Eldorado's Opaque Line is AN ORIGINAL BLACKOUT

Eldorado's blackouts are always a full success! Each mark, each line is a complete black-eye for that common enemy—MISUNDERSTANDING. When the draughtsman makes his drawing, each inch of it is as he wants it. And it shows up that way on the blueprint! Clear! Distinct! Even! What this means to American production cannot be estimated.

Only Dixon, the makers of Eldorado, are permitted to use the Typhonite process. Through this method, graphite is smashed to minute particles of even size. These make a lead that's smooth, dependable, unerring—the kind you need.

Interesting booklet—*free!*

A little history of pencil-making describes the Typhonite process—it's informative, fascinating. Please write on your professional or business stationery.

PENCIL SALES DEPARTMENT 225-J3 • JOSEPH DIXON CRUCIBLE CO. • JERSEY CITY, N. J.

TABLE OF CONTENTS on page 5

COMES REYNOLDS NEW INSULATION

Reyn-o-Cell

CELLULAR FIBRE INSULATION

FROM the warm and fertile fields of Dixie comes this newest insulating material . . . COTTON. Nature has endowed it most effectively for this purpose. A ball of fluffy cotton is made up of innumerable tiny, intertwined fibres. Each fibre is a hollow tube. Combined into a springy mass they make up myriads of dead air-spaces . . . the most effective means of retarding the flow of heat.

Nature has done more! It has coated each cotton fibre with natural wax to make it water repellent.

Science has completed the job that Nature started. The Cotton fibres of Reyn-o-Cell Insulation have been treated to make them fire-resistant and vermin-proof. They have been woven into a thick, light-weight, easily handled blanket that keeps summer heat *out,* keeps winter warmth *in.* Accredited laboratory tests show that Reyn-o-Cell has an unexcelled insulating value (K .24 BTU/hr/square foot/Degree F./Temperature difference/inch thickness). Reyn-o-Cell Insulation is manufactured in strict accordance with U. S. Department of Agriculture specifications. Every case is government inspected to assure uniform insulating value, thickness, flame proofing, vermin proofing and density.

Reyn-o-Cell (cotton insulation) is contributing its share in the national defense program and is being specified and used on numerous governmental defense projects of U.S.H.A., P.B.A., A.D.A., F.W.A. and Army and Navy.

ADVANTAGES

- Low Thermal Conductivity
- Negligible Heat Storage
- Fire Resistant
- Water Repellent
- Resilient
- Sound Deadening
- Light Weight
- Clean and Sanitary
- Economical to Install
- Federal, State and Municipal Acceptance

YOU OUGHT TO HAVE THE COMPLETE STORY. Write for Booklet A1A 37a1 giving details, facts, and scientific data.

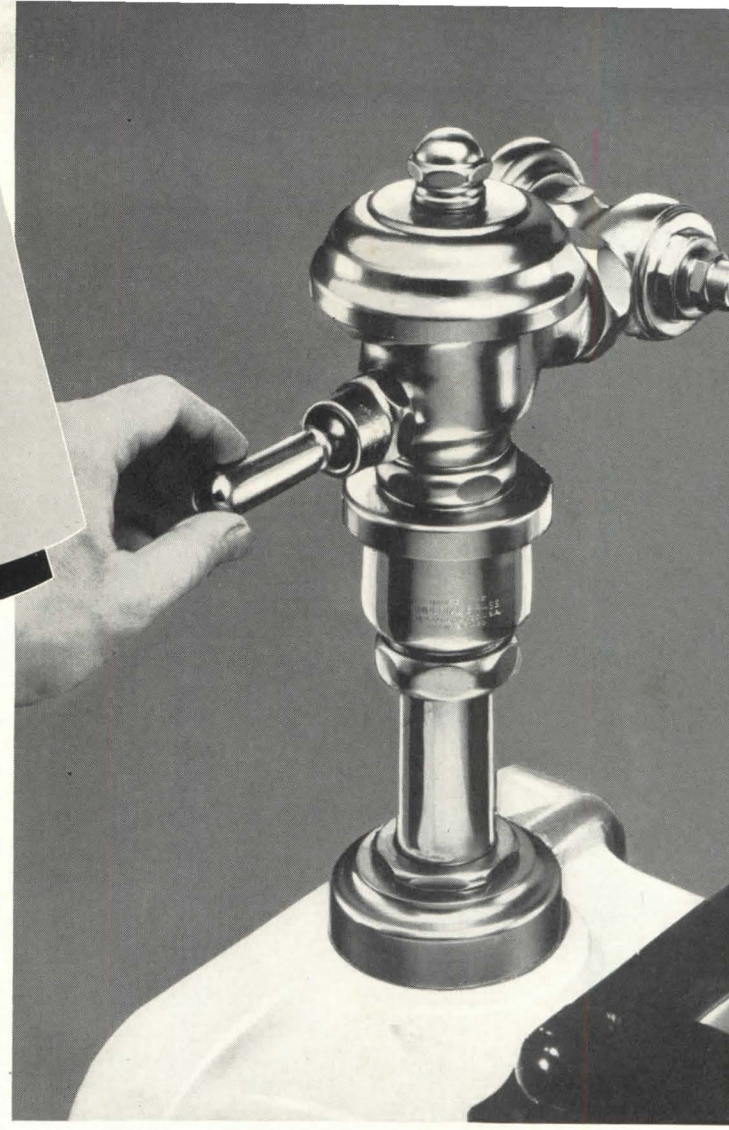
REYNOLDS METAL

REYNOLDS METALS COMPANY

BUILDING PRODUCTS DIVISION RICHMOND, VIRGINIA

ARCHITECTURAL RECORD (Vol. 91, No. 3, March, 1942) is published monthly by F. W. Dodge Corp., 119 W. 40 St., New York, N. Y. $3 per year; Foreign, $5. Reentered as second-class matter Mar. 24, 1939 at the Post Office of New York, N. Y., under the act of Mar. 3, 1879.

WATROUS EQUIPPED *means* better—equipped buildings for war work



● Shown here is the Watrous Majestic diaphragm type Flush Valve. equally outstanding piston type valve is known as the Watrous Imperi

BETTER 5 WAYS!

1. Washroom sanitation promoted. Quick, effective flushing of toilet fixtures assured by Watrous Flush Valves even under conditions of severe usage.

2. *MAXIMUM* water savings assured on EVERY FIXTURE because *ALL* models of Watrous Flush Valves are quickly *ADJUSTABLE* to fixtures' actual needs.

3. Patented self-cleansing by-pass protects against service calls. Ordinary dirt and scale AUTOMATICALLY removed. This keeps valve working properly.

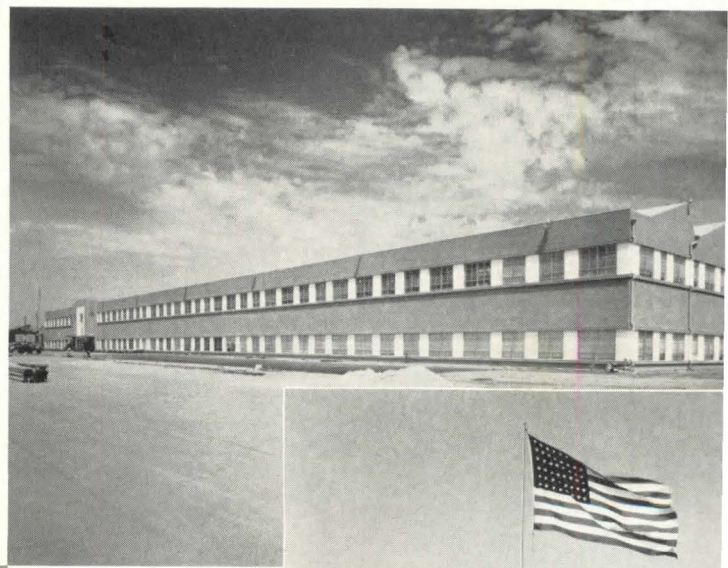
4. Watrous "SINGLE-STEP-SERVICING" cuts maintenance time and expense. Entire operating unit lifts out. Old valves can be made "new" in 3 or 4 minutes.

5. Exclusive "QUICK-CLEAN OUT" System is big time saver in instances where excessive dirt and sand may be encountered in water.

Thousands upon thousands of Watrous Flush Valves are going into all types of army and navy buildings, industrial plants, schools and hospitals in all sections of the country. These Watrous Flush Valves were selected by the architects, engineers and plumbing contractors for these projects after careful consideration of the superior mechanical features offered in these valves.

We believe that if you will make a brief analysis of these features, and their contribution to flush valve service, you, too, will join the growing swing to Watrous.

IMPERIAL BRASS MANUFACTURING CO.
1240 W. Harrison St., Chicago, Ill.



● Old Glory flies at one of the big, new aviation plants. In both office and plant washrooms Watrous Majestic Flush Valves are installed.
The Austin Company, Builder. William Nies, Plumbing Contractor.

Watrous Flush Valves

DIAPHRAGM and PISTON TYPES . . . also furnished with *SILENT-ACTION* equipment

FOR FURTHER INFORMATION SEE OUR CATALOG IN SWEET'S

STRUCTURAL PROTECTION, TOO, WITH BYERS WROUGHT IRON LINTELS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

You probably think first of corrosive *piping* services when you are applying wrought iron . . . but many architects and engineers are finding its unusual corrosion resistance of equal value in *structural* parts and members.

The illustration shows one example; wrought iron lintels. Louis Preuss, St. Louis architect, has used wrought iron for this service in several projects, to eliminate the trouble and expense of frequent maintenance, and the danger of premature failure if such maintenance should be neglected. This particular application for wrought iron was suggested some years ago, when corrosion of lintels made of ordinary materials caused failure of the facing on a large building, and required extensive and costly repairs. The new lintels were naturally wrought iron.

Other popular structural uses for wrought iron include flashing, siding and cut nails. These nails, incidentally, are the same in design, and identical in qualities, analysis and permanence, to those used in structures built a century ago.

No list can adequately describe all the profitable uses of wrought iron in the many types of defense building—including housing. If you have any services where corrosion causes premature failure of ordinary materials, the best way is to write our Engineering Service Department for data on the performance of wrought iron under similar service conditions. Ask also, for our new General Catalog (dated January, 1942), containing all necessary data for ordering and applying any Byers product.

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BYERS
GENUINE WROUGHT IRON
TUBULAR AND HOT ROLLED PRODUCTS
STEEL TUBULAR PRODUCTS

VOLUME 91
NUMBER 3

MARCH 1942

record ARCHITECTURAL

COMBINED WITH AMERICAN ARCHITECT AND ARCHITECTURE

BUILDING NEWS

SCHOOLS . . . . A BUILDING TYPES STUDY

F. W. DODGE CORPORATION
H. Judd Payne, Vice Pres. in charge Magazine Div.

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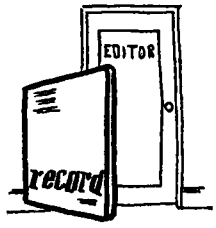
Other Dodge Services: REAL ESTATE RECORD AND BUILDERS' GUIDE, SWEET'S CATALOG FILES, HOME OWNER'S CATALOGS, DODGE REPORTS, and DODGE STATISTICAL RESEARCH SERVICE.

BEHIND THE RECORD



THE APRIL ISSUE

Next month's RECORD will be focused on *Wartime Housing*—a field of building that's teeming with activity and one in which many technical developments are taking place. In brief, here are some April issue highlights: *"War-Housing Requirements and Progress to Date"*—a report on Washington policies and procedures to guide housing-minded architects and engineers in all parts of the country. *"What's New in Heating Systems"*—a RECORD war-economy story on what can be done to conserve critical materials in heating systems for large-scale housing projects, compiled from work done by trade associations, university research departments and the recently formed Plumbing and Heating Division of WPB. *Time-Saver Standards* of officially approved simplified heating layouts will be included.

"What Tenants Want in Housing" is the subject of the Building Types Study—a graphic presentation of facts and figures sifted from an intensive field-research story of more than 200 completed housing projects.

WORKING FOR THE ARMY

Of more than academic interest— what with the Army letting out much design work to eager architects and engineers—are the contract forms now in use. Two principal contracts

(continued on page 7)

Cheerful and Inviting,

Gaylord Library Furnishings Breathe the Welcome and Comforts of Home—

Gaylord charging desk, magazine and newspaper racks, shelving, tables and chairs form a pleasant but practical grouping for the Central School Library of East Greenbush, N. Y.
J. Russell White, Architect.

This might be a corner in a home library, but it's the effect of Gaylord furnishings combined with a fireplace in the remodelled Plattsburg Public Library of Plattsburg, N. Y.

The trend toward an inviting, homey atmosphere is particularly noticeable in children's rooms, as this group at the Glencoe Public Library of Glencoe, Ill., plainly shows. Allen & Webster, Architects.

Great changes have overtaken school and public libraries in the 46 years that Gaylord Bros. Inc., have specialized in the design and manufacture of library furnishings and equipment. The entire concept of the scope and purpose of the library as an institution has changed.

No longer a cold and austere institution for the bookish few, the library has become a friendly mentor, a second home, for the community. And Gaylord—through working closely with both librarians and library architects—has helped to make the library an outreaching, vital force in the life of the common citizen, *because it has helped to make the library cozy, comfortable, inviting and cheerful.*

Let us place our specialized knowledge and experience at your service. Let us help you in the designing and planning of your new library buildings, branch libraries, or departmental changes. There is no charge for consultation.

GAYLORD BROS., Inc.

Established 1896

SYRACUSE, N. Y. STOCKTON, CALIF.

Originators and Makers of Better Library Furniture and Supplies

(continued from page 5)

were described recently by Major General Eugene Reybold, Chief of Engineers, U. S. A., before a meeting of the Associated General Contractors of America:

We—the Army Engineers—were early confronted with the necessity either for enlarging radically our engineering staffs, or, alternately, finding another method of accomplishing the greatly increased volume of design work thrown upon our shoulders. We met this particular problem by invoking the so-called "architect-engineer" form of contract. By this we have in effect contracted out such engineering work as was beyond the capacity of our existing staffs. Under his contract the architect-engineer has made the surveys, and drawn the plans and specifications for the project in question. We have taken these plans and specifications and, working through our District Engineers, have advertised and awarded the contracts.

Although the architect-engineer contract itself must normally be on a cost-plus-fixed-fee basis, the construction contracts . . . are now executed chiefly on the lump-sum or unit-price basis. Normally, the prime contract covers all, or the major part, of the project; but, where the situation demands, we do not hesitate to vary that procedure. The prime construction contractor frequently proceeds to let various subcontracts; but of course all work is supervised by our District Engineer. . . .

We now have still another form of contract brought about by still other conditions. I refer to the so-called architect-engineer-manager—or, as it is called, the "A.E.M."—form of contract. The procedure involved in this instrument has several interesting angles. The architects and engineers of the A.E.M. firm do their work about as in the architect-engineer contract. The only thing is, they submit their plans and specifications to the District Engineer as they are developed—in piecemeal fashion, so to speak. The District Engineer proceeds to advertise and award the contracts, also on this piecemeal basis.

REALISM FROM LONDON

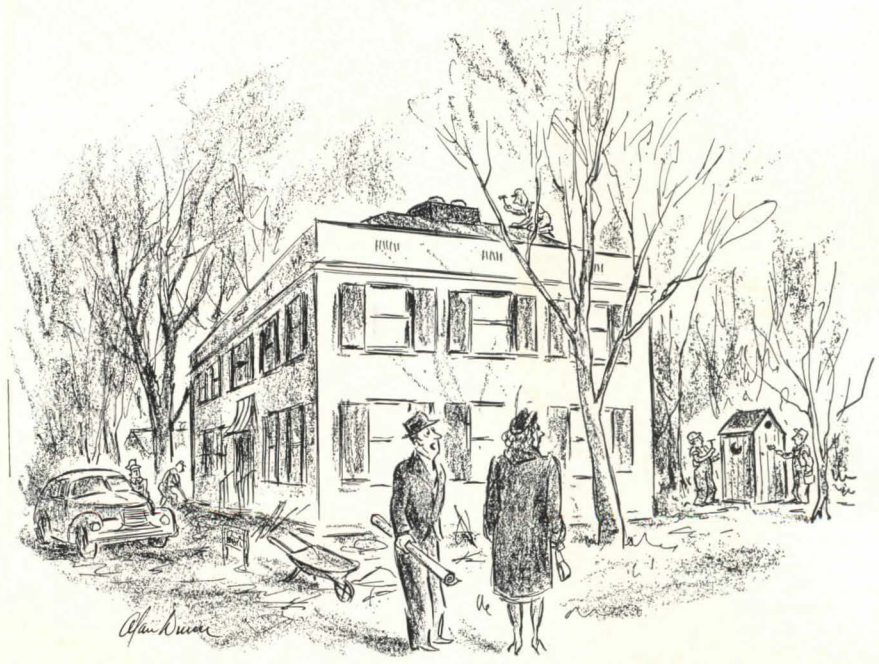
The English architect who contributed the *Trends in Brief* story in January (page 24) and the current one on page 22 of this issue has been working in a London Group control room of the Home Office for Civil Defense since September, 1939. Before that he was with the architectural staff of the London County Council. He's 33 and "a Yorkshire man with Scotch blood in me on my father's side, born in Bradford and therefore fellow townsman of J. B. Priestly." And here's a statement of his personal ambition: ". . . *My first and primary one is to see the Hitlerite doctrine smashed, never to rise again and to help in any way an ordinary person like myself can. Then this war will be over and we can start living a respectable life again!*"

That, we submit, is realism of the sort which could be more widely used to good advantage in these United States.

And speaking of realism—to a conscientious bunch of editors it's tough not to be able to publish every last bit of information that comes to hand about the various buildings in our war construction program. You may have noticed that the RECORD no longer prints the size or location of war-working industrial plants—nor any specific information about the type of product which is being made. And even pictures are cropped to delete anything that in enemy hands might cause damage to any part of our war effort. It's a self-imposed discipline for "the good of the service" and for the better protection of the cause for which we're all fighting.

Fighting, of course, isn't all gun-shooting. Some of it is done on the home front with just such editorial discipline. And a great deal more is done in the factories that until a short time ago made the things that you architects and engineers used to specify (and will again) for buildings. Conversion to war work is spelled with a capital "C" by building products manufacturers. And among those who can be particularly proud of the job they're doing is the Mueller Brass Company of Port Huron, Michigan. This company, a veteran in building and a long-time RECORD advertiser, has just been awarded the coveted Navy "E-Pennant" for work well and timely done.

So here are congratulations to pages can chronicle more "E" awards Mueller—and the hope that RECORD to more and more manufacturers who have contributed so much to building's technical excellence and who are now all-out to help preserve a way of life that has made their country great.



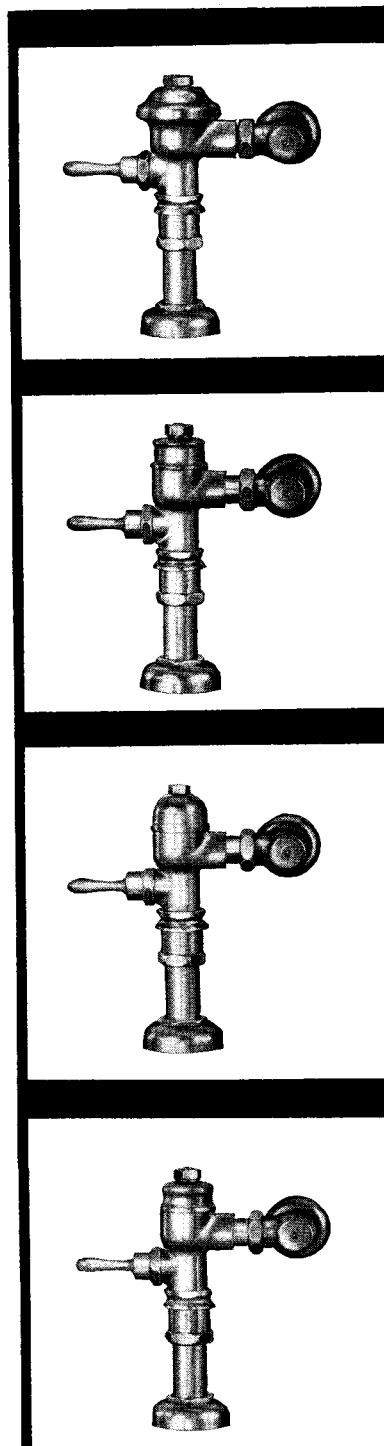
"Well, I'm happy to say we succeeded in completing your house, madam — except for one little feature."

— Drawn for the RECORD by Alan Dunn

IN WAR AS IN PEACE

There are more SLOAN FLUSH VALVES *sold than all other makes combined!*

The pre-eminence of the Sloan Valve Company, founded in times of peace, has earned for us the tremendous responsibility of meeting the demands of war-time production for the vast majority of all of America's defense arsenals. Today, as always, the Sloan Valve Company is producing more Flush Valves than all other makers combined.



Why SLOAN FLUSH VALVES?

★ ***THEY SAVE WATER.*** Because of the accuracy and permanence of adjustment Sloan Valves save their owners water *all* of the time. And saved water is saved money—not only in reduced consumption of water but in reduced pumping and man-power costs.

★ ***THEY REDUCE MAINTENANCE COSTS.*** Sloan Flush Valves cost but ½¢ to 1½¢ per valve per year to maintain. Entire installations, in service for years without being touched, are constantly being reported.

★ ***THEY SAVE REPLACEMENT.*** Sloan Valve durability may be verified in your own locality. Installations which are 15, 20 and 25 years old are common to every section of the country and every type of building.

THAT'S WHY—in office buildings, schools, hospitals, hotels, institutions, factories, apartments or public buildings, the vast majority of flush valves are Sloan. Now, as in peace time, there are more Sloan Flush Valves sold than all other makes combined.

SLOAN VALVE COMPANY • CHICAGO
4300 West Lake Street

SLOAN *Flush* VALVES

Bachrach

George Howe Succeeds Simon

APPOINTMENT of *George Howe* of Philadelphia as Supervising Architect of the Public Buildings Administration, Federal Works Agency, fills the position left vacant when *Louis A. Simon* retired in December. Seventeenth appointee to the post of Supervising Architect, which originated in the position of Federal Architect under President *Andrew Jackson* in 1836, Mr. Howe has been for two years consulting architect to the Office of Supervising Architect. A member of AIA, he has practiced architecture more than 25 years with offices in New York and Philadelphia. Since 1929 he has been a principal in the firm of Howe and Lescaze.

AIA Activities

A PLAN for utilizing the ability and experience of architects throughout the country is offered by *Elbert I. Harrison*, vice-president of the Central Illinois Chapter of AIA. Mr. Harrison suggests that AIA be selected by the Governmental agencies to classify architectural firms or groups of firms according to their qualifications, and assign to established firms the responsibility of executing the necessary architectural work for construction in their locality.

"Local building industry," Mr. Harrison said, "could be utilized, and delays and transportation reduced to a minimum. The utilization of the talents, ability and experience of the architects of the nation could accelerate the tremendous program required with economy, efficiency and dispatch, and at the same time effect the decentralization program and avoid the bottleneck of the Washington merry-go-round.

"The War Production Board has found the same idea necessary to utilize our established production facilities and organizations throughout the nation," he added.

Workability of the idea is borne out by the fact that FWA seems already to be thinking along this line (see page 39).

* * *

DEVELOPMENT of a master plan for the Los Angeles metropolitan area is the immediate program of the Southern California Chapter of AIA, as outlined by *Samuel E. Lunden* in his address as incoming president. Involved in this study, according to President Lunden, would be the land-use of the entire coastal plain.

"Under this program," he said, "we would consider such details as these: Starting with the progress that has been made in the development of the Administrative Center, we would consider the expansion of this unit to include a cultural center for our city. We have the downtown problem to consider; shall we allow it to continue to decay or will replanning save it? Housing projects both for the low-income group and the type for defense are being intermingled with the FHA program of private residential units without an over-all plan. There is now no plan relating our residential sections to the other elements of our community. The industrial and manufacturing areas are growing by leaps and bounds under the pressure of the defense program. All of these elements must be studied and readjusted in relation to the others. The over-all problem of recreational centers, including a great green belt encompassing our community, is of vital importance. Perhaps the most challenging problem of all is the solution of the transportation problem: a complete free-way system—private and public transportation—parking garages and parking areas."

In charge of this program will be *Sumner Spaulding*, who executed a civic center plan for Los Angeles which has been adopted by City, County, State and Federal Governments.

Competitions

PROGRAM for a competition to select an architect for the Administration Building at the Municipal Airport at Fitchburg, Mass., may be obtained from Dean *Joseph Hudnut*, Graduate School of Design, Harvard University. The competition, in one stage, is open to all registered architects who are citizens of the United States. Last date for submission of drawings is April 2. The jury includes The Honorable *Alfred Woollacott*, Mayor of Fitchburg, *George R. Wallace*, Chairman of the Airport Commission, *John A. Holabird*, *George Howe* and *Eero Sarrinen*, architects.

* * *

THE Kate Neal Kinley Memorial Fellowship for 1942 is announced by *Rexford Newcomb*, chairman of the Kinley Fellowship Committee. Carrying a stipend of $1,000 for advanced

(continued on page 12)

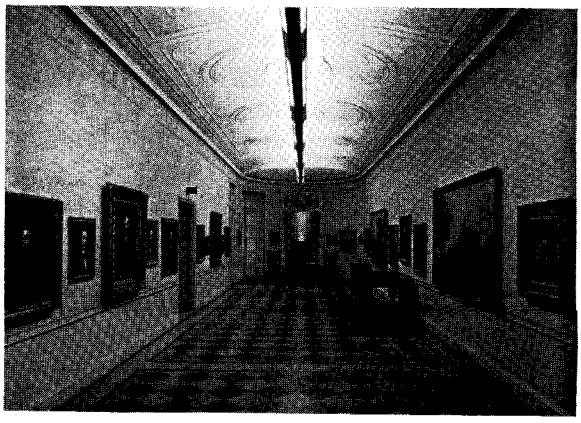


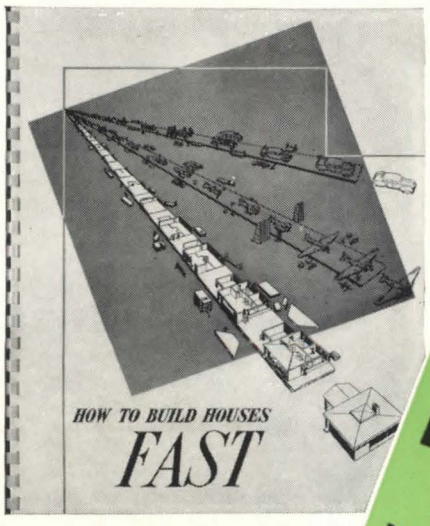
Photo by Samuel H. Gottscho

OPENING of the new NATIONAL ACADEMY GALLERIES, on upper Fifth Avenue, New York City, reconstructed from residences donated by Archer M. Huntington, gives the Academy its first home since its former building was demolished in 1899. The permanent collection of more than 2,000 items is once more available for exhibitions. Notable among the elements of reconditioning is the gallery lighting system. By means of specially shaped suspended light troughs, direct lighting aimed at the exhibits is combined with indirect illumination of the galleries. William A. Delano was the architect who supervised conversion of the houses into galleries for the Academy

Now... when you are taking new sights on your future... consider the increasing importance of Prefabrication

THIS NEW FREE BOOK tells what the leading prefabricators are doing . . . explains why they are using Douglas Fir Plywood as a basic structural material.

● Circumstances are combining to make a large part of today's building . . . *and an even larger part of tomorrow's* . . . production-line structures. Now when you are making plans for the future, by all means consider *how prefabrication can serve you and how you can serve it.* The Douglas Fir Plywood Association has just published a book, *"How to Build Houses Fast,"* which tells the story of prefabrication and contains data and photographs on both the operations and structures of the nation's leading prefabricators. Write for your free copy today. Douglas Fir Plywood Association, Tacoma, Wash.



1000 Buildings a Month in which Douglas Fir Plywood serves as a basic structural material are now being produced by prefabricators from coast to coast. The above photograph, showing a production line in Green's Ready-Built Homes Factory at Rockford, Ill., is typical of most prefabricating plants. Read *"How to Build Houses Fast"* and learn why Douglas Fir Plywood is the prefabricator's favorite material. Read also the Douglas Fir Plywood section in Sweet's Catalog and see how this "modern miracle in wood" can help you in every structure you design and build.

GENUINE DOUGLAS FIR PLYFORM Concrete Form Panel D.F.P.A. INSPECTED

GENUINE PLYWALL Douglas Fir Plywood WALLBOARD D.F.P.A. INSPECTED

SPECIFY DOUGLAS FIR PLYWOOD BY THESE "GRADE TRADE-MARKS"

PLYPANEL D.F.P.A. TRADE MARK REG. U. S. PAT. OFF.

EXT.-D.F.P.A. TRADE MARK REG. U. S. PAT. OFF.

GENUINE PLYSCORD SHEATHING D.F.P.A. INSPECTED

DOUGLAS FIR PLYWOOD
Real Lumber
MADE LARGER, LIGHTER
SPLIT-PROOF
STRONGER

WITH RECORD READERS

(*continued from page 10*)

study, the award is open to graduates of the College of Fine and Applied Arts of the University of Illinois and similar institutions of equal standing, whose principal studies have been in music, art, or architectural history or design. Applications should reach the Committee not later than May 1. Information may be had from Dean Newcomb, College of Fine and Applied Arts, University of Illinois.

Council for Victory

DELEGATES from 21 societies, representing 10,000 artists, met recently at New York's Architectural League to form the Artists' Council for Victory, and voted to place the abilities of their members at the Government's disposal during the war. As president they elected *Hobart Nichols*, president of the National Academy. Chairman for architecture is *Julian Clarence Levi*, past president of the Architectural League. Groups represented include:

Allied Artists of America; American Artists Congress; New York Chapter, American Artists Professional League; American Society of Miniature Painters; American Water Color Society; An American Group; Mural Artists Guild of United Scenic Artists; National Academy of Design; National Association of Women Artists; National Sculpture Society; National Society of Mural Painters; New York Society of Women Artists; Sculptors' Guild, Inc.; Society of American Etchers; Federation of Modern Painters and Sculptors; United American Artists; Alumni Association of the American Academy in Rome; Municipal Art Society of New York; New York Chapter, American Institute of Architects; New York Chapter, American Society of Landscape Architects; Architectural League of New York.

Engineering For Artists

TO RELATE ARTISTS to the engineering approach to machine design which is requisite of draftsmen, tool designers and architectural supervisors in the war industries, Cooper Union, New York, plans a special course for art students. Under the direction of Professor *C. Higbie Young*, chairman of the department of machine design and engineering drawing, the lectures will present the background of machine designing and emphasize current limitations of materials and production methods. Problems of quantity production, relative strengths of construction materials, elasticity of metals, lubrication, and selection of the most economic type of motion will be explained to second, third and fourth year industrial design students.

Samuel H. Gottscho

William W. Thomas

THREE HOUSES in the New York area have been awarded 1941 Certificates of Merit for excellence in small house design by the Small House Committee of the New York Chapter of AIA and 10 cooperating architectural societies. The houses are, clockwise, residence of Mrs. Archer H. Brown, Greenwich, Conn., William F. Dominick, architect; residence of Leslie Cretty, Bayside, L. I., Arthur H. Goddard, architect; and the home designed by Harry C. Starr of New Canaan, Conn., for his personal use

"Front line" industries are using

ARCHITECTURAL CONCRETE

Architectural Concrete's unique adaptability is nowhere better shown than in its current use in new aircraft factories, army depots, hangars, warehouses, defense plants and other industrial buildings. Availability and speed of construction are factors in the choice, but another big reason is this—*concrete helps to create staunch, firesafe, low-maintenance structures of good appearance at low first cost.*

Concrete can be molded into any shape or form, given many textures, formed to any structural or architectural need.

Ask your architect or engineer about Architectural Concrete, or see Sweet's Catalog, 4/45. Booklet *"Concrete for Industrial Buildings and Garages"* will be sent on request, free in the United States or Canada.

PORTLAND CEMENT ASSOCIATION

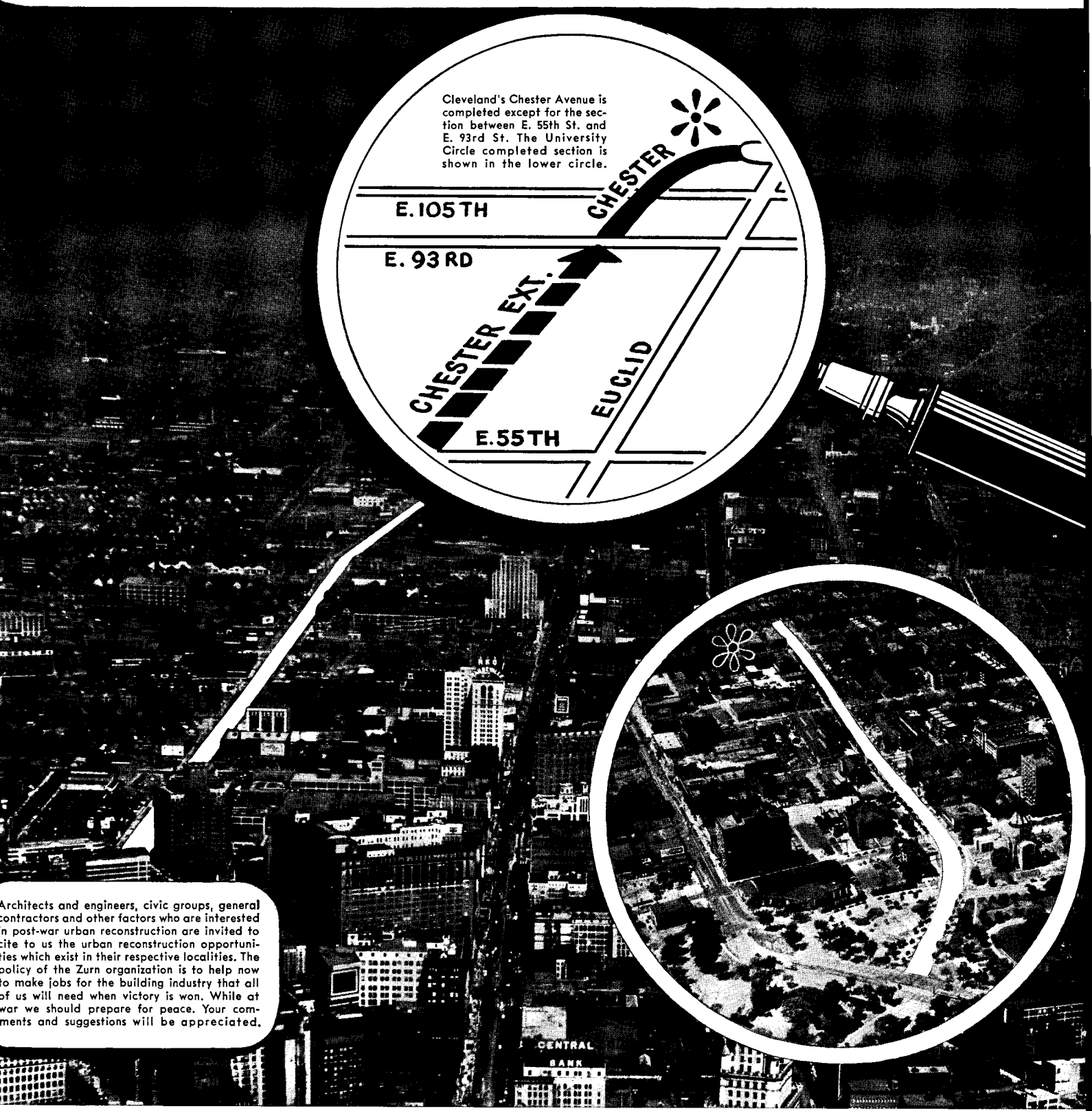
Dept. 3-8, 33 W. Grand Ave., Chicago, Ill.

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

Support the Red Cross

EXECUTIVE OFFICE BUILDING, BOEING AIRPLANE CO., SEATTLE; THE AUSTIN COMPANY OF SEATTLE, DESIGNER AND BUILDER

BUILDING FOR WAR PRODUCTION COMES FIRST



Architects and engineers, civic groups, general contractors and other factors who are interested in post-war urban reconstruction are invited to cite to us the urban reconstruction opportunities which exist in their respective localities. The policy of the Zurn organization is to help now to make jobs for the building industry that all of us will need when victory is won. While at war we should prepare for peace. Your comments and suggestions will be appreciated.

ZURN

BUILDING • PLUMBING DRAINAGE

★ *Roof to Basement*

.....But What About

POST-WAR BUILDING

in Cleveland?

While Zurn Building, Plumbing Drainage Products are helping to speed the construction of defense plants and defense housing,

ZURN

Engineers are on the alert, inventing and designing products to meet new needs that are developing

AS LONG as this war continues, every resource and every thought and every act of every citizen should be devoted in some way to preparing, equipping and supplying our military and naval forces. But, this devotion to a single purpose, should not be allowed to paralyze, or retard, or divert the broad thinking and planning of those who would prepare projects for sustaining a high level of business activity in the post-war period. The building industry seems to be the one industry, above all others, that is looked to for projects which will provide opportunities for Government, private industry and organized labor to cooperate and produce a post-war prosperity and security.

Every urban locality presents a wide variety of potential building projects. In one major city, for example, it is planned to raze sixty-eight city blocks and rebuild. In Cleveland such projects as the completion of Chester Avenue and the proposed Willow Freeway present construction and building projects that, in turn, unfold other additional projects which may result in the razing and rebuilding of large areas of this city. As of September, 1941, fifty-one cities had already planned certain construction projects.

Months, perhaps years, may pass before some of these new projects may be initiated. It takes a long time to win acceptance for new ideas. The will to do must be converted into an *inspired want to do attitude* in order to sustain the effort which will be necessary to bring such projects to fruition. The war years need not be years that "the locust hath eaten" if architects and engineers, civic groups, contractors and building money factors will work together, and with Government and private industry and organized labor, to build a better America. The entire Zurn organization is keyed to the policy of stimulating project planning for post-war urban reconstruction.

That there will be major changes in the population of cities, in the distribution of industry, in the extension of trade and transportation, there can be no doubt. Naturally building types will undergo changes to meet the needs of a new era. Foreseeing this, Zurn Engineer Specialists are investigating, analyzing, inventing, designing, making and testing one device after another in a continuous endeavor to improve building and plumbing drainage systems. Their job is to supply Engineered Protection for human health and modern structures. Not for one moment are they in any way neglecting the performance of a vital service to the winning of a victory. But to neglect the development of new devices for a new era of building that is in the making, would be unthinkable.

You are invited to utilize Zurn Engineering facilities in the preparation of post-war building projects. Architects and Engineers and others whom they may identify, are invited to send for a portfolio entitled "A New Era for Building is Only Marking Time."

J. A. ZURN MFG. CO. • *Sales Office and Factory,* **ERIE, PA., U.S.A.**

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PRODUCTS

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J. A. ZURN MFG. CO., ERIE, PA., U. S. A.

Please register my name and the names of individuals and organizations attached, to receive a copy of the portfolio entitled "A New Era For Building Is Only Marking Time," of which I understand a limited number will be available when printed.

Name ..... *Position* .....

Company .....

Address .....

City and State .....

Please attach to your business letterhead. No. 425

By RAYMOND R. DICKEY

PRESIDENT MERGES HOUSING AGENCIES UNDER SINGLE HEAD

New Push for War Housing . . . Priorities and Financing . . . FWA Decentralization . . . Labor Decisions . . . FHA Changes . . . Building Increase in 1941 . . . Management Cost Reduction

THE HYDRA-HEADED and sprawling administration over housing agencies was killed and a new National Housing Agency, merging the 16 agencies dealing with housing into one unit under John B. Blandford, Jr. as Administrator, was created by Executive Order on February 24.

No one in Washington believes, even for a minute, that this administrative re-shuffling will solve the housing problem. But it does bring into some form of cohesive unit the various housing groups which have been heretofore almost as busy fighting for power as they have been in their authorized functions.

Three main divisions are set up under the new plan. The first is a Federal Public Housing Authority which will be an amalgamation of the various agencies and personnel now constructing housing with public money. As Acting Commissioner of the Federal Public Housing Authority, Leon Keyserling, formerly USHA Administrator, will administer the duties formerly done by USHA; Defense Homes Corporation; Non-Farm (Demountables) Public Housing, done by the Farm Security Administration; Federal Works, Public Buildings Administration, Division of Defense Housing, Mutual Ownership Defense Housing Division, and the War and Navy Departments.

Second division is the Federal Home Loan Bank Administration under the guidance of John Fahey, Chairman of the Federal Home Loan Bank Board. This division will handle all the financial angles formerly split up among the Federal Home Loan Bank Board, Federal Home Loan Bank System, Federal Savings and Loan Insurance Corporation, Home Owners' Loan Corporation and the United States Housing Corporation (for liquidation).

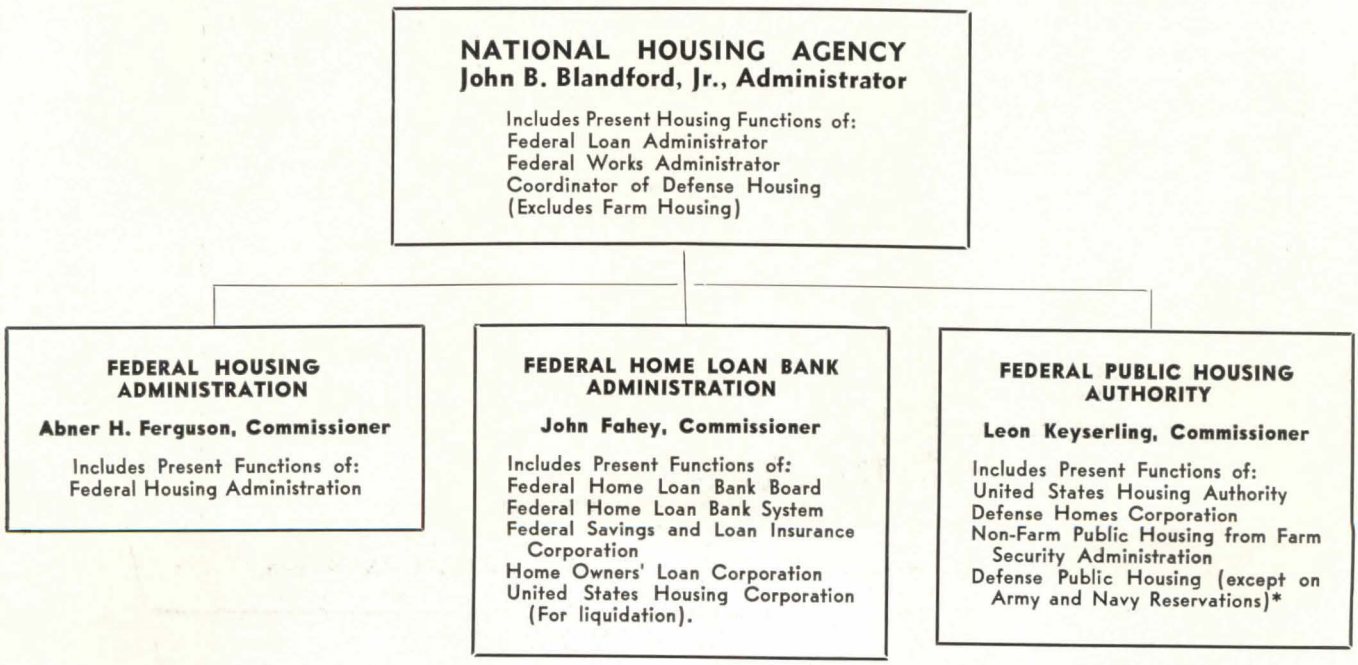
Third Division will be headed by Abner Ferguson as Commissioner of the Federal Housing Administration. This, as the name indicates, supplants the old FHA.

The Central Housing Agency and the Division of Defense Housing are abolished by Executive Order. Charles Palmer, former Defense Housing Coordinator, is expected to go to England for a special study of British housing efforts with a particular view toward the place of the construction and housing industries in post war business.

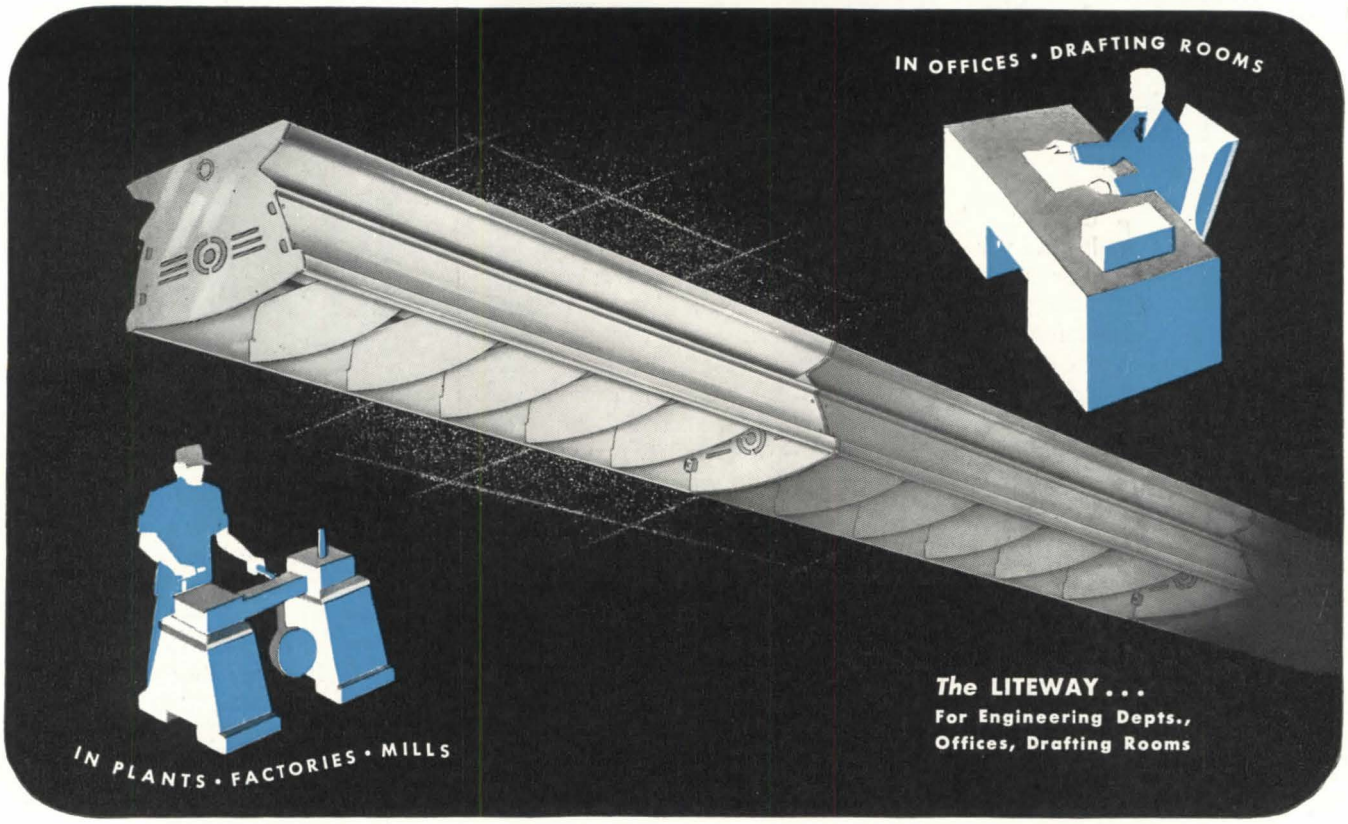
Nowhere in the Executive Order is there any mention of Federal Works Administrator Philip Fleming or of Baird Snyder, III.

The new organization follows the recommendations made by Judge Samuel Rosenman in his report on housing agency consolidation, according to Washington's grapevine. Judge Rosenman had also told the President that the changes would need legislation. This legislative lever was provided when Congress re-enacted the Overman Act of World War I, which authorizes the President to consolidate Governmental agencies to more efficiently prosecute the war. It is extremely doubtful if the President could have made such sweeping

(*continued on page* 18)

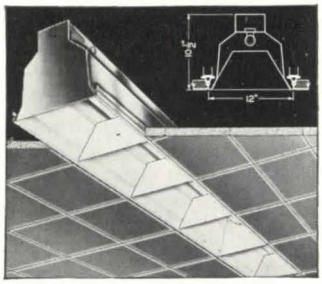


*Such Defense Public Housing (except on Army and Navy Reservations) has heretofore been divided among the Federal Works Agency, United States Housing Authority, Public Buildings Administration, Division of Defense Housing, Mutual Ownership Defense Housing Division, War Department, Navy Department, and Farm Security Administration.



THERE CAN BE NO NIGHT ON THE HIGHWAY TO VICTORY!

MULTIPLY MAN HOURS by ADDING LIGHT HOURS



Cross-section and installation view of Day-Brite Continuous Single-row Louvered-type Troffer.

The extra man hours now so urgently needed—in offices, plants, factories, mills—can often be immediately provided by adding effective light hours with Day-Brite Fluorescent Fixtures.

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FLUORESCENT FIXTURES

41

WASHINGTON

(*continued from page 16*)

changes without such over-all authority in a single piece of legislation.

In addition to this, another Executive Order abolishes the Federal Loan Agency and turns over all its functions to the Commerce Department. It should be noted also that both orders terminate wtih the expiration of Title I of the First War Powers Act.

Priorities

One of the most bothersome things that builders have been faced with, even on defense housing, is to get financing. Banks have been chary in lending money because under the preference rating system the builder can give no guarantee that the priority rating he gets will bring him material. In many instances, banks have been demanding that the builder purchase all material necessary to complete construction, show proof of such purchase and delivery, and then the bank will lend him the money. In the majority of instances, builders have been unable to do this and thus the building program has suffered, even in so-called emergency or war housing. But a plan is now being worked out by the WPB which will assure materials on defense housing projects. In rough form this plan would be for a builder to submit an estimated bill of materials needed to complete a project. WPB would then allocate these materials and specifically direct the builder's suppliers to furnish him with his requirements as listed in his bill of materials. There are still several "bugs" in the plan, so that it has not been completely worked out as yet. It may be that the Housing Project Section of WPB will be able to convince banks that materials will be assured defense contractors without a formalized allocation system. But whatever the system, this situation which has retarded building progress will be ironed out within a fairly short time.

FWA decentralization

To enable the speedier administration of the new Lanham Act funds, FWA has decentralized construction activities by appointing six regional representatives to facilitate and expe-

(*continued on page 20*)

Saves Fluorescent Installation and Maintenance Time

Westinghouse has reduced the job of industrial reflector attachment and removal to a simple "twist of the wrist." A mere quarter turn of two tension locked thumb latches instantly attaches or detaches the take-down reflector. No tools are required. There's neither wasted time nor effort in installation, maintenance or servicing.

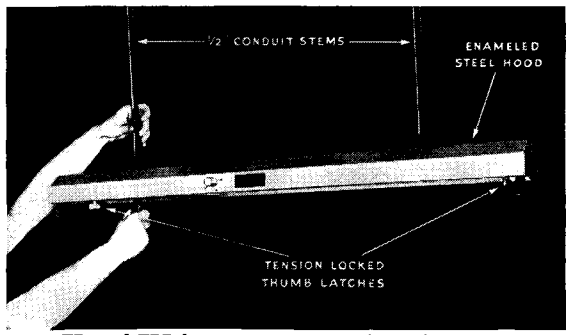
For general or supplementary lighting, Westinghouse provides two types of RLM, porcelain enameled units: Type FP, with closed ends; and Type FPR, with open ends. Both reflector types fit the same auxiliary-equipped hood. Units are furnished completely wired for 40-watt and 100-watt lamps and for new RF-85-watt lamps in open-end reflectors.

These quick-installation luminaires produce high-intensity illumination without annoying glare, harsh shadows or objectionable heat. They typify the contribution made by Westinghouse *engineered seeing* to practical and effective industrial lighting.

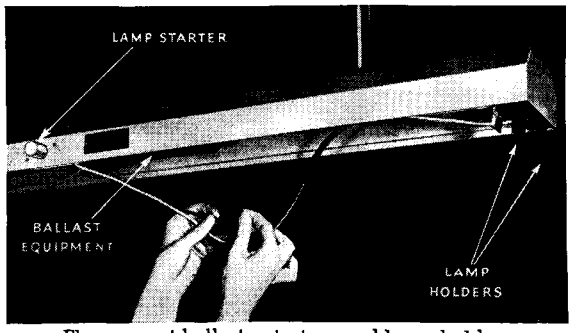
Engineered seeing—based on properly designed equipment and sound application—is available through your nearest Westinghouse Lighting Distributor. Ask him today for Fluorescent Catalog F61-000. Or, write Westinghouse Electric & Mfg. Co., Edgewater Park, Cleveland, Ohio.

★ ★ ★

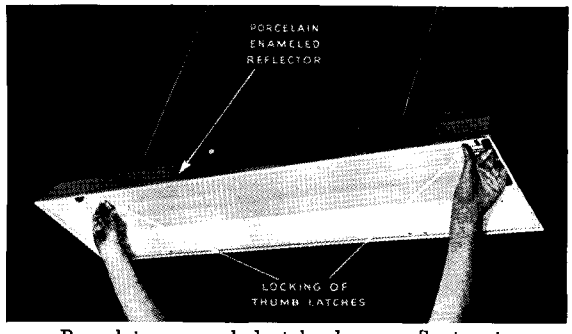
Engineered seeing is available through 117 Westinghouse Electric Supply Company offices and Independent Lighting Distributors.



FP and FPR luminaires are easily and quickly installed. Units are arranged for rigid or flexible conduit, or for chain mounting.



Fluorescent ballasts, starters and lamp holders are mounted in the hood. Line connections are quickly spliced to fixture leads.



Porcelain enameled, take-down reflector is attached to the hood by a quarter turn of two tension locked thumb latches.

Westinghouse LIGHTING EQUIPMENT

WASHINGTON

(*continued from page* 18)

dite FWA programs. The six regions are:

Region 1. New England states. and New York. Pennsylvania and New Jersey with headquarters in New York City.

Region 2. Ohio. Indiana, Illinois, Michigan and Wisconsin with headquarters in Chicago.

Region 3. Maryland, Delaware. Virginia, West Virginia, Kentucky, Tennessee, North Carolina, South Carolina. Georgia, Florida. Alabama. Mississippi, with headquarters in Atlanta.

Region 4. Missouri, Minnesota, Iowa, Kansas. Nebraska, North Dakota, South Dakota, Colorado, Wyoming, Montana, with headquarters in Kansas City, Mo.

Region 5. Texas, Louisiana, Arkansas, Oklahoma, New Mexico, with headquarters in Fort Worth, Texas.

Region 6. California, Nevada. Arizona, Utah, Oregon, Washington, Idaho. with headquarters in San Francisco.

The regional representatives are: Region 1, John T. Egen; Region 5, James Bradner; Region 6, Pierce Williams. Appointments for the other three regions will be announced shortly.

The adoption of the regional administration set-up is in line with the streamlined defense housing construction plan adopted by FWA, under which Neal A. Melick, Supervising Engineer, PBA. William P. Seaver, Assistant Administrator for Development, USHA, and Rufe B. Newman, Jr., Special Assistant in charge of construction, FWA, will be directly and individually responsible to the FWA Administrator for such Lanham Act defense housing construction as is assigned to each of them.

Legislation

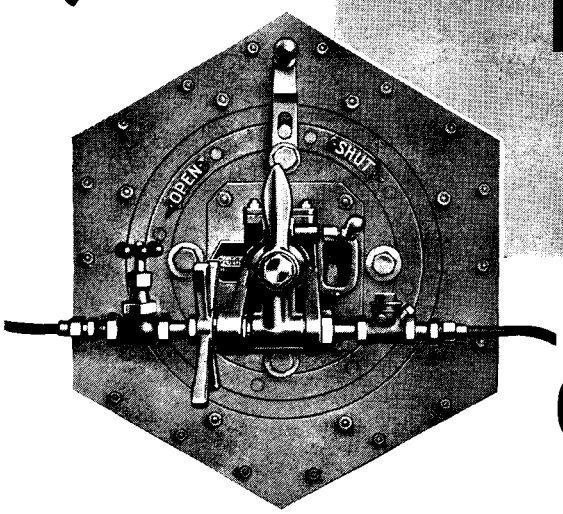
A new bill, S-2198, has been introduced by Senator Wagner of New York which would allow the RFC to acquire by purchase, condemnation, or otherwise, such real estate as may be necessary in carrying out its functions and those of its subsidiaries in connection with the national defense program. This would mean that

(*continued on page* 88)

PEAK POWER-PLANT EFFICIENCY FOR THE WAR EFFORT!

TODD

COMBUSTION UNITS



Recent Installations Include:

- Allison Engineering Company
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- Bethlehem Steel Company
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- Fafnir Bearing Company
- Grumann Aircraft Eng. Co.
- Johnson & Johnson
- Glen L. Martin Company
- Naval Health Center
- North American Aviation, Inc.
- Pratt & Whitney Div. of United Aircraft Corp.
- Revere Copper & Brass Co.
- Singer Manufacturing Co.
- E. R. Squibb & Sons
- U. S. Naval Air Station
- U. S. Naval Reserve Air Base
- Washington National Airport
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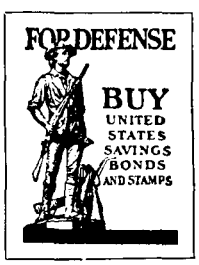
POWER COUNTS—today as never before! Super-efficient, economical Power. Upping production to unheard-of levels—driving ships at sea—speeding the Victory!

Whatever your share in the War Effort, whatever the size of your plant, a Todd unit, burning liquid or gaseous fuel, can help you get maximum heat and power production, accelerate your whole operation, keep maintenance costs right down to minimum.

Throughout the Nation, in a wide variety of plants producing for the War Effort, Todd products including rotary burners and the famous "VEE-CEE"—with its exclusive "variable range" feature—are today turning in enviable records for achievement. Efficiency, economy, ease of operation and *first-class performance* are always assured—each installation is *individually engineered* to do an outstanding job!



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TRENDS IN BRIEF

ARCHITECTS HANDLE HUMANITY INSTEAD OF BUILDING PROGRAMS IN BRITAIN'S CIVIL DEFENSE

By EUGENE REID, ARIBA

London, January 20.

SINCE my last dispatch the cards have been placed on the table and now we all know where we stand. By the savage attack on Pearl Harbor, Tojo has kept strictly to the Axis recipe, and the Master Mind, now wondering what has hit him on the Russian front, has faithfully lined up with his old pupil, and of course with them is Benito, that backward student of the lower fourth form. The infamous trio stand stripped before us and we know precisely who we are fighting and, what is more important, we know to the very letter what we are fighting for. Together our two nations will see these Axis powers damned first before their synthetic ideas of government so much as touch the first pebble on our shores. And with that sentiment ringing clear and strong let me now turn to those strange, unfamiliar problems which will be facing you architects and builders just as they faced us in the early days of war, and indeed still do.

* * *

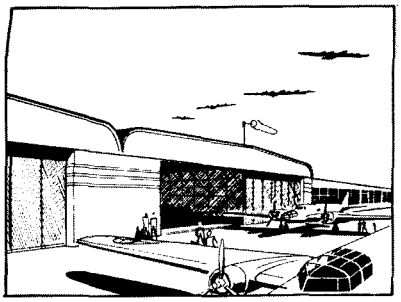
The biggest problem of all that occupied the minds of architects, assistants, builders and contractors alike in those first days of the war over here was a very natural one. It was, simply, what was to become of our livelihoods?

If a census could be taken of the most predominant thought among us at that particular time I think it would be found that the fundamental question of immediate survival ranked high while more warring thoughts came out low in the reckoning. They were there, mind you, but they lay dormant and unnurtured. Norway had to go and those mean words, "quisling" and "fifth column," had to enter the English language before quite a few of us became really warlike and attuned to the enormity of the doctrine we were fighting. Yes, and the horror of Dunkirk had to be gone through, and we had to hear bombs come slithering out of the skies, and we had to see our beloved London in flames, and many another fine city in this island, as well.

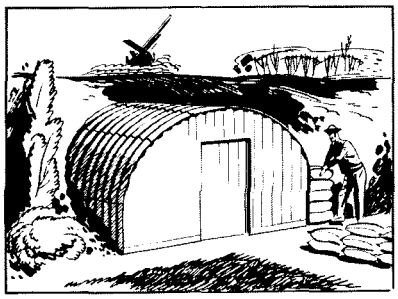
Back in September, 1939, we were still far too close to the palmy days of an age that is dead and gone for our thoughts to stretch much beyond a limited domestic circle, and so round and round went that everlasting question that seemed to have no answer: What was to become of us as individuals?

The problem didn't affect the contracting side of our job for very long, for with the launching of great shelter programs and the commencement of factories, aerodromes and military works of all descriptions, the contractors and operatives soon found work for themselves. But for the independent practitioner of architecture and his assistants there certainly was a most unpleasant hiatus when pro-

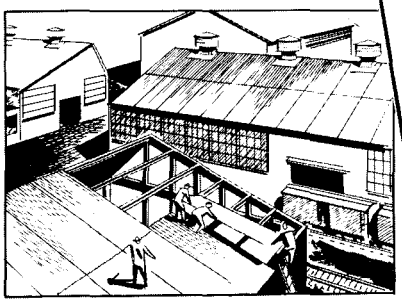
(*continued on page 93*)



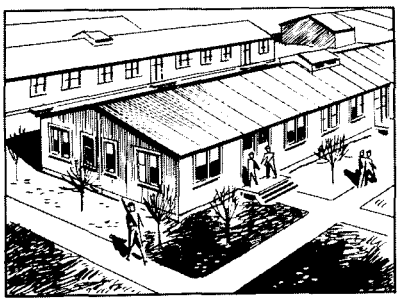
MOVABLE AIRPLANE HANGARS can be designed with U·S·S Steel Sheets so they can be moved quickly without damage.



AIR-RAID SHELTERS are being made from U·S·S Sectional Plate Arches. These are strong and can be quickly erected with ordinary labor.



MORE PLANT CAPACITY is quickly put under roof with U·S·S plain corrugated Steel Sheets.



PORTABLE BUILDINGS for the fighting forces can be made of U·S·S Steel Sheets and insulated to keep out heat and cold.

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...design with U·S·S Steel Sheets

STEEL BUILDINGS can be set up in hours rather than days when the design is right. Ask for further details on this type of construction.

PLANT expansions, army camps, air-raid shelters, defense housing, are just a few of the jobs that have to be built literally overnight. But, there's no need to sacrifice durability for speed if you build with U·S·S Steel Sheets.

Look carefully at the illustration. This is a permanent building designed for fast erection by being made in sections. It will stand the ravages of lightning, fire, weather and time. Buildings like this are low in first cost, economical to build, free from expensive maintenance. They can be moved from place to place and set up without serious loss.

U·S·S Galvanized Sheets are ideal for these applications. In most cases a base metal of plain steel or pure iron is satisfactory, but where extra corrosion resistance is required, U·S·S Copper Steel is recommended.

Where immediate painting is important specify U·S·S Paintbond. This new sheet is Bonderized to obtain a superior surface for painting. Paint holds tighter —does not flake off—protects the surface longer.

In the South and West, the special sheet manufactured for quick painting is known as U·S·S Dul-Kote.

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UNITED STATES STEEL

"Aw— who ever heard in a $4000 house!"

For years builders have installed complete G-E Kitchens in low cost homes. Here's why!...

THOUSANDS OF OWNERS have reported that they have found it costs less from the *very first month* to live in a home with high quality equipment.

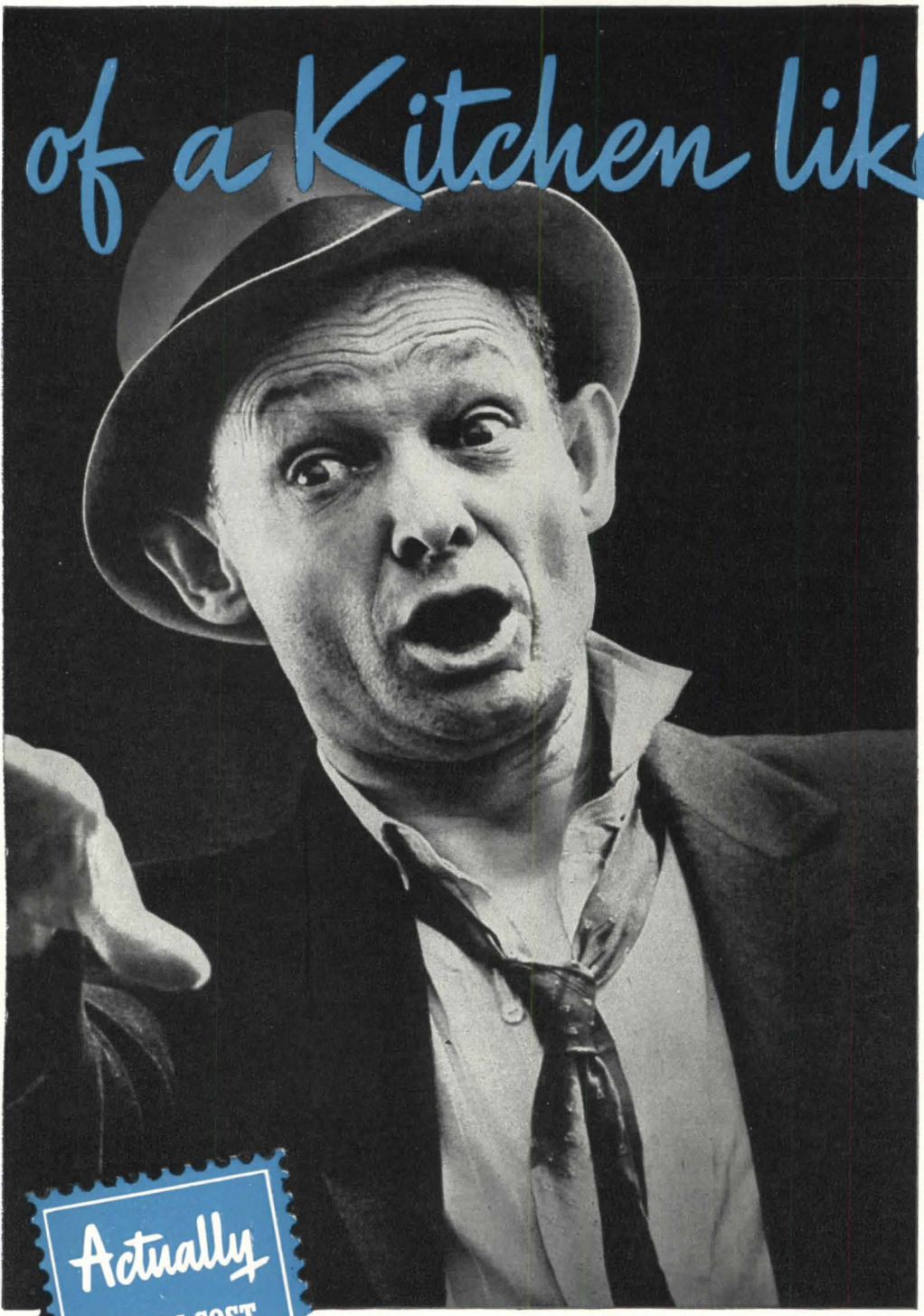
The buyer of a $4,000 home can least afford poor kitchen equipment, wasteful heating plant or skimpy wiring system. He, of all clients, needs most the economies of lower operating costs, lower maintenance costs, and longer life that are possible only with efficient, high-grade equipment.

THE BUILDER PROFITS too! Establishing a reputation for building *better* low-cost homes that cost *less to live in* is a wise move that pays dividends. Safeguarding your clients' interests safeguards your own, because the homes you design and build today are the homes that build your reputation for tomorrow.

This kitchen is but one of many arrangements possible in a new $4,000 home.

Write for book with complete details on operating equipment for small homes.

# of a Kitchen like this



Actually
IT CAN COST LESS TO LIVE BETTER

A complete electric kitchen in a $4,000 home can contribute more in operating economies for the owner than any slight increase it may cause in monthly payments when financed under a long term mortgage.

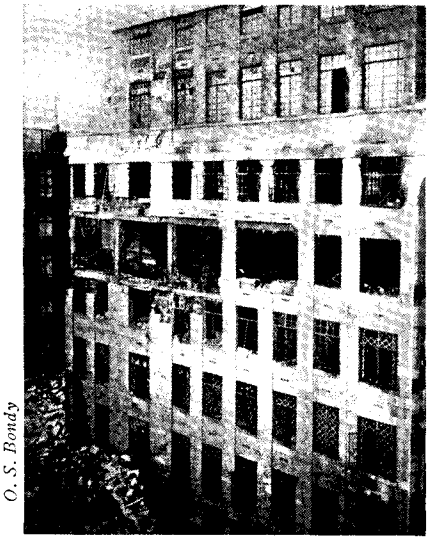
Good will plus!—*Busy housewives everlastingly appreciate the time-saving, work-saving, money-saving advantages of a G-E Electric Sink that washes and dries the dishes and disposes of garbage electrically.*

Automatic Heat—*Folks who live with a General Electric Furnace — residents of the mill district as well as the boulevard — report savings in fuel bills from 25 to 50%. That's vitally important in times like these!*

GENERAL ELECTRIC
HOME BUREAU — BRIDGEPORT, CONN.

REVIEWS OF CURRENT LITERATURE

By ELISABETH COIT, AIA



O. S. Bondy

A side-wall hit and an inside explosion caused this damage to a steel frame building. From "Aerial Bombardment Protection"

AERIAL BOMBARDMENT PROTECTION. By Harold E. Wessman and William A. Rose. New York, Wiley, 1942. 372 pp., 5¾ by 9 in., illus. $4.00

"EVEN IF the war were to end tomorrow, future wars are already in the making" is the keynote of this forward looking book, based on lectures given to architects and consulting engineers during the past year by two professors of engineering at New York University.

While British experience is necessarily the basis of much information on the effect of bombing on buildings, American structural and architectural practice are kept in mind throughout the work which, though technical in treatment, contains much material easily grasped by the layman: camouflage, air raid shelters, safety zones in existing buildings, results of bombing on different types of structures and materials.

A short refresher course on "ordinary design" based on "static" and "equivalent static" loads precedes discussion of the limited practicability of ideally good bomb resistant *construction*. Whether the decision be to replace bomb forces by equivalent static loads or to base the design upon actual energy loads, the material units required would ordinarily be unmanageably large. Empirical rules worked out from bombing tests and study of buildings damaged by bombardment may determine proportions of buildings in the new design, and a great part of the book is devoted to a summary of bomb types and their powers in penetration, of effects of blast, shock and fragmentation, with suggested resistant designs.

Some of the Edgewood Arsenal tests to determine the reliability of different types of shelters, the behavior of burster slabs and the effect of blast and fragmentation are given; there are selected references for each chapter, and over a hundred illustrations in the text, some plates and several tables, the whole constituting the best work on civilian defense for the architect we have so far seen.

WOOD TECHNOLOGY. By Harry D. Tiemann. New York, Pitman, 1942. 316 pp., 6 by 9 in., illus. $3.50

MODERN PLYWOOD. By Thomas D. Perry. New York, Pitman, 1942. 366 pp., 6 by 9 in., illus. $4.50

THE SENIOR wood physicist of the U. S. Forest Products Laboratory gives us a book so comprehensive that it must interest literally everyone in any way concerned with wood. An account of the structure of woods prefaces reports on their behavior in manufacture and in wear, and of the by-products resulting therefrom; and the material is so well organized and so clearly written that the merest of general readers can pick out an instructive path, avoiding on first reading the references and tables designed for the specialist: manufacturer, wood worker, engineer, instructor.

Mr. Perry's record of the recent rapid progress of plywood toward less expensive products of wider application links plywood with the sleigh dashboard and with the laminated rim of the grand piano, little changed since 1860, and indicates where today's product stops short of the perfection to which doubtless research in progress will bring it. Nearly 60 tables and 200 illustrations, the latter mainly diagrams and detail photographs, accompany a readable text, the thoroughness of which is emphasized by the arrangement of the bibliography: by date of publication under closely subdivided subheads, with articles from technical journals of the past two years predominating.

HOUSE CONSTRUCTION DETAILS. By Nelson L. Burbank. New York, Simmons-Boardman, 1942. 313 pp., 8½ by 11 in., illus. $3.00

A REVISED EDITION of a practical ready reference book, designed primarily for builder, mechanic and student, but useful also to the layman and the architect of limited experience. Photographs, well-drawn diagrams, tables and formulas are bound together by a clear text mainly in the form of captions. A useful feature is the descriptions of ten of the prefabricated systems now in production.

THE EARLY IRONWORK OF CHARLESTON. By Alston Deas. Columbia, S. C., Bostwick and Thornley, 1941. 111 pp., 9 by 12 in., illus. $6.00

THIS IS the latest product of the zeal for Charleston's art of the president of the Society for the Preservation of Old Dwellings and of the Zoning Commission, which requires all new structures to conform in general style with neighboring historic buildings. It is a beautiful book containing an analytical historic essay and notes by Colonel Deas, 64 soft pencil measured drawings "well interpreting the very soul of the old wrought iron" by Richard J. Bryan, and an introduction by Albert Simons, FAIA, who anticipates the reader's delight in discovering "how the pattern of an elegant communion rail . . . sired in the course of years a varied progeny of balconies and gates throughout the community."

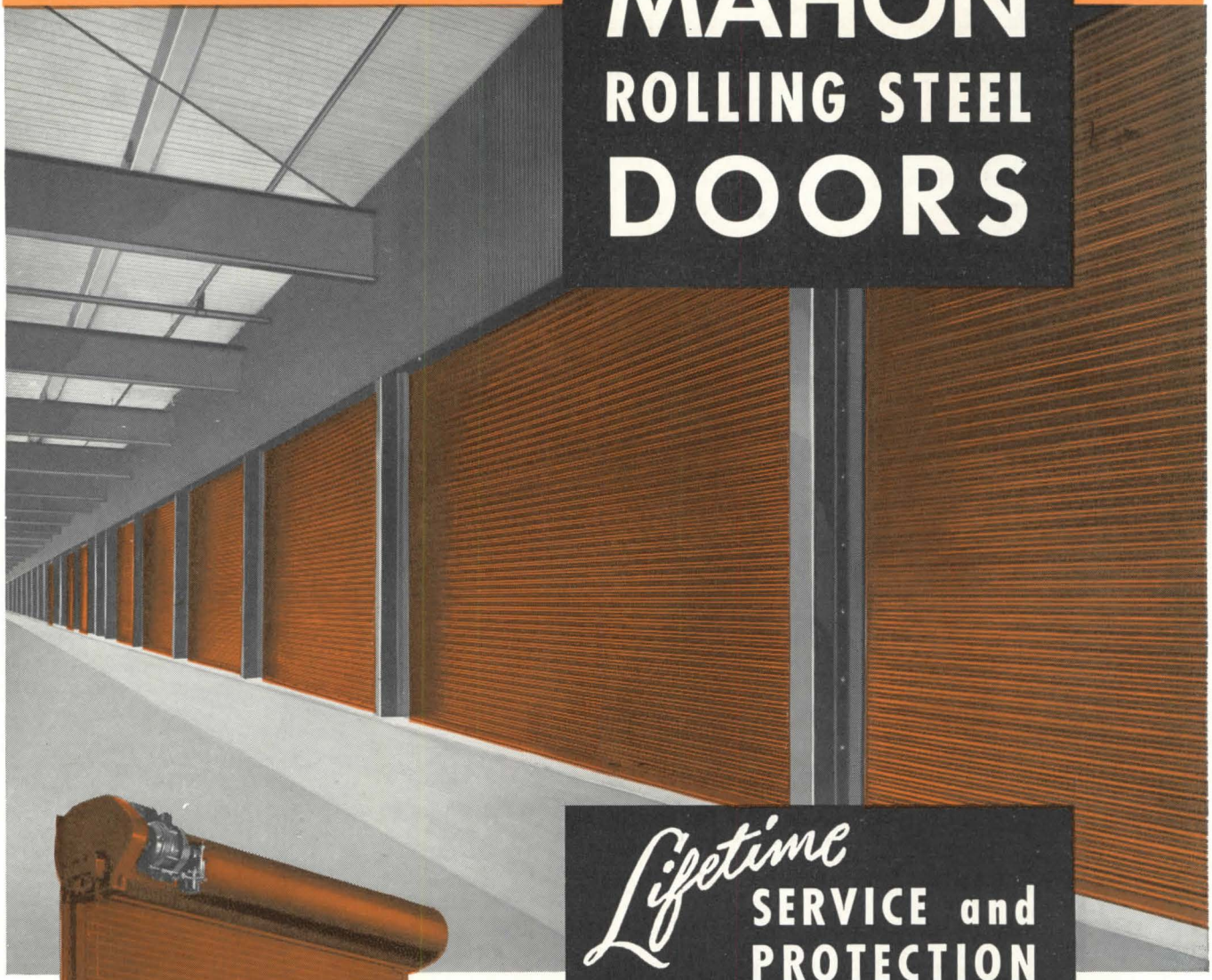
BRIDGES AND THEIR BUILDERS. By David B. Steinman and Sara R. Watson. New York, Putnam's, 1941. 379 pp., 5¾ by 8½ in., illus. $3.75

CONTINUOUS CONCRETE BRIDGES. Chicago, Portland Cement Assoc., 1941. 106 pp., 5¾ by 9 in., illus.

A BOOK for everyone short of a bridge engineer by a designer who has had a share in the Hell Gate, the Triborough, the Henry Hudson, the

(continued on page 28)

MAHON ROLLING STEEL DOORS



Lifetime SERVICE and PROTECTION

THE greater convenience of Mahon Rolling Steel Doors is matched only by the positive protection they provide. Quickly rolled up at the touch of a button or by effortless manual operation, they leave a clear, unobstructed opening from floor to lintel, from jamb to jamb. Closed, they assure utmost security against fire, weather and intrusion. In compactness of design, certainty of operation, rugged strength, Mahon advanced engineering has developed a line of labeled and non-labeled doors of outstanding superiority—doors that squarely meet today's demands for quick and easy installation—and provide trouble-free, lifetime service. For detailed facts and figures, write for the NEW Mahon catalog—or consult your current issue of Sweet's.

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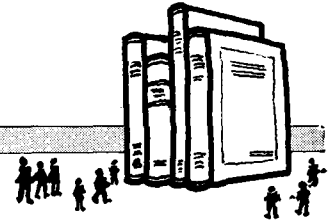
Representatives in Principal Cities

Manufacturers of Steel Roof Deck, Rolling Steel Doors, Shutters and Grilles, Kalamein Doors, Tin Clad Doors, Cast Iron Roof Sumps and Roof Sump Recesses.

★ ★ ★ MAHON ★



(continued from page 26)

Thousand Islands, the Carquinez Strait and others, written in collaboration with the daughter of a bridge engineer. With the story of each bridge described is woven that of the contemporary culture producing it; and the narrative varies pleasantly its emphasis as occasion arises from types and materials—timber spans, covered bridges, suspension and so on—to portraits of designers such as the Roeblings, Eads, and all the way back to St. Bénezèt. The list of illustrations is limited to two dozen full page photographs. The many informing line drawings in the text are worthy of listing; and an index to a record of such rich variety would have had many uses beyond merely giving page references.

The revised edition of "Continuous Concrete Bridges," recording methods developed within recent years for simplification of the design and for reducing the cost of the continuous span structure suitable to many sites, is a practical treatise for the construction engineer.

VAUXHALL GARDENS. By James G. Southworth. New York, Columbia Univ. Press, 1941. 199 pp., illus. 5½ by 8½ in. $2.75

THE "realization of Elizium" during the two centuries from the Restoration to the Crystal Palace. Description of the gardens themselves is given generous space and most of the illustrations refer to them: plan, general perspective, loges, triumphal, arcades, music room.

PERIODICAL LITERATURE

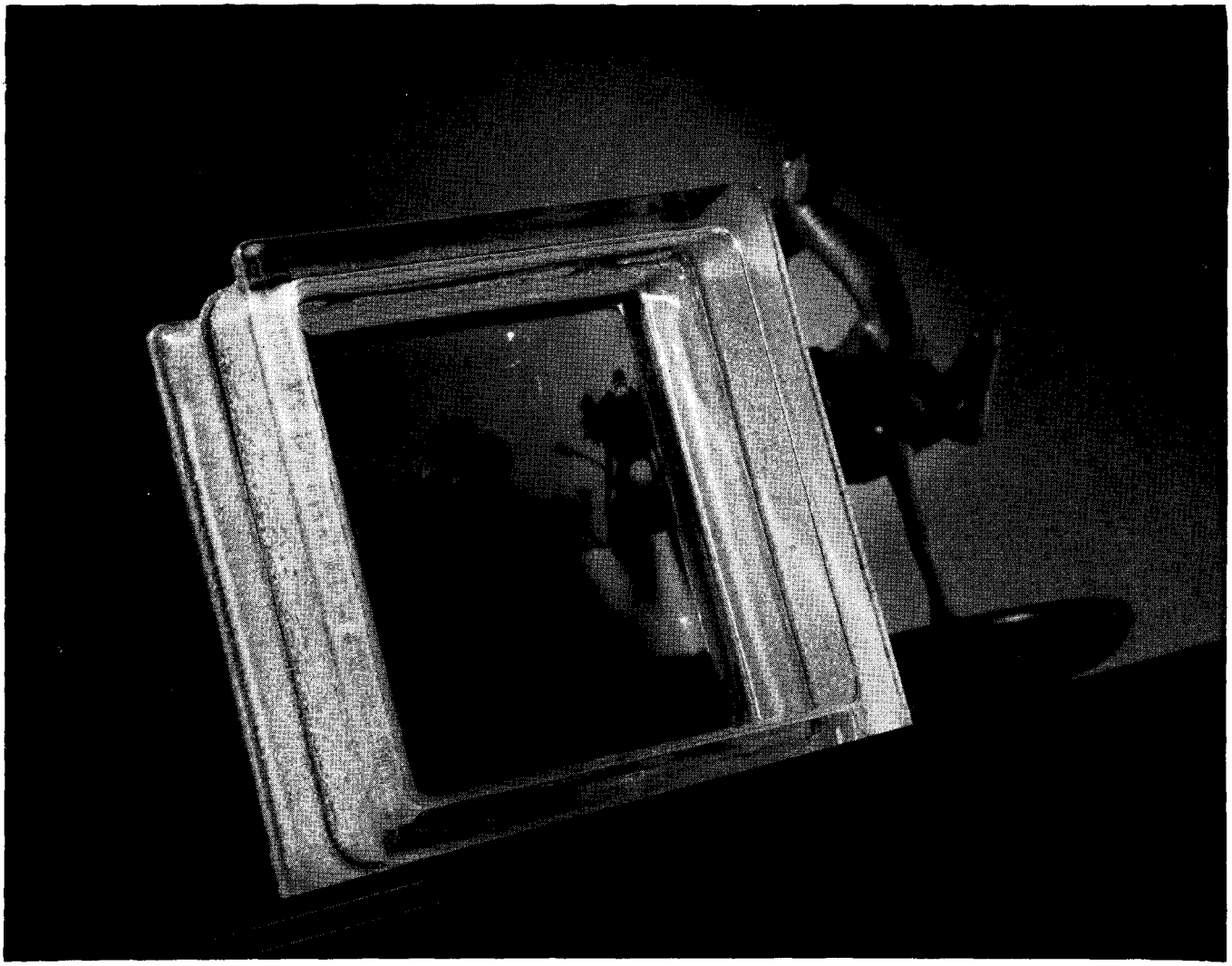
PRESERVATION OF HISTORICAL MONUMENTS. Journal of the American Society of Architectural Historians. Troy, N. Y., July-Oct., 1941. 60 pp.

THE SKYLINE. By Lewis Mumford. New Yorker, New York, Feb. 7, 1942, p. 54

THE ASAH has expanded in a year to the astronomical figure of 100 members, and the present preservation number—whatever gigantic feats a larger membership may in time achieve—must remain a monument to the thought and ingenuity of that valiant century. In addition to a summary of the evolution of preservationism, reports on the first regional groups established and plans for founding others, and a statement of hard facts on practical problems involved, there is a selected bibliography on preservation in general and by region, while the current bibliography, a feature of the first two numbers of the Journal, is continued.

Mr. Mumford notes the need of a Society for the Preservation of Brooklyn Bridge, America's finest piece of 19th century engineering and "probably the noblest work of art New York can show in any period," from which in places all the paint has chipped away, leaving the metal exposed.

(continued on page 30)



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"PITTSBURGH" stands for Quality Glass

REVIEWS OF CURRENT LITERATURE

(continued from page 28)

CIVILIAN DEFENSE REFERENCE NUMBER. Architectural Forum, New York, Jan., 1942. 68 plus 70 pp., illus. $1.00

BLACKOUT. By Richard L. Nelson. Preprint of article for March Journal of Property Management. Chicago, 1942

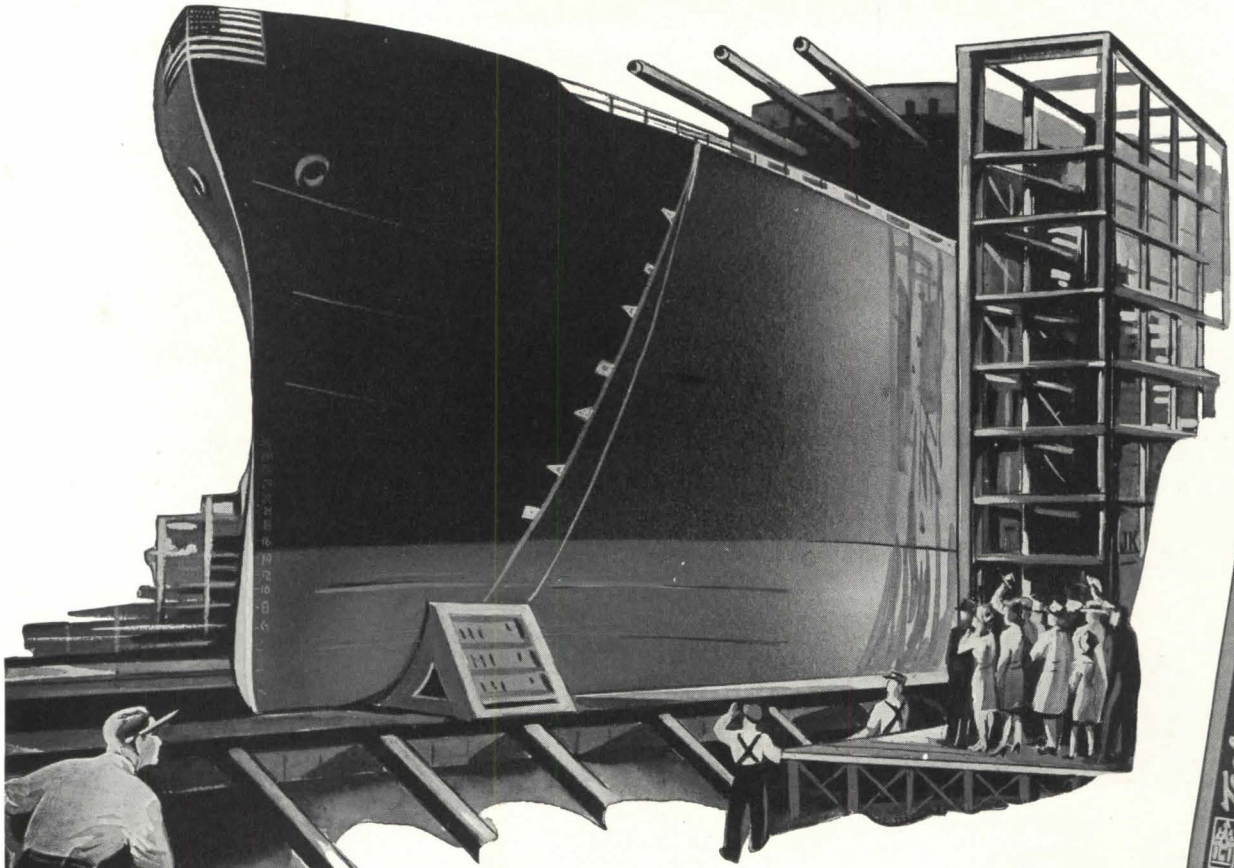
Two of many contributions by journals to a new knowledge of building construction and materials in the light of demands of today and tomorrow. "Blackout," a discussion of the technique of light obscuration, not only describes materials and gives their relative costs but also tells how best they may be applied; while the Forum has assembled in serviceable, easily assimilated form a great amount of material on various aspects of defense: blackout; camouflage; protection of buildings from fire, gas and bombing; different types of family and communal shelters; centers for evacuees, etc. Both are primarily from the viewpoint of the layman and give him in the absence of any official OCD treatise information on how to paint the windows, put up blackout curtains, etc. So far as the architect and engineer are concerned, much of the technical information has already appeared elsewhere.

GUATEMALA BAROQUE. By Pál Kelemen. Magazine of Art, Washington, D. C., Jan., 1942, pp. 22-25, illus.

A WELL ILLUSTRATED article showing influences contributing to this Colonial Baroque. Structures of Christian colonists had to be vigorous to impress peoples whose carved and painted temples the missionaries destroyed; the first Christian buildings for reasons of defense were fortress-like; danger from earthquakes dictated solid facades, massive walls, rigid roofing—all resulting in a tendency toward horizontal emphasis; the rich fancy of the skilled Indian craftsman mixed with the Spanish tradition to produce structure and ornament alike virile in form and almost indestructible in fabric.

THE SENSATION OF SPACE. URBANISM AND THE SPATIAL ORDER. By Erno Goldfinger. Architectural Review, Cheam, England. Nov.-Dec., 1941. pp. 129-131; 163-166. Illus.

ARCHITECTURE as the art of enclosing space, considered in relation to enclosures for shelter such as a house or a church, or for other purposes: a garden, a street, a stretch of riverfront, any vista, a fortress, an entire town. Success is not a matter of intuition. The physiological phenomena produced by enclosures depend on ascertainable physical and psychological effects. . . . Identical spaces will create an entirely different spatial sensation if experienced while stationary, while walking slowly, while hurrying, or while speeding in a car. An urban order designed for musing cannot give satisfaction to people whose existence depends on speed.



He stood UNDER the ways . . .

with a pencil behind his ear!

Remote from the champagne christening stood a man with a pencil behind his ear.

Suddenly a mighty cheer and the sleek new battle wagon slid down the ways . . . but the man wasn't listening. With trained engineer's eyes he watched every detail of the short journey, making rapid pencil notations and sketches. . . .

Back in the drafting room, many men and many pencils elaborated these sketches into drawings and blueprints . . . blueprints for mightier ships, for improved ship ways, blueprints for Victory.

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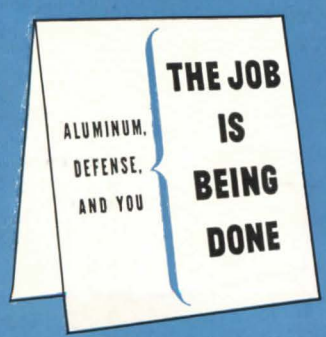

★

HOW MUCH ALUMINUM we are making now is a censored secret. We are determined it shall be sufficient to the need.

HOW MUCH WILL BE AVAILABLE, after the war, is idle talk now.

THE PRICE OF ALUMINUM is the thing that's important. It is important to the war, because our reduction of the price of ingot from 20c to 15c is saving the Government many millions of dollars a year.

THAT FIVE CENTS doesn't make aluminum one whit more useful for war purposes—only more patriotic.

BUT IT DOES MAKE aluminum terribly important to the peace. Real peace means jobs for all. Jobs-for-all come into being only when people *want to* buy and *can* buy: Which means new things, better things, at a price.

IMAGINEERING is the word we have coined to describe the thinking which is used to get those new things ready. Imagineering is letting your imagination soar and then engineering it down to earth. Imagineering needs tools as well as brains.

THAT FIVE CENTS we've lopped off the price of aluminum, so far, has more potentialities of creating new things and better things, at a price, than any single thing we know of.

THAT'S WHERE YOU COME IN. You are the man *who*. You are the man America is counting on to make the jobs Americans are going to need. You are the man who is going to do the *Imagineering*, in your specialty, that is going to win the place for yourself, your employees, your associates.

YOU ARE GOING TO DO IT, and we hope you are going to let Alcoa help. We can, and we want to.

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ALCOA ALUMINUM

Compiled by Clyde Shute, Manager, Statistical and Research Devision, F. W. Dodge Corporation, from data collected by E. H. Boeckh & Associates, Inc.

CURVES INDICATE trend of the combined material and labor costs in the field of residential frame construction. The base line, 100, represents the U. S. average for 1926-1929 for residential frame construction.

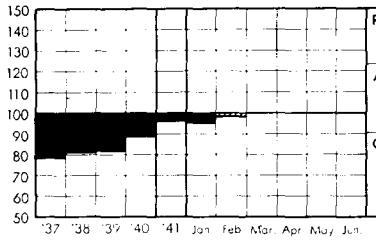
Tabular information gives cost index numbers for the nine common classes of construction. The base, 100, in each of the nine classes represents the U. S. average for 1926-1929 for each particular group. The tables show the index numbers for the month for both this year and last.

Cost comparisons, as percentage differences for any particular class of construction, are possible between localities or periods within the same city by a simple process of dividing the difference between the two index numbers by one of them. For example: if index for city A is 110 and index for city B is 95 (both indexes for A and B must be for the same class of construction), then costs in A are approximately 16% higher than in B $\left(\frac{110-95}{95} = 0.158\right)$. Conversely it may be said that costs in B are approximately 14% lower than in A $\left(\frac{100-95}{110} = 0.136\right)$.

Similar cost comparisons, however, cannot be made between different classes of construction since the index numbers for each class of construction relate to a different U. S. average for 1926-1929.

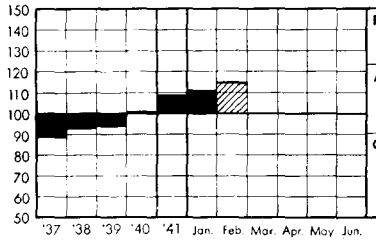
CONSTRUCTION COST INDEX United States average including materials and labor, for 1926-1929 equals 100

ATLANTA



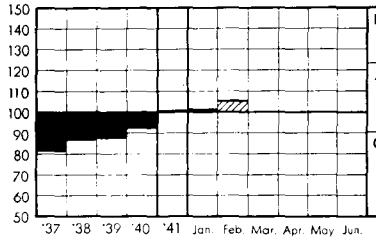
	Feb. '41	Feb. '42
Residences		
Frame	96.2	98.5
Brick	97.5	99.9
Apartments		
Br. & Wood	97.9	100.4
Br. & Conc.	99.6	101.4
Br. & Steel	100.7	102.6
Comm. & Fact.		
Frame	95.2	97.5
Br. & Wood	96.9	98.8
Br. & Conc.	101.2	102.9
Br. & Steel	100.7	102.5

BALTIMORE



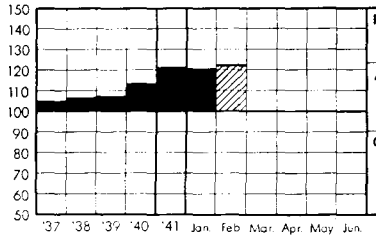
	Feb. '41	Feb. '42
Residences		
Frame	109.2	115.0
Brick	109.9	115.0
Apartments		
Br. & Wood	107.6	115.0
Br. & Conc.	100.6	113.3
Br. & Steel	100.7	113.0
Comm. & Fact.		
Frame	106.3	115.9
Br. & Wood	106.8	114.2
Br. & Conc.	101.2	114.2
Br. & Steel	96.8	115.9

BIRMINGHAM



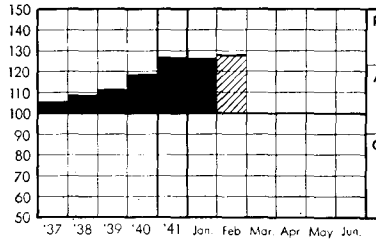
	Feb. '41	Feb. '42
Residences		
Frame	100.8	105.9
Brick	101.3	107.8
Apartments		
Br. & Wood	101.8	107.8
Br. & Conc.	98.9	106.9
Br. & Steel	100.7	107.8
Comm. & Fact.		
Frame	100.6	105.8
Br. & Wood	102.6	107.6
Br. & Conc.	99.1	107.4
Br. & Steel	100.3	107.8

BOSTON



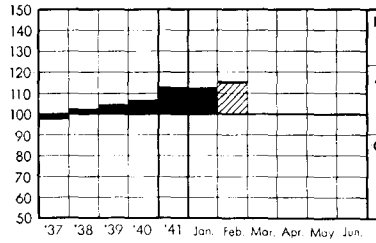
	Feb. '41	Feb. '42
Residences		
Frame	121.3	122.2
Brick	122.4	123.3
Apartments		
Br. & Wood	122.2	123.1
Br. & Conc.	118.1	118.2
Br. & Steel	117.6	118.5
Comm. & Fact.		
Frame	123.4	124.3
Br. & Wood	119.3	119.0
Br. & Conc.	120.2	120.4
Br. & Steel	121.1	121.1

CHICAGO



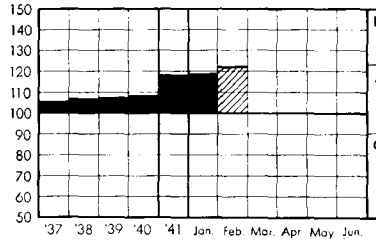
	Feb. '41	Feb. '42
Residences		
Frame	126.9	128.2
Brick	125.5	126.6
Apartments		
Br. & Wood	124.3	125.4
Br. & Conc.	126.9	126.9
Br. & Steel	124.1	124.8
Comm. & Fact.		
Frame	132.9	134.3
Br. & Wood	118.9	119.7
Br. & Conc.	129.6	129.7
Br. & Steel	126.6	126.8

CINCINNATI



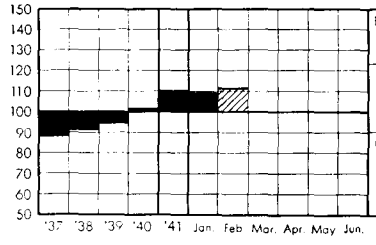
	Feb. '41	Feb. '42
Residences		
Frame	112.8	115.3
Brick	114.0	115.7
Apartments		
Br. & Wood	113.7	115.3
Br. & Conc.	116.5	117.4
Br. & Steel	114.5	115.6
Comm. & Fact.		
Frame	114.6	117.1
Br. & Wood	112.6	113.5
Br. & Conc.	118.1	118.4
Br. & Steel	116.0	116.8

CLEVELAND



	Feb. '41	Feb. '42
Residences		
Frame	118.3	122.2
Brick	120.5	124.2
Apartments		
Br. & Wood	120.1	123.6
Br. & Conc.	122.6	126.9
Br. & Steel	120.2	123.8
Comm. & Fact.		
Frame	121.7	128.1
Br. & Wood	118.2	121.5
Br. & Conc.	125.9	130.3
Br. & Steel	124.1	127.4

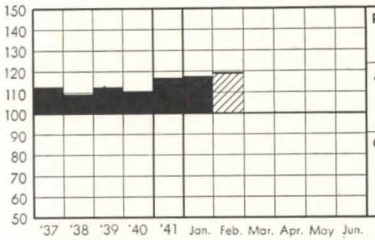
DALLAS



	Feb. '41	Feb. '42
Residences		
Frame	110.6	111.5
Brick	109.2	110.1
Apartments		
Br. & Wood	110.2	111.1
Br. & Conc.	103.3	103.7
Br. & Steel	106.7	108.2
Comm. & Fact.		
Frame	112.2	113.3
Br. & Wood	106.0	105.9
Br. & Conc.	102.5	102.6
Br. & Steel	108.9	109.9

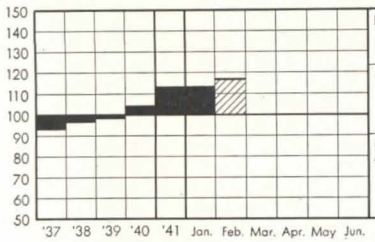
CURRENT TRENDS OF BUILDING COSTS

DENVER



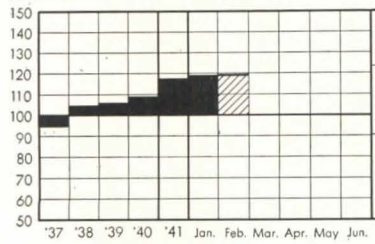
	Feb.'41	Feb.'42
Residences		
Frame	116.8	119.5
Brick	117.2	119.8
Apartments		
Br. & Wood	116.4	118.7
Br. & Conc.	118.9	120.1
Br. & Steel	117.9	120.0
Comm. & Fact.		
Frame	118.8	121.8
Br. & Wood	115.1	117.0
Br. & Conc.	121.5	122.3
Br. & Steel	120.5	121.7

DETROIT



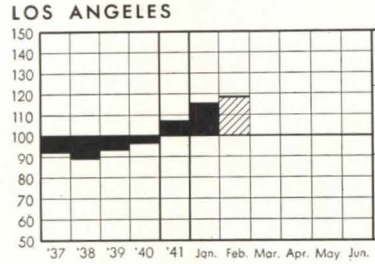
	Feb.'41	Feb.'42
Residences		
Frame	113.4	116.9
Brick	114.6	117.7
Apartments		
Br. & Wood	114.7	117.8
Br. & Conc.	114.7	117.9
Br. & Steel	114.1	117.1
Comm. & Fact.		
Frame	114.8	118.5
Br. & Wood	113.1	115.9
Br. & Conc.	116.3	118.9
Br. & Steel	116.6	119.2

KANSAS CITY



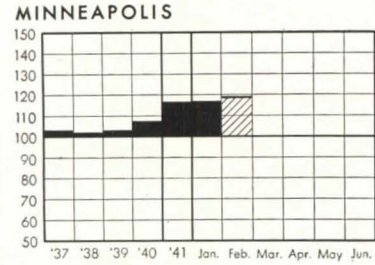
	Feb.'41	Feb.'42
Residences		
Frame	117.8	119.8
Brick	120.4	122.1
Apartments		
Br. & Wood	120.2	122.0
Br. & Conc.	120.8	122.1
Br. & Steel	119.6	121.6
Comm. & Fact.		
Frame	119.1	121.2
Br. & Wood	120.2	121.7
Br. & Conc.	123.2	125.2
Br. & Steel	123.5	124.3

LOS ANGELES



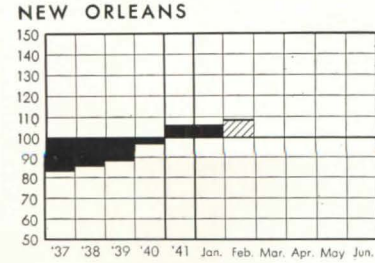
	Feb.'41	Feb.'42
Residences		
Frame	107.5	118.8
Brick	106.7	113.8
Apartments		
Br. & Wood	107.6	114.3
Br. & Conc.	106.5	115.0
Br. & Steel	109.6	118.0
Comm. & Fact.		
Frame	108.4	115.2
Br. & Wood	104.2	110.9
Br. & Conc.	105.6	115.9
Br. & Steel	112.4	119.8

MINNEAPOLIS



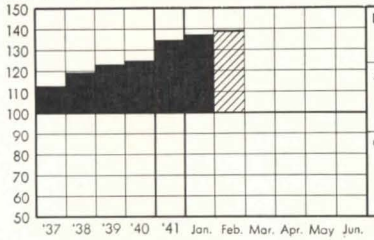
	Feb.'41	Feb.'42
Residences		
Frame	116.6	119.0
Brick	116.9	119.6
Apartments		
Br. & Wood	116.2	118.8
Br. & Conc.	116.4	118.7
Br. & Steel	115.9	119.4
Comm. & Fact.		
Frame	120.0	121.7
Br. & Wood	112.3	114.9
Br. & Conc.	119.9	122.7
Br. & Steel	118.7	120.8

NEW ORLEANS



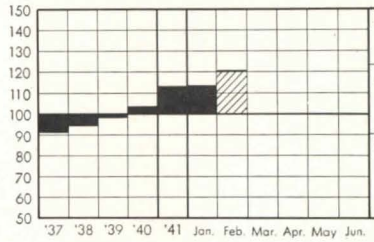
	Feb.'41	Feb.'42
Residences		
Frame	106.3	108.6
Brick	105.7	107.7
Apartments		
Br. & Wood	105.9	108.2
Br. & Conc.	106.7	109.0
Br. & Steel	108.6	111.5
Comm. & Fact.		
Frame	107.9	111.5
Br. & Wood	104.4	106.3
Br. & Conc.	106.7	108.8
Br. & Steel	108.7	112.5

NEW YORK



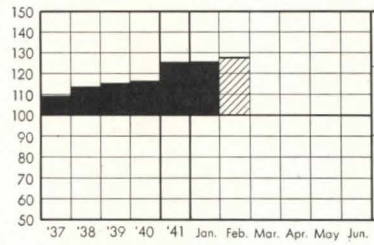
	Feb.'41	Feb.'42
Residences		
Frame	134.6	139.4
Brick	134.1	137.9
Apartments		
Br. & Wood	133.3	137.0
Br. & Conc.	135.0	137.0
Br. & Steel	131.3	134.5
Comm. & Fact.		
Frame	139.4	144.8
Br. & Wood	128.7	131.5
Br. & Conc.	137.1	138.4
Br. & Steel	134.4	136.2

PHILADELPHIA



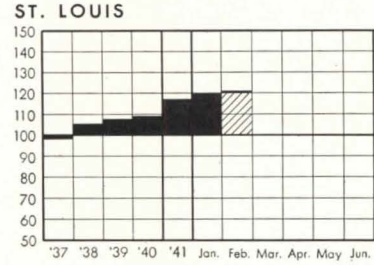
	Feb.'41	Feb.'42
Residences		
Frame	113.3	120.6
Brick	114.0	121.7
Apartments		
Br. & Wood	114.4	122.0
Br. & Conc.	111.7	121.3
Br. & Steel	111.6	120.3
Comm. & Fact.		
Frame	113.9	122.0
Br. & Wood	113.6	121.0
Br. & Conc.	111.8	124.7
Br. & Steel	113.0	121.5

PITTSBURGH



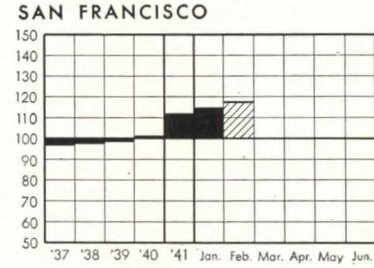
	Feb.'41	Feb.'42
Residences		
Frame	125.3	127.7
Brick	125.7	128.2
Apartments		
Br. & Wood	125.3	128.0
Br. & Conc.	120.6	123.2
Br. & Steel	118.7	122.2
Comm. & Fact.		
Frame	127.4	130.0
Br. & Wood	123.8	126.3
Br. & Conc.	122.3	125.6
Br. & Steel	119.6	122.4

ST. LOUIS



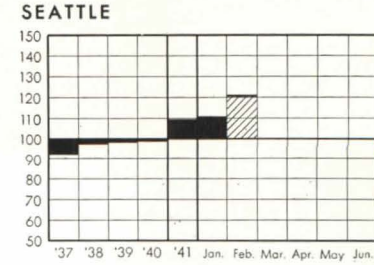
	Feb.'41	Feb.'42
Residences		
Frame	117.0	120.8
Brick	118.7	121.4
Apartments		
Br. & Wood	118.5	121.0
Br. & Conc.	121.1	123.8
Br. & Steel	120.2	123.3
Comm. & Fact.		
Frame	120.1	123.8
Br. & Wood	116.3	118.6
Br. & Conc.	121.5	124.4
Br. & Steel	122.1	124.1

SAN FRANCISCO



	Feb.'41	Feb.'42
Residences		
Frame	112.2	117.7
Brick	115.8	120.0
Apartments		
Br. & Wood	116.2	120.1
Br. & Conc.	120.1	124.2
Br. & Steel	119.8	124.7
Comm. & Fact.		
Frame	114.3	119.7
Br. & Wood	115.3	118.7
Br. & Conc.	123.0	125.3
Br. & Steel	123.4	127.1

SEATTLE



	Feb.'41	Feb.'42
Residences		
Frame	109.9	121.2
Brick	115.1	121.5
Apartments		
Br. & Wood	114.5	121.0
Br. & Conc.	123.0	131.1
Br. & Steel	119.9	127.8
Comm. & Fact.		
Frame	109.7	116.5
Br. & Wood	116.1	122.1
Br. & Conc.	128.2	136.1
Br. & Steel	123.3	132.9

"KENNETH KINGSLEY STOWELL, AIA"

GOES ON OUR EDITOR'S DOOR

Blank and Stoller

KENNETH KINGSLEY STOWELL, AIA, *is now Editor-in-Chief of* ARCHITECTURAL RECORD. *We are pleased and proud to have him at the helm at this time when the stern realities of war must be faced by all in the building industry. We know his many friends will welcome this news . . . that those of our readers who do not yet know him have a worthwhile experience ahead. Kenneth Stowell comes to us from the Editorship of* HOUSE BEAUTIFUL, *and before that* AMERICAN ARCHITECT & ARCHITECTURE, *and* ARCHITECTURAL FORUM. *Here at the* RECORD *he will add his strength and inspiration to that of our present busy staff and will further the effectiveness of the* RECORD'S *basic editorial policies.*

Thomas S. Holden

President, F. W. Dodge Corporation

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MORE— AND FASTER —NOW

TIME WENT ALONG SERENELY, steady-paced, unhurried for most of us—until Singapore. And there was enough of it—time to provide new plants, new communities, new bases and new weapons; time to plan and build, to tool up and train, to produce and deliver. Production was neatly charted, we knew where we were going, and when, and how.

Others were to hold off the enemy while we proceeded with the most gigantic war production program the world has ever seen, a program to match in two short years what the Axis powers have been building up in the last ten.

Then the invulnerable was destroyed, the invincible conquered, the impregnable taken. There is no time to plan. We must produce now. Schedules must be doubled, trebled. Speed is the one essential. Potential strength means little at the moment. Men and munitions must be sent where they are needed now, today, tomorrow—before it is too late. Present factories must be producing all 24 hours of every day. Every machine must be used to its maximum, every man work at top efficiency. Existing factories are being converted from the production of peacetime commodities. Conversions must be made with the utmost speed. Manufacturers of building materials, especially those using metals, are converting, have been and must be converted to produce war materials. New factory construction is being pushed ahead night and day but the forces of the Allied Nations need planes and bombs and guns now and only existing fast-running factories can ship them in time. American industry's only thought must be "more and faster, *now*," without wondering what present expansion will mean in after-the-war conditions.

Architects, engineers, constructors, manufacturers—the building industry—are doing their part. Factories and houses for workers are going up all over this country. These will be more and more important as time goes on, but at this moment immediately increased production for war purposes must take precedence. The building industry must accelerate its program: manufacturers by converting to war products, contractors by finishing new war-production building and remodeling old, and the technical and professional men by finding new ways to build that will save more critical war materials. Sacrifices must be made, new work found for talents no longer employable in building "as usual"; conversion of man-power and of professional talent is more difficult and more disrupting than the conversion of factories. Yet conversion there must be—for the duration—*now*.

ARCHITECTURAL RECORD will do its utmost to assist the Government, private industry and the profession to bring about the rapid conversion of the creative forces of the industry to maximum wartime production. It will endeavor to do this by bringing together the opportunity and the man, the problems and the persons to solve them. It will cooperate with Government agencies, professional organizations and individuals to this same end. Gearing its editorial approach to the urgent needs of the present—and also to the portents of the future—it will continue to serve the vital interests of the profession, the industry and the country.

Kenneth K. Stowell

EDITOR-IN-CHIEF

Leet Brothers photo

"ON TO WASHINGTON?"

"How can I make my talent, experience and ability count for most in winning this war?" That is the question uppermost in the minds and conversations of architects and engineers, contractors, sub-contractors, manufacturers and building material dealers who are not already engaged in war work. "What can I do? Where shall I go? Whom shall I see?"

It is no secret in the building industry that this is the immediate personal problem for the majority of its workers. This in the face of the biggest dollar-volume the industry has seen in a dozen years. That huge program of building-for-war-needs includes fewer though larger projects than in peacetime, and those in relatively concentrated localities, the designated Defense Areas. Also the priorities necessary to insure enough materials for war plants, bases and housing have caused a virtual stoppage of building, or even planning, in most other sections of the country. And there is the probability that such building as has been undertaken in the face of these conditons may soon be forced to cease and desist through a general stop-order on all private building, except those considered absolutely essential to the war or general welfare.

Of course many craftsmen, mechanics, laborers and artisans pick up and move to the places where there are work and high wages. They'll be needed and welcome. But there are also the men who were well-established in their communities—the architects, contractors, the subcontractors and material men. They find themselves suddenly in much the same predicament as the automobile dealers: confronted with many commitments and obligations but with no wares to sell and no customers except Uncle Sam. A feast in one place and famine in others. It is a serious, if temporary, dislocation, unavoidable and necessary in the speeding of war work. So many an architect and engineer is asking, "Where do I go from here?"

Look over the possibilities at home

First answer is naturally "Washington," for it is there that all the departments and agencies of the Government have their headquarters. And Uncle Sam now controls construction, from the determining of needs for building through every detail of planning, structure, equipment and finance. Government, for the duration, is the prime potential client, either directly or indirectly. And Government agencies, through priorities, approvals, and financing, influence all building undertaken by private industry.

So it's "On to Washington," in many cases, though it may be wise to look over the possibilities nearer home before getting into the mad whirl of the Washington merry-go-round. There are many riders on that carrousel and only those on the right horses get a chance at the elusive brass ring; and then it takes a keen eye, a long arm, and a rabbit's foot or its equivalent. There is no telling when or where a department or agency may need architectural and engineering services, but when it does it is usually in a hurry. The trick is to be the first and the best man on deck when the opportunity offers. That may mean a protracted stay or return visits. (Remember incidentally, that hotel accommodations are at a premium and not to be had without reservations well in advance.)

Most Government officials are working at top speed, concentrating on the projects that promise to accomplish the most in the shortest time. Appointments pile up, each must wait his turn. Every Government man we saw was doing his best to wring from "the unforgiving minute, sixty seconds worth of distance run." They have time to listen only to definite proposals that come within their particular sphere of activity. So do your part if you must go, make your appointments with the right people and come to the point on a definite proposal or project.

Since speed and efficiency are of the utmost importance, most Government officials are looking for strong, integrated organizations in the building field, organizations offering a complete service embracing all planning, design, engineering services, site planning and landscaping, superintendence and accounting. Or they may go even further and contract with those who will provide a finished product, such as so many houses complete on the site ready for occupancy. For the most part they strive to avoid divided responsibilities or multiplicity of *principals on* any one project. This suggests the advisability of forming stronger architectural-engineering organizations through mergers and affiliations, a process already under way in many sections of the country. Any changes of this kind should be reported at once to each department or agency where applications or qualifications are on file. A report should also be filed at The Octagon in Washington in the National Census of Engineering and Architectural Personnel.

The Government's job now is to get things done; therefore, Government agencies are awarding contracts to those they believe most competent to deliver specific results on time. That is their criterion; design ability, professional ethics, traditional relationships and procedures must take second place if they stand in the way of speed and production. Time is of the essence of every contract.

Four major potentials

Before boarding that plane or train for the nation's capital, let's examine the possibilities for putting design and engineering talents to work.

Prime opportunity rests with Government departments or agencies;

Second: with private industry engaged in war building;

Third: with preparations for post-war construction;

Fourth: with industrial or commercial concerns engaged in war production.

With these four sources of architectural opportunity in mind, it is strongly advised that a thorough coverage of local agencies and organizations be made to determine what building may be contemplated, authorized or possible.

Being thoroughly conversant with the local situation gives one a distinct advantage. No stone should be left unturned; look over the following list and make sure that you check with a responsible officer or representative to find out, *first*, what building is contemplated or authorized; *second*, how it may be possible for you to be of assistance in that building; and *third*, by inference, whether or not it may be possible for you to promote further building in which you will have a part.

Each of the local agencies or organizations here listed may possess information of value to you, received direct from various Government sources. Space does not permit an explanation of the relationships and inter-relationships of Government departments and agencies with the various sections of private industry and local governments:

FHA (Federal Housing Authority) Office
Local Housing Authority
State Planning Board
Chamber of Commerce
Architectural and Engineering Organizations
Building and Contracting Organizations
Real Estate Board
Newspaper Offices
Home Owners' Loan Corporation Office
Public Works Reserve Branch
Executives of Industrial and Manufacturing Plants

If you have not already filed complete data regarding your firm with the American Institute of Architects in Washington, this should be done at once. The questionnaire is called the National Census of Engineering and Architectural Personnel and will be sent to any architect whether affiliated with AIA or not. Many Government agencies consult this file and confer with Edmund Purvis in compiling lists for selecting local architects.

Edmund Purvis, at the AIA headquarters in Washington, is working in the interests of the entire profession and is in close touch with all Federal activity that affects building. His office serves as a one-man clearing house and advocate in matters that affect the profession.

Mr. Snyder, Assistant Federal Works Administrator, has announced that: "It is the intention of the FWA immediately upon receiving from the Coordinator of Defense Housing a certificate of need . . . to request from the AIA a panel of local architects resident in or near the specified municipality. . . . The Institute has agreed to furnish the names without distinction as between members and non-members of the Institute. From the panel the FWA would select an architect with the understanding that he would associate with an engineer in the undertaking. . . ."

Since a check of the above list of local agencies may indicate the advisability of a trip to Washington, or at least correspondence with various officials, we are publishing here a list which includes most of the Washington officials whom architects would normally approach. The list is as of February 23, 1942, and subject to change in any particular without notice. Changes in function, location and personnel are rapid and continuous and one must be prepared for such a contingency.

To be of the greatest service to our readers we have indicated 10 important agencies on the map which is to be found on page 40, so that the architect may plan his itinerary and save time in Washington.

Correction at press time

News, as we go to press, of the consolidation of the 16 housing agencies, has called for a few—but not many—changes in the map and the list, both of which have been corrected according to the announcement. One housing agency, Charles F. Palmer's Division of Housing Coordination, is abolished. But the others are *absorbed* in NHA, not *abolished*, and it is evident that they will continue their individual functions under the new alignment. And probably, for some weeks at least, in their present quarters. Personnel changes, it is assumed, will come at the top and bottom of the ranks. Overlap is found principally in such departments as press, research, personnel, accounting. Field offices are expected to be consolidated, with many personnel realignments.

Aside from housing, the other agencies are not affected. So this map and list, carefully compiled to help in the onerous task of contacting Washington, may, with few exceptions, be regarded as correct and current. If the decision does seem to be "on to Washington," take these references with you, and the best of luck!

(Map over page)

WASHINGTON DIRECTORY

CIVIL SERVICE
F. at 8th Street, N. W.
Phone: Republic 5719
(Local Federal Offices of Post Offices usually have announcements of examinations and of positions open. Civil Service status is required for most direct employees of Government Agencies and the agency can inform wanted applicants of the necessary procedure.)

FARM SECURITY ADMINISTRATION
308 Agriculture Building (South Building)
C. B. Baldwin
Phone: Republic 4142

FEDERAL HOME LOAN BANK BOARD
101 Indiana Avenue, Room 216
John Fahey, (Chairman, Federal Home Loan Bank Administration)
Phone: National 5812

(continued on page 92)

Work of Defense Housing Coordinator's Office terminated by Executive Order, February 24, 1942.
Possible, if not probable, location of superseding National Housing Agency headed by John B. Blandford, Jr.

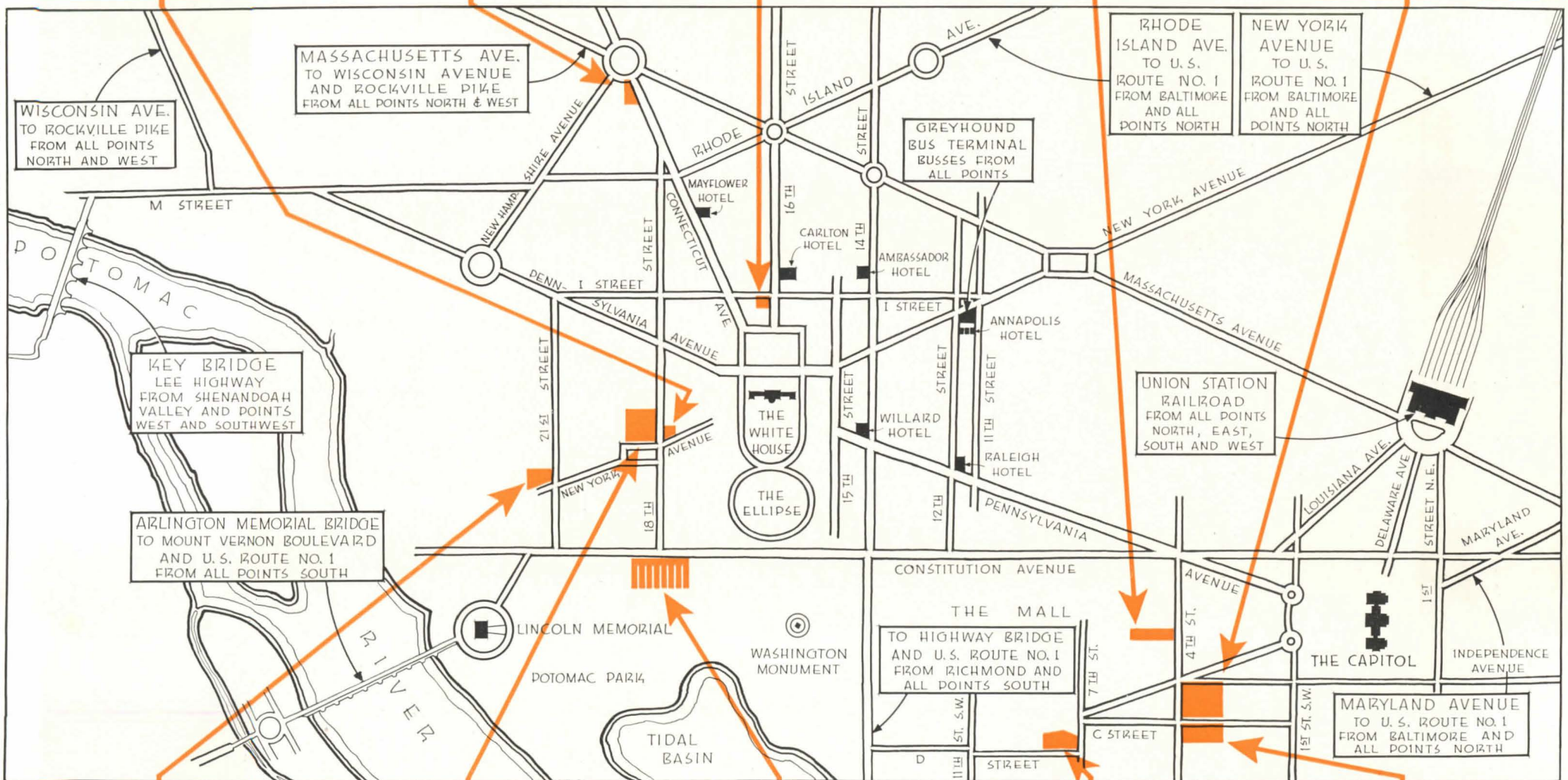
1 THE OCTAGON
American Institute of Architects
1741 New York Avenue, N. W.
Edmund R. Purvis
Phone: National 6971

2 FWA, CONSTRUCTION DIVISION
Dupont Circle
Rufe B. Newman, Jr.
Phone: Republic 7737
(Prefabricated and Demountable Houses)

3 ~~DEFENSE HOUSING COORDINATOR, OEM~~
~~1600 I Street~~
~~Charles F. Palmer~~
~~Phone: Republic 5050~~

4 WAR PRODUCTION BOARD
Housing Priorities Branch
Temporary E Building
6th & Adams Drive, S. W.
Sullivan Jones
Phone: Republic 7500

5 WAR PRODUCTION BOARD
Division of Industrial Conservation
Social Security Building
3rd & Independent Streets, S. W.
H. H. Wapels
Phone: Republic 7500



6 WAR DEPARTMENT, CORPS OF ENGINEERS
New War Department Building
21st Street & Virginia Avenue, N. W.
Captain Harry D. Temple
Phone: Republic 6700
(Military appointments, Reserve Officers, etc.)

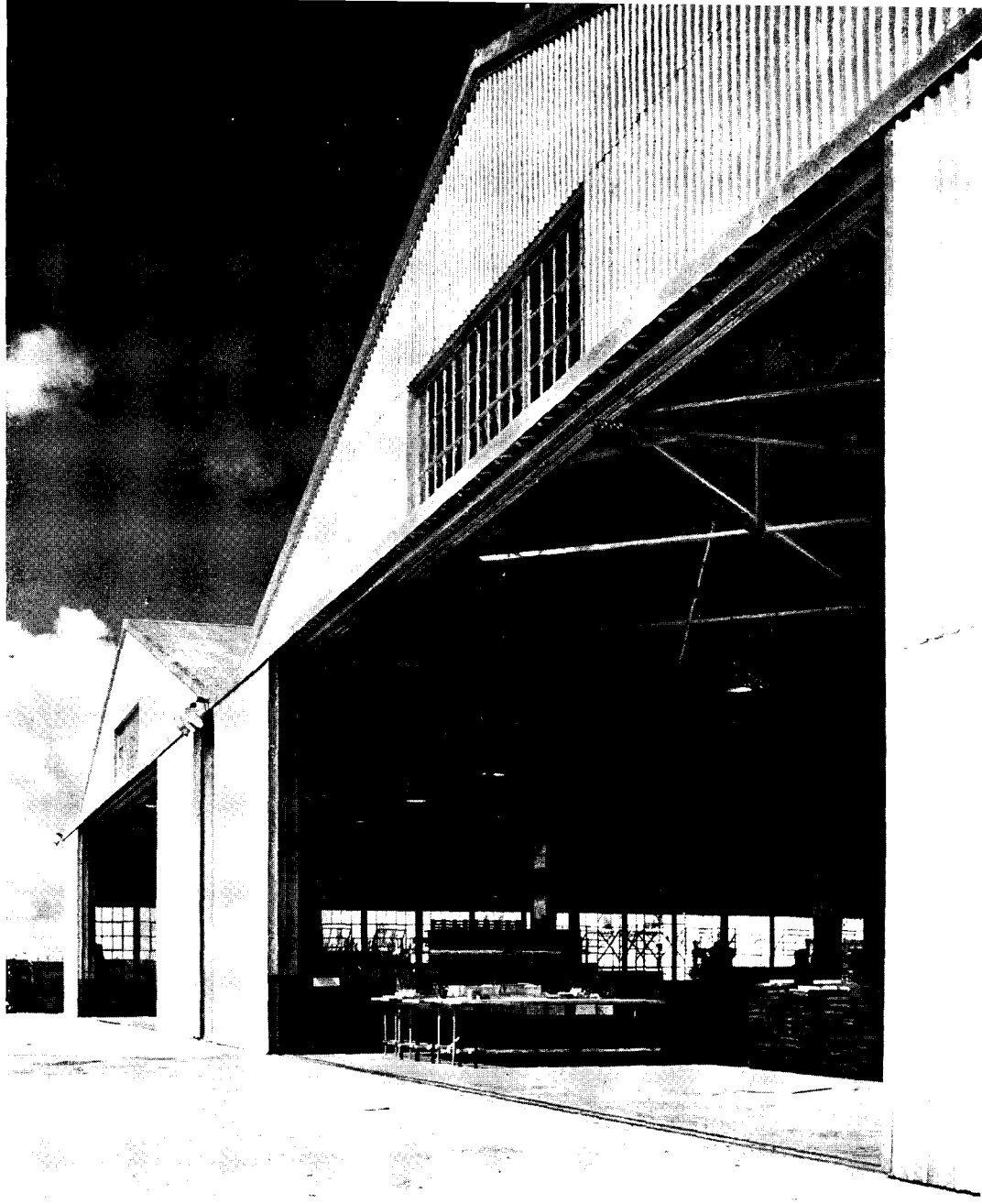
7 FWA, UNITED STATES HOUSING AUTHORITY
North Interior Building
18th and F Streets
William P. Seaver—Albert C. Shire
Phone: Republic 7337

8 NAVY DEPARTMENT, DEFENSE PROJECTS
Bureau of Yards & Docks
Navy Building
Construction Avenue & 18th Street
Lt. J. J. White, CEC, USN
Phone: Republic 7400

9 FWA, PUBLIC BUILDINGS ADMINISTRATION
Procurement Division Building
(Federal Warehouse) 7th & D Sts., S. W.
N. Max Dunning—Neal A. Melick
Phone: District 5700

10 WAR DEPARTMENT
Construction Division, Corps of Engineers
Railroad Retirement Building
4th & D Streets, N. W.
J. T. Willet
Phone: Republic 6700
(Civilian Appointments—field positions)

This map was prepared and completed as of February 23, 1942, and revised as indicated upon the issuance of the Executive Order on February 24, 1942



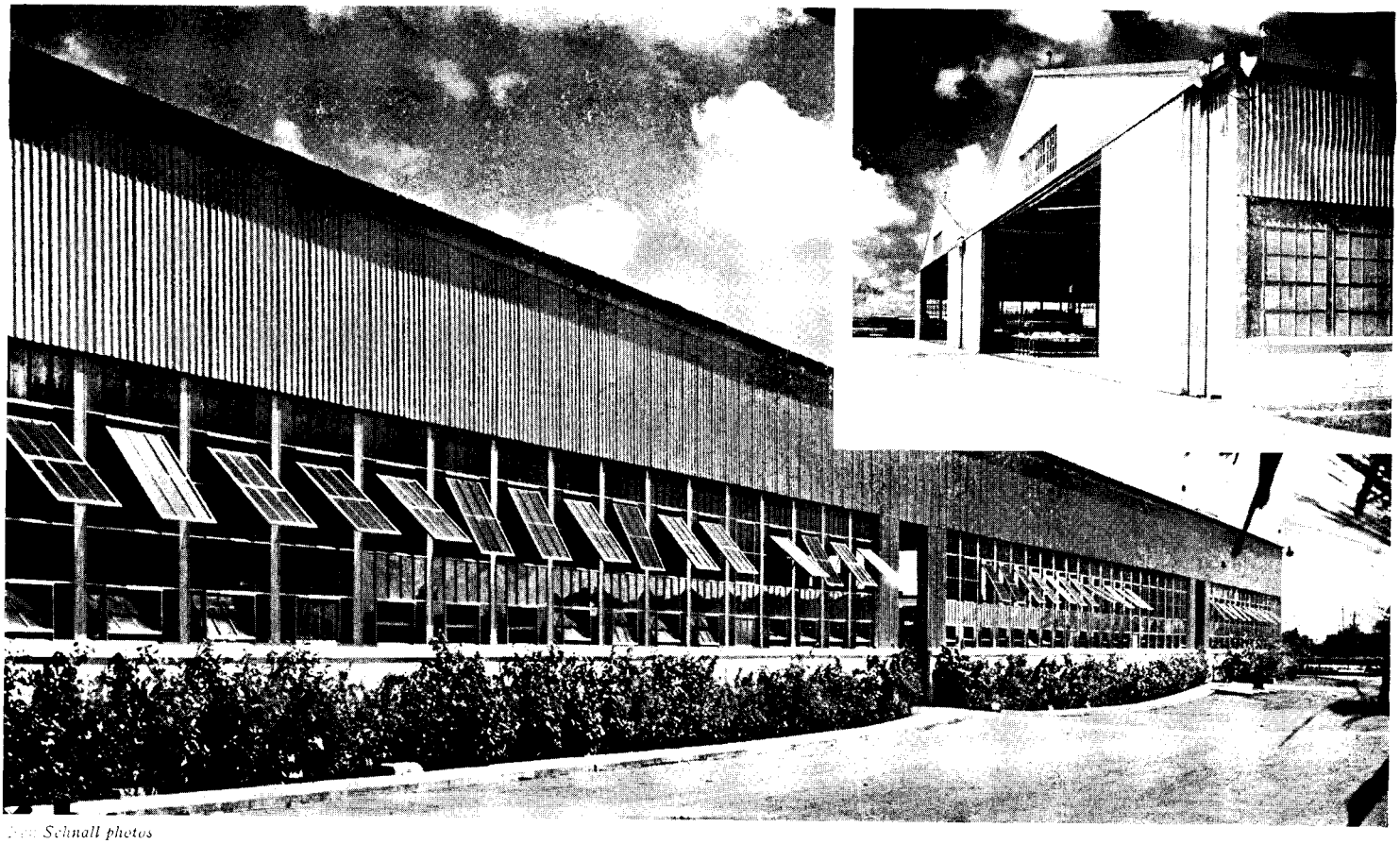
FACTORY BUILDING (see next page). ROBERT LAW WEED and EDWIN T. REEDER, Architects

Ben Schnall

CURRENT PROJECTS

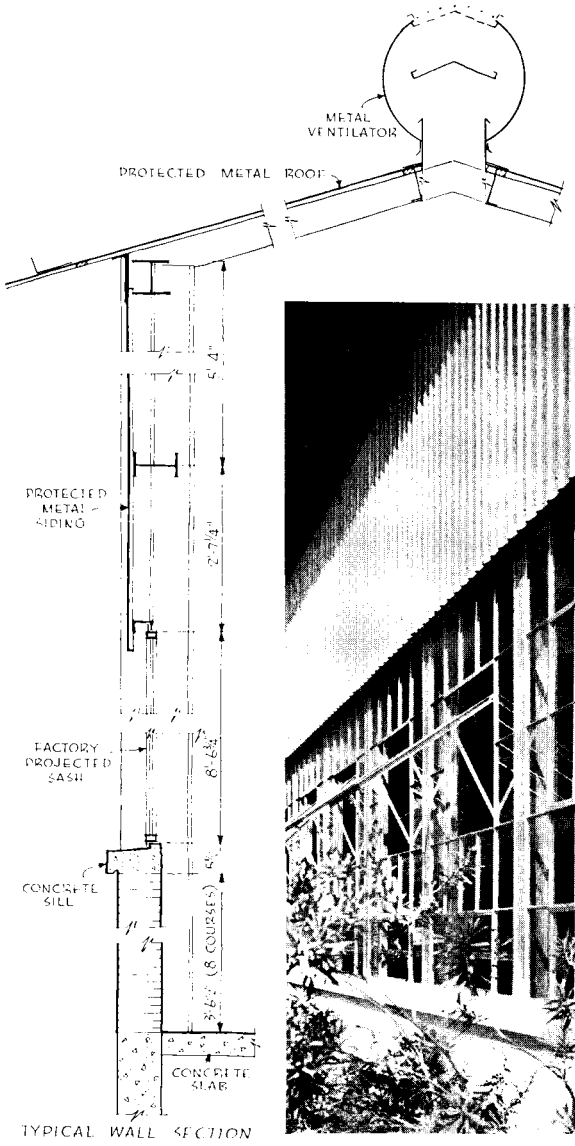
IN THE FOLLOWING 12 pages are a representative group of recently completed buildings that cut across the range of today's building news interest. There are examples of vital industrial work directly concerned with the war effort; there are alteration projects that use a minimum of critical materials, and there are one or two buildings that lie entirely outside of wartime building needs. Structures in this latter category serve either of two useful purposes: 1. They may demonstrate new techniques of design, construction or equipment which are adaptable to the types of structures being built today. 2. They may suggest answers to important post-war *design problems, forming the basis* of an invaluable "future reference" file. In presenting buildings designed to help win the war, we respect Government censorship regulations and refrain from giving any information which might be of value to an enemy.

Ben Schnall photo



Julius Schmall photos

ONE OF THE FACTORY UNITS



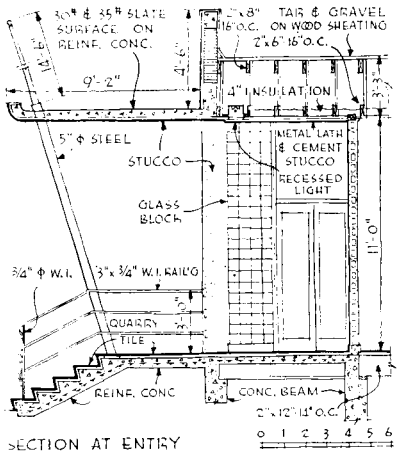
TYPICAL WALL SECTION

INDUSTRIAL

AIRCRAFT PLANT, ROBERT LAW WEED and EDWIN T. REEDER, ARCHITECTS. Several units compose this modern plant. On these pages we illustrate but two—the Administration Building and one of the factory buildings. The plant is laid out in such a way that expansion to almost double its present capacity is possible without disrupting operation of present units.

In the structure the factory building is of steel frame, with patented protected metal roofing and siding. Sash are of the factory projected type; 40 per cent are glazed with heat- and glare-reducing glass; 60 per cent, standard glass. The building foundations consist of isolated columns, footings and grade beams. Floors are cement finish on a concrete slab.

The factory area is illuminated by mercury vapor lights at the bottom of the truss lines, augmented by fluorescent units over important equipment items.



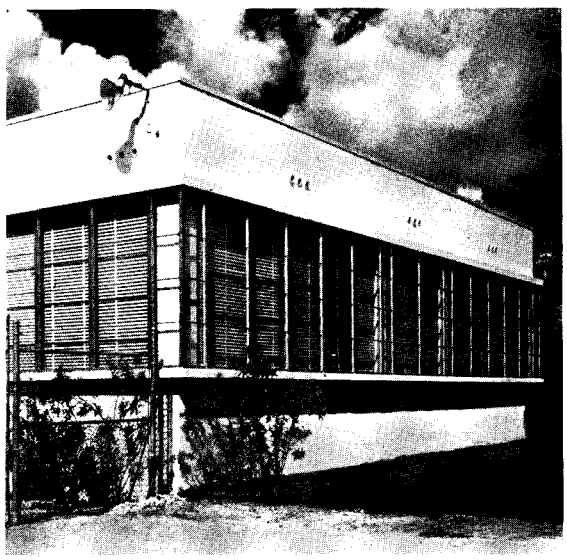
SECTION AT ENTRY

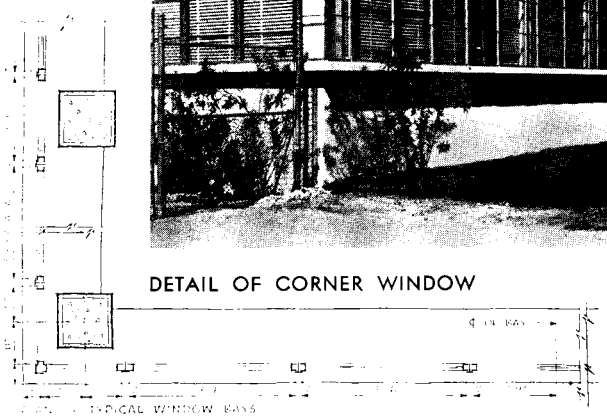

ADMINISTRATION BUILDING ENTRANCE

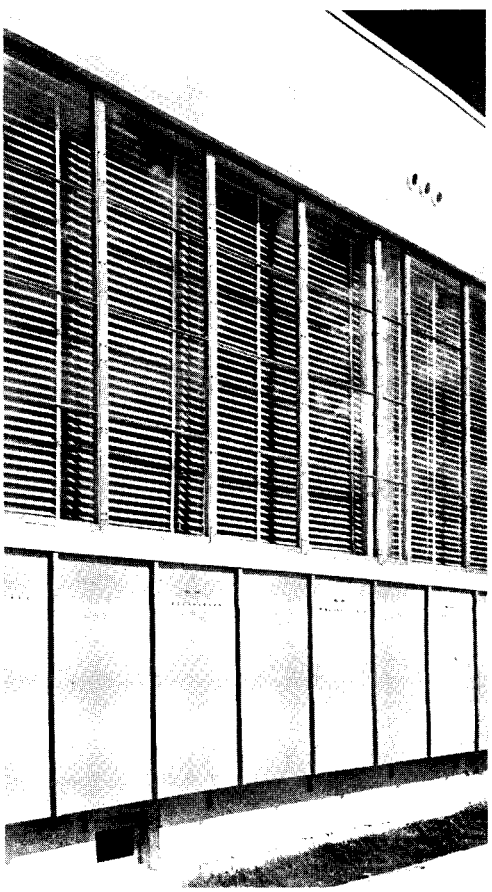
OFFICES

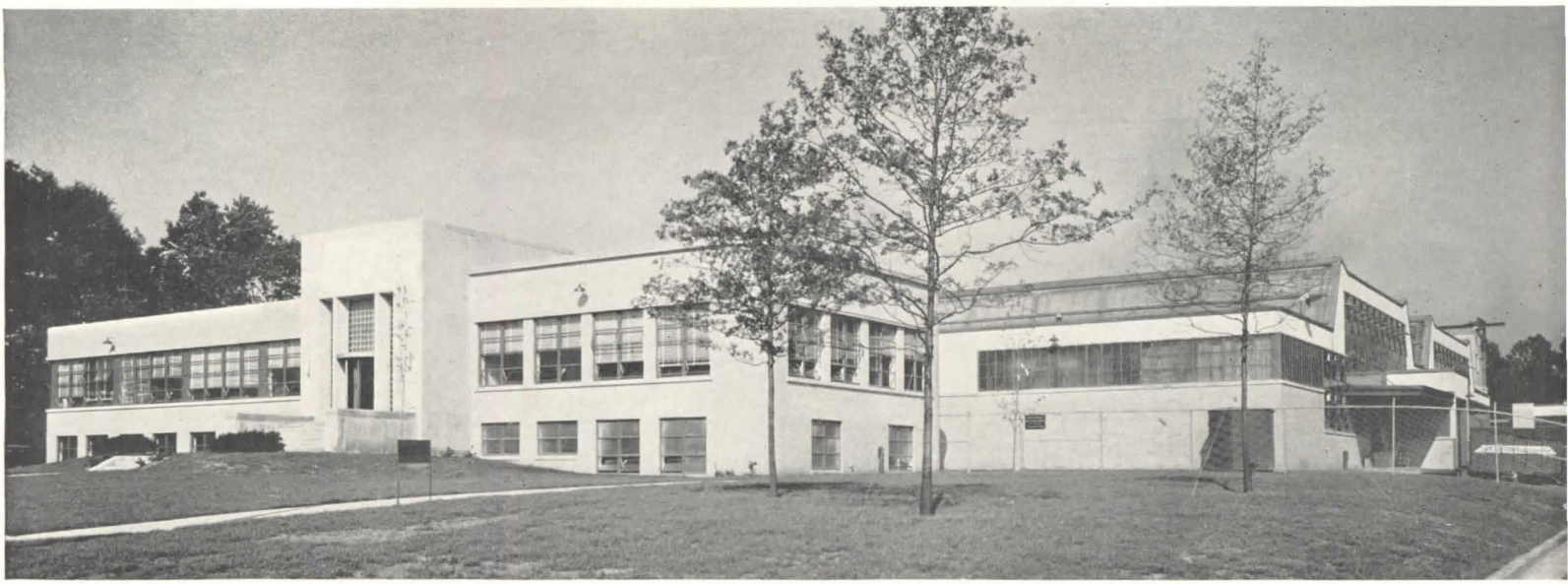
THE ADMINISTRATION BUILDING is a composite structure of concrete and steel, the latter used for interior columns and roof-frame support; the roof is 10-yr. built-up roofing over wood rafters and sheathing. Wall frame consists of reinforced concrete columns and beams. Exterior surface is concrete block and painted stucco. Sash are of fixed steel. The building has bat-type insulation, and is heated by strip electrical heating in the air conditioning system.

Segregated in containers hung on the outside of the building beneath window bands are metal shutters of the clip-on type. Designed as storm shutters, they are lightproof and appropriate for blackout purposes.


DETAIL OF CORNER WINDOW


TYPICAL WINDOW BAYS


REMOVABLE FRONT METAL BOXES under window band contain lightproof, portable clip-on shutters



INDUSTRIAL

TOOL PARTS PLANT, ALBERT KAHN, ASSOCIATED ARCHITECTS AND ENGINEERS. A small, self-contained plant, this new factory was built to replace a smaller old one, due to defense and war demands. Construction speed was of the essence. Time from ground breaking until manufacturing actually began consumed but five months. The new factory is 57 per cent larger than the former plant; yet, through skillful, economical layout, production volume was increased 170 per cent. Within the manufacturing area, the company handles the entire process, from raw material to finished product. Rather than a flow-line method of straight-line production, process planning controls continuity of production. Automatic machines are in one department; heat-treating equipment is in another; lathes in a third, etc.

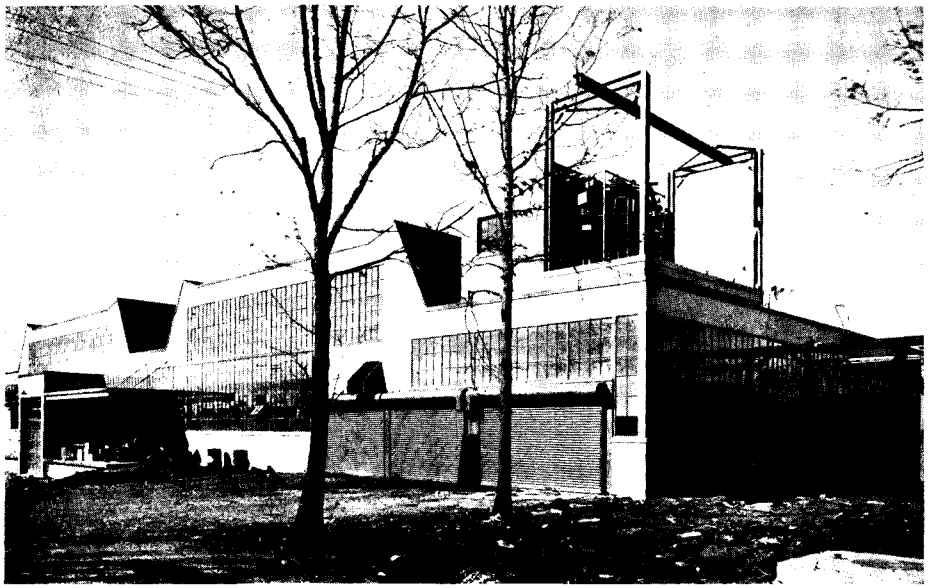
Commenting on the accelerated production capacity of the new plant, A. M. Stoner, chief engineer, says: "The increase the new plant has made possible is much greater than one would expect from a comparison of the new floor area with the old. This is due partly," he explains, "*to new*, space-saving equipment, but in great measure to the fact that the columns are widely spaced and hence do not interfere with the ideal locating of the machines. Furthermore, wide column spacing makes it possible to place more machines in a given area."

Three units constitute the layout—office building, manufacturing area, and boiler house. The office building consists of a basement and first floor, and, because of the slope of the land, the manufacturing area occurs halfway between these two floors. Any interchange between office and plant necessitates travel of only a half a flight up or down. Of modern design, the office building is a brick and steel structure, with an abundant glass area in the side walls. Floors are concrete slab on metal joists; the slab is composition-covered. Executive, accounting, production, drafting and engineering offices occupy the upper floor; in the basement are employee locker and toilet rooms and a large lunchroom.

The manufacturing area is a true "daylight factory." Walls are of brick to the sill line, 5 ft. above floor elevation. Surmounting this is a strip of continuous steel sash. In addition to this generous amount of light area in the walls, the two sloping monitors that span the building have glass sides and sash in the flat surfaces at the ends. Glare-resistant glass is used throughout the south and west sides of the building.

Steel columns are spaced 40 ft. apart east and west; 66 ft. apart north and south. Distance from floor to the bottom chords of the trusses is 20 ft. The roof is metal deck, covered with composition; the floor is concrete topped by wood block. Construction of the boiler house is similar to that of the factory.

An oil burner generates the steam that heats the plant through a system of unit heaters, strategically placed. Steam pipes and return piping are carried underground to the factory and office building. The boiler house composition roofing is laid over 1 inch of insulation and metal decking.

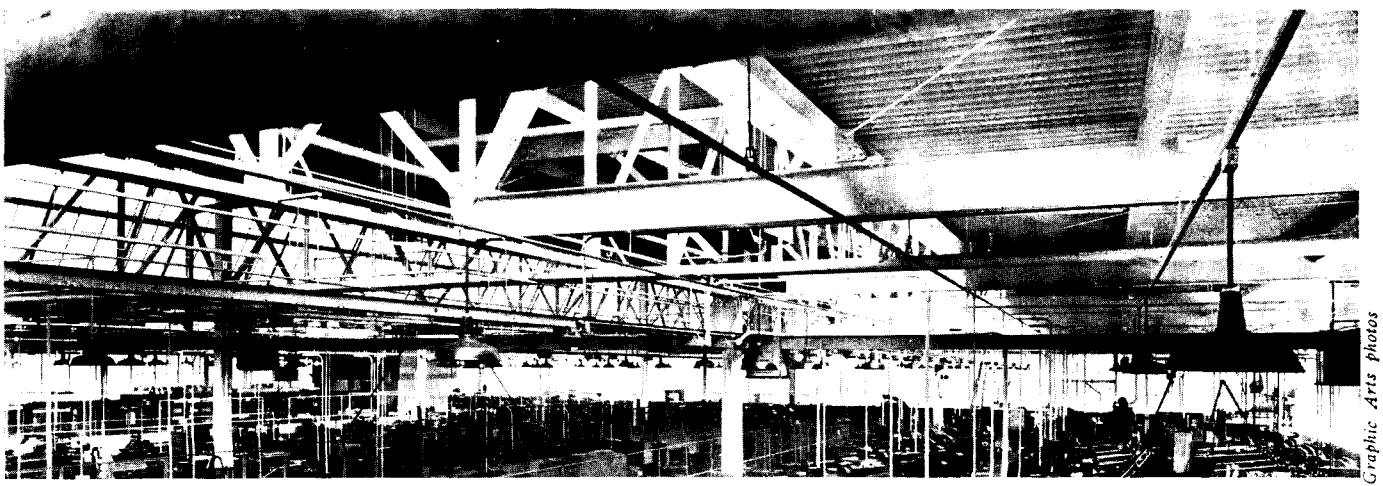


FACTORY UNIT

RECEPTION ROOM, Office Building

THE EMPLOYEE LUNCHROOM is on the lower floor of the office building

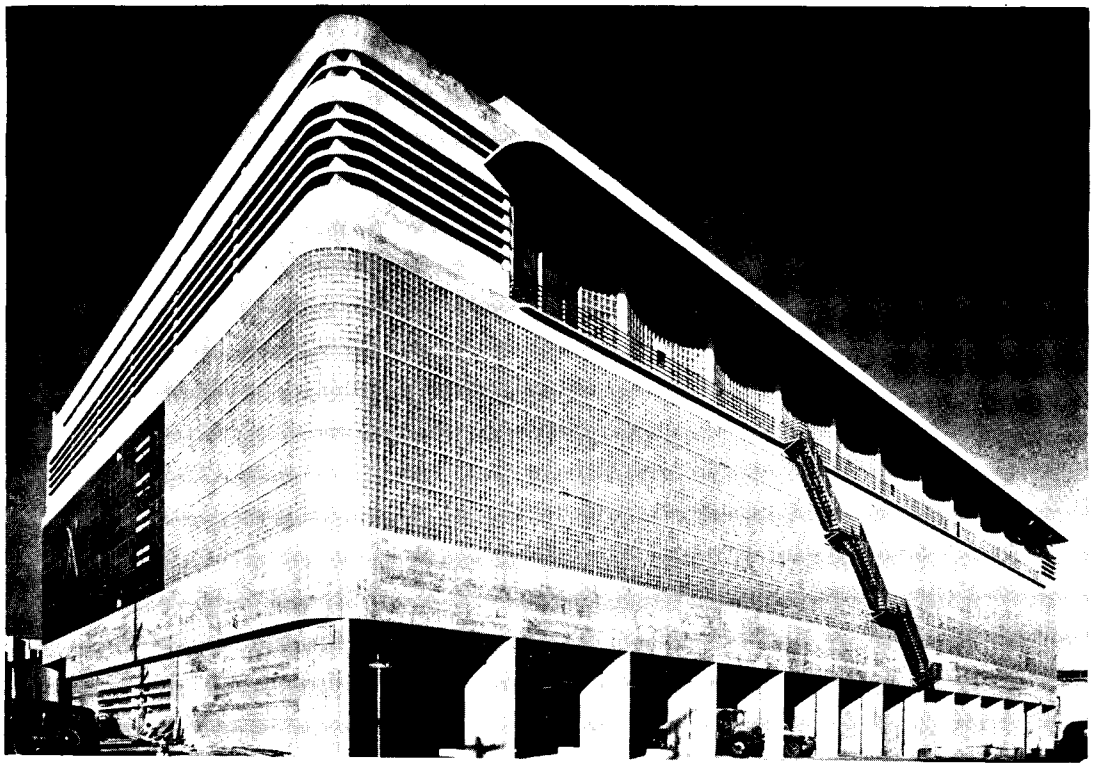
Office partitions are metal and glass

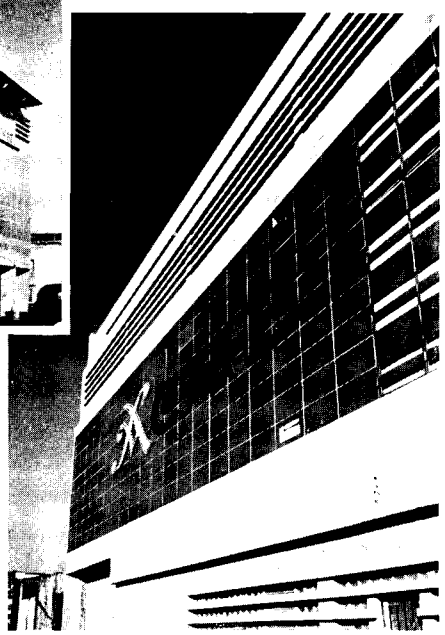


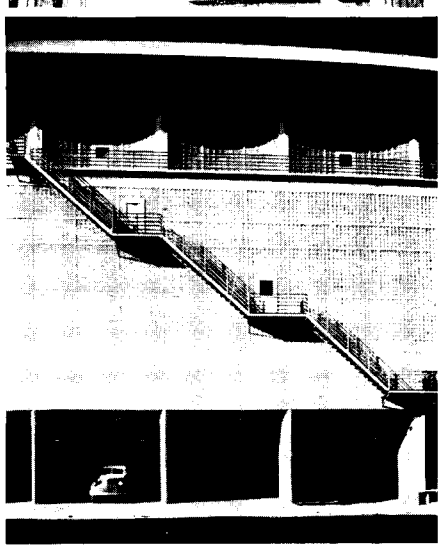
Graphic Arts photos

THE FACTORY AREA is amply daylighted by windows in walls, monitors and at ends of monitors. Note trusses parallel to monitors

INDUSTRIAL







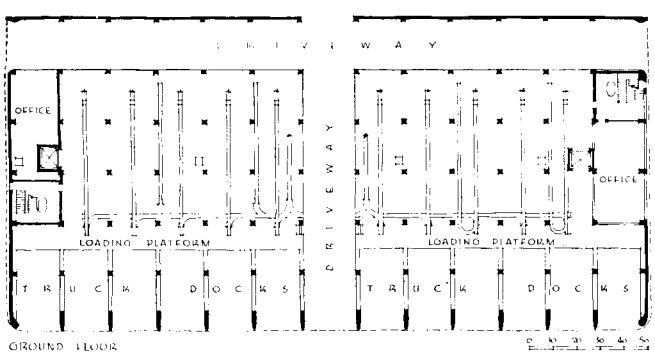
Philip Fein photos

BOTTLING PLANT

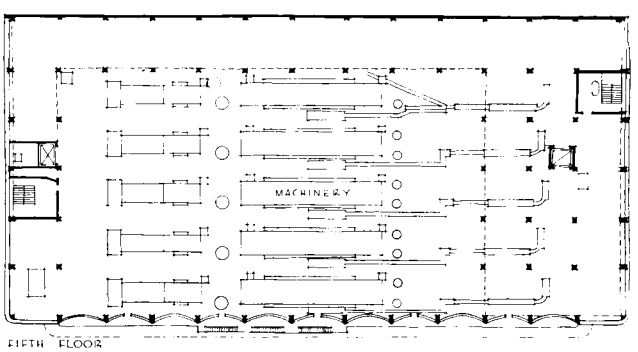
ACME BOTTLING HOUSE, SAN FRANCISCO, CALIF. WILLIAM GLADSTONE MERCHANT, ARCHITECT. An addition to an existing plant, this building fronts on an important traffic artery; hence more than usual attention has been given to exterior appearance and its attendant goodwill value. Formerly plant additions had been added with little preplanning; the present new unit establishes a pattern which may ultimately be applied to an entire square block. Briefly the bottling process involves bringing the product from storage to the top-floor machinery hall where it is packed; then it is taken by conveyor to the three lower storage floors, and thence to the ground floor shipping area as needed.

To eliminate as much direct sunlight glare as possible from the top floor, the glass block window bays are concave and shielded by a concrete marquee. On storage floors, light is kept at its desired condition by use of special glass block with an amber interior face. These window bands line the three sides of the building. In all, the glass block area equals 10,370 sq. ft. The advertising boards are of porcelain enamel—removable, in case it seems best to substitute glass at a later time. Shipping offices and trucking docks form the ground floor. The large fin-like piers between the doors are designed to the correct turning radius for company trucks.

Structure consists of a steel frame with steel trusses over the machine room; floors are patented steel beam construction; walls are reinforced concrete.



GROUND FLOOR



FIFTH FLOOR

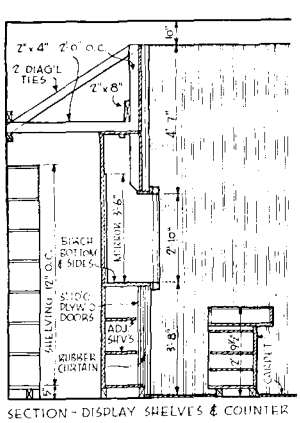
THREE SMALL SHOPS

Ezra Stoller photos

The white carpeted mannequin stand rests on blocks, three lengths of which were supplied to use for varying needs. Thus, at gift seasons the stand is raised to form a counter

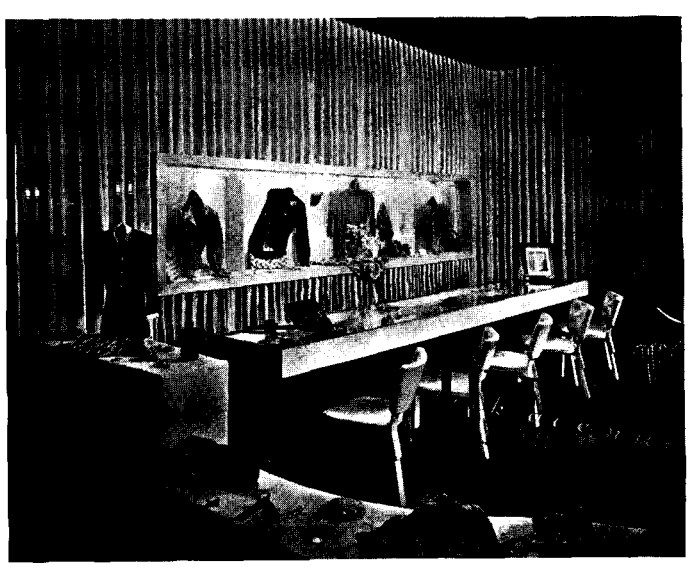
1. WOMEN'S ACCESSORIES

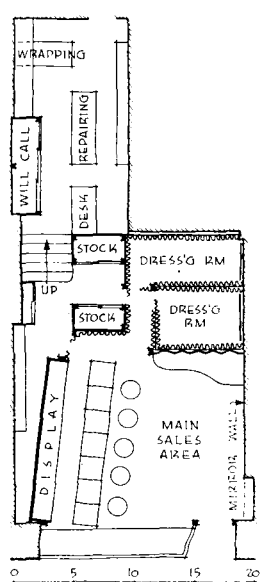
LILLIAN PARK AVENUE, INC., NEW YORK CITY. MORRIS KETCHUM, JR., ARCHITECT. Two particularly timely aspects of this accessory shop are the effective use of non-critical materials and the minimum structural change. Indeed there was no change in the shop front, other than the addition of the firm name. The shop itself is treated as the window display, the low window counter permitting unobstructed vision from the street. By skillful use of curtain walls, woven wood background and a mirror wall, the shop (which is about 20 ft. square) appears uncrowded and twice its size. The sales area walls were all treated as screens slightly shorter than the ceiling height, which increases the effect of spaciousness. Sales counter, recessed display niche and furniture are of light maple. Especially newsworthy is the detail of bringing the floor carpet right up the sides and front of the sales counter so that the upper display box almost appears to float in space.

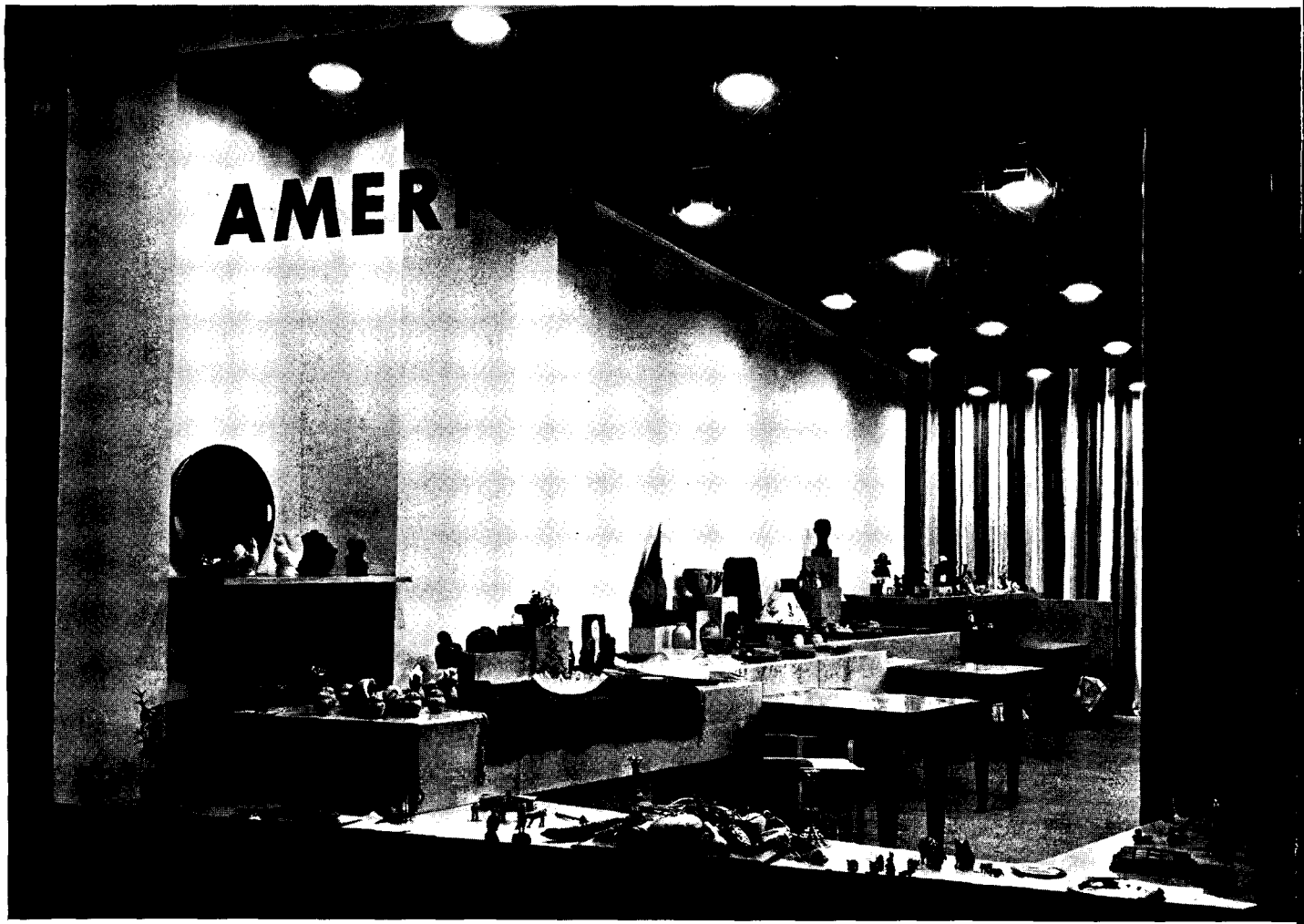


SECTION - DISPLAY SHELVES & COUNTER

SECTION THROUGH SALES COUNTER AND DISPLAY NICHE (shown in photo at right). The curtain wall is of pink rubber; ceiling is painted wine red to match carpeting







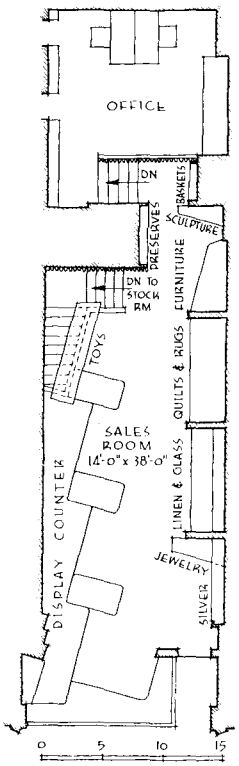
FROM THE LOW WINDOW ledge, a general display on shelves, counters and tables lines the walls

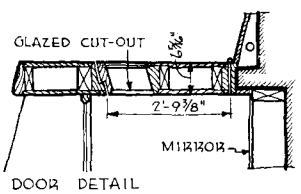
2. HANDCRAFT SHOP

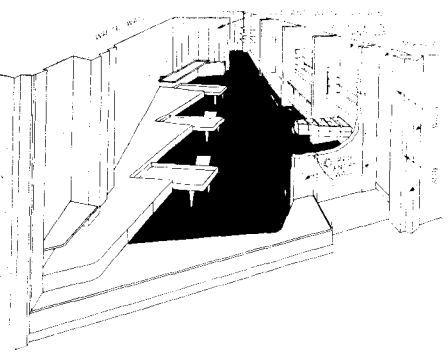
Hans Van Nes photos

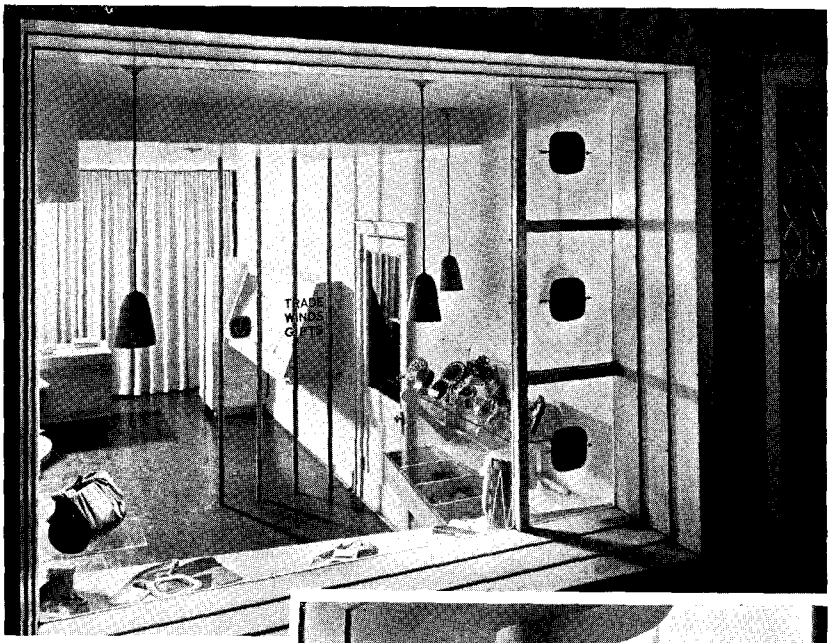
THE RIGHT HAND WALL is departmentalized by vertical wood fins

AMERICA HOUSE, NEW YORK CITY. MORRIS KETCHUM JR. (ARCHITECT) and DOROTHY DRAPER, ASSOCIATED DESIGNERS. As in the case of the shop on the preceding page, this reconditioned shop which serves as a retail outlet for a group of handcraft organizations is designed so that the entire sales area becomes the window display. Neither budget nor landlord permitted radical changes in the store front; existing show window mouldings were simply hidden under a plain wood surround. The entrance door (see detail) was remodeled into a ceiling-height fin wall, painted a dramatic red. All casework is of maple; the floor covering is cocoa matting. The color scheme reflects the shop's national character. At the rear of the sales room, the walls are covered with red and white striped fabric. The main display wall is white. The opposite wall and the ceiling are painted dark blue. Except for strip lighting in the silverware and linen departments, all illumination is from stock flood lights wrapped in metal cans and painted to match the ceiling.



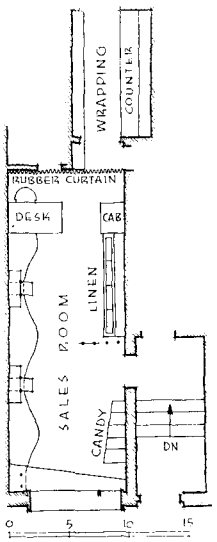


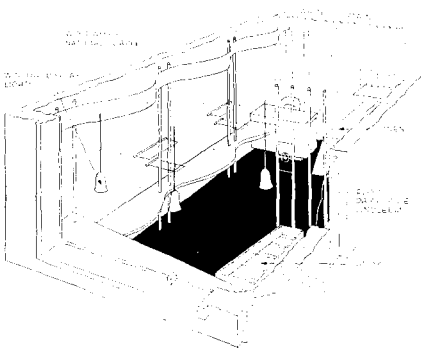




Ezra Stoller photos

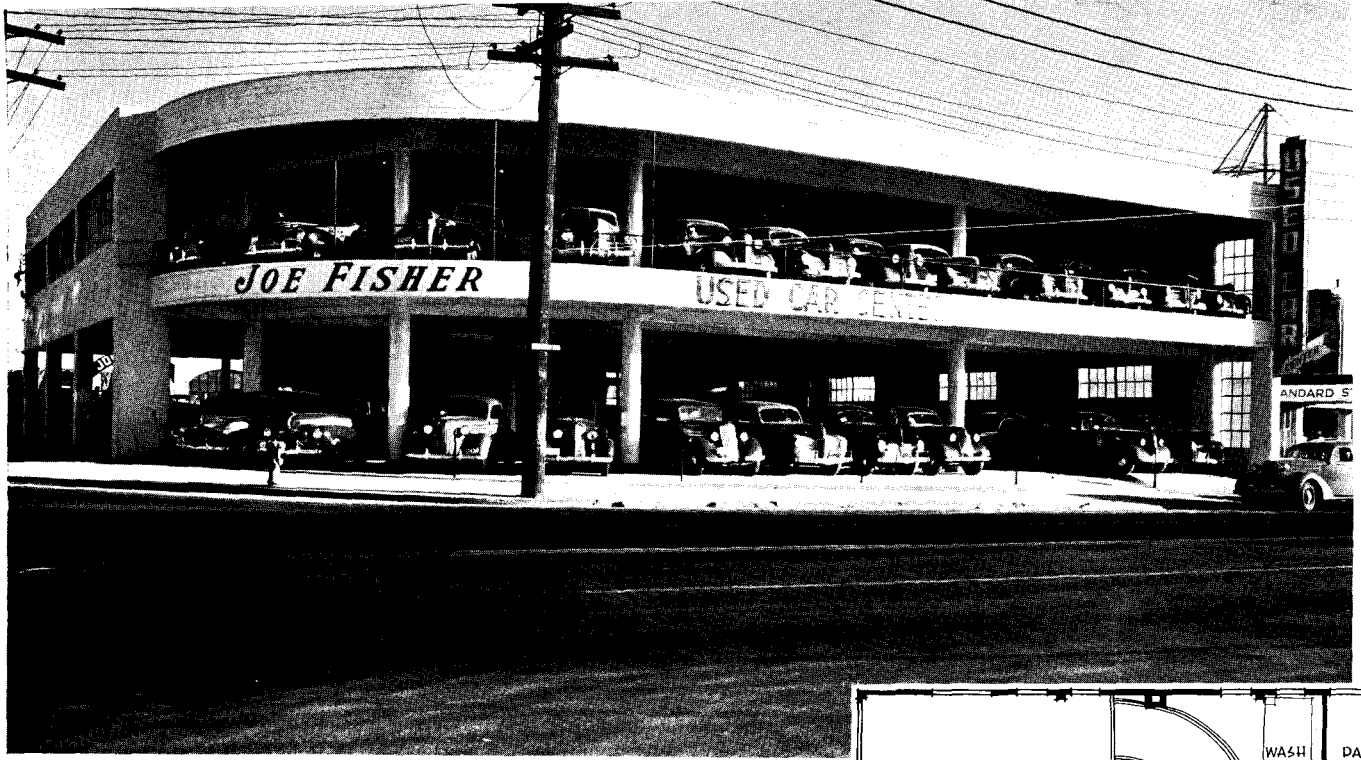
Exterior wood trim and interior display wall are painted white; the ceiling and entrance wall are light green. Dark blue linoleum covers the floor. Woodwork of the candy and linen departments is painted white; the remainder of woodwork is natural maple





3. GIFT SHOP

TRADE WINDS, INC. MORRIS KETCHUM JR., ARCHITECT. Smallest of the three shops, this store which sells products made by refugees from Hitler's Europe has a sales area only 9 by 15 feet in size. The space, in a remodeled brownstone house, is below street level, which enhances the effectiveness of the window-shop display technique used in all three of these shops. Side lights operate to provide ventilation. Inside, the merchandise is divided into a general display at the window and along one wall, a candy department and a linen department. The manager's desk is located in front of the rear curtain which separates shop and work room. Reflector bulbs behind valance light the display wall; the window display and candy department have stock downlights; concealed strip lighting illuminates the linen case.



USED CAR SALES

JOE FISHER USED CAR CENTER, PORTLAND, ORE. J. D. ANNAND, ARCHITECT. With production of private automobiles practically at a standstill, the handling of used cars assumes new importance. Even in peacetime, there was plenty of room for improvement on the usual unplanned system of selling used cars in any available vacant lot. The structure shown here, located on an important traffic artery, is especially designed for the purpose—ordered and effective display of as many cars as possible. By setting the columns back 8 ft. from the property line and cantilevering the second floor and roof on the avenue side, an unobstructed grand-tier balcony is provided for second-floor display. A ramp joins the two floors. Behind the second-floor balcony is work space for reconditioning of cars. The building is of reinforced concrete walls and floors. A laminated wood roof deck laid over beams is covered by 1-by-8 in. shiplap and built-up roofing.

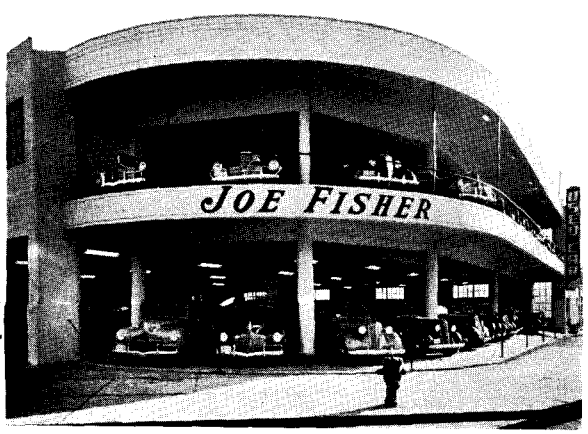
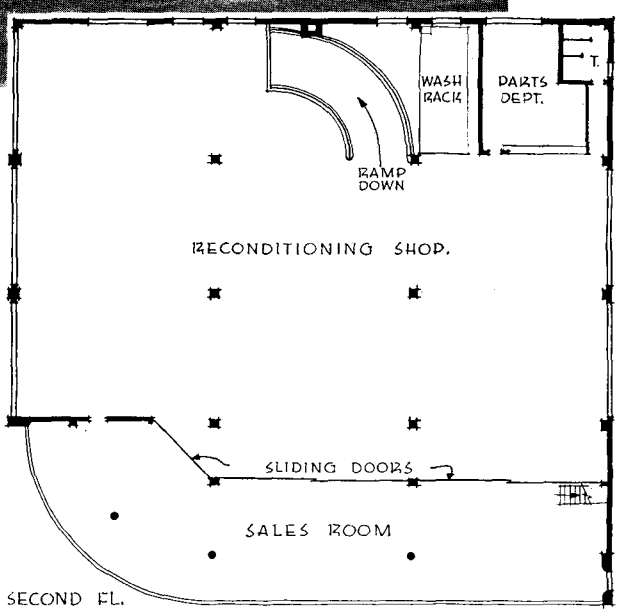
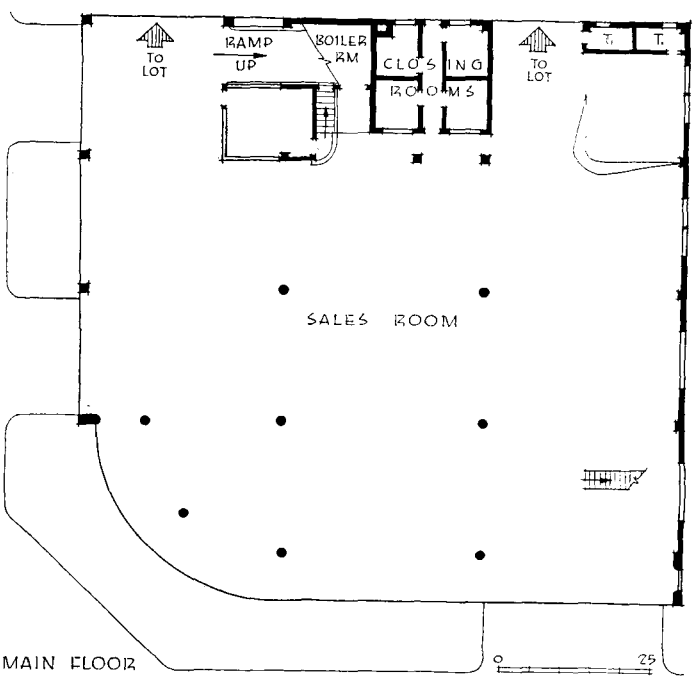
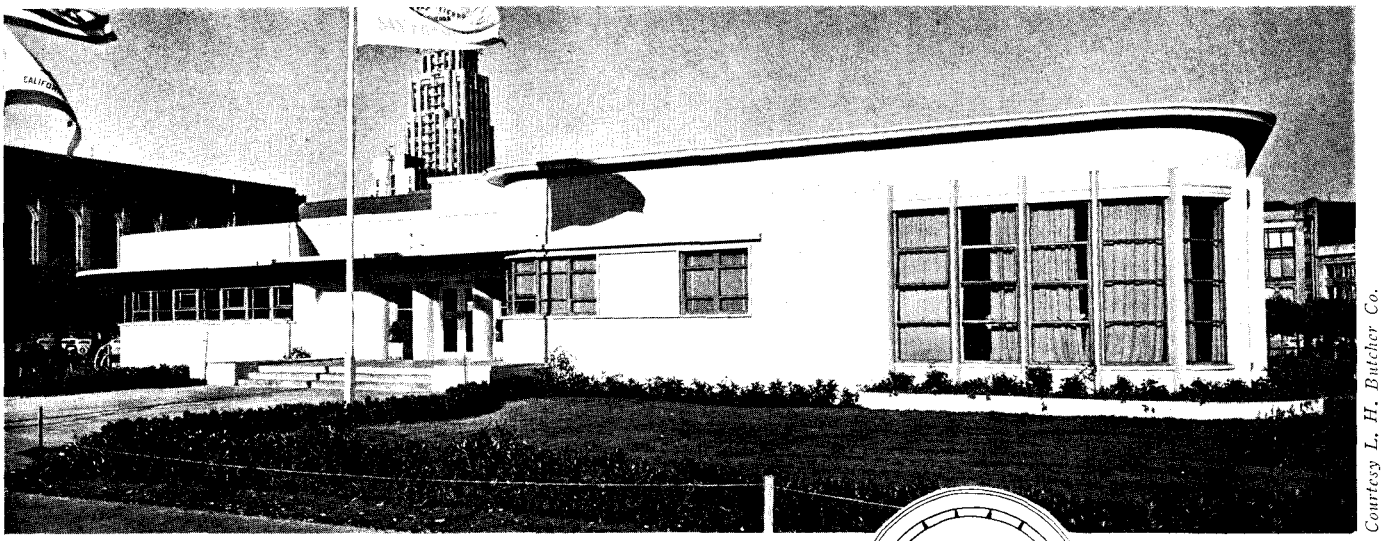


Photo-Art photos

ARRANGEMENT of cars is such that any car can be moved without moving any other



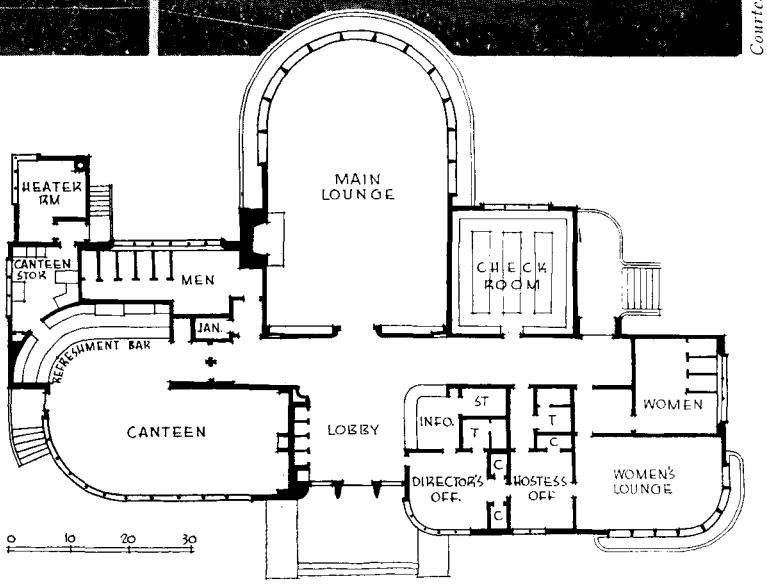


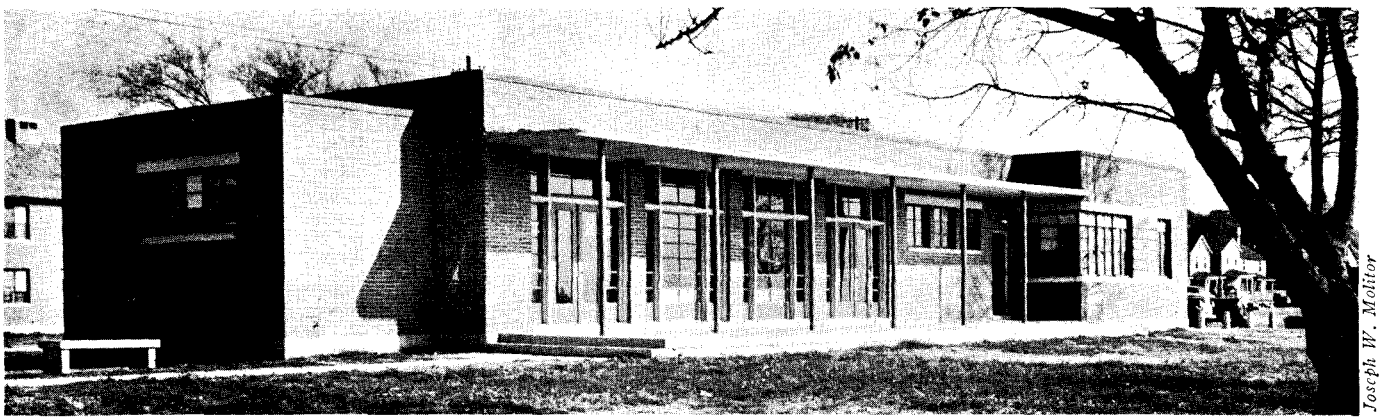


Courtesy L. H. Butcher Co.

FOR SERVICE MEN

HOSPITALITY HOUSE, SAN FRANCISCO, CALIF. DODGE REIDY, CITY ARCHITECT. Built by the City and County of San Francisco as a recreational center and headquarters for all service men, the building is located in the civic center. All labor connected with its construction was donated by the San Francisco Building Trades Union. Members of 152 local clubs and organizations take charge of daily activities, which include refreshments, a dance every evening, card playing, music, etc. All glass in the building is of a glare-reducing type. The frame building is surfaced in cement plaster.

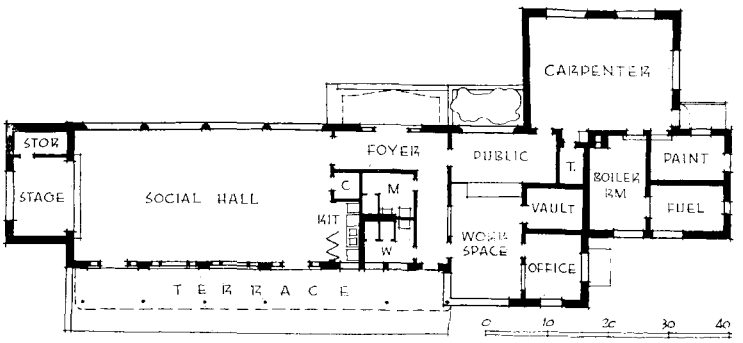




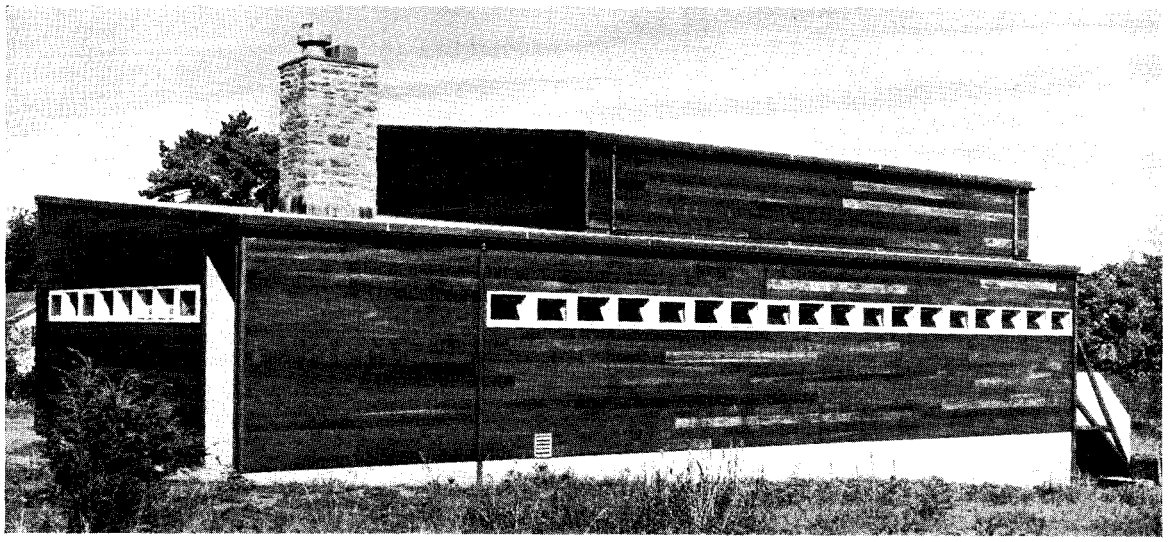
Joseph W. Molitor

COMMUNITY BUILDING

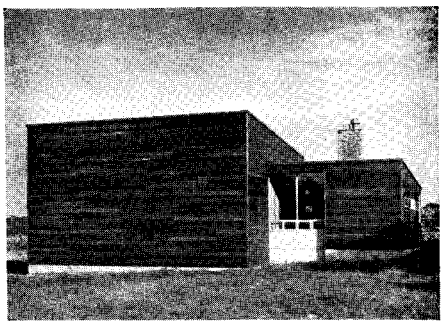
COMMUNITY HOUSE, TRENT COURT HOUSING PROJECT (USHA), NEW BERN, N. C. THE LATE A. MITCHELL WOOTEN, ARCHITECT; JOHN J. ROWLAND, ASSOCIATE. USHA community buildings such as the one shown here resemble a type that is widely needed in war-industry areas. The auditorium serves numerous uses—nursery school, handcraft center, recreation. Structure is of red brick over cinder-block back-up, built on a concrete slab.



RECREATIONAL

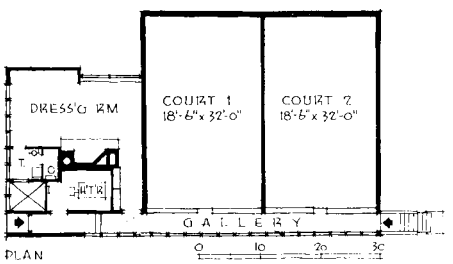


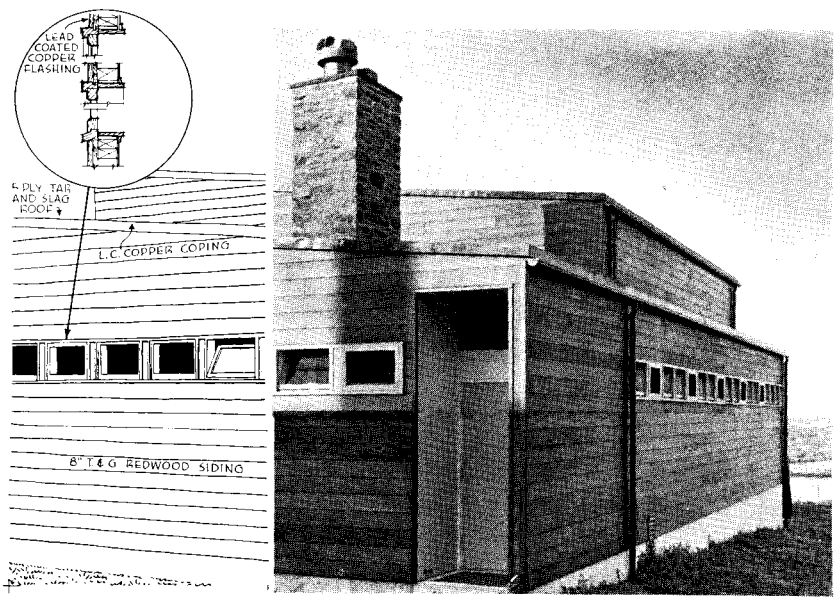
Cushing-Gellatly photos



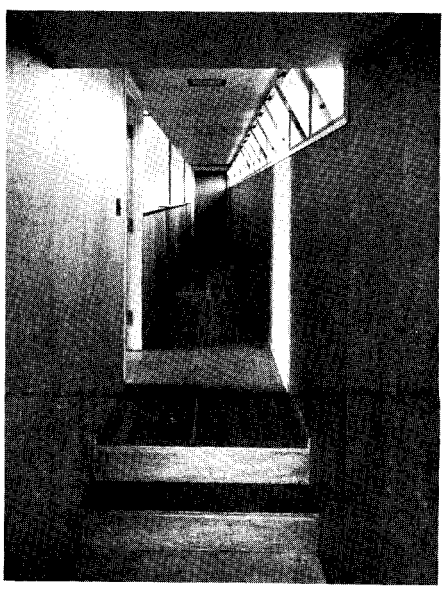
SCHOOL SPORT BUILDING

SQUASH COURT BUILDING, PORTSMOUTH PRIORY SCHOOL, PORTSMOUTH, R. I. LAWRENCE B. ANDERSON AND HERBERT L. BECKWITH, ARCHITECTS; MILTON E. NELSON, ASSOCIATE. In economy of construction, utilization of non-prior materials and design character, this specialized sport building invites close study and analysis by all those concerned with current design problems such as community—or camp—recreational and sport structures. The particular problem involved in its design was to fit the building—and a possible future unit—to a sloping site. The future expansion may include a gymnasium, locker room and swimming pool. Of wood frame construction, the building is surfaced with redwood siding. The roof is of tar and gravel. Wall and floor playing surfaces in the courts are of maple; elsewhere walls are of fir plywood; ceilings throughout are finished in insulating wallboard. The basementless building is heated by its own forced warm air system.

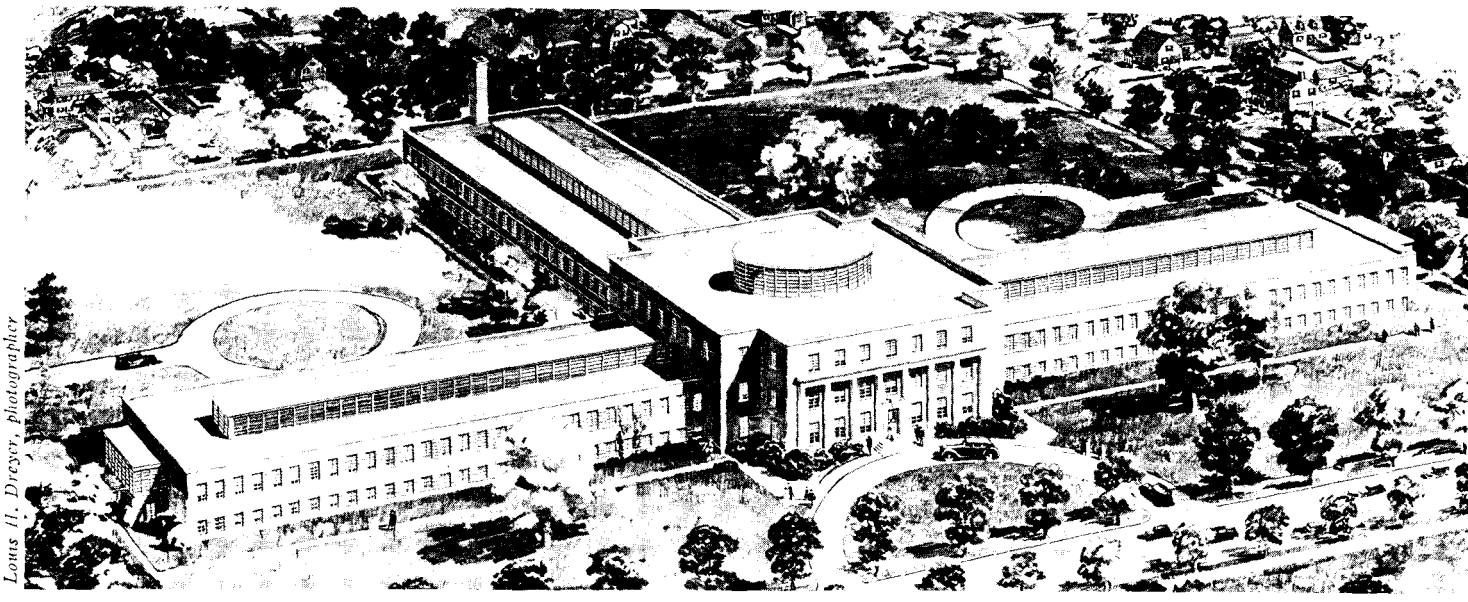




MAIN ENTRANCE and detail of window



GALLERY. Walls are of plywood



Louis H. Dreyer, photographer

Suggested design for a 200-bed general hospital that embodies the Double Pavilion Plan proposed by Charles F. Neergaard, hospital consult

NEW PLAN TO RAISE HOSPITAL EFFICIENCY

URGENT NEED for hospital facilities in emergency-congested areas has burdened hospital boards and architects alike with a knotty problem. How can capacities be increased, standards of service and equipment maintained and building costs and cubage lowered—all at the same time?

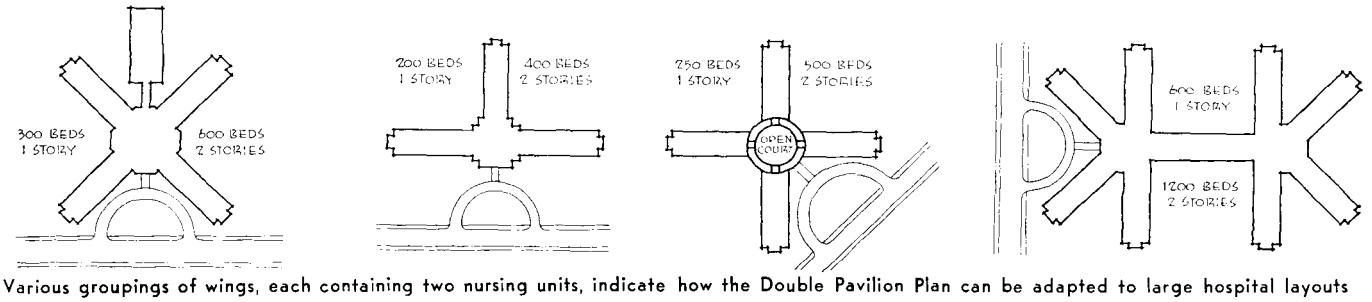
Most recent attempt to answer the riddle is the "Double Pavilion Hospital Plan" devised by Charles F. Neergaard, hospital consultant for the past 22 years and one-time (1935) chairman of the American Hospital Association's Committee on Hospital Planning and Equipment. In essence Mr. Neergaard's plan—currently the object of careful study by Federal public health officials—reduces the number of utility areas in relation to patient accommodations, almost doubles the bed capacity per floor, reduces the floor space per bed by some 20 per cent and, on the basis of a comparative analysis, saves nearly one-third the cost of construction and equipment.

The plan is the result of effort to meet hospital requirements of the current emergency in terms of a permanent, not a "demountable" structure, that is flexible enough in layout and service facilities to meet any changes or adaptations that the future may bring. With all this it must be economical enough to justify its construction now to fill an immediate and specific need.

"The modern hospital," says Mr. Neergaard, "must meet the fluctuating needs of 32 different types of patients. And under war conditions an added challenge exists in the necessity of conserving time, money and vitally critical materials in hospital construction. The urge to accept this challenge in terms of temporary, inflammable structures that must be wastefully scrapped when the war is over is unsound from every point of view. Particularly is this true in relation to mechanical equipment. Such equipment, good for many years of service, represents in a permanent hospital from 20 to 25 per cent of the cost and in temporary construction 30 to 35 per cent.

"The Double Pavilion Plan permits a permanent hospital to be built with sufficient speed and economy to justify its fireproof construction. In addition it can produce hospital facilities acceptable for community as well as Government needs for about $4,000 per bed—a cost approved by Federal authorities—instead of the $6,000 per bed minimum that most of our newer hospitals have been costing. Furthermore, by centralizing costly equipment and effecting a readjustment in the relation of bed space to utility space the Double Pavilion Plan embodies flexibility of layout, thus making it practical easily to convert emergency hospitals to specialized types according to future needs."

Illustrations on these two pages suggest how Mr. Neergaard's plan may be adapted to the design of a 200-bed general hospital of six nursing units. The scheme provides for a central administration and circulation core from which radiate the nursing unit wings. For economy elevators have been omitted—though space is provided for them in the central well.



Various groupings of wings, each containing two nursing units, indicate how the Double Pavilion Plan can be adapted to large hospital layouts

Use of circular ramps permits a staggered floor arrangement, making it possible to articulate pavilions on different levels, and thus to plan a hospital, with or without a basement, that could take all possible advantage of sloping terrain.

In a simpler form of building the central portion could be eliminated. Offices, surgery and all other needed services could be placed in one of the wings and an enclosed ramp used to join the pavilions.

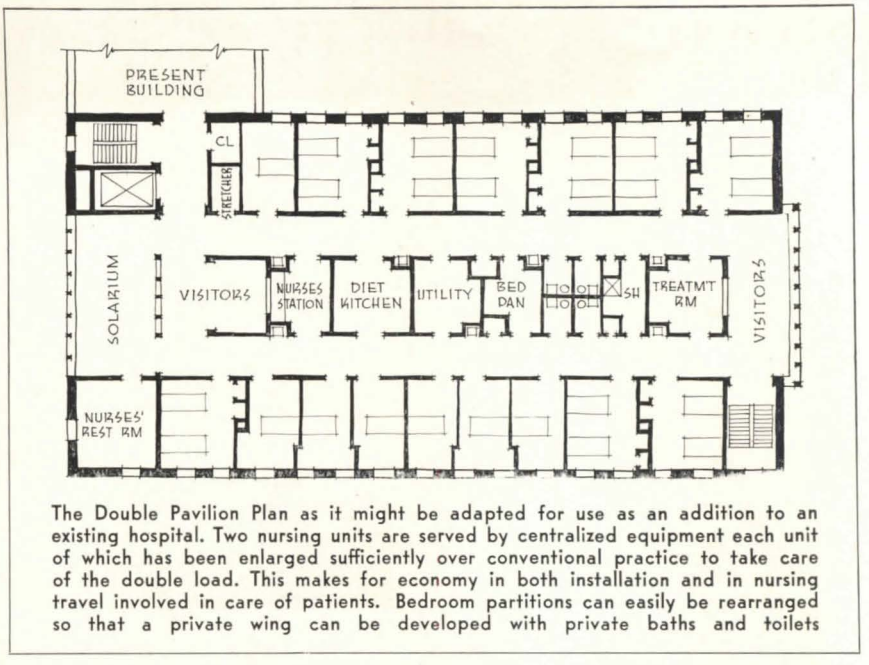
This hospital has a gross area of 105,336 sq. ft., or, for an indicated capacity of 193 beds, a per-bed area of 545.7 sq. ft. (If the basement were raised to grade, 47 beds could be added, providing a total bed capacity of 240 and reducing the unit area to 438.8 sq. ft. per bed.) According to "Hospital Space Requirements" published in *The Modern Hospital Year Book of 1941*, a 200-bed general hospital of conventional design requires a gross floor area of 127,380 sq. ft. or 637 sq. ft. per bed. On the basis of these figures The Double Pavilion Plan indicates that an impressive saving in hospital construction is possible. Economy in service units and fixtures is suggested in the following comparative tabulation:

	Conventional Plan *Six Wings*	Double Pavilion Plan *Three Wings*
Nurses' Stations	6	6
Nurses' Toilets	6	3
Visitors' Rooms	6	9
Visitors' Toilets	6	3
Utility Rooms	6	3
Bedpan Service	12	6
Diet Kitchens	6	3
Flower Rooms	6	3
Treatment Rooms	5	3
Patients' Baths	12	6
Patients' Toilets	12	12
Patients' Lavatories	104	42
Stairs	6	3
	193	102

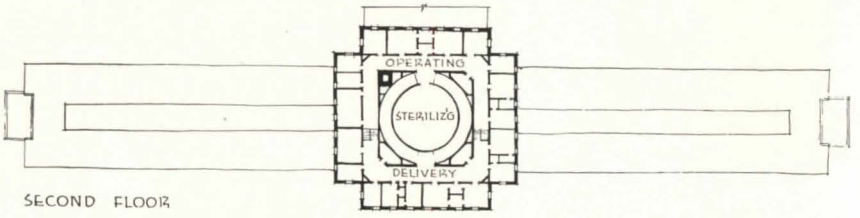
An actual hospital project, redesigned with the Double Pavilion Plan, furnishes additional detail for comparative study. As originally planned the building was a five-story structure. Redesigned, it became a three-story and penthouse building. Elevators were included in each case. Here is a comparison of bulk and cost, based on the same builder's estimate:

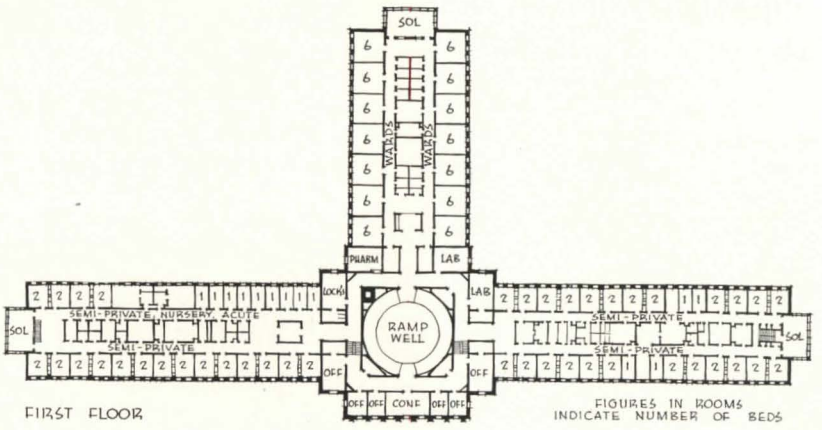
	Original		*Double Pavilion*	
		Per bed		Per bed
Number of beds	181		197	
Area, sq. ft.	94,000	519	88,600	450
Volume, cu. ft.	1,220,000	6,740	1,047,000	5,315
Outside walls (square feet)	62,300	344	46,000	233
Cost, est.	$915,000	$5,055	$720,000	$3,654

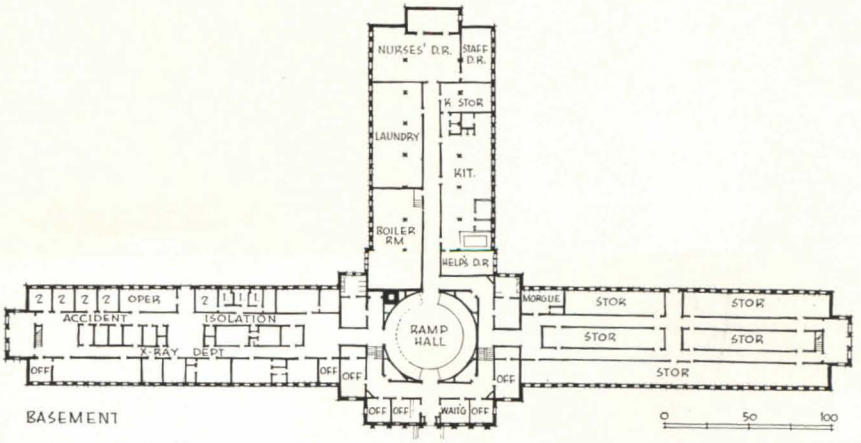
By increasing floor areas of a few service units, all can be made to do double duty, as the capacity of the fixed equipment in every case is adequate for the additional load.



The Double Pavilion Plan as it might be adapted for use as an addition to an existing hospital. Two nursing units are served by centralized equipment each unit of which has been enlarged sufficiently over conventional practice to take care of the double load. This makes for economy in both installation and in nursing travel involved in care of patients. Bedroom partitions can easily be rearranged so that a private wing can be developed with private baths and toilets







Plans for a 200-bed hospital, a sketch of which appears on the preceding page. The Double Pavilion Plan has been copyrighted by its author, but will be available to architects and hospital boards upon application

PRECAST CONCRETE IN WARTIME BUILDING

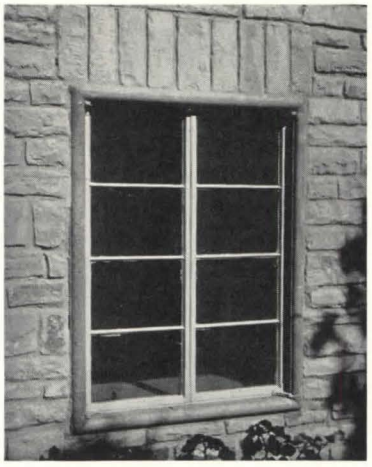
IMPORTANT among the materials currently being given new scrutiny in the stress of war building conditions is precast concrete. Precast materials, both in architectural and structural uses, have major potentials in relation to wartime objectives—such as using materials to their full capacities, conserving steel and other critical metals, saving time and labor on the job. And, of course, the practically limitless possibilities in surfaces and designs suffer not at all from emergency stringencies.

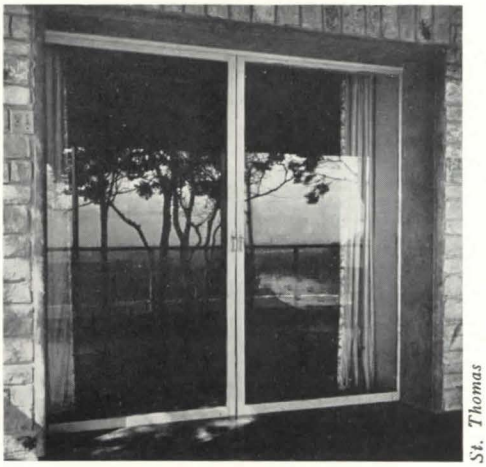
Saving steel with precast concrete

While precast slabs are usually thought of as being heavily reinforced with steel, and that is of course true, it is also true that in their proper uses they have worthwhile potentials for steel conservation. Whether the particular problem is the utmost in steel saving or the inability to obtain certain structural shapes, these possibilities are getting much new study in the design of all types of buildings. In one case the answer might lie in using precast members for the whole structure—columns,* beams, joists, and floor, wall and roof slabs. Or perhaps only for joists and purlins. Or maybe for largely architectural uses. Or, again, for roof slabs only. Steel savings might be found in various combinations, or in surprising ways within one combination. In one building, for example, it was found that precast roof slabs permitted the steel purlins to be placed farther apart than ordinarily, thus requiring fewer purlins and resulting in a considerable over-all saving in steel.

Generalization on steel savings in

*Economical Type Designs in Reinforced Concrete for Single Storey Factories (Wartime Building Bulletin No. 5), Dept. of Scientific and Industrial Research, His Majesty's Stationery Office, London, England.





St. Thomas

AN INGENIOUS IDEA for precast concrete window and door frames, as used in a residence in Austin, Texas. Cast in a patented steel form, which can be set for any desired length, the slabs have mortise and tenon joints for firm corners. Grooves are formed for window sash or doors simply by setting wood strips in the forms. For easy setting of the sill slab, holes are left through the slab, so that after it is placed on the masonry, grouting can be poured down through the slab until it runs out below. For normal spans the upper slab has sufficient strength for a lintel. For long spans a lintel beam is poured above the slab, by the simple process of laying a course of brick or stone along either side of the precast slab to form a channel, into which concrete is poured. Stirrups cast into the original slab form ties, and the poured beam is scored for good bond with masonry above. The idea was developed, and patented, by Frank Spiller, Austin contractor.

HERE manufactured precast concrete joists combined with poured concrete frame save a large quantity of structural steel, in the Aviation Mechanics Building, Western Michigan College of Education; Louis C. *Kingscott & Associates*, architects and engineers. Joists were set with forms for floor slabs and beams, becoming an integral part of the structure. Spans approximately 30, 60 and 30 ft.

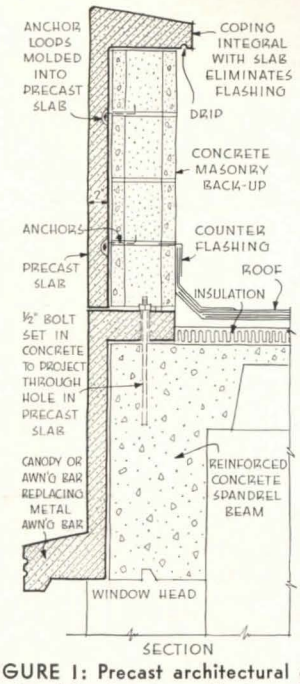


FIGURE 1: Precast architectural concrete slabs for a small store front

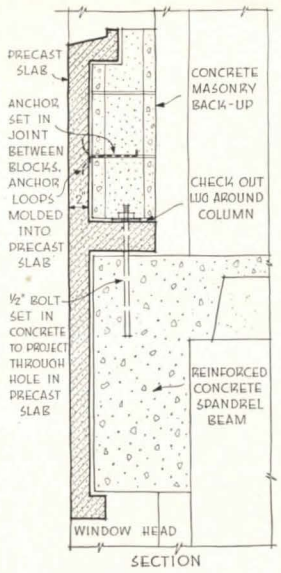


FIGURE 2: Thin precast slabs over concrete frame and masonry back-up

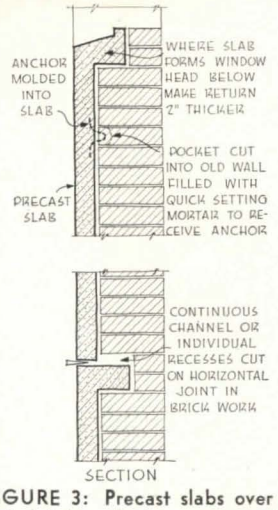


FIGURE 3: Precast slabs over an old brick wall in modernization

TRICKS WITH PRECAST SLABS

HERE are a few of the interesting possibilities of thin-shell architectural concrete slabs in modern uses, as suggested by the Portland Cement Association. Figure 1 illustrates steel-saving potentials of precast slabs, in this case for a small store front. Concrete spandrel may span the entire front, eliminating steel spandrel beam. The top return saves steel by serving as the supporting shelf, the bottom one as awning bar. The return on the parapet unit saves flashing.

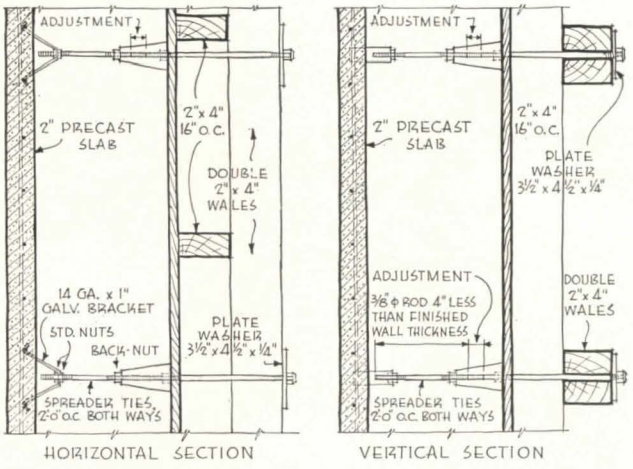


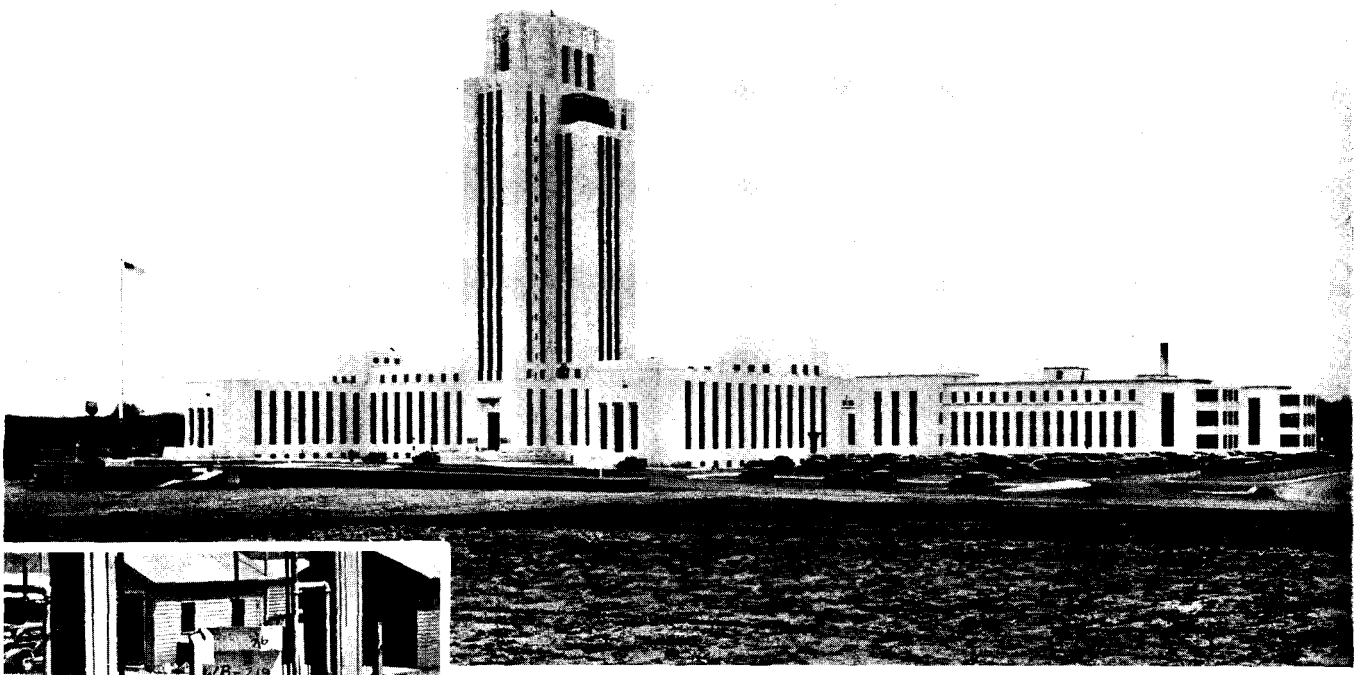
FIGURE 4: Typical sections showing the use of exposed aggregate slabs as exterior forming for poured concrete

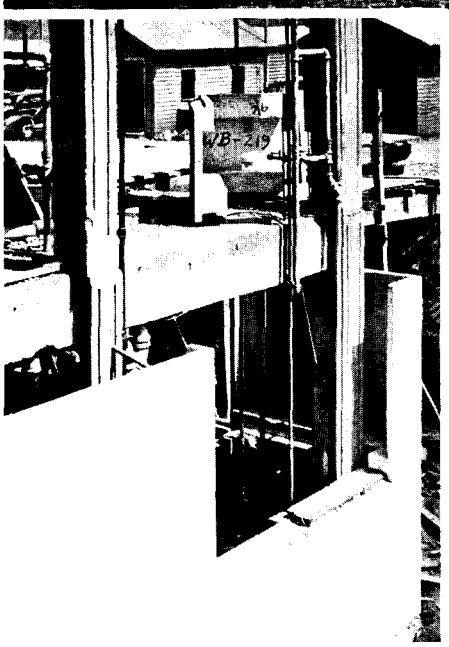
different structural systems run into so many complications that they are not reliable. One generalization that is safe, however, is that properly made precast members and slabs take full advantage of all materials. Made under what might almost be called laboratory conditions, they develop high concrete strengths and hard surfaces. Thus frequently they can save total dead weight, with consequent saving in the structure as a whole.

This is particularly true of lightweight materials in certain types of slabs—roof slabs especially, but also floor and wall slabs. The many lightaggregate materials have their own individual merits quite aside from weight saving, which will not be forgotten in concentration on metal conservation.

Outside of structural work, ingenious designers are finding many new wartime uses for precast concrete. It may be used for many items which are ordinarily made of steel but which may not now be available. Fuel tanks, for instance, or septic tanks, or many smaller items such as lintels, window weights, manhole covers. And designs have been prepared for air raid shelters made of precast slabs and covered with earth.

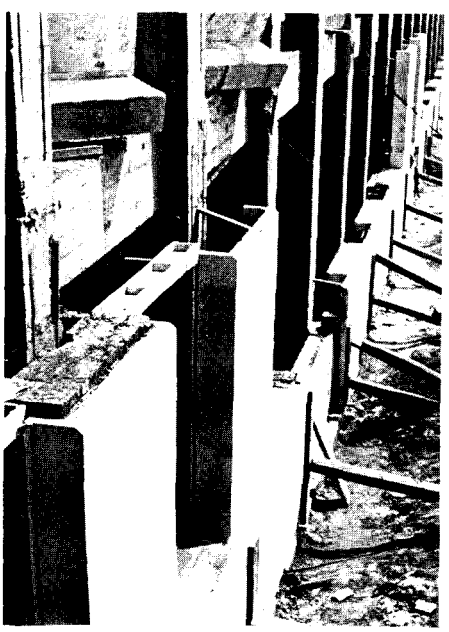
Illustrated on these pages are several noteworthy uses of precast concrete slabs and structural members. Some are strictly structural uses, as in the Aviation Mechanics Building, page 55. Some combine exposed aggregate slabs in both architectural and structural uses, as in the drawings above. The Naval Medical Center, on facing page, represents the largest building of recent years to be completely faced with architectural slabs. And the latest experiments with precast concrete for housing are shown on page 58.

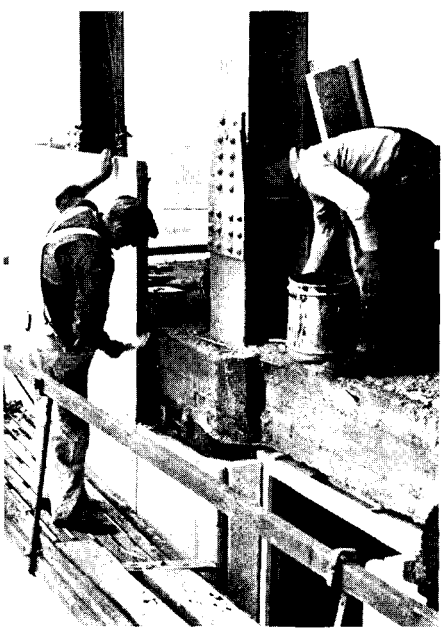


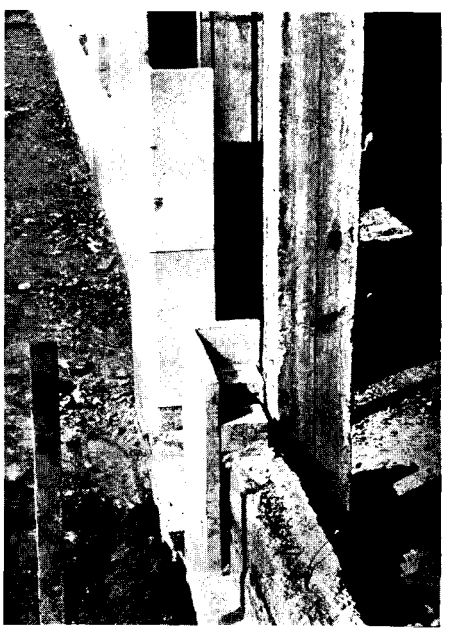


PRECAST SLABS FOR NEW HOSPITAL

ONE OF THE MOST RECENT and certainly the largest installation to date of precast architectural concrete slabs has just been completed at Bethesda, Md. This first unit of what will ultimately be a completely equipped naval medical center is the second large naval project to employ the slabs (the first was the naval testing basin at Carderock, Md., presented in the RECORD for September, 1939). Designed by Paul Cret, architect, and erected by naval authorities, the building is faced entirely with 2-in. slabs, reinforced by electrically-welded steel mesh and finished with white cement coating, acid-etched and wire-brushed to expose the quartz-chip aggregate. The slabs in this building are used merely as an exterior surfacing material. As such they have been designed with various types of finished returns for window sills, jambs and heads, for pilasters, for corners, etc.



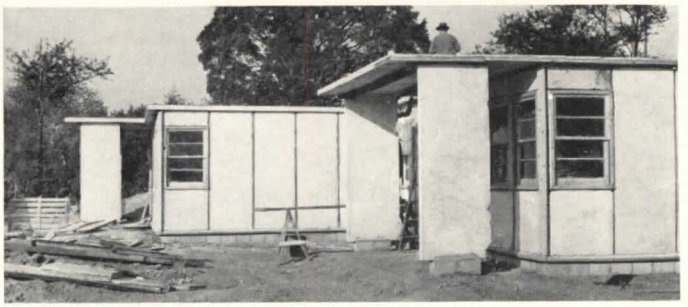




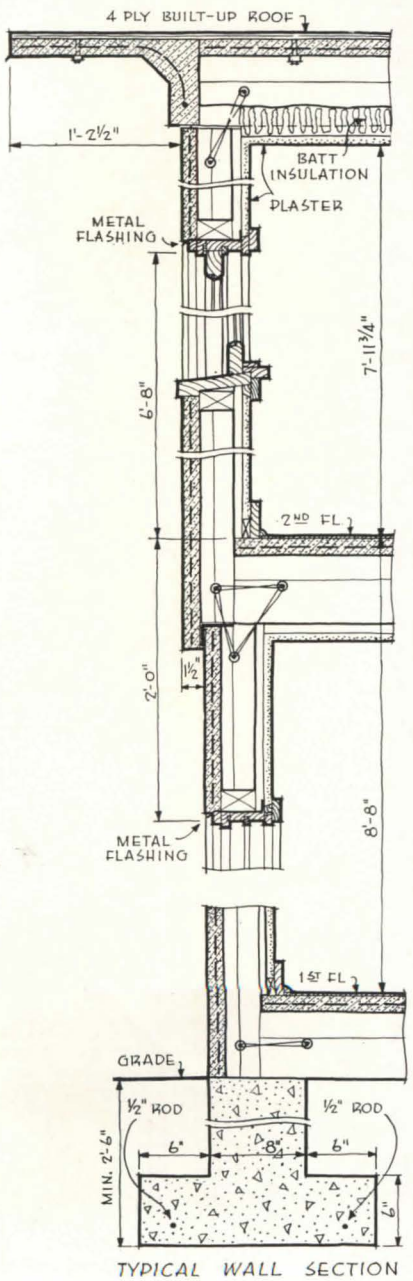
SLABS are anchored to framing in some instances by grouting around bars through integrally cast lugs and in others by means of a poured connection between framing and interlocking reinforcement of the slab. Illustrations are of typical construction details indicating the variety of the slabs

PRECAST SLABS FOR HOUSING

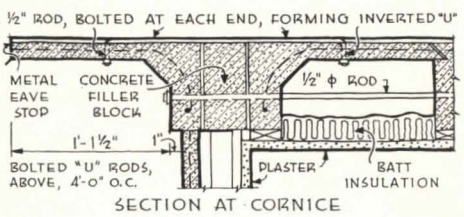
FOR MANY YEARS mass housing has been a fertile field for experimentation with all manner of materials and ideas, and in recent years precast concrete, latest of concrete developments, has begun to appear in new housing ideas. The two shown on this page are of more than passing interest, as they are experimental projects for federally financed war housing. The current call for demountable units, built in factory production and quickly erected and moved, coupled with present or expected shortages of certain materials, lends fresh interest to this use of concrete.



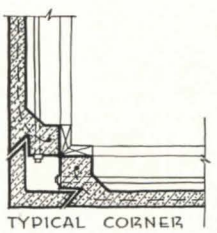
Built in an experimental housing project of the RSA at Alexandria, Va., these houses of precast concrete are now reaching completion, from plans by Kastner and Hibben, architects. Slabs are used for floors, walls and roof, with a board type insulation above the roof slabs. Houses of stabilized earth block and of rammed earth are also part of the project



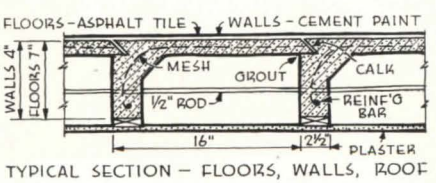
TYPICAL WALL SECTION



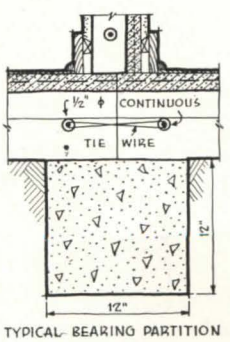
SECTION AT CORNICE



TYPICAL CORNER



TYPICAL SECTION – FLOORS, WALLS, ROOF



TYPICAL BEARING PARTITION

Still in the drawing stage is another experimental housing project, also for Alexandria, Va., done with precast concrete slabs, this one for USHA. The same typical slab unit is used for floors, walls and roof. The "returns" on the slabs form joists or studs as the case may be. Floor joists rest directly over the wall studs, transmitting the load directly to the foundation walls. The wall section (left) and the details above show how slabs are fitted together and are tied with rods and tie wires. Architects are Smith, Werner & Billings

PRECAST JOIST CONCRETE FLOORS: 1—TYPICAL JOIST DETAILS

ARCHITECTURAL RECORD
TIME-SAVER STANDARDS
MARCH, 1942

This Time-Saver Standards sheet is based on engineering data supplied by the Portland Cement Association. Further data on joist and slab design are contained in the following sheet: "Precast Joist Concrete Floors—2: Safe Loads."

TYPICAL SPECIFICATIONS

Precast concrete joists. Where shown on plans, contractor shall install precast concrete joists of approved manufacture.

Joist quality. Precast concrete joists shall be manufactured of concrete having an average compressive strength of not less than 3,000 lb. per sq. in. at 28 days when tested in accordance with the "Standard Methods of Making Compressive Tests of Concrete" (A.S.T.M. Serial C39-33).

Reinforcement. Each precast concrete joist shall be reinforced as shown on the plans with deformed longitudinal bars in the upper and lower heads, and with steel stirrups which shall be effectively connected to the longitudinal bars. Metal reinforcement shall conform to the requirements of the "Standard Specifications for Billet-Steel Concrete Reinforcement Bars" (A.S.T.M. Serial A15-35), or for "Rail-Steel Concrete Reinforcement Bars" (A.S.T.M. Serial A16-35). Welded wire fabric or cold-drawn wire for concrete reinforcement shall conform to the requirements of the "Standard Specification for Cold-Drawn Steel Wire for Concrete Reinforcement" (A.S.T.M. Serial A82-34).

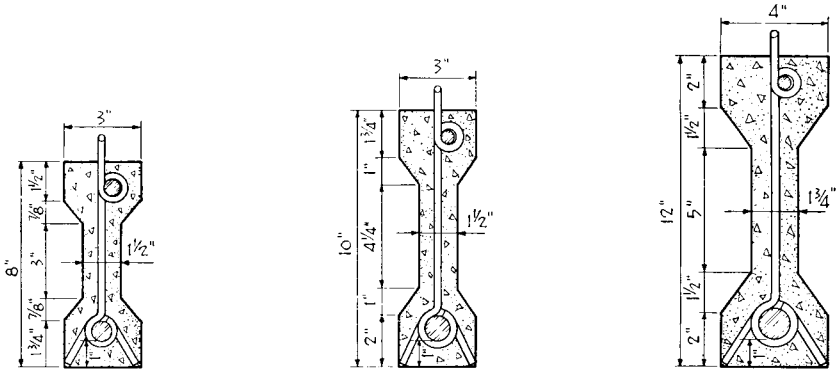
Setting. Precast concrete joists shall be set in accordance with the setting plan and joist framing details. Bearing shall be made level and to grade with cement mortar. Joists shall be set to line and leveled, with sides plumb.

Concrete slab cast in place. A reinforced concrete slab of the thickness shown on the plans shall be cast in place over the joists. Joists shall be embedded into the slab to a depth of ½ to ¾ in. Minimum thickness of concrete over head of joists shall be 1½ in. Concrete shall have an average compressive strength of not less than 3,000 lb. per sq. in. at 28 days when tested in accordance with the "Standard Methods of Making Compressive Tests of Concrete" (A.S.T.M. Serial C39-33). Slab reinforcement shall consist of ¼-in round steel bars spaced 10 in. c. to c. across the joists, or welded wire mesh of equivalent effective area.

Concrete slab—precast units. Precast concrete slab units of the type shown on the plans shall be set on the joists in a bed of mortar and leveled. Mortar shall consist of 1 volume Portland cement, 0.25 volume hydrated lime or lime putty, and 3 volumes damp, loose mortar sand. Joints between ends and edges of slab units shall be thoroughly filled with mortar or grout.

Openings for mechanical trades. Contractor shall provide for openings in the slab required by mechanical trades. (Note: See example at right for slab thickness if electrical conduit is preplaced.)

PRECAST CONCRETE JOIST CROSS SECTIONS



	8" JOIST		10" JOIST		12" JOIST	
SECTIONAL AREA	18.2 SQ. IN.		22.1 SQ. IN.		33.4 SQ. IN.	
AGGREGATE	LIGHT WEIGHT	ORDINARY WT.	LIGHTWEIGHT	ORDINARY WT.	LIGHT WEIGHT	ORDINARY WT.
AVE. WT. OF JOIST - LB/LINEAR FT.	14	19	17	23	26	35
MAXIMUM SPAN	16 FEET		20 FEET		24 FEET	

Cast-in-place Slab

Designed as T-Beams

Consider joists marked **J5** in framing plan. Clear span is 14 ft. 4 in. (use 14 ft. 0 in.). Design superimposed load is 40 lb. per sq. ft. plus floor finish (assume 3 lb. per sq. ft.) plus weight of plaster underneath (assume 10 lb. per sq. ft.). Total superimposed load equals 40 + 3 + 10 or 53 lb. per sq. ft.

Turn to Table 3, Sheet No. 3 of this series. On the right-hand side of the table are two headings—"Safe Superimposed Load" and "Span in Feet" with spans from 10 to 24 ft.

Find the vertical column with span of joist under consideration (in this case 14 ft.) and travel down the column until you find the next higher superimposed load to the one desired. In this case we find a load of 59 lb. per sq. ft., which is only 6 lb. greater than the one wanted and can be carried by an 8-in. joist.

Moving from this load horizontally to the left we find: First, that a 2-in. concrete slab is sufficient (in case conduit is to be placed in slab, use a 2½-in. thickness); second, that the spacing of joists center-to-center may be 27 in.; and third, that a ¾-in. round tension bar is needed.

Shear reinforcement is determined by noting the first horizontal line under the load used, noted as "stirrup spacing": Under the load of 59 lb. we find the key number 8-14.

Turning to Table 4, same sheet, note in the left-hand column the key number 8-14. In the same horizontal line to the right of this key number is a drawing of the stirrup arrangement for one end of the joist. Other end has same stirrup spacing.

Precast Slab Units

Designed as Independent Beams

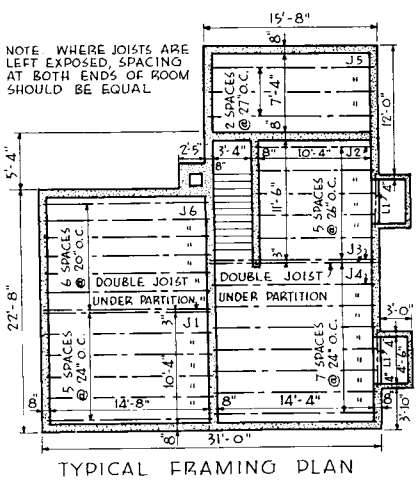
The procedure is the same as for the cast-in-place slab except:

1. Safe superimposed load includes weights of everything except joists.

2. Use Tables 1 and 2, Sheet No. 2.

For the above problem, using joist J5 as before, the superimposed load is as follows: Design load 40 lb., weight of 2½-in.-thick lightweight aggregate precast slab units, 23 lb., floor finish 3 lb.; total superimposed load is then 66 lb. per sq. ft.

Going through the same procedure as above, the following results are obtained: 8-in. joist, joists spaced 24 in. center-to-center, ¾-in. round tension bars required in both top and bottom heads of joists. Stirrup key number is 8-16 (see Design Table 2).



TYPICAL FRAMING PLAN

ARCHITECTURAL RECORD
TIME-SAVER STANDARDS

MARCH, 1942

PRECAST JOIST CONCRETE FLOORS: 1—TYPICAL JOIST DETAILS

On this page are shown typical details for forms for cast-in-place slabs, and bridging methods. Data were obtained from the Portland Cement Association. This sheet is intended for use with the sheet which immediately follows.

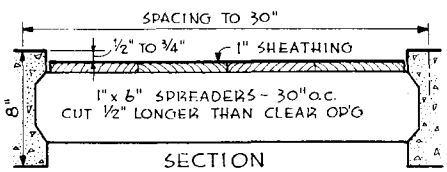
PROCEDURE IN CONSTRUCTION

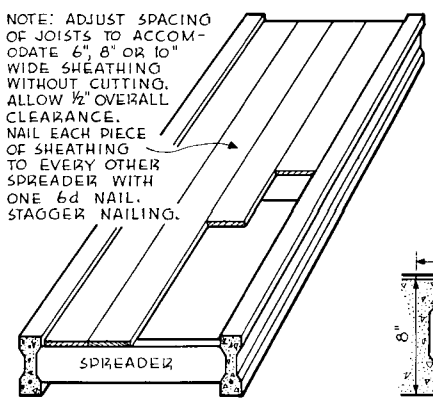
Construction methods are simple. First step is to set precast joists according to setting plans. Second, set bridging between joists at supports. Third, set spreaders and place hangers if suspended ceiling is to be installed below; place forms on spreaders, box utility openings, block openings in open units if these are used for bridging.

Fourth, lay paper and place screeds for wood floors, if used. Fifth, place slab reinforcing as required; and if electric conduit is used, place at this time. Sixth, place and finish the concrete slab. Seventh, cure concrete required length of time and strip forms.

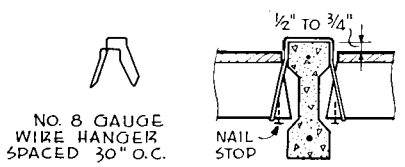
Tops of precast joists should be embedded at least ½ in. in slab; minimum slab thickness over joists should be 1½ in.

TYPICAL FORM DETAILS

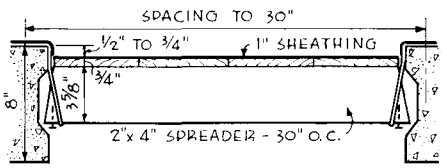




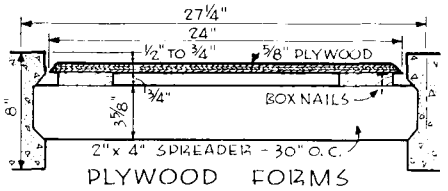
SHEATHING FORMS



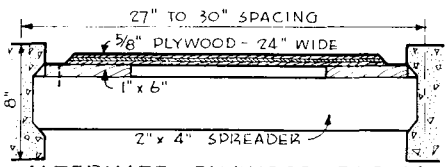
WIRE HANGERS



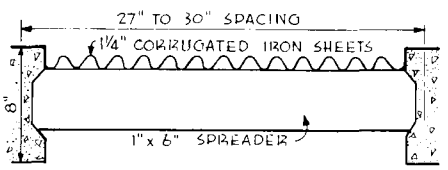
WIRE HANGER FORM SUPPORTS



PLYWOOD FORMS

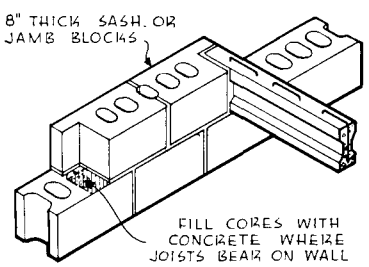


ALTERNATE PLYWOOD FORMS

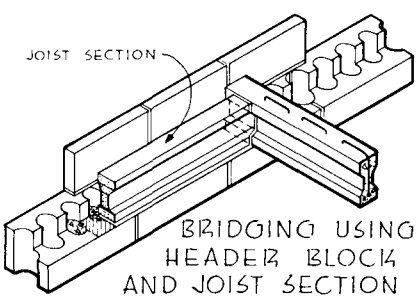


CORRUGATED IRON FORMS

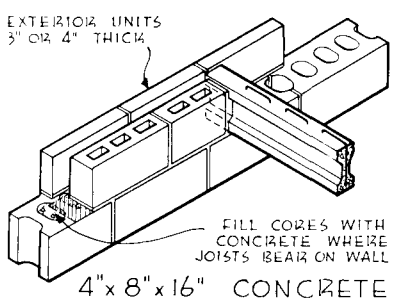
TYPICAL BRIDGING DETAILS



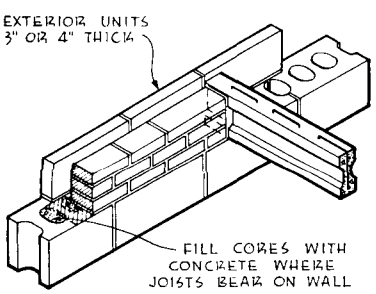
BRIDGING USING SASH OR JAMB BLOCKS



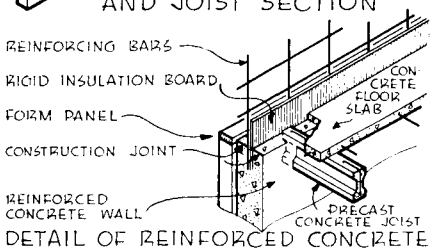
BRIDGING USING HEADER BLOCK AND JOIST SECTION



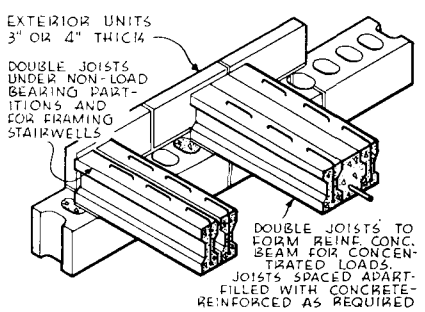
4"x 8"x 16" CONCRETE BRIDGING UNITS



BRICK BRIDGING



DETAIL OF REINFORCED CONCRETE WALL AND PRECAST JOIST CONCRETE FLOOR CONSTRUCTION



JOIST FRAMING METHODS

PRECAST JOIST CONCRETE FLOORS:
2—SAFE SUPERIMPOSED LOADS—Precast Slabs

ARCHITECTURAL RECORD
TIME-SAVER STANDARDS
MARCH, 1942

This sheet contains design data and safe load tables for precast joists and precast slabs. Information is derived from data supplied by the Portland Cement Association. Supplementary information will be found on the preceding sheet.

On this side are data concerning floor constructions employing *precast slabs only.* This should be borne in mind when using the tables. The reverse of this sheet contains data on constructions employing *slabs cast in place.* Difference between the two constructions is that slabs cast in place provide additional beam action to that supplied by the joists, and consequently design procedures are somewhat modified.

All data are based on standard, nonproprietary joist sections shown on preceding sheet.

Data in Table 1 are based on Joist Cross Sections shown on T-SS "Precast Joist Concrete Floors: 1," and stirrup spacings shown in Design Table 2.

Safe superimposed loads include *all loads except weight of joists.* Weight of floor slab, floor finish, ceilings, partitions, etc., must be subtracted from values shown to obtain allowable live loads.

REINFORCEMENT TOP BAR SIZE	REINFORCEMENT BOTTOM BAR SIZE	RESISTING MOMENT IN./LB.	MAX. SHEAR LB.	JOIST SPACING C. TO C. IN.	WEIGHT OF JOIST ONLY LB./SQ. FT.	SAFE SUPERIMPOSED LOAD - LB./SQ. FT. (ALL LOADS EXCEPT WEIGHT OF JOIST) SPAN IN FEET 10	11	12	13	14	15	16	17	18	19	20
8-INCH JOIST - 1½ INCH WEB THICKNESS																
5/8" ϕ	5/8" ϕ	36,300	1,580	20	11			89	74	63						
				24	10		90	74	62							
				27	8	99	80	66								
STIRRUP SPACING: KEY NO.						8-14 ◄				► 8-14						
¾" ϕ	¾" ϕ	44,200	1,540	20	11				93	78	67					
				24	10			93	78	66						
				27	8		100	82	69							
STIRRUP SPACING: KEY NO.							8-16 ◄			► 8-16						
⅞" ϕ	⅞" ϕ	51,900	1,515	20	11					94	81	70				
				24	10				93	79	67					
				27	8			98	82	70						
STIRRUP SPACING: KEY NO.								8-18 ◄			► 8-18					
10-INCH JOIST - 1½ INCH WEB THICKNESS																
¾" ϕ	¾" ϕ	60,500	2,070	20	14						93	80	70	61		
				24	12					91	78	67				
				27	10				96	81	70	60				
STIRRUP SPACING: KEY NO.									10-12 ◄				► 10-12			
⅞" ϕ	⅞" ϕ	78,700	2,030	20	14								95	83	73	65
				24	12							91	79	70	61	
				27	10						94	81	71	62		
STIRRUP SPACING: KEY NO.											10-16 ◄				► 10-16	
1" ϕ	1" ϕ	91,600	2,010	20	14									96	85	75
				24	12								94	83	73	65
				27	10							96	84	74	65	
STIRRUP SPACING: KEY NO.												10-18 ◄			► 10-18	

TABLE 1—JOIST DESIGNED AS INDEPENDENT BEAM

This table is based on the assumption that precast floor units will not act as a unit with the joist—T-beam action will not be obtained. Superimposed loads should be small—not exceeding 100 lb. per sq. ft. for all live and dead loads excluding the weight of the joists. This type of floor should be used only for lightly loaded construction. Design is based on American Concrete Institute Building Code Building Regulations for Reinforced Concrete (1928 and 1936 editions) with 3,000-lb. concrete and intermediate grade steel. Values for resisting moment and maximum shear are based on computed value of j for joist cross-section shown on preceding sheet.

Values for safe superimposed loads are based on the assumption that joists carry all the load without benefit from floor slab. Weight of joists has been deducted from safe superimposed load. In order to increase the load-carrying capacity of this type of floor construction, it will be necessary to redesign the joist so as to provide a larger cross section. In these cases it is essential that the design be made by a competent engineer and load tests made on typical floor panels.

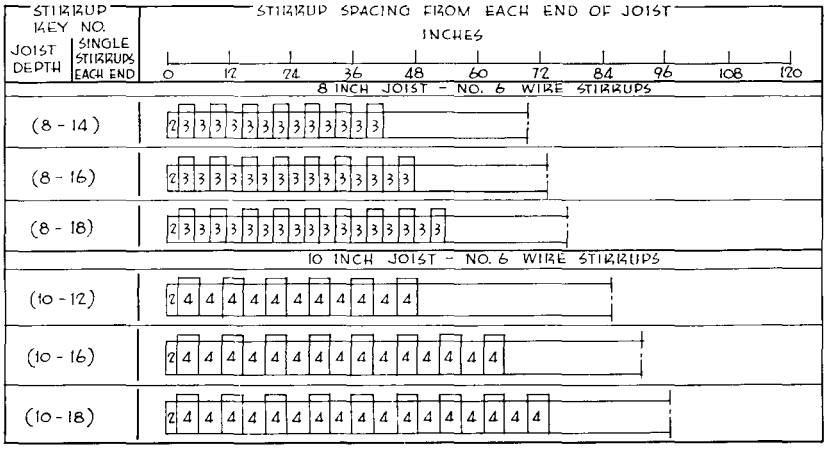


TABLE 2—STIRRUP SPACING FOR JOISTS IN TABLE 1

Based on Safe Superimposed Loads in Design Table 3, and the use of No. 6 wire stirrups welded or hooked to upper and lower bars.

Stirrup spacings shown are for each end of the joist. Use additional stirrups approximately 18 in. on centers through middle section of joist.

PRECAST JOIST CONCRETE FLOORS:
3—SAFE SUPERIMPOSED LOADS—Joist and Slabs as T-Beam

REINFORCEMENT TOP BAR SIZE	REINFORCEMENT BOTTOM BAR SIZE	RESISTING MOMENT IN./LB.	MAXIMUM SHEAR LB.	JOIST SPACING C TO C. IN.	SLAB THICK IN.	WT. JOIST & SLAB LB./SQ. FT.	SAFE SUPERIMPOSED LOAD - LB./SQ. FT. (ALL LOADS EXCEPT WEIGHT OF JOIST & SLAB) SPAN IN FEET 10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
8-INCH JOIST - 1½ INCH WEB THICKNESS																					
⅜" ϕ	⅝" ϕ	44,500	1,940	20	2	34	146	113	88	68	52	40									
				24		32	117	89	68	52	40										
				27		32	101	77	58	43											
		47,200	2,060	30	2½	37	84	64	42												
				33		36	74	52													
STIRRUP SPACING: KEY NO.							8-12 ◄						► 8-12								
⅜ ϕ	¾" ϕ	62,600	1,920	20	2	34				139	112	90	72	58							
				24		32		140	111	89	70	56	44								
				27		32	141	122	96	75	59	46									
		66,400	2,040	30	2½	37	122	105	80	60	44										
				33		36	109	93	70	52											
STIRRUP SPACING: KEY NO.							8-12	8-12	8-14	◄			► 8-14								
⅜" ϕ	⅞" ϕ	84,600	1,905	20	2	34				139	126	112	93								
				24		32		140	124	111	101	88	72								
				27		32	137	121	108	96	87	76	61								
		90,000	2,025	30	2½	37	119	102	90	79	70	59	49								
				33		36	104	90	78	68	59	51									
STIRRUP SPACING: KEY NO.							8-12	8-12	8-14	◄►	8-14	8-16	8-16								
10-INCH JOIST - 1½ INCH WEB THICKNESS																					
⅜" ϕ	¾" ϕ	78,000	2,390	20	2	37					125	103	84	70	58	47					
				24		35				123	100	81	66	53	43						
				27		34			131	105	85	69	55	44							
		81,000	2,510	30	2½	39		145	114	90	70	54	41								
				33		38	149	129	101	79	61	47									
STIRRUP SPACING: KEY NO.							10-12 ◄								► 10-12						
⅜" ϕ	⅞" ϕ	105,600	2,380	20	2	37						138	122	107	91	77	65				
				24		35							102	86	72	60	49				
				27		34				150	136	123	105	87	72	60	50	40			
		110,700	2,500	30	2½	39		144	128	114	102	90	72	58	46						
				33		38	144	129	114	101	90	79	63	50							
STIRRUP SPACING: KEY NO.							10-14 ◄			►	10-14	10-18	◄			► 10-18					
⅜" ϕ	1" ϕ	138,200	2,360	20	2	37							138	128	118	110	97				
				24		35				146	133	121	111	101	93	87	76				
				27		34			144	128	116	105	96	88	80	74	65				
		145,200	2,480	30	2½	39		141	125	111	99	89	81	73	65	60	51				
				33		38	142	125	110	98	87	78	70	63	56	51	43				
STIRRUP SPACING: KEY NO.							10-18 ◄						► 10-18	10-22	◄		► 10-22				
12-INCH JOIST - 1¼ INCH WEB THICKNESS																					
⅜" ϕ	¾" ϕ	93,500	3,340	20	2	44						150	123	101	84	69	56	45			
				24		41				150	121	100	82	67	54	43					
				27		39				129	105	86	69	56	45						
		97,500	3,480	30	2½	43				139	111	88	70	55	43						
				33		42				124	98	77	61	47							
STIRRUP SPACING: KEY NO.							12-8 ◄								► 12-8						
⅜" ϕ	⅞" ϕ	126,500	3,320	20	2	44								133	112	95	80	68	58	48	
				24		41							128	108	92	76	64	53	44		
				27		39						133	111	93	77	65	54	44			
		132,000	3,460	30	2½	43						139	115	94	77	63	51	41			
				33		42						124	101	82	67	54	43				
STIRRUP SPACING: KEY NO.							12-10 ◄											► 12-10			
⅜" ϕ	1" ϕ	166,000	3,310	20	2	44											139	120	104	90	78	68
				24		41										131	114	98	84	72	62	53
				27		39								150	133	114	97	83	71	61	52	43
		173,000	3,450	30	2½	43							143	131	117	99	83	69	57	48	
				33		42						139	126	115	104	87	73	60	49	41	
STIRRUP SPACING: KEY NO.							12-14 ◄													► 12-14	
⅜" ϕ	1" ϕ	208,000	3,290	20	2	44													142	126	111	98
				24		41										143	134	125	116	101	88	77
				27		39							145	133	125	116	107	99	87	76	65
		216,000	3,430	30	2½	43						140	128	117	108	100	92	85	72	61	52
				33		42						124	114	104	95	88	81	74	63	53	44
STIRRUP SPACING: KEY NO.																			12-14 ◄► 12-14	12-18 ◄	► 12-18

TABLE 3—JOIST AND SLAB DESIGNED AS T-BEAM

Based on joist cross-sections shown on preceding Time-Saver Standard and stirrup spacings shown in Table 4, below.

Safe superimposed loads include *all loads except weight of slab and joists.* Weight of floor finish, ceiling, partitions, etc., must be subtracted from values shown to obtain allowable live loads.

This construction is intended for relatively light live loads, such as schools and residential buildings.

Values to left of heavy vertical line are limited by shear, all others by bending moment.

Design based on American Concrete Institute Code Building Regulations for Reinforced Concrete (1928 and 1936 editions) with 3,000 lb. concrete and intermediate grade steel.

Values for resisting moment and maximum shear are approximate and are based upon a T-beam section and $j = \frac{7}{8}$.

Values for safe superimposed load are based upon a T-beam section and theoretical values of j. The allowable working stress for superimposed load is the difference between the maximum allowable working stress for steel and concrete and the dead load stress computed on the joist section independent of the slab.

Load capacity may be increased by: thickening webs at joist ends; supporting joists at mid-span until concrete slab hardens.

Spans of 20 ft. or more should have 1 row of bridging at mid-span.

Spans of 16 ft. or more should have 1 row of shoring in center until concrete slab has hardened.

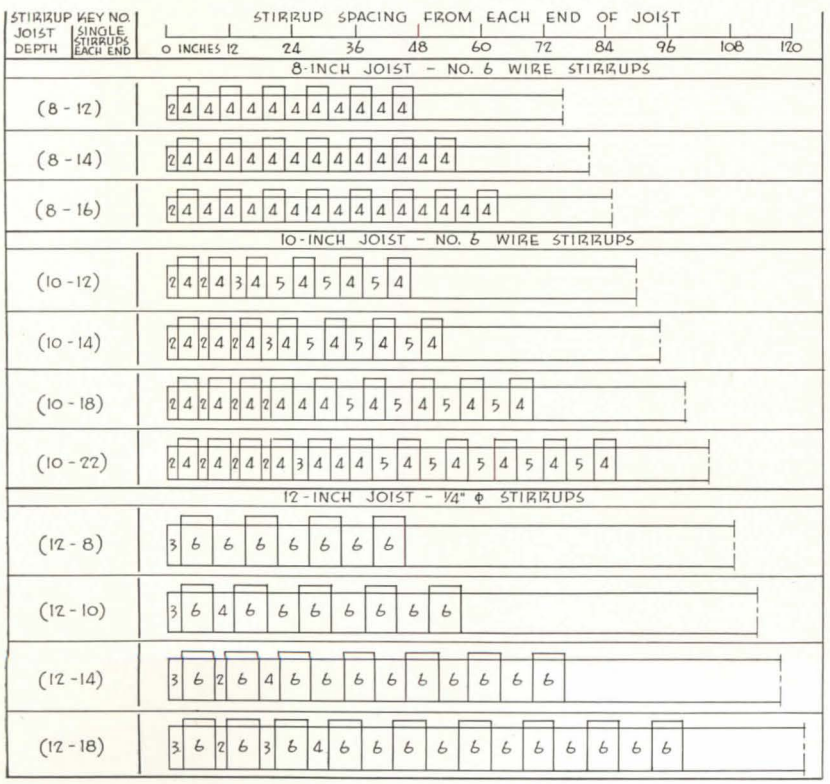


TABLE 4—STIRRUP SPACING FOR JOISTS IN TABLE 3

Based on Safe Superimposed Loads in Table 3, and the use of No. 6 wire and ¼-in. steel stirrups welded or hooked to upper and lower bars. Stirrup spacings shown are for each end of the joist.

Use additional stirrups approximately 18 in. on center through middle section of joist.

SPECIFICATION STANDARDS FOR GOVERNMENT WORK PART 3

By HAROLD R. SLEEPER, AIA

Private architects who are now or will soon be engaged in work for the Federal Government will find the following lists, continued from the February issue of the RECORD, of invaluable assistance.

DIVISION 9. LATHING & PLASTERING

FED. SPEC.

Plaster, Gypsum FED. SPEC. SS-P-401
Specify Type or Types:
W—Wood-fibered
N—Neat plaster
B—Sanded brown coat plaster
S—Sanded scratch coat plaster
Specify whether neat is with or without hair or sisal fiber for scratch coat.

Gypsum, calcined (Plaster of Paris) FED. SPEC. SS-G-901
Specify the following:
Time of set, if required, for gaging plasters.
Grades: I (fine) for lime putty finishes casting and moulding. (May be used also as listed below for Grade II.)
II (coarse) for general structural purposes such as preparing setting mortar for gypsum block; pointing cement for wall board.

Lime; hydrated (for) structural purposes FED. SPEC. SS-L-351
Specify Type F, "finishing," for finish plaster coat; Type M, "Mason's" for other coats.

Quicklime; (for) structural purposes FED. SPEC. SS-Q-351
Specify: Type "C" for calcium type
Type "M" for magnesium type

Cement, Keene's FED. SPEC. SS-C-161

Fiber-board; Insulating FED. SPEC. LLL-F-321a
Use Class B, lath for plaster base.

Plaster-board, gypsum FED. SPEC. SS-P-431a
Specify Thickness: ¼", ⅜" or ½"
Widths: 16", 24" and 32"
Lengths: 32", 36", 48"

Bases, metal (for) plaster and stucco construction FED. SPEC. QQ-B-101C
There are many specific items which must be specified if this specification is used.

A. S. T. M. SPEC.

Gypsum Plasters A.S.T.M. C 28-40 ASA A49.3-1940
Specify Type or Types:
Gypsum ready-sanded plaster
Gypsum neat plaster
Gypsum wood-fibered plaster
Calcined gypsum for finishing coat
(Last in two grades) white and grey.

Molding Plaster A.S.T.M. C 59-40

Sand for Plaster A.S.T.M. C 35-39

Hydrated Lime for Structural Purposes A.S.T.M. C 6-31
2 types; Mason's hydrate and finishing hydrate.
Both may be used for scratch or brown coat of plaster, for stucco.
Finishing hydrated lime may be used as an ingredient in the final or white coat of plaster.

Hydraulic Hydrated Lime for Structural Purposes A.S.T.M. C 141-38 T
May be used for scratch or brown coat, or for stucco.

Quicklime for Structural Purposes A.S.T.M. C 5-26
(Appendix to this spec. contains directions for slaking and preparation of quicklime.)

Keene's Cement A.S.T.M. C 61-40
These specifications are applicable to grades used in base and finish coats of plastering. Grades for Scagliola, castings, etc., should conform except for fineness and time of set, which will vary with such uses.
(Appendix to this spec. contains Field test.)

Gypsum Lath A.S.T.M. C 37-40
Specify: whether plain or perforated
Thickness: ¼", ⅜" or ½"
Sizes: Widths, nominal, 16", 24", 32"
Lengths, nominal, 32", 36", 38"

OTHER REFERENCES

Gypsum Plastering, American Standard ASA A 42.1-1938
(Including Requirements for Lathing and Furring.)
(This is also an A. S. T. M. standard.)
This is a complete specification except for scope and for requirements of specific projects. Its use by reference will greatly shorten the Architect's specification.

Metal Lath
Simplified Practice Recommendation R 3

DIVISION 10. TILE & TERRAZZO

TILE CERAMIC

Basic specifications for Tile Work
(Latest Edition).
The Tile Manufacturers' Association, New York City.

The Tile Handbook
The Tile and Mantel Contractors' Association of America, Inc., Washington, D. C.

TILE, ENAMELLED IRON

Tile, wall; enamelled iron FED. SPEC. RR-T-421

TERRAZZO

Specifications for Terrazzo and for Mosaics
The National Terrazzo and Mosaic Association, Washington, D. C.

DIVISION 11. FLOOR COVERINGS

FED. SPEC.

Linoleum; battleship FED. SPEC. LLL-L-351a
Specify: Grade, ⅛″ battleship, 3/16″ battleship, 6 mm. battleship; color (to match sample).
Fed. Spec. E-LLL-L-351a, July, '41 suggests use of plain, inlaid, and printed linoleum (to save cork).

Linoleum; plain, inlaid, and printed FED. SPEC. LLL-L-361
Specify: Type; plain, jaspe, granite, straight line inlay and molded inlay, or printed.
Specify: Color, pattern, finish (as per samples).

Tile; asphalt FED. SPEC. SS-T-306
Specify: Thickness, ⅛″ or 3/16″; size; color (to match sample), plain or mottled finish; state whether grease resistant.

FED. SPEC.

Floor-covering; rubber, sheet FED. SPEC. ZZ-F-461
Specify color or colors and pattern.

Matting, rubber FED. SPEC. ZZ-M-71

Tile; floor, rubber FED. SPEC. ZZ-T-301
Specify: Thickness, 0.125″, 0.188″, 0.250″, or 0.375″; size.

Carpet; cork FED. SPEC. LLL-C-96

Tile; cork FED. SPEC. LLL-T-431
Specify: Thickness, ½″ or 5/16″; size; type of edge, square or beveled; finish; color, light, medium, or dark brown; cork base 4″ or 6″ high, straight or cove.

Standard specification and approved methods for insulating Rubber Flooring and Sheet Rubber
Rubber Manufacturers' Assn., Inc., New York City.

DIVISION 12. GLASS & GLAZING

FED. SPEC.

Glass, flat (for) glazing purposes FED. SPEC. DD-G-451
Specify types of glass, etc.

Putty, pure linseed oil, for wood sash glazing
Specify Type: Type I Whiting putty FED. SPEC. TT-P-791a
Type II White lead-whiting putty

Putty and elastic compound; (for) metal-sash glazing FED. SPEC. TT-P-781a

A. S. T. M. SPEC.

Pure Linseed Oil Putty for Glazing A.S.T.M. D 317-33
Specify class:
Class A—Whiting Putty
Class B—White lead whiting putty
Specify if putty is to be colored.

DIVISION 13. BUILDERS' HARDWARE

FED. SPEC.

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

Hardware; builders', lock and lock trim FED. SPEC. FF-H-106
Fed. Spec. E-FF-H-106, Nov. 8, '41 allows for substitutions of materials, to save scarce metals.

Hardware; builders', shelf and miscellaneous FED. SPEC. FF-H-111
Fed. Spec. E-FF-H-111, Nov. 8, '41 allows for substitutions of materials, to save scarce metals.

Hardware; builders', hinges FED. SPEC. FF-H-116b
Fed. Spec. E-FF-H-116b, Nov. 8, '41 allows for substitutions of materials, to save scarce metals.

OTHER REFERENCES

Hardware, builders', nontemplate (second edition) CS 22-40

Hardware, builders', template (second edition) CS 9-33

FED. SPEC.

Hardware; builders', door closers FED. SPEC. FF-H-121a
Fed. Spec. E-FF-H-121a, Nov. 8, '41 allows for substitutions of materials, to save scarce metals.

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

Nails, spikes, staples, and tacks FED. SPEC. FF-N-101
Fed. Spec. E-FF-N-101, May 15, '41 allows for substitution of zinc coatings.

Padlocks FED. SPEC. FF-P-101a

Screws, machine (including screws, set.) FED. SPEC. FF-S-91

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

DIVISION 14. PAINTING

FED. SPEC. **WOOD PRESERVATIVES** **A. S. T. M. SPEC.**

Wood-preservative; anthracene-oil for brush, spray, or open tank treatment FED. SPEC. TT-W-531

Wood-preservative; creosote-petroleum solution FED. SPEC. TT-W-568

Wood-preservative; celcure (acid-cupric-chromate) FED. SPEC. TT-W-546

Wood-preservative; zinc-chloride FED. SPEC. TT-W-576a
For treatment of wood by pressure method.

Zinc Chloride A.S.T.M. D 432-39

Wood-preservative; chromated-zinc-chloride FED. SPEC. TT-W-551

Wood-preservative; Wolman-salt (Tanalith) FED. SPEC. TT-W-573
For treatment of wood by pressure method.

FED. SPEC.	A. S. T. M. SPEC.
Wood-preservative; coal-tar-creosote for treatment of wood by pressure methods FED. SPEC. TT-W-556a	**Creosote** A.S.T.M. D 390-36
Wood-preservative; coal-tar-creosote (crystal-free), for brush, spray, or open tank treatment FED. SPEC. TT-W-560	**Creosote Coal-Tar Solution** A.S.T.M. D 391-36
Wood-preservative; creosote-coal-tar solution FED. SPEC. TT-W-566a For treatment of wood by pressure method.	
Wood-preservative; zinc-meta arsinite FED. SPEC. TT-W-581	
Wood-preservative; recommended treating practice FED. SPEC. TT-W-571b	

BASIC MATERIALS

Turpentine; wood, (for) paint, destructively distilled Type II FED. SPEC. LLL-T-792a	**Spirits of Turpentine** A.S.T.M. D 13-34 ASA K 32-1937 Specify type required: Gum spirits, steam distilled, wood turpentine, sulfate wood turpentine, and destructively-distilled wood turpentine.
Turpentine; gum spirits and wood, (Steam distilled and sulphate) (for) paint Type I FED. SPEC. LLL-T-791b	
Oil, linseed, raw FED. SPEC. JJJ-O-336 Specify whether type A or B is to be used. A—nominal iodine number; B—high iodine number.	**Raw Linseed Oil** A.S.T.M. D 234-28
Oil; linseed, boiled FED. SPEC. JJJ-O-331 Specify whether kettle boiled (preferable) or quick process is to be used.	**Boiled Linseed Oil** A.S.T.M. D 260-33
Thinner; paint, volatile, mineral spirits FED. SPEC. TT-T-291 Frequently used in place of turpentine in thinning oil paint.	**Petroleum Spirits (Mineral Spirits)** A.S.T.M. D 235-39
Drier; paint, liquid FED. SPEC. TT-D-651	**Liquid Paint Driers** A.S.T.M. D 600-41 T Specify Class A or B.
Shellac; orange FED. SPEC. TT-S-271 Specify Type: A, B, C, or D.	**Orange Shellac** A.S.T.M. D 237-41 Specify Grade: A, B, C or D.
Varnish, shellac FED. SPEC. TT-V-91a Specify type, grade and body. Type I Bleached (white shellac) Type II Orange. "Body" refers to alcohol cut.	**Shellac Varnishes** A.S.T.M. D 360-41 Specify grades and body. Grades—Orange; Grade A, Grade B Bleached; Regular grade and refined grade. Each type shall be furnished as very light (3 lb. cut) light, (4 lb. cut) medium, (4.5 lb. cut) heavy, (5 lb. cut) very heavy, (6 lb. cut) or extra heavy body (8 lb. cut). Note: "Cut" denotes number lbs. of dry shellac that were added to 1 gal. of alcohol manufacture process.

PIGMENT

Red-lead; dry and paste-in-oil FED. SPEC. TT-R-191a Specify: Type and grade. Vehicle amounts to use with dry red lead are: Dry red lead 20 lbs. Raw linseed oil 5 pints. Turpentine 2 gills. Liquid drier 2 gills. **Type I Dry** — Grade A—85%; Grade B—95%; Grade C—97% **Type II Paste-in-oil** — Grade B—95%; Grade C—97% Dry type is for long period of storage. % is of true red lead. The higher the red lead content the longer the paint may be safely stored after mixing. 95% and 97% produce smoother and more uniform films.	**Red Lead** A.S.T.M. D 83-41 ASA K 24-1941 Specify: Dry or paste-in-oil; grade of pigment. Grades, etc. are as specified for Fed. Spec. TT-R-191a.
	Mineral Iron Oxide A.S.T.M. D 84-41 ASA K 25-1941 Specify dry or paste in oil.
Zinc-oxide; dry and paste-in-oil FED. SPEC. TT-W-301 Specify, dry or paste-in-oil.	**Zinc Oxide (zinc white)** ASA K 22-1941 A.S.T.M. D 79-41 Specify, dry or paste-in-oil. Specify, American process or French process type.
Whitelead; basic-carbonate, dry, paste-in-oil, and semipaste-in-oil containing volatile thinner FED. SPEC. TT-W-251a Specify: Type A Dry pigment. Type B Paste-in-oil. Type C Semipaste containing volatile thinner. Specify formula for mixing.	**Basic Carbonate White Lead** A.S.T.M. D 81-38 ASA K 23-1941 Types as in Fed. Spec. TT-W-251a.
White-lead; basic sulphate, dry, and paste-in-oil FED. SPEC. TT-W-261a Specify whether dry or paste-in-oil.	**Basic Sulfate White Lead** A.S.T.M. D 82-41 ASA K 47-1941 Specify whether dry or as a paste in oil.
Blue-lead; basic sulphate, dry and paste-in-oil FED. SPEC. TT-B-486	**Blue Lead; Basic Sulfate** A.S.T.M. D 405-41 ASA K 48-1941

PAINTS, VARNISHES, ENAMELS, ETC.

Filler; wood, paste FED. SPEC. TT-F-336a	
Oil; flatting FED. SPEC. TT-O-356	

FED. SPEC.

Putty; pure-linseed-oil, for wood-sash-glazing FED. SPEC. TT-P-791a
Specify: Type I whiting putty or
Type II white lead-whiting putty.
Type II is harder and should be used for filling holes, cracks, etc.
If color is required so state.

Sealer; floor, wood FED. SPEC. TT-S-176a
For use on wood or cork floors.
Specify: Class I—(for floors having rapid and high absorption properties).
Class II—(for floors having more dense structure).

Wax, floor; liquid and paste FED. SPEC. P-W-141
Specify type: Type I liquid
Type II paste

Wax; floor; water-emulsion FED. SPEC. P-W-151
Specify type: Type I (regular)
Type II (concentrated) to be diluted to a 12% solid basis.

Varnish; Damar FED. SPEC. TT-V-61

Varnish; interior FED. SPEC. TT-S-71a
May be used for general interior purposes; unrubbed or rubbed.
Fed. Spec. E-TT-V-71a, Sept. 30, '41. Requirements modified to permit oils, other than tung oil, to be used.

Varnish; spar, water-resisting FED. SPEC. TT-V-121a
Fed. Spec. E-TT-V-121a, Sept. 30, '41. Requirements modified to permit oils other than tung oil to be used.

Calcimine (cold- and hot-water types) FED. SPEC. TT-C-96
Specify Types:
Type I —Cold water (for temporary use)
Type II—Hot water (smoother brushing)
Specify if tinted. To be mixed in accord with manufacturer's directions. Apply over sized plaster.

Paint; cold-water, interior, light-tints and white FED. SPEC. TT-P-23a
Specify: Type I Powder or Type II Paste. (May be washed gently with mild white floating soap.) (May be advisable to apply over sealer to overcome suction effect.) This spec. permits casein paints made from both milk and soy bean, etc.

Paint; resin-emulsion, interior, paste, light-tints and white FED. SPEC. TT-P-88
For interior walls and ceilings. (May be advisable to apply over sealer on plaster to overcome suction effect.

Paint, cement-water, powder, white and tints
(for interior and exterior use) FED. SPEC. TT-P-21

Paint; red-lead-base, linseed-oil ready-mixed FED. SPEC. TT-P-86
For priming and body coats on ferrous metals.
(Thin with turpentine if required.)

Paint; ready-mixed, and semipaste black FED. SPEC. TT-P-61

Paint; blue-lead-base, basic sulfate, linseed oil, ready-mixed FED. SPEC. TT-P-20

Paint; ready-mixed, and semipaste, olive drab FED. SPEC. TT-P-81

Paint; outside, ready-mixed, medium-chrome-yellow FED. SPEC. TT-P-53

Paint; ready-mixed, and semipaste, exterior, chrome-green FED. SPEC. TT-P-71a

Paint; graphite, outside, ready-mixed, black FED. SPEC. TT-P-27
To speed drying and to increase water repellant properties add 1 pint spar varnish to each gal.

OTHER REFERENCES

"Use of United States Gov't. Specification Paints and Paint Material"
Bureau of Standards Technologic Paper No. 274.

"Painting Specifications"
Painting and Decorating Contractors of America.

Effectiveness of Paints as Protective Coatings for Wood
Forest Products Laboratory, U. S. Dept. of Agriculture, Forest Service.

A. S. T. M. SPEC.

Pure linseed oil putty for Glazing A.S.T.M. D 317-33
Specify: Class A—whiting putty
Class B—white lead whiting putty.
If color is required so state.

FED. SPEC.

Paint, white-lead-base; basic-carbonate, ready-mixed, light-tints and white FED. SPEC. TT-P-156
For exterior oil gloss finishing coat (thin with turpentine if required).
For undercoats use semipaste TT-W-251 Type C as follows:

	Priming	*Undercoat*
Semipaste	100 lbs.	100 lbs.
Linseed oil	4 gals.	1½ gals.
Turpentine	1¾ gals.	1¼ gals.
Liquid Drier	1 pint	1 pint

White-lead; basic-carbonate, dry, paste-in-oil, and semipaste-in-oil containing volatile thinner FED. SPEC. TT-W-251a
Specify Types: A dry pigment;
B paste-in-oil;
C semipaste containing volatile thinner. Specify formulae.

Paints; lead-zinc-base, ready-mixed and semi-paste, white and tinted FED. SPEC. TT-P-36a
(Linseed oil paint)
Specify type and class:
Type I Semipaste paint
Type II Ready mixed paint
Class A 70% lead—20% zinc—10% inert.
Class B 60% lead—30% zinc—10% inert.
Class "A" tends to greater chalking and is for inland use, Class "B" for seacoast use. Materials to be thinned with turpentine or mineral spirits as conditions require.

Paint; titanium zinc and titanium zinc-lead, outside, ready-mixed, white FED. SPEC. TT-P-101a
Use only white. Use Type A except use Type B to resist sulphide fumes.

Paint; (for) priming plaster surfaces (plaster primer and sealer) FED. SPEC. TT-P-56
For use on interior walls and ceilings of plaster, concrete, brick, cement, wallboard as a priming or seal coat. Do not apply on damp surfaces. Also use to mix with TT-P-51a.

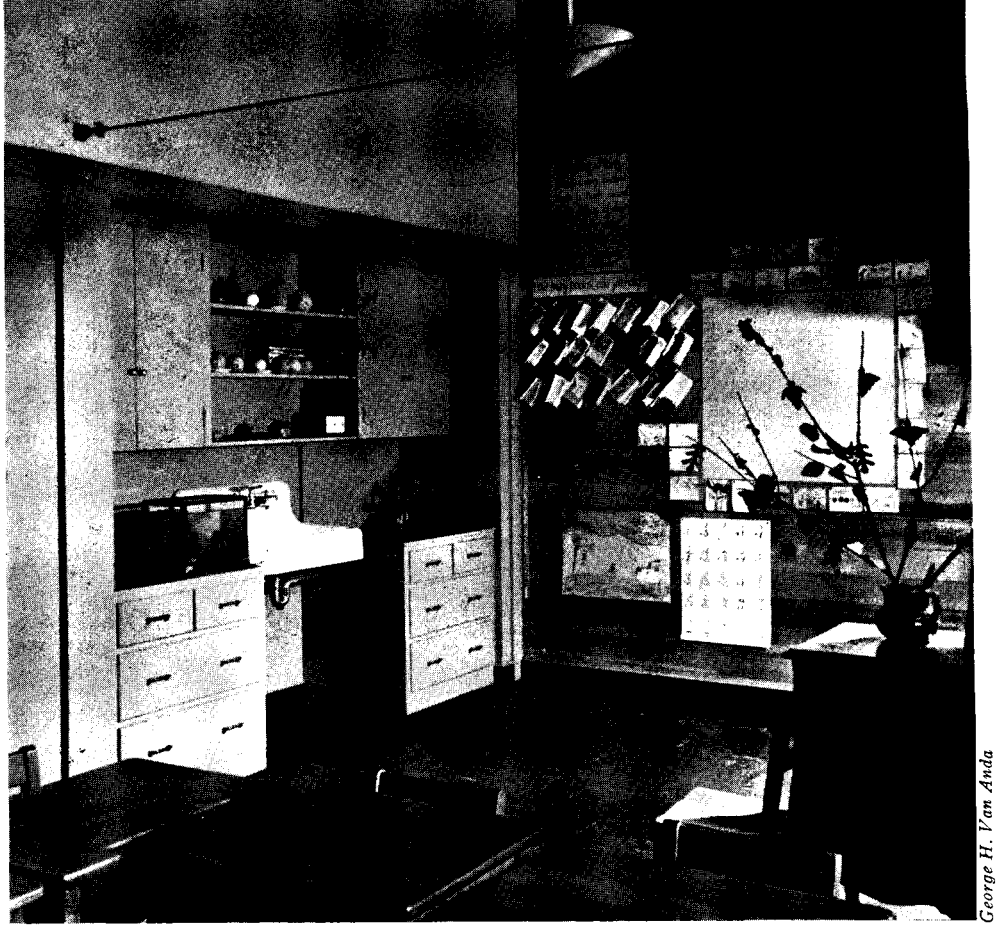
Paint; oil, interior, eggshell-flat-finish, ready-mixed and semipaste, light-tints and white FED. SPEC. TT-P-51a
Specify: Type A, ready-mixed or Type B, semipaste.
(Priming coat on plaster may be 2 parts Fed. Spec. TT-P-56 and one part of this ready mixed paint (or) add 1 quart to 1 gal. of linseed oil to each gal. or ready mixed paint.
Ready mixed paint not generally suitable for stippling; use semipaste.
Semipaste to be thinned to meet conditions; following are suggestions:
For 1st coat on new walls use equal amount of semipaste and thinner.
For eggshell gloss finish coat—add equal amount of boiled linseed oil and turpentine, 7 pints to gal. of semipaste.
For stippling finish about 3 pints to gal. of above mixture.
For flat finish add 5 pints of turpentine to 1 gal. of semipaste.
This paint is washable, but for frequent washings mix this paint Fed. Spec. TT-E-506. Enamel, resulting in a semi-gloss finish.

Enamel; Interior, gloss, light-tints and white FED. SPEC. TT-E-506a
Ready-mixed type specify: Type A, quick drying (8 hrs.) Type B, slow drying (30 hrs.). For wood, metal and plaster—washable.

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

A BUILDING TYPES STUDY

SCHOOLS



George H. Van Anda

TIME TO THINK—ONE WAR BLESSING

By FRANK G. LOPEZ, JR., *Associate Editor, ARCHITECTURAL RECORD*

THE WAR PUTS TWO QUESTIONS squarely up to the school architect and the school administrator. First, and most easily comprehended, comes the urgent query: How can we build the little that simply *must* proceed? Second, and obscurely because only lately has our civilization begun to catch up to our technology, intelligent leaders in both fields are wondering: Why are we—as a nation—so unprepared mentally, physically, morally for the conflict? What *is* the conflict? Why are we short of competent men in some walks of life, over-staffed in others? Why strikes when there's work? Does this reflect on our schools? Do we need more of some types of schools—and school buildings—than we've had? All of these latter questions bear on the same central theme. Now, in war, with school construction virtually stopped, can we find time to think this problem through?

Dr. William E. Warner, of the American Industrial Arts Association, in a speech delivered in March, 1941, stated: "The conclusion . . . is that education . . . must be concerned with preparation for living and earning in an industrial democracy . . . the school must become a laboratory of life." He further says that, partly due to democratic freedom, government, industry and education now find themselves in a mad scramble to meet emergency demands. John Erskine, in the *American Magazine* last year, said that, even in peace, our educators still produced incompetence and unemployment. He asked why any boy should leave high school without at least one manual skill.

All of this indicates that, to these men at least, the typical American secondary school turns out a "graduate" equipped with academic theory, but without basis for evaluating practical experience. The criticism is harsh, and judging by many schools previously published in these pages, not universally justified. True, a magazine with limited space can present only the leading examples.

How does the foregoing affect school architecture? Very directly, for as educational philosophy changes educational buildings must change. ARCHITECTURAL RECORD has asked several school architects to express their views on their professional future, both immediate and distant. Their responses appear in the following pages. So much for the second question.

As to the first and simpler question, circumstances will dictate the answer for each specific case. This is cold comfort, but we are at war. Many of the following contributions contain suggestions on how the problem is being solved.

WHAT DO SCHOOL ARCHITECTS AND

AN EDUCATOR'S VIEW TODAY.....By WILLAM E. WARNER,

Professor of Education, Ohio State University; Member, Executive Committee, American Industrial Arts Association

FROM ALL I CAN GATHER, the basic policy of our Government as regards anything that would be of interest to the American architect is, first of all, to make full use of all present facilities. This means that we shall not have—and I can testify that we or the schools are not yet having—any difficulty in securing supplies for maintenance, repair, and operation. Second will be the policy of renting space, and third to construct temporary quarters; going no further, however, than the possibility of prefabricated units in areas adjacent to defense plants that have brought sharply increased school populations. The fourth basic policy, namely permanent construction, seems to be very much *out* for the duration of the emergency, simply because there is not *time* enough and because it would involve too many scarce materials.

My impression is that a similar but a less acute situation existed during the last war. We have tried in Ohio to impress on people the fact that our present laws do not permit the construction of temporary quarters for school children, but I suspect that no one will have the temerity to enforce our laws on this point.

My understanding is that even with the monies now available to the United States Office of Education for school buildings, nothing but temporary construction will be considered because of the war.

Even though none of us likes to hear things like the above, I suspect that they are the facts and must be faced. My own program of laboratory construction here in Ohio, for example, is at a complete standstill.

FROM 30 MEN TO 3.....By GILBERT A. JOHNSON,

Architect for the Board of Education, Rockford, Illinois

RECALLING THE LAST WAR when conditions made it necessary to close the office for the duration and join in construction of war work, I cannot help but be pessimistic. Since Pearl Harbor there is no doubt that private construction except industrial building and possibly some school work will cease.

Even if large private projects were allowed to proceed I personally would not invest in buildings constructed of inferior or substitute materials. I believe the greatest opportunities offered the architectural profession will follow the end of the war, when the best materials will be available in new forms, and techniques will so improve that war work, even of "permanent" type, will be antiquated.

This office specializes in educational, industrial and commercial buildings and has maintained a complete organization, including structural and mechanical engineers. One year ago the organization consisted of 30 men. At present we are three; the others are either in military service or employed on war construction from Bremerton, Wash. to the Panama Canal.

We do not anticipate much school construction although we are in a Defense Area. This city (Rockford, Ill.) ranks second in the entire country as a machine tool manufacturing center, Cincinnati ranking first. Camp Grant is adjacent to Rockford, where, because of war work and cantonments, three housing projects and a trailer camp are to be constructed.

Our experience as regards grants for school work in this Defense Area has been very disappointing. One project was filed in July, 1941 and no action has been taken although the need is urgent. Classes are conducted on half time in improperly lighted and ill-ventilated classrooms.

Because of stoppage of construction of school buildings during the war period there will be need for a large building program following the end of the war. Even then, most projects with which I am familiar will not be able to proceed unless assistance similar to PWA grants is available, because insufficient property valuations limit bonding power.

In the meantime we will have to do our part to help win the war.

Washington, Feb. 15—Use of steel and other key materials is cut to a minimum under a basic construction policy for defense public works projects, announced today by Baird Snyder 3rd, acting Federal Works Administrator.

Buildings constructed under the new policy will be limited to one- and two-story masonry and one-story wooden structures. These limitations apply to schools—not only those approved in the future, but also those already approved, but for which contracts *have not been let*. Wood is preferred for temporary structures, except that masonry is recommended in areas subject to enemy action.

Specifications have been worked out for a basic masonry unit with concrete foundation and floor set on gravel fill, with concrete columns supporting a concrete roof, walls of concrete, block, or brick, and wood windows. Concrete ramps or stairs connect the floors. —from The New York Times.

EDUCATORS ENVISION?

FOCUS ON FUTURE REALITIES.....By W. R. GREELEY, AIA and W. H. KILHAM, AIA, *Kilham, Hopkins and Greeley, Boston, Massachusetts*

THE BURDEN OF TAXATION will be so great, when schoolhouse rebuilding is resumed, that every dollar of unnecessary cost will be challenged. Design and construction will be strictly limited to the minima required for educational results.

Cycles of taste and cycles of extravagance and economy characterize our progress. The first schoolhouses in this country were masterpieces of simplicity, of rigid functionalism; not a brick, or board, or pane of glass was wasted. Gradually the country developed an urbanized civilization and in an access of affluence and exoticism we created schoolhouses in the likeness of feudal chateaux, Georgian temples, and Elizabethan palaces. From this high splendor we are swinging into a diminuendo; the present war will complete the cycle. We shall begin again at the beginning with purposeful education as the major enterprise, and with buildings incidental to this purpose, built simply, directly, frugally to meet the need.

We have built permanent buildings in a fluctuating system of education. The flexibility of an evolving science of pedagogy may be cramped by the rigidity of its architectural shell. In many instances we have envied bombed cities that have been rudely rid of their heritage of outmoded buildings, a process which we dare not carry out by peaceful means. Arteriosclerosis kills not only men but also their cities.

EDUCATION FOR BASKETBALL

This, then, is the moment to begin to think in terms of adjustable buildings for a changing educational system; buildings that may be written off when obsolete, and replaced by newer types which meet newer teaching demands.

We have been building large and costly gymnasia for our children's health and recreation. Ten years hence the emphasis may be changed. Fresh-air exercise may be regarded as indispensable; the present great gymnasium spaces may be echoing voids. Outdoor programs develop more stamina, eradicate inhibitions about the weather, permit more general and democratic participation, and promote a better understanding of nature's resources.

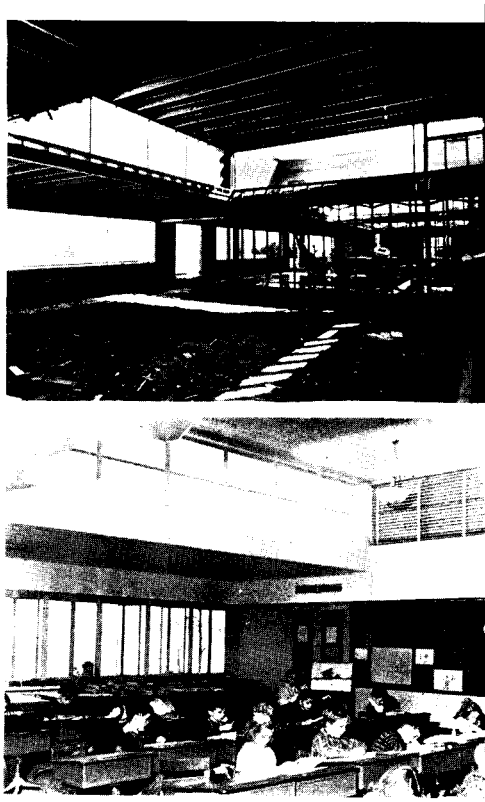
Close to Boston there is a 700-pupil school, equipped with all sorts of gymnasium facilities for indoor exercise. Adjoining this school is a beautiful rocky pine grove belonging to the Park Department, but unused. When we designed the school we were told that it was planned to use this grove for scout work and outdoor play, but this has never been done. Some famous authority, possibly Dr. Engelhardt, once declared that the entire educational system of the United States was built around the game of basketball. At any rate, emphasis seems to be placed on games in which only a few participate, and the rest look on. While the name of Germany may be anathema at present, one thing can be learned from that country and that is the practice of inuring even young children to long walks. Children are today brought to school in heated busses full of gasoline fumes, taught and exercised in steam heated rooms, fed in a chromium plated and steam heated cafeteria, and returned to their homes in the same busses without exposure to one lungful of fresh air all day.

OBSOLESCENCE

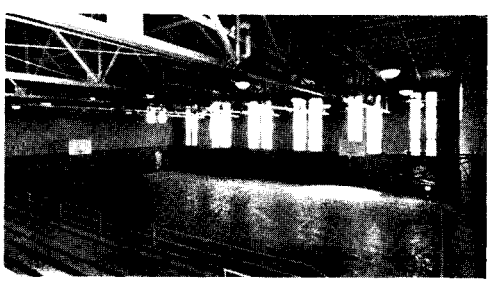
Another phase of the obsolescence question is the shift of population, which often leaves costly school buildings without pupils, or only half occupied. If smaller units were built this loss might be greatly reduced.

Consider the one-story type of building. If the site is reasonably level, and local building regulations do not require "fireproof" construction, schools can be perfectly well built of wood. With insulated walls and roofs they would serve every purpose, and could even be so made as to be removable to another site. The additional cost of roof and foundations would be offset by the absence of stairways and stair halls as each room could have its own exit to the outer air. We believe the possibilities of this type have never been thoroughly explored, particularly in the East, though California has many interesting examples.

Again, economies can be effected by a reduction of the 30-cubic-feet-per-minute standard for fresh air supply. This originated back in the early '90's when doctors



SCHOOLS OF WOOD: wood framing, trim, etc., plus clerestory classroom lighting, in Avenal School, California; Frank Wynkoop, architect



GYMNASIUM—an echoing void?

AUDITORIUM ENTRANCE: will intensive use justify such areas as this in the school of the future?

affirmed that more than one part of CO_2 in 10,000 was dangerous to health. This theory is now obsolete, but in most states the regulations continue in force. Heating and ventilating must meet known physiological requirements, not outworn theories.

Again, we wish school boards would get over their obsession for brown as a school room color. Woodwork is universally stained brown "so as not to show the dirt." Result is simply that the dirt stays there. How much would be added to the joy of life by a school room which is freshly painted now and then!

We are being told that the close of this war will bring about great changes in our way of life and a lowered standard of living. We prefer to believe that simpler methods and less motorization will actually make more jobs, and that judged by the dividends of happiness and satisfaction our standard of living may actually be higher. Was it J. B. Priestly who observed that two cars in your garage didn't automatically admit you to the Kingdom of Heaven?

A PROGRAM FOR THE FUTURE.....By RALPH E. HACKER,

of Hacker and Hacker, school architects, Fort Lee, New Jersey

FOR MANY YEARS we have waited for the long-promised, loudly heralded "more abundant life" to strike the architectural profession. Congress, nonchalantly appropriating billions upon billions, has effectively blacked out this rainbow. Restricted building, priorities, rationing, plus a stupendous burden of taxes, indicate that after the war the delayed abundant life, for the majority, will start upward from a norm so low that it may seem a forlorn hope to again attain the standards of living which we enjoyed in the decade immediately past. As the Director of the National Resources Planning Board at Washington cheerfully puts it, "We are not going back to normal and the chaos following the Axis downfall may be almost indistinguishable from war."

What will be the effect on the architect who has specialized on school planning and design? We have these factors to consider: Crushing taxation will certainly reduce school construction to a minimum, both during and after the war. There is the trend toward prefabrication. Engineers and some engineering schools are attempting to take over the functions of the architect. Various political bureaus and some state school building and ground divisions also have aspirations.

TYPE OF SCHOOL BUILDING CONSTRUCTION

Consider the demonstrated superiority of steel and reinforced concrete structures under bombing and earthquake stresses; the increased safety from fire and panic hazards accorded the occupants; war's continuing depletion of reserves of standing timber here and abroad; possibility of future wars; enormous plant capacities being developed for steel, copper, aluminum and other metals; the still undeveloped potentialities of plastics, and of chemical research. All these point to the development and use of noncombustible materials for future building construction. Hope for the future lies in their development. Schools and other public, and probably private, buildings of wood or semi-fireproof construction will face a certainty of early obsolescence in any conflict with such offerings.

CONCRETE stair and balustrade: low maintenance, great safety, permanence. Ocean View School, Norfolk, Va.; V. A. Moore and Associates, Architects

COSTS

Few architects know how or where to reduce school building costs substantially without resorting to inferior construction, or to the barren box which in its way is the opposite of the "Romanesque" architectural abortion. Cheapness in first cost is no yardstick for adequacy. Excessive annual maintenance and operating costs consume the initial saving many times over during the life of the building. Unessential items in obsolete state codes and fetishes of officials often result in unnecessary expenditures. Debt service—annual payments of principal and interest—on the building constitutes but a small percentage of the total.

Standards of lighting, sanitation, etc., and the flexibility of today's well-planned school in adjusting to educational changes, insure the use of these buildings, with few exceptions, for many times the life of bonds issued for their construction. The heavy cost factor in public education does not lie in the buildings as structures. For many years education has been charged with expensive experimentation, often

uncertain of its objectives. In some districts, politicians rather than educators have been at the educational helm.

ECONOMIES

An economy measure advocated and already adopted in some districts is utilization of the school plant and teaching personnel for a greater period than the 180 teaching days that usually comprise the school year. It is urged that such inefficient utilization of personnel and plant facilities can no longer be permitted to continue.

In the more thickly populated areas there is gradually developing a community recreational program for youngsters and adults of all ages. This program involves intensive use of parks, school playgrounds, gymnasiums, auditoriums, music rooms, etc. With the addition of adult education programs the community secures full day and evening use of its schools as educational and community centers and finds the above-mentioned rooms indispensable.

WHAT NOW?

The outlook for the school architect is anything but hopeful. As a member of his profession he must become more articulate, both in his community and in his professional relations. If infringements of bureaucracy are to be halted, the public must be educated to realize that adequate school plans and design cannot be turned out like sausages.

The school architect must be prepared through his previous research to know how and where to use substitutes, either newly developed materials or old materials used in a new way. He must realize the potentialities that American technology offers for the future development of school buildings; and must consider what the school plant means to the entire community.

When extension or renovation is necessary, the school architect should be called in, as he has the competence to plan judicious expenditures and secure maximum results in the solution of educational and civic problems. He is indispensable.

A PROGRAM FOR TODAY.....By A. ALAN STEWART, AIA,

Chief of Design, Warren Holmes Co., school architects, Lansing, Michigan

SCHOOL CONSTRUCTION, whether new building or remodeling, is a continuing need. It can of course be postponed, but the need remains and sooner or later must be met. This is the sole optimistic note in an otherwise pessimistic picture. Priorities and all their concomitant evils have not yet shut off school building entirely. Federal appropriations for new schools in Defense Areas are still forthcoming; we in the Middle West are experiencing quite a little flurry because of this program. Such projects carry an A-6 priority rating, but are, however, qualified by a critical list which tends to modify usual construction standards. Where a definite need is apparent in defense areas, the Federal Government is doing all in its power to assist; without such need and outside such areas, the immediate possibility of proceeding to construct schools is remote.

With these facts to face, the school architect and the school administrator might well be pessimistic, if it were not for the additional fact that, although the present emergency causes postponement of building programs, the need gets more acute in direct proportion to the length of time the emergency endures. The present is the ideal time for carefully planning projects which will be carried out after the war—a time when the architect can perform in the way he has always wanted to: when he has time to develop, with the school administration, a scheme without deadlines and due dates imposed by a school board, which realizes almost too late that it needs a new school.

The foresighted architect will realize the mutual advantages inherent in such present planning for future needs. School districts that seize this opportunity and go ahead with their plans and specifications at this time will be in an enviable position. This is not a hypothetical program—it is now actually being put in practice by some school districts. Obviously, some architects are benefiting. Such a program has twofold value: it encourages the school administrator to study thoroughly, with his architect, from a long-range viewpoint, the problems of his particular school; and it allows the architect to fulfill his professional function at a time when he is otherwise high and dry.

The Editors of *School Management* have surveyed a selected group of representative Boards of Education throughout the country, questioning them on plans for remodeling to be done in 1942. Well over half the boards surveyed are in Defense Areas. Of the total, most have no plans; difficulties in obtaining materials and labor, limitations on financing, etc., are listed as the reasons. With the exception of a few areas where vocational schools are apparently needed, or construction is already in progress, the bulk of school funds seem earmarked for maintenance and repair.

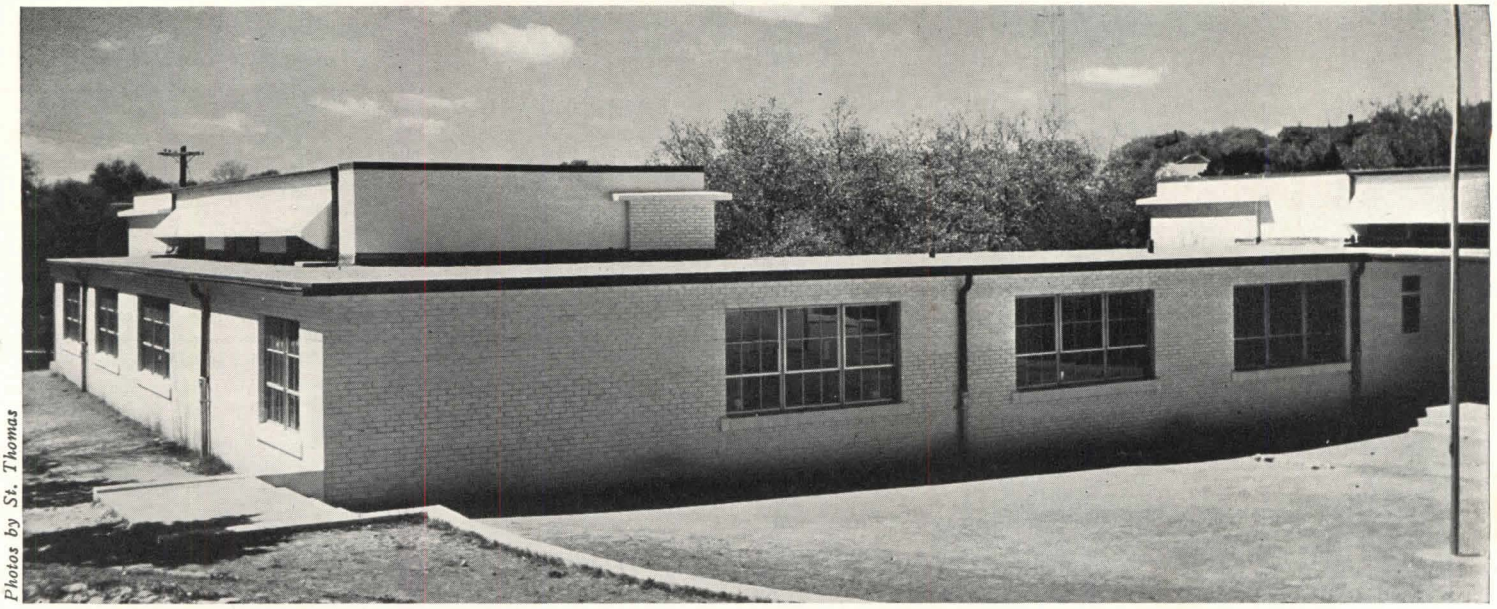
Strikingly different, however, is the picture in the Los Angeles area, where semi-permanent classrooms, on concrete foundations, with mastic tile floors and a minimum of steel, are contemplated in a comparatively large program. Is there a moral in this for other areas, and a spur for school architects?

To *School Management* we are also indebted for word of the War Production Board's attitude on priorities for schools. In general, this may be summed up as follows:

"While fully appreciative of the importance of maintaining our educational program, and of the necessity for trained manpower, no material whose release will in any way hamper production for our armed forces can be included in any item on which a "preference rating" is desired. Substitution of non-critical material (even if less satisfactory) must be made.

"The Supplies, Priorities and Allocations Board, regulation number 9, makes it clear that no public or private construction project involving critical materials may be started *unless it is necessary for direct national defense or essential to the health and safety* of the people. This applies to new construction, additions, or remodeling of existing premises. Applications for project rating should be made on Form PD-200 and forwarded to the Director of Priorities, War Production Board. PD-1 applications should *not* be made when PD-200 applications are indicated as above. Serious embarrassment and involvement have been caused by starting to build without a project rating and then finding that critical items such as heating, plumbing and electrical work cannot proceed. PD-1 applications in such cases are not approved."

Mr. Stewart appends to his statement the following practical word: "To add a note from practical experience, we have seen this thing actually work. For example, prior to actual passage of former PWA programs, some of our clients, believing such a program was imminent, authorized us to proceed with plans and specifications. When the program did finally break, these school districts had everything ready and were immediately allotted funds. Bids were taken and the projects started without delay. These foresighted clients received the most favorable of prices, because contractors were not as yet swamped with projects. The reward to the districts could actually be counted in dollars and cents. Therefore, in spite of present curtailments, there is a definite service to be performed now by the school architect and administrator."

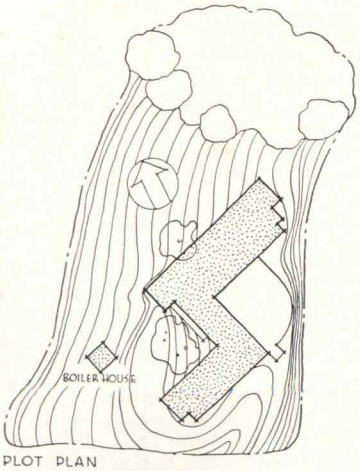


Photos by St. Thomas

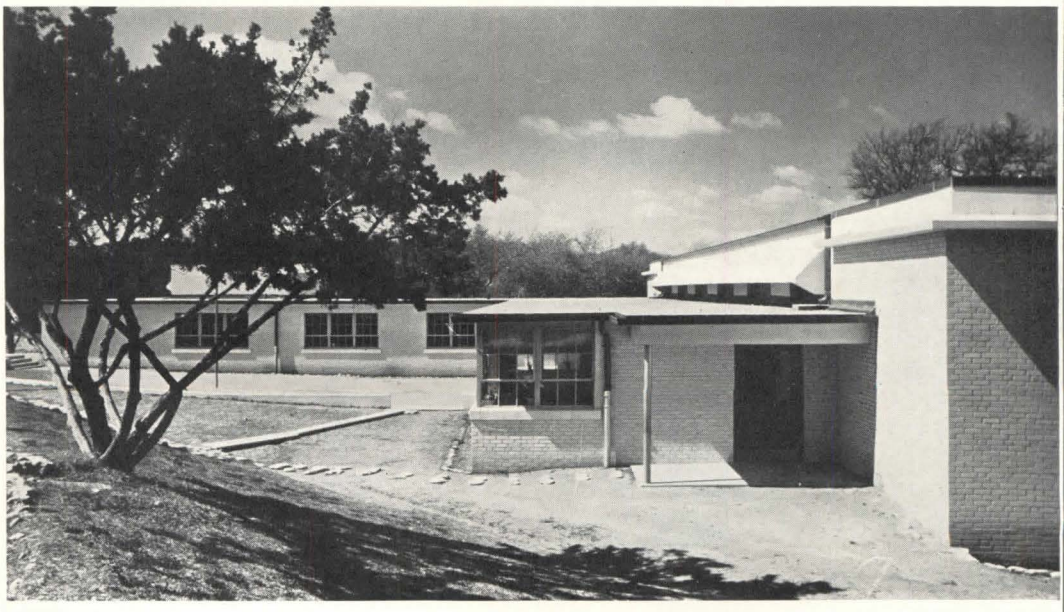
ALL CLASSROOMS NORTH-LIGHTED IN TEXAS SCHOOL

SOUTHEAST AUSTIN ELEMENTARY SCHOOL, AUSTIN, TEX. JESSEN, JESSEN and MILLHOUSE, ARCHITECTS. The site is a small, irregular, rugged limestone hillside. The plan was laid out to fit the building to contours, to provide each classroom with constant north light, and to permit as much of the site as possible to be used as play area. The entrance was designed to be easily convertible into an outdoor stage, with a court intended for use as a small amphitheater. Clerestory windows opening into classrooms above the corridors are intended primarily for ventilation—an important consideration in Texas—and have continuous cantilevered hoods which reduce sun glare almost to zero. The building is not expected to require future additions.

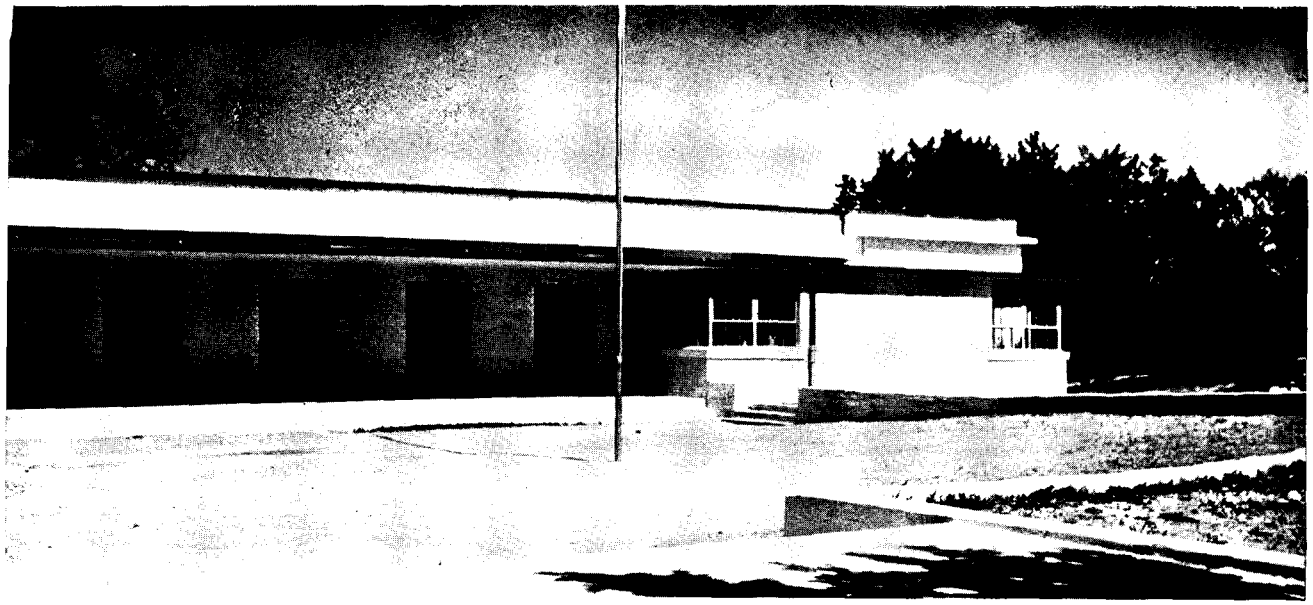
Construction is of reinforced concrete framing, with painted face-brick and concrete exterior walls, built-up, insulated roof, partitions of hollow tile, roof slab of concrete, surfaced with fiber board on classroom ceilings. Trim is wood and metal; sash and lockers are metal; toilet stalls are of marble; heating is provided by steam radiation. Cost, including the boiler house, was $49,600.

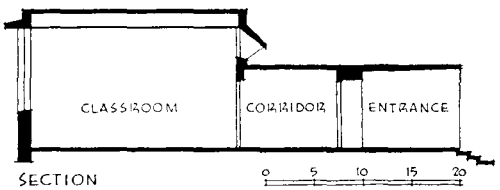


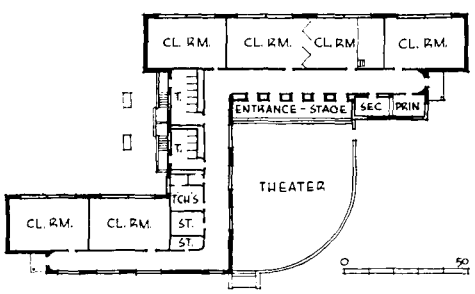
PLOT PLAN



VIEW from northeast corner, showing hooded clerestory



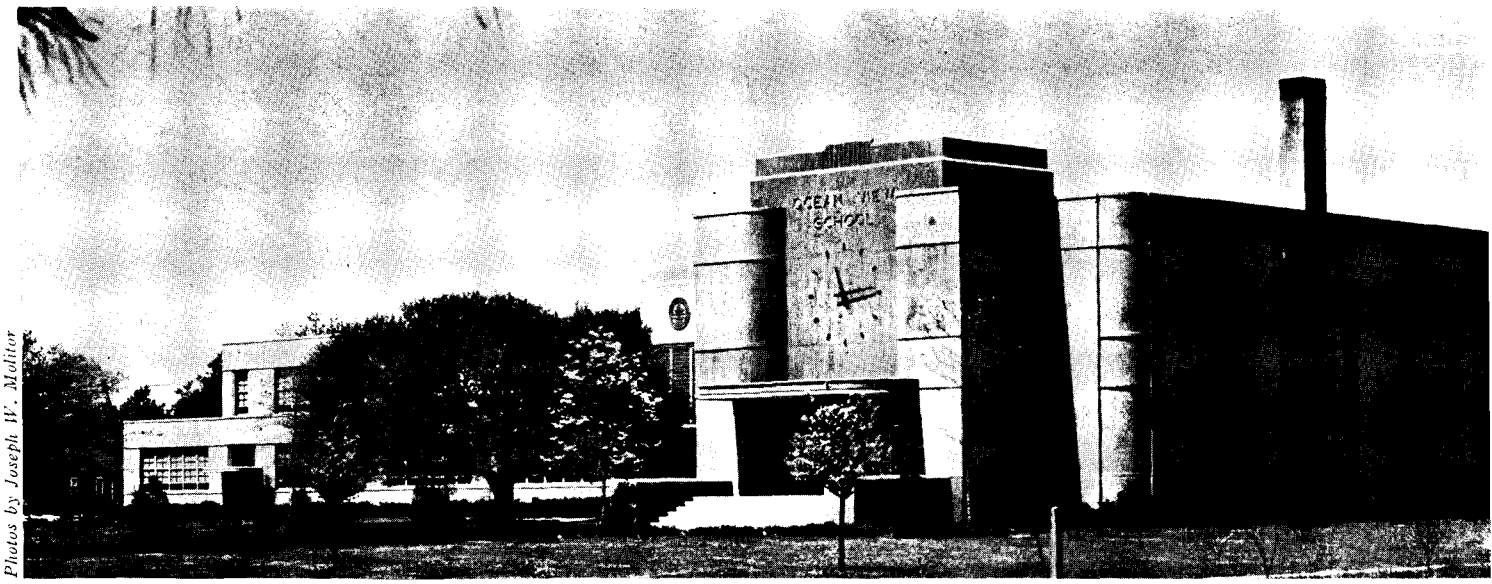




CORRIDOR, looking toward outdoor theater

PUPILS entering from play yard must use washrooms

TYPICAL CLASSROOM; windows run to ceiling



Photos by Joseph W. Molitor

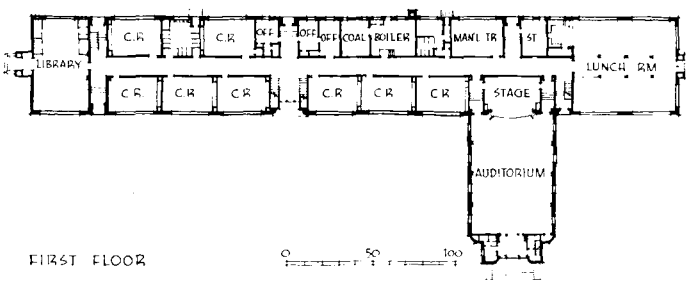
REINFORCED CONCRETE SCHOOL REPLACES

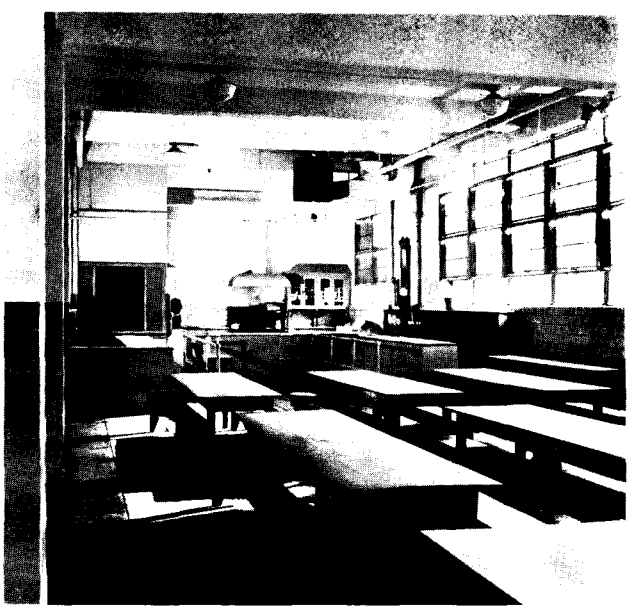
OCEAN VIEW ELEMENTARY SCHOOL, NORFOLK, VA. VERNON A. MOORE and ASSOCIATES, ARCHITECTS. As originally planned, this school was to be a 12-room addition to an existing school. Before plans proceeded, however, the existing building was found to be a fire hazard, and a new scheme, on a different site, was begun. The new building entirely replaces the old.

The school contains 22 classrooms, domestic science and manual training rooms, bicycle room, offices, conference rooms, library, lunchroom and auditorium. There is no gymnasium. Library, lunchroom (capacity 350) and auditorium (capacity 600) can be shut off from the academic portion for community use. Provisions have been made for adding four classrooms over the library and lunchroom.

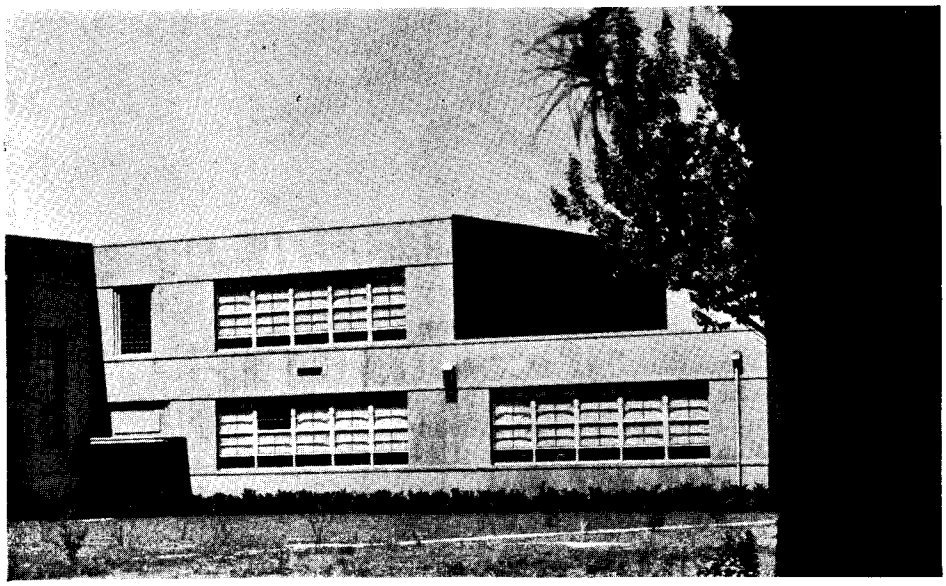
Economy controlled design of the reinforced concrete structure. Exterior walls are 12 in. thick. Second floor and roof are of slab-and-beam construction: first floor slab rests on compacted sand fill. Auditorium roof is supported by 54-ft. rigid-frame bents, exposed and painted. Ceilings generally are exposed concrete, painted, except in the library and auditorium where acoustic material was placed in the forms, bonded to the concrete, and later spray-painted. Corridor ceilings are of suspended acoustic plaster to conceal piping. Because of climatic conditions, exterior walls are furred 2 in. with tile above a 4-ft. 6-in. glazed block wainscot. Interior finish, above wainscot, is plaster.

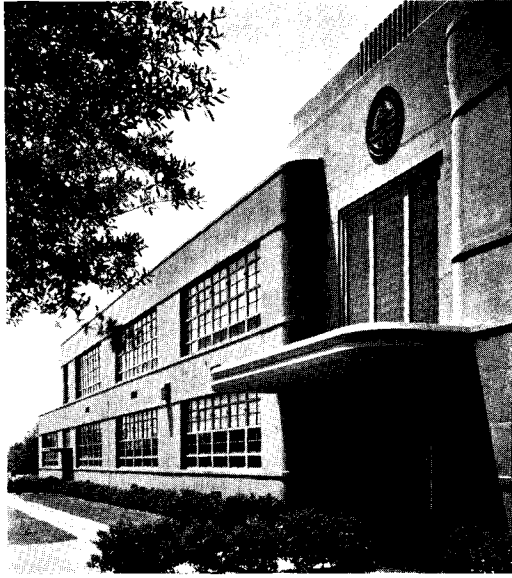
Floor finish generally is asphalt tile, with ceramic tile in toilets and concrete in utility areas. Wardrobes, interior doors and blackboard trim are wood. Cost, without fees, furnishings or landscaping, was approximately 28 cents per cu. ft.; completed and occupied, the building cost nearly $300,000. Doyle and Russell were the contractors.

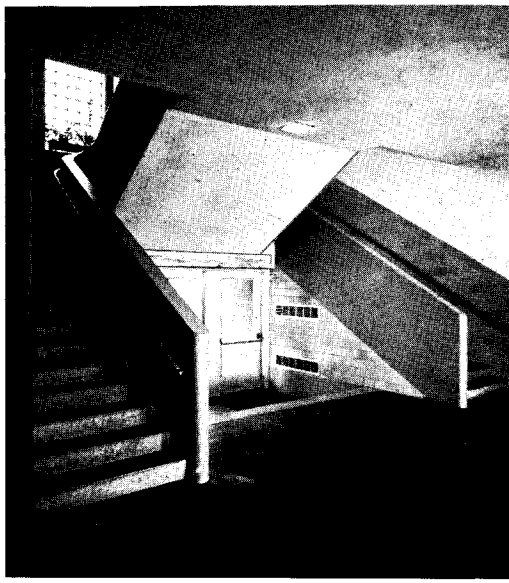




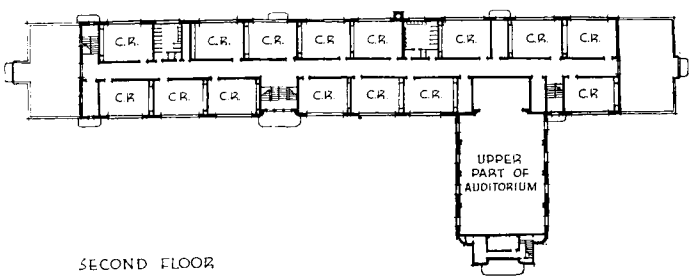
CAFETERIA







A FIRETRAP

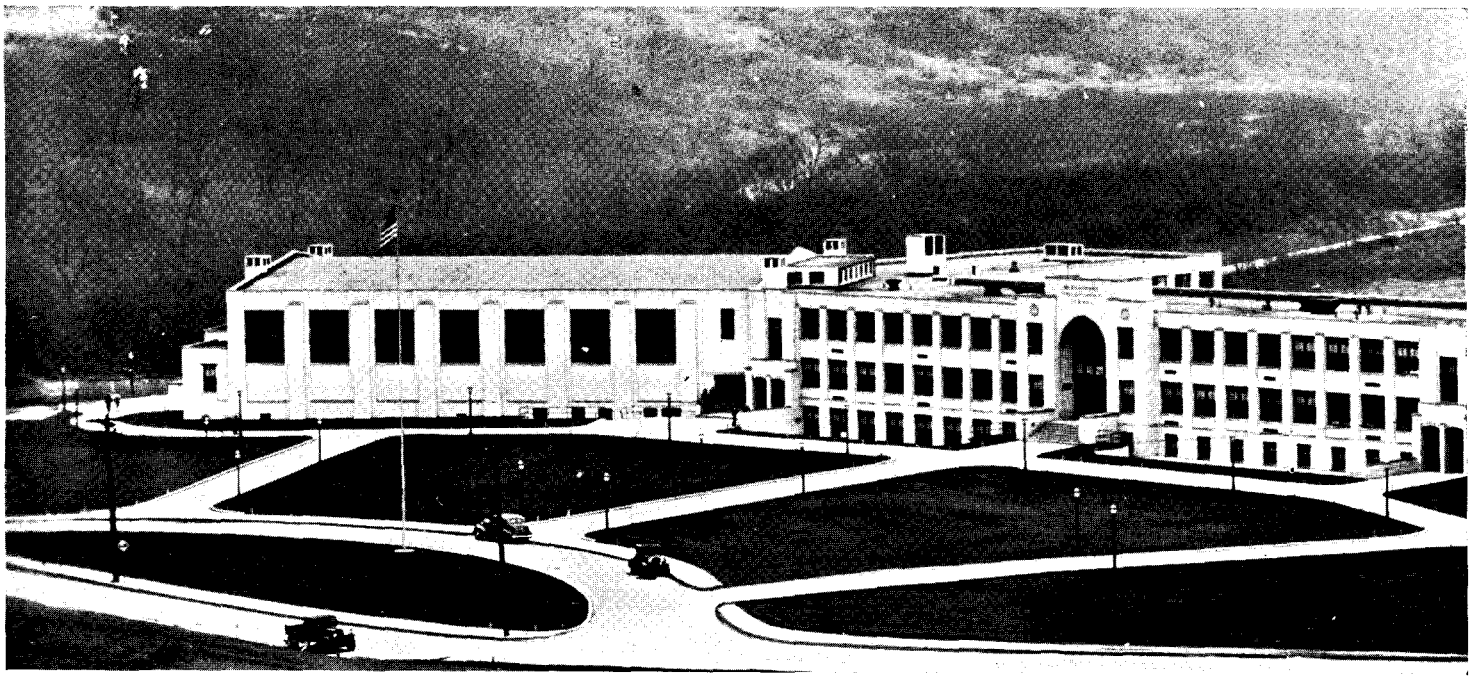


SECOND FLOOR

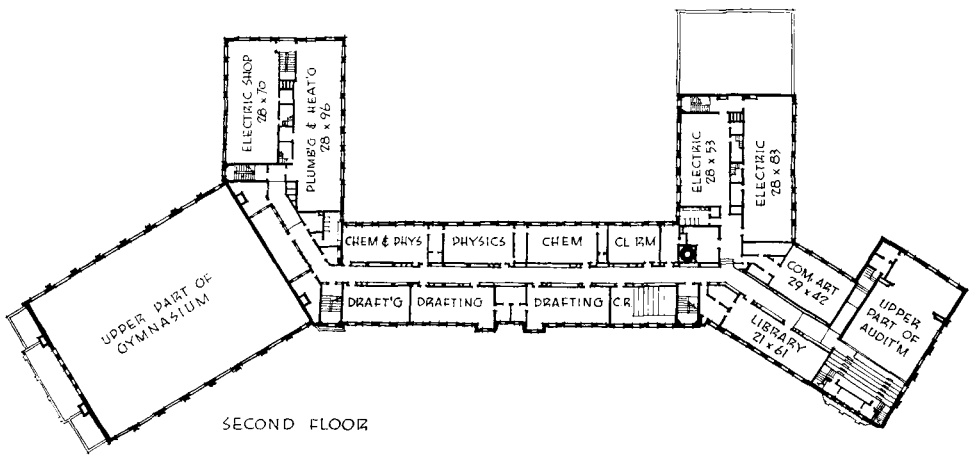
ENTRANCE, exterior and interior; note the so concrete stair rail and the well-lighted landin

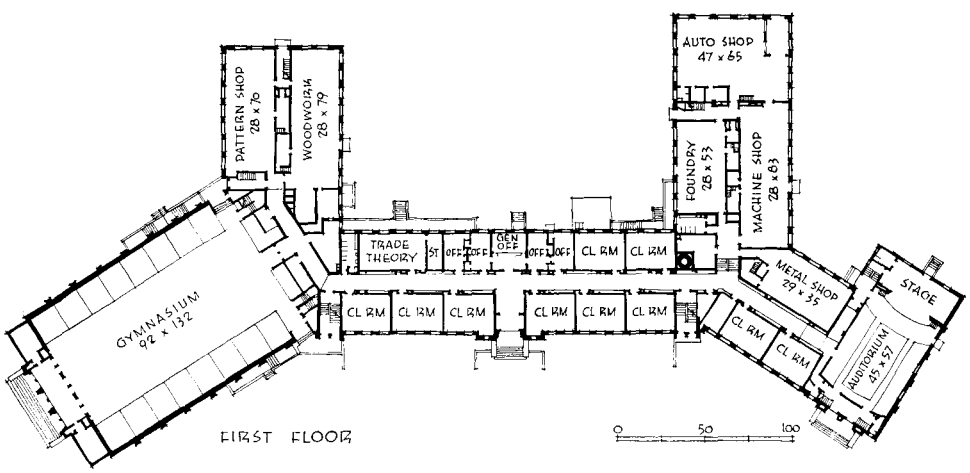
TYPICAL CLASSROOM

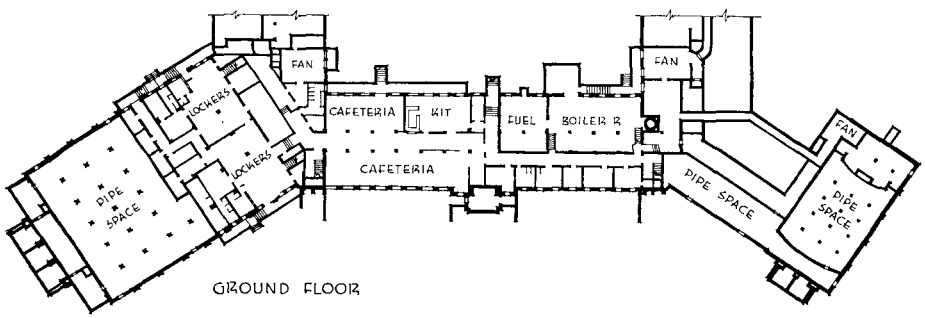
AUDITORIUM has exposed, rigid, concrete framing



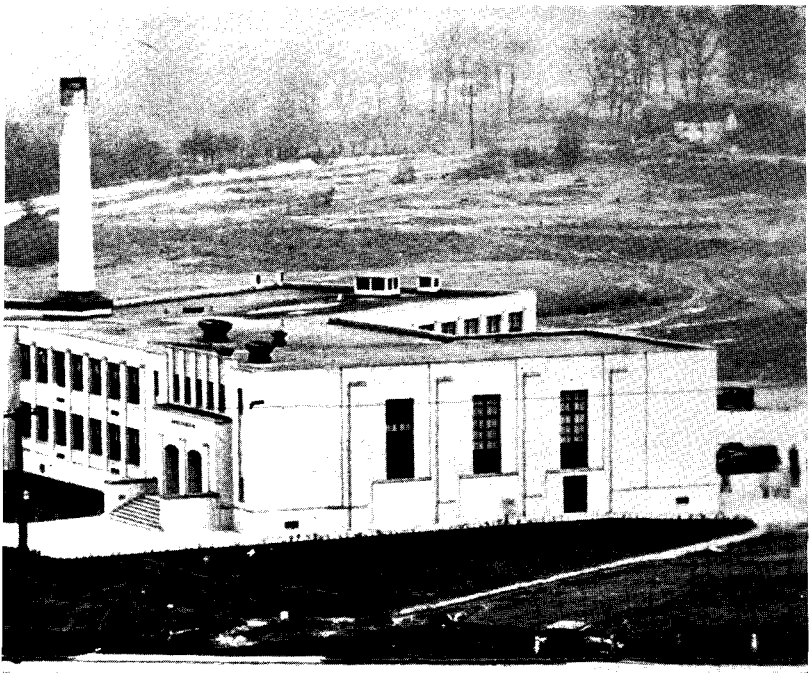
BUILT TO







Note in the plans that, although many of the shops are long, they are wider than the standard 21-ft. classroom. Also, the automobile shop, with natural light from three sides, has a shape which permits unusually efficient supervision by the instructor. Noteworthy feature is the use of ramps as well as stairs



TRAIN FOR LOCAL INDUSTRY

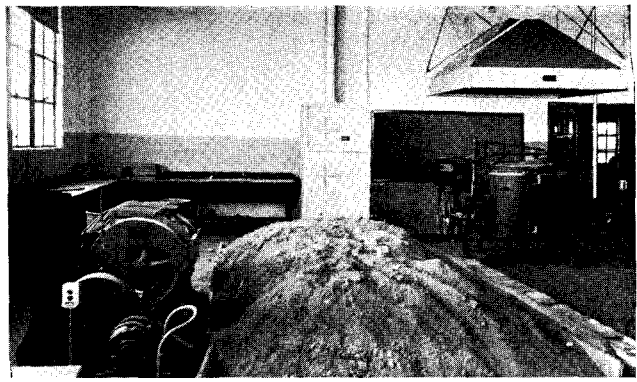
McKEESPORT VOCATIONAL SCHOOL, McKEESPORT, PA. CHARLES R. MOFFITT, ARCHITECT. This vocational school for 750 boys, all in the 10th, 11th, and 12th grades, provides for approximately 35 per cent of the total male population of the city's high schools. In addition, 350 9th-year students are enrolled for preparatory courses. These figures indicate the expansion of the city's vocational training system from an initial enrollment of 23 in 1921.

Courses offered in the new school include auto mechanics, commercial art, drafting, various electrical trades, heating and plumbing, woodworking, patternmaking, and machine shop. Curricula are divided so that students devote 50 per cent of their time to shop work, 25 per cent to mathematics, etc., 25 per cent to academic subjects.

The building faces northwest on a 49-acre site at the edge of the city. Shops vary in size from 30 by 54 to 30 by 100 ft., with space provided in each shop for instructors' office, tool room, mezzanine storage space. Classrooms are 22 by 32 ft.; science rooms are 40 to 45 ft. long. Visual education room accommodates 64 students. The auditorium, which seats 640, has a completely equipped stage. Gymnasium, which can seat 2,000 for sporting events, is sub-divided into four units for classes.

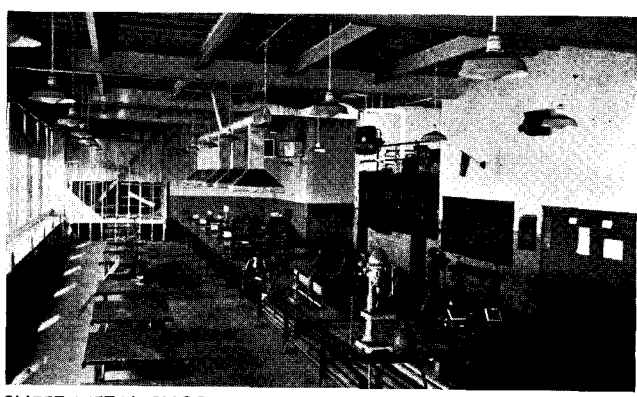
In spite of its size, the building is so designed that corridor lengths are held to a minimum. Gymnasium and auditorium may be used by the public independently of the main building. Shop wings are located to minimize noise and interference with classroom work. Shops and classrooms are well lighted.

Construction is of steel framing, with a precast concrete slab roof and brick exterior walls with Indiana limestone trim. Total cost, including land, building and equipment, was approximately $1,200,000.

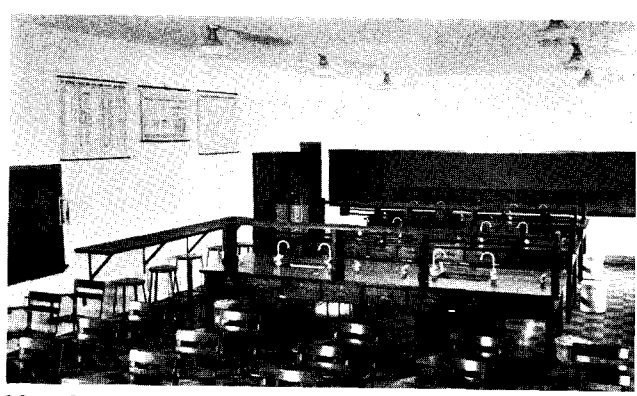


METALS FOUNDRY

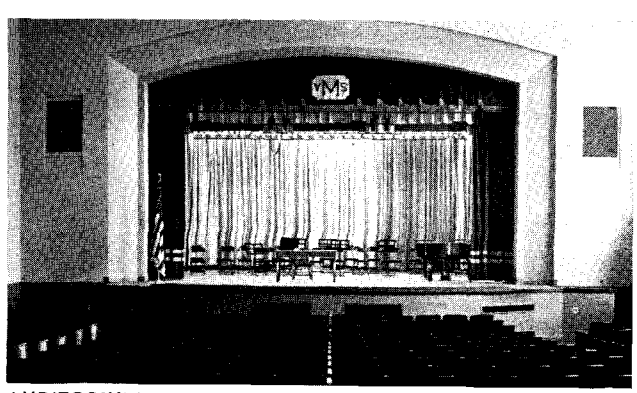
ELECTRICAL LABORATORY



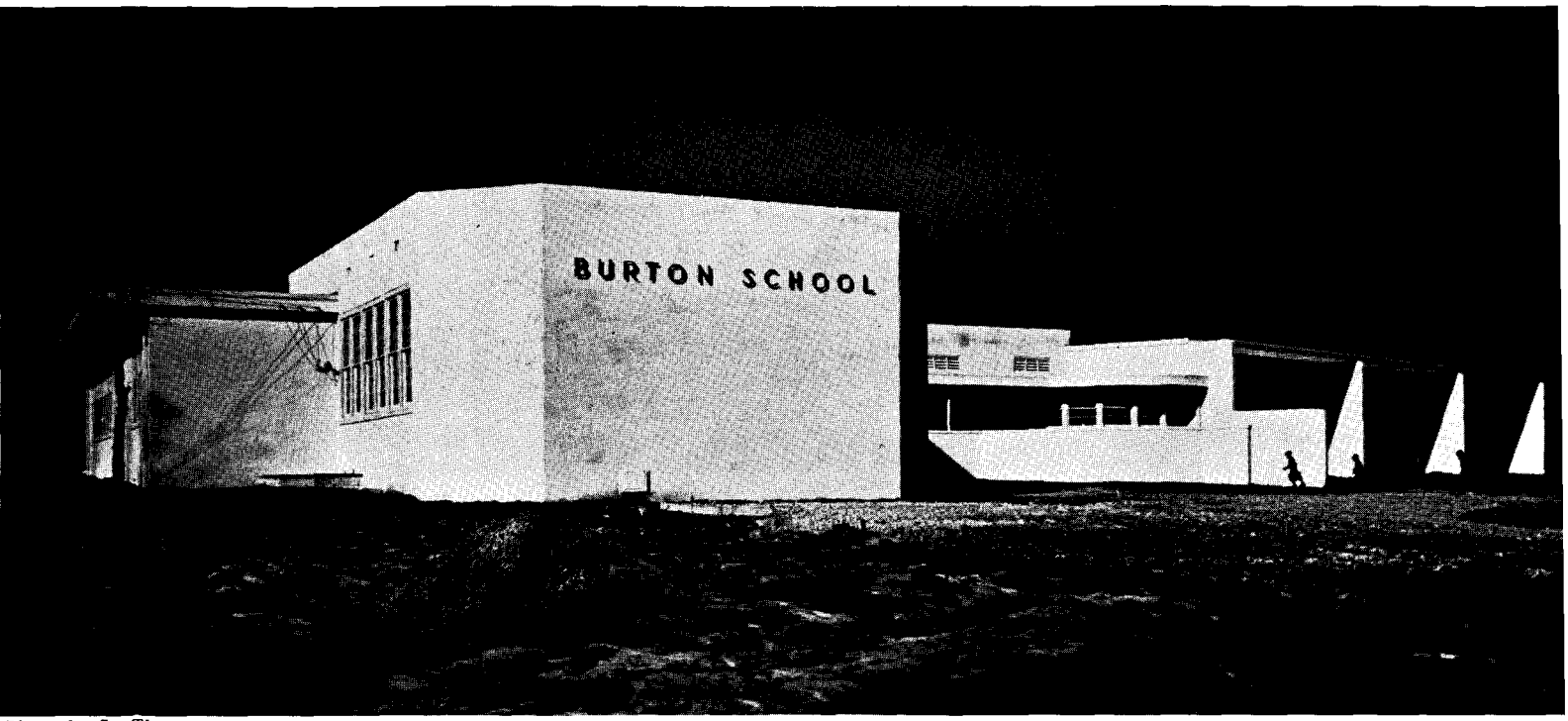
SHEET METAL SHOP



SCIENCE LABORATORY



AUDITORIUM



Photos by St. Thomas

WELL BUILT OF CONCRETE AND WOOD

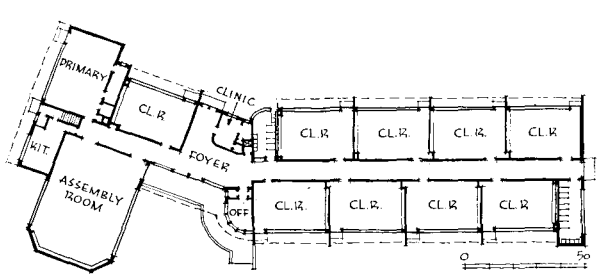
BURTON ELEMENTARY SCHOOL, DAVIDSON COUNTY, TENN. WARFIELD and KEEBLE, ARCHITECTS and ENGINEERS. Close cooperation between school board and architects here resulted in a thoroughly satisfactory, inexpensive building. As nearly as can be ascertained, this school cost 15 per cent less on a per-pupil basis than any other in the County program of seven schools—this in spite of the fact that its kitchen and cafeteria are completely above ground, a condition which did not obtain in the other six schools. The building is thoroughly functional, and every part was studied with an eye to economies of materials and labor.

Outstanding is the engineering of the "sunshade" along the north wing. Orientation of the building had to be precise to insure the sunshade's proper functioning. Advantage was taken of the fact that the sun is lower during the school year than in summer. Further details are shown overleaf.

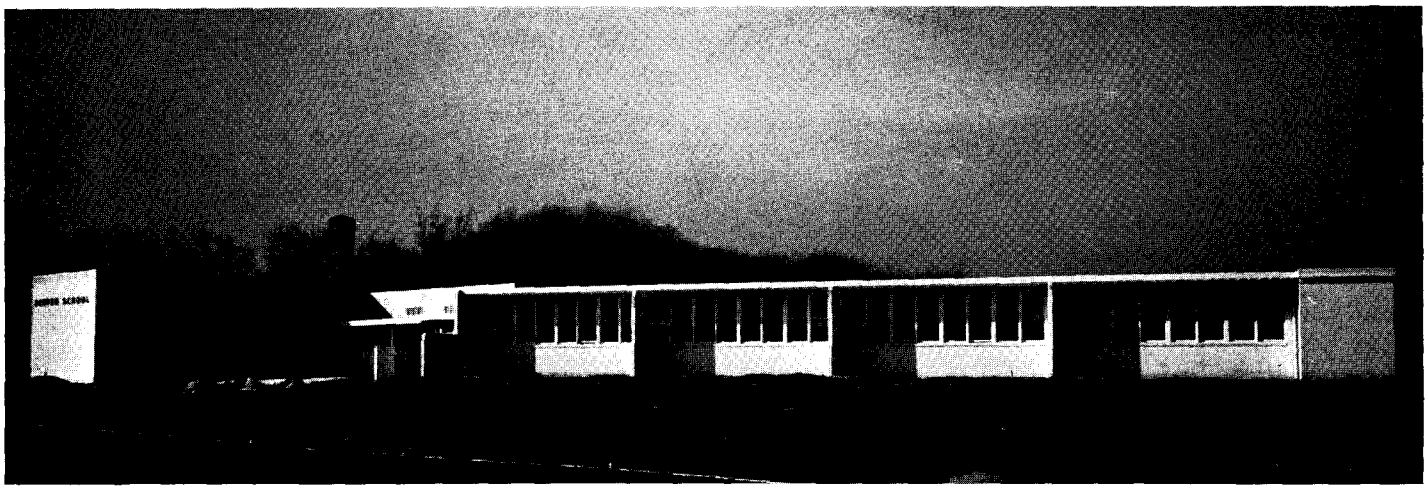
The corridor is skylighted in a manner which does not permit direct sunlight to penetrate. Cafeteria is ventilated through the furred corridor ceiling; classrooms are also vented into this space, as well as into their own insulated ceiling construction.

The combination library-cafeteria-auditorium has proved highly satisfactory, and is used also as a small gymnasium.

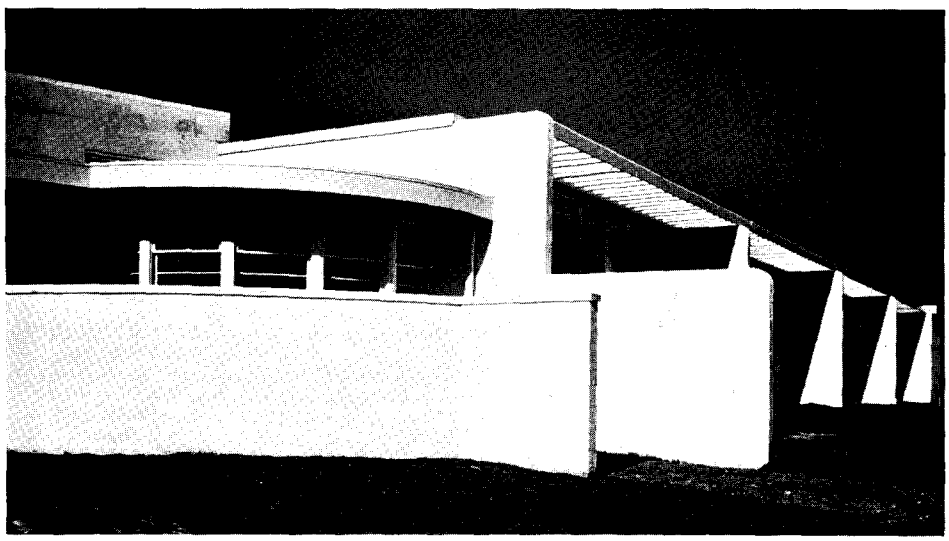
Construction is of concrete block bearing walls on concrete foundations and floor slab. Floors are covered with asphalt tile; roof is framed of wood. Ceilings in classrooms, corridors and assembly room are of low-density tile; offices, toilets and kitchen have plaster ceilings. Possible condensation on the concrete-block walls was combatted by furring them with the ceiling material. blackboard, and plywood wainscots—all necessary or desirable items in any case. Color scheme is based on the standard locker and equipment color—a dark green; the architects used a lighter shade of green, and white. Cowan Mill and Lumber Co. were the contractors.



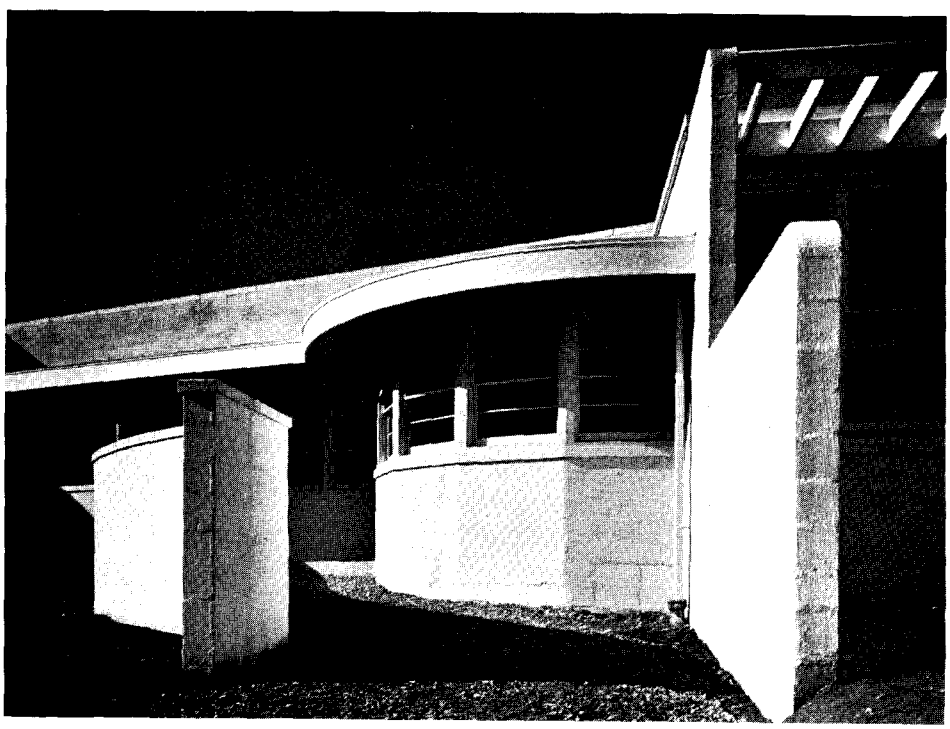
Note, in plan, the assembly room, which serves also as cafeteria, library, auditorium, gymnasium, and community room



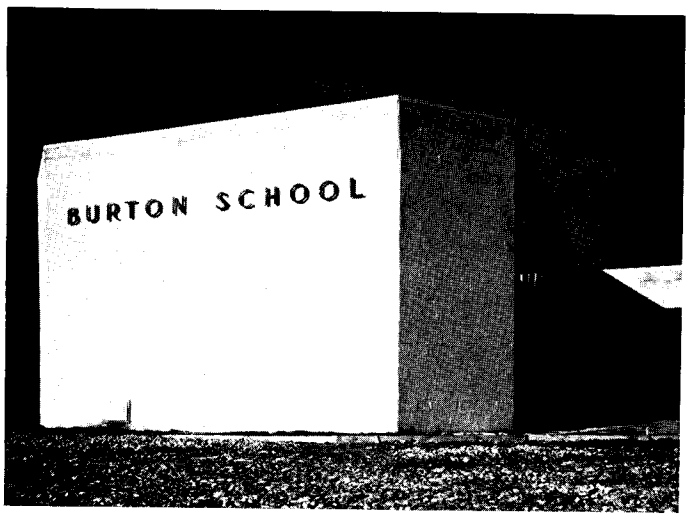
EAST AND WEST walls of classrooms have an unusually efficient "sunshade." Planting was not in place when building was photographed



WOOD SUNSHADE is supported by concrete block wingwalls, which have the added value of making possible a reduction in thickness of exterior classroom walls

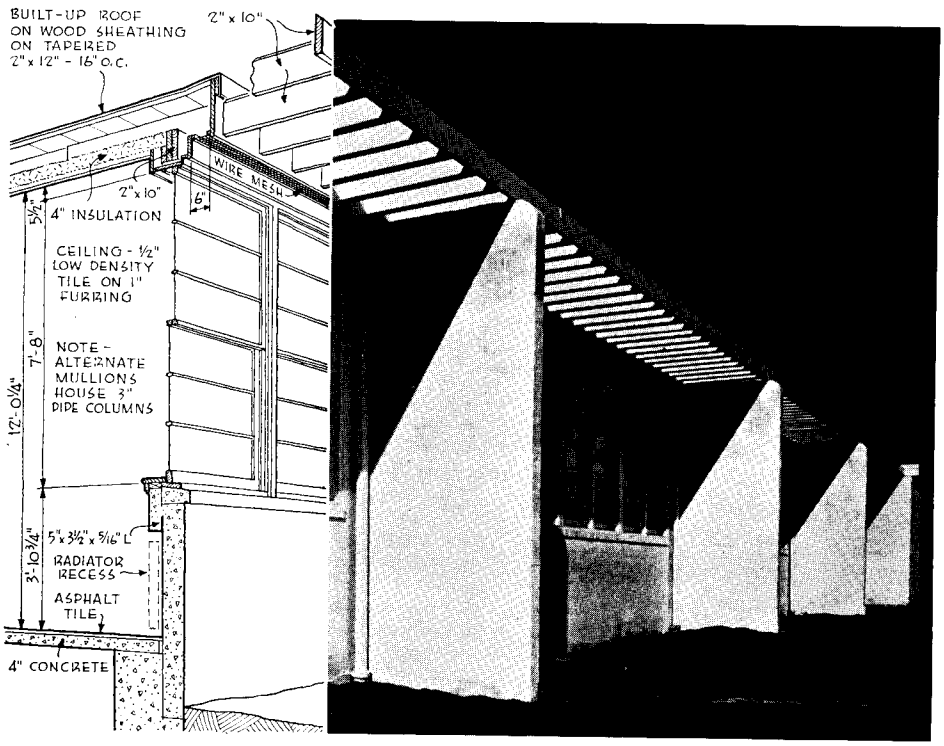


ROOFED TERRACE, with dwarf wall, serves as a protected public entrance, easily supervised from the multi-windowed office

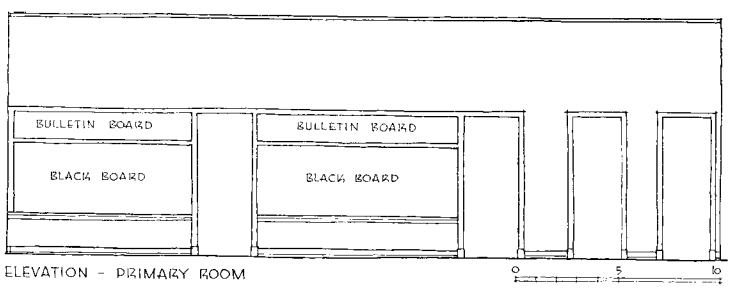


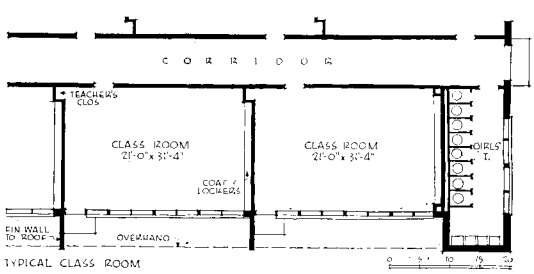
THE SUNSHADE DETAIL below overcomes the objection common to most devices of this type in that it bars almost no "indirect" light, yet eliminates almost entirely direct sunlight during school hours.

The Davidson County school board authorized all the experiments employed in this simple school, and are now enthusiastic about them. Results have been gratifying aesthetically as well as physically; in a community of strong "traditional" tendencies, architecturally speaking, the building seems thoroughly acceptable and well appreciated. Cost including fees was approximately 22 cents per cu. ft.



CONSTRUCTION detail above shows simplicity which effected economies. Exterior walls are concrete block





TYPICAL CLASSROOM plan and elevation offer further evidence of economical construction. Note also that each classroom has an outside door —a provision which makes possible full utilization of playgrounds, and somewhat nullifies the importance of a gymnasium

A NEW [illegible] IS FLYING!

THE NAVY "E" PENNANT

WE ARE HONORED . . . The United States Navy has honored our company and employees by awarding us the right to fly the Bureau of Ordnance Flag and the Navy "E" Pennant for excellence and timely performance of Navy contracts. We are keenly aware of the significance of this recognition and deeply appreciate the rare and signal honor which has been extended to us.

The Secretary of the Navy, Frank Knox, recently said "in the present defense program we've asked for miracles of industrial production and, what's more, we're getting them." The workers of the Mueller Brass Co., who have executed naval munitions contracts for the past 20 or 25 years, have now pledged themselves to continue their unceasing "all-out" efforts to help achieve the American "miracles of industrial production" which are so essential to the ultimate victory of our armed forces.

The men and women of this plant, who, a few short weeks ago were busily engaged in the manufacture of STREAMLINE solder type fittings and copper pipe—valves and fittings for mechanical refrigeration, and a host of other brass and copper products, are now devoting their full time, 24 hours a day, 7 days a week, to the production of Army and Navy requirements.

As Americans, this is now our first and most essential job and in it—

WE MUST NOT FAIL

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

Lead-Silver Solders

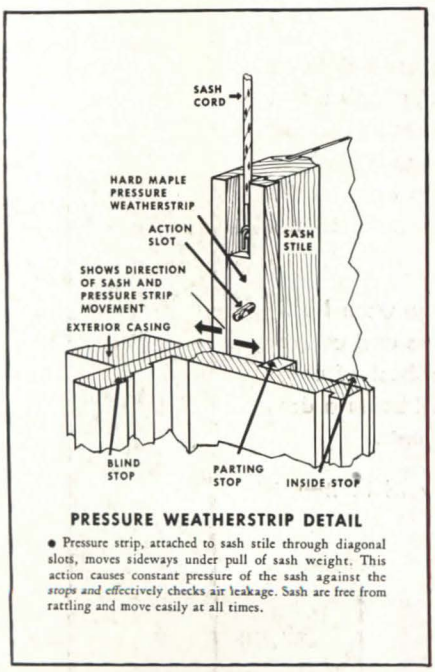
THE AMERICAN Silver Producers' Research Project reports that in the face of increasing curtailment of tin supplies from the Orient lead-silver solders containing no tin are finding increasing use. In suggesting the use of such solders it is pointed out that a lead-silver solder containing 2.5 per cent silver costs less than lead-tin solders in which the tin content is above 25 per cent. Much used tin-lead soft solders contain 50 per cent of tin. American Silver Producers' Research Project, 82 Fulton St., New York.

Expansion Joints-Asphalt, Fiber, Cork

ALL requirements of monolithic concrete construction, including industrial floors, sidewalks, pavements, etc., are said to be met by a line of asphalt, fiber and cork expansion joints. The asphalt joint is composed of asphalt, fiber and mineral fillers, formed into sheets and reinforced with a layer of felt on both sides. It possesses a high degree of compressibility. The fiber joint consists of a fiber board impregnated with a waterproof asphalt and seasoned. The cork joint, made from new live cork particles with a resinous binder, is produced under heat and pressure to retain inherent features of natural cork. Wide range of sizes and thicknesses. Keystone Asphalt Products Co., 43 E. Ohio St., Chicago, Ill.

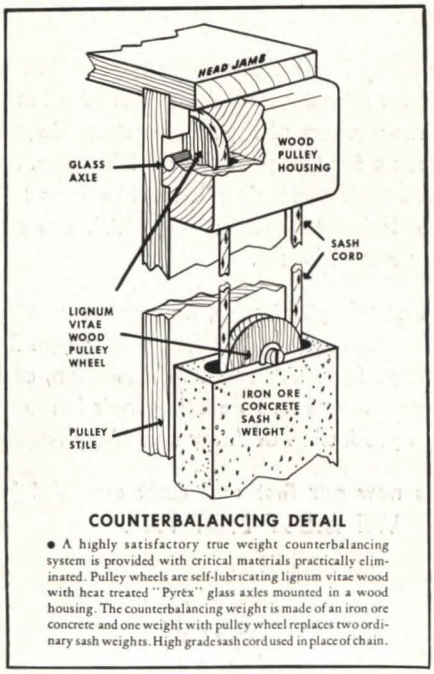
Through-Wall Flashing

A NEW through-wall flashing is manufactured from asphalt reinforced by cotton fibers, with wire mesh compressed between two layers of the membrane. It is claimed this makes a strong, tough, non-tearable and watertight material, flexible but stiff enough to hold the desired shape. The grids formed by the wire mesh cause the flashing to bond with the masonry. The coefficient of expansion is practically that of the masonry, which is said to eliminate tendency to creep or distort under temperature changes. Rolls of 50 lineal ft. in standard widths. Sandell Manufacturing Company Inc., 70 Phillips St., Watertown, Mass.



PRESSURE WEATHERSTRIP DETAIL

● Pressure strip, attached to sash stile through diagonal slots, moves sideways under pull of sash weight. This action causes constant pressure of the sash against the stops and effectively checks air leakage. Sash are free from rattling and move easily at all times.



COUNTERBALANCING DETAIL

● A highly satisfactory true weight counterbalancing system is provided with critical materials practically eliminated. Pulley wheels are self-lubricating lignum vitae wood with heat treated "Pyrex" glass axles mounted in a wood housing. The counterbalancing weight is made of an iron ore concrete and one weight with pulley wheel replaces two ordinary sash weights. High grade sash cord used in place of chain.

A NEW DOUBLE HUNG WINDOW UNIT that utilizes alternate materials. Product of Andersen Corporation, Bayport, Minn.

Fig. 1

Coating Makes Glass Shatterproof

PROTECTION against flying glass due to bomb blast concussions now comes in the form of water-white transparent liquid which, while it will not stop glass from fracturing, is claimed to keep broken glass in place. Tests have demonstrated the protection value of glass treated with this product compared with plain glass. The liquid, it is claimed, does not obstruct vision, nor prevent soap and water cleansing. It is removed with razor blade or solvents. Roxalin Flexible Finishes, Inc., Elizabeth, N. J. (See fig. 1.)

Blackout Materials

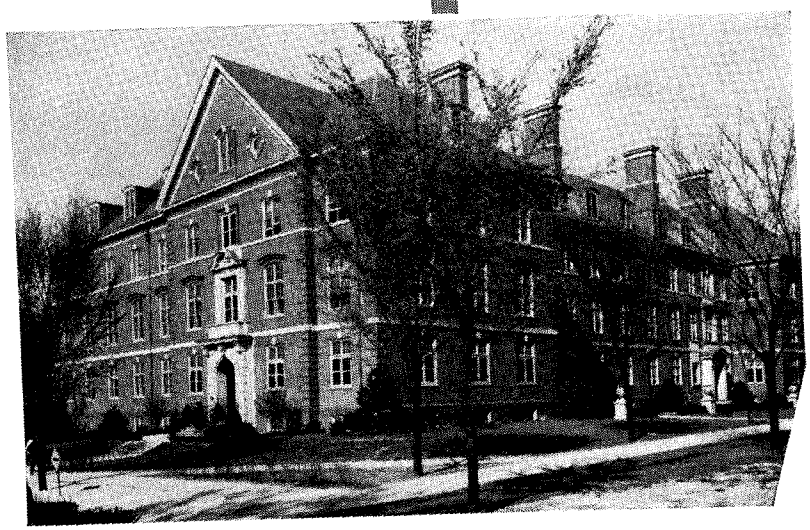
A BLACKOUT coating is provided which is said to be non-reflective and to insure complete light stoppage with one coat. Applied as a paint, the coating is recommended for inside or outside application, particularly for preventing light reflection on the outside surface of skylights. . . . Blackout boards of laminated asphaltic composition, cut to window size, are recommended for application for the inside of windows as protection against flying glass. . . . An exterior blackout treatment takes the form of a thick film of asphaltic coating in which is

(continued on page 84)

Waste steam provides Refrigeration for Air Conditioning—

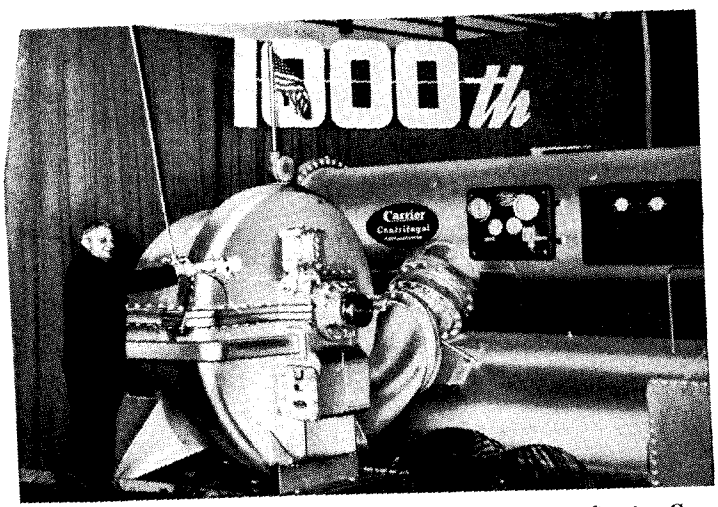
Carrier Centrifugal REFRIGERATION

GREGORY HALL of the University of Illinois,* extensively used for summer classes, is one of the first college buildings to be air conditioned. The new Illini Union Building,** social center of the University, is also air conditioned.



Increased use of air conditioning in the university and school field is fore-shadowed by installations at the University of Illinois and other colleges. The extremely low operating costs made possible by the Carrier Centrifugal Machine have been a major factor in enhancing plant investment by year round use of air conditioning in selected buildings.

Three Carrier Centrifugal Machines form a "central" cooling plant for Gregory Hall, the Illini Union and adjacent buildings. Refrigeration for these air conditioning installations is provided practically free. Exhaust steam from the University power plant is utilized directly to power the Carrier Centrifugal Machines.



PAST THE 1000TH MARK. Over 1000 Carrier Centrifugal Refrigerating Machines have been built to date . . . with capacities ranging from 100 to 1200 tons, with temperatures as low as minus 102 degrees F.

Low cost operation, however, is not the only reason for the choice of Carrier Centrifugal Refrigerating Machines. They provide 4 other great advantages:

1. **COMPACT SIZE.** Little space is required.
2. **FOR FLUCTUATING LOADS.** Carrier Centrifugal Machines automatically float on the load like an electric generator and supply varying demands for cooling.
3. **SAFETY.** Utilizing Carrene as refrigerant, the Carrier Centrifugal Machine is inherently safe.
4. **DEPENDABILITY.** Efficient design and few moving parts assure minimum attention and maintenance cost. The *first* Carrier Centrifugal Machine built in 1922 is still operating.

Carrier engineers work hand in hand, with architects in helping select equipment, perfecting new methods of installations, applying tested "short-cuts" that save time and money, thus assuring the success of the finished job.

CARRIER CORPORATION, SYRACUSE, N. Y.
WEATHERMAKERS TO THE WORLD

The Navy "E", one of the U. S. Navy's most coveted honors, has been awarded to CARRIER for excellence in war production.

**Architect*—Ernest L. Stouffer, University Architect
General Contractor—W. E. O'Neil Construction Co.
Air Conditioning Contractor—Robert Gordon, Inc.
***Architects*—Ernest L. Stouffer, University Architect
Howard L. Cheney, Consulting Architect
General Contractor—English Brothers
Air Conditioning Contractor—Phillips Getschow Co.

942

(continued from page 82)

embedded an asphaltic-saturated fabric membrane. This treatment, it is asserted, effects a complete blackout and renders glass shatterproof. . . . A tough blackout paper will serve for quick temporary repairs. . . . An exclusive camouflage system has also been developed. The Philip Carey Mfg. Co., Lockland, Cincinnati, Ohio.

Low-Cost Oil Furnaces

FOR HOMES of $6,000 or less, a new line of automatic oil furnaces is announced. Three models; for gravity air circulation; with humidifying pan and propeller type fan for forced circulation of air; with centrifugal fan, air filter and humidifying pan. A vaporizing high-low flame oil burner, controls and insulated green crinkle enamel cabinet are included. 60,000 Btu. Airtemp Division, Chrysler Corp., Dayton, Ohio.

Blackout Shade Equipment

BLACKOUT shades are now available which, it is claimed, permit no light whatever to escape from a building. The shade is retained in the vertical channels against wind and high explosive or bomb concussions by means of milled bronze balls clamped to the edges of the shades of artificial leather. Best adapted to vertical window openings of moderate size. Andel and Company, 5218 North Kedzie Ave., Chicago, Ill.

Floor Preservative

FOR CLEANING, coloring and preserving floors there is a new product which is said to withstand heavy traffic of industry, schools, etc., and to keep its color over long periods. On concrete it eliminates sanding, dusting and powdering. On wood it protects against splintering, cracking and scarring. Flexrock Company, 2300 Manning St., Philadelphia, Pa.

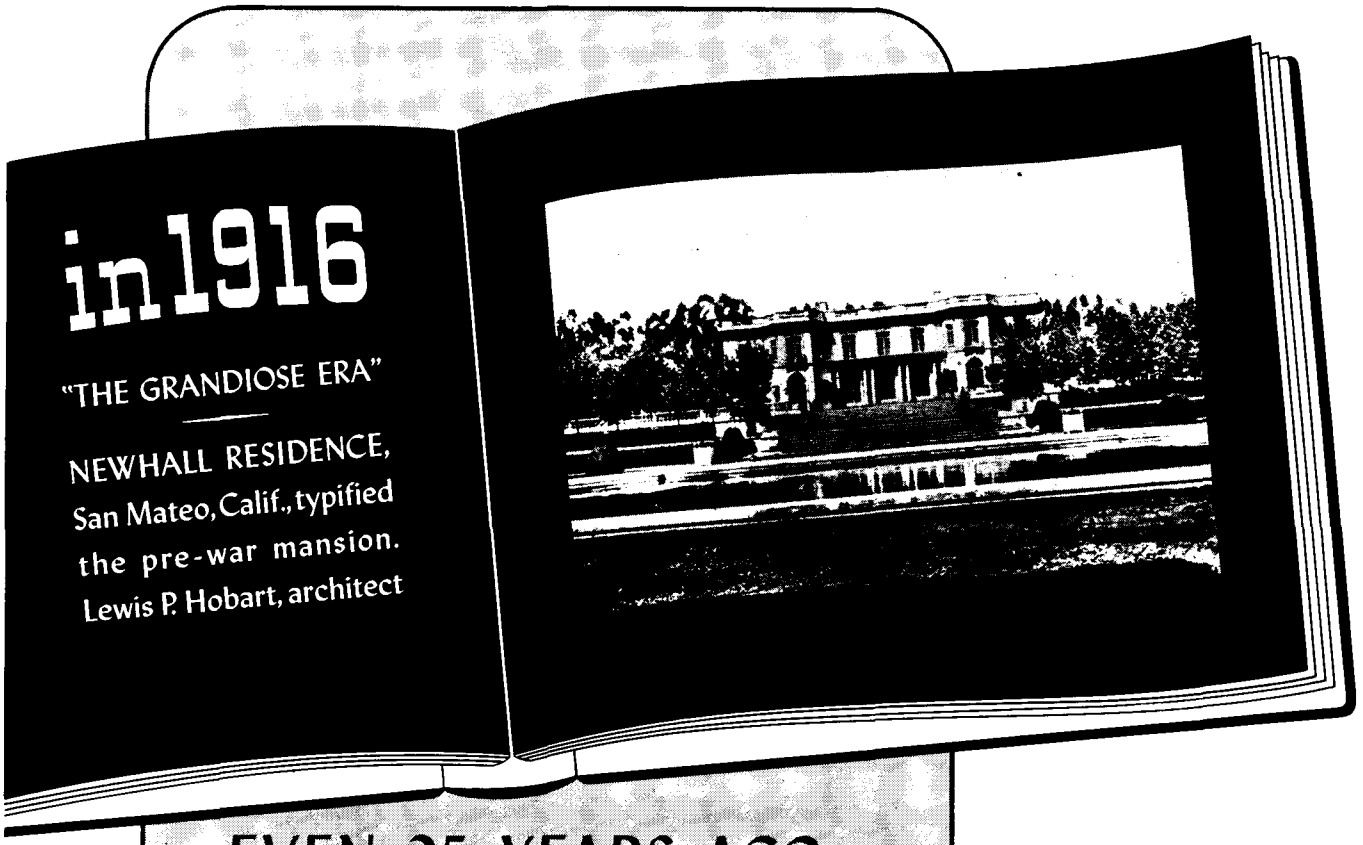
Whiteprint Machine

A FAST-PRINTING whiteprint machine turns out finished dry developed whiteprints of engineering drawings, etc., in less than two minutes. It requires less than 14 sq. ft. of floor space and is said to be easily installed in a drafting room or office. Accommodates materials up to 42 in. wide. Ozalid Products Division, General Aniline & Film Corporation, Johnson City, N. Y.

Blackout Paint

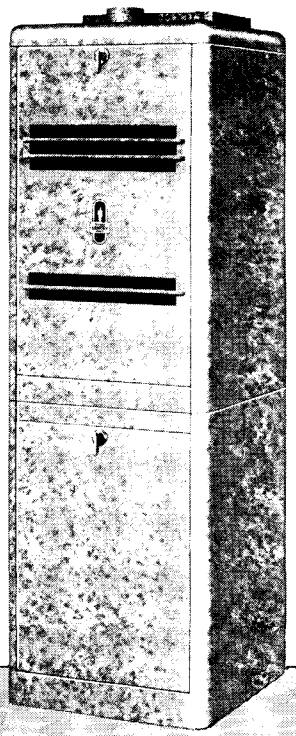
WATERPROOF, for indoor or outdoor use, is a paint that blacks out fluorescent and other lights. It resists heat up to 212° F. Hides approximately 500 sq. ft. to the gallon. Dries to touch in 15 minutes. Hilo Varnish Corp., 42-60 Stewart Ave., Brooklyn, N. Y.

(continued on page 86)



EVEN 25 YEARS AGO... ARCHITECTS PRAISED PAYNEHEAT

Like automobiles, today's gas heating equipment little resembles 1916 models. Yet even then PAYNE engineering was far advanced for the time . . . reliable and efficient beyond the Industry's standards. ☆ Through the years this leadership has won the confidence of America's leading architects — and has created the Nation's largest exclusive manufacturer of gas furnaces. ☆ Choose from 69 styles and sizes, all of which are detailed in Sweet's, Western States AEC and our convenient AIA file. Or see your PAYNEHEAT Contractor or Gas Company.



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

PAYNEHEAT

MORE THAN A QUARTER-CENTURY OF SPECIALIZATION

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

NEWS OF MATERIALS AND EQUIPMENT

(continued from page 84)

Breakfast Bar

A "BREAKFAST BAR," designed to take the place of a nook where space is limited, may be anchored by braces to ends and backs of base cabinets. Provides additional work space. Kitchen Maid Corp., Andrews, Ind.

Suspension-Type Unit Heater

A SUSPENSION-TYPE unit heater is announced for industrial and commercial buildings. The heater is available with steam or hot water coils. Adjustable louvres direct the discharge of heated air out and downward at any angle for coverage of large floor areas. A typical industrial installation is said to have shown that adequate heat is obtained as far away as 120 ft. in each direction from the heater, or a total of 240 ft. in an oblong area. Carrier Corporation, Syracuse, N. Y.

Rubber Swimming Pool Paint

AN alkali-proof swimming-pool paint made of pure rubber, without linseed oil, has been developed. The manufacturer claims toughness of film, waterproofness, resistance to weathering. The Truscon Laboratories, Caniff & G. T. R. R., Detroit, Mich.

Plastic Trims for Linoleum

PLASTIC TRIMS for linoleum installations have been developed, the new plastic parts to be supplied in the form of binding strip, cap strip, inside and outside corners and right and left end stops. Six colors. The manufacturer claims strength, ease of installation and durability. Armstrong Cork Company, Lancaster, Pa.

New Floor Finishing Product

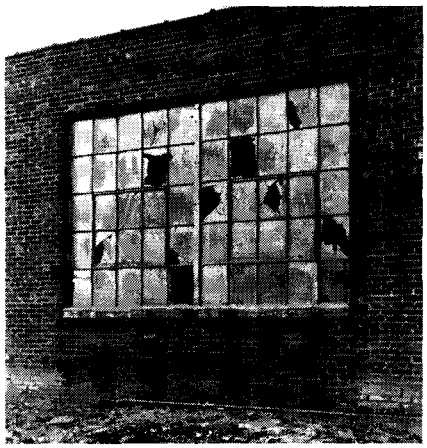
TIMELY in view of an order "freezing" shellac supplies is announcement of a new floor finishing product said to combine the sealing qualities of shellac and the filling properties of paste filler. The product can be applied to new or resanded floors and serves as a base for a gloss, dull or wax finish coat. O'Brien Varnish Company, South Bend, Ind.

Steel Grating

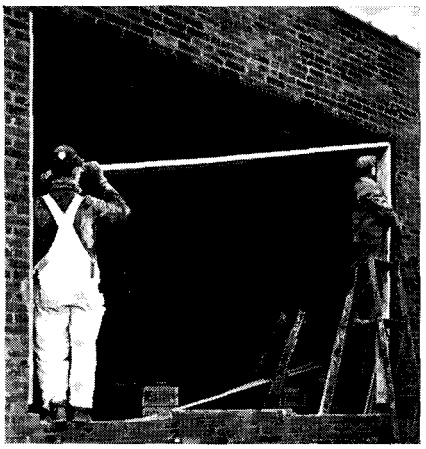
A WELDED STEEL GRATING is announced, made of hot rolled hexagonal steel bars placed at right angles on top of flat bracing bars set on edge and then electro-welded under high pressure. The resultant rectangular mesh is said to have capacity for heavy loads. Ease of installation is claimed and non-slip surface. William F. Klemp Co., 6611 S. Melvina Ave., Chicago, Ill.

250 Pounds of Metal Saved in This Single Opening By *New* INSULUX Technique for Sash Replacement

HOW TO REPLACE WINDOWS IN BRICK WALLS

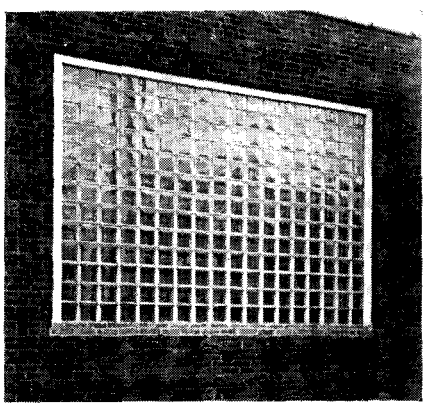


1. Knock out deteriorated window. This particular one releases valuable salvage for war — and INSULUX Glass Block panels step up plant efficiency.

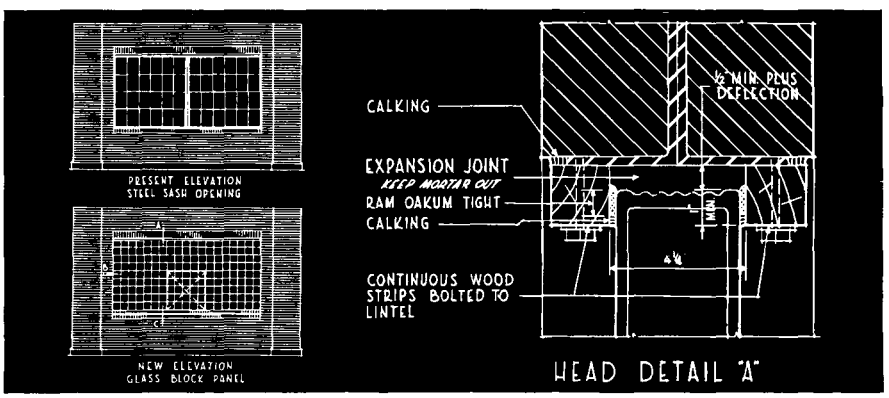


2. Build a chase in existing exterior walls, or as here, with wood blocking. Replace old sill with brick or concrete to obtain even bearing, if required.

3. Put glass block in place—any competent mason knows how. Corrugated bearing edges on INSULUX Block cut into the mortar, give the block a firmer grip.



4. The finished panel provides a high degree of light transmission, protects war work from prying eyes, makes maintenance savings that will pay dividends for years to come. This single opening saves 250 pounds of metal that can go directly into armament production.

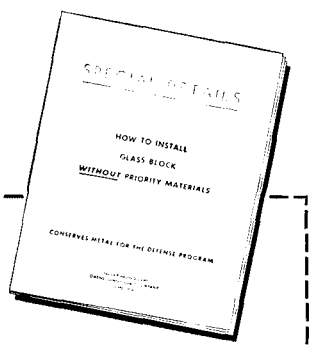


5. These details covering replacement of small windows in 8″ brick walls show the construction technique followed in the installation illustrated. A Texas textile mill has reported a saving of 9100 pounds of metal through an INSULUX replacement program that required only 300 pounds of steel in anchors and wall ties.

OWENS-ILLINOIS
INSULUX
Glass Block

PROMPT DELIVERY
SAVE PRIORITY METALS BY USING INSULUX
Every INSULUX 8-inch Glass Block used saves more than a pound of metal for national defense.

Free! This new 16-page book of special details shows how to install glass block panels without metal. It covers sash replacement and new construction. Write for your copy today.



OWENS-ILLINOIS GLASS COMPANY,
INSULUX Products Division, Dept. 28,
Ohio Building, Toledo, Ohio.
Gentlemen: Please send me, without obligation, your free book on "How to Install Glass Block *Without* Priority Materials."

Name_____

Address_____

City_____ State_____

NEWS FROM WASHINGTON

(*continued from page* 20)

where necessary the Defense Homes Corporation could condemn land for its construction activities where owners refuse to sell at what were deemed fair prices. This power of condemnation expires with the Second War Powers Act (S-2208). The bill has passed the Senate and has been reported by the House Banking and Currency Committee.

Inspection of books, records and other writings of any Navy contractor or subcontractor working on any contract of $100,000 or more is authorized in a bill introduced by Rep. Vinson of Georgia (HR 6540).

Labor

Although surface conditions on the labor front seem to be fairly stable, there are still hundreds of informal complaints charging that jurisdictional disputes are slowing down production. These have been discussed by the new War Labor Board. But action by the Administration has been postponed so as to maintain a seeming labor peace. But underneath, the situation is seething. Thurman Arnold appears to have been given a wedge to start a new attack against what he has deemed the illegitimate activities of unions. (Such as the jurisdictional tie-up). In the Columbia River Packers Association case, decided by the Supreme Court early in February, the Court allowed a private individual to enjoin union activities because it said that the activities were not a legitimate union. It allowed this injunction under the Anti-Trust laws. It appears that the decision somewhat modified the Hutcheson case which had stymied Arnold's previous drive against union hampering of the building industry.

Change in Title 6

The Federal Housing Administration has prepared changes in its Title VI, which deals with the emergency housing program for war workers. Principal points which the FHA is proposing for change are liberalizing amendments changing the amount of mortgage insurance restrictions. A new section drafted by the FHA and added to Title VI would permit insurance on loans up to 90 per cent of the value of rental housing projects of $5,000,000 or less. This addition would be applicable only to limited dividend corporations, however, in order to insure against profiteering and substandard workmanship. A second change which FHA is going to propose would raise the limit on single family dwellings from the present $4,000 insurable loan to a $5,400 insurable loan on a $6,000 home. In other words, this would make a 90 per cent loan possible on a $6,000 home. Corresponding increases in the coverage of Title VI for 2-, 3-, or 4-family houses would also be put into effect by this change in Title VI procedure.

FHA is also going to seek an increase in volume of insurance which it can handle under Title VI to $1 billion from the present allowable figure of $300,000,000.

Probably the most important change proposed in the amendment to Title VI is to strike out the present provision which necessitates that construction of a project or home be of "economic soundness" before the FHA could insure the loan. This will be changed, if FHA gets the approval of Congress, to language which provides a virtual blank check to the Administrator in that all he will have to do is make a declaration that in view of the war emergency the project is acceptable. The amendment would also extend to July 1, 1943 the applicability of Title VI.

These proposed changes are being looked over by the legal staff of the Federal Loan Agency and are expected, at this writing, to be sent up to the House Banking and Currency Committee within a few weeks.

Building increase in 1941

Private builders operating under the FHA program produced more than 170,000 new small homes during 1941 in war industry areas designated by the President. The FHA announces that in many instances private building activity under the FHA program responded with increases ranging from 50 per cent to

(*continued on page* 90)

Still making news

AMONG ARCHITECTS AND ENGINEERS!

Get this latest edition of Toncan Iron Pipe news. Forty-eight pages of editorial and pictorial facts about the advantages of Toncan Iron Pipe—from its qualities as an open-hearth iron to its long life of service under severe corrosive conditions.

Read these authentic facts about Toncan Iron Pipe—why it is made from *open-hearth iron, not* open-hearth *steel*—what this adds to its *rust-resistance,* its easy workability—what *molybdenum* contributes to its grain structure, its uniformity—why Toncan Iron has *twice as much copper* as the finest copper-bearing steel pipe—why this *alloyed* open-hearth iron ranks *first* in corrosion-resistance among all ferrous metals in its price class—and finally, that as an open-hearth iron, copper-molybdenum pipe is included in Federal Pipe Specification WW-P-403a.

When you know these facts—and get them *straight* from a producer of carbon steel, copper-bearing steel and alloy iron pipe—you'll see how you can add to the value of your service, by specifying Toncan Iron Pipe.

Write for a copy of the Toncan Iron Pipe book, 333-R, now. In the meantime, see Sweet's 27/3 on pipe—13/6 on sheets—23/5 on Steel and Tubes —9/1 and 21/2 on Berger—15/18 on Truscon.

REPUBLIC STEEL CORPORATION
General Offices: Cleveland, Ohio

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

REPUBLIC
Toncan Iron PIPE

REPUBLIC STEEL CONSTRUCTION FOR VICTORY

Reg. U. S. Pat. Off.

An alloy of refined open-hearth iron, copper and molybdenum—*that grows old slowly*

(continued from page 88)

more than 600 per cent over the 1940 levels. It is also pointed out by FHA that the 170,000 homes were provided without expenditure of Government funds. Fees and premiums paid by the public in return for FHA loan insurance were sufficient to meet all FHA operating expenses and in addition to provide a substantial reserve against possible future insurance losses.

Management cost reduction

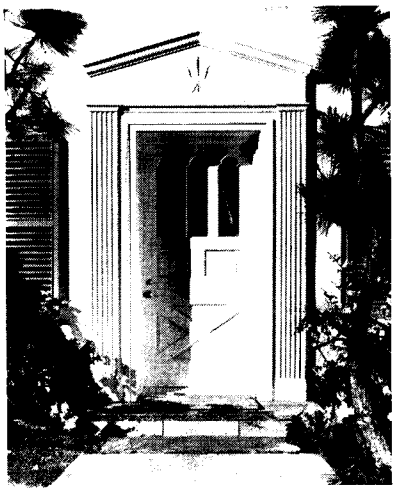
Another Government effort to speed up the necessary housing for war workers is a new plan being tried out in Arizona under sponsorship of the USHA to cut management costs. In the past, it has been found that small projects—and relatively small projects are required in increasing numbers due to the spreading out of war production contracts—require almost as much overhead management expense as projects two or three times as large.

Under a cooperative plan being tried in Arizona a single executive director will serve not only one large city housing authority, but several smaller ones as well. This central direction will provide the smaller housing authorities with assistance which they could not afford otherwise. The Phoenix Housing Authority, having wide experience in the construction and operation of three low-rent housing projects, will be joined by a group of housing authorities representing Buckeye, Flagstaff, Glendale, Holbrook, and Mesa, each of which has a population of less than 7,000. These five small Authorities have formed the Arizona Associated Housing Authority and have appointed one representative apiece to sit on its governing board. The board delegates powers and duties to a central office staff which will handle the functions common to all five including the maintaining of accounts, preparing reports, requisitioning supplies, handling correspondence, and similar necessary office work. This central office will be managed by one person acting as Secretary for each of the five Authorities. Each Authority will bear a share of the expenses in proportion to the size of its housing program. During the construction period each will contribute $3.13 per month for the four-man central staff and for other expenses. After the homes are occupied, each Authority's contribution will be reduced to $1.35. The Arizona projects are being designed so that most of the maintenance work can be done by tenants. Only one employee will be hired for each project, to collect the rents, to assist tenants with organization, and to report the need for repairs. The Authorities are planning projects which include from 28 to 56 homes.

Extra Value—Low Cost

In Stock Residential Woodwork

Here's the woodwork to help you make small homes attractive!



One of twenty-five Curtis stock entrances —Design C-1729. Low priced.

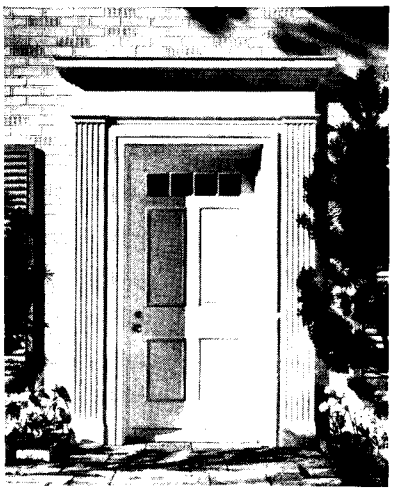
Today's small homes need true architectural beauty no matter what their size or price! That's a good way to protect their value!

Curtis has your answer—stock architectural woodwork . . . a complete line of entrances, doors, mantels, china cabinets, kitchen units, stairways, to suit the style of any home and the pocketbook of its owner. This woodwork is *extra value* at *low cost!*

Designed by some of America's foremost architects, Curtis Woodwork helps answer your design problems economically and quickly. For this is *stock* woodwork. Your Curtis dealer has it when you need it!

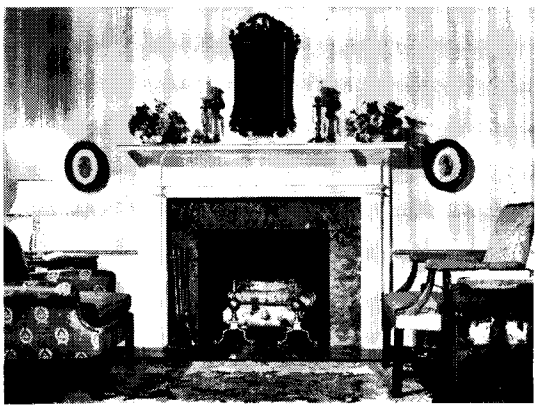
With Curtis Woodwork you can answer your woodwork requirements on every new job, large or small—on remodeling, too.

See for yourself. Ask your Curtis dealer for illustrated catalog and architectural details. Or mail the coupon below for literature.

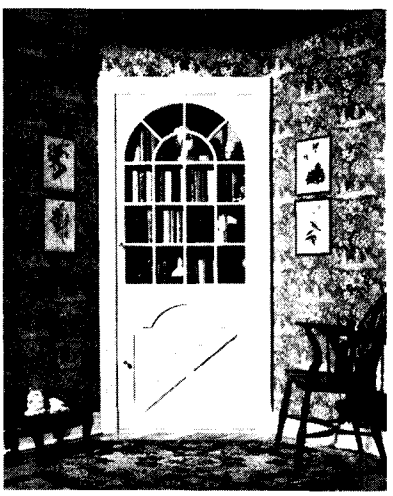


Distinctive Curtis doorway for modest priced homes. Design C-1728.

Inexpensive Curtis china cabinet to make any dining room charming. Design C-6521.



One of the most popular mantels in the Curtis line—Design C-6055.



Curtis corner cabinets are often used for bookcases—with or without glass door. Design C-6503.

1866

CURTIS WOODWORK

CURTIS WOODWORK IS SOLD BY RELIABLE DEALERS EVERYWHERE

CURTIS COMPANIES SERVICE BUREAU
Dept. AR-3W, Curtis Bldg., Clinton, Iowa

Please send me literature on Curtis stock architectural woodwork.

Name.....

Address.....

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

WASHINGTON DIRECTORY

(*continued from page 39*)

HOME OWNERS' LOAN CORPORATION
101 Indiana Avenue, Room 216
John Fahey (Chairman, Federal Home Loan Bank Administration)
Phone: National 5812

NATIONAL HOUSING AGENCY (NHA)
John B. Blandford, Jr., Administrator
(Address not decided at time of publication)

NHA—Defense Homes Corporation
811 Vermont Avenue, N. W.
George Williams
W. C. Costello
Phone: District 4911

NHA—Federal Housing Administration
Vermont Avenue and K. Street, N. W.
Abner H. Ferguson
Eugene H. Klaber, Director of Architecture
Howard Vermilya, Director, Technical Division

NHA—Mutual Ownership Division
Division of Defense Housing
North Interior Building
F. and 18th Streets
Colonel Lawrence Westbrook
Phone: Republic 7337

NHA—Rural Housing
North Interior Building
F. and 18th Streets
Ralph J. Nedwed
Phone: Republic 7337

NATIONAL RESOURCES PLANNING BOARD
North Interior Building
18th and F. Streets
Frederick A. Delano
Charles W. Eliot
Phone: Republic 7337

NAVY DEPARTMENT
Civilian Appointments (field, inspectors, superintendents, etc.)

Bureau of Yards & Docks
Navy Building, Room 2411
Carl F. Culdell
Phone: Republic 7400

Navy Appointments (reserve officers and others seeking commissions)

Bureau of Yards and Docks
Navy Building, Room 3434
Lt. Cmm. J. R. Perry
Lt. Comm. J. S. Seister
Ensign J. R. Braheney
Phone: Republic 7400

PUBLIC HOUSING AUTHORITY
North Interior Building, Room 6331
Leon Keyserling, Acting Commissioner
Phone: Republic 7337

PUBLIC WORKS RESERVE
Washington Auditorium
19th and New York Avenue
Albert F. La Spina, Chief
Phone: District 2310

WAR DEPARTMENT
Defense Projects (Professional Services)

Construction Division
Corps of Engineers
Railroad Retirement Building, Room 1086
4th and D. Streets, S. W.

Construction Advisory Committee:
Major Gen. William D. Connor
F. I. C. Dresser
Alonzo J. Hammond
Forrest S. Harvey
R. H. Tatlow III
Phone: Republic 6700

WAR PRODUCTION BOARD
Housing Priorities Branch
Temporary E. Building
6th and Adams Drive, S. W.
Sullivan W. Jones, Chief
Phone: Republic 7500

TRENDS IN BRIEF

(Continued from page 22)

fessional life seemed to suffer almost an irrecoverable eclipse. And matters were not improved by the reservation age of architects. At that time the age was 30, and this meant that those above this age limit who wanted to get into uniform couldn't. And the result was that they were left to kick their heels for many wasteful months, without a job in sight and without having the gratification of serving in the armed forces. But eventually when things began to level out many architects were able to reorient themselves successfully, and I hope to quote a typical case or two in later dispatches.

* * *

The only group of architects who had no such problems to contend with were those employed in the Government and Local Authority offices. Their problems were of quite a different order, for like all civil servants and public officials they acted as shock troops in the great switch-over from peace to wartime conditions, and in the process some of them found themselves in at the birth pangs of entirely new organizations which were completely outside their normal activities, but in which they soon found their native talents as coordinators could be adopted.

The best example I know of this occurred here in London and it was connected with the operational side of Civil Defense. One of the ARP services handed over to the London County Council to organize and control in London was the Rescue Service, and under the Council's Chief Architect (Mr. Frederick Hiorns, who held the appointment at the beginning of the war has since retired and is now succeeded by Mr. J. H. Forshaw) the service has developed into a fine arm of Civil Defense. But this has not been brought about without much hard work and some clear thinking about an original problem on the part of the Chief Architect's staff.

A point about the organization which is illustrative of this view is the ease with which the framework of the new service has slipped over the existing statutory framework of the County of London. To explain, London is made up of a number of independent boroughs and to each of these boroughs the London County Council appoints an officer called a District Surveyor whose job is to administer the Council's acts and regulations, and who has statutory powers to condemn buildings and order their pulling down if they are in a dangerous condition or do not comply with the regulations.

Now in the Rescue Service these District Surveyors are key men, inasmuch as they are in sole charge of the service in their respective boroughs, and in this capacity the advantage of having statutory powers under the Council's acts and regulations is apparent. Buildings are bombed and if the damage done is such that the building is dangerous to the public the Rescue Officer has power, under the Government's Civil Defense Regulations, to order the dangerous parts to be pulled down. What is not covered by these regulations is the case of a building only indirectly

(Continued on page 94)

TRENDS IN BRIEF

(*continued from page 93*)

affected by the bombing, and this is where the Rescue Officer doffs his official Rescue helmet and resumes his old role of District Surveyor. He is able to issue instructions for any parts of such buildings to be demolished or shored up as he thinks fit. The system works smoothly and is a credit to its creators.

* * *

My space is gone and so the story of the inner workings of that remarkable organization will have to be left for some other time, but there you have a story that has in it a warm, human element. How qualified architects were suddenly whisked away from the handling of colossal building programs to the handling of the very rough stuff of humanity. How together those architects and men marched towards the great aerial bombardments of the summer and winter 1940. And how they contributed to that performance which astounded the world.

You shall have that story in one of these dispatches.

★

MINISTRY OF HEALTH LOANS

Loans sanctioned during the quarter ended September 30, 1941, to Local Authorities in England and Wales.

	£
HOUSING	138,567
MUNICIPAL SERVICES (including clinics, sanatoria and mental hospitals)	274,527
SWIMMING POOLS, playing fields, recreation grounds, open spaces, etc.	26,766
WATER SUPPLY	155,096
DISPOSAL OF WASTE PRODUCTS (Sewerage and sewage disposal and refuse destruction)	69,342
EDUCATION SERVICES (including libraries and museums)	342,399
AIR RAID PRECAUTIONS	312,573
ROADS AND BRIDGES (including Private Street Works)	123,684
OTHER SERVICES	86,268
Total	£1,529,222

BUILDING "essential to civilian health and welfare" in England receives support from the British Ministry of Health. Table taken from "The Architect and Building News"

Correction

A LETTER from Turpin C. Bannister, who prepared the survey "Architectural Development of the Northeastern States," in our June, 1941, issue, corrects our statement of credit to Carl Feiss for the plan of Wiscasset, Me., on page 65. The plan was drawn by Frederick R. Stevenson of the Edinburgh College of Art, Scotland, and of Sheffield University, England, based on measurements which he himself took.

AT THE NEW WASHINGTON NATIONAL AIRPORT

GLASS SELLS THE DRAMA OF AIR TRAVEL

Magnificent Vision, Streamlined Beauty Achieved by Dramatic Use of Plate Glass

● All the fascinating activities of Washington's great new airport are on view for passengers and visitors alike. Thus interest in air travel is focused and intensified for thousands of present and prospective air travelers in the United States.

Through the broad sweep of Libbey·Owens·Ford plate glass windows and partitions, arrival and departure of airliners is clearly visible. Inside the terminal Tuf-Flex glass doors provide an uninterrupted view, lend sparkling modern beauty. Other glass applications specified by Architect Howard L. Cheney for one of the world's greatest air terminals include Tuf-Flex bannisters and railings.

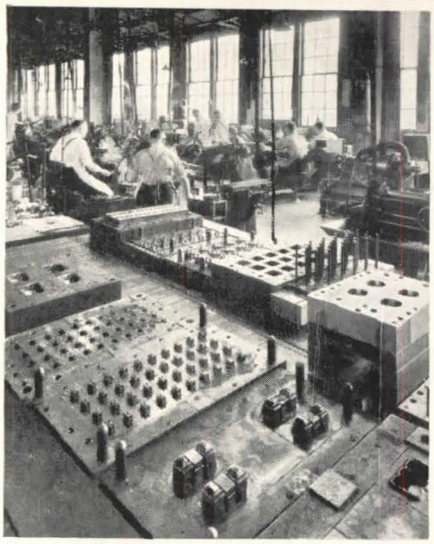
In the great new field of airport design, the Washington air terminal forecasts the important role that plate glass will play. For helpful information on new types and uses of plate glass write Libbey·Owens·Ford Glass Company, 1325 Nicholas Bldg., Toledo, Ohio.

Above: All-glass doors of TUF-FLEX, made by Libbey·Owens·Ford, provide a full view of the passenger concourse.

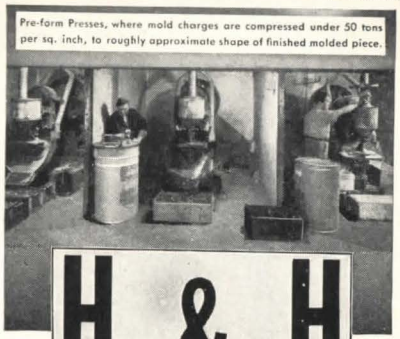
●

Below: Banisters, railings and partitions of TUF-FLEX glass lend sparkling beauty and provide clear visibility.

LIBBEY·OWENS·FORD
Quality *Flat Glass* Products



Above: General Tool Room, with molds in foreground. The hardened steel molds, ground and polished, are subjected to great pressure in molding.



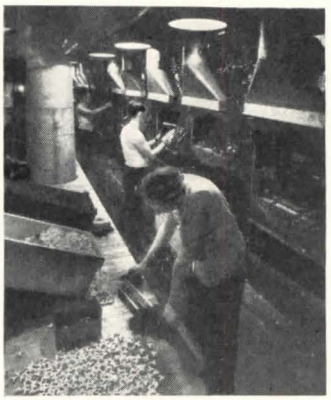
Pre-form Presses, where mold charges are compressed under 50 tons per sq. inch, to roughly approximate shape of finished molded piece.

H & H BAKELITE PLANT

Semi-automatic Hydraulic Presses, for compression molding. Mold is heated by steam and material hydraulically compressed, being "set" into a hard plastic.

Hydraulic Presses making wall plates. These machines apply a pressure of 160 tons per sq. inch, and produce 15 plates on one closing of the molds.

Hydraulic Pressing of panel units and large circuit breakers. A single panel unit requires application of 100 tons pressure, using combination of powder and pre-forms.



Air-compressed Semi-automatic Molding Presses, utilized for the shorter runs and particularly where extreme accuracy is required in the smaller parts.

Sanding Operation, where Bakelite pieces from the presses are cleaned of burrs and fins by manipulation on sand belts.

Automatic Cleaning Fixture for finishing wall plates. This machine removes used flash, left in holes during the pressing operation.

HERE, PLASTICS ARE MADE OF THE REQUISITE QUALITY FOR YOUR H & H LINES OF WIRING DEVICES AND MOTOR CONTROLS

This plant bears out the H & H policy of making in our own factories everything that could make H & H products *better.* From preforming the mold charge to the most complicated automatic compression molding, every operation is carried out by seasoned experts with highly efficient machinery and specialized equipment.

Exceptional facilities are necessary for so diversified a line as H & H, where a great variety of shapes and designs must be executed with extreme accuracy. For these Bakelite parts are the very *bases* of H & H Switches, Wiring Devices and motor control apparatus.

Thanks to the Bakelite plant, H & H products are built on durable, correctly-designed foundations, perfectly adapted to carry the load of hard usage and dependable performance. The quality of H & H Bakelite parts, like that of the sturdy mechanisms they support, is always under the coordinating control of the men responsible for the complete product. That responsibility *carries through* to your complete satisfaction with the product.

HART & HEGEMAN DIVISION

THE ARROW-HART & HEGEMAN ELECTRIC COMPANY, HARTFORD, CONN.

At left: Cleaning panel units. Cleaning and inspecting is by a group system. Several fixtures may be required for finishing one piece.

At right: Drilling circuit breakers. Holes of small diameter may be drilled more economically than molded under the pressing operation.

How about the Battle of 1952?

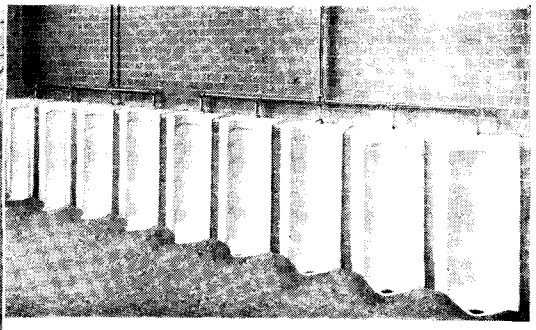
WE are all deeply concerned with the battle of 1942. Properly so, but we must not overlook the struggle that will confront the boys and girls in our schools today who will face the gigantic task of straightening out a war-torn world.

These boys and girls who will be fighting the battle of 1952 will need good minds, stout hearts and healthy bodies.

Gleaming washrooms, adequate shower baths, properly designed sanitary equipment—these are all important factors in preparing young America to face the future stoutly. When you specify Crane plumbing in your school plans, you are assuring your clients of sanitary equipment that will last—equipment that will help tomorrow's men and women win their battle.

Crane lavatories are made in vitreous china and porcelain enamel on cast iron in an ample selection of sizes and designs.

School showers are essential where athletics play a part in the school program. Available in a variety of styles.



The complete line of Crane urinals enables you to choose exactly the right style and type for each installation.

CRANE

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

PLUMBING • HEATING • PUMPS
VALVES • FITTINGS • PIPE

NATION-WIDE SERVICE THROUGH BRANCHES AND WHOLESALERS IN ALL MARKETS

★*Invest in America! Buy Defense Bonds and Stamps*

Who's Going to Step into their Shoes . . . . back at the office?

With new workers taking the place of men in uniform, America's millions of office machines become a priceless war-time asset

Maybe this happens in *your* office . . . work delayed because two workers need the same typewriter. Make sure immediately that you have enough machines to go 'round and that every one is in good operating condition. When good men leave *your* payroll for Uncle Sam's, office personnel will have to work harder than ever. Give them the facilities to make the extra effort count. Do away with typing bottlenecks.

"Yes, Mr. Atherton, these accounting machines are giving us just what we needed. Should have had them long ago. The new men? Oh, they're coming along all right. Right now, of course, they can't carry the load that Brown and Miller used to handle, but what we lose on that score these Underwood Elliott Fishers will more than make up. You should see how simple they make stock record control, order writing, billing . . . one short-cut after another, yet with complete accuracy!"

This young lady and her Underwood Payroll Machine are fighting on the side of the Allies. You see, the draft and enlistments greatly increased the work of the Payroll Department . . . so many new names to handle! And then several of that Department's best men marched off in uniform. Yet all hands are being paid promptly, accurately and with adequate, explanatory data. Thus, time and energy are being saved for the production of materials to back up the good men who left.

"Jim, do you think we're doing all right? After all, we haven't had much experience with this type of work." The operator of the Underwood Sundstrand Adding-Figuring Machine stops for a moment to answer: "I *know* we're doing all right and it's because of this little machine. Suppose we had to make all these calculations with no help except pencil and paper! We'd never be able to double check every step and be sure of our ground. Just wouldn't have enough time or energy left."

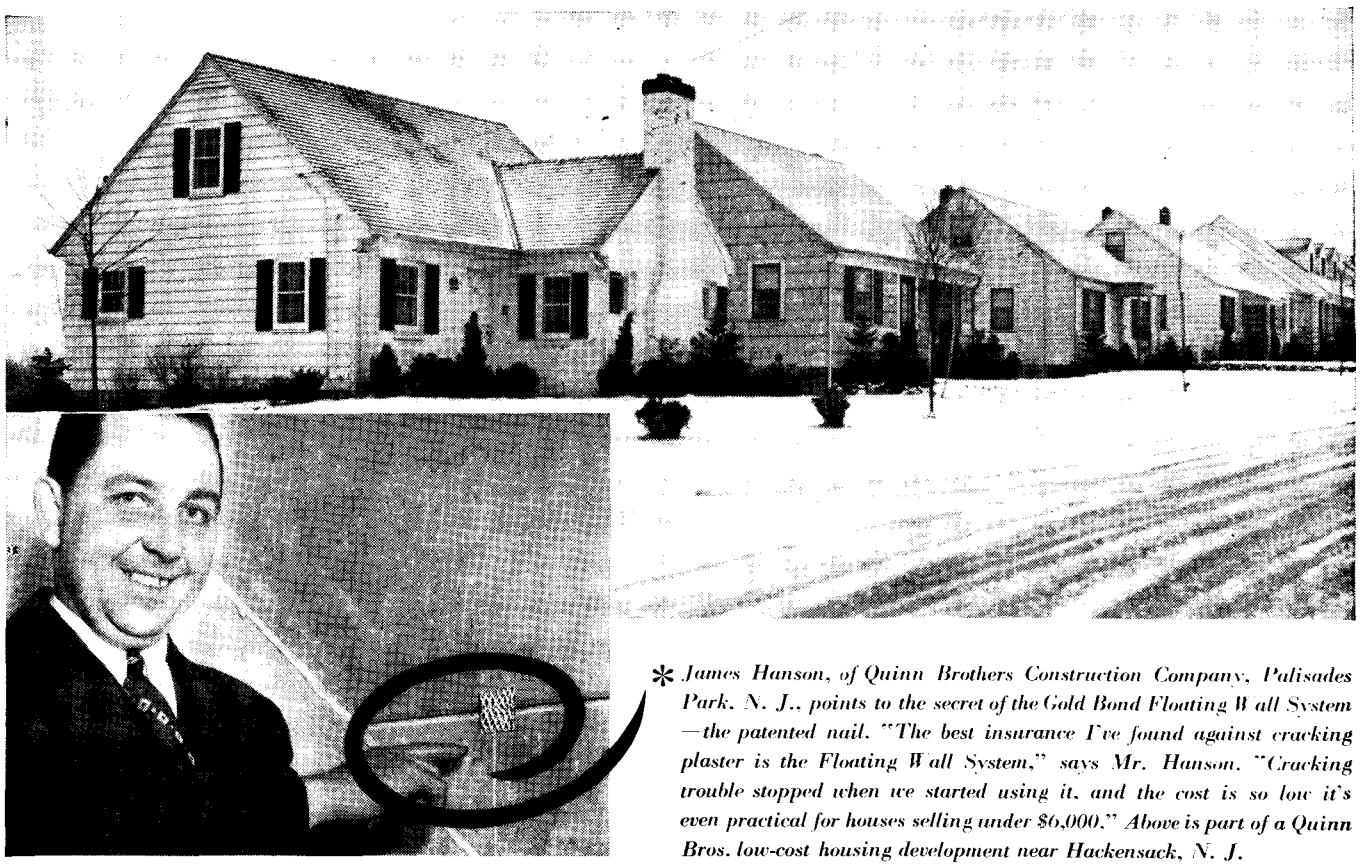
Underwood Elliott Fisher

Helps Speed the Nation's Victory!

Underwood Elliott Fisher Company

One Park Ave., N. Y. *Sales and Service Everywhere*

New Jersey Builder insures against Plaster Cracks*



* *James Hanson, of Quinn Brothers Construction Company, Palisades Park, N. J., points to the secret of the Gold Bond Floating Wall System—the patented nail. "The best insurance I've found against cracking plaster is the Floating Wall System," says Mr. Hanson. "Cracking trouble stopped when we started using it, and the cost is so low it's even practical for houses selling under $6,000." Above is part of a Quinn Bros. low-cost housing development near Hackensack, N. J.*

MORE and more architects and builders are solving the cracking plaster problem in the sure way James Hanson does. When walls and ceilings are made with Gold Bond gypsum lath and plaster by the new Floating Wall System, your jobs are protected against normal expansion, contraction, and settling . . . the causes for ninety per cent of all plaster cracks.

No special equipment is necessary to install this better wall and ceiling system. Any lather can drive the patented nails *between* panels of gypsum lath, providing a resilient fastening from wall to studding. Plastering is done in the usual manner.

Besides guarding against cracks, Gold Bond's Floating Wall System provides a one-hour fire rating for walls, and efficiently reduces room-to-room noise. Yet it costs so little it can be used even for defense housing and other low-cost jobs.

First with the best

For 16 years National Gypsum research has pioneered with new and better methods. They have developed more than 153 different products for every wall and ceiling use—including wallboard, insulation, lath, lime, plaster, sheathing, wall paint, and sound control materials. Today, more than 10,000 Gold Bond dealers and 300 trained representatives are ready to serve you with the products of 21 strategically-located plants. And when you use Gold Bond exclusively, there's no buck-passing. *All* materials are backed by the resources and reputation of *one* reliable manufacturer.

Write today for detailed specifications on the Floating Wall System, and other new and better Gold Bond methods of wall and ceiling construction. National Gypsum Company, Buffalo, New York.

Producing units at:

NEW YORK, N. Y. . . . CLARENCE CENTER, N. Y. . . . AKRON, N. Y. . . . PORTSMOUTH, N. H. NATIONAL CITY, MICH. . . . FORT DODGE, IA. . . . MEDICINE LODGE, KAN. . . . ROTAN, TEX. . . . SAVANNAH, GA. . . . LUCKEY, O. . . . BELLEFONTE, PA. . . . YORK, PA. . . . ORANDA, VA. . . . SALTVILLE, VA. . . . NILES, O. . . . MOBILE, ALA. . . . NEWBURGH, N. Y. . . . ALEXANDRIA, IND. DUBUQUE, IA. . . . DOVER, N. J.

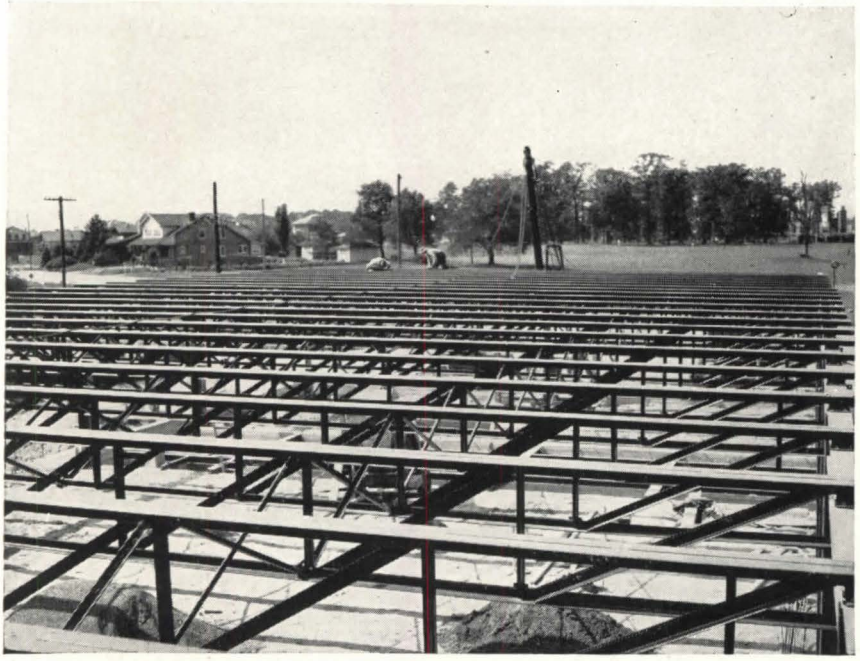
BUILD BETTER WITH

Gold Bond

Everything—for walls & ceilings

For clear floor space in light-load buildings

BETHLEHEM LONGSPAN OPEN-WEB JOISTS



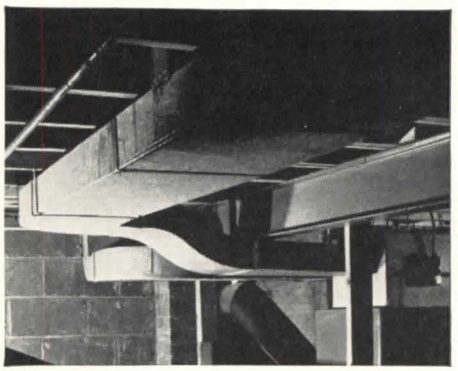
Bethlehem Longspan Open-Web Steel Joists are particularly well adapted for use in structures where it is desirable to obtain an unusually large area of column-free floor space. Bethlehem Longspans safely support roof spans up to 64 feet. In addition to elimination of excess columns, they permit doing away with undesirable pilasters.

Bethlehem Longspans are an excellent choice for all structures where live loads are light and clear floor space an important consideration.

Bethlehem Longspan Open-Web Steel Joists are light in weight and can be manually erected, requiring no special hoisting equipment. The open-web design of the joist permits the rapid installation, through the web, of pipes, conduits and ductwork.

Ductwork of Beth-Cu-Loy resists rust

Ductwork for conditioned air is on the front line of corrosion-attack. It deserves the double protection of galvanized copper-bearing steel sheets. Beth-Cu-Loy Sheets provide this double protection. First line of defense is the heavy, tightly-bonded coating of pure zinc. Second defense is the copper-content (0.20 to 0.30 per cent) of the steel itself. Impartial A.S.T.M. tests have shown that steel of Beth-Cu-Loy composition has more than twice the resistance to rust of ordinary carbon steel.



Good bonding qualities in reinforcing bars

By specifying reinforcing bars with good bonding qualities, considerably less steel can be used while requirements for permissible width of cracks will be safely met. Bethlehem Reinforcing Bars have excellent bonding qualities. They are deformed bars of constant section, essentially round, and are rolled in a complete range of sizes for all types of reinforcement work.

Other Bethlehem Building Products

STRUCTURAL SHAPES — STANDARD OPEN-WEB STEEL JOISTS
BETH-CO-WELD PIPE — ELEVATOR CABLE — BOLTS—NUTS—RIVETS

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY

Time Is Short... America's Great

WAR CONSTRUCTION PROGRAM

Must Be Kept In High Gear!

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

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

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

Now, as for more than 50 years, the information provided through Dodge Reports is functioning on a confidential basis to coordinate the activities of those who can supply products and services to new construction projects . . . to tell them what is to be built — where — and when — and the responsible officials who must be served. But now, this information is subject to control and restrictions designed to minimize the risk of sabotage or of giving aid to the enemy.

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

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

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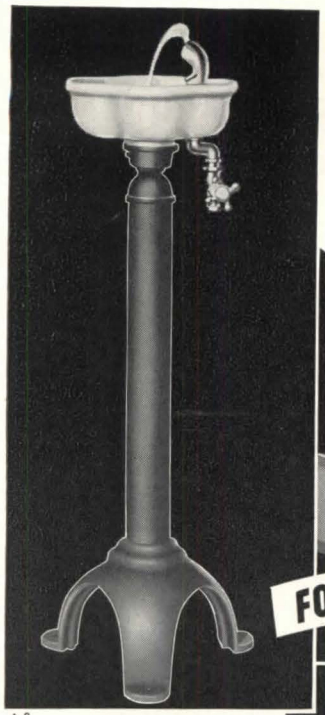

FOR PLANT OR OFFICE

A-2

In building for defense

...sanitation is important

Defense building is the keynote of present-day construction! Architects know that such buildings must go up fast... yet there are certain fundamentals not to be lost sight of in the rush. One of these is SANITATION! And most architects realize the value of Halsey Taylor Drinking Fountains in this respect. The 1942 line is complete, offering various styles in wall, pedestal, battery or cooler fountains for office or plant use . . . all with the famous Halsey Taylor health-safety features! Get our latest catalog.

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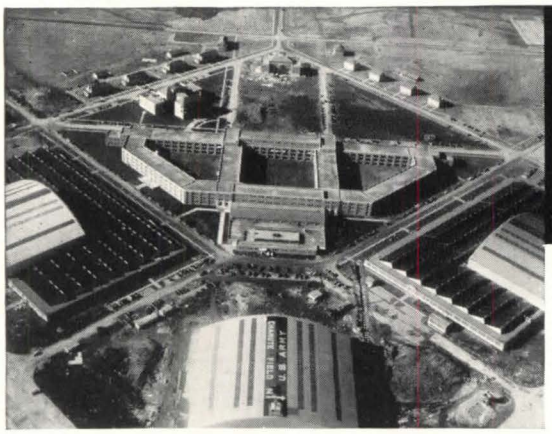

★★★ *CHANUTE FIELD, the nation's foremost air training center. ZONOLITE CONCRETE used for insulating roof fill over almost four acres of concrete roof deck—and for all saddles and cant strips. Photo courtesy of U. S. Army Air Corps.* ★★★

When Defense Construction Calls For *SPEEDY* Insulation *Then* Knowing Designers Call For ZONOLITE

★ *SPEED . . . speed . . .* and more speed—plus permanency! Those demands distinguish the nation's vast construction program. And on insulation specifications, ZONOLITE is the ready-made answer to both requirements.

ZONOLITE, as a granular fill, or as an aggregate in concrete or plaster, means a lasting job. It delivers an extremely high thermal efficiency. It saves tons of dead load weight. It is quick and easy to work with and to install; and best of all, it is proof against fire, rot, vermin and moisture.

22 conveniently located factories assure an endless inventory to ZONOLITE Dealers. We'll gladly send full technical data on all three forms of ZONOLITE: *Zonolite Granular Fill Insulation—Zonolite Insulating Plaster—Zonolite Insulating Concrete.*

No "Priorities" on ZONOLITE.

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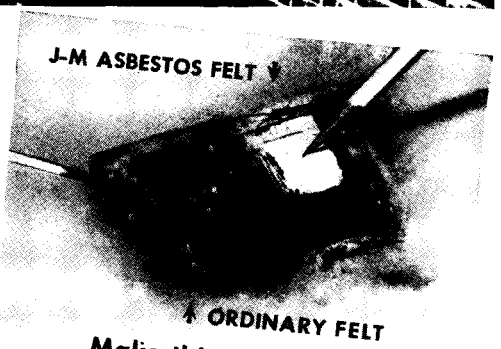
A Johns-Manville ASBESTOS Built-Up Roof protects against fire at the most vulnerable part of any building

There's every reason why you should be thinking about fire-protection today—but no reason why the roofs you specify should be at the mercy of flaming embers from a near-by fire. With a J-M Smooth-Surfaced Roof you provide the protection of ASBESTOS! In our files are many records of buildings which, threatened by outside fires, have been saved by their J-M Roofs.

And a J-M Asbestos Roof offers equal protection against high upkeep costs. Rotproof, it needs no periodic coating to withstand the drying-out action of the sun. Many J-M Roofs that were applied 20, 25 and 30 years ago are still giving excellent service with little or no cost for maintenance!

You should have all the facts about these safer roofs. Write Johns-Manville, 22 E. 40th St., New York, for a copy of the 48-page book, "Things you should know about your Roof."



Make this Fire Test!

This convincing test proves the superior fire-resistance of the J-M Asbestos Felt. Note that the ordinary roofing felt was reduced to ashes by the consuming flame while the Asbestos Felt remained unharmed. We will gladly send you the materials so you can make this test yourself.

JM JOHNS-MANVILLE
Smooth-Surfaced
ASBESTOS BUILT-UP ROOFS

THE ROOF WITH THE SAFETY FACTOR

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Schematic Description. Water supply at the Main Base comes from wells, contains considerable hydrogen sulphide and averages 14 grains hardness per gallon.

Permutit De-gasifiers first remove the hydrogen sulphide, after which all water used at the base is softened to 5 grains per gallon, by two fully automatic Permutit zeolite softening plants, each of one million gallons daily capacity.

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The water at four swimming pools is treated by complete Permutit re-circulating equipment, and three other pools under construction are to be similarly equipped.

Permutit is the world's largest manufacturer of water conditioning equipment—makes every type. Why not let Permutit help you solve *your* water problem? Write for free booklets: The Permutit Company, Dept. AR, 330 West 42nd Street, New York, N. Y.

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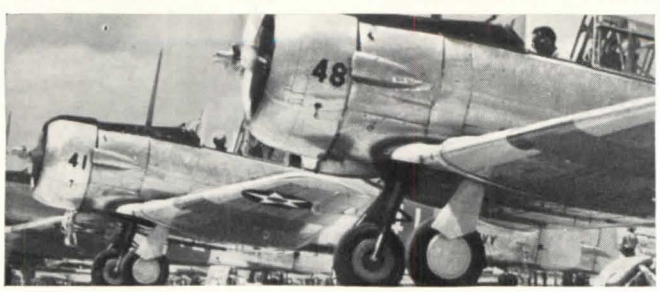
PERMUTIT

WATER CONDITIONING HEADQUARTERS



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durability of wood storm sash-

—to give them increased resistance against possible deterioration, laboratory science has developed minimum standards of *toxic preservation*—a treatment designed to supplement the natural, lasting qualities of wood products under the severe demands of modern construction.

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Seal of Approval—The Identification of a Product Meeting N. D. M. A. Preservative Minimum Standards

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Smart modern Design—matches the architectural beauty of the finest interiors.

Sturdy Construction—Heavy steel panels, cast bronze, chrome polished hardware, High grade, durable, baked-on finishes.

Sanitary, easy to clean—Smooth surfaces, without ridges, fluting or exposed edges to collect dirt and grime.

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MILWAUKEE STAMPING COMPANY

814 South 72nd Street Milwaukee, Wisconsin

An Architect's review of

his extensive experience with

OIL BURNING SYSTEMS

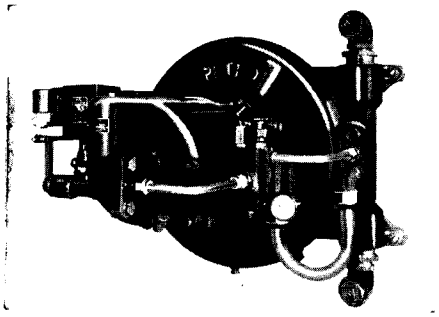
Charles M. Hart, of New York, is well-known for his design of the Dearborn Inn Colonial Village in Dearborn, Michigan, owned by the Ford Motor Co., and also of many fine hospitals, apartment houses and hotels over the country. He has consistently specified Petro equipment for his work, one of the jobs being the Queensboro Bus Company Building in Long Island City. He has these comments to make concerning the Petro Oil Burning System:

"In the great defense building program which faces us, reliable and efficient operation must be expected from heating systems. I know from experience that Petro equipment is 100 per cent dependable. There is no odor or objectionable noise where Petro is used and no annoyance from smoke and ashes. I have found their system operates economically.

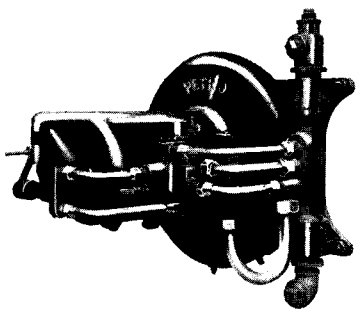
"After I went personally with a client to the Petro showrooms in Stamford, I was agreeably impressed by the competent cooperation from the Petro organization. My clients were pleased and this office was thankful that we had such a splendid source of service."

Experience with steam plants under war time conditions heavily underscores Mr. Hart's first point. Hundreds of Petro Systems which were designed and installed for ordinary peace time operation have been called on for 24-hour, plus-rating service, and have delivered it month after month, unfailingly.

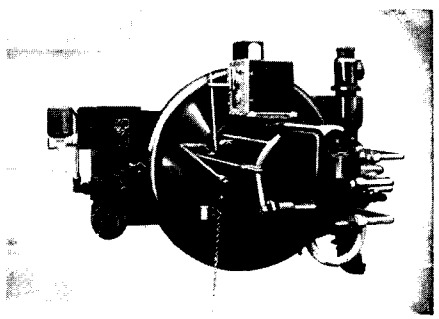
Nothing Petro has ever done is as important, nor as gratifying, as the fact that our equipment met this demand without change, without discernible strain on the equipment, and is still maintaining the firing efficiency and low over-all operating costs which have been characteristic of Petro Systems in normal times.



Model W-A: for automatic operation with unheated No. 5 or lighter fuel oils.



Model W-AH: for automatic operation with No. 6 (Bunker C) pre-heated fuel oil.



Model W-AH, equipped for self-modulation of firing to match fluctuations in demand.

CAPACITIES: to 145 gal. per hr.—487 boiler h.p—68,000 sq. ft. steam E.D.R.

FOR FURTHER INFORMATION
SEE OUR CATALOG IN SWEET'S

Petro Industrial Burners for Automatic operation with preheated No. 6 oil, or with No. 5 or lighter oils, are available in eight sizes. Models W-2½ to W-9 inclusive. Each burner is a self-contained assembly of motor, fan, pump, rotary cup atomizer and interlocked air and oil adjustments.

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

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

To the Architect in domestic building, Petro offers a complete line of burners for use with existing heating plants and complete oil fired boilers and winter air conditioners.

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

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Cuts Steam Costs

PETROLEUM HEAT AND POWER COMPANY

STAMFORD ***—Makers of good Oil Burning Equipment since 1903—*** **CONNECTICUT**

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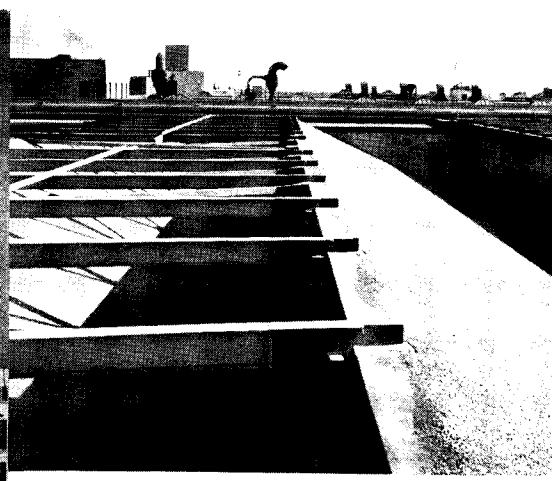
. . . exactly the right RU-BER-OID BUILT-UP ROO

to fit this modern building!



New plant of the International Busine Machines Corp. Protected with 76,300 sq. RU-BER-OID Bonded Coal Tar Pitch and Fe Built-up Roofing, gravel finish. *Architect:* K. Snow. *General Contractor:* Turner Constru tion Company, New York. *Approved Roofin Contractor:* Binghampton Slag Roofing C

"Ruberoid's line of built-up roofing is *complete.*"

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Architects can choose not only the type but the specification that best adapts itself to each job.

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RU-BER-OID

ROOFING AND BUILDING PRODUCTS

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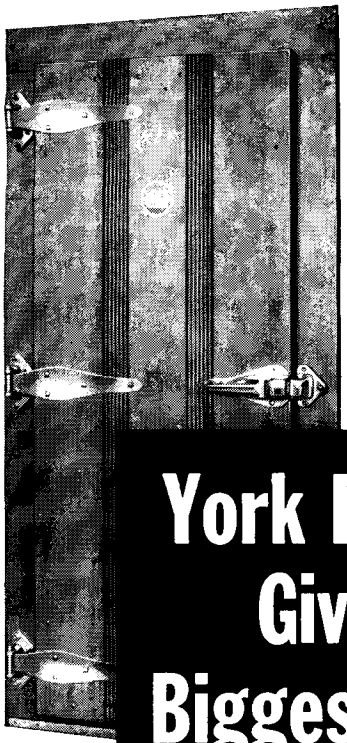
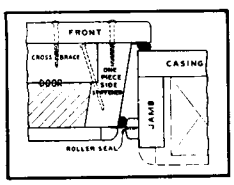


York Features Give the Biggest Future

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



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

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

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

York Ice Machinery Corporation, York, Pennsylvania.

york refrigeration air conditioning

YORK REFRIGERATION AND AIR CONDITIONING

"Headquarters for Mechanical Cooling Since 1885"

"KEEP'EM FLYING!"

positive control

mineral oil lubrication

NORTON DOOR CLOSER

Operating efficiency and low maintenance cost are prime objectives in equipping new buildings or making replacements. Norton is justly proud of the record of performance and economy set up by Norton Door Closers in the school field.

FOR FURTHER INFORMATION SEE OUR CATALOG IN SWEET'S

SECTION 16
CATALOG 27

NORTON DOOR CLOSER COMPANY

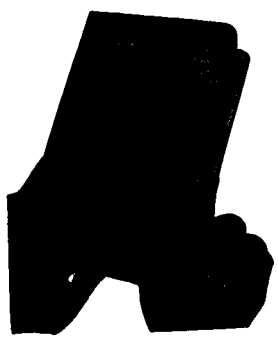
Division of The Yale & Towne Mfg. Company

2910 N. Western Ave. Chicago, Ill.

A Short Cut to Your

CONSTRUCTION COST PROBLEMS

FOR PRELIMINARY ESTIMATES



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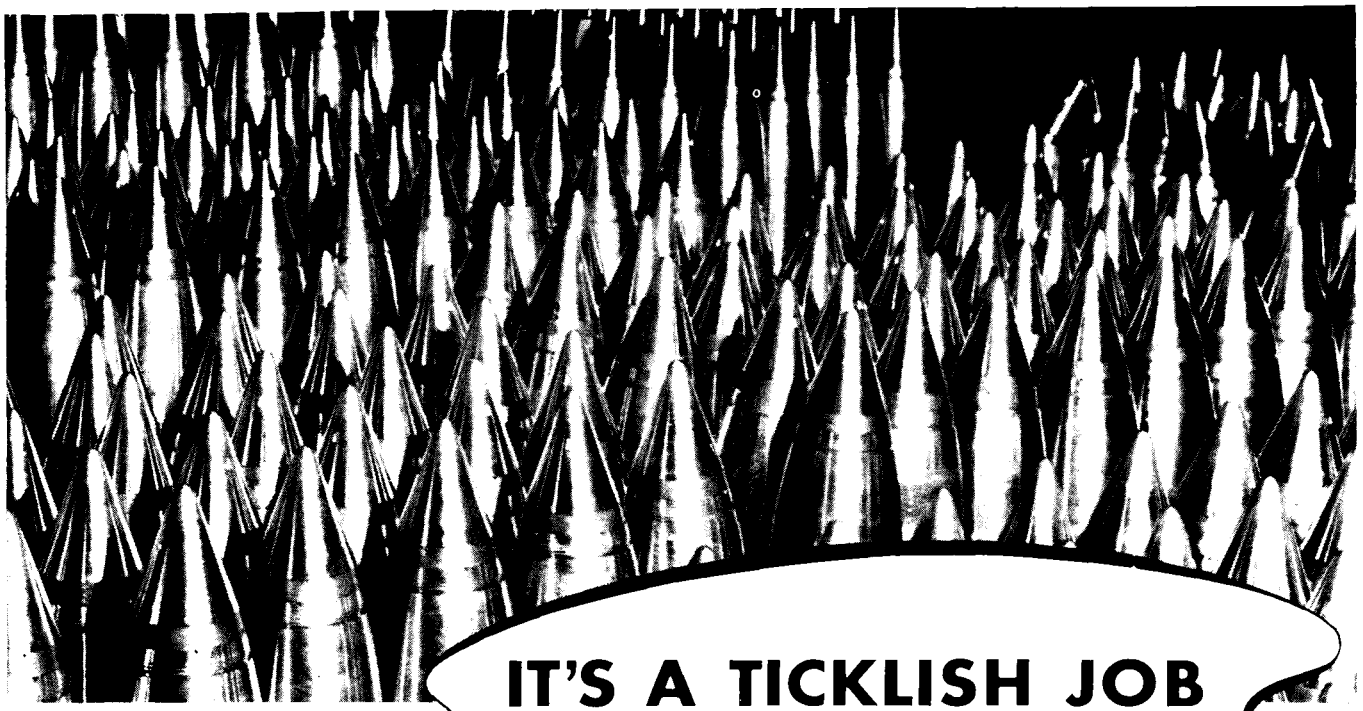
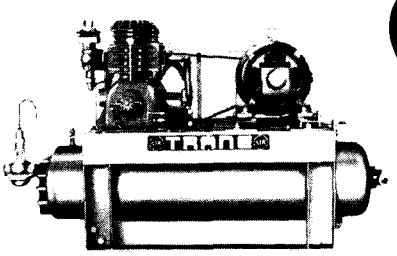
Consulting Valuation Engineers

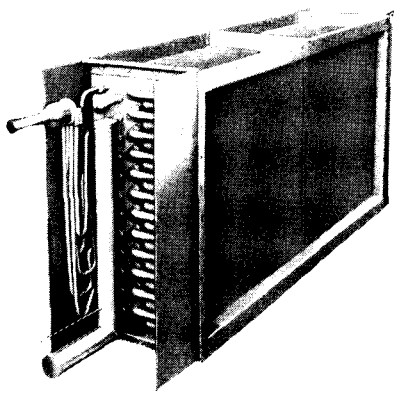
903 TIMES-STAR BUILDING, CINCINNATI, OHIO



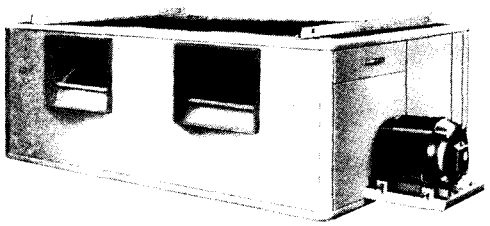
IT'S A TICKLISH JOB TO HANDLE T-N-T !



Dependable Trane Reciprocating Compressors are available in a capacity range from 3 to 50 tons. Complete and ready for installation upon delivery.



Sturdy Trane Direct Expansion Coils are a part of the broad Trane line which includes coils for every heat transfer application.



The Trane Climate Changer shown here typifies the wide variety of Trane air conditioners available for a multitude of heating and cooling purposes assisting the war program.

It's a ticklish job to handle and process T.N.T. as well as the other explosives which are incorporated with shells and ordnance material. Proper temperature and humidity conditions make the job a great deal easier, and arsenals and ordnance plants throughout the country have been quick to appreciate what air conditioning can do for them.

Trane Climate Changers control the humidity in the bullet filling room at Frankford Arsenal. They are used for the shell loading line at the Ravenna Ordnance Plant, for ammunition storage at another arsenal, for tropical test rooms at Army laboratories, for the bomb rooms at the San Diego Naval Air Station, for the fuse loading room at the Bellevue Navy Yards, for the Chemical Warfare Service at Edgewood Arsenal—and, along with Trane Coils, Compressors and other air handling equipment, for countless other applications where difficult or vital processes are made speedier and easier with correctly applied air conditioning equipment.

The same Trane equipment which is performing these precise functions is available to you for your own heating and air conditioning applications assisting the war effort—comfort or process—through the 85 Trane field offices which span America. Your nearest Trane representative is the man to get in touch with when these problems present themselves.

TRANE

THE TRANE COMPANY, LA CROSSE, WISCONSIN · Also TRANE COMPANY OF CANADA, LTD., TORONTO, ONTARIO

MANUFACTURERS OF HEATING · COOLING · AIR-CONDITIONING EQUIPMENT · 85 BRANCH OFFICES

FOR DEFENSE HOUSING

G-E GAS FURNACES

Highly efficient . . . factory packaged . . . low in cost!

You can tuck this G-E Gas Furnace away in a closet, or any small area. The smallest size occupies only 3½ sq. feet floor space. It's approved by Underwriters' Laboratories, Inc. for installation with only 2 inch wall clearance!

The G-E Gas Furnace comes all in one package—completely factory wired and assembled. It can be installed by any sheet metal contractor. Three different capacities: 48,000, 72,000, and 96,000 Btu per hour.

Would you like further data and prices on these small defense housing units—or on other equipment in the complete G-E line? Call your G-E Distributor (see Classified section of your Telephone Directory) or write to General Electric, Division 2443, Bloomfield, N. J.

TURN TO GE

For radiator or warm air heat, using oil or gas

G-E Oil Furnaces in 7 different sizes for various heating capacities. Year 'round domestic hot water coil. Also G-E Gas Furnaces.

G-E Winter Air Conditioners (Oil or Gas Fired) circulate *conditioned* warm air heat—filtered and humidified.

GENERAL ELECTRIC

DOORS of DEMOCRACY in ACTION

You can't buy EXPERIENCE, but *JAMISON* builds it into EVERY DOOR

"Eternal vigilance is the price of liberty."

Do your part to keep Liberty's light burning. Be vigilant when specifying cold storage doors.

Inefficient doors defeat Uncle Sam's plan of food conservation. Recheck those specifications today.

JAMISON-BUILT DOORS cost no MORE—they'll pay your client dividends for years to come.

Consult nearest branch or address

JAMISON COLD STORAGE DOOR CO.
Jamison, Stevenson and Victor Doors
HAGERSTOWN MARYLAND

Jamison Metal Clad Door
Send for Bulletin No. 127

A typical example of how Jamison creates doors to meet all needs

JAMISON-BUILT COLD STORAGE DOORS

See our catalog in Sweet's Catalog Files

JUST AROUND THE CORNER

Now — as always — Samson Spot Sash Cord is carried in stock by Hardware and Building Material Supply dealers in practically every town and city in the United States. It is easy to identify and easy to secure without delays. Spot Cord is the standard of quality and of real value. Its universal acceptance is a matter of slow, healthy growth created out of years of proven performance, proven satisfaction and proven economy.

There is no better way to hang windows than with weight, pulley and Samson Spot Sash Cord.

SAMSON CORDAGE WORKS
BOSTON MASS.

REG. U.S. PAT. OFF.

SAMSON SPOT SASH CORD

Announcing
The AmSeCo Public Seating Institute for Architects

An advisory service and source of information to all architects on public seating problems. Backed by the greatest public seating experience in the world.

For many years the American Seating Company has been a working partner with leading architects everywhere. But we feel that there are still many architects who don't know about our service. And others hesitate to ask for our help because they do not realize that it is available without obligation.

That's why we are announcing what we call the AmSeCo Public Seating Institute for architects. We want to make it the "answer man" to every architect in this country who is confronted with problems concerning the seating of theatres, schools, churches, auditoriums, stadiums or other public buildings.

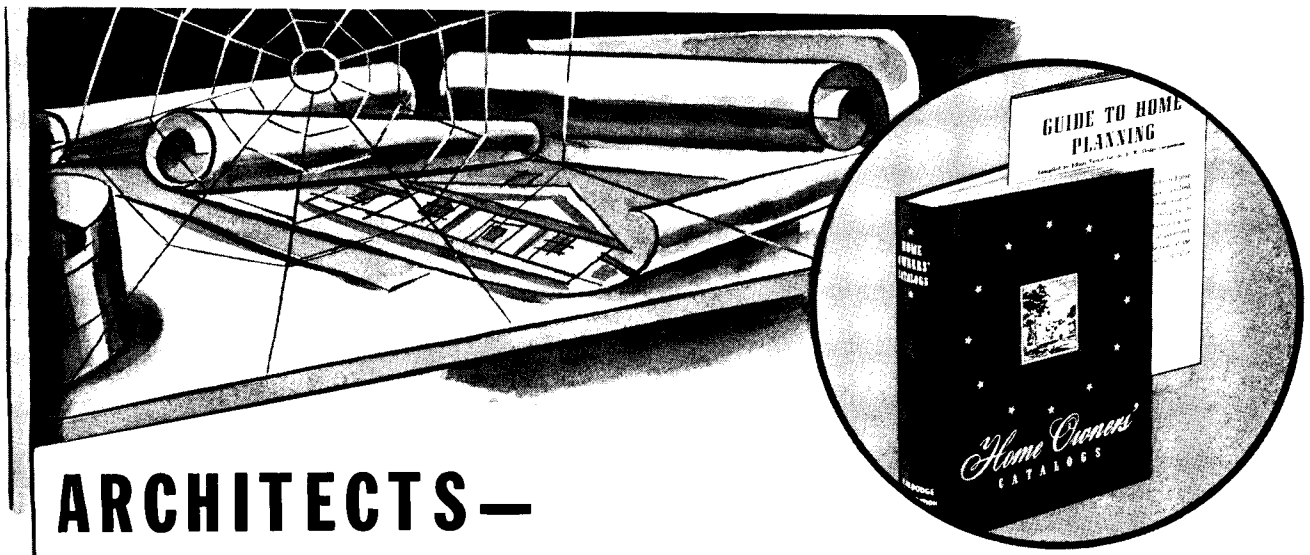
And if we haven't the information you want right on tap from our vast store of public seating experience, we'll work out the problem for you. The main thing we want to impress upon you is that we're yours to command. So call on us at the blue print stage and see how helpful we can be.

American Seating Company

GRAND RAPIDS, MICHIGAN

World's leader in public seating. Manufacturers of Theatre, School, Church, Auditorium, Stadium and Transportation Seating.

Branch Offices and Distributors in 73 Principal Cities.



ARCHITECTS—

Where are the thousands of home building families who were planning to build this year?

PRIORITIES, war production and the world wide battle for the *four freedoms* have temporarily suppressed the hopes and dreams of thousands of American home building families. You were making sketches for some of them—you had plans well under way for others—and bids were in, in many cases . . . when the fury of war and the critical needs of the nation called a halt to non-essential building activity.

What are you doing to preserve the interest of these families in the home building idea? What are you doing to encourage them to proceed with their plans—when the war is over and the victory is won?

Wouldn't it be advisable to send a free copy of *Home Owners' Catalogs* now to those of your clients who have not received this valuable book—to keep them thinking and planning during the weeks and months that will pass before they are able to build?

Home Owners' Catalogs is a big cloth-bound volume—same page size as *Sweet's*—containing a wealth of comprehensive information about materials that is of interest to home builders. It is beautifully illustrated, largely in color, and emphasizes the importance of architectural services. One section—the *Guide To Home Planning,* contains much practical advice—endorsed by leading architects—and helps the owner to crystalize his thinking. It helps him to analyze the requirements of individual members of his family and his family as a whole. It provides him with check lists and furniture cut-outs, to plan the arrangement of furniture for the various rooms. And it enables him to list the first and second choices of products used in construction as well as the furnishings and equipment that will go into the finished home.

In short, it's a book that will keep him interested and intent on building as soon as war and priority conditions will permit him to proceed with his plans—and so help you develop future business.

We will send *Home Owners' Catalogs* by mail, prepaid, and without cost or obligation, to any family which qualifies for ownership under the simple restrictions given in the coupon below. Take advantage of this offer today.

RESTRICTIONS—Home Owners' Catalogs will be sent only to owners who plan to build homes for their own occupancy, within 12 months, or as soon as war and priority conditions permit, in the 37 states east of the Rocky Mountains, costing $4000 or more for construction, exclusive of land—or to modernize at a cost of $2000 or more. THE F. W. DODGE CORPORATION RESERVES THE RIGHT TO DETERMINE THE VALIDITY OF EACH APPLICATION.

AR-3-42

F. W. DODGE CORPORATION
119 West 40th Street, New York, N. Y.

In accordance with these restrictions, please send a copy of Home Owners' Catalogs to:

Name .....
Address ..... State .....
City ..... Architect of .....
Signed .....

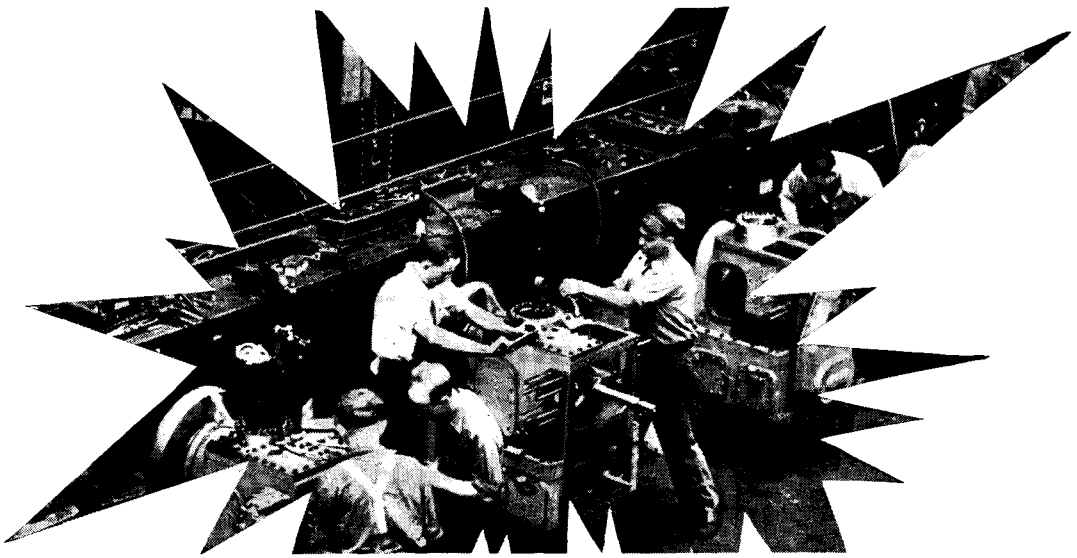
Home Owners'

CATALOGS

Published by F. W. Dodge Corporation

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

REQUEST FREE COPIES OF HOME OWNERS' CATALOGS FOR THOSE WHO WILL BUILD WHEN WAR AND PRIORITY CONDITIONS PERMIT.....



KEEP 'EM TRYING

to push production to new peaks

KEEP 'EM

comfortable and healthy with

modine unit heaters

Victory hinges on production. In that new factory you're building, the machine facilities are being precisely planned. But production wars are won with workers. They can and will do their jobs . . . cheerfully *and faster* . . . if your plans provide for their health *and* comfort. That means *Modine* Unit Heaters!

No cold floors. No complaints from workers who "can't stand" cold drafts or hot blasts. Automatic, fast-heating and flexible, Modines maintain even temperatures. Less labor turnover, less illness, and *less time lost!*

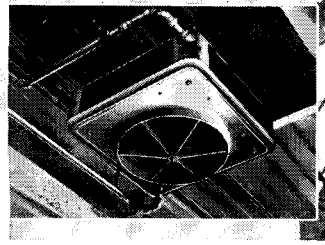
Only Modine has *all* these features: Patented Expansion Bend, Direct-from-branch-supply-line Suspension, Bonderite Rust Protection, Built-In Safety Fan Guard, Velocity Generator.

Delivery? *As prompt as any in the industry.* And Modine-patented direct-from-pipe suspension makes *installation faster* as well as cheaper.

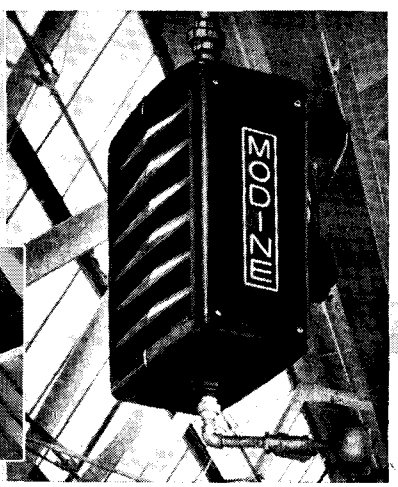
Get the Latest Catalogs

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

PRODUCTION MODINE FOR VICTORY



Vertical Delivery Model



Horizontal Delivery Model

MODINE MANUFACTURING COMPANY
1773 RACINE STREET
RACINE WISCONSIN

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 war-time 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.

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

Please send 1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐ 6. ☐ 7. ☐ 8. ☐

Check or money order for ..... is enclosed.

Name .....

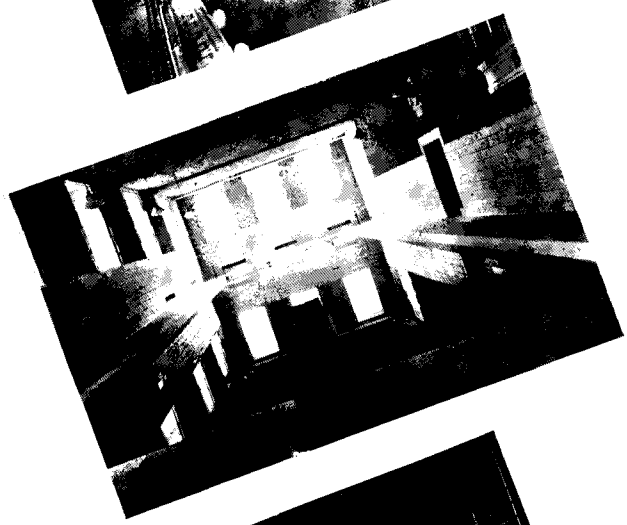
Address .....

City and State .....

AR 3-42

Check the numbers of the books you want, and mail to Architectural Record with your remittance—no extra charge for postage

Architects Agree on Chlorination for School Swimming Pools . . .



FROM Chicago to Cleveland to New York, in fact, all over the country, architects have found that thousands of people swim in the safety of Wallace & Tiernan sterilized water.

John D. Chubb, prominent Chicago architectural firm, reports that, "Wallace & Tiernan Chlorinators have proved to be most satisfactory. The School Board, as well as myself, are well pleased with the excellent manner in which these chlorinators keep the swimming pool water up to a high uniform standard of purity. This is also in line with my experience with Wallace & Tiernan equipment used in many other school buildings for which I have been the architect."

From Cleveland the well-known firm of architects, Walker & Weeks, say, "Bacteria need not be dreaded with the proper use of chlorine. We have numerous Wallace & Tiernan Chlorinators in many of our pool installations."

James W. O'Connor, New York architect, who has designed many of America's finest schools, says: "In Schools particularly it is of prime importance to protect the health of the thousands of those who use the swimming pools day in and day out. That is why I have specified Wallace & Tiernan Chlorinators; and I have found them wholly dependable and satisfactory."

Hundreds of architects, like these, all over the country have specified Wallace & Tiernan Chlorinators as **Standard** for the chlorination of school swimming pools.

Ask for the W & T Swimming Pool Technical Publications reviewing water treatment on several different types of pools.

"SWIM IN DRINKING WATER"

WALLACE & TIERNAN CO. INC.

Manufacturers of Chlorine and Ammonia Control Apparatus

NEWARK, NEW JERSEY

Represented in Principal Cities

A PERMANENT, PRIVATE EXHIBIT IN YOUR OFFICE

"SPEAKING of time-saving," says the director of an association which sponsors one of the nation's largest trade exhibitions, "an exhibit is more justified than ever in time of emergency, providing the exhibited material or equipment plays some part in solving the problems of the emergency. Exhibits save time, because a new product can be personally introduced to thousands of people in an extremely short time. They save money because the exhibitor can show his wares in one place and contact people that would require weeks and even months to reach by indirect methods."

You'd almost think he was talking about Sweet's.

Sweet's presents visual exhibits of material and equipment which are playing an important part in solving the problems of the emergency. . . . Sweet's saves manufacturers' time because it enables them to introduce their products quickly to all active architects in the country. . . . Sweet's saves manufacturers money because they can show their wares in a single instantly-accessible "show place." . . . Sweet's enables manufacturers to contact specifiers and buyers to an extent that would be impossible right now if they had to depend on buyers and specifiers taking the time and spending the money to visit a display in a distant city.

HOW MUCH INFORMATION?

Manufacturers do not have to *condense* the information they distribute in Sweet's Catalog File. This information can and should be as full and complete as the needs of user and of manufacturer require.

Generally speaking, the information which manufacturers are advised to file in Sweet's is that which the architect or contractor wants before he is ready to discuss complete details, in terms of a specific project, with the manufacturer's sales representative. It is, in fact, the information which will enable the specifier or buyer to determine whether he wishes to invite the salesman to call.

NEW FILE FOR BUILDERS

The work of compiling and printing a new Sweet's Catalog File, designed for use of builders exclusively, is just completed. Distribution of these 30,000 files will begin as soon as they come from the bindery. Manufacturers' catalogs in this file describe and picture products and materials especially adapted for use of builders in the small house field.

You don't have to go anywhere to keep up to date on new products and new materials. You don't have to spend a penny to go through "Building's Market Place," —Sweet's Catalog File. It is always on hand — right in your office.

And where the average trade exposition includes only a couple of hundred exhibits, Sweet's Catalog File includes more than a thousand.

ALL IN THE DAY'S WORK

The construction industry is well conditioned to meet its 1942 obligations as a war industry, in the opinion of Thomas S. Holden, President, F. W. Dodge Corporation. Architects, engineers and contractors are accustomed to tackling new types of projects, he says. "To jump from a school or a theater job to a cantonment or a housing project or a naval base is all in the day's work. And," he points out, "professional men have no interim period of retooling in order to convert their talents from civilian to war needs."

SWEET'S CATALOG SERVICE, a division of F. W. Dodge Corporation, is located at 119 West Fortieth Street, New York.

* * *

In the **RECORD'S** Index to Advertisements (page 122), an "S" preceding the name of a concern indicates that it has one or more catalogs filed in the 1942 Sweet's Catalog File. Thus, when a statement or a picture in a **RECORD** advertisement awakens your interest you can instantly turn to Sweet's "for further information." No writing. No waiting. No expense to you.

* * *

ACTIVE ARCHITECT WRITES:

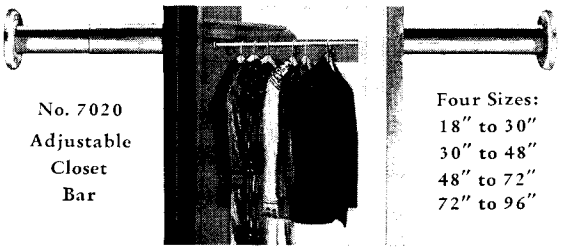
I find Sweet's most useful and whenever the opportunity is presented by the manufacturer, I say, "Put it in Sweet's".

* * *

How do you like the new Sweet's, recently delivered to your office? It contains scores of new catalogs, many of them with innovations in copy and format. As you make use of these and other catalogs in Sweet's, we will be glad to have your comments.

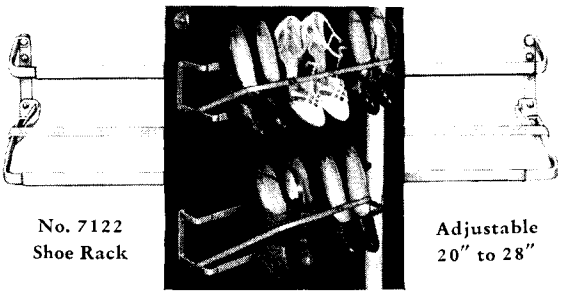
SWEET'S CATALOG FILE
Building's
MARKET PLACE

For Every Closet



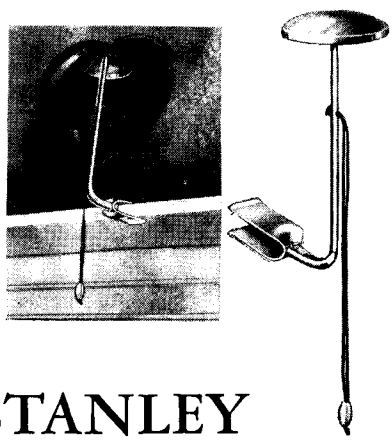
No. 7020
Adjustable
Closet
Bar

Four Sizes:
18" to 30"
30" to 48"
48" to 72"
72" to 96"



No. 7122
Shoe Rack

Adjustable
20" to 28"



No. 7121
Hat Holder.
Shelf type.
Easy pull
brings hat
down.

STANLEY
Closet Hardware

Closets planned for true convenience are generously fitted with Stanley Closet Hardware. It provides the "place for everything" that keeps a closet tidy. Bars, Racks, and Hooks to fit all shapes and sizes of closets are listed in the Stanley Catalog No. 61. It describes the complete line of Stanley Hardware, and it's a book you should have for ready reference. Write for your copy today. The Stanley Works, New Britain, Conn.

STANLEY
TRADE MARK
HARDWARE

Check THESE FEATURES of Evans School Wardrobes

They Save Space. Set flush with wall. Doors swing back into wardrobe without blocking aisles.

They Are Simple. Patented trouble-free hardware gives silent, carefree operation for life of building.

They Are Practical. Time-tested wood construction harmonizes with classroom and corridor trim.

They Are Proved. Thousands of schools, throughout the entire country, are equipped with Evans Wardrobes.

They Are Low Cost. Amazingly simple construction results in surprisingly low price. Variety of sizes.

WRITE FOR NEW CATALOG AND DETAILS

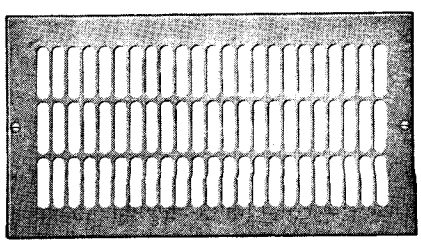
Evans VANISHING DOOR WARDROBES
W. L. EVANS COMPANY • WASHINGTON, INDIANA

FOR $6000 HOUSES - USE CLASSIC "6000" REGISTERS!

Here is a fine, attractive, inexpensive register of highly pleasing design. It can be furnished with single louvre for low cost warm air jobs or, for airconditioning, with multi-louvres, for any desired diffusion. From the standpoint of cost, of appearance, of service value, Auer Classic "6000" Registers and Grilles are especially suitable for low cost residence work.

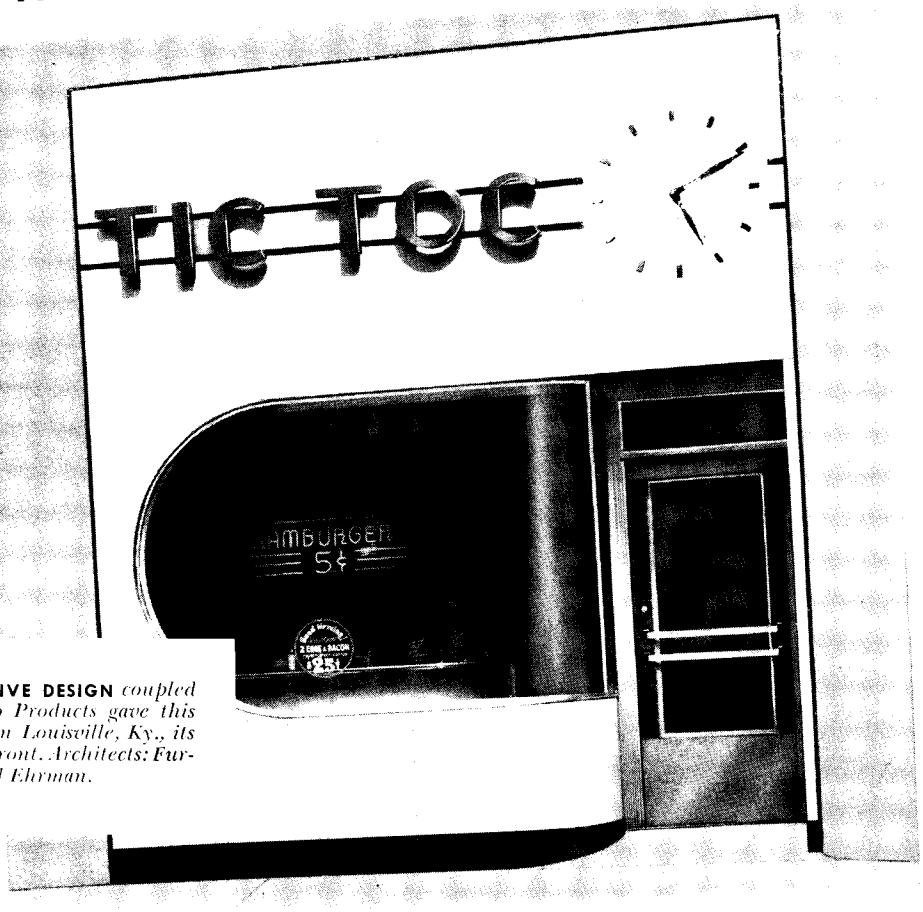
Auer makes a complete line of registers and grilles, in many designs, including all types of directional flow registers, for warm air or air conditioning. Ask for new Auer Register Book — or for your grille requirements, special Grille Catalog "G".

The Auer Register Co.
Cleveland, Ohio



AUER REGISTERS
& GRILLES · For Air Conditioning *and* Gravity

Give every store front job the benefit of Pittco Products



IMAGINATIVE DESIGN *coupled with Pittco Products gave this little cafe in Louisville, Ky., its appealing front. Architects: Furbringer and Ehrman.*

REGARDLESS of the size of your store front job—the budget given you to work with—the type of establishment concerned, you can be sure of a front that will please—and sell—if you rely on Pittco Products. The simplest store front — the most elaborate — is more impressive when built with these quality products.

For a facia as easy to take care of as it is good-looking, there is Carrara Structural Glass — either polished or suede-finish. It comes in ten attractive colors. Original design ideas may be interpreted in sparkling PC Glass Blocks. PC Architectural Glass, Tapestry Glass, Pittsburgh Mirrors and Pittsburgh Polished Plate Glass. You can even plan an appropriate decorative design—in colors—to go on the Carrara, by means of the new Pittsburgh Sandaire Process. Herculite Doors make a distinctive modern entrance. And Pittco or EasySet Metal harmonizes with all the other Pittco Store Front Products.

Our new booklet will give you more information on Pittco Products and show you how they have been used by others with outstanding success. Send for it today. It's entirely free. Just fill out and mail the coupon below.

PITTCO STORE FRONTS

PITTSBURGH PLATE GLASS COMPANY

"PITTSBURGH" stands for Quality Glass and Paint

Pittsburgh Plate Glass Company
2202-2 Grant Building, Pittsburgh, Pa.

Please send me, without obligation, your new, illustrated booklet, "Pittco Store Fronts — and Their Influence on Retail Sales."

Name_____

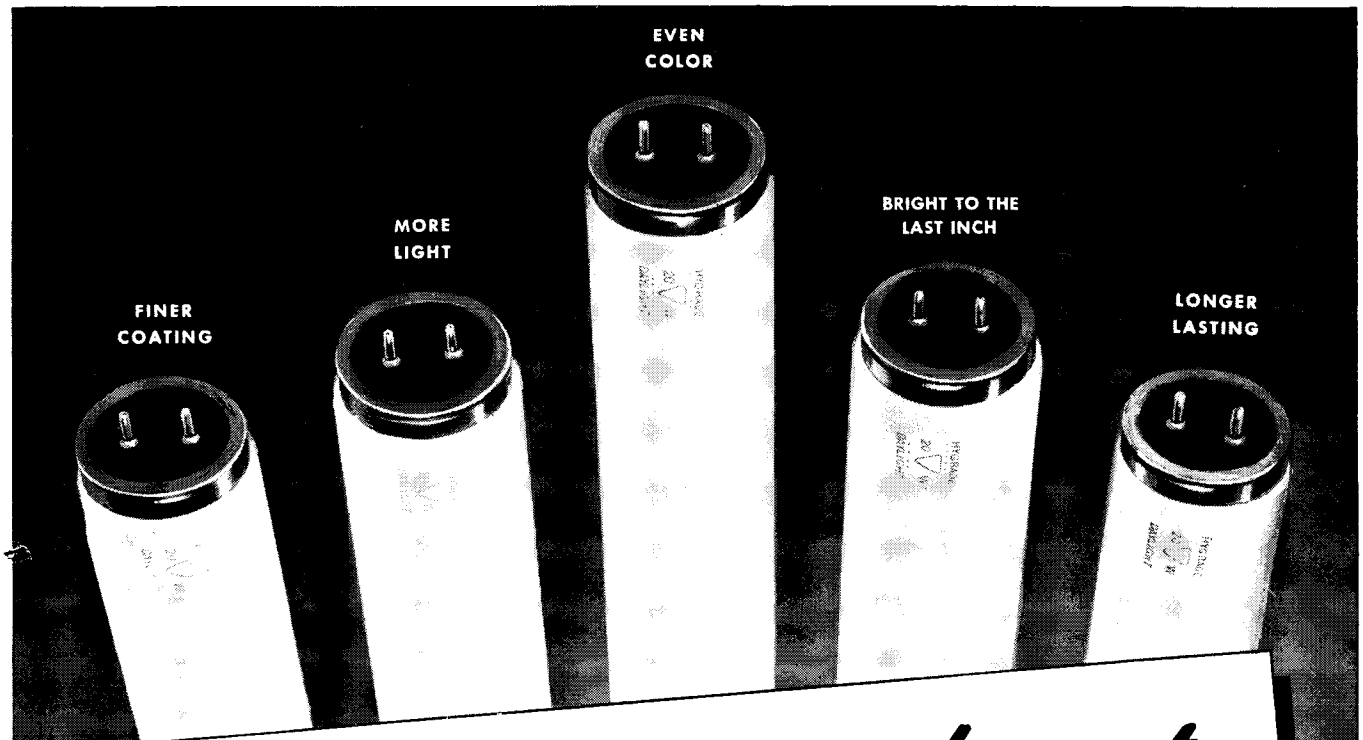
Street_____

City_____ State_____

INDEX TO ADVERTISEMENTS

Catalogs of concerns marked (s) are filed in Sweet's Catalog File (1942)

New York—General Manager: H. Judd Payne. *Advertising Manager:* Tom Tredwell. B. B. Orwig, 119 West 40th Street. *Boston*—Robert Marshall, 855 Park Square Bldg.; *Chicago*—C. B. Riemersma, F. H. Bowes and H. Neville Taylor, 700 Merchandise Mart; *Cleveland*—Homer Andrews, 321 Hanna Bldg.; *Los Angeles*—W. R. McIntyre, 400 East Third St.; *Philadelphia*—Tom Tredwell, 1321 Arch Street.



While you're at it—*why not Fluorescent at its Finest?*

In recommending fluorescent lighting, like anything else, you can either pick *any* kind – or you can pick the best.

And if the best is what you want, you'll find that Hygrade Fluorescent Lamps excel on five important counts:

They have a finer coating texture — something you'll note immediately if you compare them with other lamps;

They give more light — more lumens per watt;

They are more uniform in color — every lamp gives the same color of light;

End-darkening doesn't dim them before their time; they remain "bright to the last inch";

They last longer — tests show appreciably greater lamp life.

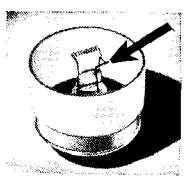
You don't have to take our word on these points; check them with any Hygrade user. Even two of these advantages would be sufficient to assure superior performance from Hygrade Lamps – all five make them, by far, the best buy for your client.

And remember, a Hygrade installation is *all* Hygrade—lamps, fixtures, starter, everything – all designed to operate as a unit for maximum efficiency and economy.

Put them together and you get lighting that's soft, shadowless, glare-free – the sort that pleases customers and builds good will for you.

If you haven't yet received our free file-size kit – containing catalogs, prices and complete technical specifications on all Hygrade Fluorescent Lighting Equipment – write today to Dept. AR3.

NO MORE MERCURY "BLACKOUTS"



To assure most efficient operation, every fluorescent lamp needs a minute quantity of mercury, accurately measured. In Hygrade lamps this is accomplished by the "mercury bomb"—a tiny metal container filled with the precise amount of mercury desired. Heated to the bursting point before the lamp is sealed, the "bomb" explodes, releasing mercury vapor. This exclusive achievement of Hygrade engineering skill virtually eliminates mercury streaks, caused by excess mercury, which appear on other lamps. It affords greater lumen output, better all-round performance.

HYGRADE SYLVANIA CORPORATION

SALEM, MASS.

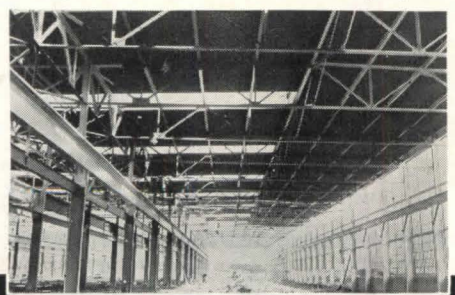
Makers of Hygrade Incandescent Lamps, Fluorescent Lamps, Fixtures, Starters, Sockets and Sylvania Radio Tubes

The *economical* answer to problems you face in getting war plants under cover *fast*—

MILCOR Steel Roof Deck

• *Above:* Milcor Steel Roof Deck being applied on new plant of A. O. Smith, Corp., Milwaukee, Wis.

• *Below:* 1140 squares of Milcor Roof Deck were required to cover the huge Smith plant constructed as part of the national armament program.



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