 1797 Adams St., Toledo, Ohio.

TWO NEW FLUSH VALVES

NEW ON THE MARKET is a flush valve for low tanks, made entirely of plastic except for the wire, screws and rubber bulb. Using a minimum of critical war materials, the valve is available for immediate delivery. Good Mfg. Co., Inc., 200 Lincoln Ave., New York City.

DESIGNED TO PROVIDE a dependable flush valve for wartime projects and at the same time to conserve critical war materials, the Watrous "V" Flush Valves conform with War Department Specification PE-623 and are approved for use on Government projects. While alternate materials are used in place of brass and bronze in these valves wherever possible, all vital working parts remain in brass. Special protective coatings are applied in accordance with specifications on all parts subject to corrosion. The Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago, Ill.

IMPROVED DIFFUSION OF CEMENT MIXTURES

A RECENT CONTRIBUTION to the technique of concrete construction improves the dispersion of cement particles in a Portland cement mix, thus automatically permitting reduction of water ratio and improving the compressive strength characteristic of concrete. This new product is Santorized Trimix Liquid, which works on the principle of greater wetting by means of additives having greater surface activity, and achieves its results, the manufacturers report, without interfering with the normal hydration cycle of Portland cement. Another advantage claimed for the product is great homogeneity, obtained because the addition of Santorized Trimix helps eliminate the tendency of water to segregate from the cement and aggregate particles. It is further said to produce concrete and mortar of great water tightness and durability, with less shrinkage. L. Sonneborn Sons, Inc., 88 Lexington Ave., New York City.

(continued on page 90)

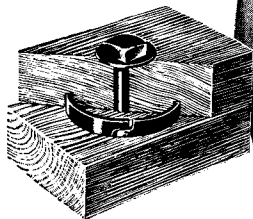
BIG HAUL

FOR UNCLE SAM

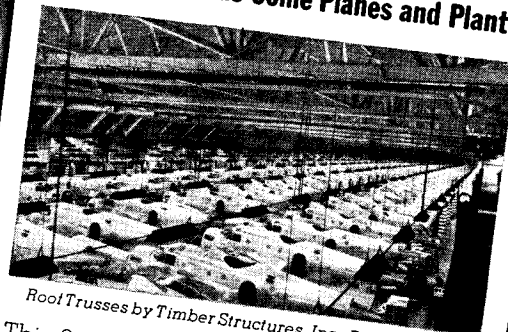


Selectively cut under scientific woods management, this forest harvest goes to war — leaving the vigorous younger growth for continuous harvests to come. Harvesting matured trees accelerates healthy forest growth.

The TECO 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.



Out of the Woods Come Planes and Plants



Root Trusses by Timber Structures, Inc., Portland, Ore.

This 8-acre, all-timber plant of the Beech Aircraft Corporation was prefabricated, shipped, and erected in 60 days to make plywood trainer planes for the Army. It is but one of thousands of heavy-duty war structures engineered in timber under the TECO Ring Connector System. You, also, can now use the TECO System for Speed, Strength and Economy. Write for our literature today.

Timber ENGINEERING COMPANY

WASHINGTON, D. C.

PORTLAND, OREGON

(continued from page 88)

GYPSUM EXTERIOR BOARD AND ROOF DECKING

TWO NON-CRITICAL building materials just added to the list of one company are Bestwall Gypsum Exterior Board and Gypsum Laminated Roof Decking.

The first of these, which sheathes, sides and insulates, has a core of gypsum rock and a weather-resistant sur-

face of asphalt roofing. It is said to have practically no contraction or expansion, to be termite resistant, and not to buckle, warp or open at joints. It is speedily applied, a single panel covering up to 20 sq. ft. of wall surface. It may be had with either a smooth or a mineral surface, in black or any standard color including 11 camouflage colors. The interior sur-

face is finished in ivory. Panels are 24 in. wide, in lengths of 8, 9 and 10 ft.

The Roof Decking is made up of panels of gypsum board in two types, 1½ in. thick with tongue-and-groove edges, and 2 in. thick with shiplap edges. It is easily and quickly applied, the panels simply spiked to wood joists without the use of special metal attachments. The ivory interior surface serves as a ceiling, and may be painted or left unpainted as desired. Certain-teed Products Corp., 120 S. LaSalle St., Chicago, Ill.

FIBERGLAS INSULATION

AN INTERESTING new use of glass fibre insulation is in the portable shelters now being built for the Army Air Corps personnel in Arctic climates. Especially designed by the James Mfg. Co., Fort Atkinson, Wis., to save weight and space in shipment, and to reduce the amount of fuel necessary to heat them (in itself a transportation problem), these shelters are insulated by glass fibre blankets in the walls and flooring. Of impregnated cotton fabric and laminated wood frame construction, the shelters are quickly erected and easily dismantled for removal to new locations.

SPACE HEATER

NOW BEING made available by Airtemp is a 50,000 Btu output, oil fired space heater. This is a combination radiant and convection heater which gives off radiant heat from the jacket surfaces and high velocity convection currents of heated air from between the jacket and the heating chamber.

Finished in black heat-resisting paint, the cabinet is "bonderized" against rust and corrosion. Operation may be on fuel oil or high octane gasoline by a simple change in the fuel control mechanism. Each heater is supplied with a 6-in. draft regulator to prevent excessive chimney pull. Optional equipment is a 6-gal. fuel tank which may be attached to the jacket. Measuring 63 in. high by 26 in. in length and 20¼ in. in width, the heater may be installed in a very small space. The heaters will be manufactured only in quantities against special war orders. Airtemp Division, Chrysler Corp., Dayton, Ohio.

(continued on page 92)



OBTAINABLE NOW .. FIRE RESISTANT ARCHES & BEAMS

Above: "Unit" glued laminated beams in machine tool plant, Defense Plant Corporation.

★

Below: One of many airplane hangars built with "Unit" glued laminated arches.

Copyright 1943, Unit Structures, Inc.



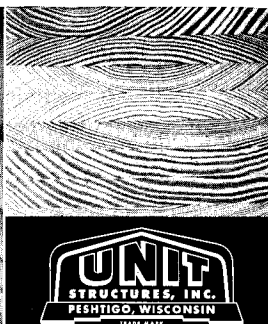
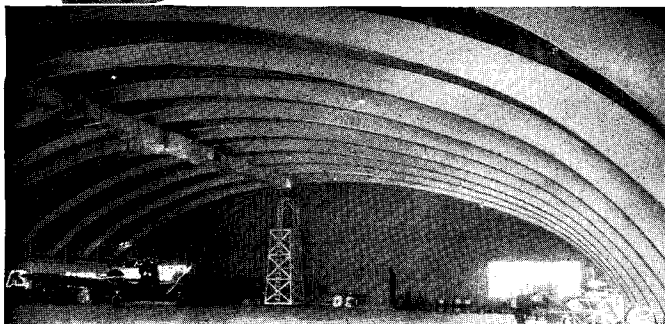
.. shop-fabricated for permanence, by scientific **UNIT** ^{GLUED LAMINATED} process

There is a vast difference between gluing on the job site by haphazard methods, and advanced techniques whereby "Unit" laminated arches and beams are *glue-welded* under rigid shop-control ... Practical for spans of 200 feet and over. "Unit" special equipment, trained personnel, and proved methods (US Patents Nos. 2177395 and 2172093) are now

serving leading war construction firms. Ample facilities for quick deliveries. Simpler detailing, faster erection save additional time. Engineering service available ... For quick action and permanence, work with established specialists (since 1934). Write, phone or wire **UNIT STRUCTURES, INC.**, Peshigo, Wis. Plants at Peshigo and at Sayville, L. I., N. Y.

← **New 12-page 2-color catalog . . .**

(also included in 1943 Sweet's), just off the press, illustrates every conceivable application. Deals with glued laminated construction exclusively. Functional designs and beautiful finishes, facts on fire-resistance are eye-openers. Ask for free copy on your letterhead.



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*.

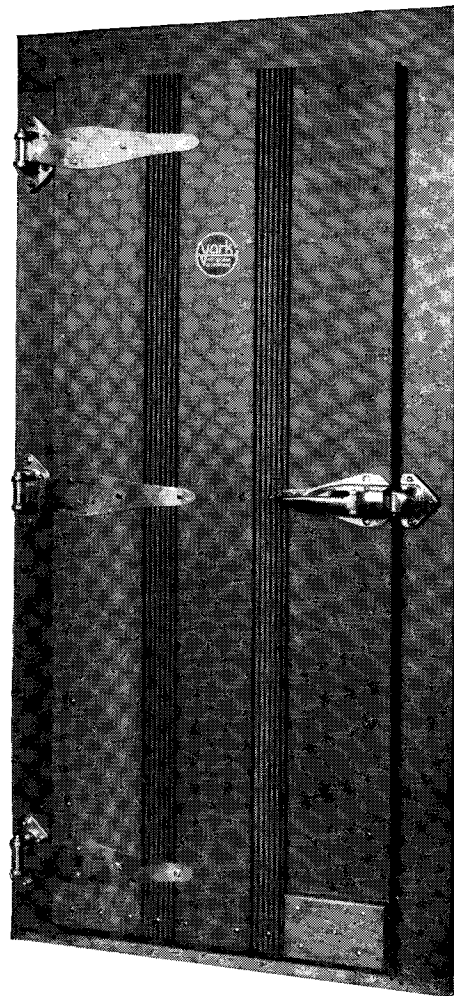
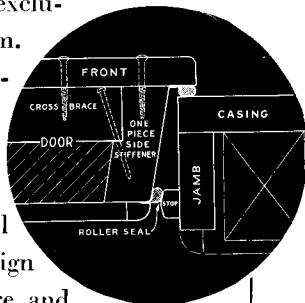
York Cold Storage Doors are equipped with two water and grease-proof, wear resistant gaskets and the exclusive York Roller-Seal shown in the diagram.

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 Ice Machinery Corporation, York, Penna.



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"	2'-0"	2'- 1-3/4"	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'- 1-3/4"	6'-9-1/8"

YORK REFRIGERATION AND AIR CONDITIONING FOR WAR



HEADQUARTERS FOR MECHANICAL COOLING
SINCE 1885

(continued from page 90)

NON-METALLIC PIPE

A NEW LINE of non-metallic drain and sewer pipe just announced can be cut to desired lengths with an ordinary wood-working saw. Said to be resistant to moisture, tuberculation, corrosion and most dilute inorganic acids and alkalis, it is made of cellulose fibre impregnated with coal tar pitch. No critical war materials are

used in its manufacture. Couplings maintain pipe lengths in line and provide tight joints if desired. Two types are available—perforated and non-perforated. The perforated pipe is designed especially for septic tank filter beds and foundation footing and field drainage. It is said to repel root growth. The Fibre Conduit Co., Orangeburg, N. Y.

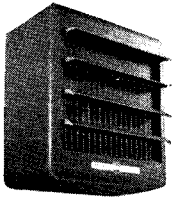
TURBINE-TYPE PUMPS

DESIGNED PRIMARILY for aviation refueling systems, but already used in refineries and other industries, a new line of turbine-type pumps is self-venting and cannot become vapor locked. Capacities range up to 1,000 gallons per minute against head pressures generally encountered in gasoline fueling systems. Higher capacity is available at slightly reduced pressure in case of increased demand. Priming difficulties, it is claimed, are eliminated and instant delivery of the liquid is assured regardless of temperature conditions. The pumps are regularly furnished with totally enclosed, explosion-proof vertical motor where highly volatile liquids are to be handled. The Deming Co., Salem, Ohio.

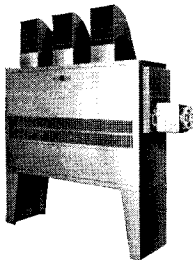
For Army-Navy Projects and War Industries

At this time The Herman Nelson Corporation is busy furnishing Heating, Ventilating and Air Conditioning Equipment for use everywhere in connection with work vital to our National War Effort. However, The Herman Nelson Corporation is maintaining Sales and Service Offices in all Principal Cities in order to help facilitate war work. Each office is equipped to quote and aid in working out details for your war project.

HERMAN NELSON *hijet* HEATERS



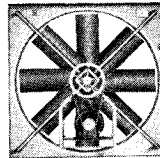
Horizontal Shaft Propeller-Fan Type hijet Heater projects warm air downward in the desired direction. Eliminates waste fuel and space. Available in 48 models, sizes and arrangements.



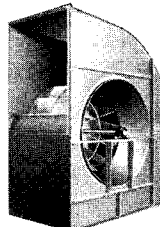
Herman Nelson Blower-Fan Type hijet Heater provides efficient heating of large areas. Streamlined discharge outlets maintain large air delivery with high velocity. For floor, wall, ceiling or inverted wall mounting. Available in 150 models, sizes and arrangements with a widerange of capacities.

AUTOVENT FANS AND BLOWERS

Autovent Propeller Fan. Exclusive Autovent design—direct or belt driven. Ruggedly constructed for economical operation under severe conditions. Available in wheel diameters from 9 to 54 inches; capacities 450 to 26,000 cfm.



Autovent Blower for heavy duty ventilating and air conditioning installations. This Blower can be furnished to any speed or discharge requirements, in a wide range of sizes.



Sales and Service Offices in Following Principal Cities

Albuquerque, N. Mex.
Atlanta, Ga.
Baltimore, Md.
Birmingham, Ala.
Boston, Mass.
Buffalo, N. Y.
Charlotte, N. C.
Chicago, Ill.
Cincinnati, Ohio
Cleveland, Ohio
Columbus, Ohio
Dallas, Texas
Denver, Colo.
El Paso, Texas
Emporia, Kans.
Fort Wayne, Ind.
Grand Rapids, Mich.
Houston, Texas

Indianapolis, Ind.
Jackson, Miss.
Johnstown, Pa.
Kansas City, Mo.
Los Angeles, Calif.
Louisville, Ky.
Madison, Wis.
Memphis, Tenn.
Miami, Fla.
Milwaukee, Wis.
Minneapolis, Minn.
Missoula, Mont.
Moline, Ill.
Nashville, Tenn.
New Orleans, La.
New York City, N. Y.
Norfolk, Va.
Omaha, Neb.

Philadelphia, Pa.
Pittsburgh, Pa.
Portland, Maine
Richmond, Va.
Saginaw, Mich.
Salt Lake City, Utah
San Antonio, Texas
San Francisco, Calif.
Scranton, Pa.
Seattle, Wash.
Spokane, Wash.
St. Louis, Mo.
Syracuse, N. Y.
Tucson, Ariz.
Tulsa, Okla.
Washington, D. C.
Watervliet, N. Y.
Westfield, Mass.



The Herman Nelson Corporation

MOLINE, ILLINOIS

Autovent Fan & Blower Div., Chicago, Ill.

Manufacturers of Quality Heating, Ventilating and Air Conditioning Products

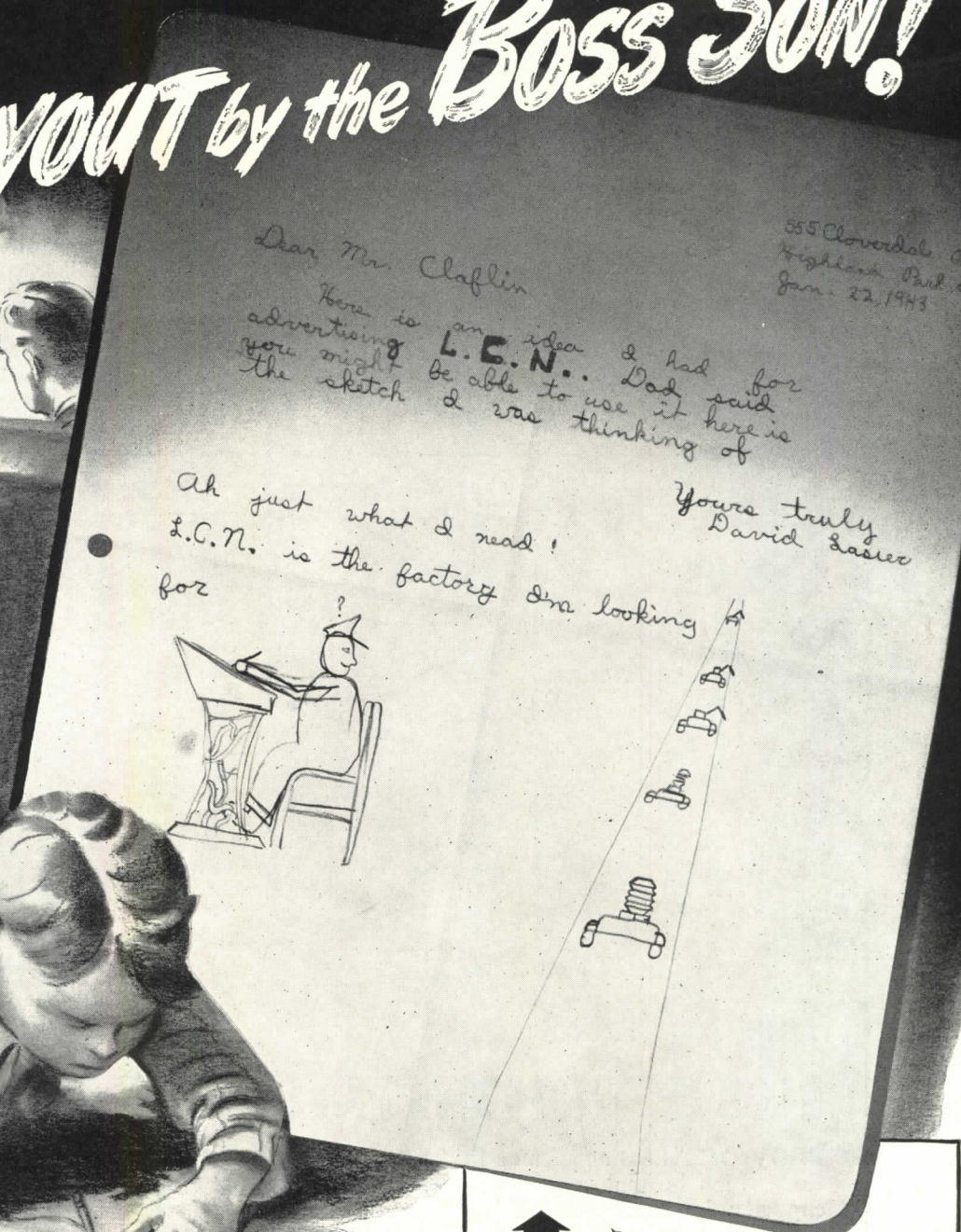
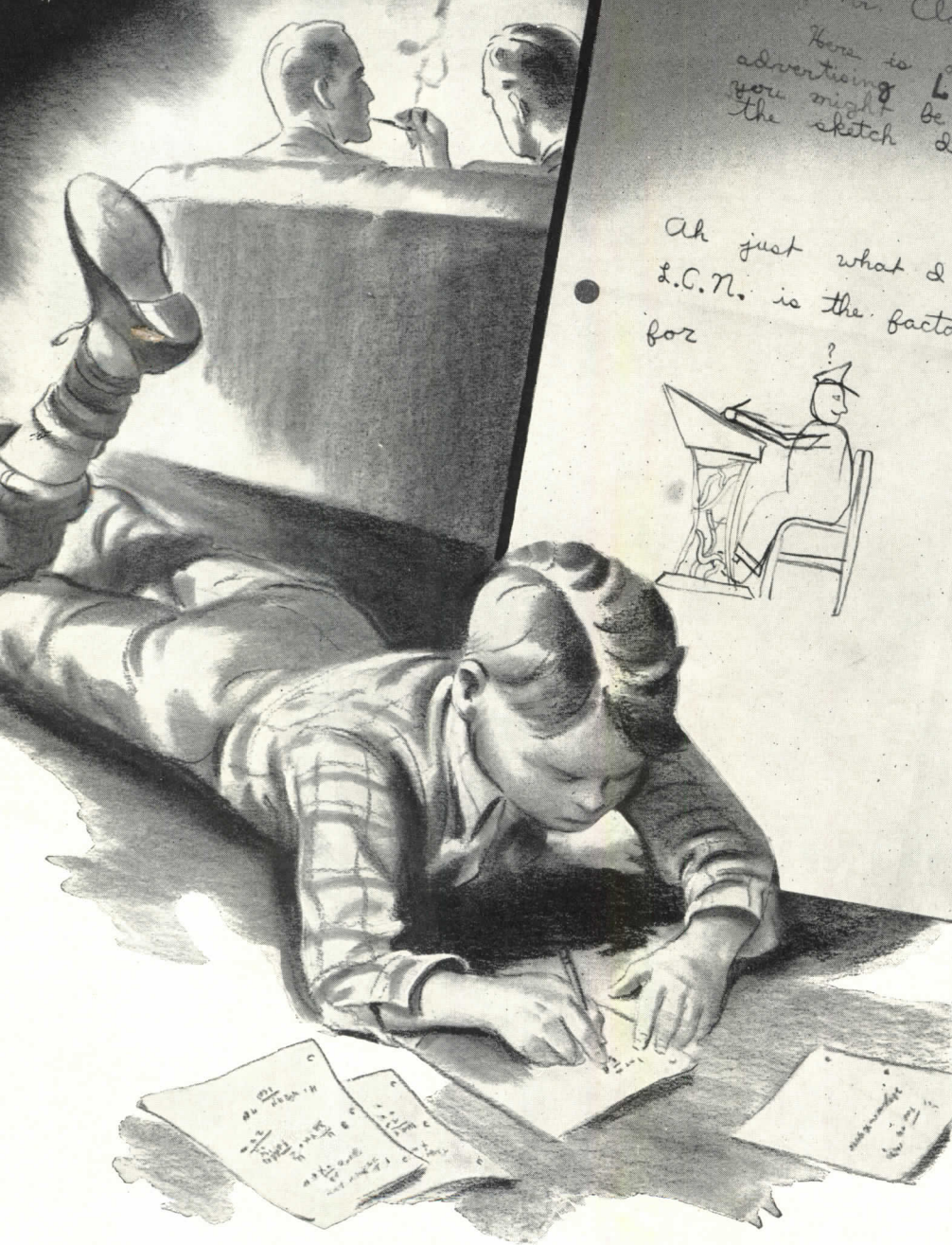
LAMINATED PLASTIC

DEVELOPED to meet Navy and war industry demands for a satisfactory substitute for brass, copper and bronze nameplates, tool checks, etc., is a laminated plastic known as Durashield. On each side of the center sheet, an opaque cellulose acetate plastic, .010 in. thick, is laminated a transparent acetate plastic, .020 in. thick, making a finished product measuring .050 in. thick. The transparent outside allows a clear vision of the directions, name, or whatever may be printed on the center. The new product, it is claimed, can be die-cut, stamped, drilled, or otherwise made to conform to any specification as to size and shape. It is also said to be fire resistant, successfully withstanding temperatures of 200°F. It can be obtained in colors. Plastic Fabricators, Inc., 500 Sansome St., San Francisco, Calif.

STRONG GLASS

RECENTLY ANNOUNCED is the development of a new type of Blue-Ridge pattern glass said to have unusual resistance to impact and sudden temperature changes. Known as Securit, the new glass is translucent and serves to diffuse light as well as to provide decorative themes. Officials of the company state that under a blow heavy enough to fracture it, the glass will disintegrate into a powdery substance. Libbey-Owens-Ford Glass Co., Toledo, Ohio.

ROUGH LAYOUT by the BOSS'S SON!



55 Cloverdale
Highland Park, Ill.
Jan. 22, 1943

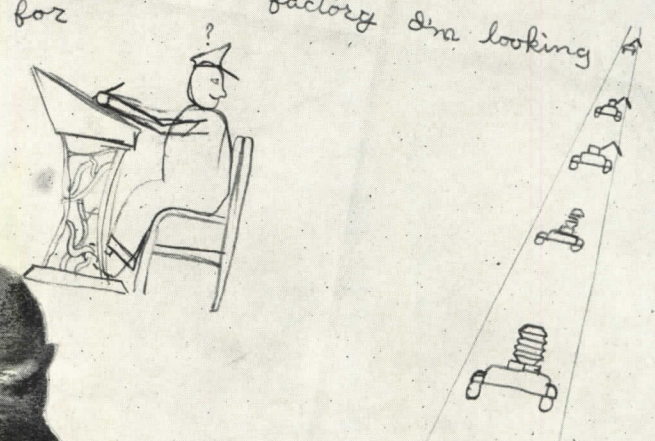
Dear Mr. Clafin

Here is an idea I had for advertising L.C.N.. Dad said you might be able to use it here is the sketch I was thinking of

Ah just what I need!

L.C.N. is the factory I'm looking for

Yours truly
David Lasser



↑

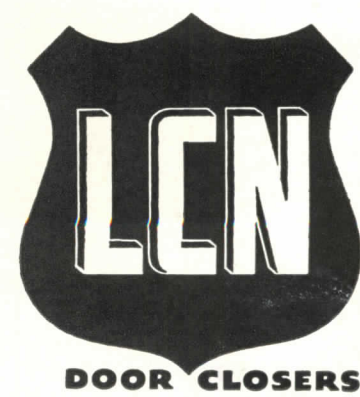
AT RIGHT: Trucks in distance carrying door closers, which change to war parts as they approach, showing LCN's 100% conversion to war work.

AT LEFT: Army officer registering pleasure at LCN production performance.

Overhearing our conversation these days might cause almost anyone to drop his arithmetic and start to draw pictures. We at LCN are tremendously proud of our part in the war, and when the story can be told we predict that our friends will be, too.



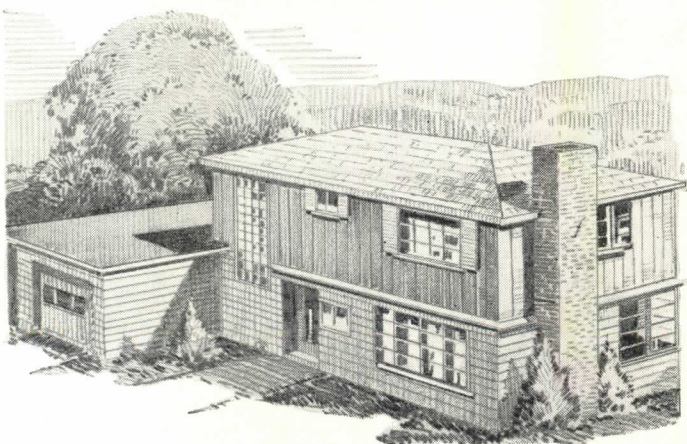
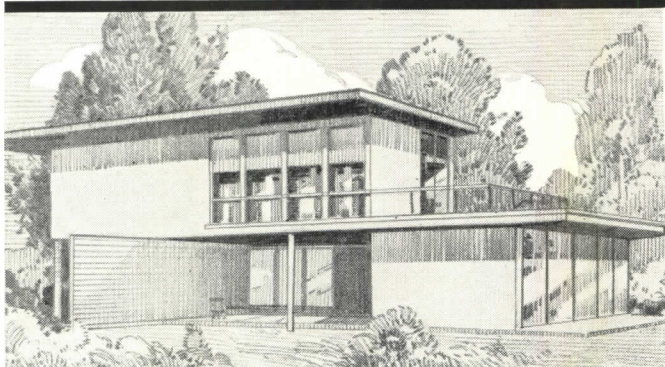
NOW 100% SMALL PARTS PRODUCTION FOR **VICTORY**





HOMES FOR 194X

Are being planned today



ON THE DRAFTING BOARDS of America's architects are plans for tomorrow's homes. Certainly home construction is due for a rapid expansion when the war is won; and thinking is already far advanced on planned communities, pre-fabrication and other developments that may mean a new conception in the planning of America's dwellings.

In keeping with this advanced thinking, Crane designers are right now developing ideas, experimenting with new materials. Out of their planning may come a radically different approach to the bathroom and kitchen of tomorrow.

But whatever fixtures the Crane postwar line includes, architects may be sure that they will embody the same regard for beauty, style and sanitation that has always characterized Crane Equipment.

CRANE

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

VALVES • FITTINGS • PIPE
PLUMBING • HEATING • PUMPS

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

(continued from page 94)

The Fellowship is open to graduates of the College of Fine and Applied Arts of the University of Illinois and to graduates of similar institutions of equal educational standing, whose major studies have been in Music, Art, or Architecture. Applicants should not exceed 24 years of age on June 1, 1943. Requests for application blanks and instructions should be addressed

to Dean Rexford Newcomb, College of Fine and Applied Arts, Room 110, Architecture Bldg., University of Illinois, Urbana, Ill.

PRE-FABRICATION RESEARCH

At the School of Design in Chicago a selected group of students under the direction of George Fred Keck, Head of the Architectural Department of

the School, is undertaking research in the development of the pre-fabricated and demountable house, its analysis and its possibilities. Assisting Mr. Keck in this work is Robert B. Tague.

POSTWAR PLANNING PROGRAM

In describing the general objectives of the postwar planning program for the construction industry, sponsored by The Producers' Council, and the detailed program for its technical committee, of which he is chairman, George J. Haas, A.I.A., Sales Manager of the Stran Steel Division, Great Lakes Steel Company, recently urged architects and engineers, material men and contractors in Cincinnati to organize their own local committees for postwar planning and to join their efforts with local business and industry groups to insure full employment after the war.

A long-time member of the American Institute of Architects and a past president of the Michigan Society of Architects, Mr. Haas was the principal speaker at a joint meeting of the Cincinnati Chapter of the Institute and the southern branch of the Ohio Society of Architects, with the Cincinnati Chapter of The Producers' Council.

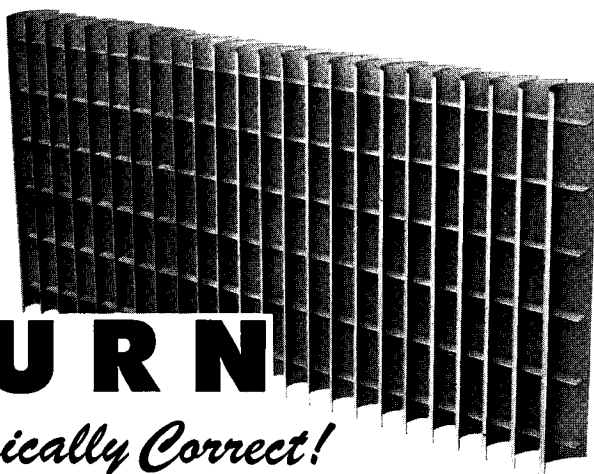
"The broad objective of The Council's postwar program," Mr. Haas said, "is the development, in cooperation with other branches of the construction industry and major allied groups, of plans and policies to insure that construction will perform its proper function in support of a full postwar economy and contribute the largest possible share towards full employment and general economic and social stability."

The Council committee does not propose to duplicate the work of the many organizations now dealing with city planning and urban problems, Mr. Haas said. Rather, it expects to keep in touch with developments, its principal interest being to recommend, as a part of the postwar program, methods of assuring the construction industry that planning of physical facilities will be comprehensive, continuous and sufficiently in advance so that essential public construction can be undertaken, if necessary, as a means of providing employment during the conversion period of industry at the end of the war.

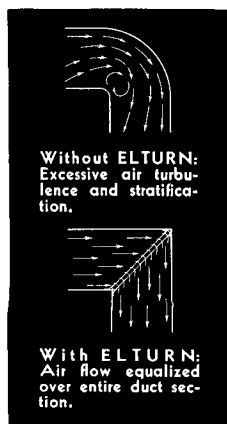
BARBER-COLMAN

GRILLES & REGISTERS **ENGINEERED** AUTOMATIC CONTROLS
AIR DIFFUSERS *uni-flow* GRILLES AND REGISTERS AIR DISTRIBUTION

First Again!... **NEW TURNING VANE IS THE BEST NOW AVAILABLE COMMERCIALY!**



The *New*
ELTURN
Aerodynamically Correct!



85% REDUCTION OF LOSSES

The New ELTURN effects a substantial reduction in elbow pressure losses in any air distribution system that employs right angle turns, reducing by as much as 85% the losses caused by eddies, reverse air flow, and low pressure areas.

CORRECT AERODYNAMIC DESIGN

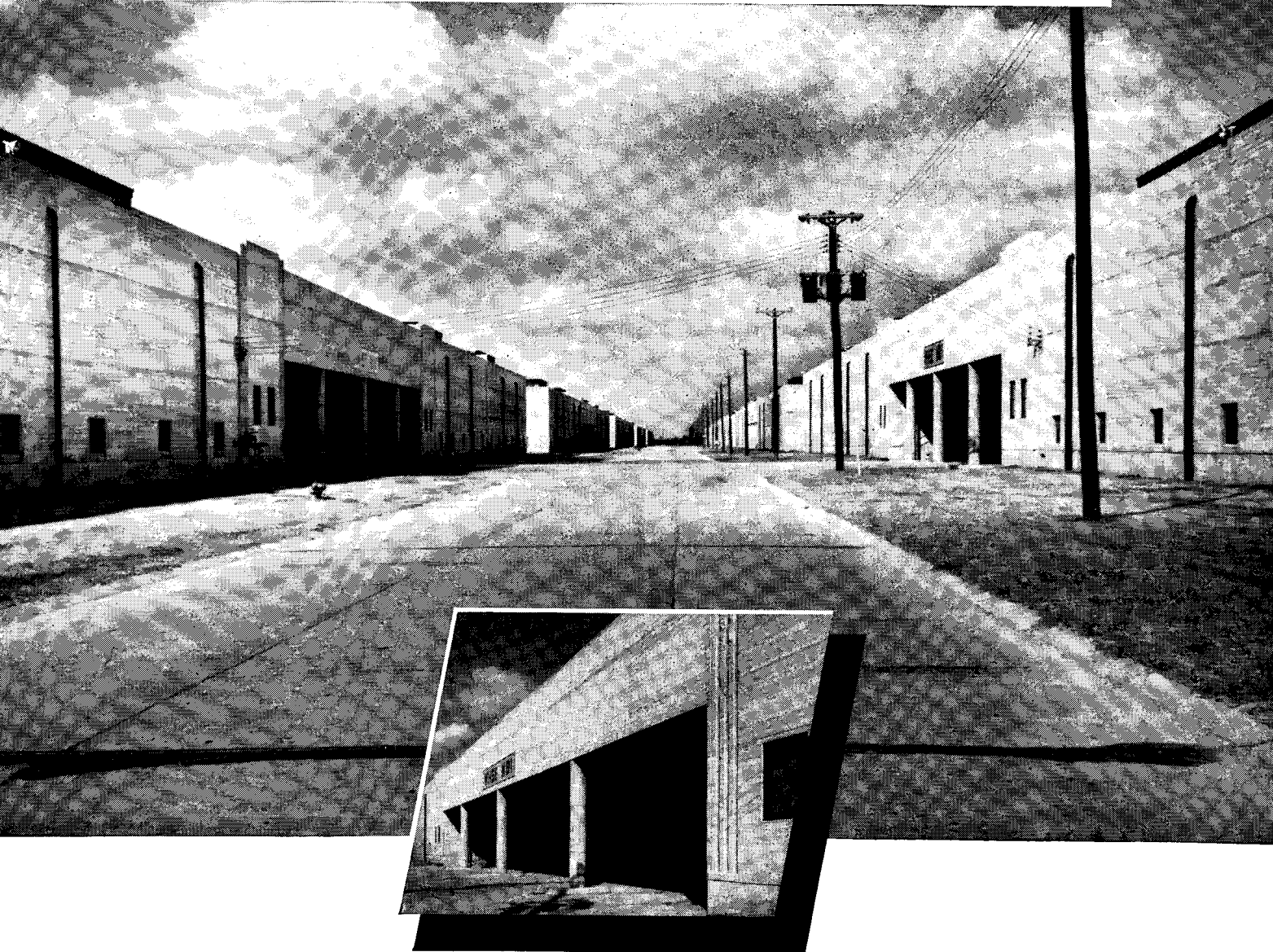
The turning vanes were scientifically designed on the basis of best modern aerodynamic principles to obtain these outstanding improvements in performance. The New ELTURN has been thoroughly tested and proved, both in the laboratory and in actual service.

WIDE SPACING • POSITIVE INTERLOCKING

The large free area of the New ELTURN precludes the possibility of clogging due to lint and dust. Distinctive construction make a strong and positively interlocked assembly. Write for sizes and other data.

BARBER-COLMAN COMPANY 1232 ROCK STREET
ROCKFORD, ILLINOIS

seven miles of Concrete walls *in one army depot*



Acres of six-inch concrete floors were laid on grade and then enclosed with seven miles of 10-inch thick concrete walls in building an Army quartermaster depot in the South.

All concrete for the walls was placed from the inside. The concrete floors were used as a base for concreting operations. Forms were built and erected on the floors and truck-mounted mixers with towers were moved over them. Forms for each group of buildings were each used four times, the buildings being identical in form and plan.

Each large warehouse was completed in about 60 days. Cost was below original estimates.

Economical, fast construction with maximum fire resistance and structural integrity was obtained on this project with a minimum use of steel.

The technical service of Portland Cement Association specialists in concrete construction is available to assist all designers of essential projects in developing the maximum structural advantages of concrete.

PORTLAND CEMENT ASSOCIATION

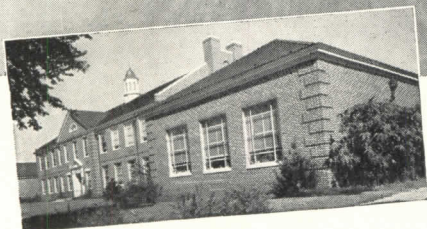
Dept. A3-8, 33 W. Grand Ave., Chicago, Ill.

A national organization to improve and extend the uses of concrete . . . through scientific research and engineering field work

Buy more war bonds

Wichita knows from Experience

IT PAYS TO STANDARDIZE ON "Maple Throughout"



Auditorium in Irving Grade School, Wichita, Kansas, floored with MFMA Northern Hard Maple—Lorentz Schmidt, Architect.

For years, the Board of Education of Wichita has standardized on MFMA Northern Hard Maple Flooring—for all classrooms, gymnasiums, auditoriums. The long-run economy of Maple, the low cost of caring for it, have paid Wichita well—will continue to reward that enterprising center of aircraft production over the years.

"Their experience with this type of flooring has been very satisfactory and, therefore, they continue its use," writes Lorentz Schmidt, architect.

In those words, Mr. Schmidt sums up the case for Hard Maple flooring in schools—its tight-grained resistance to wear, its bright cleanliness, warm comfort, and smoothness without being slippery. It's safe and fast underfoot.

Hard Maple floors for schools cut maintenance costs to the bone—properly finished, mere brushing cleans them—an important item of economy in school administration.

In your planning—present or future—keep actively in mind MFMA Northern Hard Maple, in strips or blocks, before you build or remodel. See Sweet's, Sec. 11/57, for catalog data.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1782 McCormick Building, Chicago, Illinois



THE RECORD REPORTS

(continued from page 96)



WHITNEY WARREN
1864-1943

The death of Whitney Warren on January 24 brought to a close a long and vital career which leaves its mark in many fields as well as the architectural. Best known as the architect of Grand Central Terminal in New York City and the rebuilt library of the University of Louvain in Belgium, Mr. Warren's many and varied interests and intense individuality made him a widely familiar figure.

Born in New York, Whitney Warren's early interest in art quickly turned to architecture. Following a short term at Columbia, he studied for ten years under Daumot and Girault at the Ecole des Beaux Arts in Paris.

Shortly after his return to New York in 1894 he became associated with Charles D. Wetmore and established the firm of Warren and Wetmore. The new firm promptly entered the New York Yacht Club's competition for plans for a new club house, and won it.

For many years the architects for the New York Central, Erie, and Canadian Northern Railroads, Mr. Warren and his partner were also the designers of many large hotels including the Biltmore, Vanderbilt, Ritz and Commodore in New York City, and the Ritz hotels in Atlantic City, Philadelphia and Montreal.

Always keenly interested in architectural education and convinced of the excellence of his own training in Paris, Mr. Warren was one of the founders and a charter member of the Society of Beaux Arts Architects in New York, which introduced the French atelier system of instruction to this country, encouraging students to form small groups to work under the guidance of established architects. The idea spread quickly to architectural schools throughout the country, and in 1916 the Society organized the Beaux Arts Institute of Design to take over its educational program,

(continued on page 100)



The air over Tokyo has been brought to Detroit

WHEN Tokyo is raided again—and it will be—it may be the first trip for most of the pilots. But to the carburetors of the planes' roaring engines it's old stuff.

They had their first taste of Nipponese atmosphere months ago—in a test box in an American aircraft parts factory. Trane air conditioning equipment made this possible.

The air over Tokyo, Berlin, Tunisia has been brought to Detroit, Nashville, Dallas—wherever carburetors are made. Industry has recreated in a few cubic feet of space most of the atmospheric conditions which American pilots may find regardless of where they fly.

Thus is assured as perfect performance as possible for an instrument of vital importance in America's

tremendous Number One job of winning the war.

This is but one of many examples of how Trane is mobilizing the weather of the world for the Allied war effort. Skilled Trane air engineers operating from strategic bases are applying the wide Trane line of air handling and heat exchange equipment—to test, to speed manufacturing processes, to conserve vital materials, to protect fabricated products, to help keep American workers at the peak of their productive capacity.

And from what Trane is doing today will develop improved standards for the America of tomorrow... greater comfort, better health and living—thanks to Trane air conditioning—in the better days that are to come.



TRANE

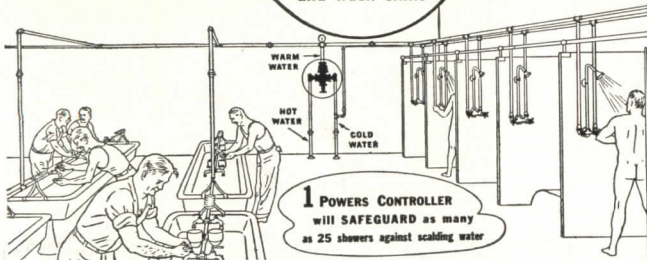


THE TRANE COMPANY LA CROSSE, WISCONSIN
 TRANE COMPANY OF CANADA, LTD., TORONTO
 AIR CONDITIONING • HEAT TRANSFER • AIR HANDLING EQUIPMENT

For Low Cost Insurance



--against
the danger
of scalding water
in shower baths
and wash sinks



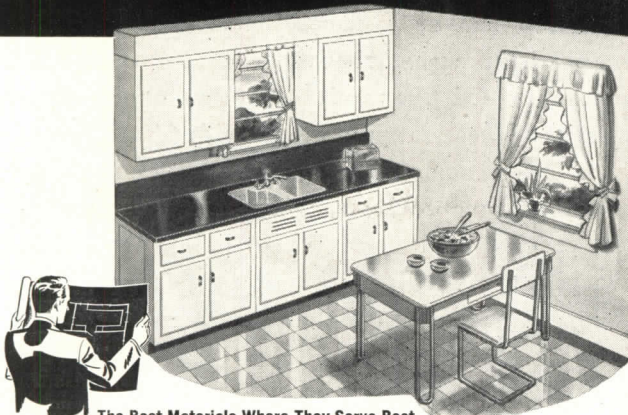
1 POWERS CONTROLLER
will SAFEGUARD as many
as 25 showers against scalding water

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

GET THE FACTS ABOUT— COMPOSITE CONSTRUCTION



The Best Materials Where They Serve Best

★ Before planning a war or post-war housing job, get the facts about Kitchen Maid Cabinetry of composite construction! This new cabinetry, made of hardwood, plywood, and newest compositions, combines all advantages of the best materials available—each used where it serves best, gives greatest strength and longest life. Remarkably flexible, too—with standard units to fit practically any arrangement. Write The Kitchen Maid Corp., 633 Snowden St., Andrews, Ind.

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KITCHEN MAID

CABINERY OF COMPOSITE CONSTRUCTION

THE RECORD REPORTS

(continued from page 98)

securing for it a provisional charter from the regents of the University of the State of New York. So successful were the efforts of these two groups that the winners of the Paris Prize Competition, established by the Society in 1904, were admitted to the Ecole des Beaux Arts in Paris without having to pass an entrance examination—the only students ever granted this privilege.

Probably prouder of his design for the Louvain Library than of any of his other work, Mr. Warren stirred up a long controversy by the inscription he wished to place on the facade of the finished building. This inscription, "Furore Teutonica Diruta; Dono Americano Restituta" (Destroyed by German Fury; Restored by American Generosity), he said had been given him for the purpose by Cardinal Mercier. The Cardinal died before the rebuilt library was dedicated. Monsignor Ladeuze, rector of the University of Louvain, refused to allow the inscription. Popular sentiment was on the architect's side, and in the resultant controversy rioters destroyed the inscriptionless balustrade. Twice it was replaced, and twice again torn down. Mr. Warren sued the university and was upheld in the lower courts, only to have the decision reversed by the highest court of Belgium.

Well known socially both in New York and in Paris, Mr. Warren originated the Beaux Arts Ball to finance the Society of Beaux Arts Architects' educational programs, and presided over it until its discontinuance.

EGERTON SWARTWOUT 1870-1943

Egerton Swartwout, whose death occurred in New York on February 18, unquestionably will be remembered as widely for his continuous efforts in behalf of the younger members of his profession as for the many and varied buildings which he designed. Throughout his fifty-two-year professional career, Mr. Swartwout worked tirelessly to better the chances given young architects to prove themselves. He spent many years perfecting the competition code of the American Institute of Architects.

A firm believer in the merit of the small architectural office, Mr. Swartwout did all the sketches for important work himself. The more than a hundred buildings of his design include the Mary Baker Eddy Memorial in Boston, the Missouri State Capitol at Jefferson City, and the Elks National Memorial in Chicago. His work for the American Battle Monuments Commission following the last war included a memorial to the American dead at Monsec, France, and one in Brookwood Cemetery outside London.

Mr. Swartwout was born in Fort Wayne, Ind. Following his graduation from Yale in 1891 he entered the architectural firm of McKim, Mead and White in New York, remaining with them until he opened his own office twenty years later. He was the recipient of many professional honors: membership in the National Academy, the National Institute of Arts and Letters, the Fine Arts Federation of New York, and the Société des Beaux Arts in Paris; and the A.I.A. gold medal award of 1920.

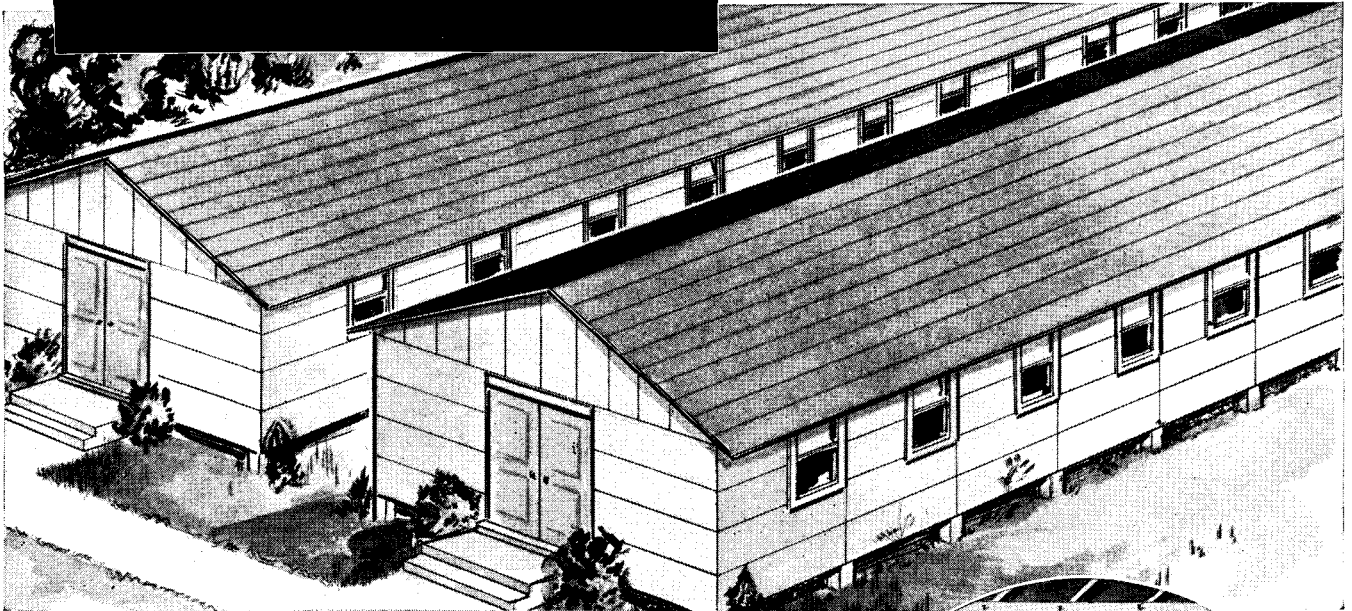
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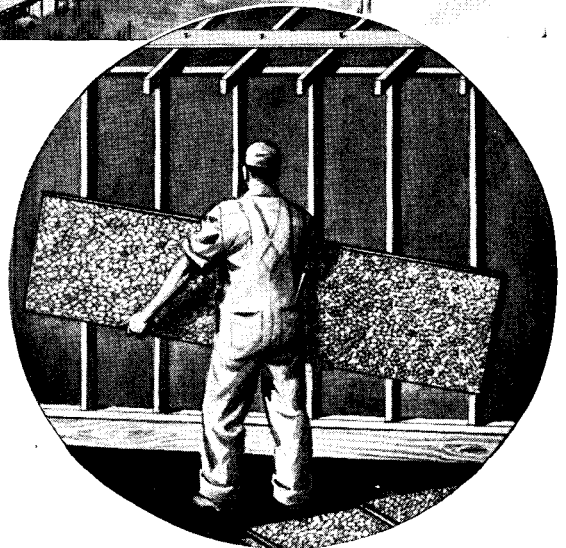
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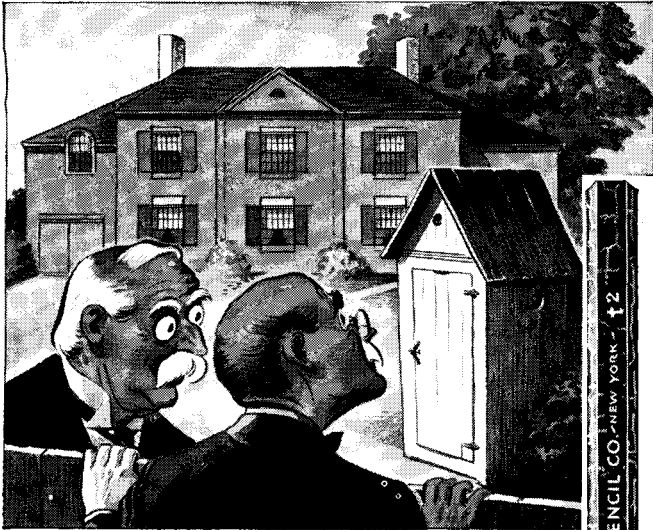
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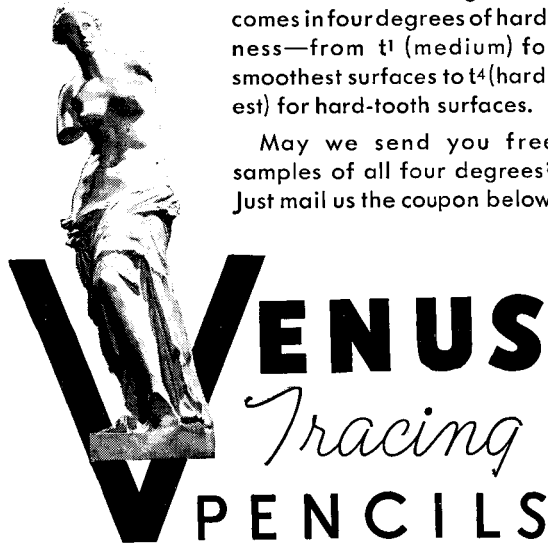
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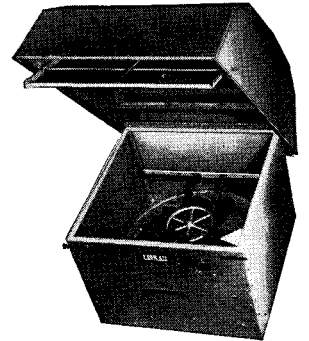
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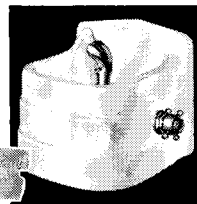
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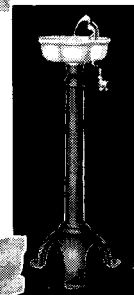
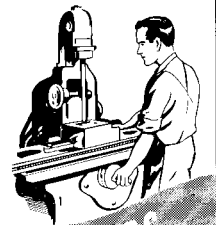
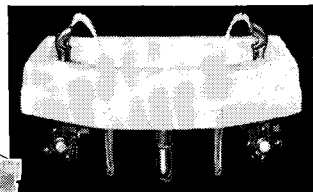
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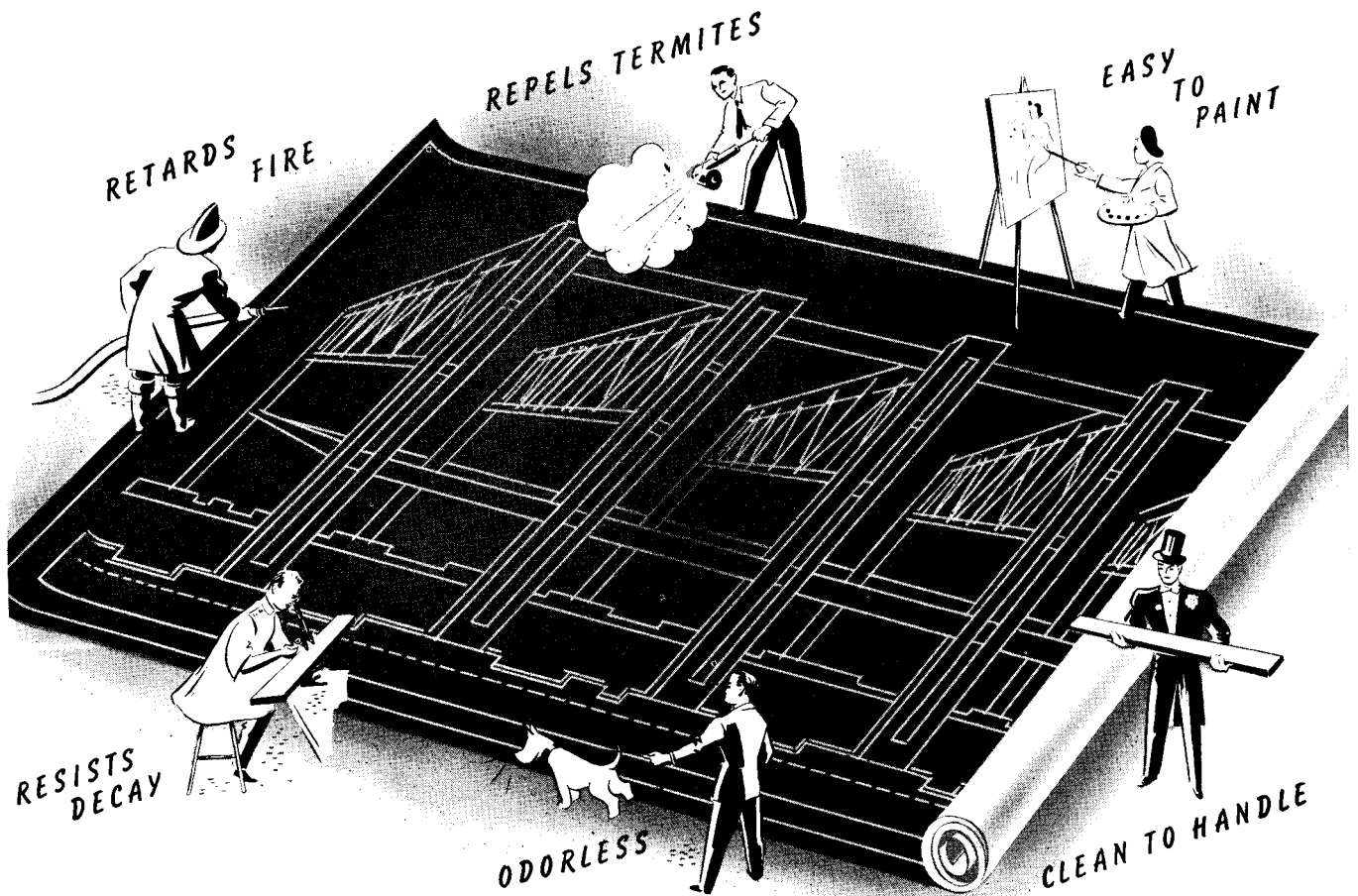
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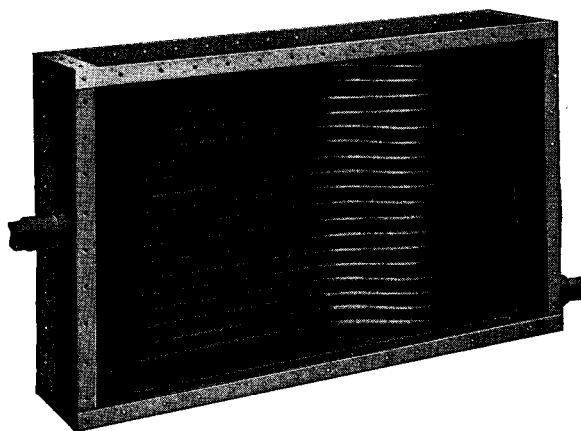
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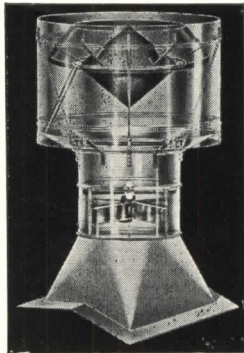
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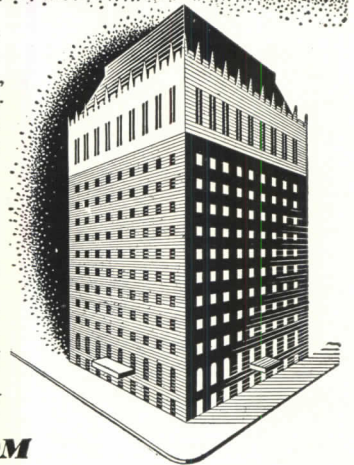
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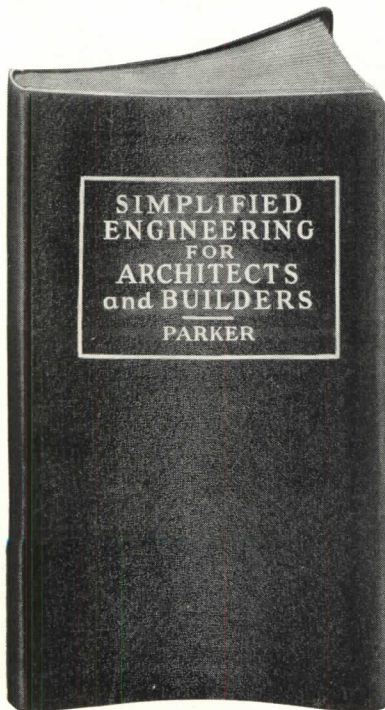
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An Engineer Remarks On

the value of a range of selection in

OIL BURNING SYSTEMS



Norman E. Bueter is Chief of the Mechanical Engineering Department of Holabird and Root, one of the country's leading architectural firms whose buildings are among the notable examples of American architecture. Among their Petro jobs are Henrotin Hospital, Chicago, Illinois, and the Morton Arboretum, Lisle, Illinois.

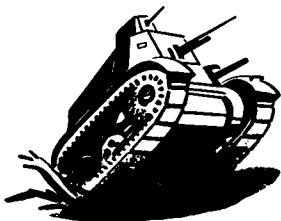
Based on practical experience, Mr. Bueter has these comments to make on oil burning systems:

"My experience in the prewar markets showed me that preference for Petro equipment among architects and engineers was based chiefly on Petro's performance record of high efficiency and low operating costs. The range of oil burning equipment from this one source for both small structures using light fuel oils and larger buildings using pre-heated fuel oils was a decided advantage to the architect and engineer in his specifications and planning . . . Under the present stress of war production loads, oil burning systems are successfully performing their most difficult jobs, and their efficiency and economy are contributing to the war production effort. Now that oil is scarce and oil burning systems are unavailable for non-essential buildings, we look forward to construction after the war when we can again freely recommend their use."

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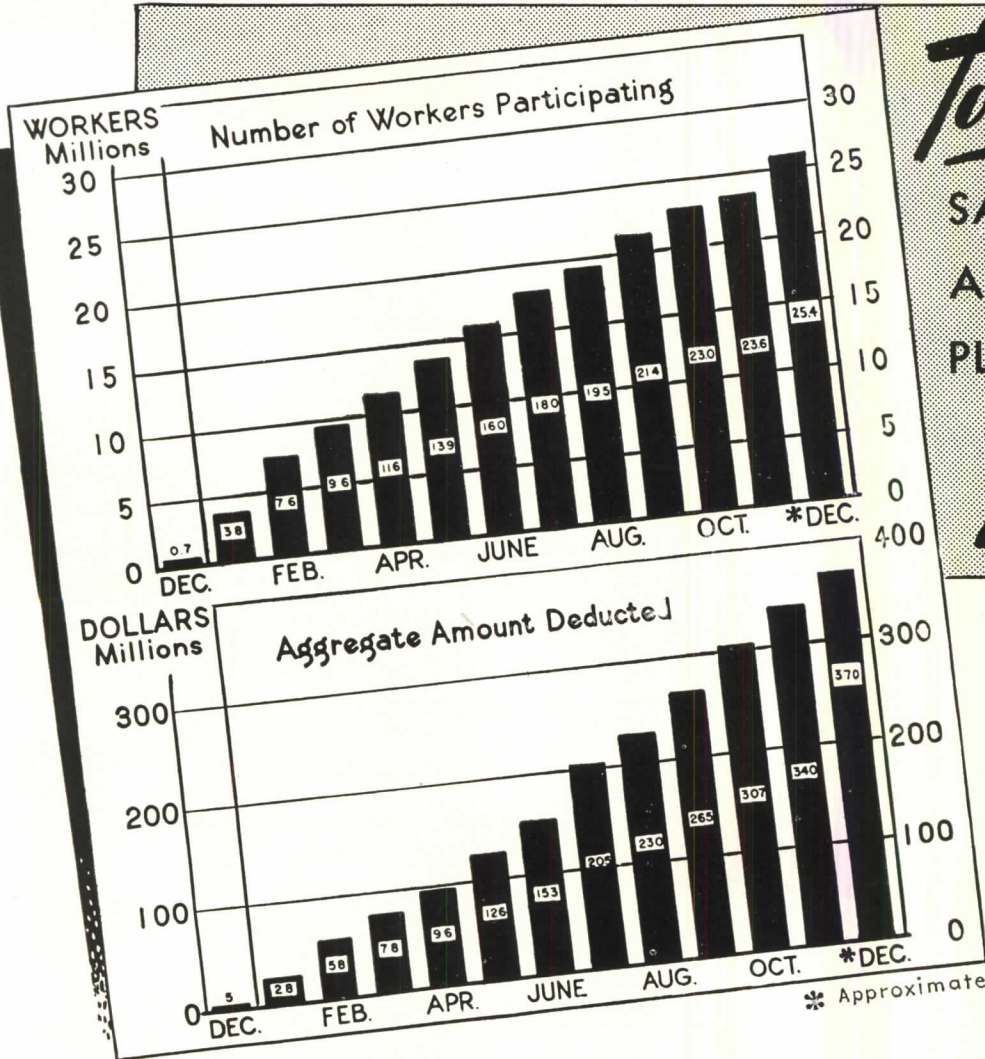


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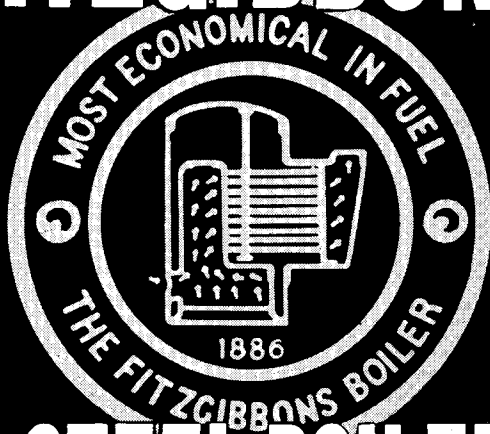
But there is still more to be done. As our armed forces continue to press the attack in all quarters of the globe, as war costs mount, so must the record of our savings keep pace.

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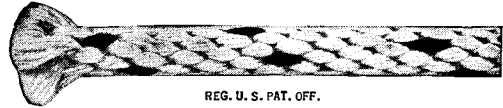
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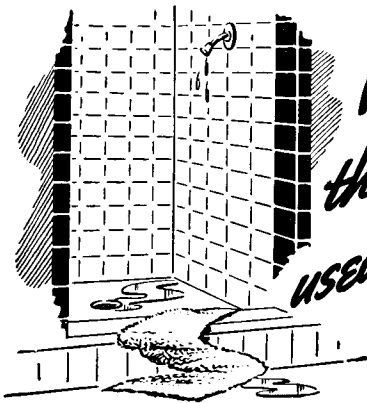
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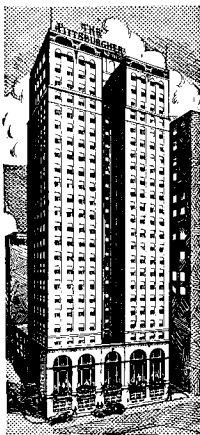
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A KNOTT HOTEL

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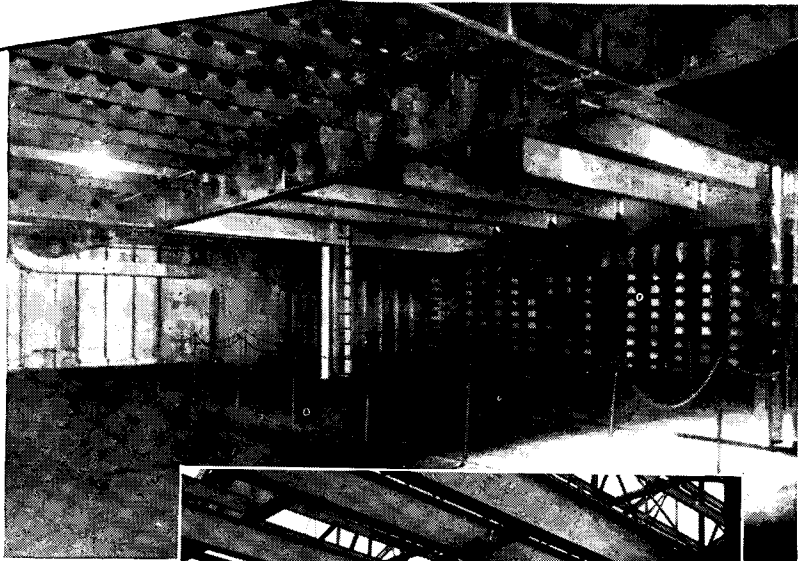
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*for ships
and
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