Looking ahead with Asbestos

ARCHITECTS WON'T BE FOOLING WHEN THEY OFFER A LIFE-TIME ROOF

No matter what trends lie ahead for home architecture, they are bound to feature roofs that combine beauty with permanence.

Such roofs are here already; those that have been built, foresightedly, with K&M "Century" Asbestos-cement Shingles. *Beauty* of roof comes from the wide variety of soft, mellow shingle colors that, either alone or in blend combination, stamp a home with distinction; from the thatched, weathered texture; from the thick edges casting heavy shadow lines and the taper of the shingles which accentuates this effect. *Permanence* of roof comes from an unvarying percentage of asbestos fibre and Portland cement, regardless of shape or style. Formed under tremendous hydraulic pressure, K&M shingles are rock-like in hardness, fire-and-weather resisting, rot-and-termite proof.

Today, most of K&M's productive facilities are required for the manufacture of those products urgently needed for war construction. But you may be sure that when peace returns, "Century" Shingles will once again play a vital part in making homes safer, more comfortable and more attractive than ever before.

* * *

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

The "EXPERIENCE POOL" fore-armed this project against corrosion

BYERS WROUGHT IRON

COL. JOHN WARNER HOMES, Peoria, Illinois

Architects
J. FLETCHER LANKTON
JAMESON & HARRISON
CARTER EDMUND HEWITT
HAMILTON B. DEX
HOTCHKISS AND WHITMEYER

Engineers
BELING ENGINEERING CO.

Today's conditions make the job of piping specification more difficult —and more important—than ever before. Some materials once used are no longer available, so experience gained with them is useless as a present guide. At the same time premature replacements must be avoided as they drain away metals that are badly needed elsewhere.

In these circumstances, the Byers "Experience Pool" is an invaluable aid to the specifier. Its operation was well illustrated in the Peoria, Ill., project pictured.

The projected water supply (wells) and water treatment were similar to those in a large local institution. Samples of the softened water; of the boiler water; of the condensate; and of the boiler compound used, were sent to the Byers Laboratory, where the analysis and corrosive characteristics of each sample were determined. The "Experience Pool" then provided case histories of various piping materials under identical conditions, which permitted sound engineering recommendations, based on *facts* instead of hopes or guess-work, to be made. Byers Wrought Iron was installed for all concealed water lines, and for all underground gas piping.

If you have a specification job on some essential project, the "Experience Pool" is at your service, without cost or obligation. Just write us the details. Our files include analyses of over 600 municipal water supplies, but if we have none covering your project, a container will be sent for a test sample. You will find some helpful information about piping problems and their solution in our technical bulletin, "Wrought Iron for Piping Systems." A complimentary copy will be sent on request.

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

CORROSION COSTS YOU MORE THAN WROUGHT IRON

BYERS
Genuine
WROUGHT IRON
Tubular
and Hot Rolled Products
Steel Tubular Products

ARCHITECTURAL

RECORD

COMBINED WITH AMERICAN ARCHITECT AND ARCHITECTURE

VOL. 92 **AUGUST 1942** NO. 2

NEXT MONTH

WHEN the newspapers have been full of disturbing news, we are glad to be able to bring out a reassuring factor in the Design for Democracy in our September issue. The production of bombers is particularly important at this time, for bombers can be delivered on the fighting fronts without danger of submarine attack. It is no secret that one of the largest bomber plants is in what is euphoniously called the Midwest and was designed by Albert Kahn. The plant we present is not only a monument to the war effort but a significant contribution to the architecture of industrial plants.

To strike a balance, we give a useful series of ingenious and practical built-in features, which can be adapted to many homes. In photographs and working drawings we show cleverly contrived built-in features for dining rooms, living rooms, studies and bedrooms, designed by G. McStay Jackson; associate, W. H. Buderus. The small house itself also comes in for its share of attention, as it is still possible to proceed with housing for war workers in defense areas. For technical reference, the lighting of industrial plants is covered from the point of view of present-day criteria and standards and the practical ways and means of lighting production plants for maximum efficiency.

F. W. DODGE CORPORATION
H. JUDD PAYNE, Vice President in charge of MAGAZINE DIVISION

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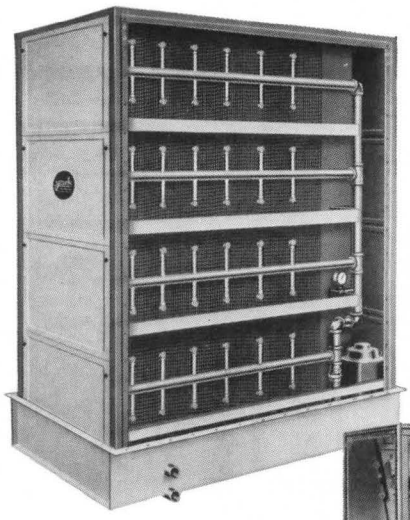
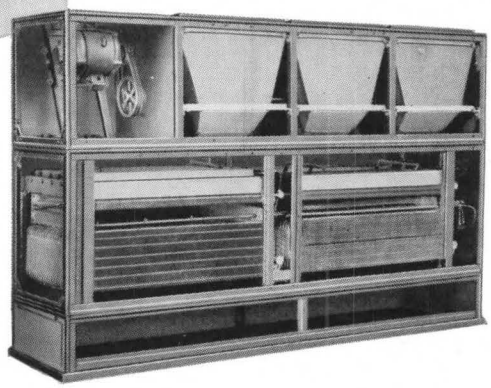
PDQ for Defense Plant Air Conditioning



YORK TYPE "MC" DEHUMIDIFIERS, using multiple Staggered-Tube Coils with lo-head circulators and water sprays are fabricated in sectional units for either chilled water or Freon duct expansion systems.



YORK SECTIONAL AIR CONDITIONERS . . . with Staggered-Tube Coils as standard equipment . . . Available 4, 6, 8, and 12 tubes deep for direct expansion Freon 12 or chilled water. 1, 2, or 3 *Fan Units* with capacities up to 9000 CFM. Units may be mounted either vertically or horizontally.

Engineers, architects and contractors with air conditioning problems in aircraft, ordnance, chemical and other defense plants, on Army cantonments or Naval bases, in merchant ships and fighting ships may now depend on *quick delivery* of York Staggered-Tube Coils.

Sizes and capacities required are promptly available for every physical and load requirement, with either chilled water or Freon.

Wherever your jobs may be there's a York factory branch or distributor close at hand and equipped to provide engineering assistance, erecting service and general expediting. York Ice Machinery Corporation, York, Pa.

"KEEP'EM FLYING!"

york refrigeration air conditioning

YORK REFRIGERATION AND AIR CONDITIONING

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

WASHINGTON NEWS

By WILLIAM J. CASEY

War housing program • Lid on construction prices • Ceilings on materials for construction projects • War damage insurance • Hospital boom • Lumber supply critical • Willow Run housing

THE WAR HOUSING program on both private and public fronts seems to be rolling again after a period of being tangled in appropriation difficulties. The direction in which housing will move is becoming fairly clear. The Federal Public Housing Administration plans a 50-50 split between "for the duration" dormitory housing and permanent family dwellings. FHA expects a heavy trend towards multiple-dwelling housing for reasons of material conservation.

The first weeks running from early June through July 11 were boom weeks at FHA. There were 19,488 firm commitments running to $80,387,750 in dollar volume under Title VI. To get an idea of just how much activity this represents, remember that Title VI started in 1941 with $100,000,000 authorization. In September, 1941 it had another $200,000,000. This $300,000,000 was used up in April, 1942, and FHA didn't get started until June on its latest Title VI authorization of $500,000,000. In part this represents accumulated backlog, but in good healthy measure it represents the speed-up in privately financed housing.

All of these new commitments were under Section 603 involving one- to four-family units. There is lots of interest and a great deal of field, survey and spade-work on large-scale rental apartment projects under Section 608. Some expect a lot of FHA money to wind up in mortgages up to $5,000,000 under Section 608. Pressure to save on plumbing, to use property in which utilities are already installed, will push privately financed housing in this direction. Even under Section 603 there is a heavy trend toward two-, three- and four-family units.

Lid on construction prices

For over three months now, OPA has been struggling to draft a satisfactory order setting a price ceiling over construction jobs.

And it looks as though the construction industry will get an advance on the base date from March to July. A March ceiling will not take into account the most recent advance in building trades wage rates. At a recent meeting with OPA officials, construction men indicated that contractors could not continue to use their March material and labor costs as a basis for estimating jobs, when labor costs have advanced.

The method to be employed in the construction price order is basically a freezing of costing methods and construction fees.

Watch OPA's desire to check alleged construction profiteering by forcing contractors to reveal an exact breakdown on their costs, overhead and profit margin in bidding, even for private contracts. The idea is that this in itself will push building charges down.

Fundamental to almost everything that happens in Washington is the stark fact of material shortage which has already stopped some production lines, and which has insiders genuinely frightened. Current panacea—which has already disappointed some of its sponsors—is the Production Requirements Plan which places a definite quantity ceiling over the materials which a manufacturer can obtain. Previously the restrictions on how much of the material could be obtained with a priority rating were either loose or loosely administered. Moreover, nobody had an idea how many ratings have been issued and how much material those ratings would pull out of a limited supply. Under PRP the War Production Board knows just how much of the nation's material stockpile has been handed out to manufacturers. Now there is great pressure on WPB to extend this type of control to construction. The first step was to limit builders getting project ratings to materials to be physically incorporated in the projects and to certain "expendible material" consumed

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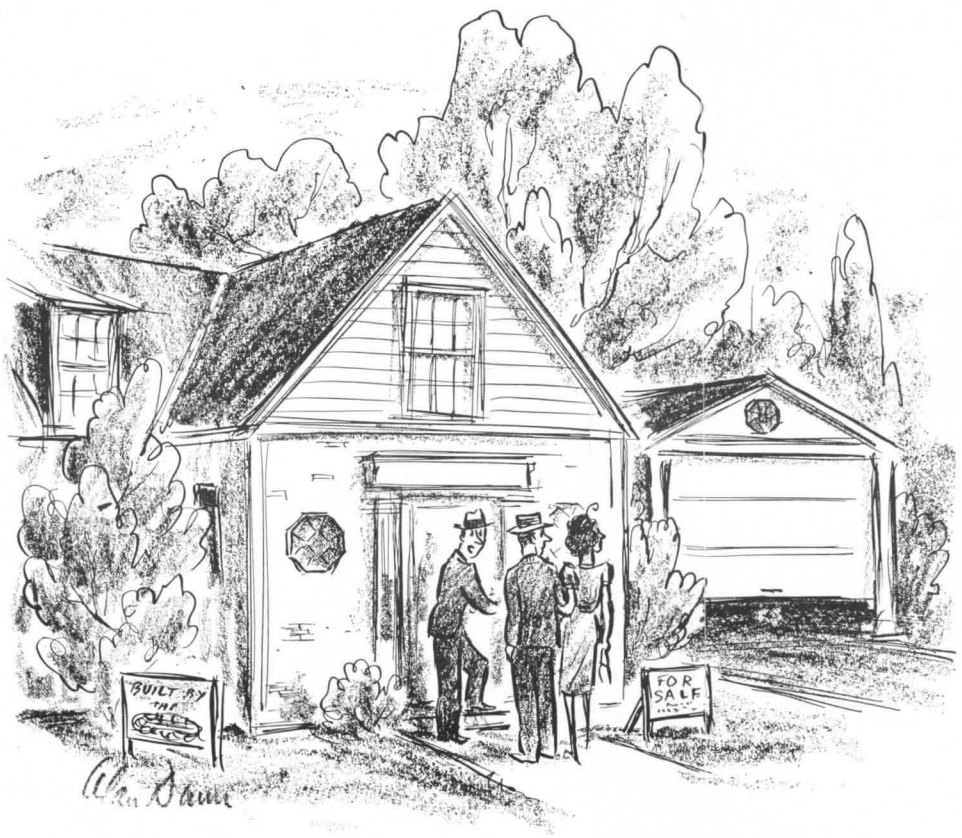
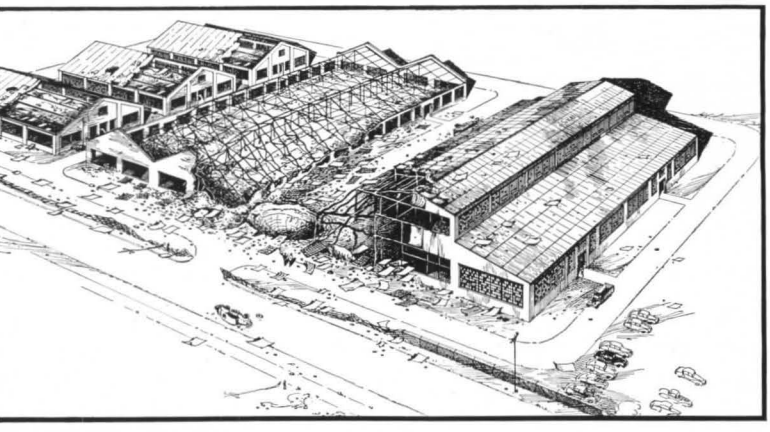
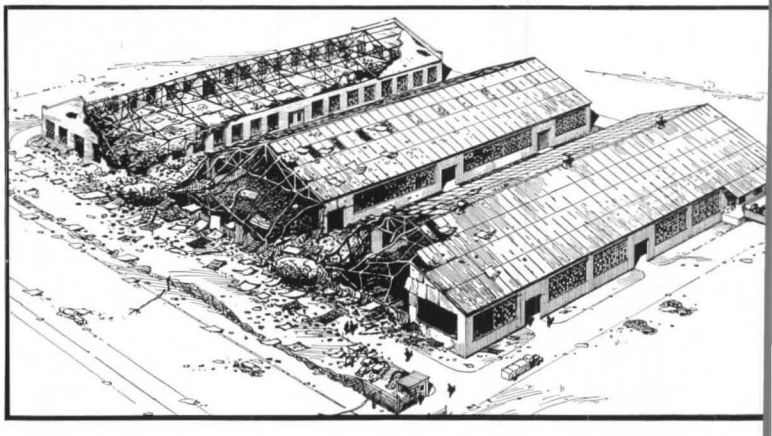


"Here in the East the garage is just an affectation."
—Drawn for the RECORD by Alan Dunn



CASE I—ENGLISH BOMBING "On Friday night (date deleted), a land mine dropped right down in the roadway between two of the ..... Company's buildings. One of them was roofed with .....(a fragmenting material), and the other with RPM.

"The fragmenting material on the adjacent building, and indeed on buildings more remote from the landing place of the mine, has been blown to pieces. The RPM covered building, (shown in foreground), has been damaged only for something like 40 to 50 feet back from the gable wall. In many cases, the sheets can be re-used."



CASE II—ENGLISH BOMBING "Bombs fell near a group of factories in (city deleted) and there were three different buildings affected by it. RPM *sheeting on two buildings* in foreground, came out of the blast with flying colors, while other materials just disappeared.

"The owners were delighted with the performance of two RPM buildings, one seven years old and the other a year old. The roof on the seven-year-old building was practically undamaged. The year-old factory had Robertson Sheetlites in the roof. Only four Sheetlites cracked while 80% of the glass (sidewall sash) has 'gone with the wind.'"

ROBERTSON PROTECTED

THEY KNOW HOW

RPM can take it!

England has the facts about building materials and their resistance to bombing.

Some can take it. Some cannot.

Some have been disastrously shattered and wrecked. Many had to be completely replaced. One material . . . Robertson Protected Metal (RPM) roofing and siding . . . has, time after time, demonstrated its ability to absorb the shock to a remarkable degree, confine the damage to comparatively small areas and make quick repairing possible.

For instance, when a detonation bomb explodes near a building, the blast wave travels outward like a veritable tidal wave of *pressure.* Then this wave is succeeded immediately by a powerful *suction* wave, which sometimes is even more damaging to roofs and sidewalls.

But, Robertson Protected Metal (RPM) roofing and siding will literally *breathe* with these pressure and suction waves; this, because RPM has the invaluable quality of yielding with the blast, yet returning to its original position. Consequently, the damaged areas of RPM roofing and siding are relatively restricted . . . and quick repairs can be made.

This ability of RPM to "give" and return to its original position, coupled with its resistance to fragmentation into shrapnel-like missiles, is responsible for its being chosen by so many English manufacturers for roofing and siding their plant buildings. They know from experience.

IT MAY HAPPEN HERE...

If and when bombs do come . . . many thousands of American War Production Plants will be ready with RPM protection. Still more are under construction.

Such a high degree of prefabrication has been achieved in RPM . . . your building roofs and sidewalls are 77% completed when RPM reaches the job. This means an earlier start on War Production.

The Robertson organization is prepared for quick action. Groups of engineers in every section of the country are immediately available for the detailing of needed structures. We manufacture with speed. Construction crews get on the job, and finish it, fast. *What Robertson really makes is time.*

H. H. ROBERTSON COMPANY

FARMERS BANK BUILDING · · · PITTSBURGH · PA.

METAL RPM

H. H. Robertson Co., Farmers Bank Building, Pittsburgh, Pa.

( ) Please send me copy of your new book, "Quick is the Word."

( ) Please have a Robertson Engineer submit new portfolio covering your Bombing Story.

Name_____ Firm _____

Address _____

City _____ State _____

THE PUBLIC ISN'T FORGETTING

He can plot the future in the plans of today

THE title on his office door is "Architect"—but it scarcely does him justice. His has been a leading part in making America a nation of modern skyscrapers, efficient factories... and comfortable, livable homes.

Today his skill is devoted almost entirely to war-vital projects. Indeed, materials for homes he would like to design are not available. Copper and brass and bronze are needed to help fight the war. He, of all people, appreciates the necessity. For the very qualities that make these metals so indispensable for home construction make them doubly vital for war production... for ammunition, for planes and ships—and for the electrification of the plants that produce them.

The cherished Navy "E" pennant—awarded to our three Connecticut plants for achievement in production.

But your architect can look ahead with confidence. Much of the wartime design he is developing today will be reflected in finer peacetime construction to come. And this he can also count on: When the present emergency is over, Anaconda Copper, Brass and Bronze—for rustproof piping, for enduring gutters, downspouts and flashing, for screens and hardware and weather-stripping — will be ready for an even wider field of application.

For, while devoting every productive effort to helping win this war, Anaconda is carrying on the same research that pioneered such important developments as brass-pipe plumbing, that paved the way for copper tubing, which made low-cost, rust-free water piping possible.

The homes that can't be built today will be better built tomorrow because of Anaconda research.

THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Connecticut
Subsidiary of Anaconda Copper Mining Company
In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont. 4204

ANACONDA *Anaconda Copper & Brass*

4204. THIS ADVERTISEMENT APPEARS IN TIME, CIRCULATION 890,698; ISSUE OF AUGUST 3, 1942

FROM TIME MAGAZINE • AUGUST 3rd
This is the fourth in a series of advertisements that are helping to maintain public interest in better building... through copper, brass and bronze.

WHAT YOU CAN DO FOR THEM...

The desire for comfortable and gracious living . . . for which you have been largely responsible . . . has not dissolved in the crucible of war. It is being kept alive by such messages as you see to the left.

Reminded that copper and brass are vital to victory, Americans also are reminded of the economies and comforts these durable

metals can bring them when peace returns. With you, they look forward to the day when you can specify, they can buy, copper and brass plumbing and be sure of no inconveniences or expenses caused by rust . . . secure in the knowledge that their piping will always deliver a full, rust-free flow of water.

The Everdur* water storage tanks they seek are doing duty in the fight for victory. But, they'll be back too, saving the unpleasantness of hot water discolored with tank-generated rust . . . serving faithfully, dependably, year in and year out.

And although less durable materials must be used for flashings today because copper is now making munitions for our armed services, peace will bring its durability back to American homeowners. With copper, they know there'll be no water damage so often experienced when rustable metal flash-

ings are used . . . they'll get better, less expensive service from rain disposal systems made of copper.

Your specifications of copper, brass and bronze have made thousands of homes more livable, more economical. The homeowners of the future will look to you for the same advantages. 4214

ANACONDA
from mine to consumer

Anaconda Copper & Brass

*Trade Mark Reg. U. S. Pat. Off.

THE AMERICAN BRASS COMPANY
General Offices: Waterbury, Conn.
Subsidiary of Anaconda Copper Mining Company
In Canada: Anaconda American Brass Ltd., *New Toronto, Ont.*

(continued from page 7)

in construction. "Expendible material" is defined as "materials which will be wholly consumed at the location and during the construction. . ."

The next move—in the advanced study stage—is to limit construction ratings to definite quantities of building materials.

On the other hand WPB's construction division has moved to ease some of the restrictions which were unnecessarily hamstringing housing projects. The issuance of defense housing ratings and ratings for utility extension has been correlated. There will be no more housing without utilities, and no utilities without housing. The defense housing critical list is up for revision.

War damage insurance

Mortgage lenders are trying to make up their minds whether or not they have the right to demand that mortgagors take out war damage insurance. Some are going right ahead on the assumption that they do have the right. Others are suggesting it to their borrowers. For urban and rural dwellings, the premium is only $1 a thousand and coverage includes the contents of the house. Banks which are sending out suggestions report a high degree of cooperation.

FHA and HOLC are faced with the same problem and are trying to work out a policy. One thought is to require only insurance to cover excess damage—damage over a certain percentage of the mortgage. Another possibility is to take out blanket insurance in some areas. Basic inhibition is the fear that any positive step by either FHA or HOLC would be popularly interpreted as an indication that the government expects bombing.

Hospital boom

A large-scale program of war hospital building seems to be a sure thing. Nobody is talking about the exact scope of the plans. Some things can be pieced together, however. Right now marine hospitals operated by the Public Health Service are jammed full and our expanded shipping program makes expanded facilities a clear necessity. One important point on which you can find a good deal of conflicting speculation and argument is whether or not new hospitals should be built off the seaboard in the United States, or outside the United States, closer to where the actual fighting will take place.

Lumber supply critical

Direct military demand for lumber will probably drain most available sources of supply during the next few months, and will curtail defense housing construction. All less essential lumber uses are slated to stop on the basis of present plans.

According to this program, which is the subject of much controversy within WPB and between that agency and Army and Navy, an order will be issued placing construction lumber under complete priority control. Deliveries, under the plan, would be prohibited to all but orders carrying highest priority ratings—even higher than those granted on defense housing projects.

Issuance of the order results from expansion of the Army construction program which calls for numerous cantonments and consequently greatly expands the Army's demand for this type of material.

The order will probably be an emergency measure—being effective only as long as the Army cantonment construction program lasts.

Willow Run housing

Housing will get some publicity when the Truman Committee digs into the Willow Run situation. WPB averted immediate hearings by appointing a board consisting of Maury Maverick, ex-Congressman, Kanzler, the Detroit regional WPB administrator, Sullivan Jones, Chief of WPB Housing Priority Section, and J. A. Krug of the WPB Power Branch, to study the Willow Run housing plan. The issue is whether large-scale public housing involves an unnecessary waste of critical materials which could be averted by using existing housing, building whatever new housing is necessary on land improved with utility installations and making maximum use of existing transportation.

Mr. Blandford urged that "a reasonable fraction" of workers be housed in "closer proximity" to the Willow Run plant in the FPHA's housing project. Revised plans called for temporary dormitories for 3,000 single workers, 1,000 temporary apartments for 1,000 two-person families, 4,500 family dwelling units, all to be built with public funds, and 4,500 privately built family dwellings within a ten-mile radius of the plant.

Building codes as usual. FHA is not satisfied with the progress of most municipalities in changing building codes to conserve critical material.

FHA's housing standards. FHA is receptive to suggestions for changes in their minimum housing standards which would conserve critical materials. They are asking architects and builders for suggestions.

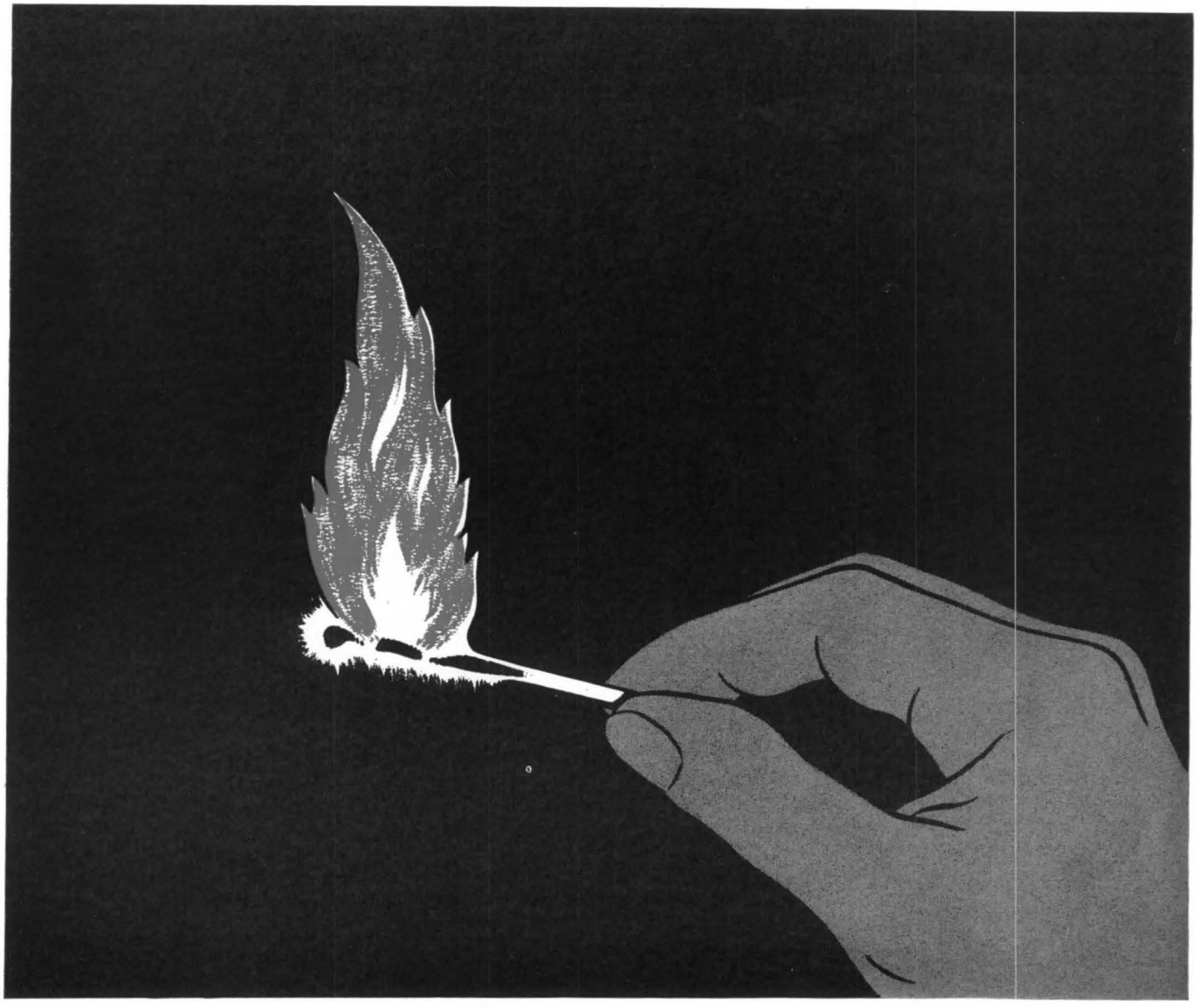
Tax studies. OPA is making tax studies in localities in which they have ceiled rents. The idea is to adjust the rent ceiling generally where general tax increases squeeze revenues.

Debt moratorium. It's just talk. Treasury tax advisor Randolph Paul made some suggestions to Congress at their request. But Secretary Morgenthau denied any Treasury backing.

Mortgage payments. FHA has been circularizing its mortgagees with a letter to President Roosevelt urging the paying off of mortgages and the stepping up of amortization payments as an anti-inflation move. As a concrete stimulus, FHA has killed its prepayments premium.

FHA's insulation drive. To save fuel, the government is anxious to get better insulation in existing houses and in newly constructed ones. FHA is using all its promotional devices to sell insulation. WPB has cut down on the size of heating equipment in relation to floor space which will be allowed in new houses. Hope is that better insulation will make smaller heating units adequate. FHA feels that there are no material shortages and no manpower shortages, except in some few areas where building tradesmen generally are short, which might interfere with this program.

Prefabricating housing. Washington housing and labor circles are buzzing with talk that AFL is softening its attitude towards prefabricated housing. Rather advanced is AFL fear that inevitable progress of prefabricated housing will give CIO a wedge into the construction labor field.



ARE YOU READY...?

FIRE ISN'T what it used to be.

Overnight fire hazards have increased a hundred-fold. Plants have been pressed into new methods of production, with new risks. Green hands tackle unfamiliar tasks, and storage is crammed with strange goods.

Add to this the grim possibility of sabotage to defense material and your vital machine tools and dies... and a man has to be ready for anything.

Are *you* ready?

Experience has shown that there is one sure way to prevent damage from fire of any and every origin, at any and every hour, day or night... and that way is to stop fire *at its source* with Grinnell Automatic Sprinkler Protection!

Built as a complete system by the leader in automatic sprinkler fire protection, a Grinnell System is prefabricated to an engineered layout to meet your special requirements, then installed with minimum disruption. Once installed it will soon pay for itself in reduced insurance premiums. Join the owners of fifty billion dollars worth of property protected by Grinnell. Write *today!* Grinnell Co., Inc., Executive Offices, Providence, R. I. Branch offices in principal cities.

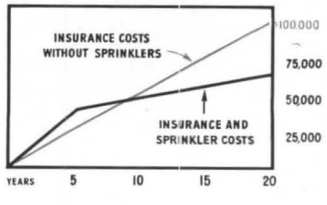
Questions and Answers

Q: Suppose fire starts in an out-of-the-way place?

A: To Grinnell Engineers there is no out-of-the-way place. Your plant is protected top to bottom!

Q: Can I afford it?

A: A Grinnell System pays for itself in an average of 6-8 years. Then, reduced insurance premiums pay you "cash" dividends.



AUTOMATIC SPRINKLERS
For Production Protection

(continued from page 12)

Gilbert Hall

HOTEL STATLER, WASHINGTON, D. C.

Holabird & Root, Architects • A. R. Clas, Associate Architect

FAMILIAR SIGHT in wartime Washington is the harried business executive trying to find a hotel room. War production must go forward, and war production necessarily brings business men to Washington in droves. Never was a hotel structure so needed as the 1,000-room Hotel Statler, now being rushed to completion.

While this latest addition to the Statler chain was conceived and planned well before materials shortages became serious and before such buildings fell under the ban, only the critical need for hotel space in Washington permitted it to go forward. Under the circumstances, the Statler received official blessing in the form of priorities assistance. It becomes the last of its kind for the duration, last to get under the wire with fine materials and equipment, including complete air conditioning. In this respect, the Statler is not only the last to get air conditioning, but the largest hotel with a complete installation.

Integrated effort

The Statler required heroic efforts to see the job through to completion, as the materials pinch got progressively tighter. Indeed it is a noteworthy example of what an allegedly "unintegrated" industry can produce when the heat is on. Principal parties are: Hotels Statler Co., Inc., owner; Holabird & Root, architects; A. R. Clas, associate architect; John W. Harris Associates, Inc., builders.

The strains of war conditions considerably extended the need for integrated effort through the construction stages, and demanded the cooperation of a new party in construction conferences—the powers that provided the priorities. Even with priorities help, the job called for the utmost in coordination between contractors and materials manufacturers, for transportation troubles complicated the already serious problem of deliveries.

Early in 1941, after the site had been acquired and plans were under way, it was clear that such troubles could be anticipated. Accordingly contracts were negotiated as soon as sufficient information was available, in many cases before specifications could be finally drawn. The rush was necessary on three counts: 1. to secure materials while they could be had; 2. to protect existing prices; 3. to determine where substitutions would be necessary. It was not possible, of course, to anticipate all restrictive orders on materials, and in many cases it became necessary to make substitutions as the job progressed. A notable example was steel sash in place of aluminum.

Wartime handicaps

The difficulties began when the priorities system was first inaugurated. But it was already clear that the hotel was vitally necessary, and soon the job was given an A-8 rating. That was a help, but not enough. For some of the more critical materials it was necessary to obtain higher ratings, finally going as high as A-1-J for certain things necessary to complete the building. As a matter of fact in most instances orders had long been placed, and manufacturers and fabricators had the materials on hand, but priorities were necessary to unfreeze the stocks.

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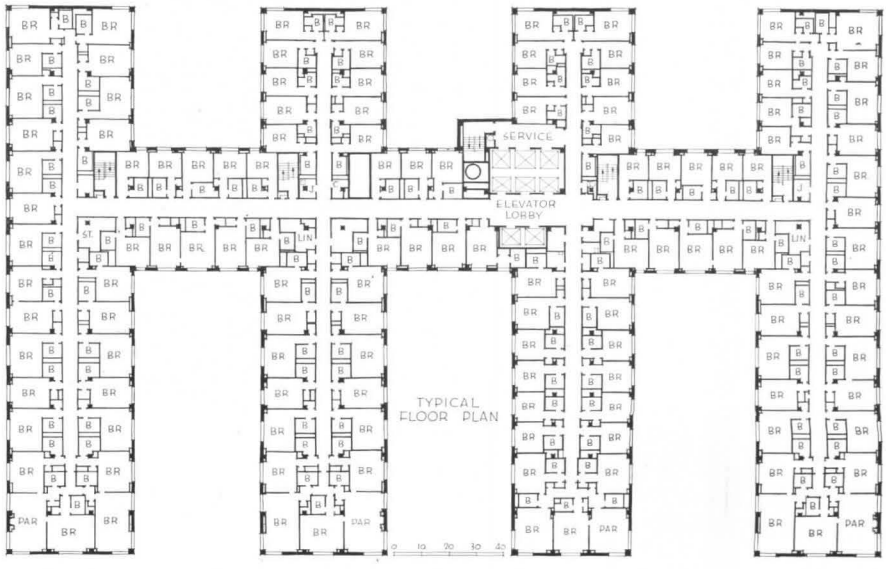


Plan of typical bedroom floor

SIX THINGS A MAN CAN DO

IMAGINEERING

SO MUCH SO SOON

1 ***MAKE OUR OWN JOB MORE PRODUCTIVE.*** Every man jack of us can. And that's not preaching, either. It's the point of view we've adopted for the duration at Alcoa. The records we've broken so far, we tell ourselves, aren't nearly good enough. Nor shall we be satisfied with the new ones we set tomorrow.

MAKE OUR MACHINES MORE PRODUCTIVE. There is a way. We don't know the answer for your equipment. But we have found the answers for many of our own machines which we thought were already up to top output. The resulting step-up is getting planes into the air faster. And it is doing things to aluminum prices. Designers please note.

III ***PRACTICE PREVENTIVE MAINTENANCE.*** Keeping present equipment in top condition is easier than getting new. One of the ways our engineers are helping production everywhere is in counseling users of aluminum equipment on means of preventing unnecessary corrosion. The remedy is usually simple; the results priceless. Ask us.

FOUR ***BUY WAR BONDS AND STAMPS.*** It's patriotism with self-interest. You finance the war and you help to defeat inflation by refusing to spend for nonessentials. Moreover, you finance yourself to take advantage of all the revolutionary new products that are going to be ready to buy when the war is over. Buy today to keep your own wheels turning tomorrow.

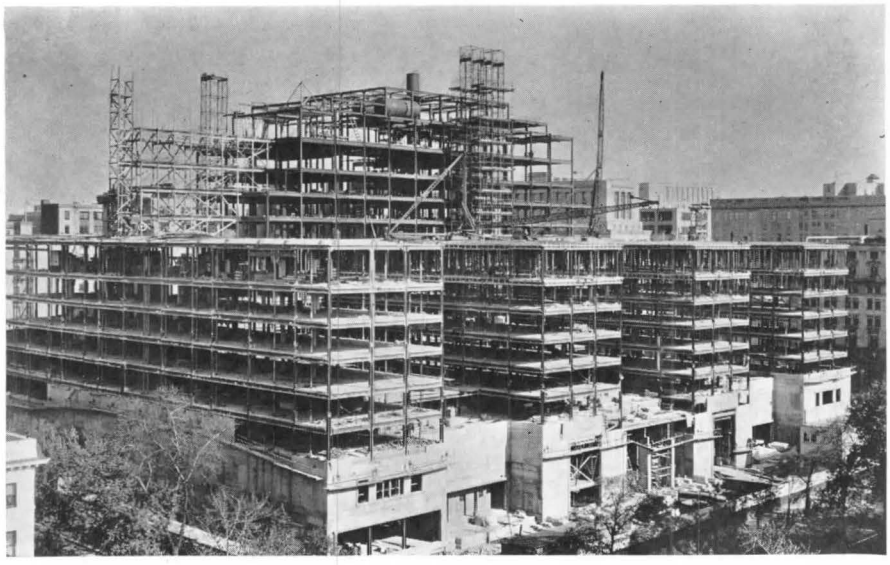
FIVE ***DREAM A DREAM EVERY DAY.*** Remember that the kind of peace we all want depends on how many jobs we think up for the boys coming back. New jobs come out of new things to make. Let your imagination soar; engineer it down to earth; then file the plans away, ready for the day when. That's Imagineering! Selfish suggestion: think seriously in terms of Alcoa Aluminum.

Sixth and last ***KEEP THE OLD CHIN UP.*** Whatever the news, whatever the temptation, keep the chin up. The boys out there deserve it. Whether it's rationing, or restrictions, or whatever, let them watch us being soldiers about that.

Aluminum Company of America, 2167 Gulf Bldg., Pittsburgh, Pa.

ALCOA ALUMINUM

(continued from page 14)



Thomas F. Scott

The Hotel Statler late in April, 1942

Vogue Photo

And now completely enclosed

And in many instances relatively low ratings caused delay, since manufacturers were obliged to fill higher-rated orders first.

Construction practice was further complicated by the necessity of storing many things long in advance. The practice was adopted of taking all deliveries as soon as possible, in some cases months before the materials could be used. Of course very little could actually be stored on the job, and warehouse space was used in Washington, Baltimore, even in Philadelphia. Such are the difficulties of hotel construction in wartimes.

The building occupies the full block front on 16th Street between K and L Streets, a rectangular plot of 65,000 sq. ft. Demolition of the old buildings began in April, 1941, and construction is to be completed, in spite of wartime difficulties, late this year.

Structural features

The structure develops the site to the full allowance of zoning regulations, rising nine stories in four principal sections, with four tower floors. A 40-ft. setback from street to property line will be utilized for grass plots and reflecting pools.

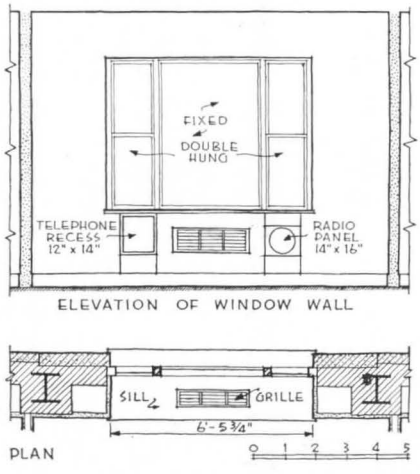
A unique feature for a large hotel is an inside taxi drive running the entire length at the rear, so that automobiles drive literally through the building.

The building also has banquet facilities capable of seating 2,000 people at dinner, or 3,500 at a meeting. Facilities for handling large conventions are on a similar scale throughout.

Typical guest rooms are noteworthy for wide and shallow proportions, centered around a large "picture" window and adapted to unusual furniture arrangement. Placing of bathrooms and closets in the inside space is such that in most rooms beds can be set along the inside wall, to give a semblance of living rooms rather than bedrooms. The wide windows, with a large fixed sash in the center, open the rooms for light and view.

Air conditioning

The structure is completely air conditioned, the system permitting each guest to regulate the room temperature over a considerable range. The



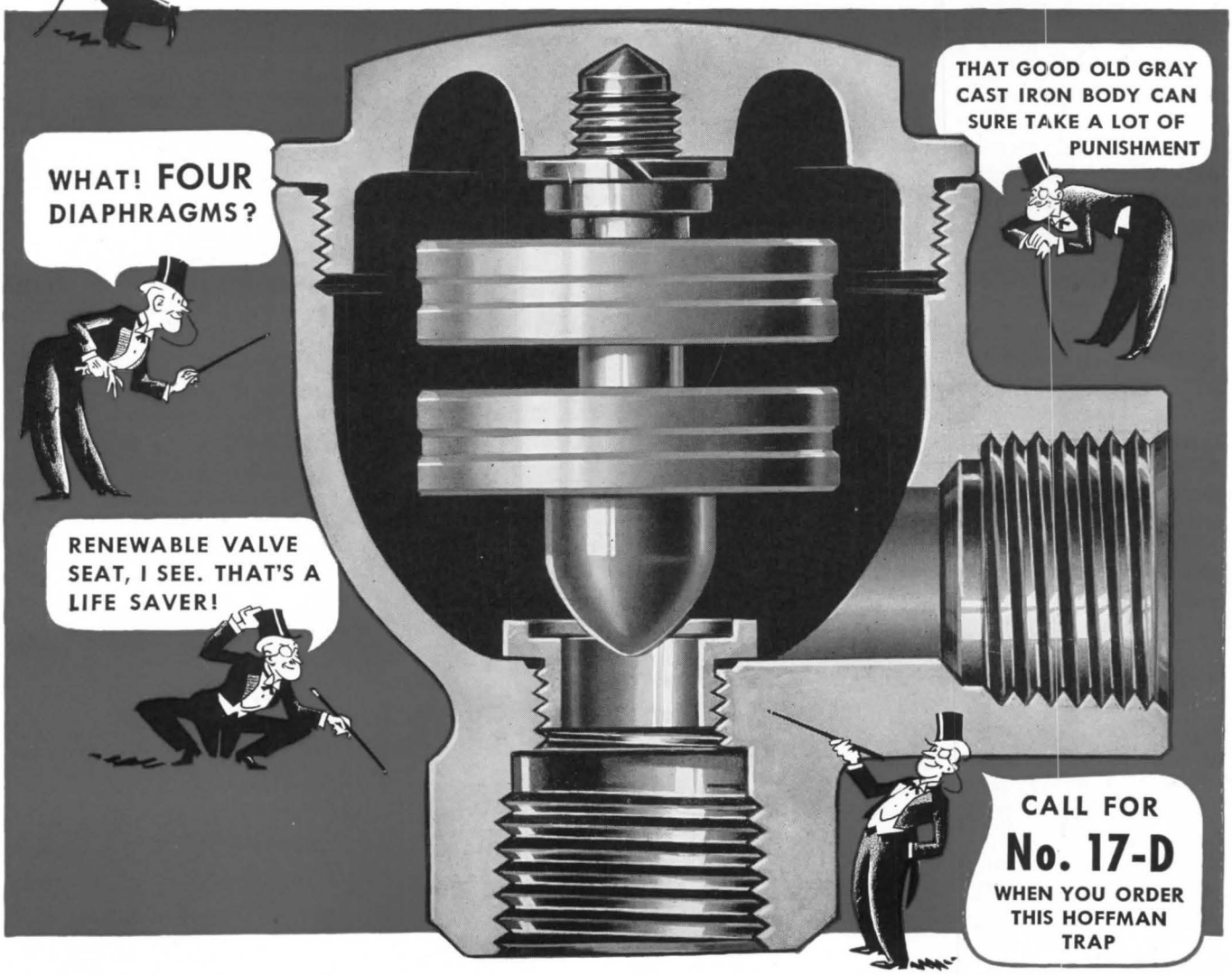
Built-in air conditioning, phone and radio under bedroom windows

distribution system is of the vertical instead of horizontal type, which permits a floor-to-floor height of 9 ft. 6 in. Heating and cooling are combined in one unit fully enclosed under the window. So the Statler becomes the last big hotel to get its air conditioning equipment before the WPB clamped down completely, and many a business man and diplomat will have occasion to be thankful for the foresight and ingenuity that got the building through its wartime difficulties.

CAST IRON GOES HIGH HAT

...TO SAVE CRITICAL MATERIALS

Precious war metals conserved in this new trap . . . but still the same old Hoffman excellence of design, workmanship and performance . . .



The War Production Board told us what metals could be used—we designed to meet the specifications. So here's the new No. 17-D Trap, built with a minimum of critical materials, simplified, but retaining all the well-known Hoffman efficiency features.

Hoffman No. 17-D Trap is built not only to operate efficiently, but to *last!* Body and cap are of fine quality gray cast iron. Note the Thermal Element—not two but *four* non-corrosive Adnic diaphragms, full of spring, long-lived under countless flexings and high temperatures. The Pin is of tough special alloy—and the entire thermal assembly can be renewed.

That goes for the Seat, as well. If long use should cause wear at this point, simply unscrew the Seat and insert a new one. To all practical purposes, you'll have a new trap at minor expense. Other specifications: ½″ x ½″ connections, with left hand thread on inlet, operating pressure 15 lbs. and capacity 200 sq. ft. E.D.R.

Use the No. 17-D Trap for emergency repairs under the terms of Government Order P-84. And, of course, on direct war work, U. S. Government buildings, barracks, hospitals, defense plants, etc. For further information, write the Hoffman Specialty Company, Dept. AR-8, 1001, York St., Indianapolis, Indiana.

HOFFMAN VALVES TRAPS PUMPS

Hoffman Steam and Hot Water Specialties are sold everywhere by leading wholesalers of Heating and Plumbing equipment.

(continued from page 16)

NEWS FROM LONDON

By J. EUGENE REID

IN THE private theatre at our Ministry of Information I have just watched a superb film of American prefabrication methods. It would seem that we have much to learn from you and little to teach. Prefabrication in England is a very necessary wartime expedient. The idea is not, of course, confined solely to wartime building. It looms large in contemporary thought about postwar events, and many people see in it a solution to the housing problems that will face us after the war. While much of this thought amounts at present to little more than airy speculation, in certain industrial and architectural circles a serious attempt is being made to get to grips with the fundamentals of the problem. Recently, for instance, a committee has been set up, with a production engineer as its chairman, to find out to what extent mechanization can be allied to house building, and it is interesting to note in this connection that Mr. D. E. E. Gibson, City Architect of the bomb-ruined town of Coventry, and one of the most progressive municipal architects we have in this country, is already experimenting with a form of house construction that consists of cold rolled steel sections, which could be mass-produced in the light industry factories now engaged upon war work, and spot-welded on the site by semi-skilled labour. These sections would form the framework of the house, and the sheathing material would be a special form of asbestos cement sheeting, thicker than the usual market article, and voluted on the external face to introduce a note of life to the facade. But all this activity is centered upon something that might, or might not, happen when the war is over.

It is in those buildings needed for the purpose of getting on with the war that we have seen the first practical development in prefabricatory methods, and these methods have been introduced because the exigencies of war called for a form of construction that would (1) make the best use of available labour, (2) conserve material, especially timber and steel, and (3) result in speedy erection.

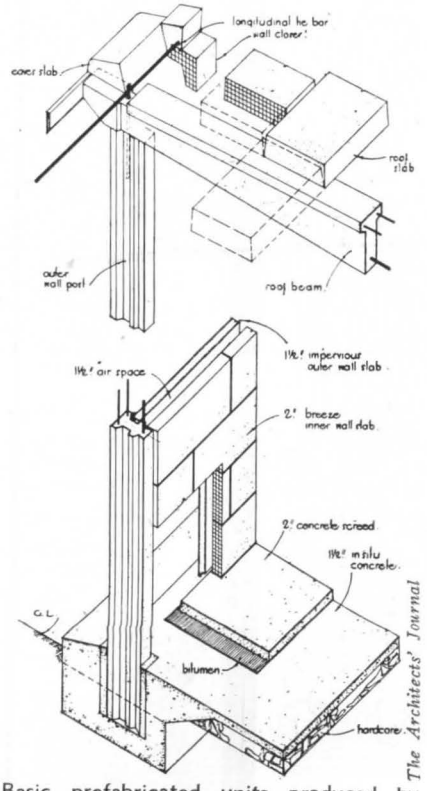
There is a mass of wartime building for which the method is eminently suitable, and indeed to which it has already been applied. There are the hostels for war workers, nursery centres for the small children of mothers who also work in the factories, emergency hospitals and clinical units, emergency schools for areas badly bombed or to which children from vulnerable towns may be evacuated, stores, and all manner of service buildings such as canteens, laundries and communal baths. And then, there are those buildings of the hutted type required by the three services of the forces. All these buildings are single-storied; their spans are of manageable dimensions, and the internal planning arrangements follow simple lines. Prefabrication methods have been devised which, as far as this country is concerned, break fresh ground entirely.

There are two lines of development: (1) in reinforced concrete and (2) in timber, but using it sparingly.

Timber imports into this country being seriously reduced, what timber is available is now regarded as something akin to precious metal, and a good deal of thought and energy are being expended to obtain so much out of so little. Generous sized scantlings for roof trusses and for walling purposes are a thing of the past. Trusses are being prefabricated out of one-inch boarding and in some forms of prefabricated hutting they are being used in conjunction with precast concrete posts. As another means of economizing in timber and still achieving maximum results, the principle of skin-stressed plywood has been introduced, and here, of course, American experience has been drawn upon. An interesting development in the use of plywood is also seen in a prefabricated hut consisting of posts and beams built up in the material.

In some respects reinforced concrete meets the immediate requirements here better than timber. No elaborate plant, for instance, has to be set up to produce the units; economy can be effected by moulding on the site; transport is saved, the danger of fracturing the units in transit avoided, and time is saved. There is also an advantage from the labour point of view. Large numbers of unskilled workers are drafted onto defense works over here through the Labour Exchanges, and a great many of them have never seen a building job before. These men are best employed on putting together concrete units where the *degree of* accuracy in fitting is not so high as in the prefabricated timber buildings.

The designs of these concrete buildings follow the simple, basic line. Post and beam are prefabricated in reinforced concrete and the panel filling in the case of the type being developed by the British Concrete Federation consists of 1½ in. pressed concrete slabs externally and 2 in. breeze slabs internally. In another type, known as the Orlit construction, 6 ft. long concrete planks are used for panel filling and these are reinforced with piano wire which is kept tautened during casting and only released after set has taken place; thus permanent compressional stresses are conveyed to the planks which do much to prevent them from cracking. But the most skillfully developed job is that of the British Concrete Federation. Its chief attraction is that it is designed on a grid basis (the posts being spaced at approximately 3 ft. by 8 ft. centres) and this, of course, makes it especially adaptable for buildings having internal planning arrangements. And in point of fact it was prefabricated for this very purpose.



Basic prefabricated units produced by British Concrete Federation

...AND A FLOORFUL OF COLOR!

P.S.— it's Fine Terrazzo!

DOWN IN MIAMI there's a room all Florida may well be proud of. It's the lobby of the Churchill Apartment-Hotel, and its floor is of FINE TERRAZZO.

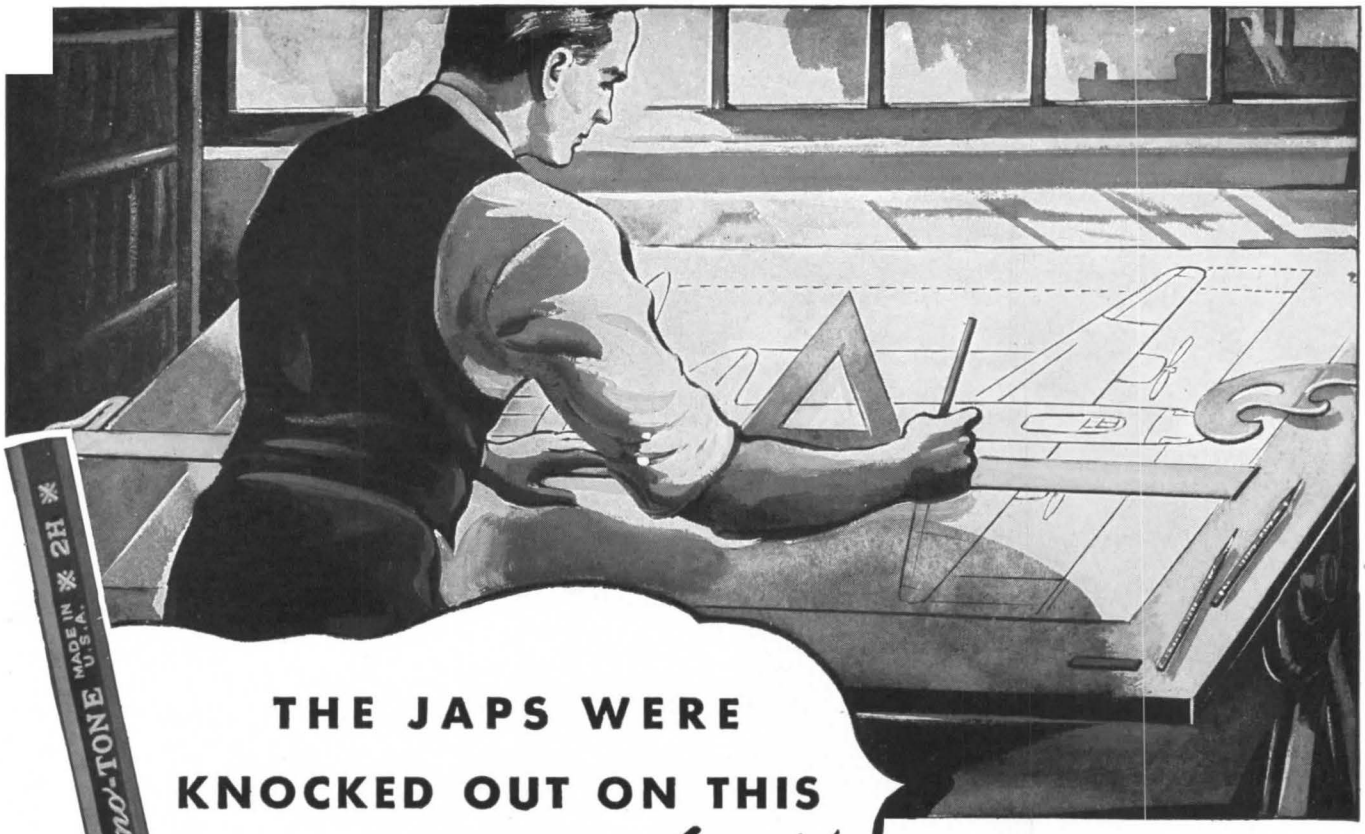
What a big difference it makes! An architect can forget the design and color limitations of usual flooring materials when he specifies FINE TERRAZZO made with Atlas White portland cement. He can be sure that his pattern will be followed faithfully . . . that his colors will stand out fresh and vivid . . . that upkeep costs, except regular cleaning, will stay way down. Best of all, he can depend on *this* floor to improve with age . . . to last a lifetime!

Consider FINE TERRAZZO next time *you* design a floor . . . and specify Atlas White portland cement. It comes both plain and waterproofed. Turn to Sweet's Building File, Section 11/24, for more details and 24 true-color illustrations of FINE TERRAZZO, or write us for free book. Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Bldg., New York.

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

Colors specified by Architect, J. Edwin Petersen, Miami, for this striking FINE TERRAZZO floor made with Atlas White cement were: Yellow Verona Marble; Verdolite Marble; Cardiff Green Marble; Domestic White Marble, all with coloring pigments. Terrazzo contractor, Southern Tile Co., Miami.

ATLAS WHITE CEMENT FOR FINE TERRAZZO



THE JAPS WERE KNOCKED OUT ON THIS DRAWING BOARD *first!*

BEFORE the little brown men of the Setting Sun were shot out of the skies—they were defeated on this drawing board. Defeated by an army of engineers, designers and draftsmen who make the pencil plans for America's mighty bombers and fighter planes.

Defeated by men whose weapons are brains and pencils—A. W. Faber's WINNER Techno-TONE, America's standard of drawing pencil excellence.

We are proud to contribute this smooth, sleek weapon to the Nation's War Effort—proud to offer a pencil that almost two centuries' experience devised. If you haven't yet used WINNER Techno-TONE we'd like to send you a sample. We want you to discover for yourself how deep-rich, how uniformly unvarying it is in all 17 degrees. Also how toughly resistant to point breakage. Just tell us your favorite degree—that's all. Write Dept. AR-8

BUY A SHARE IN AMERICA

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.

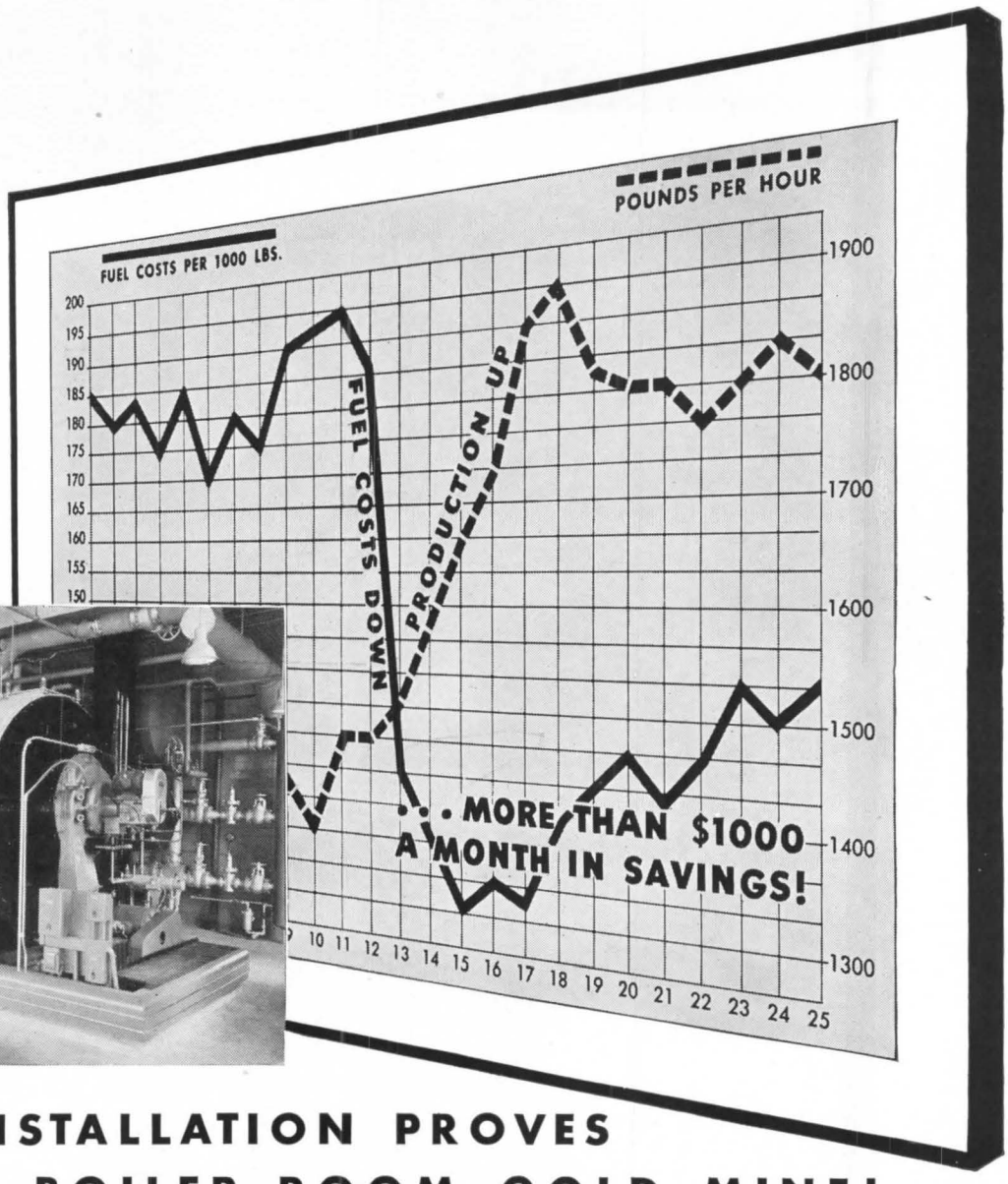
WINNER *Techno*-TONE DRAWING PENCILS

13c each 2 for 25c $1.25 dozen

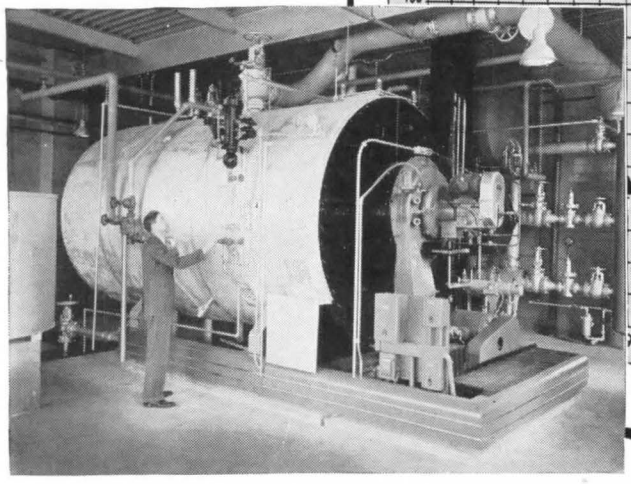
At all Drawing and Artists Material dealers and leading Stationers.

A·W·FABER·*Inc.* NEWARK, N. J.

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



• *Oilbilt of the type installed in the plant of the Wolf Sanitary Wiping Cloth Company, Detroit.*



OILBILT INSTALLATION PROVES TO BE A BOILER-ROOM GOLD MINE!

HERE is another notable instance of boiler room modernization with an Oilbilt steam plant and auxiliary equipment which resulted in phenomenal savings.

The Wolf Sanitary Wiping Cloth Co., Detroit, specializes in the volume laundering of wiping cloths—ships as much as 100,000 pounds of clean wiping cloths a week. The Oilbilt steam plant, installed last year, provides steam for processing, for a generator set, and for general plant heating.

Better steam — at lower cost — provided by the Oilbilt—has enabled this firm to achieve savings of well over $1000 a month, compared to previous equipment in service. Production has been increased, working time cut down, formulas shortened; there is softer, hotter water and more of it; the use of supplies has been greatly decreased —in every detail of performance the new boiler room has proven to be a "gold mine" for the firm.

The complete details of this Oilbilt installation and the auxiliary equipment that account for this remarkable boiler room efficiency, are available in a special report, as published in the American Laundry Digest. Write for a copy.

Modern in every detail and embodying the best engineering practice and principles, OILBILT steam plants eliminate ashes, coal dust, smoke, a high expensive stack. Fuel costs are lowest because of Oilbilt's high thermal efficiency; Oilbilts are specifically designed for efficient oil-firing with a long, four-pass, down-draft flue travel and integral burner. *Built in sizes 20 to 500 hp.*; pressures 15 to 200 lbs. Write for bulletin.

★

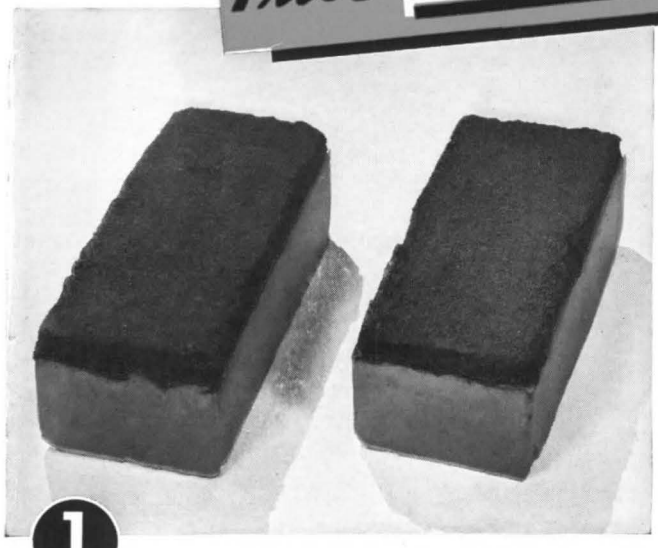
Greatly enlarged Cleaver-Brooks manufacturing facilities are going "'round the clock" for military and priority industry demands. Naturally this "Victory" effort comes first, but we welcome non-preference inquiries.

★

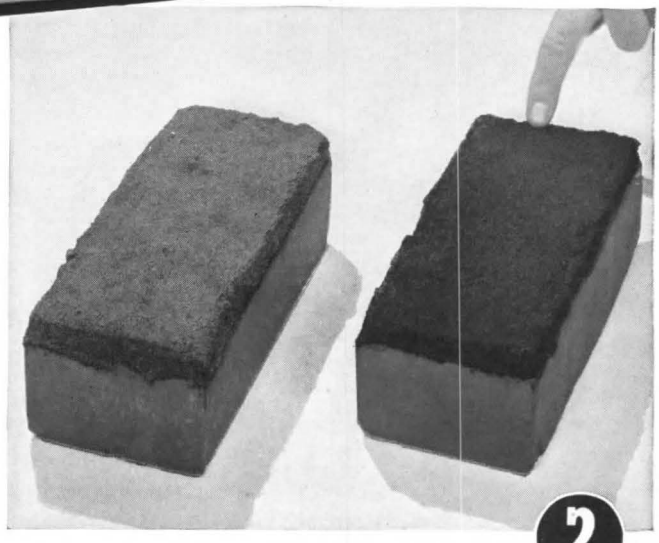
CLEAVER-BROOKS COMPANY, 5119 N. 33rd Street, Milwaukee, Wisconsin

Oilbilt STEAM PLANTS

MAKE THIS TEST – Prove BRIXMENT is BEST!



1 Butter one brick with Brixment mortar, colored with any good black mortar color. Then butter another brick with mortar made with 50-50 lime and cement, and the *same* mortar color.



2 Set both brick aside for a couple of weeks. You'll find that the sample made with Brixment mortar retains its full, rich color (right), while the other turns dull or pale.

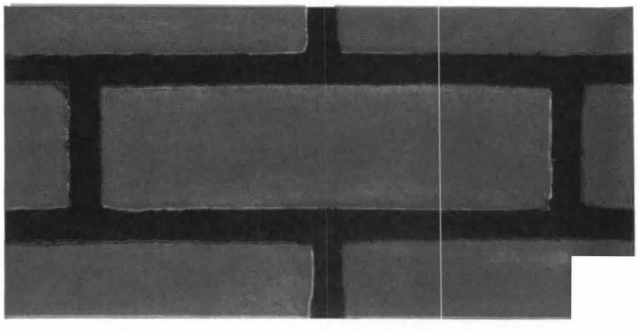
BRIXMENT *Does Not Fade Mortar Colors!*

The permanence of the mortar color in the joint depends not only upon the pigment selected but also upon the mortar materials. Too frequently a good job of brickwork is spoiled by the use of a mortar that fades the color or that leaves a white scum of efflorescence on the mortar joint.

Brixment helps prevent this condition. For Brixment is practically free from the aggressive chemical compounds or soluble salts so frequently the cause of fading and of efflorescence.

The waterproofing material combined with Brixment during manufacture is a further protection to the color because it helps prevent moisture from penetrating the mortar joint and leaching out the pigments.

Brixment is therefore recommended by manufacturers of both mortar colors and face brick, for use with their products.



BRIXMENT

For Mortar and Stucco

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

REQUIRED READING

By Elisabeth Coit, AIA

INDUSTRIAL CAMOUFLAGE MANUAL. By Konrad F. Wittman. New York, Reinhold Pub. Corp., 1942. 122 pp., 8½ by 11 in., illus. $4.00

CAMOUFLAGE WITH PLANTING. By Ralph Rodney Root. Chicago, R. F. Seymour, 1942. 79 pp., 6 by 9 in., illus. $1.50

THE ART OF CAMOUFLAGE. By C. H. R. Chesney. London, Robert Hale, 1941. 252 pp., 5 by 7½ in., illus. 8s 6d.

CAMOUFLAGE OF LARGE INSTALLATIONS. London, H. M. Stationery Office, 1939. 15 pp. plus illus. 3d. (A.R.P. Handbook 11)

FOUR works overlapping in some parts, and together including probably all the best thought to date on civil camouflage, both for planning buildings easy to camouflage when need arises and for concealing existing buildings.

Most of the material in the "Handbook" is to be found also in the "Manual"; but this little book alone of the four gives color samples.

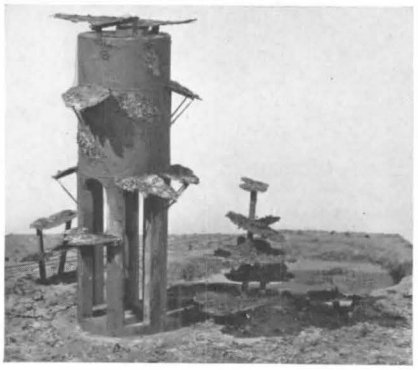
Colonel Chesney covers a wide field, from protective coloring of insects, birds and animals, through "material" camouflage—civil and military—on to "strategic" camouflage or the struggle of mind against mind in warfare, the emphasis of the work being somewhat on the military practice of the art.

The other two books noted, both just published, usefully complement each other.

Mr. Root, a landscape architect, places his emphasis on planning; but his well printed book in pleasant format with good diagrams is a clear general introduction to the art which aims at delaying recognition of the target beyond the moment when the bombardier can aim effectively. Orientation, shadow-range, excavating and banking to eliminate shadow, notes on how various colors and textures photograph in monotone and in color are well presented, along with the special study of plant life. Opaque and translucent greens behave differently. Plants must "match" to be effectual; they must seem to be in their element where found; and the camoufleur will note, for example, how differently different deciduous trees and evergreens are used in different latitudes of the U.S.A. A table shows the qualities of green of nearly 200 trees and shrubs, and in which sections of the country they can best be used.

The Industrial Camouflage Manual, by the chief of Pratt Institute's Industrial Camouflage Program, is at once a comprehensive discussion of principles, methods and materials, going far beyond the purely industrial field, and a practical guide book to procedure, with weights, dimensions and other measures well indicated. The story is vividly told in 242 photographs and diagrams, some of which first appeared in the ARCHITECTURAL RECORD of Sept., 1940 in Mr. Wittman's article on Bird's Eye Planning.

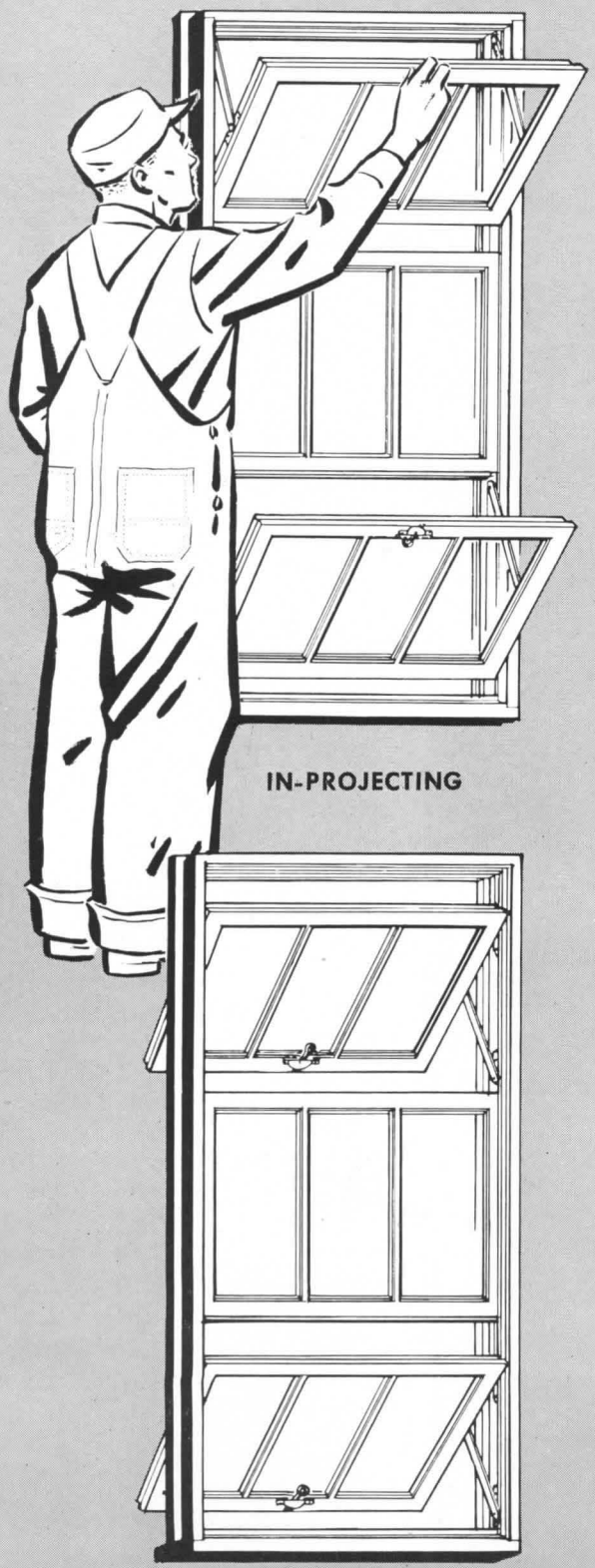
(continued on page 26)



A few boards or panels are placed on top of a water tower to distort the shape. These superstructures are constructed in wood with some fiberboards. For the projecting slabs the same material is placed at different levels. The shadow effect resembles the shadow of a tree. Right, artificial trees made of the same boards help to broaden the shadow. Photographs from Camouflage Laboratory, Pratt Institute

for industrial sash, TOO

IT'S CURTIS



Traditional Curtis quality—traditional Curtis workmanship and care—these are some of the "extras" you get when you order your National projected wood sash units from Curtis. Curtis is prepared to manufacture these units in accordance with the designs and specifications of the National Door Manufacturers Association, Inc. . . . and to deliver them with Curtis promptness.

National projected wood sash consist of 18 standardized basic units, designed by Graham, Anderson, Probst and White. Each basic unit is a complete opening in itself and may be installed individually, or the various units may be combined both in height and width to meet almost every installation requirement.

The standardized frame is designed to accommodate either bottom pivoted, in-projecting vents, or top pivoted, out-projecting vents.

You will find National industrial sash units—as manufactured by Curtis—a material aid in speeding both the planning and installation of windows in industrial and commercial buildings, schools, hospitals, etc. Put your sash problems up to Curtis, and use their 76 years of experience in making sash and fine builders' woodwork. Write Curtis first for complete information on industrial wood sash.

1866
CURTIS
WOODWORK

CURTIS WOODWORK IS SOLD BY
RELIABLE DEALERS EVERYWHERE

CURTIS COMPANIES SERVICE BUREAU
Dept. AR-8I, Curtis Building, Clinton, Iowa

Gentlemen: Please send me complete information about Curtis National projected wood sash units for industrial building.

Name .....

Address .....

City ..... *State* .....

REQUIRED READING

(continued from page 24)

WASHINGTON IS *LIKE* THAT. By W. M. Kiplinger. New York, Harper, 1942. 522 pp., 5¾ by 8¾ in., $3.50

To many people the title may suggest light essays with a personal flavor. In fact this is a closely packed 500-page compilation of up-to-the-minute facts about the how and why of significant institutions and individuals in the capital, clear in its exposition, frank to trenchant in its criticism, keen and warm in its appreciation, and impartial and mannerly withal.

Apart from their delight in finding an extensive and authoritative study (the author is editor of *Kiplinger's Washington Letter*) presented in a piquantly balanced arrangement of statement, summary and illustrated anecdotes, architects and other professional readers will value this book for the insight it gives into the necessity of "politics" in these days of government expansion, and of the need of mastering some part of the "politics" if one is to hold one's place—or to change it advantageously—in a governmental or political world.

SAN ANTONIO. By Claude B. Anion. New York, Hastings House, 1942. 57 pp., 5½ by 8½ in., illus., $1.25

THE BOOK is wider in scope than is indicated in the sub-title, "City of Missions"; for about half of the 75 photographs, striking both by reason of the subjects selected and the sense of the picturesque in the shooting, show the evolution of the city which embraces the Alamo of the Texas-Mexico conflict; Kelly Field, our oldest advanced flying training school; and Randolph Field, "the West Point of the Air," as well as dwellings ranging from the simplest adobe to the Spanish Governor's palace.

As in other of the picture books issued in the various Hastings House series, a short introduction and informing full captions to the illustrations comprise the entire text.

SHELTER DESIGN AND STRENGTHENING. London. H.M. Stationery Office (New York, British Information Services). 1942. 21 pp., 8¼ by 13 in., illus. $0.30. (Home Security Circular No. 75)

THIS IS a consolidation of Home Security Circular 290 (1940) and of three later circulars (C. E. Gen. 48, 50, 51) summarizing recommendations for construction of new ARP shelters and improvement and strengthening of existing shelters.

(continued on page 76)

CHAPEL of the ALAMO. The ravages of time and faulty construction, of war and fire, have destroyed all other buildings of the Alamo. Even the chapel has been partly restored. From "San Antonio"

John W. Harris Assoc. Inc., New York City
General Contractors

Holabird & Root, Chicago and New York
Architects

Washington's Hotel Statler

FEATURES

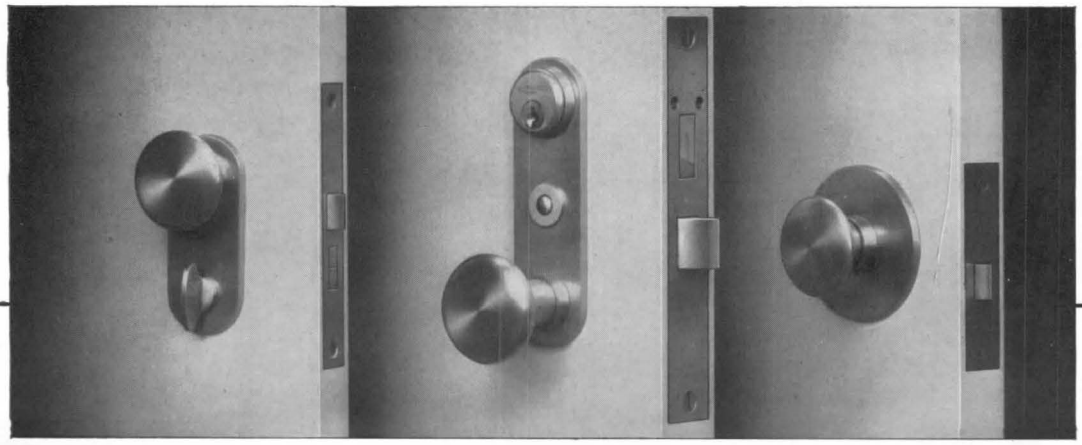
LOCKWOOD HARDWARE

Plans for the interior of this magnificent new building called for very special hardware . . . styled to fit a pattern of dignified simplicity, yet rugged enough to withstand continuous hard use.

Lockwood experts made a thorough study of the special designs conceived by the architects. Then, Lockwood's famous talent for achieving new and strikingly different effects in builders' hardware was pressed into service.

Note the graceful contours of the escutcheon and roseplate assemblies, shown below. An unusual method of attachment makes screws totally invisible, permitting a smooth, unbroken surface. Unexcelled materials, fashioned with traditional Lockwood skill, assure long, trouble-free service. In every respect, these handsome models bear out the architect's original conception.

The way we co-operated with the architects on this job is typical of the way we'll work with you.



For guest room doors on the corridors (*center*), a long, smooth escutcheon plate with rounded ends. Note the absence of screws. For non-locking doors (*right*), a graceful knob rose, unbroken by screws. For intercommunicating doors (*left*), a briefer escutcheon, with a simple thumb turn.

Lockwood Hardware Mfg. Co.

Division of Independent Lock Co. Fitchburg, Massachusetts

DESIGN FOR DEMOCRACY NOW

COMPLACENCY is a thing of the past. Events of the past month have been so serious as to be alarming and doubts replace smug optimism. Hopes for a short war go glimmering with each setback in Europe and Asia and with each report from South America and with every rescue of U-boat victims.

✦ The first concern of every American is to do all that he can to win the war. This is as true of the country's architects and engineers—and of every other factor in the building industry—as it is of the men in active service. There isn't one, to our knowledge, who would not willingly answer the call of the government to play any part where his talents and ability could be used to speed the war effort. Everyone is not only willing but anxious to do all he can to bring a speedy victory for the United Nations.

✦ That so many are now in the uniforms of the active services is evidence of that fact—and many more are working on the industrial plants, the airports, the housing of workers and of enlisted men and all other construction necessary to win the war. Thousands have filed their qualifications with government departments, have sought interviews with every conceivable authority that might make use of their services—and have not been given work or direction—or are waiting to be called.

✦ These men cannot pursue their normal peacetime activity of designing for the immediate construction of needed buildings. There are not enough materials, and the government agencies have wisely limited the use of building materials and equipment to the construction necessary to speed the war.

✦ The war is the most immediate part of the Design for Democracy—survival comes first. But progressive development is also essential to democracy. The problems of the period of conversion to peacetime living after the war are tremendously important, for the war has created new conditions we must face—economic, political, social. Both the government and industry must be and are thinking of and planning for that period. Building and public works will be needed then, not only to provide shelter and facilities for all types of community activity—but also as a necessary supplement to the expansion of private construction. Public works, and new facilities such as airports, should be planned in conformity to local programs of civic design, coordinated to function with existing or more efficient facilities of the city, town or region.

This is work which should be done *now* by the many able professional men who cannot be or are not being used in the war effort.

✦ There need be no danger whatever that planning for the future will interfere with the war effort. The opposite is true. A clearer picture of a better design for democracy, for better living conditions for every man, adds incentive to the war in contrast to Axis enslavement. The question of "proper timing" of published announcements regarding postwar planning can be taken care of by those in government who are charged with such control, but the planning should be inaugurated and formulated now, whether accompanied by public fanfare or not.

On the day when British forces are withdrawing in Egypt, announcement is made of three important speeches in London, advocating national planning. Sir William Beveridge, economist, stated that government should set up an economic General Staff to prepare plans. Lord Portal, England's Minister of Works, said, "We have some of the world's greatest architects in this country, and these will have to be coordinated in the postwar program." Richard K. Law, Under Secretary of the Foreign Office, said, "Unless we look to the future, we shall have fought the war for nothing. . . . .The choice is between a world organized to deal with the problems created by modern scientific development and a world which would drift on as it has drifted. . ."

✦ America's large corporations are quietly working on inventions and products to be introduced after the war. It is time now to plan for the buildings which must be built; it is time now to plan for the reclamation of our cities; it is time to see to it that the buildings of the future shall be integrated to produce a civic design and environment worthy of the sacrifices that are being made. It is time now to Design for Democracy in the largest sense.

Kenneth K. Stowell

EDITOR-IN-CHIEF

So I Said

EDITOR'S NOTE: These rambling, informal notes by an anonymous architect seem so typical of the thinking of many others in their summing up that they complement and complete the survey of the present status of the profession which we report factually in the article "Architects and Engineers at Work" on pages 48 to 50. Write us suggestions that will help "Bob" to work up his "private works reserve."

Here are some notes to be filed! I've spent most of the past two weeks filing things for future reference, straightening up the files in case I have to store 'em until the war is over. I hope I'll hear from Washington soon! Lord knows I've had my applications on file in enough places there to hear from one of 'em—just on the general law of averages. Filing must be a great industry in Washington.

It was kind o' fun filling out all those forms—I felt I was pretty darn good, quite an accomplished and valuable member of society with those buildings to my credit. I guessed they couldn't overlook me in selecting men for executive jobs to speed war work, or with the Engineering Corps, or Air Corps. It was good for my ego to fill in those applications—and my interviewers at the Capitol were so polite and cordial. And so were the answers to my follow-up letters. But there's no commission coming through yet for Captaincy, Majority, three per cent, or "cost-plus."

I sure would like to get a commission of one kind or the other, or even civilian work where I could feel that I was using my talents to further the war effort. The little remodelings I'm doing don't seem very vital, as I'm not in a defense area.

If the government doesn't want me in war work, I'd like to get busy now on postwar work. It seems that Hull and Wallace and the U. S. Chamber of Commerce, and a lot of others, both here and in England, are putting a good deal of thought on what kind of a world we will have after the war, in spite of the fact that the newspapers have been full of bad news. Rosy pictures are being painted of postwar America with its big building boom. It's encouraging to read all about it. However, it seems to me there are too many "blue-sky" speeches and editorials on what is going to take place, and too few programs or reports of "ways and means" to bring about this postwar millennium. I believe things can be better, but I believe also that real progress will be made only by dint of clear thinking and hard work—for there are conflicting interests, and the selfishness and greed that have always stood in the way of effective civic design are not going to be eliminated by this war.

Problems of creating better communities are going to be much the same as they were before the war. It is going to take both aroused public opinion and government action to make the building of a better environment possible. "Make no little plans" said Burnham, "but make 'em now," say I. I'd sure like to have a part in this postwar planning, but, as usual, I'll probably wait for someone else to start it, and in the meantime I'll berate the AIA, the city government and the national government for not starting it for me. It's queer how I always wait for the parade to form before I get on the band wagon.

I think I'll take a little time off to see what I personally can do about building up a little "private works reserve" while waiting for government agencies to formulate their plans for "public works reserve." Undoubtedly they are waiting for some good war news before announcing any programs for postwar work. I suppose they're right in not confusing the public by talking about postwar activity any more than they do. But the planning can go ahead now. There is no priority on brains and I still have my T-square and triangle.

I should find out where I can file an application for that work, and when. I wonder who has read my autobiography or what-my-biography-ought-to-be. Perhaps there's some way to bribe that good-looking file clerk to take my papers out of the files and put them on the Colonel's desk.

I don't know what I'd be doing now if the Board wasn't farsighted enough to let me go ahead with the drawings and specifications for the hospital. They know I'm putting more time and study on that now than I could have last year. I don't begrudge 'em that—for it gives me a chance to really show what I can do in giving 'em a smoothly operating hospital that will cost them less to run and maintain than that pile they're in now. It will be a good "ad" for me too, when they put it up after the war. And I agreed to make changes in the drawings and specifications if improved equipment or techniques come out of war practices, so they're protected!

TO MYSELF—

There must be other work like that I can get on the same basis, to be built after the war. I'll give Jack a ring to see what his company is going to do after the war. And he knows the Mayor pretty well—perhaps I can get them both interested in developing that tract north of his plant. It looked pretty good on that "Greater B-City Plan" a few years ago. I wonder what became of that plan—and of Gus who made it. Poor Gus, a swell guy, and clever, but not made for the political game, I guess. I heard he's happy in some government department now working over his drawing board. I suppose he's happier that way—he has some security at any rate.

A lot of the boys, good ones too, have joined one or another of the bureaus or have gone "civil service" here in town or for the state. I paid 'em well when I was busy, but I had to let 'em go every time things got slack. Now they've got steady jobs, and pensions ahead, and are actually doing the school buildings I used to do. Sure, I'm called Consulting Architect on the plans, but I can't get enough out of that. A few more government agencies doing architectural and engineering work and housing and we'll all be working in 'em.

I still think, old Tory that I am, that many such bureaus are uneconomic in the long run, and bog down in red tape and general lassitude and the inefficiency of "making the jobs last." Perhaps our Committee can prove that to the satisfaction of the taxpayers. Things were pretty bad in this town though when the jobs were handed out by "Oh, O." and his gang. Boy, those jobs cost the city plenty, and were the plans terrible! Why I remember—but why go into that now. I got my school jobs honestly in that competition the Reform Administration ran in '26. No more school jobs for me for a while.

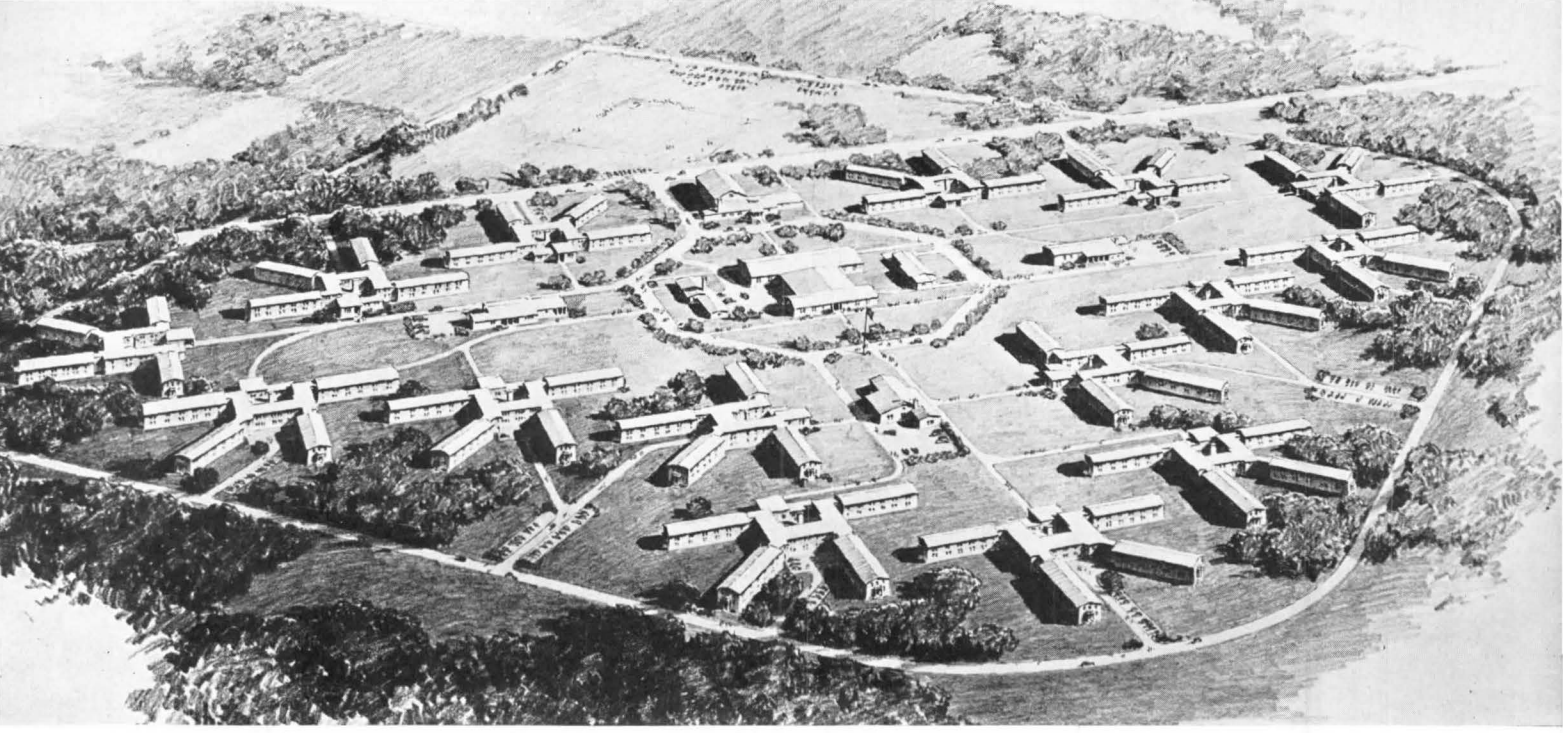
But there should be plenty of commercial, industrial, institutional and residential work for me. The G. E. T. Company has its own architectural department now and it will do all their new branches, so I won't have that work—unless I can show old man T—that I can do a better job for him, at less cost. That remodeling they did at Dunkletown wasn't so hot. I hear he's been royally entertained (and duly impressed) by that Industrial Designer, What's-his-name, the one who took Carl S—from me because he needed both his Architectural Registration stamp and his wild imagination. I wonder if I held Carl down too much? Well, competition is the life o' trade, and, by Palladio! it won't be the death o' me. I'll have to do more entertaining and get my name and physiognomy in the papers too. And perhaps I can get a "publicity release" in the papers, sponsored by the AIA, or by the State Association.

Funny how I used to think "competition" meant a competition to select an architect who could produce the best design; that was the only kind of "architectural competition" I was taught anything about at the University. Maybe a course in Merchandising plus Public Speaking would have been more to the point than "Archeology 4" and "Stereotomy 1. "I wonder what the schools are giving the boys now to fit them for the kinds of competition we have to meet. I remember when old H. J. P., then in his prime, said to me "Well, Bob, architecture is the noblest professsion all right—but it's a hell of a business." I notice he did pretty well for himself after he took in R. M. to run the business end o' things, and the business of getting-the-business.

Perhaps I should get busy lining up a new organization a little better rounded to take care of both the business end and the mechanical details. Ted and I can take care of planning, design, and structure between us. I'll suggest it to him when he comes back from overseas. Gad, what an experience he's having—talk about building against time and doing the impossible. He'll have had experience that will stand us in good stead after this is over.

And if I don't have some good jobs lined up by that time I'll have fallen down on my part. I can do some preliminary studies now and in some cases get out working drawings and outline specs for buildings to go up when materials again are available.

In the meantime I'll be pushing for our town to get its public works program under way now. If New York can do it, certainly we can. I'll do my part!



Air view of dormitory group planned to house approximately 3,000 workers

DURATION DORMITORIES

NOTES ON THE TECHNICAL PROBLEM

By FREDERICK L. ACKERMAN, Architect

The duration dormitories here described and shown in plan and diagram were developed for FPHA by Frederick L. Ackerman, architect, Charles G. Ramsey and Harold R. Sleeper, associates, Sullivan A. S. Patorno, consulting engineer for mechanical work, and Fred N. Severud, consulting engineer for structural work. Other duration dormitories for FPHA have been prepared (two of which were shown in ARCHITECTURAL RECORD for July. See also the June issue, page 38). The Technical and Management Divisions of FPHA are responsible for the coordination and development of the plans for duration dormitories.

THE ever more pressing need of shelter for workers in war industries suddenly thrust "duration dormitories" into the field of industrial effort all along the deep line of the home front. Overnight, experience in related fields had to be mobilized, new assumptions forged out of them, an ordered program of facilities launched—everywhere.

Any buildings—dormitory units, kitchens and dining halls, facilities for meetings, for recreation and motion pictures, facilities for management and maintenance—had to be designed with as clear a picture of the problem as could be put together out of current facts and future probabilities.

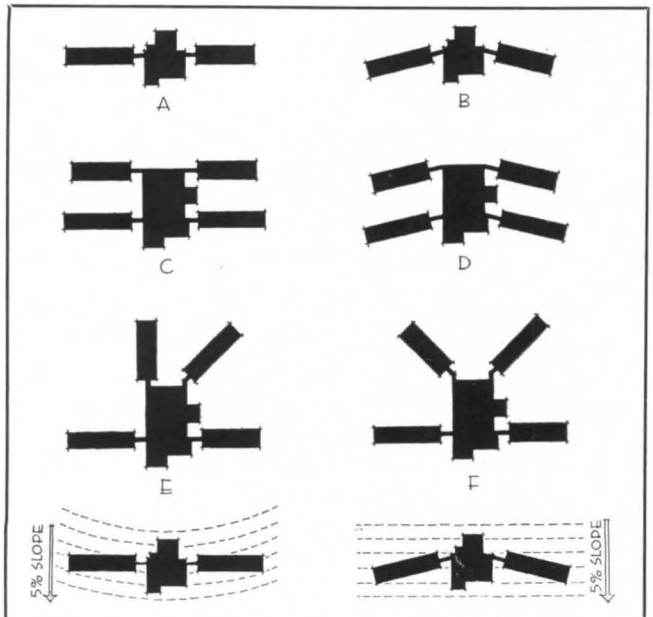
There would be need for small dormitory projects—a hundred or so workers here and there would be in urgent need of them; there would be need for projects of medium size—a thousand or so; and there would be calls for projects consisting of thousands of rooms in isolated areas.

Some would be needed in the far South, some in the North where 20 degrees below zero would be normal expectancy in winter. Some would be located on the edge of towns or cities with educational, recreational and eating facilities available; some would form isolated communities. Some could be located on flat, some only on hilly sites, some on land with rock outcroppings or high water table. Some could be related to adequate utility services; there would be the most urgent need for great projects where there would be no water, sewage disposal system or gas.

And no one could predict with any degree of certainty what materials would be physically available—and if available, which of them could, in the confused judgment of men, be released for dormitory projects by a favorable priority number or direct allocation. Irrespective of the availability of various materials, irrespective of decisions as to relative priorities, there hung like a cloud over the launching of the duration dormitories project, as a whole, one fact: in no small degree the rate of physical production of bombers, of ships and of munitions of war would remain unpredictable until we were certain that the number of workers which could increase the rate of production to the projected maximum could be provided with shelter.

Within the broad frame enclosing the total problem of providing dormitory shelter, there were problems in endless variety. The first step was that of so stating the general problem that it could be broken down into many clearly defined and limited programs of action. This meant that we must discover what there was common to all situations.

Workers must have rooms in which to rest and sleep, places where they could eat; they must have facilities for recreation and entertainment.



Changes in the floor elevations of wings in their relation to central mass may be made within halls by ramps. Changes in the floor elevation of front and rear of central feature may be made in the center passage by ramps. Obviously the basic plan as well as the variations can best be accommodated on a level site. When rings are placed at a 12 to 14 degree angle to the main building, the natural contours of the slope would give a pitch of 1 per cent along the wings for surface drainage. See contour diagrams above. The variations of "E" and "F" may be adjusted readily to contours of 5 per cent.

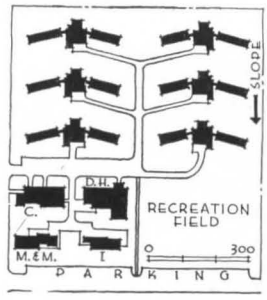
In situations where rooms only were needed, the problem was quite simple. But such would not be the case generally. Industrial plants had been built in our wide-open spaces where there were no facilities for living for miles around. Here recreational facilities would have to be supplied for the same set of reasons that had led to their provision in Army training camps.

Outside the field of unrealistic, academic discussion it would be obvious that a wider range of recreational facilities could be supplied to projects of several thousand workers than to groups of a few hundred or a thousand. Here was a morale nut to crack in the case of small, isolated dormitory projects.

No matter how small or how large a project, the adequacy of facilities for the preparation and consumption of food had to be treated as a constant in all projects, subject only to differentials arising out of local customs.

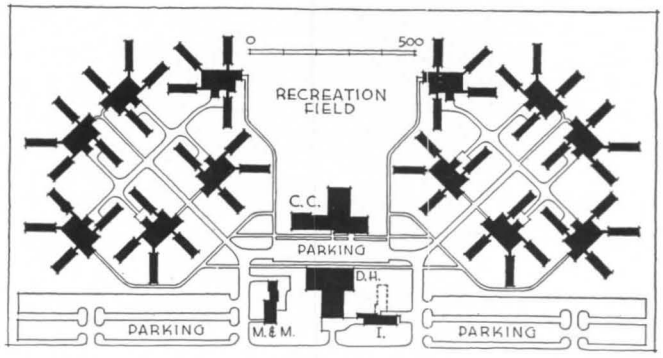
Out of consideration of the various problems of management, maintenance and control; out of the problems of heating and lighting designed to use a minimum of the now precious metals; out of the problems of design and of management created by many economies to be derived from loading two or three shifts of workers upon kitchens, dining halls, social rooms, plumbing lines and fixtures; out of endless other considerations, there emerged the "basic" dormitory units of about 100- and 200-person capacity. The larger were so designed that they would serve any combination of percentage distribution of workers by shifts, without introducing two shifts in more than one or two of some thirty wings of a dormitory group for 1,000 workers.

From the outset it was realized that we were dealing both with a variable and at the same time an unpredictable factor, in that life in duration dormitories would, except

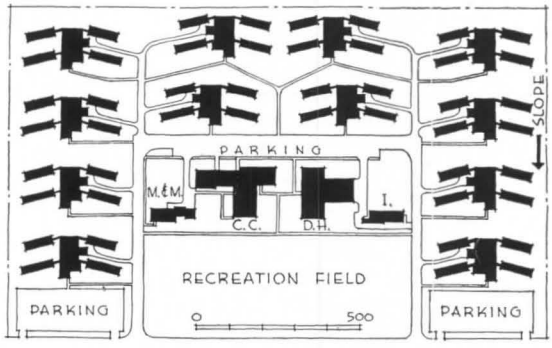


Duration dormitories group accommodating about 600 persons, acreage 13, density 48

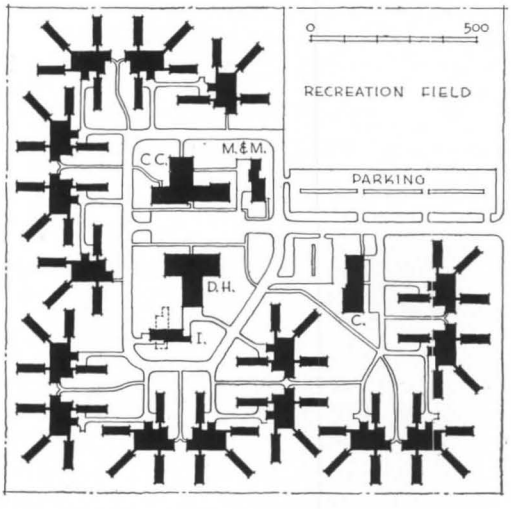
Diagrams in this column show suggested site plans to accommodate varying numbers of workers. Each is complete with its dining hall and kitchen, D.H., community building, C., maintenance and management building, M. & M., and its infirmary, I. Recreation fields and parking places are also provided. The combined community center (see C.) is included in the larger groups



Dormitory group accommodating approximately 2,600 persons, acreage 47, density 55



Dormitory group accommodating approximately 2,600 persons, acreage 37, density 70



Dormitory group accommodating approximately 3,450 persons, acreage 52, density 66

in a few cases, be on the basis of two or three shifts. Here was a factor of fundamental importance in design. If the workers were equally distributed in three shifts there would be many elements essential to the operation of dormitory projects which could be reduced by 50 per cent to some 66 per cent as against the facilities which would be required if dormitories were occupied by workers upon one shift.

The problems arising out of having to house more than one shift could not be reduced to anything like certainty. No one could possibly forecast what may be the local or the over-all distribution of workers by shifts one year from now—or later. Nor is it now possible to forecast the trend in a given industry or a given plant.

All this uncertainty as to changes in the distribution of workers by shifts pointed to the necessity of introducing deliberately, as in the application of engineering formulae, factors of safety. We must pay the same as we have to pay for the use of a factor of safety used in the design of bombers and battleships, buildings and bridges—all designed under guidance of engineering formulae.

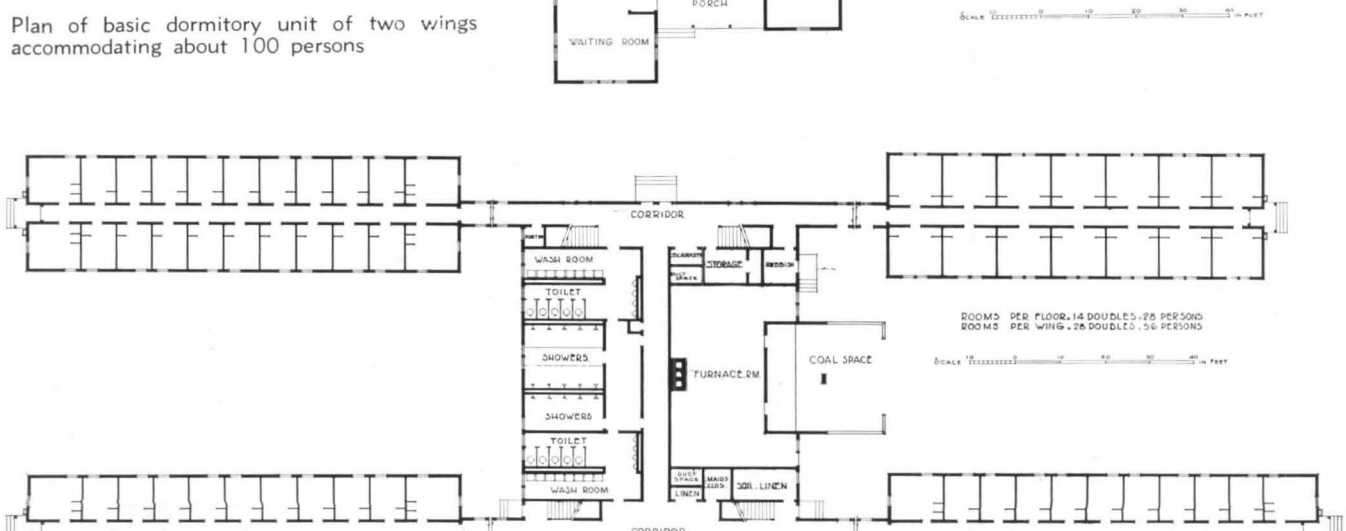
DORMITORY UNITS

How many persons had best be housed in a dormitory unit? Should dormitories be one or two stories? Should their use be confined to one or two or three shifts? Should there be a focal point of management or should they be operated and managed by remote control? What should be the ratios of persons to various kinds of toilet facilities? And so on and on. There is no space here to repeat the discussions which led to conclusions which will here be given with the principal reasons which led to decisions.

An examination of the question of one- or two-story dormitories led to the inclusion of the latter among the basic designs. The area and cost of site, length of roads, walks, utilities, areas to be seeded and maintained, distances from dormitory units to dining halls and recreation facilities—all these footed up, in the case of one-story structures, to larger quantities than those involved in the use of two stories. Against the two-story structure were greater fire risks which could be cancelled out through the use of adequate exit facilities and by fire-retarding methods; also against the two-story structure was the risk of noises passing from one story to another. But this risk could be practically eliminated by the use of acoustical materials and methods of building which would insure low transmisison of sound for an insignificant fraction of the higher cost of one-story structures.

To put two or three shifts in a single structure might result in disturbing those who were sleeping; but buildings of one or two stories might readily be so designed and so used as to eliminate the probability of such disturbance from noise. But to put two or three shifts in a single structure would result in a very marked economy in the use of critical materials in plumbing lines and fixtures, etc.

Plan of basic dormitory unit of two wings accommodating about 100 persons



Four-wing basic dormitory unit accommodating about 200 persons

Dormitory units must be serviced, beds must be made, rooms cleaned; halls, toilets and public spaces kept clean and in order. This work, as well as services which would have to be rendered to occupants, requires the presence of a competent person at the entrance for the same reason that a clerk or manager is needed in a hotel.

These considerations pointed definitely toward the use of dormitory units housing a considerable number of people, when conditions of site would permit. The number, 200, was not an arbitrary choice: it was the result of seeking an arrangement that would segregate the shifts, would not make the wings too long, for reasons which have to do with heating, cleaning and use by its occupants.

Preference as between single and double rooms was provisionally disposed of by providing for both, the relative number of each to be determined by local conditions.

The separation of wings from the central mass by a linkage of variable length served to reduce fire risks and make possible changes between the elevations of floors in wings and central mass, and the turning of the wings at angles so as to conform more readily to conditions of grade.

KITCHENS AND DINING HALLS

FROM the outset it was reasonably certain that the number of workers requiring dormitory shelter in various plants would not, when arranged in numerical order, form a smooth curve. Experience in army camps could not be applied to dormitory dining halls serving industry: the Army training camps presented a set pattern.

Obviously it was out of the question to provide designs for dining halls which would fit every situation. Besides, no situation could be treated as stable through time.

The problem in design, therefore, was to develop a minimum number of plans of kitchens and dining halls which would serve the widest possible range as to numbers of workers without resulting in so small a load as to render them uneconomic, or so large as to result in intolerable periods of waiting in line at the service counters.

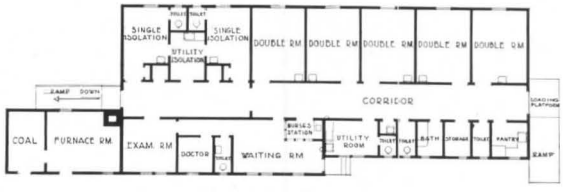
RECREATION FACILITIES

FACILITIES for other than sleeping and eating needed in dormitory groups will differ as between those located in or near communities of such size as to offer opportunities for recreation and those so located that they are really isolated. These needed recreation facilities will differ somewhat as between North and South, East and West; they will also differ as between one World War and another. The need for these "other facilities," whatever they may be, will be found to be much the same in all cases.

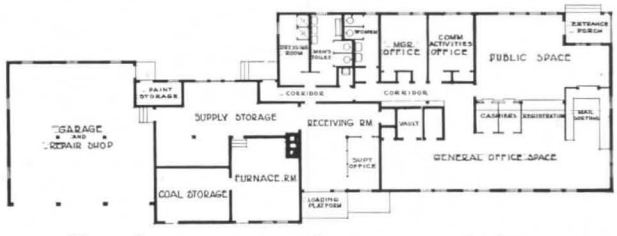
From this we should not make the assumption that "need" may be defined by edict: what is deemed "necessary" at any time is likely to be derived from the general standard of living through the years immediately preceding.

For men and women of today, living in a more or less isolated dormitory group, the last motion picture out of Hollywood is rated, as a matter of course, a necessity; it was not that way twenty-five years ago. And a place other than a "room of one's own," where one may chat with friends or read or play games, is a necessity for those who work in the industries as well as those who do not. In other words, the writing of a program to cover what should be added to dormitory groups outside the individual rooms and dining halls was a matter of striking a balance in the

Plan of dining hall with kitchen and service



Plan of infirmary



Plan of maintenance and management building

field of near imponderables, between what all workers will deem they must have by way of recreation and how much less they will accept with good grace by reason of the pressing urgencies to conserve materials for military use.

To distribute these recreation facilities according to the needs of groups ranging from two hundred to two, five, seven, ten thousand, as might be the case, was no simple matter. Obviously, large groups would support a full-fledged structure for motion pictures, which if built with a flat floor would also serve upon occasion for basketball, a lecture, or for the kind of entertainment provided in Army camps. Smaller groups would support a soda fountain—a canteen where life would seem more nearly normal. There would be need for meeting rooms, for a grouping of men or women gives rise to the need for space where lectures and instruction may be arranged.

SITE PLAN

IN PREPARING to set up diagrammatic site plans it seemed futile to propose, as has been suggested, that a site plan

should first be made which could, after the removal of duration dormitory projects, be used as the site plan for a community of houses. Such a procedure would develop no end of problems, such as providing roads, curbs, gutters, utilities, etc., of a durable nature, requiring vast quantities of materials not needed to serve dormitory projects.

The strategy to be employed seemed obvious: select sites relatively near the plant to be served and use them for duration dormitories without consideration of matters irrelevant to what it is now imperative to do.

Obviously, with buildings of the area of dining halls, recreation or community centers and dormitory units, a fairly level site would best serve. For grades up to approximately five per cent, the basic H type of dormitory unit for 200 could be readily adjusted to contours. For steeper sites the two-wing type for 100 would best serve.

The several diagrammatic site plans were made to illustrate a number of points which might be overlooked if not referred to. In a small group of up to 800 or 1,000 units, dining hall and community center should be placed upon the periphery of the group and on the way to and from the plant. With this disposition of the larger structures, a potential if not a real source of noise would be farthest from the sleeping rooms of the dormitory units.

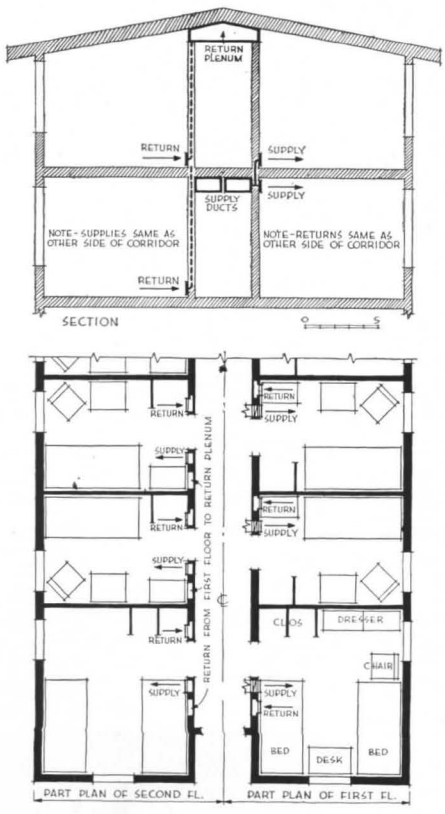
But in the dormitory unit with one wing arranged at an angle of 45 degrees to either axis of the plan a most interesting thing develops when the 45 degree wing is so located that it points outward from the plan. Of the 16 rows of rooms in the four wings, only four rows face toward the center of the plan while 12 rows face outward. None of these 12 rows of rooms are parallel. This means that three-quarters of all rooms face other than toward the center and that noise emanating from three-quarters of all rooms will not be reflected back into the row of rooms from which noise emanated.

And when it is recalled that sound diminishes with the square of the distance traveled, and that the windows in opposite rows of rooms range from 50 to more than 100 ft. apart, and three-quarters of all rooms are on the periphery of the project, it will be seen that dining, recreation and other facilities may advantageously be located centrally in respect to all dormitory units, with consequent high concentration of utilities without congesting structures.

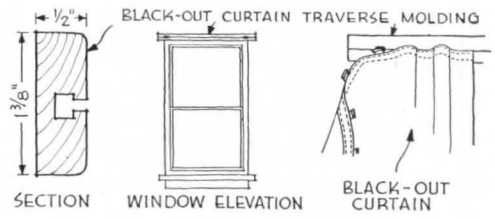
Another point should be noted in respect to the diagrammatic plans: the peculiar way in which the dormitory units with the one 45-degree wing may be interlocked, yet preserve ample distance between wings, developing a density that differs little from the basic type plan.

Obviously, difficulties will be encountered in adjusting large structures to sites of irregular contours. These are "duration" dormitories, and it would be pointless to select the least undesirable site as has so often been the case with housing projects. But the flexibility, vertical and horizontal, of the wings, adds greatly to the adjustment of structures to sites of varying contour.

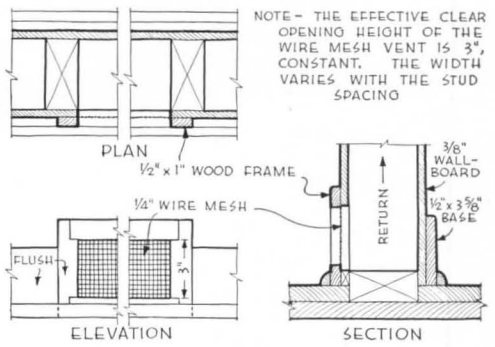
On sites approximating a tilting plane, revolving the wings through a small angle enables us to take advantage of the slope to provide drainage with a minimum of grading.

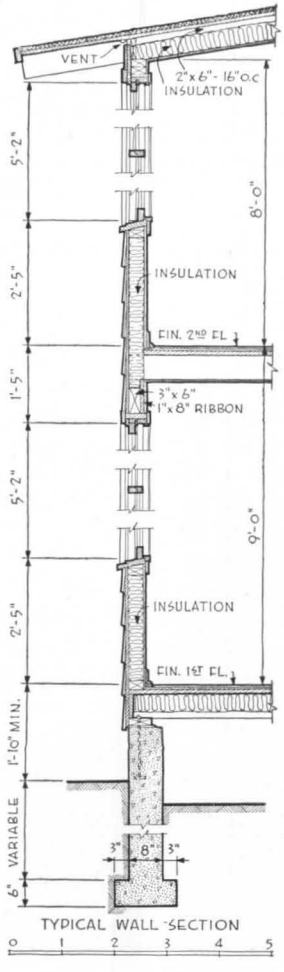


Diagrammatic plan and section showing the warm air heating system devised to conserve metals and critical materials



At the left is shown a diagram of a section of a two-story dormitory indicating the arrangement of supply ducts and return plenum. The dotted lines indicate the return which uses the stud space instead of a duct, thus saving material. Both the supply and return grilles are of the simplest effective character and are shown in detail in the diagram below. The traverse molding for the blackout curtain is mounted on the inside of the window head as shown in the diagram above. A typical wall section showing the simple construction and the insulation is shown on the right



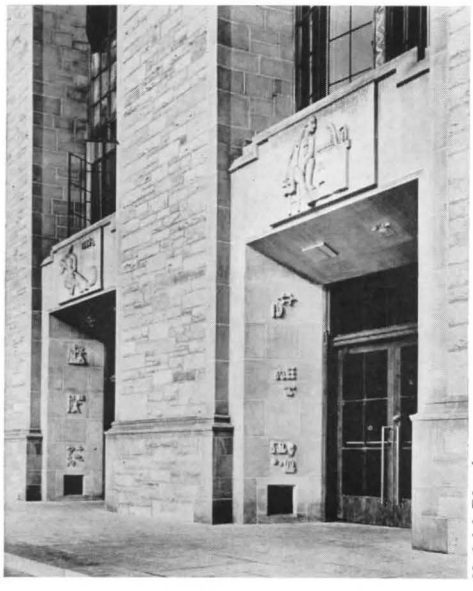


Dedicated to

"THE SERVICE OF THE COUNTRY"*

THE TECHNOLOGICAL INSTITUTE OF NORTHWESTERN UNIVERSITY

Holabird & Root, Architects • McKim, Mead & White, Consulting Architects



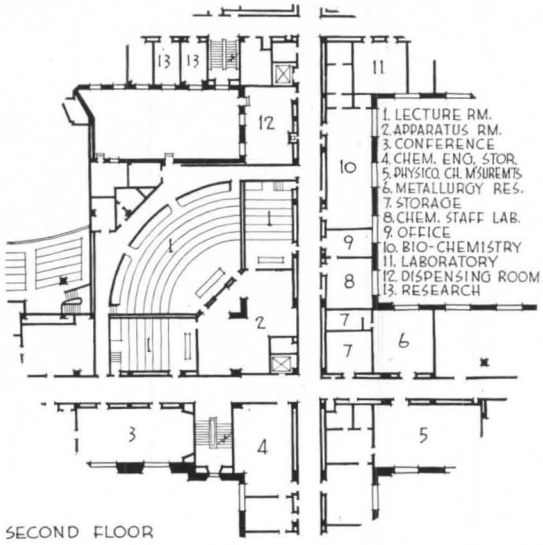
Hedrich-Blessing

PARAMOUNT in the development of a realistic program for the "design for democracy" is the training of scientists, engineers and skilled researchers to analyze problems and chart workable courses. In wartime, the need for such skills becomes acutely urgent. Hence the recent dedication of this great new Technological Institute at Northwestern's Evanston campus assumes unusual importance. Originally planned for the use of approximately 800 engineering students, and a somewhat larger number in the combined departments of physics and chemistry, it is already serving some 2,500 persons—due to the demands of war; and this figure is expected to soar to 3,500 by fall. Many of the Institute's superb laboratories have been turned over for important government research, and among the emergency units are training courses specially aimed at war industries, a navy school, a pilot school and courses to assist the signal corps. Within the walls of this vast educational structure are 350 rooms and more than 10 acres of floor space. Made possible by a gift of nearly $7,000,000 from Walter P. Murphy, inventor and manufacturer of railroad supplies, the building itself cost $4,920,000; the equipment, an additional $1,350,000.

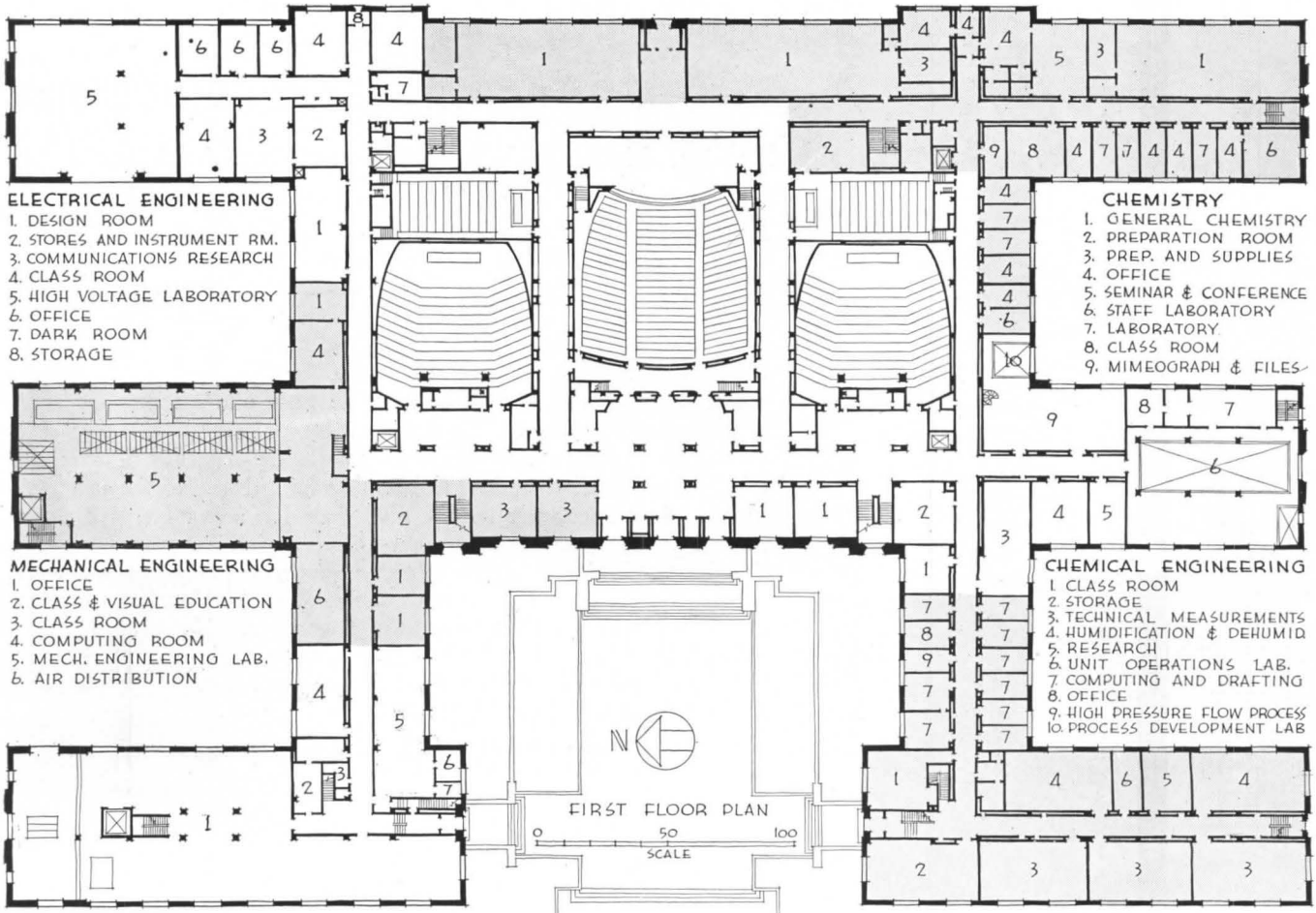
* From an address by Donald M. Nelson, Chairman, War Production Board, at dedication ceremonies, June, 1942.

PLAN

THE basic scheme—which effectively keeps the immense building from appearing gargantuan—is in the form of two letter E's arranged back to back and joined by a central structure. Each of the six wings in all of its floors is occupied by a single department—civil engineering, mechanical engineering, electrical engineering, chemistry, physics and chemical engineering. Including the basement floor, (well daylighted by moat-like grading of the terrain) each of the wings is three stories in height. The four-story central portion of the building contains the main auditorium, lecture theaters, library, student lounge and offices. Arrangement of certain of the class and lecture rooms at the angles where wings and central structure join allows joint use by different departments. See second floor plan



SECOND FLOOR



INTEGRATION

To the critical eye seeking advanced design techniques that integrate the multifarious elements of a structure into a unified whole, the Institute building is of very special interest—particularly on the interior. In many instances, structure serves also as surface finish (ceilings, for the most part, are but the painted undersides of flat slabs); operational systems do more than serve their function from concealed vantage points—lighting and ventilating elements not only light and ventilate, but become room decoration. Each element, in short, is part of and dependent on the other; whether purely functional or purely decorative, each is incorporated frankly and without apology, and the resultant rooms gain a vital, synthesized quality which is noteworthy.

Hedrich-Blessing

LIBRARY. Acoustical ceilings; fluorescent light, flush mounted

CONFERENCE ROOM finished in oak

STRUCTURE

THROUGHOUT the building, floors and roofs are of flat-slab reinforced concrete construction carried by reinforced concrete beams and load-bearing masonry walls. The reinforced concrete interior columns are supported on reinforced concrete spread foundations. In special areas, as under the 1,000,000-lb. testing machine (see page 42), the foundations rest on wood piling driven into 65 ft. of clay.

In general, beams and columns are concealed within hollow partition walls, which occur mainly on the sides of the communicating corridors. In these partitions and also in space over suspended plaster corridor ceilings, space is provided for the running of ducts, pipes and other equipment.

Steel beams were used for roof construction in the high-voltage laboratory, and structural steel is also used over all lecture theaters and reading rooms. Exterior walls are of Lannon stone, with Indiana limestone trim. The roof is of 20-year bonded bituminous gravel - coated coverings laid above 1 in. of insulating material. Windows are solid section steel sash set in lead-coated steel sub-frames; spandrels are lead-coated cast iron.

SURFACING MATERIALS

IN most areas, floors are cement-finish floated on slab and surfaced with asphalt tile. The main lobby floor is greenstone. Terrazzo is used in secondary corridors. Except where suspended plaster ceilings are employed, as in corridors and certain of the larger rooms, ceilings consist simply of the flat slab which is smoothed without plaster, painted and stippled.

Main stairways (reinforced concrete) are finished in precast terrazzo risers and treads, with non-slip nosings. Secondary stairs are finished with asphalt tile with bronze nosings. Walls of corridors are washable vitrified brick, except in the main lobby where travertine, travertine marble and wood wainscoting are used.

The decorative sculptures—both ex-

terior and interior—depict man's physical environment and his progress in mastering it; Edgar Miller, sculptor.

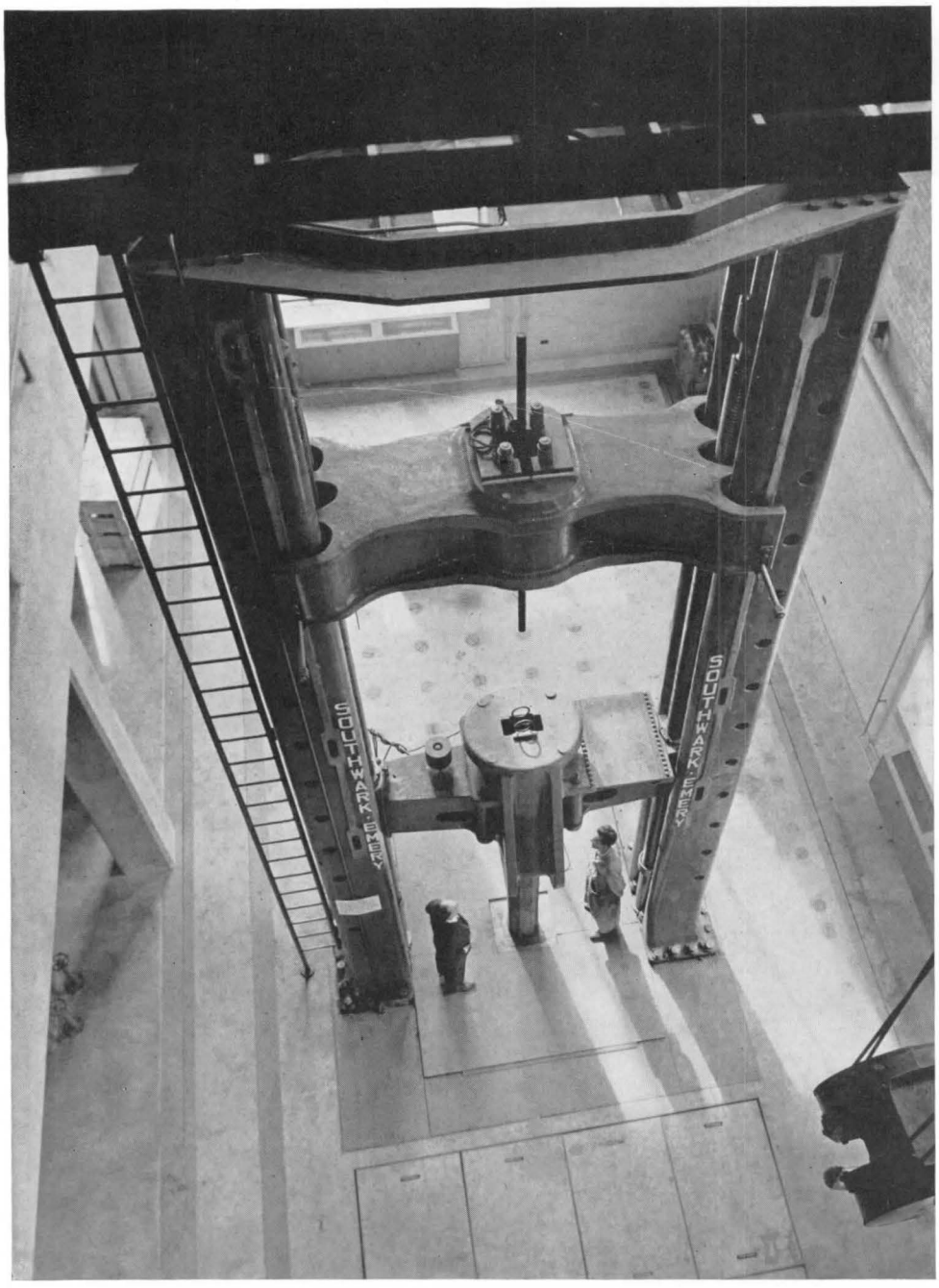
LECTURE THEATRES

THE main auditorium (shown below) seats 774 persons. The wainscot is of oak; the balcony rail, painted metal. Notice the integration of light, ventilation and decoration. At right is the fanshaped lecture room for the physics department on the second floor. Walls and ceilings are acoustically treated. The room is windowless and has a wainscot of white oak paneling.

PHYSICS LECTURE THEATER

Hedrich-Blessing

MAIN AUDITORIUM



TRANSVERSE-UNIVERSAL TESTING MACHINE

LABORATORIES

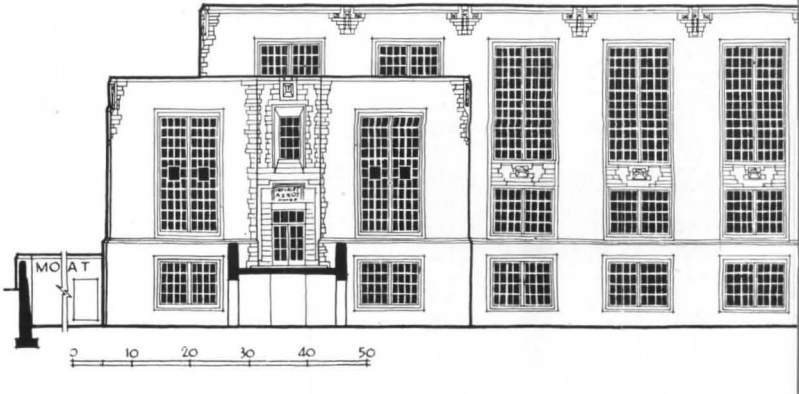
MOST impressive among the Institute's facilities are its numerous, highly specialized laboratories—several of which the government is now using to speed the successful prosecution of the war. There is an artificial river for testing ship models and wave action. A 1,000,000-lb. transverse-universal testing machine stands two and a half stories high (photo at left); this machine will take materials up to 18 ft. in height for tests in either tension or compression. Transverse loads up to a million lbs. can be applied on girders or rigid frames up to 55 ft. wide and 18 ft. high. Another machine—a hydraulic press—can exert a pulverizing pressure of 5,000,000 lbs. for testing the effects of strain on building materials.

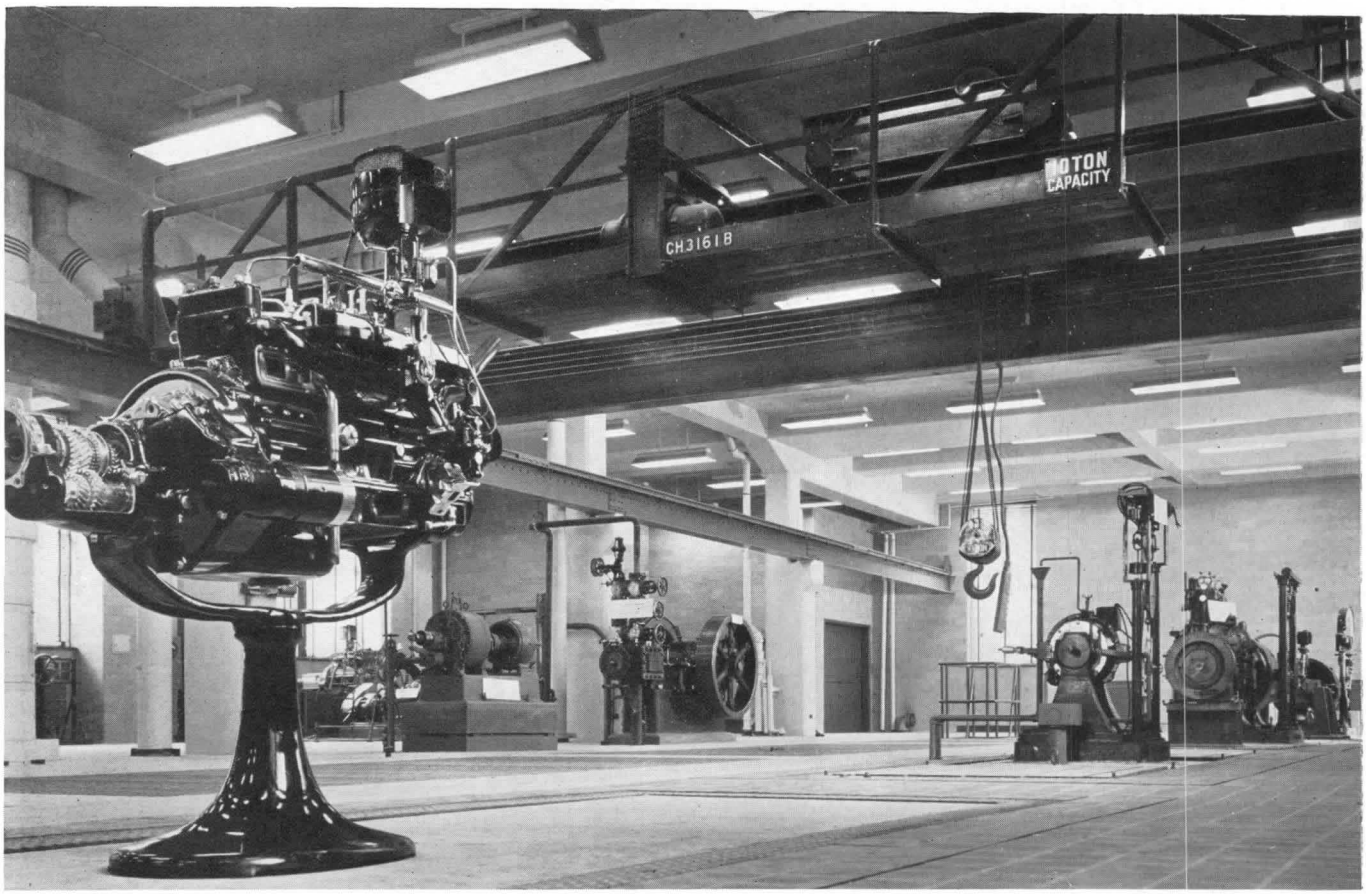
In a room large enough to house an automobile, temperatures may be driven to 75 degrees below zero. Another cold room which could contain a complete small house is used for precise study of problems connected with residential heating and air conditioning. There is a room where it always rains; another where lightning crashes on order, etc. etc.

There is the quietest room in the world, which absorbs 98 per cent of all sound and which is observed through windows, lest the researcher's

COMBINED ELEVATION AND SECTION

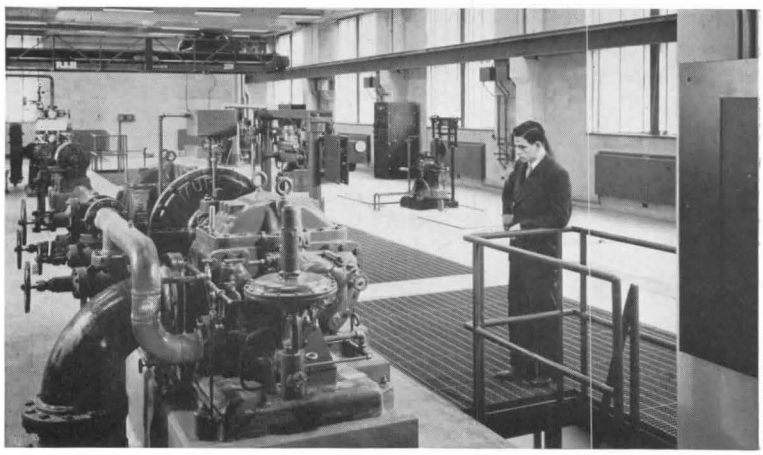
ORGANIZATION of the building is such that each of the six main departments occupies one of the wings, plus other space gained from the central block. The central mass is mainly given over to lecture rooms, lounges and offices which are used jointly by several departments. In all there are eight lecture halls. The largest (shown in section) seats 774; two rooms have seats for 285; two smaller lecture rooms have 120 seats each; a special fan-shaped room (see photo page 41) has space for 202, and two adjoining rooms (see second-floor plan detail) seat 52 each.





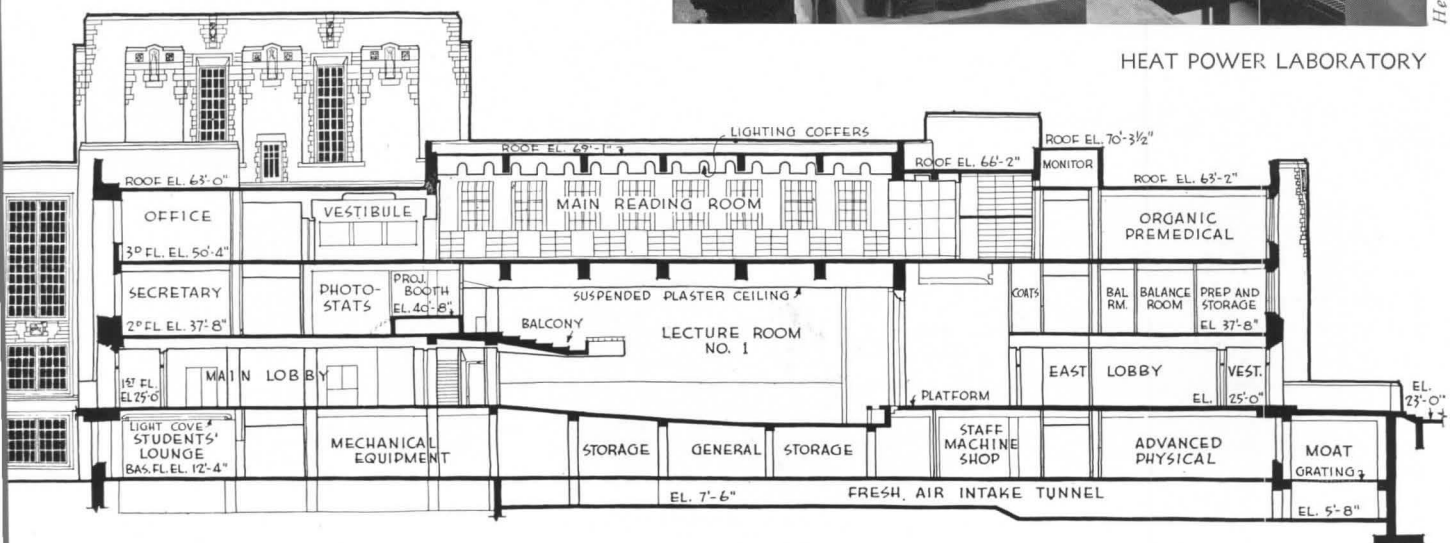
MECHANICAL EQUIPMENT LABORATORY

breathing cause distracting noise. This room is completely separated from the laboratory in which it is located and floats on rubber blocks which insulate it from vibrations of machinery in the building. Its 6-in. concrete walls and 18 layers of muslin complete the insulation. The room may be entered through a series of three doors with sound-trap vestibules between them.



Hedrich-Blessing

HEAT POWER LABORATORY



CEMENT LABORATORY

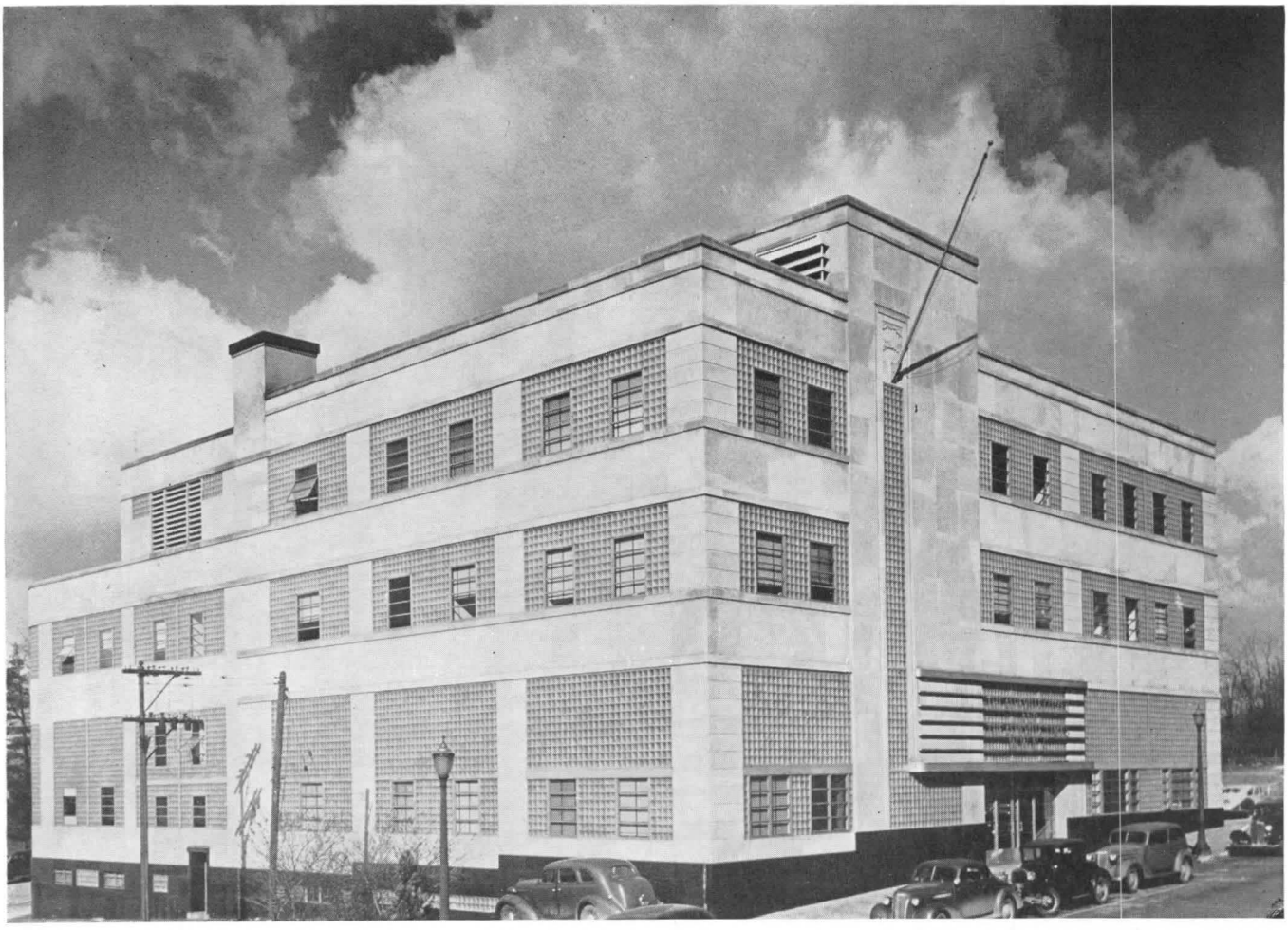
UTILITIES

THE Institute receives steam from the main University power house; each wing has a heat exchanger, which transfers the heat from the steam to heat water, which in turn is circulated through radiators of the fin type. Twelve fresh-air supply fans deliver approximately 300,000 cu. ft. of air a minute into 6 miles of ventilating system; 40 exhaust fans remove contaminated air. In general, fluorescent lighting is employed in all classrooms and laboratories. In corridors and large lecture rooms, direct-fixture and/or indirect lighting is used.

GENERAL CHEMISTRY LABORATORY

MACHINE TOOL LABORATORY

Hedrich-Blessing



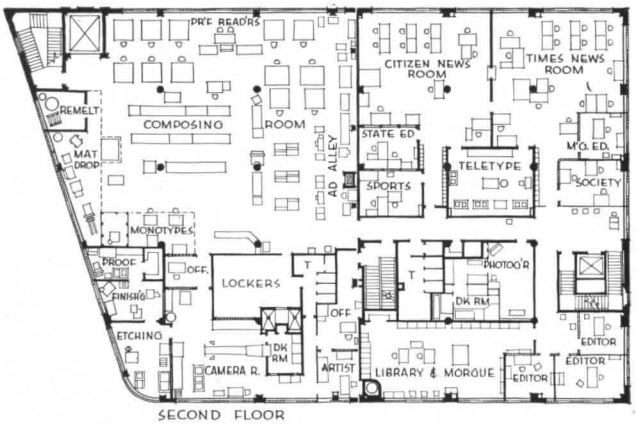
A NEW BULWARK OF FREE SPEECH

THE ASHEVILLE CITIZEN-TIMES BUILDING, ASHEVILLE, N. C.

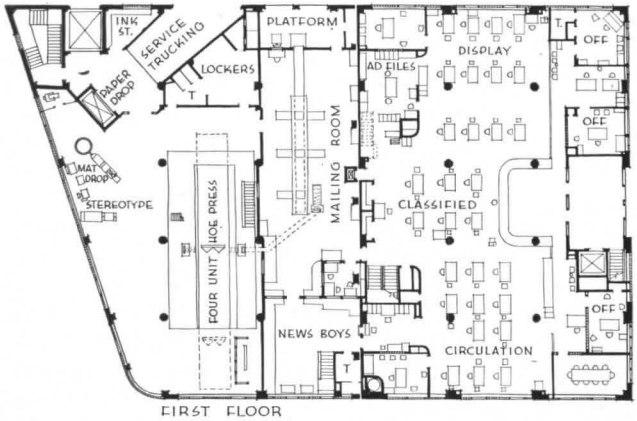
Anthony Lord, Architect

DUAL SIGNIFICANCE surrounds publication of this recently completed newspaper plant. Primarily it is an advanced type of structure specifically designed to promote efficient newspaper production; for that reason, it merits careful study by any architect concerned with the planning of such a building either now or in the future. In a symbolic—and timely—sense, however, it is considerably more: it stands as a concrete architectural expression of the first-mentioned of the Four Freedoms —Freedom of Speech—which this country is now at war to defend and maintain. The plant produces morning and evening papers and a combined Sunday issue. It also operates its own radio broadcasting station, located on the top floor of the building.

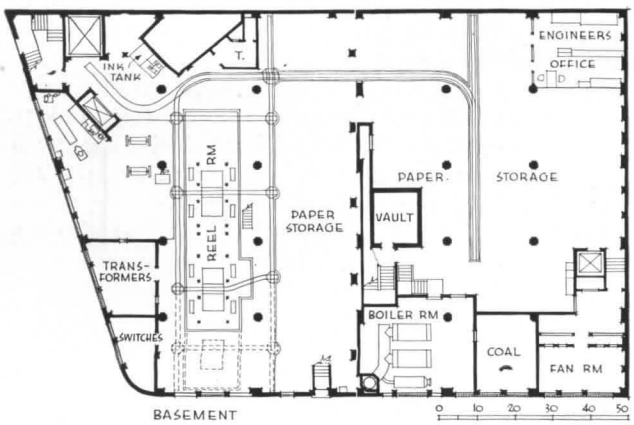
THIRD FLOOR



SECOND FLOOR



FIRST FLOOR



BASEMENT

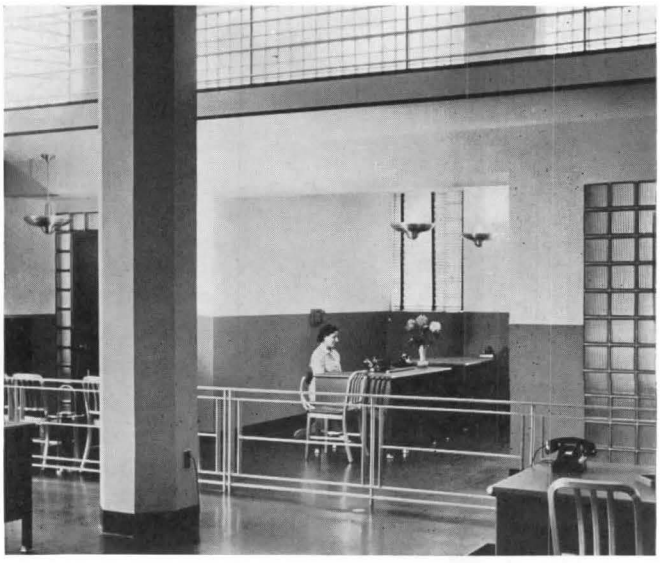
MAIN ENTRANCE. Advertising department counter at right

PLAN HIGHLIGHTS

ADVERTISING department—chief revenue source—located just inside front entrance; accessible to public; allows personnel to come and go with least waste motion.

Interrelated functions of reporters, editorial writers, photograph and teletype rooms are organized together on the second floor, and are also desirably near the composing and engraving rooms.

Executive offices, which must be accessible to the public but protected against undue interruption, are located either side of the main entrance.



EXECUTIVE OFFICES at one side of main entrance

Papers for local carriers go out one end of the mailing room and those for mails and long distance go out the opposite end, via a loading platform.

On the top floor, the radio station is isolated from the rest of the building on its own columns, completely separating it from building noise and vibration. Studios are so arranged that three of them are visible from the control room.

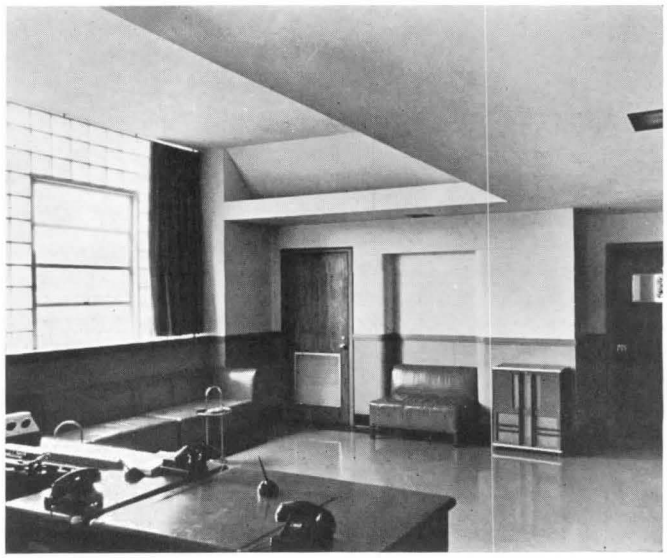
STRUCTURE

THE BUILDING is of reinforced concrete, with interior partitions of hollow tile, steel stud and—in the radio station—cinder block. Floors in the business areas are surfaced with asphalt tile or rubber tile; in the industrial part, with wood block; in heavy duty areas with special heavy duty flooring. Exterior stone trim is of limestone, with a black serpentine base. Sash and frames are of steel.

Coordinated heating and ventilating systems control five areas of the building: the principal offices on the first floor; news, editorial and photographic rooms on the second floor; the composing room; offices and accounting department on the third floor and the radio studios. Of these systems, only that serving the studios includes refrigeration for summer cooling.

REAR VIEW. Advantage was taken of the site slope to the rear for simplifying the handling of stores of newsprint and ink, a very considerable item. From the truck-bed-high loading platform near the rear of the building, paper goes to the basement on an electrically operated paper drop. Thereafter it is handled horizontally on dollies running on trackage sunk below basement level (see basement floor plan) either to storage room or reel room from which the press is serviced. Space is provided for a month's supply

BUSINESS WORK SPACE



RADIO AUDITION ROOM

ARCHITECTS AND ENGINEERS

Because the question of what the profession is doing now, has been doing and will be doing has been subject to so much conjecture and offhand comment, ARCHITECTURAL RECORD presents this direct factual study and turns up some unexpected trends of unusually timely interest.

"So Jim got his commission after all, and Tom has gone with that prefabrication outfit, and Dick and Harry are working on site plans for defense housing—what's going to happen to the profession?"

Talk like this has been rampant and snap judgments have led to some far-fetched conclusions. The architects and engineers of this country have been and are adapting themselves to do their share in the war effort. First SPAB and then the "stop-order" made the change over to war work sudden, necessary and difficult. The nature and extent of these changes and the current trend of both contemplated changes and current architectural thinking are the subject of this factual report on architects' work in wartime. It throws a spotlight on the future of the planners and designers of buildings.

The future is not as black as it has been painted by pessimists. At any rate, architects themselves are fairly confident about what the future holds for them. The RECORD now speaks positively, for it has just questionnaired a sizeable proportion of the country's architects and engineers on several most important questions about their present activities and future plans.

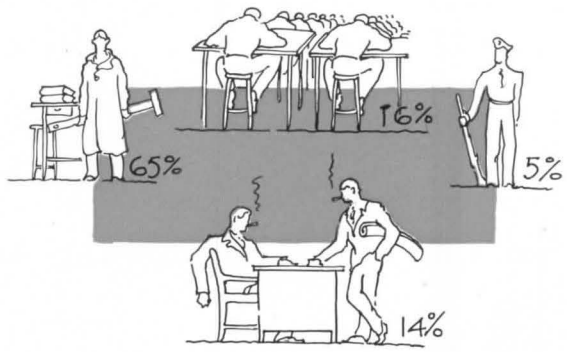
It would not be correct to say they are altogether happy about the situation, and that is natural. They realize that they are in the same boat as hundreds of other business and professional men who have been forced by war to change their activity, to adapt themselves to new conditions and to carry on in new roles. And they list many things about which "something must be done." But they are strongly of the opinion that the private practice of architecture is their spot for the future, and that they will be ready for it.

The survey clearly indicates, as might be expected, that a goodly number of architects and engineers have useful places in the war effort, in active service and in construction for speeding production. Most are still using their architectural training and ability. Indeed, more than half of the architects reporting are planning buildings to be completed when present restrictive regulations are lifted.

It is plain also that there will be more changes of status among those who have not yet been absorbed by the war work. But perhaps the most significant fact uncovered by the survey is that 94 per cent signified their intention to practice architecture after the war is over. The practice of architecture, according to results of the survey, will probably see some significant and strengthening developments; a great many architects expressed their intention of adding new services, broadening their activities, changing their techniques with regard to securing and doing business, and so integrating their offices as to offer more complete and efficient services. They listed many steps that should be taken to protect the business of architectural practice and also to increase its effectiveness in the times that lie ahead, and they did not hesitate to direct some of the criticism toward themselves. Nevertheless, an almost negligible proportion of architects have been discouraged to the point of contemplating some other business in the future.

A field already questionnaired to death indicated a lively interest in the professional changes of the times in a response of 15 per cent of a total 3,600 mailed blanks. The states covered by the survey included California, Ohio, Illinois, New Jersey, New York and Texas. Many of the more than 500 who responded wrote at considerable length of their plans and activities.

The first question sought factual data on what has already happened:



1. My present work is that of.....

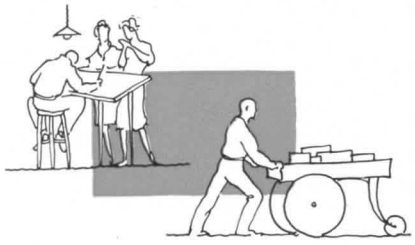
ANSWER: Architects 410 Engineers 48
Miscellaneous 17

In private practice	**65%**
With government agencies	**16%**
With corporations	**14%**
With armed forces	**5%**

The fact that stands out is that an overwhelming majority are still in architectural work. One figure that is probably inaccurate is that only 5 per cent are in the armed forces, for it is probable that the questionnaire forms did not actually reach all of the men in active military service, due to changes of address. And many in uniform were probably kept too busy to reply.

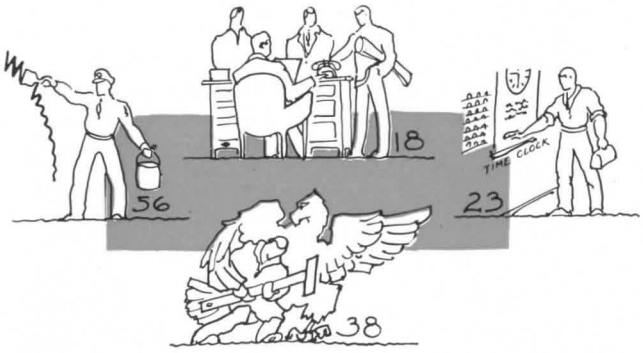
AT WORK

Results of the second question show the extent of changes in the past year. Whereas practically all are doing architectural work, almost exactly 25 per cent have seen some change in professional occupation or employment. Of the approximately 500 tabulated returns, 135 expect to make a change.



2. My work a year ago was.....
ANSWER: Same 298 Changed 100

Changes still contemplated were the subject of the next inquiry, and results show that roughly an additional 27 per cent of those still in their old work expect to change in the near future:



3. If you contemplate a change of work in the near future what will it probably be?

ANSWER: To armed forces	**56**
Private firms	**18**
Government agencies	**38**
Other business	**23**

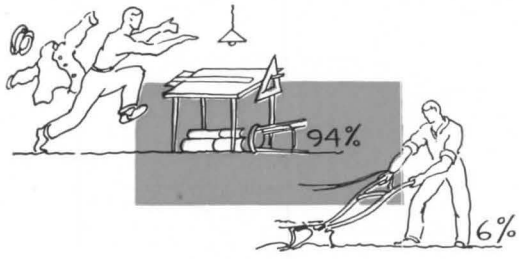
Perhaps most interesting of all of the detailed figures were those on postwar planning. A surprising number of architects—more than half—are actually working on plans for buildings to be erected after the war!

4. Have you planned, or are you now planning, buildings to be erected after the war?
ANSWER: Yes 242 No 229

The data on the types of buildings on the boards for post-war completion run the whole gamut of construction. So many different types of buildings were mentioned that classification is virtually impossible. However, a few principal ones were outstanding, including:

Apartments	11	Complete planned communities	4
Residential buildings	53	Public buildings	9
Churches	18	Airports and airport buildings	4
Schools	35	Institutions	6
Hospitals	22	Low-cost housing	5
Industrial buildings	24	Prefabricated housing	4
Commercial buildings	11	Zoos	2
Stores	7		

If anybody thinks architects are downhearted they can pretty definitely decide that architects feel confident about the long pull and their own futures. This is clearly shown in the vote on question 5:



5. Do you expect to return to practice in the post-war period?
ANSWER. Yes 374 No 25

Many of the responders left this question blank, and it is anybody's guess as to whether they were too intent on war work to make plans ahead, or feel that it is too early to make specific plans. The next part of the question was:

In what capacity?
ANSWER: Architects 323 Engineers 22
Other business 15

Of the 15 who expect to change to another line of work, the only outstanding change that came up in the answers was "government service." One man thought farming was the thing for him, and another decided to give it up and just retire. All of the others elected some other type of future in the building industry, mostly in

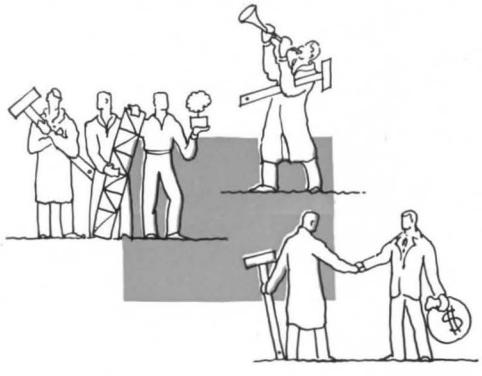
the development of new fields such as plastics or prefabricated structures, and such. One man saw his future in the movies, but he didn't say whether in front of or behind the camera.

The way the architects unburdened themselves along the lines of changes they contemplate in their own methods of doing business, and in things that might be done for the benefit of the profession generally, showed the tremendous interest in these topics and the extensive planning that has already been done. The message is clear that the rapid changes brought about by the war emergency have focussed an intensive concentration on some professional trends that were already in evidence, as well as on those that grow out of the war.

Many architects wrote at considerable length and some with unmistakable feeling. Many of the answers would have a definitely familiar ring if it were not for the new note of urgency.

6. What changes, if any, in your mode of doing business, do you feel you may make in regard to such things as: added services or increased integration (such as full engineering, furnishings, landscape, etc.), fee changes, technique of getting business, public relations, etc.?

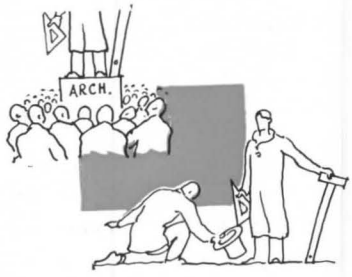
ANSWER: No change	**73**
Added services	**107**
Increased integration	**97**
Fee changes	**67**
Technique of getting business	**27**
More public relations	**36**
Increased civic activities	**15**
All depends on conditions	**56**



The merest glance at these figures reveals that while business-getting methods are as usual engrossing the attention of architects, they are thinking first of making their services as valuable as possible. The fact that "added services" and "increased integration" lead the list of votes speaks for itself in this regard. As a matter of fact, of *those* who voted "no change" a great many noted the fact that they had already arranged their offices for complete design services. So the integration of the various elements of the design picture stands out as an important trend of the times that bids fair to continue in the expected postwar building boom.

Perhaps a straw in the wind is the 15 votes for "increased civic activities." From this vote and from remarks written on the forms, it is apparent that the hand of the government in building matters is expected to continue to be important and that architects are beginning to sharpen their wits on such topics for the future as city and regional planning.

The "What To Do About It Department" holds a wide variety of heartfelt comments. Everybody had rather positive ideas about cooperative efforts in behalf of the profession. Taken together, the answers would make a very interesting and lively book, but the book would still leave plenty of room for debate, for a great many of the opinions expressed were direct opposites. It is impossible to do more here than classify them by subjects to show the relative importance of various well-known desires of the profession. But it must be remembered that within certain of these classifications, part of the votes are for and part against the activity suggested. The matter of government recognition is outstanding in this regard. Some said work for the favor of the government and others said keep government out of the construction business.



7. What specific things do you feel the AIA or other organization can do now to put the profession on a sounder basis for postwar work?

ANSWER:	
AIA increase activity looking toward—	
Government recognition	**31**
Public recognition via public relations	**103**
Legislation to protect profession	**23**
Legislation for uniform building codes	**8**
AIA increase activity looking toward—	
Postwar program for profession	**48**
Unification of profession	**87**
Plan to meet competition, etc.:	
Legislation	**11**
Integration and better service	**51**
Better education of profession	**46**
Revision and standarization of fees	**21**
Closer integration of industry	**31**
End of government control	**23**

As for the AIA, the questionnaire answers could very well start a staggering program of activities. Or, to put it another way, the general membership is much more anxious for action on the familiar activities of the past. By the same token, anyone reading the questionnaires is bound to be struck by the fact that the feeling "Let George do it" is still much in evidence. Perhaps the results of this part of the survey could be summarized: there is a newly urgent need for cooperative professional activity, and an even more pronounced need for active participation by every member of the organization.

Little Traverse Hospital, Petosky, Mich. Skidmore & Owings, Architect

HOSPITALS IN TIME OF WAR

SCARCITIES of materials as a direct result of our unprecedented production for war are, of course, accelerating substantial changes in the technique of hospital construction and equipment. But other forces not directly traceable to the war effort are having an increasingly important effect on the organization and operation as well as the physical plant of American hospitals. Even the briefest analysis of them points to the conclusion that the day of the huge, vastly complicated metropolitan medical center is waning; and, conversely, that the day of the small hospital—ranging in capacity from 10 to 100 beds—is rapidly coming into its own as a local or regional *health center,* offering to an ever-widening clientele a general, but technically restricted hospitalization service.

This trend in hospital development started long before Pearl Harbor and has little, if anything, to do with the fact that today materials are not available for any sort of large, all-facility medical center. Reasons for the trend are too numerous to document here. But among the foremost is the lack of "gift-financing"—not easily available for several past years and today practically non-existent as one result of various inhibitory taxes or financial restrictions. Private hospitals must now be self-supporting; and even the most conservative of hospital boards are glad to consider service innovations of any character if they promise help in keeping the significant figures on the black side of the ledger.

Of equal or even greater importance is the growth of "3 cents-a-day" hospitalization plans and various "health insurance" programs, coupled with the increasing "socialization" of the medical profession. However much these movements may be subject to critical argument from a professional viewpoint, the fact remains that they have served to "popularize" the hospital and to bring the demand for its services within the financial scope of a growing number of people.

Linked with the current limitations due to the war, these trends present hospital designers with a technical problem that has no peer. The solution to it is not in the rule-book; and most precedent is useless as a guide. The technical challenge is to organize space for operation with minimum personnel; to provide the utmost in "minimum service" for the man-in-the-street; to stress strictest economy in operation and maintenance; and to use a super-ingenuity in substituting the few materials that still are plentiful for those which have been swallowed up by war.

. . . BUILDING TYPES STUDY NO. 68

PREPARED FOR ARCHITECTURAL RECORD BY ROGER WADE SHERMAN, AIA

"SAVE, SIMPLIFY, AND SUBSTITUTE . . . ."

Material restrictions make structural innovation the order of the day

. . . And ingenuity is creating new hospital standards for the future

HOSPITAL construction today is completely ruled by war!

Read that statement again and underline it mentally. For it sums up, briefly and bluntly, the situation now faced by hospital trustees, administrators and operating personnel, by architects, engineers and artisans who build hospitals and by the ailing public that uses them. In many respects it is a dark one. But it has its encouraging highlights. And as with any adversity, there exist hidden values in this one that may well produce under-the-surface developments of future importance.

War domination of the hospital field does not mean that no hospitals will be built for civilian use. But it does mean that all such construction—whether for a new building or for improving the facilities of an existing one—*must be proved indispensable* to some direct war effort. Thus, huge and elaborate "memorial" structures will remain as architectural dreams for the duration of the war. But in congested areas where the tools of war are being forged, the needs of an increased population will be met by new, small, quite often temporary, and always strictly utilitarian hospital units, just adequate to maintain standards of health and safety.

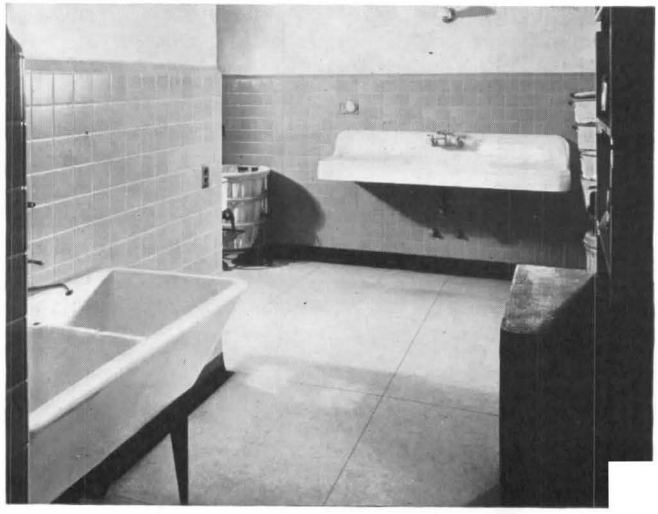
Such hospitals will inevitably be staffed with a minimum personnel, for the war is rapidly draining all communities of both doctors and nurses. Also, it can safely be assumed that the capacity of each will constantly be taxed, for none will be built unless a pressing need is abundantly evident. Hence, a double premium is placed on planning for the highest degree of space-and-time-saving efficiency in operation to ease the administrative burden and to promote maximum over-all economy in maintenance.

According to such authoritative sources as the States Relations Division of the U. S. Public Health Service and the American Medical Association, these "temporary," war-emergency hospitals can even now be regarded as important experimental parts of a newly evolving system of hospital organization.

Planned on a national and regional basis, this system recognizes the need for widening the availability of generalized hospitalization service on the one hand and for intensively cultivating narrow fields of specialization on the other. It takes into account the manifold technical implications of preventive, as well as curative, medical measures and therefore embraces the field of public health nursing and medical clinic service.

Thus, at one end of this hospital-service integration are the types of neighborhood and community Public Health Centers which were fully described and illustrated in last month's RECORD. That is the personal end. At the other end—the impersonal—stand our great metropolitan and university medical centers as the homes of medical research, specialized treatment of all sorts and the seats of medical policy, supervision and coordinating direction for a series of wide-spread "medical regions."

Between these extremes lie two other types of general-service hospitals. One constitutes the medical headquarters for a sub-region—in a county seat, perhaps, or in a town that is the natural center of a greater, but less populous area. This type of hospital may range in size from 100 to 500 beds, according to regional circumstances, and will embody many facilities for a wide variety of medical specialization. The other type is the link between these and the Public Health Centers. It is the small community hospital ranging in size from 10 to 100 beds and offering, as inexpensively as possible, routine surgical, medical and maternity treatment and care. To the extent that such units will contain relatively few facilities for research or specialization, they might be called "restricted service"



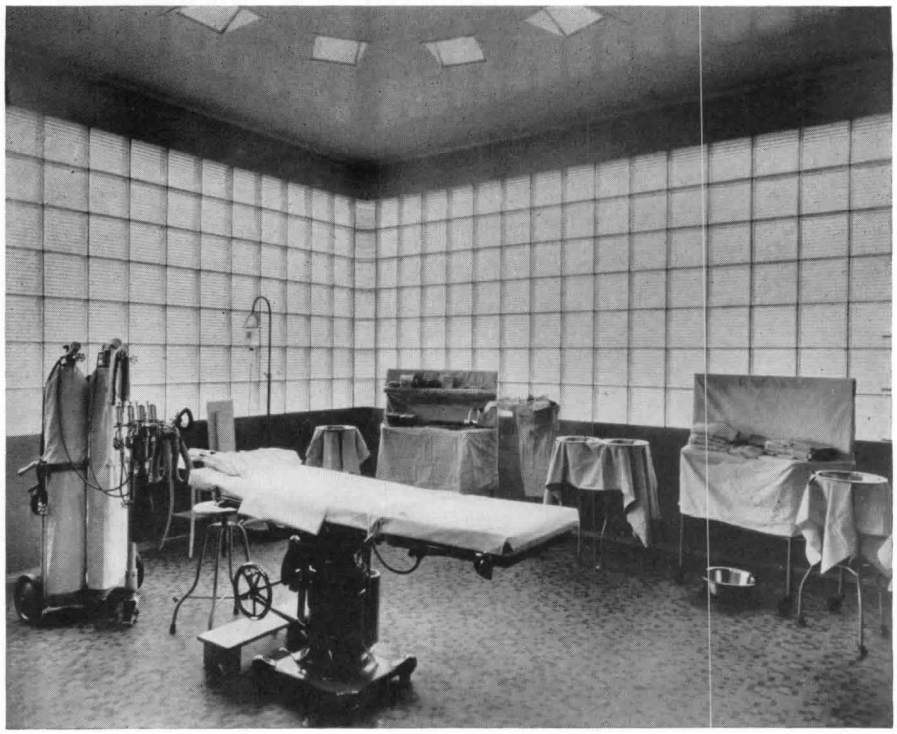
Ewerich-Blessing

hospitals. But they will be planned and equipped for a wide number of medical emergencies.

This last is the type of hospital that will be built today. The war has ended construction of others. But one of the values hidden in this situation is the fact that hospital authorities, in adapting medical service facilities to the pattern of organization just outlined, are reexamining technical standards for small hospitals. Their study is by no means complete. But progress to date suggests that simplification and innovation are the order of the day. Therefore still another hidden value is the current opportunity to develop new types of community hospitals that will be less costly to construct and maintain and more generally efficient in economical operation.

Construction and equipment—now. Realization of that opportunity in any sort of fullness must probably wait until the end of the war—or at least until materials and products for construction become generally available again. For war controls such things; and although it would be pleasant to report that this sector of a complicated technical situation was improving, it would be grossly inaccurate to do so.

Actually, the reverse is true, if one is to accept results of recent interviews



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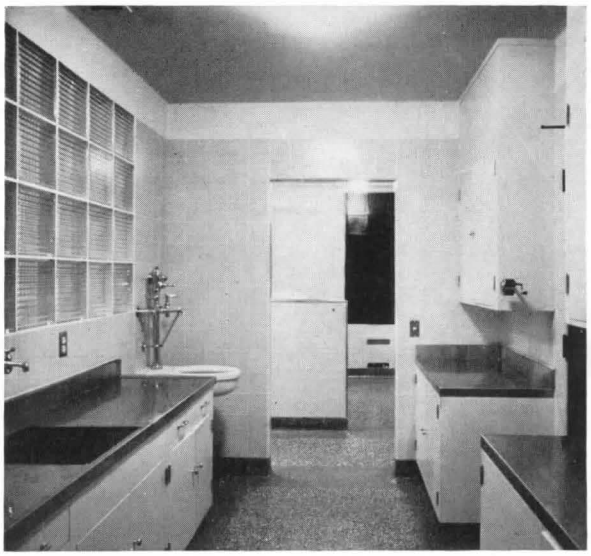
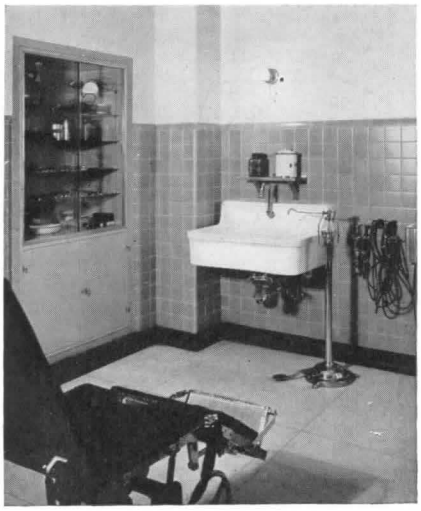
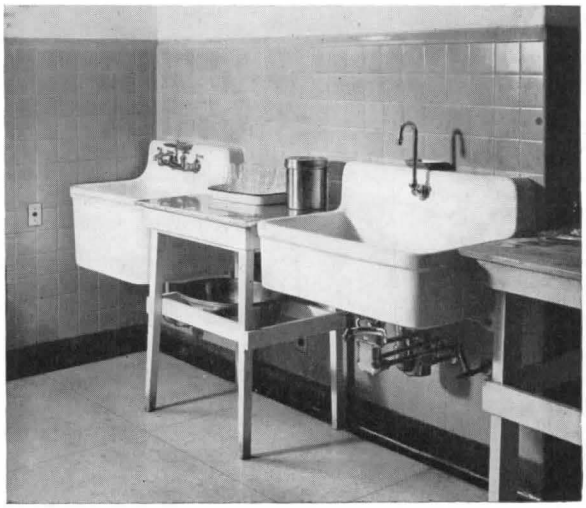


Ernst Kassowitz





Hedrich-Blessing

EQUIPMENT for operating rooms, nurses' work rooms and various types of utility rooms is, of course, a vitally necessary part of each community hospital. Superluxury gadgets will be increasingly scarce, but sturdy, serviceable units are available in sufficient quantity to fill needs of all projects the construction of which may be justied by their contribution to some phase of the war production effort.

ABOVE is the operating room of the Swedish Hospital addition in Seattle, Wash., Smith, Carroll, Johanson, architects; and below it is a view of the adjoining nurses' work room. Except for metal counters in the latter, the finish of these rooms suggests one type of construction to conserve critical materials.

BELOW are work areas that typify equipment in the Baroness Erlanger Hospital in Chattanooga, Tenn., Schmidt, Garden & Erikson, architects. From left to right they are: scrub-up in an operating suite, large utility room, examination and treatment room and a portion of a typical nurses' work room. In the latter, note how well the simple, strong wooden furniture meets requirements in place of more elaborate and expensive equipment

Hedrich-Blessing

FOOD SERVICE EQUIPMENT IN THE KITCHEN OF A 25-BED HOSPITAL

Planned by Armstrong, Furst & Tilton and Edward H. Fairbank, associated architects, the Del Nor Hospital at St. Charles, Ill., has been characterized as "excellently arranged . . . with the liberal medical service area well arranged and grouped together as it should be" by Carl A. Erikson, hospital specialist and Chicago architect. Particularly noteworthy is the location and layout of the kitchen illustrated above. Small one-story hospitals do not require serving pantries, but kitchen equipment must be adequate to meet special diet requirements while filling routine needs of both patients and staff. This kitchen might serve as a model of well-organized space

with officials of the U. S. Public Health Service, representatives of the Federal Works Agency and responsible members of the War Production Board.

As early as last May a statement issued by FWA said, in part, "(hospital) Buildings must be constructed of masonry, lumber or other non-metallic materials. Two-story buildings may be permitted where one-story buildings are not feasible. The construction of buildings shall conform to the critical construction list. Elevators and dumb waiters shall be limited to hand-operated facilities. Call bells and other signal systems must be reduced to an absolute minimum." The list of critical construction items released with that statement contained some 125 materials and products—from structural steel to burlap for curing concrete—"which should be eliminated as far as practicable from construction projects."

That was barely three months ago. Today most of those items are vastly more critical than they were then; and even construction lumber has become precious enough as a direct commodity of war to merit a restriction order, which at this writing has been twice extended!

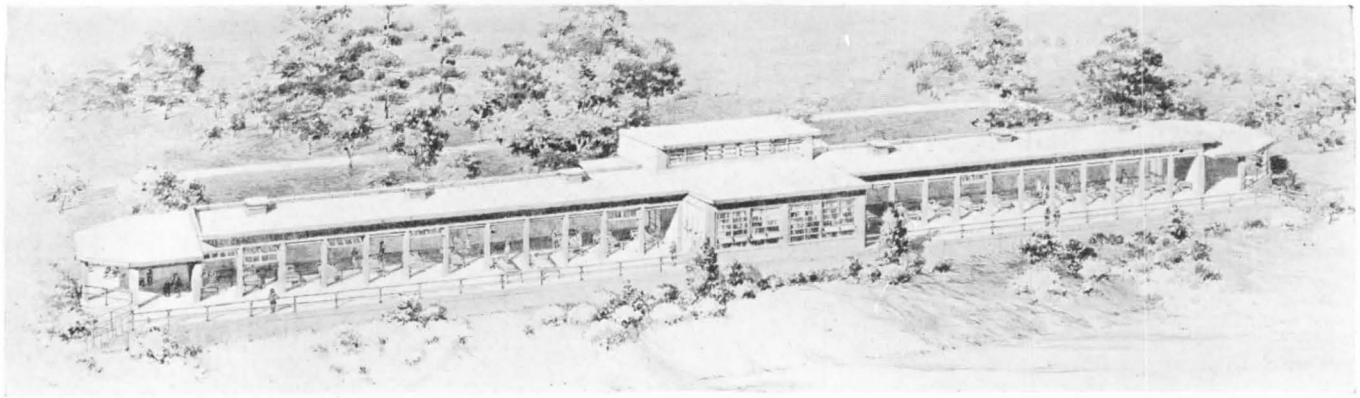
This is not written to paint the situation blacker than it really is, but to emphasize the truth of the sentence which opens this report: *Hospital construction today is completely ruled by war.* Today the rule of war is, first, prime necessity; and second, expediency harnessed to technical ingenuity of the highest order.

The type of hospitals that *can* be built where needed is typified by projects that the Navy's Bureau of Yards and Docks has developed and by plans suggested for 50- and 100-bed hospitals by the States Relations Division of the U. S. Public Health Service. All of these are admittedly temporary buildings planned as nearly as possible in accordance with long established custom. But the design projected by Markus & Nocka (see pages 56 to 58) contemplates a permanent type of construction and relies on ingenious space adjustments and integration of structural and equipment elements to effect the required conservation of critical materials.

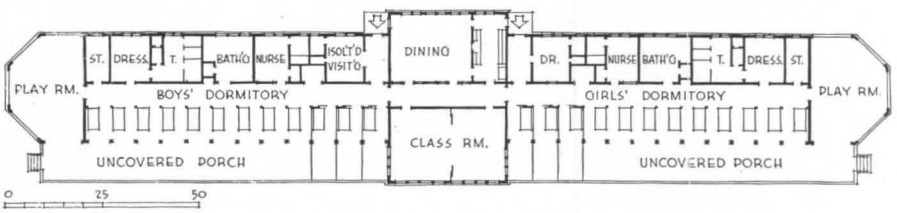
These contrasting projects might well define the limits of wartime hospital building. From a study of them a few generalities can be deduced as a guide to design.

Layout: The preferred plan is for a single-story building wherein convenience and a certain economy of operation are sacrificed to structural expedience. Subsurface construction is eliminated except where *utility basements* are absolutely necessary.

Structural systems: Though Navy projects are designed for wood, best choice for a specific project would be the material indigenous to the locality. Complete fire protection is regarded as desirable but not of prime importance in a one-story struc-



Rheumatic Fever Sanatorium at Sharon, Mass., Leland & Larson, architects. Though a special hospital for children, the design suggests a simple type of emergency construction that might be adapted to wide variety of requirements. Porches can be converted into cubicles by use of semi-glazed partitions



ture. But if brick, stone, cement block are locally abundant—and also the labor to lay them up—they would probably gain official preference over wood. And a masonry building can be just as "temporary" as a wooden one.

Building equipment: The very least that can be provided to meet minimum requirements of health and safety. Criteria are: the virtual elimination of non-ferrous metals; simplification of all mechanical layouts; use of standardized items and avoidance of special designs; and exposed, or easily accessible, connections for all service and utility systems to facilitate maintenance.

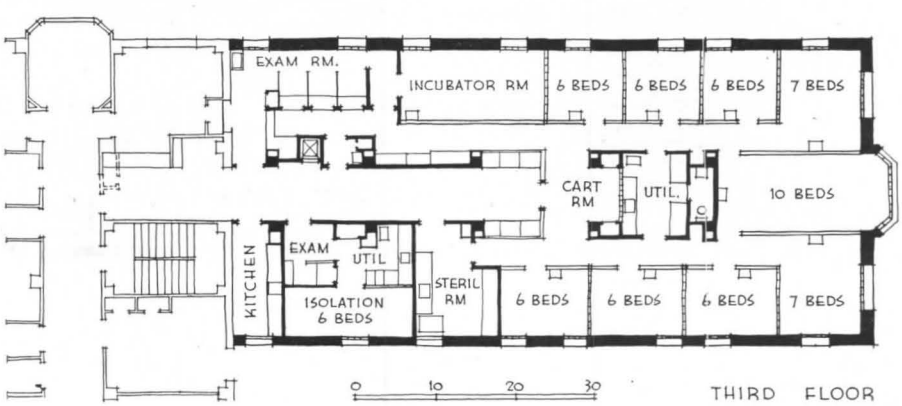
Current technical standards can hardly be reported in greater detail. For they are variously developed according to the specific availability of materials and the technical expediency of the moment.

And that, paradoxically, constitutes another—and a major—hidden value! For as old standards become unavailable, American ingenuity develops new ones to take their place.

Ernst Kassowitz

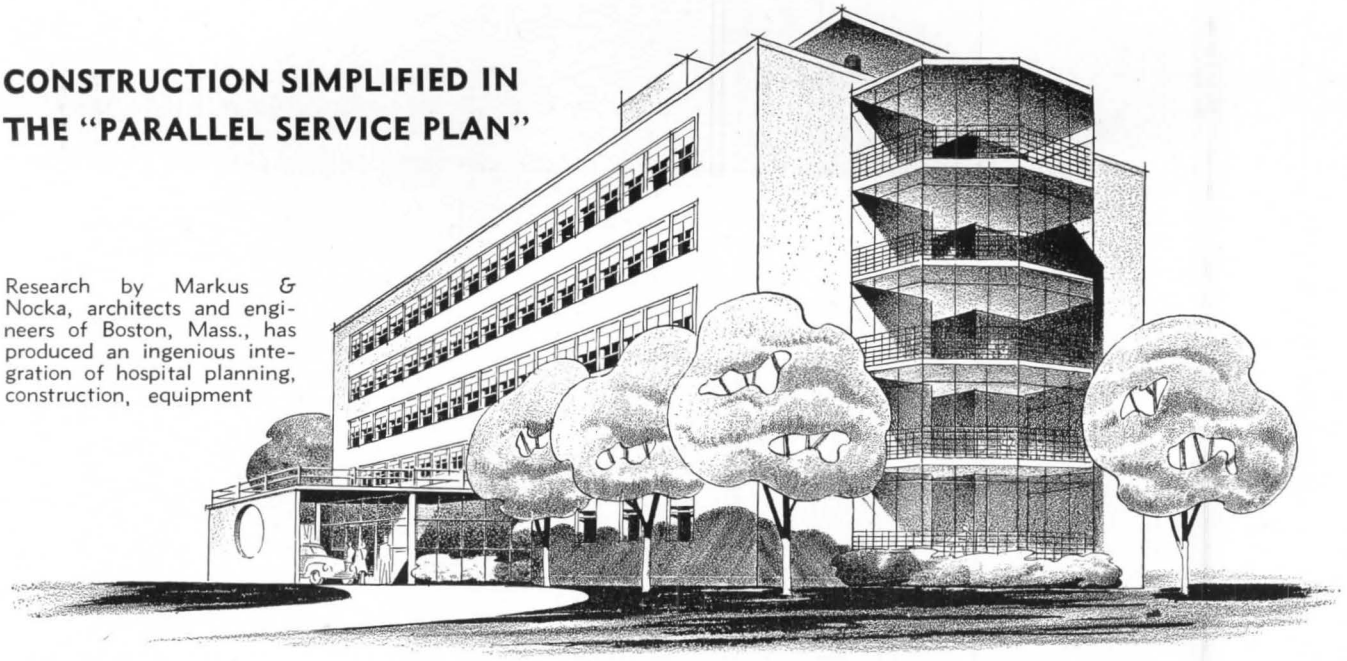
AIR-CONDITIONED NURSERY IN SEATTLE HOSPITAL

This part of the addition to the Swedish Hospital in Seattle, Wash., Smith, Carroll, Johanson, architects, is notable for the complete segregation of infant patients from visitors. Note how bedrooms are grouped about a central utility room. The scheme might not be practical today due to the scarcity of suitable air conditioning equipment. But the layout indicates an admirable solution to a large-hospital problem elements of which might be adapted to smaller projects. Above, left, is a typical bedroom; at left is a cubicle in the examining room; and above, viewing cases toward cart room



CONSTRUCTION SIMPLIFIED IN THE "PARALLEL SERVICE PLAN"

Research by Markus & Nocka, architects and engineers of Boston, Mass., has produced an ingenious integration of hospital planning, construction, equipment

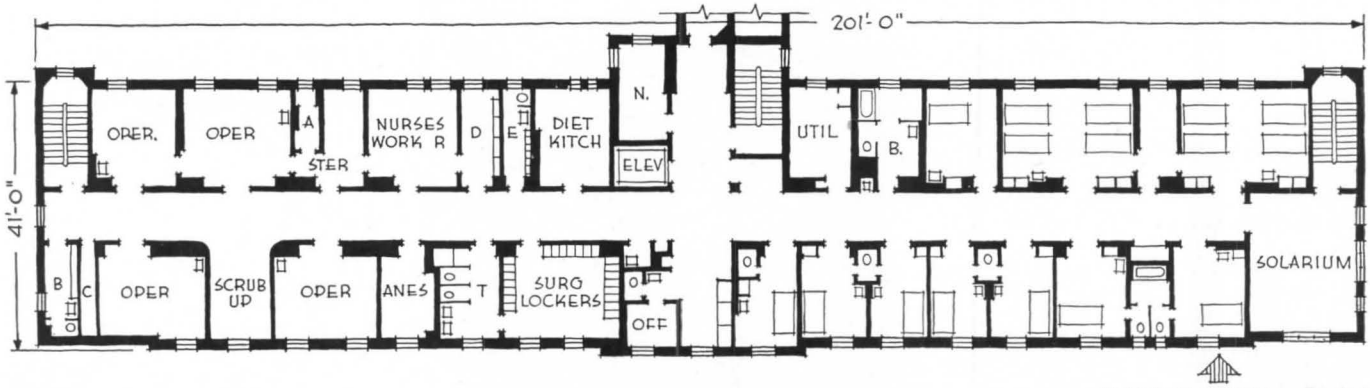


OBJECT OF the Parallel Service Plan is to simplify and improve hospital construction, increase operating efficiency, and, if possible, to reduce cost.

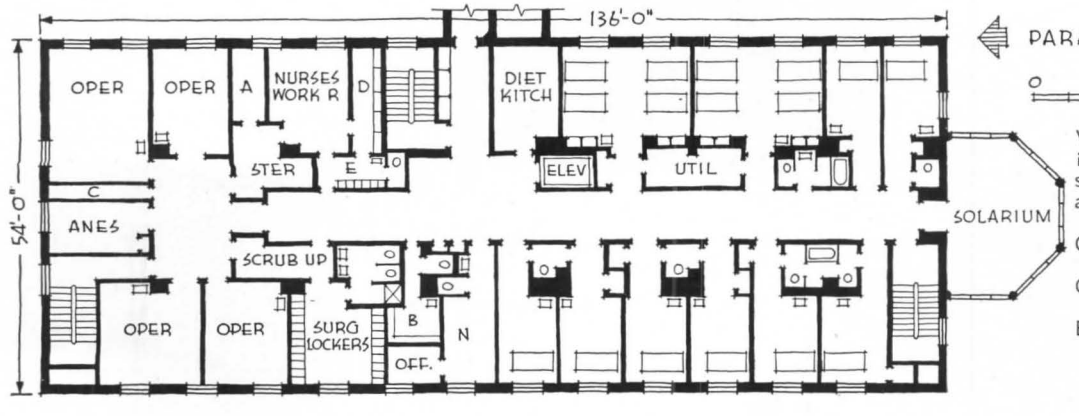
The basis of the scheme is illustrated in the two plans below. Here—and in following drawings relating to construction and equipment—requirements of a hospital representing conventional good practice have been adjusted according to the new scheme. Essentially, the Parallel Service Plan employs enclosing wall space only for those rooms which require outside light, and locates all services in parallel areas of the interior. This produces a layout that is both wider and shorter than the conventional type.

Obviously, this permits immediate simplification of construction. In the conventional layout, varying beam spans, numerous sizes and irregularities complicate the form and steel work; and the central span is too short both structurally and economically in proportion to outer spans. By employing optimum spans in both transverse and longitudinal directions, the Parallel Service layout not only unifies all beam, slab and column sizes, but also reduces the number of them. Thus, field construction is simplified; and in addition to actual savings in materials (see notes on structure, plumbing and heating) there are other advantages.

For example, utilities are concentrated in shafts at each column and though concealed in accordance with the best practice are easily accessible at every floor for maintenance or changes. All mechanical systems are thus zoned; and runs of pipe and wire



CONVENTIONAL PLAN



PARALLEL SERVICE PLAN

0 25 50

With identical hospital facilities the Parallel Service Plan shows the following space advantages:

	Conven.	Par. Serv.
Gross Fl. (sq.ft.)	8,480	7,730
Corridor (lin.ft.)	180	118
Expansion (emergency beds)	3	8

are comparatively reduced, automatically reducing the sizes required.

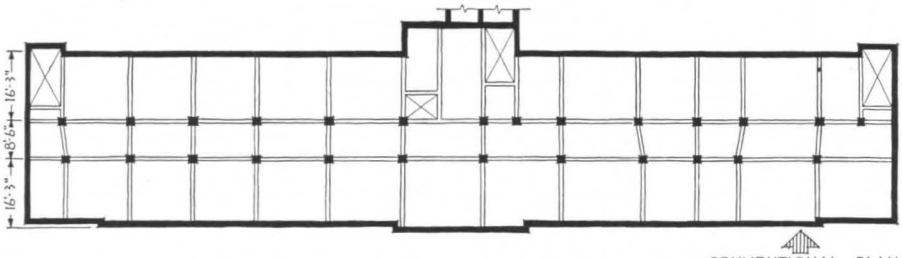
Again, all transverse beams have been eliminated and provision for wind stresses and partition loads have been incorporated in the floor design. As a result, partitions can be installed at any transverse point and changed as required. This flexibility of partition locations is increased by the use of a radiant heating system which eliminates all radiators and outside risers.

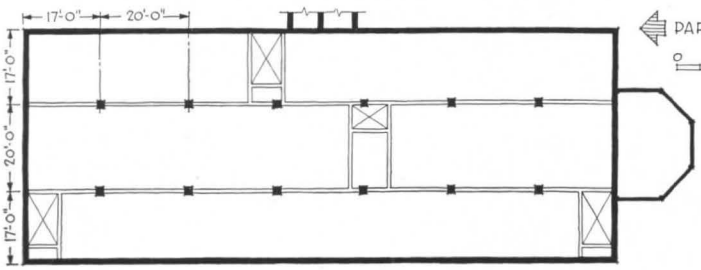
This radiant heating system is integrated with the construction. The building is divided into six heating zones per floor; and hot air, thermostatically controlled according to requirements of each zone, is circulated through floor ducts. These are of precast concrete and are the essential structural units of the floors.

This novel integration of structure and equipment permits a compact plan without loss of essential space. As one result, horizontal nursing travel is reduced. Patients' rooms are removed as far as possible from corridor noise; and because these rooms are not cut into by various furred spaces for plumbing closets, etc., (as in the conventional plan) they can readily accommodate an additional bed if emergencies should so require—an impossibility in the conventional plan, although net areas of bedrooms are identical.

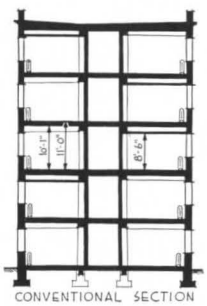
In view of current practice, the inside location of service areas might be criticized. But the designers point out that good practice requires mechanical ventilation of service rooms even though windows are present; and point also to the inside locations of service areas such as kitchens, laboratories, etc. in hotels, science buildings and windowless industrial plants.

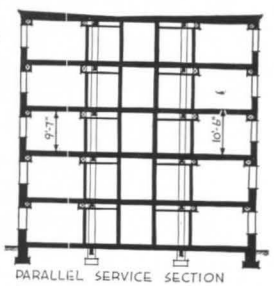
As to first cost, the new hospital layout has been estimated at about 20 per cent less than its conventional counterpart, assuming the same materials and equipment. It is reasonable to assume mechanical operation would also cost less, since the Plan has 20 per cent less outside wall surface, 10 per cent less gross roof area.

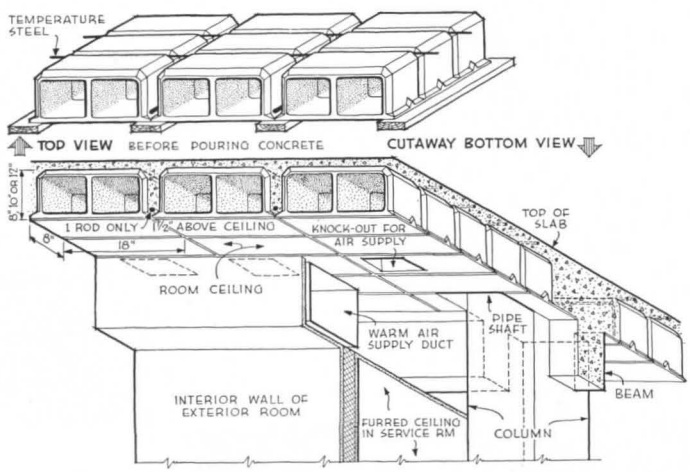




	Conventional	Parallel Service
Columns (number)	26	12
Beams (lin. ft.)	940	390
Walls (sq. ft.)	5,620	4,260



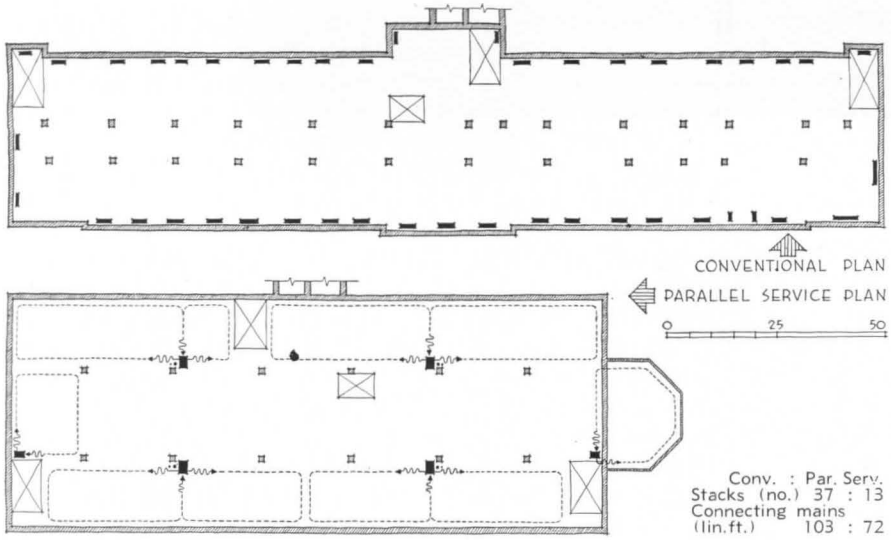


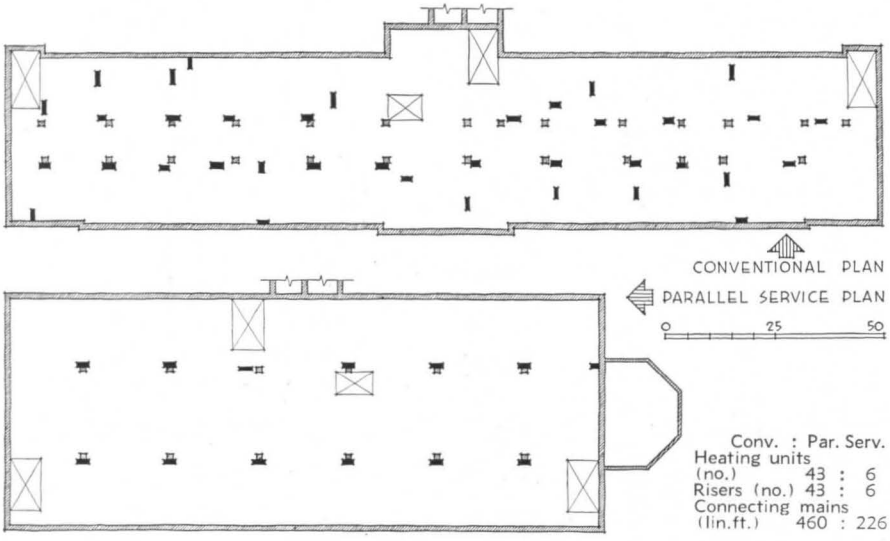


Detail of the floor construction. Precast, lightweight concrete blocks are hollow to serve as ducts for the hot air radiant heating system. Set as shown, blocks are self-centering both ways; and the bottom of the slab becomes, in effect, a tile ceiling, for joints between blocks can be pointed and left exposed. If made with a cinder aggregate, the blocks would provide a sound absorbing surface of considerable effectiveness. Use of steel is simple and minimum; bending eliminated except for bond hooks

STRUCTURE

CAREFUL FIGURING of spans and elimination of transverse beams by use of precast concrete blocks incorporating the one-way T-beam principle combine to produce an ingenious, simplified structural system which should prove economical in field erection. Design of the blocks with projecting V-shaped chairs makes all but the negative steel self-centering. Joints are chambered to allow concrete to flow in, thereby providing a structural continuity so that the blocks can be figured as part of the compression member, thus lightening the dead load. The only wiring and centering necessary is for the negative steel which is wired to the top of the temperature steel shown in the sketch at left; and bending is almost entirely eliminated. Continuous ducts formed by the hollow floor blocks are utilized for distribution of heated air to form an unusual system of zone-controlled radiant heating. This gives radiation from the floor and ceiling and eliminates imbedding mechanical service lines in the primary structural members.

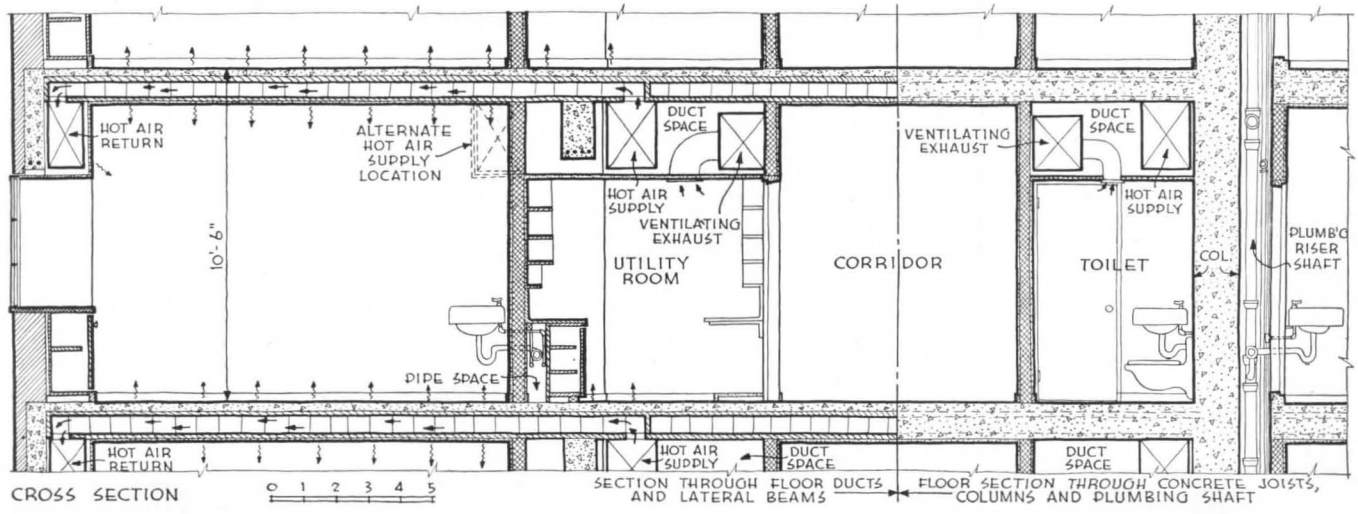




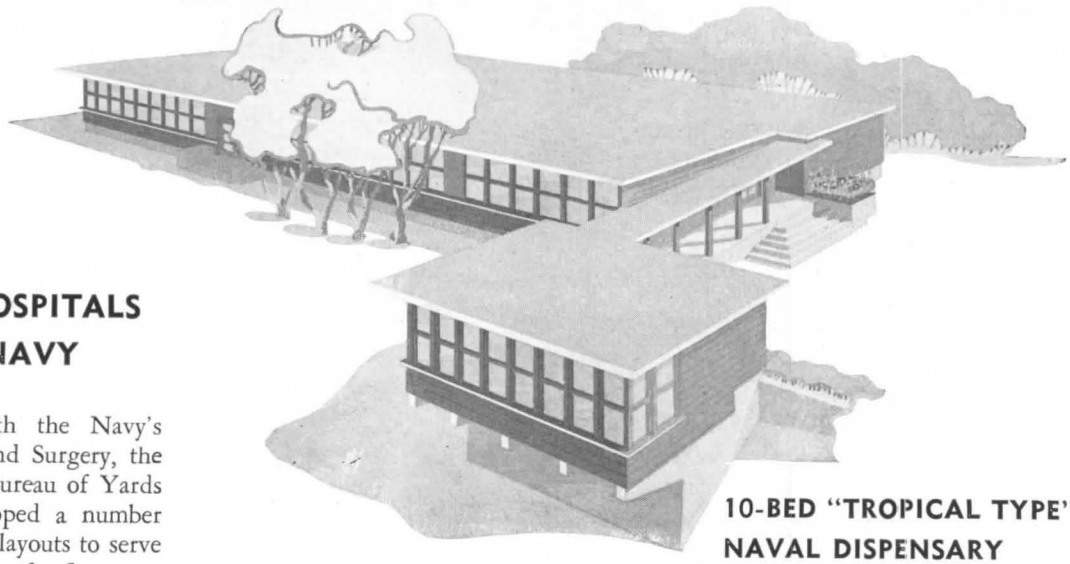
EQUIPMENT

Heating is accomplished through a zone-controlled system of radiating panels. Floors are divided into six zones as sketched. In each zone a thermostatically controlled heat exchanger is served by a riser from a central plant. Heated air is supplied by forced circulation from a plenum chamber above furred ceiling in service areas. It enters the floor ducts through holes in the end blocks (see detail, page 57, and section below) and is collected in a duct at the ceiling to be drawn back into the heat exchanger. The method can also be used to provide radiant cooling.

Plumbing lines are concentrated in a comparatively few stacks which are all located centrally around interior columns. Since all service rooms that require plumbing are located on the interior of the building, it is obvious that by use of such regularly spaced pipe shafts the maximum horizontal run for a supply or waste line need not be more than one-half the column spacing, or about 10 ft. Thus, in many instances sizes of pipe can be reduced and economies effected. Furthermore, short runs and access to shafts at every floor make for easy maintenance and facilitate alterations, justifying the desire of hospital executives for concealing all types of mechanical lines.



Integration of space requirements, construction elements and equipment units should produce numerous advantages as suggested in this sketch. Patient space is clear of wall jogs and encumbrances; mechanical systems and utilities are centralized and accessible; elements of construction serve a double purpose as essential parts of the heat distribution system; and control of interior conditions can be adjusted within zones to accommodate varying conditions, and thus maintain maximum operating efficiency and comfort —all of which help reduce costs.



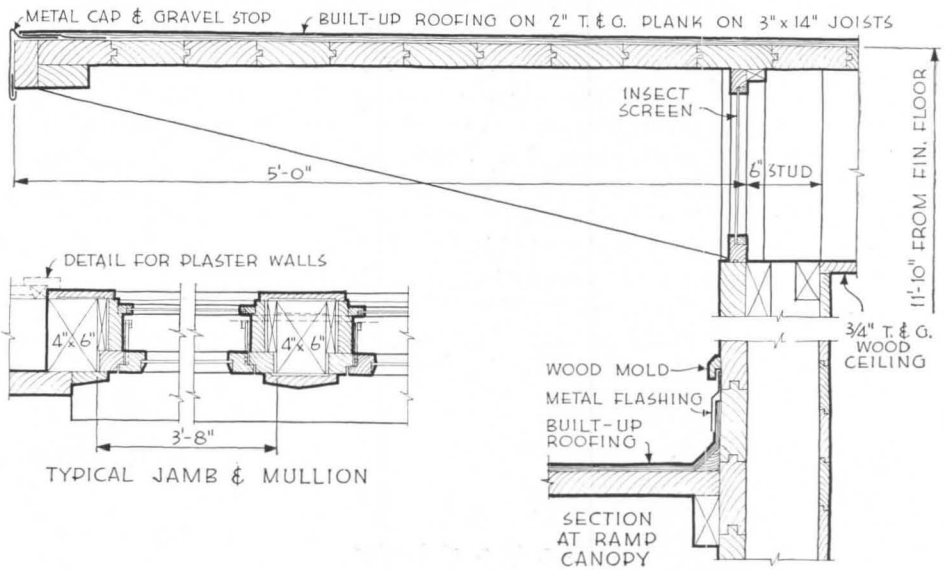
10-BED "TROPICAL TYPE" NAVAL DISPENSARY

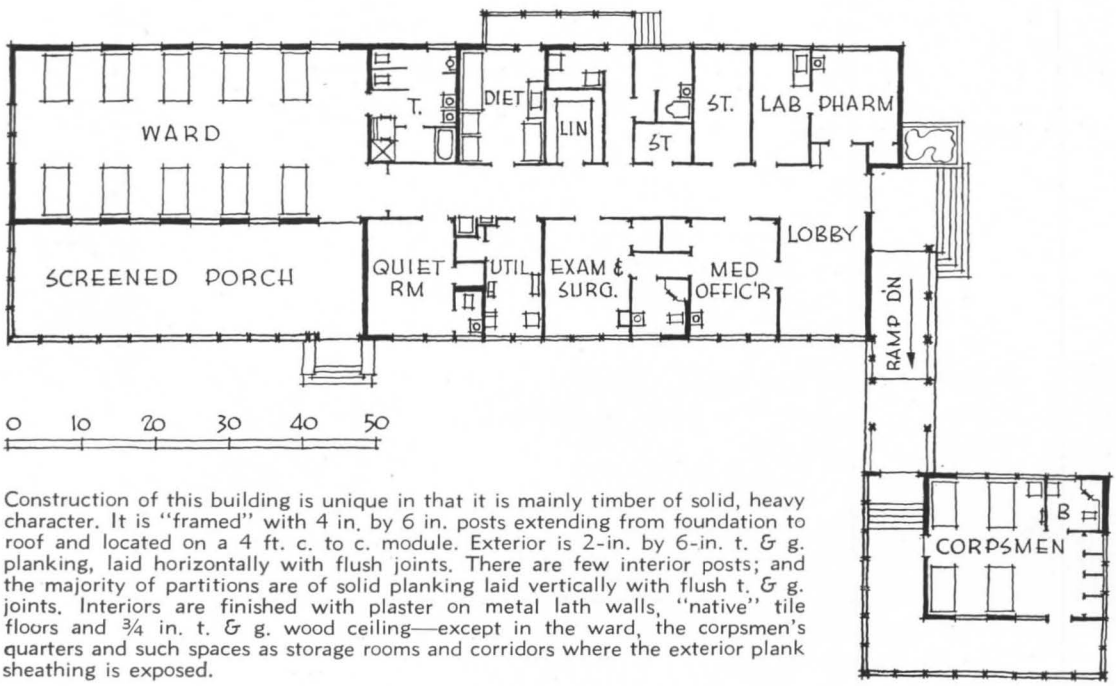
EMERGENCY HOSPITALS FOR THE U. S. NAVY

IN COOPERATION with the Navy's Bureau of Medicine and Surgery, the technical staff of the Bureau of Yards and Docks has developed a number of "standard" hospital layouts to serve emergency needs of our far-flung naval services. Although these small buildings (they range from 10-bed dispensaries to 100-bed general service hospitals) are planned to fulfill specific Naval requirements, they indicate a general arrangement that is worth study in reference to hospital needs of non-military personnel.

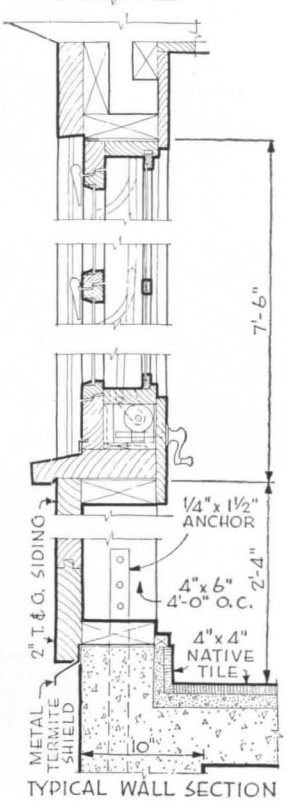
The two projects published on this and the following page typify the sort of temporary hospital structures that the Navy is now building. In general, plans are so arranged that room sizes are minimal; and the relationship of patient areas to treatment spaces is such that nursing travel is minimized and expansion of services may be accomplished without materially affecting the main plan or continuous operation of the hospital.

(continued on page 60)





Construction of this building is unique in that it is mainly timber of solid, heavy character. It is "framed" with 4 in. by 6 in. posts extending from foundation to roof and located on a 4 ft. c. to c. module. Exterior is 2-in. by 6-in. t. & g. planking, laid horizontally with flush joints. There are few interior posts; and the majority of partitions are of solid planking laid vertically with flush t. & g. joints. Interiors are finished with plaster on metal lath walls, "native" tile floors and 3/4 in. t. & g. wood ceiling—except in the ward, the corpsmen's quarters and such spaces as storage rooms and corridors where the exterior plank sheathing is exposed.



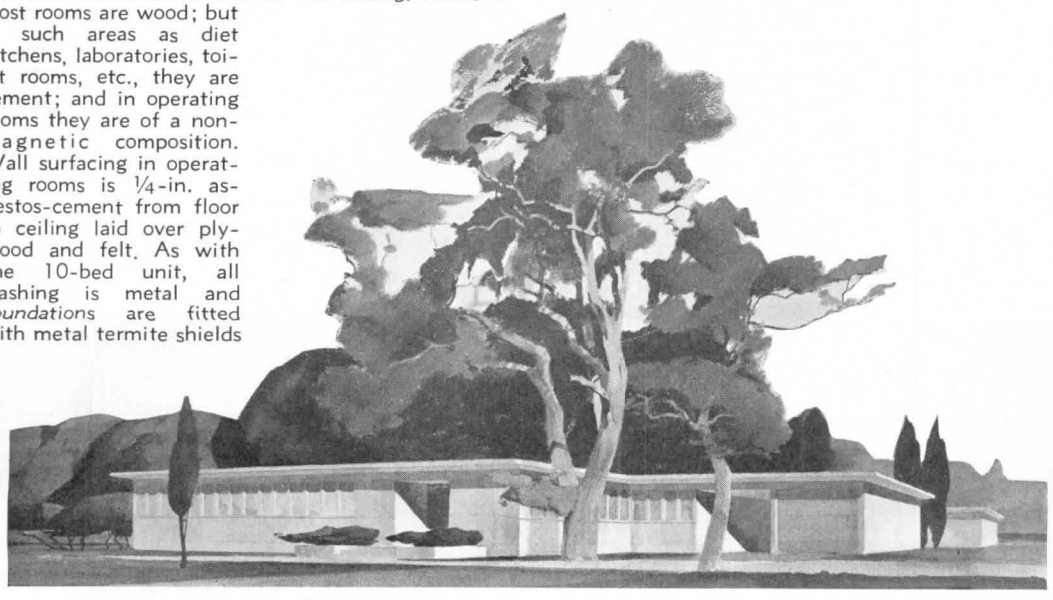
WARDS are oriented to the south, thus giving the solaria the greatest amount of sunlight and assuring to patient areas the greatest possible benefit of prevailing winds. This is, of course, good standard practice; but for those hospitals that will be built "somewhere in the tropics" it is particularly important.

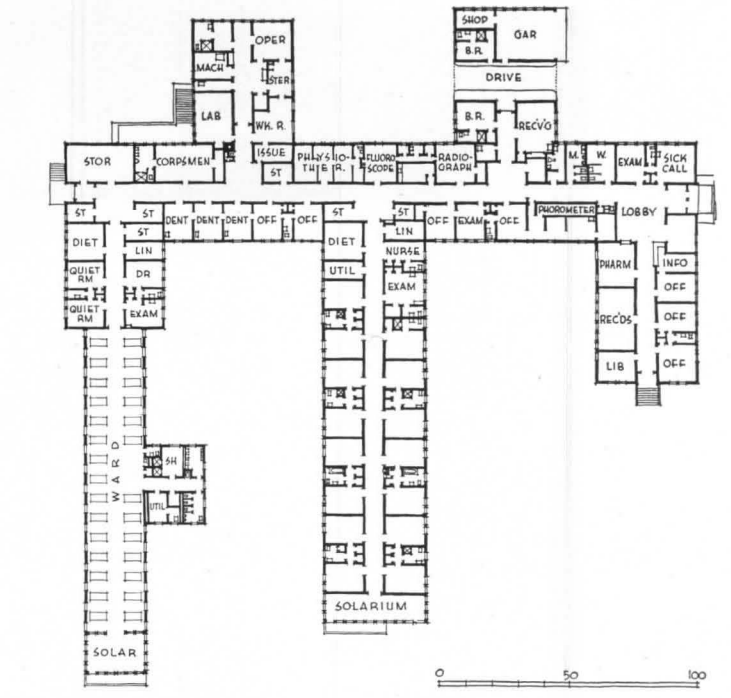
Study of these two layouts will disclose that, although treatment equipment is surprisingly complete—even to a physiotherapy unit in the 50-bed plan—food service facilities have been confined to relatively small, centrally located diet kitchens and pantries. Larger kitchens and dining rooms are not required, for food is prepared and delivered from separate subsistence buildings that are part of the personnel barracks which the dispensaries and hospitals serve.

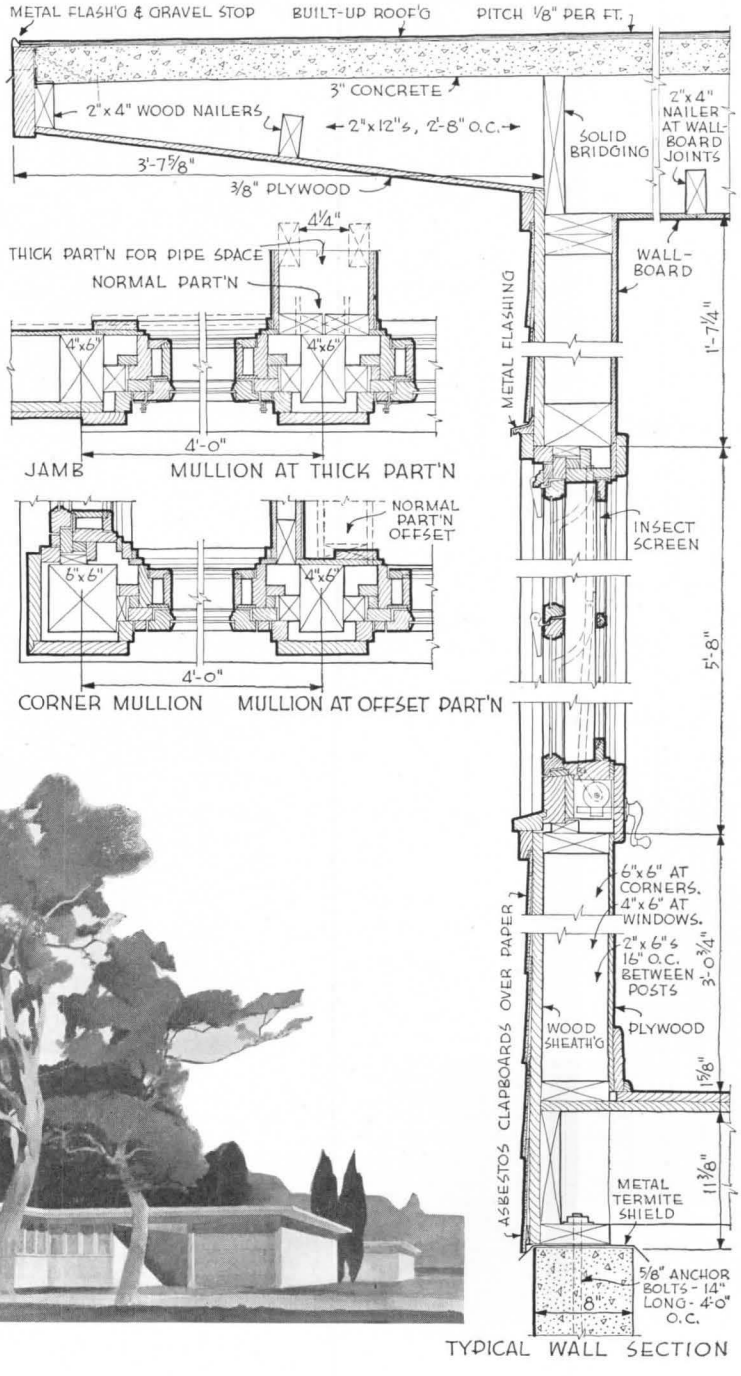
These buildings suggest how the principle of standardization can be applied—at least to temporary emergency structures—to secure economy consistent with speed in field erection and to assure a high degree of efficiency relative to a technical routine of operation and maintenance. To expedite construction they were planned for a modular system of construction, which, according to Naval authorities, has worked well in the field. Wards and private-room wings are standard layouts for 30-bed, 50-bed and 100-bed hospitals; and treatment rooms are largely standardized so far as the general facilities and equipment are concerned. Treatment wings for hospitals of various capacities differ, however, according to local requirements.

50-BED NAVAL HOSPITAL

Planned on a module of 4 ft. c. to c. of framing members, this building is framed with 6 in. by 6 in. corner posts, 4 in. by 6 in. posts at window jambs and mullions with 2 in. by 6 in. plank studs 16 in. o.c. between. As with the 10-bed unit, posts extend from foundation to roof. They support a flat deck of 3 in. vermiculite concrete poured integrally over a wire mesh and building paper membrane. Exterior surfacing is of asbestos-cement clapboards, exposed 8 in. and laid over building paper and wood sheathing. Soffit of roof overhang is waterproof plywood. Interior surfacing is plywood to the window heads and wall board above and on the ceiling. Floors in most rooms are wood; but in such areas as diet kitchens, laboratories, toilet rooms, etc., they are cement; and in operating rooms they are of a non-magnetic composition. Wall surfacing in operating rooms is ¼-in. asbestos-cement from floor to ceiling laid over plywood and felt. As with the 10-bed unit, all flashing is metal and foundations are fitted with metal termite shields



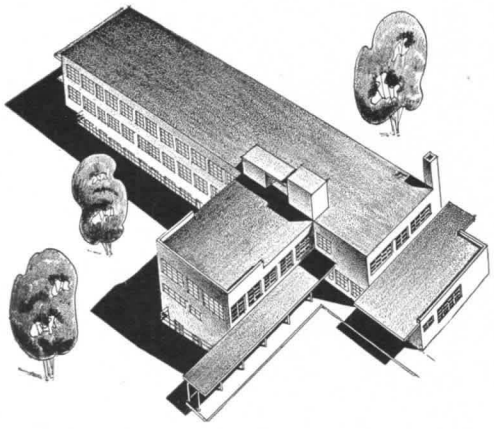




TYPICAL WALL SECTION

PAVILION HOSPITALS FOR WARTIME USE

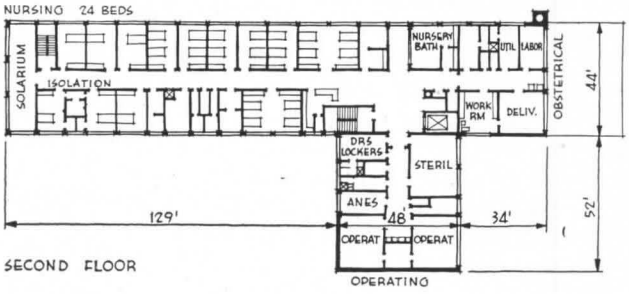
Suggested by the U. S. Public Health Service as emergency units

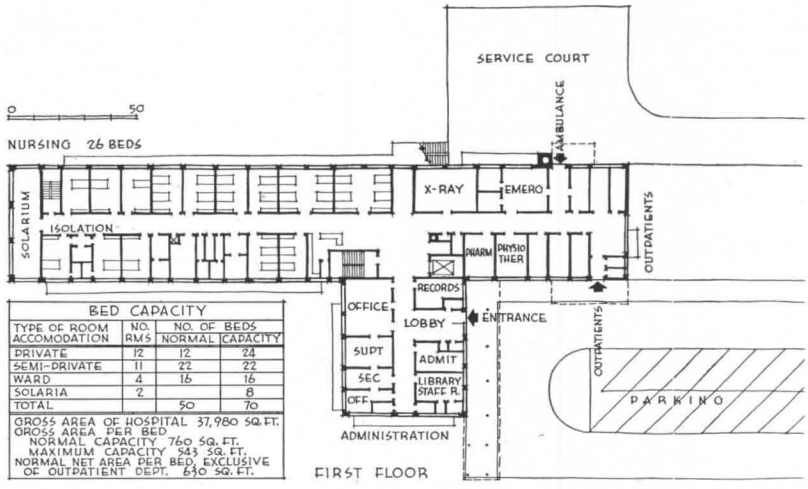


LAYOUTS on this and the following page were developed by the technical staff of the U. S. Public Health Service as indicating the type of hospital which, in most cases, can best meet the peculiar requirements of the moment. Public Health Service officials are emphatic in disclaiming the plans as representing "recommended standards," comparable to those developed on Public Health Centers and published in ARCHITECTURAL RECORD last month (July, 1942, pp. 63 to 78). They offer the plans merely as graphic suggestions on how hospital requirements of major importance can be incorporated in a design for a temporary type building that will be constructed only under the most pressing circumstances and under the handicap of a constantly growing shortage of materials and equipment.

50-BED HOSPITALS

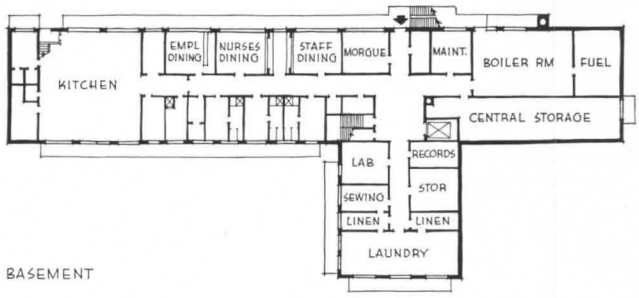
THE SKETCH and the three upper plans suggest a scheme for a two-story plant with a margin of emergency expansion to bring the bed capacity to 72. The plan at the right below indicates how the same normal and emergency capacity can be incorporated in a single-story building. Obviously, the latter is the least generally efficient of the two, for utility lines must be extended, and the larger ground-floor areas mean that nursing travel is comparatively greater. But if elevators are not available it may be virtually impossible to construct any more elaborate plant than one patterned after the single-story scheme shown here.

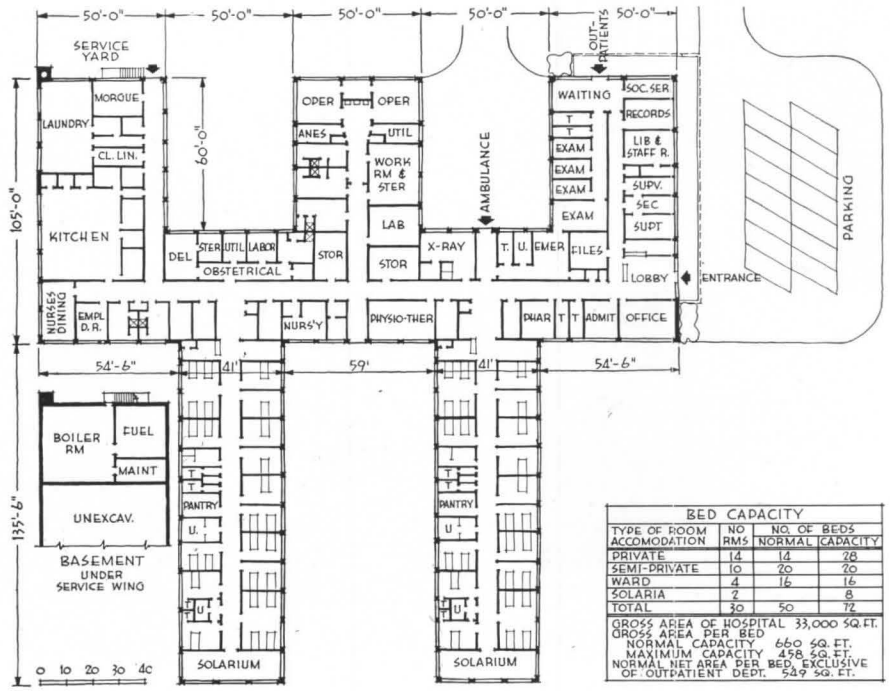




BED CAPACITY			
TYPE OF ROOM ACCOMODATION	NO. RMS	NO. OF BEDS NORMAL	CAPACITY
PRIVATE	12	12	24
SEMI-PRIVATE	11	22	22
WARD	4	16	16
SOLARIA	2		8
TOTAL		50	70

GROSS AREA OF HOSPITAL 37,980 SQ. FT.
GROSS AREA PER BED
NORMAL CAPACITY 760 SQ. FT.
MAXIMUM CAPACITY 543 SQ. FT.
NORMAL NET AREA PER BED, EXCLUSIVE OF OUTPATIENT DEPT. 630 SQ. FT.



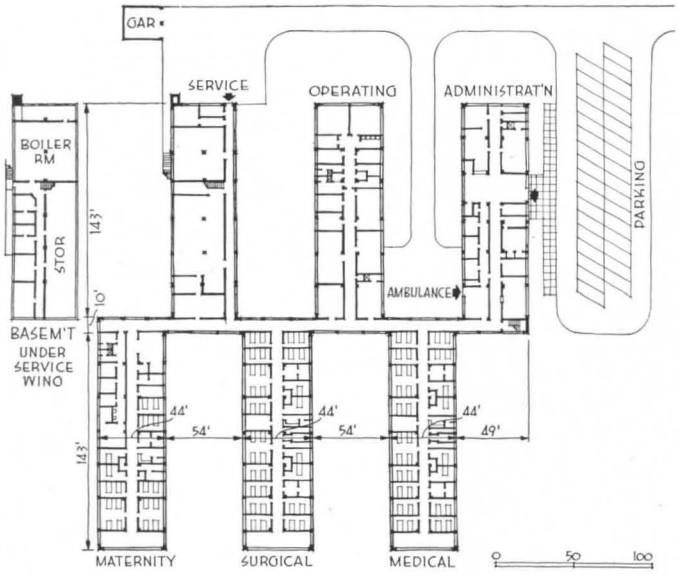


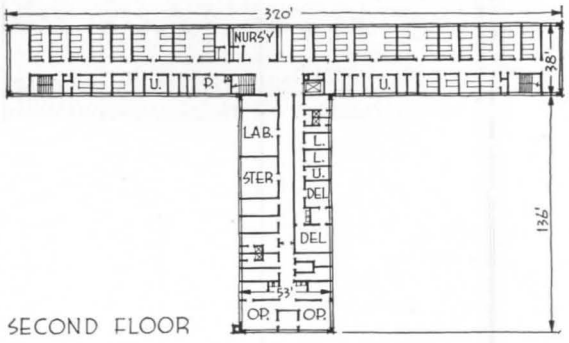
BED CAPACITY			
TYPE OF ROOM ACCOMODATION	NO RMS	NO. OF BEDS NORMAL	CAPACITY
PRIVATE	14	14	28
SEMI-PRIVATE	10	20	20
WARD	4	16	16
SOLARIA	2		8
TOTAL	30	50	72

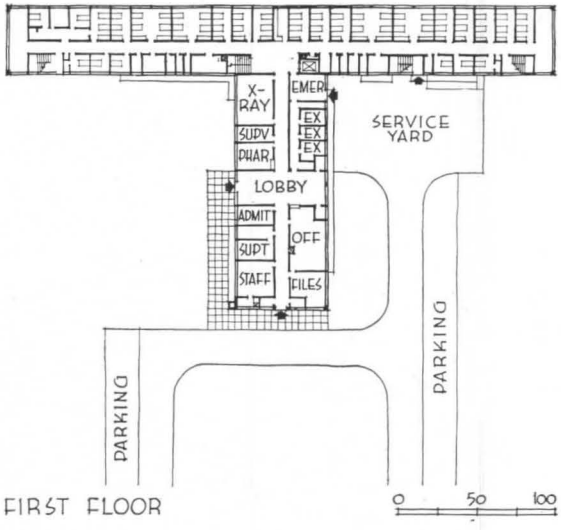
GROSS AREA OF HOSPITAL 33,000 SQ. FT.
GROSS AREA PER BED
NORMAL CAPACITY 660 SQ. FT.
MAXIMUM CAPACITY 458 SQ. FT.
NORMAL NET AREA PER BED EXCLUSIVE OF OUTPATIENT DEPT. 549 SQ. FT.

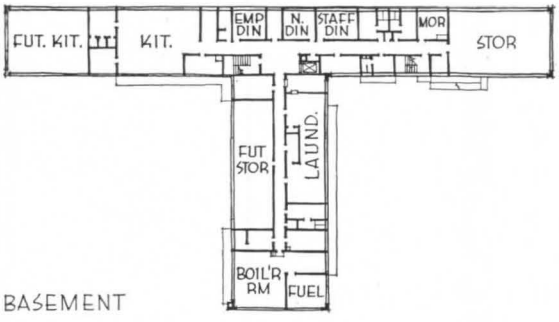
86-BED AND 100-BED HOSPITALS

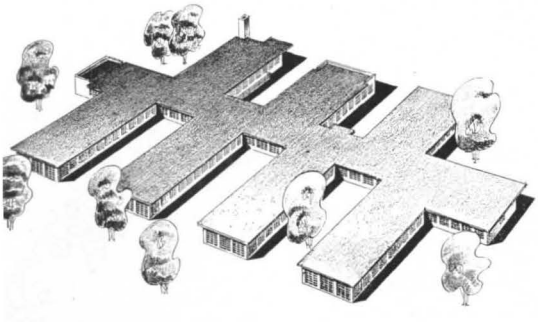
PLANS on this page indicate how the U. S. Public Health Service suggests meeting the requirements for emergency hospitals larger than a normal 50-bed capacity. Directly below is a layout for an 86-bed plant; and the three plans at the right are for a two-story hospital with a normal rating of 100 beds and an emergency expansion capacity of about 138 beds. The plan and thumb-nail sketch below suggest a one-story version of the 100-bed plant. It is worth noting that in these schemes—and in the 50-bed plans on the preceding page—various ward wings have been planned as "semi-standardized" units; and adjustment for additional required capacities has been made in the accompanying treatment areas. This approach to the planning of emergency hospitals is similar to that of the Navy's Bureau of Yards and Docks; the two sets of layouts reproduced here are worth close comparative study as indicating how the same planning analysis has produced unit solutions to two technical problems, special requirements of which are widely divergent.

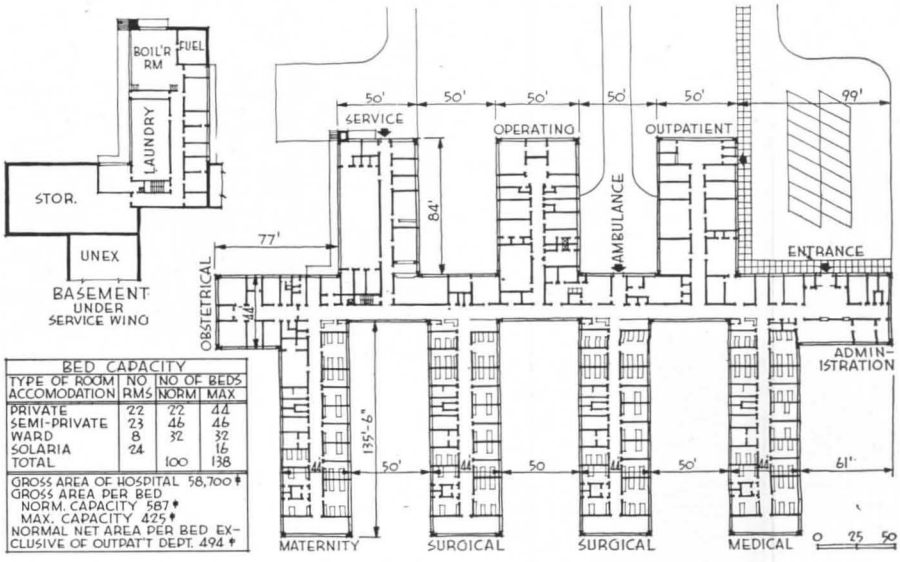












BED CAPACITY			
TYPE OF ROOM ACCOMODATION	NO RMS	NO OF BEDS NORM	MAX
PRIVATE	22	22	44
SEMI-PRIVATE	23	46	46
WARD	8	32	32
SOLARIA	24		16
TOTAL		100	138

GROSS AREA OF HOSPITAL 58,700 ft
GROSS AREA PER BED
NORM. CAPACITY 587 ft
MAX. CAPACITY 425 ft
NORMAL NET AREA PER BED EXCLUSIVE OF OUTPATT DEPT. 494 ft

Layouts for these emergency hospital units—and for those illustrated on the preceding page—were prepared by the staff of the Hospital Facilities Section of the States Relations Division, United States Public Health Service; V. M. Hoge, Surgeon (in charge of Section), Marshall Shaffer, Chief Architect, and Neil F. MacDonald, Senior Hospital Consultant

WAR-EMERGENCY HOSPITAL DATA
1—GENERAL PLANNING

ARCHITECTURAL RECORD
TIME-SAVER STANDARDS
AUGUST, 1942

THE war-emergency has created a two-fold problem in hospital design. First, the **need** for hospitals cannot now—because of shifting population, disruption of travel facilities, and emergency housing conditions—be determined on the basis of what was formerly considered a normal ratio of beds per unit of population. (See various studies by the Commonwealth Fund of New York, the Duke Endowment, of Durham, N. C. and various articles in The Journal of the American Medical Association; also a survey made by Alden B. Mills of **The Modern Hospital** and Patsy Mills in cooperation with the Julius Rosenwald Fund.) Specific hospital requirements must necessarily be based on local situations, upon which a number of unusual factors are today having an important influence.

Second, in every instance, hospital organizers and architects face the difficulties of the drastic restrictions that war has imposed on construction.

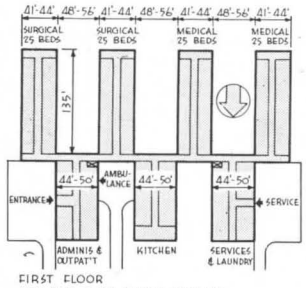
To provide technically adequate facilities of a minimum character is the core of the current problem of planning hospitals. As a basis for the solution the principle of semi-standardized layouts, with wings that contain various types of facilities also arranged in semi-standardized units, has been adopted by the Hospital Facilities Section, States Relations Division of the U. S. Public Health Service and also by the technical staffs of the Army and Navy working closely with their respective medical branches. Because most hospitals that can be constructed today are needed to relieve congested situations that will probably be temporary, the physical plant is being regarded as temporary also. This results in recommendations for one-story or at the most two-story structures; and the assembly of required space units in wings develops a plan that is characterized by a central corridor serving a series of these wings.

Typical of this type of scheme are the small diagrams reproduced at the right.

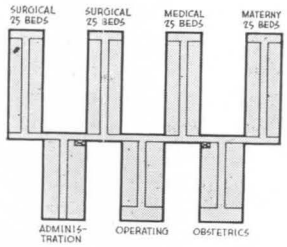
Whether for one- or two-story buildings, these layouts embody a few simple essentials which facilitate planning and tend to simplify construction. Nursing units are largely standardized at 25 beds each, and are located to gain a southern exposure. Surgical, medical and maternity cases are usually situated in separate wings.

Facilities for administration, building and food services, operating and treatment are likewise arranged in three separate wings and located on the northern side of the plan opposite the courts formed by the nursing unit wings. In most cases mechanical plants and utility controls are located in a basement under the service wing.

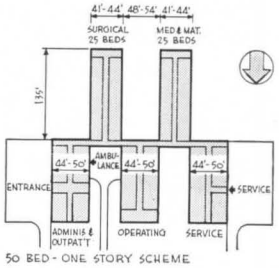
SCHEMATIC PLANS FOR UNIT TYPE HOSPITALS



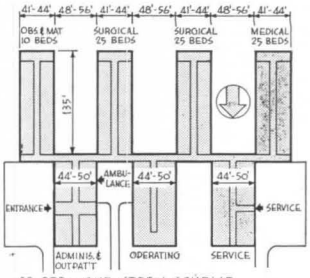
FIRST FLOOR
200 BED - TWO STORY SCHEME



SECOND FLOOR

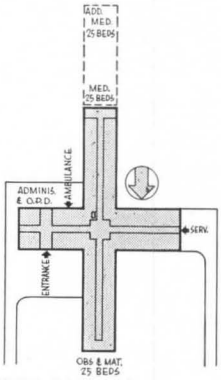


50 BED - ONE STORY SCHEME

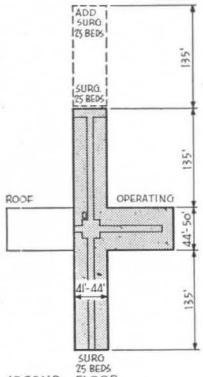


85 BED - ONE STORY SCHEME

These diagrams indicate the types of hospital unit layouts suggested by the U. S. Public Health Service for war-emergency construction. The "unit-wing" system has been used to allow development of the hospital as a series of fairly well standardized units of patient and service space, allocated in whatever relative proportions may be necessary according to specific requirements of each project. A southern exposure for patients' areas is recommended; and by staggering the patients' and service wings on opposite sides of a central corridor, open courts are obtained that are at least 40 ft. in width.

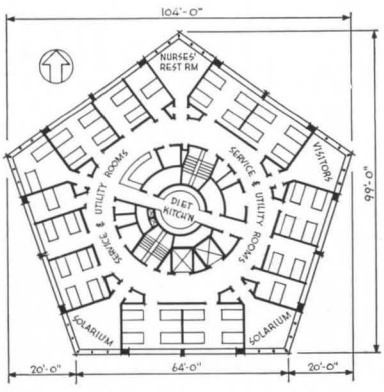


FIRST FLOOR
85 BED - TWO STORY SCHEME



SECOND FLOOR

PLAN SUGGESTION FOR A PENTAGONAL HOSPITAL

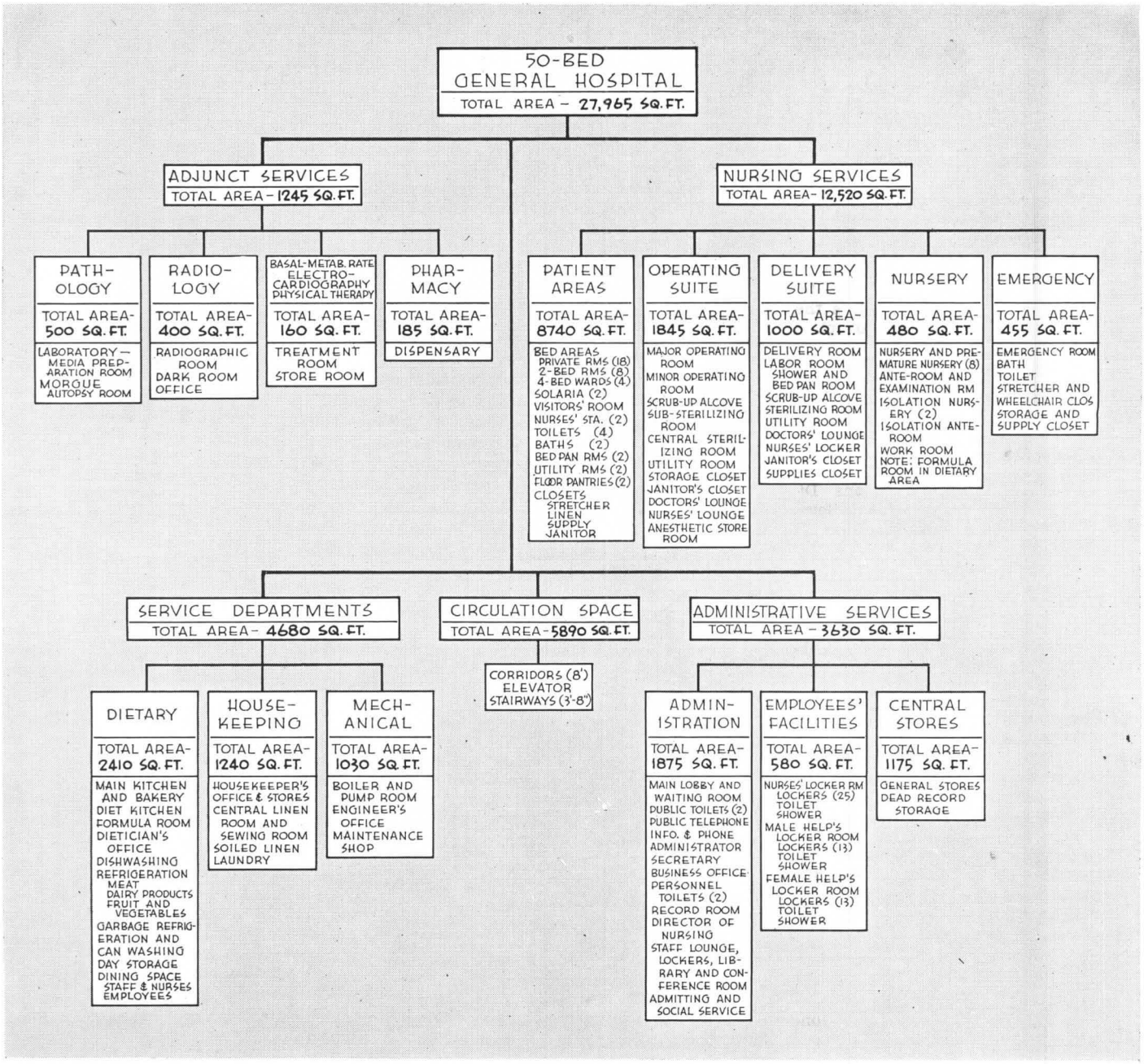


This scheme, proposed by John Matthews Hatton, New York architect, is suggested as being applicable "for all types of hospitals from 50 to 1,000 beds and even for army casualty buildings one story high." With patients' areas grouped about a centrally located service, including baths, toilets, nurses' station, two utility rooms and a treatment room, the scheme provides a nursing unit of 39 beds within an area of 7,200 sq. ft. Orientation is such that bedrooms receive a maximum of sunlight throughout the day. For interior spaces, however, complete mechanical conditioning would probably be necessary.

ARCHITECTURAL REC
TIME-SAV STANDARDS
AUGUST, 1942

WAR-EMERGENCY HOSPITAL DATA
2—GENERAL PLANNING AND AREA ORGANIZATION

NET AREA DISTRIBUTION FOR A 50-BED GENERAL HOSPITAL



This type of standardized layout has certain advantages. It is, for example, susceptible to considerable expansion without a substantial amount of alteration to existing facilities. Mechanical organization is relatively simple and can readily be adapted to changed requirements. And if hospital buildings are only one story high, authorities agree that they need not be made fireproof, provided adequate means for fire control is installed. Thus construction can be relatively inexpensive and easily erected.

Disadvantages center largely about problems of operation and maintenance. As gross floor area spreads horizontally, interior traffic increases in proportion; and a point is reached where duplication of centralized facilities may be necessary to offset disproportionate nursing travel. The chart above lists average area allowances for most spaces normally required in a 50-bed general hospital. As shown, figures indicate net areas; gross areas will approximate 114 per cent of each total for usual types of fire-resistant construction. Because areas for an out-patient department, personnel, fuel storage and garage will vary widely according to local circumstances and needs, allowances for them have not been included. This chart, the tabular data and the room-unit plans reproduced in this series of Time-Saver Standards were prepared for the RECORD by the Hospital Facilities Section of the States Relations Division, U. S. Public Health Service; Dr. Vane M. Hoge, Surgeon-in-Charge; Marshall Shaffer, Chief Architect; and Neil F. MacDonald, Senior Hospital Consultant. These are not definite recommendations of the Hospital Facilities Section; but they do constitute suggestions for standards of good practice based on much field research and thorough analysis.

WAR-EMERGENCY HOSPITAL DATA
3—AREA REQUIREMENTS AND SIZES

ARCHITECTURAL RECORD
TIME-SAVER STANDARDS
AUGUST, 1942

THE table and chart on this page furnish a practical tabular guide to the proportional allocation of spaces required in any modern hospital—even though it may be temporary in character and constructed solely to meet abnormal needs generated by a war emergency. But these figures do not constitute hard and fast recommendations; for it should be obvious that substantial adjustments may be necessary according to the force of special factors which may exist under the surface of any given situation. In addition, analysis of specific requirements within each group listed—in terms of room units and medical service facilities—will, in many cases, make still further adjustments necessary.

For example, "nursing services and "patient areas" are categorically broad terms. The first suggests inclusion of manifold work areas and utility spaces that are required for routine hospital operation. All such room units must be carefully related not only to the mechanical requirements of modern nursing technique, but also to the type of service that must be performed according to the administrative policy and program of the hospital.

All modern general hospitals offer medical and nursing service for surgical, medical and maternity cases. But the proportion of any of these three general divisions relative to the complete hospital layout is directly influenced by such matters as location, the character and density of population, and the relative proximity and type of other hospital services—all of which, summed up, establish the need for a particular kind of hospital and constitute a factual basis on which a specific building program can be developed.

Strangely enough, there exist little statistical data to guide hospital administrators and architects in the allocation of space for various classifications of hospital service. What meager figures are available refer primarily to special case studies. But to quote Carl A. Erikson, "It seems safe to assume that surgery will vary between 30 to 60 per cent (of admissions); obstetrics 15 to 20 per cent and the balance among all other clinical classifications."

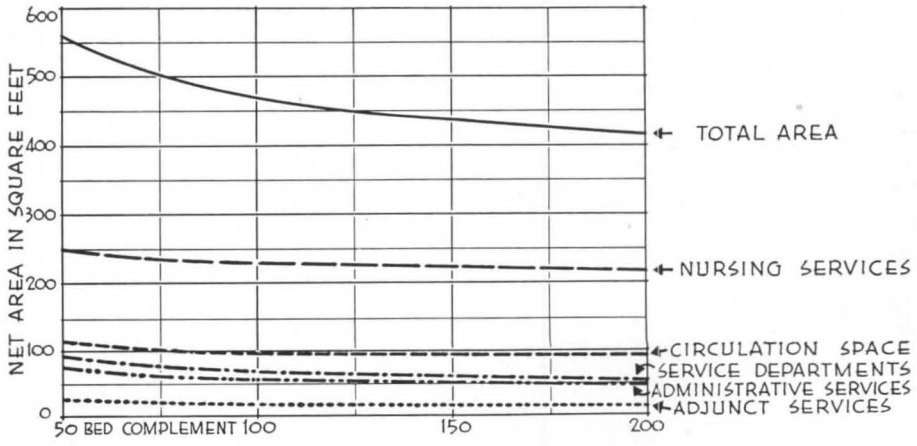
It seems probable that these figures will stand up well relative to services which war-emergency hospitals will need to offer to communities now crowded with war production workers. Despite safety campaigns the rate of industrial accidents remains high—which in a large proportion of cases implies hospitalization in a surgical ward.

In plan suggestions for an 86-bed unit type of general hospital to meet present emergency needs, the U. S. Public Health Service allocated 34 beds to medical cases, 34 to surgical cases and

FUNCTIONAL AND DEPARTMENT NET AREA DISTRIBUTION IN SQUARE FEET PER BED FOR ACUTE GENERAL HOSPITALS OF CAPACITIES SHOWN

	50 bed	100 bed	150 bed	200 bed
Administrative Services				
Administration	37.5	26.4	21.0	18.8
Employes' facilities	11.6	9.4	8.8	8.3
Central storage	23.5	22.4	22.2	21.9
Total	72.6	58.2	52.0	49.0
Adjunct Services				
Pathology	10.0	7.0	5.7	5.0
Radiology	8.0	6.0	5.7	5.5
Basal metabolic rate, electrocardiography and physical therapy	3.2	1.8	1.3	1.3
Pharmacy	3.7	3.8	3.7	3.2
Total	24.9	18.6	16.4	15.0
Nursing Services				
Patient areas	174.8	175.4	173.9	174.4
Operating suite	36.9	28.5	24.4	21.2
Obstetrics suite	20.0	12.0	11.7	9.0
Nursery	9.6	7.3	7.4	6.9
Emergency	9.1	5.3	4.1	3.2
Total	250.4	228.5	221.5	214.7
Service Departments				
Dietary department	48.2	34.0	28.7	26.3
Housekeeping department	24.8	17.7	15.2	13.9
Mechanical department	20.6	14.8	12.0	9.8
Total	93.6	66.5	55.9	50.0
Circulation space	115.4	96.2	92.1	87.7
Total area per bed	556.9	468.0	437.9	416.4

GRAPH SHOWING NET AREA DISTRIBUTION IN SQUARE FEET FOR GENERAL HOSPITALS RANGING FROM A 50-BED TO A 200-BED CAPACITY



located 18 beds in a separate maternity wing that included a nursery, a delivery room and two labor rooms. In a similar plan for a one-story pavilion type of hospital with a normal capacity of 100 beds, allocations were: medical, a normal rating of 28 with a maximum of 36; surgical, a normal of 52 with a maximum of 72; and for maternity cases, a normal capacity of 20 beds with a maximum of 30. Surgical cases were assigned two wings, medical and maternity cases, one. In each wing two rooms were assigned as an isolation ward providing a maximum of eight isolation beds for surgical treatment and four each for the medical and maternity areas.

ARCHITECTURAL RECORD
TIME-SAVER STANDARDS
AUGUST, 1942

WAR-EMERGENCY HOSPITAL DATA
4—BEDROOMS AND WARDS

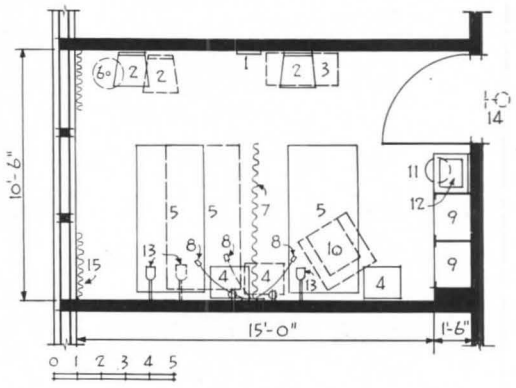
RELATIVE provisions of private rooms, semi-private rooms and wards should normally be decided on the basis of a local survey to determine, as accurately as possible, the character of a hospital's potential clientele. A survey made by the Duke Endowment of 10 small hospitals ranging in size from 31 to 56 beds indicated an average proportion of beds in single rooms, semi-private (two-bed) rooms and wards of 34 per cent, 14 per cent and 45 per cent respectively. Considerable variation existed; three had no semi-private rooms.

Very nearly the reverse of that situation must be contemplated in relation to war-emergency hospitals. Solely on the basis of construction, greater economies might be gained through use of unusually large wards—a principle adopted by both Army and Navy hospitals where wards of 30 beds are not unusual. But medical science and the complications attendant on the operation of a non-military hospital—even of a temporary war-emergency character—justify a relatively large proportion of semi-private rooms and a smaller percentage of wards (which good hospital practice commonly limits to four beds) than that shown in the Duke Endowment survey.

In plans for typical 50-bed wartime hospitals developed by the U. S. Public Health Service, percentages for room-types are: private rooms in a one-story plan 28 per cent, and in a two-story plan 24 per cent; semi-private rooms in the one-story plan 40 per cent, and in the two-story scheme, 44 per cent. Four-bed wards accounted for 32 per cent of the total capacity in both.

These percentages relate to the normal rated capacity of the hospitals. As indicated by the upper plan on this page, all private rooms in these projects are of a standard size that will permit their use as semi-private rooms whenever the demand may warrant. Conversely, semi-private spaces can be turned into private rooms when necessary through the simple expedient of removing one of the beds and its related furniture.

This element of flexibility is highly important in any small hospital and is particularly so in structures that will be built to serve wartime emergency requirements. Because this is so, no bedroom should provide for less than 80 sq. ft. of gross floor area per bed—a standard long advocated by Carl A. Erikson, authority on hospital space, and supported by the planning standards established as a result of much research by the Duke Endowment. This means that for flexibility no modern hospital bedroom should be less than 160 sq. ft. in area, though a private room of 135 sq. ft. will accommodate a single bed and provide ample space for the work of doctors and nurses.

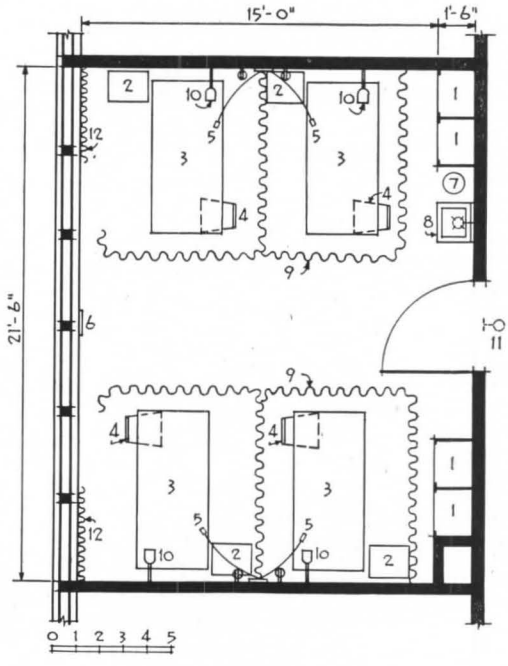


EQUIPMENT LEGEND

1. Night light
2. Chair
3. Dresser
4. Bed stand with overbed tray
5. Bed
6. Floor lamp
7. Curtain on overhead rod
8. Nurses' call
9. Patients' lockers
10. Easy chair
11. Waste receptacle
12. 20" x 18" lavatory with knee or elbow control
13. Bed lamp
14. Corridor signal light
15. Sliding curtain

PRIVATE OR SEMI-PRIVATE BEDROOM

Space allowances for private rooms in emergency hospital projects planned by the U. S. Public Health Service are the same as for the semi-private room, a ⅛-in. scale plan of which is shown above. This is done to provide a flexible capacity which can be adjusted to meet abnormal situations. On the basis of semi-private occupancy, this standard bedroom provides a gross floor area of 86.6 sq. ft. per patient and is therefore well over the 80 sq. ft. average that is commonly accepted as a satisfactory minimum. Furniture locations for the area when used as a private bedroom are shown by dotted lines.



EQUIPMENT LEGEND

1. Patients' lockers
2. Bed stand with overbed tray
3. Bed
4. Chair
5. Nurses' call
6. Night light
7. Waste receptacle
8. 20" x 18" lavatory with knee or elbow control
9. Overhead curtain rod
10. Bed lamp
11. Corridor signal light
12. Sliding curtain

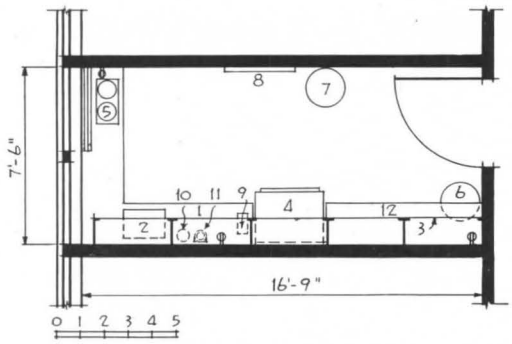
Minimum area 80 sq. ft. per bed

FOUR-BED WARD

This standard type of bedroom, reproduced at ⅛-in. scale, and suggested as a means of providing 32 per cent of a wartime hospital's normal bed capacity, contains 354.75 sq. ft. of gross area and permits a per-bed allowance of 88.7 sq. ft. Furniture and other equipment are arranged in accord with general principles of the "Riggs plan." In the full development of this plan large wards are divided into four-bed units by glazed partitions, each unit being equipped with a lavatory, and each bed being susceptible to individual screening as indicated here. This arrangement of bedroom space and equipment is the most generally economical of floor space and also most generally comfortable for patients.

WAR-EMERGENCY HOSPITAL DATA
5—WORK AND UTILITY ROOMS

ARCHITECTURAL RECORD
TIME-SAVER STANDARDS
AUGUST, 1942



Floor pantry for typical nursing floor of 25 to 50 patients

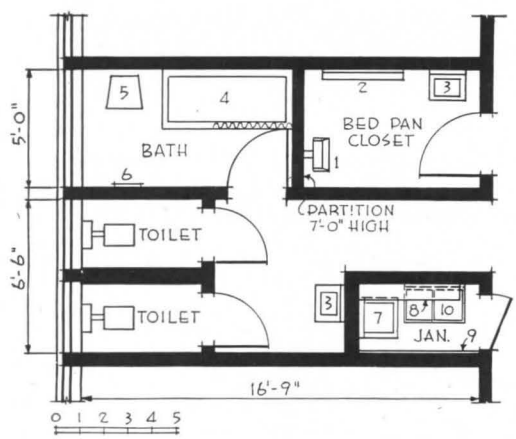
EQUIPMENT LEGEND

1. Work counter with cabinets below
2. Sink
3. Wall cabinets
4. Refrigerator — 8 cu. ft.
5. 2 element hot plate
6. Garbage receptacle
7. Linen hamper
8. Bulletin board
9. Toaster
10. Juicer
11. Beverage mixer
12. Flower counter — vase storage below

UTILITY ROOMS

Layouts on this page were developed by the technical staff of the States Relations Division of the U. S. Public Health Service to indicate recommended standards of good practice for war-emergency hospital use. So far as area is concerned, these rooms represent practical minima; and relative locations of various equipment units have been studied to produce an arrangement that will prove most generally efficient and convenient in actual use. Note that all rooms have been sized and equipped to serve requirements of a typical nursing unit of 25 patients. This unit has been established by the U. S. Public Health Service as being most generally consistent with wartime hospital requirements and technical limitations.

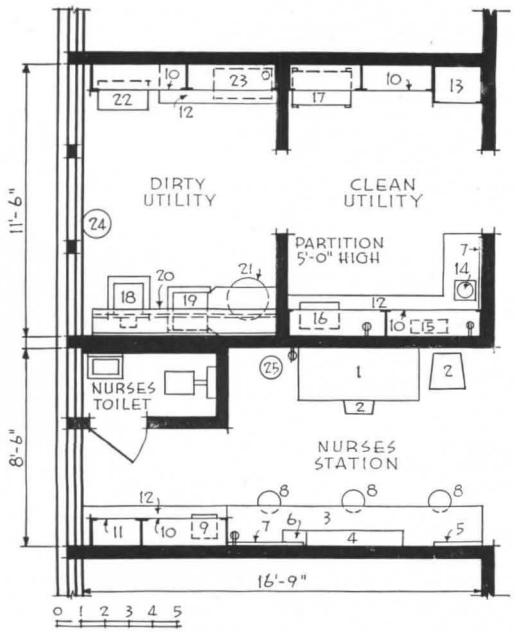
Actual selection of various units of mechanical equipment indicated in these layouts is necessarily subject to circumstances relative to each specific project. Criteria for selection in order to conserve critical materials are: elimination wherever possible of all types of non-ferrous metals; use of standardized units to facilitate repair or replacement; simplification of design; types of connections that can be left exposed or, if concealed, made easily accessible for maintenance.



Bed pan closet, janitor's closet, bath and toilets for typical nursing unit

EQUIPMENT LEGEND

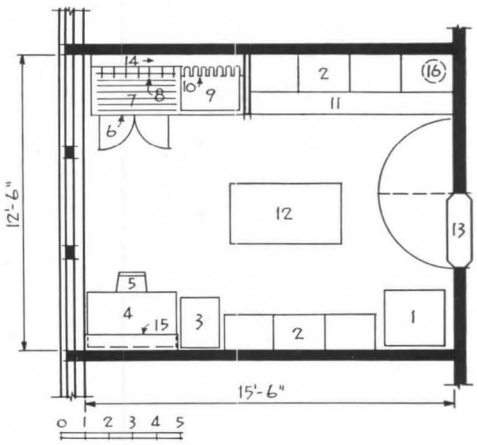
1. Bed pan washer and sterilizer
2. Bed pan rack
3. Lavatory
4. Bath tub with shower
5. Chair
6. Hook strip (clothes)
7. Service sink
8. Shelf
9. Hook strip for brooms and mops
10. Mop truck



Utility room and nurses' station for typical nursing unit

EQUIPMENT LEGEND

1. Nurse's desk
2. Chair
3. Counter 30" high
4. Chart rack
5. Nurses' call panel
6. Pigeon hole form rack
7. Bulletin board
8. Stool
9. Medicine sink
10. Wall cabinet
11. Medicine and narcotic cabinet (locked)
12. Work counter 36" high with cabinets below
13. Blanket and solution warmer 18" x 24" x 72"
14. Hot plate
15. Instrument sterilizer
16. Sink with arm control
17. Dressing cart
18. Clinical sink
19. Laundry tray with wringer and drainboard
20. Marble shelf with wood rod under
21. Laundry hamper
22. Utensil sterilizer
23. Cracked ice bin
24. Sanitary waste receptacle
25. Waste receptacle



Pharmacy for a 50-bed hospital

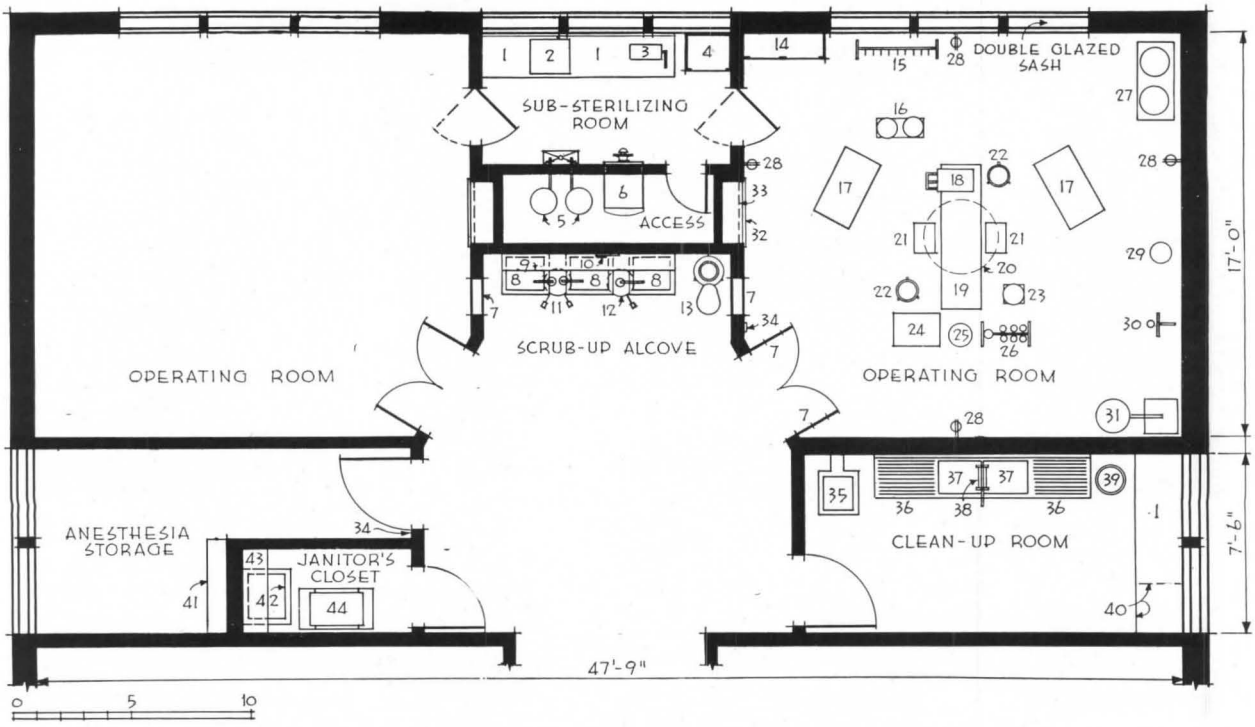
EQUIPMENT LEGEND

1. Refrigerator
2. Drug cabinet*
3. Prescription file case
4. Desk
5. Chair
6. Cabinets under drainboard
7. Drainboard
8. Draining pegs
9. Acid-proof sink
10. Graduate racks
11. Prescription counter
12. Table
13. Dutch door
14. Shelf
15. Book shelf
16. Hot plate

* Provide locked compartment for narcotics.

ARCHITECTURAL RECORD
TIME-SAVER STANDARDS
AUGUST, 1942

WAR-EMERGENCY HOSPITAL DATA
6—TYPICAL OPERATING SUITE



EQUIPMENT LEGEND

1. Counter
2. Sink
3. Instrument Sterilizer, 6″x8″x17″
4. Blanket warmer, 18″ x 24″ x 72″
5. Hot and cold water tanks, 10 gal.
6. Pressure sterilizer 16″ x 24″
7. View window
8. Scrub-up sink
9. Shelf over sinks
10. Secondary clock
11. Double soap dispenser
12. Single soap dispenser
13. Alcohol dispenser
14. Cabinet
15. Sponge rack
16. Double basin stand
17. Instrument table
18. Mayo stand
19. Operating table
20. Operating light with general illumination feature
21. Operator's footstool
22. Kick bucket
23. Single basin stand
24. Anesthetist's table
25. Anesthetist's stool
26. Anesthesia unit
27. Drums and carriage
28. Explosion-proof outlet
29. Operator's stool
30. Irrigation stand
31. Emergency light
32. Combination viewbox, solution warmer and aspirator
33. Secondary clock and interval timer
34. Mercury light switch
35. Rim flushing service sink
36. Drainboard
37. Laundry tray
38. Wringer
39. Laundry hamper
40. Cabinet under counter
41. Shelving
42. Service sink
43. Shelf over sink
44. Mop truck

SIZES AND LOCATION OF OPERATING ROOMS

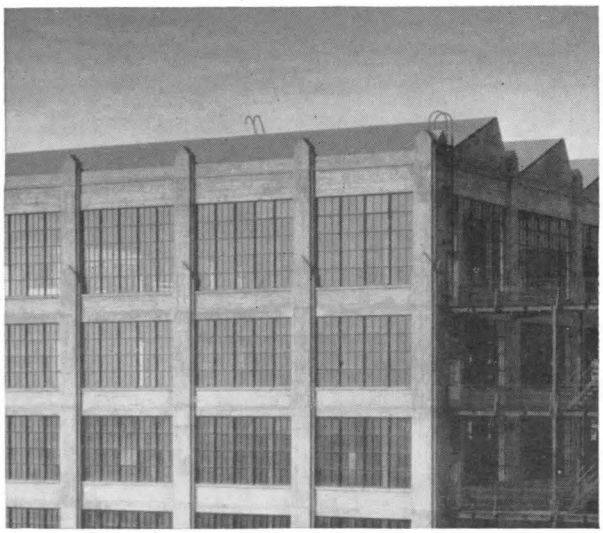
THIS LAYOUT of an operating suite, reproduced at a scale of ⅛ in. to 1 ft., was developed by the States Relations Division of the U. S. Public Health Service as a recommended standard for construction of war-emergency hospitals. With minor adjustments it is incorporated in Public Health Service plans for both one- and two-story hospitals ranging in capacity from 50 to 100 beds. Invariably these plan recommendations indicate the operating suite in a north wing; and a good medical service arrangement would place the suite in close relationship with locker rooms for both doctors and nurses, and with a general work room that can well be equipped for use as a central sterilizing room.

The size of the operating rooms in this suite—17 ft. by 18 ft., or a total of 306 sq. ft.—is somewhat larger than the minimum of 14 ft. by 18 ft (252 sq. ft.) recommended by the Duke Endowment for a major operating room in a small hospital and considerably in excess of the 12 ft. by 13 ft. 8 in. area recommended for minor operating rooms by the same organization.

According to Dr. W. P. Morrill, of the American Medical Association, an operating suite of the general character illustrated is adequate for hospitals containing 75 to 100 beds; but as the bed-capacity increases an additional surgical operating room should be provided for each 50 beds. In such larger hospitals delivery rooms for maternity cases are entirely separate from the surgical suite. However, this authority questions the justification for three operating rooms—two surgical and one delivery—in hospitals of 50 beds or less. The same opinion is held by Carl A. Erikson, hospital expert and architect. Both hold that the 50-bed hospital should contain but two operating rooms, the larger one for surgical cases only and the smaller for obstetrical deliveries, which according to Dr. Morrill will *average less than* 20 per month.

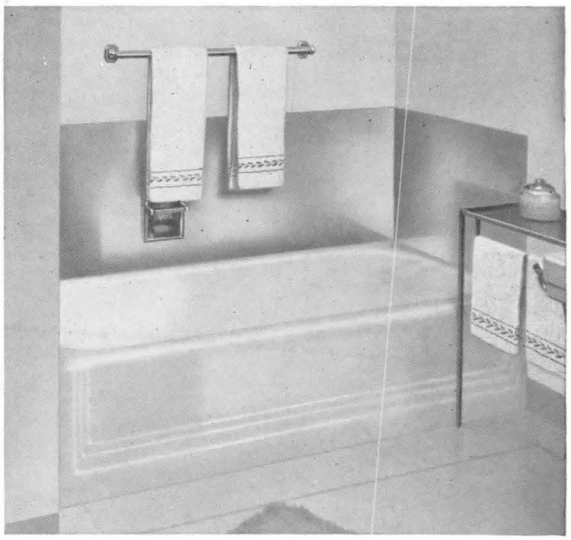
Delivery rooms are included as separate areas by the Public Health Service in plans for both 50-bed and 100-bed hospitals. These are incorporated as part of a separate obstetrical suite including one or more labor rooms (about 12 ft. by 12 ft.) a sterilizing room, a work room and doctor's locker room.

To fill your wartime needs . . . "Pittsburgh" Glass!



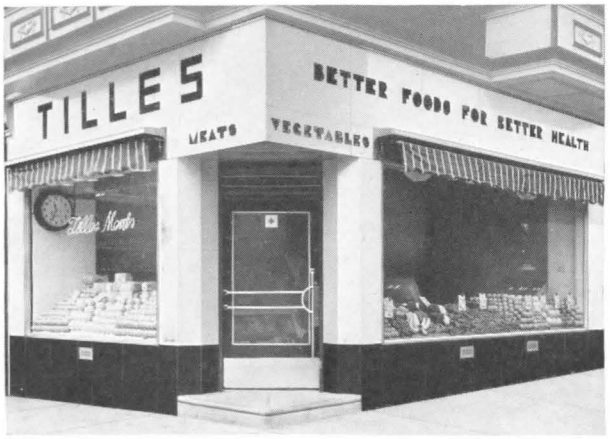
PENNVERNON WINDOW GLASS

This quality window glass, with its unusual clarity, good vision and surface brilliance, is ready to help you design war factories flooded with natural daylight and to glaze defense houses at reasonable cost.



CARRARA STRUCTURAL GLASS

Now, for the first time, available in Ready-Built Panels, prefabricated at the factory for tub recesses, shower enclosures, and stove backings of low-cost homes. These Ready-Built panels speed up construction, save substantially on labor costs and give the defense home the beauty of Carrara at a cost no higher than that of ordinary materials.



PITTCO STORE FRONT PRODUCTS

Still available, including selected Pittco Metal shapes. Ideal for designing sales-building fronts for "neighborhood" stores, now revitalized by changing shopping habits. Only Government restrictions: front must cost less than $5,000, involve the use of no critical materials.

IF you desire detailed information on any of the "Pittsburgh" Products mentioned here, we will gladly supply it upon request. And if you are confronted with any problem concerning flat glass which we can help you solve, we urge you to call upon us. Address Pittsburgh Plate Glass Company, 2090-2 Grant Building, Pittsburgh, Pa.

"PITTSBURGH"
stands for Quality Glass and Paint

PITTSBURGH PLATE GLASS COMPANY

FOR BETTER BUILDING

NEWS OF MATERIALS, EQUIPMENT AND METHODS

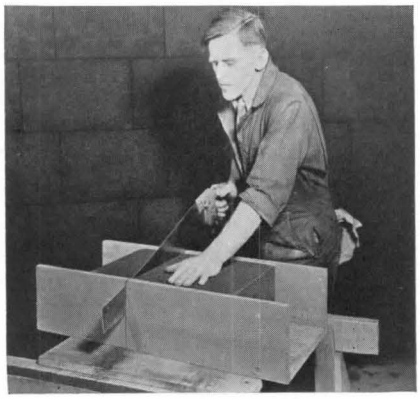


FIGURE 1

CELLULAR GLASS

SAID to weigh one-fifteenth as much as ordinary glass, a cellular glass made up of tiny airtight cells has been added to a line of low-temperature insulating materials The cellular structure results in formation of a slight vacuum within the cells that provides a barrier to the passage of heat. Other physical properties named: Impervious to water; will not rot, mold or decay; verminproof and odorless; can be sawed and worked with ordinary tools. This nonpriority product, it is claimed, offers permanent insulating efficiency for cold storage rooms in meat packing plants, chemical and food processing factories, refineries, ice cream and dairy plants, etc. In board size of 12 by 18 in. Thicknesses 2, 3, 4½, 6 in. Armstrong Cork Company, Lancaster, Pa. (Figure 1.)

FURNACE IN CHIMNEY

A NEW heating development which is said to overcome difficulties caused by wartime limitations on materials and fuels has just been announced. A coal-fired unit is concealed inside the chimney with firepot on first floor or basement level. No room space is required. A metal, porcelain-enameled heat exchanger flue extends above the attic floor inside the brick chimney. Here an electrically operated fan forces the radiated heat downward in a counter flow through baseboard, wall or ceiling grilles. Return air is drawn through wall baseboard grilles, studding spaces and attic floor joists, back into blower and again down through the chimney heating space. Operating cost is said to be very low. An attachment is available for domestic hot water. Shipping weight including fire brick liners for fire pot, 400 lbs. Round Oak Company, Dowagiac, Mich. (Figure 2.)

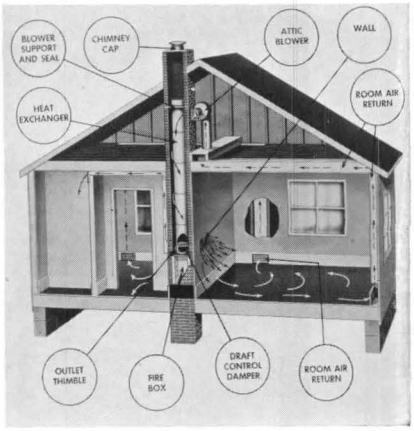


FIGURE 2

INDUSTRIAL WOODEN FENCE

AN INDUSTRIAL wooden fence is being manufactured as substitute for steel fencing which has been restricted by WPB. The fencing weighs 20.4 lbs. per lineal ft., 2,000 lineal ft. or 44,000 lbs. to a car. It is said to have been given a thorough try-out and has been approved by the Chief Engineers and the Provost Marshall of the Army Engineering Corps. Rock Island Sash & Door Works, Rock Island, Ill. (Figure 3.)

(continued on page 72)

FIGURE 3

An Engineer Comments on Meeting

increased demands with

OIL BURNING SYSTEMS

Max Siegel, well-known New York Professional Engineer, has to his credit many outstanding industrial and institutional buildings throughout the East. Included among the many jobs in which he has used Petro Oil Burning Systems are such buildings as the Lennox School in New York; the Daniel Reeves Warehouse and Office at East 143 Street, New York; and four apartment buildings at 527-41 East 72 Street, New York, which were converted from eight old-law tenements.

Mr. Siegel says this about oil burning systems:

"In the buildings where I have used Petro equipment I have found that they have rendered a consistently good performance in the way of low operating cost and dependability. Never before has efficient maintenance been so essential, and Petro engineering consultants have given me the best kind of service in keeping their equipment in top working condition.

"Now that war construction comprises our chief interests, I find that oil burning systems are meeting the most rigid tests for heating our war industries. Normal firing operation has been stepped up to 24-hour operation, seven days a week, and oil heating systems are solving this problem with complete efficiency."

Petro Oil Burning Systems

are available only—"for duration", on orders carrying high preference ratings.

BUT—

Petro service, parts for necessary maintenance, and engineering consultation and services, are still fully available.

AND—

hundreds of Petro Oil Burning Systems are meeting unprecedented steam demands in war production plants everywhere;

—24 hour operation, far above normal ratings, day after day, week after week;

—a "break down" test on a gigantic scale which Petro equipment is meeting efficiently, economically, reliably, and without breaking down because ample reserve strength and wear has always been built into Petro.

In addition to being proud of such performance, we think it is a good thing for specifiers to remember against the time when conditions again permit the free selection and installation of normal industrial and commercial firing equipment.

OIL IS AMMUNITION
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Full data on Petro Industrial Burners are in our Catalog in Sweet's Catalog file—or we will gladly send copies on request.

PETRO
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(continued from page 70)

MAINTENANCE PAINT

A PAINT that is said to prime, seal and finish on interior surfaces in one coat has been announced. Formulated for maintenance painting of industrial, institutional and commercial properties, the paint is said to cover dark surfaces with a single coat. Dries within 12 hrs. and provides a dead-flat finish when viewed at a 90 degree angle. Plaster, concrete, brick, wallboard, wood, wallpaper and metal surfaces may be covered. Coverage is up to 750 sq. ft. per gal. American-Marietta Co., 43 E. Ohio St., Chicago.

MINERAL SURFACED SIDING

FOR outside walls of such structures as factory buildings, warehouses, storage and machine sheds, barns, etc., a new mineral surfaced siding board is announced. This laminated, asphalt-saturated felt, covered on one face with colored mineral granules, requires no painting. It is recommended for use where a flat, semi-rigid, waterproof, fire-retardent material is desired. Heavier than corrugated siding, it is applied with roofing nails. Sheets are 36 by 48 in. in lengths of 6, 7, 8, 9, 10 ft. Certain-teed Products Corp., 120 S. LaSalle St., Chicago, Ill.

FITTINGS FOR WIRING INSTALLATION

NEWLY developed fittings and installation methods are said to make possible an entirely new and simplified "network" type of electric wiring installation, providing complete surface wiring layout for lighting and portable tool or appliance power outlets in production areas, engineering departments, laboratories and plant office buildings. Simplified layouts use minimum of steel and other scarce materials. It is claimed installation methods require no pipe threading equipment, eliminate mess and inconvenience and reduce material waste. Wiremold Company, Hartford, Conn.

PLASTICS AS ALTERNATES

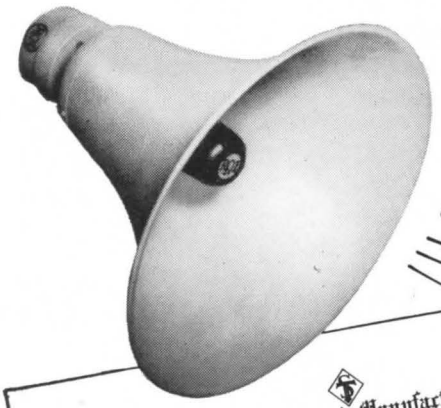
READILY OBTAINABLE materials are said to go into a line of plastics which have a wide range of usefulness as alternates for rubber, copper, tin, aluminum, monel metal, stainless steel. Production is under way in various forms such as threads, tubes, rods and sheets and extrusions from flexible to rigid grades. Mechanical and physical data to enable user, in most cases, to determine suitability for use, are available from the manufacturer. Colonial Alloys Company (Chemicals Division), Colonial Philadelphia Building, E. Somerset, Trenton Ave. and Martha Sts., Philadelpnia.

EQUALIZES AIR FLOW

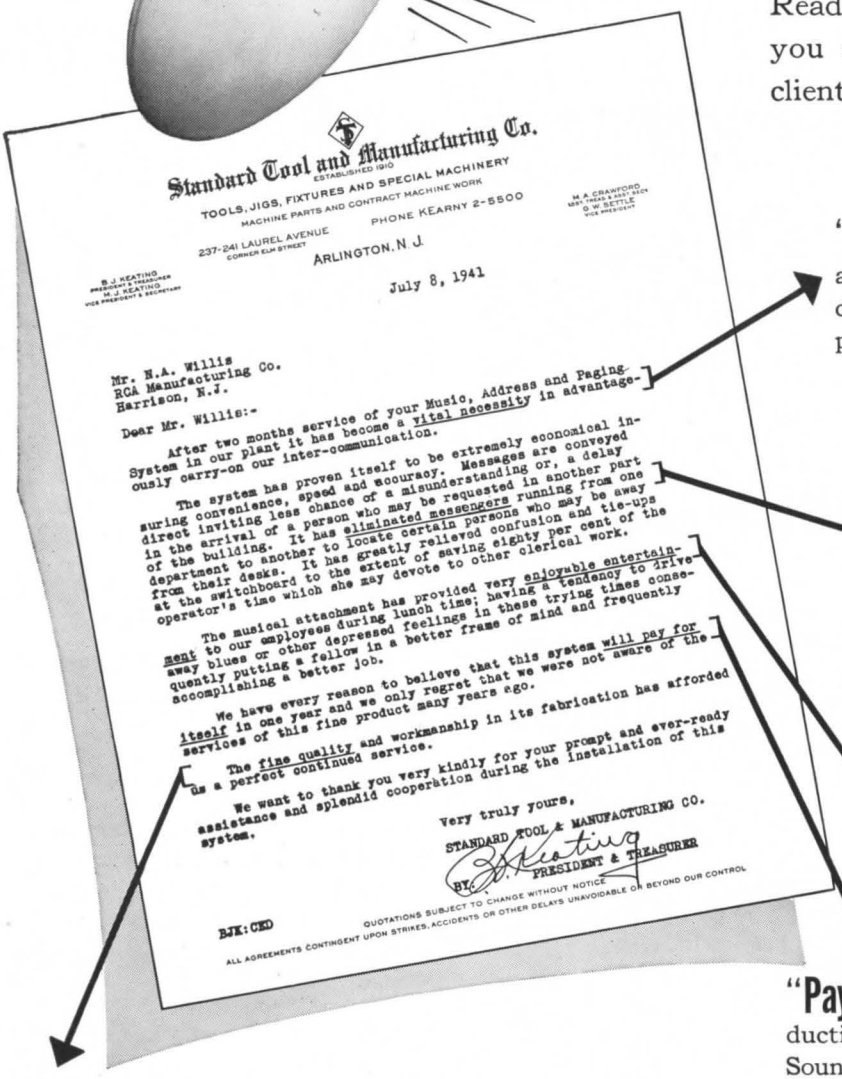
JUST on the market is an equalizing damper for heating, ventilating and air conditioning installations which, it is claimed, has unlimited adjustments to control the direction of flow as well as the volume up to 60 per cent of the supply air. The device, a series of blades of galvanized steel, fits at

(continued on page 74)

An RCA SOUND SYSTEM Belongs in Every Plant!



HERE'S PROOF!



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July 8, 1941

Mr. H.A. Willis
RCA Manufacturing Co.
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Dear Mr. Willis:-

After two months service of your Music, Address and Paging System in our plant it has become a vital necessity in advantageously carry-on our inter-communication.

The system has proven itself to be extremely economical insuring convenience, speed and accuracy. Messages are conveyed direct inviting less chance of a misunderstanding or, a delay in the arrival of a person who may be requested in another part of the building. It has eliminated messengers running from one department to another to locate certain persons who may be away from their desks. It has greatly relieved confusion and tie-ups at the switchboard to the extent of saving eighty per cent of the operator's time which she may devote to other clerical work.

The musical attachment has provided very enjoyable entertainment to our employees during lunch time; having a tendency to drive away blues or other depressed feelings in these trying times consequently putting a fellow in a better frame of mind and frequently accomplishing a better job.

We have every reason to believe that this system will pay for itself in one year and we only regret that we were not aware of the services of this fine product many years ago.

The fine quality and workmanship in its fabrication has afforded us a perfect continued service.

We want to thank you very kindly for your prompt and ever-ready assistance and splendid cooperation during the installation of this system.

Very truly yours,
STANDARD TOOL & MANUFACTURING CO.
By H. J. Keating PRESIDENT & TREASURER

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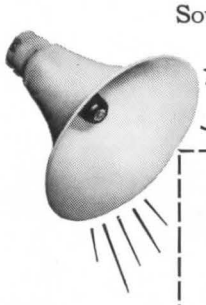
"Vital Necessity" RCA Sound Systems are speeding vital war production in hundreds of plants. They improve morale, promote team work and coordination.

"Eliminates Messengers" Instant communication between key executives, separate departments, and buildings saves valuable time and unifies effort. All workers can be addressed simultaneously over loudspeakers from central microphone.

"Enjoyable Entertainment" Music played through the plant relaxes workers during meal time . . . makes monotonous work less tedious during working hours. Music is *rhythm* . . . rhythm speeds *work!*

"Pays for Itself" Savings from increased production and efficiency quickly pay for an RCA Sound System. More important, war work is aided.

"Fine Quality" Because it's made by the leading manufacturer of sound equipment you can be sure it's made right!



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Please give me complete information about an RCA Sound System.

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RE-8

(continued from page 72)

the top of the supply duct leading to the outlet. 3 sizes. Anemostat Corporation of America, 10 E. 39th St., New York City.

BLACKOUT AND SHATTER SCREEN

A NEW PRODUCT for protecting glass against the effects of explosion is a porous blanket made up of 16 layers of black flameproof expanded fiber and four layers of light colored flameproof expanded fiber. The material is mounted in a light wooden frame and attached inside windows, skylights and door glass. Extensive tests were made in an "explosion box" to determine the effectiveness of the new screen. Research Products Corporation, Madison, Wis.

18-INCH SEARCHLIGHT

FOR industrial plants, public utilities, ordnance plants is a new 18-in. incandescent searchlight with pilot house control or flat base. Intense beam concentration is obtained by a primary precision-ground and polished silvered-glass reflector and a metal secondary reflector to permit continuous operation with lamps up to and including 1500 watts. Westinghouse Lighting Division, Cleveland, Ohio.

NEW FLUORESCENT FIXTURE CIRCUIT

DEVELOPMENT of a new metal-saving circuit for fluorescent lighting fixtures and a specially designed ballast control unit has been announced. The new circuit permits use of only one ballast—or control unit—with four 100-watt fluorescent lamps, in place of the present 100-watt fluorescent fixtures which require two ballasts for four lamps. The two lamps on each phase start in sequence and operate in series. One ballast does the work of two. For use with 100-watt fluorescent lamps and on 254, 265 and 277 volt circuits. General Electric Company, Cleveland, Ohio.

COMPOSITION FLUORESCENT REFLECTOR

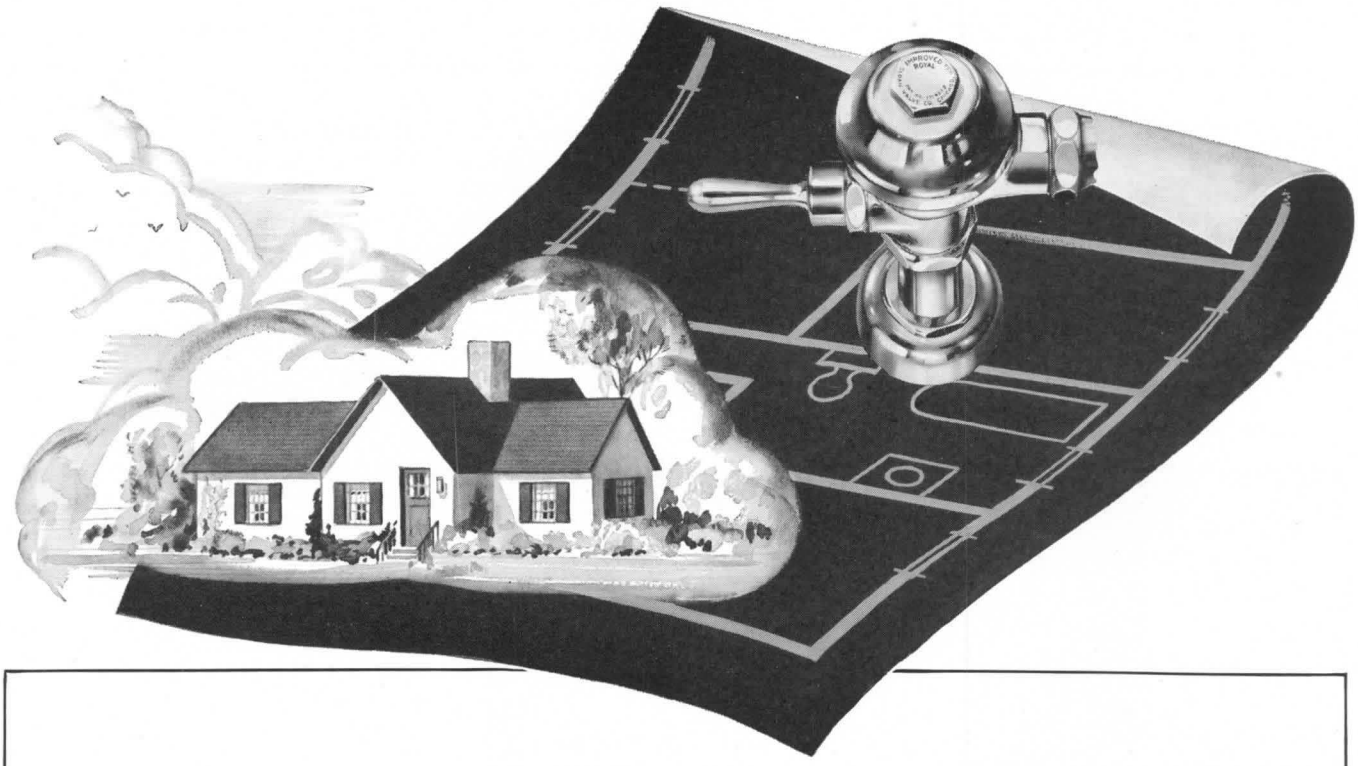
A COMPOSITION REFLECTOR for fluorescent lighting, constructed of materials not vital to war production, is considerably lighter in weight than present reflectors. Fixtures utilizing it will employ only about one-third as much steel. Hygrade Sylvania Corporation, Salem, Mass.

ALL-WOOD CULVERT

AN ALL-WOOD CULVERT that does not require steel bands, nails or metal reinforcing has been designed, for use wherever drainage work cannot wait for the return of iron and steel to peacetime uses. American Rolling Mill Company, Middletown, Ohio.

PATCHING CEMENT

FOR QUICK patching of cracks, ruts and shallow holes in concrete floors there is a new iron cement that is said to harden overnight and to become stronger with age. Smooth-on Mfg. Co., Dept. 354, Communipaw Ave., Jersey City, N. J.



START PLANNING *NOW* FOR SLOAN-EQUIPPED HOMES

Through these dark clouds of War, many of us envision our dream-house of tomorrow, and in it we see many new ideas and innovations—a new way of life itself. Sloan engineers are going to be responsible for some of this change, because even now they say—

> *"Heretofore Sloan Flush Valves were specified for only luxury homes, large apartments, hotels, hospitals, schools, institutions and other types of large buildings; but here is our promise to you today—*
>
> *After the War there will be Sloan Flush Valves with all their well-known advantages for even modest homes and inexpensive walk-up apartments."*

For 36 years Sloan Flush Valves have proved their trouble-free durability with astonishingly low maintenance cost. They protect health by preventing back-syphonage—They save water—They are quiet—They are the accepted standard-of-excellence by which all other flush valves are judged.

So start planning now for Sloan-equipped homes. With Sloan Flush Valves you provide home owners with the ultimate in convenience, health and economy. Remember: there are more Sloan Flush Valves sold than all other makes combined.

SLOAN VALVE COMPANY

4300 WEST LAKE STREET · CHICAGO

REQUIRED READING

(continued from page 26)

PERIODICAL LITERATURE

AIR WAYS OF THE FUTURE. By Wolfgang Langewiesche. Common Sense, New York, July, 1942, pp. 219-223

FLIGHT STRIPS. Time, New York, July 13, 1942, p. 70. illus.

"NOT ONLY can airplanes do with much less space than you have been led to believe; the newfangled ones can also easily land cross-wind. . . . You no longer need a 'field,' but only a narrow strip. . . . Airplanes are now muffled, or can be: there is no longer any excuse for not having a landing strip, say 200 ft. wide and 1,200 ft. long, somewhere along the Manhattan waterfront, the Chicago lake front. . . ." "The first of 80 flight strips—auxiliary landing fields adjacent to highways—was opened . . . last week. These strips, much cheaper to construct than airfields . . . will be within 5 to 50 miles of the Army's regular fields [to] help prevent planes from being destroyed on the ground."

THE REVOLUTION IN HOUSEBUILDING. By Douglas Haskell. Harper's, June, 1942. pp. 47-54

AN unsentimental but sympathetic account of the extent and the rôle of migratory homes for labor migrating into the new industrial centers and of how that housing comes into being. Here are permanent houses, demountable houses, mobile shelters, dormitories, etc., speedily produced by the TVA, the FSA, and by private industries such as the Glenn Martin plant, called on to house 40,000 workers where the population had been 2,500.

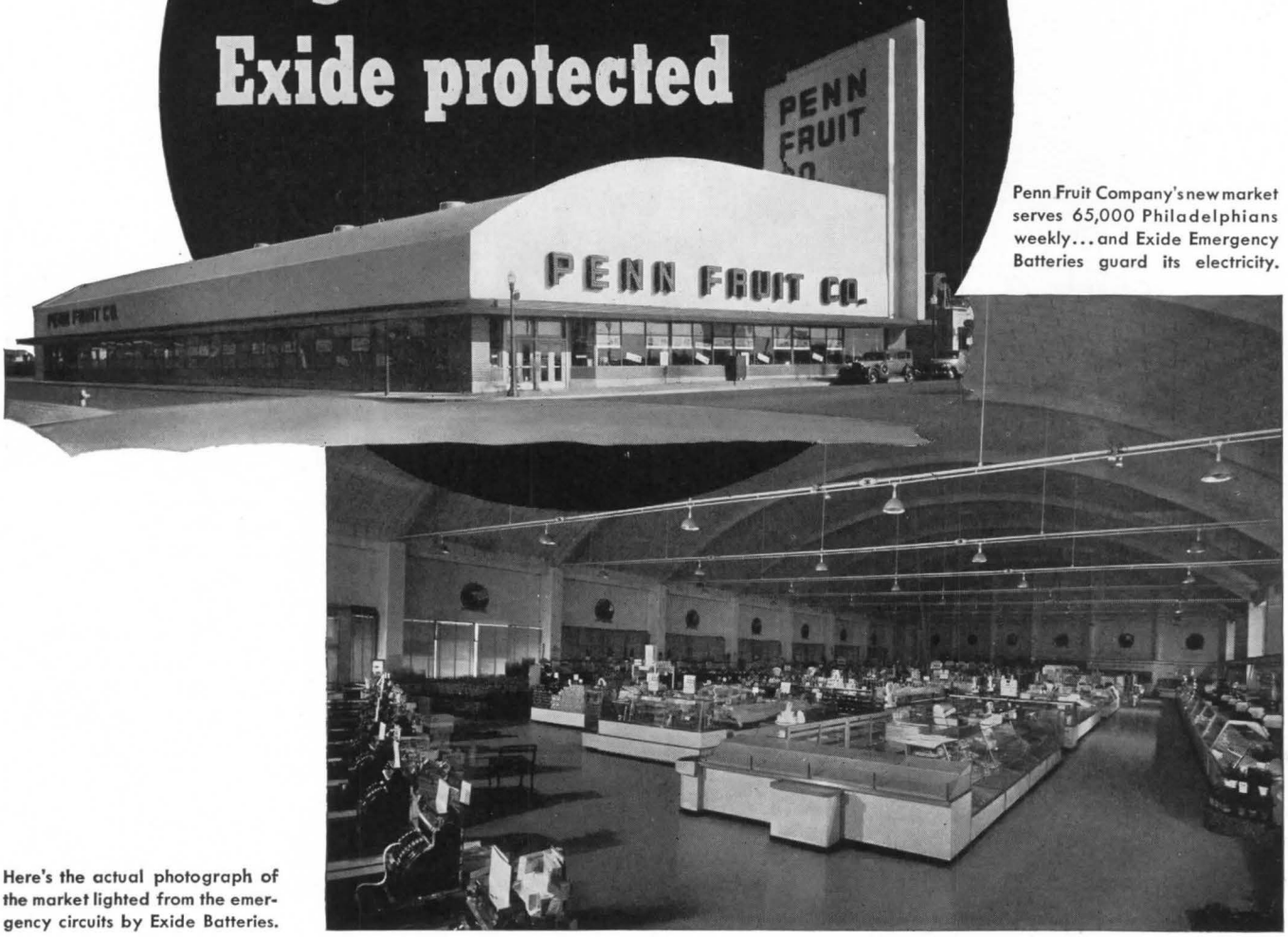
NEW YORK ROOFERS WARN AGAINST VULNERABLE ROOFS. By Alfred Neulander. Amer. Roofer, New York, June, 1942. pp. 19, 32-3

CAP SHEET, which covers over 80 per cent of New York City roofs, is highly inflammable. And most of those roofs are flat. Furthermore "combustible roofs have been largely responsible for 55 out of 100 fires in the U.S. since 1900." London has found satisfactory the covering of cap sheet with a mixture of slag, cement, grit, and mastic, which can be applied by non- or semi-skilled workmen. None of the materials is critical and all are plentiful. Alternates are tile, asbestos, slate, gravel.

CONSTRUCTION EXPEDIENTS IN WAREHOUSES. Engineering News-Record, New York, July 2, 1942. illus.

THREE time- and labor-saving expedients adopted in building warehouses by the Corps of Engineers of the. . . U.S. Army. . . . 1. In a floor 180 by 960 feet a slope of 2 feet was allowed in each direction, so as to avoid moving earth. The column height was constant, the roof level, the pedestal heights varied slightly. In pouring concrete the wire mesh reinforcement was laid first, the concrete poured continuously, and the mesh pulled up into it. 3. Prefabricated members of the 40- and 60-foot wood trusses were shipped across the continent in box cars, assembled on a siding near the job and shipped to it in flat cars.

America's largest food market is Exide protected



Penn Fruit Company's new market serves 65,000 Philadelphians weekly... and Exide Emergency Batteries guard its electricity.

Here's the actual photograph of the market lighted from the emergency circuits by Exide Batteries.

THE Penn Fruit Company's new food market is altogether up-to-the-minute. Largest in the country, its 38,000 square feet hold two city blocks of counters, 30 cashiers, 200 clerks, and can serve 65,000 customers a week. Naturally, this modern market needs its dependable Exide protection.

Despite all precautions of utility companies, forces beyond control can cause power failure. Storms, floods, fires, and street accidents may shut off power and light... but an Exide Emergency Lighting Unit steps in *instantly* to make good the loss. All architects should know about this protection. Write or wire your nearest Exide Branch for full details, *today.*

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The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto

THE RECORD REPORTS

(continued from page 18)

"WRESTLERS," by Kermit Ruyle of St. Louis, Mo., took first prize of $150 in the eighteenth nationwide Soap Sculpture Competition

EVENING COURSE

AN EVENING curriculum leading to the degree of Bachelor of Architecture will be offered by the School of Architecture of Columbia University in September, for the first time in the school's 46-year history, Dean Leopold Arnaud announces. The curriculum of professional studies is designed, Dean Arnaud said, to prepare young men and women as architects and planners "for the enormous building program that will develop immediately after the war." Two years of evening classes will be required to cover the number of hours included in one year of day classes, and students will be required to transfer to the day school for their final year of study.

MINIATURE ROOMS

THE English and French miniature rooms designed by Mrs. James Ward Thorne of Chicago will be shown at the Newark (N. J.) Museum from September through November, Beatrice Winser, director of the Museum, announces. Thirty model interiors will be exhibited, on the scale of one inch to a foot.

"WINDOWLESS BUILDINGS MEAN MORE EFFICIENT INDUSTRIAL PRODUCTION"

. . . *says* HERBERT E. ZIEL, *Albert Kahn, Associated Architects & Engineers, Inc.*

NO. 2 OF A SERIES by Kinetic Chemicals, Inc., makers of "Freon" *safe* refrigerants

TODAY'S great need for all-out production makes it imperative for architects to weigh carefully all the aspects of industrial planning which affect production. Obviously, the advantages of windowless construction must be determined by many factors, but here are some specific advantages of interest to every architect today.

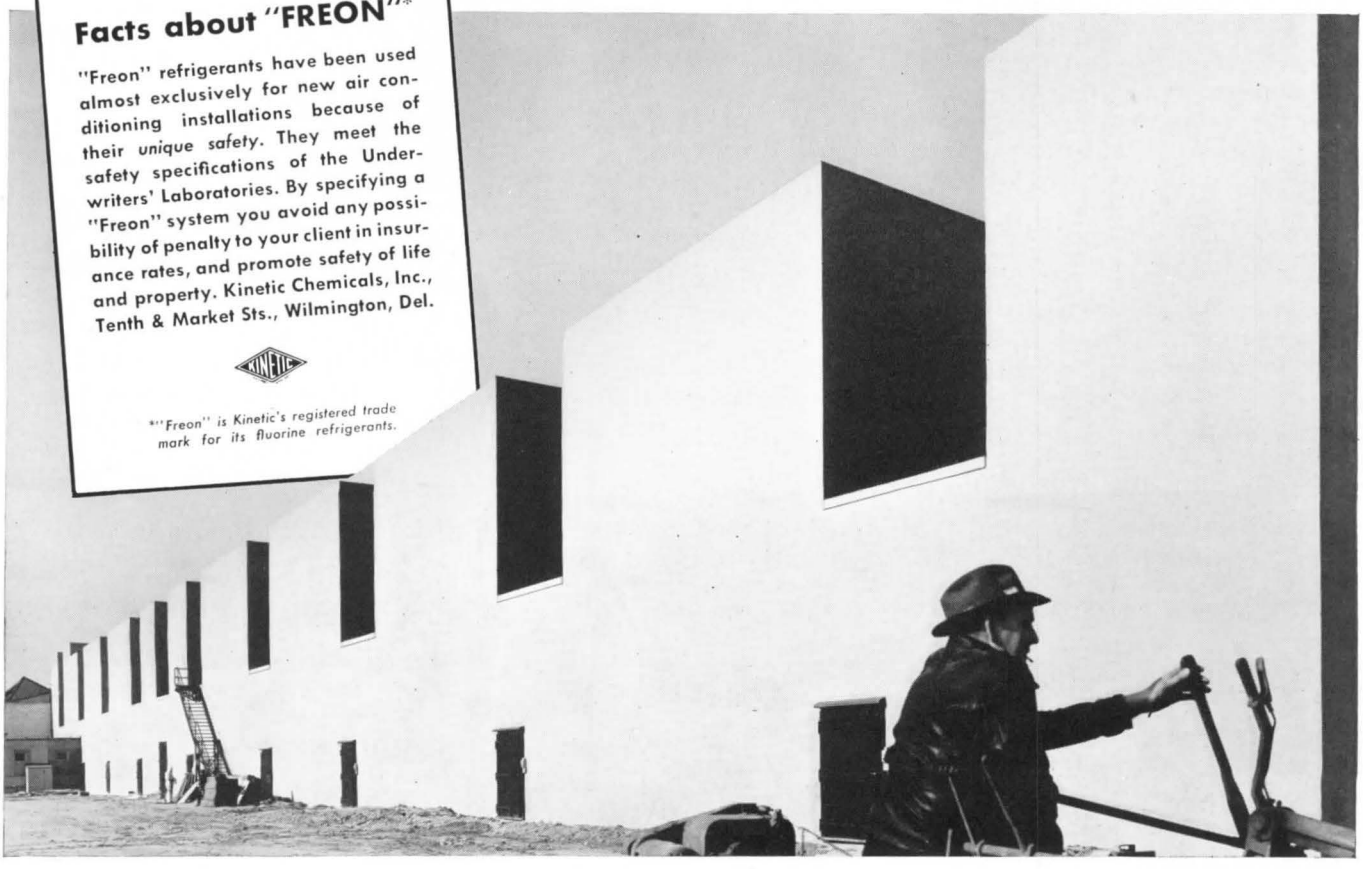
These advantages were pointed out by Mr. Herbert E. Ziel of Albert Kahn, Associated Architects & Engineers, Inc., one of the leading architect-engineers today engaged in the design and construction of production plants. We quote Mr. Ziel:

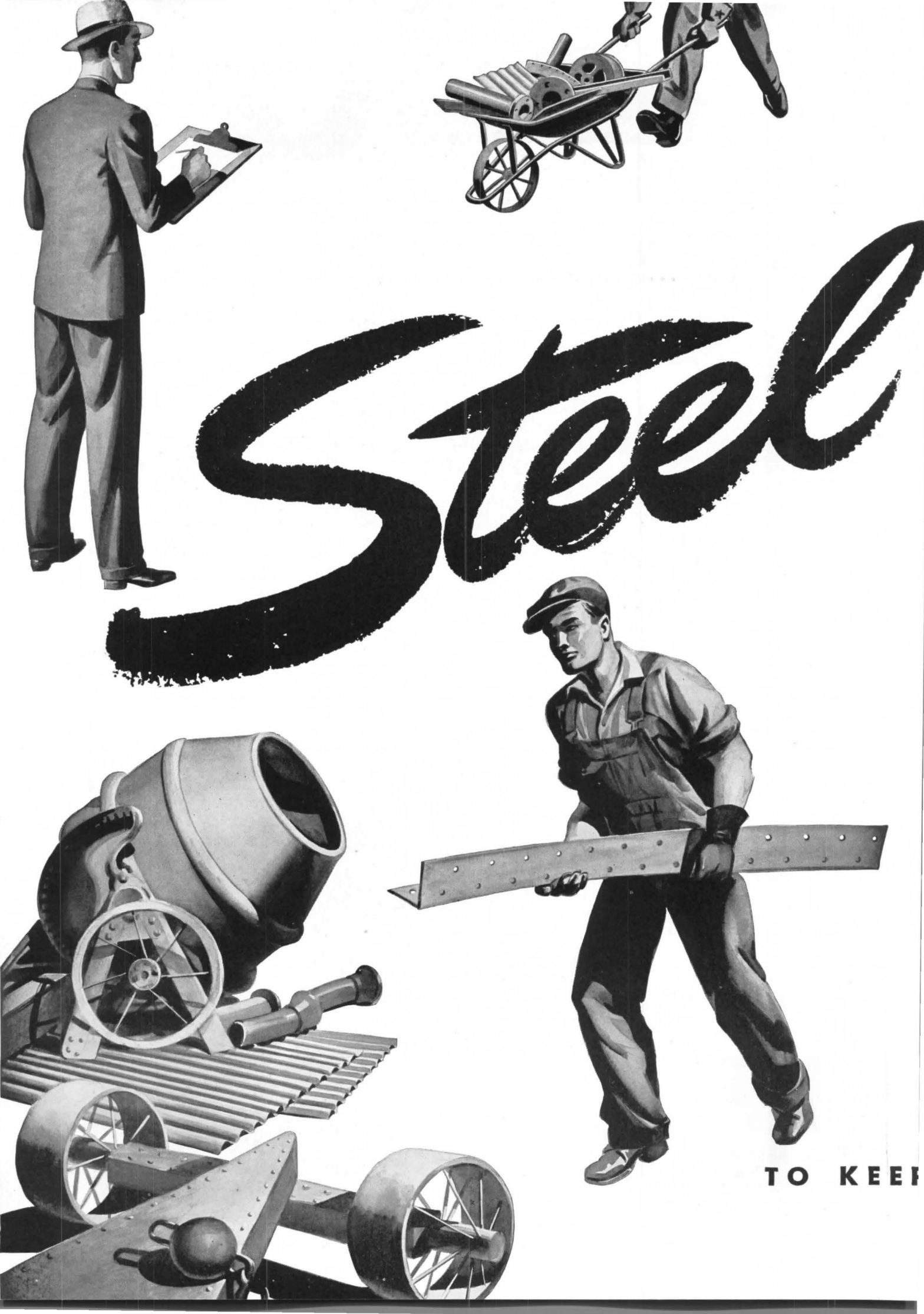
"The new era of industrial expansion in which we live has created new problems of industrial architecture. For example, the tear-down inspections of aircraft engines must take place in scrupulously clean surroundings. Therefore, windowless buildings are really best suited for this purpose. Many windowless plants have been constructed in this manner more for specialized manufacturing reasons than for 'blackout' purposes.

"Other specific advantages of windowless buildings in the war economy are: Production need not be interrupted during blackouts; military secrets are readily concealed from outsiders; and fewer rejects result from change in working properties, caused by expansion and contraction of materials when temperature and humidity vary."

Air conditioning is a key factor in the success of all controlled-conditions, windowless factories. When specifying for windowless construction, remember that the safety and efficiency of "Freon" refrigerants offers this key factor at its best.

Middle-west aircraft plant designed by Albert Kahn, Associated Architects & Engineers, Inc.




Steel
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needed – now

The steel industry is in urgent need of iron and steel scrap to keep the mills operating to capacity —to keep war materials moving steadily to American fighting forces and to our Allies.

Scrap is required in enormous quantities in the production of new steel. A constant flow to the steel mills must be maintained *now* in order to prevent the slackening off of operations and a drop in production.

It is of vital importance to everyone to see that all iron and steel scrap is salvaged and sent on its way to the mills.

Cooperate With the National Scrap Salvage Campaign

A national scrap salvage campaign is now under way and we are appealing to users of iron and steel equipment or material to collect all possible scrap and put it to work for your country.

Contractors in the building trades may have old or worn-out equipment or machines that can be scrapped. In the case of equipment being saved for spare parts—the parts can be removed now and the remainder scrapped.

Anything made of steel or iron is valuable as scrap—old wheelbarrows, shovels, old pipe, discarded furnace castings, old roofing, worn-out ductwork, old radiators, old tanks, worn-out hardware. Comb your equipment yards and storage sheds for such material.

★ ★ ★ ★ ★ ★

This appeal is made on behalf of the national war effort and is not for ourselves alone. All the steel-producing companies need and will need such material. Much of the available scrap is allocated by the Government to be used wherever needed most.

It's the obligation of everyone to do whatever he can to help keep the scrap moving. Sell your iron and steel scrap to a local junk dealer or send it to a collection point. But get it started on its way to the steel mills.

If you have any questions regarding procedure, we suggest that you get in touch with your local Industrial Salvage Committee.

WAR MATERIALS MOVING

BETHLEHEM STEEL

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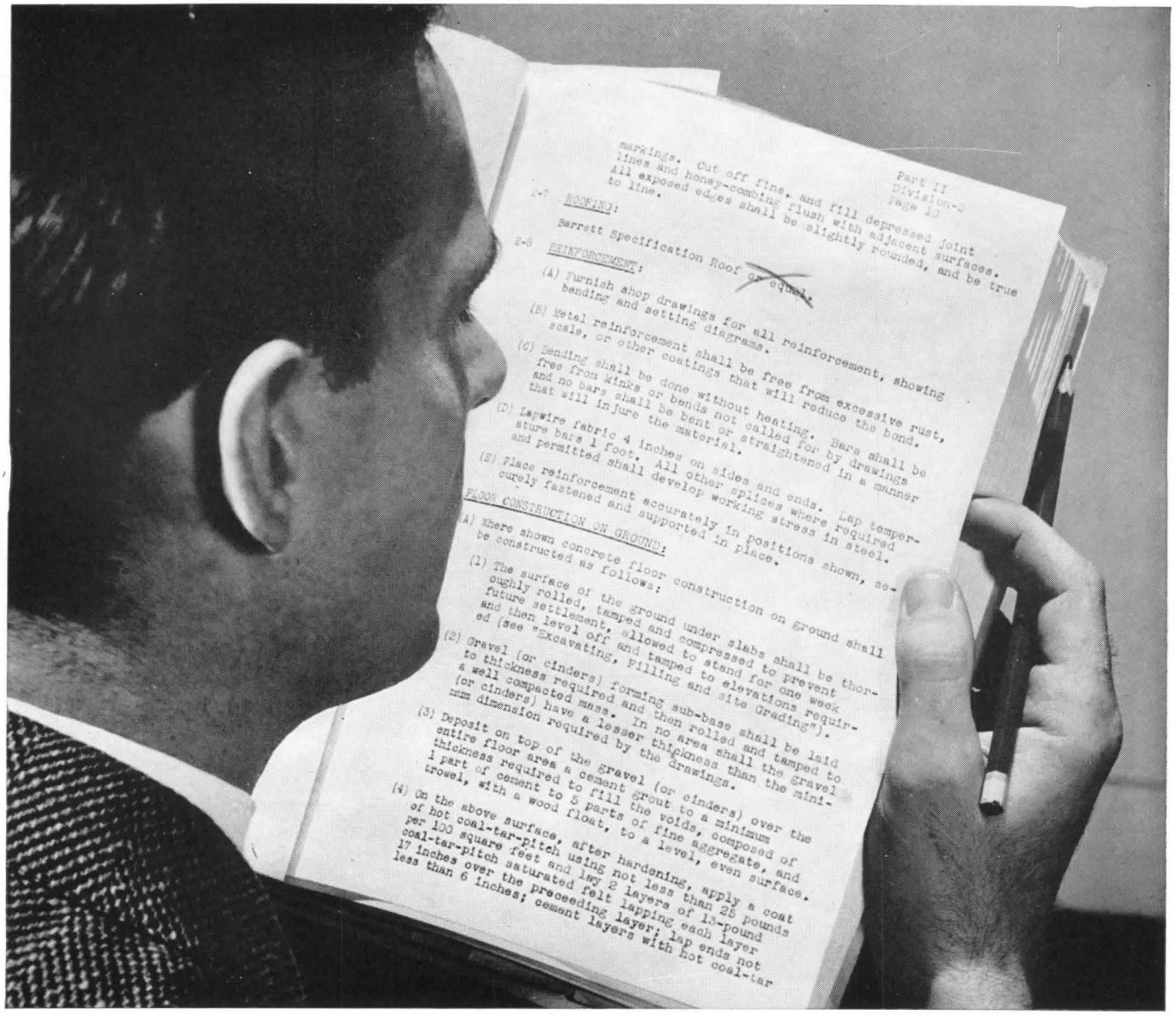

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*Reg. U. S. Pat. Off.

• In the design and construction of vital war plants, speed is a paramount factor. New and complex problems must be solved *right the first time*, or the production of planes, tanks and guns will be delayed.

In this situation, the significance of three words—Barrett Specification* Roof—is of vital importance to the architect. For these three words written into the building specification definitely remove the element of chance from roof performance.

They mean that the roof you have specified will be constructed of Barrett Specification coal-tar pitch and felt with a fire-safe gravel or slag wearing surface, that it will be applied according to the Barrett Specification by a Barrett Approved Roofer, a roofing contractor of proved experience, ability and integrity. They mean also that the roof will carry Fire Underwriters' Class A rating, that it will be bonded against repair and maintenance, and that it will be built to outlast the bonded period—of up to 20 years —by decades.

Three words — Barrett Specification Roof! When it's that simple to protect yourself and your client against roof failure . . . and when it's so important today that you do—why take a chance with "something else"? In war time particularly you can't afford to gamble on roofs!

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BOOKS FOR WAR-TIME REFERENCE

The books listed below are especially helpful for architects and engineers in solving their many technical problems, including those pertaining to wartime construction and the protection of the civilian population.

1. **PLANNED A. R. P.,** by Tecton, Architects. 138 pages — extensively illustrated with photographs, diagrams and maps — Price $2.50.

2. **CIVIL AIR DEFENSE,** by Lt. Col. Augustin M. Prentiss, U.S.A. A 334-page illustrated treatise on the protection of the civil population against air attack — Price $2.75.

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

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

5. **ARCHITECTURAL SPECIFICATIONS,** by Harold Reeve Sleeper, A.I.A. 822 pages — Price $10.00.

6. **ARCHITECTURAL GRAPHIC STANDARDS,** by Charles G. Ramsey and Harold R. Sleeper, 2nd Edition — 284 pages. 9¼ x 9½ in. — Price $6.00.

7. **ARCHITECTS' AND BUILDERS' HANDBOOK,** by Frank E. Kidder and Harry Parker, 18th edition — 2,315 pages — 4½ x 7 in. — Price $8.00.

8. **SIMPLIFIED ENGINEERING FOR ARCHITECTS AND BUILDERS,** by Harry Parker. 214 pages — 96 illustrations —5 x 7¾ in. — Price $2.75.

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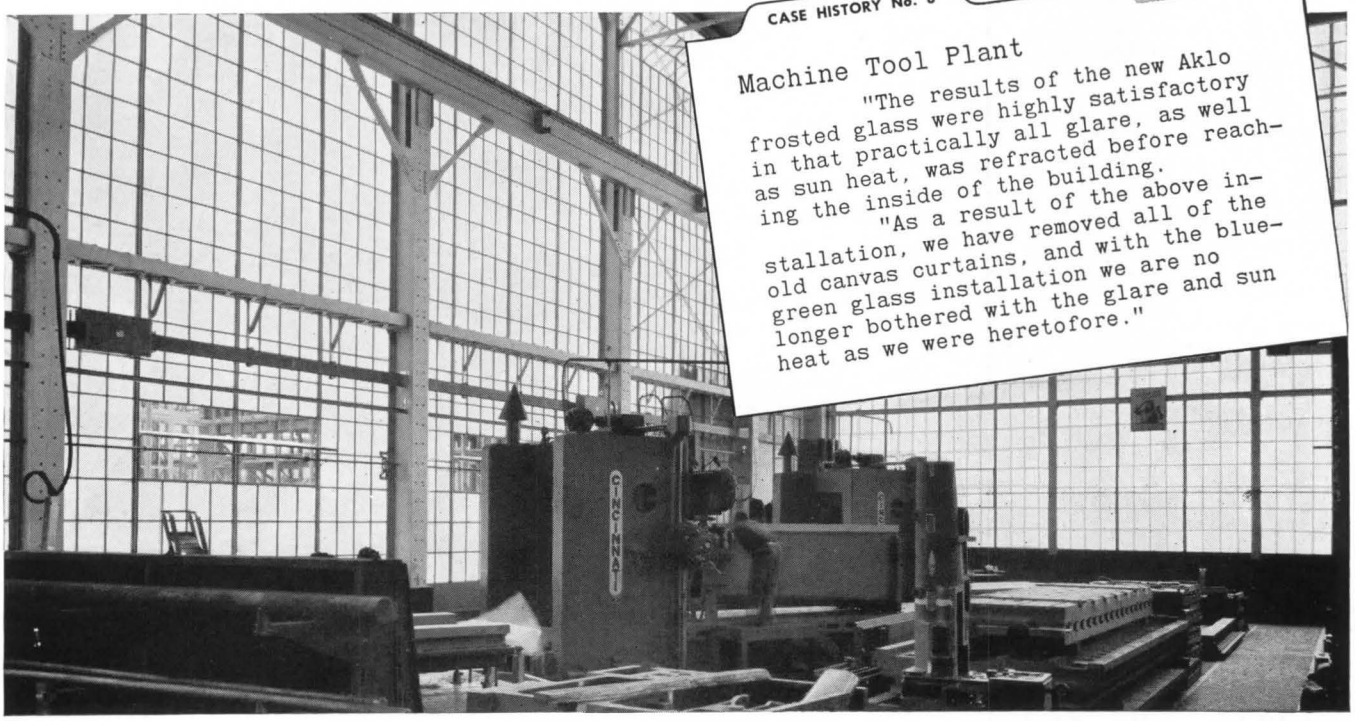

Frosted Aklo Glass admits glareless Daylight, eliminates costly shades, keeps interiors Cooler

REDUCES GLARE—*eliminates* eye-strain and employee fatigue.

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From scores of plants come enthusiastic reports on Frosted AKLO glass installations. By reducing eyestraining glare, this scientific diffusing glass helps employees do more and better work. Errors are eliminated, production speeded up. Costly shades or bothersome painting of glass are eliminated.

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AKLO glass is manufactured by Blue Ridge Glass Corporation, Kingsport, Tenn., and sold by Libbey·Owens·Ford through leading glass distributors. It is available in hammered and ribbed pattern, both wired and unwired. For full information, write Blue Ridge Sales Division, Room 1272, Libbey·Owens·Ford Glass Company, Toledo, Ohio.

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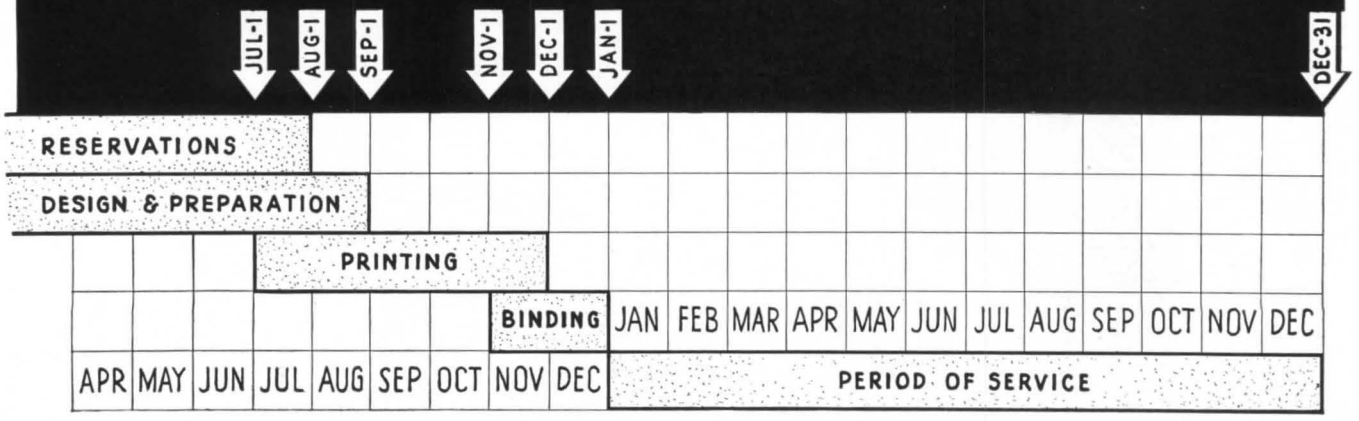

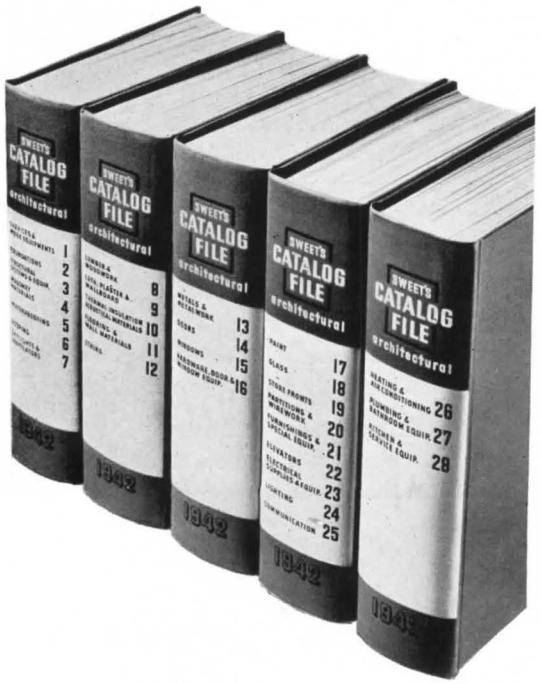

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Between now and that time, Sweet's will have received and executed the catalog orders of hundreds of manufacturers. A staff of eighty people will have gathered up detailed instructions; designed and printed clients' catalogs totalling thousands of pages; submitted proofs; secured okays; classified and indexed the file; verified the names and addresses of thousands of recipients and completed arrangements for the distribution of some 250 *tons* of building-product information.

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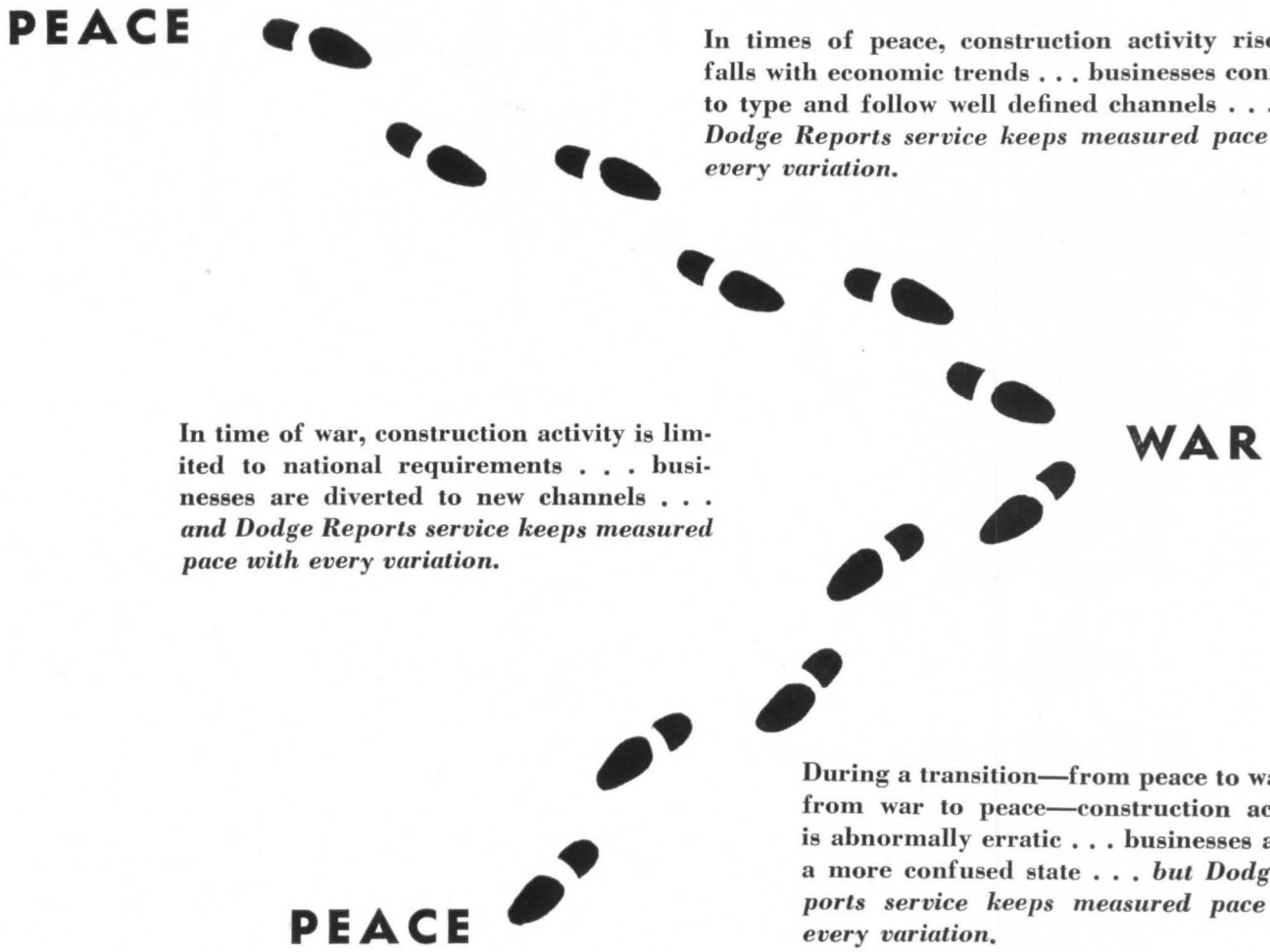

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Here is an opportunity to add one or more important architectural books to your working library. Each one of these titles is a standard on its particular subject and is well worth the price.

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2. **BETTER HOUSES FOR BUDGETEERS, by Royal Barry Wills.** 104 pages—9 x 12 in.—Sketches, plans and descriptions—Price, $3.00.

3. **GLASS IN ARCHITECTURE AND DECORATION, by Raymond McGrath and A. C. Frost.** 650 pages, 462 halftone and line illustrations—9½ x 12½ in.—Price, $20.00.

4. **AERIAL BOMBARDMENT PROTECTION, by Harold E. Wessman and William A. Rose.** 372 pages — 5¾ x 9 in. illustrations—Price, $4.00.

5. **HOUSES FOR GOOD LIVING, by Royal Barry Wills.** 104 pages, 9 x 12¼ in.—102 illustrations and plans—Price, $4.00.

6. **GUIDE TO STANDARD SPECIFICATIONS FOR GOVERNMENT BUILDING, by Harold R. Sleeper, A.I.A.** Single copies, 50 cents each.

7. **SIMPLIFIED ENGINEERING FOR ARCHITECTS AND BUILDERS, by Harry Parker,** 214 pages — 96 illustrations 5 x 7¾ in. — Price $2.75.

8. **THE RESTORATION OF COLONIAL WILLIAMSBURG,** a cloth-bound reprint of Architectural Record for December 1935 — 104 pages — Price $1.50.

9. **WORKING DETAILS, PART I. Domestic, edited by Mildred W. White.** 139 pages. Price $4.00.

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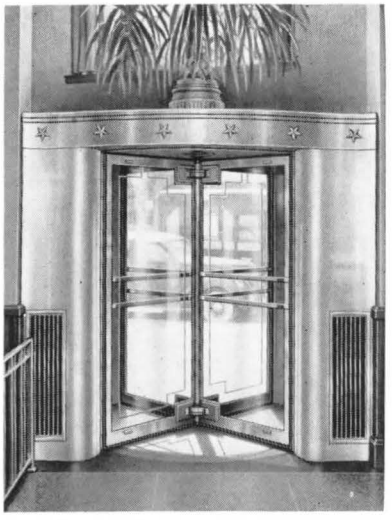

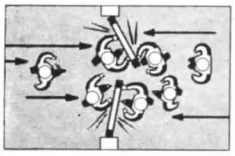

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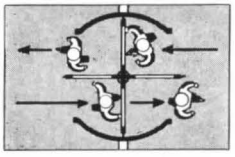

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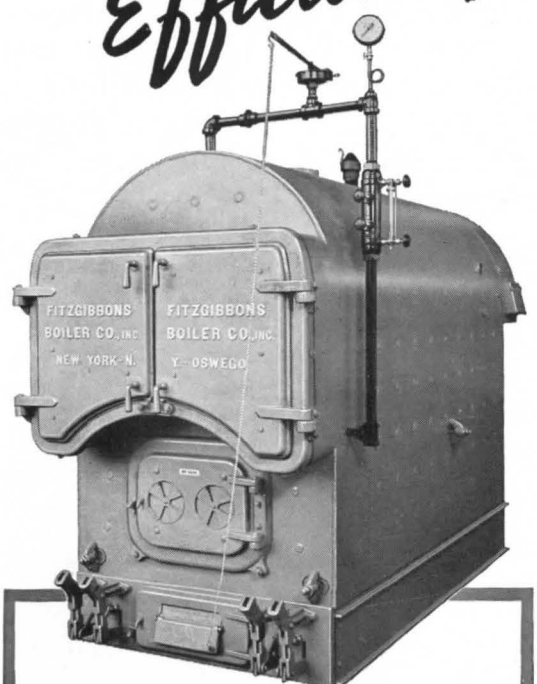

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I am in the Army with no immediate hope of return to civil life. Both my wife and myself are anxious to build our own home. We have not selected an architect so far. —Sgt. T. C., Omaha, Nebraska

I intend to build as soon as priority conditions permit and so far I have no architect or builder. Cost $4,500 to $6,000—negotiating for site.
—F. J. G., Chicago, Illinois

I recently purchased an eight-room house with two-car garage, just ripe for extensive remodeling. Priorities make it impossible to carry out my desires . . . in the meantime I am trying to get together all the ideas I can, so that I shall be able to tell the selected architect what is wanted.
—R. S. B., Chester, Pennsylvania

I plan to build a home as soon as materials are available after the duration . . . location near Libertyville . . . cost around $10,000.
—E. J. F., Chicago, Illinois

We are considering several designs at present . . . will build in Chicago vicinity as soon as war conditions permit . . . cost $7,500 to $8,500. Architect not selected.
—R. H. O., Assoc. Mechanic Engineer, U. S. Army Air Force

★

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