

July 1945

7

Transportation Facilities

PENCIL POINTS



**PROGRESSIVE
ARCHITECTURE**

We will help you
Reduce your overhead-

on Store-Front work!

THE **Kawneer** MAN



The *Kawneer man* in your territory will help you reduce overhead on store-front work in three ways:

1. He will provide design and merchandising data, based on national experience with all types of retail stores, which will cut your research time and assist you in creating effective "Machine For Selling" store-fronts.
2. He will offer you a completely new line of store-front construction, with new products and new ideas, which will simplify your detailing, speed up your work, and give you results in stock construction previously available only in special work.
3. He will provide you with expert local installation service and pre-tested products which will cut down supervision time and help to eliminate "call-backs".

Over 250 Kawneer distributors will assist Kawneer field men in these new services to architects. Write today for new booklet, "The Architect and Machines For Selling". THE KAWNEER COMPANY, 307 FRONT STREET, NILES, MICHIGAN. (Western Factory, Berkeley, Calif.)

Kawneer
STORE-FRONTS

MACHINES FOR SELLING!

✓ THERE'S NEW OPPORTUNITY FOR ARCHITECTS
IN THE STORE-FRONT FIELD!

Pencil Points

PROGRESSIVE ARCHITECTURE

July, 1945

month to assure receipt of next issue. Articles, drawings, photographs, etc., submitted will be carefully considered, but the publisher will not be responsible for loss or damage. Copyright 1945, Reinhold Publishing Corp. Trade Mark Registered. All rights reserved. Entered as second class matter March 25, 1944, at the Post Office at New York, N. Y., under the Act of March 3, 1879. Volume XXVI, No. 7, July, 1945. Indexed in Art Index.

Editor-in-Chief:

Kenneth Reid

Editors:

Frank G. Lopez, Jr.
Charles Magruder
George A. Sanderson

Assistant Editors:

Edith Lamar
Eileen Feus

Cover, Layout, Typography:

Stamo Papadaki

Publishing Director:

Philip H. Hubbard

Associate Publishing Director:

John G. Belcher

Circulation Manager:

John Zellner

Views: Letters; Jobs and Men; Notices	beginning on page	8
News: Men and Activities in the field of architecture; Competitions	beginning on page	16
Two Kinds of Architecture?: Editorial, by Kenneth Reid		53
Evansville Memorial Airport and Recreation Center, Evansville, Indiana: Albert Kahn Associated Architects and Engineers, Inc.; Analysis by Roland Wank, A.I.A.		54
Baltimore Greyhound Bus Terminal: Wischmeyer, Arrasmith & Elswick, Architects; Lucius White, Associate Architect		64
Bus Service Terminal for the Cleveland, Ohio, Transit System: A. C. Wolf, Architect; R. M. Knutsen, C.T.S., Superintendent of Properties		69
Three Structures Designed to Serve Railroad of Tomorrow: Lester C. Tichy, A.I.A., Architect		70
Garage, Store, and Office Building for Washington, D. C.: J. E. Greiner Co. and DeLeuw, Cather & Co., Consulting Engineers		76
Shopping Village For the Motor Age, Dallas, Texas: Hare & Hare, Landscape Architects, City Planners		78
Sanitation Department Garage, Brooklyn, N. Y.: Antonin Raymond, A.I.A., Architect		79
Service Station: The firm of Frederick G. Frost, Architects		82
MATERIALS and METHODS:	beginning on page	83
Techniques: Advances in Hospital Lighting Design by Isadore Rosenfield, A.I.A.		84
Why Zone Heating Systems? by W. J. Warren, Heating Engineer		91
Details: Combined Panel and Forced Warm Air Heating System; Perkins, Wheeler and Will, Architects		93
Products: Progress in product development; What the War has taught us about wood		95
Manufacturers' Literature: Reviews of current manufacturers' publications		96
From the Technical Press: Technical books, handbooks, magazine articles; British Building Research Station Publications, articles on insulation, reinforced concrete		98
Building Product Facts: No. 13, Air-Entraining Portland Cement; most important cement innovation since evolution of the water-ratio theory. (<i>Note: Due to the restrictions on use of paper, it will now be necessary to publish Building Product Facts sheets on regular magazine stock rather than cardboard.</i>)		99
Reviews: Books, periodicals, bibliographies, beginning on page		106
Cover: Photograph by F. S. Lincoln: Composition by Stamo Papadaki.		

in floors, too...

IT'S THE

Finish



America's Beauty Floors

THAT COUNTS !

It's the new **FACTORY FINISH** on Bruce Finished Flooring that will make it a winner for postwar building

8 ways better than on-the-job finishes...



- 1** **Smooth Sanding**—Each strip sanded to perfect smoothness on multiple drum, precision sanders. No sander marks.
- 2** **Prime Condition**—Finishing starts immediately after sanding, so no "raised grain." Moisture content of flooring is right.
- 3** **Perfect Filling**—Highest quality silex filler is rubbed into wood as flooring moves down the finishing line.
- 4** **Thorough Sealing**—Bruce Finish penetrates into wood pores . . . seals them against dirt and wear. Beautifies wood grain.
- 5** **Infra-red Drying** applies heat uniformly . . . welds finish into a tough, even film. No "unfavorable drying weather."
- 6** **Extra Buffing** with high-speed brushes burnishes finish into wood . . . provides a harder, smoother surface for waxing.
- 7** **Superior Waxing**—Special wear-resistant wax is applied evenly, then polished over and over with brushes and buffers.
- 8** **Proper Seasoning**—Finishing done weeks before flooring is used—so no hazard of finish being walked on too soon.

*Yes!
it's the Finish
that Counts
in Floors!*

And Mr. & Mrs. Home Builder of tomorrow will know about the advantages of Bruce Finished Floors. Color advertisements in American Home, The Saturday Evening Post, Better Homes & Gardens, House Beautiful, House & Garden, and Small Homes Guide will present the beauty, wear and ease of cleaning features of this modern flooring. Watch for these smart, attractive ads!

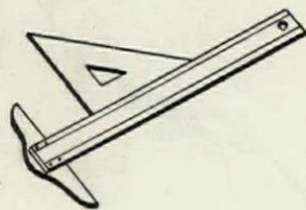
E. L. BRUCE CO. MEMPHIS, TENN.

World's Largest Maker of Hardwood Floors

BRUCE FINISHED FLOORS



◀ **CARRARA STRUCTURAL GLASS** offers a combination of polished beauty, permanence and sanitation which qualifies it exceptionally well for use in the washrooms of public buildings. It is impervious to moisture, chemicals, pencil marks. It is easily cleaned. In the interesting application shown, Carrara partitions and stiles are hung from ceiling and walls so that the floor area remains clear and unobstructed. Architects: Hart, Freeland & Roberts.



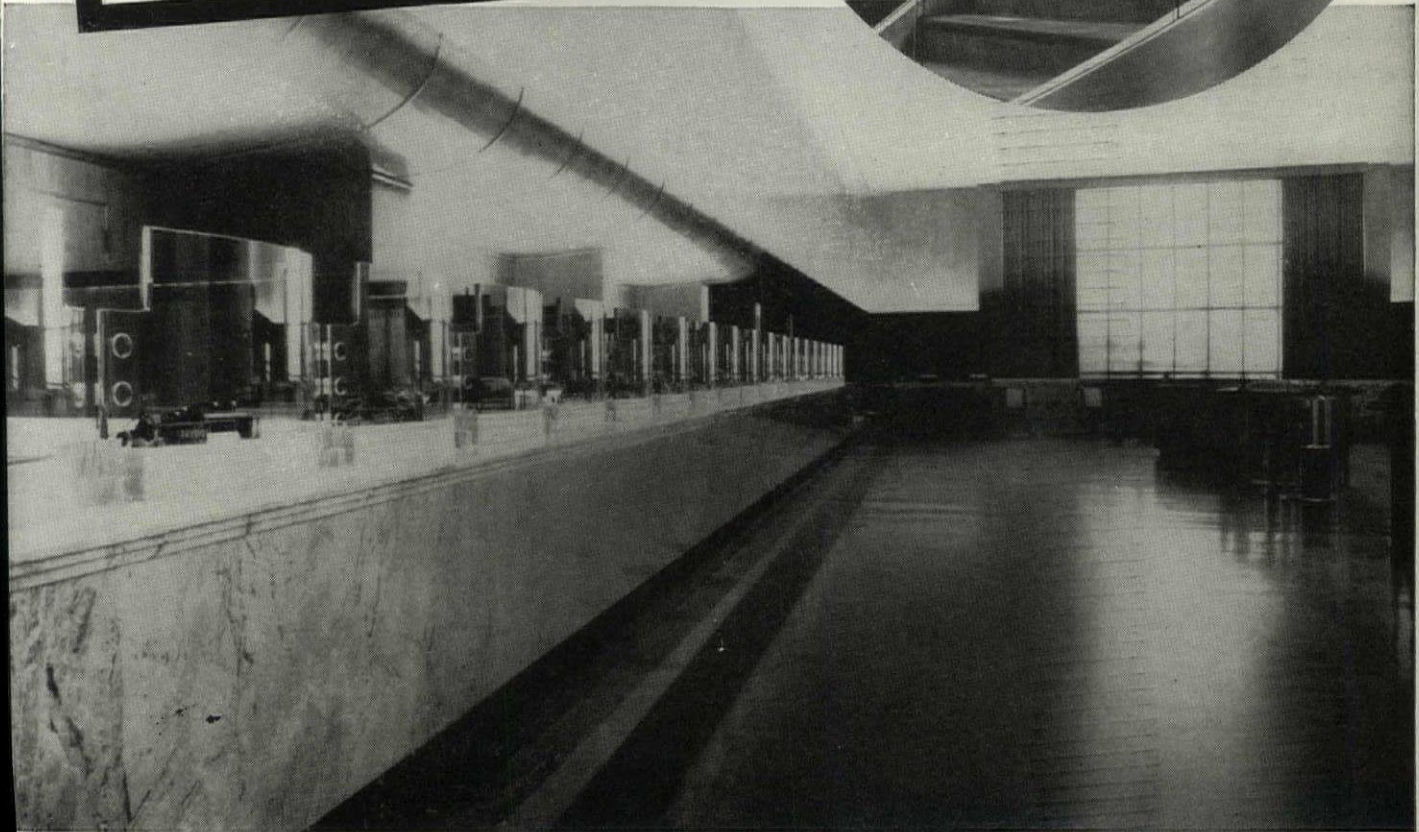
▶ **COMBINING DECORATIVE BEAUTY** and practical usefulness. Pittsburgh Polished Plate Glass can serve a hundred purposes in public buildings. In this striking bank interior, heavy Plate Glass both bent and flat, is an important factor in creating a smart, business-like atmosphere. Note the large window at the rear. Architect: Walter W. Ahlschlager.

▶ **WHEN WINDOWS** occupy such a large percentage of wall area, as in this University Building, it becomes especially important to specify a quality glass. Pennvernon Window Glass and Pittsburgh Polished Plate Glass are always dependable choices for glazing structures like this. Architects: Cram & Ferguson.



INTERESTING
APPLICATIONS
OF *GLASS*
IN PUBLIC
BUILDINGS

TRANSPARENT STAIR RAILS of Herculite Tempered Plate Glass offer new design possibilities, not only in public buildings, but in commercial and residential structures as well. Herculite Glass is tempered to give it many times the strength and impact resistance of normal Plate Glass. Architects: Reinhard & Hofmeister and Harrison & Fouilhoux.



Design it better with products of

Pittsburgh Plate Glass Company



"PITTSBURGH" stands for Quality Glass and Paint

We believe you will find much to interest you in our new illustrated booklet of ideas concerning the use of Pittsburgh Glass in building design. Send the coupon for your free copy.

Pittsburgh Plate Glass Company
2128-5 Grant Building, Pittsburgh 19, Pa.

Please send me, without obligation, your new booklet entitled: "Ideas for the Use of Pittsburgh Glass in Building Design."

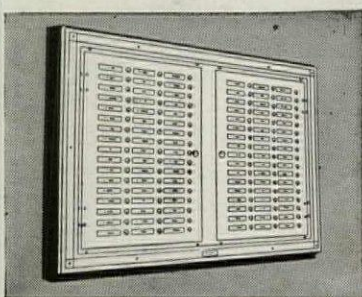
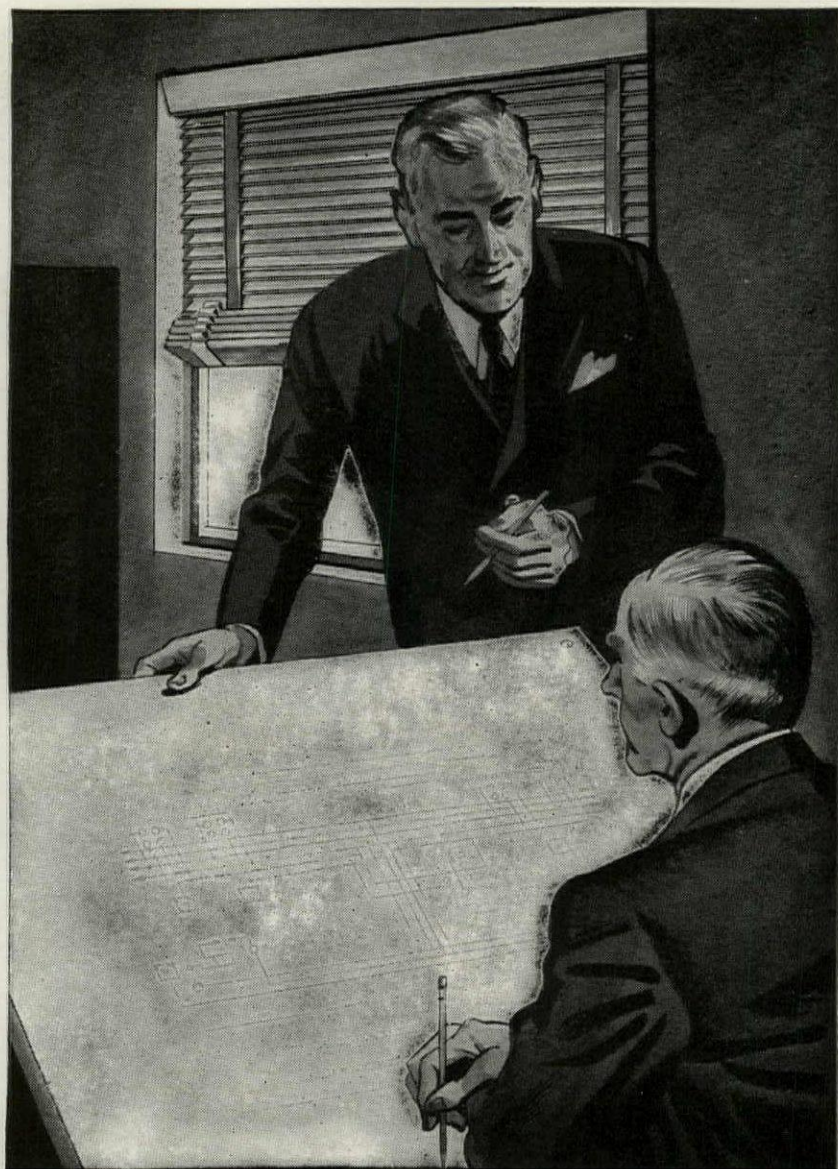
Name

Address

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

Design for HOSPITAL EFFICIENCY

The communicating system in a modern hospital is more important than in any other type of building. It has more jobs to do — and prompt, un-failing contact may be a matter of life and death. Among these important signalling and communicating jobs are: keeping track of the whereabouts of doctors and staff members, nurses' call, patient supervision, and integration of all the complex phases of hospital operation... Long experience as specialists in the design and manufacture of hospital communicating and signalling systems has taught us the importance of considering them at an early stage of the planning. Consultation with a Connecticut Telephone and Electric representative is a sound step toward maximum hospital efficiency. It involves no obligation.

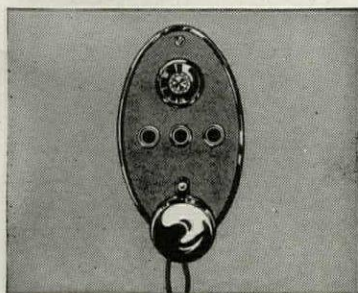


DOCTORS' CALL SYSTEMS

A system for indicating at central positions which staff members are in the building is essential in every well-equipped, efficient hospital. "Connecticut" systems are adaptable to hospitals of all sizes, and can be arranged to meet any conditions.

INTERIOR PHONE SYSTEMS

Special systems to serve diet kitchens, nurses' homes and other specialized purposes are an important planning consideration. Such circuits provide faster communication, privacy where required, and remove a heavy load on central switchboard.



Connecticut Telephone & Electric Division

GREAT AMERICAN INDUSTRIES, INC.

MERIDEN



CONNECTICUT

NURSES' CALL SYSTEMS • DOCTORS' SILENT AND AUDIBLE PAGING
DOCTORS' REGISTRY • INTERIOR TELEPHONE SYSTEMS • NIGHT
LIGHTS • NURSES' HOME TELEPHONE AND RETURN CALL SYSTEMS

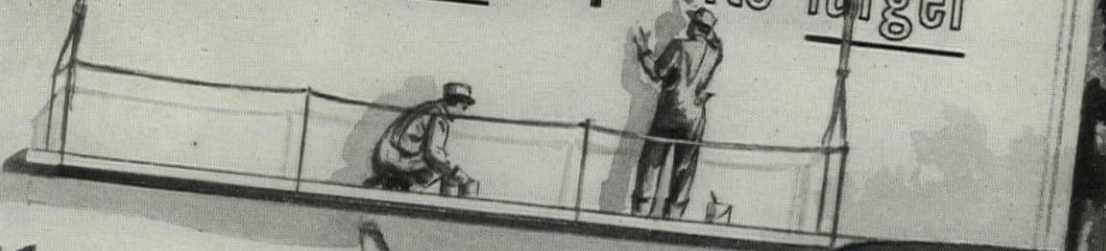


Good Buildings Deserve Good Hardware



Announcing important developments
to make selling good hardware easier
installation simpler... profits larger

- 1.
- 2.
- 3.



P. & F. Corbin
THE AMERICAN HARDWARE CORPORATION, SUCCESSOR
New Britain, Conn.
since 1849



Views

Opinions from readers

Remarks from the editors

Changes of address

Competition Aftermath

Dear Editor:

An aftermath of every competition perhaps brings to your desk many letters of criticism; some just, and some just plain crank letters. This is not meant to be the latter type, though I did enter a non-winning design in your competition. The satisfaction and pleasure of even working on an architectural design after three years in the Service without that opportunity was well worth the time and effort expended. Rather than that type of criticism, this is just a plain statement of facts gleaned from showing the winning designs to G.I.'s, officers, and civilians who are interested in building after the war is won. These people originate in all parts of the country and surely reflect a consensus of opinion from all corners of our great land.

The first opinion gathered is that of the appearance of the house. The layman does not understand the finer problems of planning, and first considers how the house looks. All but one person remarked, "I can't see a one that I would care to own." The one exception was a G.I. from California who had done small house construction before entering the Service and was clever at drafting. . . . Each and every one said that some of the designs would fit very well as a summer cottage or beach house. Some said if they could afford to spend their life traveling, following pleasure and the seasons, they would like a place like those shown to spend a couple of months . . . very few of the G.I. Joes will be in such a fortunate position. Besides, the competition was for a home for a returning veteran and his family—a place to live, to be proud of, and make up for the lost pleasures of his family happiness. . . . Are the architects planning for better living or are they trying to force a style of architecture upon people? The latter being the motivating force prompting me to write this letter.

The Jury admits the faults of many of the designs but overlooks the problems of poor traffic and air circulation in the houses, in favor of supervising the play of children who are getting beyond the age of needing constant supervision. Speaking as one in a realm of G.I. Joes, I'm not against modern innovations, but feel they should be in-

corporated in more substantial appearing homes. Joe won't be in a financial position to make any mistakes in this home, that must last him for years to come.

From my talks with these flesh and blood G. I. Joes, it looks as though our architectural thinking should be bolstered by a great deal more research into the requirements and desires of the public as a whole—and G. I. Joe—as well as all the new materials and methods of construction.

SGT. EDWARD W. RYDER
Bangor, Maine

In 25 Words

Dear Editor:

I have just seen a copy of PENCIL POINTS showing the prize-winning houses. It has left me with only enough breath to say God Almighty!

WADE PIPES
Portland, Oregon

This Modern Stuff

Dear Editor:

I wish to register a feeble protest against the growing tendency of modern designers and of modern periodicals make-up men to make plans, both in the process of delineation and of reproduction, so obscure and confused that draftsmen and contractors (to say nothing of laymen) cannot even read them intelligently, let alone build.

I cite your May issue with its Competition winners as a case in point. I defy anyone except the authors (and I reserve judgment in these instances) to tell me what in H—the plans on pages 63, 65, 82, and 83 are all about. The same criticism holds true in some detail in practically every entry except the first money, which scheme is unfortunately the one least likely to sell the public.

I like this modern stuff and believe we are going to see more and more of it, but to persuade people to buy it is going to require master salesmanship which will not be helped if they can't get even an inkling of what it's all about.

ROI L. MORIN
Portland, Oregon.

Throw 'em Out

Dear Editor:

If it was desired to find a home for G.I. Joe, as the program led the competitor to suppose, the least the Jury could have done would have been to throw out all plans which would not meet the regulations set up for insured loans by the Federal Housing Authority. To my way of thinking, it is detrimental for architects to be a party to any such thinking as was prevalent in the selection of the prize winners and mentions in this competition. If we are to lead the public, we must begin to think logically or our reputation will be definitely at stake.

In my opinion, the results will in no way benefit either the sponsors, the professional adviser, or the public; and will be a black mark against the architectural profession. . . . Although I intended to enter this competition, I am glad now that I did not, as the results were either practical nor academically in good judgment.

RICHARD HAWLEY CUTTING
Cleveland, Ohio

The "Guessing Game"

Dear Editor:

Stuck again. Stuck, because the Jury does not write the Program and often writes its own during judgment. . . . Would it not be better for the Jury to approve the Program in advance, or to modify it more to its taste? Or to dispense with the Program as a snare and a delusion? As it is, guessing ability is the basis on which the competition is conducted.

I know. I don't have to enter the competition. But, probably, I'll be there again, trying to meet the Program whose provisions will be twisted to meet the preferences of the jurymen, which in the recent contest coincided with my own. Probably I need bifocals in order to read properly both the Program and the Jury.

DONALD BARTHELME
Houston, Texas

Everything Burlesqued

Dear Editor:

I was seriously interested in looking over the prize awards. . . . So many of the country's reputable manufacturers have resorted to such an overdone trend in their advertising. . . . Everything must be burlesqued. . . .

From the results I fail to see where the competition has added one iota to the luster of (Pittsburgh Plate Glass Company) products. I did not enter, and speak from no feeling of pique. All I can think of is a description from Louis Bromfield's "A Modern Hero": "Like goldfish the inhabitants swam about amid the ornamentation of pianos. . . ." Even the draftsmanship is affected and the evident desire to arrive at some astounding *tour de force* was patently achieved.

I will close with my first vivid reaction on going over the drawings. Mr. Rapson, 3rd Prize, overlooked just one possibility: ground glass for his client's dinner.

JAMES W. ADAMS
Washington, D. C.

And Had a Wonderful Time

Dear Editor:

Perhaps you will agree with me (and maybe the Jury) when I comment on the fact that the results of the Pittsburgh Competition were disappointing. The *parti* of each plan has some excel-

(Continued on page 10)



AROUND THE WORLD WITH RAYMOND

FOR ALMOST HALF A CENTURY, the Raymond Company has successfully completed more than 11,000 contracts in North, Central and South America and many foreign lands. These activities have been so widely diversified as to include jetties, foundations, harbor and river improvements, tunnels, dams, highways, community development, housing and industrial projects.

As a result of this world-wide experience a highly trained personnel has been developed—the men who handle this particular range of Raymond service possess a comprehensive knowledge of foreign languages and native customs and are thoroughly familiar with working conditions in many countries. The sum total of Raymond experience—wisdom is yours to command. Inquiries will receive prompt and careful attention.

RAYMOND

CONCRETE PILE COMPANY

BRANCH OFFICES IN PRINCIPAL CITIES
140 CEDAR STREET • NEW YORK 6, N. Y.

SCOPE OF RAYMOND'S ACTIVITIES includes every recognized type of pile foundation—concrete, composite, precast, steel, pipe and wood. Also caissons, construction involving shore protection, ship building facilities, harbor and river improvements and borings for soil investigation.

PENCIL POINTS, JULY, 1945 9

Views

(Continued from page 8)

lent qualities, but that is as far as it goes. Don't you think the contestants "let their hair down a bit" and had a wonderful time?

And one thing more—why the exposed plumbing in Mr. Kazdailis' plan—and all those angular shapes?

GEORGE E. TINGLEY
Mystic, Connecticut

They Win Races, Too

Dear Editor:

Of the kind of houses shown in your Pittsburgh Plate Glass Company Competition there is only one example in this locality. It is located near the Hamburg State Fairgrounds, near the turn where the harness horses go into the stretch. In a race, it is a fairly common sight to see a driver pull his horse to the outside of the turn near this house. One sight of it sends the horse scampering down the stretch—a runaway and a winner.

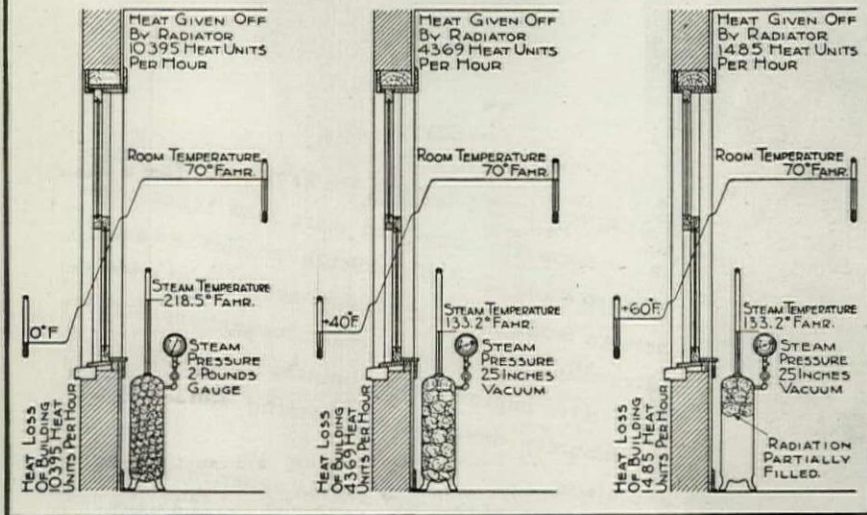
By the way, where were all the architects among the premiated designs?

Or is your magazine no longer concerned with architects, architecture, and their advertisements?

A great profession has a right to expect some aid and inspiration from its press. It has been some time since the architectural magazines have published anything recognized outside Southern California as architecture; and it is inexcusable to the extent that you, at least, know better. In the celestial orbits in which these publications now move, architects and architecture may have become anachronisms. If so, for bringing up the subject, I beg your pardon.

GUY H. BALDWIN
Buffalo, New York

This is No. 2 in a series of 6 Advertisements, setting forth values of the adequacy, simplicity, flexibility, dependability and economy of the Dunham Differential Vacuum Heating System.



ADEQUATE

...means EQUAL to what is required

At all times...in all parts of the building...under all weather conditions... regardless of variables in service and occupancy...Dunham Differential heating maintains comfort-level temperatures with efficiency and economy. Never an overheat (a problem during 95% of heating season)...and never an underheat...this system meets the "ups and downs" of weather as they occur...not with on-and-off control, but with continuous flow of sub-atmospheric steam at temperatures varying

from barely noticeable warmth to the hot steam needed for zero weather.

Write for Brochure 632 entitled "High Altitude Heating". Address C. A. Dunham Company, 450 East Ohio Street, Chicago 11, Illinois.

DUNHAM

DIFFERENTIAL HEATING
CHICAGO • TORONTO • LONDON

The Sponsor Makes Glass

Dear Editor:

It is obvious from the results of the competition that the sponsor is a manufacturer of glass products. This is as it should be. But reason should temper all things. I simply wonder how the winning drawings would look if the sponsor had been a cinder block, a roofing material, or a bamboo products manufacturer.

Beyond the fact that the structures delineated on the winning drawings showed many interesting, novel, and useful ways of employing glass products in a home, the other equally, if not more important, feature of the competition—namely that the building being designed was to be a home—was entirely overlooked in many, if not all, of the winning drawings.

I am no hidebound traditionalist but it is popular, as well as my own, opinion that a home is a place of privacy, security, comfort, convenience, and beauty. How can the occupants of a home have any privacy if the walls, roof, partitions, and most of the rest of the structure are open to the public view? . . . How much security would your G.I. feel in a home slapped together out of skinny pipes, screens, folding partitions, and general construction much like that of our wartime wooden toys? . . . Having adequate places to store one's possessions and having these belongings easily and readily accessible certainly are major parts of comfort and convenience. . . . As to the beauty of the chosen designs, there are definitely two irreconcilable sides to that question—mine and the wrong one!

JOSEPH M. PUFFER
Saugus, Massachusetts

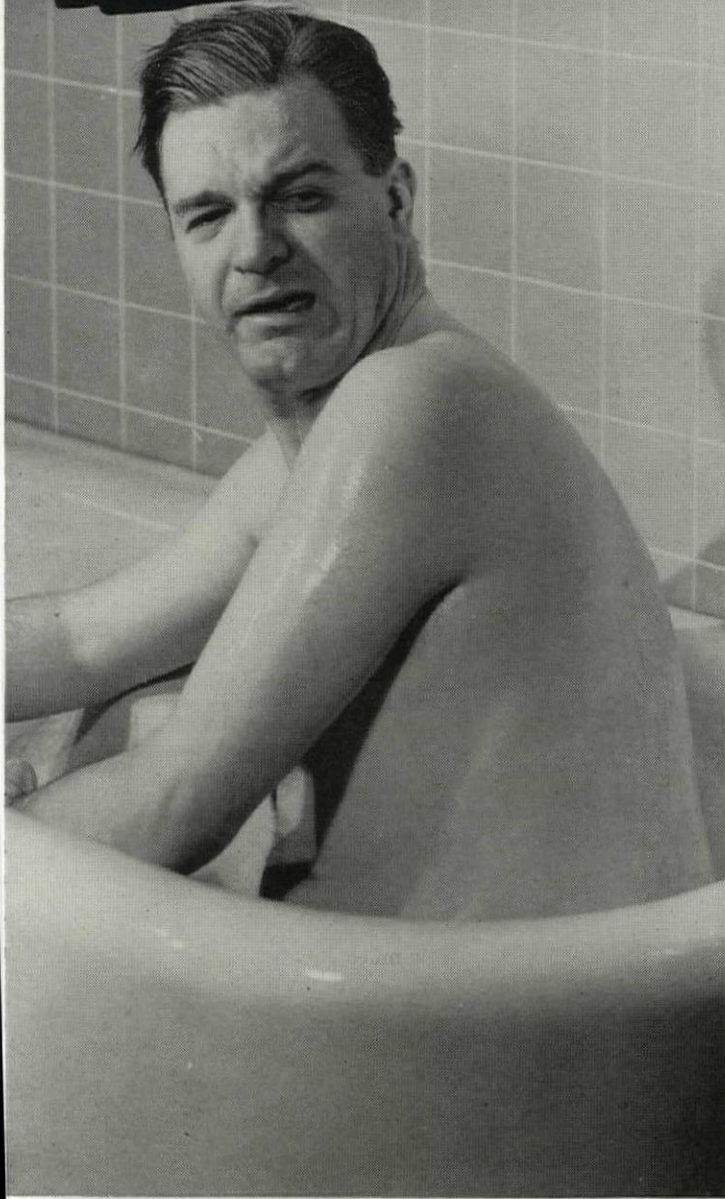
And Now—a Few Kind Words

Dear Editor:

I wish to congratulate you for the very successful Pittsburgh Competition that graced your pages recently. Many of the plans shown indicated mature thought on the part of the contestants and the entire project was beautifully presented.

GEORGE FRED KECK
Chicago, Illinois

Father's freezing
in his Bath . . .



INSTALL STEEL PIPING
ADEQUATE FOR TOMORROW'S NEEDS

Because Mother's
washing dishes!



EVERYTHING was lovely until "the boss" downstairs started scalding the dishes. That's when the hot water stopped.

Perhaps Father doesn't understand why his family can't have hot water upstairs and down at the same time. Maybe he doesn't know that the pipes were too small in the first place, and that the city water pressure cannot deliver a good healthy stream of water upstairs when somebody's using the water downstairs.

Don't blame Father for his ignorance of proper water pipe diameters. He has to be shown why he should pay a little more for adequate-size pipe when he builds that new house or modernizes the old one. He will see the advantage of providing for all those extra fixtures and extra outlets.

Always remember this: No more water can be delivered than pipes can carry under existing city pressures. To get more water, use larger diameter pipes and larger meters, too. The best protection to insure an adequate flow is to use adequate-size steel pipe.



Pipe and Tubular Products-Sheets-
Plates - Conduit - Coke Tin Plate

YOUNGSTOWN
THE YOUNGSTOWN SHEET AND TUBE COMPANY
YOUNGSTOWN 1, OHIO
Manufacturers of
CARBON, ALLOY AND YOLOY STEELS

Electrolytic Tin Plate - Bars - Rods -
Wire - Nails - Tie Plates and Spikes.

JOB AND MEN

MEN WANTED

DESIGNER-DRAFTSMAN wanted by small office in western Massachusetts. General practice with housing predominating. A permanent opening for the right man. R. J. Hubert, 18 N. Main St., South Hadley Falls, Mass.

COMPETENT ARCHITECTURAL DRAFTSMEN wanted for a small office with a general practice. Public and private postwar work. A long time connection assured to men of demonstrated capacity. Edwin E. Valentine, 99 Miller Ave., Muskegon, Michigan.

LAYOUT LOFTSMEN AND CHECKERS with three to five years' experience on sheet-metal loft layout wanted. Must have educational background to qualify for position with established New England company. Good postwar possibilities. Write, giving qualifications, draft status, age and salary requirements. General Aircraft Equipment, Inc., 22 Elizabeth St., South Norwalk, Conn.

DESIGNERS-DETAILERS WANTED: Some experience on department store and general interiors. For architectural woodworking plant. Very pleasant surroundings and associates. S. W. Mannheim Co., 3614 Euclid, Cleveland, O.

Exceptional postwar opportunities for top-flight **DISTRICT SALES MANAGERS, RETAIL STORE DESIGNERS, and ARCHITECTURAL DRAFTSMEN**, with manufacturer store-fronts, entrance doors, and new postwar building materials sold through established distributors and backed by national promotional program. Write giving details education, experience, etc. Address—Personnel Director, The Kawneer Company, Niles, Michigan.

Minneapolis firm of architects has opening for **ARCHITECTURAL DESIGNERS, DRAFTSMEN, AND ENGINEERS**. Give age, education, experience, and full particulars. Lang & Raugland, 502 Wesley Temple Bldg., Minneapolis, Minn.

ARCHITECTS AND ARCHITECTURAL DRAFTSMEN wanted by architectural firm in the Middle West. Application should state experience, definite references, and salary desired. Box 139, PENCIL POINTS.

EXPERIENCED DRAFTSMEN wanted by Midwest manufacturer. Must be familiar with all phases of architectural drafting, particularly store exterior and interior work. Excellent opportunity for present and postwar period. Write in confidence giving full details education, experience, and salary desired. Box 143, PENCIL POINTS.

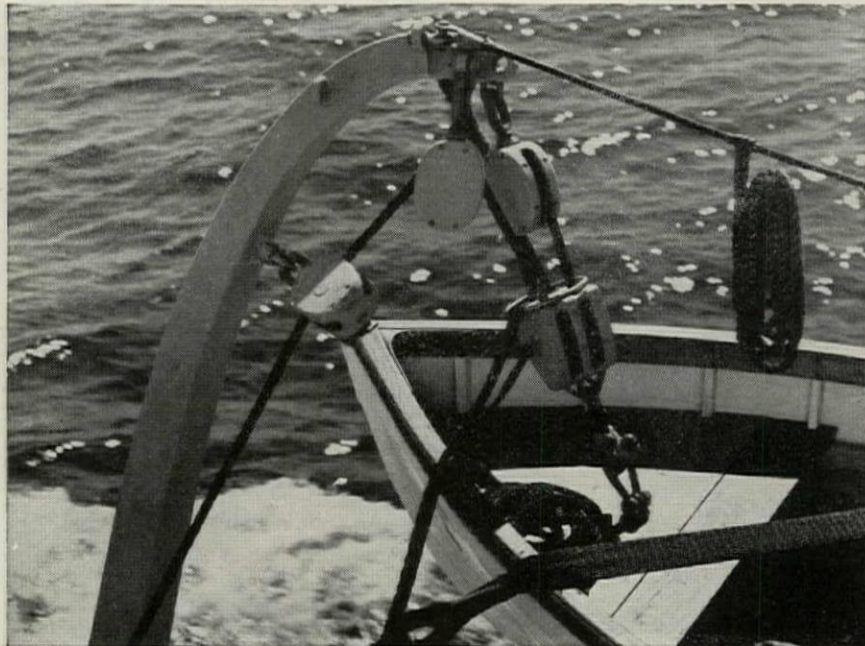
ARCHITECTURAL DESIGNER AND ARCHITECTURAL DRAFTSMAN wanted. Men capable of design, and development of working drawings and details. Established office, with extensive practice in public buildings, schools and hospitals. Excellent opportunity for capable men. Kansas City location. Box 145, PENCIL POINTS.

GENERAL DRAFTSMAN AND DESIGNER of schools, hospitals, and other public work, wanted in small office in eastern New York State. Give educational qualifications, references, and salary desired. Box 146, PENCIL POINTS.

HEATING, VENTILATING AND STRUCTURAL ENGINEER wanted as a partner in established architectural firm with general practice in a progressive Virginia city. If interested and qualified submit statement of educational background and experience, and tell when and how registered. Also enclose photograph. Box 147, PENCIL POINTS.

ARCHITECTURAL DRAFTSMAN wanted capable of handling design and working drawings. Small office, principal practice, schools, churches, hospitals. Please give age and full particulars. Box 148, PENCIL POINTS.

STRUCTURAL ENGINEER, thoroughly familiar with all types of structural building design wanted for permanent employment in our offices in Omaha, Neb. Send full details of schooling and experience. Leo A. Daly Co., 629 Insurance Bldg., Omaha 2, Neb.



TRUSTWORTHY

Of all the material things on which man relies in time of crisis, none is worthier of his trust than are Von Duprin fire and panic exit devices.

For nearly forty years Von Duprins have kept the faith. No matter what the emergency, they have always provided safe, sure, instant exit. They have saved countless thousands of men, women, and children from the twin terrors of fire and panic.

Whether they are the current models, of sturdy malleable iron, or the more brilliant brass and bronze types of pre-war days, Von Duprins . . . solely on the basis of their past performance . . . merit your full confidence and trust.

Every Von Duprin is built to do just that!



(Continued on page 1)



ART REPRINTS OF THIS ILLUSTRATION ARE AVAILABLE ON REQUEST

Pattern for better living

Gracefully modern and accentuated with soft curves, Saturn will add distinction to postwar homes and buildings.



Not a postwar dream, Saturn IS BUILT, and is only one of a series of lock designs to be produced immediately when victory releases materials and manpower.

1034B

SAN FRANCISCO

SCHLAGE

NEW YORK

Views

(Continued from page 12)

DRAFTSMAN FOR PENCIL POINTS—Full-time position as member of editorial staff preparing plans, elevations, and details for magazine reproduction. This is a creative job, analyzing and explaining contemporary construction. A knowledge of building techniques and facility with pen required. State qualifications and salary expected. Box 156, PENCIL POINTS

Architect established 25 years New York City has opening **ARCHITECTURAL DRAFTSMAN-DESIGNER**, experience school, institutional buildings, capable assuming charge of drafting room, development postwar commissions now under contract, relieve present architect to develop new business. Right man future associate partnership extended. Weekly drawing account. Give experience, age, education. Applications received to July 28th. Box 150, PENCIL POINTS.

ARCHITECTURAL DRAFTSMAN wanted—talented in quick perspective studies. Western North Carolina office. State qualifications fully and salary expected. Box 151, PENCIL POINTS.

ARCHITECTURAL DRAFTSMEN—Can employ for one year or less men capable of making good working drawings. Design and engineering ability not required. Office located in progressive Louisiana city. Practice varied. Work along "Contemporary" lines. Air-conditioned office. Good lake fishing. Swell job for the right man. Write fully. Box 155, PENCIL POINTS.

SITUATIONS WANTED

DESIGN ENGINEER, N. Y. State license, twenty years' comprehensive experience on architectural and engineering structures, seeks to develop clientele among New York architectural organizations with progressive construction programs. Box 141, PENCIL POINTS.

ARCHITECT-DESIGNER—18 years' experience, hospitals, public works, housing, industrial; self-reliant, and good personality; graduate Columbia University; seeks opening with progressive architects or engineers with possibility of future association or partnership; preferably South or West. Box 149, PENCIL POINTS.

ARCHITECT, age 32, desires to associate with progressive West Coast organization. This man is a Registered Architect in Michigan, N.C.A.R.B. registered, A.I.A. member, graduate architectural engineer, with 10 years' varied professional experience in Detroit, Mich., Portland, Ore., and Pearl Harbor. Box 152, PENCIL POINTS.

ARCHITECT, with over 25 years of successful experience on all types of buildings, seeks association with firm located in mild climate, for reasons of family health. Box 153, PENCIL POINTS.

NAVAL OFFICER, 33, to be released this summer, married, child, excellent health, desires offer that will crystallize his future. Southern university graduate, sales engineering; superior positions two large corporations, housing project, head small construction corporation, prefabrication research and interest; planner, organizer, knowledge of Latin America, including Spanish, Portuguese. Box 154, PENCIL POINTS

Notice to Competitors

Most of the drawings submitted in the PENCIL POINTS—Pittsburgh Architectural Competition have been returned to their owners. About seventy-five of them, however, are being held for possible use in a book of competition designs. As soon as definite choices are made the authors of these designs will be asked for permission to include their drawings in the book and those not selected will be returned.

WILLIAM F. BENNETT, JR. The return address marked on your entry in the Pittsburgh Glass Company Architectural Contest is incorrect. Will you send us your correct address, or call our editorial offices so that we may return your drawing?

**Make it with
WHITE**

**WHITE
CEMENT**
is practical
for many floors

**Light-Reflecting
Sanitary Floors**

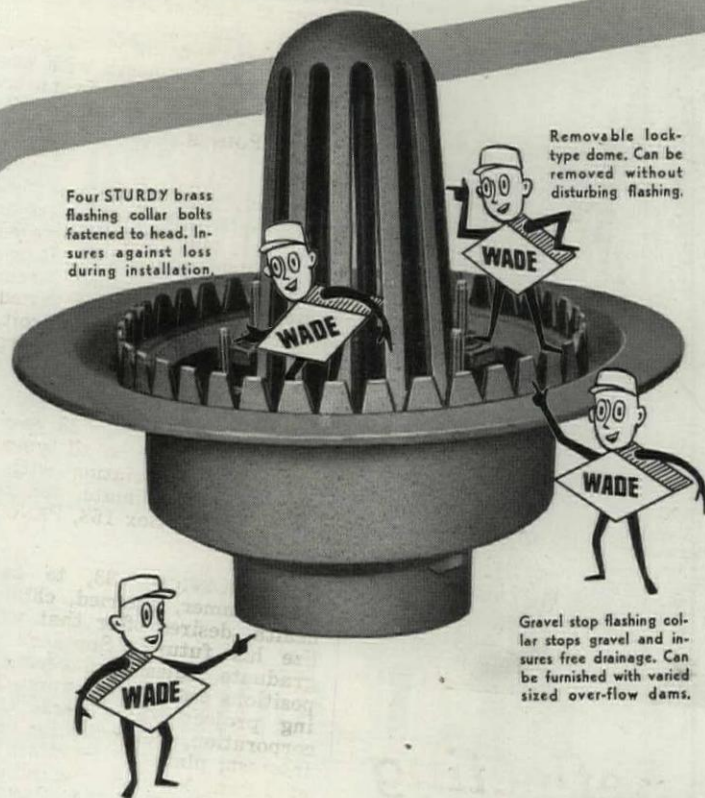
● Many of tomorrow's buildings will have light-reflecting, sanitary, white cement floors made with Medusa—the original White Portland Cement. Such floors give more light to increase the activities of workers, save light equipment and electricity, and are bright, easy to clean, smooth and non-absorbent . . . and they will stay white, for Medusa White is built into them and is not just a surface coating. Too, white cement floors can be laid over old floors. Send today for complete information on Medusa White for white cement floors.

MEDUSA PORTLAND CEMENT COMPANY
1004 MIDLAND BUILDING, DEPT. C • CLEVELAND 15, OHIO



MEDUSA the ORIGINAL WHITE
portland cement

When you want the best - call for **WADRAINS**



Four **STURDY** brass flashing collar bolts fastened to head. Insures against loss during installation.

Removable lock-type dome. Can be removed without disturbing flashing.

Gravel stop flashing collar stops gravel and insures free drainage. Can be furnished with varied sized over-flow dams.

Furnished with either threaded or heavy caulk outlet.

• The No. 3100 Roof Drain shown here is a good example of the extra quality and value you get when you specify **WADRAINS**. Note the many features that contribute to longer life—to easier installation — to dependable trouble-free service. Whatever your drain requirements you'll find an answer in the **WADRAIN** line. It's your simplest and safest way to be sure of complete satisfaction.

STOP WATER HAMMER with the Wade Arrester



Ends annoyance and damage of water hammer completely, permanently. Easily installed; needs no maintenance or adjustment. Sizes for all needs, all types of buildings. No. 6 illustrated; serves the average home.....\$12.00

Calling All Jobbers!

The Wade Authorized Distributor Plan offers you the right kind of cooperation, the right source of supply, for the big things to come. Write for details.

- QUALITY PRODUCTS SINCE 1865**
- Floor Drains • Roof Drains • Back-water Valves • Grease Interceptors
 - Traps and Cleanouts • Swimming Pool Drains and Equipment
 - Water Hammer Arresters.



WADE

MANUFACTURING CO.

77-79 N. STATE STREET, ELGIN, ILL.

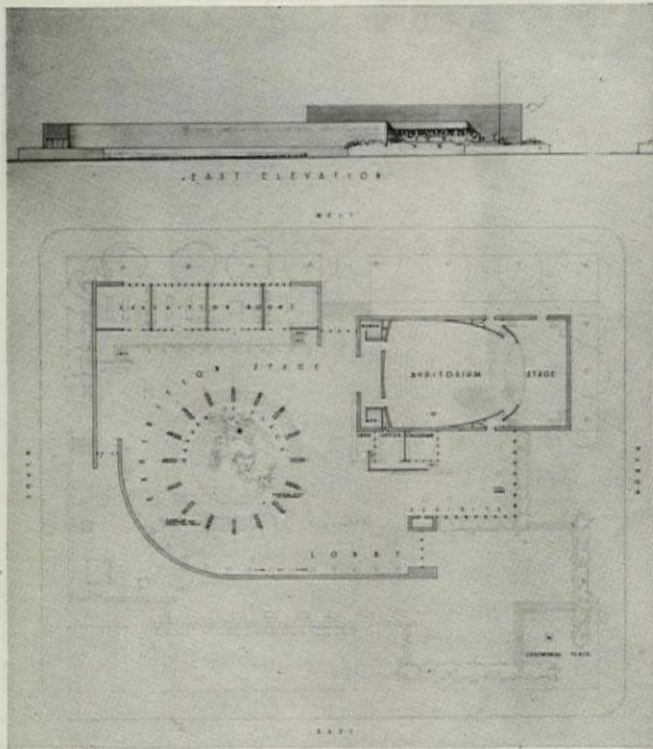
On the West Coast:

WADE-PORTLAND IRON WORKS DRAINS

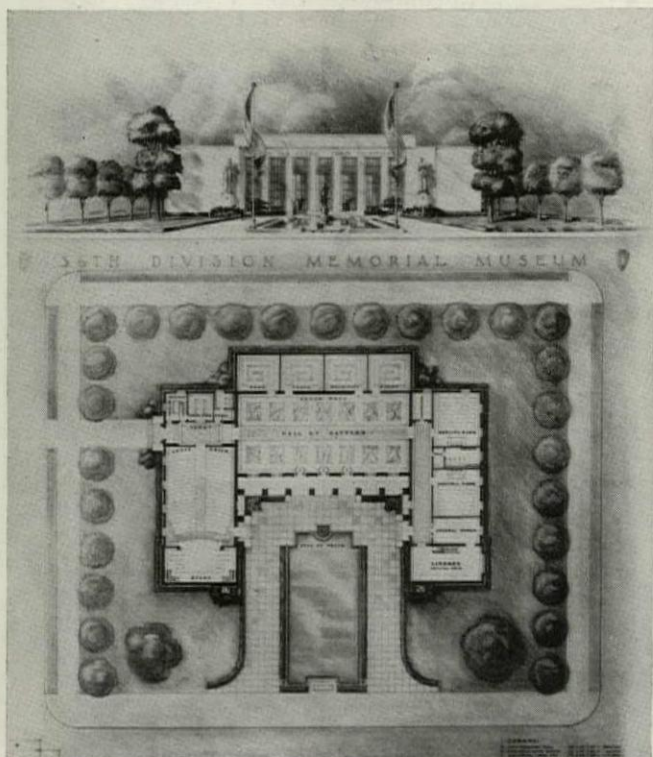
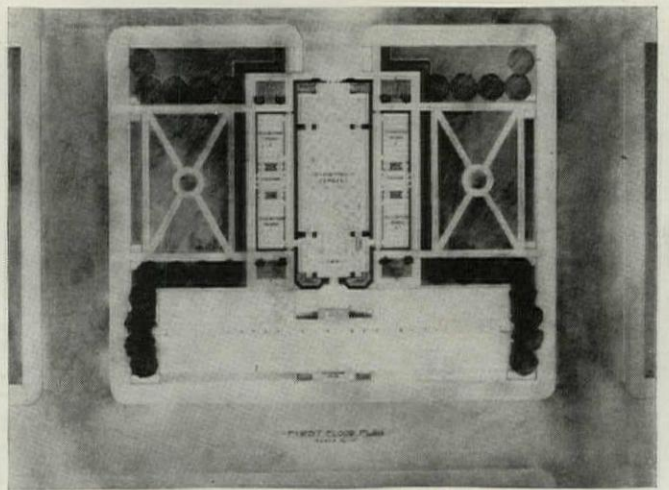
(FLEMING DRAINS)

36TH DIVISION MEMORIAL COMPETITION Museum and Auditorium for Temple, Texas

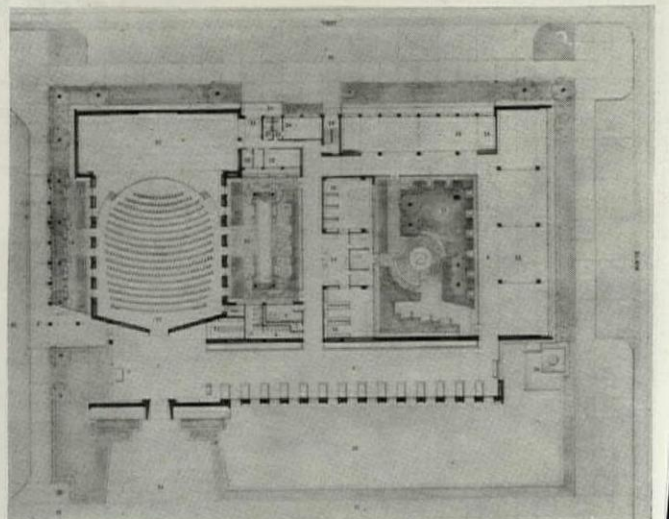
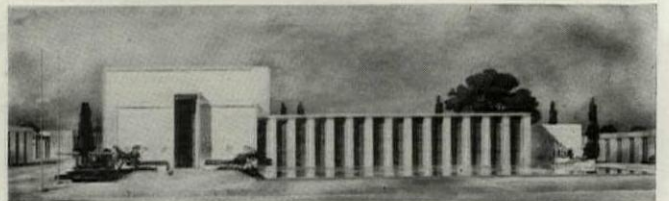
First Prize—The Jury liked the emphasis given the exposition space in this design by Alden B. Dow, Inc., Houston, and thought it "fits well the nature of the site."



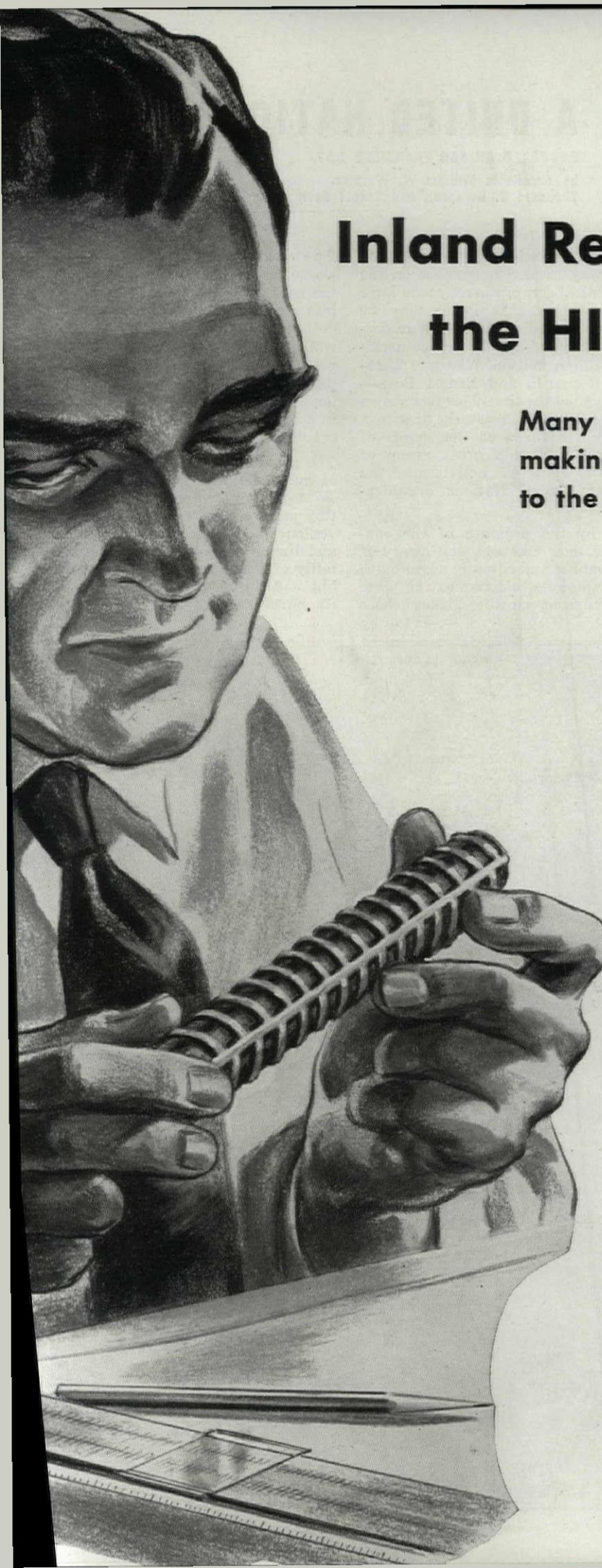
Second Prize—"Possesses beauty of drawing and great dignity" was the Jury's accolade for this design by J. Thomas Rather and George W. Rustay, also of Houston.



Third Prize—Termed "a well ordered, conventional design" was this drawing by J. Murrell Bennett, Dallas. But the exposition space was less than wanted.



Fourth Prize—Donald S. Nelson and Thomas D. Broad, Dallas, ran counter to the Jury's opinion when they gave more emphasis to the auditorium than exhibits.



Inland Research Creates the HI-BOND Re-Bar

Many practical difficulties overcome in making an outstanding contribution to the construction industry

Inland research actually scored twice in developing the HI-BOND Reinforcing Bar—first in designing a deformed bar of extremely high bond value, and equally important in developing steel mill rolls for efficient and accurate production.

Inland engineers, with long experience in construction, knew that there was need for a better reinforcing bar. After years of study a design was created, but it presented a number of problems before it could be rolled successfully. In fact, there were those who said it was impractical to roll. That was a challenge to Inland roll designers and mill men. After studies of the problems, rolls were cut and billets were formed into HI-BOND Bars—bars that were true to design and accurate—bars that could be rolled in any quantity, restricted only by wartime conditions.

The HI-BOND Bar is another example of how Inland research develops and makes available new steel mill products—products that do a better job—products that often save steel and cut labor costs.

Inland has prepared a booklet, "Engineering Tests Prove Bonding Strength of HI-BOND Reinforcing Bar." Write for your copy! Inland Steel Company, 38 S. Dearborn St., Chicago 3, Ill. Sales Offices: Cincinnati, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis, St. Paul.

Principal products: Sheets, Strip, Tin Plate, Bars, Plates, Floor Plates, Structural, Piling, Rails, Track Accessories, Reinforcing Bars.

HI-BOND REINFORCING BARS

A UNITED NATIONS CENTER

PROPOSED ON SAN FRANCISCO BAY

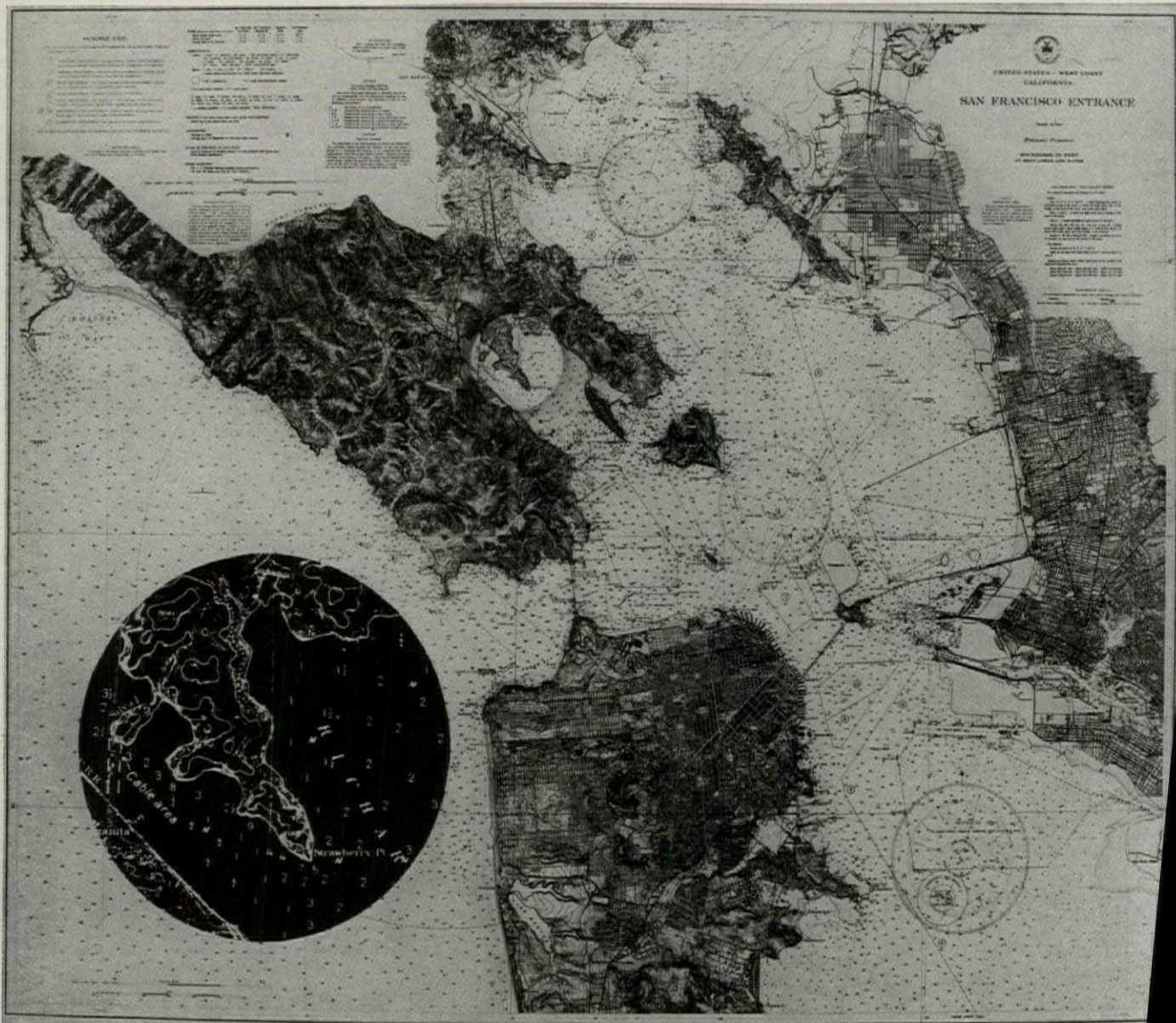
by Architects William W. Wurster,
Theodore C. Bernardi, and Ernest Born

As the San Francisco Conference pursues its way toward agreement on the world political setup, whereby men have dared to dream that Peace may be maintained in the world and War outlawed, a group of San Francisco architects—William Wilson Wurster, Theodore C. Bernardi, and Ernest Born—have presented the timely project shown here. In a series of masterly drawings they have visualized on the shores of San Francisco Bay a great group of buildings to house the activities of the permanent United Nations organization.

Inspired by the presence of the conference in their city and well aware of the geographic and climatic advantages that prompted its selection as the place for the current meetings, they chose

Strawberry Point in Marin County as a site possessing in the highest degree the necessary character to be developed into a center of world importance. The design is offered as a preliminary study which would, of course, require further research and development before it might eventually be realized. It is the hope of the designers that it may help in some way to advance the great project of permanent world peace.

The architects approached their design of the center with two criteria in mind. To use their own words, "Its architecture must possess every utilitarian convenience and general amenity for work and living, with the space-usage flexibility of a loft building or warehouse—but it must also, by the beauty of all its parts and by the integrity of its





2

1. Map of San Francisco Bay area highlighting Strawberry Point, chosen as ideal site for the project. 2. Aerial view looking northwest from 9000 feet altitude. 3. Looking south towards San Francisco. Main group of buildings on point; hotel and residential center at curved head of Richardson Bay to take care of delegates, staff, and personnel.

3



plan and the nobility of its conception, stir men's hearts to fine things and inspire in them the clarity of vision to see past the obscurations of cynics and doubters and give mankind the perseverance and power needed to make this truly the good world we dare to believe it could be."

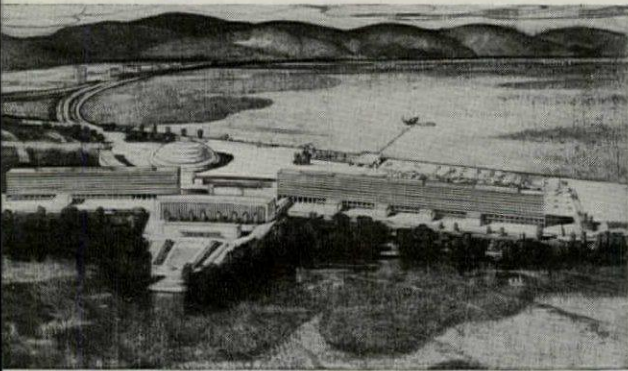
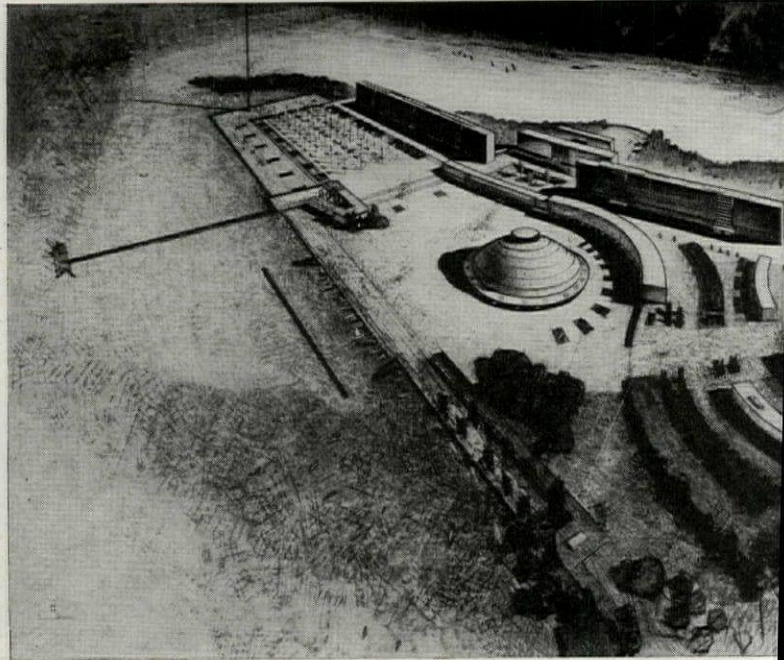
The site chosen, as may be clearly seen, overlooks a panorama to the south including San Francisco, Oakland, and the bridges. It is sheltered from the westerly ocean winds by Mt. Tamalpais and the Marin Hills. It is within twenty minutes of the heart of San Francisco via the Redwood Highway. The land area is sufficient for all needed buildings, with plenty of space for future expansion to the north.

Traffic and circulation have been studied and can be adequately handled. From the future modern six-lane highway leading from the Golden Gate Bridge, a system of loops would lead down into the center from the low hills to the north, arriving through a tunnel under the main group of buildings into a parking area under the Court of the United Nations. Elevators would give direct access to the major buildings.

Automobiles on the way to the parking area can let out delegates, personnel, and visitors directly into the great Entrance Court. Directly facing on this is a Press, Communications, Police, and Information Building. In the center of this Entrance Court is an Auditorium seating 10,000 people, giving ample space for delegates and visitors. The Auditorium is so located as to give access from all directions, making for easy entrance and exit. Modern, well-

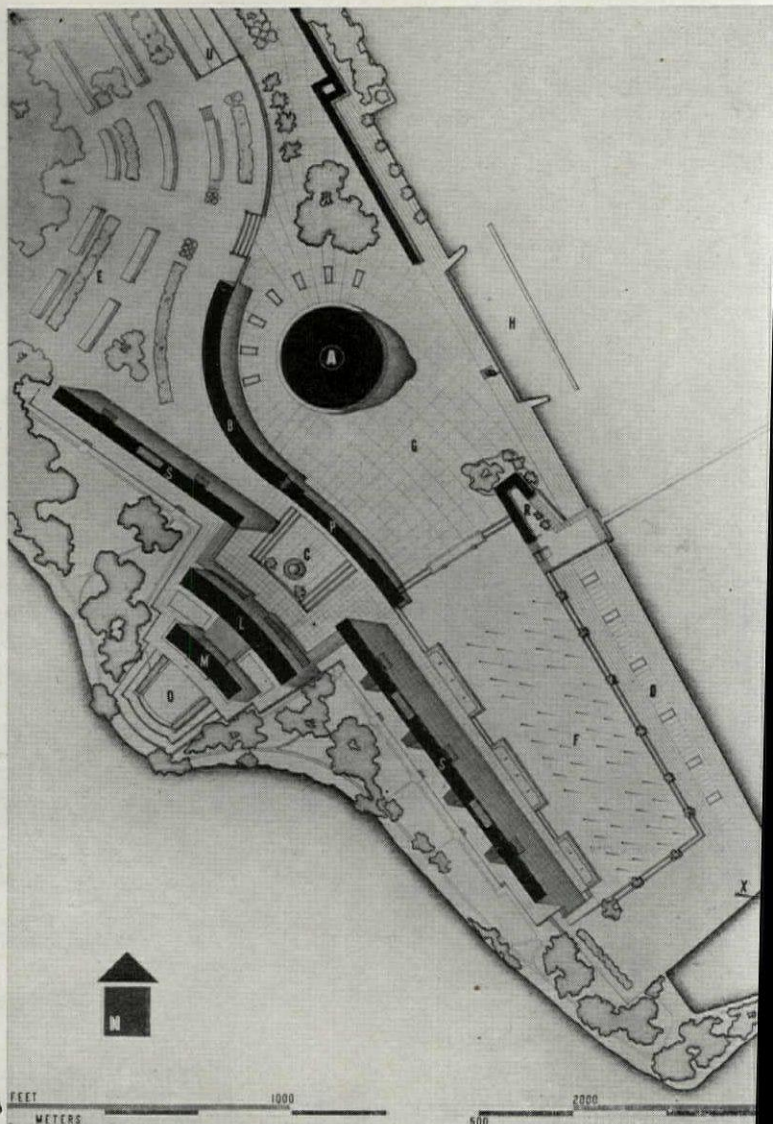
(Continued on page 20)

Two views of main group of buildings, with huge domed auditorium flanked by curved Archives Building and Press and Information Building. Secretariats housed in long office buildings. Note seaplane and boat landings with restaurant at waterside to serve public arriving by air, land, or water.

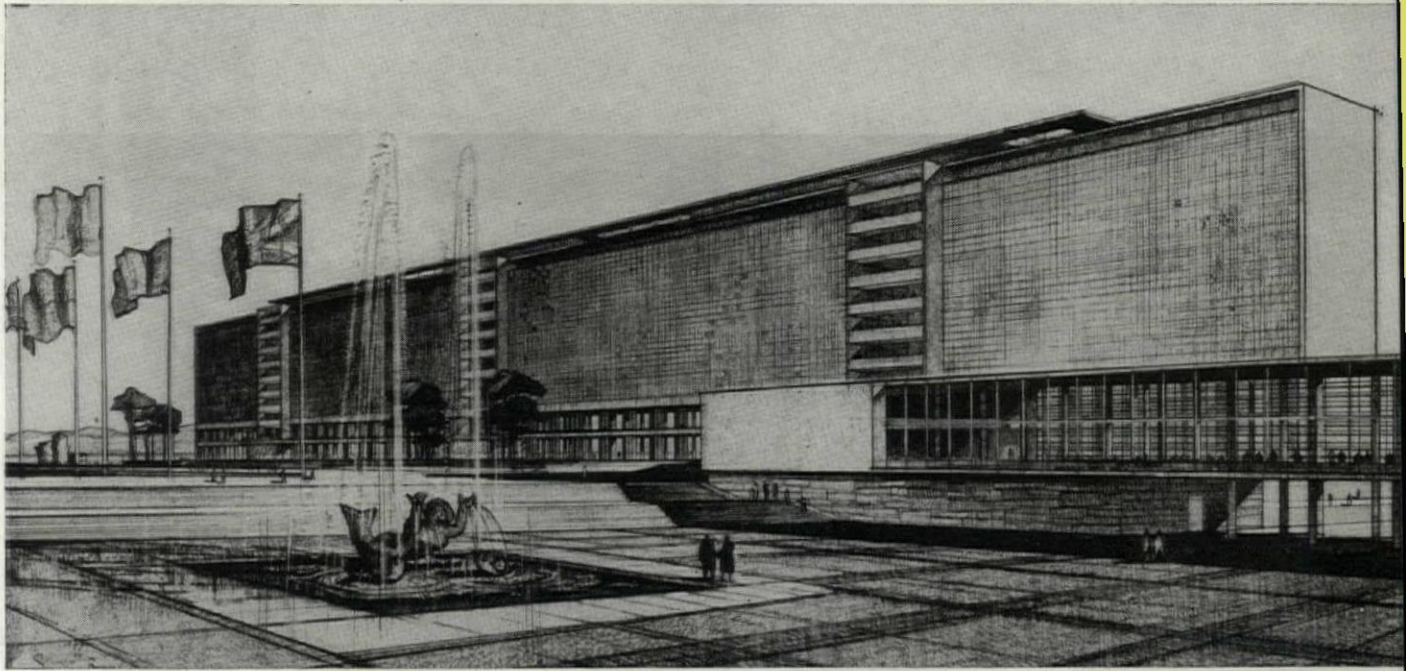


LEGEND FOR PLAN

- A. Auditorium, seating 10,000 people, for large gatherings, official, cultural.
- B. Archives Building, where documents of member governments are on file for official use.
- C. Library Court, with revolving Globe.
- D. Outdoor Exhibitions.
- E. Auxiliary Buildings, housing scientific foundations and study organizations.
- F. Court of Flags. Flags of member countries would be flown here on state occasions.
- G. Entrance Court and Auditorium Plaza.
- H. Harbor for Small Craft.
- L. Library, capable of expansion, to house historical documents open to the public and materials on history and politics.
- M. Museum.
- O. Outdoor Museum.
- P. Press and Information Building.
- R. Restaurant, open to the public.
- S. Secretariats, or office buildings, housing the offices of the member governments.
- U. Underpass to Parking Areas.
- X. Beacon.
- Y. Seaplane Landing Base.



THEIR DARING IS THAT THEY CAN BE REALIZED"



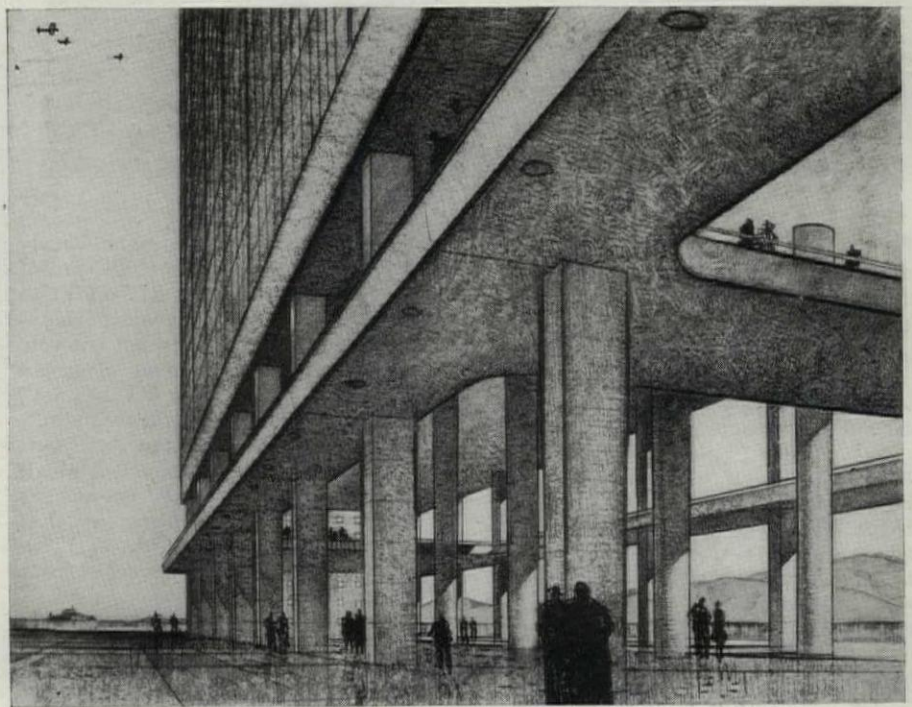
lighted office buildings provide working space for the Secretariat and the various committees. These office buildings are so located as to shelter the Entrance Courts and the Court of the United Nations from the occasional westerly winds. A Library for the use of all delegates and their staffs is centrally located facing an inner Garden Court. A Museum for the exhibition of unique documents or items of world-wide interest is centrally located adjoining the Library. An Archives Building for storage of records and documents is located to form a great backdrop for the Entrance Court.

In the hills to the north immediately adjacent to the central group of buildings will be other buildings housing activities concerned with the coordination and development of cultural, social, and humanitarian problems. Here would be the offices concerned with propagation of ideas on agriculture, science, and arts. Indoor and outdoor theaters and music halls are indicated in this part of the development.

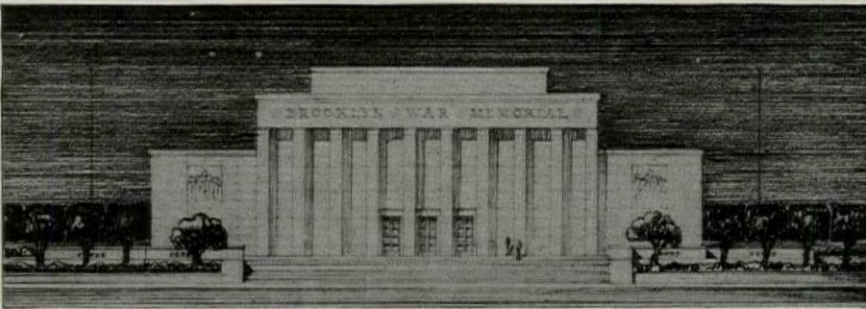
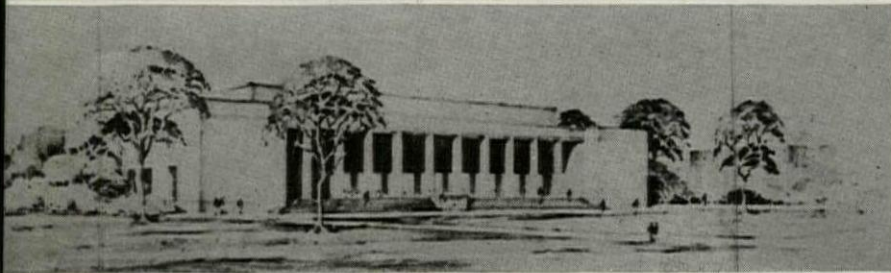
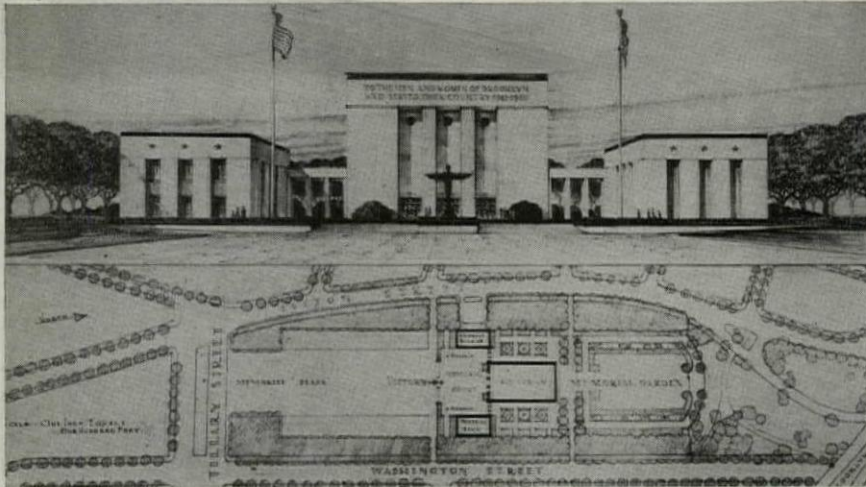
At the edge of the United Nations Plaza and facing the water is a restaurant serving visitors and personnel, and suitable for entertainment of delegates and visitors. In addition there would be club rooms, promenades, and gardens on the roofs of the office buildings.

It is proposed to develop the whole area within the two-mile circle as a beautiful park. All the modern ideas of Science and Art would be utilized to produce the most convenient and workable center, as well as one pleasing to the eye. The work of the master painters and sculptors of the world would be incorporated.

South office building viewed from Entrance Court, with Press and Information Building at right foreground. Stairs at left lead up to Court of Flags. The ground level of the office buildings is an open promenade and loggia. Top floors house club rooms, dining rooms, and special meeting rooms. Offices are on intermediate floors. Outside walls are to be of grid construction, permitting use of transparent or opaque materials as needed.



BROOKLYN WAR MEMORIAL COMPETITION



Designs for a borough memorial to heroes of World War II, winning the recent competition initiated by the *Brooklyn Eagle*, are all for sites facing the proposed Civic Center. The first prize drawing (top, left) won \$3,000 for Stuart Constable, chief designer of New York Department of Parks, and Elisabeth Gordon, New York, sculptor of the statue of Victory (above) for the forecourt. Aymar Embury II, architect, and Gilmore D. Clarke, landscape architect, won the \$1,500 second prize with their design (left) for a sculptured and inscribed Wall of Honor in a loggia at the front of a memorial auditorium. Paul Fitzpatrick, vice president of the American Arbitration Association, won the third prize of \$500 with his design (below, left) for a Hall of Arbitration. The proposals will be referred to the city for consideration among postwar projects.

Prominent New York architects and landscape architects agree with Borough President Edgar J. Nathan, Jr., in his policy of "planting trees wherever possible," he ascertained by a recent poll.

Moved to reexamine his tree-planting program when Philip LeBoutillier, president of Best & Co., flatly refused to have trees around his new store on Fifth Avenue just beyond the blocks where sidewalk trees have been cherished since 1939 by Rockefeller Center and St. Patrick's Cathedral, Nathan sent out a questionnaire to 17 landscape and architectural men. They gave their enthusiastic approval to his policy.

Those questioned voted unanimously that "trees enhance the architecture of city buildings such as exist on Fifth Avenue or on similar streets of Manhattan" and with one exception (no vote cast) that "continuous trees along an avenue are beneficial to its beauty." The majority favor "general tree-planting throughout Manhattan, such as exists in Paris and Vienna." And all but one (no vote) disagreed specifically with LeBoutillier's contention that "trees should have no place on Fifth Avenue, except on the park side, in front of a park."

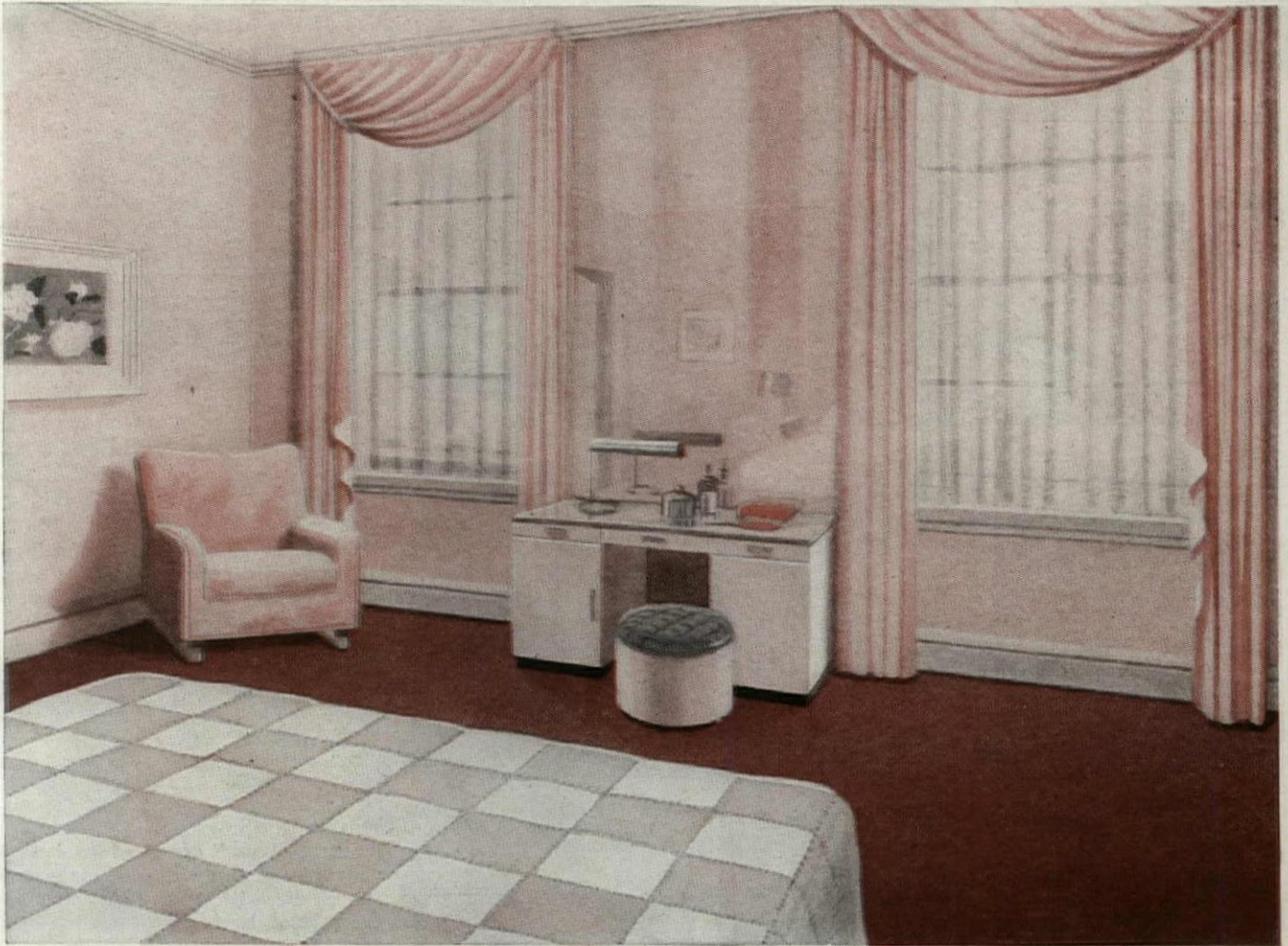
In denying the request of Mrs. Iphigene Ochs Sulzberger, president of the Park Association of New York City, Inc.,

that he consider planting trees, LeBoutillier took occasion also to complain that trees "obscure the architectural beauty" of St. Patrick's Cathedral, the Church of St. Nicholas, the Pulitzer Fountain in the 59th Street plaza, and the hotels around the plaza. He also objected to the "measly trees" at the corners of the Public Library. He ventured his opinion that "the Park Association of New York City, Inc., should confine its efforts to parks, for which it probably was organized."

Perry Coke Smith, of Voorhees, Walker, Foley & Smith, has been elected president of the

(Continued on page 24)

Where is the Radiator?

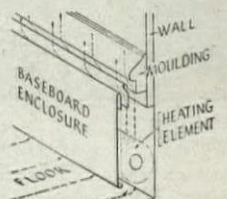


In the Home of Tomorrow the radiator is conspicuous by its absence—it is everywhere, and nowhere. In Webster Baseboard Heating, the heating element is something so small that it fits behind the baseboard and runs in a continuous line all around the exposed walls of the room.

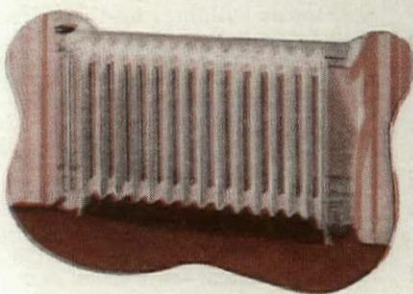
The baseboard unit supplies heat to the room using "forced" hot water. Air goes in at the floor-line, passes over the heating element, is warmed and comes out at the top—a constant, even circulation. No cold corners. No hot spots. No hot-or-cold levels . . . Installations of Webster Baseboard Heating show a variation of less than 2° from floor to ceiling.

With Webster Baseboard Heating there is nothing to limit or mar plans for interior decoration and furniture arrangement . . . And you will find that the absence of radiators in the room gives considerably more useable space.

Webster Baseboard Heating has been under development for several years and has met the most severe operational tests. It will be available to home owners and home builders when war conditions permit.



The Webster Baseboard Heating Element is copper tubing around which are coiled copper fins. Baseboard Enclosure is removable for cleaning.

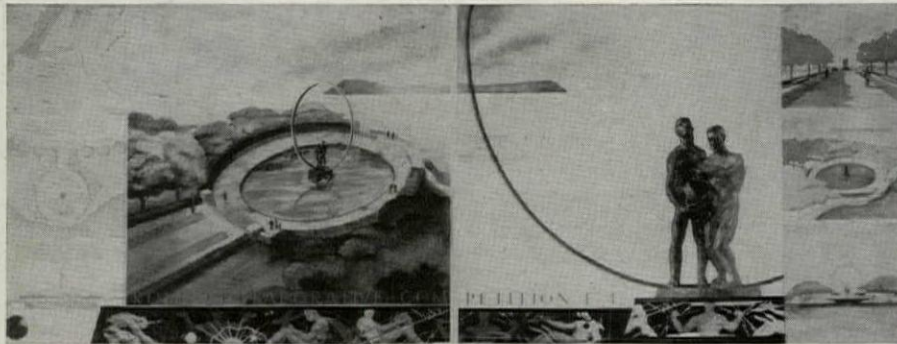


Make this test: Cut out illustration of radiator at left. Place cut-out picture under right window in main illustration above. See how presence of a radiator in the room interrupts whole scheme of decoration . . . A leading architect, collaborating with a well-known interior decorator, is preparing a series of paintings showing application of Webster Baseboard Heating to different types of rooms. When completed, these paintings will be reproduced in full color. Write today for your copy of this brochure on Webster Baseboard Heating. Dept. PP-7

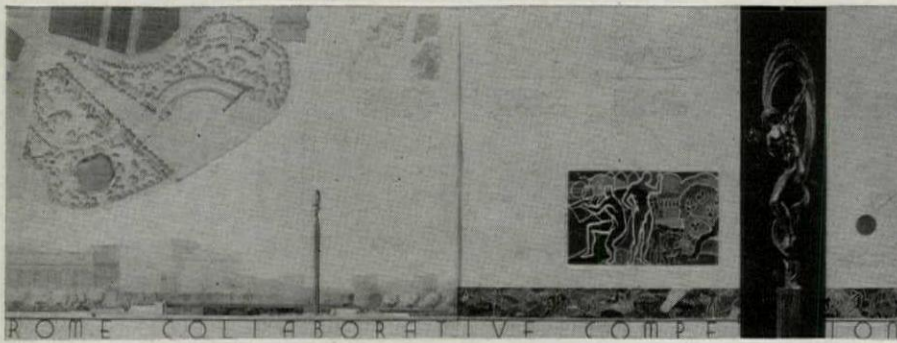
WARREN WEBSTER & COMPANY, Camden, New Jersey
 Pioneers of the Vacuum System of Steam Heating: : Established 1888
 Representatives in principal cities : : Darling Brothers, Limited, Montreal, Canada

SPERRY MEMORIAL COMPETITION

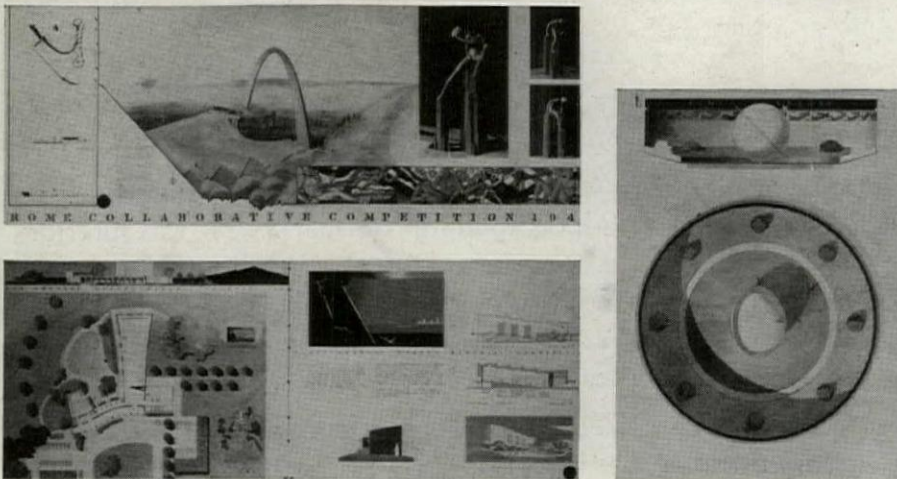
Sponsored by Sperry Gyroscope Company, Inc., and Alumni Association of The American Academy in Rome



First prize of \$1,000 plus the students' prize of \$200, in the recent collaborative competition to design an enduring memorial "at a scale commensurate with Dr. Elmer A. Sperry's . . . importance" as inventor of the gyro-compass, has been awarded to Mary T. Wilcox, as architect, University of Pennsylvania; Helen Omansky, as painter, and Richard Frazier, as sculptor, both of Pennsylvania Academy of Fine Arts. Their winning entry is shown at left.



With the entry at the left, John Pile, as architect, University of Pennsylvania; Eda Castle, as sculptor, and Marie-Celeste Fadden, as painter, both of Pennsylvania Academy of Fine Arts, won the second prize of \$200 plus the students' prize of \$75.



landscaped and exhibited to best advantage—serving admirably to acquaint the public with the characteristics of the sort of houses they can have built when materials become available. Architects whose work is shown are Frank Lloyd Wright, Vernon DeMars, Mario Corbett, George Fred Keck, Philip Johnson, Hugh Stubbins, Jr., Carl Koch, Serge Chermayeff, and Plan-Tech Associates. In addition, two new models, by John Funk and by Wurster & Bernardi, in association with Ernest J. Kump, will be added to the show during the summer. The models will be exhibited through September 3.

In addition to the small house models, which were created to be photographed in color for the section of *Ladies Home Journal* edited by Richard Pratt, architectural editor, there is shown a neighborhood model by DeMars, Chermayeff, and Susanne Wasson-Tucker. In addition to single houses of the neighborhood, patterned after the other models in the exhibition, are community buildings by Chermayeff and DeMars, and apartment buildings by Chermayeff.

Visitors to the museum show are asking questions about the architects' solutions of the problems of modern living. They study the models at length, peer into the rooms from all angles, compare the models with the plans, discuss preferences (and prejudices) with enthusiasm. Architects who have any interest in client opinion might find it worth while to go and listen—as well as see.

(Continued on page 26)

Three prizes of \$100 each were awarded to three more teams, whose entries are shown above. The drawing at center is by Eduardo Mejia, as architect, University of Pennsylvania; Bolton Morris (special mention), as painter, and Andrew Hawkins, as sculptor, both of Pennsylvania Academy of Fine Arts. The drawing at lower left is by Mayer & Whittlesley, architects, New York, with Sgt. Edgar A. Tafel, associate; and Amedée Ozenfant, painter, New York. At lower right is shown the drawing of William Henry Deacy, architect; Vincent Carano, sculptor; and Ernest S. Leland, painter, all of New York.

(Continued from page 22)

New York Chapter, A.I.A., succeeding Arthur C. Holden.

Other chapter officers elected are Morris B. Sanders, vice president; Theodore J. Young, of Eggers & Higgins, secretary; and Robert W. McLoughlin, Jr., treasurer.

The retiring president reported a net gain of 30 new members during the

year, bringing the chapter membership to 544, the peak since the chapter was formed in 1867.

Unusual interest is evidenced by visitors to the Museum of Modern Art in the current show of models of contemporary houses loaned by the "Ladies Home Journal" for the show entitled "Tomorrow's Small House."

Painstakingly detailed, furnished throughout, the miniature houses are

A Planned Community . . . Modern Homes with Lupton Metal Casements . . . Added beauty and added liveability—natural ventilation and abundant daylighting—in every room. Lupton Metal Casements are easily operated and their sturdy construction assures weather-tightness and fire protection. Back of “Lupton” is more than 40 years in metal window design.

See our Catalog of Post War Types and Sizes in Sweet's for 1945, or write today for reprint.

MICHAEL FLYNN MANUFACTURING CO.
E. Allegheny Ave. at Tulip St., Philadelphia 34, Pa.
Member of the Metal Window Institute



LUPTON METAL WINDOWS

News

(Continued from page 24)

Critical attention to the limits of the roles of government and industry in construction research is invited by the Technical Committee, Producers' Council, Inc., in a tentative statement of principles sent out to professional and trade groups of the construction industry.

Explaining that "there appears to be need for constructive determination of the areas of research" because of divergent opinions "as to the proper scope, pattern, and objectives of government research, in relation to private enterprise and the maintenance of the American incentive system," the Technical Committee emphasizes that the Council itself does not wish to take a definite stand on this question until it has the advice of the industry. If a statement can be agreed upon, the Council proposes to put it before Congressional committees and government agencies concerned.

The statement offers definitions of the objectives of research—fact-finding and invention—and suggests divisions of responsibility, areas, financing, and official controls.

NOTICES

CHURCHILL-FULMER ASSOCIATES announce the removal of their offices to 19 West 44th St., New York 18, N. Y.

PERRY M. DUNCAN, Architect, announces the reopening of his office at 121 East 54th St., New York 22, N. Y.

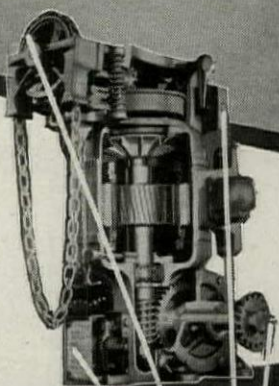
THE DETROIT BRASS FOUNDRY, Los Angeles, Calif., will hereafter be known as THE LOS ANGELES BRASS CO., it has been announced by DON DAVIDSON, General Manager. The company will manufacture under the trademark name "L. A. BRASS."

The U. S. GENERAL AND CONVALESCENT HOSPITAL, Camp Carson, Colorado, has requested back issues of PENCIL POINTS and other architectural magazines for use by veterans in courses that are designed to aid in readjustment after years of active combat duty. Put your unused back issues to work by sending them to the attention of CAPTAIN R. F. RINKER, Chief of the Ed. Recon. Section.

CARL L. GARDNER has been appointed chief city planner in charge of the master plan division for the Chicago Plan Commission, it is announced by H. EVERETT KINCAID, executive director. Until recently Mr. Gardner was in charge of all land planning for the Federal Housing Administration and has resigned to take this new post.

(Continued on page 28)

KINNEAR DOORS
offer **ADDED**
SAVINGS with
this **KINNEAR**
Motor Operator



Just touch the button and the KINNEAR Motor Operated Rolling Door coils upward without further effort or attention. Touch the button again and the door closes smoothly. The door can be quickly stopped and reversed at any point in its travel. The "attention-free" operation of the KINNEAR Motor Operated Rolling Door assures added savings in manpower, in heating and air conditioning costs, and in time. Remote control switches, permitting the door to be operated from any number of distant points, may also be used.

The KINNEAR Motor Operator is an integral unit, insuring accurate alignment, quieter operation, greater efficiency and minimum maintenance. The motor is a specially designed high torque output unit, matched to the load requirements of the door. Worm gears are of bronze and the worms are of polished, hardened steel; both are machine cut. Precision ball bearings, graphite oilless bearings, bronze bushings and large sealed oil reservoir for adequate lubrication with minimum attention, are incorporated in the KINNEAR Motor Operator.

For complete information on KINNEAR Motor Operated Rolling Doors, write today! The KINNEAR Mfg. Co. Factories: 1900-20, Fields Ave., Columbus 16, Ohio; 1742 Yosemite Ave., San Francisco 24, Calif.

Offices and Agents in Principal Cities.

OTHER KINNEAR FEATURES INCLUDE

...Flexible steel slat curtain that coils up out of the way, clearing the opening completely.

...Helical spring counterbalance that assures smooth, easy operation.

...Kinear "tough" all-steel construction stands up under hard night - and - day service.

...Wall, floor and ceiling space around door always usable.

...Many others.

**SAVING WAYS
IN DOORWAYS**

KINNEAR
ROLLING DOORS



5 REASONS WHY

Owners prefer Silbraz Joints*

for copper or brass pipe runs

SILBRAZ is the name when you want leakproof copper or brass pipe runs that remain permanent for years; that contribute to increased prestige . . . and business. Performance-proved in thousands of installations, here are 5 major reasons more and more owners are demanding safe, dependable Silbraz installations in all types of buildings.



**HE CAN INSTALL
SILBRAZ
JOINTS**



Better plumbing and heating contractors already have the special Airco oxyacetylene equipment for making Silbraz joints and the "know how" to do the job. You can rely on them to install "one-piece" Silbraz copper or brass piping systems.

1. VIBRATION PROOF

—the physical characteristics and design of the Silbraz joint are such that the joint will withstand vibration *under load* better than even the pipe or the fitting.

2. FIRE

—the silver brazing alloy used in Silbraz fittings has a melting point of 1300° F. In a fire, the pipe will fail—under load—long before the joints and fittings are affected.

3. CORROSION RESISTANT

—in conveying many commercial gases or liquids, Silbraz joints have been found to stand up as well as the pipe itself and frequently better. This is due to their high percentage of copper and silver.

4. "ONE-PIECE" LINE

—the brazing alloy incorporated in each Silbraz port, flows out when heated with the oxyacetylene flame, and makes a tight, leakproof joint—stronger than the pipe itself.

5. ECONOMICAL

—Silbraz joints require neither maintenance nor repairs, and are good for a service span equal to or greater than the life of the pipe.

Silbraz fittings and valves are produced by leading manufacturers. You can specify them with assurance for plumbing and heating lines, fuel, gas and process lines—in better-class homes, apartment houses, public, commercial and mercantile buildings—wherever you want copper or brass pipe runs that can "stand-up" under all conditions and give your clients complete satisfaction.

*Registered U. S. Pat. Off.

★ BUY UNITED STATES WAR BONDS ★



AIR REDUCTION

General Offices: 60 EAST 42nd STREET, NEW YORK 17, N. Y.
In Texas: MAGNOLIA AIRCO GAS PRODUCTS CO. • General Offices: HOUSTON 1, TEXAS

Offices in all Principal Cities

MORE
planes available
MORE
space available
SPECIFY
AIR EXPRESS



WHEN TIME MEANS MONEY, Air Express *earns* its weight in gold. Specify this fastest delivery for all urgent shipments — there's more space available these days for all important traffic.

HIGH SPEED FOR LOW COST. When you consider that shipments travel three miles a minute between airport towns and cities, the cost of Air Express is low, indeed, as is shown by typical rates on chart.

AND COST INCLUDES special pick-up and special delivery in major U. S. towns and cities — a service that makes same-day delivery possible in many cases. To 23,000 off-airline points there are rapid air-rail schedules. Direct service to scores of foreign countries.

AIR MILES	2 lbs.	5 lbs.	10 lbs.	25 lbs.
250	\$1.04	\$1.25	\$1.57	\$2.63
500	\$1.11	\$1.52	\$2.19	\$4.38
1000	\$1.26	\$2.19	\$3.74	\$8.75
2500	\$1.68	\$4.20	\$8.40	\$21.00

WRITE TODAY for interesting "Map of Postwar Town" picturing advantages of Air Express to community, business and industry. Air Express Division, Railway Express Agency, 230 Park Avenue, New York 17. Or ask for it at any Airline or Express office.

AIR EXPRESS



GETS THERE FIRST

Phone AIR EXPRESS DIVISION, RAILWAY EXPRESS AGENCY
 Representing the AIRLINES of the United States

News

(Continued from page 26)

OBITUARIES

N. Max Dunning
 1873-1945

N. Max Dunning, architectural adviser to PBA Commissioner W. E. Reynolds and public servant since World War I, died April 19 in Washington. Prior to entering government service, he designed schools, clubs, hotels, and commercial structures in the Midwest.

As one of the founders of the Architectural League of America, Dunning was secretary of its first convention in 1903 and became president of the League in 1904. He began the practice of architecture in Chicago, in 1894, and in 1900 won the first traveling scholarship of the Chicago Architectural Club, which enabled him to continue his studies abroad. He was a Fellow of the A.I.A., a former national director and vice president, a past president of the Illinois Chapter, and past chairman of various A.I.A. national committees.

Edith Elmer Wood
 1872-1945

Dr. Edith Elmer Wood, internationally known housing authority, died April 29 at Morristown, New Jersey. She had been known for more than 30 years as an expert on slum clearance and low-cost housing problems. Her books and pamphlets on the subject also have been widely quoted.

As consultant to the United States Housing Authority and a director of the National Public Housing Conference, Dr. Wood completed in 1942 a nation-wide survey of wartime housing conditions. She founded the Anti-Tuberculosis League of Puerto Rico, of which she was president from 1906 to 1909 and honorary president until her death; served from 1917 to 1929 as chairman of the National Committee on Housing, American Association of University Women; supervised Columbia University's extension courses in housing from 1926 to 1930; was a member of the New Jersey State Housing Authority, the executive committee of the International Housing Authority; served for four years as vice president of the National Public Housing Conference.

Other leaders in the field paid tribute to Dr. Wood's devotion to "the cause of housing and human welfare" at a memorial meeting May 9 in New York. The meeting was sponsored by Citizens' Housing Council of New York, National Public Housing Conference, and National Committee on Housing.

design for lasting appreciation with Dow plastic



Screen from **SARAN**
leads the way

Among countless plastic materials Saran has the inside track in the architectural field. Screen from Saran has already proved itself—is an accepted product in up-to-the-minute building plans. High ranking among advantages that have brought it popularity over the best metal screens is resistance to corrosion. Saran simply *can't* rust. It's not affected by salt air, rain, snow, or fog. It possesses stamina, has a tensile strength of 50,000 pounds per square inch, yet is extremely resilient. Saran's beautiful colors are a part of the material itself—there's no need of repainting and there's no danger of ugly streaking of sills. These and other advantages support the prediction of a brilliant future for screen from Saran.

Other Dow plastics are headed for success in building—close on the heels of the leader. For example, Styron and Ethocel possess properties definitely fitting them for many unique architectural duties. These materials are worthy of your consideration—any Dow plastics technician will be glad to discuss them with you.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland • Detroit • Chicago
St. Louis • Houston • San Francisco • Los Angeles • Seattle



TRIM WITH ETHOCEL

Tough trimming material that absorbs bumps without bruising. It's available in many attractive colors—transparent or translucent. Ethocel trim lends color and protection to many a corner.



FIXTURES OF STYRON

Low priced plastic available in beautiful colors—clear, opaque or translucent. Styron is light in weight yet dimensionally stable. You'll see a lot of it in future homes and buildings.

Let's work it out together



At Dow feel that the successful use of plastics in architecture is not one-man nor even a one-industry job. It calls for the combined skill and experience of architect, plus fabricator, plus raw materials producer. Working together, this team saves time and money and puts plastics to work successfully. Call us—we'll do our part.

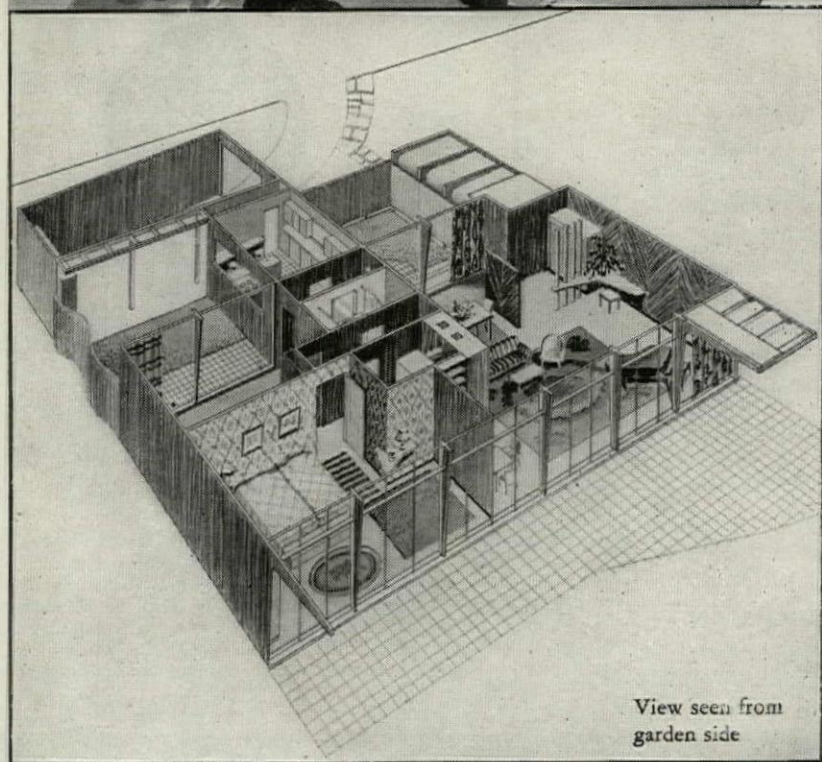
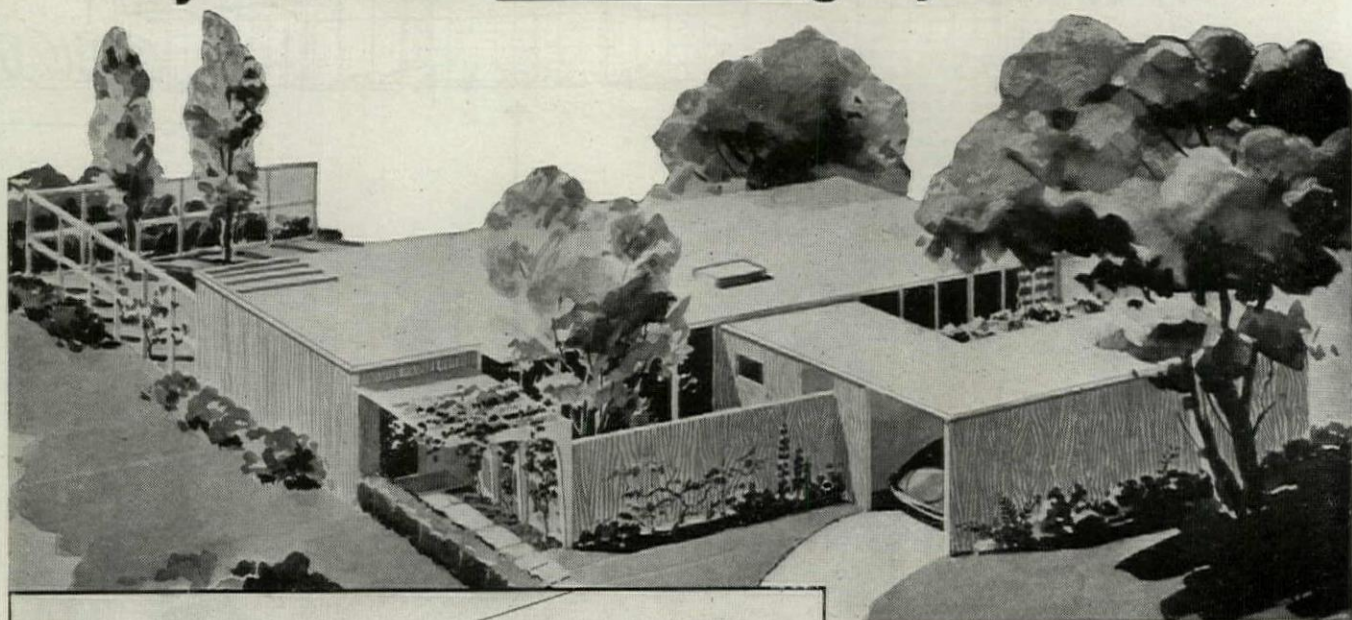


PLASTICS

STYRON • STYRALOY • ETHOCEL • ETHOCEL SHEETING
SARAN • SARAN FILM • STRIPCOAT

COMPACT, SIMPLIFIED PLANNING

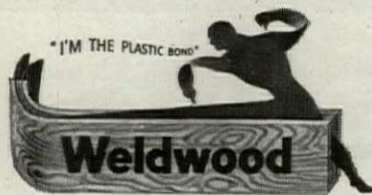
Keynotes this Prize-Winning Plywood Home



View seen from garden side

Second-Prize Design

by Lt. (j.g.) Russell M. Amdal,
U.S.N.R., Washington, D. C.



Plastics and Wood Welded for Good

Waterproof Weldwood, so marked, is bonded with phenol formaldehyde synthetic resin. Other types of water-resistant Weldwood are manufactured with extended urea resins and other approved bonding agents.

Plywood's structural possibilities are graphically illustrated in this second-prize plan, in the recent United States Plywood Corporation — "Arts & Architecture" Small Home Competition.

This highly simplified method of construction, based on the principle of the three-hinged arch, shows that plywood is truly a material that combines beauty and utility.

Laminated wood arches...strong plywood hardwood paneling...plywood sheathing for sub-floors, ceilings and walls to be papered...waterproof exterior sheathing...they all combine to produce a compact, livable, economical home for the modest budget.

Another very interesting feature of this design is the way Lt. Amdal provided for today's demand for easy transition between indoor and outdoor living. Here again the structural advantages of plywood permit a freedom of planning that would have been difficult, economically, with other materials.

Complete details of this and the other winning designs are available upon request.

WELDWOOD Plywood

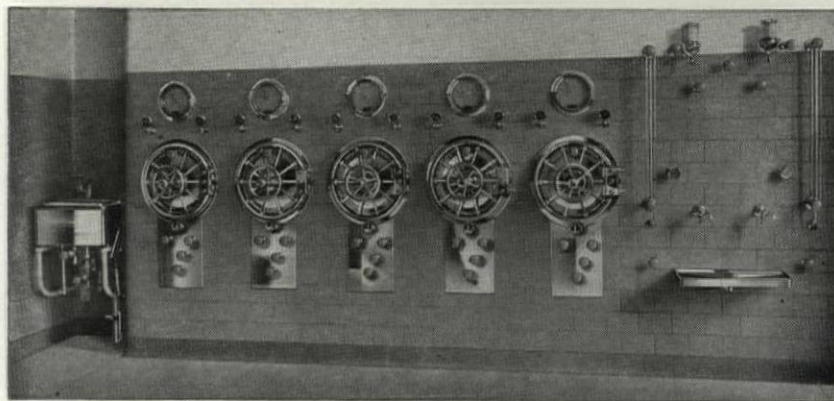
Weldwood Plywood and Plywood Products are manufactured and marketed by
UNITED STATES PLYWOOD CORPORATION **THE MENDEL COMPANY**
New York, N. Y. Incorporated
Louisville, Ky.

Distributing units in Baltimore, Boston, Brooklyn, Chicago, Cincinnati, Cleveland, Detroit, High Point, Los Angeles, Newark, New York, Oakland, Philadelphia, Pittsburgh, Rochester, San Francisco, Seattle. Also U.S. Mengel Plywoods, Inc. distributing units at Atlanta, Jacksonville, Louisville, New Orleans. In Canada: United States Plywood of Canada Limited, Toronto. Send inquiries to nearest point.

Planning

and ENGINEERING DATA

Forty years of experience in equipping hospitals, and direct personal contact with superintendents, engineers and architects, qualify our Technical Service Department to give valuable assistance and authentic



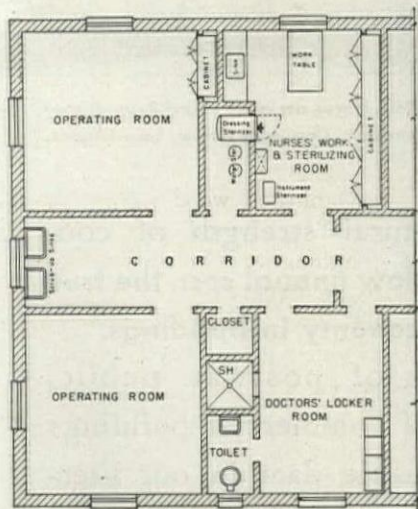
guidance in the important matter of planning for
**STERILIZER
INSTALLATIONS**

A Typical Sterilizing Room at Charity Hospital of Louisiana, New Orleans, La. This 3000-bed hospital is completely equipped with Scanlan-Morris sterilizing apparatus.

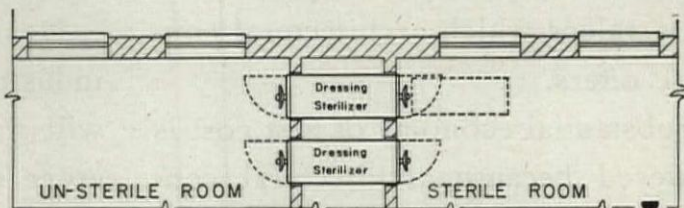
TO SERVE SPECIFIC HOSPITAL NEEDS

Many of the finest small hospitals of the United States and Canada as well as scores of the largest are equipped with Scanlan-Morris sterilizing apparatus. No matter what a hospital needs in sterilizers, we can supply them.

Suggested layouts of sterilizer and other equipment based on careful survey of the conditions relating to the individual project, with complete recommendations for the most efficient and economical installation to meet the requirements, are furnished upon request and without obligation.



Typical layout for small hospital with major and minor operating (or delivery) rooms



In this sketch, double doored autoclaves divide the sterilizing department into unsterile and sterile sections

SCANLAN·MORRIS

Division of THE OHIO CHEMICAL & MFG. CO.
MADISON 4, WISCONSIN

MANU-
FACTURERS
OF:

**Sterilizing Apparatus • Operating Tables
Operay Surgical Lights • Scanlan Sutures**

SCANLAN-MORRIS, Madison 4, Wisconsin

Send Sterilizer Catalog and Planning Manual to:

Name _____

Address _____

City _____ State _____

You can have both economy
and distinctive design with
**ARCHITECTURAL
CONCRETE**



Iberia Parish Court Building in Louisiana is classical in form yet constructed of modern materials. It was designed in architectural concrete by Architect A. Hays Town of Baton Rouge. Engineer, Thomas Lucy, Baton Rouge. Contractors, Gravier & Harper, Lake Charles.

Easy adaptability to exacting design requirements, firesafety and long life at low maintenance expense are extra values which architectural concrete offers.

Substantial economy of first cost is achieved because architectural concrete combines both architectural and structural functions in one material.

Besides these advantages and the

rugged structural strength of concrete, it gives **low annual cost, the true measure of economy in buildings.**

Designers of postwar public, industrial and commercial buildings will find valuable data in our literature on design and construction practice with architectural concrete. It is free in the United States and Canada. See Sweet's Catalog 4F/3.

PORTLAND CEMENT ASSOCIATION

Dept. A7-25, 33 West Grand Avenue, Chicago 10, Illinois

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

★ **Buy and Keep More War Bonds** ★



A BUILDER ASKED THIS QUESTION

“Will the use of Aluminum Windows increase my labor costs?”

And this residence in Illinois answers “Definitely not!”

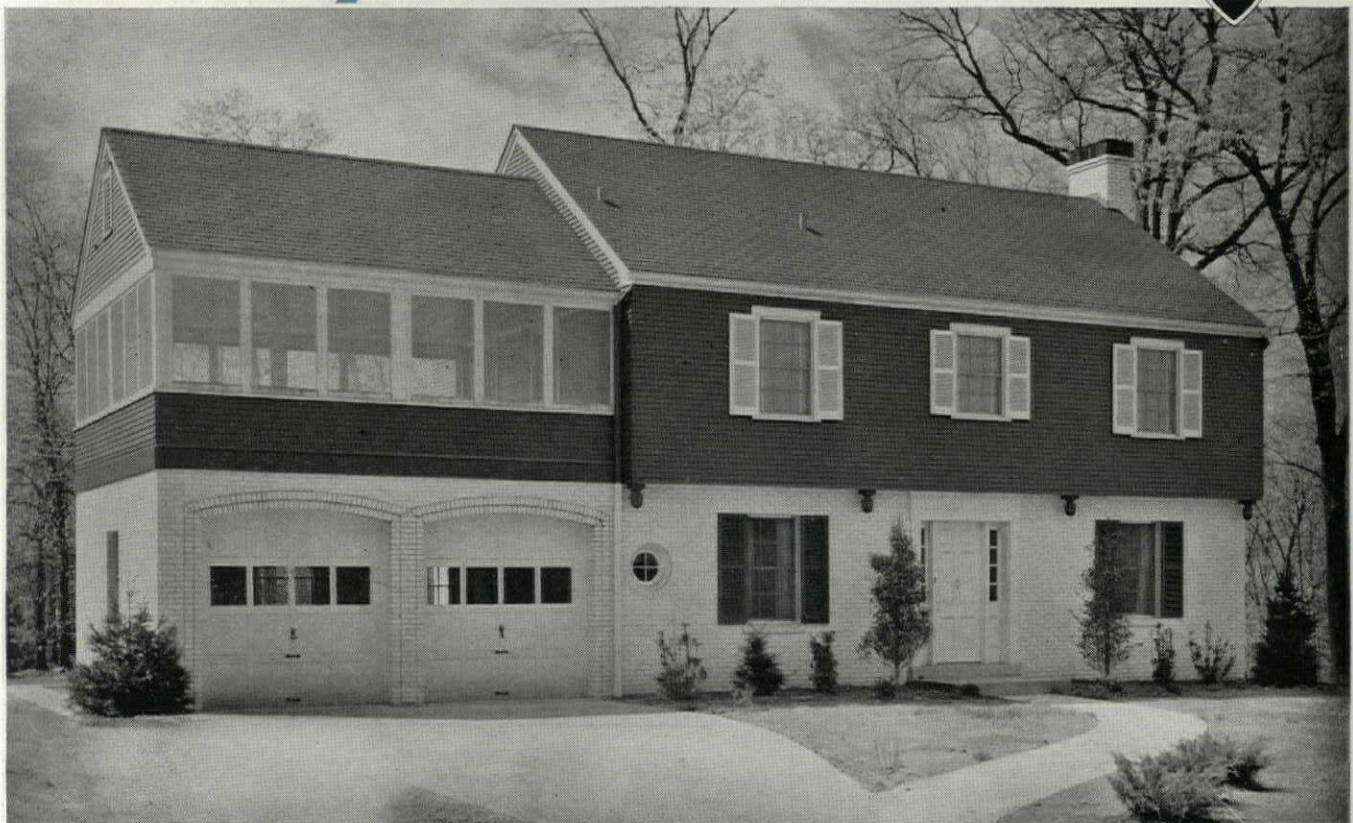
Two carpenters started to unpack the eighteen aluminum windows for this house (this is a prewar story, of course) at 10:30 one morning. At 2:30 that afternoon, with a half hour out for lunch, all eighteen windows were set, anchored and lined up, ready for the plasterers.

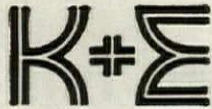
That's been nearly five years ago. To-

day, their good appearance, their easy operation, greater glass area and low upkeep continue to make living with them a joy.

Windows made of Alcoa Aluminum will again be available, from a number of manufacturers, just as soon as aluminum and manpower are available. ALUMINUM COMPANY OF AMERICA, 1868 Gulf Bldg., Pittsburgh 19, Pa.

Windows of **ALCOA ALUMINUM**





SLIDE RULES

A TRADITION OF SKILL AND PRECISION

Never before have so many K & E Slide Rules been wanted by engineers for such critically important work.

You may have had to wait for the K & E Slide Rule you wanted. We apologize. We've stepped up our wartime production tremendously. But in the manufacture of Slide Rules haste can be a hazard. The engineer cannot tolerate instrumental errors in his equipment.

• K & E Slide Rules are traveling all over the world. They have to stand up to all kinds of climates and conditions. Only carefully selected materials, experienced skill and thorough workmanship are sure to do that.

That's why engineers know they can rely on the unvarying accuracy of a K & E Slide Rule anywhere, anytime.

You will find Don Herold's booklet, "How to Choose a Slide Rule" helpful and amusing. Write to Keuffel & Esser Co., Hoboken, N. J.



*Drafting, Reproduction, Surveying
Equipment and Materials.
Slide Rules. Measuring Tapes.*

KEUFFEL & ESSER CO.

EST. 1867

NEW YORK • HOBOKEN, N. J.

CHICAGO • ST. LOUIS • DETROIT • SAN FRANCISCO
LOS ANGELES • MONTREAL

"Was the roof of tomorrow here yesterday?"

This is one of the new synthetic rubber plants, a unit in America's newest industry. On its many buildings are roofs built of Koppers Coal Tar Pitch and Tarred Felt . . . the type of roofing that was setting up records for durability away back before synthetic rubber was a practical possibility.

This is only one of the big wartime plants on which Koppers Roofing was used. Individual plants with as much as 60 acres under one roof have been covered with Koppers Roofing.

The war brought immense construction activity and resulted in many revolutionary new ideas in construction, but through it all no one was able to find any built-up roofing which is better than the good, old reliable coal tar pitch and felt.—Koppers Company, Inc., Tar & Chemical Division, Pittsburgh 19, Pa.

One of America's
newest industries

uses one of America's
oldest roofings

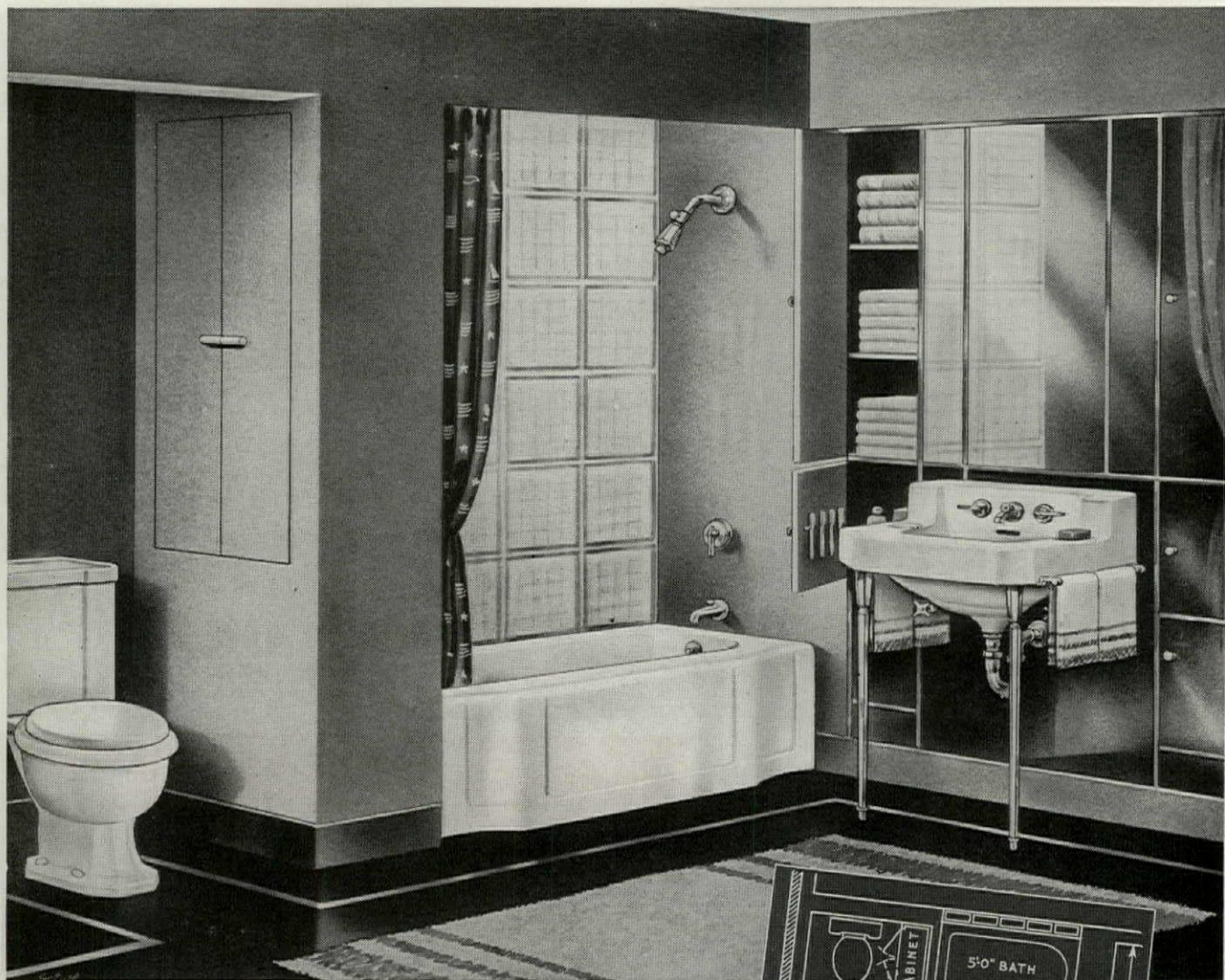
KOPPERS Coal Tar Pitch Roofing



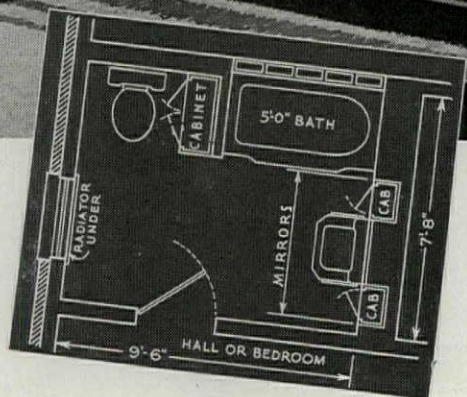
Buy War Bonds and keep them!

KOPPERS

THE INDUSTRY THAT SERVES ALL INDUSTRY



Accenting the practical in new bathrooms



In modern bathrooms, the skill of the Architect can be apparent to the most inexperienced home owner. Practical, convenient arrangement of facilities; ingenuity in providing ample storage space; beauty, dignity and harmonious design in fixtures and fittings specified—all these are easily recognizable.

Kohler fixtures and fittings fulfill all requirements for first quality: the fixtures with their sound, rigid construction, permanently lustrous, easy-to-clean surfaces, and appropriately matched designs; the fittings with their sureness and ease of performance, and reliability of all working parts.

The arrangement above includes the new Kohler Gramercy lavatory with built-in fittings and roomy shelf back; the Cosmopolitan recess bench bath, with shower controlled by the efficient Triton mixer; and the quiet, smooth-acting Wellworth close-coupled closet. Quality control of Kohler products is assured by unity of supervision and complete manufacture in one plant—backed by 72 years' experience. If you don't have Catalog K-41, write Kohler Co., Dept. PP-7, Kohler, Wis.



KOHLER OF KOHLER

Buy and Keep
U. S.
War Bonds

PLUMBING FIXTURES AND FITTINGS • HEATING EQUIPMENT • ELECTRIC PLANTS

She'll want a
MODERN Kitchen
 of course



But—



Curtis stock cabinets provide maximum convenience and storage space for any size or shape of kitchen.

Wall and base units are designed to fit easily and quickly together in various combinations to fit different needs.



During the war years, millions of housewives have formed some pretty definite ideas about their kitchens-to-come. They want them truly modern—certainly. **BUT** they'll want cabinet arrangements to fit their own individual tastes and needs. They'll want kitchen color schemes that meet *their* conceptions of kitchen beauty—and that may be changed as desired. They'll want *solid* value—not mere surface charm.

And that's exactly why so many architects and builders will specify Curtis wood kitchen units in the homes of tomorrow. Curtis stock cabinets make it possible to have the most desirable arrangement plus the most desirable color scheme. Curtis cabinets fit every kitchen arrangement. They are easily installed—fit perfectly with all standard kitchen appliances—and are priced for budget-minded home builders.



Curtis cabinets are scientifically designed for greater efficiency in use. Expert in workmanship, they are recommended by "Good Housekeeping" Institute.



The Curtis line includes a unit for every purpose—sizes for every need. You have the widest possible scope in planning the right kitchen for any home.



Keep Up To Date on Post-War Kitchens!—Many years of research and experience have made Curtis an authority on kitchens. Mass production methods have placed these beautiful kitchen units within the reach of all. Keep up to date on Curtis kitchen cabinets and woodwork—mail the coupon for complete information.

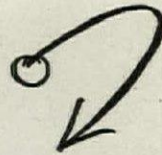
Curtis Companies Service Bureau
 Dept. PP-7S Curtis Building
 Clinton, Iowa
 Gentlemen:
 Send me your Curtis Kitchen Planning Book and other literature on Curtis Stock Architectural Woodwork.

Name.....

Address.....

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

Floors of Nairn Linoleum create an atmosphere of smartness and efficiency... provide an effective background in this flower shop.



for small retail shops...

or great department stores...

the "No. 1" floor is...

NAIRN LINOLEUM



easy to maintain,

colorful, permanent, resilient

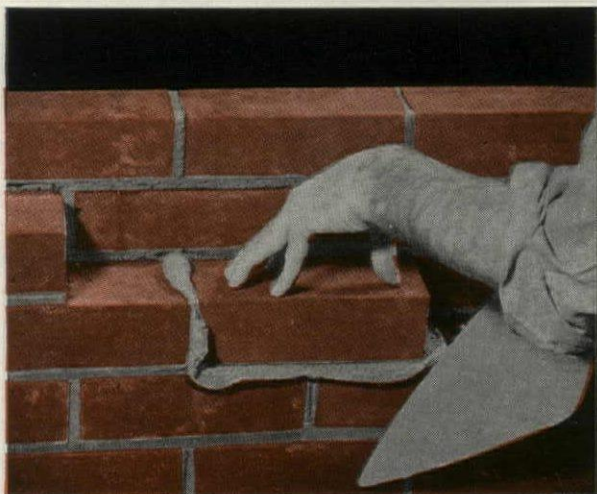
When the "musts" for a floor are appearance, resilience, durability, ease-of-maintenance—Nairn Linoleum—the quality linoleum—rates AAA-1. Nairn's colorful patterns afford the store architect or designer unique opportunities for decorative effects. The well-proved wearing qualities of Nairn Linoleum insure long, trouble-free service, with a minimum of maintenance. In great department

stores, small shops—retail establishments of every type—Nairn Linoleum is daily proving itself the outstanding floor of tomorrow's new construction and remodeling. A handbook on linoleum specifications has been prepared for your use. May we send you a copy?

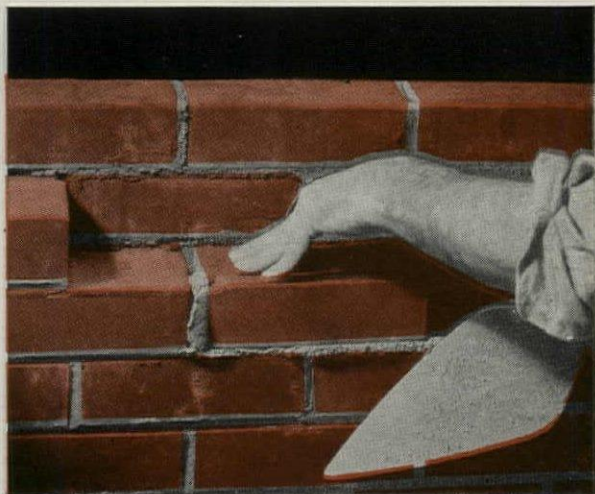
CONGOLEUM-NAIRN INC., KEARNY, N. J.

BRIXMENT MORTAR

Is More Plastic



To compare the plasticity of any two mortars, try shoving a brick into place, with a full head



joint. The more plastic the mortar, the easier the work. Try this with Brixment mortar!

AND GOOD PLASTICITY

IS THE FIRST REQUIREMENT OF GOOD MORTAR

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

One of the outstanding characteristics of Brixment mortar is its unusual plasticity. For twenty-five years, brick-

layers all over the United States have agreed that the workability of Brixment is comparable to that of straight lime putty. This exceptional plasticity makes it easy for the bricklayer to secure neat, economical brickwork, with the brick properly bedded, and the joints well filled. And because of this unusual plasticity, a bag of Brixment will carry three full cubic feet of sand and still make an ideally workable mortar.

LOUISVILLE CEMENT CO., Incorporated, LOUISVILLE 2, KENTUCKY
CEMENT MANUFACTURERS SINCE 1830

Another Example of Douglas Fir Plywood's Versatility In Wall Design Treatment!

No. 4 of a Series

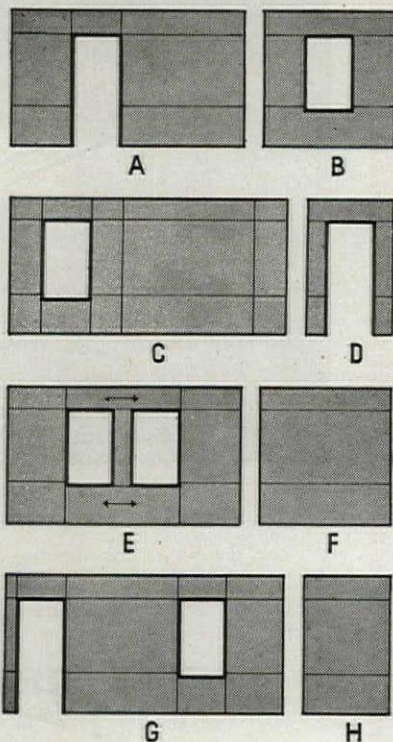
In a long list of offices, stores and other commercial buildings—as well as in homes of almost every type—Douglas fir plywood can add beauty and utility to wall design. The restaurant illustrated below is one typical example worked out by an architect.

Several basic principles will serve as a guide in planning wall design treatments with Douglas fir plywood. Start at the openings with vertical joints and divide the plain wall spaces in an orderly pattern for the most pleasing effect. Vertical joints should be used

at top of doors and at top and bottom of windows, as in the diagram at the right. In cases where the width of the door or window is over four feet, do not hesitate to place the panels horizontally (as in Figures B and E) for combinations of vertical and horizontal arrangements may be used in the same room with pleasing effect.

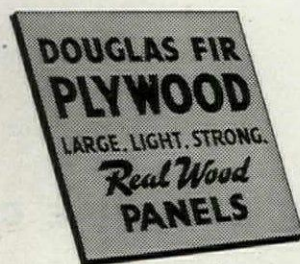
For additional helpful data, write the Douglas Fir Plywood Association.

Simple Suggestions For An Attractive Wall Design With Plywood

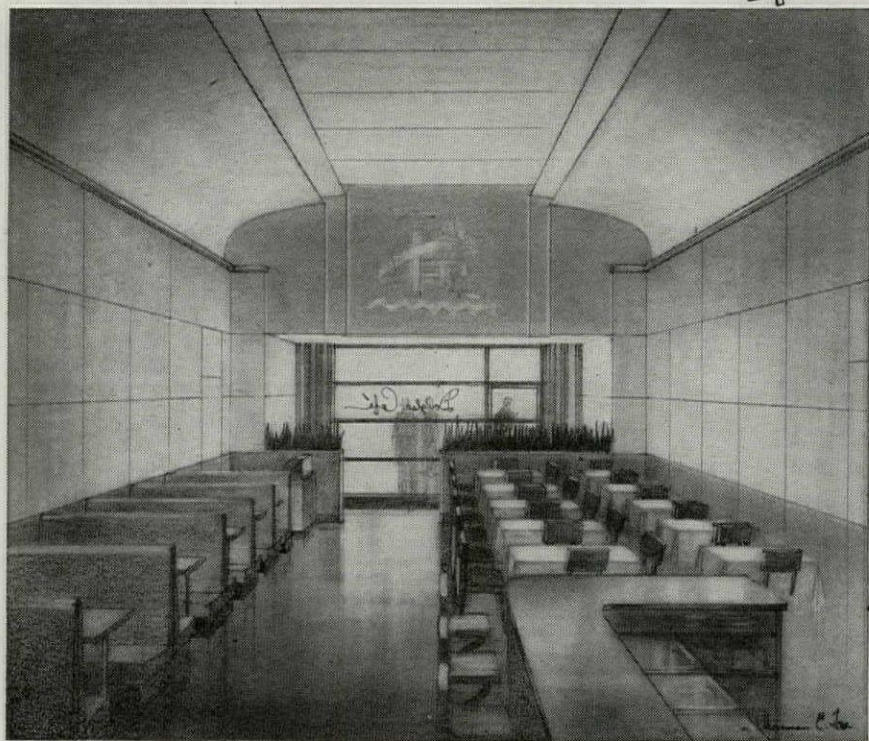
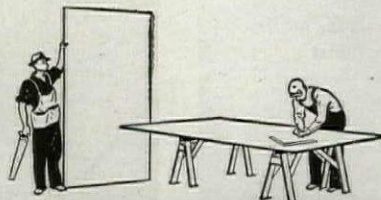


CAN PLYWOOD BE SPECIFIED NOW FOR POSTWAR USES?

The increased capacity of the industry will make MORE Douglas fir plywood available for civilian consumption THAN EVER BEFORE, as soon as the needs of the armed services lessen or war restrictions are lifted. There will be no reconversion delays; the same types and grades of Douglas fir plywood that are now being made can flow immediately into peace-time building and construction.



There are three grades of Douglas fir plywood panels made especially for various phases of wall construction. PLYWALL is made especially for standard wallboard use; PLYPANEL is a premium panel used for quality interior work; PLYSCORD is a utility panel made for wall and roof sheathing.



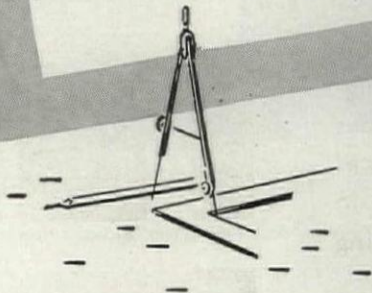
In the illustrated application above, notice that a curved treatment is used on the ceiling. Douglas fir plywood is ideal for such use, for it can be bent to simple curves without steaming and without danger of splitting.

DOUGLAS FIR PLYWOOD ASSOCIATION
Tacoma 2, Washington

TRUSCON

Steel Building Products

help you build quicker, better, safer!



● Your building requirements in roofs, walls, doors, windows, floors, roads... *almost every conceivable construction need*... can be met by the complete line of Truscon Steel Building Products.

Distinctive design and construction efficiency have been built into millions of structures with Truscon products, assuring strength, long life and safety that mean good investment return.

See "Sweet's" for description and details of the entire Truscon line, and ask for experienced Truscon engineering service to help with your plans.

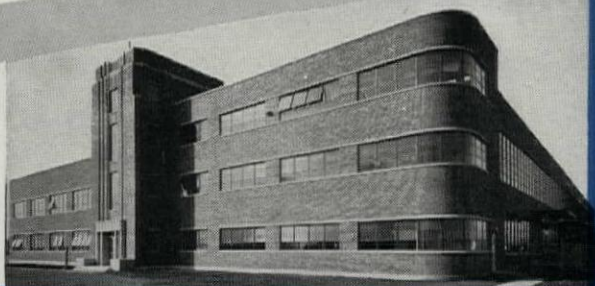


TRUSCON

Steel Company

YOUNGSTOWN 1, OHIO

Subsidiary of Republic Steel Corporation



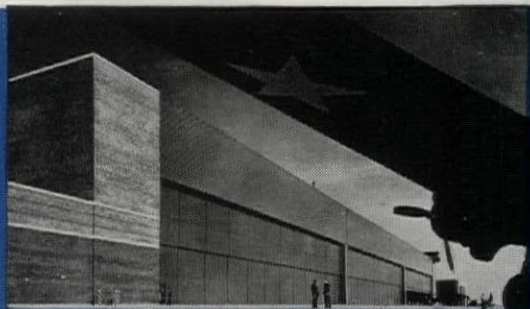
Truscon Commercial Projected Steel Windows in the Hygrade Sylvania Corp. office building, Danvers, Mass.



Truscon Ferrroglass construction in large southwestern bomber assembly plant.



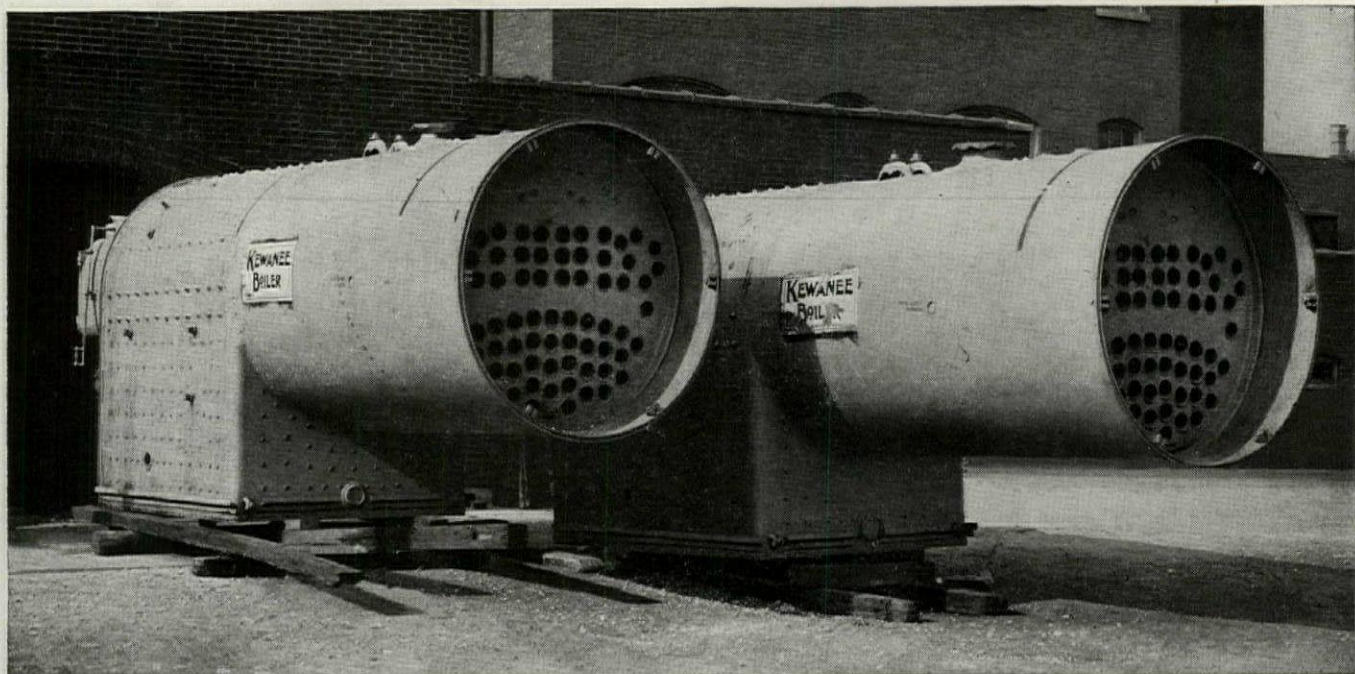
Truscon Pivoted Steel Windows in office, Pivoted Steel Windows in factory, and Open-Truss Steel Joists in Sanders Tri-Cleaning Co. plant, Detroit, Mich.



Truscon Steel Hangar Doors in large midwestern bomber assembly plant.



Truscon Commercial Projected Steel Windows in office, Pivoted Steel Windows in factory, and Open-Truss Steel Joists in Progressive Welder Co. plant, Detroit, Mich.



Two Heavy Duty Kewanee Boilers going into Chicago's Hawthorne School

15,589

KEWANEE STEEL BOILERS are Heating 10,742 Schools

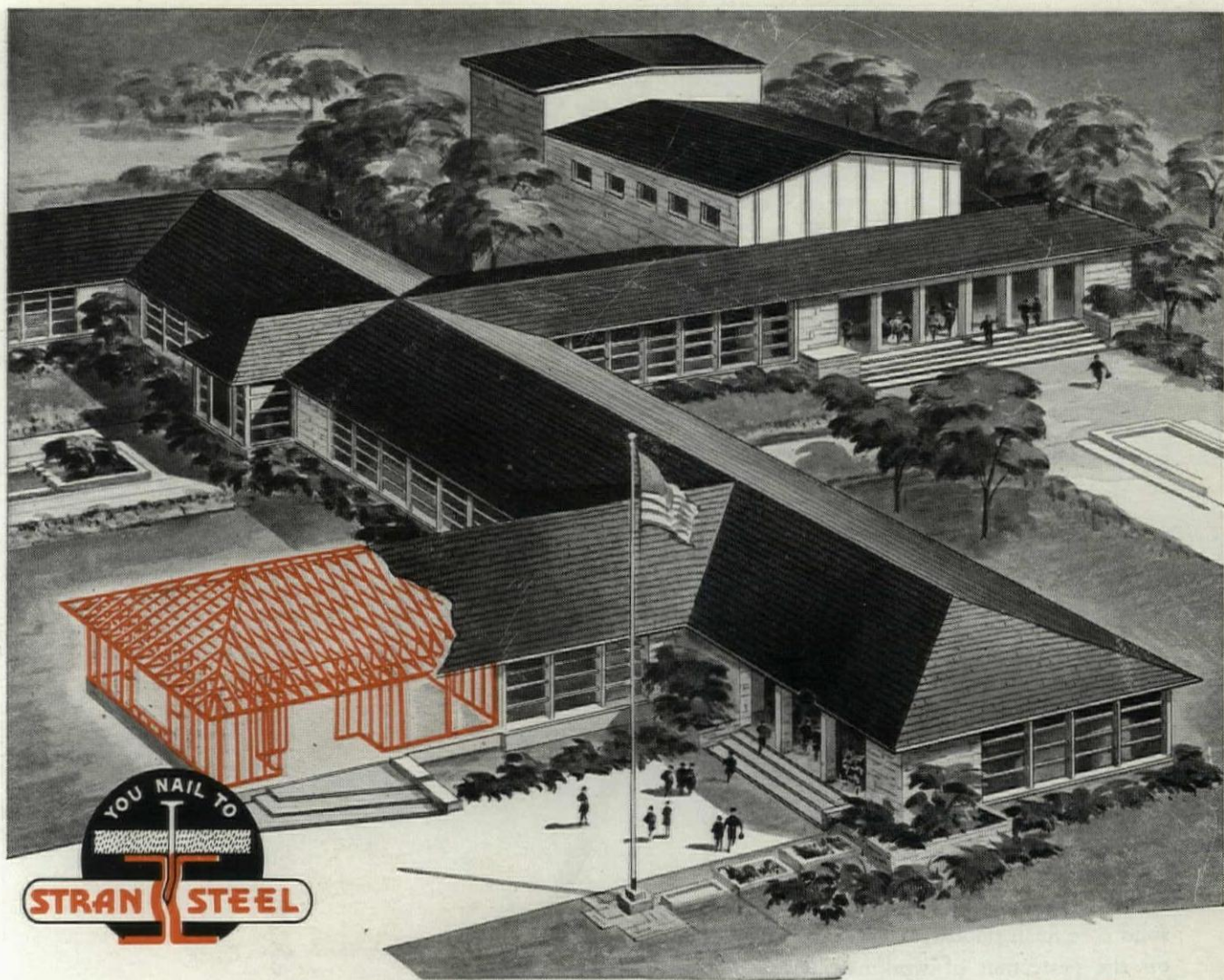
For Heating, Power and Process Steam
... using Oil, Gas or Coal (hand or
stoker fired) ... there's a Kewanee
just right for the job.

75 YEARS
BOILERMAKERS



KEWANEE BOILER CORPORATION
KEWANEE, ILLINOIS

Branches in 60 Cities—Eastern District Office: 40 West 40th Street, New York City 18
Division of **AMERICAN RADIATOR & Standard Sanitary CORPORATION**



Foundation of democracy— framed in steel for lasting strength

Think in terms of

STRAN STEEL

SERVING TODAY IN THE
QUONSET HUT

Stran-Steel, the universal light framing member with the patented nailing groove, brings permanence, rigidity and fire-safety to schools, institutions, homes, factories and light commercial structures.

Stran-Steel framing systems provide sag-proof, warp-free strength—reducing maintenance, eliminating plaster cracks and sagging floors. They are adapted readily to efficiency in design, and enable versatility in arrangements.

Leading architects and engineers are thinking in terms of Stran-Steel construction to protect the schools of tomorrow. Explore the lasting values inherent in Stran-Steel. Plan and build in steel for lasting strength.

GREAT LAKES STEEL CORPORATION

Manufacturer of the Famous Quonset Hut for the U. S. Navy

STRAN-STEEL DIVISION • 37TH FLOOR PENOBSCOT BUILDING
DETROIT 26, MICHIGAN

UNIT OF NATIONAL STEEL CORPORATION

Roddiscraft

**QUALITY
BUILT INTO THE DOOR**

Identified by the Dowel

Guaranteed by the Bond

RODDIS—world's largest manufacturer of hardwood solid core flush doors, stakes its half-century reputation on the perfection of workmanship and materials built into every door made according to its Standard Construction, with its Guarantee Bond. Each door is permanently identified by the built-in red, white, and blue RODDIS-CRAFT dowel — indestructible as the door itself. There can never be a question of RODDIS quality or responsibility.

RODDISCRAFT Standard Construction fuses the wood fibres and welds the core, crossbanding, and face veneer into a single unit — absolutely waterproof, verminproof, and fungiproof — with inherently high resistance to fire and sound. Specify RODDIS-CRAFT doors in your plans for present and postwar building. Get the quality—guarantee—and permanent identity that only RODDIS gives.

FROM TIMBER TRACT TO BUILDING SITE—IT'S RODDIS ALL THE WAY



RODDIS owns many years' supply of timber, does its own logging, sawing, cuts veneer in the largest hardwood plywood plant in the world—containing the largest hot-plate presses in the world, where 50 years of craftsmanship and know-how with wood, are applied in the manufacture of doors, wainscoting, and complete Door Units.



Roddiscraft WAREHOUSES

CAMBRIDGE 39, MASS., 229 Vassar St.
CHICAGO 8, ILL., 1440 W. Cermak Rd.
CINCINNATI 2, OHIO, 457 E. Sixth St.
DALLAS, TEXAS, 2615 Latimer St.
KANSAS CITY 8, MISSOURI, 2729 Southwest Blvd.
LOUISVILLE 10, KENTUCKY, 1201-5 S. 15th St.
LONG ISLAND CITY, N. Y., Review and Greenpoint Ave.
MARSHFIELD, WISCONSIN
MILWAUKEE 8, WIS., 4601 W. State St.
NEW YORK CITY 18, NEW YORK, 515 W. 36th St.
SAN ANTONIO, TEXAS, 727 N. Cherry St.
DEALERS IN ALL PRINCIPAL CITIES
See Sweet's Architectural File for complete door line and specifications

Roddiscraft

Roddis Lumber & Veneer Co.
MARSHFIELD, WISCONSIN

There's
merchandising power in a

**VISUAL
FRONT**



This Visual Front, by Frederick L. W. Moehle and Associates of Baltimore, capitalizes on the merchandising potentialities of a corner location. It draws traffic toward the front for a view of the fountain and store displays. Walls are sanitary Vitrolite Structural Glass.

A Visual Front makes an entire store a big showcase for your merchandise.

When passers-by can see right into the store—can see the light, color and activity of the whole interior—they're more likely to think of items they need. A Visual Front extends sales appeal to the sidewalk.

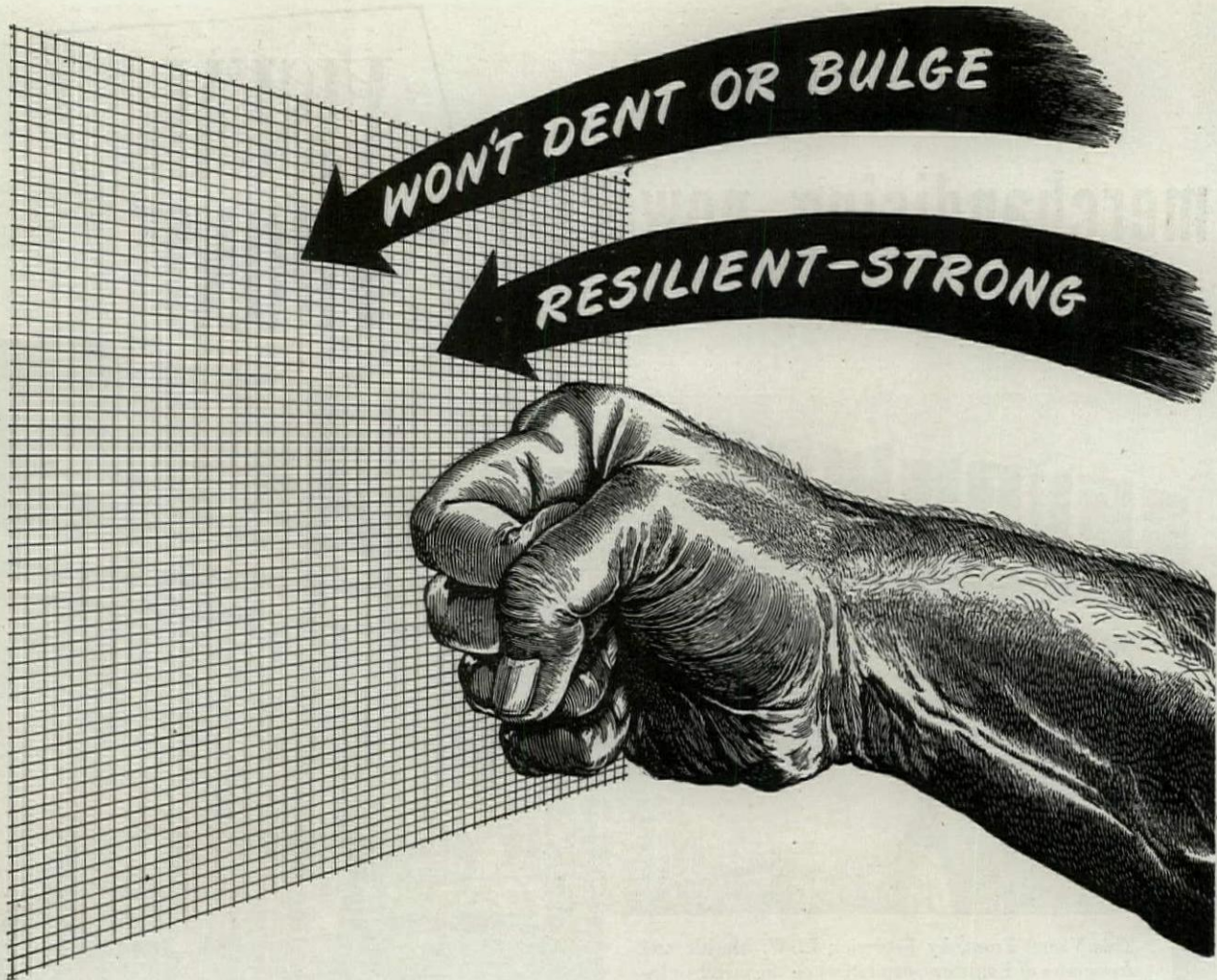
With a clear glass front, there's no visual barrier, and thus the store looks more inviting, easier to enter. There's no sudden transition from

outdoor daylight to a darker interior. And at night, the whole store is an illuminated display.

A Visual Front is suitable for a store of any size. It's a practical front . . . for glass keeps its sparkling surface year after year without refinishing. When you design your next store, include the merchandising power of the Visual Front. Write to us for a copy of our brochure of suggested designs. Libbey-Owens-Ford Glass Company, 7675 Nicholas Building, Toledo 3, Ohio.



LIBBEY • OWENS • FORD
a Great Name in **GLASS**



LUMITE—the screen that lasts!

A screen that can't rust—*ever?*

Yes, that's LUMITE*, the modern plastic insect screen cloth. Nothing can corrode it! A swish or two with a damp cloth restores its spotless freshness. And because it is *non-staining*, repainting of sills and sidewalls is a thing of the past.

LUMITE's durability is no less amazing. It has unusual tensile strength and resilience . . . will not dent or bulge in ordinary use.

LUMITE can *never* wear out through natural causes. Its "life expectancy" is far greater than

ordinary screens. Tested daily on today's battlegrounds, LUMITE is a *proved* product . . . a "must" in any postwar building plans.

FREE SAMPLES ON REQUEST

Although the Pacific war must come to an end before we'll be able to release LUMITE for general civilian use, prepare yourself *now* for tomorrow's building boom! Write to us today for further information about this revolutionary new plasticscreen. We'll be glad to send you complete descriptive literature, together with free samples of LUMITE.

*WOVEN FROM SARAN, PRODUCT OF DOW CHEMICAL CO.

Tested in War — Ready for Peace

Many millions of feet of LUMITE screening are now being used successfully to protect the Armed Forces against disease-bearing insects. Today's fighting men are your tomorrow's customers . . . and they're sold on LUMITE already!

- ★ 100% Rustproof under any conditions.
- ★ Cannot stain sills or sidewalls.
- ★ Strong, resilient . . . can't dent or bulge.
- ★ Never needs painting . . . non-inflammable.
- ★ Not affected by humidity or salt air.
- ★ Will be competitively priced with better grades of wire screen cloth.

Chicopee Manufacturing Corp., Lumite Division

40 Worth Street

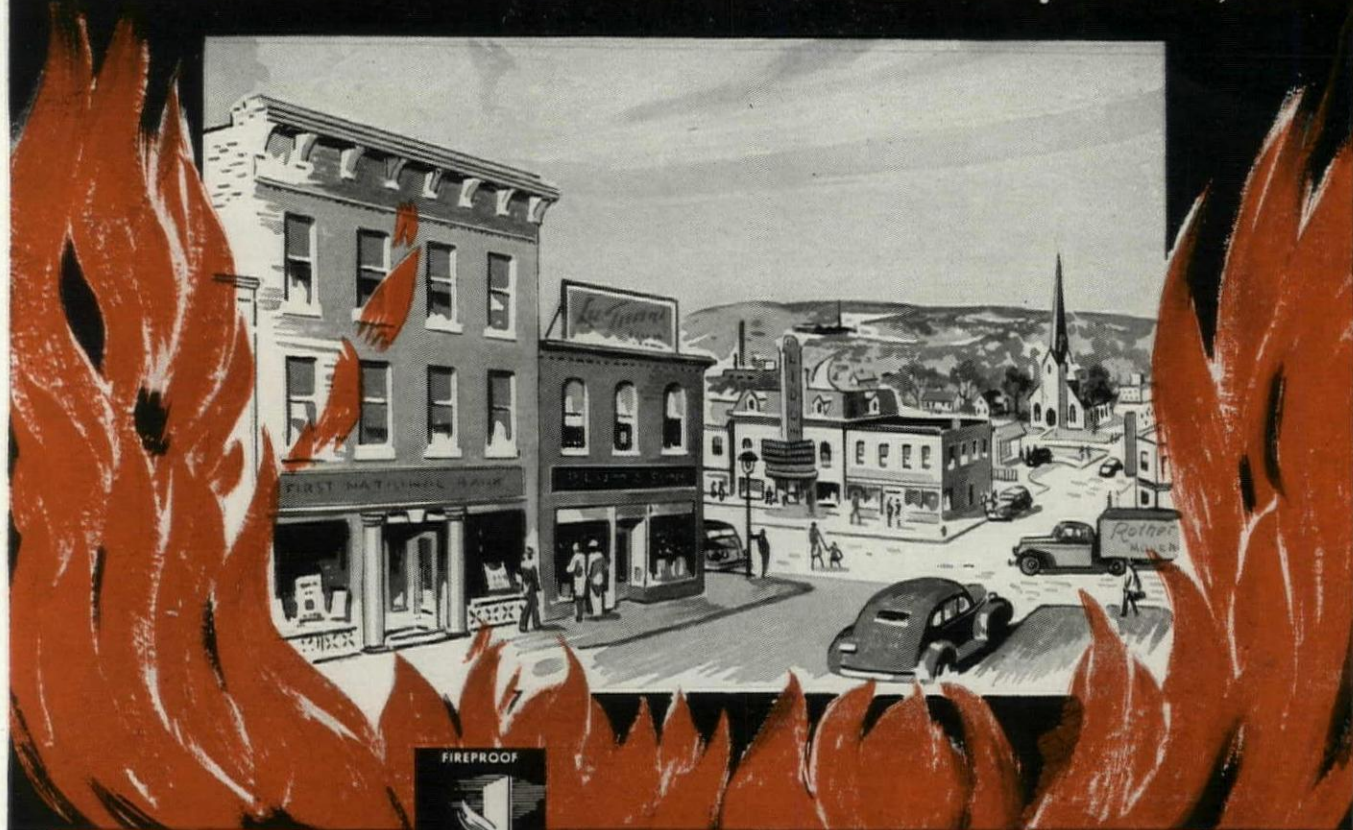


New York 13, N. Y.

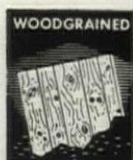
LUMITE

*World's largest makers
of Plastic Screen Cloth*

WIPE OUT... An American City of 10,000



SHEETROCK *Fireproof* WALL and CEILING PANELS



Imagine the headlines if fire wiped out Washington, Ind., or Astoria, Ore., or Americus, Ga. . . . cities of about 10,000. All America would mourn. This isn't likely to happen, but fire kills 10,000 Americans every year. And fire losses total close to \$300,000,000.

Such grievous destruction demands better safety education, better fire fighting equipment, even safer building methods. You

can help. Install fireproof Sheetrock wall and ceiling panels that stand guard against the spread of fire till help has a chance to arrive.

Sheetrock* brings outstanding wall beauty to any home. You can "weld" the panels into one with Perf-A-Tape* or feature the joints with Beveled Edge Sheetrock. Woodgrained Sheetrock is finished in faithful reproductions of knotty pine, bleached mahogany and walnut. Write today. 300 W. Adams St., Chicago 6, Ill.

*Reg. T. M.

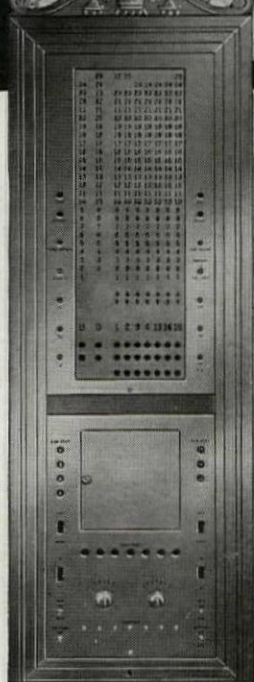


United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint

OTIS *Dispatching* FOR IMPROVED ELEVATOR SERVICE



Dispatching Panel: Indicates position and direction of travel of the car and the location of waiting passengers.

Otis Elevator dispatching methods and equipment can help correct congested elevator traffic conditions.

This scientific system of elevator operation and dispatching provides the highest quality and maximum quantity of service for a given number of elevators.

Otis dispatching is your assurance that every car is doing an equal share—that the flow of traffic is evenly distributed over the entire plant.

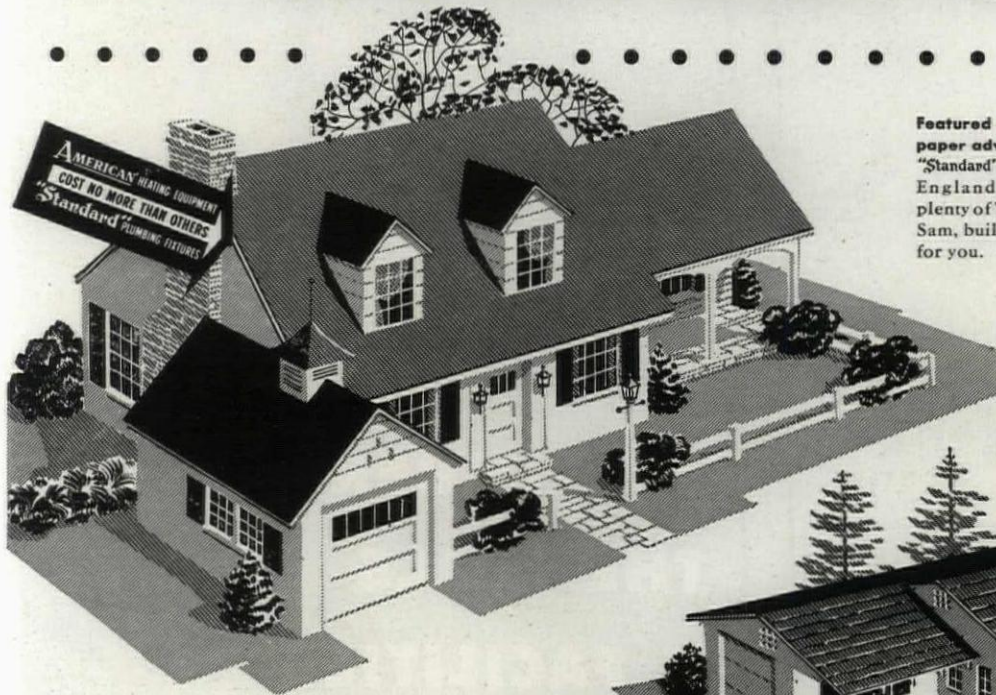
So, when it comes to new elevator installations or getting more work from your present equipment, investigate the possibilities offered by Otis dispatching equipment.

Your Otis representative is ready now to help you and your Architect plan the correct type of dispatching system best suited to your needs. For the finest in vertical transportation tomorrow, call your Otis representative **TODAY**.





Today's nest eggs will mean MORE NEW HOMES TOMORROW!

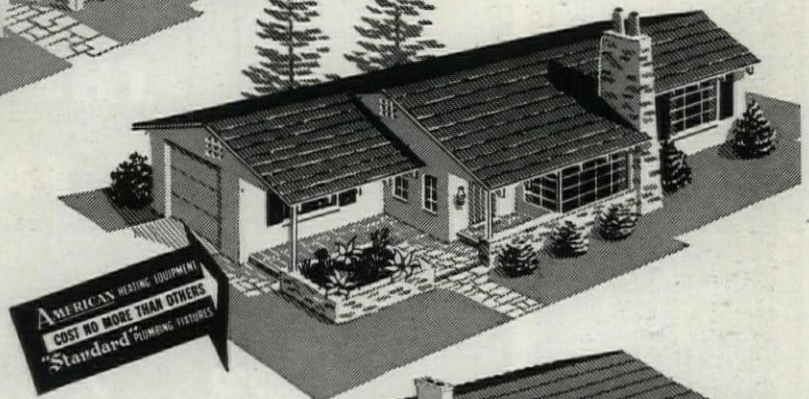


Featured in national newspaper advertising by AMERICAN-"Standard", this charming New England home is selling plenty of War Bonds for Uncle Sam, building future business for you.

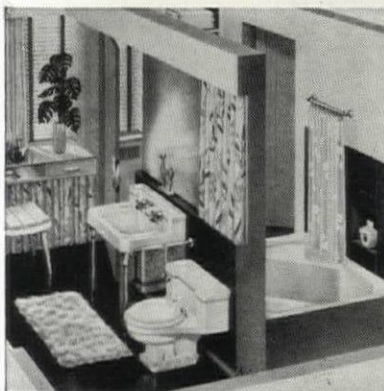
"Want this ranch house?" asks the AMERICAN-"Standard" newspaper advertisement of millions of Americans. And they are told that War Bonds will help them own it.

IN A NATIONWIDE newspaper campaign, AMERICAN-"Standard" is urging millions of American families to buy War Bonds today—so they can own the home of their dreams tomorrow! And these prospective homeowners are also being urged to consult their Architects and Contractors for the help they need in planning homes that will fit both their needs and their pocketbooks.

They'll depend on your experience and ability to provide the finest homes their money can buy. They'll also be guided by your advice in the selection of heating and plumbing equipment. And when you suggest AMERICAN-"Standard", you'll be recommending a name they know and trust. For this name has for many years identified the best in heating and plumbing that research and practical engineering can provide.



"Feather your nest with War Bonds," urges our large newspaper advertisement. And when the Bonds can be turned into homes, you'll be called on to help build them.

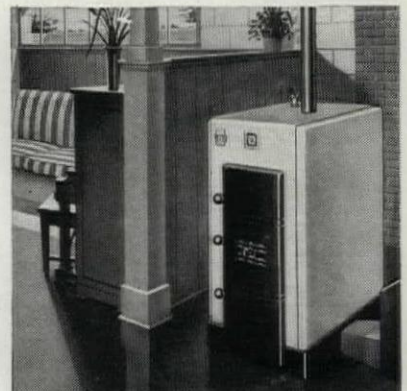


(Left) Ideas like the new Duo-Use Bathroom have been featured by "Standard" to keep up interest in homes. This double-duty bathroom is adaptable to almost any floor plan—requires no extra fixtures or piping.

(Right) Economical, automatic heat as supplied by the Severn Boiler makes for top comfort, top convenience. And the attractive, streamlined appearance makes it ideal for planning recreation rooms.

AMERICAN & Standard RADIATOR & Sanitary

New York CORPORATION Pittsburgh



A black and white photograph of a forest. In the foreground, a large stack of lumber is visible, with a single board extending from the stack towards the left. The background shows a dense forest of trees, some with snow on the ground and branches, suggesting a winter or early spring setting. The lighting is soft, creating a serene atmosphere.

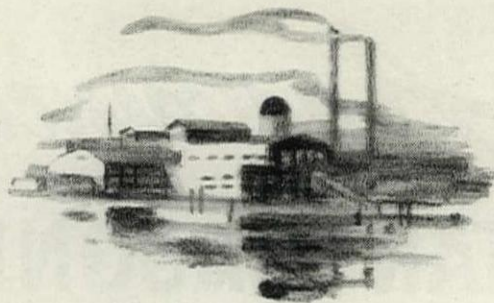
As a Nation

we have

**THE TIMBER
THE MILLS
THE FACILITIES**

to produce

Quality Lumber
for all our normal needs



YOU CAN count on the lumber industry to take on the tremendous postwar building job with the same energy and effectiveness that has characterized its service in the war effort.

You can count on lumber because as a nation we have the timber, the mills, and the facilities to produce quality lumber for normal domestic needs.

The war-time scarcity of lumber for civilian consumption is easily understood. War needs come first. And these needs are taking the best and very nearly all the lumber being manufactured... just as they are taking the best of everything for our fighting men.

In spite of the enormous lumber footage produced for the war, we still have available for our peace-time needs vast stores of timber resources, made up not only of mature timber ready for harvest, but also of constantly growing supplies of young trees.

You can count on lumber because Timber is a Crop, and because modern forest management, with proper forest harvesting practices, is making significant strides toward the goal of sustained timber production, where timber growth equals the harvest. You can count on lumber again, our great renewable natural resource.

WEYERHAEUSER SALES COMPANY
SAINT PAUL 1, MINNESOTA

WEYERHAEUSER 4-SQUARE LUMBER AND SERVICES

Announcing

LONE STAR MASONRY CEMENT



3 QUALITY CEMENTS

LONE STAR PORTLAND CEMENT

for quality concrete in all types of construction

'INCOR'* 24-HOUR CEMENT

America's FIRST high early Portland Cement—saves time, cuts costs

LONE STAR MASONRY CEMENT

The modern masonry cement, for really great job performance

*Reg. U. S. Pat. Off.

AFTER years of intensive research, the Lone Star Cement Corporation now takes genuine pleasure in announcing a significant forward step in Masonry Cement. Significant—because this modern masonry cement furnishes important plus properties all along the line—in plasticity, in water-retention, in strength, in bond, and in all the other qualities which add up to *really great job performance*. Trying is believing—specify Lone Star Masonry Cement for your next job.

LONE STAR CEMENT CORPORATION

Offices: ALBANY • BIRMINGHAM • BOSTON • CHICAGO • DALLAS • HOUSTON • INDIANAPOLIS • JACKSON, MISS. • KANSAS CITY, MO. • NEW ORLEANS • NEW YORK • NORFOLK • PHILADELPHIA • ST. LOUIS • WASHINGTON, D. C.

LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 15 MODERN MILLS, 25-MILLION BARRELS ANNUAL CAPACITY.

PENCIL POINTS
PROGRESSIVE
ARCHITECTURE

Two Kinds of Architecture

It has seemed to us for many years that there might be an advantage to all concerned if architects made a clear distinction between the Small House and all other buildings. Both are architecture, yes—but when we consider the frequently quoted statement that trained architects are professionally employed on less than twenty percent of the first group and on over ninety percent of the second, it seems clear that there is some basic difference that should be recognized by our code of practice.

It becomes of unusual importance to look closely at this paradoxical situation when we face the generally agreed upon forecasts for postwar construction which predict among other things “an average of a million dwelling units a year for at least ten years.” A very large proportion will be low-priced single houses. Most of these, if we follow our prewar pattern, will be provided by speculative builders and developers, and architects will have little to do with controlling their quality of design and construction. Believing, as we do, that on the whole the best houses will be designed by those who have the best training for the task, and further believing passionately in the objective of getting the best possible houses built during these next years for the common man and his family, we regard the state of affairs as unsatisfactory.

We have as customers the thousands of American families who need and want houses, who have definite or limited funds with which to pay for them over a period of years. We have as suppliers a group of architects and a group of builders—the former gifted and trained in design, the latter capable and experienced in putting the houses together. The little man who wants a house needs a first-class designer plus an honest and able builder, but he feels, with more or less justification, that he cannot afford both. So he looks for the two functions combined in one person and usually takes what the average speculator can offer—a stereotyped mediocre design, built well or ill, but within his budget. He finds it livable, though imperfect, and never realizes that he could have had something better.

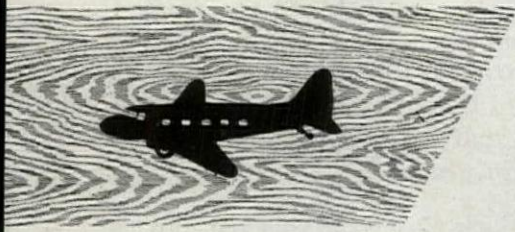
Now, if there were available in localities throughout the country a supply of well-trained architects who had chosen to make the small house their particular specialty, and if these men had taken the trouble to acquire experience in actual building, would they not be in an ideal position to give the low-income public what it really needs? By setting themselves up as architect-builders and undertaking as entrepreneurs to develop residential areas they would be able to provide numbers of completed houses, better designed and better built than would otherwise be procurable. Their activity need not interfere with the practice of architects doing larger work.

It so happens that at this moment there are a number of talented architects who will soon be coming out of the uniformed forces with several years of experience in building various sorts of war projects. With this start, some of them might find a useful and profitable career in this business of providing better small houses. We suspect that some of them will. There seems no sane reason why the professional code could not be adapted to cover this special field and set up the special safeguards that would guard it against degenerating into speculative operations.

Kenneth Reid

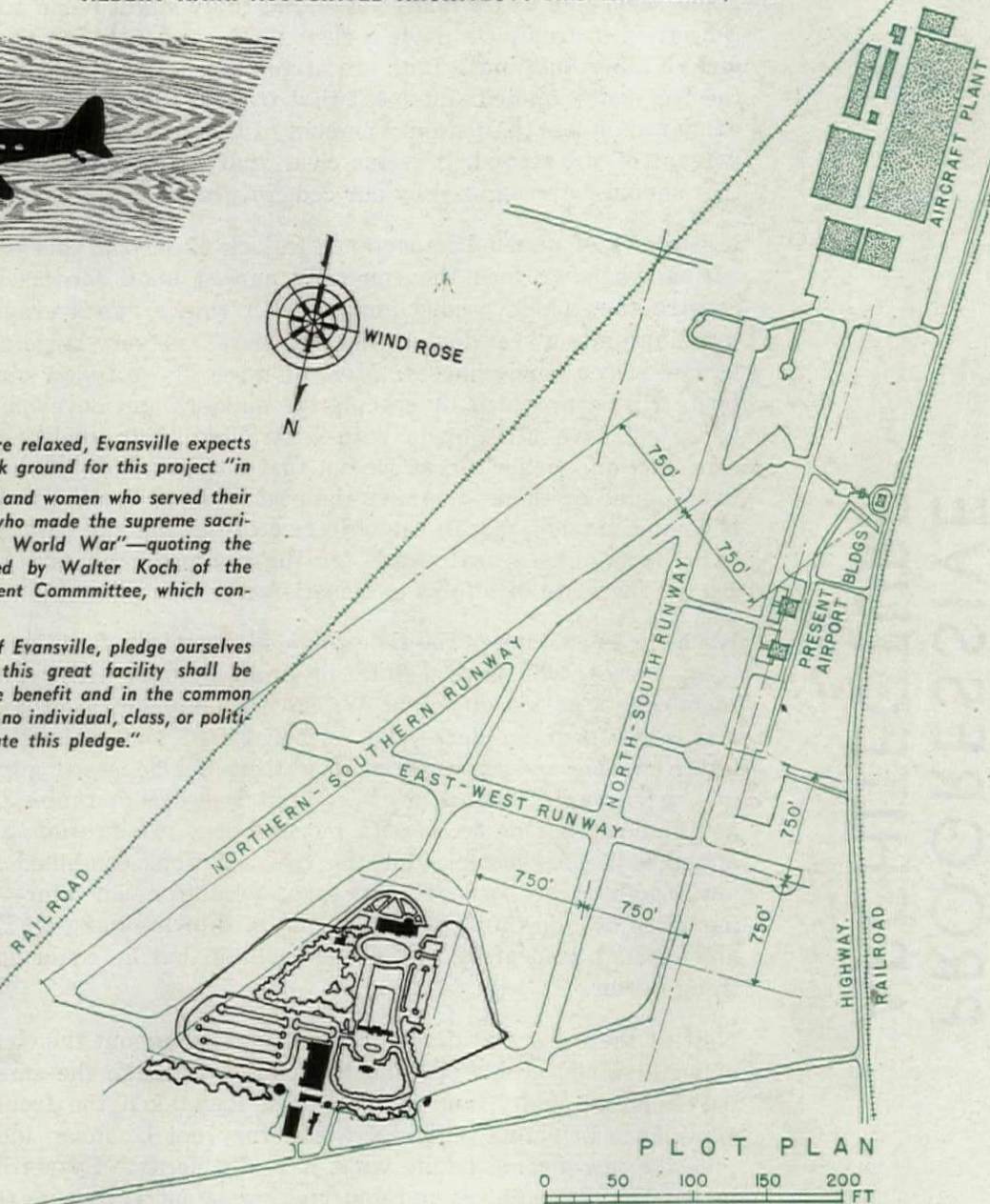
EVANSVILLE MEMORIAL AIRPORT

ALBERT KAHN ASSOCIATED ARCHITECTS AND ENGINEERS, INC.



When restrictions are relaxed, Evansville expects to be ready to break ground for this project "in memory of the men and women who served their country and those who made the supreme sacrifice in the Second World War"—quoting the inscription suggested by Walter Koch of the Post-War Development Committee, which concludes:

"We, the citizens of Evansville, pledge ourselves in perpetuity that this great facility shall be administered for the benefit and in the common interest of all. Let no individual, class, or political group ever violate this pledge."



Analysis by Roland Wank, A.I.A.

Evansville, with a population of about 100,000 in 1940, is one of the many middle western cities which were affected early by the southward sweep of industry from the Great Lakes belt. It expects greater gains as industry further diffuses. Yet its passenger communications by rail and air have not been very convenient. Now, with growing industries, Evansville prepares for intensive schedules as soon as restrictions are lifted. Already there are eighteen flights by two airlines daily in place of last year's four movements, and a third airline has requested space and landing privileges.

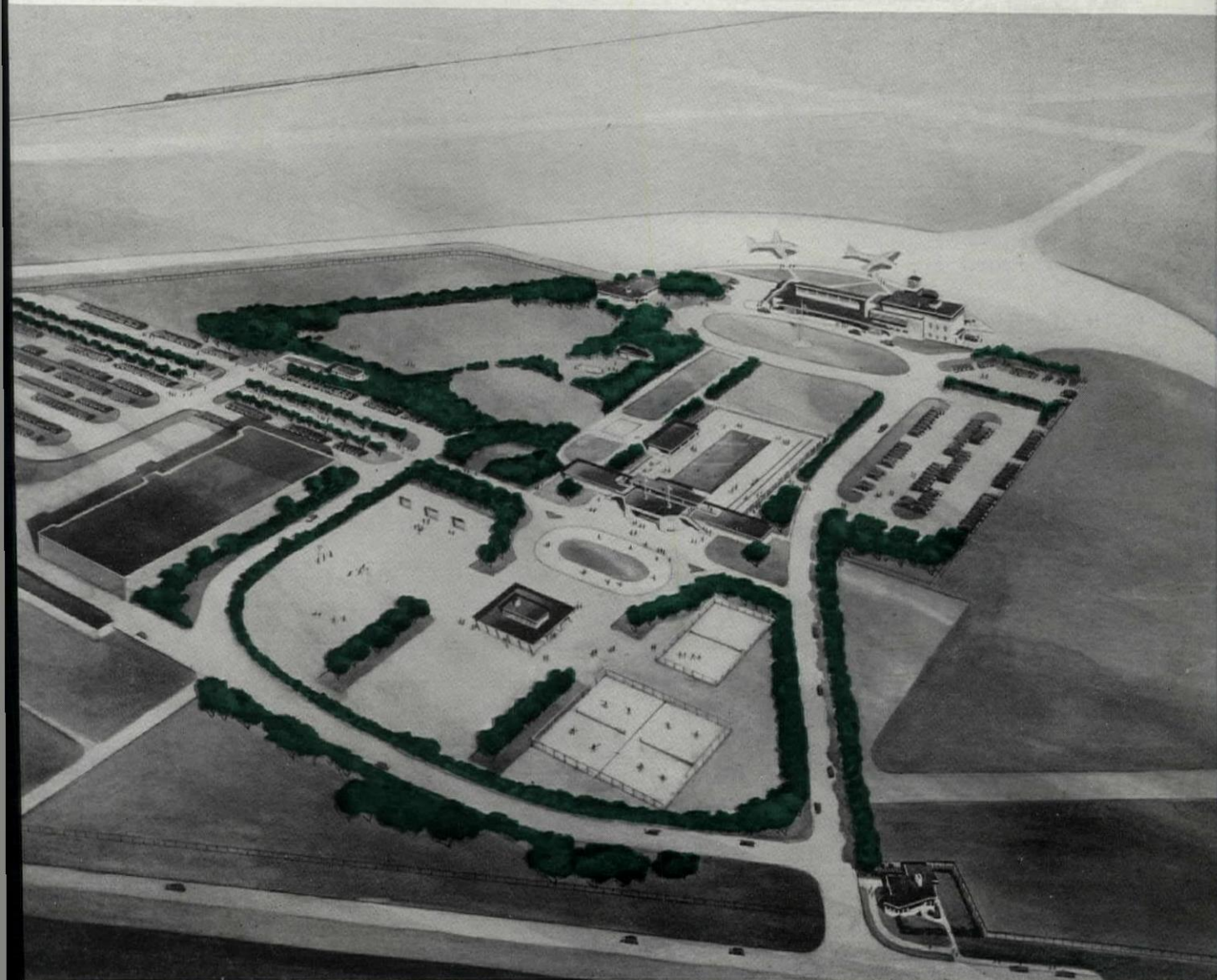
From the designer's point of view, the characteristics of this traffic are important. No scheduled flights are expected to begin or end at Evansville; therefore, no need exists for airline hangar space or shop facilities. Nor did the airlines regard the port as a logical service point for in-flight meals, so kitchen space for that purpose was superfluous. The port is not a likely spot for stops of transcontinental ships; thus runways and aprons could be held to the dimensions and loads of present day Constellations and DC-6's.

Traffic definitely anticipated on the basis of past experience includes: private transport planes of nearby industrial corporations; feeder lines; charter and taxi operations; aerial freight; and advanced amateur flying, supported mainly by high-income residential districts close by.

Evansville was lucky in its progressive and forceful citizenry and city administration. Mayor Manson Reichert appointed a postwar development committee of the Board of Aviation Commissioners and lent them his full support. The resourceful and imaginative committee, consisting of Lew LeMoine, Victor Goeke, and Edward Lewenthal, was sparked by its indefatigable secretary, Walter G. Cook (pronounced Cook). The manager of the port, Emory Boelson, also a member of the County Planning Commission, assisted in the development of plans and zoning ordinances to assure permanent air clearances.

It was these men who recognized the chance for the port to answer another of Evansville's crying needs: for recreational facilities, indoors and out, especially of the kind that lets all members of a family enjoy their leisure.

and Recreation Center, Evansville, Indiana



together amid surroundings appropriate to this nation's dream of a higher postwar standard of living. The Board felt, too, that this need will increase as working hours are reduced to a peacetime basis. Thus evolved a concept which served as a frame of reference for the designers and which might be stated as follows:

The first and overriding objective is to supply the facilities needed by the passenger airlines.

Other flying activities shall be accommodated until expanding scheduled passenger traffic crowds them out (by which time facilities will have been provided for them elsewhere). That expansion shall not be limited short of the capacity of the field itself.

The field, the administration building, and all other features shall permit orderly expansion without basic changes or interruption of traffic.

All potentialities for recreation inherent in the airways facilities themselves shall be fully exploited.

In addition, all suitable land not serving the primary ob-

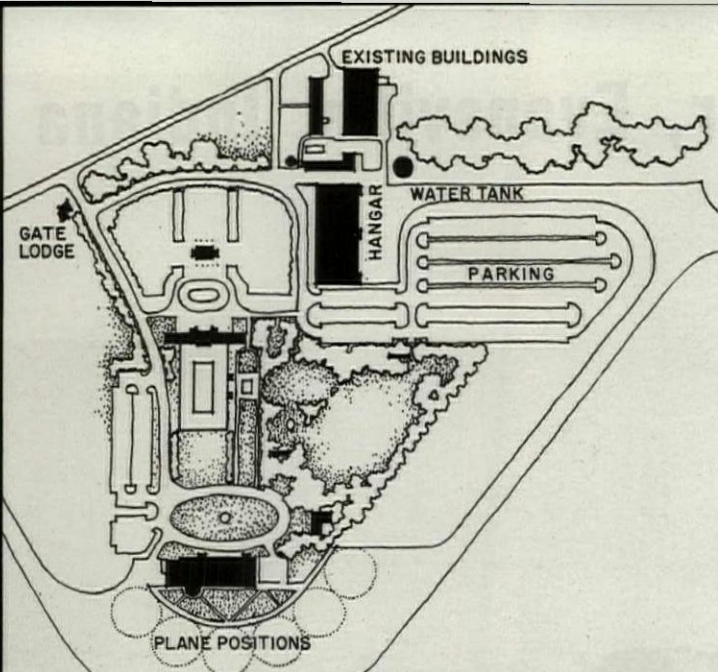
jective of air traffic shall be planned for recreational use, together with additional lands acquired for that purpose; and while initial development will be limited, future expansion to the capacity of the site shall be definitely anticipated.

Recreational facilities shall be so varied that at any time of the year or day any member of any family will find some that are attractive and within his means.

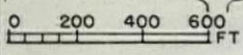
Such facilities, as well as concessions and other accommodations for airlines, tenants, and the public shall be self-supporting or profit-making if possible, but this consideration should not conflict with widest use by the greatest number.

Finally, the port and the attached public park should be visualized as the front door of the city. They shall say to the visitor, and to the casual through-passenger, "Welcome!" and "Come again!" and "This is the kind of people we are and we hope to have earned your liking and respect."

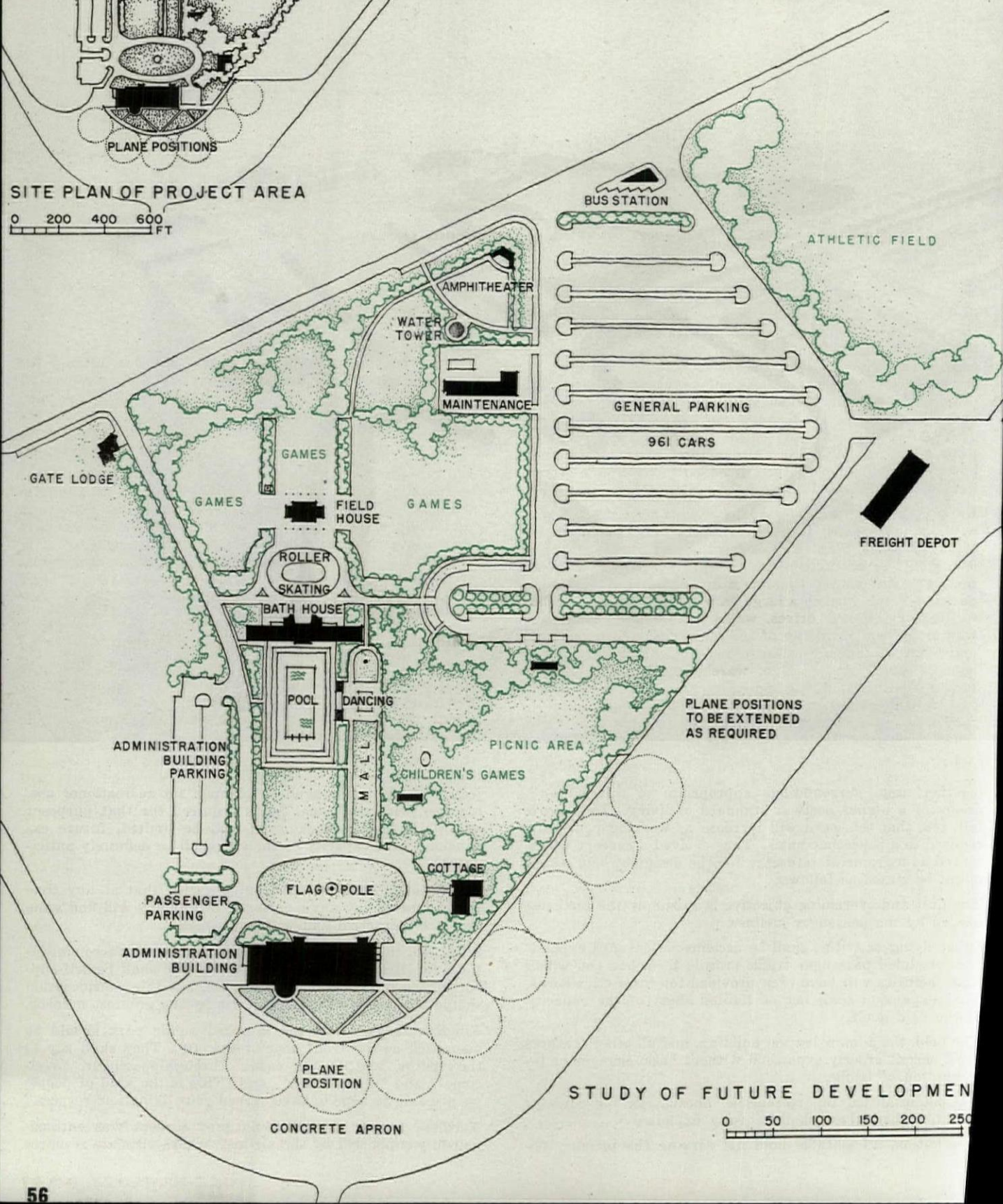
Needless to say, the above outlined concept was enthusiastically supported by the airlines, whose ultimate resource



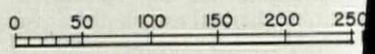
SITE PLAN OF PROJECT AREA

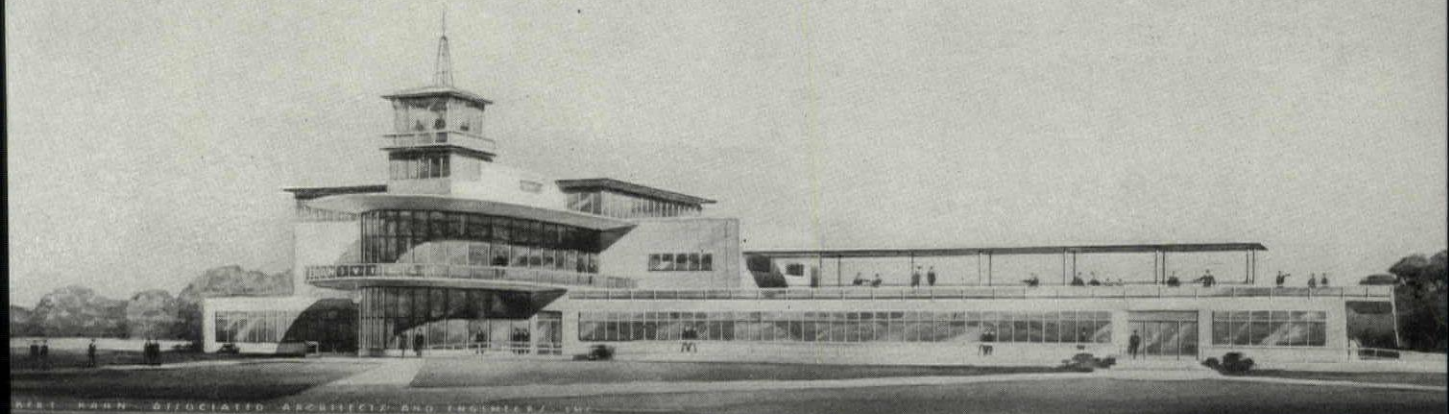


The site plan (left) for initial development of the Administration and Recreation Area should be examined in conjunction with the study for later development shown below. For the immediate future, the scheme is rather messed up by the necessity for keeping the old Modification Center main shop as a hangar for charter and private planes, plus garage for field service equipment, etc. The subsequent plan will give an expanded and more orderly arrangement of recreation facilities and permit direct access from the highway to the general parking area. Its enlarged apron will allow more plane positions, a small freight depot, and a vacant stretch assignable to cargo planes, charter, or private transport craft as needed. Proper hangars will be provided on the northwest corner of the field.



STUDY OF FUTURE DEVELOPMENT





Field side of Administration Building as it will be first seen by motorists approaching from Evansville.

is the air-mindedness of the public. There remained, however, the necessity to convince taxpayers and citizens—particularly restaurant men, haberdashers, etc., who might raise perhaps shortsighted but nevertheless effective objections to competition by the commercial features of the project. The Committee set about that task with such skill and tact that the public gave the proposal a resounding “yes,” assuring the ability of the city to construct a going project by itself. The prospect of some federal help has not, however, been slighted, since without it some of the attractions of the plan would have to be postponed.

During the war a fighter plane Modification Center was built on land leased from the Airport under the auspices of the Defense Plant Corporation. Some of the improvements will be adapted to the new project instead of being removed. An existing concrete apron of 21 acres and other pavements will furnish a large part of the surfacing needed for parking spaces, drives, walks, playgrounds, and taxiway to the main building of the Modification Center. That mammoth structure, cut down to a manageable size, will be used as hangar, garage, warehouse, firehouse, and so forth. A utility building and boiler plant will be converted to a permanent maintenance headquarters, while the transformer station, water reservoirs, fire hydrants and mains, fencing, etc., will be absorbed into the project.

All future tenants or users of the project were considered, together, as the client; the architects functioned somewhat as a secretariat to see that all needs were stated and mutually discussed. The CAB, the Weather Bureau, the Airlines, the Management of the present port, the Post Office Department, the American Express Company, were all consulted, and their advice was invaluable. On recreational planning, the Post-War Development Committee interpreted the needs and desires of the community; and the architects had counsel from Lawrence G. Linnard, Landscape Architect.

SITE LAYOUT

Choice of locations was limited by instrument landing clearances. CAB considers 750' on either side of runway centerlines a good width, within which not only fixed objects but even parked cars or planes should be prohibited. Subtracting the 1500' wide clearances from the area of the field, scattered wedge-shaped interstices were left, of which only one was big enough to contain the apron, administration building, recreational area, and parking spaces, all in one group. Since close proximity between those features was considered essential, the choice was automatic.

FIELD IMPROVEMENTS

The runways being in existence, the main item under this heading will be the passenger apron, laid out initially for six plane positions (150' diam. circles) with an over-all width of 300' for passing. The six gates will be equipped with illuminated identification numbers, two power circuits for battery charging and cargo lifting devices; and with stations of the PAX system of the administration building.

The plane gates will connect to the administration building by blacktop walks, laid in a diagonal pattern to minimize distances but otherwise quite in accord with past (and admittedly unsatisfactory) practice. Unsettled factors prevented agreement on a better solution. Other field improvements will consist of taxiway links to reach the new apron, arranged to speed operations by tapping runways near their ends. All this work will be in reinforced concrete.

ADMINISTRATIVE AND RECREATION AREA

At the start, a single highway entrance controlled by a gate lodge will serve all administrative and recreational facilities. The Highway Department will be urged to add a decelerating lane to the highway pavement. Circulation inside the project is easily read on the plan.

On the east side of the swimming pool, a shelter astraddle the fence over the recirculation and sterilization plant will house the double-faced refreshment counter: one counter to serve the pool population, the other open towards the mall. In front of the refreshment stand, the center strip of the mall will be paved with waxed concrete for dancing; the floor will be surrounded by tables, chairs, gay sunshades, and subdued lighting.

The game area is to be equipped principally for informal and sociable ball and other minor games; with some portion set aside for tennis and easy interchangeability to comply with shifts of demand. A small children's playground with spray pond, seesaws, swings, etc., will be separately placed in about the center of all attractions, and the more bucolic adult pastimes, such as horseshoe pitching, will be distributed around the picnic grounds.

The main picnic area was placed for a good view of the airfield and apron. However, the noise and commotion of that vicinity may not appeal to some, and prohibition there against open fires will prevent cooking. Therefore, it is intended to add another picnic ground near Highway #57 when demand warrants and the budget permits.



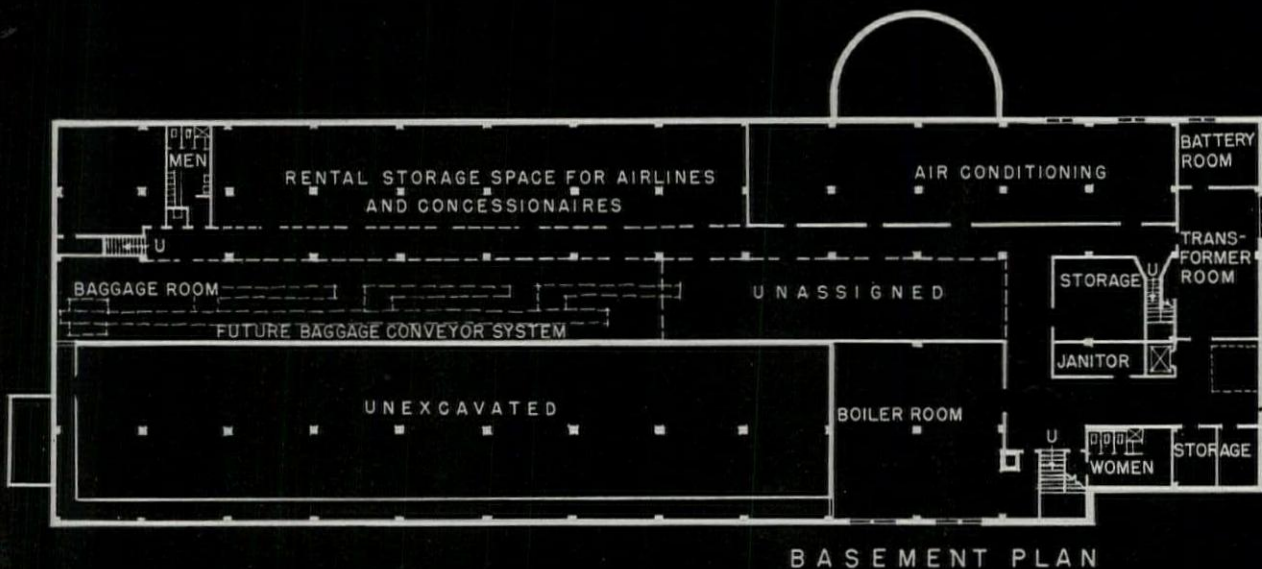
In the recreational park, the major future improvement would be enlargement of the general parking space with a one-way marginal road connecting into Highway #57; the highway to be improved with additional turning lanes and an entrance plaza upon which a combined bus terminal and service station might be placed. The original main gate would thus be restricted to administration building traffic, supervised by the gatehouse guard.

Of the old structures of the Modification Center, only the maintenance building would be retained. The balance of the property newly opened up would develop into additional game areas, picnic grounds, children's playground, and an athletic field of the overgrown sandlot variety. An outdoor movie amphitheater was also considered, though its repertory might suffer too much from the noise of airplane motors.

ADMINISTRATION BUILDING

Since this structure will account for the lion's share of the investment, special thought was given to prevent early obsolescence and to avoid errors that might necessitate fundamental alterations or abandonment within a few years.

Even a superficial examination of past records would caution designers against at least two frequent lapses. One is the assumption that any forecasts of traffic that are reasonable enough to be accepted by a budget-conscious building committee will be worth a hoot tomorrow. In this fantastic industry only the most outrageously uninhibited daydreamers have a chance of being somewhere near right.

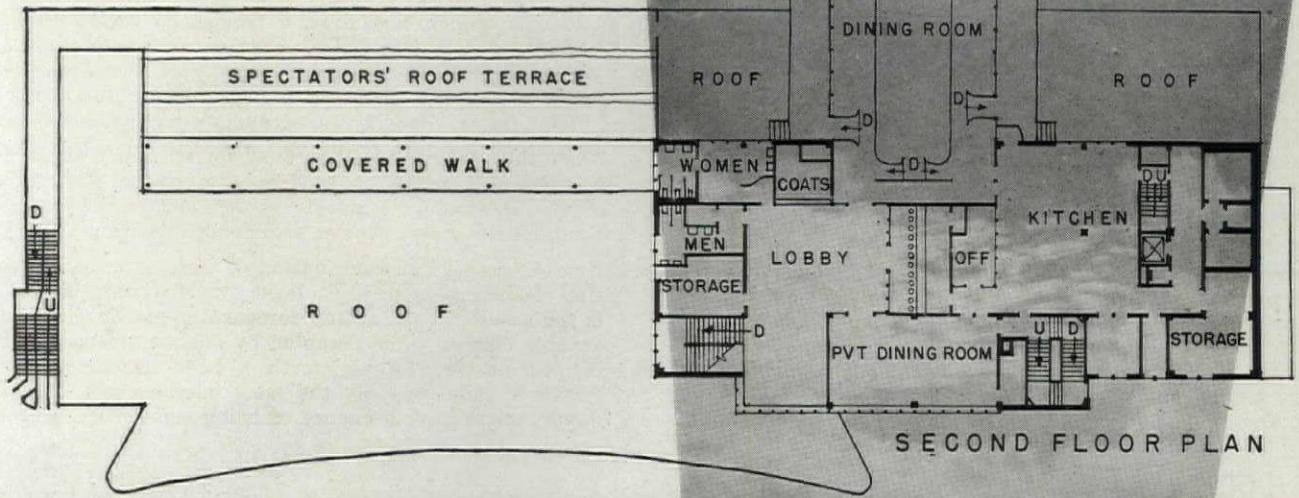
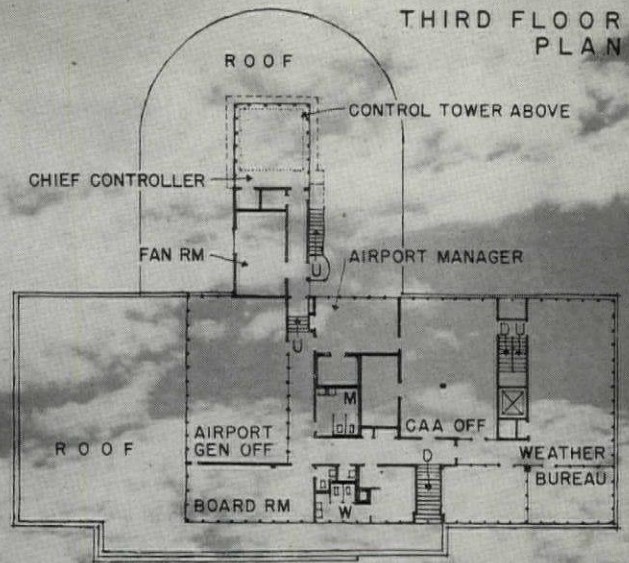


Expansibility has been provided in the Administration Building for the Airlines Offices, which may, in case of unexpected growth, either displace less essential users from existing space or be given additional room through extension of the building eastward. As CAB, Weather Bureau, and Management Offices grow, they can first take over the Board Room and crowd out the Grounds and Park Management from the General Office. Later the office floor can be extended eastward and finally the whole wing can be extended westward.

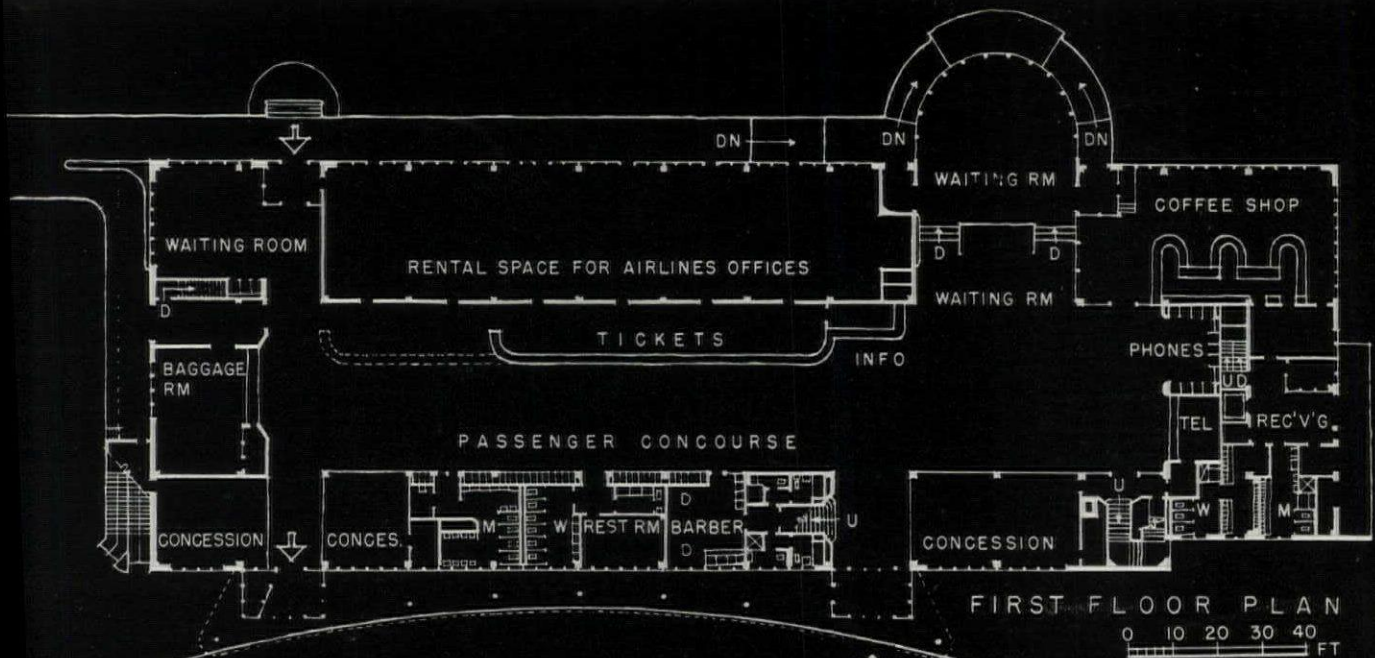
Beyond good planning to insure easy circulation for incoming and outgoing passengers and to provide more than usual comfort and convenience, special facilities have been thoughtfully disposed. Out-of-traffic waiting rooms, coffee shop, and restaurant are easily accessible and overlook the field. Rental shower and tub baths are easily accessible and overlook the field. Rental shower and tub baths and a baby-care room are uncommon features for a port of this size.

Baggage will be at first handled by small trucks but as traffic grows chutes and conveyors will be added.

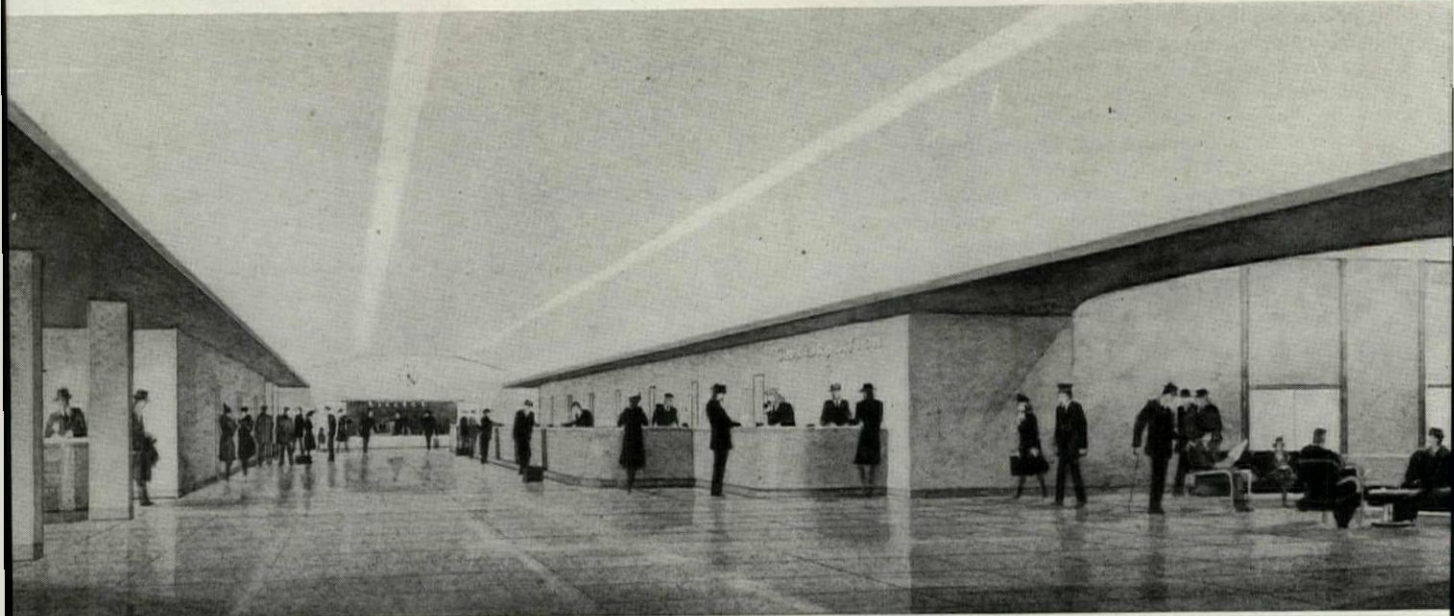
THIRD FLOOR PLAN



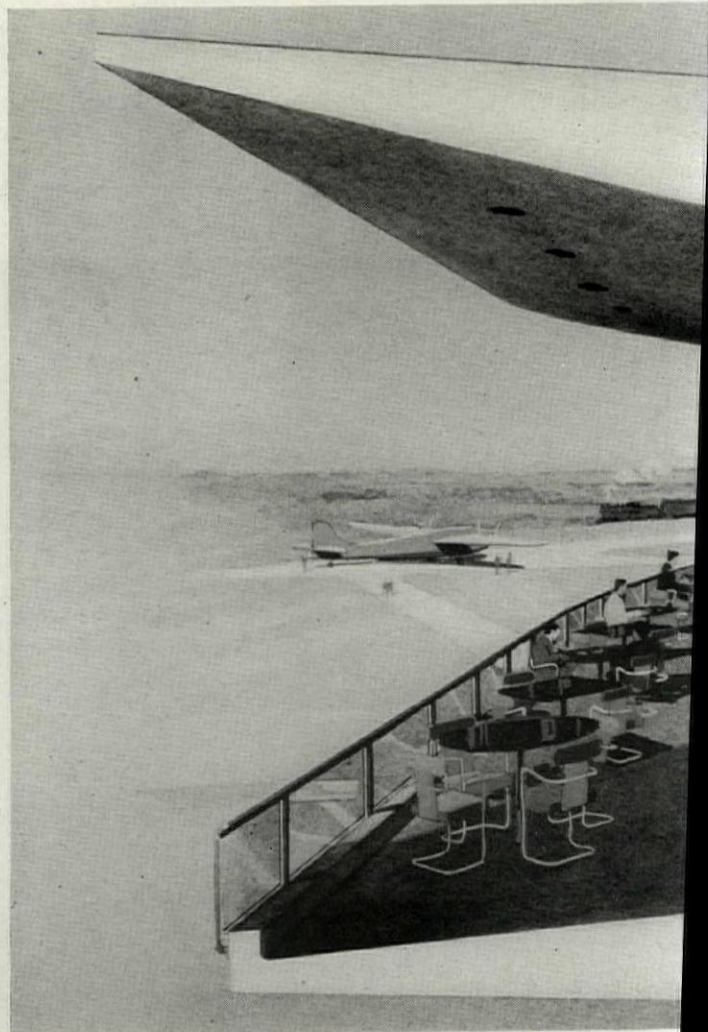
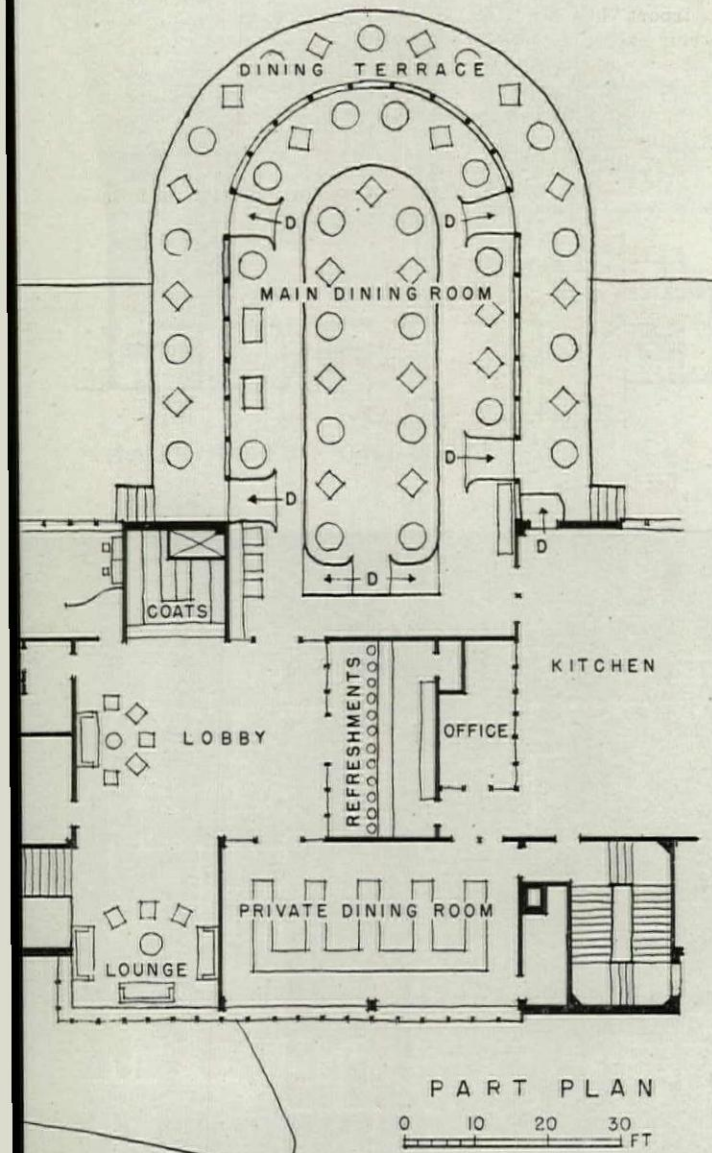
SECOND FLOOR PLAN



FIRST FLOOR PLAN



The passenger concourse, a trafficway rather than a hall of splendor, is designed for easy service: with ticket counter along field side; concession space, rest rooms, and baggage lockers opposite. A useful and spectacular item is the second floor dining room, terraced and projecting out toward the field with a sloped ceiling to emphasize the sky view.



The other obvious pitfall lies along the design approach that regards the structure primarily as a civic monument, subject to all the planning straight-jackets and stylistic afflictions with which a tradition-loving nation likes to hamstring public buildings. Recently, colonnades in place of a plain sheet of glass on the view side have become less frequent; but one is still likely to find impressive concourses laid across the path of hurrying passengers, grand stairs taking the space needed for ticket counters, and desperate striving to squeeze unequal spaces into some kind of symmetry, regardless of consequences.

On this project, the designers, guided by the progressive Committee, tried to stick to the following considerations:

1. *Expansibility.* In spite of limitations inherent in the horseshoe shape of the site, and regardless of present-day convictions as to the ultimate traffic the port can carry, those activities which would be affected by unexpected growth of traffic shall have room to expand.

2. *View and Orientation.* The basic reason for existence of the building is the flying field; every activity within is related to it; therefore, all but service areas shall have the fullest attainable view of the field. For the control room and the main restaurant, all-around views are, of course, commonplace today; but in many otherwise adequate plans, the waiting room is still in the middle of the building, the kitchen occupies field frontage that rightfully belongs to the coffee shop, or airlines offices must depend on the phone for contact with their service crew or their planes.

3. *Convenience of Passengers.* This building must take its proper place in the all-around policy of airlines to make every passenger feel himself the recipient of special solicitude. This purpose will be served, primarily, by an efficient layout to speed him on his way; secondarily, by comfort features of the equipment and finish, in matters such as atmospheric control, lighting, acoustics, and the like.

4. *Efficiency of Airlines Offices.* As noted before, this space, contiguous to the field and elevated above it, will permit direct contact with the plane and service crews and direct view of the planes at the apron. On the other side, there is equally uninterrupted frontage towards travelers and their baggage.

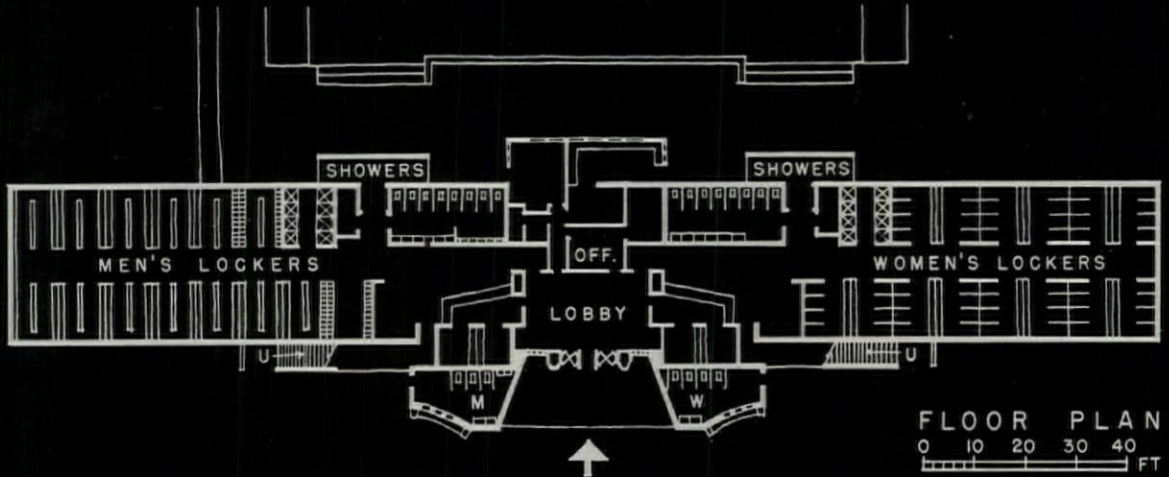
For flexibility, all of the airlines' space—offices, counters, and aisles—is continuous without structural subdivision. Thus, space can be reallocated as needed. At first, a part of the office space will be surplus, available for concessions. Airlines storage space in the basement could be connected to the offices by direct stairs, if desired.

5. *Non-Interference of Traffic.* Airports house a good many diverse activities, most of which are in a perennial rush and should be kept out of each other's way.

Sightseers will undoubtedly be the largest group; while they will not be forcibly kept out of the building, their main interest may lead to the roof terrace via an independent outside access. Mail and express do not require much accommodation at present, since both are hauled to and from planes without entering the building (except express transferred between planes, which may go to the baggage room). But the east end of the building can be altered should those activities demand space later.

6. *Convenience of the General Public.* Even though the structure was designed for function rather than symmetry, the fact that it will be part of the "Evansville Memorial Airport" has not been lost from sight. Beyond travelers and their escort, it is intended, also, to cater to the widest possible public—whether this produces an income or not. Luxury services are, of course, expected to produce a return, and concession space has been allotted with both service and income in mind. But, aside from welcoming the citizen just because he is a citizen and a part owner, he is regarded as a potential passenger or aviation enthusiast.

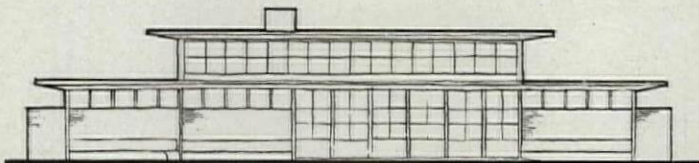




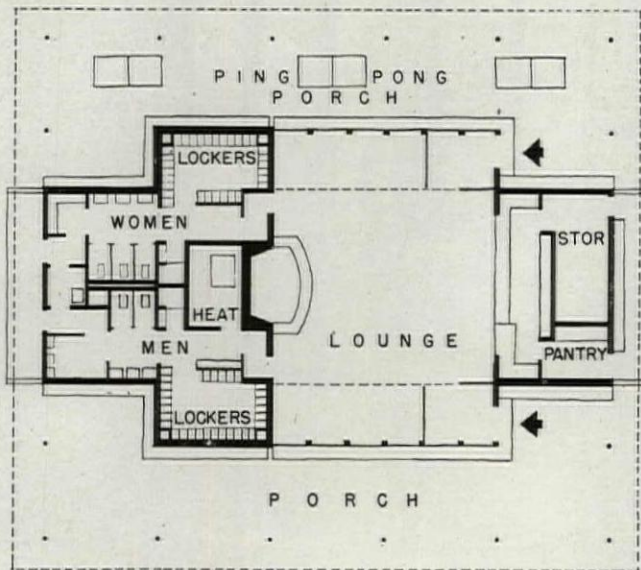
BATH HOUSE

The swimming pool is expected to be the most popular feature of the recreation area. It will accommodate 1,500 people within its enclosure at one time. Part of the bath house roof is to be paved for spectators, who can also overlook the roller-skating rink. The paving around the pool itself will be terraced and surrounded by a grass strip.

FIELD HOUSE



FRONT ELEVATION

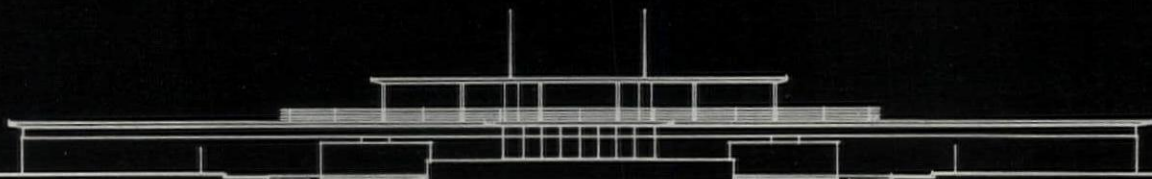
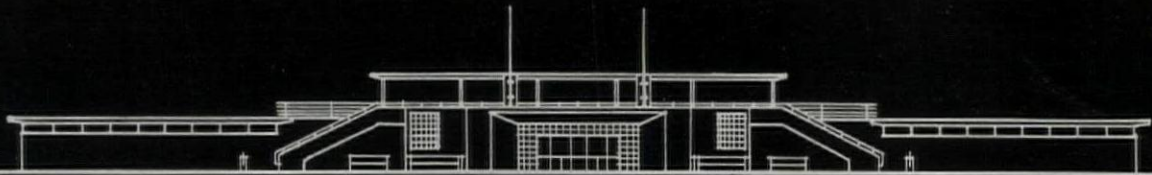


FLOOR PLAN

Admission tickets, checked belongings, rental skates, will be handled at the Field House which will perform similar services for the adjacent game courts too. This structure, which will also house rental lockers and showers, will adapt its functions to the seasons. In summer, the main lounging room, its outer walls removed, will offer a shaded haven to checker and domino playing elder excursionists; the surrounding porch will provide for ping-pong, shuffleboard, and the like. Both the lounge and the porch will constitute a first line of defense against summer squalls. The counter may serve packaged refreshments.

In fall, the main refreshment concession at the pool will continue operation until cold weather to serve roller skaters, picnic area and dance floor patrons, even though the pool and bathhouse are closed. But for the winter, refreshment service at a reduced scale will be transferred to the counter at the Field House, the lounge of which will be converted by then into a warming-up place by installation of glass exterior walls and vestibules. Through the cold season, it will cater to hardened roller skaters and games courts users; during the coldest weeks, a part of the game area is to be flooded for ice skaters, for whom the raised seat and sunken hearth of the Field House should constitute a special attraction.

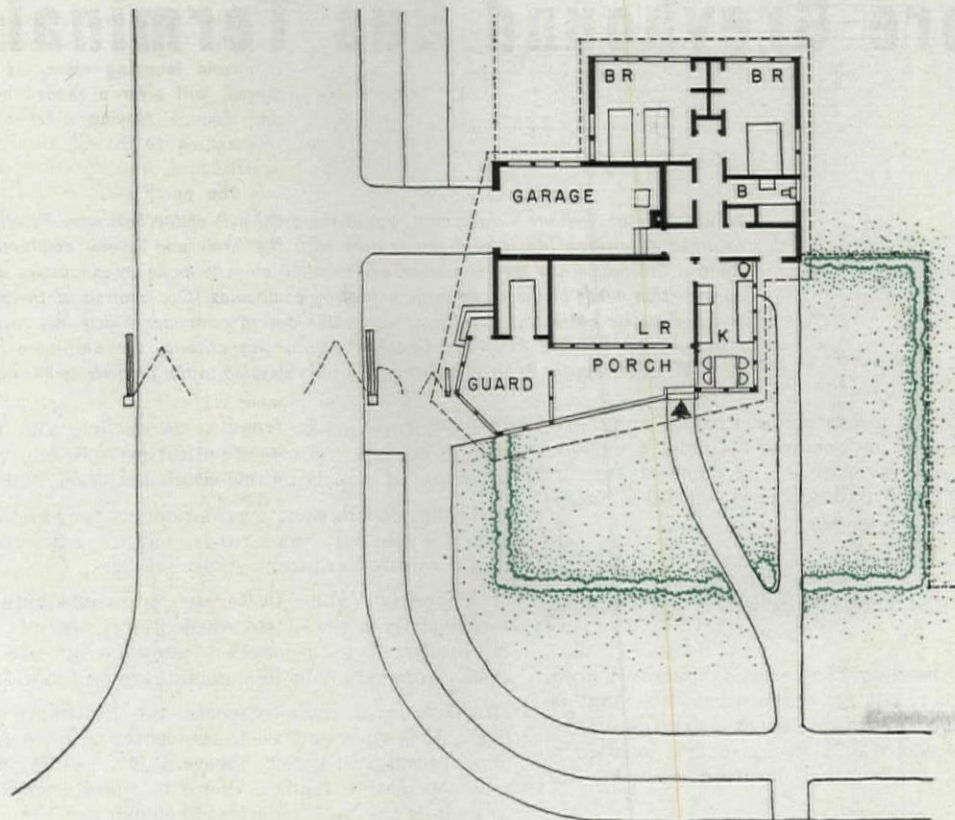
The Gatehouse will be a combination of information center, superintendent's residence, guard headquarters, lost children department. In addition, it may be used to collect fees on the occasion of special events, to direct traffic as between the parking spaces and turn away the overflow on peak days, or to stop traffic altogether in emergencies.



GATE LODGE



FRONT ELEVATION



0 5 10 15 20 FT

FLOOR PLAN



Baltimore Greyhound Bus Terminal

Editorial Note: William S. Arrasmith, one of the architects of the Baltimore Terminal, has recently returned to civilian life from overseas duty with the Army and is now employed jointly by the Central Greyhound and the Pennsylvania Greyhound Lines to make an exhaustive study of building-construction needs of these two large operating companies. Our analysis of the Baltimore project is based on an outline of objective, bus-station-design principles which Mr. Arrasmith prepared especially for PENCIL POINTS. Checked against his criteria, the Baltimore Station, built in 1941-42, would appear to be as progressive a plan solution to the problem as has been built to date.

Whatever special problems a particular location may present, the basic requirements for terminal facilities are essentially always the same—convenience and comfort for the traveler, maintenance of fast and accurate schedules, facilities that assist operational efficiency.

SITE

Four controlling factors influence the selection of a terminal site:

1. **Location:** It should be near the central downtown area, for travelers' convenience, but not *too* central; not, that is, so close that heavy traffic congestion causes operating delays. Not unimportant in the choice of a fairly central location is the safety factor that good street lighting provides for night-time travelers.

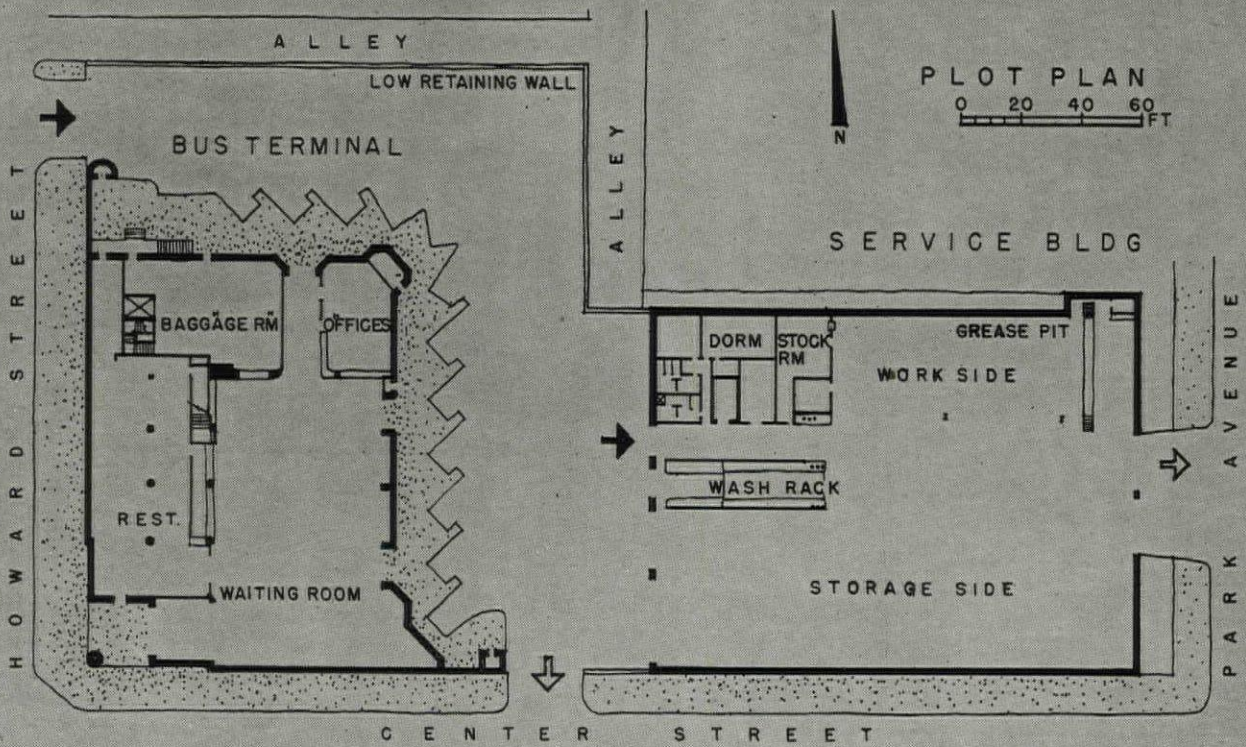
2. **Size and Physical Characteristics:** Site should be large enough to include all needed present facilities and anticipate

likely future needs; regular in outline, and relatively flat (the two last factors facilitating efficient planning and economy of construction, operation, and maintenance).

3. **Traffic Circulation:** Arrangements for handling the traffic should avoid left-hand turns, narrow entrances and exits, and congested adjacent street traffic.

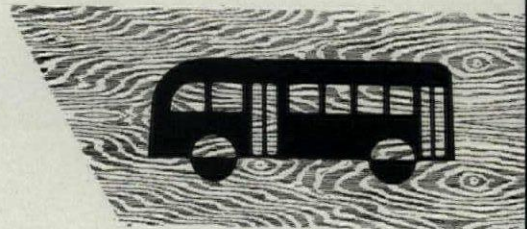
4. **Property Value:** A larger, more adequate site slightly removed from the most crowded city center is frequently to be preferred to a smaller, more costly site at the hub; traffic congestion is less, and there is room for expansion.

In all four of these respects, the Baltimore project rates high. It is close enough to the center of town for convenient access to stores, hotels, theaters, etc., yet far enough out to avoid excessive traffic. There is space enough on the plot to include the highly desirable element of the on-site service garage which eliminates "dead mileage" between terminals and garages, effects considerable saving in operating costs



Wischmeyer, Arrasmith & Elswick, Architects
Lucius White, Associate

Cummins Construction Co., Contractors
Roldon F. Dressler, Designing Engineer for the Service Building





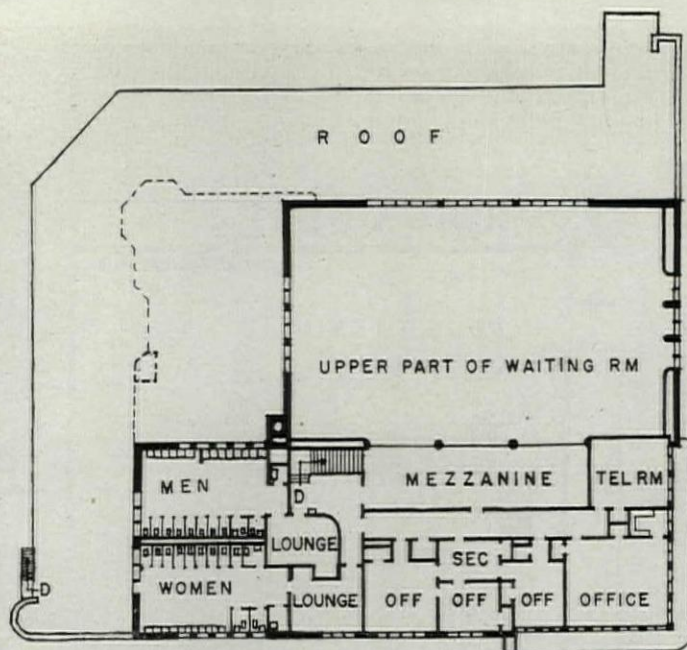
Waiting room.



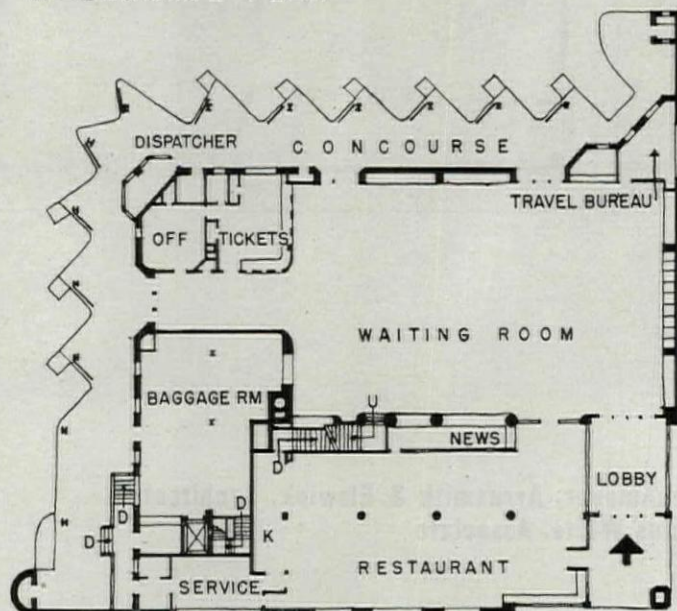
Restaurant.



Concourse.

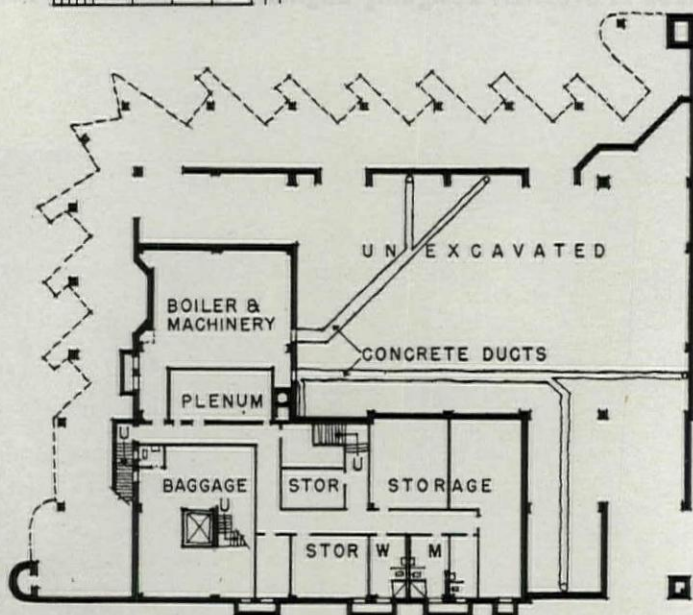


MEZZANINE PLAN



FIRST FLOOR PLAN

0 10 20 30 40 50 FT



BASEMENT PLAN



One great advantage of the on-site garage and Service Building (shown on this page) is the operational flexibility (without waste motion) it gives to coping with peak periods of travel. Without the near-by garage, efficient handling of unforeseen peak loads would require twice the docking space (often unused), costly delays (while busses come from a distant garage), or both.

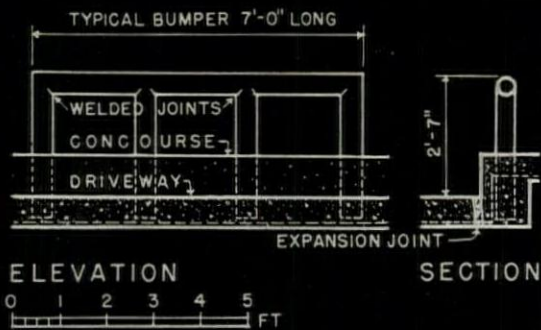
and handling of equipment, and permits use of extra busses required on short notice with very little waste movement or time. Furthermore, the garage reduces the traffic load on crowded city streets.

The site is quite regular in outline; grades are not a serious problem, and the property value was considered in reasonable relation to anticipated operating revenue. The corner location of the terminal provides almost ideal lanes for bus movements in a clockwise direction—entering the lot from the front street, easing into the platform area, and exiting on the side street. When servicing or repairs are needed, a “trip” to the garage is simply a matter of a few feet.

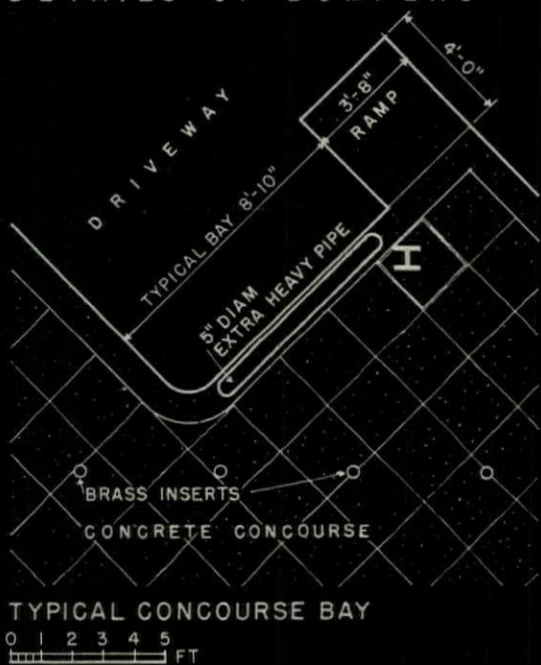
TERMINAL BUILDING

The central location of the main waiting room with respect to the bus concourse follows Mr. Arrasmith’s standard recommendation—particularly for large stations where 12





DETAILS OF BUMPERS



or more busses may be loading or unloading at once. The ticket counter is near the bus-loading platform—a feature that has proved advantageous in the face of the fact that many passengers have to change their tickets at the last moment. In general, Mr. Arrasmith advocates that this element should be in “a central position off the waiting room.” This does not apply in the Baltimore station, and one questions the desirability of requiring all ticket purchasers to cross the entire long diagonal of the room to reach the counter; foot traffic congestion must occasionally be a problem.

As for check lockers, Mr. Arrasmith comments: “You can never find enough wall space for enough of them.” One location that is “very desirable”—and one that is used at Baltimore—is the area between the recessed, out-swinging doors from the waiting room to the concourse. Built-in lockers such as are used in the Maryland station prevent accumulation of dust and dirt and hence help reduce building maintenance.

Rest rooms preferably occur on the main floor level, but “floor space prohibits this in many cases (as at Baltimore) and basement or balcony locations have proved satisfactory. . . . These facilities should be easily reached from the waiting room but not too accessible from the street. . . . Women’s rest rooms should include a comfortable, adjacent lounge . . . no lounge space for men should be provided, as this usually becomes a loafing place and nuisance. Facilities for bathing and changing clothes should be a part of every modern rest room.” The arrangements at Baltimore follow these design principles with two exceptions: no bathing facilities are included; and a small lounge adjoins the men’s toilet room: “Determining the correct location for the baggage room is always a headache,” says Mr. Arrasmith. If it is centrally located with respect to the outside loading platform, cross traffic of both passengers and baggage results. If placed at one end of the concourse, this usually brings it at a considerable distance from the bus lanes at the other end. The solution at Baltimore, due to the right-angular organization of bus docks, is a compromise solution somewhere between these two extremes. An elevator to a storage basement almost doubles the storage space without using too much of the precious ground-floor area.

Location of the restaurant in the Baltimore station follows exactly the principle Mr. Arrasmith recommends—equal accessibility from the street and waiting room; kitchen so placed that handling of supplies and garbage is separated from bus or passenger traffic; adequate storage space and toilets for the help (in the basement). “The soda bar and newsstand should be located in the waiting room near the restaurant, as these three are usually operated by the same concessionaire.”

Concourse-loading platform. “It is generally agreed that the sawtooth or irregular parking is the most efficient.” For large terminals, separate parking lanes are usually assigned to local and to “long haul” busses, the latter being yet further subdivided into separate lanes for arriving and departing busses. “It is very important,” Mr. Arrasmith says, “that the baggage room and dispatcher be centrally located between the two.” In the Baltimore plan, the dispatcher occupies a glass-enclosed corner office that commands a full view of the lanes on the two sides.

Finally, as to the “very vital” problem of passenger control on the loading platforms: “Where it is not possible to have individual loading doors from the waiting room to each bus loading area (and it seldom is), it has been found advisable to use a barrier with individual gates to each bus.” In the case of the Baltimore station, the barriers are formed by removable stanchions and cords which are used only in special peak-load hours.

Structure of the Baltimore terminal includes concrete foundations, steel frame, concrete floors over bar-joist members, filler walls of brick with cement, terra cotta, stone or porcelain enamel exterior surfacing. Sash are of wood (steel ones, not available). Partitioning is of clay tile or standard metal sections. Floors and bases of all main rooms are finished with terrazzo.

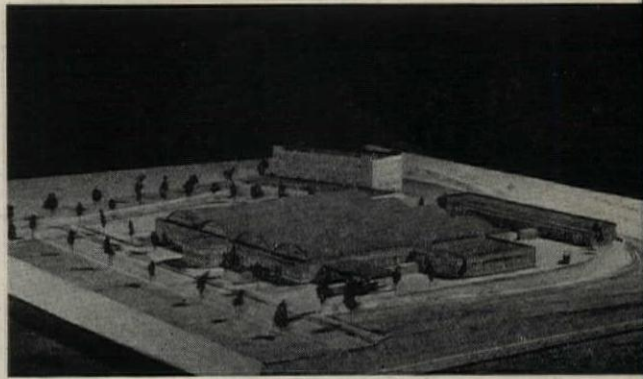
Detail of concourse.



BUS SERVICE TERMINAL FOR THE CLEVELAND, OHIO, TRANSIT SYSTEM

GENERAL PLAN: A. C. WOLF, ARCHITECT

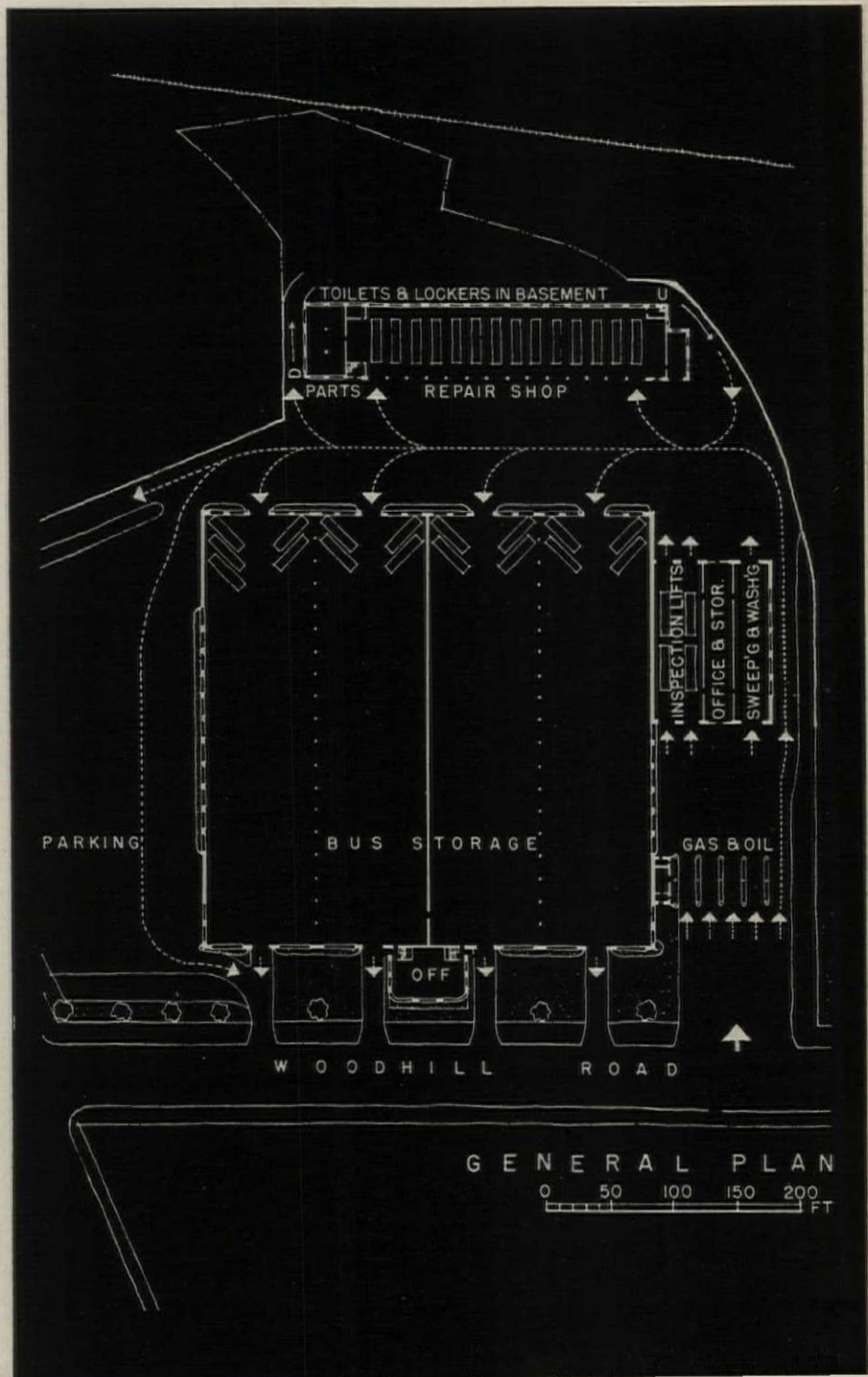
R. M. KNUITSEN, SUPERINTENDENT OF PROPERTIES



If proposed plans go forward after the war, Cleveland will boast a new million-dollar city bus-service terminal. Designed to solve the problems of economical operation, servicing, and storage of the Transit System's busses, the project is made up of five related, functional elements: gas and oil service unit, inspection and wash house, repair shop, storage garage, and offices. Organization of these on the site (selected for its strategic location with respect to bus routes) is such that an entering bus will be progressively serviced as if on a production line:

1. At the end of its day's run a bus uses the entrance drive to reach a covered gas and oil service station, large enough to service four busses simultaneously; this unit also contains a magazine room where money boxes are turned in and stored.
2. Busses requiring inspection or cleaning proceed in a direct line to the next service unit; the inspection bay is equipped with hydraulic lifts and other equipment for inspection of batteries, tires, body, and mechanical parts; in the wash house portion, sweeping and vacuuming operations precede the automatic washer wherein an electric eye starts sprays and four rotary brushes working.
3. Next in line is the repair shop at the back of the site, where all minor repairs, greasing, unit changes, etc., are handled.
4. Finally comes the garage itself, composed of four-sections each with a 90-foot clear span that allows parking in the herringbone pattern, angled toward the front doors. Each section accommodates 58 busses—a total of 232. For busses that do not need inspection, cleaning, or repairing, a by-pass road is provided at the right of the wash-house wing which leads around to the back and so directly into the garage.
5. At the front of the storage structure is the office unit: administrative offices, dispatcher's office, driver's report room, lounge, locker, and toilet rooms.

Proposed construction is steel frame, concrete floor and roof slabs. Exterior walls: brick with stone trim, glass-block panels, and steel sash. Doors throughout will be of the overhead type, electrically operated. Heating lines (steam furnished by a nearby City plan) will extend outside under the paved drives to eliminate snow and ice problems in winter. All heating will be automatically controlled—forced air at floor level, supplemented by direct radiation thrown toward the underside of stored vehicles.



STRUCTURES TO SERVE RAILROADING

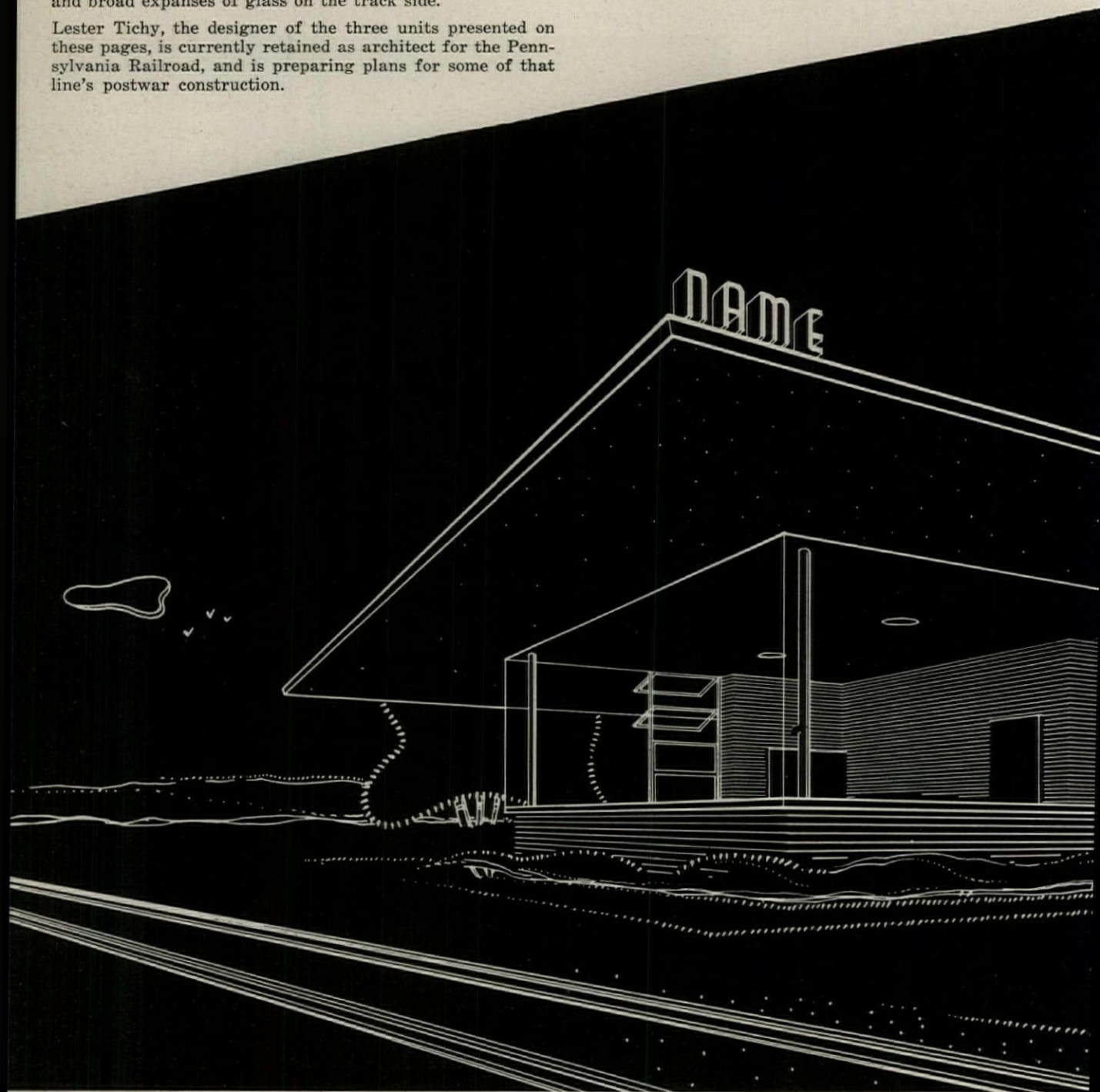
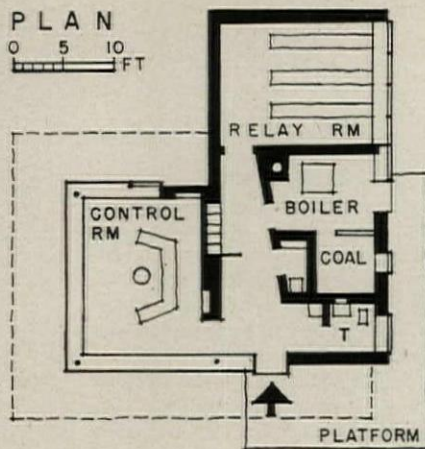
LESTER C. TICHY, ARCHITECT

1. SWITCH TOWER

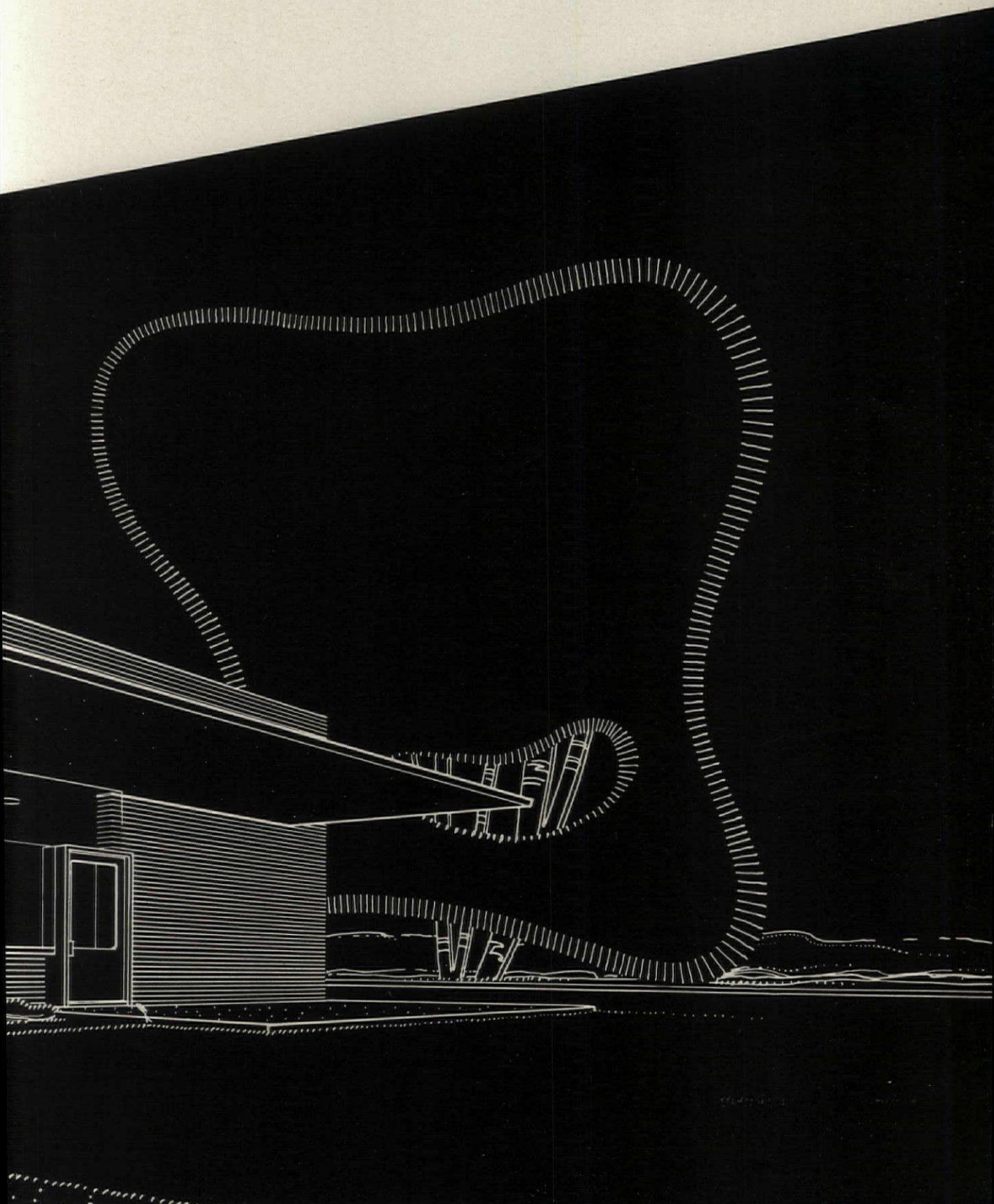
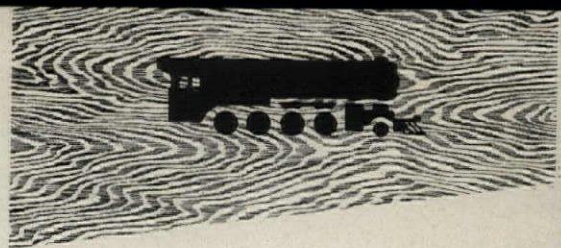
Any observant eye senses the weary architectural quality of the average railroad structure. Most of them were built before the days of automatic controls; not a few stations were designed to include the station master's home; the picturesque tastes of the "romantic" days of railroading contributed their full quota of costly-to-maintain gewgaws. A new set of conditions exists today. There are automatic switches and signals; bus lines and air lines are vigorous competitors for trade; the streamlined train is sending the "iron horse" out to pasture.

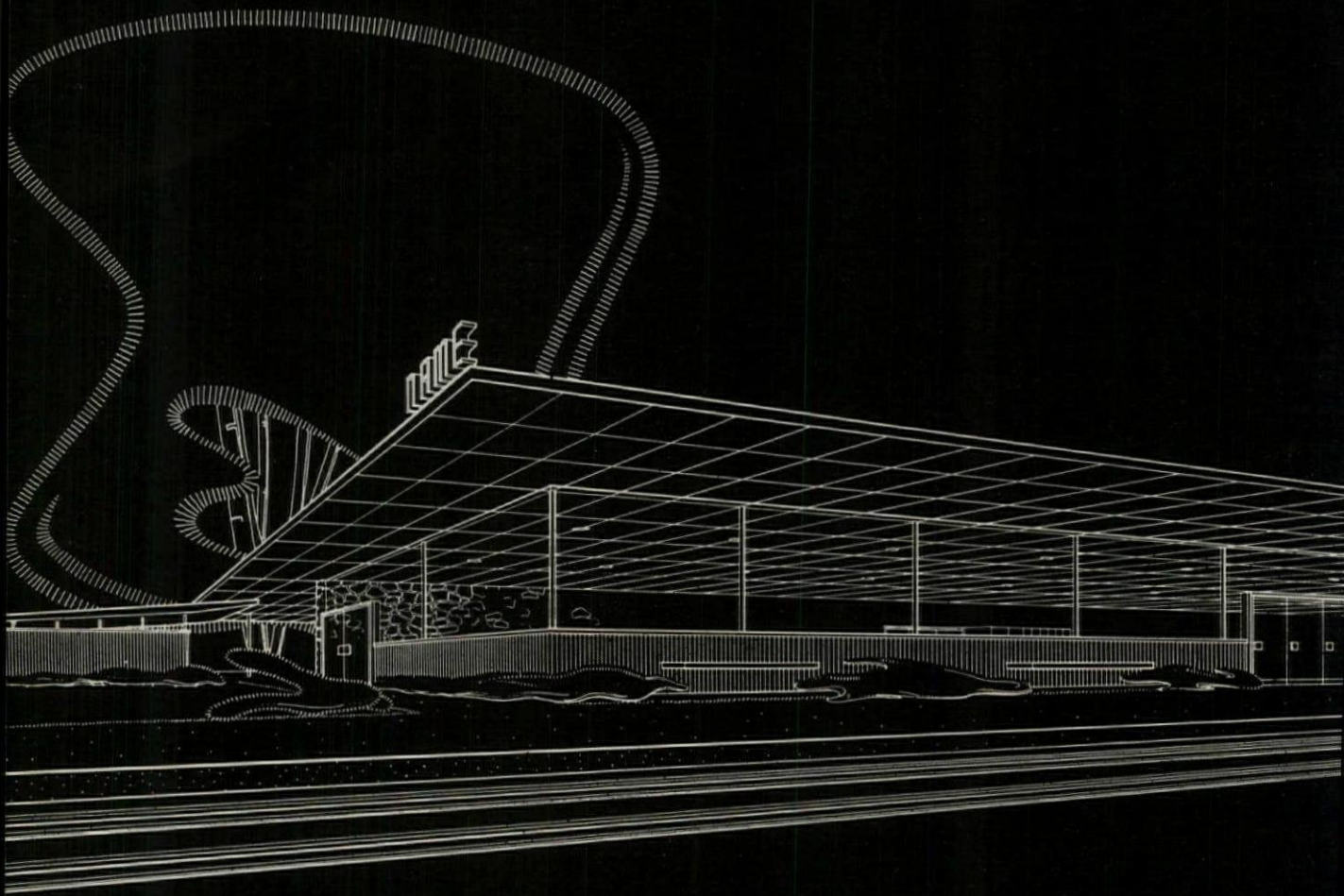
Design of the Switch Tower shown here is an attempt to work out a thoroughly functional solution to a contemporary problem. Fireproof, equipped with an electro-pneumatic device for automatic control of switches and signals, the proposed building would have pipe structural columns, terra cotta filler walls with face-brick surfacing, insulated roof, and broad expanses of glass on the track side.

Lester Tichy, the designer of the three units presented on these pages, is currently retained as architect for the Pennsylvania Railroad, and is preparing plans for some of that line's postwar construction.



OF TOMORROW





2. Railroad Station For A Town Of 20,000

LESTER C. TICHY, ARCHITECT

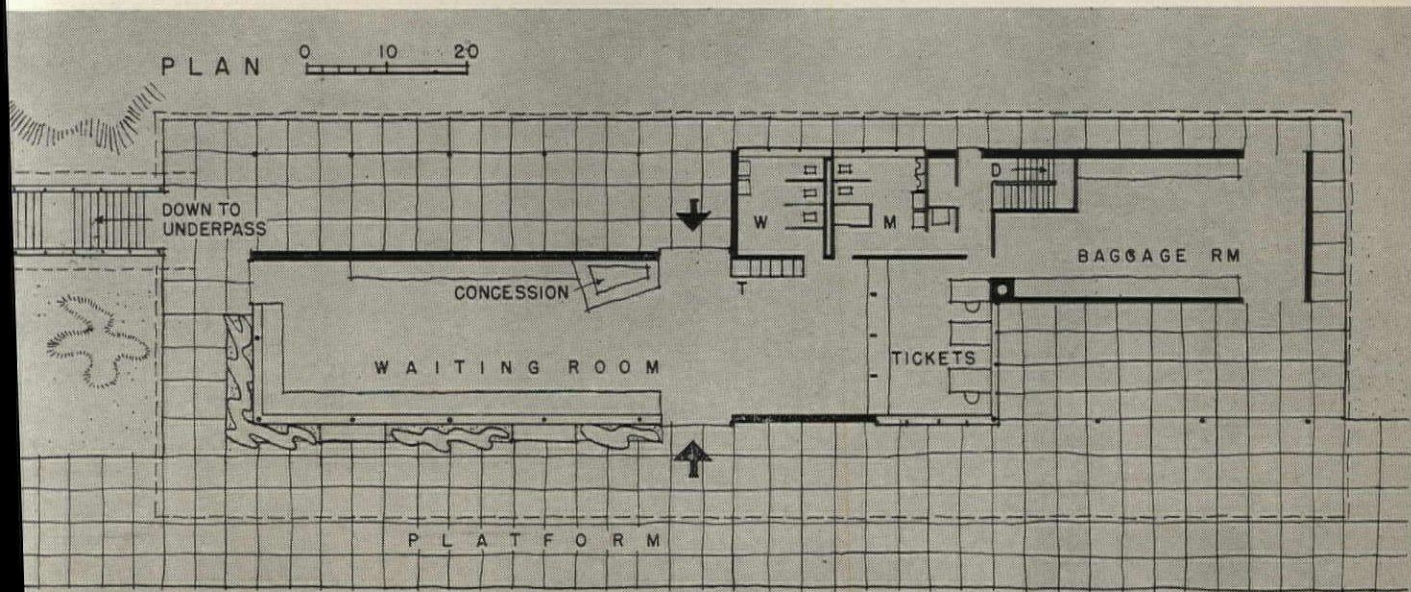
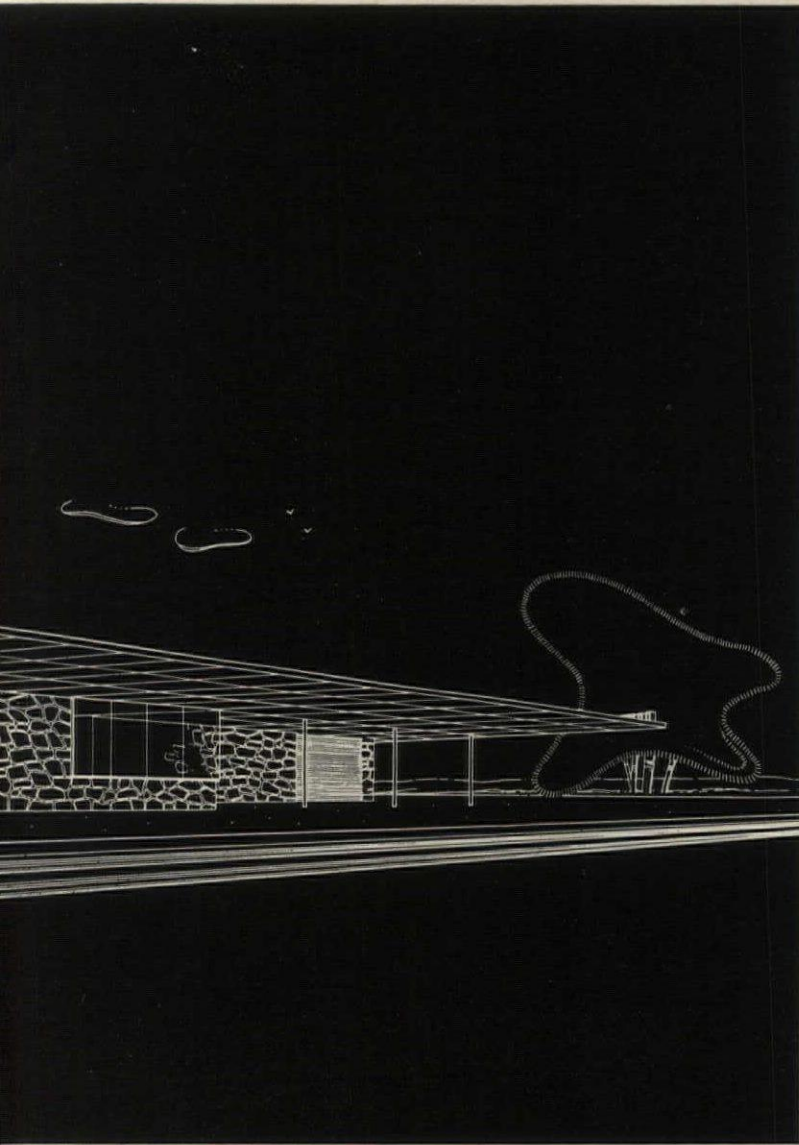
When the railroad station was also the home of the station agent, there was a modicum of logic in conceiving of its design as that of a residence; and it wasn't the railroads' fault that the period of their expansion coincided with a highly escapist delight in the architectural whatnot. By now, however, as Mr. Tichy points out, "many of these structures are entirely obsolete."

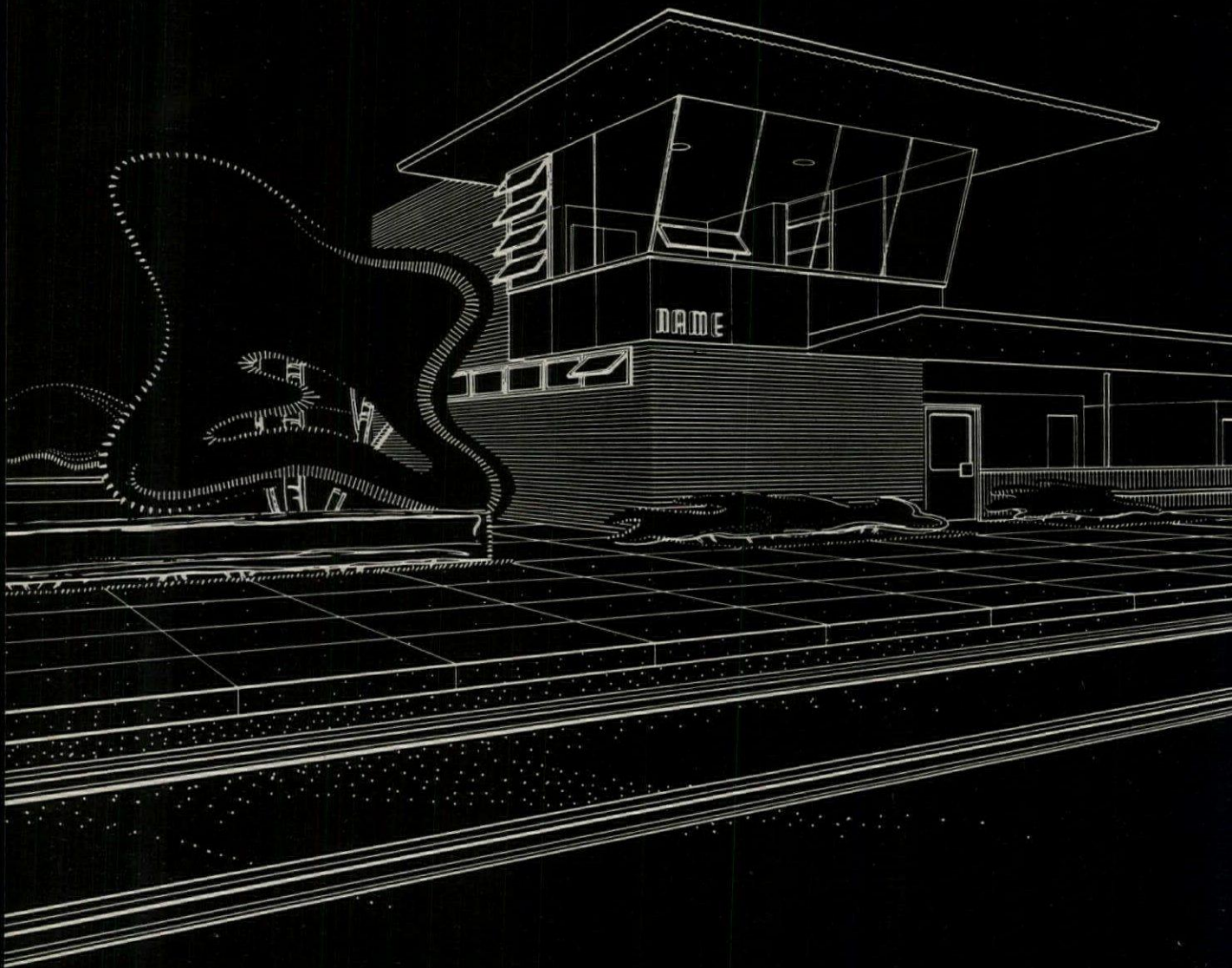
In designing the station for a town of about 20,000, Mr. Tichy explains that he tried "to work out a functional design both to meet present day needs and to anticipate future conditions. . . . The basic facilities (ticket office, baggage room, toilets, etc.) would remain static, while the waiting room space could be either enlarged or contracted depending on the community's changing needs." The fact that the passenger has a full view of the tracks is a plan advance of no little importance.

Selection of materials and structural systems that require minimum maintenance—painting or repairing—is part of the architect's fundamental approach to the design of railroad facilities. For exterior wall materials, he suggests (depending on the particular location and availability) natural stone or corrugated metal panels; prefinished, corrugated asbestos cement board is proposed for interior ceiling finish, and vertical frame members would be either light steel channels or pipes.

Believe it or not, this is a railroad station.

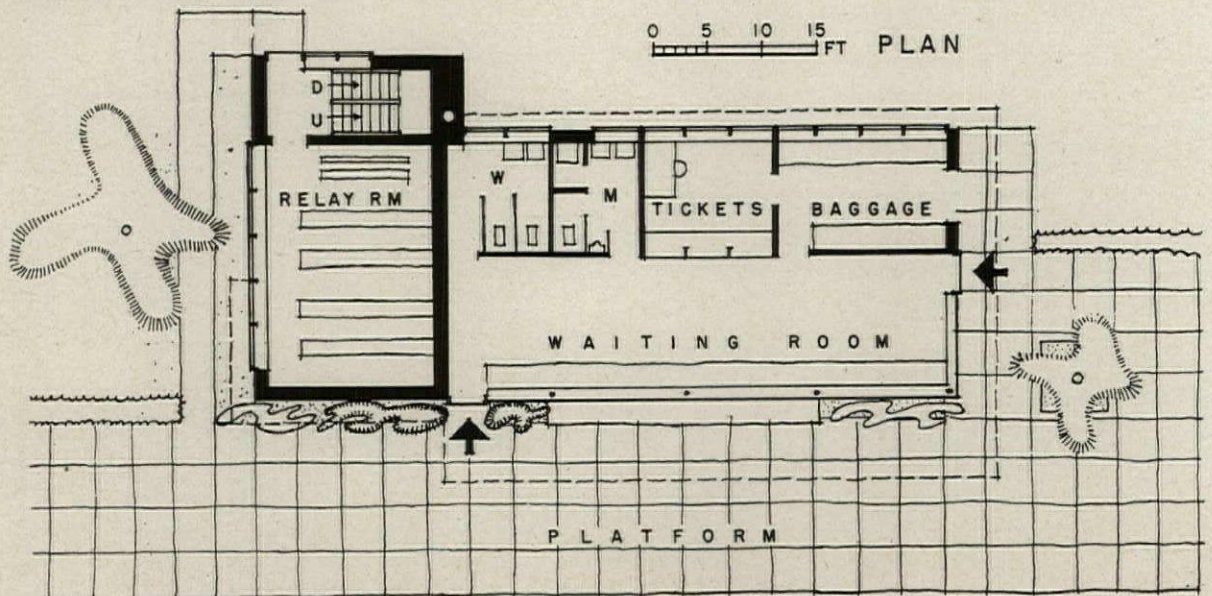


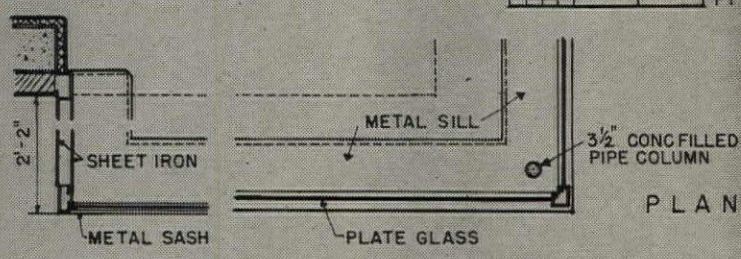
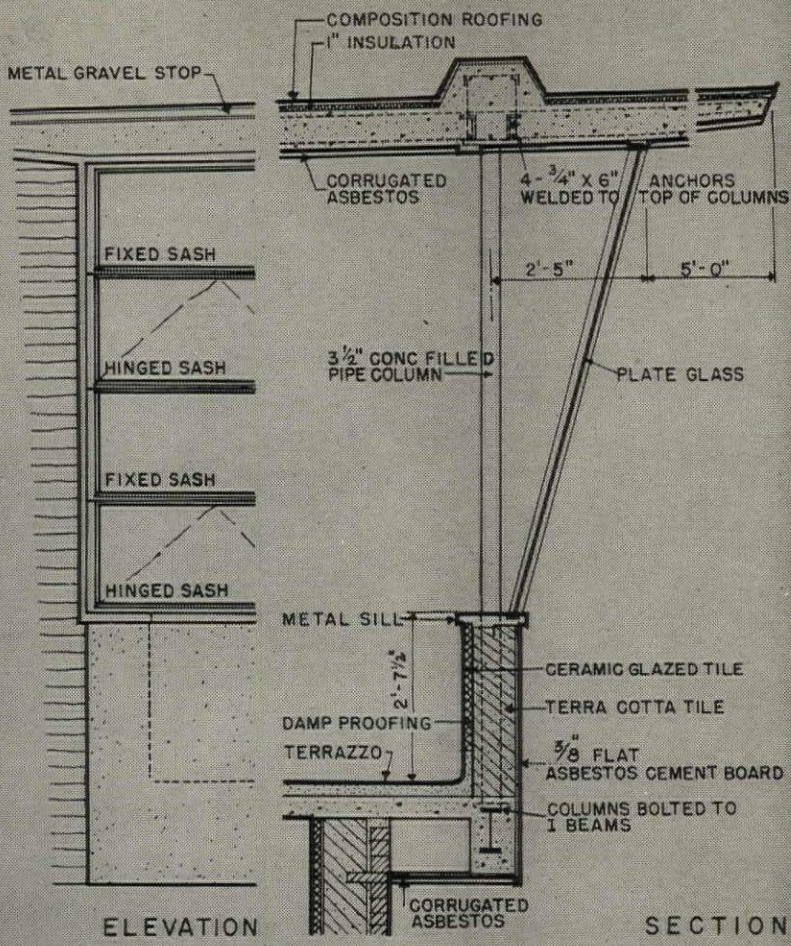
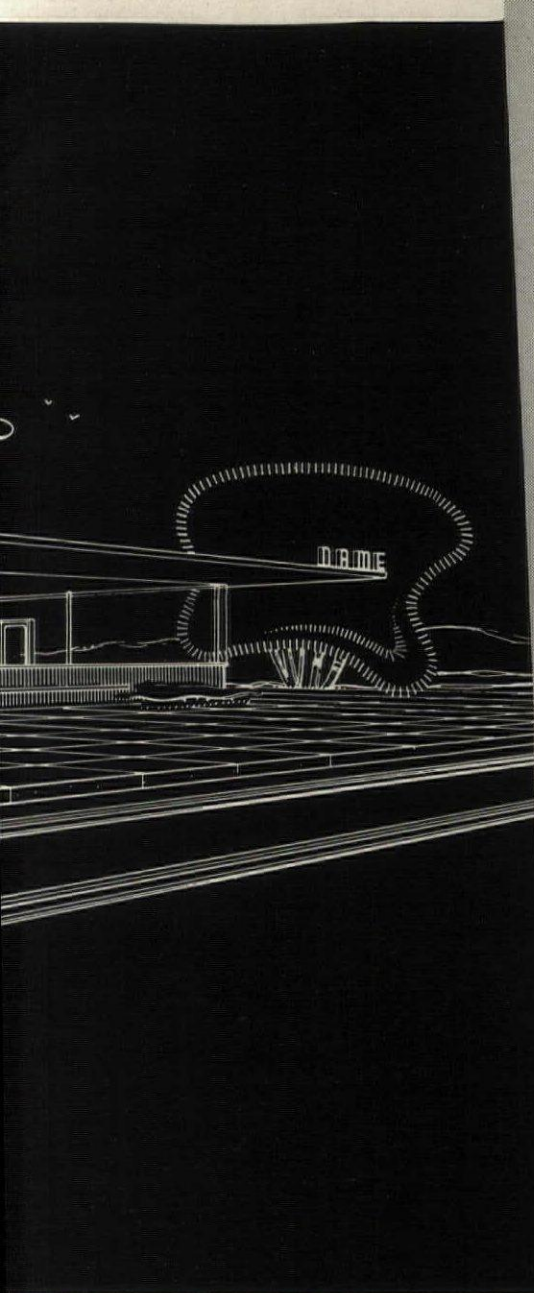




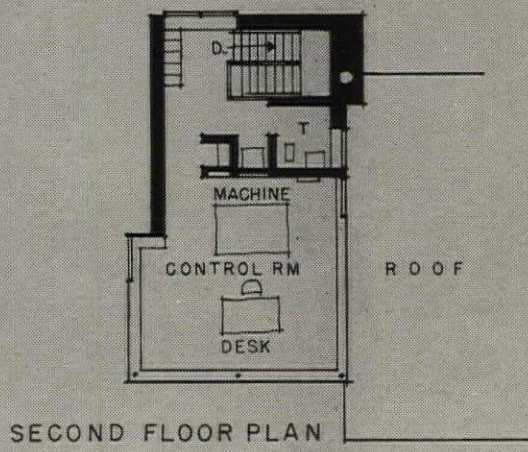
3. Combination Station And Switch Tower

LESTER C. TICHY, ARCHITECT





DETAILS OF CONTROL ROOM WINDOWS

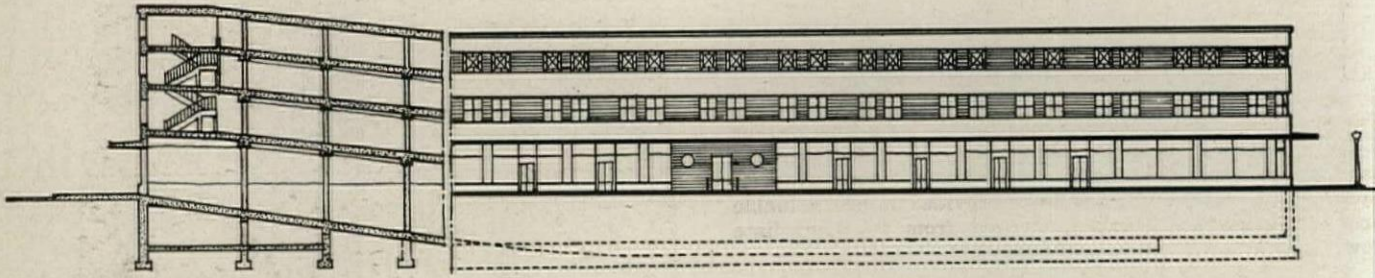


This interesting proposed structure is an exceptional instance of design integration. Until the advent of automatic switching devices, the Switch Tower always had to be placed within view of converging tracks; with automatic controls, this is no longer necessary, and the tower can be placed at any reasonable location. Built as a unit with the railroad station itself, it also accomplishes numerous operational economies: reduced overhead; one plant instead of two to heat and maintain; simpler inspection, even (possibly) reduced personnel. Like the other railroad structures shown on preceding pages, this scheme would be built of permanent, easily maintained materials. Here again the passenger would have the great advantage of being able to see approaching trains from within.

Garage, Store, and Office Building

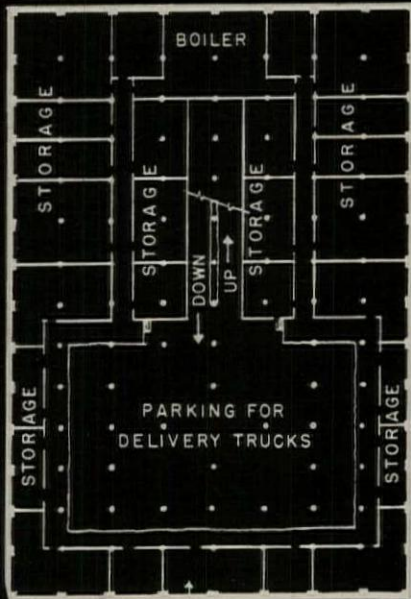
J. E. GREINER CO. AND DE LEUW, CATHER & CO.,
CONSULTING ENGINEERS

In cooperation with the Department of Highways and Department of Vehicles and Traffic of the District of Columbia and Public Roads Administration (FWA).



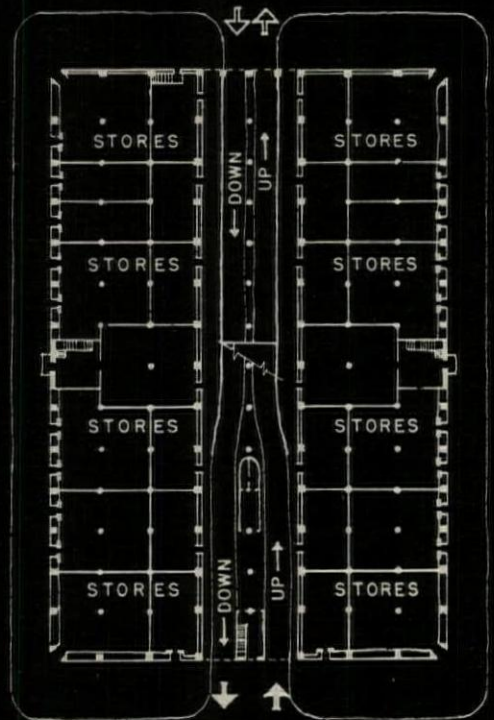
SECTION
AT CENTER LINE OF BUILDING

SIDE ELEVATION



AIR CONDITIONING

BASEMENT PLAN



FIRST FLOOR PLAN

For Washington, D. C.

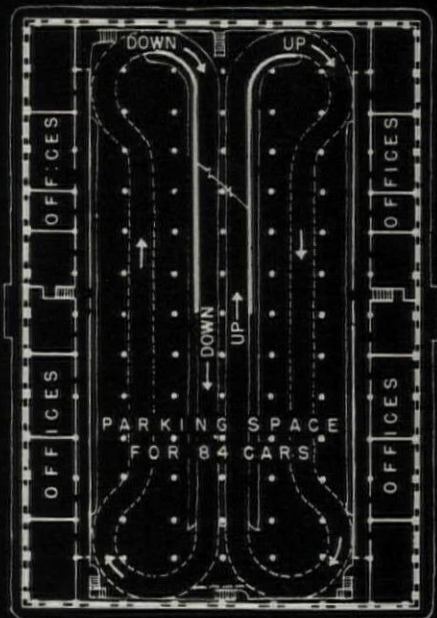
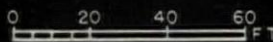
Developed in connection with a "Transportation Survey and Plan for the Central Area of Washington, D. C.," for the Commissioners of the District of Columbia, this proposed garage, store, and office building is an attempt to provide a single answer to three phases of the problem of decline in downtown business districts: (1) Provide additional parking space; (2) supply more first-floor shops and business offices (for which there is usually active demand); (3) put to good use otherwise vacant property.

The suggested scheme would occupy an entire block. The ground floor consists of almost continuous shop fronts. A delivery truck entrance provides speedy, off-street delivery to basement stock rooms of the stores.

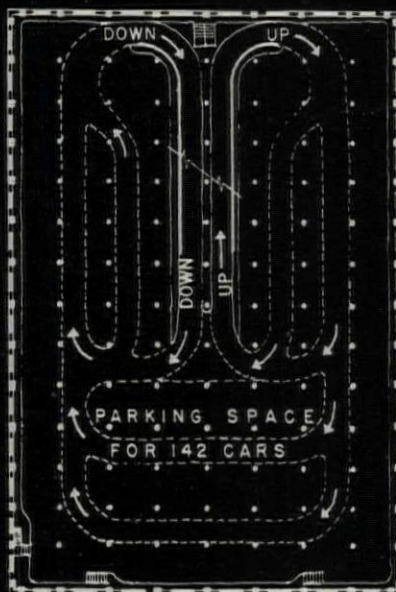
On the second floor, daylight offices border interior parking space and access ramps. Upper levels, including the roof, are wholly devoted to parking. The scheme is diagrammatic; several more parking levels (depending on the local need) might well be added; if the number of floors (including ground floor and roof) exceed four, however, passenger elevators or escalators should be provided. Another possibility that would apply to sloping sites is that two levels might be served directly from streets without the use of ramps. The project is specifically designed for the part-time parker—the shopper or person making business calls; parking rates are proposed that would encourage frequent turnover. Space for all-day parking would be provided on less valuable property, somewhat further removed from the immediate downtown area.



ROOF PLAN



SECOND FLOOR PLAN



THIRD FLOOR PLAN

Shopping Village for the Motor Age, Dallas, Texas

HARE AND HARE, LANDSCAPE ARCHITECTS, CITY PLANNERS

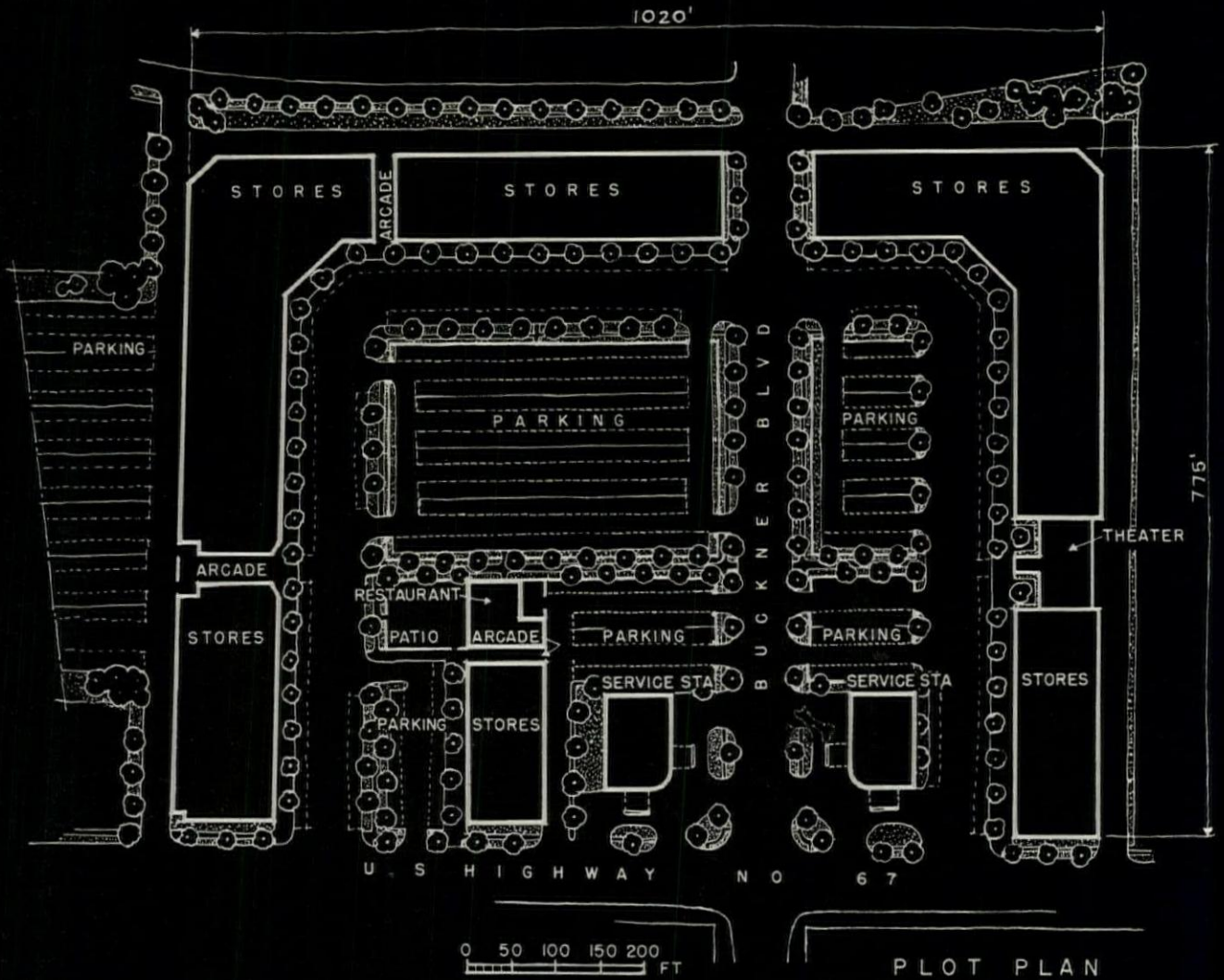
To be built as an adjunct to Casa Linda Estates, 435-acre tract on which Carl M. Brown, developer, put up some \$3,000,000 worth of houses before the war, this 31-acre decentralized shopping village is located 7 miles from downtown Dallas at an important intersection of a circumferential thoroughfare (Buckner Boulevard) and a state highway (Garland Road). In addition to serving the Casa Linda property, the project would also provide a shopping center for several other adjoining residential developments and such trade as might derive from highway traffic. Hare and Hare have developed the land plan and basic arrangement of building groups shown on this page; design of the actual buildings will be done by others.

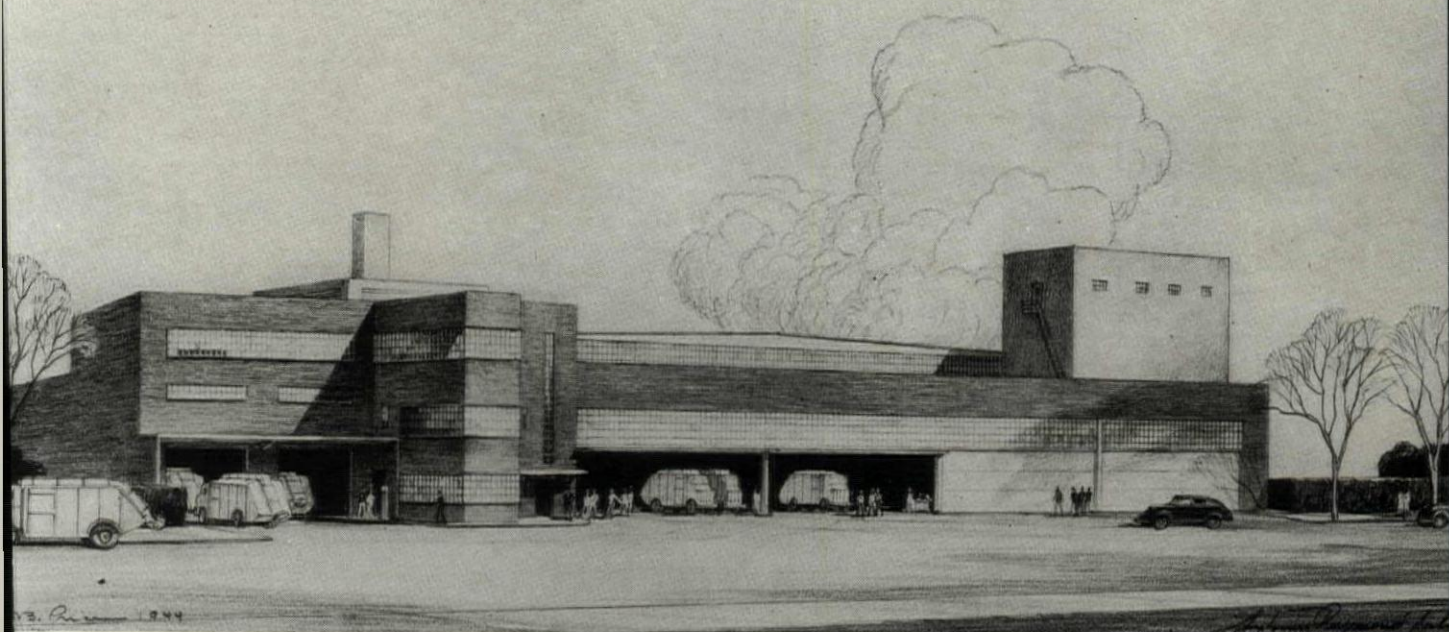
A basic assumption is that upwards of 1,500 motorists may wish to trade, dine, or be entertained here all at one time. Hence, the various stores and restaurants and the theater are organized courtyard fashion around a central area that is subdivided into landscaped parking enclosures. Addi-

tional parking space will be available at the curbsides bordering the commercial structures. Two large auto-service stations, each to cost \$75,000, are strategically located either side of Buckner Boulevard in the direct line of travel of arriving customers.

The scheme worked out by the City Planners provides approximately 3,000 feet of buildings—office buildings, shops, drive-in bank, a 1,000-unit locker plant, auto sales and service, and a restaurant 80 by 200 feet, one portion of which is to be developed as a patio or courtyard for outdoor dining. The developer reports that already, with only the theater actually built, more than 50 applications are on file for rental of business premises.

Such generous and comfortable provisions for the motoring public may well present a vigorous challenge in postwar years to downtown property owners who fail to find an answer to the problems of crowded streets and too little convenient parking space.





Sanitation Department Garage

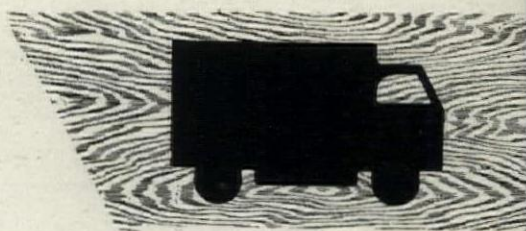
For Districts 47 and 48, Borough of Brooklyn,
City of New York, Department of Public Works

ANTONIN RAYMOND, A.I.A., ARCHITECT

CLYDE R. PLACE, MECHANICAL ENGINEER

WEISKOPF & PICKWORTH, STRUCTURAL ENGINEERS

HOWARD H. BATTIN, A.I.A., ARCHITECT IN CHARGE



Efficient storage and servicing of a city department's trucks is an architectural-engineering problem more often handled by rote than with creative imagination. In the project detailed here, but one specific instance is sufficient to indicate why this solution jumps well out of the category of the "routine" into the realm of progressive architecture.

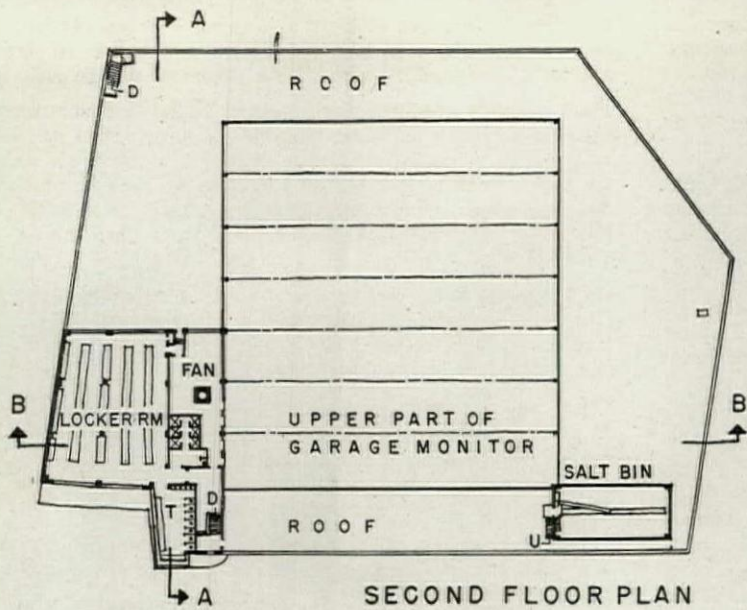
It has evidently been standard practice (derived from what obsolete truck sizes or other original set of conditions, we know not) to provide 45-foot bays in garages for sanitation departments. In the Brooklyn job, these are discarded in favor of a clear span of 126 feet (see truss detail, page 81). This shift in design procedure is based on nothing less obvious than the fact that contemporary trucks are of a certain size and need space in which to maneuver; but, curiously, it takes the exceptional designer to re-examine accepted standards and re-chart obvious reference points and come up with a solution that sets higher standards. Design of the rest of the structure appears to be equally thoughtful and objective.

Basic requirements were the need to house and maintain 15 garbage collection trucks, 25 can carriers, and 72 snow plows. Attendant or separate facilities which had to be included were washing and gassing service stations; lockers, toilets, and showers for 270 men; a workshop; a rock-salt storage bin; office space for foremen; and general offices for keeping records and handling payrolls or other business.

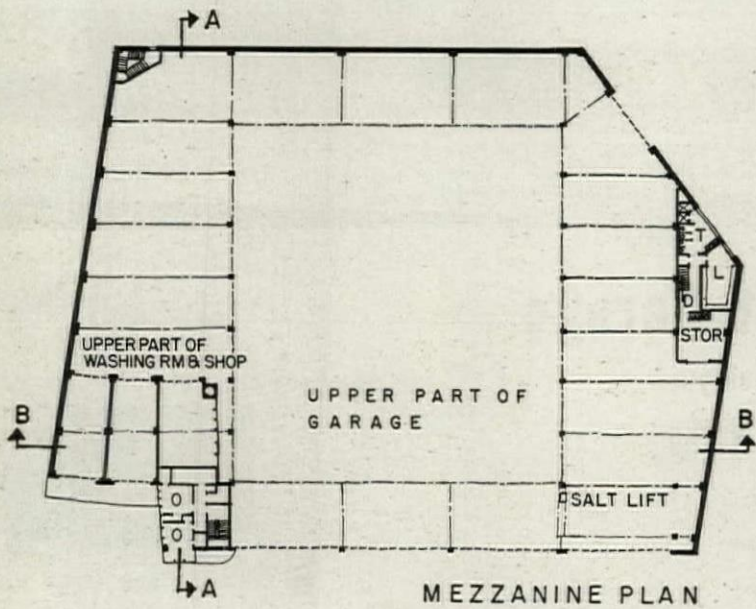
The parti was based on a traffic plan requiring trucks to enter and exit on one street; which, in turn, called for space for trucks to maneuver inside the garage. Customary practice is a "drive-through" scheme which eliminates inside maneuvering, a factor which in this case (in the architect's judgment) is outweighed by the greater problem of centralized control which the drive-through scheme involves and by the enormous heat loss which results when large doors on two sides are opened.

Organization of the plan (over page) is such that the office block and control space occupy a projection at the front of the building between the two entrance doors (at left) and the bank of overhead exit doors of the garage proper. When trucks return from their day's work, gassing and washing take place simultaneously at the two entrance bays which, in fact, constitute washing compartments wherein facilities are designed to clean one truck in two minutes. The gas lines are located in the open area just in front of the washing bays, an area deep enough to avoid blocking of the sidewalk. Within the garage area, the walkway spaces between traffic lanes are raised platforms. This device assists both safety of personnel and protection of the structure.

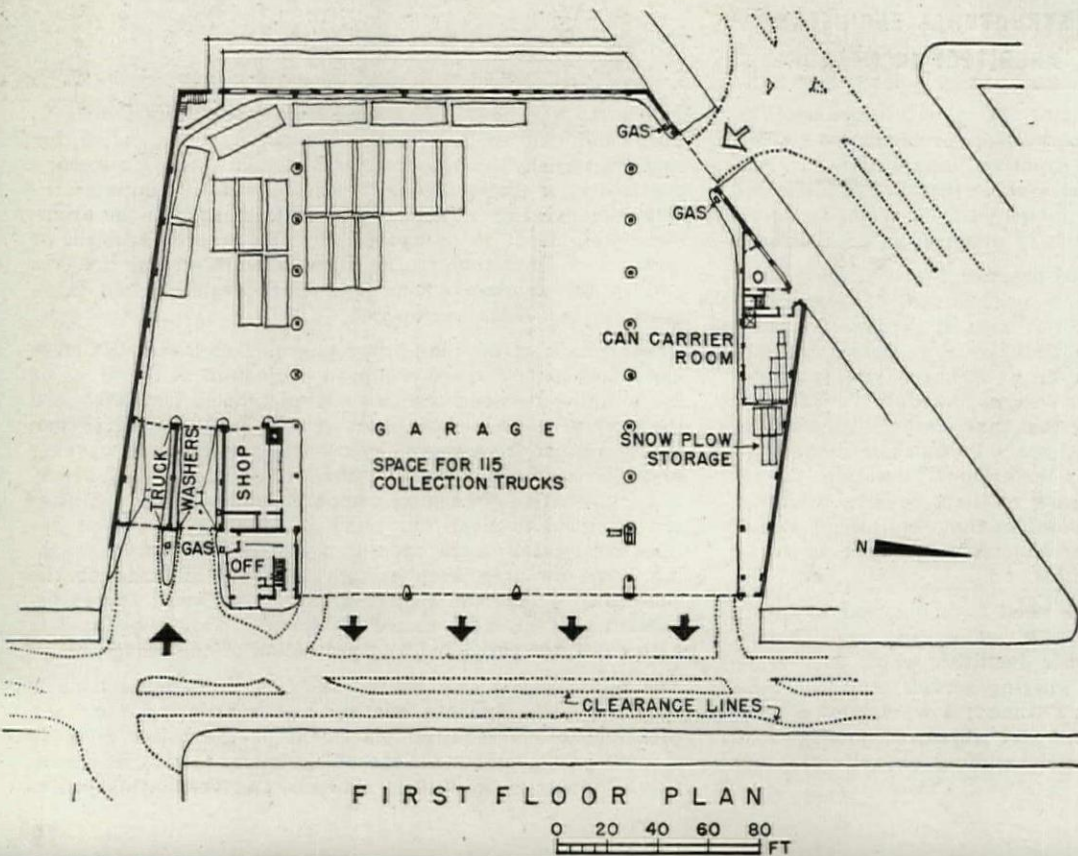
The minor-repair and testing shop on the ground floor is provided with separate heating and ventilating facilities. Site limitations required placement of the boiler room in a small basement (under the office-control tower) and location of locker room, toilets, showers, and ventilating equip-



The penthouse salt bin, framed with trusses that resist side pressure, holds 200 tons of rock salt. Brought to the bin by a bucket and belt conveyor, it delivers the salt to the garage level by gravity.



The basement boiler room comes under the office and control-tower block; steel-framed, the building is supported on piles. Entrance wash bays are at left (front) of the ground floor; storage space for can carriers and snow plows occupies the wedge-shape areas at right.



ment at a second-story level. Between the two floors is a mezzanine with two offices for district superintendents. A penthouse bin for storage of 200 tons of rock salt occurs at the right and front of the building, the salt being hoisted to the bin by a bucket and belt conveyor and fed to the ground floor by gravity for quick distribution.

The mechanical plant consists of two boilers, with heat supplied by overhead unit heaters. The ventilating system of the main garage, designed to maintain safe working conditions under all normal situations, is based on an exhaustive study of likely concentrations of noxious gases and any possibility of concentration of explosive gases that might result from spilled gasoline, exhausts, etc. Electric outlets at column bases provide current for lights and small power tools through trailer lanes to parked trucks.

Structure is steel frame with welded trusses. The large central area of the roof is supported by eight 126-foot trusses (see detail) spaced 20 feet apart. Simple in pattern, the truss panels are designed to accommodate the large ventilating ducts which occur over the aisles between parked trucks. The truss chords are 18-in. T sections, the stem portion of the T taking the place of gusset plates; web members, welded to these, are made up of double channels faced

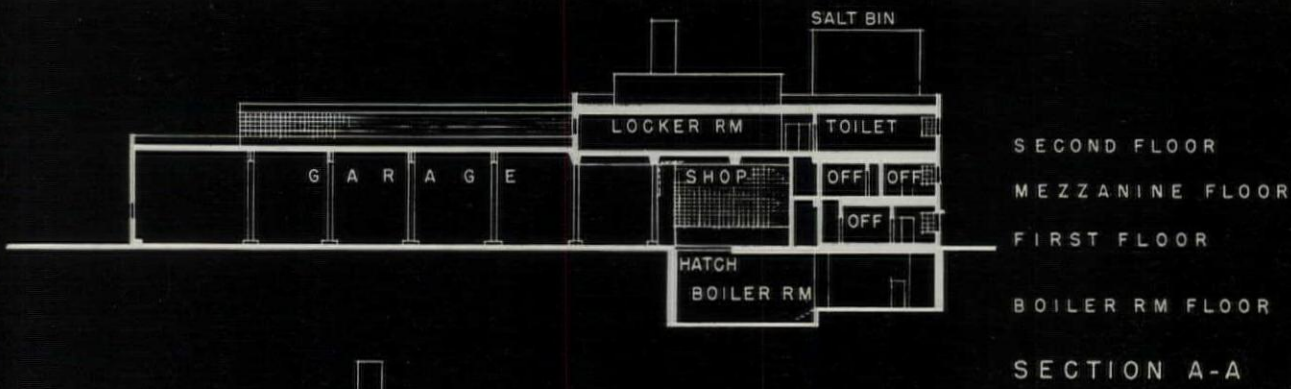
together to form an efficient rectangular cross section. The salt-storage bin is supported between columns by trusses specially designed to resist side pressure of the salt load.

Face brick is specified for exterior walls; for partitioning, either face brick or other suitable masonry units of a light color will be used to provide high light-reflection values; ceilings are to be plaster on metal lath; sash is of the industrial type, pivoted or projected, and glazed with wire glass. In the truss projection clerestory lighting is provided.

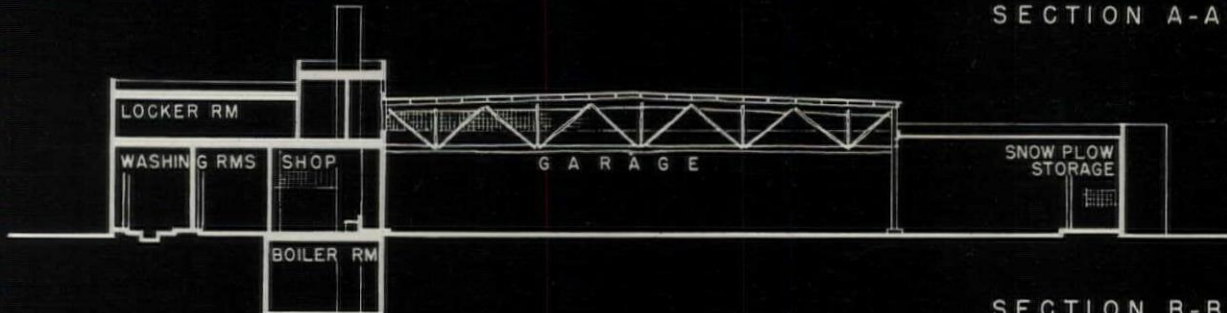
Over second story rooms, the roof is a concrete slab; over the main garage, masonry plank is specified. The entire roof is to be insulated with 1-in. insulating board; roof surfacing is 20-year bond type on lightweight fill.

Office and locker room floors are asphalt tile; ceramic tile is used for toilets and shower rooms, and cement for stair halls. For the floor of the main garage (to be supported on piles, as is the entire building) a heavy traffic type concrete floor is to be installed.

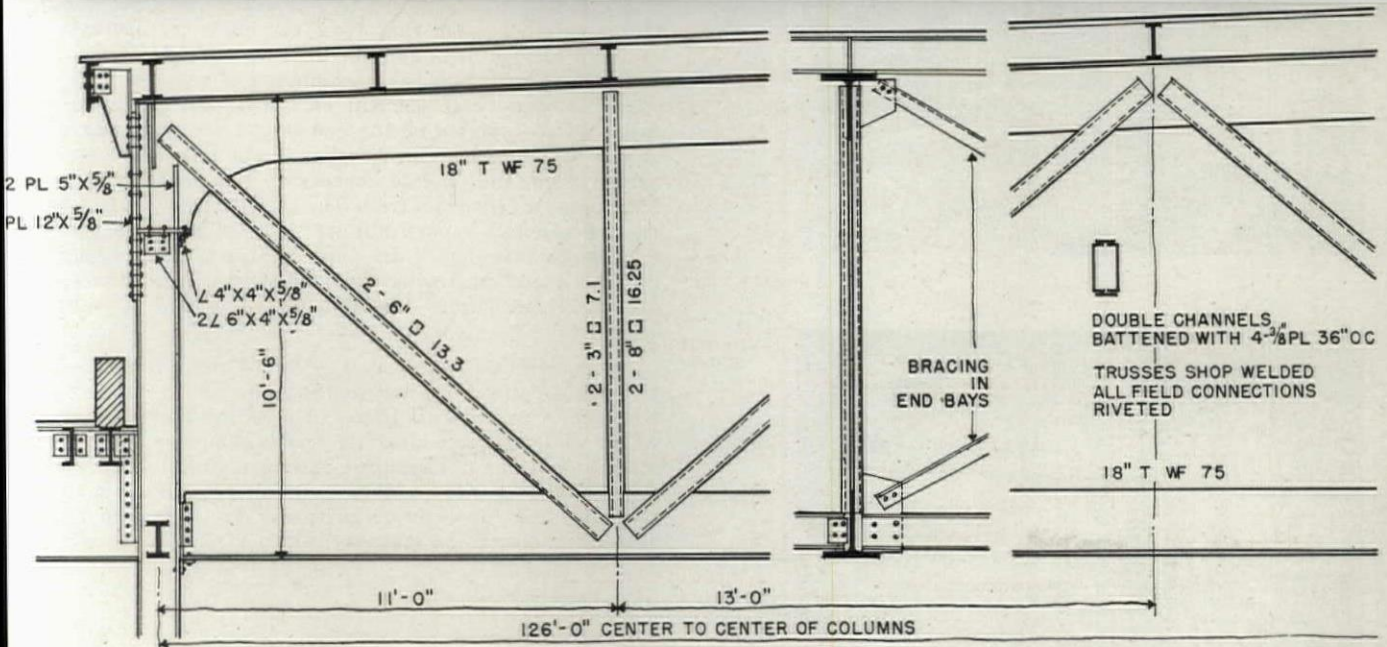
In the whole design, painting or other maintenance items are kept at a minimum; only metal work and safety markings will need repainting.



SECOND FLOOR
MEZZANINE FLOOR
FIRST FLOOR
BOILER RM FLOOR
SECTION A-A



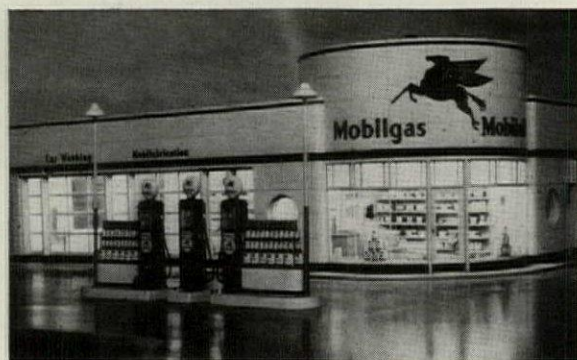
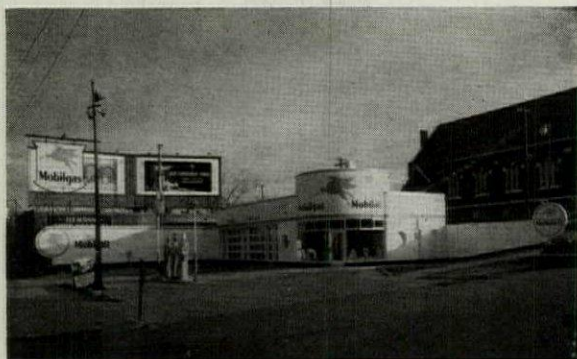
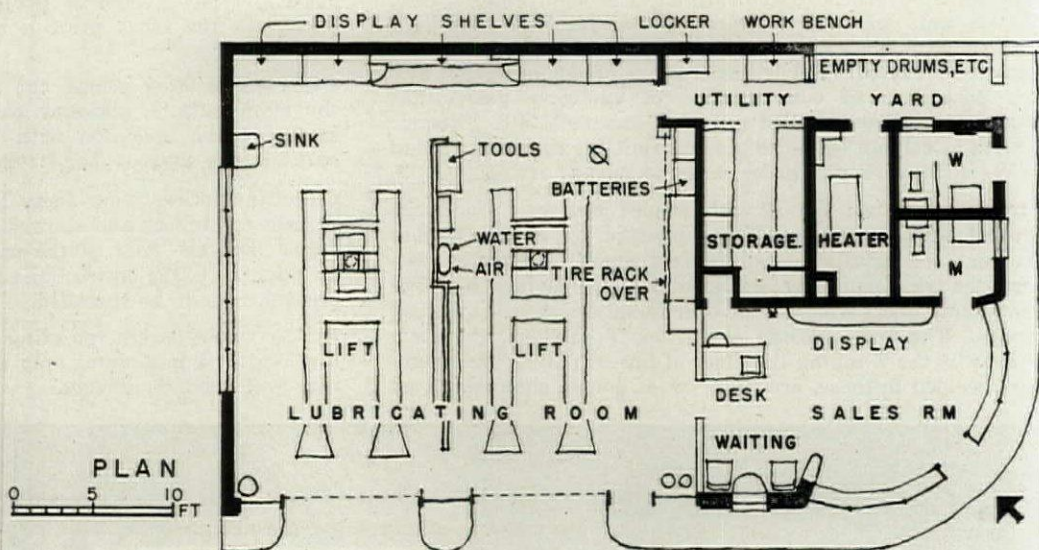
SECTION B-B



ROOF TRUSS DETAILS

Service Station

THE FIRM OF FREDERICK G. FROST, CONSULTING ARCHITECTS FOR SOCONY-VACUUM OIL CO., INC.



Chief requirements in the design of this standard service station (with variations) were: to produce a profit; to accomplish maximum sales; to create consumer demand; to establish immediately the identity of the station as that of the particular company. On further examination, however, it develops that in order to meet these candid goals, efficient consumer service was a sine qua non of the problem.

Plan of the basic minimum, complete station developed for a corner lot through joint research by the architects and company representatives is shown above; an actual building (completed before the war in Omaha) and two photographs of the scale model appear at left. This building (30'-5" x 52'-6" over-all), planned for a 75' x 100' plot, consists of sales-office space (12' x 19'-6"); two service bays occupying an area 28'-6" x 31'-3"; utility room (6'-8" x 15'-10"); heater room (5' x 10'-6"); and rest rooms (each 5'-1" x 6'-4").

Organization is such that from the office the operator can see both service bays and out to the pump island and yard. Location of rest rooms is convenient and obvious. One standard "sales appeal" element of the design is the circular drum motif—symbol of the company's standard package—at the sales office area. Another is the pair of fences that extend from the outside corners to the property line and terminate in circular trade-marks, creating of the whole (as the research report puts it) "a large billboard speaking a powerful message." In some locations, local ordinances prohibit use of such wing walls; in others, one of three standard heights is used, depending on the extent of screening desired.

In most essentials, this unit is to be used for immediate postwar construction; research is going on for improvement, however. One proposal is use of a ceiling-hung heater unit which would allow adding the space at present occupied by the heater to the storage area. Standard, prefabricated panels for stockpiling are another possibility. Among materials recommended for exterior surfacing are porcelain enamel glazed tile, stucco on masonry, plywood, and plate glass.

MATERIALS and METHODS

This month **PENCIL POINTS • PROGRESSIVE ARCHITECTURE** initiates a technical information section: **MATERIALS AND METHODS**. The new section will contain reports on technical advances that affect architectural design; technical progress in the development and application of new materials and equipment; and new uses for familiar materials.

We are inaugurating the **MATERIALS AND METHODS** section of **PENCIL POINTS • PROGRESSIVE ARCHITECTURE** now

- because we believe America — and the world — is approaching a period of building activity unparalleled in history;
- because the war has stimulated unusual developments of great importance to those who design and build;
- because war-enforced idleness in some portions of the building field has given us time to evaluate familiar products and procedures, time to revamp the outmoded, to improve the tested products of modern technology;
- because only meager scraps of data on these new developments have hitherto been made available to the designers of our structures;
- because we believe that, if we are to progress toward better architecture while we are satisfying the demands anticipated for building, our designers must have a clearinghouse of unbiased technical information, wherein the search will always be for better ways to build.

The **MATERIALS AND METHODS** section consists of several parts. Most will be regular features, others will recur from time to time, but each month the section will be balanced, well rounded, covering as many phases of technical design as space permits. Features will include:

1. Techniques

Articles based on research which affects progress in technical design; discussions of potentialities of new types of materials or equipment; reports on trends; evaluations of procedures.

2. Details

Long a feature of **PENCIL POINTS** as "Selected Details," this series of design sheets will be augmented with technical information.

3. Products

Familiar under its former title, "Products Progress," this monthly report now contains informed comment on trends in development of new materials and equipment as well as announcements of new products.

4. Manufacturers' Literature

Because this monthly, codified resume of new catalogs and factual publications has aroused intense interest, this feature will be continued and improved.

5. From the Technical Press

Concise, accurate reviews of new technical books and periodicals, plus condensations of important articles published in technical, professional, and popular magazines which the designer might otherwise miss.

6. Building Product Facts

Complete technical information on specific building products: descriptions, composition, uses, methods of use, where to buy — all in filable form, punched for 3-ring binders.

*The editors of **PENCIL POINTS • PROGRESSIVE ARCHITECTURE** recognize the necessity of maintaining a full, free flow of accurate information between those who solve America's building problems and those who supply the materials and equipment without which no building project can become reality. The **MATERIALS AND METHODS** section is one means of promoting such an interchange of information. We know it can be improved, and we will strive to better it. We hope for, and we will thoughtfully consider, suggestions from our readers.*

ADVANCES IN HOSPITAL LIGHTING DESIGN

BY ISADORE ROSENFELD, A.I.A., Chief Architect for Hospitals, Bureau of Architecture, Department of Public Works, City of New York

The following is a transcript of a lecture delivered before a professional audience in New York City, together with significant portions of the discussion which followed. It is part of a projected publication on hospital design. Another portion, on mechanical equipment for hospitals, will be published here next month.

Light in the hospital involves much more than merely being able to see properly; there are also bactericidal and psychological effects of light to be considered. These are frequently inseparable and involve both natural and artificial sources.

We know a good deal more about artificial than about natural light because artificial lighting means are in the hands of producers of electric current, bulbs, tubes, fixtures, gadgets, etc. These are well advertised, so people know about them. This, though good, has the disadvantage of directing undue attention to artificial means, resulting in comparative neglect of the natural means. The average person concerned with safeguards against air-borne bacteria thinks of ultraviolet lamps, whereas recent literature shows that daylight, even after it has passed through ordinary window glass and the cover of a petri dish, is still bactericidal. Natural light is cheaper than artificial, yet many people consider windows primarily a matter of architectural style.

There is need for both artificial and natural light for most purposes in a hospital, and there is a great deal we have yet to learn about both. Developments in both fields are now in a state of flux, but we can be certain that merely to hang a lighting fixture from the ceiling will not meet modern ideas of proper lighting.

The author has studied illumination for many years,¹ and in collaboration with

his associates has been particularly interested in developing and integrating hospital lighting.² This discussion of artificial lighting summarizes his experience to date.

TRADITIONAL METHODS HAVE DRAWBACKS

The traditional method of lighting a hospital room is to hang in its middle a fixture—usually a glaring glass globe, or in more advanced practice an indirect or semi-indirect fixture. If the room is large, requiring more than one fixture, units are generally spaced in the aisles or distributed in an over-all pattern. Traditional methods have the following shortcomings:

- (1) As long as the light source is in a glass globe of one kind or another, it causes glare in the eyes of the patient.
- (2) As long as the fixture is made of glass it is a hazard to patients and maintenance personnel, because maintenance work on the lighting fixtures involves being insecurely balanced on a ladder.
- (3) Maintenance of traditional fixtures is costly because for servicing they require the efforts of two people from the engineering department, to carry a ladder. One must hold the ladder while the other climbs it.
- (4) Indirect fixtures deliver most of the light on the ceiling instead of where it is wanted. Therefore they are inefficient.
- (5) All traditional fixtures have bacteria-bearing, dust-collecting shoulders or pans. Dust impairs the efficiency of the fixture.

¹ Light in Museum Planning, *Architectural Forum*, June 1932.

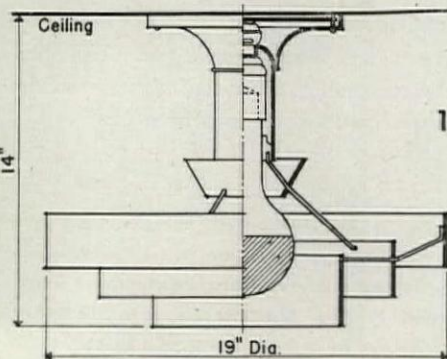
Eclairage Naturel & Artificiel, Chap. III, *Museography*, 2 vs., Paris, 1935.

² *Recent Experience in Hospital Lighting*, *Pencil Points*, Nov. 1940.

Ward lighting, Riverside Hospital; Electus D. Litchfield, Architect; Isadore Rosenfeld, Senior Architect.

Fig. 1—Ceiling lighting fixture (incandescent), concentric ring type, all metal.

Fig. 2—First experiments in hospital ward lighting. Chart on this page shows results obtainable in a Riggs ward, shown on facing page.



COMPARATIVE METHODS OF WARD LIGHTING										
READINGS WERE TAKEN AT CENTER OF MATTRESS UPON WHITE SHEET										
HEIGHTS - BED 2'-10" PARTITION 7'-4" CEILING 11'-2"										
COLOR - CEILING, WHITE - WALLS, LIGHT BUFF										
DISTANCE BETWEEN BEDS 3'-6" FROM WALL 2'-2"										
NOTE: ALL READINGS WERE TAKEN WITH BEDSIDE LAMPS TURNED OFF										
EXPERIMENT	FIXTURES	HEIGHT ABOVE FLOOR	NUMBER OF FIXTURES IN WARD	WATTS IN EACH FIXTURE	TOTAL WATTS	WATTS PER SQ. FT. OF FLOOR		FT. CANDLES AT CENTER OF BED WITH BEDSITS OFF		REMARKS
						GENERAL ILLUMINATION	GENERAL PLUS BEDLIGHT	BED #1	BED #2	
A	PENDANT FIXTURE T. GOLDEN GLOW GLOBE	8'-6"	3T. GENERAL ILLUMINATION 24BL BEDLIGHTS	300 60	2340	0.44	1.14	2	1	GENERAL ILLUMINATION WITH BEDLIGHTS OFF WAS SPOTTY. INDIVIDUAL BEDSIDE LAMPS REQUIRED FOR EXAMINATION OF PATIENTS, FOR OCCASIONAL READING, ETC.
B	METAL LOUVRED FIXTURE L.	11'-2"	3L. GENERAL ILLUMINATION 24B BEDLIGHTS	300 60	2340	0.44	1.14	TOO DARK TO REGISTER READING ON PORTABLE METER		GENERAL ILLUMINATION WITH BEDLIGHTS OFF WAS ENTIRELY UNSATISFACTORY. BEDLIGHTS WERE REQUIRED AS COMPENSATION TO GENERAL ILLUMINATION AS WELL AS FOR EXAMINATION, READING, ETC.
C	INDIRECT REFLECTOR WR SR	7'-4"	4SR 4WR	200 100	1200	0.58		2.5	2.5	GENERAL ILLUMINATION VERY SATISFACTORY. NO ADDITIONAL INDIVIDUAL BEDSIDE LIGHTING WAS REQUIRED FOR EITHER EXAMINATION, OCCASIONAL READING, ETC.

LEGEND

T.—TRADITIONAL PENDANT FIXTURE
L.—LOUVRED CEILING FIXTURE
WR—WALL HUNG INDIRECT REFLECTOR
SR—INDIRECT REFLECTOR MOUNTED ON SCREEN
BL—INDIVIDUAL BEDSIDE LAMP

(6) The traditional location of fixtures in the middle of the room, in an over-all spacing, or in the aisles does not result in delivery of light to parts of the room where it is most wanted.

BED LIGHTING NEEDS

After analysis of the shortcomings of traditional lighting methods the following criteria were laid down:

(1) Most light should be delivered where it is most needed. In the case of a patient in bed the location is at the head. This would make it possible for the patient to read in ample light, and examination of patients by doctors and nurses would be facilitated in most cases, eliminating the special examination light usually required. This means placing the source immediately back of the patient's head, so intensity would diminish toward the feet, with the least amount of light delivered to the aisle beyond.

(2) The source should be so placed and masked as not to cause glare to the patient whom it illuminates or to his neighbor across the aisle. The angle of light should be such as not to cause unpleasant reflections when looking at reading matter nor excessive brightness contrast between reading matter and background.

(3) The fixture should be made largely of metal so as to be nonbreakable, and it should be accessible for servicing without having to climb a ladder.

This may seem impossible of achievement. Study showed that it was not possible to satisfy all conditions with one solution. In this connection a new principle was introduced, *distinguishing between a person lying in a horizontal position and a person in a sitting or standing position*. Little thought was formerly given needs of the person who remains in a horizontal position for a long time. This is the problem of the sick person and this is the problem peculiar to hospital lighting.

Under the above principles the problem of lighting office space, utility rooms, serving kitchens, and similar occupancies is satisfactorily met by the concentric-metal-ring fixture with the silvered bulb in the middle (Fig. 1).

It is unbreakable, is not a dust collector; the bulb can be replaced from the floor by a stick with a bulb holder at the end; it will not cause glare from most reasonable standing or sitting positions; it distributes the light very well; and, if placed where needed most, will produce satisfactory conditions of illumination.

PRACTICAL EXPERIMENTS

For bed patients, many lighting schemes were tried before a satisfactory solution was found. After evaluating traditional methods (A, Fig. 2) a fixture was tried consisting of concentric rings with the lamps in a reflector box above (B, Fig. 2). The whole fixture was flush with the ceiling. This type of fixture was installed in all the wards at Goldwater Memorial Hospital. It was meant for general illumination only, and was supplemented by individual hooded lights at the head of each bed. The method did not prove a success. While the ceiling fixtures were made of metal and did not produce glare, the following were the main disadvantages:

The general lighting fixtures were placed in the aisles in the traditional manner. For this reason they contributed almost no light to the bed areas. Being flush with the ceiling, they produced excessively bright spots against the dark ceiling. The ward looked gloomy unless all patients turned on their individual lights. 2340 watts were required for a typical 24-bed ward.

It was then decided that it is virtually impossible to produce satisfactory lighting for a person in a horizontal position *as long as the fixture is at the ceiling*. Where then should the fixture be placed? Many positions were evaluated. The most promising location was thought to be somewhere between floor and ceiling, certainly above eye level, but not so high as to be in line of normal view of a patient in bed. It was decided to try a height of about seven feet which, in a Riggs ward, is the height of the screen which separates the ward into its parts (Fig. 3).

It was thought that placing the fixture on top of the screens would accomplish the following: the source would be behind the patient's head. Thus, the most

intense light would be at the head and would diminish toward the feet. This should be favorable for reading and for examining patients. It would not be necessary to have both general illumination fixtures and individual reading fixtures; one unit would accomplish both. An experiment on these lines was made at Goldwater Memorial Hospital. While it was rather crudely improvised, it showed much promise. This scheme of illumination was then incorporated in all the wards of the new pavilion at Riverside Hospital (C, Fig. 2). Instead of 2340 watts, this scheme required only 1200 watts, and gave much better light.

PARTIAL SUCCESS

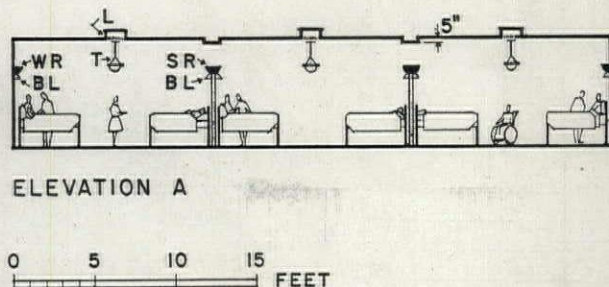
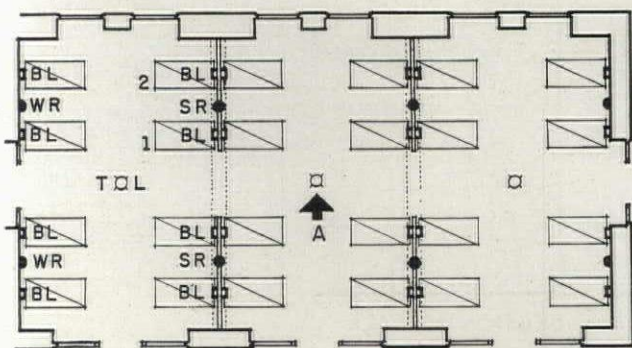
This installation proved a general success but showed the need of many refinements. For instance, four full fixtures and four half fixtures (at end walls) per ward proved somewhat inadequate in total light output. It was concluded that in future installations there should be a light for each bed instead of for each pair of beds. Although this building has not as yet been put to patient use because of the war, it nevertheless became obvious that depending on the same fixture for both bedside and general illumination will cause difficulties, because if a fair proportion of the patients should decide to put out the lights immediately contiguous to them the ward would be plunged into comparative gloom.

This led to the latest series of experiments which took place in a loft where ward conditions were simulated (Fig. 3).³ These experiments were made with two mediums: the usual incandescent; and fluorescent (hot cathode).⁴

In the incandescent experiment (Figs. 4 & 5), each fixture had two 150-watt lamps. This amounted to a total of 5400 watts for a 24-bed ward, but it provided a high level of illumination where it was most wanted. It delivered six to seven foot-candles at the head

³ The drawing shows beams on the ceiling. A new design in flat slab concrete construction eliminates practically all cross beams.

⁴ Investigation of Light Sources for Public Buildings in New York City's Post-War Program, by Albert Lorck, *Lighting and Lamps*, June 1944.



PLAN OF TYPICAL 24 BED WARD

of the bed, 5.5 to 6 at the middle of the bed, 5 at the foot of the bed. Such high illumination is practically unknown in hospital lighting.

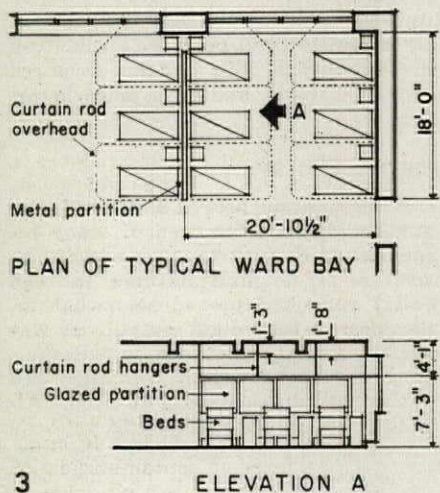
But incandescent lighting would seem to be practically a thing of the past. Under present conditions it remains practical where direct current is used, as it frequently is at older hospitals which have their own electric generating plants. In most hospitals, however, alternating current is used; under this condition fluorescent light is the logical medium. After several experiments it was decided that the most satisfactory fixture with fluorescent light is the continuous trough over the screen and a modified half trough on the wall at the ends of the ward (Fig. 6). This fixture is divided into compartments. The sections over the beds are for direct illumination. They are covered on top by a reflecting shield and have openings on the bottom. The openings are masked by louvers to prevent glare in the eyes of the patient occupying the opposite bed. Each of these lights is controlled by a switch, giving the patient individual control. The sections between the direct illuminators have reflectors on the bottom to throw light to the ceiling for indirect general illumination of the room or ward. This set of lights is controlled by switches at the door to the room. The readings on the three locations on the bed, from head to foot, were 8, 7, and 3 foot-candles with both sets of lights on, and 7, 6, and 2 with only the over-the-bed lights on. This means a patient could receive attention in adequate light in the middle of the night from his own overhead light, without use of a plug-in portable light. Each section of the direct and indirect parts of the trough had two 30-watt tubes. For a 24-bed ward, three beds deep, such as was used in this experiment, the total wattage would be approximately 1500.

INVESTIGATION CONTINUES

A hypothetical case does not always reveal hidden factors which may come as great surprises when findings based upon it are applied in actual human situations. For this reason a complete installation of this improved lighting will be tried out in a ward at Goldwater Memorial Hospital. Light and brightness tests will be made and comments by doctors, nurses, and patients will be recorded. Higher wattages will be tried because, while the present level of illumination is a great improvement over traditional lighting, it is felt that it might be advantageous to raise it somewhat.

This type of lighting should prove more satisfactory as the size of the ward decreases. It should be better in a semi-private ward of three to four beds, and ideal in a room of one or two beds where both beds have their heads against the same wall.

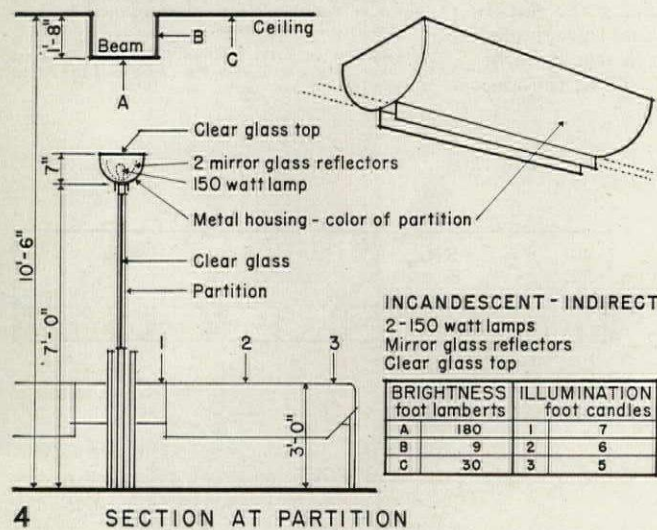
Before leaving this subject, a word should be said about cold cathode lighting. The principal shortcomings of incandescent lighting are generation of heat, high current consumption, and concentration of light at source points (causing glare). Fluorescent light is ever so much cooler, takes a good deal less electric energy to produce the equivalent amount of light, and, because of its tubular form, distributes the source evenly over a fairly long line. One of the objections that still stands out as somewhat formidable to fluorescent (hot cathode) light is its color. (In these experiments, "white" tubes were used.) However, "white" fluorescent light is nearer to daylight than incandescent light. People will either get used to it as they have successively become used to candlelight, kerosene lamp light, gaslight, Wellsbach incandescent light, electric incandescent light; or else a new quality will be



3

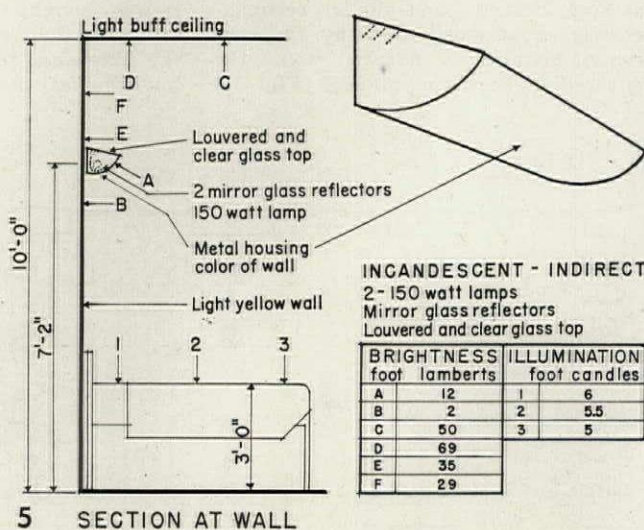
ELEVATION A

Second series of experiments with various lighting methods and equipment; tests made by City of New York, Department of Public Works, Bureau of Architecture, for improvement of lighting in public buildings and institutions.



4

SECTION AT PARTITION



5

SECTION AT WALL

developed in fluorescent light to meet all objections. "Cold cathode" light comes in continuous thin tubes of considerable length. Many of its features promise greater possibilities in some respects than hot cathode: one could light a large room from a single outlet; the tubes are small in diameter and could be arranged in almost any required space and pattern; the current consumption is smaller, etc. However, it is a new medium and its unquestionable potentialities remain to be developed gradually by people with imagination.

NIGHT LIGHTING

Night lighting of wards and corridors has been variously handled. In the traditional pendant fixture it had frequently been the practice to include a low wattage bulb on a separate circuit. In this manner the night light came from the same fixture as the ordinary illumination. Many patients object to this type of night lighting as being bright enough to be disturbing. The sleep of a patient deserves greater care than that of a well person.

The more acceptable method of lighting is by fixtures about 18" from the floor, usually built flush with the wall to prevent injury. These are located so as to light the principal aisles and corridors. To direct the light to the floor and to prevent glare, the fixtures are equipped with horizontal louvers. These should be green or blue, never white, or else the louvers themselves become a source of glare. To prevent dust from settling on the louver, it is well to place a sheet of wire glass in front of it.

In a recent experiment in night lighting, we tried a new idea which seemed very promising, but could not be pronounced a success until tried in an actual ward situation. Instead of metal louvers protected by wire glass, we used

plastic "glass" with louvers cast in the plastic sheet. To prevent glare and injury, the plane of the plastic sheet is tilted, with its top edge flush with the wall, its bottom edge recessed (Fig. 7).

CORRIDOR LIGHTING

The level of illumination in corridors need not be high. Almost any type of safe and sanitary illumination suitable to a vertical human position will generally do, except where the patient is apt to see it through glass in the corridor partition, glass in the door, or through a transom (Fig. 8). In many public hospitals there is glass in these locations. It is therefore important so to place the corridor light that it will be out of the patient's view. For this reason it is proposed to use a typical ward-end fixture which throws the light to the ceiling, and place it about 7'-0" above the floor on the ward side of the corridor. When this is done a patient looking out of the ward to the corridor can see that there is light but he cannot see the source. (Similar to Fig. 5.)

OPERATING ROOM LIGHTING

The design of lighting fixtures for operating rooms involves several factors other than illumination. The necessity for ridding the air of bacteria has been shown by tests and is now recognized. Both air conditioning and air sterilization by means of ultraviolet lamps are therefore desirable. In addition, tests have indicated that utilization of air conditioning results in less possibility of explosions of anesthetics because raising the humidity of the air makes it less likely that objects in the room will hold a charge of static electricity. Instead of treating these various factors as separate problems, it is more reasonable to integrate air conditioning and air sterilization with proper operating room lighting. This approach was followed in the fixtures installed at Tri-

boro Hospital. Two principal factors were taken into consideration:

(a) The proper arrangement of mercury vapor lamps which radiate ultraviolet rays for the purpose of destroying air-borne bacteria;

(b) Properly directed air movement so as not to negate, but rather to complement, the action of bactericidal lamps. This implies that the air current at the operating table should be upward, away from the patient, so that any bacteria not destroyed by the rays would be carried away in the upward flow of exhaust air, rather than downward on an open wound.

In order to accomplish the above, a scialytic bactericidal lamp was used. This is a dome-type surgical lighting unit with a circular bactericidal lamp tube attached to it. The dome varied in this case from the usual type, in that it had an open top, which permitted the upward-flowing air to pass by the bactericidal lamp (Fig. 9).

Auxiliary bactericidal lamp units were provided on the ceiling in addition to the one on the surgical fixture in order to lower the level of contamination of the air in the entire operating room.

From the point of view of lighting alone, many other types of fixtures are feasible. The principal advantage in the fixture described is that it is open at the top, a feature which, in addition to facilitating the upward movement of air, also does away with the reflection of much heat on the head of the surgeon, his assistants, and the patient. The surgeon should decide whether he prefers the light imbedded in the ceiling or whether he wants it nearer, and the extent of mobility he desires in the lighting unit. It should be pointed out, however, that ceiling lenses are the least efficient as to candlepower output per watt at the working plane. On the

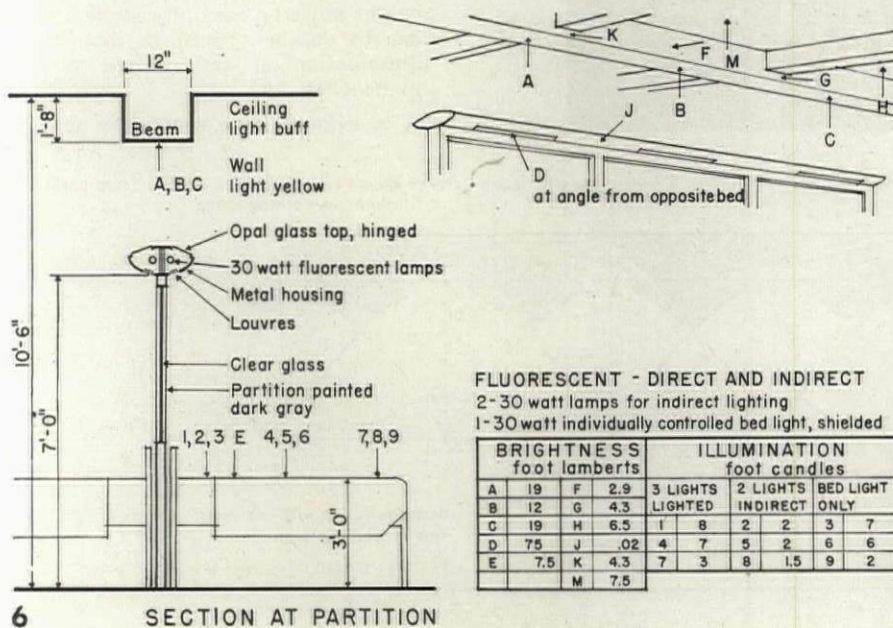
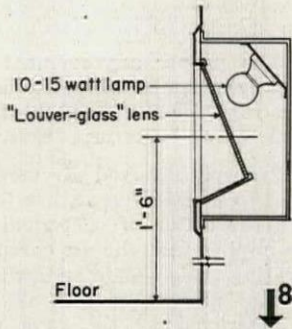


Fig. 3—Test spaces built to simulate actual hospital ward conditions.

Figs. 4 and 5—Recommended for use in hospitals having direct current.

Fig. 6—Ideal ward lighting: good distribution, low ceiling brightness, low maintenance cost, economical current consumption, relative coolness, and other advantages.



other hand, the higher the fixture is from the operating table, the less heat it reflects on the table. A comparison of the mechanical efficiency of three types of operating room fixtures follows:

Type of Fixture	Watt-age	Illumination Level: Foot-candles at working plane	Foot-candles per watt at working plane
Movable in two planes	350	1500	4.3
Movable in one plane	400	1800	4.5
Ceiling (stationary) lenses	2700	1200	0.44

In addition to the operating light and bactericidal lamps, the operating room should be equipped for general illumination to be employed in preparing the operating room and in cleaning up after the operation. More time is spent on these duties than in actual operating.

EMERGENCY LIGHTING

Emergency lighting in the operating room, delivery room, and similar situations must not depend on one source of power only. Institutions which generate their own electricity usually also have public utility connections for

emergency lighting. An automatic relay switch throws the emergency current into action when the normal current fails. When an institution depends entirely on utility current, it is desirable also to connect the critical points with a special, automatic, water-actuated generator.

A more clumsy solution is to have separate emergency fixtures with batteries. One must be sure, however, that the battery is always charged and that the fixture is on hand; and then there is always the confusion resulting from temporary darkness until the detached fixture is brought into action. In the first two methods described the transition is automatic.

LABORATORY LIGHTING

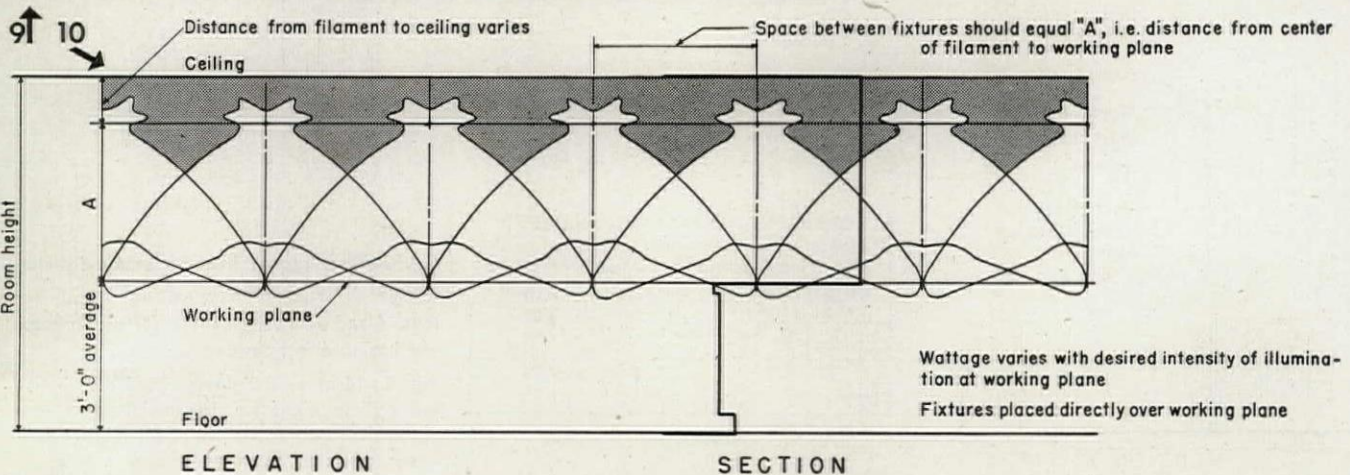
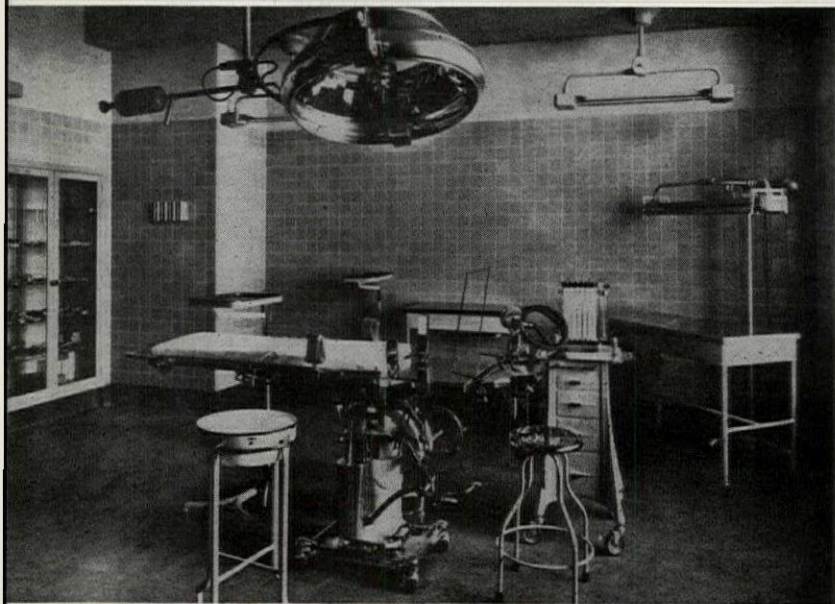
In laboratories, traditional lighting consists of a globe suspended from the ceiling, or an ordinary disc reflector, likewise hung. In both cases the outlets are frequently over the aisles instead of over the tables. When placed over the tables, the source of light is generally within sight of the worker, causing both eyestrain and discomfort from heat.

The following requisites are assumed for proper laboratory lighting:

- maximum intensity of illumination on the working plane;
- avoidance of disturbing shadows;
- the source of light out of sight of the worker;
- maximum foot-candles per watt, which in turn implies a minimum of heat generated.

One fixture which meets laboratory requirements most satisfactorily is of a semi-direct type with a prismatic glass reflector-refractor. It must be understood, however, that the light distribution curve of this fixture is such that the location, spacing, and mounting height must be carefully studied in order to obtain a uniform intensity of illumination at the desired working plane (Fig. 10).

It is evident from the figure that the



area directly under the fixture receives less light than the area around it; it is thus necessary to space the fixtures so as to cause an overlap of the well lighted over the less illuminated areas. This overlap is also helpful in eliminating sharp shadows of objects directly under the fixtures. This being the case, the fixtures may be mounted directly above the working plane. It is also possible to mount them at sufficient height so that the source of illumination is out of sight, and so that little heat generated by the fixture can reach the laboratory table.

This fixture employs incandescent lamps. It is believed that as good, or better, results could be obtained with fluorescent lighting, particularly if plastic lenses, with louvers cast into the sheet, were used. The louvers eliminate glare.

The laboratory is probably one of the most promising fields for cold cathode, but here, again, experimentation must first be undertaken.

AUTOPSY LIGHTING

In autopsy work a high level of illumination is required. The usual arrangement requires high wattages immediately over the heads of the workers. This generates much heat, which not only produces direct discomfort but likewise accelerates the generation of odors. After demonstrations and adjustments in cooperation with manufacturers, a type of fixture using fluorescent lamps was developed. This consists of four 40-watt tubes mounted under a single reflecting canopy. Stems supporting the reflector are also equipped with three ordinary 60-watt incandescent lamps. For cleaning, or at other times when general illumination alone is required, only the incandescent lamps are turned on (Fig. 11).

One of the virtues of fluorescent lighting for this purpose lies in the fact that proper illumination is obtained with the expenditure of only approximately 200 watts. This, as well as the fact that fluorescent lamps generate comparatively little heat, makes them superior

to the incandescent type traditionally employed.

DISCUSSION

ROSENFELD: I take particular pleasure in introducing Albert Lorch, Supervising Engineer of our Electrical Section, because he was the first electrical engineer to become genuinely interested in cooperating with us in the studies of illumination. To my regret, too many engineers in the building field work from handbooks as if the ultimate had already been achieved. Mr. Lorch has been very helpful. I am going to ask him to say a few words about the experiment on lighting of which he has technical charge.

LORCH: Mr. Rosenfield mentioned the lighting experiments which were conducted some years ago at Goldwater Memorial Hospital. These indicated that the most suitable means of illuminating hospital wards with filament lamp sources was by totally indirect trough fixtures mounted atop the partitions which divide the ward into bays. The first practical application of this type of illumination was made not so long ago in the wards of Riverside Hospital, and the results were very gratifying.

It was then decided to make further experiments to develop satisfactory means of illuminating hospital wards using fluorescent light sources, and comparing these with fixtures equipped with incandescent lamps. To reproduce actual conditions as closely as possible, a replica of a hospital ward bay was set up in a shop equipped to fabricate lighting fixtures. Thus it was possible to make up and revamp fixtures quickly, on the spot, to test the various ideas which developed during the experiments.

We experimented with ward lighting by fluorescent light sources with totally indirect fixtures. Such a fixture was designed (Fig. 12) and, while the illumination over the bed is very uniform, the fixture is very clumsy in appearance, the trough being 20" wide.

Then again, for each fixture there are

four tubes and two sets of auxiliaries to service. While the reflected spot on the ceiling directly over the fixture has a brightness of only 115 lamberts (a very low level), the brightness *contrast*, between the spot and the surroundings in an otherwise relatively dark ward, could be annoying to patients. I want to point out here that it is becoming more and more recognized that brightness *contrast* is something to be avoided more than brightness itself. Until recently, consideration has been given solely to foot-candles of illumination and shielding of light sources; annoyance due to brightness *contrast* has been neglected. To illustrate, the headlights of an automobile will cause intense discomfort to the observer on a dark night, while the same headlights viewed on a sunny day are not hard to look at.

QUESTION: How do you measure, and what is the gauge of, brightness?

ANSWER: Brightness may be measured with a "brightness meter," and is stated either in terms of "candles per square inch" or in "foot-lamberts." To convert candles per square inch to foot-lamberts, we multiply by 452. The foot-lambert designation is used for low-intensity brightness, candles per square inch for higher intensities.

To eliminate the spot on the ceiling over the partition, it was decided to develop a fluorescent fixture which would afford a relatively high level of illumination directly on the bed for examination of the patient or for reading. The fixture is louvered so as to cut off the direct light source from the line of vision of any other bed patients. The fixture also has a totally indirect section of fluorescent lighting for general illumination of the ward at a low level. Figure 6 gives a general idea of how this fixture performs. It consists of two types of sections; one type is a louvered section for direct bed illumination and the other for the space between beds, for totally indirect general low level ward illumination. Each section has two 30-watt daylight fluorescent tubes, one for each side of the partition. The direct sections have a hinged metal cover on

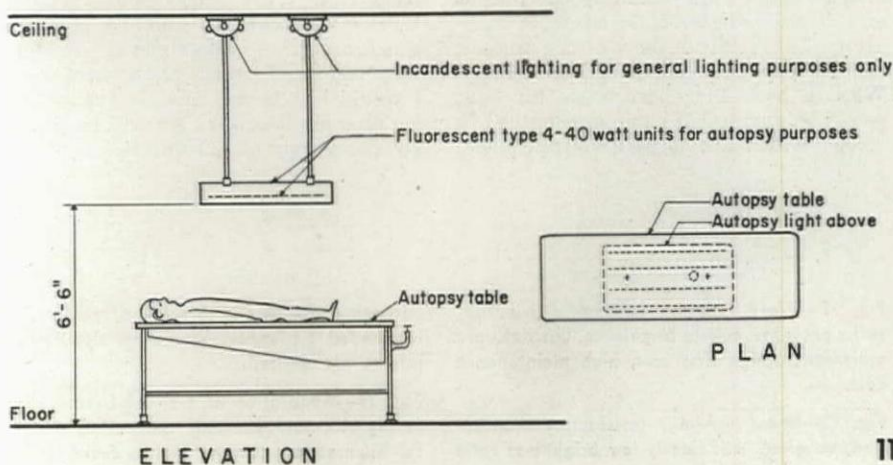


Fig. 7—Night light for hospital ward and corridor.

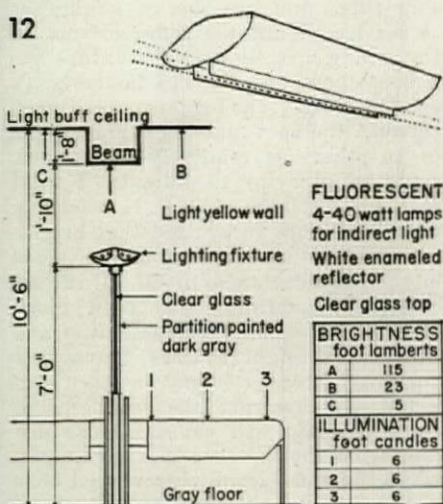
Fig. 8—Corridor lighting (traditional).

Fig. 9—Lighting in operating room. Eggers & Higgins, Architects; Isadore Rosenfield, Senior Architect.

Fig. 10—Light distribution curve: standard laboratory fixture, direct prismatic type, showing desirable spacing of fixtures.

Fig. 11—Lighting over autopsy table.

12



top which also acts as a downward reflector. The indirect sections are each equipped with a hinged glass lens cover.

QUESTION: Suppose the indirect ward lighting is required to be on but the patient does not want the light over his bed?

ANSWER: The patient simply turns off the local switch, at the bedside, which controls his own direct fixture. The indirect ward lighting remains on because it is on a separate circuit controlled from a central switching location near the ward entrance.

It will be seen from the chart which accompanies the illustration that with only the indirect units turned on, general ward illumination of approximately two foot-candles will be obtained. This is ample for nurses and others, yet is not annoying to the bed patients. On the other hand, the direct section of the fixture affords 7 or 8 foot-candles of illumination at the head of the bed. This is by far the highest glareless illumination for beds achieved in our municipal hospitals thus far.

Further experiments are under way to develop a fixture in which the direct section will have two 30-watt tubes in place of one. Preliminary tests indicate that this arrangement will afford about 13 to 14 foot-candles of illumination at the head of the bed. At the same time, the stroboscopic effect of fluorescent lighting will be reduced to a minimum.

Further experiments are under way to achieve more pleasing spectral qualities of light by using different color schemes for walls, partitions, floors, and equipment, and also by the use of colored plastic louvers. These experiments, thus far, are only a beginning, not conclusive; but they point the way for further development.

We have prepared a comparison of the heat generated by incandescent lighting with that due to fluorescent lighting for a 24-bed ward. For approximately the same level of illumination, an incandescent, totally indirect, system would generate enough more heat than the type of fluorescent installation under discussion to equal approximately the output of a steam radiator of 50 sq. ft. of radiation. This is about 50% of the amount required to heat the ward in winter. What a boon the absence of this heat would be during hot summer months! In spaces which are to be air-conditioned,

it is folly first to pay for the current to create heat, then to extract it at more expense.

QUESTION: Wouldn't you say that it is desirable to have a glass over the open sections of the fixture?

ANSWER: We do have a glass, which I referred to in a previous question as a lens.

Plans are under way to equip a complete ward at the Goldwater Memorial Hospital on Welfare Island with the fluorescent fixture just developed. Final evaluations, especially as regards spectral qualities and serviceability, will be arrived at.

Getting back to the important consideration of brightness contrast: here is a semi-indirect fixture employing a translucent plastic shield (Figs. 13, 14). Note that the brightness contrast between the shield and the illuminated spot on the ceiling is about 3 to 1, 5 to 1 being considered fair practice. The result is very pleasant and restful. The illumination is at a very satisfactory level. This fixture should find good application in public buildings other than hospitals.

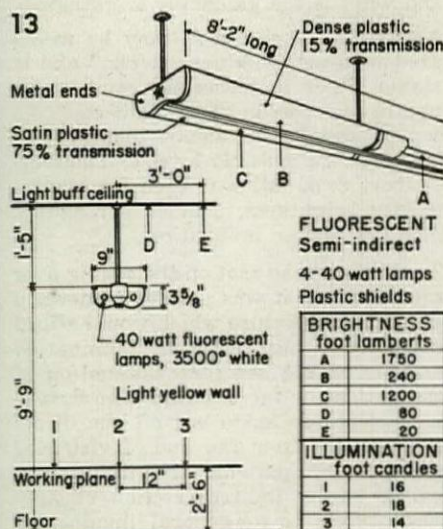
We had quite a problem getting a wall fixture which would give sufficient illumination on the bed without producing too bright a spot on the wall. We made half a dozen different attempts. Finally, we manufactured this fixture (Fig. 5) with 12 louvers that could be adjusted or taken out. Too many louvers reduced the light output. We removed the louvers one at a time and kept measuring the light on the bed and the brightness on the wall and finally got down to two louvers, with which we obtained practically full illumination output, yet the brightness was cut down to 28 from the 1500 which it measured without louvers.

QUESTION: As things now stand, which fixtures do you propose to use?

ANSWER: For direct current installation we propose to use Figs. 4 and 5. For alternating current, we propose to use Fig. 6. Both types are subject to further experimentation.

A. GORDON LORIMER (Chief Architect, New York City Dept. of Pub. Works): I want to make a comment concerning these experiments. We hope they will be of benefit to the profession. I would like to add that if anyone else is doing similar work we will be glad to receive a copy of his findings.

13



14

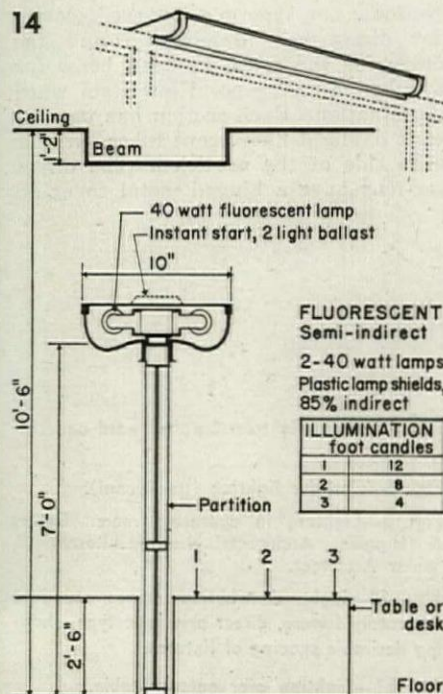


Fig. 12—Ward lighting: uniform distribution, sufficiently low ceiling brightness, but awkward appearance, high first cost, high maintenance cost.

Fig. 13—Ward lighting: satisfactory distribution, no glare, sufficiently low brightness ratio

between dense plastic shield and ceiling. Recommended for spaces where definite esthetic effects are desired.

Fig. 14—Adaptation of type of fixture shown in Fig. 13, for mounting over office screens, for illuminating corners, tables, desks.

WHY ZONE HEATING SYSTEMS? by W. J. Warren, Heating Engineer, Chicago

In designing a heating system, the importance of observing the sun's effects has often been overlooked. Engineers frequently select the minimum outdoor design temperature, and then compute the maximum capacity of the heating elements—radiators, convectors, unit heaters, and the like—without much thought as to the operation of the system on "in between" days. They assume that a system that will maintain comfort under the worst conditions can be "slowed up," or that part of its heating elements can be turned off when outdoor temperatures are higher than those for which the system was designed. Let's see what effect the sun might have.

As an example, we shall consider a building having 20-ft. by 20-ft. bays and a 12-ft. story height, exterior walls of average construction with 50% of their area in single glass windows. The proportion of window area in the wall is of minor significance in the over-all picture we wish to consider, as will be pointed out later. Let's assume an 80° design differential, 70°F inside and -10°F outside. The heat loss for a typical bay would then be about as follows:

Wall transmission	2,400 Btu/hr
Glass transmission	10,600 Btu/hr
Infiltration	7,000 Btu/hr
Total	20,000 Btu/hr

The wall transmission might vary slightly depending on the kind and thickness of materials. However, even if the walls were insulated and the coefficient cut in half, the effect on the over-all total would be small since this

item represents only 12% of the total. The loss due to infiltration depends upon the type of window construction, the amount of crack, wind velocity, and such factors. These values, which can be considered typical for normal construction, are based on about one air change per hour.

To the total shown above, a factor of 10% to 20% is added according to the exposure of the rooms to be heated before selecting the capacity of the radiators, convectors, or other heating elements. However, since air leakage may be either inward or outward, depending upon wind direction, let's consider only those items tabulated above.

Chart A shows heat losses as ordinates for various outdoor temperatures as a base. The curve is a straight line from 20,000 Btu/hr at -10° sloping down to zero at an outdoor temperature of 70°F. This line represents the heat loss for various outdoor temperatures when the sun is *not* shining.

Now let us investigate what happens when the sun is shining. The values for solar radiation through glass, as shown in Chart B, are used. These values are for the month of December.

Assuming a typical bay facing east at 8:00 A.M., or one facing west at 4:00 P.M., solar radiation (from Chart B) would amount to about 80 Btu/hr/sq. ft. of glass. The peak condition is somewhat more than this, but since the peak is of short duration, the 80 Btu value is assumed to be sufficient for design purposes. This gives us a total credit of about 9,600 Btu/hr for the bay. A south bay at noon would be credited with

about 18,000 Btu/hr. Again plotting these values as credits to the heating load, on Chart C, we have two new "net load" lines. This indicates that when the sun is shining, (1) an east or west bay will not require heating at outdoor temperatures at or above 31.6°F; (2) a south bay will not require heating at outdoor temperatures at or above -2°F; and (3) when the sun is shining, some means of cooling will actually be required at outdoor temperatures above those mentioned to prevent the discomforts of over-heating.

These curves also help in visualizing the tremendous fluctuations that may occur, not so much from variations in outdoor temperatures, but rather from large cumulus clouds which, on some days, obscure the sun one minute and then suddenly open to permit it to shine fully on the walls and glass of the building. Temperature changes in the space would not follow quite as sharply, due to the lag effect produced by the mass of the building, but the tendency will nevertheless be there.

The curves clearly indicate the necessity for sufficient flexibility in heating and ventilating systems to compensate not only for moderate load fluctuations, but also for the rather large changes in the type of requirements, from heating to cooling and back again, over rather short periods of time.

A more detailed analysis could be made by considering reduction in solar radiation obtained by using shades at the windows. These help to reduce the magnitude of load fluctuations but, on the other hand, heating due to artificial

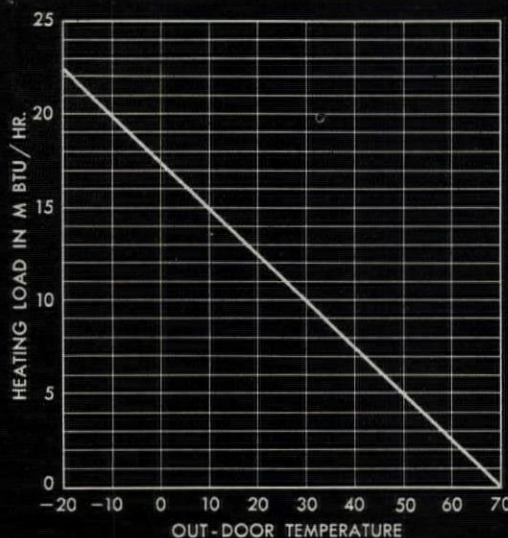


CHART A: Heating load for various outdoor temperatures when sun is not shining.

lighting would tend to increase it.

All that has been stated above is predicated on a wall of which 50% of the area consists of windows with a single thickness of glass.

If the percentage of glass in the wall is increased or decreased, the problem is much the same except that the range of load fluctuation may be greater. If the windows were of double glass, the heating load would be less. Since double glass admits practically the same solar radiation as single glass, this would tend to accentuate the load fluctuation with and without sun. The result would be that an even lower outdoor temperature would constitute the equilibrium point at which no heating is required.

Although glass block has a considerably lower solar radiation effect than single glass, it also has a lower heat transmission factor. Upon checking the equilibrium point of this type of construction, the outdoor temperature at which no heating or cooling will be required for a west bay is found to be between 55° and 60°F above zero for a wall having the same proportion of glass used in our example for single glass. For a south bay the equilibrium point would be at about 40° to 45°F outdoor temperature.

Human beings radiate or absorb heat largely through the skin. Buildings also have considerable "skin" area for the volume enclosed. Since all of the cold air which penetrates into the building comes through the "skin," the building wall will be warm if we can keep the "skin" warm. This is why heating elements are placed at or near outside walls.

Then, too, there is the phenomenon of "down-draft" to be considered. The higher the windows, the more pronounced the down-draft effect becomes. Few of us realize what the temperature is on the inside of the "skin"—the wall or the glass surface. For single-glazed windows the inside surface temperature would be about 15°F when it is -10°F outside and the room is 70°F. This is 55° below the room temperature and the effects of cooling the air next to such a relatively cold surface are immediately apparent. We are all familiar with the manner in which cold air drops and in which the down-draft is set in motion. With double-glazed windows the temperature of the inside glass surface would be about 22° below room temperature under the conditions mentioned above. While this difference is much less than that with single glass, the cooling effect, particularly with high windows, is quite considerable and warrants attention in the design of the heating system.

Considering these two phenomena, "skin effect" and "down-draft," the conclusion is that the heating medium should be installed at, or as close as possible to, the "skin" of the building and imme-

diately below the windows to counteract the "down-draft" effect.

Chart B shows that the maximum heating effect of the sun will occur at about 8:00 A. M. on the east side, at noon on the south side, and about 4:00 P.M. on the west side of the building. This indicates quite definitely the necessity of some means of zoning for heating, mechanical ventilating, or air cooling systems in buildings. Otherwise, the only means of preventing over-heating will be opening and closing the windows.

Vapor or hot water heating systems wherein the "intensity" of the heating medium can be varied, both for different zones throughout the day and in proportion to the outdoor temperature, will help to alleviate the tendency to over-heating, and will be more comfortable for occupants who may be seated close to heating elements. Furring, or concealing heating elements in enclosures below the window stool with a grille or opening in front and one in the stool, helps to improve the appearance of the system. It also creates the upward movement of air in front of the windows necessary to offset down-draft.

It is important to note, too, that if a mechanical ventilating system is to be installed for use as an air cooling system, a temperature control system should be provided. This should link the cooling system with the heating system in some way, so that as the radiators are throttled lower and lower until they are turned completely off, the cooling system will provide the necessary cooling effect.

Special attention should be given to corner bays, particularly those on the southeast and southwest corners, since these present special problems of both heating and cooling. In about nine cases out of ten, they are subject to the greatest load fluctuations, being difficult to heat and even more difficult to cool. They more or less require treatment as separate zones in themselves. Because they have sun exposure on two sides, they reach peak load conditions at different hours than the side bays. Such special bays require a temperature control of such nature that, when more cooling or more heating is needed, there remains in the system a reservoir from which to draw sufficient warm or cold air to maintain comfort independently of any neighboring or adjacent spaces.

When designing a heating system, look out for the sun. Check to see what will happen when the sun shines at various outdoor temperatures. Check the time of day when wide fluctuations of load may occur on different parts of the building. Then zone the heating and the cooling system, if one is to be incorporated into the building, so as to adjust for these variations and prevent over-heating of the space. By avoiding over-heating, not only can operating costs be reduced, but occupants can have more comfortable living conditions.

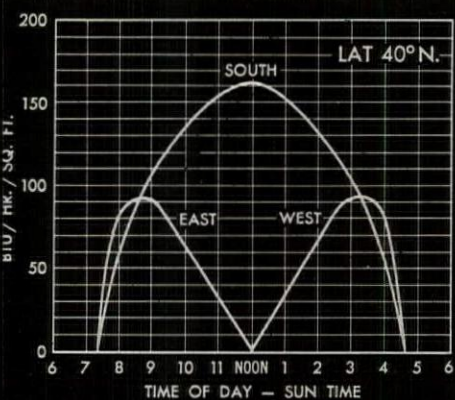
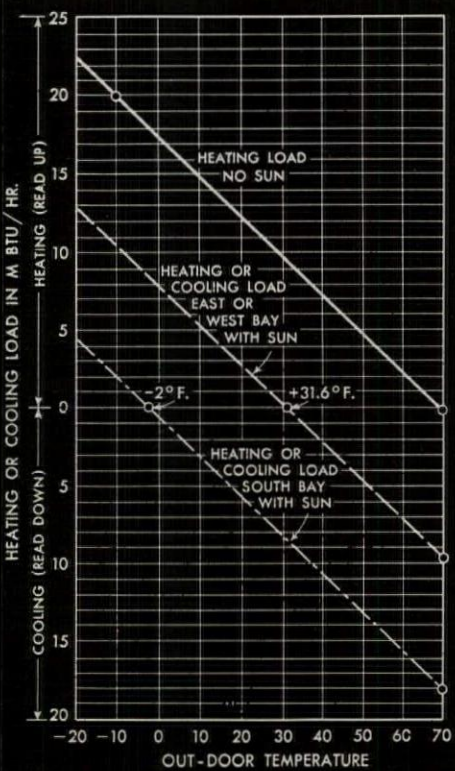


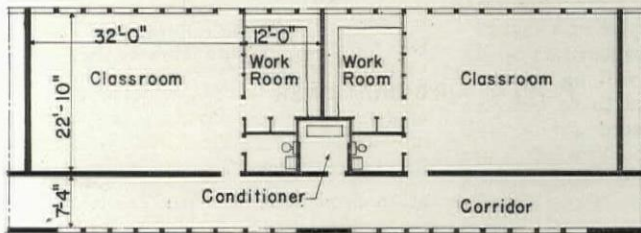
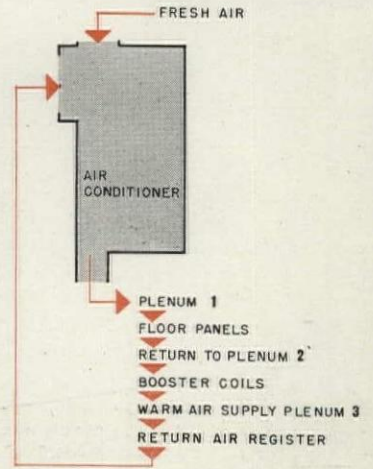
CHART B: Solar radiation for various hours of the day in December.

CHART C: Heating or cooling load for various outdoor temperatures when sun is shining.

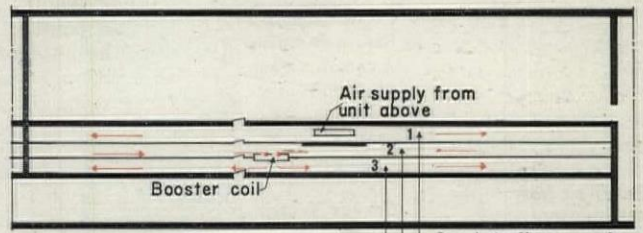


This heating system was originally developed by the architects and A. Gritschke, Heating Engineer, for the first addition to the Rugen School, Glenview, Ill. (See Pencil Points, April, 1945; also September, 1943.) Although it was not installed due to priorities difficulties and costs of installation and attendant construction, it has been declared to be most practical in regard to operating efficiency. It is possible that low operating costs might have offset an unusual initial expense. Certainly the entire conception is based upon efficient, complete use of treated air to provide "air conditioning" (air cleaning, tempering, and humidity control), air movement, panel heating, and fresh air by circulating a single air stream. As an added feature, ductwork and floor structure are combined by using one of the newer materials, "Flexicore" hollow precast concrete slabs.

The diagram at the right illustrates the principle of the system and shows how fresh and recirculated air are moved through a series of operations. Below are first floor and foundation plans of the one-story building, and an enlarged plan showing disposition of the precast hollow slabs and the method of utilizing their cores for both panel heating and register supplies. On the back of the sheet are details of the installation and technical data applying to the particular school building for which it was designed.

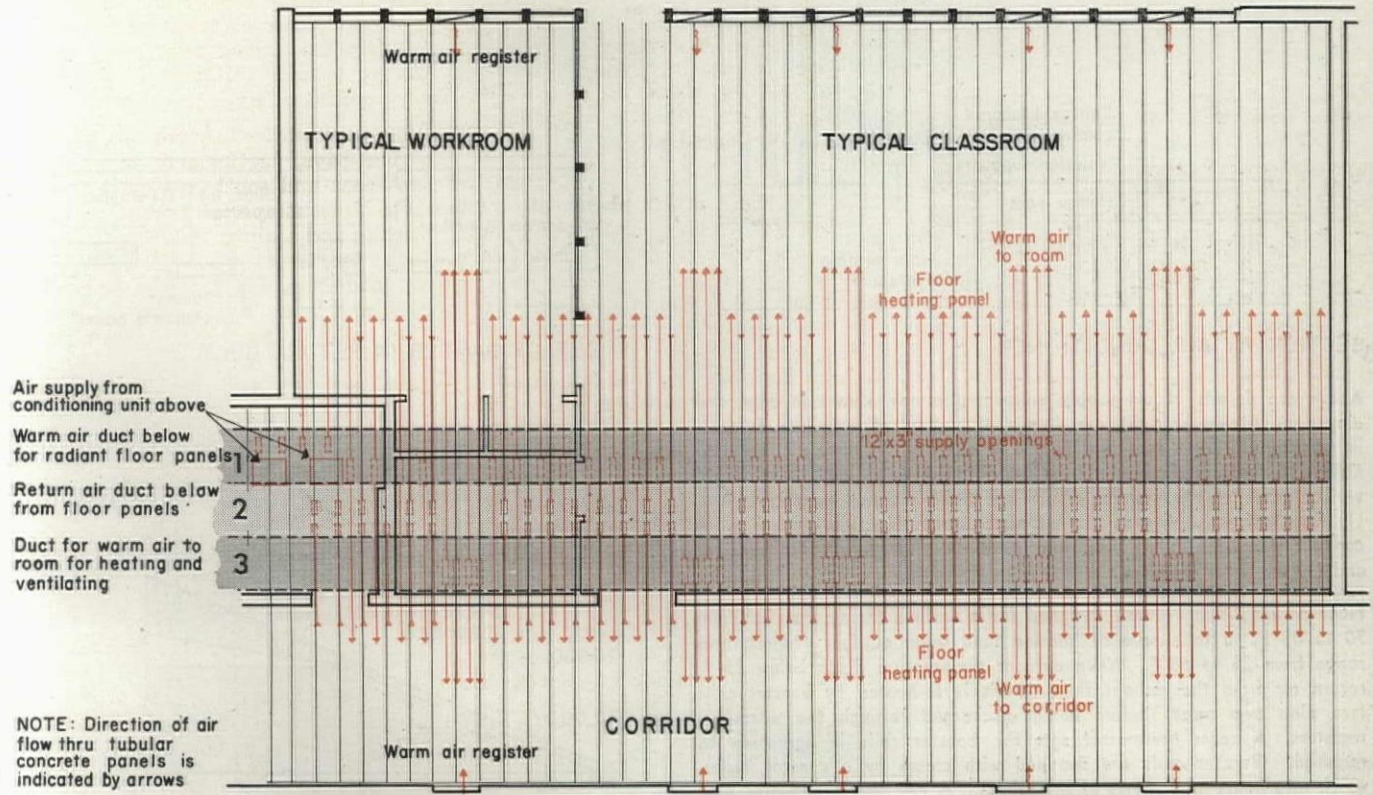


TYPICAL HEATING AREA



FOUNDATION PLAN

Supply to floor panels
Return from floor panel
Supply to room, reheated by Booster Coil

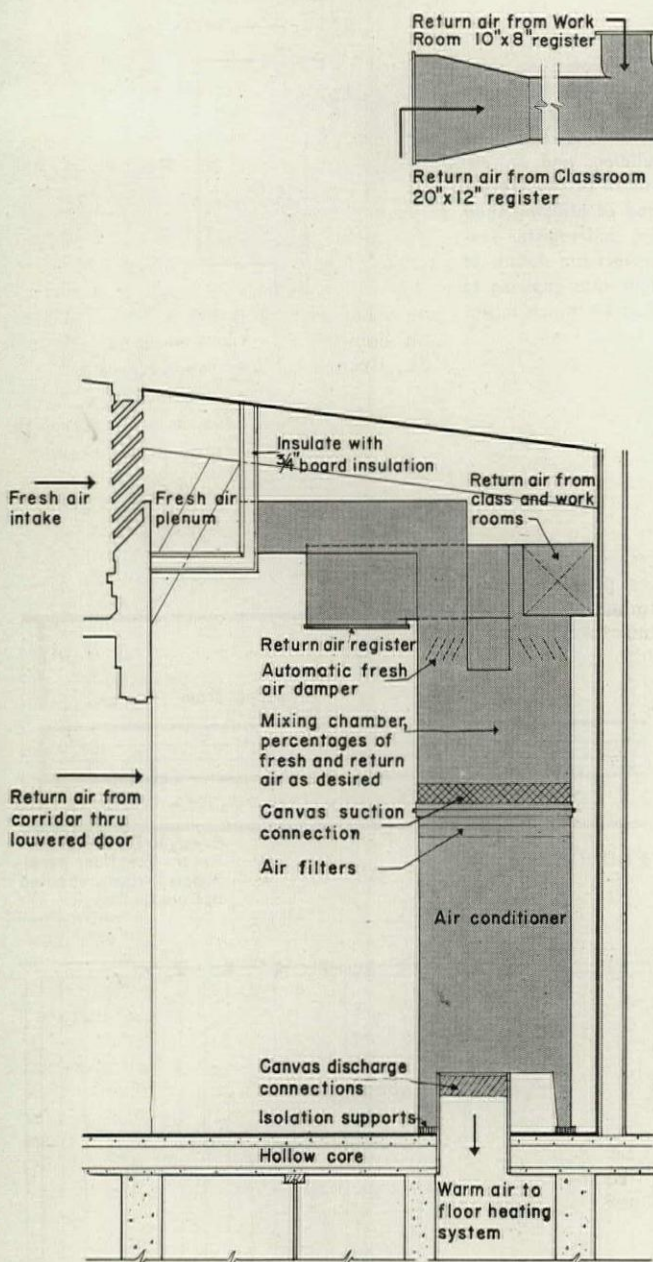


NOTE: Direction of air flow thru tubular concrete panels is indicated by arrows

PLAN OF FLOOR DUCT ARRANGEMENT

Scale 1/8" = 1'-0"

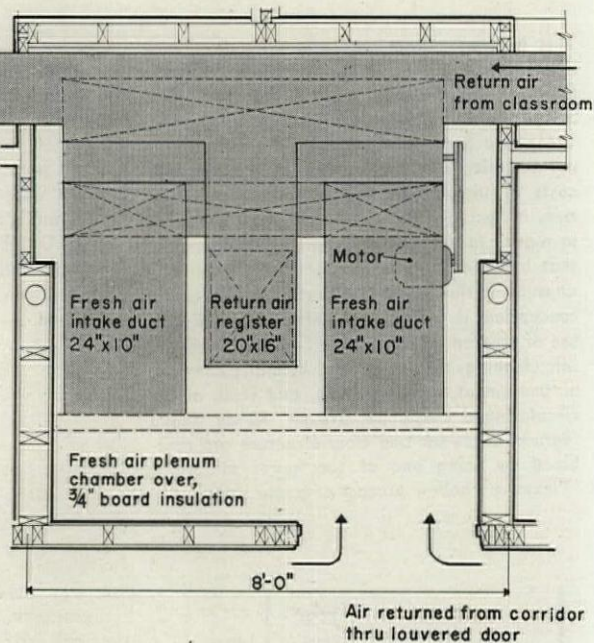
MATERIALS and METHODS



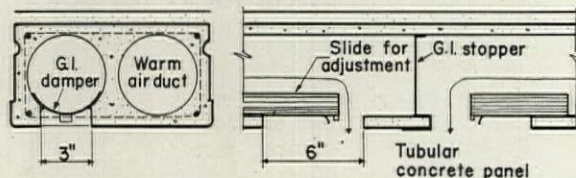
SECTION AT AIR CONDITIONER

Above are details of air supply unit installations, shown in plan and elevation. Above, at right, are details of method of installing dampers in the cores of the "Flexicore" slabs, in order to regulate air flow. At right is a diagram showing proportions of the heating load cared for by various parts of the system. There are three distinct heating means: (1) floor panels serving as radiant panels only; (2) floor panels which conduct warm air to registers and incidentally provide panel heating; and (3) warm air registers.

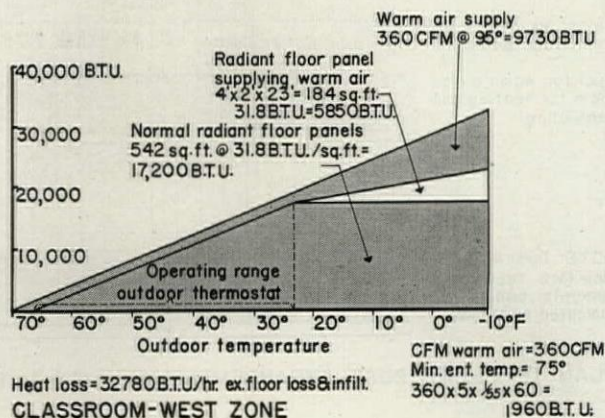
Floor panels (item 1) were designed for a surface temperature of from 70 to 85 F, to take care of heating load when outdoor temperatures range from 25 to 68 F. When outdoor temperature drops below 25 F, return air from the radiant floor panels is re-heated by booster coils (see plan over page) before being discharged through the warm air registers. A room thermostat sets the booster coils in operation as required. (Booster coils are supplied with steam by a central boiler, which also heats other parts of the school.) A low-limit thermostat prevents air colder than 70 F from entering the room. After passing through the booster coils and air supply registers, air can be recirculated in combination with fresh air in any desired proportion.



PLAN OF AIR CONDITIONER



DET. OF DAMPER IN RETURN DUCT



Combined PANEL and FORCED WARM AIR HEATING.. Perkins, Wheeler and Will, Archts.

WHAT WARTIME PRACTICE HAS TAUGHT US ABOUT WOOD CONSTRUCTION

Frank J. Hanrahan, Structural Engineer of the National Lumber Manufacturers' Assn., recently reported on "Structural Performance of Wartime Wood Buildings and Its Postwar Application," before the Illinois Society of Architects.

Conditions for "proper" design, fabrication, construction, and maintenance did not generally prevail during the war. For instance, the fact that a piece of lumber will reduce in cross-sectional area as it seasons often went unrecognized. ". . . Structural design suitable for unseasoned lumber should be employed, and the bolts at the joints should be drawn up as the lumber seasons to avoid possible misplacement of fastenings and over-stressing of joints from looseness and distortion. . . . When seasoned lumber is available, it is to be preferred for buildings."

Better control and simplified design, fabrication, erection, and maintenance are possible with seasoned lumber because dimensional changes take place before, rather than after, fabrication and erection. It is desirable to use lumber which has a moisture content in equilibrium with the conditions of service. But in war buildings, he said, "The haste with which the job had to be done, together with its size, made necessary the use of much personnel with little or no experience with design, fabrication, and erection of wood structures. There was little time for refinement and checking."

The more common design faults found in war buildings were:

Poor joint design.

Failure to provide adequate truss camber, particularly when built of unseasoned lumber (which requires more camber than dry lumber).

Failure to provide hangar or other door details which left operation of the door unaffected by truss deflections.

Use of trusses with too low a height-span ratio.

Improper design of columns or compression members, such as assuming that a built-up nailed or bolted member acts as a solid member, or designing spaced columns improperly.

Application of principles or procedures used for metal design without adequate regard for the properties of wood (failure to recognize that wood is non-homogenous—that its strength in all directions is not the same).

Use of non-structural, improperly graded lumber.

Most common construction faults were misfabrication and sloppy workmanship, such as boring bolt holes and connector grooves at the wrong location and then reboring nearby to correct the

error; using wider or deeper connector grooves than those specified; inaccurate fabrication followed by horsing around and mauling of members into place during assembly; omission of fastenings; rough handling such as picking up large trusses at a single point or dropping the trusses during erection; improper storage of lumber awaiting fabrication or erection; re-sawing lumber without re-grading; and omission of specified truss bracing.

However, an official inspection revealed that "on the whole, wood gave performance beyond all expectations. . . . The practically unanimous reactions of engineers, without and within the industry, who inspected the wartime timber structures were (1) amazement that many more failures did not take place in wartime structures in view of the abuses, and (2) a firm conviction that the design stresses in use prior to the war for stress-grade lumber were far too conservative, and therefore uneconomical, for timber buildings properly designed and constructed. . . ."

New Lumber Specifications

In December, 1944, the National Lumber Manufacturers' Assn. Board of Directors approved as recommendations for postwar application the *National Design Specification for Stress Grade Lumber and Its Fastenings*, based on assumption of competent engineering or architectural design, accurate fabrication and adequate supervision, with the preparation, installation, and joining of wood members and the connectors, mechanical devices and adhesives for their fastenings conforming throughout to wood engineering practice, and the further assumption that properly grade marked or certified stress-grade lumber will be used. The *Specification* includes the recommended working stresses contained in WPB Directive 29.

Wartime use has broadened realization of the merits of timber connector and glued laminated lumber construction; designs recently developed show savings in lumber, hardware, and fabrication without sacrificing load capacity or utility.

PLANNING FOR MASONRY CEMENT

A new masonry cement is announced by the Lone Star Cement Corp., 342 Madison Ave., New York City 17. The company researchers got together with masons in various parts of the country to find out what the masons really wanted in the way of a good cement tested under actual field conditions. Their findings, gathered over a period of ten years, revealed that masons were interested in six principal properties—plasticity, high water retention, strong bond, controlled setting time, water repellency, and the ability to hold color. The Corporation claims its new cement embodies these and other properties and exceeds Federal Spec. SS-C-181B and A.S.T.M. Spec. C 91-44T requirements.

NEW VENEER COATING

A ready-mixed veneer for concrete, cement, brick, and stucco exteriors, "Renewall Composition," is said to seal cracks and leaky joints at the same time it provides a coating. Because of its heavy viscosity, one coat only is said to be necessary; this is laid on with a paintbrush, then leveled with a roller, smooth or stippled. It has an oil resin base; it's washable. It may also be used over other surfaces and can be blended with colors. Paint-Point Corp., 99 S. 6 St., Brooklyn, N. Y.

ONE-COAT LACQUERS

A new development in lacquer formulations is announced by Hercules Powder Co., Cellulose Products Dept., Wilmington, Del. Lacquer itself is made up of solids—nitrocellulose, resins, pigments—dissolved in a volatile solvent that evaporates, leaving a film which is the protective coating. By increasing the solids content per gallon of lacquer (according to the end use required), a "high solid" lacquer results which is said to take only 2 or 3 coats to finish a piece of furniture where old-style lacquer requires 5 coats. (Hercules does not manufacture lacquers, but produces nitrocellulose and suggests uses.)

CURTAINS FOR GERMS

Edwin F. Guth Co., 2615 Washington Blvd., St. Louis 3, Mo., announce a new fixture for use with germicidal lamps. A base of ultraviolet light is provided which can be so placed as to "curtain" off an area against outside germs. Suggested uses: over counters of exposed food to prevent settling of germs; over milk bottles to retain sterility; over cosmetics to prevent mold; over passage between reception room and doctor's offices; for rooms in the home. The fixture is designed for use with 15- and 30-watt germicidal lamps.

RIGIDIZED METAL SHEETS

A new method of cold forming sheet metal by "rigidizing" results in extra heavy strength as well as patterned surface effects. Rigidized sheets eliminate the problem of "waves" in the flatness of panels for architectural use; porcelain enamel sheets and panels are said to be especially adaptable for store front installations. Rigid-Tex Corp., Buffalo 3, N. Y.

RETURN OF THE "GRENADIER"

WPB restrictions have been lifted on the manufacture of the "Grenadier," a 2-lamp, 40-watt, steel-framed, fluorescent unit for use as a single fixture or a continuous strip, for ceiling or lower mounting. It features translucent plastic side panels, a reflector bottom equipped with transverse louvers, a light distribution of approximately 41% upward and 45% downward for a total over-all efficiency of 86%. W. F. Wakefield Brass Co., Vermilion, Ohio.

Air Conditioning and Air Handling Equipment

1-20. *Air Conditioning for Hospitals (MAF-3)*, 8-page illustrated booklet. Advantages of air conditioning for hospital operating rooms, temperature and humidity control, X-ray rooms, nurseries, laboratories, etc. Information on packaged air conditioners. Airtemp Division of Chrysler Corp.

1-21. *What We Make (Cat. No. 500)*, 200-page illustrated catalog (4½x9). A condensed catalog of types of air handling and allied equipment, from air conditioning units and down-blast heaters to steam turbines and ventilators. Capacity, dimension, and typical performance tables; construction information. Special design data section. B. F. Sturtevant Co. *Because the printing is limited due to paper shortage, requests for this catalog will be filled only if special application is made on your company letterhead.*

Ash Disposal

1-19. *Bulletin No. 1244*, Chicago Fire Brick Co. (Reviewed in June.)

Concrete

3-36. *Corrosion-Resistant Concrete for Dairies and Meat Packing Plants*, 16-page illustrated booklet on uses for food-product plants of calcium-aluminate concrete and on characteristics of "Lumnite," corrosion-resistant cement. Data on aggregates, mix proportions, methods of placing, mortar joints for tile floors, plaster coats for walls and tanks. Atlas Lumnite Cement Co.

Doors

4-25. *Manual of Veneered Doors (No. 42)*, A.I.A. 19-E-12, Hardwood Products Corp. (Reviewed in June.)

4-26. *Riverbank Sound Insulating Doors*, 6-page illustrated booklet on wood and metal-covered doors equipped with sound insulating properties. Information on decibel scale; architects' specifications; suggestions and recommendations for hanging, etc. Hardwood Products Corp.

Electrical Wiring

5-15. *Manual of Better Home Wiring*, A.I.A. File 31-C-6, 8-page booklet. Part I gives recommended minimum wiring requirements for houses, including number and type of circuits and outlets for various parts of the house; Part II presents suggested specifications for single family dwellings. Westinghouse Mfg. Co., Better Homes Dept.

Electronics

5-17. *The ABC of Electronic Heating*, 14-page illustrated booklet. Brief record of development of electronic heating, definition of operating principle; description of two chief methods and fields of application. Drawings, specifications. Scientific Electric Division, "S" Corrugated Quenched Gap Co.

Expansion Joints

5-14. *Expansion Joints (1942 catalog)*, A.I.A. File 4-E-11, Serviced Products Corp. (Reviewed in June.)

Finishes

6-19. *Porceliron*, A.I.A. 15-h-2, Ingram-

Richardson Mfg. Co. (Reviewed in June.)

Fireplaces and Equipment

6-21. *Book of Successful Fireplaces*, A.I.A. 14, Donley Bros. Co. (Reviewed in June.)

Flooring and Floor Coverings

6-13. *Ideas: Portfolios of Practical Suggestions for Modernizing Business Interiors (14¾x11)*, Armstrong Cork Co. (Reviewed in June.)

6-22. *Bates Grates (Cat. 43-44)*, A.I.A. File 14-P-21, 16-page illustrated catalog on anti-slip open steel flooring and stair treads of hexagonal cross bars fillet-welded to main bars, available in standard and special spacings and stock panels. Walter Bates Co., Inc.

6-23. *Kerlow Open Steel Flooring (Cat. MC43)*, 22-page illustrated catalog on advantages of open steel floorings for industrial use. Data on types, anchoring, installation; typical floor plans, safe load table. Kerlow Steel Flooring Co.

6-24. *Flooring*, 16-page illustrated booklet on "Rubberlok," rubber tile, cork-rubber tile, and slate-surfaced asphalt plank, etc., for floors. Color chart, patterns. Serviced Products Corp.

Floors

6-26. *"Smooth Ceilings" System of Flat Slab Construction*, 4-page illustrated folder. Data on advantages and economies of 2-way flat slab designs for use with columns of reinforced concrete, structural steel, steel pipe, or cast iron. Design data, typical details, test data. Smooth Ceilings System.

Glass

7-23. *Glass*, A.I.A. File 26-A, Libbey-Owens-Ford Glass Co. (Reviewed in June.)

Glass Block

7-22. *Methods of Replacing Worn-Out Windows with Insulux Glass Block*, Owens-Illinois Glass Co. (Reviewed in June.)

7-26. *Daylight in Schoolrooms (Old and New) 1B-53-442*, 11-page illustrated booklet. Discussion of advantages of use of glass block for schools—light transmission, insulation, strength, fireproofing, low sound transmission and maintenance, window replacement. Owens-Illinois Glass Co.

Gypsum and Gypsum Products

7-25. *2" Solid Partition*, A.I.A. File 20-B-31, United States Gypsum Co. (Reviewed in June.)

Heating

8-42. *Catalog 79A*, A.I.A. File 30-C-1, 24-page illustrated booklet. Information on automatically or hand fired boilers of various types for homes and buildings. I-B-R ratings, fuel dimensions, tables, accessories. Burnham Boiler Corp.

8-46. *How to Choose a Heating System for Your New Home*, 16-page illustrated consumer booklet advising post-war home builders to consult architects for accurate estimates of radiant heating installation costs. Presentations of

residences where radiant heating systems are used; data on installation and operating costs. A. M. Byers Co.

8-47. *Dunham Differential Vacuum Heating System, Technical Data (Bulletin 631)*, 28-page illustrated booklet. Engineering information on an automatic system of heating by steam under sub-atmospheric pressure. Typical specifications, piping methods, drawings, accessories, etc. C. A. Dunham Co.

8-45. *A Primer on Space Heaters*, Evans Products Co., Evanaire Division. (Reviewed in June.)

8-51. *Payne Zone Conditioning*, 20-page illustrated consumer booklet (4x8¾), on thermostatic control of gas furnace unit heat for one room or a grouped "zone" of rooms. Payne Furnace & Supply Co., Inc.

8-48. *Prox Sectional Boilers*, 18-page illustrated booklet. Catalog of data on heavy duty cast iron boilers (mechanical or hand fired) for large installations. Capacity ratings from 615 to 27,940 sq. ft., steam header type. Ratings, foundation plans, sectional assembly drawings, dimensions. Frank Prox Co., Inc.

8-49. *How to Handle Heat Generation for Radiant Heating Systems*, 4-page illustrated folder presenting H. B. Smith Co.'s "experiences as a contribution to practical progress" in the panel heating field, shown by photographs of installation in a residence. The H. B. Smith Co., Inc.

Incinerators

9-28. *Kewanee Garbage Burner*, A.I.A. File 29D2 (Cat. GW-95a), 4-page illustrated folder on a steel welded garbage burner (available when steel allocation permits) which supplies 165 to 700 gals. hot water per hour. Data on base and lower rocking grate, steel storage tanks for hot water, piping connections; specifications and measurements. Kewanee Boiler Corp.

9-29. *Bulletin No. 160*, 8-page illustrated booklet on types of Morse Boulger and Kernerator incinerators for new and existing buildings. Capacities, dimensions, special applications, specifications, layouts. Morse Boulger Destructor Co.

Insulation

9-25. *Novoid Cork Insulation (A.I.A. portfolio)*, Cork Import Corp. (Reviewed in June.)

9-26. *Insulite (No. 3)*, 4-page data sheet. "Insulite" products; descriptions, standard sizes, packaging and shipping weights; building board, sheathing, "Lok-Joint" lath, wallboard, interior board, tile-board, plank, "Fiberlite," "Dualboard," tempered and untempered hardboard. Insulite Division of Minnesota & Ontario Paper Co.

9-27. *PC Foamglas Insulation for Roofs*, Pittsburgh Corning Corp. (Reviewed in June.)

Lighting and Lighting Equipment

12-23. *Luminite*, illustrated folder on an electrically lighted wall switch plate that shows location of a light switch in the dark, serves as automatic safety night light, helps prevent wall smudges. Associated Products Co.

12-18. *Bulletin F-80, A.I.A. File 31-F-2*, Day-Brite Lighting, Inc. (Reviewed in June.)

12-19. *Lighting Goes Dramatic for the Postwar Drugstore (Y-473)*, 10-page consumer booklet presenting J. Gordon Lippincott's visualization of lighting effects in a modern postwar drugstore and suggestions on how they might be produced. Suggested floor plan and perspective notes; list of available lighting tools; photographs. General Electric Co., Lamp Department.

12-24. *The Whole House A Lighting Fixture (Y476)*, 10-page illustrated booklet presenting Nathaniel A. Owings' plans and detail drawings for a "house designed as a lighting fixture." General Electric Co., Lamp Dept.

12-25. *Number "44" Catalog, A.I.A. File 31-F-23*, 38-page illustrated catalog of fluorescent, incandescent, and germicidal lamps, now permitted by WPB to include heavy-gauge, rigid, all-steel models, steel louvers and shields, and steel and aluminum reflectors. Edwin F. Guth Co.

12-26. *Verd-A-Ray*, 4-page illustrated folder on "Verd-A-Ray" lamps—a "modern form of light which is kind to the eyes, for use in all standard incandescent fixtures in all types of industrial plants." Definition; technical data. Verd-A-Ray Corp.

12-21. *Hints on Lighting Maintenance (F-8392-20)*, Westinghouse Electric & Mfg. Co. (Reviewed in June.)

Lighting Fixture Glassware

12-22. *"The 6-Point Line" Illuminating Glassware, A.I.A. File 31-F-237*, Corning Glass Works. (Reviewed in June.)

12-27. *Lighting Data, A.I.A. File 31-F-237*, 46 pages, illustrated, on "Flur-O-Guide" lenses and panels for fluorescent and incandescent lighting of large areas. Data sheets. Corning Glass Works, Lighting Division.

Paint

16-48. *Amercoat 23 Plastic Coating*, 4-page folder on uses of a general purpose, cold-applied coating having high resistance to corrosion and contamination. General, physical, and chemical properties. American Pipe and Construction Co., Amercoat Division.

16-45. *Color for Safety (B33)*, Arco Co. (Reviewed in June.)

16-49. *Optonic Color System*, 12-page booklet on correct use of color in industry, schools, hospitals, homes. Definition and guide to use of "optonic" colors; suggested outline for color survey of a building. Arco Co.

16-46. *Color for Industry*, U. S. Gutta Percha Paint Co. (Reviewed in June.)

Protective Coatings

16-47. *Eternium (772)*, Barrett Division, Allied Chemical & Dye Corp. (Reviewed in June.)

Roofing

18-10. *Built-Up Roofs*, 12-page booklet. Specifications on types of built-up roofs for industrial plants or similar flat roof construction jobs: underwriters' rating; deck type; roof deck incline per foot, inch, surface or finish construc-

tion; and weight of materials per square. Includes roof insulation data, flashing specifications, detail drawings. Certain-teed Products Corp.

18-11. *Featherweight Concrete Insulating Roof Slabs (Cat. 103 Roof Standards)*, A.I.A. File 12 e 2, 32-page illustrated catalog on concrete roofing slabs—channel, nailing, interlocking, glass insert, acoustical, seat, and floor. Detail sheets, specifications. Federal-American Cement Tile Co.

18-08. *Built-Up Roofing Specifications*, Flintkote Co. (Reviewed in June.)

18-12. *Shingles and Siding*, 8-page illustrated booklet. Data and specifications on asphalt shingles (individual, strip, square butt strip, hexagon strip) and asbestos sidings ("Tapertex" straight edge, wood grain, and smooth finish). Color chart. Flintkote Co.

18-09. *Things You Should Know About Your Roof*, Johns-Manville Corp. (Reviewed in June.)

Sound Insulation

19-23. *Sound Conditioning, An Aid To Effective Church Management*, Celotex Corp. (Reviewed in June.)

19-24. *Sound Conditioning, An Aid To Those Responsible for Education*, Celotex Corp. (Reviewed in June.)

19-25. *Less Noise in Factory and Shop*, 12-page consumer booklet containing diagrams showing how sound conditioning protects factory and shop workers and eliminates negative effects of noise; photos showing actual factory installations of "Celotex" acoustical products on ceilings and baffles. Celotex Corp.

19-26. *Acoustical Units and Plaster*, American-Franklin-Olean Tile Co. (Reviewed in June.)

Steel

19-27. *Steel in the Making (136A)*, Bethlehem Steel Co. (Reviewed in June.)

19-30. *Mayari R (Cat. 156)*, 32-page illustrated catalog on low-alloy steel for lightweight, high-strength, corrosion-resisting applications. Installations, typical and physical properties; chemical composition; workability, welding, and fabricating qualities. Products, sizes, other high-strength steels. Bethlehem Steel Co.

19-28. *Industrial Steel Fabrication*, Marine Fabricators Co. (Reviewed in June.)

Sump Pumps

19-29. *Bulletin 3003, A.I.A. 29-cl*, Yeomans Bros. Co. (Reviewed in June.)

Tile

20-15. *Facing Tile (Catalog 45c)*, Facing Tile Institute. (Reviewed in June.)

Toilet Compartments

20-16. *Toilet Compartments and Toilet Room Environments, Cat. No. 83, A.I.A. File 35-H-6*, Sanymetal Products Co. (Reviewed in June.)

Ventilating

22-07. *Bulletin No. 2301*, Herman Nelson Corp. (Reviewed in June.)

Water Heaters

23-32. *Is It Costing You Too Much To Heat Water?* 10-page illustrated consumer booklet (5 1/4 x 9). Information on use of copper water tube for residential hot water piping systems. Revere Copper and Brass, Inc.

23-31. *Smithway Automatic Gas Storage Water Heaters (Bulletin 545A)*, A. O. Smith Corp. (Reviewed in June.)

23-33. *Smithway Automatic Electric Storage Water Heaters (Bulletin 553)*, 1-page illustrated pamphlet on features of glass-lined and zinc-lined electric water heaters for the home. A. O. Smith Corp.

Water Systems

23-24. *F & W Centrifugal Jet Pumps—Water Systems*, Flint & Walling Manufacturing Co., Inc. (Reviewed in June.)

Windows

23-35. *New Postwar Modular Sizes for Metal Windows*, Mesker Bros. (Reviewed in June.)

23-36. *Wood Windows for Use with Glass Block*, South Side Lumber and Supply Co. (Reviewed in June.)

23-37. *Williams Reversible Window Equipment, A.I.A. 27-c-1*, Williams Pivot Sash Co. (Reviewed in June.)

Pencil Points, 330 West 42nd St., New York 18, N. Y.

I should like a copy of each piece of Manufacturers' Literature listed.

We request students to send their inquiries directly to the manufacturers.

NO. _____	NO. _____	NO. _____	NO. _____
NO. _____	NO. _____	NO. _____	NO. _____
NO. _____	NO. _____	NO. _____	NO. _____
NO. _____	NO. _____	NO. _____	NO. _____

NAME _____ POSITION _____

FIRM _____

MAILING ADDRESS _____

HOME
 BUSINESS

CITY _____ STATE _____

PLEASE PRINT

... from the Technical Press

House Construction in Great Britain

"House Construction," a postwar building study (No. 1 of a series) of the British Ministry of Works, prepared by an interdepartmental committee appointed for the purpose. His Majesty's Stationery Office, London, England, 1944. 152 pp., paper bound, illus., tables, appendices, index. Two shillings. Available on order from the British Information Services, 30 Rockefeller Plaza, New York, N. Y., at 60 cents.

It is notable that the government of Great Britain, as an official action, has found time even in the midst of war to attempt to evaluate construction methods and materials for the rebuilding which must take place in that country. We have nothing like it in the good old U.S.A. (This can be said despite the efforts of several not-unknown government bureaus and private organizations. The closest we have yet come is a suggestion that a construction sub-bureau might be set up within the Bureau of Foreign and Domestic Commerce of the Department of Commerce. The intent here seems wholly praiseworthy, but the suggestion is still too new to appraise. Let us hope that politics won't kill it in embryo.)

Twenty-two studies are at present contemplated in the British series of publications; of these, we have received sixteen, which will be reviewed in succeeding issues. Subjects covered deal with, in addition to houses *per se*, school construction; plastics; plumbing; painting; gas installations; steel; reinforced concrete; mechanical installations; fuels; electrical installations; non-ferrous metals; lighting; sound control; walls, floors, and roofs; and business buildings.

This first study starts by appraising the postwar house-building problem in the light of experience after the last war; proceeds to suggest basic technical considerations in house construction; explores and thoroughly explains all the suitable structural systems; follows that with a section on building materials; and winds up with 14 brief paragraphs of summary and conclusions. It is a fairly exhaustive work, but it is so clearly and simply written that it is also short. The confused governmental verbiage and obscurity which characterize most official American publications are strikingly absent.

For example, design requirements are explicitly stated in approximately 2½ pages of text, supplemented by 1½ pages of simple tabulation. In this small space are succinctly stated the requirements regarding strength and stability, moisture penetration and condensation, thermal insulation, sound insulation, fire hazard, maintenance and

durability, and vermin infestation. In comparing with the desired standards values achieved by conventional brick construction, the committee of authors found the brick house wanting in many respects, and they weren't afraid to say so.

Electrical Drafting

by D. Walter Van Gieson, electrical engineer. McGraw-Hill Book Co., Inc., New York, 1945. 140 pp., illus.; appendix; index. \$1.50

Treating his subject essentially as a type of mechanical drawing, but nevertheless in the belief that a special technique is desirable for presenting electrical circuit diagrams and wiring plans, the author has produced a comprehensive work, practical in both text and illustrative matter. In addition to chapters on electrical drafting itself, covering the subject generally and in relation to many specific types of wiring, there is a discussion of the relationship between drawings and specifications, another on office practice, etc.

Thermal Insulation in Buildings

(Paper by A. F. Dufton, British engineer, Journal of the R. I. B. A., London, England; February 1945.)

On the basis of research conducted by the British Building Research Station before the present war, Mr. Dufton argues that financial return is only one of many reasons for regarding thermal insulation as worth while; that the many additional values gained need better appreciation.

Insulation against solar heat in summer is considered by the author to be as important as reducing winter heat losses, for comfort, to reduce cooling loads on air-conditioning systems, and to reduce possible structural damage due to expansion caused by high temperatures. The Building Research Station tested various thin structures (glass, sheet metal, etc.), treated in various ways, to obtain data on their relative efficacy in excluding solar heat. Roof construction was simulated; all materials were tested under identical conditions. Glass, clear, was found to transmit the most solar heat. White-wash in 1 or 2 coats on the underside reduced insulation somewhat; so did thin white cloth suspended 1 in. above or below the glass. Most effective were two coats of whitewash on the top surface; temperatures under test pieces thus treated were more than 80° F lower than under clear glass.

Sheet metal painted black on both sides transmitted the most heat of any non-glass materials, 42% as much as clear glass. Using two blackened metal sheets with 1 in. of unventilated air space between, 33% as much heat was transmitted; ventilating the air space reduced this to 23%, approximately the same value as that obtained with an

untreated, flat asbestos-cement sheet (24%). Untreated galvanized iron, corrugated, transmitted 29%; ½-in. wall-board, metal-clad on both faces, with the upper face black, lower tin-plated, 19%; one inch of wallboard similarly treated, 14%.

Most startling reduction was obtained by using sheet metal, either single or with an air space between two sheets, when white paint, aluminum paint, or simply exposed tin plating was used for surface finish (8 to 0% of glass transmittance). No heat at all was transmitted (above maximum air temperature for the day) when a single metal sheet, with top surface white-painted, lower surface tin-plated, was used. Curiously, 1% of the amount of heat transmitted by glass came through a structure composed of 2 similar sheets of metal, plus a 1-in. unventilated air space; 3% when the air space was ventilated.

In another case, thermal insulation of a ceiling not only prevented pattern-staining due to dust adhering to condensation which gathers over lathing and structural members, but also made the temperature of the entire ceiling structure more nearly equal to that of the air, and so decreased the amount of dust precipitated.

Reinforced Concrete without Falsework

(Article by Jacob Feld, Consulting Engineer, New York, N. Y. Engineering News-Record; May 3, 1945.)

In designing a reinforced-concrete grade-separation bridge for New York City's postwar building program, structural steel frames serve the dual purpose of permanent reinforcing and temporary support for concrete forms during the bridge's construction.

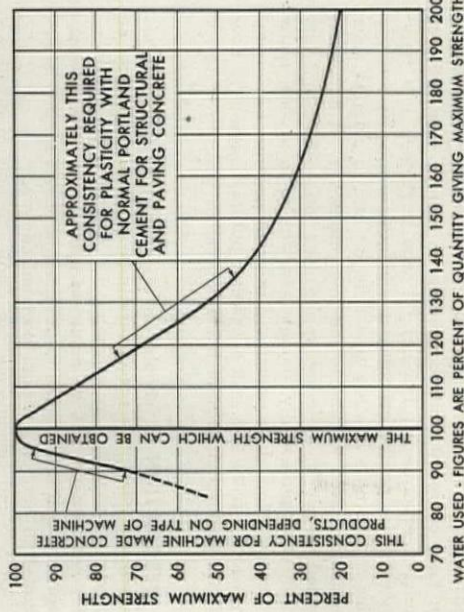
The bridge is of rigid frame reinforced concrete type. Experience revealed that three operations in constructing this type of bridge are costly: supporting arch forms on falsework; bending and placing long, heavy reinforcing rods; and separating and holding in proper position the inner and outer reinforcement layers. All these operations were eliminated in this unusual design by employing welded structural steel angle frames as reinforcement. Steelwork is designed first as rigid frames to sustain the weight of forms and wet concrete; after the concrete has set, the structure becomes a reinforced rigid frame, the structural angles acting as reinforcement in both faces.

For this particular bridge, loading for the completed rigid frames was so heavy, in order to accommodate truck traffic, that the weight of reinforcing needed for these ultimate loads was more than sufficient for the preliminary purpose of supporting the wet concrete and forms. (This condition might, or might not, exist in other types of construction, and might seriously affect the economies apparently obtainable.)

Air-Entraining PORTLAND CEMENT Cont'd.

TYPES OF USES—Air-entraining portland cement concrete has proved its worth for all types of paving subject to excessive temperature variations. It has been used by the Corps of Engineers, U. S. Army; and by private architects, engineers, and constructors. Applications include highway and airport paving, dams, and tanks, as well as buildings. It has been found successful for slip-form construction and for gunite.

While it is probable that air-entraining cement produces a concrete with slightly reduced bond-strength between the concrete and reinforcing steel (due to the fact that the air bubbles may limit the area of bond) this has not been a serious factor, and may be offset by such means as changing the physical design (shape) of reinforcing. Satisfactory results have been achieved when air-entraining cement was used for reinforced concrete structures. However, adequate test data do not exist.



Effect of quantity of mixing water on compressive strength of concrete. When using air-entraining cement for structural and paving concrete, it is desirable to use less mixing water, which results in greater strength. When making machine products, more water can be used without sacrificing speed and handling qualities, and resulting strength will then approach optimum.

Masonry mortar must be smooth, workable, and buttery. Special mortars are available for this purpose, but if, for any reason, a portland cement mortar is required, it has hitherto been necessary to sacrifice smoothness, etc. Use of air-entraining cement for this purpose reduces the harshness characteristic of mortar made of normal portland cement and sand. In addition, if the new cement inhibits laitance and bleeding, and results in a more water-repellent product, it may prove efficacious in reducing that bugaboo of bricklayers, efflorescence. Investigation in this quarter has not yet proceeded far.

Machine-made concrete products usually require a mixture that is very dry, usually too dry to develop maximum strength. The use of air-entraining cement imparts to such a mixture a rubbery consistency which permits its handling at an earlier stage, with less breakage, than is possible with normal cement. Therefore, block and pipe manufacturers can utilize a concrete which more nearly attains maximum strength if air-entraining cement is used; breakage of "green" products can be reduced.

COST—Air-entraining portland cements are sold at the same price as normal portland cement. These cements contain the air-entraining agent, which is interground with the cement at the mill. Cost of air-entraining agents added to the concrete at the mixer, though slight, is extra.

REFERENCES

- A.I.A. material filed under Index No. 3A.
- American Society for Testing Materials (ASTM) C175-44T. "Tentative Specifications for Air-Entraining Portland Cement for Concrete Pavements." Revised, 1944.
- C185-44T. "Tentative Method of Test for Air Content of Portland Cement Mortar." Issued, 1944.
- Construction Methods (magazine) December, 1944. "Air-Entrained Concrete Applied to Structural Repair," by H. Z. Moody.
- Engineering News-Record (magazine) October 10, 1940. "Pavement Scaling Successfully Checked," by O. L. Moore.
- August 24, 1944. "How to Use Air-Entraining Cements," by H. G. Farmer and G. L. Lindsay.
- Rock Products (magazine) January, 1945. "Air-Entraining Portland Cement in Concrete Block," by H. G. Farmer.
- March, 1945. "Air-Entraining Agents," report of discussion at convention of ready-mixed concrete industry.

SOURCES OF SUPPLY—Omission of any name from this list of manufacturers emphatically is not to be construed as indicating that the manufacturer's product in any way lacks merit.

Trade Name	Manufacturer
Aetna Air Entraining Cement	Aetna Portland Cement Co., Bay City, Mich.
Alpha Air Entraining P. C.	Alpha Portland Cement Co., 15 S. 3rd St., Easton, Pa.
Ideal Air Entraining Cement	Colorado Portland Cement Co., Denver National Building, Denver, Colo.
A-E Portland Cement	Dewey Portland Cement Co., 310 Ward Parkway, Kansas City 2, Mo.
Florida Air Entraining P. C.	Florida Portland Cement Co., 305 Morgan St., Tampa, Fla.
Hawkeye Air Entraining Cem.	Hawkeye Portland Cement Co., 802 Hubbell Building, Des Moines, Iowa
Huron Air Entraining Cement	Huron Portland Cement Co., 601 Griswold St., Detroit 26, Mich.
Wyandotte Air Entraining C.	Wyandotte Portland Cement Co., 1433 Starks Bldg., Louisville, Ky.
Kosmos Air-Entraining Cem.	Kosmos Portland Cement Co., 1433 Starks Bldg., Louisville, Ky.
(Trade name not ascertained)	Lehigh Portland Cement Co., Allentown, Pa.
Lone Star Air Entraining P. C.	Lone Star Cement Corp., 342 Madison Ave., New York City
Medusa Air Entraining P. C.	Medusa Portland Cement Co., 1000 Midland Bldg., Cleveland 15, Ohio
(No trade name adopted)	National Cement Co., Birmingham, Ala.
Nazareth Air Entraining P. C.	Nazareth Cement Co., Nazareth, Pa.
North American Air Entrain-	North American Cement Corp., 41 E. 42nd St., New York City
ing Portland Cement	Northwestern States P. C. Co., Mason City, Iowa
Plastolith	Northwestern States P. C. Co., Mason City, Iowa
Penn-Dixie Air Entraining P.C.	Pennsylvania-Dixie Cem. Corp., 60 E. 42nd St., New York City
Petoskey Air Entraining P. C.	Petoskey Portland Cement Co., Petoskey, Mich.
Columbia Air Entraining P.C.	Pittsburgh Plate Glass Co., Columbia Cement Division, Zanesville, Ohio
Duraplastic	Universal Atlas Cement Co., 135 E. 42nd St., New York City

Air-entraining portland cement is normal cement to which has been added a small amount of air-entraining agent which, in turn, causes the mixed concrete to entrain a quantity of minute, separate air bubbles. It was developed first as a material for paving concrete, to eliminate scaling of concrete due to alternate freezing and thawing and to chloride salts commonly used to remove ice from highways. It has been tested widely in highway applications since 1939, and has been used successfully, though less widely, in several types of construction. It is potentially of great usefulness in many types of construction. Air-entraining portland cement is now available through regular trade channels.

DESCRIPTION—It should be understood that use of air-entraining cement is not a substitute for good aggregate or good workmanship; conversely, the desirable properties of this new product will be achieved if the same care in workmanship and selection of aggregates is observed that is employed in handling normal portland cement.

All portland cements contain small amounts of alkalis—compounds of sodium and potassium. When a small amount of animal fat, vegetable oil, or resin is added, and the cement mixed with water, the alkalis dissolve and combine with such agents to form a small quantity of soap. (This process is termed "neutralizing" the air-entraining agent, and was formerly common practice. The newer practice of adding a pre-neutralized agent is rapidly gaining acceptance.) The action of mixing whips a small amount of air into the concrete, and the soap entraps—or **entrains**—the air in uniformly distributed microscopic bubbles. These tiny air bubbles repel each other and do not readily unite to form larger bubbles. Examination of the hardened concrete under a microscope shows that the bubbles vary from about 1/100 to 1/1000 of an inch in diameter.

The function of the billions of minute air bubbles has been likened to that of ball bearings; they hold apart the particles of fine and coarse aggregate; while the solid particles can roll freely on the bubbles, they cannot roll freely through or around the bubbles. In both laboratory tests and field use, the resulting concrete has proved to differ from normal portland cement concrete in being:

1. More plastic and workable, so that it spreads, screeds, and finishes more easily;
2. More cohesive, viscous, or "gummy."

3. More durable in withstanding scaling effects of de-icing salts and freezing-thawing cycles of weather;
4. More uniform throughout its mass.

PROPERTIES—It has been observed that concrete made from air-entraining portland cement "bleeds" less; it has less "water-gain." In paving, this property enables finishers to follow the placing operation almost at once, thus eliminating much of the customary time-lag and reducing overtime labor costs. In placing structural concrete, this characteristic makes for a better bond between successive lifts, and tends to reduce sand streaks.

"Density" of concrete has long been regarded as a chief requirement of quality. This would seem to be at variance with the practice of deliberately introducing air into concrete; but such a conclusion is not justified. With regular cement, more water than is essential for chemical reaction usually is introduced in order to make the mix workable and placeable. When it evaporates this excess water leaves in the concrete air channels into which water can penetrate. The excess mixing water also might cause ponds to collect beneath particles of aggregate. After the concrete has hardened these channels and ponds form areas where water may enter and freeze and where salts can crystallize. If the resulting expansion exerts force greater than the tensile strength of the concrete, failure may result.

Proper use of air-entraining agents, on the other hand, causes concrete to become more homogeneous; substantially reduces the possibility of bleeding and of segregation of the particles; and, due partly to the action of the microscopic air bubbles, partly to the smaller quantity of water required to produce a workable mix, decreases the permeability of concrete. Under high pressure saturation tests some water has been found to penetrate concrete made from air-entraining cement; however, the tiny air bubbles were found to be only partly full of water. None was completely full. This means that, if water penetrates to them, there is space to take up the expansion due either to freezing or to crystallization of salts.

The discontinuous air bubbles may slightly reduce strength of the concrete, but this is offset by reducing the quantities of sand and water (which produces a richer, stronger mix; see "Preparation") and, at least potentially, by increased bond due to reduced sedimentation.

PREPARATION—The amount of cement per cubic yard of concrete should be the same for air-entraining cement as for normal cement. Quantities of materials that produce one cubic yard of concrete when normal cement is used produce more than a cubic yard when air-entraining cement is used. The excess varies with the proportion and aggregates used and is best determined by trial mixes. Since this wet concrete is more plastic than that made with normal cement, a satisfactorily workable mix is obtained with less sand and water. Use of air-entraining cement generally permits a reduction in sand content of about 3% to 6% of the total amount of aggregates, and a reduction in water of about a gallon or more per sack with lean mixes, or less than half a gallon per sack with rich mixes. This reduction of sand and water offsets the bulking effect of the air and enables the user to obtain the same yield per bag of cement. Tests show that, for the same yield, with lean (4-sack) concrete higher strengths generally result, while with rich (7-sack) concrete somewhat lower strengths are obtained with air-entraining cement than with normal cement.

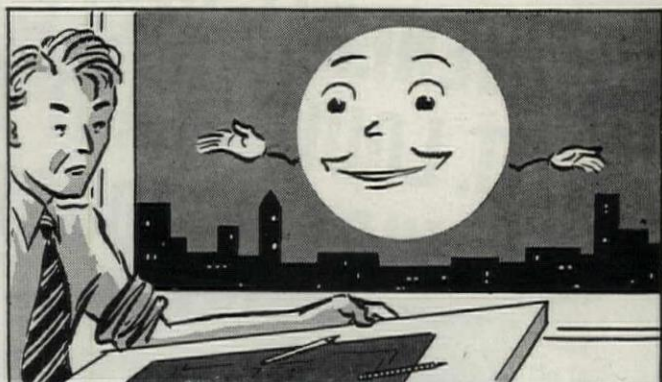
AIR-ENTRAINING AGENTS—Two air-entraining materials have been approved by Committee C-1 on Cement, of the American Society for Testing Materials: (1) Vinsol resin, an inexpensive by-product produced by the Hercules Powder Co., and (2) Darex, a product manufactured by the Dewey and Almy Co. Other substances will produce the desired reaction but conclusive test data on them are not yet available.

There are two methods of using an approved air-entraining agent with portland cement: (1) intergrinding the substance with the cement at the mill; (2) adding the substance to the concrete at the point of mixing. The first is currently more common practice.

PROPORTION OF AIR-ENTRAINING AGENT—ASTM C175-44T (Specifications for Air-Entraining Portland Cement) requires that such cement meet certain standards. The quantity of vinsol resin, which is the substance ordinarily used when an agent is added at the mill, is not limited except that sufficient is required to produce the necessary air content. The maximum content of Darex is 0.05%.



1 Take a look at that blueprint. It's so blurred you couldn't read it with a magnifying glass. Same old trouble over and over again—soft, crumbling leads, smudged drawings, bad blueprints!



2 Wait, pal! I can shed light on that problem. Go get yourself the drawing pencils that never crumble, that produce clean, dense, opaque lines all the time and every time. Get Typhonite Eldorado!

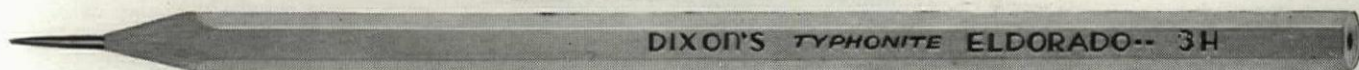


3 Eldorado drawings result in blueprints as clear as a bell and a pleasure to read. And remember—these pencils are unerringly uniform in every degree. Perfect. Get 'em tomorrow. O. K.?



4 The best steer I ever had. For my money, Typhonite Eldorado is the world's finest drawing pencil. Try it! We'll send you a free Comparison Sample. Request it on your business or professional stationery, specifying degree.

DIXON'S TYPHONITE ELDORADO



PENCIL SALES DEPT. 167-J7, JOSEPH DIXON CRUCIBLE COMPANY, JERSEY CITY 3, N. J.

A MILLION MILES

GENERAL CABLE CORPORATION'S ST. LOUIS PLANT CELEBRATES RECORD WIRE PRODUCTION ACHIEVEMENT



More than twenty months of inspired war effort on the part of the Men and Women Employees of the St. Louis Plant of General Cable Corporation were crowned today with gratifying success when the millionth mile of critical field communication wire, single conductor, rolled off the production line ready for shipment to our armed forces overseas.

This notable General Cable achievement, one of the most significant accomplishments in the production of a vital war material to be achieved in the St. Louis area and unequalled in performance in any communica-

tion wire plant in the world, marks an epochal milestone in the production of field wire which began in the local plant in October, 1943.

More than four thousand employees working on an average of fifty-two hours per week in three shifts, seven days, are engaged in meeting the urgent requirements for field wire of the United States and its allies. Current production is running in excess of four thousand miles per day or, putting it another way, approximately five times around the globe once a month.

In commenting on the production feat of the local organization, Dwight R. G. Palmer, President General Cable Corporation stated: 'Though the performance of our St. Louis Plant was accomplished in an ordinary line of duty, Management nevertheless is particularly grateful that its personnel, comprising all races, creeds and colors, have so obviously evidenced their patriotism and sincerity by establishing this outstanding record. We salute the Men and Women of our St. Louis Plant for this production achievement.'

a very great need to conserve and

in preparation of income tax returns. Ordinarily the O. P. A. must complete its prosecutions within one year after bringing charges.

company contrasts sharply the record of delays in the program for production from

OF FIELD WIRE...

Just one example of
General Cable's Service to
the Nation and its Allies

This output of *one million miles of single conductor communication wire* for the armed services represents the *all-out* effort at only one plant producing enough wire to encircle the globe five times each month.

All ten General Cable plants have been working three shifts, seven days per week, on this and other essential military items.

Come final Victory, General Cable will as energetically attempt to do its part in winning the peace.

GENERAL CABLE CORPORATION



*Manufacturers of Bare and Insulated Wires and Cables
for Every Electrical Purpose*

Protect the future value with Servel All-Year



**PERFORMANCE PROVED IN
MORE THAN 400 INSTALLATIONS**

YOU TAKE NO CHANCES when you specify and install the Servel All-Year Gas Air Conditioner. It has proved its efficiency, economy and dependability in more than 400 successful installations from coast to coast.

of your post-war homes Gas Air Conditioning

**It keeps homes "modern" longer,
financing agents agree**

You can make sure your post-war homes maintain a high re-sale value for many years by installing Servel *All-Year* Gas Air Conditioning.

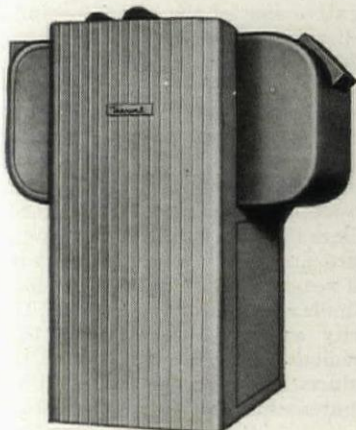
Financing agents state that homes so equipped will stay "modern" longer. They agree that the Servel Air Conditioner increases the value of any home far more than any other new idea that may be developed. For this reason, you'll find most banks, building and loan organizations, etc., prepared to extend larger loans, offer better terms, on homes containing this new Servel equipment.

In addition to paying dividends in increased investment value, Servel *All-Year* Gas Air Conditioning provides homeowners with an entirely new quality of living the year round. It keeps homes delightfully cool and free from humidity during the summer. And in winter it provides clean, even heat, comfortably humidified. A touch of the finger is all that is required

to select just the climate desired indoors, no matter what the weather outside.

You can specify Servel *All-Year* Gas Air Conditioning with full confidence that it will meet architectural and building requirements, as well as home-owner expectations. More than 400 installations have already been made, in every part of the country. Some have been operating for more than four years. Owners are unanimously enthusiastic about the new comfort, the convenience, economy and dependability of this new Servel summer-winter unit.

Find out today how easily and inexpensively you can protect the future value of your post-war homes with Servel *All-Year* Gas Air Conditioning. Get full technical details and complete installation data from the trained application engineer at your local Gas Company. Or write direct to Servel, Inc., 4507 Morton St., Evansville 20, Indiana.



SERVEL *All-Year* Gas Air Conditioner

SUMMER COOLING • WINTER HEATING • IN ONE SIMPLE UNIT
MADE BY THE MAKER OF THE SERVEL GAS REFRIGERATOR

Reviews

Books

Periodicals

Bibliographies

Beyond The Blueprint Stage

by Rita Davidson and William Smull

The arrival of V-E day has made imperative the solution of many housing

conundrums. Considerable attention is being given to these problems in various quarters and from different angles. The architects are going beyond the blueprint stage; public works have come off the postwar shelf; even the planners are impatient to dream up standards from the sidelines. It seems pertinent therefore to note the nature of this intensified interest in shelter provision.

"ON THE RECORD" TESTIMONY

Probably the best over-all picture can be gleaned from the recent hearings of the Taft Subcommittee on Housing and Urban Redevelopment, of the (George) Special Senate Committee on Post-War Economic Policy and Planning. It is

significant that 11 of the 15 parts of this Committee's printed record of hearings—covering more than 1,000 pages of testimony and charts and tables—are concerned with housing and redevelopment. We cannot attempt even to summarize its findings in this column, for the Committee was virtually indefatigable. Everyone who has or wants a finger in the pie was represented and contributed to an invaluable "on the record" compendium.

The reference value of the testimony is enhanced by a well-arranged index. Worth special mention is Housing Facts and Goals, the exhibit presented by Administrator Blandford. (*The Administrator's testimony and the graphic material may be obtained from the National Housing Agency; the record of hearings may be purchased from the Superintendent of Documents, Washington, 25, D. C.*)

THE SOCIAL PROFITS

Government enterprise should operate on a basis of social accounting. Straight bookkeeping principles of profit and loss are inapplicable to activities which consider the intangible gains of better health, better citizenship, and happiness. Unfortunately, the public housing movement in America has been unable to achieve the status of the (older) field of education. Schooling for every citizen requires no justification in terms of dollars and cents. Low-cost housing still has to indicate fiscal "savings" to the community, if its expense is not to be attacked as unwarranted.

The Newark Housing Authority, recognizing this necessity, has issued some "stockholders' reports." (*The Social Effects of Public Housing, November 1944, 92 pp., charts and illustrations; Public Housing Pays Dividends, April 1945, 10 pp. Prepared by the Housing Authority of the City of Newark, N. J., 57 Sussex Ave., Newark, 4, N. J. A limited supply of the reports is available for free distribution upon request to the Authority.*) In discussing the dividends of public housing, the Authority clearly translates into monetary values the economic savings the projects have brought to the city. But in the more extended report of the Social Effects, the social bookkeeping method is apparent.

This is a welcome study, inasmuch as the negative side of the picture—slums breed disease, crime, fire, etc.—is emphasized so frequently. The converse and positive side—does good housing actually eliminate these evils?—has rarely been treated systematically. Professor Jay Rumney, with Sara Shuman's assistance, conducted this sociological study on case-method principles. The records of dwellers in three public housing projects were analyzed and compared with those of residents of neighborhoods having a similar socio-economic status. The Authority assumes, with reason, that improvements will grow apace with the years since "for every health condition investigated there was a better record

(Continued on page 108)



EVERY Kind of Building NEEDS P E C O R A WEATHER - PROTECTION

Here is weather-protection in concentrated form for every type of building. Pecora Calking Compound, when used for sealing joints around window and door frames, and for pointing up masonry, assures these important benefits:

- FUEL SAVING
- FREEDOM FROM NEEDLESS DRAFTS
- NO MOISTURE SEEPAGE IN JOINTS
- NO NEEDLESS DUST INFILTRATION
- BETTER TEMPERATURE CONTROL FOR AIR CONDITIONING
- BETTER OCCUPANCY CONDITIONS



Time-tested for 37 years, Pecora Calking Compound is impervious to heat, cold and moisture, or acid fumes. It remains permanently elastic beneath its tough outer skin, for when properly applied, it will not dry out, crack or chip. Adheres to stone, glass, metal and wood and adjusts itself to variations in expansion and contraction. Available in knife grade and gun grade in standard and special colors. Knife grade packed 25 to 900 lbs. Gun grade in 1 to 55 gal. containers.

See SWEET'S for suggested specifications, or write us for descriptive folders and detailed information.

PECORA PAINT COMPANY, INC.

Sedgley Avenue & Venango Street

Established 1862 by Smith Bowen

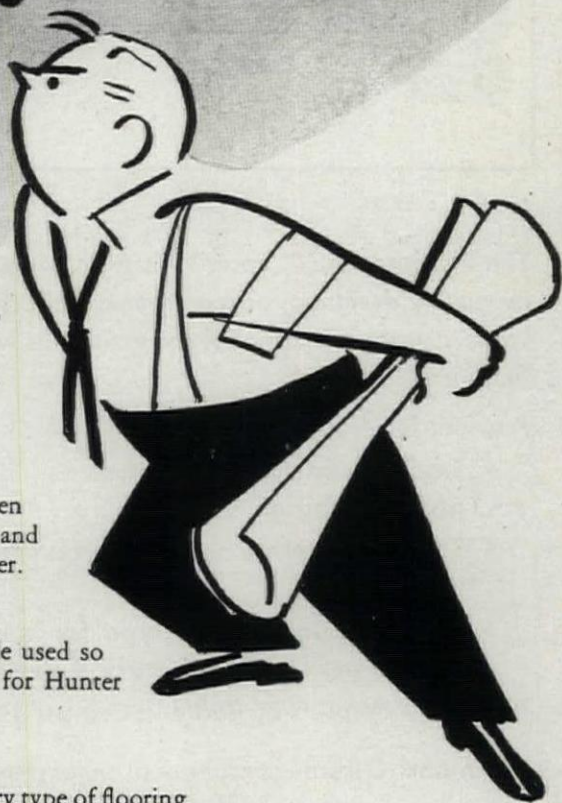
Philadelphia 40, Penna.

Member of Producers' Council

ROOF COATING • WATERPROOFING • DAMPPROOFING • SASH PUTTIES



Who says Kentile
is the best asphalt tile?



Well, the U. S. Government picked Kentile for the largest office floor area ever laid down—the entire Pentagon Building

Yeh? Which commercial office buildings have used it?

Pretty nearly every outstanding office building for the last ten years. Rockefeller Center put it in the first building erected—and then put it on every floor of every building put up thereafter.

But the Rockefellers don't have to worry about price!

No, but they buy pretty shrewdly. And why is Kentile used so often when material is bought on "low bid"—like for Hunter College, N Y., for instance?

Oh, that's not a scientific way to buy.

It's science you want? Bell Telephone tested every type of flooring for six months before picking Kentile for their Murray Hill Laboratory.

Laboratory stuff. I want practical tests.

Such as the selection of Kentile for A. & P. stores, Woolworth stores, Sears Roebuck stores, Walgreen stores—the list is terrific?

Well, they don't have any grease falling problem.

They do, and they use Greaseproof Kentile where needed—as likewise do Union News and Exchange Buffet restaurants.

Popular price chains. How about beauty and glamour?

You asked for it. Kentile was chosen by Tiffany for their store—and by such "decorated" spots as the Williamsburg Inn, Stouffer's Restaurant, Santa Anita Race Track.

Okay, okay, so now I know Kentile is the best.

But you don't know all the reasons why—and you should to be really informed. Why not ask any flooring contractor in the United States what Kentile's position is—or look at the Kentile catalogue in Sweet's. It tells the whole story. If you want an individual copy for yourself, it will be gladly sent upon request.

Just write

DAVID E. KENNEDY, INC.
57 Second Ave., Brooklyn 15.
30 No. Michigan Ave., Chicago 2, Ill.
Kansas City • Atlanta • Boston
Cleveland • San Francisco

(Continued from page 106)

for the combined housing projects for the second year than for the first."

The septennial inventory of Pittsburgh's housing agency (The First Seven Years, A Report of the Housing Authority of the City of Pittsburgh for the Years 1937-1944, September 1944; 63 pp., illustrations, tables, charts) makes good citizens' reading. It should gain considerable support for the Authority by its straightforward and attractive presentation. This interracial housing Authority has a good record but is well aware that its job has just started. Its report should aid in dispelling Pittsburgh's inertia toward adequate solution of postwar housing and planning problems. It also indicates the possibilities of expertly prepared literature for winning support.

The Vallejo Housing Authority in California has prepared an informative tenant's handbook. It is arranged simply in loose-leaf form and will be added to periodically. Utilitarian documents on this order are effective as another means of selling a housing program.

FOLK WISDOM OR FOLK LORE?

Home Ownership: Is it Sound? *John Dean. Harper & Bros., 49 East 33rd St., New York, 1945. 215 pp., appendices, foreword by Robert Lynd. \$2.50* *Caveat emptor* is as timely a warning in home buying as in any other consumer purchasing. Most actual or would-be home owners probably would welcome a special FTC serving their peculiar needs. Meantime, "Own your own home" is embedded in the folklore of capitalism. It is a homily overweighted with emotion and too rarely subjected to objective scrutiny. John Dean, a sociologist, has dispassionately dissected one of the most outstanding current bogies. He merely distinguishes between sound and unsound home ownership—but in that simple approach lies dynamite.

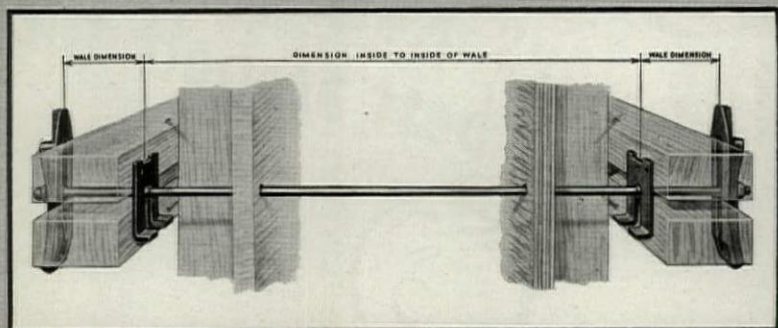
This analysis actually stacks up far better for those with a stake in the building market than they would suspect. His critical approach to the economics of house-buying does not mean a reduction of building activity. For one thing, he points up the tremendous potentialities of the market for rental housing, which in the preoccupation with home ownership has been ignored substantially. Inasmuch as only about 20% of private homes are architect-designed (the remainder mostly springing forth from stock plans) a scaling down of the overpadded home-owners' ranks would barely affect the architect. Dr. Dean's objective, sound ownership, though resulting in a numerically smaller market, would provide a far greater outlet for creative and functional design. The monograph is well documented. The

(Continued on page 110)

RICHMOND A. C. FORM-TYS

offer

Advantages for Architectural Concrete Wall Forms



Patent No. 2,222,339

The Richmond A. C. Form-Ty is a 3,000 lb. safe load tie unit especially designed for requirements of architectural concrete walls assuring dimensional correctness as well as architectural finish and

Provides for:

- Small clean hole (less than 1/4" diameter) for grout patching.
- Spreading action between wales to gauge wall thickness.
- Available in pull-out type for complete withdrawal or, 1 1/2" break back if desired.

Approved by Portland Cement Association

Richmond Offers—consultation on best types of forms and ties to be used for a given job; estimates on job requirements and recommendations on specific form problems. All of this is without obligation. Richmond's method of packing and shipping is a distinct service in itself.

Richmond Reusable Accessory Devices—known as "Working Parts," are furnished RETURNABLE FOR FULL CREDIT — no rentals charged.



Form-Ty Engineering Guide
on Request



RICHMOND SCREW ANCHOR COMPANY, INC.

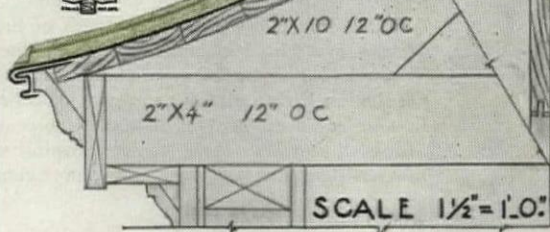
816 LIBERTY AVENUE, BROOKLYN, N. Y.
MANUFACTURING SINCE 1911





TYPIFYING the manner in which standing seam sheet copper roofing may be used over bays and entrances to impart both warmth and color, and to accentuate the structure's individuality.

Anaconda Copper

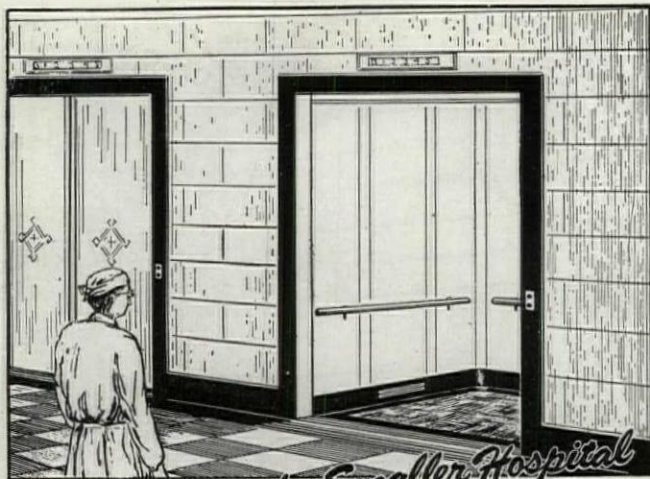


THE AMERICAN BRASS COMPANY, General Offices: Waterbury 88, Connecticut
 Subsidiary of Anaconda Copper Mining Company • In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.

4636

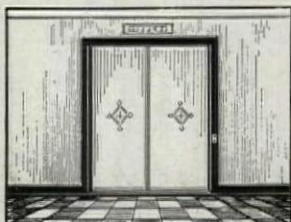
Reviews

(Continued from page 108)

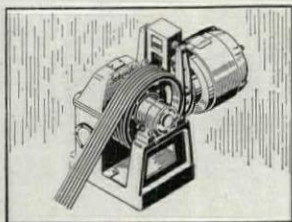


Designed for the Smaller Hospital

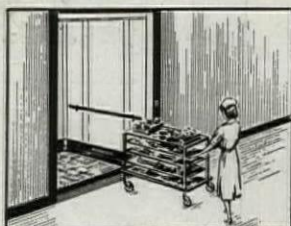
**TO SEE THE ELEVATOR OF TOMORROW . . .
LOOK AT SEDGWICK HOSPITAL ELEVATORS TODAY**



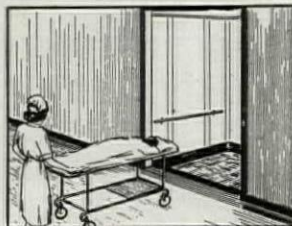
Modern design inside and outside. Sedgwick elevators become an integral part of the hospital.



Precision-engineered Sedgwick elevator machines are specially designed for hospital elevator service.



Sedgwick Hospital Elevators are ruggedly constructed to do many essential jobs.



Comfortably proportioned to accommodate stretchers, visitors or hospital personnel.

The new Sedgwick Electric Hospital Elevators are expressly designed for use in hospitals up to six floors where car speeds up to 150 feet per minute are required.

These multi-use Sedgwick elevators are made with three types of control. *One*—The Sedgwick simple, straight automatic push button control with dispatching buttons in the car for each landing and a call button at each opening, for operation without an operator or attendant. *Two*—Sedgwick's self-centering, manually operated lever-type car switch for those elevators to be run by an operator. *And three*—Sedgwick dual control which offers all the advantages of automatic floor stops and permits operation of the elevator with or without an operator by simply flicking a switch.

These are some of the advantages of Sedgwick Multi-Use Electric Elevators for smaller hospitals. There are many more. We would like to tell you about them. So if you have a perplexing lifting problem—present or postwar—tell us about it. Our engineers will be happy to help and show you how Sedgwick elevators solve smaller hospital vertical transportation problems through safer, surer, more economical operation.

Sedgwick MACHINE WORKS

164 West 15th Street, New York 11, N. Y.

facts marshalled by the author prove almost startling: for example, the true financial costs of home ownership as against paying rent mitigate strongly against the former for most individuals. In addition to being a valuable repository of the arguments of the anti-home-ownership school, it is a subtle and readable statement against the outmoded clichés of the pseudo individualism of an earlier America.

MODERN HOUSES FOR EVERY INCOME

A Million Homes a Year. *Dorothy Rosenman. Harcourt Brace and Company, Inc., 383 Madison Ave., New York, 1945. 333 pp., charts, tables. \$3.50*

In Mrs. Rosenman's own words, her book has "attempted to perform a blood chemistry of housing finance, a dissection of construction cost, an X-ray of land and land-development cost, a metabolism of real-property taxes." This statement succinctly reveals the volume's scope—and also the somewhat lyrical style maintained throughout.

It is intentionally a book for popular appeal—which seems good. It can make sense to Aunt Susie as well as the pedants and administrators. It is in many ways a crystallization of housing ideas at present in the wind. Dorothy Rosenman's vast experience with the housing movement is apparent on every page.

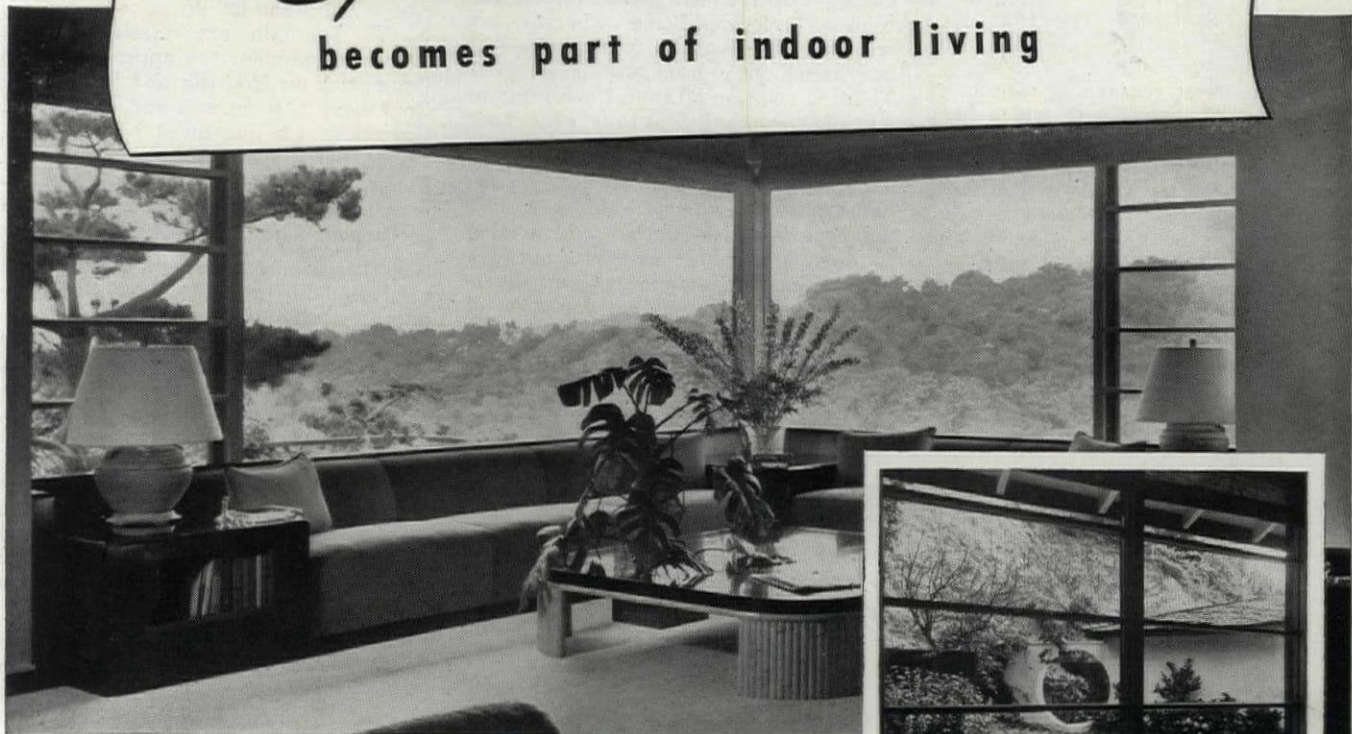
Three primary goals are singled out: the provision of homes at lower cost to bring them within the reach of family incomes under \$2,000; the stabilization of values; and the location of homes in "a convenient, prosperous, and pleasurable milieu." Recourse to what technology, business, and the government can do, separately and as partners, indicates the degree to which the aims will be realized.

The methods of reducing housing costs are examined from the angles of borrowed money, land and its improvement, construction and distribution, and property taxes. The section of the physical aspects of reducing building cost presents particularly interesting material not available elsewhere in such compact form. "No one of these cogs is in itself capable of effacing a sufficient percentage of the cost to produce the desired result."

The attainment of property stability and a favorable milieu are interrelated factors and depend largely on the planners and their tools. One cannot determine at which point the author steps from houser to planner. This also is to the good. Her broad approach is completely in step with, if not a bit ahead of, the house-neighborhood-community concept which has been gaining such widespread acceptance.

(Continued on page 112)

THE *Spaciousness* OF THE *Outdoors*
 becomes part of indoor living



California house by Architect Burton Schutt, A.I.A. of Bel Air, Calif. Polished Plate Glass and Thermopane, the new double-glass insulating unit, were used in this attractive home.



A feeling of spaciousness depends, perhaps, more on what the eye sees than on the actual size of the room.

A wall of glass lets the eyes roam. The room takes on the light, broad feel of the outdoors, is opened up to the beauty of gardens, flowers and views.

Designers of all types of houses are counting on *Daylight Engineering* to make rooms brighter, more livable... rooms flooded with healthful, cheerful, eye-saving daylight. And they're counting on *Daylight Engineering* to win a quicker "yes" from prospects, and greater satisfaction from home owners.

When you open up the walls with glass, you can provide extra comfort and heat saving by using Thermopane—the L·O·F windowpane that insulates. It's a worth-while feature to include in the houses you design or build.

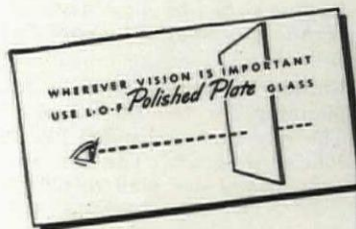
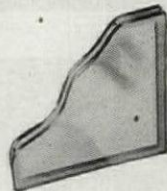
The benefits of Thermopane are described briefly at right. For full information, write for our illustrated Thermopane Book and for Data Sheets by Don Graf. Libbey-Owens-Ford Glass Company, 2375 Nicholas Building, Toledo 3, Ohio.

Thermopane...

the windowpane that insulates, makes big windows practical in any climate

Thermopane provides effective insulation because a layer of dehydrated air is hermetically sealed between its two panes of glass. Thanks to the patented Bondermetic Seal, used to prevent dirt and moisture infiltration, there are only two glass surfaces to clean.

This double-glass windowpane fits into a modified sash, just like a single pane of regular glass... stays in all year. It's the modern, practical way to provide the benefits of bigger windows, with assurance of winter comfort and heating economy. Available in Canada.



LIBBEY · OWENS · FORD

a Great Name in **GLASS**

Reviews

(Continued from page 110)

One of the most reassuring aspects of the book is the vigor with which Mrs. Rosenman hammers away at certain basic principles often given but passing attention. The important distinction is maintained between slum clearance and redevelopment on the one hand, and housing for slum dwellers on the other. A plea is made against the "marked neighborhood" whereby families of a certain income level, whether high or

low, determine completely the character of a significant proportion of residential land. The helter-skelter flight to the suburbs is deplored, and the wide possibilities of central city land are indicated. The frequently ignored limitations of American home ownership are treated. The desirability of a property tax based on present use is stressed. There is mention of almost every major housing proposal that has ever been seen.

This material is not particularly new; nor are the viewpoints expressed. The value lies in the author's invariably sound judgment, her ability to bulwark her case in each instance with an appropriate history as well as inspection of current theories.

HOUSING NOTES

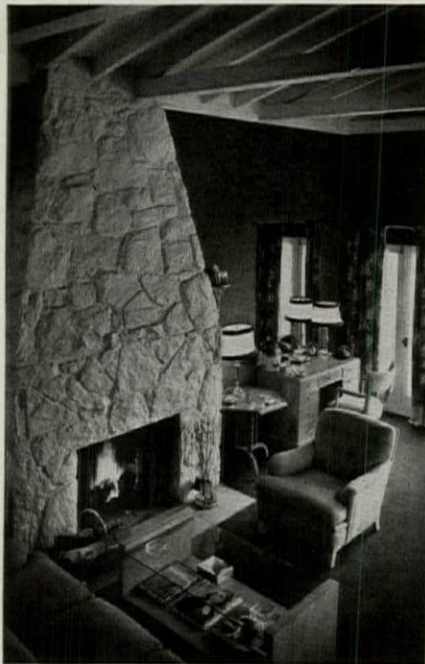
A useful compendium of housing legislation for New York State for 1945 has just been issued by the Committee on Housing of the Community Service Society, 105 East 22 St., New York 10, N. Y. The bills are classified in the following manner: (1) approved by the Committee on Housing and sent to the Governor; (2) opposed and sent to the Governor; (3) approved bills not enacted; (4) other bills not passed. The Committee gives its standards for determining whether or not a bill should be backed. The price is 10 cents.

A rather dramatic account of provision of shelter during the war has been prepared by NHA for use at the conference of the United Nations in San Francisco. (War Housing in the United States, National Housing Agency, Superintendent of Documents, Washington 25, D. C., 36 pp., 10 cents.) It is a non-technical resumé of the public and private housing erected since Pearl Harbor. Its particular usefulness seems to lie in the discussion of those communities created by exigencies of war, about which little information has heretofore appeared.

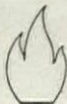
A Louisville bank president has proposed that the FHA insure mortgages on sound older dwellings on the same basis which has been applied to new homes. He distinguishes this problem from that of rebuilding the slum areas. It is his contention that such a scheme would encourage home ownership and tend to retard obsolescence. This proposal is examined in a symposium (Tomorrow's Town, National Committee on Housing, Inc., 512 Fifth Ave., New York, 18, N. Y.) in which the measure is given fairly close attention. As presented there, the plan reveals some major flaws. It does not recognize that structural and neighborhood deterioration cannot be treated piecemeal or that near-blighted areas require the same over-all vision a slum redevelopment project requires; that the market for buying and remodeling aged property is probably much over-rated (in fact, off-hand, it sounds like an unfortunate alternative for minority groups who have little choice other than to purchase the no-longer desirable houses of a more privileged class); that the complete desirability of home ownership may be unwarranted in the light of Mr. Dean's skepticism about home ownership (see above).

These 3 advantages come with

BENNETT Fireplaces

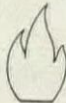


ADAPTABLE



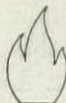
Simple and easy to fit into your plans for any kind of home—new or remodeled.

FLEXIBLE



Gives you unrestricted freedom to design the fireplace—any way you want it.

PRACTICAL



Provide homes with evenly distributed, circulating warmth—without smoke.

TWO TYPES AVAILABLE

FRESH-AIRE—Designed especially for tightly constructed, fully insulated, weather-stripped homes. Special intake draws fresh air from outdoors.

WARM-AIRE—Recommended particularly for homes that are not fully insulated and weather-stripped. Intake draws cool air supply from indoors.

Both types supply evenly distributed, circulating warmth—without smoke.

Send for Fireplace Catalog—or see Sweet's

Bennett-Ireland

745 CEDAR STREET, NORWICH, NEW YORK



PLANS, PLANES, PHOTOS

Reviews by Margaret Greenough King

You Have a Stake in the Future of Buffalo: Prepared and published by the Buffalo City Planning Association, Underhill Building, 158 Pearl St., Buffalo 2, N. Y.

Buffalo has approached the problem of planning for the future with realism. The city first assembled its goals as a concise program. The major objectives are: a land use plan to balance better

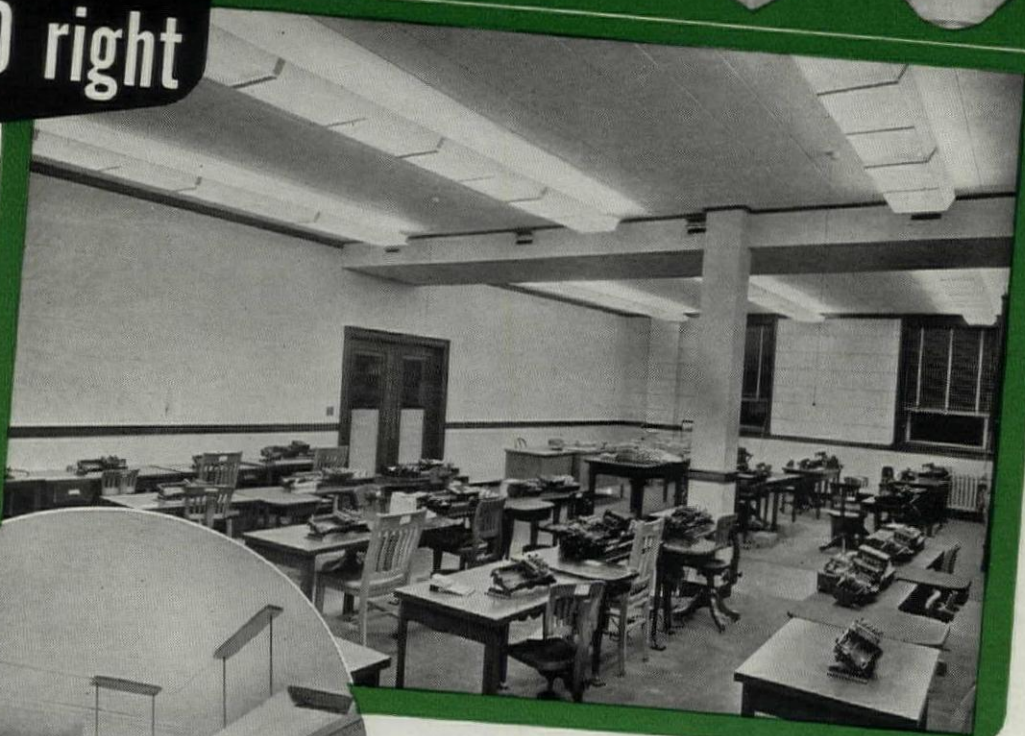
(Continued on page 114)

CHOOSE FLUORESCENT OR INCANDESCENT LIGHTING

DESIGNED right
APPLIED right



High-level illumination of 50 footcandles or more is recommended for office work. When Westinghouse Fluorescent Luminaires were installed in this tabulating room, they provided efficient lighting, free from annoying shadows, and tabulations increased 12% by actual count.



Private Office—a difficult lighting problem solved by coordinating desk and luminaire layouts. Maximum seeing comfort is provided with 85 footcandles on the worktable after 1000 hours burning.

You get BOTH in Westinghouse *Lighting*

Soundly engineered equipment is vital to good lighting. So is correctly engineered application of that equipment to your specific requirements. You need BOTH. You get both from Westinghouse.

With correctly designed Westinghouse luminaires, you get maximum illuminating efficiency with minimum maintenance expense . . . and at no sacrifice in appearance. Of equal importance, with Westinghouse, you also have available the advisory services of thoroughly qualified lighting engineers in applying this equipment. Where unusual conditions must be overcome, these men bring to your lighting problem vast Westinghouse experience gained in the pioneering of standards and principles now widely accepted throughout the lighting industry.

Both these phases of good lighting—*right* DESIGN and *right* APPLICATION are available to contractors, architects and users through Westinghouse distributors. Get in touch with the distributor nearest you or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

J-04033



Westinghouse
LIGHTING EQUIPMENT

AVAILABLE THROUGH 117 WESTINGHOUSE ELECTRIC SUPPLY
COMPANY OFFICES AND INDEPENDENT DISTRIBUTORS

Reviews

(Continued from page 112)

the business, industrial, and residential areas; a throughway for express traffic; waterfront reclamation; rehabilitation of blighted areas; recreation and public buildings.

To suit action to its program, the Planning Association chose five tracts of land exemplifying most of the above needs. Five teams of professionals developed layouts for these areas. Publication of the layouts and the association aims is now undertaken to enlist

financial support for further study of one or more of these tracts, to a point where definite costs can be determined. Joint activity by the late Dr. Walter Curt Behrendt, the Planning Research Station, and the University of Buffalo has resulted in the establishment of a City Planning Commission. Buffalo was fortunate to have Dr. Behrendt's aid in its planning.

Memorandum on Urban Planning: Report of the Post War Planning Committee, Washington, D. C., Chapter, A.I.A. January 1945.

In 1942 this chapter of the A.I.A. formed a special Post War Committee to examine the problems of urban plan-

ning. The aims were "to stimulate the interest of architects in problems of urban planning," and "to encourage the type of architectural training that will better equip the architect to contribute to urban planning."

It is suggested that growing interest in planning may be charted through the increasing number of publications on the subject. Budgets for planning also have been increased by sixty percent between 1941 and 1943, in larger cities, and by nearly one hundred percent in small communities.

Definite statements of policy crystallize the work done by this committee. Planning must be democratic, initiated by the people of the community, and submitted to the people (even though this may create waste and lack of continuity). Technical aid should be given by state and federal governments but, as far as possible, their interference in local planning should be avoided.

The entire urban area must be planned at one time, with a schedule permitting orderly evolution. Each area must establish its own goals with foresight to anticipate state and national influences on location of industries and movements of population. Following careful research as to existing conditions and goals, a planned schedule of action must be prepared. A centralized official agency, preferably an integral part of the local government, must be in charge of this work.

Citizen participation and dissemination of planning information should come about through cooperation by all representative citizen organizations.

Approved State and Municipal Projects: New York State Postwar Public Works Planning Commission, State and Municipal Projects.

By law, this exact record of the progress of the design of all approved projects must be available to officials and the public at all times. Such a compilation has been published before, each issue being a larger booklet and making an impressive report of the activity of the Commission.

Community Airports and Airparks: Esso Aviation Products, Aviation Division, 26 Broadway, New York 4, N. Y.

With an eye to accommodations for the small individually-owned plane, the Esso Company has published this excellent "small airport" primer. All material has been "reviewed and approved" by the Editorial Board, National Aeronautics Association.

Although commercial aviation will initiate tremendous postwar developments, it is apparent that the private ownership of small planes will have an effect comparable to that of the automobile on the structure of cities, towns, and rural areas. The effect of this increased private ownership upon economy and the location of centers of trade is as unpre-



The Barcol OVERdoor for Residence Garages

With the withdrawal of limitation orders, the manufacture of Barcol OVERdoors for general residence use is again possible, subject only to priority orders and the availability of materials and manpower. Frankly, we have on hand a considerable volume of priority business and material of satisfactory quality is hard to find, so it will not be practical for us to start immediate delivery of Barcol OVERdoors in quantity on unrated orders. We are, naturally, doing everything we can think of to overcome these handicaps and have hopes of an early solution. In the meantime, we welcome your inquiries and will be glad to *accept your orders* if you are willing to place them on a when-possible basis. There are a lot of residence garages, present or planned, that can use Barcol OVERdoors to good advantage, and we want to see that they get them as soon as possible. *For detailed information, see your Barcol representative.*



BARBER-COLMAN COMPANY

100 MILL ST.

• ROCKFORD, ILL.

(Continued on page 116)

The Elevator that's Pushed Up STREAMLINES BUILDINGS...REDUCES COSTS



Oilraulic Elevators

REQUIRE NO PENTHOUSE, NO HEAVY SIDEWALL STRUCTURE, NO SPECIAL MACHINE ROOM

You can streamline your building designs and, at the same time, make sizeable savings in construction costs. How? By specifying Oilraulic Elevators for 2, 3 or 4-story structures.

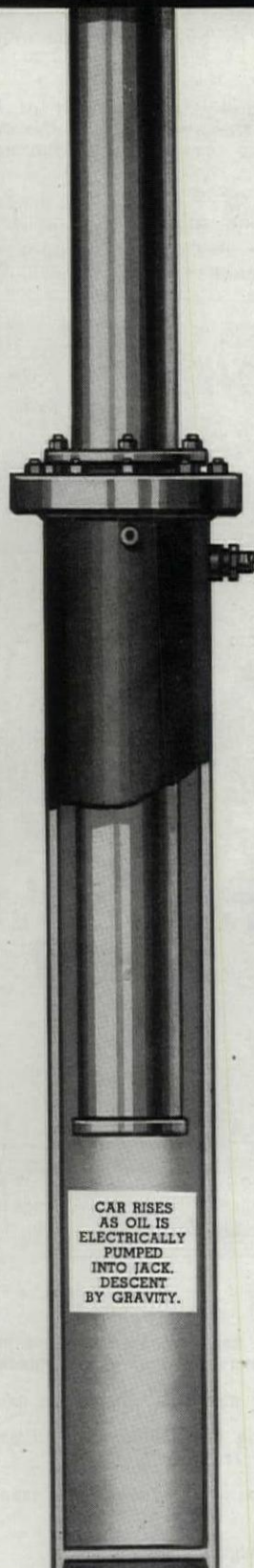
Because this modern elevator is pushed up from below (not pulled from above) there's no need for costly, unsightly penthouses or for heavy load-bearing supporting columns. And no special machine room is required with an Oilraulic Elevator . . . the compact power unit can be located in any convenient space.

It's Done by Hydraulic Power

The elevator car (for freight or passenger service) is raised by a powerful hydraulic jack, as shown at right, powered by an electric oil pumping mechanism. Initial cost is low. Operating cost is low too . . . power used only when elevator rises, descent by gravity. And there's little maintenance expense, even after years of service.

The operation of the Oilraulic Elevator is hydraulically smooth...no abrupt starts or stops. Landing stops are accurate to within 1/4 inch, plus or minus—most important on freight elevators because of the increased use of powered vehicles for material handling.

The coupon at the right will bring you complete information and Architect's Preliminary Layout Data on Oilraulic Elevators.



Rotary

Oilraulic Levelators

ELIMINATE NEED FOR RAMPS AND LOADING DOCKS. MAKE BUILDINGS MORE EFFICIENT

Oilraulic Levelators fit right in with the trend to functional and integrated design in postwar industrial and commercial buildings. They save plant space and streamline structures by eliminating ramps and loading docks. Increase building efficiency by speeding up traffic.

Everything on the Same Level

With an Oilraulic Levelator loads up to 50,000 pounds can be raised directly from the plant floor to trucks, freight cars, or different building levels. Levelator car, when down, becomes a part of the floor and can be trucked over. The plant floor can be poured at grade instead of at railway car or truck bed height—a real cost saving!

Owners approve Oilraulic Levelators because operation is fast, safe, dependable, and economical. Car rises quickly and smoothly as oil is forced into powerful hydraulic jack by a simple electric pumping mechanism (or by available compressed air). Installation simple.

Use the coupon below to request Catalog RE-201 showing the use of Oilraulic Levelators in various types of structures.



MAIL FOR A. I. A. FILE LITERATURE

ROTARY LIFT COMPANY
1035 Kentucky, Memphis (2), Tenn.
Please send Catalog RE-301 on Oilraulic Elevators Catalog RE-201 on Oilraulic Levelators to:

NAME.....
ADDRESS.....
CITY.....STATE.....

OILDRAULIC ELEVATORS - LEVELATORS

Reviews

(Continued from page 114)

dictable as it was when the automobile first appeared to shorten distances.

Types of planes to be used by individual owners include the small two- to four-seater in use before the war, the helicopter, and a proposed model with collapsible wings which will be usable on highways.

Recommendations include: membership needed for an efficient airport commit-

tee; aspects of site choice; typical runway layout and building markings; equipment for the airport's sources of revenue.

The information contained in this booklet is not specific enough to warrant its use as a handbook, but it has considerable value as a presentation of the basic factors in planning a community air facility.

Photography in the Study of Design: By L. Moholy-Nagy. Reprinted from the 1945 *American Annual of Photography*.

Moholy-Nagy, president of the Institute of Design, Chicago, writes of the increasing uses for photography and describes methods of teaching the develop-

ment of photography as an art form, as opposed to its familiar use as a medium for recording and reporting. He feels that photography's working rules are not yet frozen into "unalterable dogmas" which would restrict it as an art form.

Photography without the camera, using the photogram, he advocates to exploit the full range of tonal values, leading to experiment with the interplay of light and the study of forms. Much of this work is being done at present at the Institute of Design.

Periodicals

Reviewed by Maude Kemper Riley

THE ARCHITECTURAL REVIEW

45 The Avenue, Cheam,
Surrey, England
April 1945

Some sort of citation for excellence of publication should go to the *Architectural Review* for its April special issue entitled "Electricity in its Regional Setting," a fifteen-article study of power potentialities in the British Isles, prepared for the magazine by the Association for Planning and Regional Reconstruction. The practical idealism of TVA Chairman Lilienthal (U.S.A.) is felt to hover over British concentration of thought upon this vital problem: Britain's discrepancy between power required and power generated.

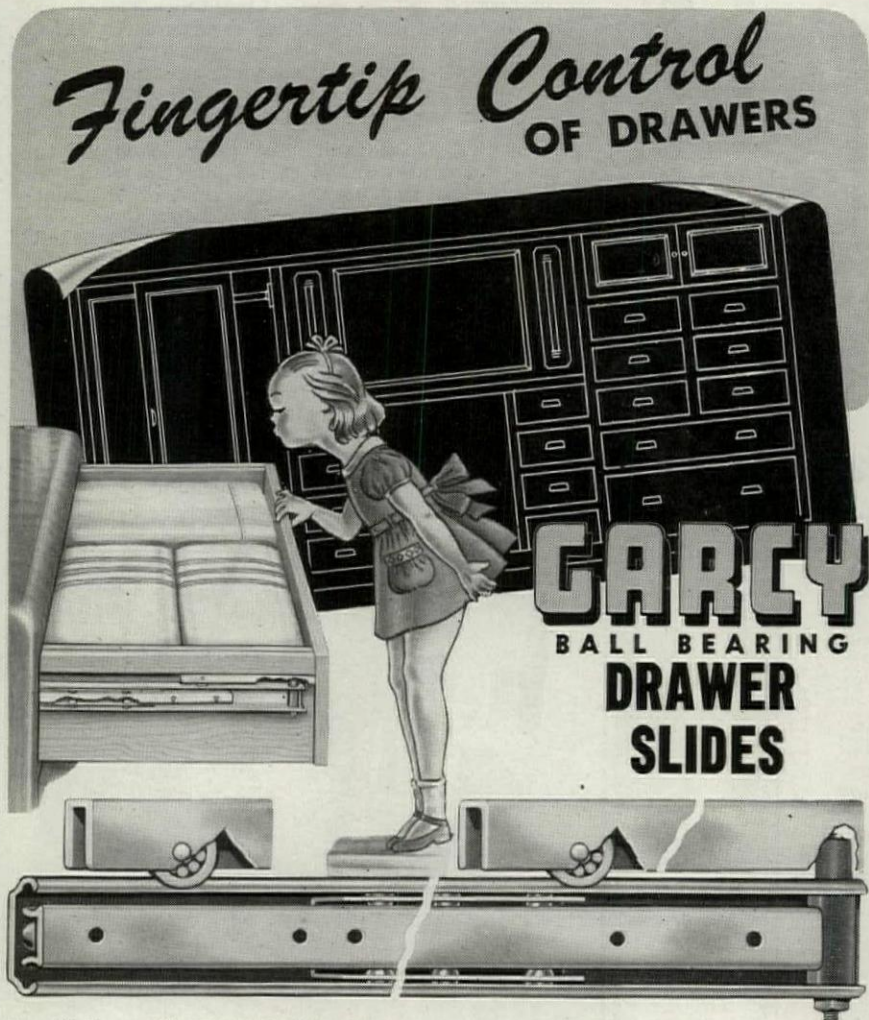
"If we fail to solve the problem, posterity may have no alternative but to buy outside—coal and oil from lands more abundantly endowed, electricity perhaps by some improved type of submarine power cable from Scandinavia," states the introductory article. Survey, followed by Plan, is the modern technique for meeting colossal questions such as this. In stating existing conditions and in offering their expert advice for best ways of unlocking the present deadlock, the writers (all of them British) who contribute to this series may be said to have made the "Survey." One more courageous step should achieve the "Plan." The articles are accompanied by beautiful and pertinent photographs and by diagrams, maps, and charts of resources and present exploitation of same. It is to be hoped that this issue is enjoying wide circulation in the land of its origin, as well as among all industrially progressive peoples.

THE ARCHITECTS' JOURNAL

45 The Avenue, Cheam,
Surrey, England
April 5, 1945

In condensing John Hersey's article on the Plan for rebuilding once-stately Leningrad (*Architectural Forum*, Dec. 1944), *The Architects' Journal* points up Chief Architect Baranov's views on contemporary design, observing that "if

(Continued on page 118)



No. 361 drawer slide illustrated. Other types available for every drawer or shelf slide-out problem.

Tomorrow's homes will have more drawers than ever. Will they be the kind that stick and jam, fall out and strew their contents over the floor? Not if you specify inexpensive, easy-to-install GARCY drawer slides, the slides that keep drawers rolling smoothly and effortlessly, defying time and weather.

- Even wide, heavily loaded drawers pull out at a touch. No sticking or jamming.
- Ball bearing action . . . smooth and quiet.
- Drawers pull out all the way. All contents easily reached.
- Drawers easily lifted out, but cannot fall out.
- Standard lengths from 15" up.

FOR COMPLETE DRAWER SLIDE DATA — ASK FOR BULLETIN 39-30

GARDEN CITY PLATING & MFG. CO., INC.
Ogden Blvd. & 5. Talman Ave., Chicago 8, Ill.



IN THE DINING ROOM—Panels of Insulux bring the blessed sunshine in yet keep prying eyes out.

Sunshine and Light

MANY of the homes of tomorrow are sure to display lustrous, light-flooded panels of Insulux Glass Block.

And here's why!

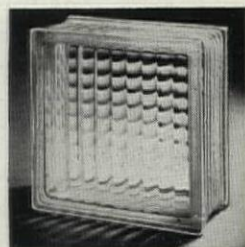
Panels of Insulux transmit and diffuse light better than ordinary construction yet provide privacy along with light.

Furthermore—panels of Insulux reduce heat loss and condensation.

And they're easy to clean and to keep clean.

Panels of Insulux can be used to brighten dark corners all through the house—to add new beauty to an entry way, kitchen, dining room or bath.

For technical data, specifications, and installation details, see our section in Sweet's Architectural Catalog, or write: Insulux Products Division, Dept. B-43, Owens-Illinois Glass Co., Toledo 1, Ohio.



Insulux Glass Block is a functional building material—not merely a decoration. It is designed to do certain things that other building materials cannot do. Investigate!



← **IN THE KITCHEN**—Panels of Insulux flood the work counters with natural daylight.

IN THE BATHROOM—Panels of Insulux are easy to clean and provide complete privacy along with light. →

OWENS - ILLINOIS
INSULUX
GLASS BLOCK



See, Feel, and Hear Why HI-DENSITY LEAD

Improves Blueprint Reproduction!

There's a vast difference in drawing pencil leads these days—which you'll see...feel...and hear when you meet up with HI-DENSITY Microtomic "Van Dyke". See how sharp and clear-cut it draws...how its greater opacity brings out fine details free of fuzz and smudge. Feel its added strength that enables you to rule uniformly dense lines with less pressure...fewer sharpenings and easier erasures. Hear how smoothly it glides over work without scratching or rasping. Say Microtomic "Van Dyke" to your accredited "Van Dyke" dealer. It's a start toward improved blueprint reproduction.

MICROTOMIC VAN DYKE

DRAWING PENCILS

The EBERHARD FABER Drawing Pencil in 18 degrees, 7B to 9H—plus 6 degrees with special Chisel Point Leads.

EBERHARD FABER

LEADERSHIP IN FINE WRITING MATERIALS SINCE 1849

Reviews

(Continued from page 11)

Wright and Le Corbusier were dominate, then Moscow, Leningrad, Paris, Washington, and New York would all look exactly alike." In searching for a worthy contemporary style Baranov specifies "heroic and glorious enough to be worthy of Leningrad heroic and glorious defense." Reconstruction of the city is already well under way.

Report by the Housing Committee of R.I.B.A. acknowledges a shortage of timber not likely to be met with imported materials and labor on hand, estimates these to be sufficient to meet the goal of 200,000 houses completed in five years. Bricks, cement, plaster, roofing tiles, and insulation materials, plumbing and cooking units, structural steel (also for window frames), aluminum (if it can be produced cheaply) are to be the working materials. Labor enough will be trained. Regional Councils will be established clear permits and to adapt general standards to local conditions.

Astragal points out that folks in Russia and Sweden build their own homes from simple plans and materials. Britishers can, too.

JOURNAL OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

66 Portland Place, W.1,
London, England
March 1945

The Ministry of Works devised a salvage Scheme in 1941 to save damaged historic buildings from complete destruction after enemy action. Some a cloister could be supported by stanchions and buttresses; a housefront seal prevent further damage to an historic interior; or, when the facade threatened to cave in, the main features of the building could be removed and saved. Many odd findings have resulted from this activity. Medieval houses uncovered at Southampton, for instance, prompted a program to reconstruct the original plan of the medieval town. At All Hallows, Barking, a cross-shaft was found, to which antiquarian importance is attached. Archeologists are on the alert in London to Pompeii to recognize, and expose, relics of even older civilizations than those historic spots so readily destroyed.

JOURNAL OF THE ROYAL ARCHITECTURAL INSTITUTE OF CANADA

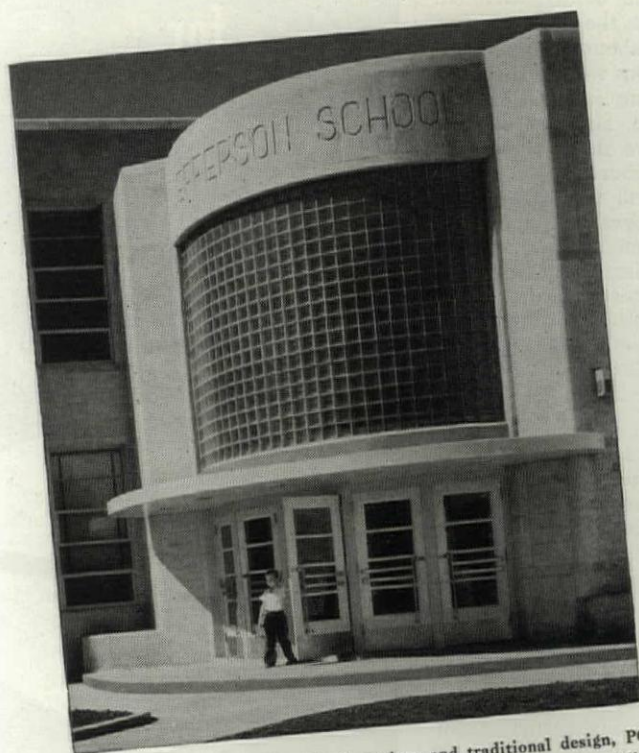
57 Queen Street West,
Toronto, Canada
April 1945

This issue of the Journal is devoted, usual, to the work of schools of

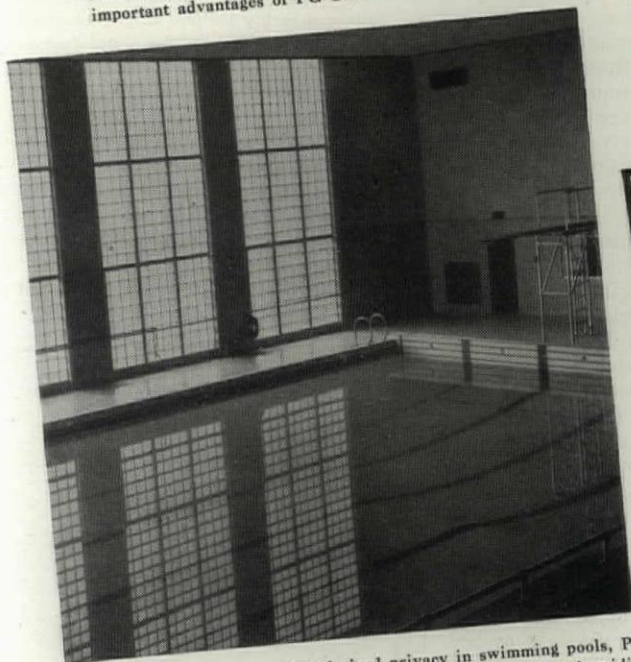
(Continued on page 12)

FOR SCHOOLS

more light.. beauty.. comfort.. economy



IN SCHOOL BUILDINGS of both modern and traditional design, PC Glass Blocks lend a new note of beauty and distinction. Floods of diffused daylight keep corridors, stairs, exits safe for hurrying pupils and teachers. Less dirt-infiltration—quicker, easier cleaning—are other important advantages of PC Glass Block construction.



IN ADDITION to maintaining desired privacy in swimming pools, PC Glass Block construction also withstands the constant warm humidity which frequently causes ordinary sash materials to rot, check, warp, rust and need constant repainting. For other large lighting areas, such as those needed in gymnasiums, auditoriums, playgrounds, stair wells and halls, freedom from repairs, replacements and maintenance, quick and easy cleaning, make the use of PC Glass Blocks a positive economy.

with PC GLASS BLOCKS

THE growing demand for PC Glass Blocks is due mainly to their ability to do so many things so well.

They direct diffused daylight over wider areas. They add a distinctive note of beauty to both modern and traditional plans. They preserve privacy. Their insulating qualities help to maintain desired temperature and humidity, to lessen condensation. They are unusually free from repairs and maintenance. They reduce cleaning costs. No other building material equals their versatility in these respects.

In large cheery classrooms, all pupils share the generous supply of natural light when PC Glass Blocks are used. They direct diffused daylight to remote desks where it is needed most. Pupils are more attentive because distracting outside sights are excluded, disturbing noises are deadened by the panels of PC Glass Blocks.

You can confidently specify PC Glass Blocks for many and varied uses in school buildings, as well as in homes, factories, mill and offices, hospitals and other institutions. Pittsburgh Corning Corporation, Room 748, 632 Duquesne Way, Pittsburgh 22, Penna.

Also Makers of PC Foamglas



GLASS BLOCKS

Distributed by

PITTSBURGH PLATE GLASS COMPANY

and by W. P. Fuller & Co. on the Pacific Coast

**PITTSBURGH CORNING CORPORATION
632 DUQUESNE WAY, PITTSBURGH 22, PA.**

Now is the time to make sure that you are fully informed about PC Glass Blocks. The need for new school buildings and for modernizing present buildings will undoubtedly bring a flood of business to the country's architects. Write today for technical and descriptive data, which includes the full line of shapes, sizes and patterns in PC Glass Blocks and complete information on how to use and install them. Pittsburgh Corning Corporation, Room 748, 632 Duquesne Way, Pittsburgh 22, Penna.

Hillyard FLOOR TREATMENTS

SAVE



Hillyard Floor Treatments SAVE all types of floors in every type of Institution . . . they are Uniform, Dependable, and Economical, and bring out the natural beauty of every type floor.

Send for our new FREE book "Floor Job Specifications" full of helpful hints on economical floor maintenance.

**THE
HILLYARD
COMPANY**

DISTRIBUTORS

Hillyard Chemical Co.
St. Joseph, Mo.

Reviews

(Continued from page 118)

ture in Canada. Pertinent introductory remarks by the editor, Eric R. Arthur, remind that the professor of architecture is now about to commence his most grueling war work—with end of term and beginning of term coming simultaneously. Also, summer courses and night courses are the order of the day. The present shortage of newly trained architects and the urgency of increasing the numbers are made obvious by the statement that, in all Canada, only 20 students will graduate from schools of architecture this spring. School work illustrated is from the architectural schools of McGill University, University of Toronto, University of Manitoba, and the Ecole des Beaux-Arts in Montreal.

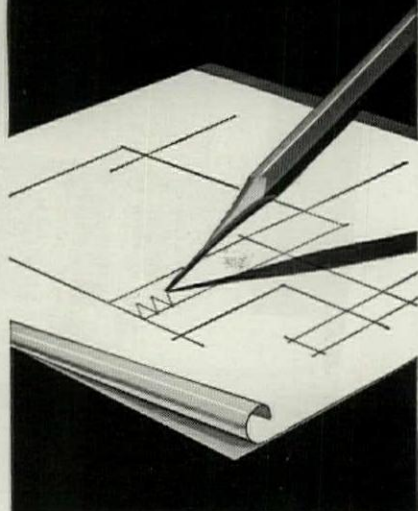
An article by Francis Henry Taylor, director of the Metropolitan Museum of Art, dealing with the extent of Nazi-dealt damage, destruction, and loot of historic buildings, monuments, and famed collections of art in Europe, will be of interest to all architects and to scholars of antiquity. This article, reprinted from *Atlantic Monthly*, corrects the impression given by a daily newspaper which interviewed Taylor in September, 1944, on his return from France and England, where he went as a member of the American Commission for the Salvage and Protection of Historic Monuments in War Areas. The *Herald Tribune* quoted Taylor as saying that "not a single painting or sculptured work of national importance is missing from France." While those in the know credited Taylor with meaning that all national collections were found intact, the inference that private collections were of little, or much less, artistic importance caused bitter comment among our art dealers, many of whom had lost their foreign collections to Goering's omnivorous freight trucks. "How long would it take," they protested, "to ascertain that every art work of importance, supposed to be in New York, were here and safely in the hands of its rightful owner?" Estimates seemed to be two years as minimum. (Taylor was in France only a week or two.) But he explains that "the private collections of France no longer exist . . . The Germans tried assiduously to cloak their thievery with some form of legal fiction." The experts' biggest headache lies ahead: to untangle the "sales under duress," and to track down some of the world's finest paintings, once privately owned.

LIFE
Rockefeller Center
New York, N. Y.

Life gives 25 pages to a portfolio of ideas for Home Planning. Prefabrica-

(Continued on page 122)

TRACING CLOTH for HARD PENCILS



● Imperial Pencil Tracing Cloth has the same superbly uniform cloth foundation and transparency as the world famous Imperial Tracing Cloth. But it is distinguished by its special dull drawing surface, on which hard pencils can be used, giving clean, sharp, opaque, non-smudging lines.

Erasures are made easily, without damage. It gives sharp, contrasting prints of the finest lines. It resists the effects of time and wear, and does not become brittle or opaque.

Imperial Pencil Tracing Cloth is right for ink drawings as well.

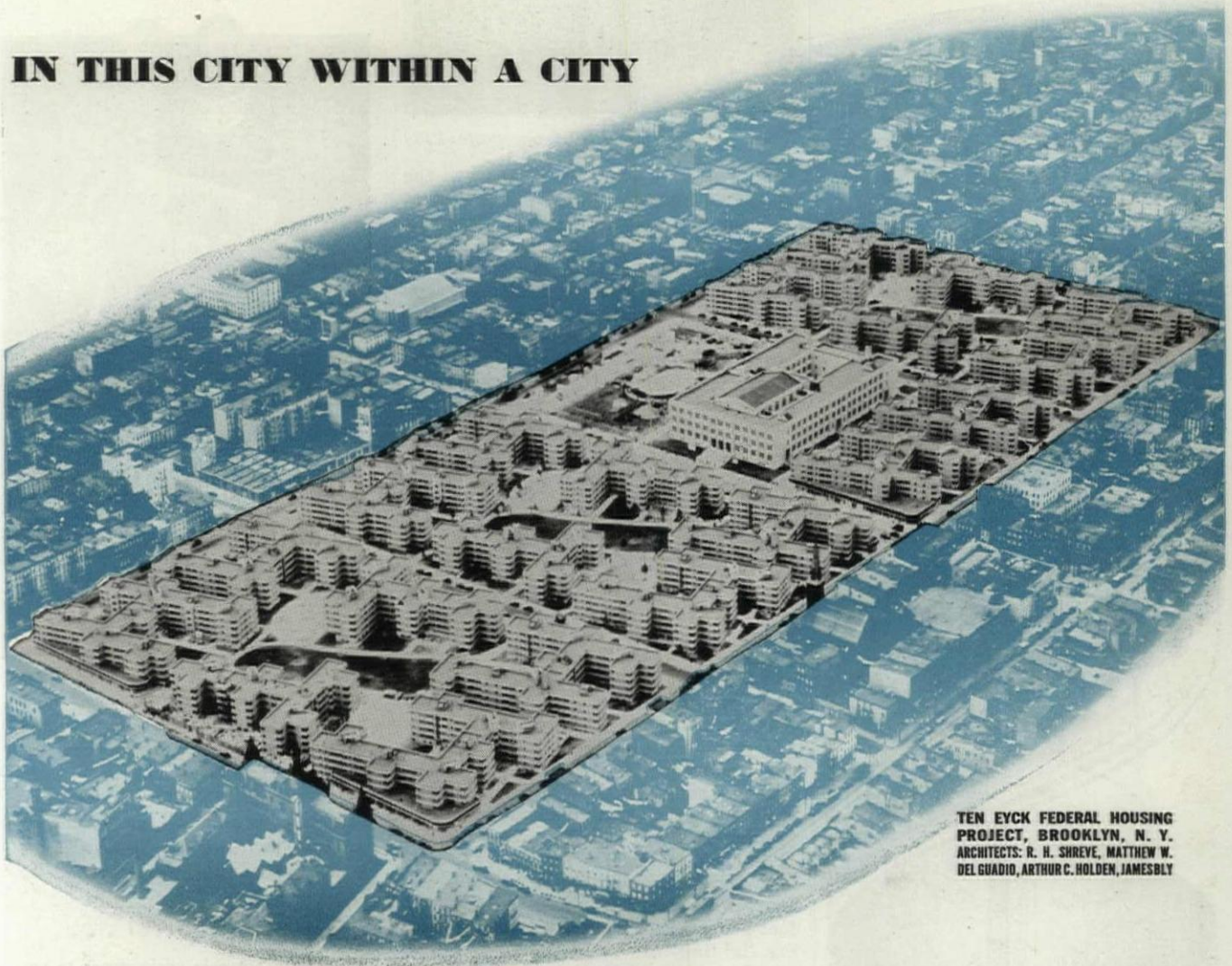


**IMPERIAL
PENCIL
TRACING
CLOTH**

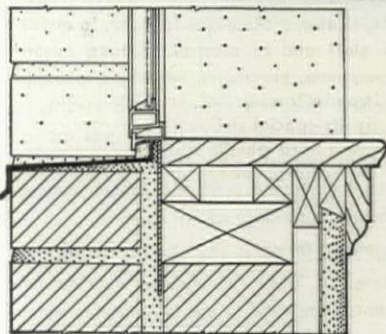


SOLD BY LEADING STATIONERY AND
DRAWING MATERIAL DEALERS EVERYWHERE.

IN THIS CITY WITHIN A CITY



TEN EYCK FEDERAL HOUSING PROJECT, BROOKLYN, N. Y.
ARCHITECTS: R. H. SHREVE, MATTHEW W. DEL GUADIO, ARTHUR C. HOLDEN, JAMES BLY



TYPE "A" ALUMINUM SILL
One of many standard Alcoa sills

every window has an Alcoa Aluminum Sill

Easy to install, neat in appearance, low on upkeep—good reasons for using Alcoa Aluminum window sill on this and many other projects before the war. Convincing arguments for continuing their use as they again become available.

Their light weight makes handling easy. One man can set Alcoa sills. Sections are thin, permitting sills to be extended into the masonry, making tight joints. Aluminum needs no protective painting to safeguard it against the weather.

As aluminum is released for civilian uses, sills will again be stocked in convenient warehouses around the country. Plan on including Alcoa Aluminum sills in the residences and buildings you are now planning. Send for your copy of the booklet "Sills and Copings of Alcoa Aluminum". ALUMINUM COMPANY OF AMERICA, 2198 Gulf Building, Pittsburgh 19, Pennsylvania.

Section Number	A	B	C	D	E	F	Wt. Per Foot
18053	3 1/2	3	1 1/8	1 9/16	3/16	3/16	.692
18054	4	3 1/2	1 1/8	1 19/32	3/16	3/16	.768
16754	4 1/2	4	1 1/8	1 1/2	1/4	3/16	.844
18971	5	4 1/2	1 1/8	1 21/32	9/32	3/16	.919
18055	5 1/2	5	1 1/8	1 11/16	5/16	3/16	.992
18972	6	5 1/2	1 1/8	1 23/32	11/32	3/16	1.067

ALCOA FIRST IN ALUMINUM



Reg. U.S. Pat. Off.

Reviews

(Continued from page 120)

tion is again the main theme, the thought being that costs can be kept down and improvements made on existing awkward and insufficient houses with the purchase of units such as baths, garages with adequate storage and workshop areas, added bedrooms. *Life* and the *Architectural Forum* asked seven architects to submit designs. Best of them are shown by photographs of scale models or full-size construction; some are shown in color.

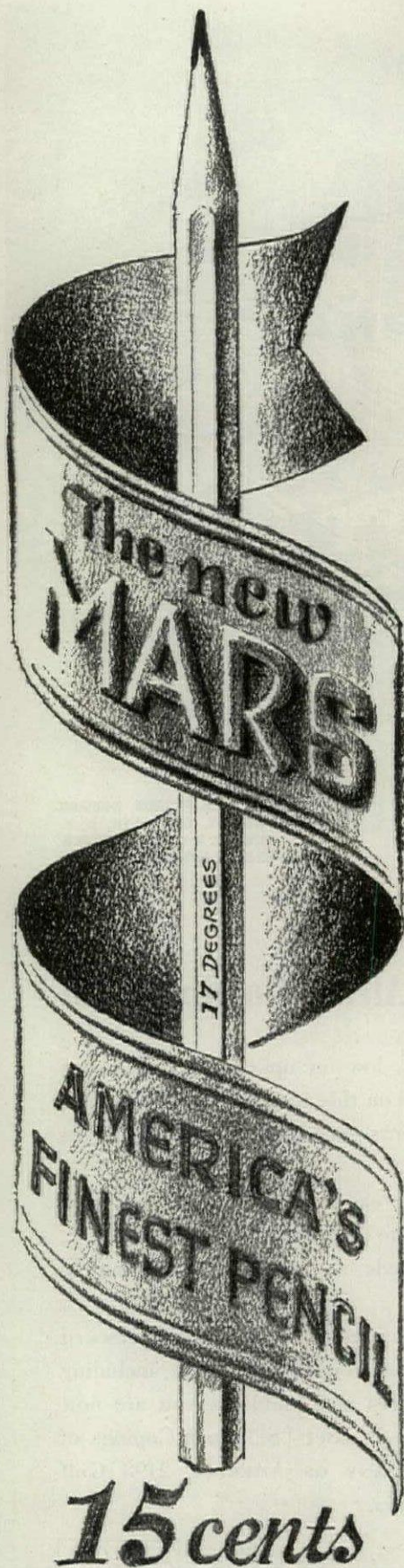
An "in-line bathroom," occupying a space 2'10" x 13', to be installed along the wall of any bedroom, provides separate stall shower and dressing compartment, lavatory, toilet, with storage spaces for linen and toilet articles. This design, by George Kosmak and Ruth Gerth, and Kosmak's "corner lavatory" which can go anywhere in the house, will no doubt have the greatest number of takers, if put into manufacture. The "3-passenger bath" designed by Morris Ketchum, Jr., and Jedd Stow Reisner for families that must dress at the same hour—a luxurious though closely spaced 3-compartment unit—may be installed in the center of an upstairs needing an extra bath and able to spare 11 square feet. This and the "in-line bathroom" are ventilated by exhaust fans. Warm colors, plenty of mirrors, foot-pedal water controls, indirect ceiling lighting, are some of the features of this communal bath.

Of suburban intent are the other designs. The "indoor-outdoor living room," by Samuel A. Marx with Noel L. Flint and C. W. Schonne, Associates, is of no great interest beyond its main feature—the glass front—which is a matter of owner-taste. "Everyone will want to spend more time out-of-doors," the planners surmise. But Allmon Fordyce's "living-kitchen" is a masterpiece of ingenuity that supposes a monied and servantless family of good size to whom dining, conversation, pursuit of hobbies, firelight, and sunshine are best when taken simultaneously and within sight of all. Partitions are never complete, laterally or vertically.

The "storage-garage" by John Funk is also a suburban dweller's dream come true with well lighted spaces for work-bench; fitted storage lockers opening two ways for bicycles, trunks, toys, rakes and rollers, garden chairs, etc. A trellised gardening shed adjoins. May be built of wood, brick, or cheap cement block.

Life actually built two additional bedrooms on a house in Tarrytown from the "convertible bedroom" design of Malcolm Graeme Duncan. It allows two youngsters, sharing a bedroom, to separate their new 11' x 15' space with a

(Continued on page 124)



15 cents

"DEMAND THE BEST!"

J. S. STAEDTLER, INC.

53-55 WORTH STREET
NEW YORK, N. Y.



The better way to mount photos, drawings and other valuable papers...

Try SUPERGRIP 50, the synthetic rubber cement with a superior grip that remains unchanged. The SUPERGRIP bond defies oxidation not only at normal temperatures but even when tested in an atmosphere of almost pure oxygen. This changeless adhesion is without injury or change to photo or to mount. SUPERGRIP'S thin, clear film does not stain or wrinkle, and any excess can easily be removed by rubbing with the finger, as with rubber cement.

It grips better...

SUPERGRIP not only sticks paper to paper; it also sticks paper to wood, to metal, to glass and to plastics. Artists, advertising men, architects, engineers, photographers, teachers—anyone who mounts—need "mourn no more" for pre-war rubber cement because this recently developed but fully tested synthetic rubber cement has many advantages all its own.

SUPERGRIP 50 is the civilian brother of scores of highly specialized wartime cements developed in our laboratories which are one of principle sources of special industrial adhesives. You can buy and use SUPERGRIP 50 in full confidence of satisfactory performance of its specified uses. SUPERGRIP 50 is available in photo supply and stationery stores, in 4 oz. bottle (with brush) and in pint, quart and gallon containers.

Look for this trademark on label—

Supergrip
CEMENT 50

BB

CHEMICAL COMPANY

781 MEMORIAL DRIVE, CAMBRIDGE 38, MASS.

QUICK QUIZ:



Are you in a fog about the future?

Is it a question of:

Securing air conditioning or refrigerating equipment that represents the greatest value for the investment?

Obtaining equipment that will most satisfactorily fit the job?

Selecting equipment that will

keep operating and maintenance costs to a minimum?

Being certain of controlling air conditions with dependability?

Selecting a system for individual room control?

Minimizing loss of useful floor areas with equipment and ducts?

EASY ANSWER:

CARRIER can brighten your outlook on all these questions! Out of Carrier's 43 years of specialized experience have come some remarkable new developments in scientific air conditioning — to be ready for post-war installations of practically every type. On present essential needs and future plans for air conditioning, refrigeration and unit heating, consult Carrier. Our best counsel and cooperation are yours for the asking. Write NOW.

Carrier Corporation, Syracuse, N.Y.



**AIR CONDITIONING • REFRIGERATION
INDUSTRIAL HEATING**



THE FUTURE—IT'S HERE NOW!

V. E. DAY was the beginning of the future for over two million G.I. Joes. They will soon be on their way home to start building their lives, businesses, and homes again.

The construction men never faced a bigger job.

EFFICIENCY and QUALITY are two points of building that have assumed leading importance in specifications.

MODERN ARCHITECTS know the answer to flat roof construction and maintenance work is THE ABESTO COLD PROCESS METHOD.

KEEP UP WITH DESIGN—write for our free specification sheets which show the various types of construction for which Abesto adhesives are used.

EFFICIENCY
UNIFORM HIGH QUALITY



ABESTO MFG. CO.
Dept. 20-A Michigan City, Ind.

Reviews

(Continued from page 122)

folding partition; to own (separately) two closets, two windows, a desk-wash basin combination, many shelves and drawers. Cost is \$2,500 but with pre-fabrication can be cut down a third. Efficient placement makes up for lack of space but the design seems better for traveling than for "living" at home.

INTERIORS

11 East 44th St., New York 17, N. Y.
April 1945

A remarkable civic theater in Malmo, Sweden, built in a park with money raised by townspeople, held "first night" last fall, after being under construction for six years from plans made in a competition back in 1933. The great auditorium has seating capacity for 1,200 but may be reduced to 600 or 400 by drawing in at the sides and rear light linden wood partitions, hung on steel tracks along the ceiling. Backstage is larger than the entire auditorium; dressing rooms all have windows on the park; lobby space includes musicians' lounge, artists' lounge; attached are a cafe, bar, an experimental theater, and orchestra rehearsal room. The de-

sign is by Sigurd Lewerentz, competition winner, in conjunction with the two runners-up, Prof. Erik Lallerstedt and David Hallden, whose plans also were admired by the citizenry of Malmo.

ARCHITECT AND ENGINEER

68 Post Street,
San Francisco, Calif.
April 1945

Although the editors were aware that this issue of *A & E* would be read by "foreigners" (delegates to the great Conference), they put forth one of their duller issues. An overpoweringly long article on Chinese porcelains and the technical particulars of high-fired monochromes continues throughout the issue.

A picture feature of San Francisco's Civic Center, which could have been twice as impressive, and a tantalizing article on the famous Bailey Bridge, are the features. D. C. Bailey's (British Ministry of Supply) quick-assembly spanning device looks like a lulu but captions and brief article fail to show how the sections can be pushed forward from the bank to bridge a gap of 240 feet without the use of pontoons, the non-requirement of which is one of the handy features that make the invention "quite the best thing in that line" General Montgomery has seen. A pre-fab house of steel for immediate production in Britain is also pictured and described.

STEEL JOISTS

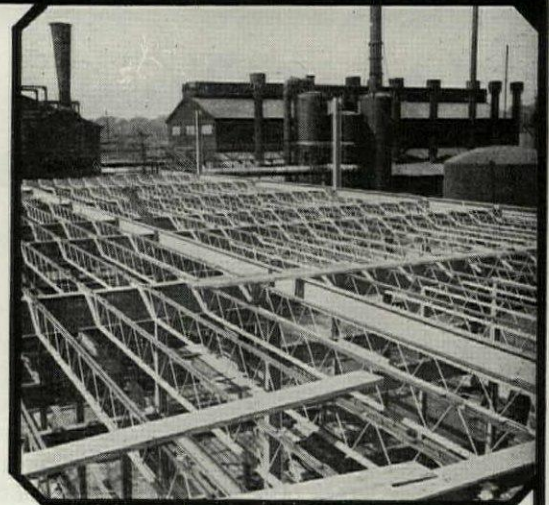
FOR
**CURRENT
CONSTRUCTION**
and
**POST-WAR
PROJECTS**

AVAILABLE NOW for Use in Floors,
Roofs, and as Roof Purlins, Steel
Joist Construction is

- ECONOMICAL
- LIGHT WEIGHT
- VERSATILE
- EFFICIENT
- PERMANENT
- FIRE RESISTANT



Write for Catalog



Laclede Steel Joists and Laclede Nailer Joists
for Superior Construction and Design of

- FACTORIES
- HANGARS
- STORES
- APARTMENTS
- MILL BUILDINGS
- THEATRES
- CHURCHES
- RESIDENCES

LACLEDE STEEL COMPANY

GENERAL OFFICES

ARCADE BUILDING

ST. LOUIS, MISSOURI

ASHORE OR AFLOAT

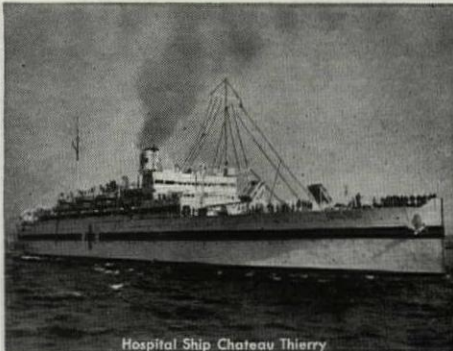
Hoffman Traps save fuel by preventing steam waste!

Heating equipment, like people, can be judged by the company it keeps. Measuring Hoffman Traps and Steam Specialties by this standard gives them the highest possible character rating. Ashore and afloat, Hoffman Traps are found in an impressive number of the most modern heating installations . . . because they are noted for fuel-saving performance . . . and because they cost no more!

Any heating plant is sparing of fuel in direct ratio to the efficiency and condition of its equipment. The tiniest steam leak, when multiplied over a year's operation, can total up to an incredibly large waste of fuel. Replacement of worn-out equipment, therefore, cannot be considered as an expense, but rather as an investment paying a substantial return.

For your fuel conservation program, depend on Hoffman Traps! They restore a run-down steam-wasteful system to economical operation . . . enabling it to do the required job on less fuel. These traps can be maintained at full efficiency for years by inexpensive replacement of those parts in which long usage is bound to cause wear.

Hoffman engineers are always at your service for consultation on your specific heating problem. Your inquiry will receive prompt attention.



Hospital Ship Chateau Thierry



County Hospital—Los Angeles, Cal.



Department of Commerce—Washington, D. C.



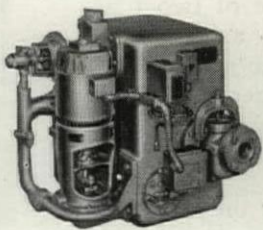
Northwestern University—Chicago, Ill.



Airplane Carrier Saratoga

BRASS TRAPS ARE BACK AGAIN!

Release of previously restricted material enables Hoffman to again offer a complete line of low, medium and high pressure traps, with body, nut and tailpiece of best quality brass. Equipped with renewable Thermostats and Seats and Special Alloy Pins.



HOFFMAN HEATING PUMPS

Hoffman-Economy Pumps, both Vacuum and Condensation types, eliminate common causes of half-effective heating system operation. They have established a sound reputation with exacting engineers for their ability to keep a heating plant clear of condensate and air—quietly, economically and dependably. Condensation Pumps are built in capacities to 200,000 sq. ft. Vacuum Pumps to 300,000 sq. ft.



HOFFMAN VACUUM VALVES

Vacuizing a one-pipe steam heating system with Hoffman Vacuum Valves makes an amazing difference in comfort and in the amount of fuel burned. These valves, when installed on the radiators, completely vent the system of heat-blocking air and prevent its return by means of Double Air Locks. The adjustable Vent Port of the Hoffman Vacuum Valve assures easy "balancing" of the system for uniform distribution of steam.



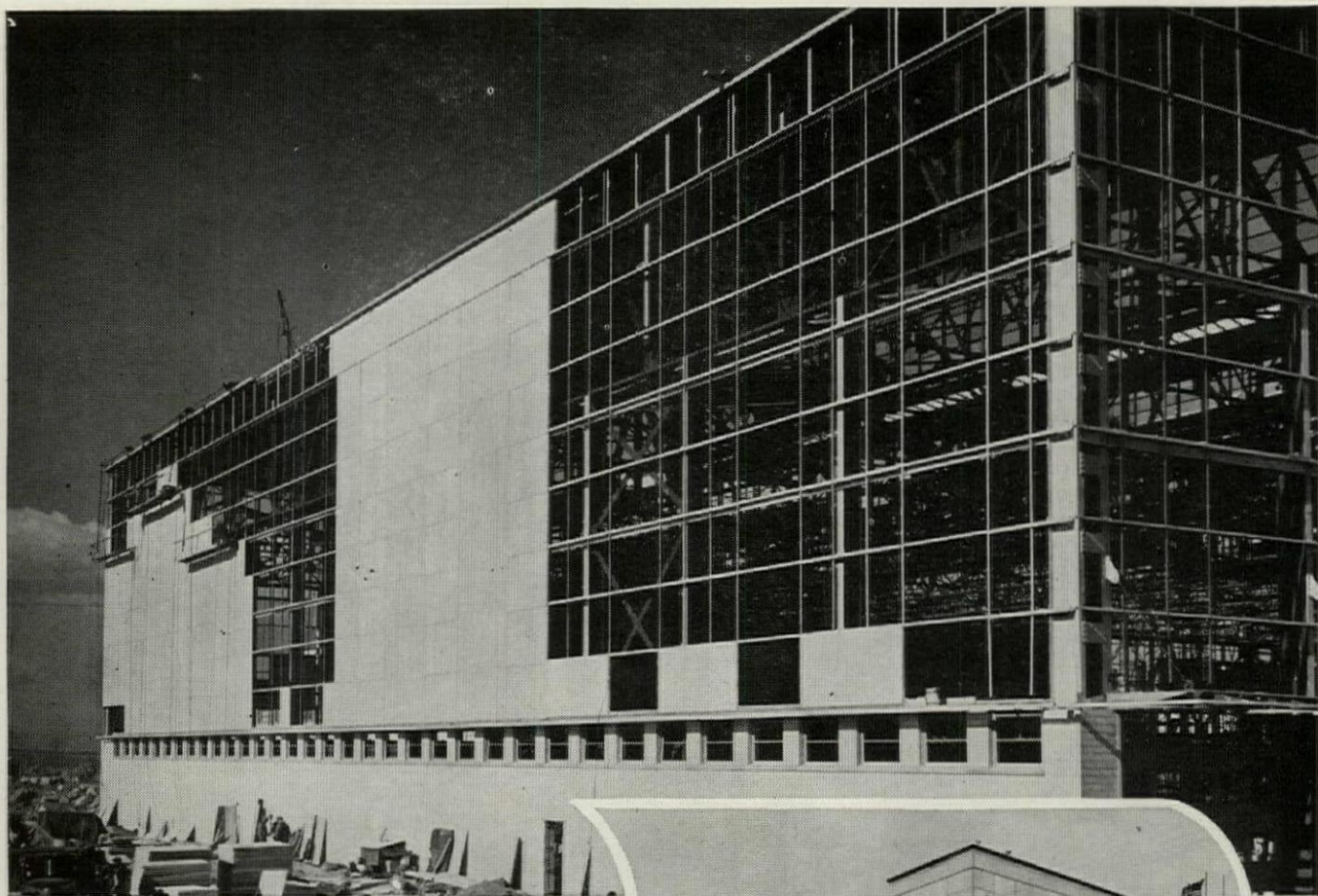
Send today for these descriptive booklets

HOFFMAN *Controlled Heating*

HOFFMAN SPECIALTY CO., 1001 YORK ST., DEPT. AF-6, INDIANAPOLIS
7, IND., MAKERS OF VALVES, TRAPS, FORCED HOT WATER
HEATING SYSTEMS, VACUUM AND CONDENSATION PUMPS



STEAM / HOT WATER



J-M TRANSITE

simplifies construction



...and it's attractive, modern, durable!

HERE is construction in the modern trend . . . using Johns-Manville Asbestos Corrugated Transite for the exterior walls.

Quickly applied over light steel framework, the fireproof, rotproof Transite sheets effectively carry out a design that is modern in appearance . . . streamlined for production!

In this instance, the large Corrugated Transite sheets are bounded by areas of flat asbestos sheets, producing an attractive two-tone effect.

Used alone . . . or in combination with other building materials . . . Johns-Manville Corrugated Transite sheets are adaptable for all kinds of industrial construction.

They require no painting, no preservative treatment, no upkeep expense. Made of two practically indestructible materials, asbestos and cement, they're highly resistant to acids, fumes, and severe temperatures. And because they're easily dismantled, they're 100% salvageable!

Send for illustrated booklet on *J-M Corrugated Transite*. Write to Johns-Manville, 22 East 40th St., New York 16, N. Y.



Johns-Manville CORRUGATED TRANSITE

You can't pull it out of a hat!



Good air conditioning is *not* hokus-pokus! It can only be the result of *correctly engineered equipment* correctly applied!

From the beginning, Westinghouse has worked singularly on this one principle. For any installation, regardless of size or purpose, is only as *right* as the

engineering behind the equipment that performs the magic of *correctly* conditioning the air.

By *correct* air conditioning Westinghouse means the scientific blending of desired temperature, humidity, circulation, ventilation and air cleanliness.

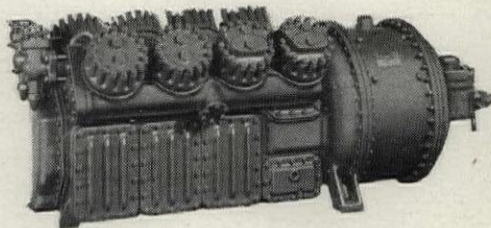
Consider these advantages: First, an air conditioning plant which will provide exactly the conditioned air you want to "live" with. Second, an installation which can be depended upon to give continued trouble-free and economical service. Third, correctly engineered equipment resulting from Westinghouse know-how.

If you're thinking about air conditioning, write for your copy of "How to Plan Correct Air Conditioning." Call your nearest Westinghouse Office, or write Westinghouse Electric Corporation, 150 Pacific Avenue, Jersey City 4, New Jersey.

CURRENT
WESTINGHOUSE
ADVERTISING
IS DESIGNED
TO SELL
YOUR AIR
CONDITIONING
KNOW-HOW

The Heart of Correct Air Conditioning WESTINGHOUSE HERMETICALLY SEALED COMPRESSOR

The entire mechanism of the Westinghouse Hermetically Sealed Compressor—including its motor—is sealed gas-tight. This feature means sealed-in power and sealed-out trouble... has been service-proved in thousands of Westinghouse installations. Compact and lightweight for easy installation. Low operating costs.



Westinghouse presents John Charles Thomas—Sunday, 2:30 E.W.T., N.B.C. Tune in Ted Malone, Monday through Friday, 11:45 A.M., E.W.T., Blue Network.

Westinghouse

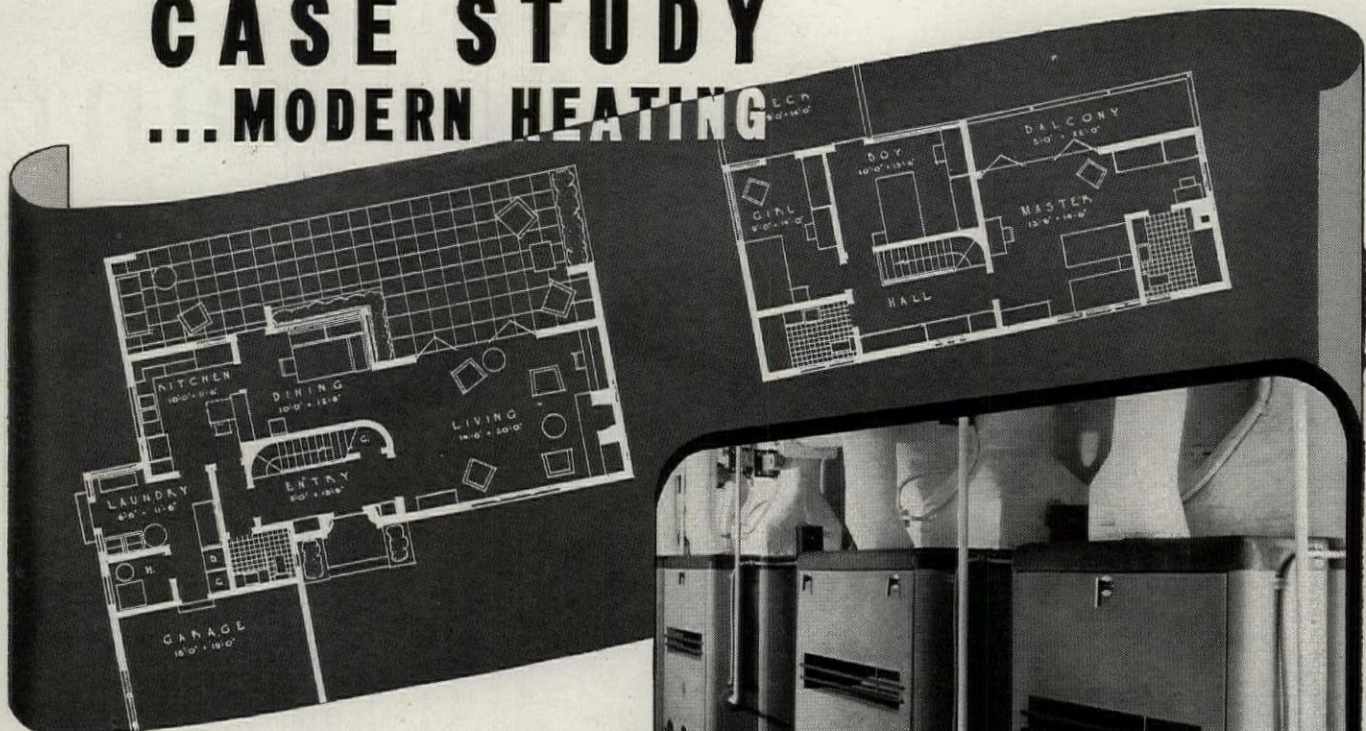
PLANTS IN 25 CITIES OFFICES EVERYWHERE

CORRECT

Air Conditioning

CASE STUDY

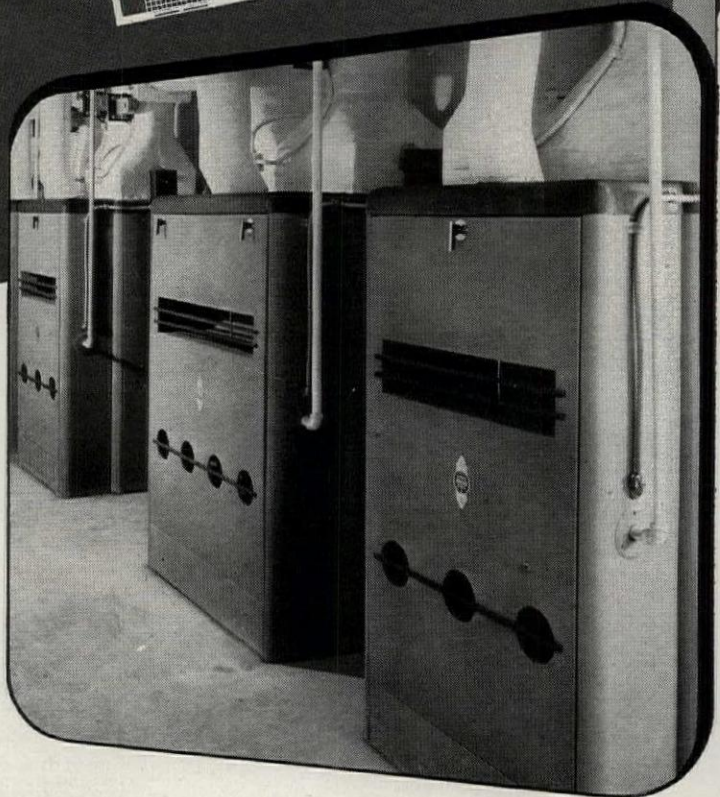
... MODERN HEATING



PAYNE

ZONE-CONDITIONING INSTALLATION

For the floor plan shown above, a "battery" of three compact PAYNE "ZONEAIR" units (right) would provide ideal flexibility. The entire first floor could be one zone, with the second floor divided into two zones, or vice versa . . . each zone with a separate control.



The problem—to provide winter air conditioning and cooling summer ventilation adapted to modern living. *The solution*—PAYNE ZONE-CONDITIONING, successor to old-fashioned central heating. ★ Any house, large or small, can be divided, according to natural grouping of rooms, into two, three, four or more zones; and any of the time-tried PAYNE models, when again available after victory, can be employed for ZONE-CONDITIONING. ★ Before planning any postwar building or remodeling, request new ZONE-CONDITIONING booklet. Write today.



FOR SMALLER HOMES

PAYNE "Sentry" forced air units may be installed on service porches or in other out-of-the-way corners. No basement required.

PAYNEHEAT

OVER 30 YEARS OF LEADERSHIP



PAYNE FURNACE COMPANY
(One of the Dresser Industries)
BEVERLY HILLS, CALIFORNIA

**"Lose something?"
asked
NILMERG**



"Only my temper," said Jones

NILMERG: I comprehend, Mr. Jones. What a pity your beautiful drawing is ruined by unsightly finger marks!

JONES: Look, Bud, I have no time to waste on a Gremlin-spelled-backwards. Besides, it's probably *your* fault.

NILMERG: You do me an injustice, Mr. Jones. I'm a *different* kind of Gremlin. My job is to spread sunshine and joy and to prove it I'm going to tell you how to avoid fingermark sabotage in the future.

JONES: No kidding?

NILMERG: No kidding, Mr. Jones. Those ghastly finger-prints are the result of your colored pencils dissolving in the honest sweat of your busy hands. I suggest you use A. W. Faber's The WINNER Thin Lead Colored Pencils which are practically *insoluble* in your fingers. Not to speak of the beautiful color effects they give to your drawings!

JONES: Say, that sounds like a good tip. Who carries The WINNER?

NILMERG: Almost any live dealer. If *yours* doesn't, tell him to get in touch with A. W. Faber right away.

JONES: Do they come in an assortment of colors?

NILMERG: And *what* colors, Jonesy! Red, Blue, Green, Black, White, Brown, Carmine, Blueprint Yellow and Blueprint Orange. You can sharpen 'em to a needlepoint without flaking or crumbling.

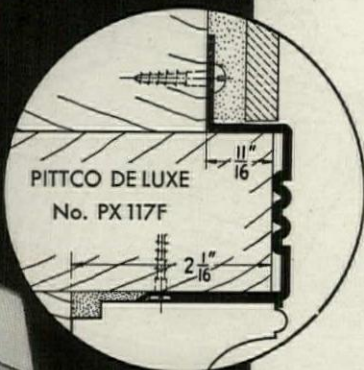
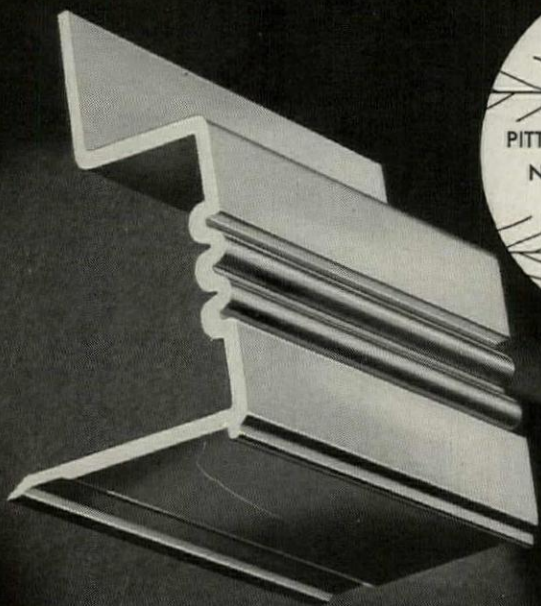
JONES: Oh Miss Smith—call our Drawing Material dealer or Stationer and order a complete assortment of A. W. Faber's The WINNER Thin Lead Colored at once! *No more ruined drawings for me.*

**The WINNER thin lead
COLORED PENCILS**



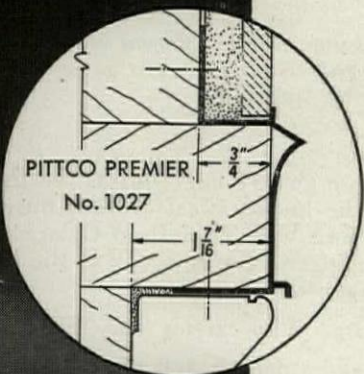
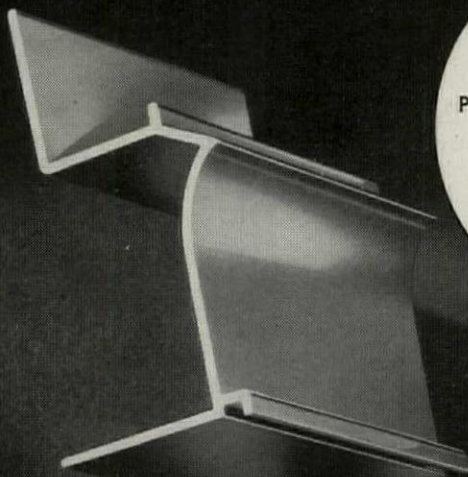
AW. FABER INC.
NEWARK, N. J.

Two lines of PITTCO METAL with the same rich finish



PITTCO DE LUXE Pittco DeLuxe Store Front Metal

Pittco DeLuxe Metal has a satin-smooth finish, rich in tone and gloss, which has delighted both architects and store owners. They like it because it harmonizes perfectly with any material or color combination. And the Pittco De Luxe line also has rugged, sturdy strength and clear, sharp profiles assured by its extruded method of manufacture. Imaginative styling and the wide variety of bars, mouldings and sash in the De Luxe line permit the architect many effective combinations. For symmetry, strength and perfect finish, Pittco De Luxe is the ideal choice for impressive, distinctive store fronts of high quality.



PITTCO PREMIER Pittco Premier, although

lighter in weight and more moderately priced than Pittco De Luxe, has the same rich, smooth finish. And into the Premier line, too, has gone the same careful planning which has made the De Luxe line so popular. All Premier members were styled at one time so that perfect harmony would be inherent in the line . . . each Premier unit complementing the beauty of other pieces used with it. Pittco Premier construction can be set quickly and easily . . . a simple outside procedure that effects a substantial savings in setting time. In Pittco Premier architects will find a lightweight, economical metal with which to create pleasing, appealing store fronts.



PITTCO STORE FRONT METAL
PITTSBURGH PLATE GLASS COMPANY

"PITTSBURGH" stands for Quality Glass and Paint

HOW TO SELECT POWER DISTRIBUTION

FOR **SMALL**
PLANTS



AS WELL AS
THE LARGEST



BUSDUCT

is designed for efficient plant layout and is unexcelled for changing plant conditions.

Architects and engineers have found great, new possibilities in power distribution with Ⓢ Busduct—both Feeder and Plugin—for the smallest to the largest plants!

Selection is Easy . . .

Just Remember These Advantages!

The greatest value of Feeder Ⓢ Busduct is that it takes up a minimum amount of space for large capacity feeders. Used between generators and switchboards, between switchboards and distribution center, or from the service entrance to the distribution center it assures minimum voltage loss, plus permanent yet flexible service.

Plugin Ⓢ Busduct is the answer to busy manufacturers. No time is lost when equipment is added or moved . . . just plug-in and go! It reduces shut downs . . . speeds up reconversion! It eliminates tearing up and restringing long, expensive lead-ins when equipment is moved. Saves on Panelboard and Switchboard expansions when load is increased. And it is practically 100% salvageable if moved.

There is a Ⓢ District Representative near you. Write for his name and address, or see our catalog in Sweets. His experience in serving small manufacturers as well as the nation's largest companies will be helpful in planning your distribution system.

FRANK ADAM ELECTRIC CO. • Box 357, St. Louis, Mo.

Makers of

BUSDUCT

WIRE & CABLE DUCT

PANELBOARDS

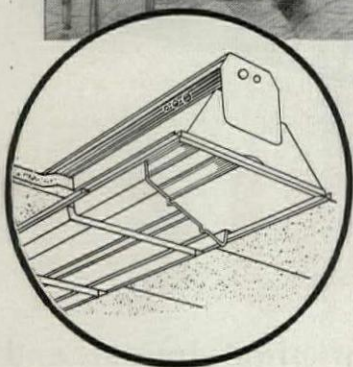
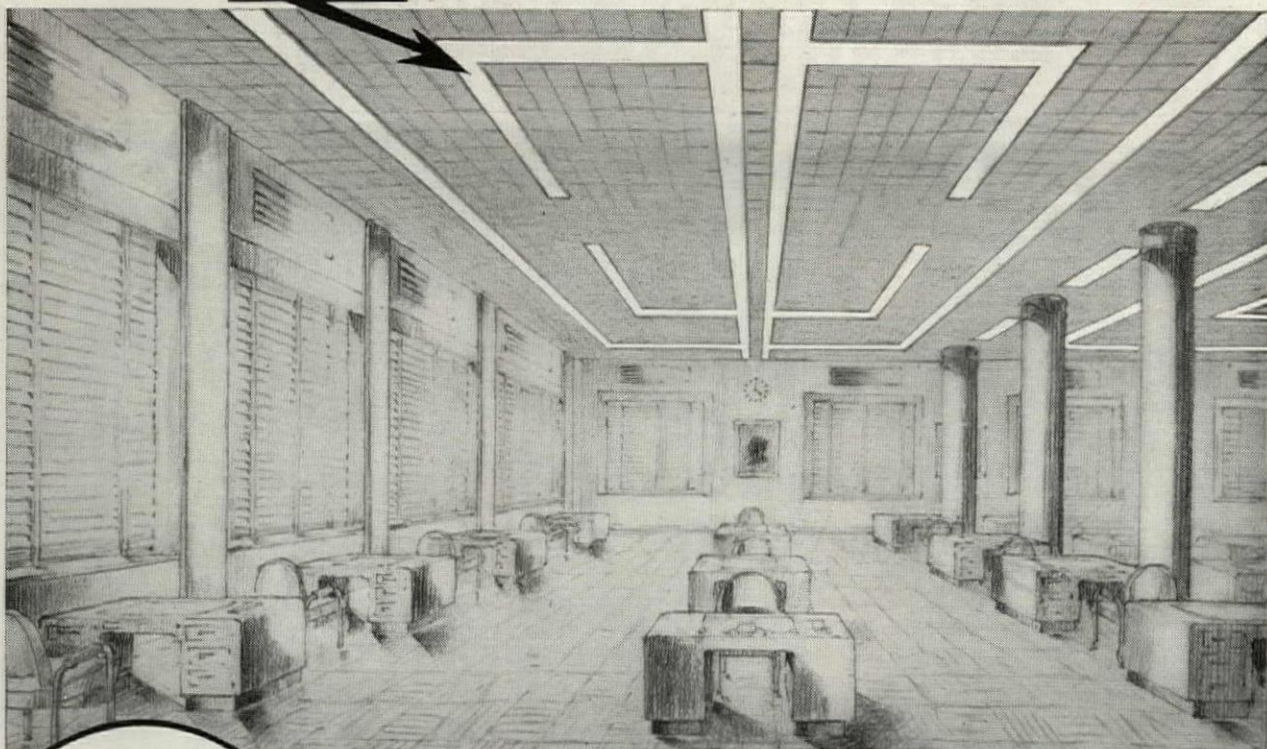
SWITCHBOARDS

ENCLOSED SWITCHES

SERVICE EQUIPMENT



Follow These Lines of Least Resistance



Miller Fluorescent Troffer Lighting Systems

for offices, stores, factories, schools and public buildings

**AID IN PLANNING
SIMPLIFY CONSTRUCTION
FACILITATE MAINTENANCE**

Other Pluses of MILLER Fluorescent Troffer Lighting Systems:

Supports from structural ceiling reduced 50 to 75%.

Conduit and conduit fitting costs reduced up to 80%.

Wiring costs reduced up to 50%.

Permanent operation and maintenance economies.

They aid in planning because they suggest practicable new themes for interiors.

In geometric patterns or lightstrips "by the mile" . . . in a versatile variety of glass and plastic lenses, plates, and metal or plastic grilles . . . they encourage the modern trend to plan the *entire building* around the lighting.

They simplify construction because of mature, forward-looking engineering that solves past problems—without adding new ones.

For instance: The Miller patented bracket ends laborious fitting of recessed lighting systems into hung ceilings. Now,

these brackets are hung from the structural ceiling and support both furred ceiling and Troffer Lighting System!

The true cost of any lighting system is the *complete cost*, installed and operating.

Miller Fluorescent Troffer Lighting Systems facilitate maintenance because they are engineered to assure *continuing* economies of operation.

Yes, from first to last, Miller Fluorescent Troffer Lighting Systems are an outstanding achievement of our times!

Miller field engineers are conveniently located to serve you.

THE MILLER COMPANY • MERIDEN, CONNECTICUT

ILLUMINATING DIVISION
Fluorescent, Incandescent
Mercury Lighting Equipment

OIL GOODS DIVISION
Domestic Oil Burners
and Liquid Fuel Devices

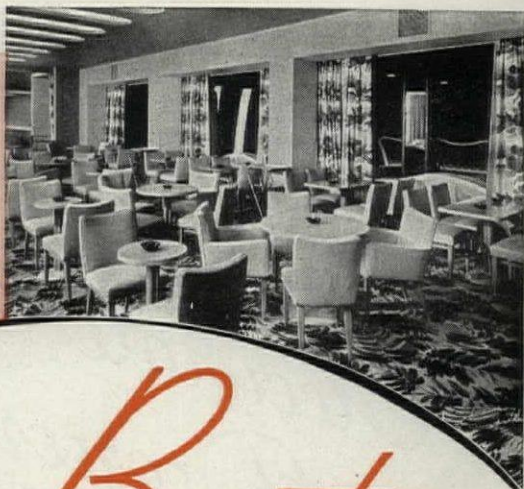
ROLLING MILL DIVISION
Phosphor Bronze and Brass
in Sheets, Strips and Rolls

WAR CONTRACTS DIVISION
War Materiel





Department Store
Perfume Bar
of Formica



Cocktail Tables
Washington's
Statler Hotel

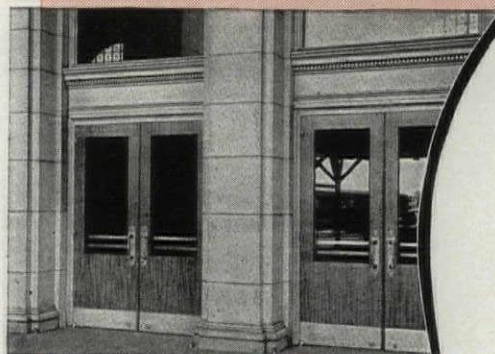
FORMICA *Beauty* IS INTRINSIC BEAUTY

Formica comes in many colors and fabric or wood finish effects but the color is not on the surface where it can wear off by abrasion or be worn off or faded by washing. It never requires renewal or salvation by any kind of treatment whatsoever. Colors are achieved by fadeless pigments and dyes deeply imbedded in plastic, while fabric patterns and actual wood veneers, plastic impregnated, are thickly covered with clear transparent plastic.

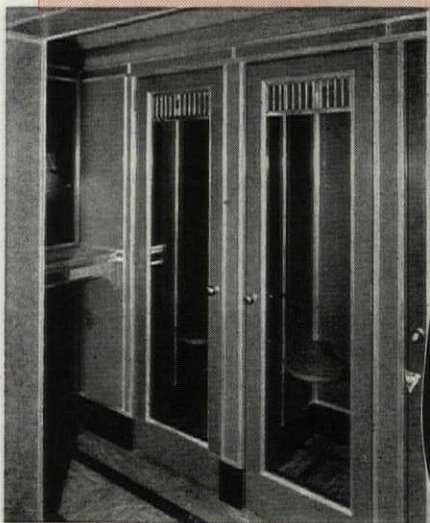
Even when used on restaurant tables and hotel dresser tops, abrasion is scarcely ever perceptible after years of wear, for the plastic is harder than marble.

Formica does not check or chip. Water, food, alcohol and even lighted cigarettes do not spot or stain it. Ordinary washing brings out *all* the original intrinsic beauty after years and years of use.

The Formica Insulation Co., 4621 Spring Grove Ave., Cincinnati 32, O.



Doors of the Washington Union
Railroad Station

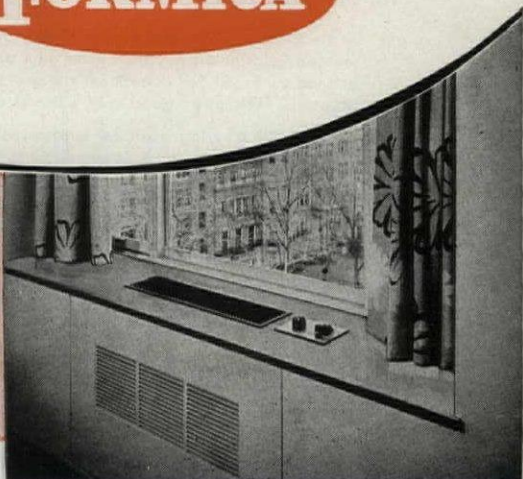


Formica Telephone Booths
Library of Congress



Formica
Wainscot,
Chicago Bus
Station

Window Sill
Washington
Statler



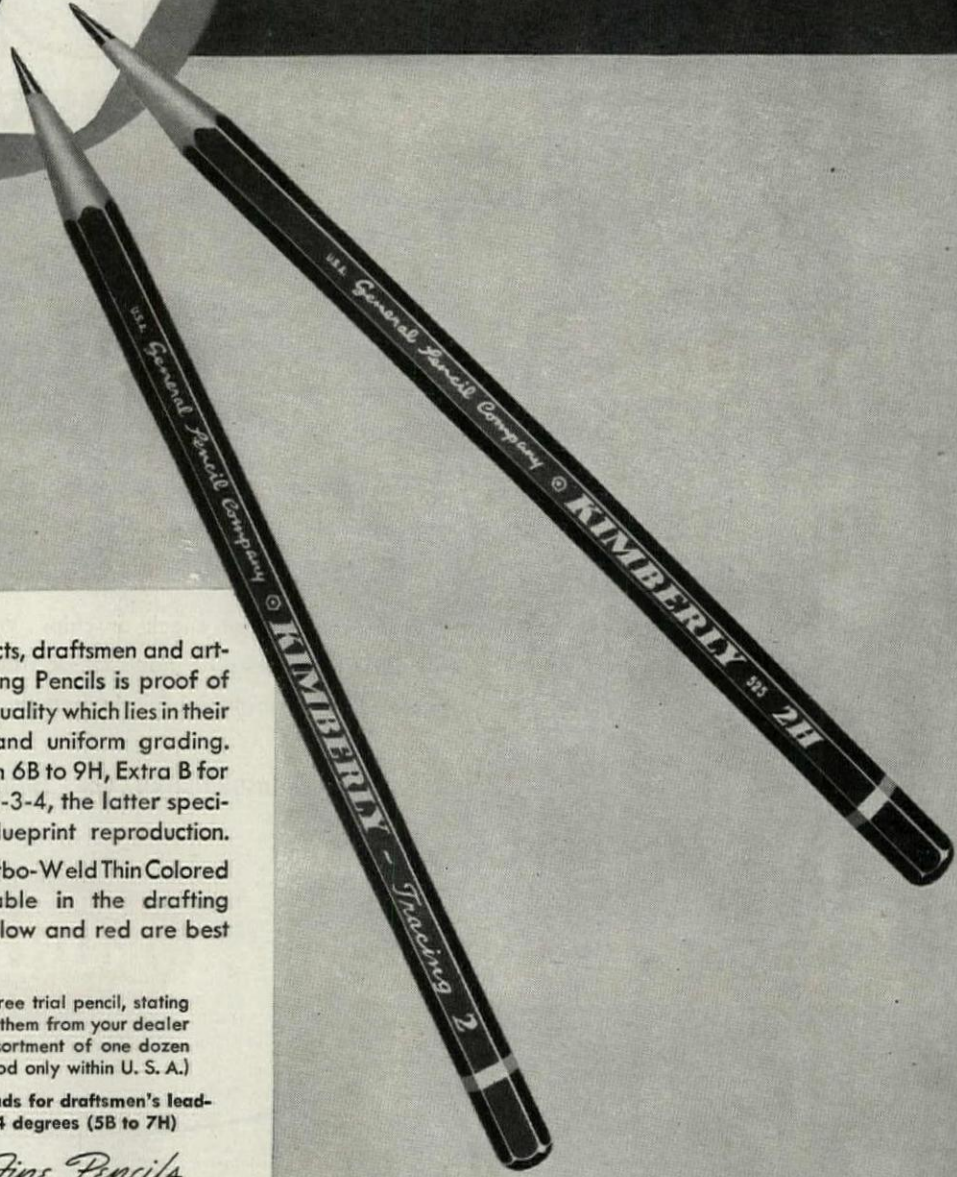


KIMBERLY

Quality

DRAWING PENCILS

WITH *Carbo-weld* LEAD



The demand by architects, draftsmen and artists for Kimberly Drawing Pencils is proof of Kimberly quality—the quality which lies in their strong, smooth leads and uniform grading. The degrees range from 6B to 9H, Extra B for Layout and Tracing 1-2-3-4, the latter specially developed for blueprint reproduction. General's SEMI-HEX Carbo-Weld Thin Colored Pencils are indispensable in the drafting room. White, lemon yellow and red are best for blueprints.

Write to Dept. P for a free trial pencil, stating the degree or color. Buy them from your dealer or send us \$1.00 for assortment of one dozen prepaid. (This offer good only within U. S. A.)

Kimberly refill drawing leads for draftsmen's lead-holders available in 14 degrees (5B to 7H)

*Makers of Fine Pencils
since 1889*

General Pencil Company

67-73 FLEET STREET



JERSEY CITY 6, N. J.

WE'RE "TELLING THE WORLD" ABOUT YOU!

● The eye-catching advertisements shown below are part of a series we're publishing to remind the public that, when it comes to building a home *right*, "there's *no* madness in method!"... and that the only right method is to employ an Architect's experienced services.

Yes, we've been "telling the world" ... and to date over one hundred thousand home-planning couples have said: "Tell us *more!*" So to each couple we've sent "How to Plan Your New Home," the now-famous book Edwards and Company has prepared in cooperation with the A.I.A.

Many architects have requested extra copies of this book as an effective means of keeping prospective clients aware of the architect's proper place in their building dreams. Limited quantities are still available ... imprinted with your name, if you so wish.

EDWARDS

AND COMPANY
NORWALK, CONN.

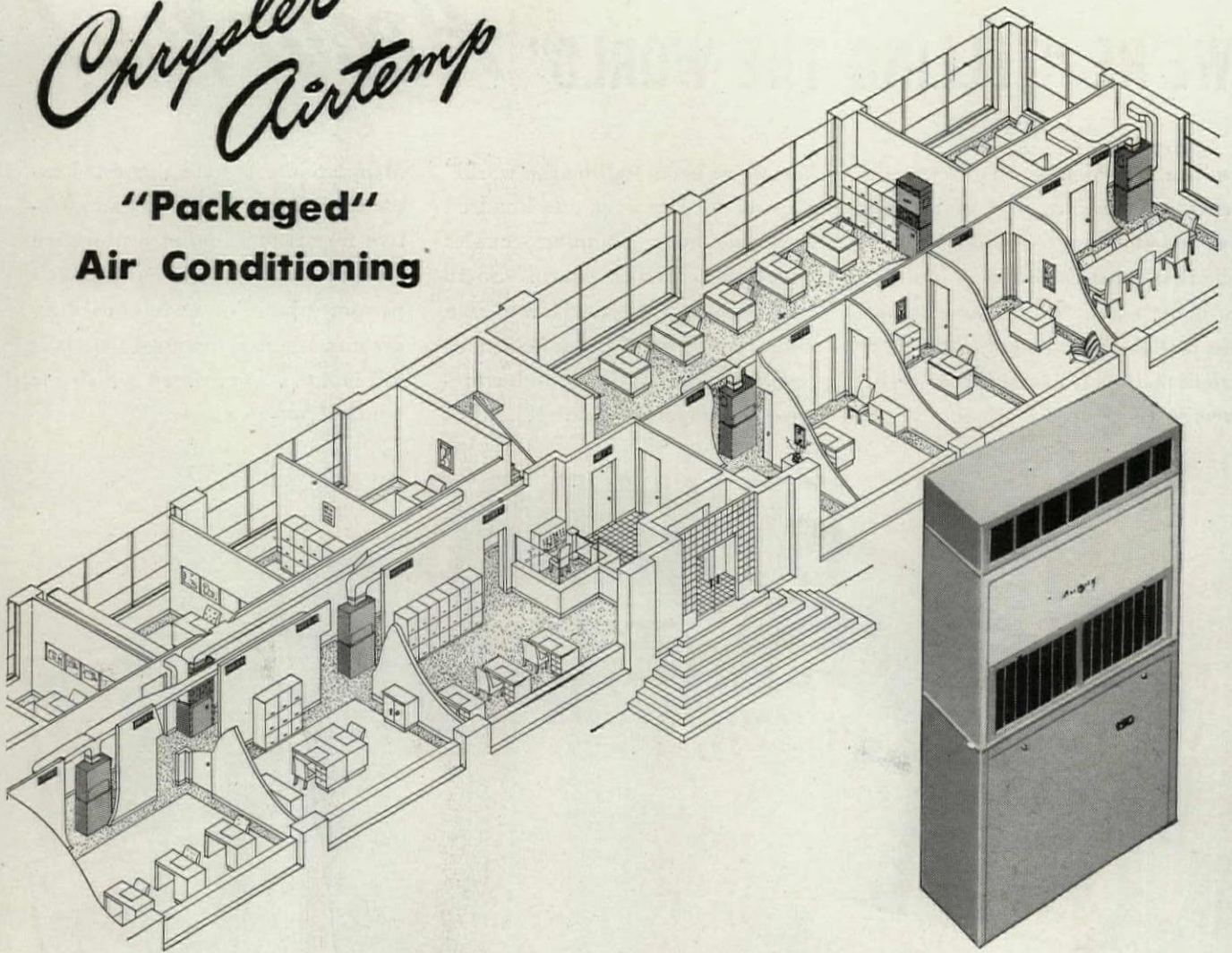
IN CANADA: EDWARDS & CO., LTD.

The collage features several overlapping advertisements:

- Top Left:** "Use me?" - A couple looking at a blueprint.
- Middle Left:** "Is there an ARCH in you?" - A woman in a swimsuit looking at a man.
- Bottom Left:** "...and tomorrow a blueprint" - A man holding a blueprint, with the text "thanks to your architect".
- Center:** "The stuff of dreams..." - A couple looking at a blueprint.
- Bottom Center:** "Plan your house right! START RIGHT WITH AN ARCHITECT. EDWARDS ELECTRICAL SIGNALING" - A promotional card for a book.
- Bottom Right:** "Plan your house right! START RIGHT WITH AN ARCHITECT. EDWARDS ELECTRICAL SIGNALING" - Another promotional card.
- Right Side:** "planning a house..." - A couple looking at a blueprint.
- Far Right:** "EDWARDS ELECTRICAL SIGNALING" - A small promotional card.

Chrysler Airtemp

"Packaged" Air Conditioning



A Valuable Investment In the Modern Factory Office

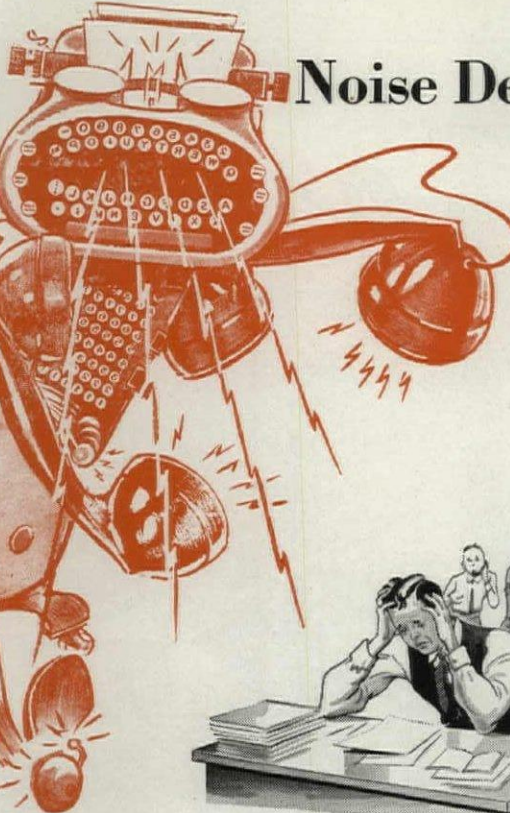
Air conditioning, by shutting out factory noises, dust and dirt, has become a "must" in modern industry. Offices can be built as a part of the plant for convenience without sacrificing employee efficiency. Cool, quiet and comfortable behind closed windows and doors, office personnel keeps cleaner and does more accurate work. Better working conditions attract a better type of office help! "Packaged" Air Conditioners, pioneered by Chrysler Airtemp, provide clean, cool,

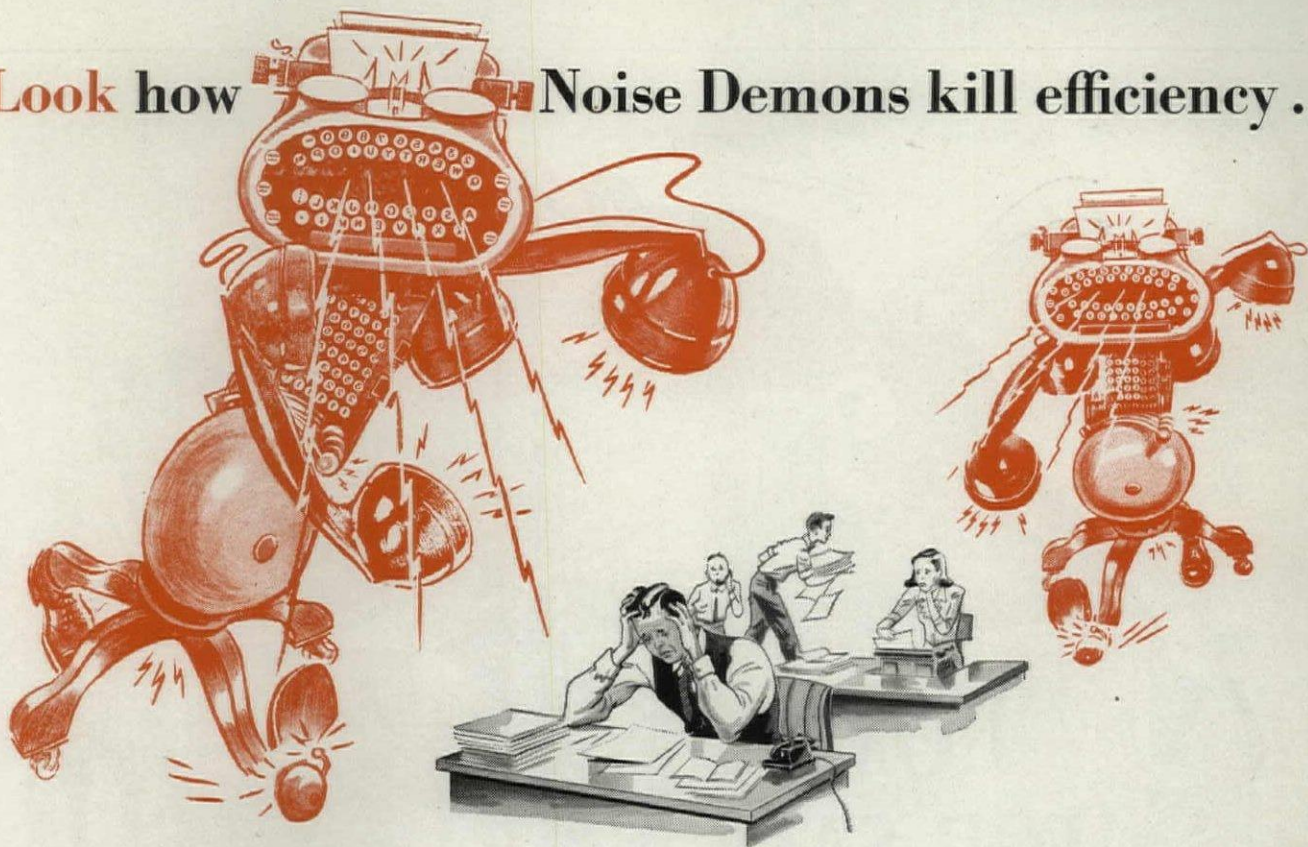
properly dehumidified and gently circulated air in many of our offices today. Flexible and easy to install, these dependable, trouble-free and time-tested Chrysler Airtemp "Packaged" Air Conditioners, with the hermetically sealed radial compressors, can be used singly or in multiple—with or without a duct system. Specify Chrysler Airtemp "Packaged" Cooling as a sound investment in factory offices. • Airtemp Division of Chrysler Corporation, Dayton 1, Ohio.

Invest in Your Future—Buy War Bonds! You'll enjoy "The Music of Morton Gould," Thursdays, CBS., 9 p.m., E.W.T.

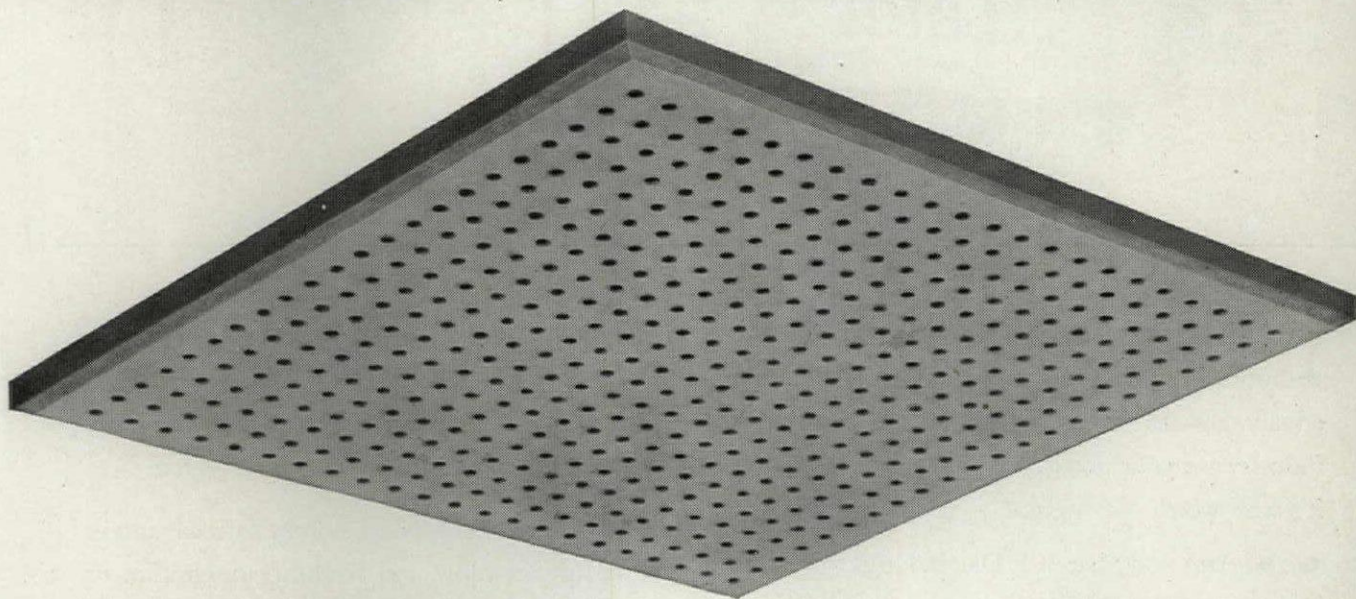
CHRYSLER AIRTEMP

HEATING • COOLING • REFRIGERATION

Look how  **Noise Demons kill efficiency . . .**



Look at the ceiling that kills Noise Demons . . .



It's Armstrong's Cushiontone!


ERRORS MULTIPLY and your clients' work piles up, when their offices are overrun with noise demons. These ugly pests hamper concentration, use up energy, destroy business efficiency.

Noise demons are born in the ceaseless din of clattering machines, loud voices, and strident

bells. But you can show your clients how to end them once and for all—with economical ceilings of Armstrong's Cushiontone.

The 484 deep holes in each 12" square of this fibrous material trap and kill noise demons—absorb up to 75% of all noise striking the ceiling. Cushiontone is an excel-

lent reflector of light, and it can be repainted without decreasing its high acoustical efficiency.

NEW FREE BOOKLET gives all the facts. Write for your copy to Armstrong Cork Company, 6907 Stevens Street, Lancaster, Pa. 



MADE BY THE MAKERS OF ARMSTRONG'S LINOLEUM AND ASPHALT TILE



YOUR dreams of a new home must wait on the future. But if you could see all the thrilling advantages that are being planned by American industry for your postwar home, you'd agree that it's well worth waiting for!

- ● And now that V-E Day belongs to history and part of the battle has been won, you'll feel all the more like buying additional War Bonds, both to speed final Victory and to help finance your new home when you're ready to build it.
- ● The modern techniques of functional de-

sign and compact construction which enabled Defoe to build seven different types of fighting ships for the Navy will be converted to producing quality-built homes in the postwar period.

- ● Defoe will produce homes with advantages of beauty, comfort and livability heretofore unknown in their price range. There will be nothing stereotyped, extreme or fantastic in Defoe homes. They will combine functional convenience with a wide range of individual designs, yet give you all the economies of volume production.

COPR. 1945 DEFOE SHIPBUILDING CO.

HOUSING DIVISION - DEFOE SHIPBUILDING COMPANY, BAY CITY, MICH.

BACK THE ATTACK
- BUY WAR BONDS



☆☆☆☆ Five White Star Renewal Citations now decorate the Navy "E" Award won by Defoe workers.

SHIPS FOR VICTORY
SERVANTS FOR PEACE

Get This FREE BOOKLET for your reference library



Tells how best to provide for using visual aids in school, church, hospital, and other buildings

VISUAL aids are now important teaching tools in almost every educational program . . . are destined to be as commonly used as textbooks. Your clients will recognize the wisdom of providing for the most effective, convenient use of visual aids in your plans for building or remodeling.

auditorium . . . gives experienced counsel on seating arrangements; locations for projector, screen, loudspeaker, cables, and wall sockets; electrical specifications; illumination and acoustics; projection booths; service and storage rooms; other important considerations.

Let this new, free handbook help you. It covers the requirements of both classroom and

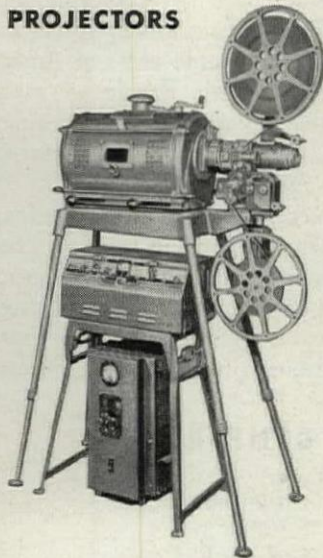
To get your copy, pin the coupon to your letterhead. No obligation!

BELL & HOWELL PROJECTORS

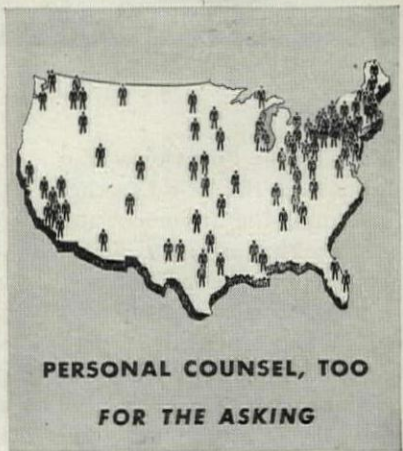


FILMOSOUND 16mm. sound-on-film projectors are overwhelmingly preferred by educators and other users. Built in a full range of capacities to meet every need for lastingly superior sound and picture reproduction.

FILMCARC 16mm. sound-on-film projector with powerful arc lamp illumination. Provides brilliant pictures and ample sound volume in large auditoriums.



OPTI-ONICS—products combining the sciences of OPTics • electRONics • mechanICS



PERSONAL COUNSEL, TOO
FOR THE ASKING

Near you is a member of the B&H staff of Special Representatives. Thoroughly informed on visual education, he is able and willing to help you work out any related problem. Get acquainted with him now . . . he'll urge you to ask for his aid at any time. Send the coupon to learn his name.

Bell & Howell Company, Chicago; New York; Hollywood; Washington, D. C.; London. *Established 1907.*

★ ★ ★

Buy and Hold More War Bonds

BELL & HOWELL COMPANY
71-1 McCormick Road, Chicago 45
Please send, without obligation () copy of *Architects' Visual Equipment Handbook*; () name of nearby B&H Special Representative; () Details about Filmosounds and Filmoarc.

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

PP 7-45

PRECISION-MADE BY



Bell & Howell

For the World's Outstanding Buildings the most widely used concrete reinforcement



IN the new Chicago Post Office—and in hundreds of the world's other notable buildings—the architects and engineers knew that concrete floors, roofs and walls must be safe, strong, fireproof—permanently. That is why so many of them specified U·S·S American Welded Wire Fabric for concrete reinforcement.

Made of cold drawn, round steel wires, prefabricated by electric welding into roll or sheet form, American Welded Wire Fabric reinforcement is *adaptable* for most types of concrete construction, from wide highway ground slabs to thin-sectioned precast slabs and other building products.

The recognized superior reinforcing value of closely spaced high-yield point steel wires, the high allowable working stress granted by many building codes and used by responsible engineering, contracting, and architectural organizations, enable users of American Welded Wire Fabric to make appreciable savings in the amount of steel to be purchased, transported, handled and installed.

The successful service of American Welded Wire Fabric in concrete construction promises many further practical uses, as yet unknown. It will prove economical and efficient in one or more constructions in every building project.



BEAM AND SLAB CONSTRUCTION. Welded Wire Fabric reinforces these ceiling slabs of the Smoke Chamber, Chicago Post Office, Chicago. Note the accuracy of placement and the rigidity of the Welded Wire Fabric Reinforcement.

AMERICAN STEEL & WIRE COMPANY

Cleveland, Chicago and New York

Columbia Steel Company, San Francisco, *Pacific Coast Distributors*

United States Steel Export Company, New York

UNITED STATES STEEL

U·S·S American Welded Wire Fabric



THIS DROP OF WATER
was
IS THE dangerous one!
might have
IT LEAKED OUTSIDE THE DRAIN... INSIDE THE BUILDING

Josam

NON-CLOG Triple Drainage DRAINS
 PROVIDE COMPLETE PROTECTION AGAINST FAULTY DRAINAGE



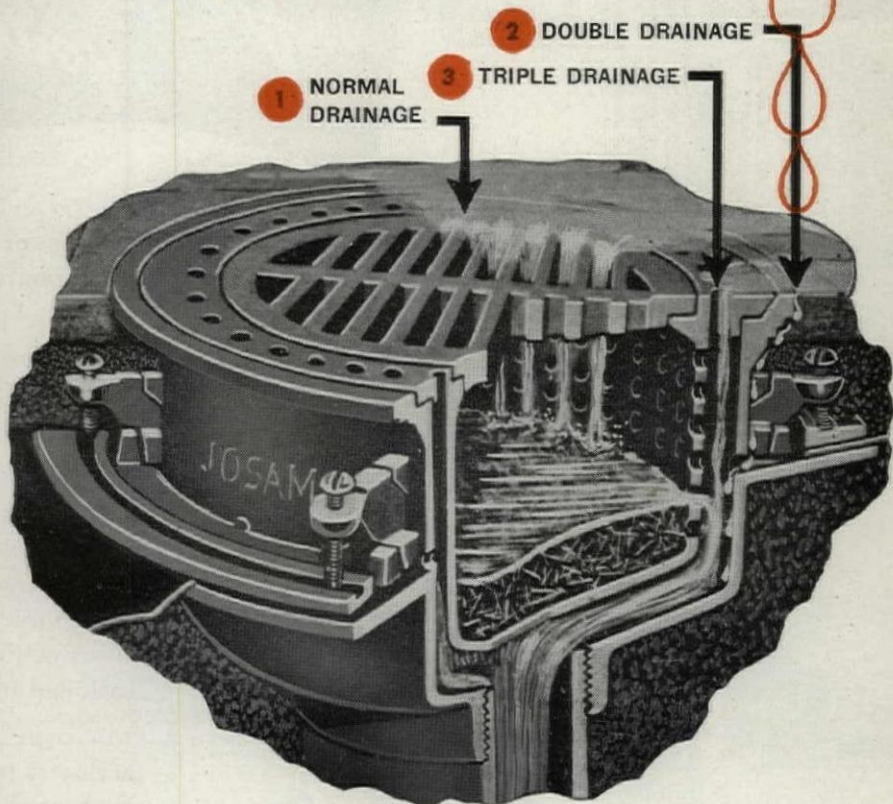
Sediment container removed for cleaning



Strainer cannot be replaced without sediment container being in place—no chance of forgetting to put it back



Sediment container in place, strainer fits properly into position



There is no other drain that offers the protective drainage feature of the Josam Non-Clog Triple Drainage Drains. Their "three-way" performance not only assures continuous, uninterrupted floor drainage in spite of accumulated debris, but also positive protection against leakage. Sediment container intercepts debris, allowing clear water to flow into drain line (normal drainage). If water seeps into floor around drain, it is returned directly into drain line . . . does not spread into floor or walls (double drainage). Even if sediment con-

tainer becomes filled with debris, drainage continues through holes in auxiliary rim, signalling need for cleaning (triple drainage). Besides, as illustrated at left, the features of this drain are a positive guard against carelessness in cleaning and replacing sediment container. Don't shorten the life of the buildings on which you are working by taking chances with floor drains that do not have these exclusive features. Give them added years of life and service by specifying Josam Non-Clog Triple Drainage Drains every time!

Josam
JOSAM MANUFACTURING COMPANY
 Founded 1914

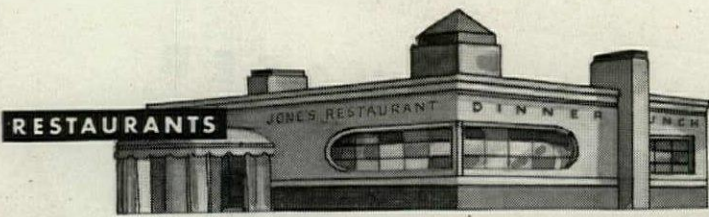
Executive Offices, 303 Empire Building, Cleveland, Ohio • Manufacturing Division, Michigan City, Indiana
 Representatives in all Principal Cities

JOSAM-PACIFIC CO., 765 Folsom Street, San Francisco, California—West Coast Distributors
 EMPIRE BRASS COMPANY, LTD., London, Ontario—Canadian Distributors

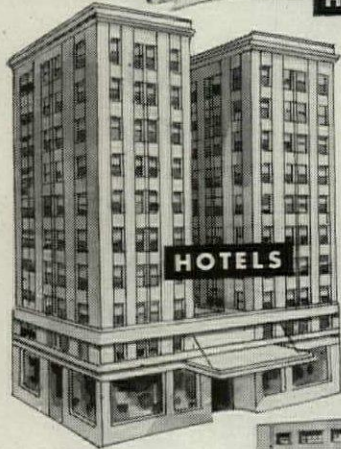
THERE ARE NO SUBSTITUTES FOR JOSAM PRODUCTS

JOSAM MANUFACTURING CO., 303 Empire Bldg., Cleveland 14, O.
 Please send me illustrated booklet on the Josam line of "Triple Drainage Drains".

Name _____
 Firm _____
 Address _____
 City _____ State _____

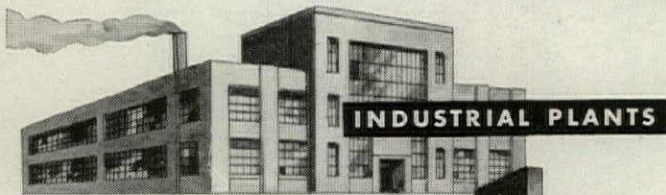


**... to help you plan
the plumbing**
*... for the buildings on
your board!*



No matter what type of construction is on your boards, you must consider adequate sanitary facilities.

The Crane line, in the future as in the past, will include every type of plumbing in a wide variety of styles to permit you the greatest flexibility in your design.



To aid you in laying out bathrooms, wash-rooms, kitchens, and other sanitary facilities for these projects, we have prepared a data book giving accurate detailed dimensions of the plumbing fixtures that will be included in the new Crane postwar line.

A copy will be sent on request to any architect interested. Ask for "Transitional Data on the Crane Plumbing Line."



CRANE

CRANE CO., GENERAL OFFICES:
836 S. MICHIGAN AVE., CHICAGO 5
PLUMBING • HEATING • PUMPS
VALVES • FITTINGS • PIPE

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



Sherarduct

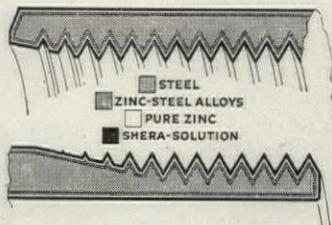
A RIGID STEEL CONDUIT

worthy of your

finest buildings

NATIONAL ELECTRIC SHERARDUCT

- IS MORE HIGHLY RESISTANT TO MOISTURE AND CORROSIVES.
- BENDS MORE READILY.
- FABRICATES INTO THE JOB EASIER.
- "LASTS AS LONG AS THE JOB."

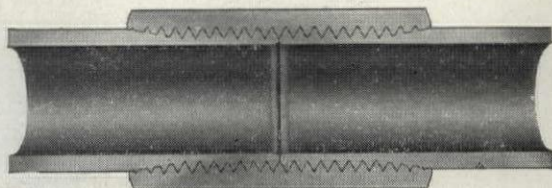


Cross-section of Sherarduct



NE Sherarduct is a rigid steel electrical conduit that is worthy of the finest buildings. National Electric pioneered "Sherardizing" over thirty years ago. This process, by which zinc dust is driven into steel pipe and applied to the surface under heat, is unsurpassed for protection against rust and corrosion.

Even deposit of the zinc gives a uniformly protected, smooth surface over which is applied SHERA-solution which impregnates the zinc. In addition, the steel is "Spellerized" to produce a pipe which works more smoothly, bends easier and threads cleaner.



The craftsmanship in this conduit is illustrated by the coupling. The tapered threads provide strong, close union which keeps out corrosion. For complete information write for our 350 Page Engineering Data Book—free.

CONDUITS, RACEWAYS, WIRES
AND CABLES FOR EVERY
ELECTRICAL PURPOSE.

National Electric
PRODUCTS CORPORATION
Pittsburgh, Pa.

*Correct design
will prevent this*



*... and then a copper gutter
can last
for generations*

WHEN a copper gutter failed, in the past, nobody seemed to know the real reason. Revere determined to get to the root of this matter . . . on behalf of sheet metal contractors, architects, and the copper industry itself.

Revere research soon showed that a typical failure starts in the way illustrated above. The metal gutter buckles locally; sometimes the soldered lockseam is sheared. This may be caused by expansion and contraction of the copper with changing temperatures, or by some movement of the building.

The way to prevent such effects, it was found, is to engineer into the gutter enough columnar strength so that buckling is eliminated, and to make certain the shear strength of the joints is fully adequate.

From such facts Revere has worked out new and simple methods that reduce sheet

copper construction to a matter of engineering design. These will be described and illustrated in a booklet now being prepared. Upon request we will place your name on our list to receive a complimentary copy when issued. Write the Revere Executive Offices. Revere materials are handled by Revere Distributors in all parts of the country. For help in difficult problems, call on the Revere Technical Advisory Service, Architectural.

REVERE

COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

Executive Offices: 230 Park Avenue, N. Y. 17, N. Y.

Listen

to The Human Adventure on the Mutual Network every Wednesday evening, 10 to 10:30 p. m., E. W. T.



Architect: Arthur E. Thomas

Photos: Rhoton Gilbert

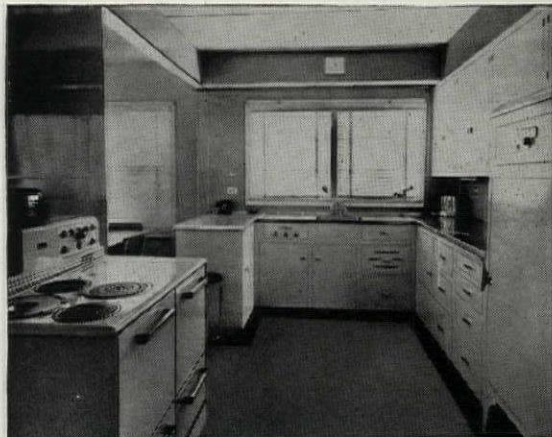


Subscriber 4-10-ZMH424-598

ELGIN B. ROBERTSON owns this trim, little cottage in Dallas selected by the editors of *Architectural Forum* as one of the recently constructed U. S. homes most likely to influence new trends.

Presenting THE SHOW-ROOM HOMES of the Nation

HARDLY a great mansion, this *TIME*-reader's cottage in Dallas is still a show-room home. In homes like these, other members of the community see the building products you want them to want—being used—and enjoyed—and recommended. Of course, *all* *TIME*-readers don't own homes like Mr. Robertson's. But, by and large, the more than a million *TIME* families do own the modern or traditional, sumptuous or simple, *show-room homes of the nation*—and surveys show that these *TIME* families entertain more than 125,090,000 guests a year.



Because they have twice the average U. S. income, *TIME*'s million alert, progressive families can afford to own more homes and better homes—the kind of homes that will be admired and copied by the hundreds of thousands of other U. S. families who build or buy new homes. In a very real sense, the readers of *TIME* help establish the home-building trends of the nation.

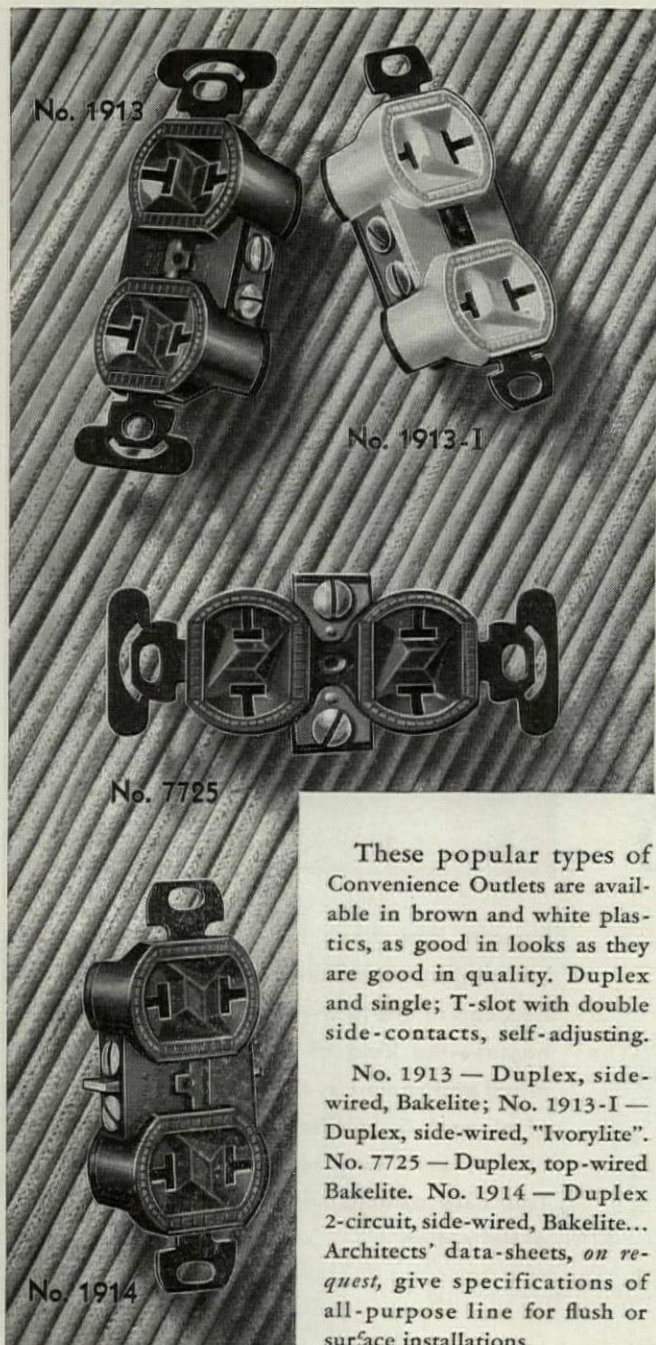
P. S. According to surveys made among test-groups of *TIME* families in seven large cities, 180,000 *TIME* families are *already* planning to build; 109,000 more to remodel!



THE GATEWAY TO THE BUILDING MARKET

ADVERTISING OFFICES: New York, Chicago, Boston, Philadelphia, Cleveland, Detroit, San Francisco

H&H FLUSH RECEPTACLES



These popular types of Convenience Outlets are available in brown and white plastics, as good in looks as they are good in quality. Duplex and single; T-slot with double side-contacts, self-adjusting.

No. 1913 — Duplex, side-wired, Bakelite; No. 1913-I — Duplex, side-wired, "Ivorylite". No. 7725 — Duplex, top-wired Bakelite. No. 1914 — Duplex 2-circuit, side-wired, Bakelite... Architects' data-sheets, *on request*, give specifications of all-purpose line for flush or surface installations.

HART & HEGEMAN DIVISION

**ARROW-HART & HEGEMAN ELECTRIC
COMPANY, HARTFORD 6, CONN., U.S.A.**

Here is an old trusted friend!



THAT MAKES YOUR WORK
NEATER, EASIER, CLEANER

None other than

ARTGUM

BRAND

ERASER and CLEANER

The ORIGINAL and STANDARD. Used by
architects and draftsmen for half a century

1. "ARTGUM" is a surface cleaner with a light touch.
2. "ARTGUM" is friable—has no deteriorating content.
3. "ARTGUM" contains no grit.
4. "ARTGUM" doesn't abrade the surface of paper.
5. "ARTGUM" doesn't smudge.
6. "ARTGUM" doesn't dim ink lines or delicate imprinting.

Insist on the original and standard

THE ROSENTHAL CO.

45 EAST 17th STREET, NEW YORK 3, N. Y.

ARCHITECTURAL ENGINEERING

A Practical Course (HOMESTUDY) by Mail Only

Prepares Architects and Draftsmen
for structural portion of

STATE BOARD EXAMINATIONS

For many this is the most difficult section of the examinations. Qualifies for designing structures in wood, concrete or steel. Successfully conducted for the past nine years. Our complete Structural Engineering course well known for thirty years.

Literature without obligation—write TODAY

WILSON ENGINEERING CORPORATION

College House Offices Harvard Square
CAMBRIDGE, MASSACHUSETTS, U. S. A.

FUNDAMENTALS OF PERSPECTIVE

By Theodore DePostels, A.I.A.

Edited by Don Graf

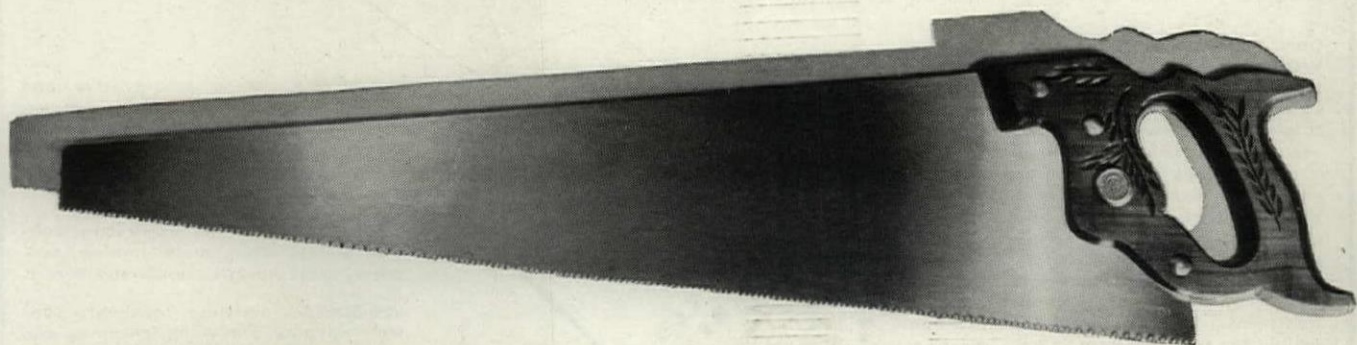
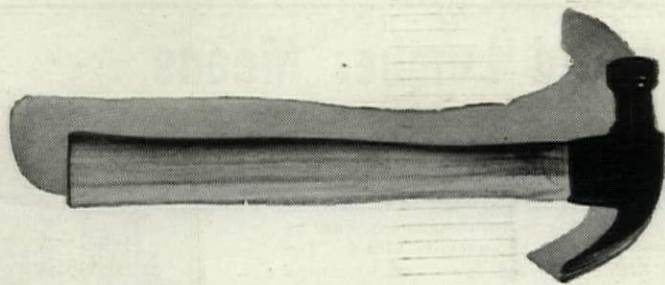
The widely known author of Fundamentals of Perspective has evolved a simple and easily understandable method of showing the order in which the lines of a perspective are drawn.

By numbering each line of the constructed perspective and signifying its direction with arrows, the procedure and reasons for it becomes quickly apparent. To further clarify the examples, FOUR COLORS are used. The system of using colors, numbers and arrows makes it possible to eliminate much of the text which, in the past, has been found necessary in books on perspective to explain the construction of the drawings.

Several of the sheets contain practical helps to speed up the making of perspectives. These are simple to understand and convenient to use, yet are not generally known except to professional delineators.

20 Plates in Stiff Cover, Price \$2.50

Reinhold Publishing Corp., 330 W. 42nd St., New York 18



Not enough!

Looks like everyone with a hammer and saw is planning to cash in on the postwar demand for homes.

But hammers and saws are not enough if the home is going to *sell!*

Your postwar prospects will want well-built homes, *designed for "better living"!* And they'll expect them to be completely equipped, electrically, with the best in home appliances included as basic elements in the home.

- They'll want adequate wiring and proper lighting.
- Automatic heating and air conditioning.
- An automatic water heater for plenty of hot water.
- An all-electric kitchen with refrigerator, range, dishwasher, garbage Disposall, exhaust fan, clock, and steel cabinets.
- An all-electric laundry with washer, dryer, ironer.

Most People want G-E Equipment

In a recent survey of women all over the country, *53 out of every 100 said General Electric makes the best electrical appliances for the home!*

This preference, *more than twice* that for the next most popular brand, is why so many builders and architects

are planning to include all the dependable G-E appliances in their postwar homes.

It Can Cost Less To Live Electrically

One of the strongest selling points for a fully equipped home will be its *lower cost!*

The initial cost, with complete equipment included in the mortgage, will be *less* than if such equipment had to be bought separately. Savings in operation, maintenance, and through longer life of dependable G-E appliances, will more than offset the slight increase in monthly payments.

For figures and facts on these savings, send for your free copies of the two G-E booklets, "Your New Home And Your Pocketbook," and "Castles In Foxholes."

General Electric is ready with a complete technical service to help you in designing homes for better living, electrically. Home Bureau, General Electric Co., Appliance and Merchandise Department, Bridgeport, Conn.

FOR GOOD LISTENING: Don't miss Art Linkletter, in "The G-E House Party," every afternoon, Monday through Friday, 4 p. m., E.W.T., CBS. "The G-E All-Girl Orchestra," Sunday, 10 p. m., E.W.T., NBC. "The World Today," News, Monday through Friday, 6:45 p. m., E.W.T., CBS.

FOR FINAL VICTORY—BUY AND HOLD MORE WAR BONDS

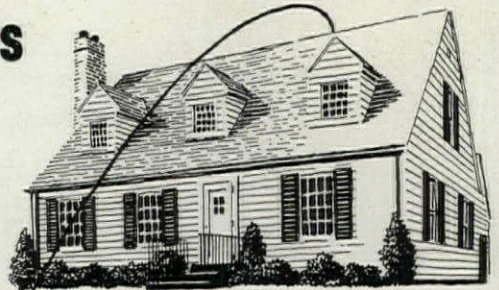
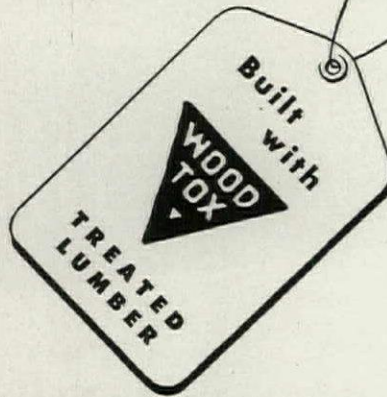


GENERAL  ELECTRIC

Specifying Treated Lumber Means BETTER CONSTRUCTION

Wood will always be first as a construction material. And now its tendency to warp, swell, shrink and change in dimensions can be controlled. It can become repellent to decay and termite attack. The cracks, creaks and "sticks" that result from the dimensional changes in wood can be practically eliminated. When you specify WOODTOX you specify a "clean" proven, practical and economical wood treatment.

Our WOODTOX, TIMBERTOX and WOODFIX make the use of properly treated lumber practical for general construction, for both indoor and outdoor use. It is a "clean" treatment. The wood is not changed in color or appearance and there is no hindrance to any finish desired. The vehicle of these preparations is a light volatile oil of high penetration. Consequently, a simple dip treatment gives a good penetration sufficient for all general construction use. Because of this, any lumber yard is easily equipped for the treatment. The architect's specification calling for the treatment is both practical and economical.



WOODTOX (wood preservative and moisture repellent) controls decay, stain, mold, mildew, termites, lyctus beetles and wood borers . . . plus control of warping, shrinking, checking and grain raising.

TIMBERTOX (wood preservative) controls decay, stain, mold, mildew, termites, lyctus beetles and wood borers.

WOODFIX (moisture repellent) controls warping, shrinking, checking and grain raising.

GOVERNMENT REQUIREMENTS . . . WOODTOX, TIMBERTOX and WOODFIX meet Government specifications.

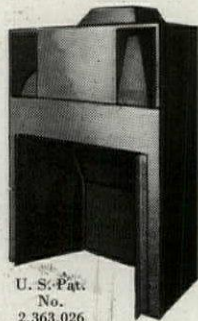
SEND FOR BULLETINS . . . fully describing purposes and methods of application of our standard wood preservative and moisture repellents . . . the complete technical data an architect needs.

WOOD TREATING CHEMICALS CO.
5137 Southwest Avenue St. Louis, 10, Mo.
Sales Agent for MONSANTO CHEMICAL CO.
Santophen 20, Santobrite and Permasans



Majestic Building Necessities

The
Adjustable Frame
of the
**MAJESTIC
CIRCULATOR
FIREPLACE**
Fits Any Mantle
Design



U. S. Pat.
No.
2,363,026

You need not be hampered by "material" limitations when you specify the MAJESTIC Circulator Fireplace Unit in your plans. The MAJESTIC adjustable frame adapts itself easily to any mantle design, and the engineered proportions of the unit assure a fireplace that draws properly and does not smoke. The MAJESTIC Circulator Fireplace also heats with furnace-like efficiency. Cool air drawn in at floor level is heated as it flows past patented Radiant Blades, and distributed through warm air grilles at mantle level, heating the entire room. For fireplace satisfaction, include the MAJESTIC Circulator Fireplace Unit in your plans. Write for specifications.

Nationally Known and Advertised for 40 Years

THE MAJESTIC COMPANY
1009 Erie St., Huntington, Indiana

ELLIOTT'S VEMCO Drafting Machine



**Accurate
and Faster**

Speeds Up Operations 40%

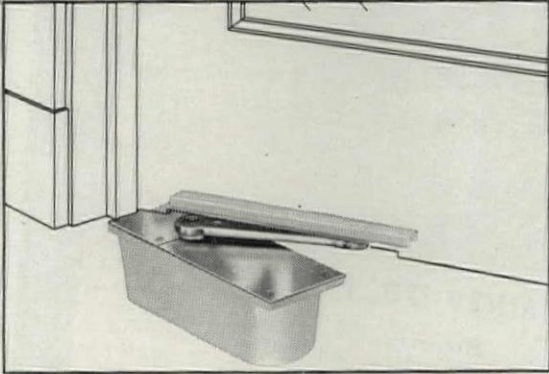
Vemco Drafting Machines will enable you to get more production from your drafting room without adding to the personnel or sacrificing accuracy. Vemco machines operate smoothly, easily and with precision, eliminating many drafting tools.

Write Dept. B-2 for full information.

B. K. ELLIOTT COMPANY
Drawing Materials Surveying Instruments
PITTSBURGH - DETROIT - CLEVELAND

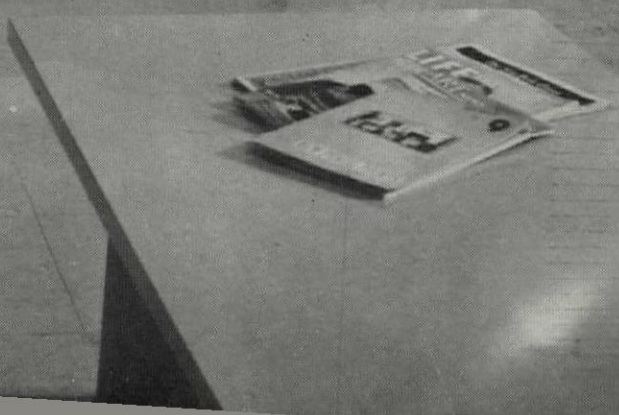
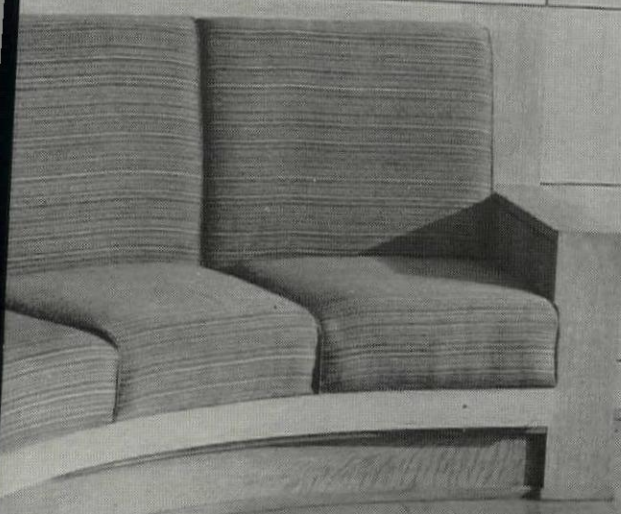
Library Doors

SAARINEN & SWANSON • ARCHITECTS
LCN DOOR CLOSER NO. 4 SPECIFIED



LCN concealed method of door control is usually associated with overhead installation, but floor type LCN closers, as applied to the beautiful Saarinen doors shown, are also noted for finished workmanship, accessibility, long service life. NORTON LASIER COMPANY • CHICAGO

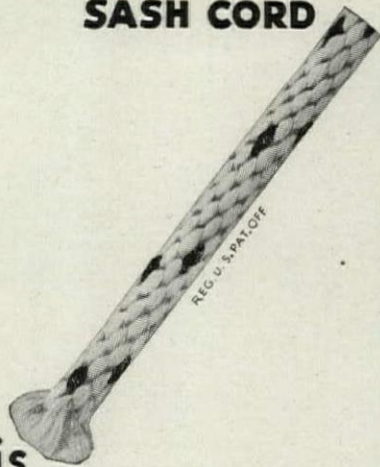
DOOR  CLOSERS



SPOT

REG. U. S. PAT. OFF.

SASH CORD



is
TOPS
in Value



REG. U. S. PAT. OFF.

SAMSON CORDAGE WORKS

BOSTON 10, MASS.

Availability somewhat limited by war conditions



Architect: Villa Mill, New York City

STAINED TO PERFECTION!

Homes that are outstanding examples of modern architecture are even more beautiful when they're stained with Cabot's *quality* Shingle Stains! This is because Cabot's Stains bring out all wood's natural beauty—penetrate deep—protect for years! And there's no waste of raw material—no peeling or blistering even when they're used on green lumber.

FREE BOOKLET "Stained Houses"—contains complete details on Cabot's Creosote and Heavy-Bodied Stains. Write for your copy and color cards today! Samuel Cabot, Inc., 1295 Oliver Bldg., Boston 9, Mass.

Cabot's Shingle Stains

Creosote

Heavy-Bodied

IT'S A CELLAR FIRE ESCAPE TOO!

BILCO

Copper Steel

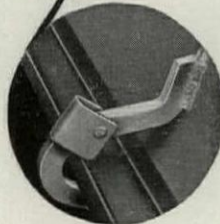


CELLAR BULKHEAD

FOR
ACCESSIBILITY
PERMANENCE
SECURITY



You give the home cellar real utility when you provide a direct-to-the-yard cellarway. And in modern cellars with game rooms and workshops, *safety* demands a second exit. BILCO Hatchway Doors provide a modern, trouble-free and attractive outside entrance. Copper steel lasts a lifetime. Leak-proof, warp-proof, fire-proof, termite-proof and burglar-proof. Can't be blown or knocked shut.



Automatic Safety Catch

FILL OUT AND MAIL THIS COUPON TODAY!

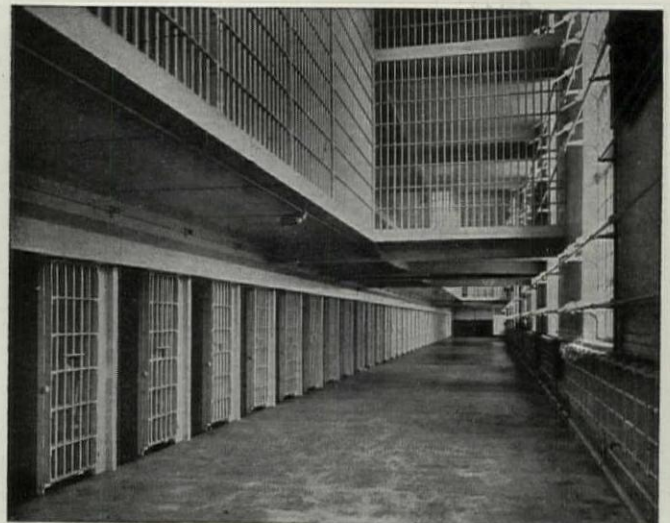
The BILCO Manufacturing Company
165 Hallock Avenue, New Haven 6, Conn.

Please send me specifications and prices of Bilco copper steel cellar bulkheads for homes and other structures.

Name

Address

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



JAIL & PRISON EXPERTS

Backed by 65 years experience

we can assist you with your

PLANS - SPECIFICATIONS - COST DATA

FRIES & SON

Steel Construction & Engineering Co.

Second & Madison Sts.

Covington, Ky.

TO ARCHITECTS:

An Interim Statement on Automatic Heating by General Electric

POSTWAR, this Company will aim at substantial sales increases in the fields of domestic heating and air conditioning equipment. The sales increases we will seek cannot be achieved unless and until we obtain wide acceptance of our new designs by architects, heating engineers, building contractors, and dealers, as well as by future home owners.

It is a matter for regret that because of war pressures on our facilities and personnel, and war restrictions on materials, we must still postpone announcements to architects and engineers of the specific details of new designs and services.

We probably will have no miracles to offer . . . but building on our sound and successful prewar experience we plan to offer a line of products competitive in price with all heating equipment of like quality, and offering genuine economies in fuel consumption and service requirements.

If the name "General Electric" means to you what we hope it does in technical competence and integrity, in full acceptance of all proper responsibility for every product bearing the G-E Monogram, this statement of our belief in the new line will earn a certain measure of your interest.

In the not too distant future we hope General Electric can serve you, and serve you well . . . not alone with products which will justify your selection of them, but with layout and specification assistance of a highly practical character. So we hope that as circumstances permit, you will "wait for G E" . . . with this assurance of our belief that you will then find it highly worthwhile to turn to G E. *General Electric Company, Air Conditioning Department, Section 5507, Bloomfield, New Jersey.*

BUY . . . and hold . . . WAR BONDS

GENERAL  ELECTRIC

Automatic Heating Equipment

Tune in: The "G-E HOUSE PARTY" every afternoon, Monday through Friday, 4 p. m., E W T, C B S . . . The "G-E ALL-GIRL ORCHESTRA," Sundays, 10 p. m., E W T, N B C . . . "THE WORLD TODAY" News, Monday through Friday, 6:45 p. m., E W T, C B S.



The Pace of Victory Permits Only A Congratulatory Handshake!

American Industry well merits a decoration for its brilliant record in the Mighty 7th! But, as our newly decorated Pacific heroes quickly return to combat, so industrial leaders aren't resting on their laurels. **Back into Bond action**—they are now busy consolidating recent Payroll Savings Plan gains!

First, many executives are now patriotically working to retain the substantial number of new names recently enrolled during the 7th War Loan. By selective resolicitation, they are urging all new subscribers to maintain Bond buying allotments.

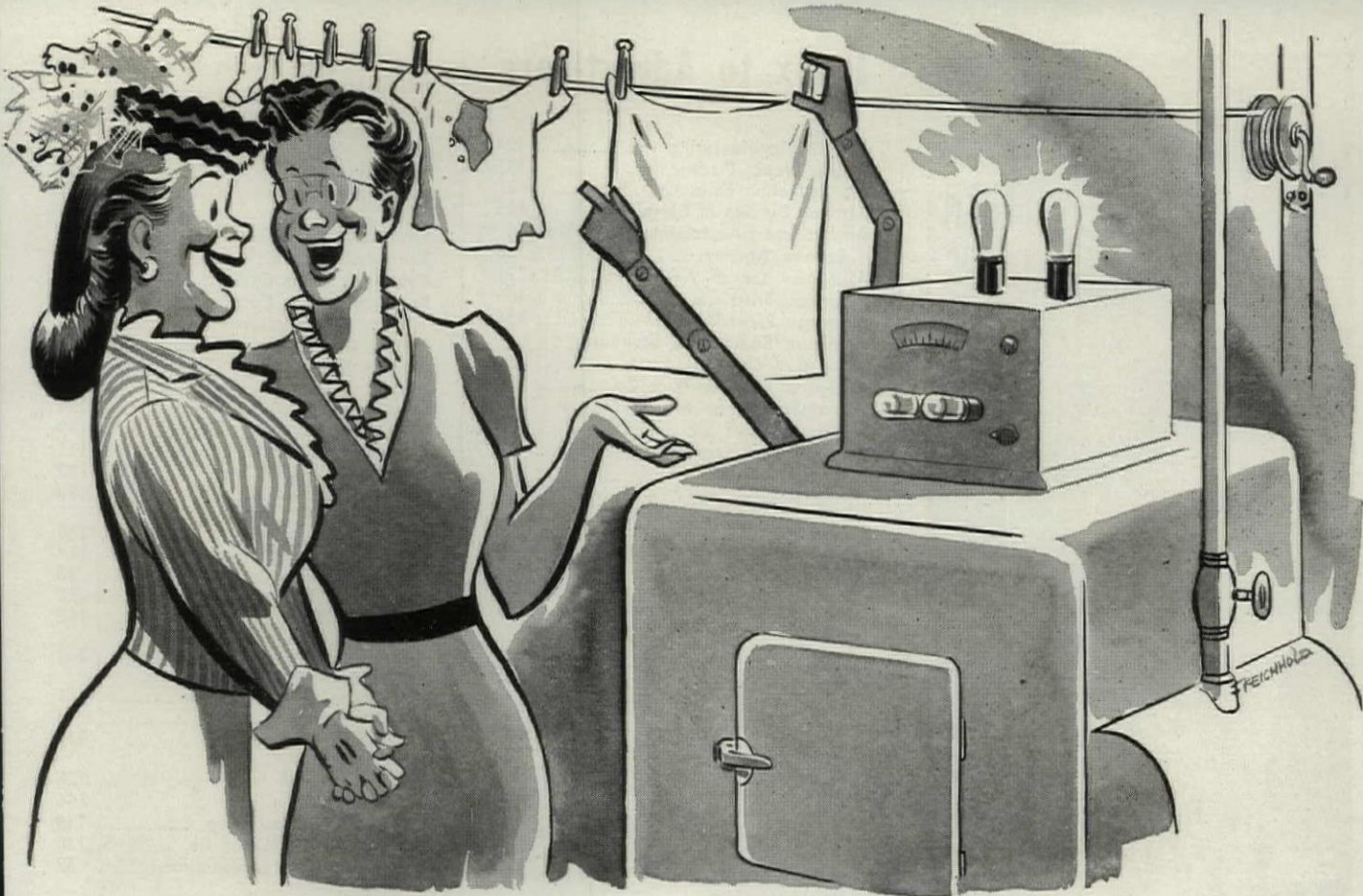
Second, many are also employing selective resolicitation to urge every worker who increased his or her subscription in the 7th to continue on this wise, saving-more-for-the-future basis.

Help to curb inflationary pressures and harvest peacetime prosperity by holding the number of Payroll Savings Plan subscribers—and amounts of individual subscriptions—to the mark set in the Mighty 7th!

The Treasury Department acknowledges with appreciation the publication of this message by

PENCIL POINTS

★ *This is an official U.S. Treasury advertisement prepared under the auspices of Treasury Department and War Advertising Council* ★



“They say the new model changes the baby, too!”



NEW STEEL LAUNDRY SAVES A DAY'S WORK

1. U-S-S Stainless Steel for work surfaces and sinks lasts forever—never rusts.
2. Porcelain enamel on a U-S-S VITRENAMEL base. Swish and it's clean. Comes in many brilliant colors for washing machines, hot-water heaters, tables, sinks and wall tile.
3. Enameled steel (painted) for sanitary storage space and cabinets.
4. U-S-S Galvanized Steel for area wells, ducts, gutters and downspouts.

WE'VE seen some marvelous plans for postwar automatic laundries . . . but in most homes today, the laundry is still the forgotten room.

Pictured at left is a laundry of tomorrow, that not only saves work but is both practicable and good-looking. It makes extensive use of steel—for steel does so many jobs so well. When planning your new homes don't neglect the laundry. Our new booklet, "85 Ways to Make a Better Home," will give you many usable ideas. It will show you how to build better homes at low cost—with steel.



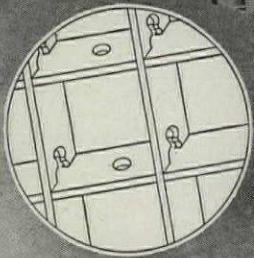
**ONLY STEEL
CAN DO SO MANY
JOBS SO WELL**

CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh and Chicago
 COLUMBIA STEEL COMPANY, San Francisco
 TENNESSEE COAL, IRON & RAILROAD COMPANY, Birmingham
 United States Steel Supply Company, Chicago, Warehouse Distributors
 United States Steel Export Company, New York

UNITED STATES STEEL

NEW LONDONER

HOLLOW-CORE
FLUSH DOORS



Pat. No.
2272227

for EVERY BUILDING YOU PLAN

Performance records tell you why to recommend New Londoner Hollow-Core Flush Doors for every building you plan. In all climates, under unusual conditions, these famous doors have established unbeatable records for sterling performance. Architects, Builders and Contractors everywhere, select New Londoners for every type of building, large and small, because experience has taught them New Londoners "stay put." If you do not have the facts handy, write for the story of New Londoner Hollow-Core Flush Doors — today.

A PLYNEERED PRODUCT

AMERICAN PLYWOOD Corporation
NEW LONDON, WISCONSIN

Index to Advertisers

Abesto Manufacturing Co.	124
Adam, Frank, Electric Co.	131
Air Reduction Sales Co.	27
Airtemp Division of Chrysler Corp.	136
Air Transport Association for Railway Express Agency	28
Aluminum Co. of America	33, 121
American Brass Co.	109
American Plywood Corp.	156
American Radiator & Standard Sanitary Corp.	49
American Steel & Wire Co.	140
Anaconda Copper Mining Co.	109
Armstrong Cork Co.	137
Arrow-Hart & Hegeman Electric Co. ..	146
Barber-Colman Co.	114
B. B. Chemical Co.	122
Bell & Howell Co.	139
Bennett-Ireland	112
Bilco Manufacturing Co.	150
Bruce, E. L., Co.	2, 3
Cabot, Samuel, Inc.	150
Cambridge Tile Mfg. Co.	3rd Cover
Carnegie-Illinois Steel Corp.	155
Carrier Corp.	123
Ceco Steel Products Corp.	151
Chicopee Manufacturing Corp.-Lum-nite Division	46
Congoleum-Nairn, Inc.	38
Connecticut Telephone and Electric Division	6
Corbin, P. & F., Division, American Hardware Corp.	7
Crane Co.	142
Curtis Cos.	37
Defoe Shipbuilding Co., Housing Division	138
Dixon, Joseph, Crucible Co., Pencil Sales Dept.	101
Dixon's Typhonite Eldorado Pencils ..	101
Douglas Fir Plywood Association	40
Dow Chemical Co., The	29
Dunham, C. A., Co.	10
Eberhard Faber Pencil Co.	118
Edwards & Co., Inc.	135
Elliott, B. K. Co.	148
Faber, A. W., Inc.	129
Field, Alfred, & Co., Inc.	152
Flynn, Michael, Mfg. Co.	25
Formica Insulation Co.	133
Fries & Son Steel Construction & Engineering Co.	150
Garden City Plating & Mfg. Co.	116
General Cable Corp.	102, 103
General Controls Co.	152
General Electric Co., Heating and Air Conditioning Equipment Div.	153
General Electric Co., Home Bureau ..	147
General Pencil Co.	134
Hart & Hegeman Div.	146
Hillyard Chemical Co.	120
Hoffman Specialty Co.	125

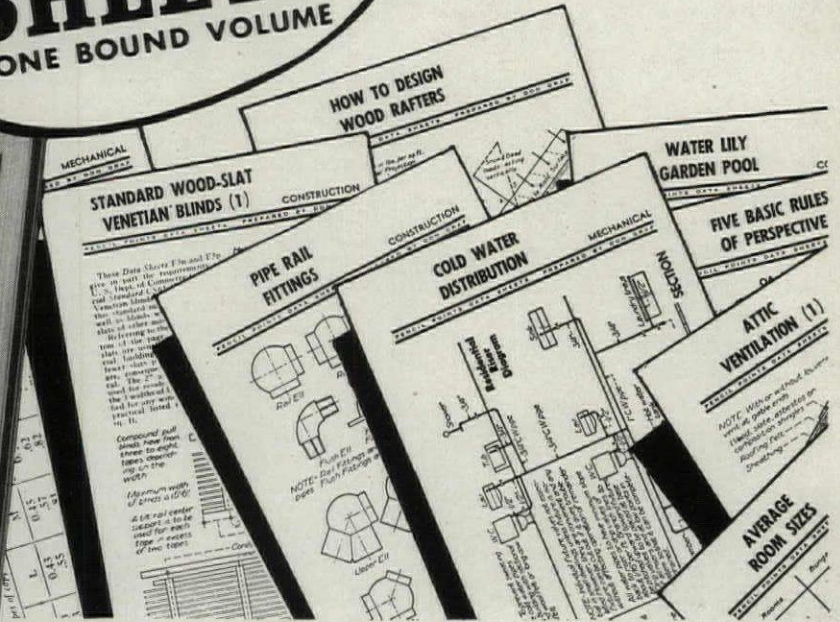
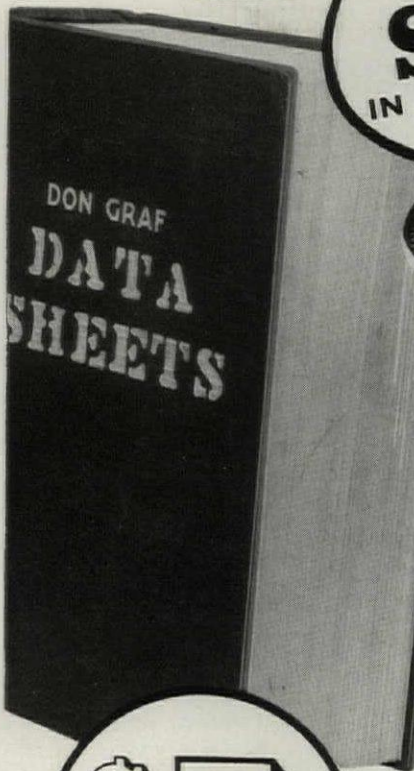
Imperial Pencil Tracing Cloth	120
Inland Steel Co.	17
Insulux Products Division, Owens-Illinois Glass Co.	117
Johns-Manville	126
Josam Manufacturing Co.	141
Kawneer Co.	2nd Cover
Kennedy, David E., Inc.	107
Keuffel & Esser Co.	34
Kewanee Boiler Corp.	42
Kinnear Manufacturing Co.	26
Kohler Co.	36
Koppers Co., Tar and Chemical Div.	35
Laclede Steel Co.	124
LCN Door Closers	149
Libbey-Owens-Ford Glass Co.	45, 111
Lone Star Cement Corp.	52
Louisville Cement Co.	39
Majestic Co.	148
Medusa Portland Cement Co.	14
Mengel Co., The	30
Miller Co., The	132
Milwaukee Stamping Co.	152
National Electric Products Corp.	143
Ohio Chemical & Mfg. Co.	31
Otis Elevator Co.	48
Owens-Illinois Glass Co.	117
Payne Furnace & Supply Co., Inc.	128
Pecora Paint Co.	106
Pittsburgh Corning Corp.	119
Pittsburgh Plate Glass Co.	4, 5, 130
Portland Cement Association	32
Raymond Concrete Pile Co.	9
Reinhold Publishing Corp.	146, 157
Revere Copper & Brass, Inc.	144
Richmond Screw Anchor Co., Inc.	108
Roddis Lumber & Veneer Co.	44
Rosenthal Co.	146
Rotary Lift Co.	115
Samson Cordage Works	150
Schlage Lock Co.	13
Sedgwick Machine Works	110
Servel, Inc.	104, 105
Staedtler, J. S., Inc.	122
Stran-Steel Division of Great Lakes Steel Corp.	43
Sylvania Electric Products, Inc.	158
Time, Inc.	145
Truscon Steel Co.	41
United States Gypsum Co.	47
United States Plywood Corp.	30
United States Steel Corp.	140, 155
United States Treasury	154
Vonnegut Hardware Co.	12
Wade Manufacturing Co.	15
Warren Webster & Co.	23
Westinghouse Electric Corp.	113, Back Cover
Westinghouse Electric Elevator Co.	127
Weyerhaeuser Sales Co.	50, 51
Wilson Engineering Corp.	146
Wood Treating Chemicals Co.	148
Youngstown Sheet & Tube Co.	11

Advertising and Executive Offices, 330 West 42nd St., New York 18, N. Y.
 PHILIP H. HUBBARD, President and Publishing Director.
 JOHN G. BELCHER, Associate Publishing Director and Business Manager.
 DOUGLASS G. PILKINGTON, District Manager,
 310 South Michigan Ave., Chicago 4, Ill.
 RUSSELL H. ALVIS, District Manager,
 1133 Leader Building, Cleveland 14, Ohio
 EDWARD D. BOYER, JR., District Manager,
 330 West 42nd St., New York 18, N. Y.
 WILLIAM H. BALDWIN, District Manager,
 330 West 42nd St., New York 18, N. Y.
 DUNCAN A. SCOTT & CO.,
 Mills Building, San Francisco, Calif.
 448 South Hill St., Los Angeles 13, Calif.

THE BOOK YOU'VE WAITED

FOR!

**DON GRAF
DATA
SHEETS**
IN ONE BOUND VOLUME



\$5

The Opportunity to Own This 779-page Book That Will Save Your Time and Temper in Finding Those Hard-to-locate Facts

Those world-famous DATA SHEETS are now available in a single bound volume. Thousands of 4-volume loose-leaf DATA SHEET Libraries have been sold at almost twice the cost of this book and are used all over the world. For 11 years these fingertip facts were a regular feature of Pencil Points. Now for the first time you can get them in one handy volume to speed up working drawings and specifications.

The DATA SHEETS contain much original material available in no other architectural reference work. These pages are not just reprinted catalog drawings. The book is packed with the results of original research in quick, easy-to-use form.

An index of hundreds of entries makes it lightning fast to find what you want to know from this fat, fact-packed handbook. When you look for a subject in this index you won't find those irritating words "see something else"! Even the thumb cut is designed to help you get into the index instantly.

HOW TO GET YOUR BOOK

Restrictions on paper and shortages of bookbinding materials have limited the size of this edition. To be sure of getting your copy order it today. Use the handy form below. As soon as we receive your order with the remittance of \$5.00 for each copy (plus 5c sales tax if for delivery in New York City), we will send your copy postpaid. When this edition is exhausted wartime restrictions may prevent an immediate reprinting. This book is handsomely bound in red cloth with silver stamping. Strong paper stock will allow unusually hard use—and you will be using this book constantly!

The preparation of this information took many years and cost thousands of dollars. Every page is packed with useful and hard-to-locate facts. Any one of the 779 pages in this book may save you more than the cost of the entire work in time and annoyance—yet it is yours for about 2/3c per page!

A wealth of material including valuable information on manufactured products is included within the covers of this single book, together with hundreds of sheets originally appearing in Pencil Points. Elusive facts, hard-to-remember facts, buried facts, appear on these subjects:—

1. Materials in General
2. Structural Design
3. Mathematics
4. Planning Data
5. Mechanical
6. Construction Details
7. Drafting Helps
8. Furniture and Furnishings

**USE THIS
HANDY
ORDER FORM**

PENCIL POINTS, Dept. B • 330 West 42nd Street • New York City 18
Enclosed find \$..... for copies of Don Graf DATA SHEETS bound in book form. I understand that delivery will be made to me postpaid as soon as published. (Include 5c sales tax for each volume for delivery in New York City.) No C.O.D. orders. No foreign orders accepted at this special price.

Name Address
City State

SYLVANIA NEWS

ARCHITECTURAL EDITION

JULY Published by SYLVANIA ELECTRIC PRODUCTS INC., Emporium, Pa. 1945



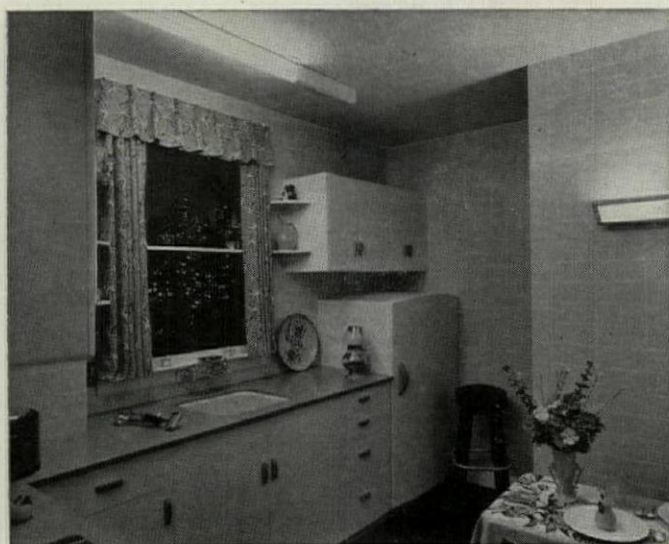
The all-purpose living room, with corner seat and table designed for dining or games. Illumination is provided by fluorescent ceiling fixture, throwing light downward and out into the room. Corner fixture is decorative and useful.

VISIT THE NEW SYLVANIA LIGHTING CENTER FOR LATEST FLUORESCENT IDEAS

Architects will find the Sylvania Lighting Center packed full of lighting ideas. This display of model rooms at 500 Fifth Avenue (2nd Floor), offers the architect a world of postwar lighting applications that will be of immeasurable help to him in formulating plans for the home of the future.

Accept Sylvania Electric's cordial invitation to visit their Lighting Center. Sylvania engineers will be glad to describe and answer questions concerning the modern lighting applications on display.

Notice the accompanying photographs—a few of the highlights to be found at the Sylvania Lighting Center, 2nd Floor, 500 Fifth Avenue, New York, N. Y.



In the kitchen continuous strips of fluorescent light are over the work surfaces. This type of illumination can be extended around the entire kitchen.

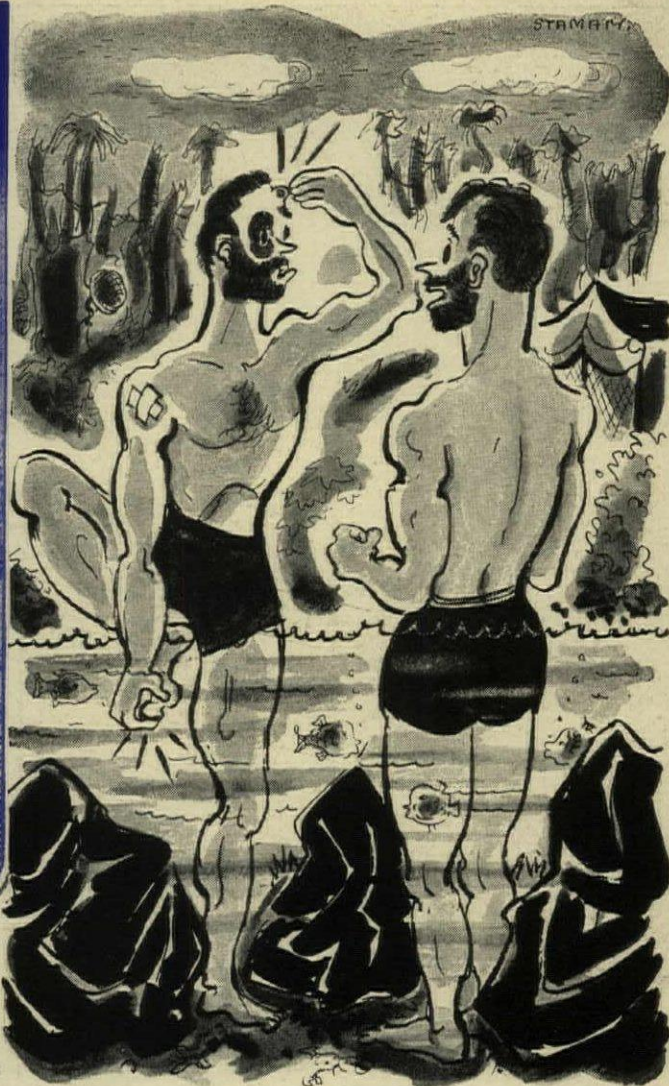
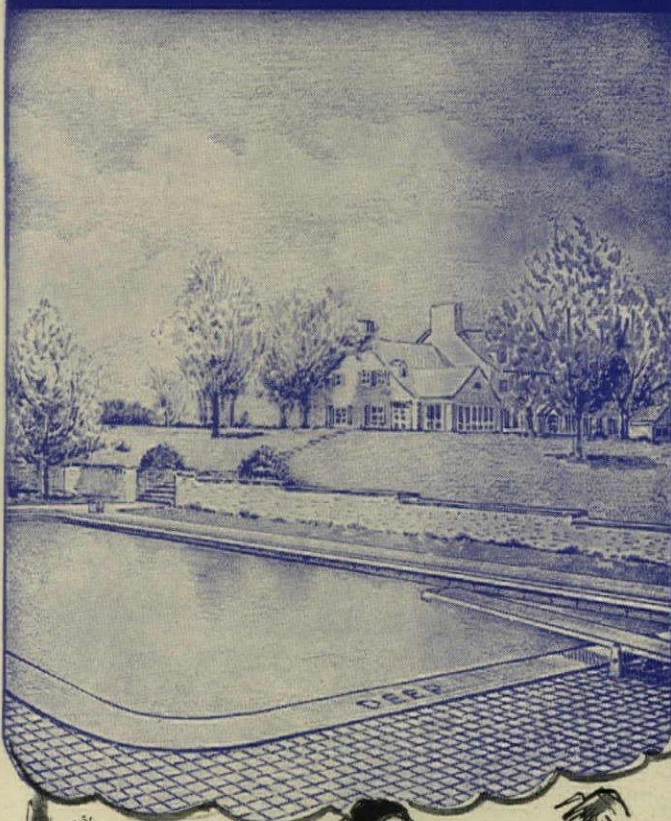


Study-type office or small conference room has lowered central fixture that provides both indirect general lighting and good working light on the desk itself.

SYLVANIA ELECTRIC

MAKERS OF FLUORESCENT LAMPS, FIXTURES, ACCESSORIES; ELECTRIC LIGHT BULBS; RADIO TUBES; CATHODE RAY TUBES; ELECTRONIC DEVICES

★ *What they dream about*




"You can have this 'ole swimmin' hole' stuff—
give me a safe sanitary Suntile pool!"

★ **WHAT THEY SEE ...**

Every now and then another substitute for tile appears on the market. Most of these products are colorful and attractive. Some of them are quite satisfactory for certain uses. All of them pay tribute to the superiority and leadership of tile by trying to duplicate its many assets.

No substitute has ever been found to replace real clay Suntile. Suntile is at home in any climate. Whether it is used indoors or out, its beauty is permanent . . . its colors bright for life. Suntile is easy to clean and to keep clean . . . it requires no waxing, no painting, no refinishing. Since the first cost is usually the only cost, Suntile is a real economy.

Specify color-balanced Suntile in your plans now. We will be making it again when our war work is finished.

THE *Cambridge*  *Bright with color—Right for life*

Money Invested In
SUNTILE
Is Wisely Spent

TILE MFG. COMPANY
MEMBER OF THE PRODUCERS' COUNCIL

CINCINNATI 15, OHIO

★ THIS SERIES IS BASED ON AN IDEA SUGGESTED IN LETTERS WRITTEN BY CPL LOUIS A. PERKOVIC OF THE ARMY ENGINEERS IN THE SOUTH PACIFIC. PAPER, URGENTLY NEEDED TO MAKE OR WRAP OVER 700,000 ESSENTIAL WAR PRODUCTS, IS A NO. 1 WAR MATERIAL SHORTAGE. HELP SAVE PAPER.

WHAT PEOPLE
REALLY WANT IS

Electrical Living

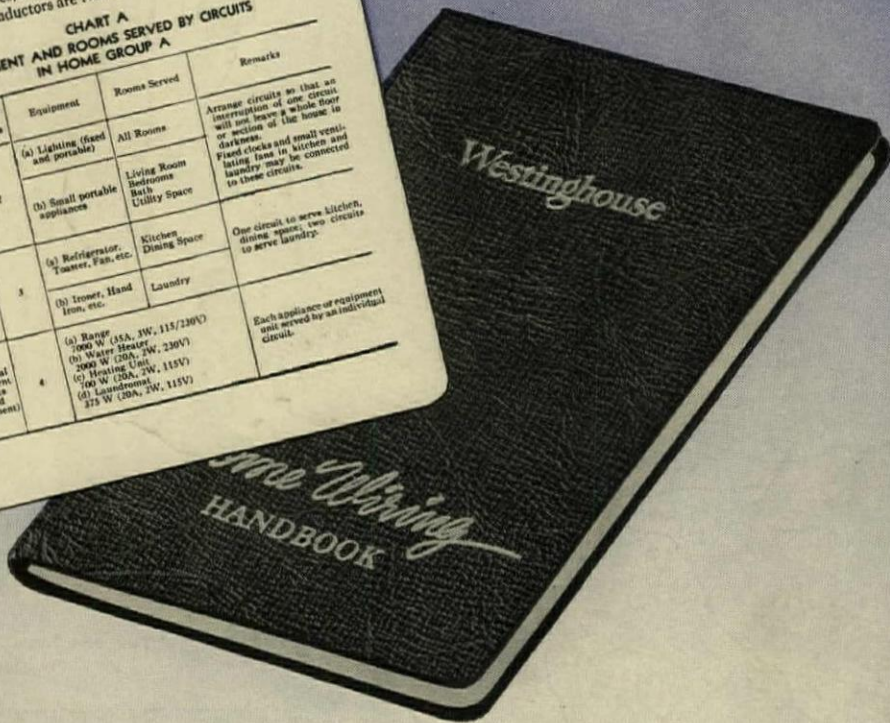
HOME WIRING HANDBOOK

...individual pieces of equipment should have sufficient for the load which they supply. The determining size of circuits for cooking is based on determining size of circuits for cooking rated at 7,000 watts, for ranges rated up to ...
Electrical Code classifies circuits as 15, 20, 25, 35 ampere branch circuits that can be used for any circuit having a minimum size of conductors that can be used for the rating or setting of the over-current device protecting the circuit. If conductors of a larger size are used in order to reduce the voltage drop, the change in size of the conductor does not change the classification of the circuit. For example, if the rating of the over-current device is 20 amperes, the circuit is a 20-ampere circuit, regardless of whether the conductors are Nos. 12, 10 or larger.

CHART A
EQUIPMENT AND ROOMS SERVED BY CIRCUITS
IN HOME GROUP A

Type of Circuit	Number of Circuits	Equipment	Rooms Served	Remarks
General Purpose (15-Ampere) Circuits	2	(a) Lighting (fixed and portable)	All Rooms	Arrange circuits so that an interruption of one circuit will not leave a whole floor or section of the house in darkness. Fixed clocks and small ventilating fans in kitchen and laundry may be connected to these circuits.
		(b) Small portable appliances	Living Room Bedrooms Bath Utility Space	
Appliance (20-Ampere) Circuits	3	(a) Refrigerator, Toaster, Fan, etc.	Kitchen Dining Space	One circuit to serve kitchen, dining space, two circuits to serve laundry.
		(b) Ironer, Hand Iron, etc.	Laundry	
Individual Equipment Circuits (Fixed Equipment)	4	(a) Range 200 W (55A, 3W, 115/230V) (b) Water Heater 2000 W (55A, 2W, 230V) (c) Heating Unit 700 W (20A, 2W, 115V) (d) Laundromat 375 W (10A, 3W, 115V)		Each appliance or equipment unit served by an individual circuit.

LOOK TO THIS NEW BOOK
FOR THE RIGHT NUMBER OF
CIRCUITS TO MAKE PEOPLE
REALLY WANT YOUR HOUSES



Tomorrow's homeowners will expect their homes to be wired so they can enjoy the full convenience of Electrical Living.

That means enough circuits and outlets, wire of ample size, modern circuit protection, and quality wiring devices and workmanship.

In the new Home Wiring Handbook, charts clearly show and explain the right number of circuits to

include in each of four groups of homes in the popular price class. A typical page is shown above.

The same comprehensive assembly of pertinent technical information on all other phases of electrical needs is included in this 120-page reference book. Use this valuable timesaver to guide you in designing and planning homes. Costs one dollar. Send coupon below.

J-91530



Westinghouse
PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

BETTER HOMES DEPARTMENT

as part of its consulting service to the building profession, offers the following FREE BOOKS: Electrical Living in 194X (Professional Edition); Manual Better Home Wiring.

ORDER YOUR COPY NOW

Westinghouse Electric Corporation
Extension Training—Industrial Relations Department
306 Fourth Avenue, Pittsburgh 30, Pa.

Gentlemen:

I enclose \$1.00 for a copy of your "Home Wiring Handbook".

Name.....

Street.....

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